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REMEDIAL ACTION PLAN 5th Street and Magnolia Street Oakland, California ACDEH Case No.: RO3194

November 2017

Prepared for

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All information, conclusions and recommendations contained in this report have been prepared under the supervision of the undersigned professional(s).

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1.0 INTRODUCTION

This *Remedial Action Plan* ("*RAP*") has been prepared by West Environmental Services & Technology, Inc., (WEST), on behalf of Holliday Development for the 5th Street and Magnolia Street property located in Oakland, California ("Site;" Figure 1-1). The Site is to be redeveloped for mixed commercial retail and multi-family residential use, with landscape areas and hardscapes. This *RAP* presents the proposed remedial actions to address: total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs) and metals in soil; and volatile organic compounds (VOCs) in soil gas, during Site construction activities. The *RAP* includes: a summary of the Site investigations; data evaluation and data gap analysis; evaluation of remedial technologies; and details of the recommended remedial action implementation.

The recommended remedial action includes excavation of soil containing TPH, PAHs and metals during Site grading, building foundation construction and utility trenches for on-Site reuse as engineered fill and/or off-Site disposal; vapor mitigation to address VOCs in soil gas; preparation of a Residual Risk Management Plan (RRMP); and institutional controls (i.e., land use covenant). Soil containing TPH, PAHs and metals will also be removed from the landscape areas to approximately 3-feet below ground surface. A geotextile marker fabric will then placed in the landscape areas prior to placement of clean fill for planting.

Approximately 450 cubic yards of soil excavated during mass grading will be placed beneath the proposed buildings as engineered fill. Approximately 1,200 cubic yards of soil removed during excavation for foundations, landscaping and utility trenches will be reused on-Site as engineered fill and/or transported off-Site for disposal. The extent of the vapor mitigation deployment will be determined based on the findings of additional soil gas sampling conducted prior to construction activities. Implementation of the *RAP* is being overseen by the Alameda County Department of Environmental Health (ACDEH).



2.0 BACKGROUND

2.1 SITE DESCRIPTION AND HISTORICAL USE

The approximately 0.5-acre Site is an undeveloped asphalt paved lot bounded by: 5th Street to the south; Union Street to the west; commercial businesses to the north; and Magnolia Street to the east; and is located within a commercial zone. The Site was formerly part of the California Department of Transportation's (Caltrans) Interstate 880 (Cypress Freeway) right-of-way that was demolished following the 1989 Loma Prieta earthquake. As part of the demolition, the freeway support columns were demolished to approximately 4-feet below ground surface. In August 2015, Caltrans auctioned the Site for redevelopment. Prior to freeway construction, the Site was occupied residential dwelling between at least the 1900s to the 1950s.

Historical uses of adjoining properties have included: steam laundry and cleaners (1910s to 1970s); automobile repair (1920s-present); and a gasoline service station (1950s-2000s) (AEI, 2017). Neighboring commercial businesses include automobile repair and service operations. Releases to soil and groundwater occurred on the adjacent commercial properties (1225 7th Street and 1211 7th Street) from underground storage tanks (USTs) containing petroleum products. In June 1997, the releases from the USTs at 1225 7th Street were closed by the Alameda County Health Care Services Agency (ACHCSA, 1997). Investigations of the UST releases at 1211 7th Street are currently ongoing.

2.2 SITE DEVELOPMENT

The Site will be a mixed-use development comprised of: a single story commercial/retail building; a multi-story residential apartment building with two elevators; an at-grade open-air parking garage; landscaping; and hardscape (Figure 2-1; Appendix A). The residential units will be constructed above the at-grade open-air parking garage (WEST, 2017). As part of the construction, excavation activities will include: mass grading of approximately 450 cubic yards and reuse on-Site as engineered fill beneath the buildings; removal of approximately 1,200 cubic

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yards for the utility trenches and building wall and column foundation footings for on-Site reuse or transported off-Site for disposal. Soil will be removed within the footprints of commercial building, parking garage/residential building and for subsurface utility trenches between approximately 1-feet and 4-feet below ground surface. The landscape areas will be completed at or above final grade. Additional soil will be removed to accommodate planting of trees within the at-grade planter areas. Copies of the plans for the proposed development are included in Appendix A.

2.3 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The geology encountered in borings at the Site is comprised of fill and unconsolidated sands, silty sands and clay sands of the Merritt Formation. The fill material is approximately three-feet thick and comprised of sands and gravels with brick, wood, charcoal and concrete debris. Unconsolidated sands, silty sands and clayey sands of the Merritt Formation were encountered beneath the fill material to approximately 16-feet below ground surface (WEST, 2015).

Groundwater was encountered in the borings advanced at the Site between approximately 10-feet and 12-feet below ground surface. The groundwater flow direction measured at nearby sites is to the west-southwest (AEC, 1995).

2.4 SUMMARY OF INVESTIGATIONS

Investigations have been conducted at the Site since 2015. The investigations included collection of soil, soil gas and groundwater samples. Summaries of the Site investigations are presented below. Summaries of the analytical results are summarized in Tables 2-1 to 2-6 and presented on Figures 2-3 and 2-4. Cross-sections depicting the proposed building foundations and residual chemicals to remain in the subsurface following construction are depicted on Figures 2-5 to 2-7.



2.4.1 Site Investigation – 2015

In September 2015, WEST conducted Site investigations to characterize the environmental conditions at the Site and potential impacts from the UST releases on the adjacent properties. The field activities included drilling of eight borings (W-1 to W-8) to 16-feet below ground surface for collection of soil, soil gas and groundwater samples.

2.4.1.1 SOIL SAMPLING

Soil samples were collected from the Site between one- and six-feet below ground surface. Laboratory analysis of the soil samples revealed the presence of: PAHs including benzo(a)pyrene (BaP) up to 119 micrograms per kilogram (μ g/kg); pesticides including chlordane up to 18.4 μ g/kg and 4,4-DDE up to 7.54 μ g/kg; and metals including arsenic up to 7.21 milligrams per kilogram (μ g/kg) and lead up to 2,180 mg/kg (Tables 2-2 to 2-4).

2.4.1.2 SOIL GAS SAMPLING

Soil gas samples have been collected from four temporary vapor wells (W-1, W-2, W-4 and W-7) installed to five-feet below ground surface at the Site on September 17, 2015. Laboratory analysis of the soil gas samples revealed the presence of VOCs including: PCE up to 352 micrograms per cubic meter ($\mu g/m^3$)(W-4); benzene up to 9.14 $\mu g/m^3$ (W-1); toluene up to 15.8 $\mu g/m^3$ (W-1); ethyl benzene up to 4.60 $\mu g/m^3$ (W-1); xylenes up to 19.11 $\mu g/m^3$ (W-1); and trichlorofluoromethane (TCFM) up to 16.7 $\mu g/m^3$ (W-1)(Table 2-5 and Figure 2-4). The helium leak tracer gas was not detected in the soil gas samples above the laboratory-reporting limit of 0.100-percent.

2.4.1.3 GROUNDWATER SAMPLING

Three groundwater samples were collected from borings W-1, W-2 and W-4 on September 17, 2015. Laboratory analysis of the groundwater samples did not reveal the presence of TPHg



above its laboratory-reporting limit of 0.050 milligrams per liter (mg/l)(Table 2-6). VOCs were not detected in the groundwater samples above their laboratory-reporting limits, except for PCE at 0.850 micrograms per liter (µg/l) (W-2)(Table 2-6).

2.4.2 Soil and Soil Gas Investigation – 2017

In May 2017, WEST conducted a soil and soil gas investigation at the Site. Nine soil borings (B-1 to B-9) were advanced for collection of soil samples between 1-foot and 2.5-feet within the proposed building foundation areas. Five soil gas samples (SG-1 to SG-5) were collected from temporary vapor probes installed at approximately 5-feet below ground surface. In addition, pursuant to a request by the ACDEH, two soil gas samples were collected from temporary vapor probes installed near previous soil gas sample locations W-2 and W-4. Summaries of the analytical data are presented in Tables 2-1 to 2-5 and depicted on Figures 2-3 and 2-4.

2.4.2.1 Soil Sampling

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Soil samples collected from the borings advanced at the Site on May 8, 2017 were reported to contain TPHd up to 423 mg/kg (B-6; collected from one-foot below ground surface) and TPHmo up to 2,000 mg/kg (B-6; collected from one-foot below ground surface)(Table 2-1). Laboratory analysis of the soil samples did not reveal TPHg, benzene, toluene, ethyl benzene, xylenes and methyl tert-butyl ether (MTBE) above their respective laboratory-reporting limits (Table 2-1).

Laboratory analysis of the soil samples collected between 1.5-feet and 2.5-feet below ground surface from borings B-1, B-2, B-4, B-6, B-7, B-8 and B-9 revealed PAHs above the laboratory-reporting-limits, including: benzo(a)anthracene up to 311 μ g/kg (B-9); benzo(b)fluoranthene up to 404 μ g/kg (B-9); BaP up to 399 μ g/kg (B-9); dibenzo(a,h)anthracene up to 216 μ g/kg (B-9); and indeno(1,2,3-c,d)pyrene up to 453 μ g/kg (B-9)(Table 2-2).



□□□□1 □ Metals

Metals were reported present in the soil samples collected from the nine borings advanced at the Site with: arsenic up to 4.57 mg/kg (B-9); barium up to 214 mg/kg (B-2); chromium up to 43.2 mg/kg (B-9); cobalt up to 11.5 mg/kg (B-9); copper up to 30.8 mg/kg (B-2); lead up to 1,080 mg/kg (B-4); mercury up to 0.306 mg/kg (B-2); nickel up to 38.8 mg/kg (B-9); vanadium up to 36.6 mg/kg (B-9); and zinc up to 265 mg/kg (B-2)(Table 2-4). Other metals were not reported present in the soil samples above the laboratory-reporting limit of 2.50 mg/kg (Table 2-4).

2.4.2.2 SOIL VAPOR INVESTIGATION

Soil gas samples were collected at five-feet below ground surface from the temporary vapor probes, SG-1 to SG-5, W-2 and W-4, on May 8 and 9, 2017. The temporary vapor probes were installed in borings advanced using direct push technology. The soil gas samples were collected pursuant to the California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC) *Advisory – Active Soil Gas Investigation* (DTSC, 2015) guidelines a minimum of two-hours following vapor probe installation.

Laboratory analysis of the soil gas samples revealed VOCs including: PCE up to $182 \mu g/m^3$ (W-4); benzene up to $18.6 \mu g/m^3$ (SG-2); toluene up to $38.4 \mu g/m^3$ (SG-2); methylene chloride up to $24.2 \mu g/m^3$ (SG-3); and TCFM up to $14.2 \mu g/m^3$ (SG-4) (Table 2-5 and Figure 2-4).

2.5 SUMMARY

Based on the investigations conducted at the Site, the contaminants of concern and associated media include: TPH, PAHs, pesticides and metals in soil; and VOCs in soil gas. Laboratory analysis of groundwater samples collected at the Site did not reveal TPH or VOCs above applicable screening levels and/or laboratory-reporting limits.



3.0 DATA EVALUATION

Consistent with Regional Water Board guidance, a screening level assessment was performed to assist in assessing the adequacy of the existing data (Regional Water Board, 2007). The screening level assessment consisted of three components: (1) identification of potential exposure pathways; (2) identification of appropriate screening levels for each media; and (3) a comparative analysis. The screening level assessment has been used to evaluate conditions of potential concern and identify areas for additional investigations, i.e., data gaps.

3.1 CONCEPTUAL SITE MODEL

Pursuant to the DTSC guidance documents, a CSM has been prepared for the Site (CalEPA, 1999). The CSM represents the assemblage of the existing Site data and the general physical conditions that influence contaminant transport.

The CSM presents the primary and secondary sources of TPH, VOCs, PAHs and metals and their release mechanisms to soil, soil gas and/or groundwater. The CSM was developed based on: known historical operations at the Site and adjacent properties; investigation results; properties of the chemicals present; suspected chemical release mechanisms; transport mechanisms; and potential exposure scenarios. The CSM is depicted on Figure 3-1.

3.1.1 Sources of Chemicals

3.1.1.1 HISTORICAL SITE USE

Between at least the 1900s and the 1950s, the Site was comprised of residential dwellings (AEI, 2017). In the 1950s, the residential buildings were demolished for construction of the Cypress Freeway. The Cypress Freeway was an elevated roadway supported on columns. In 1989, the Cypress Freeway was damaged during the Loma Prieta Earthquake. During the 1990s, the Cypress Freeway structure was demolished. The support columns were removed to



approximately 3-feet below ground surface, approximately level with 5th Street. Approximately 3-feet of fill material appears to have been placed on the Site following the freeway demolition. The source of the fill material is unknown. Based on the historical Site use, the presence of TPH, PAHs, pesticides and lead in Site soil appears attributable to the former residential buildings (lead-based paint), automobile exhaust from leaded gasoline (aerially-deposited lead) and/or the fill material.

3.1.1.2 HISTORICAL USE OF ADJOINING PROPERTIES

Between at least the 1920s and the 1970s, commercial laundering and cleaning operations; automobile repair and a gasoline service station have operated on the adjoining properties to the north (AEI, 2017). The laundering and cleaning operations might have used cleaning agents containing PCE. The automobile repair operations might have used solvents that contain PCE for degreasing automobile parts including brakes and engines. Underground storage tanks (USTs) were used for gasoline and waste oil storage as part of the gasoline service station. Releases to soil and groundwater from the USTs were documented in the 1990s.

In addition, wastewaters containing waste cleaners and solvents generated from the laundering and cleaning operations and the automobile repair operations might have historically been discharged to the sanitary sewers or to the ground surface. Investigations conducted at the Site revealed PCE up to 352 μ g/m³ in the soil gas sample W-4 advanced near the proposed commercial building and within the west-central portion of the Site. Lower concentrations of PCE were detected between 13.5 μ g/m³ (SG-4) and 109 μ g/m³ (SG-1) advanced along the northern Site boundary with the adjacent commercial operations (Figure 2-4). However, based on the Site historical use (residential and Cypress Freeway right-of-way), the source of PCE in soil gas appears attributable to releases from the historical commercial operations adjacent to the Site.



3.1.2 Nature and Extent of Chemicals

3.1.2.1 Soil

The highest concentrations of TPH, PAHs, pesticides and lead in soil were detected in the samples collected within the upper 3-feet, within the fill material, at the Site. TPHd and TPHmo were detected up to 423 mg/kg and 2,000 mg/kg, respectively in the soils samples collected at 1-foot below ground surface. PAHs were detected in soil including BaP up to 399 µg/kg in the sample collected from boring B-9 at 1-foot below ground surface. Lower concentrations of PAHs were detected in the samples collected at 2.5-feet below ground surface including BaP up to 74.2 µg/kg. The pesticides 4,4-DDE and chlordane were detected up to 7.54 µg/kg (W-5) and 18.4 µg/kg (W-8) in the samples collected at 1-foot below ground surface. Similarly, the highest concentration of lead in soil was detected at 2,180 mg/kg (W-4) within the upper 3-feet (Figure 2-3). Based on the Site conditions and historical Site use, the presence of TPH, PAHs pesticides and lead in soil appear attributable to the fill material.

3.1.2.2 **SOIL GAS**

The highest concentration of PCE was detected at 352 μ g/m³ (September 2017) in the soil gas sample collected from boring W-4, located within the west central portion of the Site (near the proposed commercial building; Figure 2-4). Lower concentrations of PCE were detected at: 109 μ g/m³ to the north-northeast and adjacent to the northern Site boundary (SG-1; May 2017); up to 224 μ g/m³ to the northeast within the footprint of the proposed parking garage (W-2; September 2017); 21.3 μ g/m³ to the east within the footprint of the proposed elevators for the parking garage and residential building (SG-5; May 2017); less than 13.6 μ g/m³ to the south (SG-3); and at 14 μ g/m³ to the west within the footprint of the proposed commercial building (Figure 2-4).

Based on the historical Site use, the source of PCE in soil gas appears attributable to releases associated with historical uses of the adjoining properties. The distribution of PCE in soil gas at

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the Site indicates the highest concentration was detected within the western central portion of the Site.

3.1.2.3 GROUNDWATER

Laboratory analysis of groundwater samples collected from the Site did not reveal TPHg or VOCs above their respective laboratory-reporting limits; except for PCE at 0.850 µg/l in the sample collected from boring W-2. Boring W-2 was advanced within the northern central portion of the Site near the northern Site boundary. The Site is located hydraulically downgradient of the adjoining commercial properties as the groundwater flow direction is the south-southwest. Based on the groundwater flow direction and the historical Site use, the presence of PCE in groundwater appears attributable to releases from the upgradient and adjoining commercial properties.

3.2 SCREENING LEVEL ASSESSMENT

3.2.1 Exposure Pathways Evaluation

Exposure pathways for: TPH, PAHs, pesticides and metals in soil; VOCs in soil gas; and VOCs in groundwater, at the Site have been evaluated to assess the potential impacts to human health and the environment (Figure 3-2). Direct contact and ingestion of soil is identified as complete exposure pathway for future construction and maintenance workers. Direct contact and ingestion of soil was not identified as complete exposure pathway for future occupants due to the proposed hardscapes and buildings to be constructed on the Site. Inhalation of VOCs is identified as a potentially complete exposure pathway for future Site occupants. Direct exposure to VOCs in groundwater is not identified as a potentially complete exposure pathway as the Site is served by municipal water supply.



3.2.1.1 EXPOSURE CONCENTRATIONS

The maximum-detected concentrations of the chemicals detected at the Site were used to compare with the screening levels. The United States Environmental Protection Agency (USEPA) recommends that maximum beneficial uses of a property be the basis for evaluation. Based on the development plans for ground floor commercial offices, above grade residential, parking garage, landscaping and hardscape, the Site soil conditions have been screened using the methods described below based on a commercial/construction worker exposure scenario. The Site soil gas conditions wee screened based on a residential and commercial exposure scenario.

3.2.1.2 COMMERCIAL/INDUSTRIAL WORKER

The commercial/industrial scenario uses the conservative assumption that on-Site workers spend all or most their workday outdoors. The exposure for commercial/industrial workers is presumed to include: (1) a full time employee of a company operating on-site who spends most of the work day conducting maintenance or manual labor activities outdoors or (2) a worker who is assumed to regularly perform grounds-keeping activities as part of his/her daily responsibilities (Regional Water Board, 2007). Exposure to surface and shallow subsurface soils (i.e., at depths between zero- and 3-feet below ground surface) is expected to occur during excavation of foundations, subsurface utilities and landscaping areas as part of the Site construction and moderate digging associated with routine post-construction maintenance and grounds-keeping. The commercial/industrial worker scenario is based on a worker that is exposed to chemicals at the Site for 24-hours per day during 250-days per year for 25-years.

3.2.2 Identification of Screening Levels

Based on the identified exposure pathways, screening levels were identified for chemicals in soil, soil gas and groundwater as non-drinking water source. Chemical-specific screening levels were developed from concentrations based on published environmental screening criteria. The screening levels that were considered include the Regional Water Board Environmental



Screening Levels (ESLs) and the California Department of Public Health (CDPH) maximum contaminant levels (MCLs). Exceeding a screening level "does not necessarily indicate that adverse impact to human health or the environment are occurring, [it] simply indicates that potential for adverse impacts may exist and that additional evaluation is warranted" (Regional Water Board, 2007).

3.2.2.1 REGIONAL WATER BOARD ESLS

The Regional Water Board has identified ESLs for TPH, PAHs, pesticides and metals in soil, VOCs in soil gas and VOCs in groundwater (Regional Water Board, 2016). The Regional Water Board ESLs "are intended to be conservative" and "the presence of a chemical at [...] concentrations below the corresponding ESL can be assumed to not pose a significant threat to human health and the environment." While a chemical may be measured at concentrations above the Regional Water Board ESL, it "does not necessarily indicate adverse effects on human health or the environment are occurring, rather that additional evaluation is warranted." In developing the ESLs, the Regional Water Board has considered exposure pathways to humans, including inhalation of VOCs in indoor air from migration of contaminated soil gas.

3.2.2.2 CALIFORNIA DEPARTMENT OF PUBLIC HEALTH – MAXIMUM CONTAMINANT LEVELS

The CDPH MCL is the maximum concentration of a chemical that is allowed in public drinking water systems. The MCL is established by either the USEPA or the CDPH. Currently, there are fewer than 100 chemicals for which MCLs have been established; however, these represent chemicals that are thought to pose the most serious risk.

The USEPA guidance for establishing an MCL states that "MCLs are enforceable standards and are to be set as close to the maximum contaminant level goals (MCLGs) as is feasible and are based upon treatment technologies, costs (affordability) and other feasibility factors, such as availability of analytical methods, treatment technology and costs for achieving various levels of

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removal." The process of determining an MCL starts with an evaluation of the adverse effects caused by the chemical in question and the doses needed to cause such effects.

The result of this process is a safe dose (the dose thought to provide protection against adverse effects including a margin of safety), now called a Reference Dose (RfD) by the EPA. This evaluation is based on the results of animal experiments, and the research results are extrapolated to humans using standard EPA methods.

3.3 COMPARATIVE ANALYSIS

An evaluation between the identified screening levels and the soil laboratory analytical results was performed to characterize the Site conditions.

3.3.1 Soil Conditions

3.3.1.1 TPH AND VOCS

TPHg was not detected in soil above its laboratory-reporting limit of 1.00 mg/kg. TPHd was detected up to 423 mg/kg (boring B-6 at 1-foot below ground surface), above its unrestricted use ESL of 230 mg/kg but below its commercial ESL of 1,100 mg/kg. TPHd was not detected in the soil sample collected from boring B-6 at 2.5-feet below ground surface above its laboratory-reporting limit of 10 mg/kg.

TPHmo was detected up to 2,000 mg/kg (boring B-6 at one-foot below ground surface) and copresent with TPHd at 423 mg/kg, below its unrestricted use ESL of 5,100 mg/kg. TPHmo was detected in the soil sample collected from boring B-6 at 2.5-feet below ground surface at a lower concentration of 10.8 mg/kg, below its unrestricted use ESL of 5,100 mg/kg (Table 2-1).

VOCs including benzene, toluene, ethyl benzene, xylenes and MTBE were not detected in the soil samples collected at the Site above their respective laboratory-reporting limits (Table 2-1).



3.3.1.2 PAHs

Benzo(a)anthracene was reported present in the soil samples up to 311 μ g/kg (boring B-9 at one-foot below ground surface), above its unrestricted use ESL of 160 μ g/kg but below its commercial ESL of 2,900 μ g/kg. Benzo(b)fluoranthene was detected in soil up to 404 μ g/kg (boring B-9 at one-foot below ground surface), above its unrestricted use ESL of 160 μ g/kg but below its commercial ESL of 2,900 μ g/kg. Benzo(a)pyrene was detected in the soil samples collected at the Site up to 399 μ g/kg (boring B-9 at one-foot below ground surface), above its unrestricted use and commercial ESLs of 16 μ g/kg and 290 μ g/kg (Table 2-2 and Figure 2-3).

Dibenzo(a,h)anthracene was detected up to 430 μ g/kg (boring W-6 at one-foot below ground surface), above its unrestricted use and commercial ESLs of 16 μ g/kg and 290 μ g/kg. Indeno(1,2,3-c,d)pyrene was detected up to 453 μ g/kg (boring B-9 at one-foot below ground surface), which is above its unrestricted use ESL of 160 μ g/kg but below its commercial ESL of 2,900 μ g/kg. Other PAHs were detected in the soil samples collected at the Site but at concentrations below their respective unrestricted use ESLs (Table 2-2).

3.3.1.3 Organochlorine Pesticides

The organochlorine pesticides chlordane and 4,4-DDE were detected in the soil samples above the laboratory-reporting limits. Chlordane was detected up to 18.4 μ g/kg (boring W-8 at one-foot below ground surface), which is below its unrestricted use ESL of 480 μ g/kg. 4,4-DDE was detected up to 7.54 μ g/kg (boring W-5 at one-foot below ground surface), which is below its unrestricted use ESL of 1,900 μ g/kg (Table 2-3).

3.3.1.4 <u>METALS</u>

Metals were detected in the soil samples including arsenic and lead. Arsenic was detected up to 7.21 mg/kg (boring W-2 at one-foot below ground surface), which is consistent with the range of background arsenic concentrates up to 11 mg/kg for the San Francisco Bay Area (Duverge,



2011). Lead was detected in soil up to 2,180 mg/kg (boring W-4 at three-feet below ground surface), which is above its unrestricted use and commercial ESLs of 80 mg/kg and 320 mg/kg (Table 2-4 and Figure 2-3). Other metals were detected in the soil samples but at concentrations below their respective unrestricted use ESLs.

3.3.2 Soil Gas Conditions

VOCs were detected in the soil gas samples collected at the Site. PCE was detected up to 352 $\mu g/m^3$ (boring W-4; September 2015), which is above its unrestricted use ESL of 240 $\mu g/m^3$, but below its commercial ESL of 2,100 $\mu g/m^3$. However, during the May 2017 investigation, PCE was detected in the soil gas sample collected from the boring W-4 location at a lower concentration of 182 $\mu g/m^3$, which is below its unrestricted use ESL of 240 $\mu g/m^3$ (Table 2-5 and Figure 2-4).

Benzene was detected up to $18.6~\mu g/m^3$ (boring SG-2), which is below its unrestricted use ESL of $48~\mu g/m^3$ (Table 2-5; Figure 2-4). Toluene was detected up to $38.4~\mu g/m^3$ (boring SG-2), which is below its unrestricted use ESL of $160,000~\mu g/m^3$. Methylene chloride was detected up to $24.2~\mu g/m^3$ (boring SG-3), below its unrestricted use ESL of $510~\mu g/m^3$. Vinyl chloride was not detected in the soil gas samples above its laboratory-reporting limits; however the laboratory-reporting limits for soil gas samples collected from borings W-2, W-4, SG-2, SG-3 and SG-4 were above the Regional Water Board unrestricted use ESL of $4.7~\mu g/m^3$. Other VOCs were either not detected in soil gas above their respective laboratory-reporting limits or unrestricted use ESLs (Table 2-5).

3.3.3 Groundwater Conditions

Groundwater samples were collected from borings W-1, W-2 and W-4. Laboratory analysis of the groundwater samples did not reveal the presence of TPHg above its laboratory-reporting limit of 0.050 mg/l. The VOC PCE was detected up to 0.850 μ g/l, which is below its MCL of 5 μ g/l.



Other VOCs were not detected in the groundwater samples above their respective laboratory-reporting limits (Table 2-6).

3.4 DATA GAP ANALYSIS

The findings of the investigations identified:

- TPH, PAHs and lead in Site soil above their respective Regional Water Board unrestricted use ESLs but below their respective Regional Water Board commercial use ESLs;
- The VOC PCE in soil gas above its Regional Water Board unrestricted use ESL but below its Regional Water Board commercial use ESL near the proposed commercial building. PCE was detected in soil gas below its unrestricted use Regional Water Board ESL near the elevator and proposed at-grade open air parking garage. Vinyl chloride was not detected above its laboratory-reporting limits; however, the laboratory-reporting limit in the soil gas sample collected near the elevator was above the Regional Water Board unrestricted use ESL; and
- TPHg and VOCs were not detected in groundwater above their respective laboratoryreporting limits and /or applicable screening levels.

