County of Santa Cruz

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR
www.sccoplanning.com

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

NOTICE OF PUBLIC REVIEW AND COMMENT PERIOD

Pursuant to the California Environmental Quality Act, the following project has been reviewed by the County Environmental Coordinator to determine if it has a potential to create significant impacts to the environment and, if so, how such impacts could be solved. A Negative Declaration is prepared in cases where the project is determined not to have any significant environmental impacts. Either a Mitigated Negative Declaration or Environmental Impact Report (EIR) is prepared for projects that may result in a significant impact to the environment.

Public review periods are provided for these Environmental Determinations according to the requirements of the County Environmental Review Guidelines. The environmental document is available for review at the County Planning Department located at 701 Ocean Street, in Santa Cruz. You may also view the environmental document on the web at www.sccoplanning.com under the Planning Department menu. If you have questions or comments about this Notice of Intent, please contact Todd Sexauer of the Environmental Review staff at (831) 454-3511.

The County of Santa Cruz does not discriminate on the basis of disability, and no person shall, by reason of a disability, be denied the benefits of its services, programs or activities. If you require special assistance in order to review this information, please contact Bernice Shawver at (831) 454-3137 to make arrangements.

PROJECT: DISCRETION BREWING

APP #: 161034

APN(S): 025-161-06

PROJECT DESCRIPTION: This is a proposal to demolish two of the three existing buildings and construct a 17,050 square foot brewery and related improvements such as a parking lot and signs. The brewery would have no public tasting. Requires a Development Permit and a Grading Permit.

PROJECT LOCATION: The proposed project is located on the west side of Chanticleer Avenue north of Highway 1 and within the community of Live Oak in the unincorporated portion of Santa Cruz County. Santa Cruz County is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

EXISTING ZONE DISTRICT: C-4
APPLICANT: David Rhodes, MADI Group, Inc.
OWNER: Margaret Kaysen Doerksen, et.al.
PROJECT PLANNER: Annette Olson
EMAIL: Annette.Olson@santacruzcounty.us
ACTION: Negative Declaration with Mitigations
REVIEW PERIOD: March 24, 2017 through April 12, 2017

This project will be considered at a public hearing by the Zoning Administrator. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

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MITIGATED NEGATIVE DECLARATION

Project: Discretion Brewing **APN(S): 025-161-06**

Project Description: This is a proposal to demolish two of the three existing buildings and construct a 17,050 square foot brewery and related improvements such as a parking lot and signs. The brewery would have no public tasting. Requires a Development Permit and a Grading Permit.

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Owner: Margaret Kaysen Doerksen, et.al.

Applicant: David Rhodes, MADI Group, Inc.

Staff Planner: Annette Olson, (831) 454-3134

Email: Annette. Olson@santacruzcounty.us

This project will be considered at a public hearing by the Planning Commission. The time, date and location have not been set. When scheduling does occur, these items will be included in all public hearing notices for the project.

California Environmental Quality Act Mitigated Negative Declaration Findings:

Find, that this Mitigated Negative Declaration reflects the decision-making body's independent judgment and analysis, and; that the decision-making body has reviewed and considered the information contained in this Mitigated Negative Declaration and the comments received during the public review period; and, that revisions in the project plans or proposals made by or agreed to by the project applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and, on the basis of the whole record before the decision-making body (including this Mitigated Negative Declaration) that there is no substantial evidence that the project as revised will have a significant effect on the environment. The expected environmental impacts of the project are documented in the attached Initial Study on file with the County of Santa Cruz Clerk of the Board located at 701 Ocean Street, 5th Floor, Santa Cruz, California.

Review Period Ends: April 12, 2017

Date:_____

_____
TODD SEXAUER, Environmental Coordinator
(831) 454-3511

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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
INITIAL STUDY/ENVIRONMENTAL CHECKLIST

Date: January 9, 2017 **Application Number:** 161034

Project Name: Discretion Brewing **Staff Planner:** Annette Olson

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: David Rhodes, MADI Group, Inc. **APN(s):** 025-161-06

OWNER: Doerksen **SUPERVISORAL DISTRICT:** First

PROJECT LOCATION: The proposed project is located at 2725 Chanticleer Avenue north of Highway 1 and within the community of Live Oak in the unincorporated portion of Santa Cruz County. Santa Cruz County is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

SUMMARY PROJECT DESCRIPTION:

This is a proposal to demolish two of the three existing buildings and construct a 17,050 square foot brewery and related improvements such as a parking lot and signs. The brewery would have no public tasting.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: *All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.*

- ☐ Aesthetics and Visual Resources
- ☐ Agriculture and Forestry Resources
- ☐ Air Quality
- ☐ Biological Resources
- ☐ Cultural Resources
- ☐ Geology and Soils
- ☐ Greenhouse Gas Emissions
- ☐ Hazards and Hazardous Materials
- ☐ Hydrology/Water Supply/Water Quality
- ☐ Land Use and Planning
- ☐ Mineral Resources
- ☒ Noise
- ☐ Population and Housing
- ☐ Public Services
- ☐ Recreation
- ☐ Transportation/Traffic
- ☐ Utilities and Service Systems
- ☐ Tribal Cultural Resources
- ☒ Mandatory Findings of Significance

DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- ☐ General Plan Amendment
- ☐ Land Division
- ☐ Rezoning
- ☒ Development Permit
- ☐ Sewer Connection Permit
- ☐ Coastal Development Permit
- ☒ Grading Permit
- ☐ Riparian Exception
- ☐ LAFCO Annexation
- ☐ Other:

OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (e.g., permits, financing approval, or participation agreement):

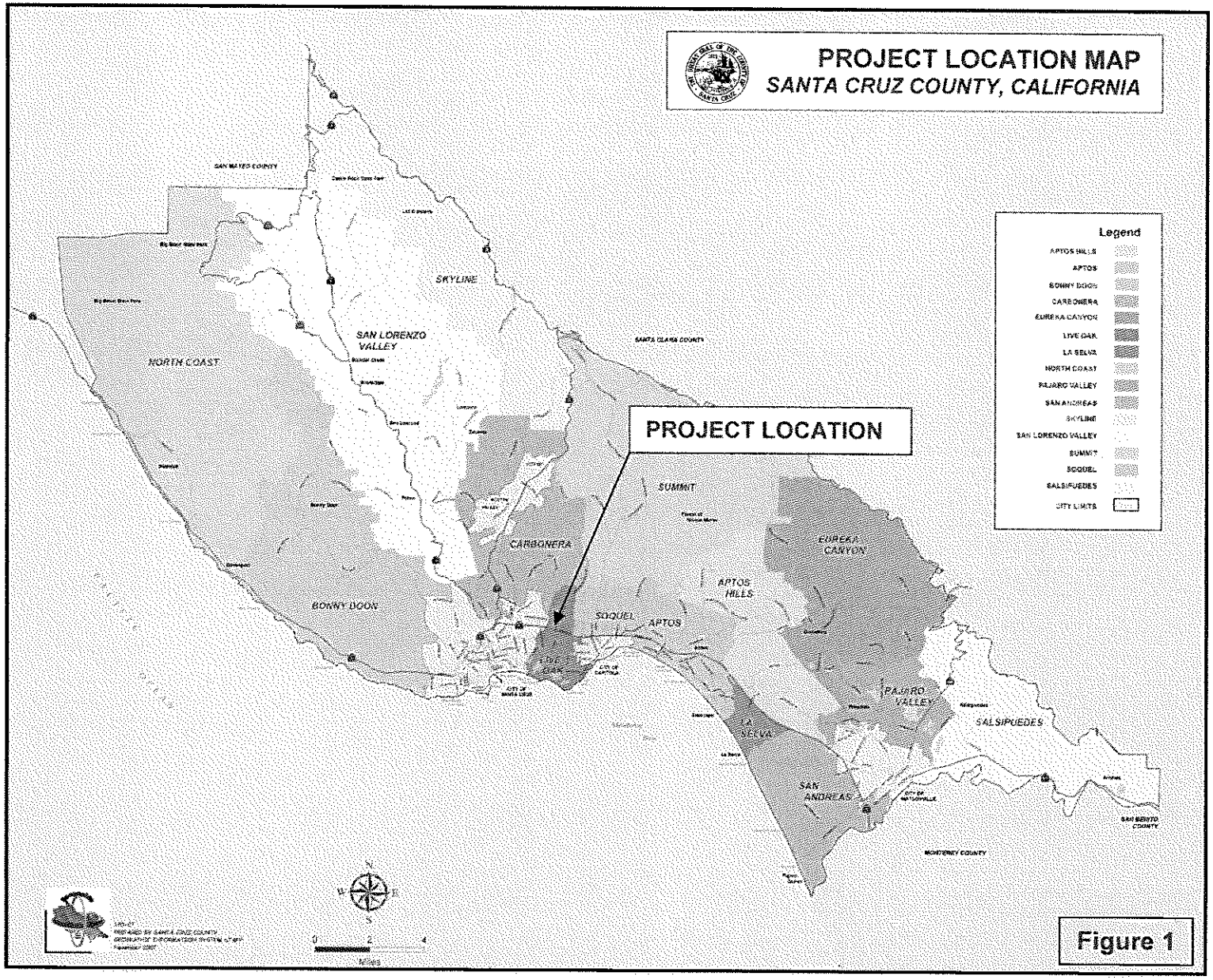
Permit Type/Action	Agency
SWPPP	Regional Water Quality Control Board

DETERMINATION:

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

TODD SEXAUER, Environmental Coordinator _____ Date


PROJECT LOCATION MAP
SANTA CRUZ COUNTY, CALIFORNIA
PROJECT LOCATION
Legend
APTOS HILLS
APTOS
BONNY DOON
CARBONERA
EUREKA CANYON
LIVE OAK
LA SELVA
NORTH COAST
PAJARO VALLEY
SAN ANDREAS
SKYLINE
SAN LORENZO VALLEY
SUMMIT
SOQUEL
SALSIPUEDES
CITY LIMITS
SKYLINE
SAN LORENZO VALLEY
NORTH COAST
SUMMIT
CARBONERA
EUREKA CANYON
APTOS HILLS
BONNY DOON
SOQUEL
APTOS
LIVE OAK
PAJARO VALLEY
LA SELVA
SALSIPUEDES
SAN ANDREAS
SANTA CLARA COUNTY
MONTEREY COUNTY
SAN BENITO COUNTY
Miles
Figure 1

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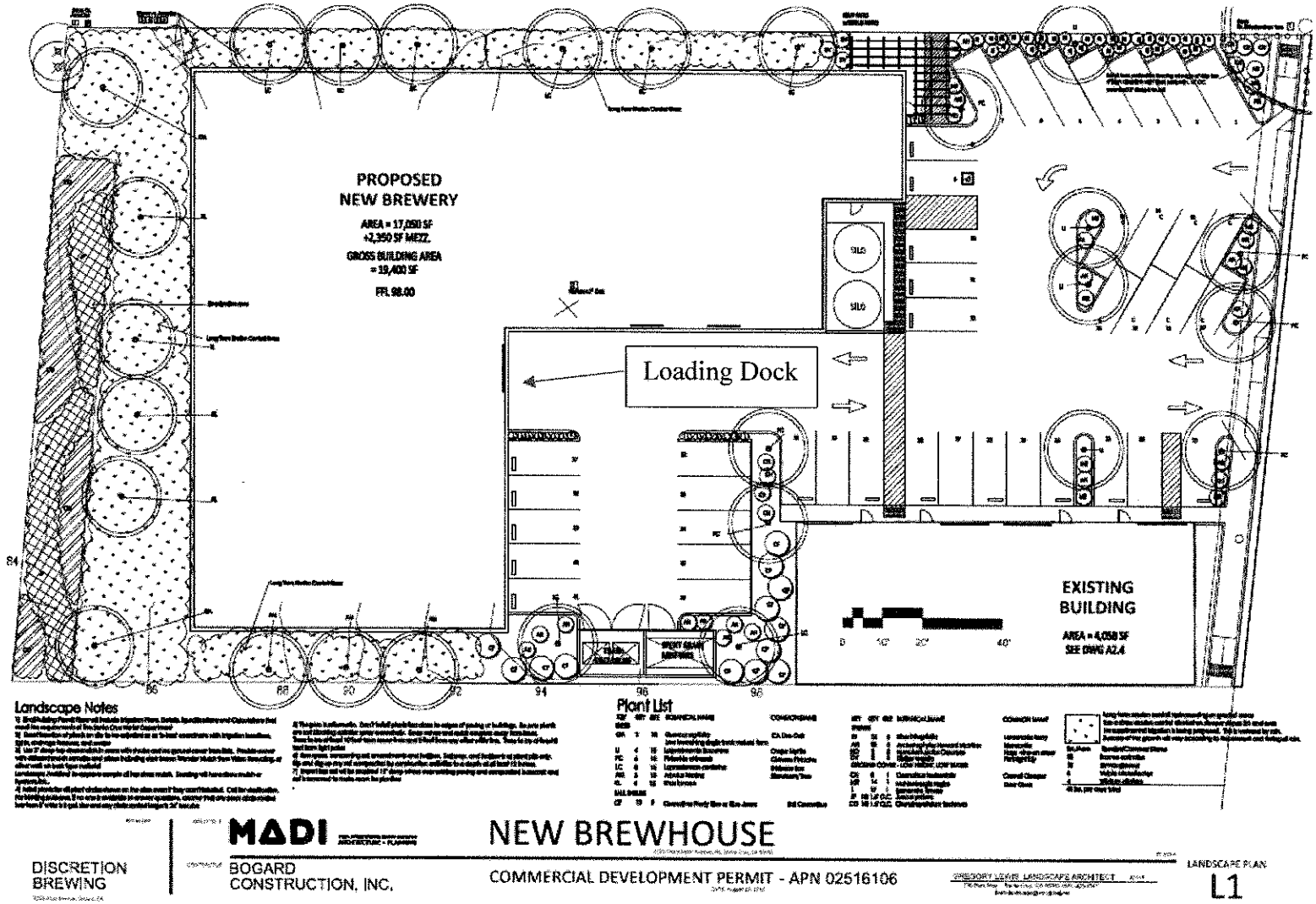