Based on the investigation findings, the distribution of TPH, PAHs, pesticides and lead in soil has been adequately characterized. However, additional soil gas investigations appear warranted to further characterize the presence of VOCs near the proposed commercial building and elevators. Therefore, additional soil gas sampling to further characterize the extent of VOCs within the subsurface is needed.



3.5 SUMMARY

The proposed Site use is a mixed commercial/residential development comprised of: an at-grade commercial building; and at-grade open-air parking garage with residential units constructed above the parking garage; landscaping and hardscapes. Approximately 450 cubic yards of soil will be excavated during mass grading and placed beneath the proposed buildings as engineered fill. Approximately 1,200 cubic yards of soil will be removed during excavation for foundations (1,100 cubic yards) and utility trenches (100 cubic yards) and will be reused on-Site as engineered fill and/or transported off-Site for disposal.

The landscape areas will be completed as at-grade or above grade planters. Soil will be over-excavated within the at-grade landscaping areas to accommodate tree plantings. The soil removed will be reused on-Site as engineered fill or transported off-Site for disposal. Prior to planting of the trees and other plants, a marker fabric will be placed within the tree excavations then backfilled with imported soil. A marker fabric will also be placed within the at-grade landscaping areas prior to covering with imported soil. The remaining portions of the Site will be completed as hardscapes (i.e., sidewalks, pavers and patios).

PCE was detected in soil gas near: the proposed commercial building up to $352 \,\mu\text{g/m}^3$ (W-4), below its commercial use ESL of $2,000 \,\mu\text{g/m}^3$; and the proposed elevator $21.3 \,\mu\text{g/m}^3$ within the parking garage/residential building below its unrestricted use ESL of $240 \,\mu\text{g/m}^3$. However, additional soil gas sampling is needed to further define the extent of PCE in soil gas to the north and northeast of the proposed commercial building and evaluate the potential presence of vinyl chloride in soil gas due to elevated detection limits near the elevator for the residential building.



4.0 EVALUATION OF REMEDIAL TECHNOLOGIES

Pursuant to the requirements of *Resolution No. 92-49 Policies and Procedures for Investigation and Cleanup and Abatement of Dischargers Under Water Code Section 13304*, remedial technologies were identified and evaluated with respect to effectiveness, feasibility and relative costs of applicable alternative methods for cleanup. Based on previous analysis of analogous sites, remedial technologies have been selected. The selected technologies included: soil excavation; engineering controls; and institutional controls, to address TPHd, PAHs and lead in soil; and VOCs in soil gas. The additional soil gas data, as identified in Section 3.5, will be used to determine the extent of engineering control deployment to address VOCs in the subsurface. The supporting rationale for the selected technologies is presented below.

4.1 EXCAVATION

Vadose zone excavation can be an effective technology in removing both source material bound to geologic material, as well as the gas phase contaminants present in the interstitial soil voids. Excavation can be accomplished using conventional equipment, including excavators, backhoes or other equipment.

4.2 Engineering Controls

Engineering controls encompass a variety of barriers (e.g., soil capping, hardscapes, subsurface venting systems, fences, etc.) to contain or prevent exposure to contamination on a property (USEPA, 2010). To address potential direct contact to TPH, PAHs and lead in soil, engineering controls include placement of excavated soil on-Site as engineered fill beneath buildings and hardscapes and using marker fabrics to demarcate soil beneath at-grade landscape areas.

To address VOCs in soil gas, engineering controls can include both active and passive techniques. Vapor intrusion mitigation may be taken as a proactive measure to avoid a costly



characterization study (USEPA, 2008) and include passive and active subslab venting/barrier systems.

4.3 Institutional Controls

Institutional controls are legal and/or physical means of limiting or eliminating potential human exposures. Institutional controls include deed restrictions and land use covenants that limit Site access and land uses to protect human health. Institutional controls also can be effective, especially, when used in conjunction with other remedial technologies. In addition, if the cleanup does not result in unrestricted use, institutional controls can be used to limit potential exposure to subsurface contaminants by limiting activities on a property.

4.4 Preferred Remedial Action

Based on the technical analyses, the remedial actions have been selected to address the presence of TPH, PAHs and lead in soil and VOCs in soil gas. The remedial actions include:

- Excavation of soil containing TPH, PAHs and lead during Site grading, foundation excavation and utility trenching activities;
- On-Site reuse of excavated soil as engineered fill beneath buildings and hardscapes and/or off-Site disposal of soil generated from the excavations not used as engineered fill;
- Placement of a marker fabric within the at-grade landscape planters and backfilling with clean imported soil;
- Installation of subslab vapor mitigation system beneath occupied building(s), elevator pits, etc., if shown to be necessary, to control vapor intrusion;
- Installation of trench dams within utility trenches to control vapor migration, if shown to be necessary;



- Land use controls to limit exposure to subsurface contaminants to future Site occupants and workers; and
- Preparation of a Residual Risk Management Plan (RRMP), which details the procedures and protocols for managing soil and soil gas, if needed, during post-construction maintenance activities.



5.0 REMEDIAL ACTION IMPLEMENTATION

The preferred remedial actions include: soil excavation and on-Site reuse as engineered fill and/or off-Site disposal; installation of subslab vapor mitigation system for VOCs; land use restrictions; and preparation of a *RRMP*. The proposed building foundations and vapor mitigation system areas are depicted on Figure 5-1. A remedial action implementation plan will be prepared and submitted to the ACDEH for review and approval providing additional details of the remedial actions provided below.

Prior to implementation of the remedial actions, the following activities will be conducted: obtaining necessary permits and agency approvals; conducting proper notification; and obtaining approval from the ACDEH. Details of the implementation activities are presented below.

- Supplemental soil gas sampling to further characterize the presence of VOCs in the subsurface;
- Excavation of soil containing TPH, PAHs and lead above screening levels during Site
 construction activities for reuse on-Site beneath buildings and hardscapes
 and/or transported off-Site for disposal;
- Placement of a geotextile marker fabric following excavation of soil between 0-feet and
 3-feet below ground surface within landscape areas;
- Install vapor mitigation system, if required;
- Prepare a Residual Risk Management Plan (RRMP) to present the requirements for postdevelopment soil and vapor mitigation system management;
- Record a Land Use Covenant (LUC), which incorporates the RRMP requirements; and
- Task 6: Remedial Action Completion Report.



5.1 TASK 1: SUPPLEMENTAL SOIL GAS SAMPLING

As identified in Section 3.5, additional soil gas samples will be collected to further characterize the presence of VOCs in the subsurface near the northern and central portions of the Site (Figure 5-1). The soil gas samples will be collected prior to commencement of Site construction activities. The findings from the supplemental soil gas sampling will be forwarded the ACDEH for review and concurrence on the necessity for vapor mitigation measures. A work plan detailing the sample collection methodology and suite of chemicals to be analyzed will be submitted to the ACDEH for review and approval prior to implementation.

5.2 TASK 2: SOIL EXCAVATION

5.2.1 Permitting and Utility Clearance

Prior to implementation, a Site Management Plan (SMP) will be prepared which details the procedures and protocols for managing soil during Site construction. In addition, approvals, permits and licenses required by local, state and federal agencies, as necessary, will be obtained. In addition, affected parties will be notified of the scheduled work dates approximately one week prior to commencing work.

Prior to implementation of the actions, appropriate notifications will be made to USA to locate and clear work areas for underground utilities at the Site. The work areas will also be cleared for underground utilities using a private underground utility locating contractor.

5.2.2 Worker Health and Safety

Due to the potential exposure to TPH, PAHs and lead in soil, prior to Site development activities, a HASP will be prepared and followed by on-Site personnel. The HASP will be prepared to address the requirements of the Occupational Health and Safety Administration (OSHA) 29 CFR 1910.120 guidelines and Title 8 CCR Section 5192. The HASP will be read by Site workers and

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visitors to apprise them of the Site conditions and provide instructions for implementing proper safety training and procedures during development activities.

As phases of work proceed, the HASP will be updated to reflect: Site organizational structure; names of key personnel; personnel training requirements; medical surveillance program; summary of risk assessment; a task-specific hazard analysis; Site control program; personal protective equipment use; air monitoring plan; decontamination procedures; emergency response plan; spill containment; Site sanitation facilities; and standard operating procedures. The contractor conducting the development activities will also use their Injury and Illness Prevention Program (IIPP) in conjunction with the HASP.

5.2.3 Site Preparation

Prior to soil excavation, the asphalt will be removed to expose the underlying soil. Pursuant to AB 939 requirements, asphalt will be recycled to the extent possible. Fencing will also be installed and maintained around the Site to control unauthorized Site access and provide protection to the community.

5.2.4 Soil Excavation

The proposed excavation depths will be determined based on the proposed grading and building foundation plans using hydraulic excavating equipment operated by a California Class A Hazardous Waste licensed contractor (Figure 5-1; Appendix A). The excavated soil will then be temporarily stockpiled on-Site for future placement as engineered fill beneath the buildings and hardscapes and/or transported off-Site for disposal.

5.2.5 Soil Handling

It is anticipated that the excavated soil will be stockpiled prior to on-Site reuse. The soil will be handled in a manner to minimize the potential for airborne dust to be generated. During soil



handling, air monitoring will be conducted and used to confirm the efficacy of soil handling procedures. As appropriate, procedures will be modified to control emissions of dust. Disturbed areas that are inactive for seven days or more will also be wetted to minimize potential airborne entrainment and generation of dust.

5.2.5.1 AIR MONITORING

Visual and real-time air monitoring for respirable dust will be performed during excavation and soil handling activities. The objective of the air-monitoring program is to document conditions, and as appropriate, adjust work activities to protect the health and safety of the on-Site construction workers and nearby community. The real-time dust monitoring will be conducted at upwind and downwind locations. The upwind and downwind monitoring locations will be adjusted, a necessary, depending on the direction of the prevailing winds.

Real-time respirable dust air monitoring will be performed using a Monitoring Instruments for the Environment, Inc. (MIE) data logging real time monitor, model PDR-1000 respirable air monitor (RAM) or equivalent. The PDR 1000 is designed to measure the concentration of airborne particulate matter using a high sensitivity nephelometer (photometer) using a light scatter sensor. Sensitivity of the PDR 1000 is reported to range from 0.001 milligrams per cubic meter (mg/m³) to 400 mg/m³. The RAM will be calibrated daily.

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Lead has a California Occupational Safety and Health Administration (CalOSHA) Permissible Exposure Limit (PEL) of 0.05 mg/m³ and an Action Level (AL) of 0.03 mg/m³. Based on the maximum concentration for lead in soil at 2,180 mg/kg, approximately 11.5 mg/m³ of total dust would need to be generated to exceed the lead AL of 0.03 mg/m³ (Appendix B).

Respirable dust has an OSHA PEL of 5.0 mg/m³ and an AL of 2.5 mg/m³. The respirable dust action level of 2.5 mg/m³ is below the concentration of total dust needed to exceed the lead AL.

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Therefore, if visible dust is observed, engineering controls, i.e., soil wetting, should be implemented to control fugitive dust emissions.

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The California Air Resources Control Board (CARB) sets 24-hour 10 micron or smaller dust particulate matter (PM10) California Ambient Air Quality Standard (CAAQS) concentration of 0.05 mg/m³ at the Site perimeter. Therefore, engineering controls, i.e., soil wetting, should be implemented during excavation activities if dust levels at the Site perimeter exceed the CARB CAAQS concentration.

5.2.5.2 Dust Control

Dust control will be performed by applying water with a low-pressure spray system. Low volumes of potable water will be routinely spread in areas where dust may be generated because of excavation activities. If monitoring indicates that the dust control measures are not adequate, then additional engineering control measures will be implemented. These additional measures will include, but are not limited to: 1) change of work procedures; 2) soil wetting during and excavation, stockpiling, backfilling and loading; 3) tarping of trucks; and 4) covering of exposed excavations and stockpiles with plastic sheeting; and 5) use of dust palliatives.

5.2.6 Geotextile Placement

Following Site grading within the at-grade landscaped areas, a non-biodegradable woven geotextile fabric (Mirafi Orange Delineation Non-woven Geotextile or equivalent) will be placed at the base of the tree excavations and landscaping as a marker. A copy of a geotextile specification is included in Appendix C.



5.2.7 Off-Site Soil Disposal

Excavated soil not reused on-Site for engineered fill will be stockpiled, characterized and profiled for off-Site transportation and disposal. Procedures for characterizing the excavated soil are presented below.

5.2.7.1 <u>DISPOSAL CHARACTERIZATION</u>

Samples will be collected to properly characterize the soil prior to off-Site disposal. The final destination of excavated soil will be selected based on the waste analytical results and acceptance criteria provided by the waste management facilities. The soil samples results will be evaluated using the procedures outlined in *Test Methods for Evaluating Solid Waste*, *Physical/Chemical Methods* (SW-846). USEPA's SW-846 identifies that the statistically representative concentration will be used when characterizing solid wastes with potentially variable concentrations, i.e., the 90 percent upper confidence level (UCL) concentration. The 90 percent UCL concentration represents the concentration that it is expected that 90 out of 100 samples will have concentrations equal to or less than. The number of samples and suite of analytes will be determined based on the nature and source of the contamination and waste facility requirements.

A statistical analysis using a Student's "t-test" will be performed using the sample results to determine the 90 percent UCL concentration of the regulated constituents in the samples. The results of the sampling will also be evaluated to determine whether an appropriate number of samples have been collected to characterize the waste using methodologies as outlined in USEPA's SW-846. The results of the stockpile soil sampling and statistical analysis will be forwarded to landfills or other appropriate facilities for profiling and acceptance.



5.2.7.2 STOCKPILE SAMPLE COLLECTION METHODOLOGY

Discrete samples will be collected from the stockpiled soil for characterization. The frequency of sampling will be conducted in general following the California Department of Toxic Substances' (DTSC) *Information Advisory – Clean Imported Fill Material* and in accordance with the waste management facility for soil requiring off-Site disposal. The discrete soil samples will be collected from at least three to six-inches below the surface of the stockpile by hand pushing brass-lined tubes into each portion of the stockpile. The ends of the brass-lined tubes will be covered with Teflon® sheets and plastic end caps, labeled, sealed in a plastic bag and placed in a chilled ice chest. Following appropriate sample collection protocols, the soil samples will be transported to a CDPH ELAP certified laboratory for chemical analysis, following ASTM D 4840 chain-of-custody protocols. The stockpiled samples will be analyzed for the constituents required by the waste management facility for soil requiring off-Site disposal.

5.2.7.3 OFF-SITE SOIL TRANSPORT

Following acceptance by the disposal facility, the stockpiled soil will be loaded into trucks operated by licensed transporters for off-Site disposal. Non-hazardous soils will be transported off-Site using appropriate bills of lading. Hazardous wastes will be manifested off-Site on Uniform Hazardous Waste Manifests in accordance with regulatory requirements. It is expected that the excavated soil will be segregated and disposed at Class I and/or Class II waste management facilities. Appropriately, designated and licensed trucks will be used to convey the soil from the Site to the disposal facilities. In addition, trucks transporting soil off-Site will not be loaded above the side or rear of the truck bed. The truckload will be covered with a tarp prior to leaving the Site to prevent particulate emissions to the atmosphere.

5.2.7.4 RECORDKEEPING

A log sheet will be maintained that documents the date, time, estimated volume, waste/material, trucking company, driver and vehicles used for the trip. The log will also document the



decontamination procedures of the trucks. Log sheets will be kept at the Site. In addition, copies of bills-of-lading, analytical results representing the load, hazardous waste manifests (as appropriate), route maps and directions, emergency instructions and contacts will be carried with each load leaving the Site.

5.2.8 Import Soil Characterization

Imported soil used for backfilling of excavations and landscaping will be characterized prior to transportation to the Site. Soil samples will be collected from the off-Site borrow areas for characterization. The laboratory analytical results of the soil samples collected from the proposed borrow areas will be compared to the Regional Water Board Tier 1 ESLs, with concurrence from the ACDEH. A summary of the imported fill material soil sample collection methodology is presented below.

5.2.8.1 SOIL SAMPLE COLLECTION METHODOLOGY

The contractor will identify borrow areas and soil samples will be collected as appropriate. The frequency of sampling will be conducted in general following the California Department of Toxic Substances' (DTSC) *Information Advisory – Clean Imported Fill Material*. The borrow area soil samples will be collected in pre-cleaned brass liners or glass jars, labeled and placed in a chilled cooler for transportation to a CDPH ELAP laboratory following ASTM D 4840 chain-of-custody protocols. The soil samples will be analyzed for the suite of analytes in accordance with DTSC's *Advisory for Clean Imported Fill Material*.

5.2.9 Soil Stockpile Management

The following procedures will be used for management of soil stockpiles. The soil stockpiles will be covered with plastic sheeting to control dust. Stockpiled areas will also be bermed to prevent storm water erosion and/or runoff. Uncovered stockpiles will be watered pursuant to dust control requirements to minimize airborne particulate emissions. The berms surrounding

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the stockpiled area will be inspected and maintained when the stockpiles are uncovered and water is applied for dust control.

Any portions of the stockpile not being actively worked on during a given day will remain covered with plastic sheeting. Plastic sheeting will be held in place by tires, concrete or other appropriate weighted material. Excavations, stockpiles and inactive work areas will be inspected regularly to assess the potential for dust generation. Stockpiles will be inspected daily for proper cover.

5.2.10 Groundwater Management

While not anticipated, if groundwater is encountered in excavations advanced during Site development, the groundwater will be removed from the excavations, as necessary, containerized on-Site and managed for off-Site disposal. Groundwater management options include off-Site transportation to an appropriate disposal facility or discharge to the sanitary sewer under a permit obtained from the wastewater treatment plant in accordance with local permit requirements.

5.3 TASK 3: VAPOR MITIGATION SYSTEM

A vapor mitigation system will be installed, as necessary; to control subsurface migration of VOC vapors into future occupied spaces (Figures 5-1 and 5-2). Based on the findings of the additional vapor investigation and concurrence with the ACDEH, the vapor mitigation system will be deployed, if VOCs are detected above applicable screening levels in areas beneath the proposed commercial or residential buildings (i.e., elevator pit).

The vapor mitigation system will be comprised of a dispersion vent layer and vent riser, vapor barrier and foundation seals typically installed between the backfill and the floor slab of the buildings. Figures 5-2 and 5-3 illustrate a typical design. Additionally, utility trench vapor dams will be installed. The vapor mitigation system will be adaptable for active ventilation, if post-construction monitoring warrant such modification. The developer/owner's licensed professional

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engineer shall prepare engineering drawings and specifications for the vapor mitigation system. The drawings and specifications will be submitted to the ACDEH for review and approval prior to installation. Details of vapor mitigation system are presented below.

5.3.1 Dispersion Vent Layer

A dispersion layer vent system will be installed to provide a higher permeability zone, i.e., preferential pathway, for the gas to migrate and vent to atmosphere. The dispersion layer will be comprised of a minimum of 4-inches of coarse aggregate meeting ASTM 57, with 85 percent of the surface consisting of fractured faces. The coarse aggregate shall have an open gradation with 100 percent passing the 1.5-inch sieve; 95 to 100 percent passing the 1.0-inch sieve; 26 to 60 percent passing the 0.5-inch sieve; 0 to 10 percent passing the No. 4 sieve; and 0 to 5 percent passing the No. 8 sieve. A GeoventTM gas venting core or equivalent will be installed within the dispersion vent layer and connected to a vent riser which will extend vertically to the building roof (Figures 5-2 and 5-3). A copy of the GeoventTM specification is included in Appendix C.

5.3.2 Vapor Barrier

The overlying building foundation in conjunction with membranes and other barriers will be used to retard upward migration of vapors. The vapor barrier layers will include a permeable vented zone overlaid with: a 16 mil high-density polyethylene (HDPE) membrane; 40 mil spray applied asphalt/rubber barrier; and a 100 mil non-woven geotextile.

5.3.2.1 VAPOR BARRIER INSTALLATION

Proper installation of the vapor barrier is essential for optimal performance. Small imperfections in the barriers (e.g., due to holes, tears, or incomplete seals at the footings or pipe penetrations) can provide a migration route for soil gas when buildings are under negative relative pressure (compared to soil gas pressure).



The vapor barrier must be tested following construction of the vapor barrier and before the placement of concrete over the barrier. The testing will be performed by blowing smoke or some tracer gas under the membrane. If smoke is detected outside of the barrier, additional measures will be undertaken. Methods will be developed to pinpoint imperfections and repair them after installation, e.g., smoke and/or tracer gas testing. Once smoke tested and receiving approval/passing test, the concrete slab/pads may be poured completing the foundation.

The construction will follow quality control procedures, including training of construction workers, to minimize barrier damage during installation and subsequent construction. The installation requirements will include the use of: certified installers; certified inspectors; and smoke testing.

A construction quality assurance plan (CQA Plan) will be used during the installation and testing of the vapor barrier. The CQA Plan will be submitted to ACDEH as part of the engineering drawings and specifications. The CQA Plan will follow the applicable ASTM standards for underslab vapor retarders; including those for material specifications with specific criteria that the material has to meet; both applicable to new materials as well as materials that are conditioned or exposed to simulate service conditions; and the placement and installation of the vapor retarder. Specifically, the following ASTM standards will be followed, as applicable:

- ASTM E1993: Standard Specification for Bituminous Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs;
 - This covers bituminous membrane water vapor retarders and specifies requirements for water vapor permeance, tensile strength, puncture resistance, and thickness.
- ASTM E1745: Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs;



- This covers plastic water vapor retarders and classifies the material into either Class A, B, and C based on: water vapor permeance; tensile strength; puncture resistance.
- o Water Vapor Permeance requirements per ASTM E1745-11 call for a vapor retarder material to have a maximum permeance rating of 0.1 perms.
- ASTM E1643: Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.

5.3.3 Foundation Seals

The design also requires sealing of foundation penetrations. Penetrations of the foundation include plumbing, electrical conduits and expansion joints installed during construction. Improper sealing may also increase operational costs due to excessive indoor air flow relative to soil gas capture.

5.3.4 Utility Trench Vapor Dams

Vapor dams will be installed in utility trenches that extend beneath the building foundation from areas outside the perimeter of the buildings to mitigate preferential migration of vapors. The trench dams will consist of a cement, bentonite and water slurry or controlled low-strength material placed within the utility trench extending a minimum of five feet beginning immediately adjacent to the exterior perimeter of the building foundation and placed a minimum of six inches above the bottom of the perimeter footing to the base of the trench.

5.3.5 Post-Construction Monitoring

To document the effectiveness of the vapor mitigation system, post-construction sampling will be conducted. The sampling will include collection of subslab samples one time prior to building



occupancy following building completion. Details of the post-construction monitoring will be presented in the RRMP to be submitted separately.

5.4 TASK 4: RESIDUAL RISK MANAGEMENT PLAN

The RRMP will be prepared which specifies procedures and protocols for future maintenance workers for managing soil beneath the buildings, hardscapes and marker fabric. The RRMP will be used in conjunction with the installed engineering controls, i.e., vapor mitigation system, to control potential exposures to chemicals in the subsurface. The RRMP will be submitted to the ACDEH for review and approval separately. Implementation of this RRMP will be the responsibility of the Site owner including its construction manager, contractors, subcontractors and future maintenance workers.

5.5 TASK 5: LAND USE COVENANT

Following completion of Site remedial actions, a land use covenant (LUC) will be prepared and recorded with the Alameda County Recorders Office. The LUC identifies restrictions that are reasonably necessary to protect human health and safety or the environment due to the presence of hazardous materials beneath the Site including but not limited to:

- Site use shall be for commercial, office space, retail, restaurant, and/or multi-family residential, in conformance with local zoning code;
- All uses and development of the Site shall be consistent with the RRMP, which shall be included into the LUC by reference;
- No wells for the purpose of extracting water for any use, including but not limited to, domestic, potable, or industrial uses, shall be allowed on the Site or any portion thereof unless expressly permitted in writing by the ACDEH;



- ACDEH shall have reasonable access to the Site for the purposes of inspection, surveillance, maintenance, or monitoring, as provided for in Division 7 of the Water Code; and
- No owner or occupant of the Site shall act in any manner that will aggravate or contribute to the existing environmental conditions of the Site. All use and development of the Site shall preserve the integrity of any remedial measures or installations.

5.6 TASK 6: COMPLETION REPORT

Following completion of the remedial actions a report will be prepared that details the RAP implementation activities. The report will include:

- Introduction and executive summary; including remedial actions, and any changes to the remedial design or field activities;
- Field data sheets with all observations (i.e., notes, charts, sketches, or photographs), air monitoring results, and a record of field and/or laboratory tests;
- Details of the activities, including: soil excavation areas; engineered fill placement areas; soil disposal documentation; post-grading and foundation excavation soil sample results; vapor mitigation system installation; trench dam installations; sample locations; laboratory data certificates; and copies of the chain-of-custody forms; and
- Summary of deviations from the RAP.

The *Completion Report* will be prepared under the supervision of a California Professional Civil Engineer and Geologist, with appropriate qualifications.



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7.0 DISTRIBUTION LIST

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TABLES

TABLE 2-1

SUMMARY OF SOIL ANALYTICAL RESULTS - TPHS & PVOCS

5th Street and Magnolia Street West Oakland, California

					Petrole	um Hydro	carbons		Petrole	um Related	VOCs	
Area of Development	Sample ID	Date	Depth (feet)	Depth Relative to Foundation / Slab (feet below)	ТРНд	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Xylenes	МТВЕ
					(mg/kg)	(mg/kg)	(mg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Commercial Building	B-1	5/8/17	1.5		<1.00	58.3	334	<1.65	<1.65	<1.65	<1.65	<1.65
Commercial	B-2	5/8/17	4		<1.00	10.8	43.8	<1.71	<1.71	<1.71	<1.71	<1.71
Building	D- 2	3/6/17	2.5	1	<1.00	<10.0	<10.0	<1.68	<1.68	<1.68	<1.68	<1.68
Elevator	B-3	5/8/17	1.5		<1.00	59.6	498	<1.72	<1.72	<1.72	<1.72	<1.72
Lievator	D -3	3/0/17	3	0.5	<1.00	<10.0	<10.0	<1.77	<1.77	<1.77	<1.77	<1.77
Lobby	B-4	5/8/17	1.5		<1.00	36.3	45.9	<1.57	<1.57	<1.57	<1.57	<1.57
Parking Garage	B-5	5/8/17	1.5		<1.00	22.6	77.6	<1.68	<1.68	<1.68	<1.68	<1.68
Parking	B-6	5/8/17	1		<1.00	423	2,000	<1.85	<1.85	<1.85	<1.85	<1.85
Garage	D-0	3/8/1/	2.5		<1.00	<10.0	10.8	<1.72	<1.72	<1.72	<1.72	<1.72
Parking	B-7	5/8/17	1.5		<1.00	<10.0	29.3	<1.80	<1.80	<1.80	<1.80	<1.80
Garage	D-/	3/0/1/	2.5		<1.00	<10.0	21.0	<1.81	<1.81	<1.81	<1.81	<1.81
Parking Garage	B-8	5/8/17	1.5		<1.00	12.1	64.4	<1.70	<1.70	<1.70	<1.70	<1.70
Landsaaning	B-9	5/8/17	1		<1.00	63.1	455	<1.79	<1.79	<1.79	<1.79	<1.79
Landscaping	D-9	3/8/1/	2	0.5	<1.00	<10.0	<10.0	<1.65	<1.65	<1.65	<1.65	<1.65
ESLs-Comme	rcial			_	3,900	1,100	140,000	24,000	4,600,000	22,000	2,400,000	180,000
ESLs-Constru	ction Wo	rker		_	2,800	880	32,000	1,000	4,100,000	480,000	2,400,000	3,700,000
ESLs-Unrestri	icted Use				740	230	5,100	230	970,000	5,100	560,000	42,000

Notes:

VOCs: Volatile organic compounds

TPHg: Total petroleum hydrocarbons as gasoline TPHd: Total petroleum hydrocarbons as diesel TPHmo: Total petroleum hydrocarbons as motor oil

MTBE: Methyl tert-butyl ether mg/kg: milligrams per kilogram µg/kg: micrograms per kilogram

<1.00: Less than the laboratory-reporting limit of 1.00

ESLs: California Regional Water Quality Control Board - San Francisco Bay Region Environmental Screening Levels, Rev. 3

<58.3: Strikethrough indicates to be excavated during Site development

TABLE 2-2 SUMMARY OF SOIL ANALYTICAL RESULTS - PAHS

5th Street and Magnolia Street West Oakland, California

Area of Development	Sample ID	Date	Depth (feet bgs)	Depth Relative to Foundation/ Slab (feet below)	Acenaph- thene	tnylene	Anthracene	Benzo(a) anthracene	Benzo(b) fluoran- thene	Benzo(k) fluoran- thene	Benzo(a) pyrene	Benzo(g,h,i) perylene	Chrysene	Dibenz(a,h) anthracene	Fluoran- thene	Fluorene	pyrene	Naphthalene	Phenan- threne	Pyrene
Parking					(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Garage	W-1	9/17/15	1		<2.50	9.42	5.46	14.8	80	15.6	47.1	209	53.4	36.5	8.07	<2.50	41.8	14	19.3	29.5
Parking Garage	W-2	9/17/15	1		<2.50	14.8	10.1	55.1	132	35.8	99.8	255	79.6	59.3	31.5	<2.50	103	26.2	36	97.1
Commercial Building	W-3	9/17/15	1		<2.50	11.3	6.73	26	176	27	87.4	240	130	98.1	14.4	23	87.3	12.3	49.2	101
Commercial Building	W-4	9/17/15	1		<2.50	32	25.9	105	178	60.7	119	287	91.9	70.6	87	28.2	107	13.9	129	184
Landscaping	W-5	9/17/15	1		<2.50	20.3	18.3	67.5	130	47.2	81.5	159	75.9	26	74	<2.50	99.6	11.4	49.7	127
Parking Garage	W-6	9/17/15	1		<2.50	17.7	9.44	36.9	74.5	28.3	44.4	226	40.5	430	28.2	19.5	59.2	11.7	38.3	72.6
Parking Garage	W-7	9/17/15	1		<2.50	18.8	15.7	61.2	187	45.2	111	264	97.2	77.3	50.7	9.02	120	13.5	84.2	144
Parking Garage	W-8	9/17/15	1		<2.50	13.9	6.45	41.7	134	38.5	78.2	234	80.1	73.1	17.1	13	99.7	23.6	30.9	48.4
Commercial Building	B-1	5/8/17	1.5		<2.50	14.2	16.5	42.1	70.5	39.8	24.7	114	46.4	28.4	55.5	<2.50	59.4	5.44	36.1	134
Commercial Building	B-2	5/8/17	2.5		<2.50	43.8	98.9	70.9	185	115	74.2	231	165	48.0	321	<2.50	169	103	125	309
Lobby	B-4	5/8/17	1.5		<2.50	15.4	26.4	41.1	70.1	42.7	33.9	86.3	64.6	28.7	112	<2.50	61.0	7.32	36.2	94.9
Parking Garage	B-6	5/8/17	2.5		<2.50	19.6	40.4	22.2	65.8	43.6	21.0	66.5	51.1	14.3	98.2	<2.50	45.1	40.2	33.7	71.1
Parking Garage	B-7	5/8/17	2.5		<2.50	14.6	40.3	27.1	36.0	24.9	15.7	47.9	50.2	<10.0	77.4	<2.50	31.4	184	53.5	70.2
Parking Garage	B-8	5/8/17	1.5		<2.50	6.46	17.1	21.7	36.2	25.9	17.0	47.5	34. 9	22.6	35.0	<2.50	27.7	6.60	19.6	56.6
Landscaping	B-9	5/8/17	1		4.77	97.3			404		399		241			9.07	453	13.0	249	1,720
ESLs-Commer					4.5.E+04			2,900	2,900	29,000			2.6.E+05		3.0E+07	3.0E+07	2,900	14,000		2.3E+07
ESLs-Contruc		er			1.0.E+07		0.00		16,000				1.5.E+07		6.7E+06	6.7E+06		350,000		5.0E+06
ESLs-Unrestri	cted Use				3.6.E+06		1.8E+07	160	160	1,600	16		1.5.E+04	16	2.4E+06	2.4E+06	160	3,300		1.8E+06

Notes:

PAHs: Polycyclic aromatic hydrocarbons

μg/kg: micrograms per kilogram

--: Not promulgated

ESLs: California Regional Water Quality Control Board - San Francisco Bay Region Environmental Screening Levels, Rev. 3

<2.50: Less than the laboratory-reporting limit of 2.50

<2.50: Strikethrough indicates to be excavated during Site development

TABLE 2-3 SUMMARY OF SOIL ANALYTICAL RESULTS - PESTICIDES

5th Street and Magnolia Street West Oakland, California

]	Pesticides	}								
Area of Development	Sample ID	Date	Depth (feet)	Depth Relative to Foundation /Slab (feet below)	ති ලූ ලූ	Beta-BHC	Gamma-BHC (Lindane)	(%) Heptachlor	(gg/gg) Delta-BHC	(vg/ga) (vg/Aldrin	Heptachlor	(gg) Endosulfan I	(sg/dy/4,4-DDE	(pg/kg)	(ga/gau) Endrin	(sg/dg/4,4-DDD)	ල් ල් ග්	(kg/sm) (kg/4-DDT	(var) Endrin aldehyde	Endosulfan Sulfate	$\begin{pmatrix} \mathbb{R} \\ \mathbb{R} \end{pmatrix}$ Methoxychlor	(va) Chlordane	(var) Toxaphene
Parking																							
Garage	W-1	9/17/15	4		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<12.5	<12.5	<62.5
Parking Garage	W-2	9/17/15	1		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<12.5	17.6	<62.5
Commercial Building	W-3	9/17/15	4		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<12.5	<12.5	<62.5
Commercial Building	W-4	9/17/15	1		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<5.00	<5.00	<12.5	15.2	<62.5						
Landscaping	W-5	9/17/15	4		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	7.54	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<12.5	<12.5	<62.5
Parking Garage	W-6	9/17/15	4		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<12.5	15.8	<62.5
Parking Garage	W-7	9/17/15	1		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<12.5	15.3	<62.5
Parking Garage	W-8	9/17/15	1		<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<12.5	18.4	<62.5
ESLs-Comme	ercial						2,500			160	300	5.8E+06	8,500	170	290,000	12,000	5.8E+06	8,500		5.8E+06	4.8E+06	2,200	2,200
ESLs-Constru							16,000			1,000		1.5E+06	57,000	1,100	74,000	81,000	1.5E+06	57,000		1.5E+06	1.2E+06	14,000	14,000
ESLs-Unrestr	icted Use				-		550			36	67	4.2E+05	1,900	38	21,000	2,700	4.2E+05	1,900		4.2E+05	3.5E+05	480	510

Notes:

μg/kg: micrograms per kilogram

--: not promulgated

ESLs: California Regional Water Quality Control Board - San Francisco Bay Region Environmental Screening Levels

<2.50: Less than the laboratory-reporting limit of 2.50

<2.50: Strikethrough indicates to be excavated during Site development

TABLE 2-4 SUMMARY OF SOIL ANALYTICAL RESULTS - METALS 5th Street and Magnolia Street

West Oakland, California

				5 1									Metals								
				Depth									Wictais								
Area of Development	Sample ID	Date	Depth (feet)	Relative to Foundation/Slab (feet	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				below)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parking			1			3.58							25.9							<u>-</u> -	
_	W-1	9/17/15	3			<2.50							119		-						-
Garage			6	3		<2.50							3.45								-
D 11			1			7.21							36.4								-
Parking	W-2	9/17/15	3	2	< 2.50	6.91	1,790	<2.50	<2.50	25.6	3.92	37.7	661	0.38	<2.50	20	<2.50	<2.50	<2.50	28.5	688
Garage			6	5		<2.50							<2.50								
			1		<2.50	2.61	99.1	<2.50	<2.50	23.1	8.18	40.1	19.6	0.127	<2.50	27.8	<2.50	<2.50	<2.50	43.2	87.1
Commercial	W-3	9/17/15	3	2		<2.50							169			=-					
Building	,, 5	2717713	6	5		<2.50							1,360								
			1			3.54							24.7								
Commercial	W-4	9/17/15	3		<2.50	7.17	990	<2.50	<2.50	29.9	6.35	43.4	2 ,180	0.344		34.5	<2.50	<2.50	<2.50		
Building	VV -4	9/11/13	-	3		<2.50	770		<2.30	27.7	0.55	43.4	<2.50	0.344	<2.30	34.3	₹2.30	₹2.30	<2.30		
			6																		
Londocomina	W-5	0/17/15	7			5.60							510								
Landscaping	W-3	9/17/15	3			<2.50							50.2							<u>-</u> -	
			6	3		<2.50							<2.50								
Parking			1			4.34							25.5								
Garage	W-6	9/17/15	3			4.36							316								
			6	3	<2.50	< 2.50	36.1	< 2.50	< 2.50	22.3	< 2.50	4.04	7.87	< 0.100	<2.50	11.9	< 2.50	< 2.50	< 2.50	15.6	12.8
Parking			1			4.90							18.9								
Garage	W-7	9/17/15	3			2.50							199								
Gurage			6	3		2.64							2.87								
Parking			1			3.28							20.1								
_	W-8	9/17/15	3			2.76							174								
Garage			6	3		2.93							3.58								
Commercial Building	B-1	5/8/17	1.5										102								
Commercial	D 0	5 /0 /15	1										107								
Building	B-2	5/8/17	2.5	1.5	<2.50	4.5	214	<2.50	<2.50	31.4	4.05	30.8	314	0.306	< 2.50	18.1	<2.50	<2.50	<2.50	20.8	265
Ŭ			1.5										36.5								
Elevator	B-3	5/8/17	3	0	<2.50	4.02	141	<2.50	<2.50	17.2	7.07	20.2		0.110	<2.50	15.4	<2.50	<2.50	<2.50	36.1	72.8
Lobby	B-4	5/8/17	1.5										1,080								
· .													_,,,,,								
Parking	B-5	5/8/17	1.5										191								
Garage			1										12.0								
Parking	B-6	5/8/17	1										43.9								
Garage			2.5		<2.50	3.40	104	<2.50	<2.50	30.0	4.39	15.4	206		<2.50	20.5	<2.50	<2.50	<2.50	22.2	110
Parking	B-7	5/8/17	1.5										76.9								
Garage			2.5										228								
Parking Garage	B-8	5/8/17	1.5		<2.50	3.34	106	<2.50	<2.50	32.8	6.22	18.7	113	0.186	<2.50	20.8	<2.50	<2.50	<2.50	30.2	119
T and a series	D O	E /0 /17	1										96								_
Landscaping	B-9	5/8/17	2	0.5	<2.50	4.57	122	<2.50	<2.50	43.2	11.5	26.1	13.6	< 0.100	<2.50	38.8	<2.50	<2.50	<2.50	36.6	43.9
ESLs-Commerc	cial				470	bg	220,000	2,200	580		350	47,000	320					5,800			
ESLs-Construct					140	bg	3,000				28	14,000	160		,	86		1,800			-
ESLs-Unrestric					31	bg	15,000	150			23		80				·		+		-
Notes.		Not analyze	•			U				- San Franicsc						020	390	390	0.78	390	25,00

Notes:

--: Not analyzed

mg/kg: milligrams per kilogram

ESLs: California Regional Water Quality Control Board - San Franicsco Bay Region Environmental Screening Levels, Rev. 3

<2.50: Less than the laboratory-reporting limit of 2.50

1,080: Strikethrough indicates to be excavated during Site development

TABLE 2-5 SUMMARY OF SOIL GAS ANALYTICAL RESULTS

5th Street and Magnolia Street West Oakland, California

Area of Developmen t	Sample ID	Depth (feet bgs)	Depth Relative to Foundation /Slab (feet below)	Date	Dichlorodifluoromethmane	Chloromethane	Dichlorotetrafluoroethane	Vinyl Chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	1,1-Dichloroethene	Trichlorotrifluoroethane	Methylene chloride 1,1-Dichloroethane	cis-1,2-Dichloroethene	(m ³)	1,1,1-Trichloroethane	1,2-Dichloroethane	Benzene	Carbon Tetrachloride	1,2-Dichloropropane	Trichloroethene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Toluene	1,1,2-Trichloroethane	1,2-Dibromomethane	Tetrachloroethene
Parking Garage	W-1	5	2	9/17/15	<4.95	<2.07 <6	6.99	<2.56	<3.88	<2.64	16.7	<3.97	7.66	<3.47 <4.0	5 <3.97	<4.88	<5.46	<4.05	9.14	<6.29 <	4.62	<5.37	<4.54	<4.54	15.8	<5.46	<7.68	29.4
Parking	W-2	5	4	9/17/15	<24.7	<10.3	<35	<12.8	<19.4	<13.2	<28.1	<19.8	<38.3	<17.4 <20.2	2 <19.8	3 <24.4	<27.3	<20.2	<16.0	<31.5	23.1	<26.9	<22.7	<22.7	<18.8	<27.3	<38.4	224
Garage	,, 2	J	•	5/8/17	<4.95	<2.07 <6	6.99	<2.56	<3.88	<2.64	6.52	<3.97	7.66	5.07 <4.0	< 3.97	<4.88	<5.46	<4.05	<3.19	<6.29 <	4.62	<5.37	<4.54	<4.54	<3.77	<5.46	<7.68	45
Commerical	W-4	5	2	9/17/15	<24.7	<10.3	<35	<12.8	<19.4	<13.2	<28.1	<19.8	<38.3	<17.4 <20.2	2 <19.8	3 <24.4	<27.3	<20.2	<16.0	<31.5	23.1	<26.9	<22.7	<22.7	<18.8	<27.3	<38.4	352
Building	,, .	J	_	5/9/17	<9.89	<4.13 <1	14.0	<5.11	<7.77	<5.28	<11.2	<7.93	<15.3	<6.95 <8.10	<7.93	<9.77	<10.9	<8.09	<6.39	<12.6	9.24	<10.7	<9.08	<9.08	<7.54	<10.9	<15.4	182
Parking Garage	W-7	5	2	9/17/15	<24.7	<10.3	<35	<12.8	<19.4	<13.2	<28.1	<19.8	38.3	<17.4 <20.2	<19.8	<24.4	<27.3	<20.2	<16.0	<31.5	23.1	<26.9	<22.7	<22.7	<18.8	<27.3	<38.4	64
Parking Garage	SG-1	5	2	5/8/17	<4.95	<2.07 <6	6.99	<2.56	<3.88	<2.64	6.24	<3.97	7.66	<3.47	< 3.97	<4.88	<5.46	<4.05	<3.19	<6.29	4.62	<5.37	<9.08	<9.08	4.86	<5.46	<7.68	109
Commercial Building	SG-2	5	4	5/8/17	<9.89	<4.13 <1	14.0	<5.11	<7.77	<5.28	<11.2	<7.93	<15.3	<6.95 <8.10	<7.93	<9.77	<10.9	<8.09	18.6	<12.6	9.24	<10.7	<9.08	<9.08	38.4	<10.9	<15.4	14
Lobby	SG-3	5	2	5/9/17	<9.89	<4.13 <1	14.0	<5.11	<7.77	<5.28	<11.2	<7.93	<15.3	24.2 <8.10	<7.93	<9.77	<10.9	<8.09	<6.39	<12.6	9.24	<10.7	<9.08	<9.08	<7.54	<10.9	<15.4	<13.6
Parking Garage	SG-4	5	2	5/9/17	<4.95	<2.07 <6	6.99	<2.56	<3.88	<2.64	14.2	<3.97	7.66	<3.47 <4.03	< 3.97	<4.88	<5.46	<4.05	<3.19	<6.29	4.62	<5.37	<9.08	<9.08	<3.77	<5.46	<7.68	13.5
Elevator	SG-5	5	2	5/9/17	<9.89	<4.13 <1	14.0	<5.11	<7.77	<5.28	<11.2	<7.93	<15.3	<6.95 <8.10	<7.93	<9.77	<10.9	<8.09	<6.39	<12.6	9.24	<10.7	<9.08	<9.08	<7.54	<10.9		21.3
ESLs-Comme					3	3.9E+05		160	22,000 4			3.1E+05		12,000 7,70			4.4E+06	470	420		_			3.5E+05				2,100
ESLs-Unrestri	cted Use					47,000		4.7	2,600 5	.2E+06		37,000		510 880	4,200	61	5.2E+05	54	48	33	140	240	88	420	1.6E+05			240

Notes:

μg/m³: micrograms per meter cubed

<21.8: Less than the laboratory-reporting limit of 21.8 μ g/m³

--: not available

ESLs: California Regional Water Quality Control Board - San Franicsco Bay Region Environmental Screening Levels (Rev. 3)

TABLE 2-5 SUMMARY OF SOIL GAS ANALYTICAL RESULTS

5th Street and Magnolia Street West Oakland, California

Area of Developmen t	Sample ID	Depth (feet bgs)	Depth Relative to Foundation /Slab (feet below)	Date	Chlorobenzene	Ethyl Benzene	Xylenes	Styrene	1,1,2,2-Tetrachloroethane	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene	1,2,4-Trichlorobenzene	Hexachlorobutadiene	(%) Helium
Parking Garage	W-1	5	2	9/17/15	<4.60	4.60	19.11	<4.26	<6.87	<4.92	<4.92	<6.01	<6.01	<6.01	<14.8	<10.7	<0.100
Parking	W-2	5	4	9/17/15	<23	<21.7	<21.7	<21.3	<34.3	<24.6	<24.6	<30.1	<30.1	<30.1	<74.2	<53.3	< 0.100
Garage	VV -2	J	4	5/8/17	<4.60	<4.34	<4.34	<4.26	<6.87	<4.92	<4.92	<6.01	<6.01	<6.01	<7.42	<10.7	< 0.100
Commerical	W-4	5	2	9/17/15	<23	<21.7	<21.7	<21.3	<34.3	<24.6	<24.6	<30.1	<30.1	<30.1	<74.2	<53.3	< 0.100
Building	VV -4	7	2	5/9/17	<9.21	<8.68	<8.68	<8.52	<13.7	<9.83	<9.83	<12.0	<12.0	<12.0	<14.8	<21.3	< 0.100
Parking Garage	W-7	5	2	9/17/15	<23	<21.7	<21.7	<21.3	<34.3	<24.6	<24.6	<30.1	<30.1	<30.1	<74.2	<53.3	< 0.100
Parking Garage	SG-1	5	2	5/8/17	<4.60	<4.34	<4.34	<4.26	<6.87	<4.92	<4.92	<6.01	<6.01	<6.01	<7.42	<10.7	< 0.100
Commercial Building	SG-2	5	4	5/8/17	<9.21	<8.68	<8.68	<8.52	<13.7	<9.83	<9.83	<12.0	<12.0	<12.0	<14.8	<21.3	< 0.100
Lobby	SG-3	5	2	5/9/17	<9.21	<8.68	<8.68	<8.52	<13.7	<9.83	<9.83	<12.0	<12.0	<12.0	<14.8	<21.3	< 0.100
Parking Garage	SG-4	5	2	5/9/17	<9.21	<8.68	<8.68	<8.52	<13.7	<9.83	<9.83	<12.0	<12.0	<12.0	<14.8	<21.3	< 0.100
Elevator	SG-5	5	2	5/9/17	<9.21	<8.68	<8.68	<8.52	<13.7	<9.83	<9.83	<12.0	<12.0	<12.0	<14.8	<21.3	< 0.100
ESLs-Comme					2.2E+05	4,900	4.4E+05	3.9E+06	210					8.8E+05	8,800		
ESLs-Unrestr	ricted Use				26,000	560	5.2E+04	4.7E+05	24				130	1.0E+05	1,000		

Notes:

μg/m³: micrograms per meter cubed

<21.8: Less than the laboratory-reporting limit of 21.8 μ g/m³

--: not available

ESLs: California Regional Water Quality Control Board - San Francesco Bay Region Environmental Screening Levels (Rev.

TABLE 2-6 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

5th Street and Magnolia Street West Oakland, California

W-1 9/17/15 <0.050 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500		(mg/	(mg/l)	Dich	Chlor	Bromor	Chloroeth	Trichlorofl	1,1-Dchlore	Trichlorotrifluor	Methylene chlori	1,1-Dichloroethane	cis-1,2-Dichloroeth	2-2Dichloropro	Bromochloromnethane Chloroform	1,1,1-Trichlore	Carbon Tetrachloride	1,1-Dichlorpro	Benzene	1,2-Dichloroet	Trichloroether	Dibromometh	Bromodichlor	trans-1,3-Dic	Toluene	cis-1,3-Dichlor	1,1,2-Tetrach	Tetrachloroet	1,3-Dichlorop	Dibromochle
W-2 9/17/15 <0.050 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500	W-1 9/1	9/17/15 <0.03	<0.050	0 <0.500	<0.500 <0.5	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	00 < 0.50	0 <0.500	<0.500	<0.500 <0.50	<0.500	<0.500	<0.500	<0.500	<0.500	0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	W-2 9/1	9/17/15 <0.03	<0.050	0 <0.500	<0.500 <0.5	00 <0.500	<0.500	<0.500	<0.500	<0.500 <	<0.500 <0.5	00 <0.50	0 <0.500	0 < 0.500	<0.500 <0.50	<0.500	<0.500	<0.500	<0.500 <	<0.500 <	0.500 < 0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.850	<0.500	<0.500 <0.50
W-4 9/17/15 <0.050 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500 <0.500		9/17/15 <0.03	<0.050	0 <0.500	<0.500 <0.5	00 < 0.500	<0.500	<0.500	<0.500	<0.500	<0.500 <0.5	00 <0.50	0 <0.500	0 < 0.500	<0.500 <0.50	<0.500	<0.500	<0.500	<0.500 <	<0.500 <	0.500 < 0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500 <0.50

Notes:

μg/l: micrograms per liter mg/l: milligrams per liter

<0.500: Less than the laboratory-reporting limit of 0.500

MCLs: Maximum Contaminant Levels

TABLE 2-6 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

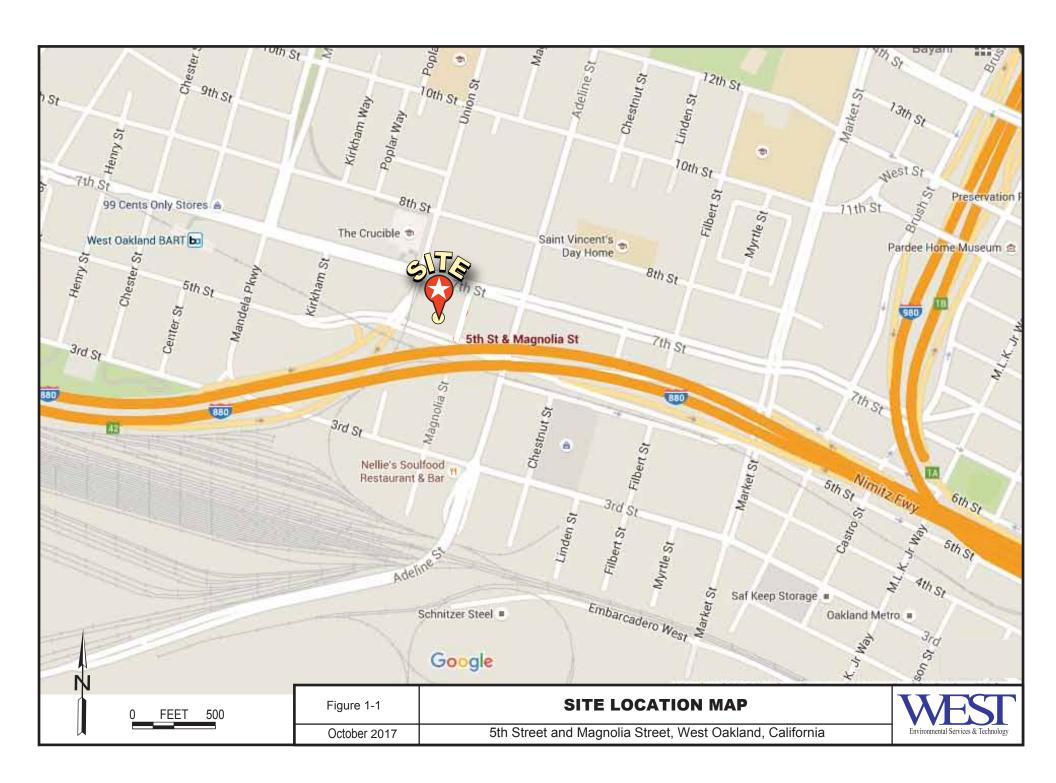
5th Street and Magnolia Street West Oakland, California