Figure 2 Project Site Plan

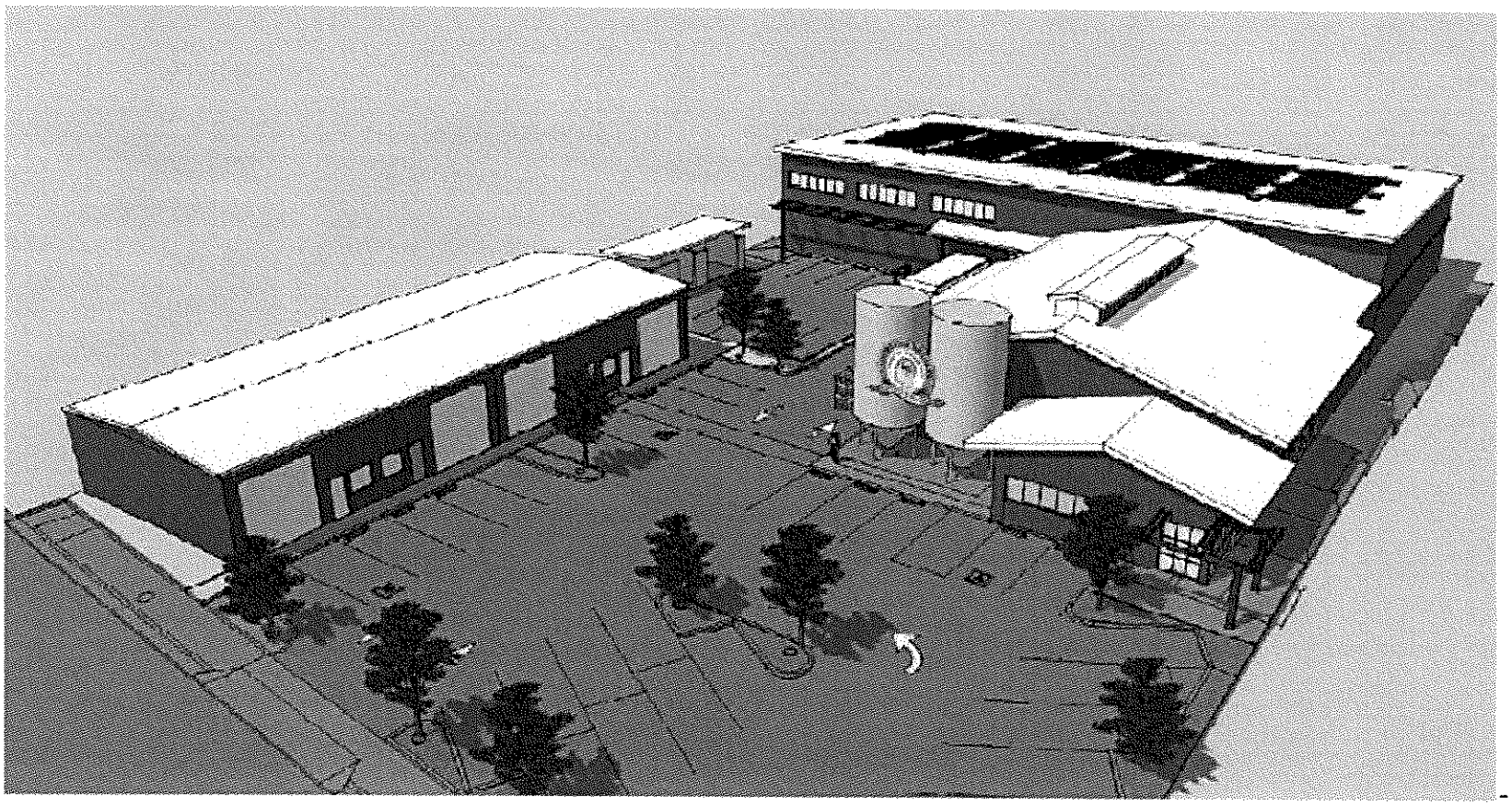

Figure 3 Rendering

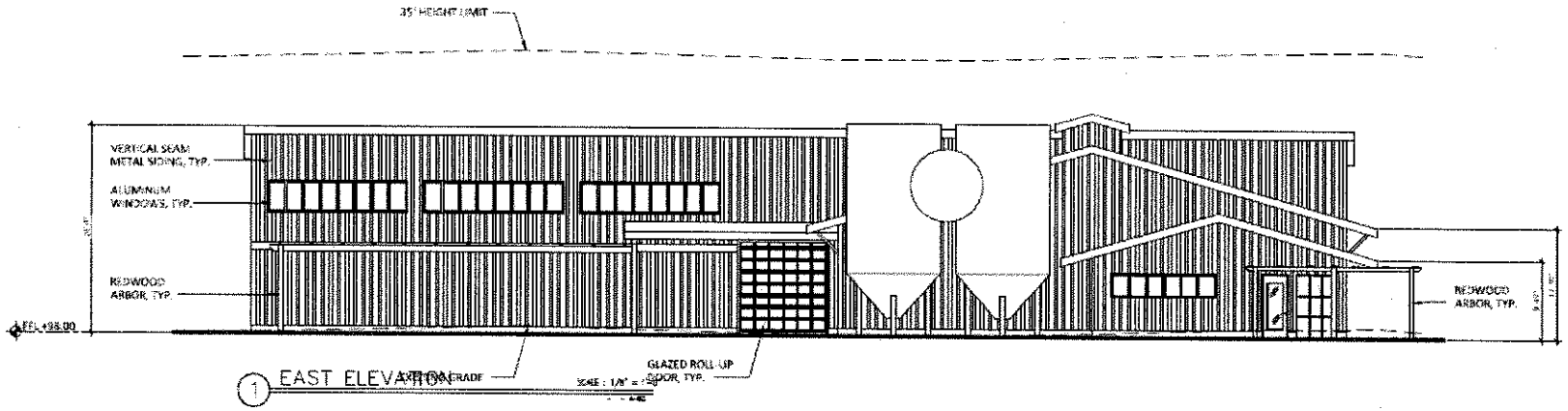

Figure 4 Front Elevation

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II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS:

Parcel Size (acres):	1.177 acres (51,253 square feet)
Existing Land Use:	Light Industrial
Vegetation:	Eight trees, mowed grass at rear of parcel
Slope in area affected by project:	☒ 0 - 30% ☐ 31 – 100% ☐ N/A
Nearby Watercourse:	Rodeo Creek Gulch, Arana Gulch
Distance To:	~2,320 feet to Rodeo Creek; ~2,970 to Arana Gulch

ENVIRONMENTAL RESOURCES AND CONSTRAINTS:

Water Supply Watershed:	Not mapped or identified on site	Fault Zone:	Not mapped or identified on site
Groundwater Recharge:	Not mapped or identified on site	Scenic Corridor:	Highway 1 Scenic Corridor
Timber or Mineral:	Not mapped or identified on site	Historic:	No historic structure on-site
Agricultural Resource:	Not mapped or identified on site	Archaeology:	Not mapped or identified on site
Biologically Sensitive Habitat:	Not mapped or identified on site	Noise Constraint:	Not mapped or identified on site
Fire Hazard:	Not mapped or identified on site	Electric Power Lines:	No high voltage transmission lines
Floodplain:	Not mapped or identified on site	Solar Access:	Available
Erosion:	Low erosion potential	Solar Orientation:	Level
Landslide:	Not mapped or identified on site	Hazardous Materials:	None listed
Liquefaction:	Low liquefaction potential		

SERVICES:

Fire Protection:	Central FPD	Drainage District:	Zone 5
School District:	Soquel Elementary Santa Cruz High School	Project Access:	Chanticleer Avenue
Sewage Disposal:	County of Santa Cruz	Water Supply:	City of Santa Cruz

PLANNING POLICIES:

Zone District: C-4 (Commercial Services)
General Plan: C-S (Community Service)
Special Designation: None

Urban Services Line:	☒ Inside	☐ Outside
Coastal Zone:	☐ Inside	☒ Outside

ENVIRONMENTAL SETTING AND SURROUNDING LAND USES:

Natural Environment

Santa Cruz County is uniquely situated along the northern end of Monterey Bay approximately 55 miles south of the City of San Francisco along the Central Coast. The Pacific Ocean and Monterey Bay to the west and south, the mountains inland, and the prime agricultural lands along both the northern and southern coast of the county create limitations on the style and amount of building that can take place. Simultaneously, these natural features create an environment that attracts both visitors and new residents every year. The natural landscape provides the basic features that set Santa Cruz apart from the surrounding counties and require specific accommodations to ensure building is done in a safe, responsible and environmentally respectful manner.