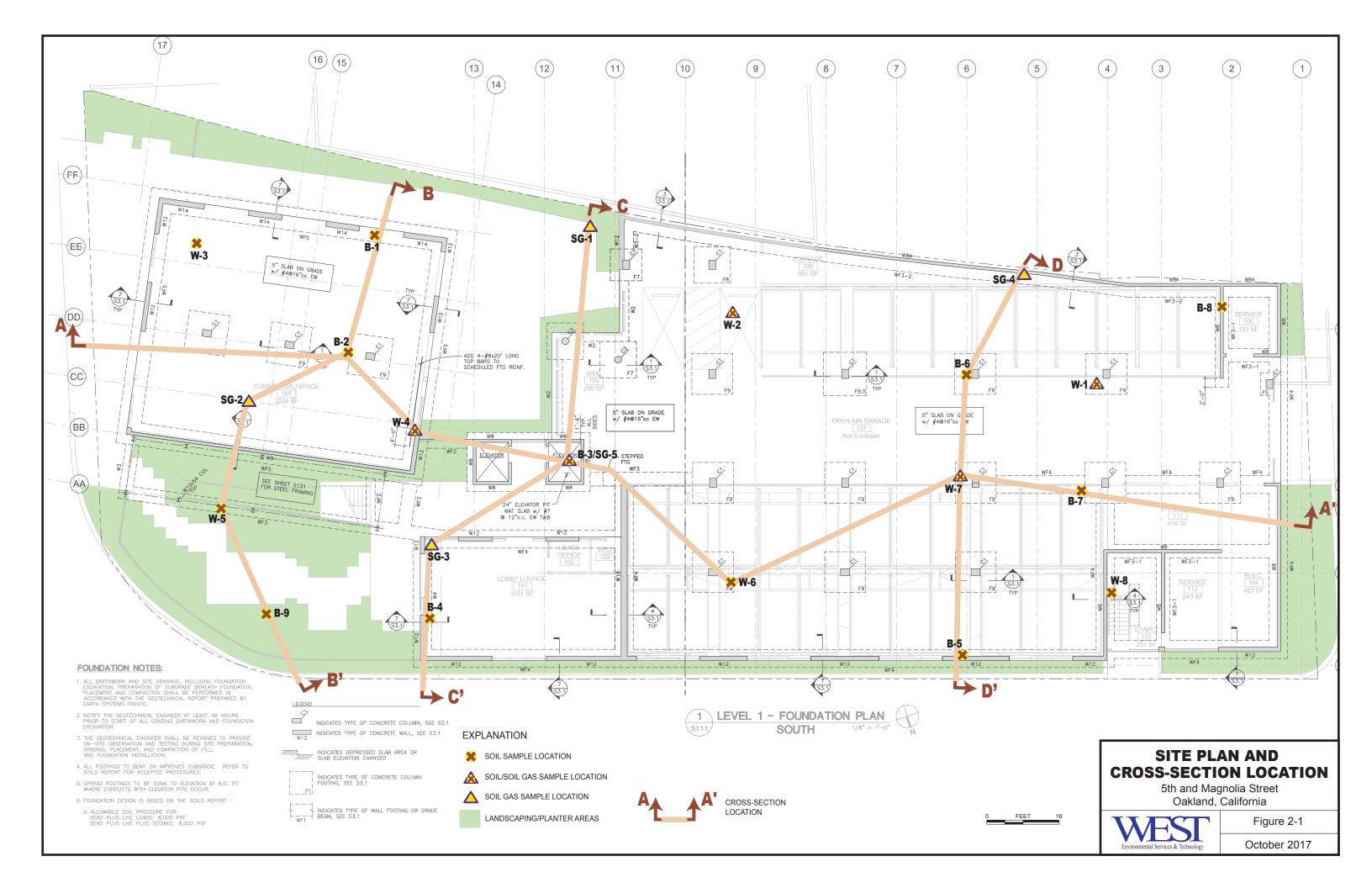
Sample ID	Date	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethyl Benzene	Xylenes	Styrene	Bromoform	Isoprpylbenzene	1,1,2,2-Tetrachloroethane	Bromomethane	1,2,3-Trichloropropane	n-Propylbenzene	2-Chlorotoluene	1,3,5-Trimethylbenzene	ள் (J/	Tert-Butylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	1,3-Dichlorobenzene	4-Isopropyltoluene	1,4-Dichlorobenzene	n-Butylbenzene	1,2-Dichlorbenzene	1,2-Dibromo-3- chloropropane	1,2,4-Trichlorobenzene	Hexachlorobutadiene	Naphthalene	1,2,3-Trichlorobenzene
W-1	9/17/15	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
W-2	9/17/15	<0.500	<0.500 <	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
W-4	9/17/15	<0.500	<0.500 <	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
MCLs			0.57	30	20		80		1										60		5		100		5	0.14	0.17	