The California Coastal Zone affects nearly one third of the land in the urbanized area of the unincorporated County with special restrictions, regulations, and processing procedures required for development within that area. Steep hillsides require extensive review and engineering to ensure that slopes remain stable, buildings are safe, and water quality is not impacted by increased erosion. The farmland in Santa Cruz County is among the best in the world, and the agriculture industry is a primary economic generator for the County. Preserving this industry in the face of population growth requires that soils best suited to commercial agriculture remain active in crop production rather than converting to other land uses.

Project Site

The subject parcel is located on the west side of Chanticleer Avenue about 350 feet north of Highway 1 in Live Oak. Currently, the project site is developed with three structures arranged in a U-shape around a parking lot. On the north side is a metal building that has been divided up into spaces that are rented to trades people/contractors. On the west side of the parking lot, there is a wooden barn-like structure constructed in 1948 that is being used similarly. On the south side is a 4,000 square foot shop building which was constructed in 1965. This building operates as a machine shop and is proposed to be retained while the other two buildings would be demolished.

At the front of parcel where the existing buildings are located, the land is level but, at the back, the parcel slopes to the west at an approximately 6% grade (page 4, Geotechnical Report by

Butano Geotechnical Engineering, Inc, August 2016, Attachment 1). There are no structures on this grassy slope which appears to be regularly mowed. An aerial photo from 2007 shows that this sloped area was used for truck and other vehicle parking.

There are a variety of land uses along this portion of Chanticleer Avenue, including medical offices and a surgery center at the northern end, three animal-related business (a veterinary clinic, SPCA and grooming/boarding business), Grey Bears thrift store, warehouses, offices, a plumbing supply store, motorcycle repair, Mission Tile and a nonconforming dwelling. Directly west of the subject parcel is another area with a mixture of uses, including warehouse and mini storage facilities. More distantly, Pacific Family Mobile Home Park is located about 160 feet to the west and Good Shepherd Catholic School is located 1,125 feet to the east.

PROJECT BACKGROUND:

Discretion Brewery is a local brewery that is located on 41st Avenue. The brewery owners now wish to expand production; and therefore, have proposed to construct a new brewery on the subject parcel that would be devoted to beer production. There would be no public tasting or restaurant at this location as there is at the 41st Avenue location (Attachment 2 Program Statement).

DETAILED PROJECT DESCRIPTION:

As noted above, the current proposal is to demolition two of the three existing buildings, retaining the machine shop building located along the southern property line. The two demolished buildings total approximately 5,600 square feet. In addition, a seven-inch in diameter coast live oak, six acacia trees, and possibly a 39-inch in diameter Linden tree would be removed. A 17,050 square foot beer brewing facility would then be constructed. Brewery offices would be included within the brewery building.

The maximum brewery capacity would be 775,000 gallons per year. However, it is anticipated that reaching that capacity would take several years with the initial year production being 93,000 gallons. By the fifth year, 310,000 gallons is the projected production. Production would initially be limited to daytime hours (7 AM to 6PM) Monday through Friday, with weekend production occurring between 11 Am and 5 PM. Over time, production would extend to 11 PM and, eventually, 24-hour production would occur. At full production, approximately 15 employees would work the first shift and fewer than 10 would work the second shift. Production would require about 10 deliveries a week, including FedEx and UPS deliveries. A loading dock is located on the southern side of the front of the building. Currently, the delivery of beer occurs six times per week by two box vans (Ford E-250 and Nissan NV200). At full production level, the brewer anticipates that three larger vehicles (box trucks) would be needed six times per week.

The construction of the brewery would require about 350 cubic yards of grading and 4,650 cubic yards of fill in order to establish finish building grades. From Chanticleer, the brewery would increase from the approximately 13 foot tall entrance at the front of the building to its

full height of 35 feet at the back of the parcel. A trellis and two large silos would create visual interest at the front of the building. The distinctive Discretion Brewery sign would be located between the two silos. Other signs include a small monument sign and the existing 4.5 square foot "Doerksen Precision Products" sign.

Frontage improvements that conform to the Chanticleer Avenue plan line are proposed as a part of the project. The brewery would be set back from the road to accommodate the existing building and the parking lot. The 41-space parking lot has been sized to provide parking for both the machine shop and the employees of the brewery, as well as to accommodate delivery, trash and recycling trucks. No public tasting is proposed at the brewery.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

III. ENVIRONMENTAL REVIEW CHECKLIST

A. AESTHETICS AND VISUAL RESOURCES

Would the project:

1. *Have a substantial adverse effect on a scenic vista?* ☐ ☐ ☒ ☐

Discussion: Although Highway One is a designated scenic resource in the County's General Plan, buildings and vegetation would obscure the view of the proposed brewery from the highway. The only views of the brewery that would be affected are those from nearby private property. County visual resource protection regulations only apply to public viewsheds.

2. *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?* ☐ ☐ ☐ ☒

Discussion: Although Highway One is a County scenic road, it is not officially designated as a state scenic highway. Therefore, the project would have no impact on a state scenic highway. Regardless of its designation, the project would not be visible from Highway One.

3. *Substantially degrade the existing visual character or quality of the site and its surroundings?* ☐ ☐ ☒ ☐

Discussion: The existing visual setting is a mixture of commercial buildings of various architectural styles and in varied states of maintenance. The project site is currently developed with three buildings, two of which are proposed to be demolished. The proposed brewery building and general site improvements are anticipated to substantially upgrade the visual character of the project site. Improvements include a new sidewalk, landscaping, formalized parking and an architect-designed building that would be compatible with surrounding development.

4. *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?* ☐ ☐ ☒ ☐

Discussion: The project would create an incremental increase in night lighting. However, this increase would be small, and would be similar in character to the lighting associated with the surrounding existing uses. The project would be required to comply with County Code, which calls for shielded light sources and light standards no higher than 15 feet (County Code 13.11.074(D)(1)b).

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

B. AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

1. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*	☐	☐	☐	☒

Discussion: The project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. In addition, the project does not contain Farmland of Local Importance. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide or Farmland of Local Importance would be converted to a non-agricultural use. No impact would occur from project implementation.

2. *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*	☐	☐	☐	☒

Discussion: The project site is zoned C-4 (Commercial Services) which is not an agricultural zone. Additionally, the project site's land is not under a Williamson Act Contract. Therefore, the project does not conflict with existing zoning for agricultural use, or a Williamson Act Contract. No impact is anticipated.

3. *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

(as defined by Government Code Section 51104(g))?

Discussion: The project is not located near land designated as Timber Resource. Therefore, the project would not affect the resource or access to harvest the resource in the future. The timber resource may only be harvested in accordance with California Department of Forestry timber harvest rules and regulations.

4. *Result in the loss of forest land or conversion of forest land to non-forest use?*	☐	☐	☐	☒

Discussion: No forest land occurs on the project site or in the immediate vicinity. See discussion under B-3 above. No impact is anticipated.

5. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*	☐	☐	☐	☒

Discussion: The project site and surrounding area within a radius of 1.5 miles does not contain any lands designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance or Farmland of Local Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide, or Farmland of Local Importance would be converted to a non-agricultural use. In addition, the project site contains no forest land, and no forest land occurs within 2.2 miles of the proposed project site. Therefore, no impacts are anticipated.