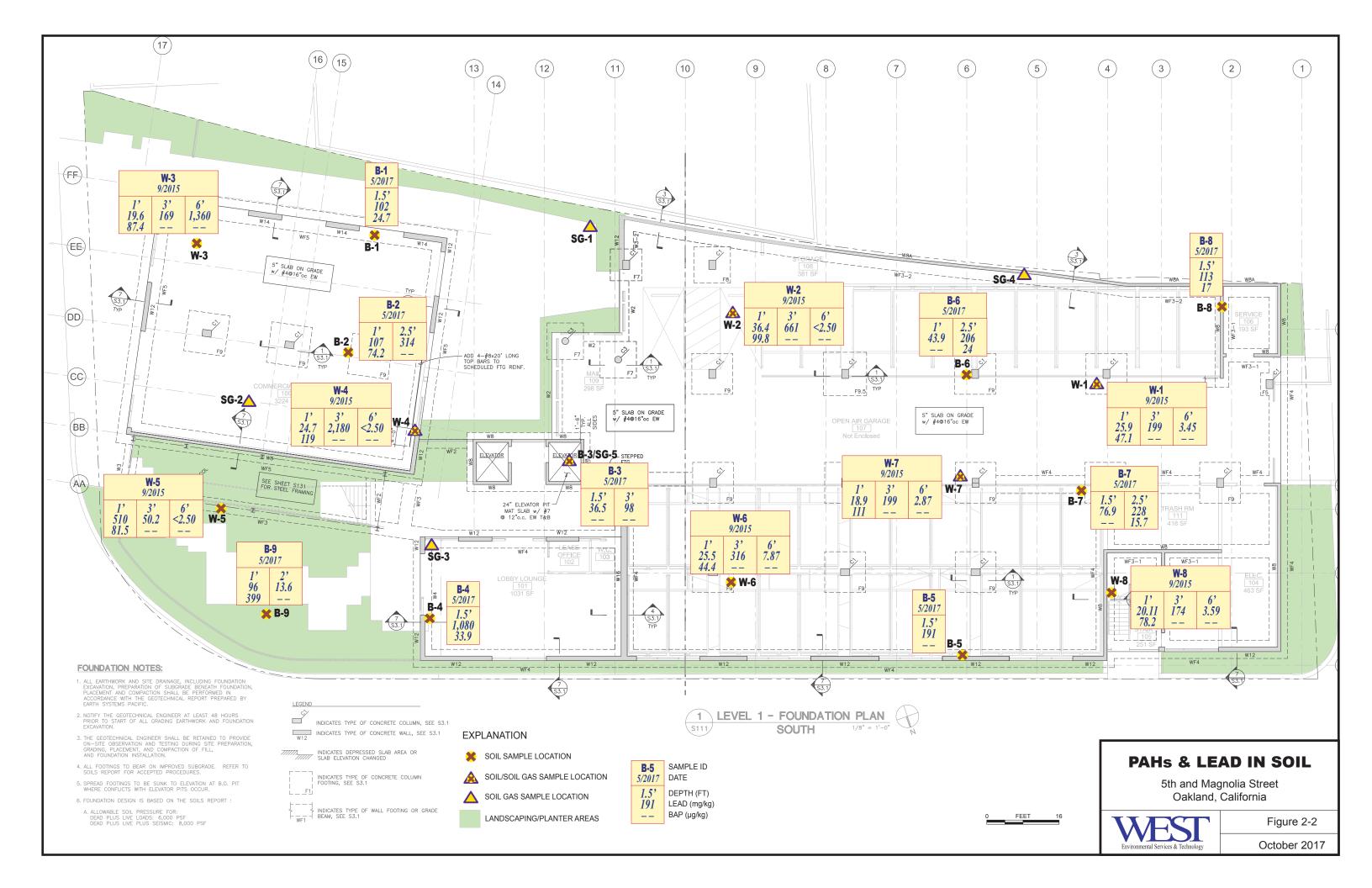
REMEDIAL ACTION PLAN 5TH STREET AND MAGNOLIA STREET OAKLAND, CALIFORNIA

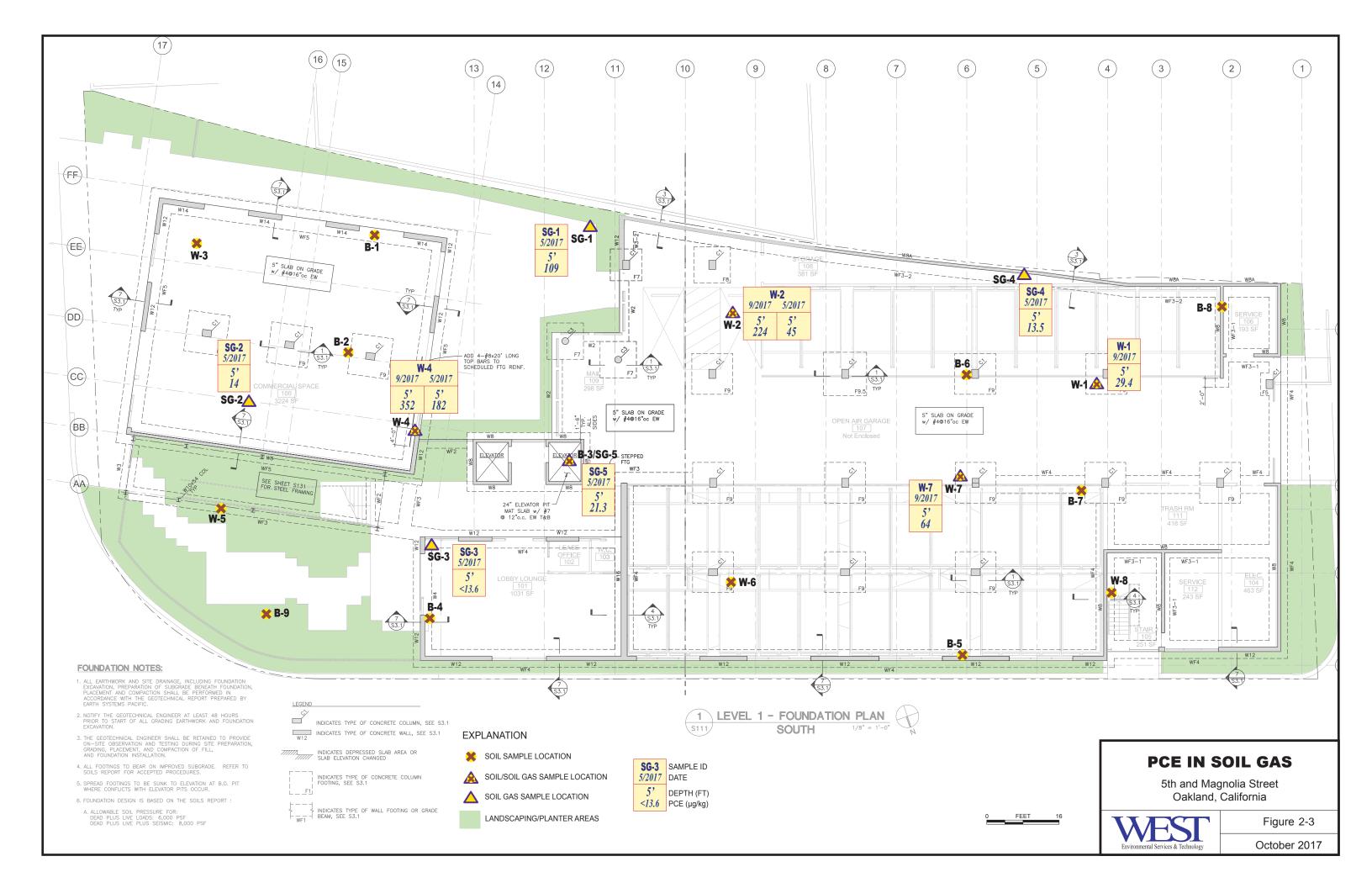


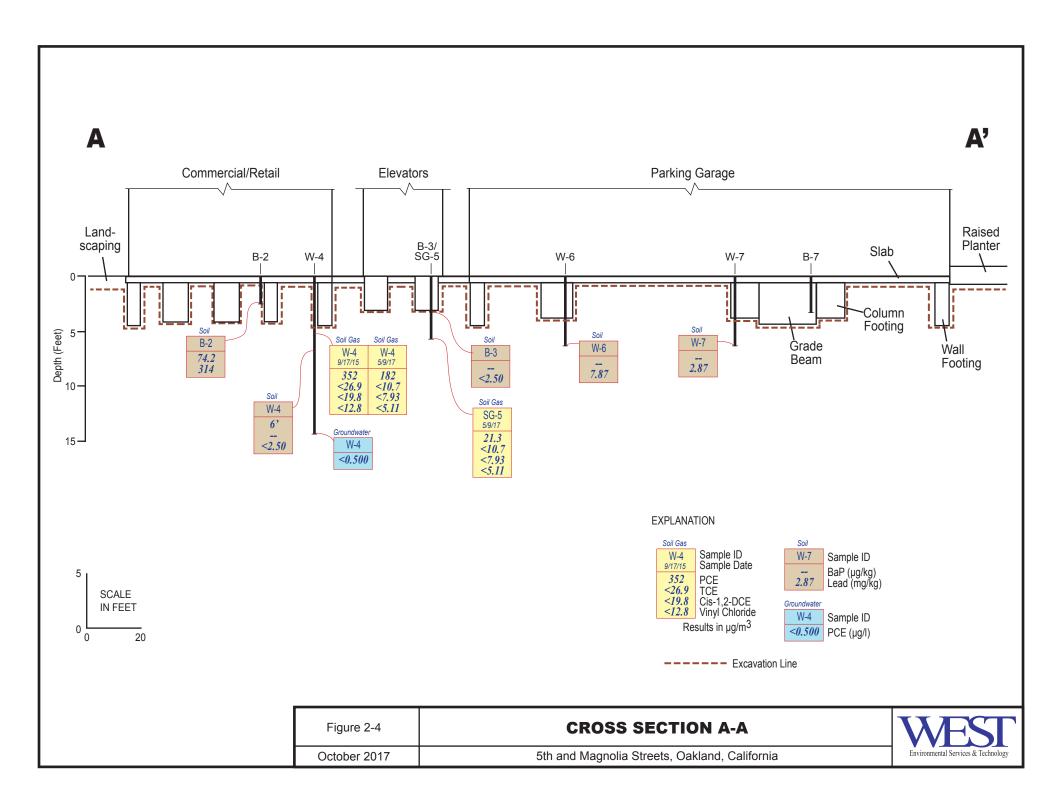
FIGURES

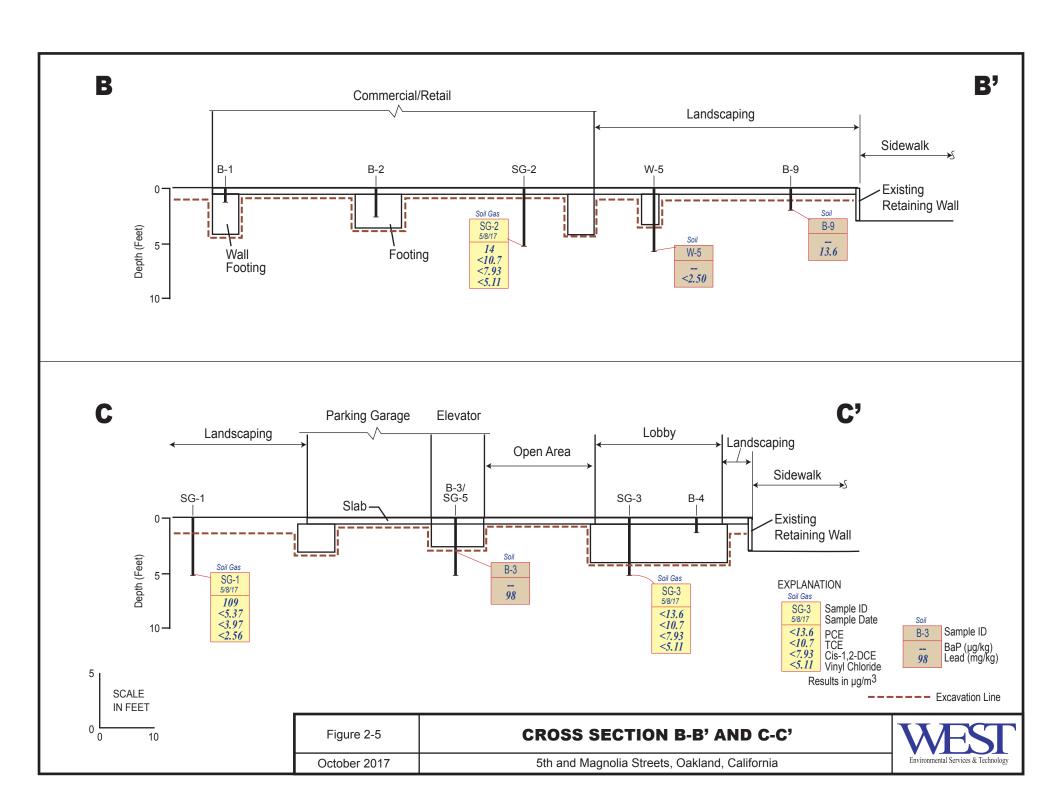


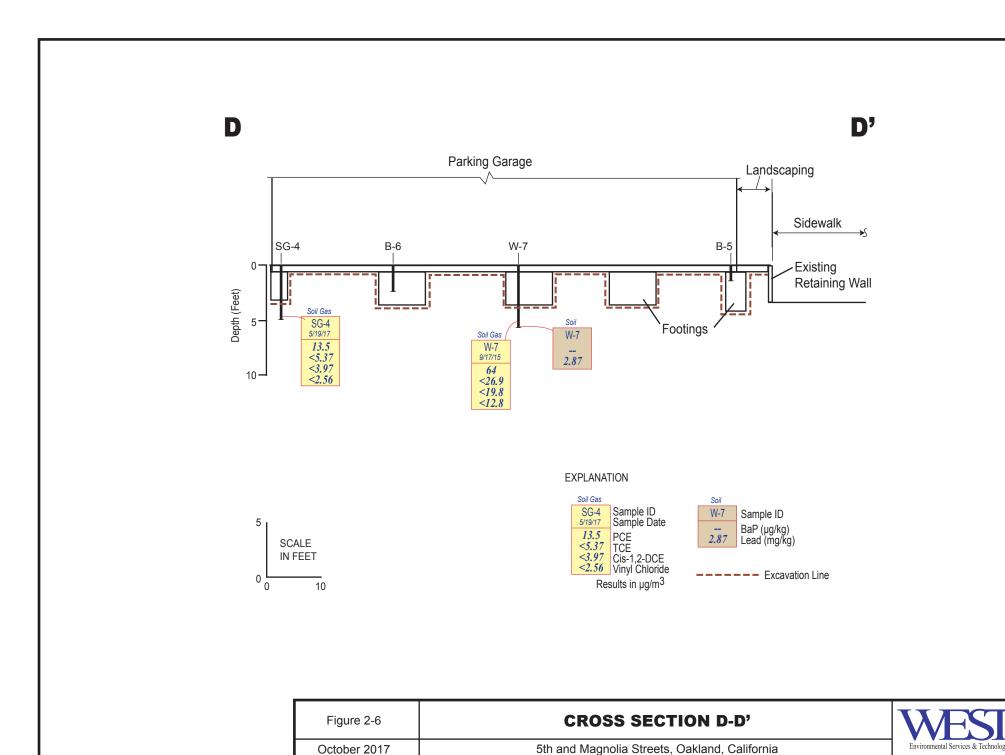


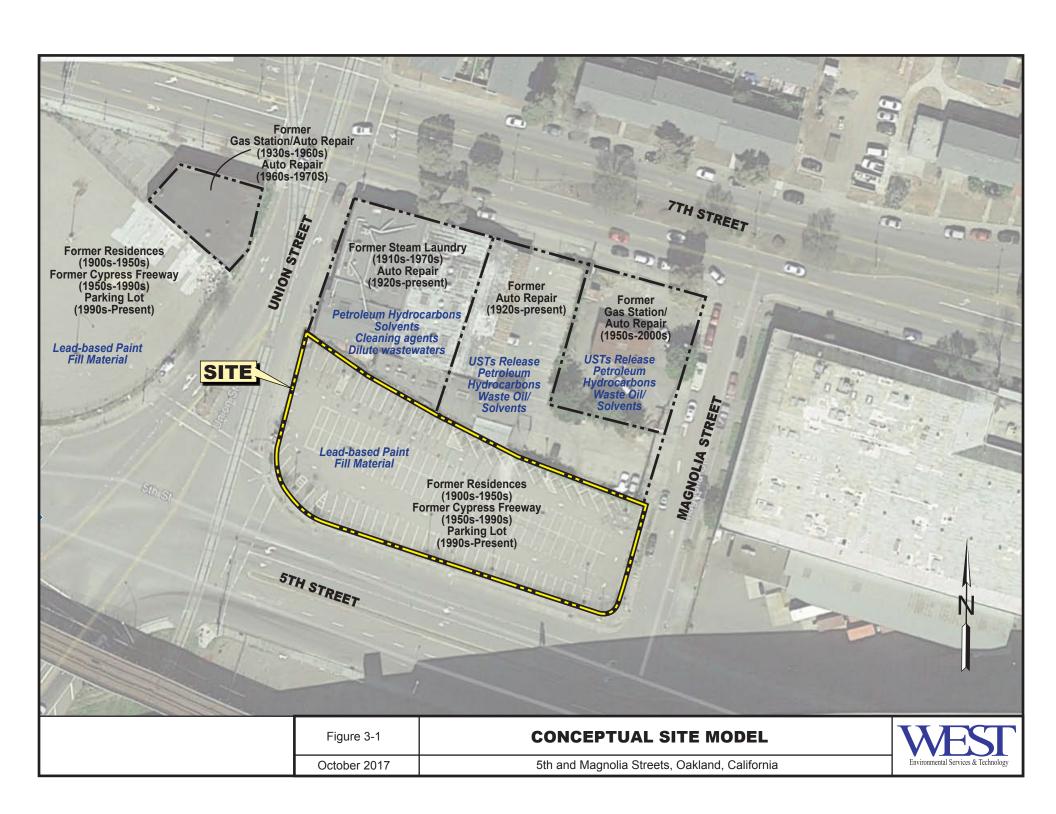


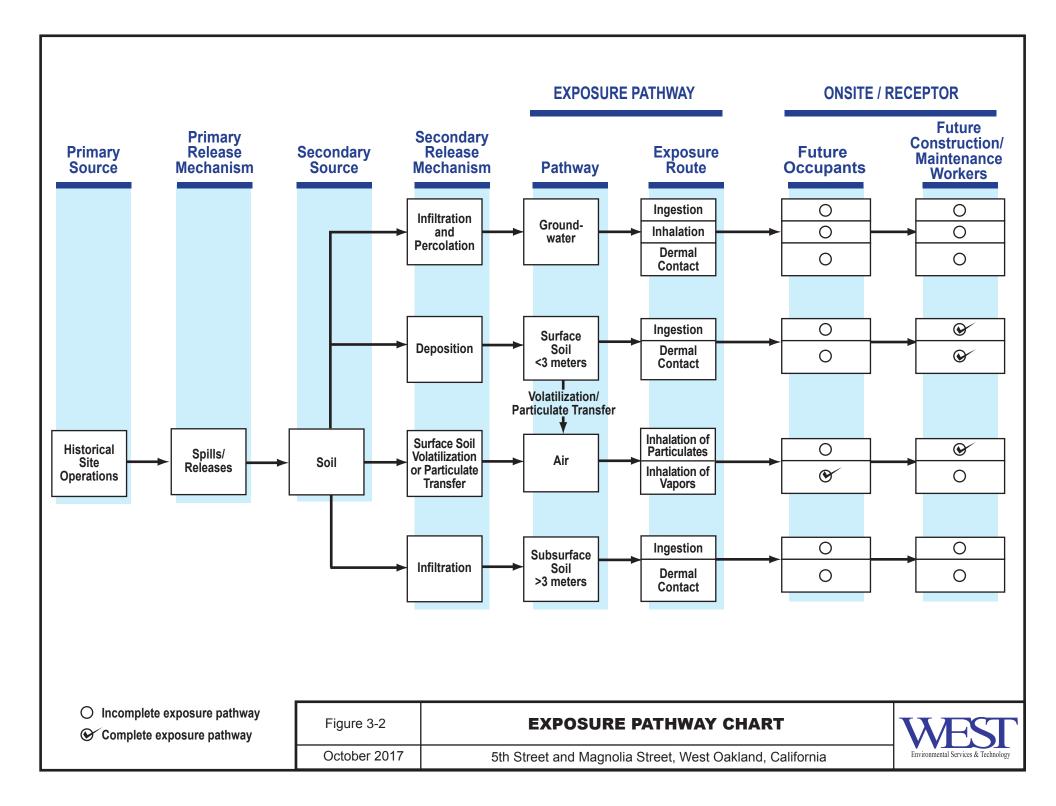


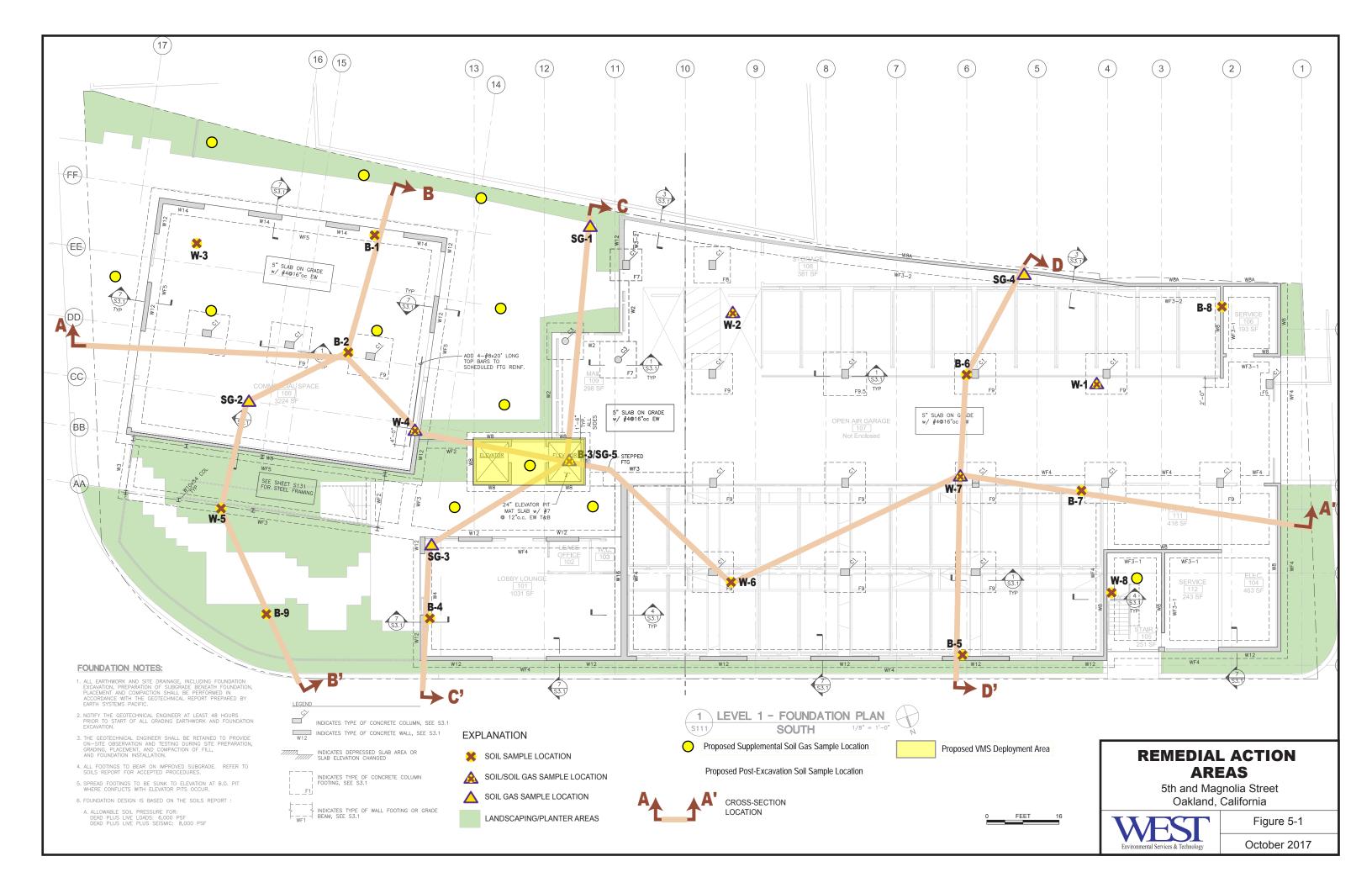


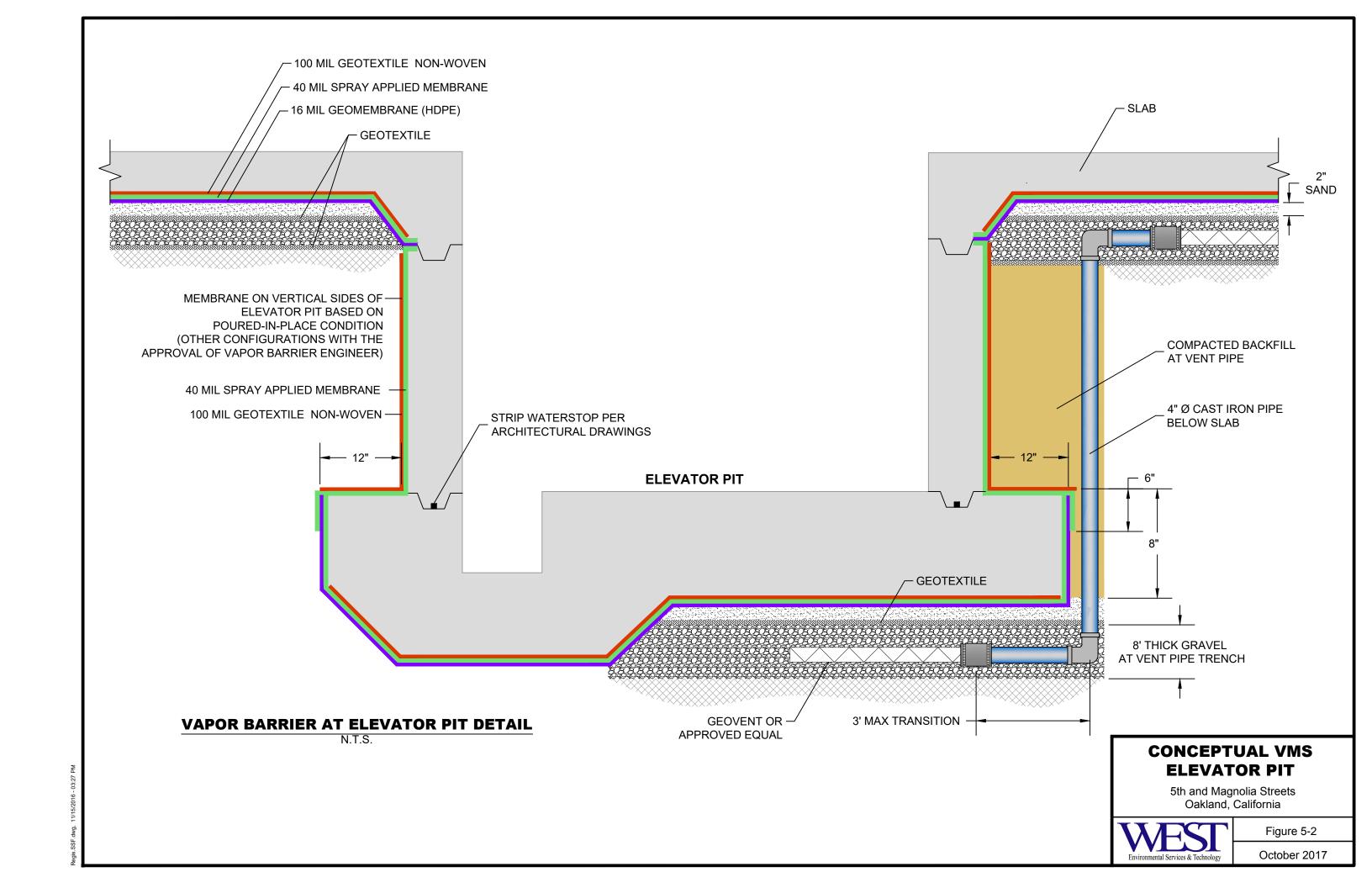


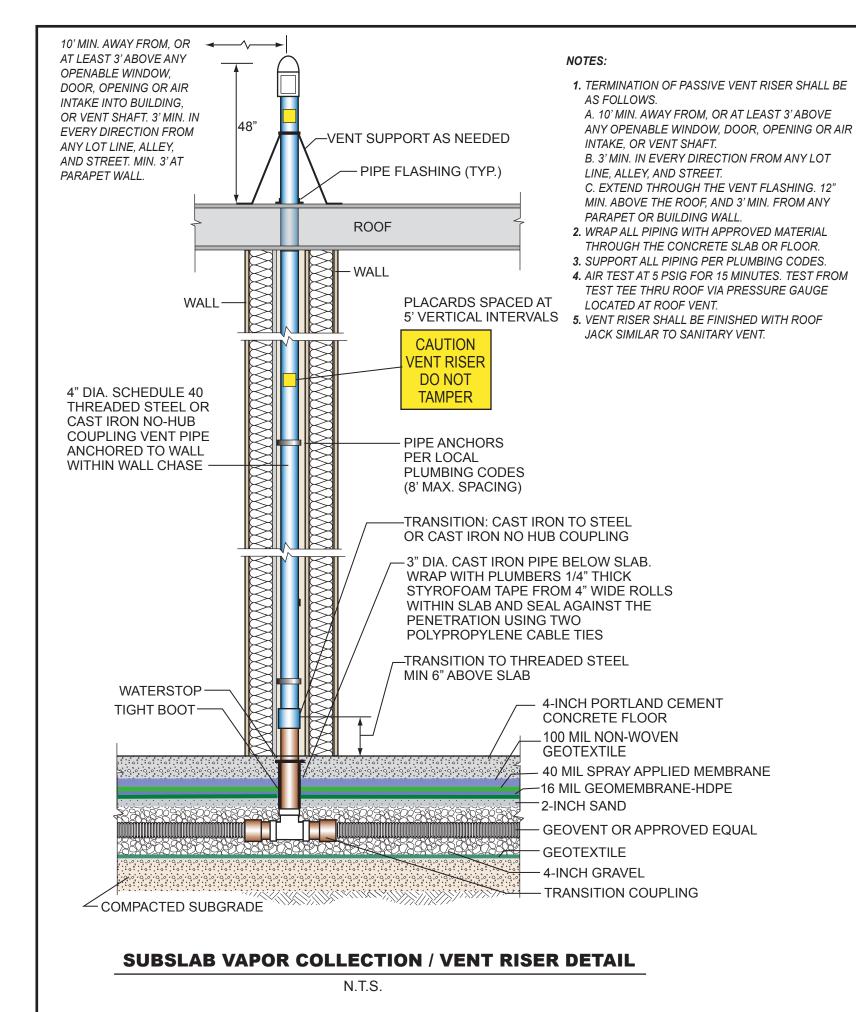


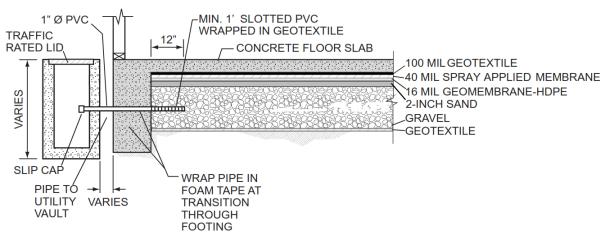












SUBSLAB MONITORING PORT DETAIL

N.T.S.

CONCEPTUAL VMS VENT RISER

5th and Magnolia Streets Oakland, California

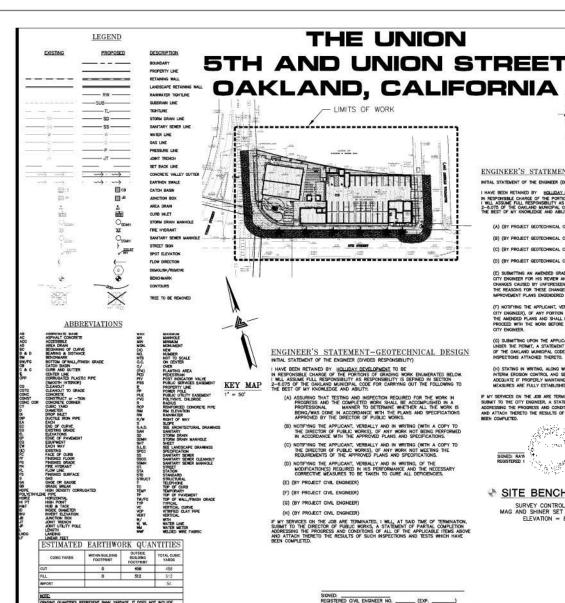


Figure 5-3

October 2017



APPENDIX A DEVELOPMENT PLANS



PROJECT SITE

OWNER'S INFORMATION

HOLIDAY DEVELOPMENT 1201 PINE STREET, SUITE 151 OAKLAND, CA 94807

2. SITE PLAN BY DAVID BAKER ARCHITECTS, ENTITLED; "SITE PLAN" 461 SECOND STREET #127 SAN FRANCISCO, CA

THIS GRADING AND DRAWNAGE PLAN IS SUPPLEMENTAL TO:
1. TOPOGRAPHIC SURVEY BY LEA AND BRAZE ENGINEERING
"TOPOGRAPHICAL SURVEY"
123 MAIN ST
ANYTOMN, USA
DATE:
JOBY 2151068

3. SOIL REPORT BY WEST ENVIRONMENTAL SERVICES & TECHNOLOGY, ENTITLED, "SITE NASSIGNATION WORK PLAN"
711 GRAND AVENUE, SUITE 220
SAN RAFAEL CA.
DATE: APRIL 2016

LANDSCAPE PLAN BY MILLER COMPANY LANDSCAPE ARCHITECTS, ENTITLED:

THE CONTRACTOR SHALL REFER TO THE ABOVE NOTED SURVEY AND PLAN, AND SHALL VERIFY BOTH EXISTING AND PROPOSED ITEMS ACCORDING TO THEM.

BENCHMARK

CITY OF OAKLAND BENCHMARK 8 SW 38-R PIN MONUMENT 5 FEET NORTH OF CENTER LINE OF 10TH STREET, 5 FEET WEST OF CENTER LINE OF MAGNOLIA STREET.

ELEVATION = 15.133

(CITY OF OAKLAND DATUM)

EASEMENT NOTE

EASEMENTS ARE SHOWN PER TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. 15-58206368-KD, DATED SEPTEMBER 3, 2015.

EXCEPTION 45-"EASEMENTS OR LESSER SERVITUDES, IF ANY, AS MAY EXISTS FOR SEWER PURPOSES OVER THE SOUTHERLY

PORTION OF PREMISES AS DISCLOSED BY OFF

RECORD INFORMATION (CITY OF OAKLAND SEWER MAP. NO. 201)", SAID MAP SHOWS A STORM CONDUIT OVER THE PROPERTY BUT DOES NOT LIST AN EASEMENT.

APN: 004-0049-004-00

REFERENCES

VICINITY MAP

ENGINEER'S STATEMENT - CIVIL DESIGN INITIAL STATEMENT OF THE ENGINEER (DIVIDED RESPONSIBILITY)

HAVE BEEN RETAINED BY HOLLIDAY DEVELOPMENT. TO BE

IN RESPONSIBLE CHARGE OF THE PORTIONS OF GRAINING WORK ENUMERATED BELOW.

I MILL ASSUME FULL RESPONSIBILITY AS RESPONSIBILITY IS DEFINED IN SECTION
2-6.075 OF THE GANCIAND MUNICIPAL CODE FOR CARRYING OUT THE FOLLOWING TO
THE BEST OF MY KNOWLEDGE AND ABILITY:

- (A) (BY PROJECT GEOTECHNICAL CONSULTANT)
- (B) (BY PROJECT GEOTECHNICAL CONSULTANT)
- (C) (BY PROJECT GEOTECHNICAL CONSULTANT)
- (D) (BY PROJECT GEOTECHNICAL CONSULTANT)

(E) SUBMITTING AN AMENDED GRADING PLAN (THEOLOR THE APPLICANT) TO THE CITY DISINDERF FOR IN SERIEM AND APPROVAL FOR ANY SIGNIFICANT CHANGES CAUSED BY UNPOSSEDED CONTRIONS, ALONG WITH A REPORT SETTING FORTH THE REASONS FOR THE CHANGES AND THE RECOMMEDICE CHANGES TO THE MERCYLLERY THE MEDICINE CHANGE AND A RESILL OF THE AMENDED CHANGE PLAN.

(F) NOTIFYING THE APPLICANT, VERBALLY AND IN WRITING (WITH A COPY TO THE CITY ENGINEER), OF ANY PORTION OF THE GRADING WORK AFFECTED BY THE AMERICED PLANS AND SHALL RECOUNSING WHETHER OR NOT THE APPLICANT SHOULD PROCEED WITH THE WORK BEFORE THE AMERICED PLANS ARE APPROVED BY THE

(G) SUBMITTING UPON THE APPLICANT'S SATISFACTORY COMPLETION OF WORK LINDER THE PERMIT, A STATEMENT OF COMPLETION PURSUANT TO SECTION 2-8-111 OF THE OAKLAND MUNICIPAL CODE WITH THE RESULTS OF ALL TESTS AND INSPECTIONS ATTACHED THIDRETO.

(H) STATING IN WRITING, ALONG WITH THE STATEMENT OF COMPLETION, THAT THE INTERNE BROSON CONTROL AND SEDMENT CONTROL MEASURES APPEAR TO BE ACCULATE IF PROPERLY MAINTAINED UNTIL THE PERMANENT EROSION CONTROL MEASURES ARE FULLY ESTABLISHED, IF ANY ARE REQUIRED.

IF MY SERVICES ON THE JOB ARE TERMINATED, I WILL, AT SAID TIME OF TERMINATION, SUBMIT TO THE CITY ENGINEER, A STATEMENT OF PARTIAL COMPLETION ADDRESSING THE PROGRESS AND CONDITIONS OF ALL OF THE APPLICABLE ITEMS ABOVE AND ATTACH THERETO THE RESULTS OF SUCH INSPECTIONS AND TESTS WHICH HAVE

5 (EXP. 09-30-17)

SITE BENCHMARK

(TO BE STAMPED AND SIGNED BY PROJECT GEOTECHNICAL CONSULTAN

SURVEY CONTROL POINT MAG AND SHINER SET IN ASPHALT ELEVATION = 8.68'



C-2.4 C-3.0 C-3.1 C-3.1 C-4.0 ER-1 ER-2 SW-1 SW-2 SU-1

SHEE TITLE SHEET DEMO PLAN GRADING & DRAINAGE PLAN SECTIONS PARKING & STRIPING PLAN DETAILS

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DETAILS GRADING SPECIFICATIONS
EROSION CONTROL
EROSION CONTROL DETAILS STORMWATER TREATMENT PLAN STORMWATER TREATMENT SPECS TOPOGRAPHIC SURVEY

FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT GREG BRAZE AT LEA & BRAZE ENGINEERIN (510)887-4086 EXT 103. gbraze@leabraze.com



david baker architects

dbarchitect.com 461 second street loft 127 san francisco california 94107



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Development Street Oakland,

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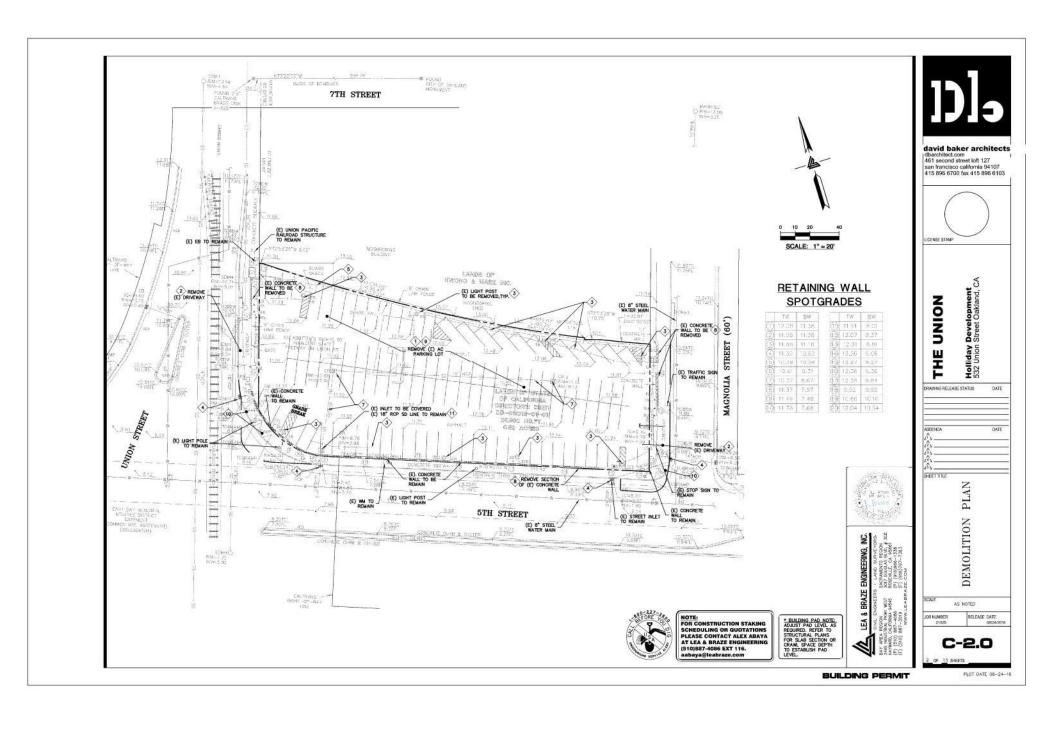
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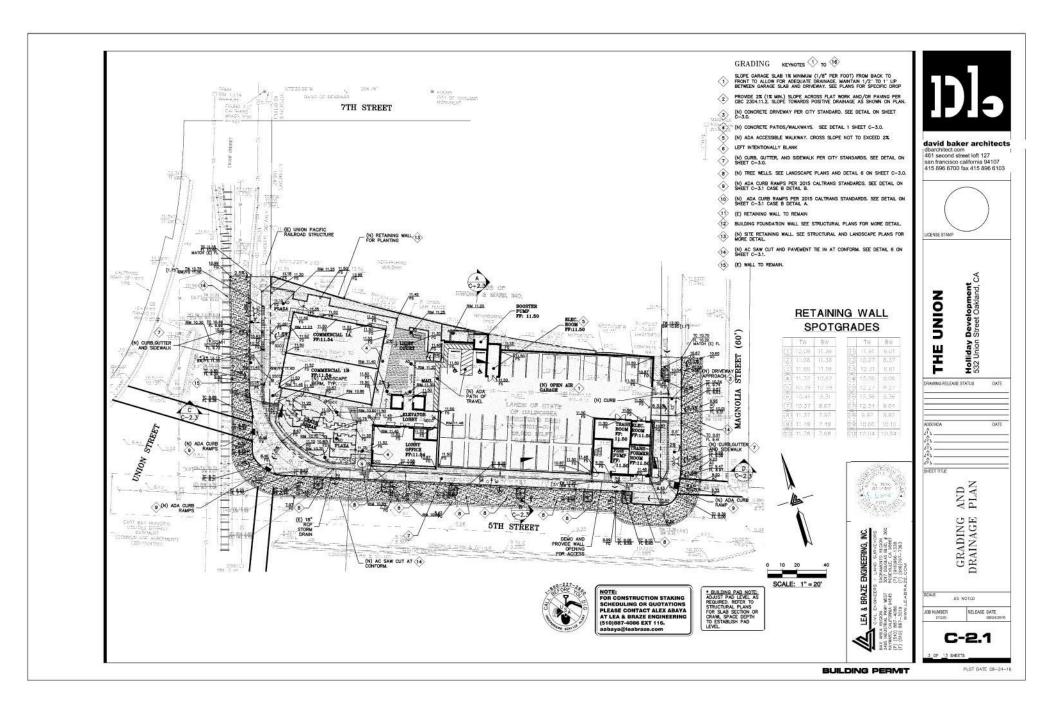
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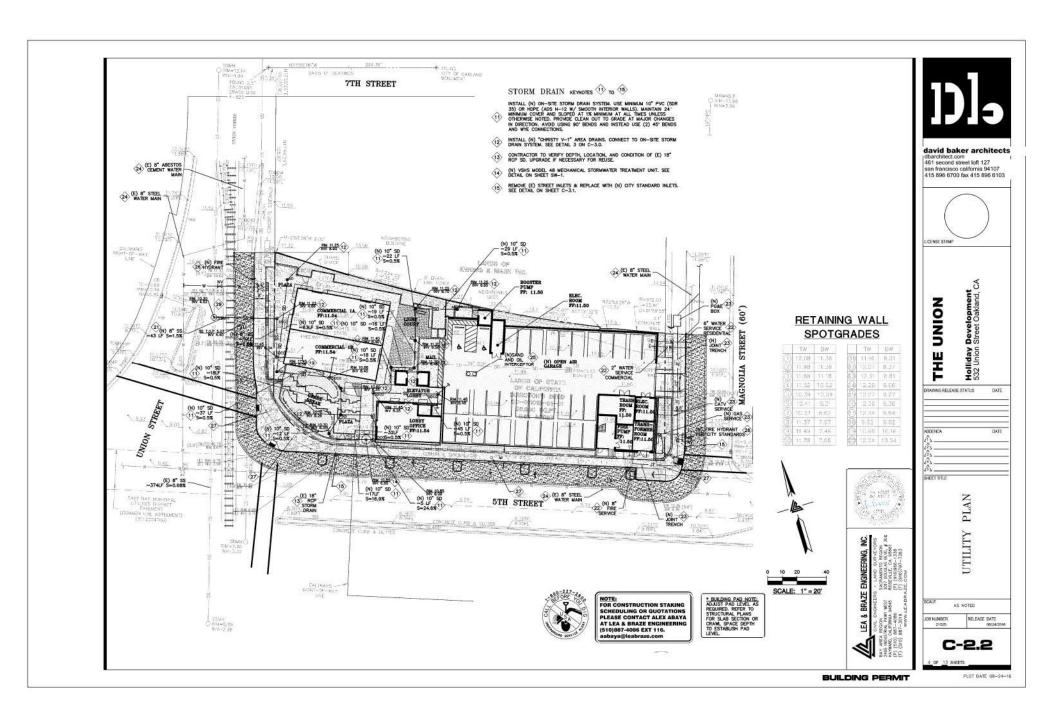
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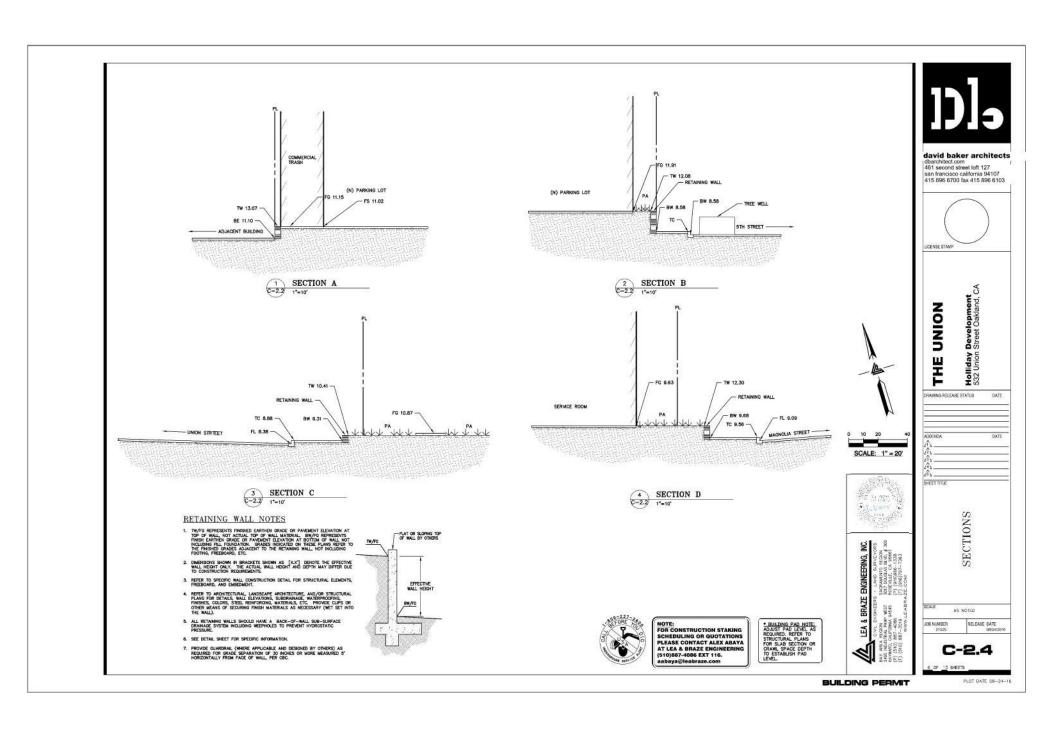
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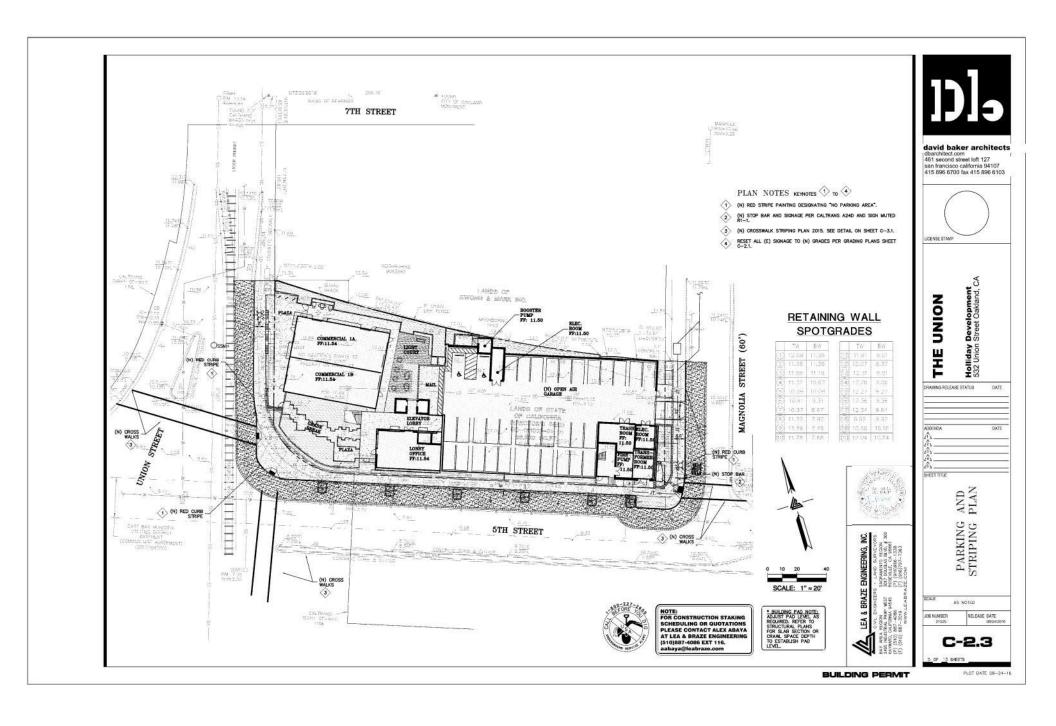
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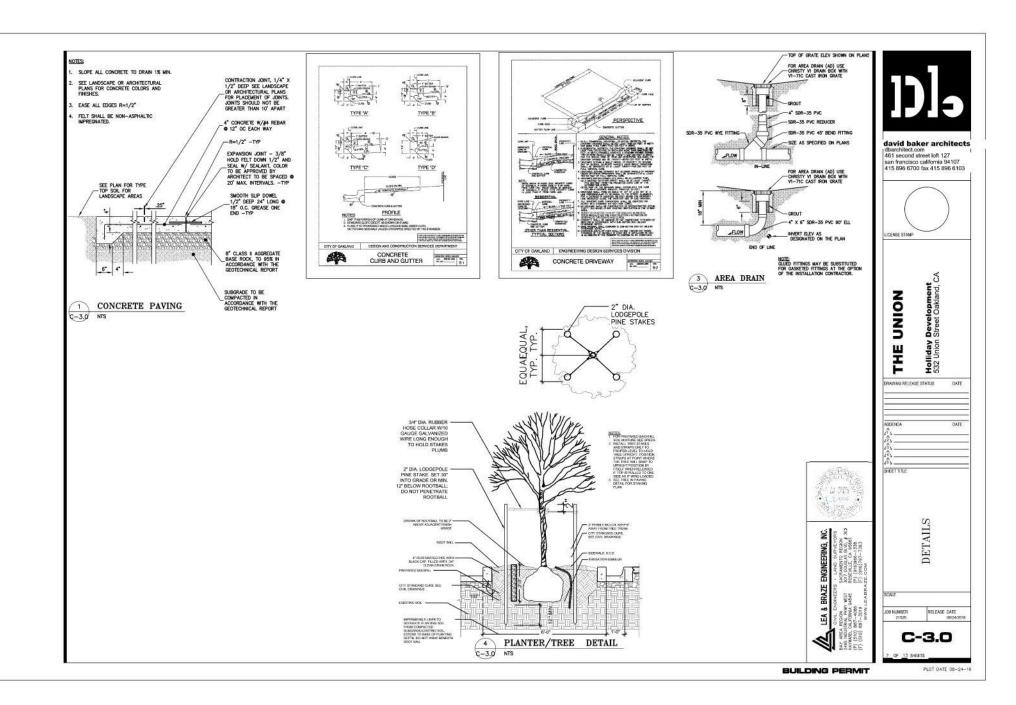