C. AIR QUALITY

The significance criteria established by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) has been relied upon to make the following determinations. Would the project:

1. *Conflict with or obstruct implementation of the applicable air quality plan?*	☐	☐	☒	☐

Discussion: The project would not conflict with or obstruct any long-range air quality plans of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). Because general construction activity related emissions (i.e., temporary sources) are accounted for in the emission inventories included in the plans, impacts to air quality plan objectives are less than significant. See C-2 below.

General estimated basin-wide construction-related emissions are included in the MBUAPCD emission inventory (which, in part, form the basis for the air quality plans cited below) and

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

are not expected to prevent long-term attainment or maintenance of the ozone and particulate matter standards within the North Central Coast Air Basin (NCCAB). Therefore, temporary construction impacts related to air quality plans for these pollutants from the proposed project would be less than significant, and no mitigation would be required, since they are presently estimated and accounted for in the District's emission inventory, as described below. No stationary sources would be constructed that would be long-term permanent sources of emissions.

2.	*Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*	☐	☐	☒	☐

Discussion: The North Central Coast Air Basin (NCCAB) does not meet state standards for ozone and particulate matter (PM_{10}) (MBUAPCD, 2013a). These pollutants are both emitted during construction activities.

Ozone is the main pollutant of concern for the NCCAB. The primary sources of ROG within the air basin are on- and off-road motor vehicles, petroleum production and marketing, solvent evaporation, and prescribed burning. The primary sources of NOx are on- and off-road motor vehicles, stationary source fuel combustion, and industrial processes. In 2010, daily emissions of ROGs were estimated at 63 tons per day. Of this, area-wide sources represented 49 percent, mobile sources represented 36 percent, and stationary sources represented 15 percent. Daily emissions of NOx were estimated at 54 tons per day with 69 percent from mobile sources, 22 percent from stationary sources, and 9 percent from area-wide sources. In addition, the region is "NOx sensitive," meaning that ozone formation due to local emissions is more limited by the availability of NOx as opposed to the availability of ROGs (MBUAPCD, 2013b).

PM_{10} is the other major pollutant of concern for the NCCAB. In the NCCAB, highest particulate levels and most frequent violations occur in the coastal corridor. In this area, fugitive dust from various geological and man-made sources combines to exceed the standard. Nearly three quarters of all NCCAB exceedances occur at these coastal sites where sea salt is often the main factor causing exceedance (MBUAPCD, 2005). In 2005 daily emissions of PM_{10} were estimated at 102 tons per day. Of this, entrained road dust represented 35 percent of all PM_{10} emission, windblown dust 20 percent, agricultural tilling operations 15 percent, waste burning 17 percent, construction 4 percent, and mobile sources, industrial processes, and other sources made up 9 percent (MBUAPCD, 2008).

Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can

nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Table 1 summarizes the threshold of significance for construction activities.

Table 1: Construction Activity with Potentially Significant Impacts from Pollutant PM_{10}

Activity	Potential Threshold*
Construction site with minimal earthmoving	8.1 acres per day
Construction site with earthmoving (grading, excavation)	2.2 acres per day

*Based on Midwest Research Institute, Improvement of Specific Emission Factors (1995). Assumes 21.75 working weekdays per month and daily watering of site.

Note: Construction projects below the screening level thresholds shown above are assumed to be below the **82 lb/day threshold of significance**, while projects with activity levels higher than those above may have a significant impact on air quality. Additional mitigation and analysis of the project impact may be necessary for those construction activities.

Source: Monterey Bay Unified Air Pollution Control District, 2008.

Impacts

As required by the MBUAPCD, construction activities (e.g., excavation, grading, on-site vehicles) which directly generate 82 pounds per day or more of PM_{10} would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors such as the community of Live Oak (Table 1). Construction projects below the screening level thresholds shown in Table 1 are assumed to be below the 82 lb/day threshold of significance, while projects with activity levels higher than those thresholds may have a significant impact on air quality. The proposed project would require minimal grading. Although the project would produce PM_{10}, it would be far below the 82 pounds per day threshold. This would result in less than significant impacts on air quality from the generation of PM_{10}.

Construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone [i.e., volatile organic compounds (VOC) or oxides of nitrogen (NOx)], are accommodated in the emission inventories of state- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS (MBUAPCD 2008).

Although not a mitigation measure per se (i.e., required by law), California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight will be used in all diesel-powered equipment, which minimizes sulfur dioxide and particulate matter.

The following Best Management Practices (BMPs) and Best Available Control Technology (BACT) will be implemented during all site excavation and grading.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Best Management Practices (BMPs) and Best Available Control Technologies (BACTs)

AQ-1 Contracted Diesel Control Measures: In addition to the use of Tiered engines and California ultralow sulfur diesel fuel, the following requirements will be incorporated into contract specifications:

- To minimize potential diesel odor impacts on nearby receptors (pursuant to MBUAPCD Rule 402, Nuisances), construction equipment will be properly tuned. A schedule of tune-ups will be developed and performed for all equipment operating within the project area. A written log of required tune-ups will be maintained and a copy of the log will be submitted to the County of Santa Cruz Department of Public Works (DPW) Planning Director for review every 2,000 service hours.
- Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) will be electrically powered unless the contractor submits documentation and receives written approval from the County of Santa Cruz DPW that the use of such equipment is not practical, feasible, or available (generally contingent upon power line proximity, capacity, and accessibility). California ultralow sulfur diesel fuel with maximum sulfur content of 15 ppm by weight (ppmw S), or an approved alternative fuel, will be used for on-site fixed equipment not using line power.
- To minimize diesel emission impacts, construction contracts will require off-road compression ignition equipment operators to reduce unnecessary idling with a 2-minute time limit, subject to monitoring and written documentation.
- On-road material hauling vehicles will shut off engines while queuing for loading and unloading for time periods longer than 2 minutes, subject to monitoring and written documentation.
- Off-road diesel equipment will be fitted with verified diesel emission control systems (e.g., diesel oxidation catalysts) to the extent reasonably and economically feasible.
- Utilize alternative fuel equipment (i.e., compressed or liquefied natural gas, biodiesel, electric) to the extent reasonably and economically feasible.

Feasibility will be determined consistent with Best Available Control Technology (BACT) general criteria: 1) achieved in practice; 2) contained in adopted control measures; 3) technologically feasible; and 4) cost-effective.

AQ-2 Diesel Particulate Matter Emissions Control Measures: In addition, the project will implement the following measures to reduce particulate matter emissions from diesel exhaust:

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

- Grid power will be used instead of diesel generators where it is feasible to connect to grid power (generally contingent upon power line proximity, capacity, and accessibility).
- The project specifications will include 13 CCR Sections 2480 and 2485, which limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines will be limited to 5 minutes when within 100 feet of homes or schools while the driver is resting.
- The project specifications will include 17 CCR Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements; emission standards for operation of any stationary, diesel-fueled, compression-ignition engines; and operation restrictions within 500 feet of school grounds when school is in session.
- A schedule of low-emissions tune-ups will be developed and such tune-ups will be performed on all equipment, particularly for haul and delivery trucks.
- Low-sulfur (≤ 15 ppmw S) fuels will be used in all stationary and mobile equipment.