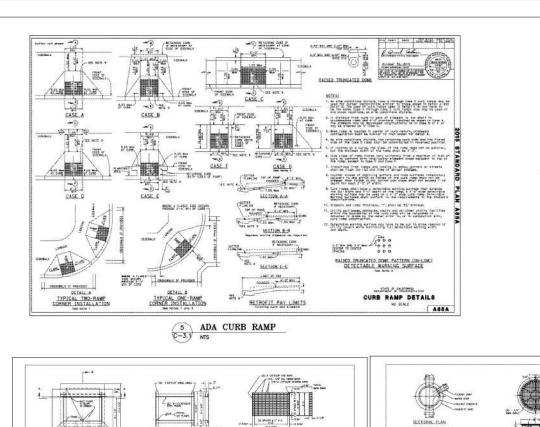


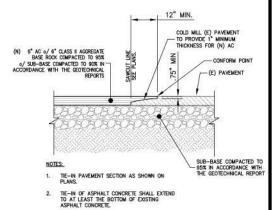




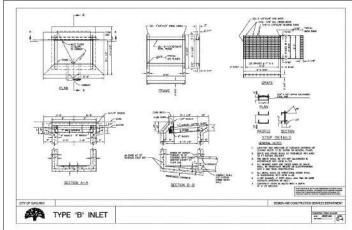






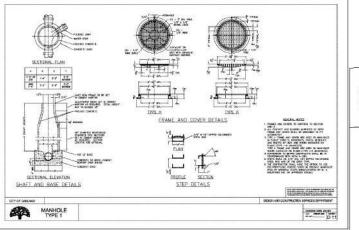


PAVEMENT TIE-IN C-3.1 NTS



7 TYPE B INLET DETAIL

C-3.1 NTS



8 MANHOLE DETAIL C-3,1 NTS



dbarchitect.com 461 second street loft 127 san francisco california 94107 415 896 6700 fax 415 896 6103



Development Street Oakland, lolliday 32 Union 뿓

SHEETTITLE

DETAILS

RELEASE DATE 08/24/2019

C-3.1

PLOT DATE 08-24-16

ENGINEERING,

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Para that

CAUTION:

- CONTRACTOR SHALL CONTACT UNDERSPOUND SERVICE ALERT FOR LOC UNDERSPOUND STRITTES AT USANT 48 HOURS PRICE TO COMMENCED CONSTRUCTION—PRICE (800) \$43-2444, CONTRACTOR SHALL WIREY
- GENERAL SITE NOTES:
- 2. AL WORK IN THE PUBLIC HOST-OF-BUT SHALL COMPUNE TO ALL APPLICABLE
- THESE DANAMES AND THEM CONTROL ARE AND SAME, REMAIN THE PROPERTY OF LEA AND BRAZE ENGNEETING, INC. WHETHER THE PROJECT FOR WHICH THEY ARE PROVINCIAL DISCUSSIONS OF RICH, THEY ARE AND TO BE SUBD BY ANY PRODUCT ON CHEST PROJECTS OR DITTERSOONS OF THE PROJECT EXCEPT BY AMPRICADOR'S ON CHEST PROJECTS OR DITTERSOONS OF THE PROJECT EXCEPT BY AMPRICADOR'S
- COMMERCIALITY OF YORK BY THE CONTRACTOR AND/OR ANY SUCCOMPLACTOR SHALL INDICATE CONTRACTOR AND ACCOMPLISHED OF ALL CONTRACTOR DECOMING ON SHE, WHICH COLLD AFFECT
- DAMAGE TO ANY CONTROL BY REPORTEDING, UTBLIEFS AND ANY DEPARTS TO PRICE SHALL BE RESPONDED. OF THE CONTRACTOR, CONTRACTOR SHALL BEFARE AND AN EMPLOY BY BALLS IN "ANY DEPARTS."
- CONTRACTOR SHALL RETURNE ALL ERRICTIMES AND SHALL HOS FOR WALL TO CONTRACT AND SHALL H
- THE CONTRACTOR SHALL ADJUST TO FINAL SHAPE ALL COSTING AND/OR HER MANIFESTED, CARDO BRANCO, WAITE, MCHANGAT CONTRACT, AND OTHER CONTRACT AND THE TRACE AND CONTRACT AND THE CONTRACT AND THE CONTRACT AND THE CONTRACT AND CONTRAC
- CONTRACTOR AGREES THAT HE GRALL ASSUME SOLE AND COMPATTE PREVIOUSLY FOR JUST CONSTRUCT OF ANY COMPATTE CONTRACTOR OF CONTRACTOR OF THE PRODUCT OF CONTRACTOR AND PRODUCT OF ANY PRODUCT AND PRODUCT OF ANY PRODUCT AND PRODUCT OF ANY P THE CHART, THE COMMUNITY ENGINEER AND THE CITY MARKALES FROM AN ALL LUBBLITY, FIGL. OR ALLESD, IN COMMEDTION WITH THE PERFORMANCE WORK ON THIS PROJECT, DICEPTING FOR LUBBLITY ANDREO FROM THE SOLI MILLIARING OF THE OWNER OR THE COMMUNITY AND DISSIPRET.
- TE DESTING PERSONNERS MAJORIANS, BRIE PATHS AND ACCOUNTY ACCESS PATHENTS SHALL BE MARINARD, MADE PENDELL OUTSIN CONSTRUCTOR IS. IF A COUPLAT ARMS SETMEN THE SPECIFICATIONS AND THE PLANS HOTER, THE WORK STRANDIT ROLLPOST SHALL SCHOOL

- THE CONTRACTOR SHALL PRINCIPLY MAY DESCRIB IN WISH, AND PAY FOR MAY DAMAGE TO CHIEF MICH. RESILENCE THESE THIS WHICH SHALL APPEAR WHICH A PROPERTY OF THE ARCTIVATE OF PRINCIPLY AND THE ARCTIVATE OF THE ARCTIVAT
- E. AL, WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL.

 REPORT BY RECORDING SECTED-MICAL, DATED DICT. IN 2015, JULy \$15-464.
- EXISTING CONDITIONS:
- EXERTING TEPCORANT-EC SURVEY FOR OFF-SITE POPPOPARES BY LEA AND MINUTES SURVEY-SEC ON 2-OT--IS (LOS ACIDESO) GRASES EXCOLUTIONED MAY WAY FROM SHOULD SHOW A SHOULD FINANCIAL AND COMMUNICATION OF A SHOULD TO WERPY DESTROY COMMUNICATION OF A SHOULD TO WERPY DESTROY COMMUNICATION OF A SHOULD TO WERPY DESTROY COMMUNICATION OF A SHOULD THE MINUTES AND COMMUNICATION OF A

SITE FENCING NOTES:

- CONTRACTOR SHALL PROVIDE A CONSTRUCTION FISHER ANGURE THE EXTRE AREA OF DEPAULTION AND CONSTRUCTION, BELLERING ALL STRAINS, STORAGE, CONSTRUCTION OFFICE AND LANGUAGE AREA.
- FORCE LOCATION MAY BE ADMISTED FROM THE TO THE AS CONSTRUCTION PROCEEDS TO DESIGNE SHEE AREAS WHERE CONSTRUCTION WORK IS NOT REPORT ONLY THE WALL APPRAISANCE, AT THE
- 3. CONSTRUCTION FONCE SHALL BE A MINIAL OF A 6" HIGH GALVANEZED CHAIN LINE FONCE WITH CHEST WARREND FRANCE ON THE CLYDER OF THE FIRMS. CONTRACTOR SHALL REPLACE THE OPEN FASTIC AT LEAST DICE A YEAR OR AT SIGN A THAN AS IT RECOMES TATTERED AND UNDOWNLY DUE TO BED ON CONSTRUCTION ACTIVITIES.

SURVEYOR'S NOTES:

THE THESE LIGHTONIS SEED AND TO DESTRUCT OF DESTRUCTION OF THE SECOND SEED AND THE SECOND SEED ASSOCIATION OF THE SECOND SEED AND THE SECOND SEED ASSOCIATION OF THE SECOND SECO

HORIZONTAL CONTROL NOTES:

- CONTRACTOR SHALL LAYOUT THE CONTROL FOR THE SYST AS SPECIFIED ON HORIZONTAL CONTROL POWER CONTRACTOR SHALL CLEARLY SET AND HARD SACRO THE SHALL CLEARLY SET AND HARD SACRO THE PROPERTY PROPERTY HE POWER THEORYCAN
- 2. ALL DESIGNED ON THE PLANS AND IN FRET OR DECEMBS THERE OF LIPLESS SPECIFICALLY CALLED OUT AS FRET AND MONES.
- 3. ALL BALDINGS DEVENING AND PARKING LOTS ARE TO BE PARKED, AND PROST ANGLES TO THE BASIS OF SEASONS UNLESS EXCITED OF GLEARLY SHOWN AS
- 4. ALL RECIPIO DADE AND CARRE DATA ARE TO FACE OF CARR. LINEESS DIVERNIS

DEMOLITION NOTES:

- CONTRACTOR IS TO COMPLY WIN ALL GENERAL AND STATE REQUIREMENTS INVOLVING THE RESIDENCE, AND DEPOSAL OF INCLANDING MATERIALIST.
- 2. CONTRACTOR'S IND IS TO INCLUDE ALL VISIBLE SUPPLIES AND ALL SUBSEMPACE PLATINGS EDITINGS TO SE RELIVACION OF ASSAURCES IN THOSE SOCIALISTS. 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE RESPECTION TO FALLY ACKNOWLEDGE THE CITEST OF THE SEACUTION WORK.
- 5. THE CONTRACTOR SHALL BE RESPONDED FOR OSTABBING ANY AND ALL POSSITS HOTELSHAY FOR DISCROMENT, SPACING, DEVELOPING, AND STATE JURISDICTIONS.
- T. BASIFUL ALL DEVESSIONS AND TREMOSES FROM DEMOLTON OF PRIMEATING &
- WITHIN LIMITS OF WORK, REMOVE OURSES, GUTTERS, LIVESCAPING, SIGNAGE, THEIS, SCHOOLS, ASTHALE, UNDERSTROAD PIPES, ETC. AS MICKATED ON THE FLANS AND E. REMONE OF LANGUAGES SHALL ROLLDE ROOTS AND ORGANIC MATERIALS TO THE SATISFACTION OF THE GEOTED-BOOK DARBER.
- O PROF TO RESIDENC DESCUTOR BORN ACTIVITIES, CONTRACTOR SHALL RETALL DECISION CONTROL MEXICAGES CUITABLE BY THE ENCORDY FLAN & DETALS. CONTRACTOR SHALL BE RESPONDED FOR CEPTORING ALL DEMOLITORS MATERIALS, OR STORMO RELECTED ITEMS BY OWNERS REPRESENTATIVE AT DESIGNATED CONTRACTOR
- THE CONTRACTOR BUILL MANTAN ALL SAFETY DEVICES, AND SHALL BE RESPONDED FOR CONFORMANCE TO ALL LOCKS, STATE AND PEDERAL SAFETY MAD SERVED TRANSMICS LAND AND SECULATION.
- COORDINATE WIN ELECTRICAL MICHARDAL LANGUAGHED AND ARCHIT CRAMBIOS FOR UTILITY SHAT-COMM / DISCONDECT LOCATIONS. CONTRA SHAT DRY ALL UTILITIES AS MICHIGANY PROPERTY DISSIALTION. CONTRA COMMAND REPORT REPORTED WITH THE CONT.OFF / CHIEF, DO NOT PLANS FOR ADDRESS ASSESSMENT OF STILL CHIEFLY, AND SEE APOSTOCIANA, PLANS FOR ADDRESS, ORDALITON SOONE OF MESS.
- DENOLITION INCLIDED REMOVAL OF ALL TIMES ASSOCIATED WITH THE UTILITY, RETAINING WALL, FIRST, THEY OF SULCIONS, MICLIONES BUT NOT LIGHTED TO PROTECT, WANTE, SOUTH, BALOFILL, FIC. AND SHALL HOLLICE PREPARENCE TO
- TO ALL MATERIALS TO BE DEVOLUTED AND REMOVED SHALL RECORD THE PROPERT OF THE CONTRACTOR AND SHALL BE LAWFILLY DISPOSED OF OTT-SITE.

- A DICHARD HIS TOTALLY ROMONE THE UTILITY LINE FROM THE TRENCH.

TREE/PLANT PROTECTION NOTES-

LPROR TO SECRETARY CONSTRUCTION ON STILL CONTRACTOR SHALL DESIGN, CONTRACTOR SHALL DESIGNAL AS TO RESEAR. 2.PROVIDE & FOOT TALL TREE PROTECTION FEWER WITH DISTRICTIVE MARKING MISSILE TO CONSTRUCTION EQUIPMENT, ENGLISHING ONE LINES OF TREES DESIGNED TO WORK RECORDS WITHIN PERCEI LINE SHALL, HE HELD TO A MEMBER, AVOID LINE OF HEAVY EXCHANGED WITHIN PERCEID AREA AND DO HOT PARK ANY VIDEOUS LINESS. OF LINE OF THEIR OR HOT TOWN TOWNS OF MARKING WHAT THE LINES. MICH TO REMOVED FOOTS AND SPANDING LANGER THAN 2" IN DIAMETER OF THESE OR FLANTS THAT IS TO REMAN, CONSULT WITH THE OWNER'S PROJECT ANY OWNER OWNER THAN IT WE'VE THAN THE DEVINE OF EXCELLENT AND THE DEVINE A PROTECT DISTING THIS TO REMAIN FROM SPILLD CHEMOALS, FAR. OR, MOTION OR, ORGANIZATION ALL OTHER ORGANIZATION SALENCES MATERIALS AND RELL AS PRODUCED OF CONTRIBUTIONS SHOWERS AND THE ORGAN A SPILL OF COMMITTEE SHOWERS AND THE ORGAN AS PROTECTION OF COMMITTEE SHOWERS AND THE ORGANIZATION SHALL BE REPROTESSED. TO MITTOLT SHAMOUR PROMISED MATERIALS AND SPILLO MATERIALS AND SPILLO MATERIALS AND SPILLO MATERIALS.

PREMIET THAPPENET PROMITCH TO ALL TREET AND PLANTS THAT ARE IS ON AMACISM TO CONSTRUCTION AREAS WERE DESTINE PROMITCH STRITTED AND THAPPENET OF THE CONSTRUCTION ALSO PROMIE THAPPENET WORKSHOT OF THE PROMITCH THAPPENET WORKSHOT OF THE PROMITCH THAPPENET AND THAPPENET THAPPENET THAPPENET AND THAPPENET T

SANITARY SEWER NOTES:

- HETALL DETECTIONS INSTRUCTED VARIOUS TAPE APPROXIMENTED ST-12" INC. THE SERVICE IN NON-PARKED AREAS, AND AT THE BETTOM OF EASTHOOD FOR PARKED AREAS, CHECK TO ATTOM SANETHY STREET USE. BLOOM, CARRIED THE SERVICE SANETHY STREET USE. BLOOM, CARRIED THE SANETHY STREET USE.
- AL MEMOR MORE SHALL BE IN COMPOSITIONS WITH THE CITY AND COUNTY OF SAM PRINCIPLOS STREETING SPECIFICATION SECTION 201. PUBLIC AND PROVIDE SANDARY SENSE MAN AND SENSOE LINE SHALL BE WIREFED CLAY PIPE (NOT).
- FO IN
- E. ALL LITERALS SHALL HAVE AN APPENT AT THE BACK OF CURE, AS SHOWN ON

GRADING AND EARTHWORK NOTES:

- ALL PARES AREAS ARE TO SCOPE AT A MARKEN OF 1 S. ACCESSED.

 AREA LOADING ZORES ARE TO SCOPE AT A MARKEN OF 2 SE IN AT THE AREA ACCESSED.

 AREA LOADING ADDRESS ARE TO SCOPE AT A MARKEN OF 2 SE IN AT THE SEA ACCESSED.

 BURNARIO GOODS SCOPE OF 1 S. AREA AREAS OF 18 SE STE INTO CONFORMERS TO SCOPE ACCESSED.

 DOCUMENTS AREA TO SE REPORTED 7 OTHER MARKET AND ASSESSED FROM PROCESSED AREA TO SER REPORTED 7 OTHER MARKET ACCESSED.
- CONTRACTOR SHALL DETERMINE CANTHERINE CLANTIES IMAGE ON THE TOPOGRAPHIC SUPPLY. THE SOLE INVESTIGATION AND THE PROPOSED SUPPLY CHARGE AND BASE THE IND ACCUSINGS AND INTERNIORIS SETTINGS STUTE IN WHICH THE PROJECT STEED COLUMNED TO THE CONTRACTOR AND ALL FILL SHALL BE COMPACTED FOR THE CONSTRUCTION SPECIFICATIONS AND THE CONTRACTOR SHALL COMPACTE AND COMPACT WITH THE CHARLES SETTING ADDRESS TO TAKE THE APPROPRIATE SET TO SHAPPY COMPACTION VALUES.
- MOST SUE MET HET THE RESIDENCES OF THE SOLE REPORT AND COMPANIE THE PLACEMENT OF ALL ELEMENT FOR LANGUAGE REGATION (WATER AND CONTROL, MERNO) AND STREET LIGHTING PRIOR TO THE PLACEMENT OF ANY ASSPCRACE, OR CONCRETE SURVACION. BUT LIMITEDIAY AND STREET, DESCRIPTION OF THE PLACEMENT AND THE PLACEMENT A
- DO NOT MOUNT GRADES ON THIS PLAN MINOUT PRIOR WHITEH APPROVAL OF MAN DENING AND TO DAMPED WHILE
- ROUGH GRADING TO SE WITHIN S.1" AND FRASH GRADES ARE TO SE WITH IN AFTER STANDE FOR HORIZONTAL CONTROL CONTROLTOR SHALL FRED CHECK ALL ELECTRONS MARKES WITH (IC) AND REPORT ANY DISCREPANCES SHEATER THEN BOT TO MOTHER SHEET
- ALL DOSTRIG LITELTY STRUCTURES WHICH THE AREA OF WORK SHALL HAVE THE LIGH, GALLES, CONTROL, CITY, ALAUSTED TO BE FILLING WITH PRODUCE GRACIES, CONTRACTOR, SHALL, DOSTRY, ALL SOUTHERS BY LISE OF THE FILLING AND
- GENEROHECH, CONSIGNATION TO BE MOTHED OF DELARRY OF ALL MACRIED SOLE TO STE FOR HELVER MOSTECTION AND APPROVIL MICH TO PLACING BY

- REMOVE ALL DIFF. GRANDL, RUBBISH, RETURE, AND GREEN WASTE FROM I PAYERSTY AND STORM DRANGE ALADRINGS THE STY. LINT CONSTRUCTION ACCISES ROUTES CHITO THE RIFE AND PLACE GRAND, PAGE AT THESE LICATIONS, DO NOT DRIFT, VIEWILLES AND EXCEPTION OF THE PAYED OF
- FIRST TIMES, DETAILS, MAY THE PROPERTY CONTINUES WHITE THE PROPERTY CONTINUES AND THE PROPERTY OF THE PROPERTY OF
- CHARTE A CONTINUED AND CONNECT AND ON THE SITE FOR THE STORAGE OF BACK, COMENT, PARTIE, CALL, FERTILIZER, PERTODES, OR OTHER MATERIAL USES ON THE SITE THAT MAKE THE POTENTIAL OF MEMORIMO-BLOSH OR IN THE TOTAL OF A MARKET.
- NEVER CAPAS MACHINEY, EQUIPMENT OR TOQUE INTO A ERRET, QUITER OR DEUTE THAT COURT TRUCKS, PARTERS, OR STUCKS/PLASTER FRESHNO CHEMICATURE CO HIT DEUTAGE MUSIC NATUR PRICE EXEMPLENT, TOOLS OR MINES CONTAINED ON THE RESTREET OF TRUCKS.
- PREMED DUST FROM LEAVING THE SITE AND ACCUMULATING ON ADJACENT AND/AS AS REQUIRED IN THE DUST CONTROL NOTES ON THE SHEET. PREMENT SEMENT LAKEN STORM RAN-OFF FROM LEAVING THE SITE OF DESIGNATION OF THE SHARED STORMS AS REQUIRED IN THE
- MANTAN COURSE SHEET AND PLANTE THAT ARE TO REMAIN AS REGARD BY THE THE AND PLANT PROTECTION NOTES ON THE SHEET. PAVEMENT SECTION:
- ME DESIGNATION OF ALL PARKET METERS
- SE TRACTIFIA, DAMESON FOR BALDING BLAS SECTIONS AND PAGE 1. SE GRADIC MO DETAL SHEETS FOR PLATHON SECTIONS MG BASE
- Doctors Pawkient SHALL BE TACK COURS PROR TO CONSTRUCTION HEW PAWGEOT.
- ALL PARKE SHALL BE IN CONFORMACE WITH THE LATEST ESTICH OF CALTRAN STANDARD SPECIFICATIONS.

STORM WATER POLLUTIONS PREVENTION REQUIREMENTS: STORM DRAIN NOTES:

- STORE, HARDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND MATES PROPERLY, SO AS TO PREMIOT THESE CONTACT WITH STUMMATES. CONTROL AND PREVENT THE OSCINANCE OF ALL POTENTIAL PALLUTANTS, INCLUDING SIZE NECTORS, PARTY, CONDUCT, PETROLICAL PRODUCCIE, ORGANICALS, MAIN PARTY OF SIZEMANT, AND NOT-STORMANTIN ESCOLARIES TO STORM
 - USE SEDMENT CONTROL OF PILTRATION TO REMOVE SEDMENT PROM DESKRIPTONS ESTRUCTOR. AND CLEMBS, FIELDS, OF MANTANNS VOICES ON STE, DOOPT IN A
 - DELMENTE CLEMBNG LIMITS, ENSEMBNITS, SETSACHS, SENSITINE OR OFFICIAL MEGA, BUTTER ZONES, TREES AND DISCHARGE COURSE WITH FRED MARKETS.
 - PERSON CLASSIC AND EAST MARKS AT THE STORE OF WATER TO BE MAKED TO THE STORE OF STOR LIMIT AND THE APPLICATIONS OF PERSONS AND PERSONS TO PREMIST.
 - AVOID TRADIBIO DIET OF MATERIALS OFF-STE: CLEAN OFF-STE PAVED AREAS AND SECRETARY LIGHED DIST SHEEPING METHODS TO THE MADMAN EXTENT
 - ALL CONTRACTION ON OFF-SITE IMPROVISIONS SHALL ASSESS TO BEST MANAGEMENT PRACTICES TO PREMENT DELICENCES INTERNALS OR POLLUTIANTS
 - SHEP ALL SUTTERS AT THE END OF EACH WORKING EAX. SUTTERS SHALL BE REST CLEAR AFTER LEARNS CONSTRUCTION STILL. SUPPLEMENTAL MEASURES:
 - E PHEASE "NO DIAMPHO DRANG TO BAY" OR EDUALLY EFFECTIVE PHEASE SAST DE LABELD ON STORE DRANG HELTS (BY STENCERO, DRANGHO, OR PLACES TO ALBET THE PLACE TO THE EDISTRACTION OF STORE BAYER AND TO REPORT DESTRUCTOR DECIMARY OF POLICIPATE AND THE STORE DRANG HE
 - USING FLERATION MATERIALS ON STORM DRIVE COVERS TO REMOVE SEDMENT STANDARDO AL DONDED AREAS AND MANTARNO DICTION CONTROL MEXICAGES CONTRODUSLY FROM COTTODER 15 AND APPL 15.
 - ENCHRO SPOLS PROMPET, AND AVID STOOPLING OF FILL MATERIALS, WITH THAT IS FRIEDRIST, IF THAT THEATERS, STOOPLING SOLS AND STREET MATERIALS DANK, MY COMED WITH A TAPP OF CHEST MATERIALS.
 - STORING, HANDLING, AND DESPOSING OF CONSTRUCTION MATERIALS AND NASTES. SC AS TO ANDE THEIR RESTOR TO THE STORIN DRAW STORING OR WITH BODY. ANGERS CLEANING PIECES OF HANTENING VEHICLES ON-SITE, DICEPT IN AN GENERAL UTILITY SYSTEM NOTES:
 - AL TROOPS SHALL BE SADPLED FOR THE GESTEDHICAL EXCHER

 - CATHODIC PROTECTION MAY BE RECURRED ON ALL METALLY PITTINGS AND ADDRESSED THAT ARE IN CONTACT WITH SEX, IF RECOMMENDED BY THE SECURIOR DEPOSIT, CONTRACTOR IS RESPONDED. TO FALLY DEPOSIT.
 - IT IS THAT PROCESSED FOR THE PURPOSE MERCEN.