AQ-3 Dust Control Measures: The following controls will be implemented at the construction and staging sites as applicable:

- Water all active construction areas at least twice daily as necessary and indicated by soil and air conditions.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, will be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads will be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities will be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off site, all material will be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day will prevent carryout and trackout.
- Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily, or apply (nontoxic) soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.
- Install wind breaks at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 20 miles per hour.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

Implementation of the above BMPs and BACT would ensure that emissions of diesel particulate matter (DPM) and fugitive dust from project excavation and grading would be consistent with the MBUAPCD emissions inventories. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*	☐	☐	☒	☐

Discussion: Project construction would have a limited and temporary potential to contribute to existing violations of California air quality standards for ozone and PM_{10} primarily through diesel engine exhaust and fugitive dust. However, the Santa Cruz monitoring station has not had any recent violations of federal or state air quality standards mainly through dispersion of construction-related emission sources. BMPs and BACT described above under C-2 would ensure emissions remain below a level of significance. Therefore, the proposed project would not result in a cumulatively considerable net increase in criteria pollutants. The impact on ambient air quality would be less than significant.

4. *Expose sensitive receptors to substantial pollutant concentrations?*	☐	☐	☒	☐

Discussion: The proposed project would not generate substantial pollutant concentrations. Emissions from construction activities represent temporary impacts that are typically short in duration. Impacts to sensitive receptors would be less than significant.

5. *Create objectionable odors affecting a substantial number of people?*	☐	☐	☒	☐

Discussion: The proposed brewery would be anticipated to emit a yeasty smell. Smells are subjective making it difficult to anticipate whether the smell of brewing beer would be offensive to people in the vicinity. California Health and Safety Code Section 41700 states that no person can discharge air contaminants that cause injury, nuisance or annoyance to any considerable number of persons or the public. To enforce this, the Monterey Bay Air Resources District (MBARD) has a nuisance complaints process. Once a certain number of nuisance complaints are received, MBARD issues a Notice of Violation. The business is then required to take action to correct the violation. Typically, control equipment is required to be installed to minimize the offending smell. Given that smells are subjective and the a process exists to address offending odors, the odor from brewing beer is anticipated to be less than significant.

California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be used in all diesel-powered equipment, which minimizes emissions of sulfurous gases (sulfur dioxide, hydrogen sulfide, carbon disulfide, and carbonyl sulfide). Therefore, no objectionable odors are anticipated from construction activities associated with the proposed project, and no mitigation measures would be required. The proposed project would not

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

create objectionable odors affecting a substantial number of people; therefore, impacts are expected to be less than significant.

D. BIOLOGICAL RESOURCES

Would the project:

1. *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service?*	☐	☐	☐	☒

Discussion: According to the California Natural Diversity Data Base (CNDDB), maintained by the California Department of Fish and Wildlife, the project site is mapped as having the potential to support the white-rayed pentachaeta (*Pentachaeta bellidiflora*). Given the disturbed nature of this site, however, and the fact that this species is found on serpentine soils and none are present on the subject parcel, conditions on-site are not suitable for the white-rayed pentachaeta. When Environmental Planning staff visited the site, there were no special status species observed in the project area. The lack of suitable habitat and the disturbed nature of the site make it unlikely that any special status plant or animal species occur in the area.

2. *Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*	☐	☐	☐	☒

Discussion: There is no riparian habitat in the immediate vicinity and no mapped or designated sensitive biotic communities on or adjacent to the project site. Therefore, no impact to these biological resources is anticipated.

3. *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion: There are no mapped or designated federally protected wetlands on or adjacent to the project site. Therefore, no impacts would occur from project implementation.

4	*Interfere substantially with the movement of any native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*	☐	☐	☐	☒

Discussion: The proposed project does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or impede use of a known wildlife nursery site.

5.	*Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)?*	☐	☐	☐	☒

Discussion: The project would not conflict with any local policies or ordinances protecting biological resources. Although County Code 13.11.075(2) requires that trees over six inches in diameter at five feet above ground level be retained, the ordinance also provides exceptions such as when a tree obstructs a prime building spot or is a nuisance tree. In this, the project arborist evaluated the eight trees located on the subject parcel (Attachment 3). The oak tree obstructs the prime building site as it is located in the middle of the parcel where the brewery is proposed. The Linden tree which is located on the northern property line, may not survive construction of the frontage improvements. The arborist did provide construction recommendation and the project will be conditioned to comply with these recommendations. The acacia trees are considered to be nuisance trees. Given this, the proposed removals would be in conformance with County Code. No impact would occur.

6.	*Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*	☐	☐	☐	☒

Discussion: The proposed project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
7. *Produce nighttime lighting that would substantially illuminate wildlife habitats?*	☐	☐	☐	☒

Discussion: The subject property is located in an urbanized area and is surrounded by existing commercial development that currently generates nighttime lighting. There are no sensitive animal habitats within or adjacent to the project site.

E. CULTURAL RESOURCES

Would the project:

1. *Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?*	☐	☐	☒	☐

Discussion: The existing structures on the property are not designated as a historic resource on any federal, state or local inventory. As a result, no impacts to historical resources would occur from project implementation. The barn located on the west side of the parking lot, which was constructed in 1948, was evaluated by the Planning Department's historic resource planner (Attachment 9), Annie Murphy. Ms. Murphy observed the large cracks in the exterior walls, the roof's poor condition, and the fact that the setting of the barn is now commercial/industrial instead of rural. Further, the structure is not representative of a distinct architectural style, and is not known to be associated with a person or historic event or theme of local, state or national importance. Ms. Murphy concludes, "...the demolition of the barn would not result in an impact to historic resources under CEQA. No further historic evaluation is required" (Attachment 9). Given this, the demolition of the barn would be less than significant.

2. *Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?*	☐	☐	☒	☐

Discussion: No archeological resources have been identified in the project area, therefore no impact would result from the project. Pursuant to County Code Section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, any human remains of any age, or any artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040.

3. *Disturb any human remains, including those interred outside of dedicated cemeteries?*	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion: Impacts are expected to be less than significant. However, pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

4.	*Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*	☐	☐	☐	☒

Discussion: No unique paleontological resources or unique geologic features are known to occur on or in the vicinity of the subject parcel. No impacts are anticipated.

F. GEOLOGY AND SOILS

Would the project:

1.	*Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*				
	A. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*	☐	☐	☒	☐
	B. *Strong seismic ground shaking?*	☐	☐	☒	☐
	C. *Seismic-related ground failure, including liquefaction?*	☐	☐	☒	☐
	D. *Landslides?*	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion (A through D): The project site is located outside of the limits of the State Alquist-Priolo Special Studies Zone (County of Santa Cruz GIS Mapping, California Division of Mines and Geology, 2001). However, the project site is located approximately 8.6 miles southwest of the San Andreas fault zone, and approximately 5.75 miles southwest of the Zayante fault zone. While the San Andreas fault is larger and considered more active, each fault is capable of generating moderate to severe ground shaking from a major earthquake. Consequently, large earthquakes can be expected in the future. The October 17, 1989 Loma Prieta earthquake (magnitude 7.1) was the second largest earthquake in central California history.

All of Santa Cruz County is subject to some hazard from earthquakes. However, the project site is not located within or adjacent to a county or state mapped fault zone. A geotechnical investigation for the proposed project was performed by Greg Bloom, Butano Geotechnical Engineering, Inc., August 24, 2016 (Attachment 1). The report identifies intense seismic shaking and collateral seismic hazards (e.g. fault ground surface rupture, coseismic ground cracking, etc.) as the primary geotechnical hazards that could affect the proposed project. The report concludes that the potential for collateral seismic hazards is low. The report also concludes that construction in conformance with the 2013 California Building Code would minimize impacts from intense seismic shaking. The reports overall conclusion is, "Based on the results of our filed investigation, laboratory testing, and engineering analysis it is our opinion that from the geotechnical standpoint, the subject site will be suitable for the proposed construction" (page 6). The report was accepted on by Rick Parks, County Civil Engineer, on October 7, 2016 (Attachment 4). Therefore, impacts are expected to be less than significant.