 DESCRIPTION OF THE PURPOSE MESSAGE SERVICE AND APPROXIMATE TO THE PURPOSE AND APPROXIMATE ADMINISTRATION APPROXIMATE ADMINISTRATION APPROXIMATE AND APPROXIMATE AND APPROXIMATE APPR
 - THE CONTRACTOR SHALL BE RESPONDED FOR PROTECTION ALL UTILITIES PRODUCED TO PLACEMENT SUBSECTION OF PRODUCED SUBSECTION OF SUBSECTION OF PRODUCED SUBSECTION OF SUBSECTION OF SUBSECTION OF SUBSECTION OF SUBSE

 - SAME THE SERVICE WHICH A STOCK OF THE SERVICE WAS CONTINUOUS TO SERVICE WAS CONTINUOUS OF THE SERVICE WAS CONTINUOUS DOOR WAS CONTINUOUS OF THE SERVICE WAS CONTINUOUS DOOR WAS CONTINUOUS WAS CONTINUOUS

- A MARKAM HOROUGHTAL SEPARATION INTEREST MAY PRELIABLE AND ANY DISTING UTLITIES SHALL SE OF PEET EXCEPT THAT THE MARKAM HOROUGHTAL SEPARATION WHITE AND SMARTAM SHARK PAPELSE AND ALL SE OF CHARMS AND SMARTAM SHARK PAPELSE AND SMARTAM SMAR A MINIMAN HORSONTIL SEPARATION SETTEEN HEW PREJIES AND JOHT TRENGS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ANY SHALL HELD RESPONSE FORTH, PRICE SERVICES AND RECOGNISHED WATERCOMES OF SERVICES FOR FROM ALL HER FACILITIES AND TO SA MARINA 3-FOOT OF DESCRIPTION DAYN SCREEN PY AND NO UTUTION.

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 WE'RE 3-FOOT OF DESCRIPTION DAYN DAYNOT BE ADDRESS, PROMOT BLUM
 WILL FOO ON OTHERS. BLUMF MALL SALL BY 4-FOOT BOOK DAYNOT BE ADDRESS. THE STREET BEING THE STREET PARKET CONTROL BASE OF SETTION OF CONSISTS SECTION. PROMOS 5-FOOT BASE OLDMANC SETTION SUBJECT WAS OCCUPANT.

- ALL PROVINE STORM DRAW PIET STALL SE PAC SOR SE, SLOPED AT 25 INLESS CHEMINES STORMED ON THE FLANE, ALL STORMERAN LINE IN TH INCH-LOT-MAY SHALL SE VINTED CLAY PROC (MOT). PER SHALL SE SEA AS STORMED ON THE PLANE, ALL DESCRIPTION CHANGES SHALL SE MAKE TA A SHY COMMERCION OF LOOK SHEET SLOWER, SHOULAN ELECTR. AND TOTAL
- PART THE TOP OF THE CURBS ADJACENT TO EACH CATCH BASIN HISTALLS UNDER THE WORK OF ADJACENT TO THIS SITE WITH THE WORKS THO DAMPHOY, WORKING TO BE SILLY I HIGH LETTINGS ON A PARAMED WATE
- PROTECT ADJACENT PROCEDURE HE DECEMBERS MESS THE CONSTRUCTOR

 WASTE USED SECURITY REPORT THREE SERVICE ARREST OF PLEASE,
 ACT SHALL MET AN RECOMMENT. WHEN PERSONNE ACCESSED.

 - PRIVATE STORM SPAIN LINE 4-BION THROUGH 12- BION WITH A MINIMAN OF THP (2) PIET OF COMPL IN HON-TRAFFIC AVEXE SHALL BE POLYMAN. PRIVATE STORY DAVID LINE 6-8001 TWOOLDS 12-8001 WITH LESS THEN 3. HELT OF COVER BY VEHICLES TRAFFIC AREAS BYAIL BE POLYMEN, ONLINES
 - ALL DOME SPOUTS SHALL DESCRIPTION SHOULD BE TO ADMISSION METHODIS SHARKES OF SPLASH REGION LIVERS CHESTONIC HOTELD ON PLANS. SEE ARCHITECTURE PLANS FOR ELECT LOCATION OF THE TOWN SHOULD.

DUST CONTROL NOTES:

- AL PARKA STREETS AND MEDIANS SOLED ON LITTINGS DAY TO THIS CONCENCION ACTIVITY SHALL BE QUIAND AND INSPIT OF A DAY AS DARRON TO WARR THE WORK MAD, OR AS OTTEN AS DEEDED NECESSARY BY THE OWNERS INVESTIGATION, TO THE SATISFACTION OF THE OTTE
- S. CH-STE PANES ACCESS FOADS, PARENC AMERS AND STAGING AMERS WHEN, WIGHERS SHALL HE HISTALLE AND USED TO CLEAN ALL TRUDGS AND COMPRIST LEAVING THE CONSTRUCTION STIL. IF WELL, MAJERS CAMPOT THE RESTAULD, TRUES OF TRADES OF ALL TRACES AND EXAMPLE AND ALL TRACES AND EXAMPLE AND ADDRESS AND ADDRESS

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EARTHWORK QUANTITY NOTES:

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SIGNING & STRIPING NOTES:

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- D. PROVIDE IT NOT A 10T LONG WHITE LINE MY CALTRANS AGES STOP
- E. THE LANE MUST BE PARTED HED WITH THRE LANE HE PARTED!
 If HEIGHT WHITE LETTER ENERY SET. F. LOADSHO AND UNLOADSHO ZONE - MAST BE PARTED YELLOW WITH "LOADSHO / UNLOADSHO NO PARKING", 2" HEIGHT LETTER EVERY SET.

- GENERAL UTILITY SYSTEM NOTES:
- THE LIBRIDINATION FIRST PROTECTION STOTICS BEST/ALL PROTECTION STORY OF THE AUGUST STO
- BACP DRAMMOS SHALL BE SUBMITTED TO THE LOCAL PINE BANDHALL THE RATING ASSIST, AND THE CIVIL ENGINEER ALLOWING THE TO REVIEW AND ACCOPTANCE, PRICE TO STAN
- THE UNCOMMOUND FIRST PROTECTION INSTALLED SHALL OFFICE ALL APPROPRIES AND PROMITE FROM TO GREENING MATERIALS.
- BOTTON OF BACKFLOW PREVENTION ON ADDRESS.Y TO BE HISTALLED IND OPENTER ON LESS THEN 12" FROM FRANCH GRAND LINESSO, APPROVED BY CIVIL ENGINEER.
- HISTALL MONTORED TAMPER SHITCHES AT ALL PIVS AND WALVES ON DECTOR DIRECT ASSEMBLES.
- HISTAL DETECTABLE METALIZED WARRING TAPE APPRODRAFELY 6" --12" BELOW THE SURFACE, DELIE, SAPPHITE WITH "DULTTON- PRE SERVICE LINE RELOY",
- WH. 5 PEET GLEANANCE FROM SACK OF GURS TO TH'S, PIN'S, AND FEOTS.
- WATER NOTES: WHERE WATER LINES HAVE TO CROSS SANTRAY SENER LINES, DO SO AT A NO DECREE ANGLE AND NATER LINES SHALL BE LINEAU OF 12" ADDRESS THE TOP OF THE SANTRAY SENER LINES
- EXTER LINES ARE SHOWN SCHEMETONLY, CONTRACTOR SHALL EXTERY EACH ANGLE AND/ OR NEWS SHAT MAY BE RECURRED TO ACCOMPUSE THE INTEREST DESIGN. USE DETECTABLE METALIZED NAMESCO THY APPROXIMATELY O'
 BELOW THE SUPPLIE, TAPE SHALL BE A SPORT COLOR AND
 MEMORITED WITH "CALVION-MATER LINE MELON", CALVICO THYS
- ALL WATER SERVED CORRECTIONS SHALL BE RETAILED IN
- ALL WATER LINES IT OR BANALER SHALL BE THTE K COPPER WITH SELECT MAKED LINES, CONTRACTION TO WORST PRESSURES FROM DISCHOL LINES ARE ADDRESSED TO SERVICE
- ALL WATER LINES SHALL BE RETALLED WITH 30" MAL COVER ON
- ALL WATER WALVES SHALL BE PER COST WATER DEPARTMENT ALL TEMPORARY AND/OR PERSONNENT ARE-RELEASE AND BLOW-OFF VALVES SHALL BE FER CITY STANDARD AND AS DIRECTED BY THE CITY ENGAGES.
- CONCRETE THRUST BLOOKS SHALL BE METALLED AT ALL TIES, CHOSENS, BENES OFCICENTIAL AND METICAL), AT SEE CHANNE AND AT FIRE HYDRAYTS FOR CITY STANDARD, ANNA CHOO.
- MECHANICAL PROFESSION ACCORDING WHI COP WITHOUT COPMISSION ACCORDING WHI COP WITH COPMISSION ACCORDING WHI COP TO THE COPMISSION ACCORDING WHI COPMISSION COPMISSION ACCORDING WHI COPMISSION ACCORDING WHICH COPMISSION A ALL WATER VALVES SHALL BE CLISTERED, UNLESS CHARMES THE CONTRACTOR SHALL BE RESPONDED FOR COLLECTING AND DELACTING WATER SAMPLES FOR ANALYSIS TO A CITY APPROVED

M. HETALL CLY WATER DEVANTAGET APPROVED PRESSURE, RESULTED AND RESIDED BASISTAN PRESIDENT OF SIX NYT USE AT EXPRISED TO BRAINED RESIDENCE PLANNING MAI FOR MOST SECTION, AND ADMINISTRATION (SPY) SINCE! OF THE MOST RESIDENT LIST APPROVED BY THE COST, BANZ FOR DOLLESSED WATER SINCE, BE LIGHT-THE ...



david baker architects

dbarchitect.com 461 second street loft 127

san francisco california 94107

415 896 6700 fax 415 896 6103

GRADING MO SONE

> RELEASE DATE C-4.0

> > PLOT DATE 08-24-18

ENGIN

REGION 85861 1338 7363

PURPOSE:

THE PURPOSE OF THIS PLAN IS TO STABILIZE THE SITE TO PREVENT EROSION OF GRADED AREAS AND TO PREVENT SEDIMENTATION FROM LEAVING THE OF GRADID AREAS AND TO PRIVATE SIZUADISTATION FROM LEAVING THE CONSTRUCTION AREA AND AFTERING INSUBIORIEST SIZES ARTHRAL AREAS, PUBLIC ASCULTES OF MY OTHER AREA SHAT WHAT HE AFFECTION FOR THE AREA SHAT WHAT HE AFFECTION FOR A PARTY OF THE AREA SHAT WAS A PARTY OF THE AREA OF THE AR

EROSION CONTROL NOTES:

- IT SHALL BE THE OWNER'S/CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTROL OF THE ENTIRE CONSTRUCTION OPERATION AND TO KEEP THE ENTIRE SITE IN COMPLIANCE WITH THIS ERSOON CONTROL PLAN.
- THE INTENTION OF THIS FLAN IS FOR INTERM EROSION AND SEDMENT CONTROL, ONLY ALL EROSION CONTROL MEASURES SHALL COMPOSED TO FOR EROSION AND SEDMENTATIONS CONTROL, THE CALIFORNA STOMM WAITER GUALITY ASSOCIATION REST MANAGEMENT PRACTICES HANDSOOK FOR CONSTRUCTION, AND THE LOCAL GOVERNING AGENCY FOR THIS
- 3. OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING EROSION AND SEDMENT CONTROL MEASURES PRIOR TO, DURING, AND AFTER STOWN EVENTS, PERSON IN CHARGE OF MANIFAMINE REDSON CONTROL MEASURES SHOULD WATCH LOCAL MEATURE REPORTS AND ACT APPROPRIATELY TO MAKE SURE ALL NECESSARY MEASURES AND MEASURES.
- 4. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE STITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM, INCLUDING EXISTING DRAINAGE SMALES AND WATERCOURSES.
- CONSTRUCTION OPERATIONS SHALL BE CAPRED OUT IN SUCH A MANNER THAT EROSION AND WATER POLILITION WILL BE WINNZED. COMPULANCE WITH FEDERAL, STATE AND LOCAL LAWS CONCERNING POLILITION SHALL BE MAINTAINED AT ALL TIMES.
- CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED BY THE APPROPRIATE FIDURAL, STATE AND LOCAL AGENCY REQUIREMENTS.
- 8. ALL MATERIALS NECESSARY FOR THE APPROVED EROSION CONTROL MEASURES SHALL BE IN PLACE BY OCTOBER 15TH.
- EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON, OR FROM OCTOBER 15TH THROUGH APRIL 15TH, WHOSHOER IS LONGER.
- 11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND REPAIRING EROSION CONTROL SYSTEMS AFTER EACH STORM.
- ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL JURISDICTION'S ENGINEERING DEPARTMENT OR BUILDING OFFICIALS.
- 13. MEASURES SHALL BE TAKEN TO COLLECT OR CLEAN ANY ACCUMULATION OR DEPOST OF DRY, MUD. SAND, MODES, GRAVEL OR DEBRIS ON THE STORM DRAN SYSTEMS. IN REBOVAL OF A PROFESSION SHALL BE COME BY STREET SWEDPING OR HAND SWEDPING. WATER SHALL NOT BE USED TO WASH SEDIMENTS INTO PUBLIC OR PREVAILE DRANAME FACILITY.
- 14. EROSION CONTROL MEASURES SHALL BE ON-SITE FROM SEPTEMBER 15TH THRU APPIL 15TH.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON OR FROM OCTOBER 15 THRU APRIL 15, WHICHEVER IS GREATER.
- PLANS SHALL BE DESIGNED TO MEET C3 REQUIREMENTS OF THE NUNICIPAL STORMMATER REGIONAL PERMIT("MRP") NPDES PERMIT CAS 612008.
- 17. THE CONTRACTOR TO INPOES (NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM) BEST MANAGEMENT PRACTICES (BMP) FOR SEDMENTATION PREVENDION AND EROSION CONTROL TO PREVENT DELETERIUS MATERIALS OR POLLUTANTS FROM ENTERING THE TOWN OR COUNTY STORM DRAIN SYSTEMS.
- THE CONTRACTOR SHALL MAINTAIN ADALEDTS STREETS IN A NEAT, CLEAN DUST FIRE MAD SHAFFAY COCKING AT ALL MISS AND TO SHALL AT ALL MISS. SHE MAY CLEAN OF SHEET, WITE DUST AND OTHER MISSING ENHALL AT ALL THESE SHE CONTRACTOR BE RESPONSIBLE FOR CONTROLLED AT ALL THESE, THE CONTRACTOR BE RESPONSIBLE FOR CONTROLLED AT ALL THESE, THE CONTRACTOR BE RESPONSIBLE FOR CONTROLLED AT ALL THESE, THE CONTRACTOR BE RESPONSIBLE FOR CONTROLLED AND ALL THE CONTRACTOR SHEET OF ALL MAND SHALL BY D'ONT SHEET OF ALL MAND SHALL BY D'ONT SHEET OF SHEET OF ALL MAND SHALL BY ONT SHEET OF SHEET OF SHEET OF THE TON SHEET OF THE TON SHEET OF SHEET OF THE TON SH
- 20. SEDIENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE STE BY NEGOLE TRAPIC. HIS CONTRACTOR SHALL INSTALL AS TRABUZED CONSTRUCTION ENTRANCE PRIOR TO THE INSPECTION OF ANY WARK OWNER AND MANTAIN IT FOR THE DURATION OF THE CONSTRUCTION PROCESS SO AS TO NOT INNERT SEDIMENTS PROM BEING DEPOSITED INTO THE PUBLIC RIGHT-OF-MAT VINIT. THE COMPLETION OF ALL LANGSCAPING.
- 21. THE CONTRACTOR SHALL PROTECT DOWN SLOPE DRAINAGE COURSES, STREAMS AND STORM DRAINS WITH ROCK FILLED SAND BAGS, TOMPGRARY SWALES, SLT FENESS, AND EARTH PERMS IN CONJUNCTION OF ALL LANDSCAFFEN.
- 22. STOCKPILED MATERIALS SHALL BE COVERED WITH UNSULEEN OR A TARRAMUN UNIT. THE MATERIAL IS REMOVED FROM THE SITE, ANY THE MATERIAL BE ADDRESS OF THE MATERIAL GROUND COVER IS ESTABLISHED OR IT IS SEIDED OR FLANTED TO PROVIDE GROUND COVER PRICE TO THE FALL RAINY SEASON.
- 23. EXCESS OR WASTE CONCRETE MUST NOT BE WASHED INTO THE PUBLIC RIGHT-OF-WAYOR ANY OTHER DRAINAGE SYSTEM, PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
- 24. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED NOTO A COMPITED RECEIPTACLE TO PREVENT CONTAMINATION AND DISSPERSEL BY MANY.

EROSION CONTROL NOTES CONTINUED:

- 24. FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAINANTE THE SOL AND SURFACE MUSTES, ALL APPROVIDE STORAGE CONTAININGS AND TO BE PROTECTED FROM THE WEATHER, SPILLS MUST BE CIZAMED UP IMMEDIATELY AND DISPOSED OF IN A PROFUR MANNER, SPILLS MUST NOT BE WASDED INTO THE ORDANIAGE SYSTEM.
- 25. DUST CONTROL SHALL BE DONE BY WATERING AND AS OFTEN AS REQUIRED BY THE TOWN INSPECTOR.
- 26. SILT FENCE(S) AND/OR FREER ROLL(S) SHALL BE INSTALLED PRIOR TO SEPTEMBE 15TH AND SHALL REMAIN IN PLACE UNTIL THE LANDSCAPING GROUND COURT IS INSTALLED. CONTRACTOR SHALL CONTINUOUSLY MONTOR THESE MEASURES, FOLLOWING AND DURING ALL RAIN EVENTS, TO PUBLIC OWNED FACILITIES.

EROSION CONTROL MEASURES:

- THE FACULTIES SHOWN ON THIS PLAN ARE DESIGNED TO CONTROL EROSION AND SEDMENT DURING THE RAINY SEASON, OCTOBER 15TH TO APPLE, 15, THE PROPERTY OF THE PROPERTY OF
- STE CONDITIONS AT TIME OF PLACEMENT OF EROSION CONTROL MEASURES
 WILL WARY. APPROPRIATE ACTION INCLUDING TEMPORARY SWALES, BLETS,
 PREVENT EROSION AND SEMBLATION FROM LIAMNG STE. EROSION,
 CONTROL MEASURES SHALE BY ADJUSTED AS THE CONDITIONS CHANGE AND
 THE NEED OF CONSTRUCTION SHIFT.
- 3. CONSTRUCTION ENTRACES SHALL SE RETALLES PRISE TO CAMERICADION OF READOR. ALL CONSTRUCTION TREFFIC ENTRACE ONTO THE CAMERICAN CONTRACTOR SHALL CONSTRUCTION TREFFIC ENTRACES.

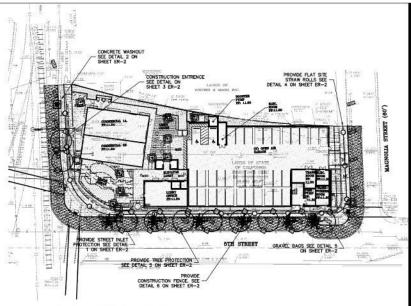
 CONTRACTOR SHALL MANIFACT STREATED DISTRICTS AT EACH VISIGLE TREFFIC SHALL BE SHAVED TO CONTRACTOR OF THE CONTRACTOR SHALL SHAVED SHAVED SHAVED THE CONTRACTOR CONTRACTOR OF THE CONTRACTOR CAMERIC.
- ALL DROSED SUPES THAT ARE NOT VEGETATED SHALL BE HYDROSEDED. IF HYDROSEDED SUPES THAT ARE NOT VEGETATED SHALL BE HYDROSEDED. IF HYDROSEDED SUPES THAT DROSE HYDROSEDED SHALL BE HAVE SUPES TO SUPES. THE HYDROSEDED SUPES TO SUPES. AND A THE SUPES AND A THE SUPE AND A THE SUPES AND A THE SUPE AND
- 5. INLET PROTECTION SHALL BE INSTALLED AT OPEN INLETS TO PREVENT SEDIMENT FROM ENTIRENO THE STORM DRAIN SYSTEM. INLETS NOT USED IN CONLINCTION WITH DEBOOK CONTROL ARE TO BE ELECKED TO PREVENT ENTRY OF SEDIMENT, MAINLAIN INLET PROTECTION SHALL CONSIST OF A ROCK SACKS OR AS SHOWN ON THIS PLAN.
- 6. THIS ENGINE AND SERVENT CONTROL FLAM MAY FOT COMES ALL. THE THE CONSTRUCTION OF THE CONTROL OF THE MANIFORM TO FELL CONSTRUCTION AND ADDITIONS MAY BE MADE TO THIS FLAM IN THE FELL A. REPRESENTATIVE OF LEA & BRAZE DIMENSIONAL CONTRACTOR IS RESPONDED. TO NOTIFY LEA & BRAZE DIMENSIONAL CONTRACTOR IS RESPONDED. TO NOTIFY LEA & BRAZE DIMENSIONAL AND THE GOVERNOR AGENCY OF MY CHANGES.
- THE EROSION CONTROL MEASURES SHALL CONFORM TO THE LOCAL JURISDICTION'S STANDARDS AND THE APPROVAL OF THE LOCAL JURISDICTION'S ENGINEERING DEPARTMENT.
- 8. STRAW ROLLS SHALL BE PLACED AT THE TOE OF SLOPES AND ALONG THE DOWN SLOPE PERMITTER OF THE PROJECT. THEY SHALL BE PLACED AT 25 FOOT THISTMAN ON GRADED SAMES, TAXABORN SHALL RUN WITH THE WITH THE PROJECT OF THE PROJECT OF THE TOTAL SHALL REFER TO MANUFACTURES SPECIFICATIONS FOR PLACEMENT AND INSTITULATION INSTRUCTIONS.

REFERENCES:

- CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR ENGSIGN AND SEDMENTATION CONTROL
- 2. CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION

PERIODIC MAINTENANCE:

- 1. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:
- A DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION SHALL BE REPARED AT THE END OF EACH WORKING DAY.
- B. SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS NEEDED.
- C. SEDIMENT TRAPS, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS MADE AS NEEDED.
- D. SEDMENT SHALL BE REMOVED AND SEDMENT TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDMENT HAS ACCUMULATED TO A DEPTH OF 1° FOOT.
- E. SEDIMENT REMOVED FROM TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. F. RILLS AND GULLIES MUST BE REPARED.
- GRAVEL BAG INLET PROTECTION SHALL BE CLEANED OUT WHENEVER SEDIMENT DEPTH IS ONE HALF THE HEIGHT OF ONE GRAVEL BAG.
- STRAW ROLLS SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHED HALF THE HEIGHT OF THE ROLL.
- SLT FENCE SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDMENT DEPTH REACHES ONE FOOT IN FIDERT.
- CONSTRUCTION ENTRANCE SHALL BE REGRAVELED AS NECESSARY FOLLOWING SLT/SOIL BUILDUP.
- ANY OTHER EROSION CONTROL MEASURES SHOULD BE CHECKED AT REGULAR INTERVALS TO ASSURE PROPER FUNCTION



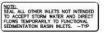
EROSION CONTROL LEGEND

CRAVEL BAG

INLET PROTECTION -0-STRAW ROLL CONSTRUCTION









SCALE: 1" = 30"





PLOT DATE 08-24-18

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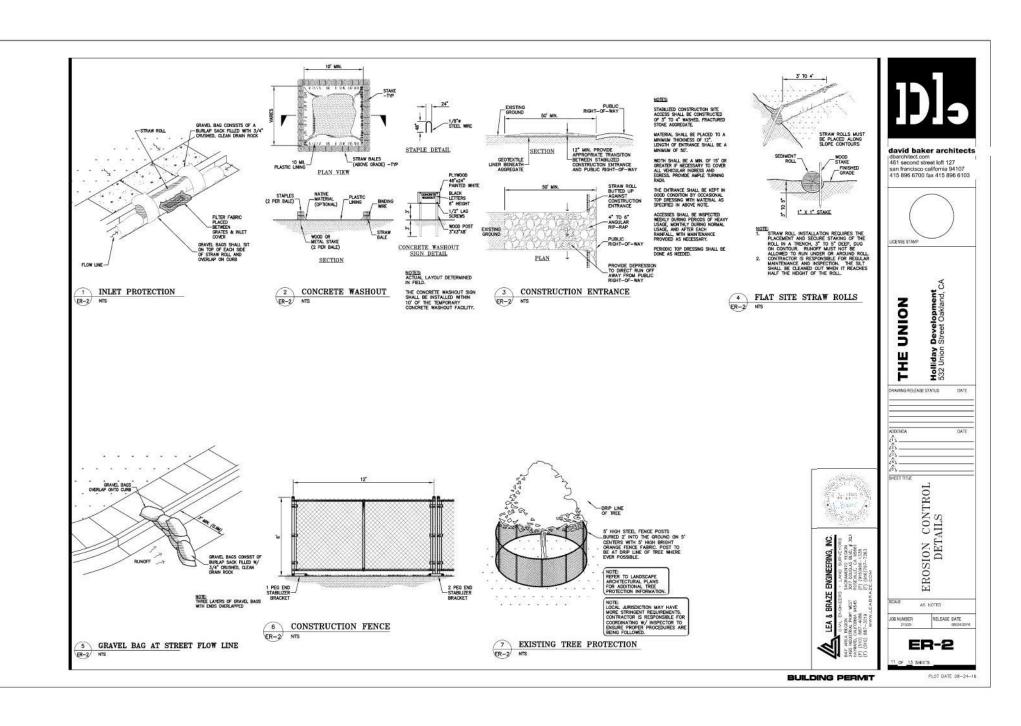
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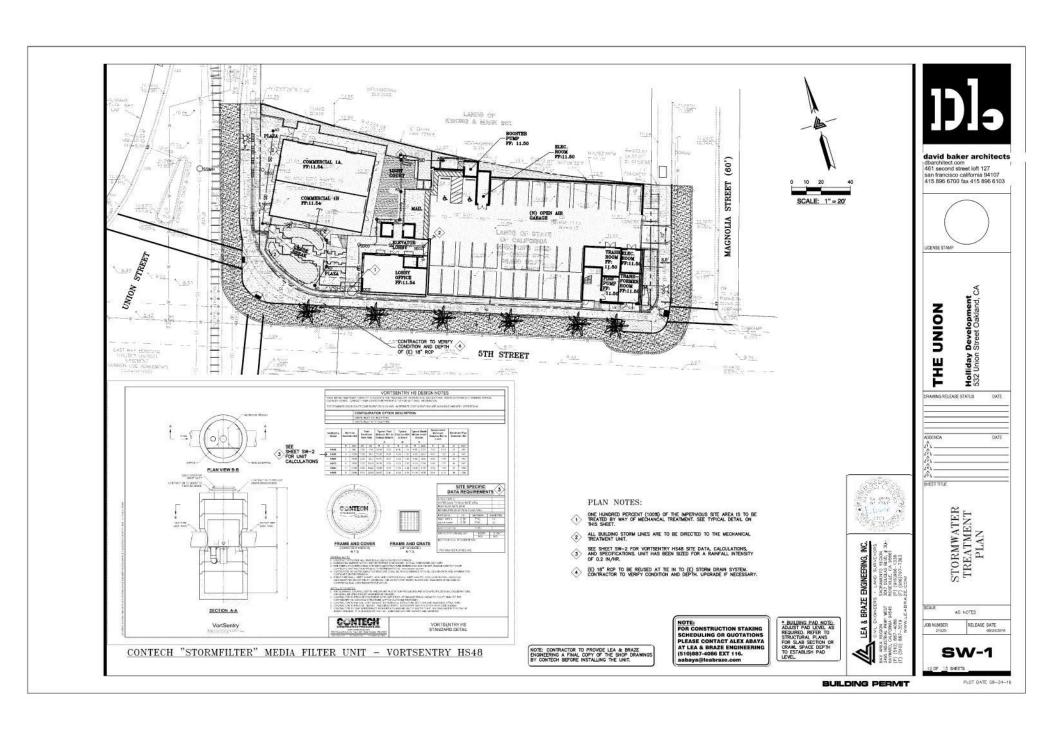
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CUNTECH

PART 1 - SCHERAL

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12 QUALITY CONTROL INSPECTION

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1.3 SUBMITTALS

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- 11 MATERIALS AND DESIGN
- A. Carector for precord occurrences incorrent opinions shall continue to AETU.

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- Socions shall have being a and groose or stop-lest pints with a butyl resolu-scolars contaming to ASTM C 090.
- 3. Comment shall resolve the \$4579 C 183

CONTECH

- All rections shaft be pured by an approved method. Sections shaft not be skipped until the operants has stormed a commission stempth of 4,000 ps (30 MPs) or other designate suitable handing strangth.
- All observed commonweats shall be PVC per ASTM D1785, and alteriology 5052-HB2 page by apprehensive with ASTM B 200.
- C. Shock an exacting your to in AST in manifold flame to grade shall confident in AST VIC.20 or AST VIC.10 and shall be installed in commence with all local recommend.
- Catting for married frames and covers after be in accordance with AGTB A44.
 Sit and ARB-RD M101. The resided frame and cover shall be equivalent to Concrete Founds Pattern \$1000A.

holds made in the immedia surfaces for blanding or other purposes shall be purgate with a morthmax group or by using group in continuation with constraint plugs.

END OF SCOTION

david baker architects dbarchitect.com 461 second street loft 127

san francisco california 94107 415 896 6700 fax 415 896 6103



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STORMWATER
TREATMENT PLAN
SPECS AND
CALCULATIONS

SCALE AS NOTED RELEASE DATE

RECION 84/6, # 95661 1338 7363 ENGINEERING, II - MANGER BRAZE WEST M545 LEA & PROF 2019 REGIL CAUFT 887



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SW-2

CONTECH

PART 2 - PRODUCTS

- 3.1 MATERIALS AND DRAWN Gorconic for preced observation featured systems also conferred a ASTM CBS7 and C476 and made the following additional requestions:
 - In all capes the woll-frieldness shall be no loss than the reminers thickness records any to sustain MECS-44 (MSIIII) locating respectments as determined by a Location Professional Engineer.
 - Sections and have longue and grove or ship tra joints with a bubyl meets location confirming to ASTMIC state.

 - A6-veneral components and the PyC on ASTRI D1785, and avariance also 8000 H10 policy or a condense with ASTRI 8-286.
- C. Think or measury used to study the resolute frame to grade what conform to AGTIS C 32 or AGTIM C 139 and depicte immake in conformance with enloced.
- D. Copping for marked tomas concess shall be in accordance with sold self-cia, 388 was AAD (TO 1916). The markeds have and solve shall be appropried to Compital Foundry Publish 970050.
- E. A Statem separation of Renerview B ASTM C 990 station attacking aftering

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CONTECH

13 MANUFACTURER

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Contacts Singuisranted Sabultions 9525 Contro Pointe Dr., Sudio 869 West Chastas, Dit 45060 (800) 239-1122

PART 2 EXECUTION 3.1 INSTALLATION

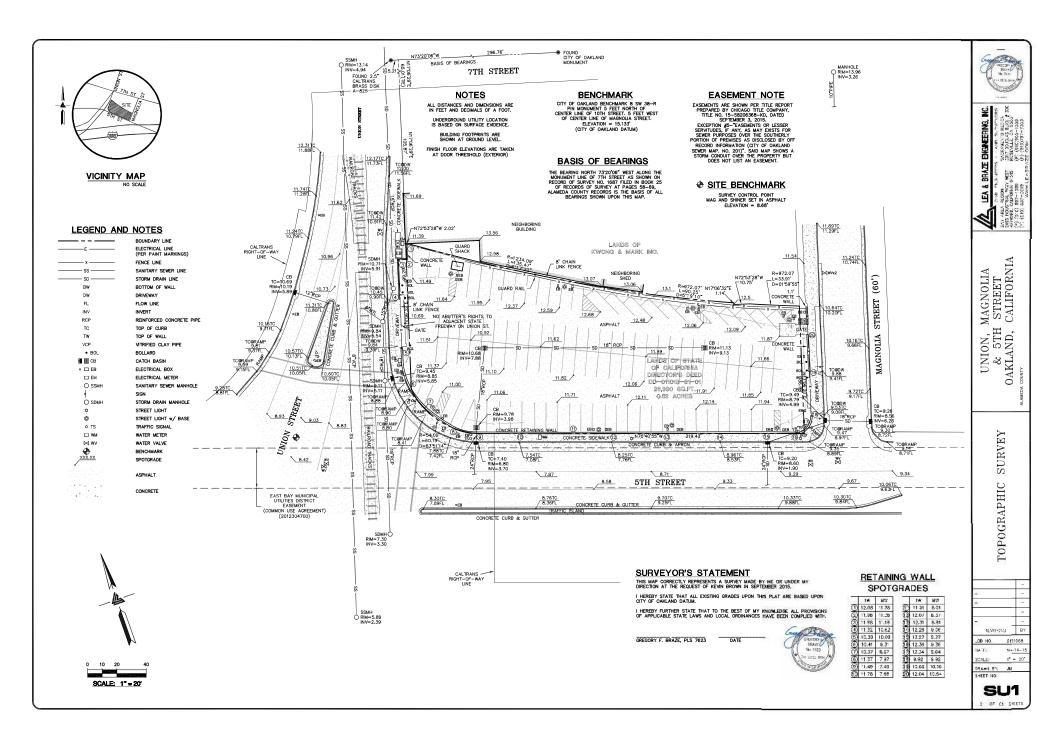
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- recommendation from the contraction of a transverse contraction from the contraction of one recommendation. If it may define confirmation the contraction of one recommendation of the contraction of the c
- Prox to setting videocured socions place tributed updated in conformance with ASTMIC 500-31 along the construction part to the section that is alonedly at the conformal part of the conformal part to the section of the section of the conformal part of

NOTE: CONTRACTOR TO PROVIDE LEA & BRAZE ENGINEERING A FINAL COPY OF THE SHOP DRAWING BY CONTECH BEFORE INSTALLING THE UNIT.

NOTE: FOR CONSTRUCTION STAKING SCHEDULING OR QUOTATIONS PLEASE CONTACT ALEX ABAYA AT LEA & BRAZE ENGINEERING (510)887-4086 EXT 116.

BUILDING PAD NOTE:
ADJUST PAD LEVEL AS
REQUIRED. REFER TO
STRUCTURAL PLANS
FOR SLAB SECTION OR
CRAW, SPACE DEPTH
TO ESTABLISH PAD
LEVEL.



STREET LEVEL PLA	NTING S	SCHEDULE					
SYMBOL	ABBREV.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	WATER	NOTES
TREES							<u> </u>
••	ACE PAL	ACER PALMATUM	JAPANESE MAPLE	36" BOX		MEDIUM	
••	ACE 'SAN'	ACER PALMATUM 'SANGO KAKU'	JAPANESE MAPLE	24" BOX		MEDIUM	
	ACE RUB	ACER RUBRUM 'ARMSTRONG'	UPRIGHT RED MAPLE	36" BOX		MEDIUM	
• So	BRU CAN	BRUGMANSIA X CANDIDA	ANGEL'S TRUMPET			MEDIUM	
	COR AUS	CORDYLINE AUSTRALIS 'RED STAR'	RED STAR CORDYLINE			LOW	
•	MAY BOR	MAYTENUS BOARIA	MAYTEN			MEDIUM	
	MUS BAS	MUSA BASJOO	JAPANESE FIBER BANANA			HIGH	
	WAS ROB	WASHINGTONIA ROBUSTA	MEXICAN FAN PALM			LOW	
SHRUBS, PERENNIALS AND V	VINES						
	ACE 'ORE'	ACER PALMATUM 'ORANGEOLA'	JAPANESE MAPLE			MEDIUM	
	ANE HYB	ANEMONE X HYBRIDA	JAPANESE ANEMONE			MEDIUM	
\bigcirc	ANI FLA	ANIGOZANTHUS FLAVIDUS	KANGAROO PAW			LOW	
	BAM MUL	BAMBUSA MULTIPLEX 'ALPHONSE KARR'	ALPHONSE KARR BAMBOO			LOW	
	DOD VIS	DODONAEA VISCOSA 'PURPUREA'	PURPLE HOPSEED BUSH			LOW	
	FIC PUM	FICUS PUMILA	CREEPING FIG			MEDIUM	
♠	HEU SAN	HEUCHERA SANGUINEA	CORAL BELLS			MEDIUM	
	HEU PAL	'SPLENDENS' HEUCHERA 'PALACE PURPLE'	PALACE PURPLE CORAL BELLS			MEDIUM	

STREET LEVEL PLANTING SCHEDULE, CONTINUED

SYMBOL	ABBREV.	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	WATER	NOTES
SHRUBS, PERENNIALS AND V				0.22		****	
\odot	LIR MUS	LIRIOPE MUSCARI	CREEPING LILY TURF			MEDIUM	
	MUH CAP	MUHLENBERGIA CAPILLARIS	PINK MUHLY			LOW	
	NEP COR	NEPHROLEPIS CORDIFOLIA	SOUTHERN SWORDFERN			MEDIUM	
lacktriangle	LOT BER	LOTUS BERTHELOTII	TRAILING LOTUS			LOW	
	OLE 'MON'	OLEA EUROPEA 'MONTRA'	LITTLE OLLIE DWARF OLIVE			VERY LOW	
	POL MUN	POLYSTICHUM MUNITUM	WESTERN SWORDFERN			MEDIUM	
◆◆	SAL MIC	SALVIA MICROPHYLLA 'HOT LIPS'	HOT LIPS SAGE			LOW	
×	SED MOR	SEDUM MORGANIANUM	BURRO TAIL			LOW	
	THY 'ARG'	THYMUS VULGARIS 'ARGENTIUM'	VARIEGATED SILVER THYME			LOW	
	TRA JAS	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE			MEDIUM	
	WOO FIM	WOODWARDIA FIMBRIATA	GIANT CHAIN FERN			MEDIUM	

2ND LEVEL PLANTING SCHEDULE

SYMBOL	ABBREV. SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	WATER NOTES
SHRUBS, F	PERENNIALS AND VINES				
	COR GLA CORREA GLABRA 'COLIBAN	COLIBAN RIVER ROCK			LOW
(+)	RIVER'	FUCHSIA			
Θ	SED SAR SEDUM SARMENTOSUM	CREEPING STONE CROP			LOW
	TRA JAS TRACHELOSPERMUM	STAR JASMINE			MODERATE
•	JASMINOIDES				

PLANTING NOTES

- 1. All trees shall be of uniform height and form for the species and container size.
- 2. Final placement of plants shall be reviewed at the site by the Landscape Architect.
- 3. Install all planting after irrigation system is completed, fully operational, and has been reviewed by the Landscape Architect.
- 4. Mulch all newly planted areas with 3" of specified mulch.
- 5. Remove nursery stakes and tags from trees and shrubs at time of planting.
- 6. The contractor is responsible for taking soil samples of the topsoil to be used as planting medium for the project. This includes site soil and imported topsoils. Lab test results and recommendations to be approved by Landscape Architect prior to soil delivery to site. The Landscape Architect may request re-testing of delivered import topsoil to verify its conformance to the approved sample. Refer to specifications for soil testing methodology.
- 7. Plant schedule is subject to change based on plant availability and existing soil conditions.
- 8. Listed water requirements are based on water use classification of landscape species as per WUCOLS III, August 2000, and EBMUD Plants and Landscapes for summer-dry climates of the San Francisco Bay Region, 2004)
- 11. CONTRACTOR TO PLACE A MARKER GEOTEXTILE FABRIC BENEATH THE LANDSCAPE AREAS FOLLOWING OVER-EXCAVATION AND PRIOR TO IMPORT BACKFILL PLACEMENT. THIS WILL PROVIDE A BARRIER FOR FUTURE MAINTENANCE WORKERS TO INDICATE THAT SOIL BELOW THE FABRIC, IF REMOVED, SHOULD BE MANAGED PER THE SITE MANAGEMENT PLAN.

david baker architects dbarchitect.com 461 second street loft 127

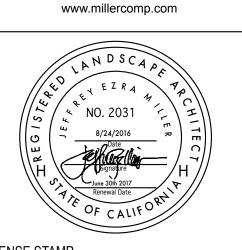
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HOLLIDAY DEVELOPMENT

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landscape architects

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SAN FRANCISCO, CA 94103

415.252.7288



LICENSE STAMP

NON D

532 Union Street Oakland CA 94607

DRAWING RELEASE STATUS

BUILDING PERMIT

OFF-SITE DRAWING

PRICING SET

DATE

08.24.2016

12.01.2016

02.21.2017

ADDENDA

Description

PLANTING SCHEDULE

0415

APN NUMBER
004-0049-004-00

DRAWN BY

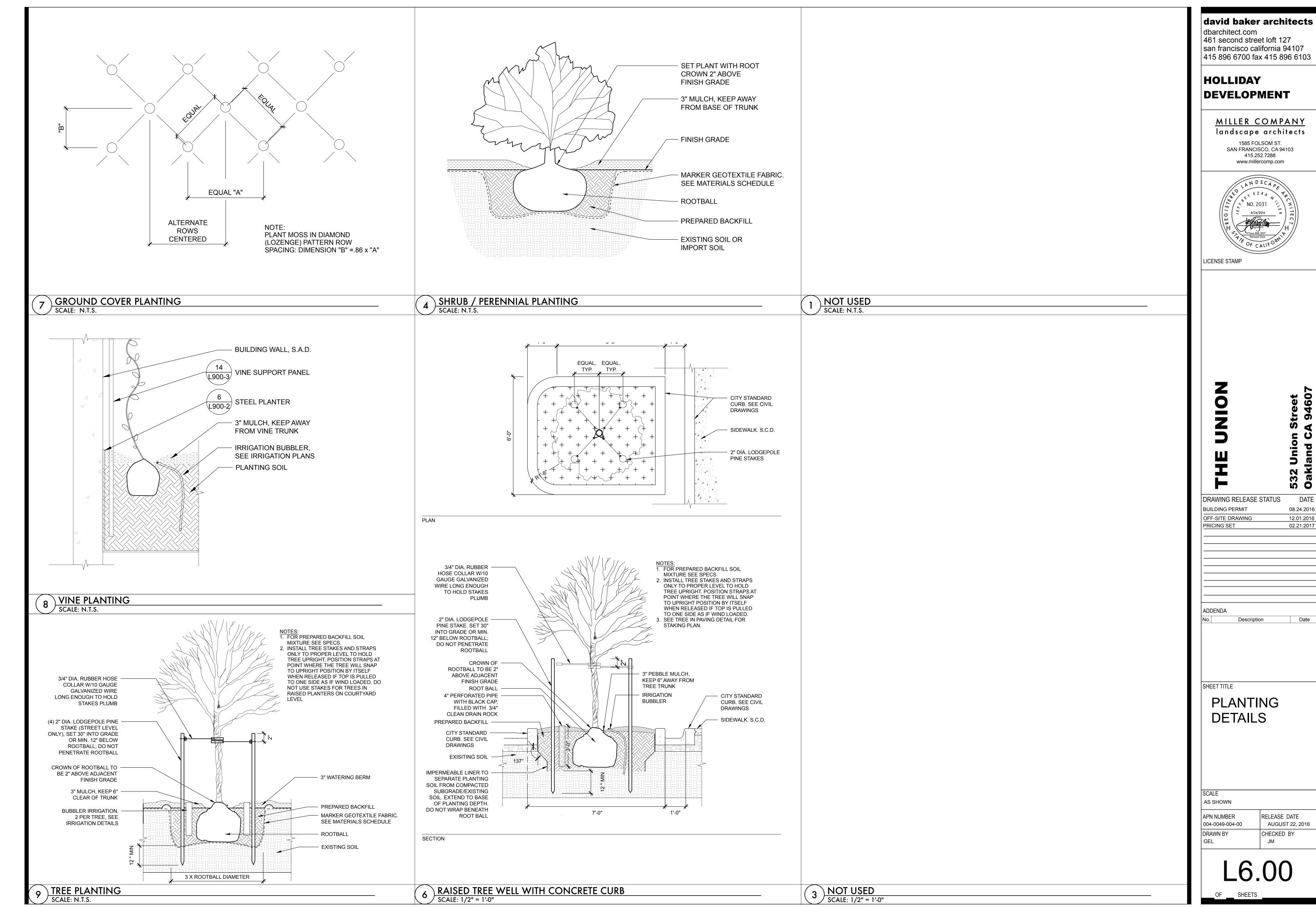
CEL

RELEASE DATE
AUGUST 24, 2016

CHECKED BY

L3.00

OF ___ SHEETS



MILLER COMPANY landscape architects



DATE 08.24.2016 12.01.2016 02.21.2017



APPENDIX B CALCULATIONS

TABLE B-1 WORKER AND COMMUNITY PROTECTION ACTION LEVELS

5th and Magnolia Streets Oakland, California

	Soil RME	Threshold Limits			Action	MiniRam Real Time Air Measurements	
Chemicals of Concern	2011 11112	Cal OSHA	NAAQS ^a	CAAQS ^b	Level	Dust	Dust Action
		PEL		CHIQD		Threshold	Level
	(mg/kg)	(mg/m^3)	(mg/m^3)	(mg/m^3)	(mg/m^3)	(mg/m^3)	(mg/m^3)
Lead (Max Concentration)	2,180	0.05			0.03	23	11.5
Respirable Dust (Worker)		5			2.5	5.0	2.5
Respirable Dust (Perimeter)			0.15	0.05	0.05	0.05	0.05

Notes:

mg/kg: milligrams per kilogram mg/m³: milligrams per cubic meter

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit

TWA: Time weighted average for an 8-hour work shift, 40-hour work week

a: National Ambient Air Quality Standards (NAAQS) is $0.15~\text{mg/m}^3$ for a 24-hour period; and $0.05~\text{mg/m}^3$ for an annual arithmetic mean

b: California Ambient Air Quality Standards (CAAQS) is 0.05 mg/m^3 for a 24-hour period and 0.02 mg/m^3 for an annual arithmetic mean.



APPENDIX C SPECIFICATIONS







Mirafi[®] Orange Delineation Nonwoven Geotextile for Visual Barrier, Soil Separation and Drainage

TenCate™ develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

The Difference Mirafi® Orange Nonwoven Geotextiles Make:

- Utility Alert. Mirafi® delineation geotextiles are a visual dig barrier designed to be placed above underground utilities.
- Contaminated Soils. Mirafi® delineation geotextiles separate contaminated soils from clean soils.
- Archeological Sites. Mirafi® delineation geotextiles assist in the long-term protection of historical sites.

APPLICATIONS

Mirafi® nonwoven geotextiles are used in a wide variety of applications in the environmental and general civil markets. These include separation, filtration and protection applications.

Mirafi® delineation geotextiles are is used in many critical subsurface systems. The use of

this orange delineation fabric allows for safe excavations where utilities or other sensitive structures may be buried. The highly visible orange nonwoven geotextile serves as a warning to construction workers when the excavation reaches a buried structure.

Excavation near all utilities, (gas, electric, water, Cable TV and telephone) is always a sensitive operation. The use of Mirafi® delineation geotextile is a low cost-effective method of protection. In addition, lining trench's with a geotextile keeps the selected and costly backfill material separated from the native subgrade.

Construction in areas where contaminated soils exist poses risks when trenches or deep footings need to be excavated. These risks are minimized when the Mirafi® delineation geotextile is placed on the contaminated soils before the capping of these areas occurs. The geotextile limits particle movement between the clean new soil and the contaminated substrate. The Mirafi® delineation geotextile offers a visual barrier to future excavations of the contaminated hazard below.



Mirafi® Orange Delineation Geotextiles

Federal and State laws require that archeological sites must be protected from adverse impacts caused by engineering projects. Many archeological sites throughout the world are left in place to protect them. In some cases, after discovery, they are buried. Sites can be protected through burial below an engineered cover, if the engineering project does not require excavation. The installation of Mirafi® delineation geotextile before the new soil is placed will aide in the long term protection of these archeological sites.

* These guidelines serve as a general basis for installation. Detailed instructions are available from your TenCate™ representative.







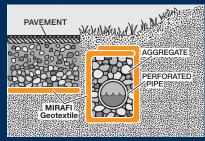
Mirafi® Orange Delineation Nonwoven Geotextiles

for Visual Barrier, Soil Separation and Drainage

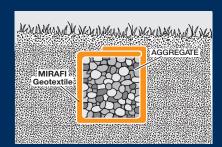
Property / Test Method	Units	140NL	160N	180N	
MECHANICAL PROPERTIES					
Grab Tensile Strength ASTM D4632					
Strength @ Ultimate	lbs (N)	100 (445)	175 (779)	240 (1068)	
Elongation @ Ultimate	%	75	75	70	
Trapezoidal Tear Strength	lbs	50	85	90	
ASTM D4533	(N)	(223)	(378)	(400)	
CBR Puncture Strength	lbs	310	480	630	
ASTM D6241 UV Resistance after 500 hrs.	(N)	(1380) 70	(2136) 80	(2802) 80	
ASTM D4355	% strength	70	00	00	
HYDRAULIC PROPERTIES					
Apparent Opening Size (AOS)	US Sieve	70	100	100	
ASTM D4751 Permittivity	mm sec ⁻¹	0.212 2.4	0.15 1.5	0.15 1.5	
•	260	2.4	1.0	1.0	
ASTM D4491					
Flow Rate ASTM D4491	gal/min/ft² (l/min/m²)	175 (7130)	105 (4278)	95 (3870)	
Packaging					
Roll Width	ft (m)	15.0 (4.5)	15.0 (4.5)	15.0 (4.5)	
Roll Length	ft (m)	360 (110)	300 (91)	300 (91)	
Est. Gross Weight	lbs (kg)	143 (165)	215 (97)	265 (120)	
Area	yd² (m²)	600 (502)	500 (418)	500 (418)	

^{*}NOTE: Mechanical Properties and Hydraulic Properties shown are Typical Value. Apparent Opening Size (AOS) properties shown are Maximum Average Roll Values. (Values and methods could change without notice)

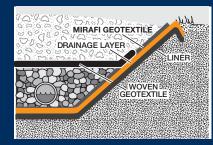
Mirafi® Orange Delineation Geotextiles



Cut-off/Inceptor Drain Along a Roadway Or Another Critical Struction



French Drain Without Pipe



Liner Protection Within a Landfill

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PDS.NLO.0911

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GEOVENTTM

ACTIVE/PASSIVE GAS VENTING SYSTEM

DESCRIPTION

GEOVENTTM consists of a three-dimensional vent core that is wrapped in a non-woven, needle-punched filter fabric.

GEOVENT End Outlets are available for use in conjunction with GEOVENT active/passive gas venting systems.

APPLICATION

GEOVENT™ is designed for use in the following application:

• An active or passive venting when used with CETCO vapor intrusion mitigation systems.

BENEFITS

- Installed directly on subgrade eliminating trenching and potential interference or damage to existing underground utilities
- Placed in closer proximity to the vapor intrusion barrier allowing for more effective venting of any accumulated gas
- Greater opening area per lineal foot of pipe and integral filter fabric allows for higher ventilation efficiency



GEOVENTTM allows for ease of installation directly on the subgrade, eliminating the need for costly and labor-intensive trenching.



GEOVENTTM allows for ease of installation directly on the subgrade, eliminating the need for costly and labor-intensive trenching.

TESTING DATA

PHYSICAL PROPERTIES					
CORE PROPERTY	TEST METHOD	RESULT			
Compressive Strength	ASTM D 1621	8,500 - 11,000 psf (407 - 527 kN/m²)			
Thickness	ASTM D 1777	1.0 in. (2.54 cm)			
Flow Rate (Hydraulic gradient = .1)	ASTM D 4716	30 gpm/ft width (372 lpm/m)			

FABRIC PROPERTY	TEST METHOD	RESULT
A.O.S.	ASTM D 4751	70 US Sieve (0.212 mm)
Grab Tensile Strength	ASTM D 4632	100 lbs. (0.45 kN)
CBR Puncture Strength	ASTM D 6241	250 lbs. (1.11 kN)
Flow Rate	ASTM D 4491	140 gpm/ft² (5,704 lpm/m²)

PACKAGING

GEOVENT™ is available in the following packaging option:

• 1 ft. x 165 ft. (0.3 m x 50 m) Rolls

North America: $847.851.1800 \mid 800.527.9948 \mid www.CETCO.com$

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UPDATED: FEBRUARY 2014

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