2.	*Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*	☐	☐	☒	☐

Discussion: The geotechnical report cited above (see Discussion under F-1) did not identify a significant potential for damage caused by any of these hazards. Therefore, impacts are expected to be less than significant.

3.	*Develop land with a slope exceeding 30%?*	☐	☐	☐	☒

Discussion: There are no slopes that exceed 30% on the property. No impacts are anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. *Result in substantial soil erosion or the loss of topsoil?*	☐	☐	☒	☐

Discussion: Some potential for erosion exists during the construction phase of the project, however, this potential is minimal because the sight has only a 6% slope and standard erosion controls are a required condition of the project. The project proposes 350 cubic yards of excavation and 4,650 cubic yards of fill to establish finish building grades. Prior to approval of a grading or building permit, the project must have an approved Erosion Control Plan (*Section 16.22.060 of the County Code*), which would specify detailed erosion and sedimentation control measures. The plan would include provisions for disturbed areas to be planted with ground cover and to be maintained to minimize surface erosion. Impacts from soil erosion or loss of topsoil would be considered less than significant.

5. *Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?*	☐	☐	☒	☐

Discussion: The geotechnical report for the project did not identify any elevated risk associated with expansive soils. Therefore, no impact is anticipated.

6. *Have soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*	☐	☐	☐	☒

Discussion: No septic systems are proposed. The project would connect to the Santa Cruz County Sanitation District, and the applicant would be required to pay standard sewer connection and service fees that fund sanitation improvements within the district as a Condition of Approval for the project.

7. *Result in coastal cliff erosion?*	☐	☐	☐	☒

Discussion: The proposed project is not located in the vicinity of a coastal cliff or bluff; and therefore, would not contribute to coastal cliff erosion. No impact is anticipated.

G. GREENHOUSE GAS EMISSIONS

Would the project:

1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*	☐	☐	☒	☐

Discussion: The proposed project, like all development, would be responsible for an incremental increase in greenhouse gas emissions by usage of fossil fuels during the site

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

grading and construction. Santa Cruz County has recently adopted a Climate Action Strategy (CAS) intended to establish specific emission reduction goals and necessary actions to reduce greenhouse gas levels to pre-1990 levels as required under AB 32 legislation. The strategy intends to reduce greenhouse gas emissions and energy consumption by implementing measures such as reducing vehicle miles traveled through the County and regional long range planning efforts and increasing energy efficiency in new and existing buildings and facilities. All project construction equipment would be required to comply with the Regional Air Quality Control Board emissions requirements for construction equipment. As a result, impacts associated with the temporary increase in green house gas emissions are expected to be less than significant.

2.	*Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*	☐	☐	☐	☒

Discussion: See the discussion under G-1 above. No significant impacts are anticipated.

H. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

1.	*Create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials?*	☐	☐	☒	☐

Discussion: The proposed project would not create a significant hazard to the public or the environment. No routine transport or disposal of hazardous materials is proposed. However, during construction, fuel would be used at the project site. Best management practices would be used to ensure that no impacts would occur. Impacts are expected to be less than significant.

2.	*Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*	☐	☐	☒	☐

Discussion: Please see discussion under H-1 above. Project impacts would be considered less than significant.

3.	*Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
one-quarter mile of an existing or proposed school?				

Discussion: The Good Shepherd Catholic School is located 2727 Mattison Lane, approximately 1,125 feet to the east of the project site. Although fueling of equipment is likely to occur within the staging area, best management practices would be implemented. No impacts are anticipated.

4. *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*	☐	☐	☐	☒

Discussion: The project site is not included on the 9/27/16 list of hazardous sites in Santa Cruz County compiled pursuant to Government Code Section 65962.5. No impacts are anticipated from project implementation.

5. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*	☐	☐	☐	☒

Discussion: The proposed project is not located within two miles of a public airport or public use airport. No impact is anticipated.

6. *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*	☐	☐	☒	☐

Discussion: The proposed project is located about 1,500 feet southeast of the Dominican Hospital helipad which is located in a parking lot behind the hospital. The infrequency of emergency helicopter use coupled with the nature of helicopter take-offs and landings which are more targeted than those of airplanes means that the helipad would be unlikely to be a safety hazard for people residing or working in the project area. Therefore, the impact would be less than significant.

7. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion: The proposed project would not conflict with implementation of the County of Santa Cruz Local Hazard Mitigation Plan 2015-2020 (County of Santa Cruz, 2020). Therefore, no impacts to an adopted emergency response plan or evacuation Plan would occur from project implementation.

8. *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*	☐	☐	☐	☒

Discussion: The proposed project is not located in a Fire Hazard Area. However, the project design incorporates all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency. No impact would occur.

I. HYDROLOGY, WATER SUPPLY, AND WATER QUALITY

Would the project:

1. *Violate any water quality standards or waste discharge requirements?*	☐	☐	☒	☐

Discussion: The project would not discharge runoff either directly or indirectly into a public or private water supply. No commercial or industrial activities are proposed that would generate a substantial amount of contaminants. The parking and driveway associated with the project would incrementally contribute urban pollutants to the environment; however, the contribution would be minimal given the size of the driveway and parking area and the fact that a similarly sized parking lot currently exists. Potential siltation from the proposed project would be addressed through implementation of erosion control best management practices (BMPs). In addition, the project would be required to complete a Stormwater Pollution Prevention Plan (SWPPP) in conformance with the Central Coast Regional Water Quality Control Board standards. No water quality standards or waste discharge requirements would be violated. Impacts would be less than significant.

2. *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion: The project would obtain water from the City of Santa Cruz Water Department and would not rely on private well water. Beer production is anticipated to require 5,425 gallons on average per work day. Although the project would increase water demand, the City of Santa Cruz Water Department is willing to serve the project (Attachment 5). The project is not located in a mapped groundwater recharge area.

3. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*	☐	☐	☒	☐

Discussion: The proposed project is not located near any watercourses, and would not alter the existing overall drainage pattern of the site. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan. The Central Coast Water Quality Control Board would require a Stormwater Pollution Prevention Plan prior to commencement of construction. The purpose of a SWPPP is to minimize sediment and other pollutants that become mobilized by stormwater runoff. The SWPPP would insure that erosion and siltation on and off-site would be minimized. This project would result in a less than significant impact.

4. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, on- or off-site?*	☐	☐	☒	☐

Discussion: The proposed project is not located near any watercourses, and would not alter the existing overall drainage pattern of the site. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan. Impacts from project construction would be less than significant.

5. *Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial additional sources of polluted runoff?*	☐	☐	☒	☐

Discussion: Drainage Calculations prepared Rodney Cahill, P.E. of Mesiti-Miller Engineering, Inc., dated August 25, 2016, have been reviewed for potential drainage impacts and accepted by the Department of Public Works (DPW) Drainage Section staff (Attachment

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

6). The calculations show the pre-development runoff rate for the 10-year 15 minute storm will be maintained. The runoff rate from the property would be controlled by a detention system located along the western property line. The drainage study also provided a downstream analysis. Department of Public Works staff have determined that existing storm water facilities are adequate to handle the increase in drainage associated with the project. Refer to response I-1 for discussion of urban contaminants and/or other polluting runoff. Impacts would be considered less than significant.

6. *Otherwise substantially degrade water quality?*	☐	☐	☒	☐

Discussion: Please see discussion under I-1 above. Impacts would be considered less than significant with the implementation of BMPs.

7. *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*	☐	☐	☐	☒

Discussion: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated May 16, 2012, the subject parcel is not located within a 100-year flood hazard area. In addition, no housing is proposed as a part of the project. Given this, no impact would result from this project.

8. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*	☐	☐	☐	☒

Discussion: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated May 16, 2012, no portion of the project site lies within a 100-year flood hazard area. Therefore, the proposed project would not impede or redirect flood flows. No impact would occur.

9. *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*	☐	☐	☐	☒

Discussion: The proposed project would not increase the risk of flooding and would not lead to the failure of a levee or dam. No impact would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
10. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion: There are two primary types of tsunami vulnerability in Santa Cruz County. The first is a teletsunami or distant source tsunami from elsewhere in the Pacific Ocean. This type of tsunami is capable of causing significant destruction in Santa Cruz County. However, this type of tsunami would usually allow time for the Tsunami Warning System for the Pacific Ocean to warn threatened coastal areas in time for evacuation (County of Santa Cruz 2010).

The more vulnerable risk to the County of Santa Cruz is a tsunami generated as the result of an earthquake along one of the many earthquake faults in the region. Even a moderate earthquake could cause a local source tsunami from submarine landsliding in Monterey Bay. A local source tsunami generated by an earthquake on any of the faults affecting Santa Cruz County would arrive just minutes after the initial shock. The lack of warning time from such a nearby event would result in higher causalities than if it were a distant tsunami (County of Santa Cruz 2010).

The project site is located approximately 1.8 miles inland and approximately 0.8 miles beyond the effects of a tsunami (County of Santa Cruz GIS map). In addition, no impact from a seiche or mudflow is anticipated. No impact would occur.

J. LAND USE AND PLANNING

Would the project:

1. Physically divide an established community?	☐	☐	☐	☒

Discussion: The proposed project does not include any element that would physically divide an established community. No impact would occur.

2. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Discussion: The proposed project does not conflict with any regulations or policies adopted for the purpose of avoiding or mitigating an environmental effect. Although County Code 13.11.075(2) requires that trees over six inches in diameter at five feet above ground level be retained, the ordinance also provides exceptions such as when a tree obstructs a prime building spot or is a nuisance tree. In this, the project arborist evaluated the eight trees located on the subject parcel (Attachment 3). The oak tree obstructs the prime building site as it is

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

located in the middle of the parcel where the brewery is proposed. The Linden tree which is located on the northern property line, may not survive construction of the frontage improvements. The arborist did provide construction recommendation and the project will be conditioned to comply with these recommendations. The acacia trees are considered to be nuisance trees. Given this, the proposed removals would be in conformance with County Code.

In addition, County Code 13.10.587 (Sign Exceptions) allows for more than 50 square feet of signs and three signs when a sign exception is obtained. The intent of limiting sign size and the number of signs is to limit visual impacts. In this case, three signs totaling about 55 square feet would be installed (Attachment 7, Sign Design). Because the brewery building is large, a larger sign is considered appropriate. Further, a monument sign located at the front of the parcel would facilitate the orderly access of the property. The 4.5 square foot sign for the existing precision grinding business is necessary to allow customers and deliveries to locate the business. Given that the proposed signs would conform to the requirements of the Sign Exceptions ordinance, then visual impact of the three signs would be less than significant.

3.	*Conflict with any applicable habitat conservation plan or natural community conservation plan?*	☐	☐	☐	☒

Discussion: The proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan. No impact would occur.

K. MINERAL RESOURCES

Would the project:

1.	*Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*	☐	☐	☐	☒

Discussion: The site does not contain any known mineral resources that would be of value to the region and the residents of the state. Therefore, no impact is anticipated from project implementation.

2.	*Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*	☐	☐	☐	☒

Discussion: The project site is zoned C-4 (Commercial Services), which is not considered to be an Extractive Use Zone (M-3) nor does it have a Land Use Designation with a Quarry Designation Overlay (Q) (County of Santa Cruz 1994). Therefore, no potentially significant loss of availability of a known mineral resource of locally important mineral resource

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

recovery (extraction) site delineated on a local general plan, specific plan or other land use plan would occur as a result of this project.

L. NOISE

Would the project result in:

1.	*Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*	☐	☒	☐	☐

Discussion: The project would generate two categories of noise impacts: construction and operational. Both are addressed below.

Construction Impacts

Although construction activities would likely occur during daytime hours, noise may be audible to the nearby residents. However, periods of noise exposure would be temporary. Noise from construction activity may vary substantially on a day-to-day basis, however the construction hours would be limited as a condition of approval for the brewery. County Code section 8.30 further limits any offensive noise to the hours between 8 AM to 10 PM.

Operational Impacts

Jeffrey K. Pack, President of Edward L. Pack Associates, Inc., prepared a noise assessment study for the proposed brewery, evaluating the ambient noise level as well as calculating the anticipated noise from project operations (Attachment 8). The County's General Plan states that allowable noise levels shall be raised to the ambient noise levels where the ambient level exceeds the allowable levels. In this case the ambient noise level exceeds the General Plan average maximum of 50 dBA L_{eq} (daytime) and 45 dBA L_{eq} (nighttime). The General Plan limits the maximum level to 70 dBA during the daytime and 65 dBA during the nighttime (which is unchanged by the ambient noise level). Mr. Pack determined that the applicable noise limits with adjustments for the ambient noise level as being:

Table 3 Applicable Noise Limits

Location	Average Hourly Leq (as raised by ambient noise level)	Maximum
North Property Line	52 dBA L_{eq}	70 dBA L_{max}
West Property Line	56 dBA L_{eq}	70 dBA L_{max}
South Property Line	57 dBA L_{eq}	70 dBA L_{max}

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Nonconforming Residence on Chanticleer	56 dBA L_{eq} Day 45 dBA L_{eq} Night	70 dBA L_{max} 65 dBA L_{max}

Mr. Pack then calculated the anticipated noise resulting from the project and found that the equipment in the outdoor yard (glycol chiller, air compressor, and refrigeration compressors) would exceed the noise limits (above table) for the southern property line between the existing sheet metal shop building and the project building. The air compressor would also exceed the limits of the standards at the northern property line. In addition, the semi-tractor trailer truck which delivers grain would exceed the noise limits at the northern property line, southern property line and at the nonconforming residence on Chanticleer Avenue. The following mitigations would mitigate the excesses to a less than significant level in almost all cases.

NOI-1 Select an air compressor rated at no more than 93 dBA at three feet.

NOI-2 Select refrigeration compressors rated at no more than 81 dBA at five feet each.

NOI-3 Construct a 10-foot high acoustically-effective barrier along the south side of the outdoor mechanical equipment yard. The barrier height is in reference to the nearest mechanical equipment yard pad elevation. A gate may be incorporated into this barrier. The gate shall fit tight when closed. Stops or astrals shall be placed over the gaps at the strike jamb and at the hinge jamb. The gap at the bottom of the gate shall be no more than one inch high.

NOI-4 Construct an eight-foot high acoustically-effective barrier along the south property line extending from the southwesterly corner of the remaining building on the site for a distance of 56 feet to the west. Connect the barrier to the southwest corner of the remaining sheet metal shop building. The barrier height is in reference to the nearest loading area at the roll-up door driveway grade.

NOI-5 Delivery truck drivers shall be instructed to turn off their engines during unloading and loading activities.

While these mitigations would mitigate most of the project noise impacts to a less than significant level, the noise assessment notes that, even with the mitigations, once a month for approximately an hour, there would be a one decibel excess resulting from the semi-tractor grain deliveries. Without the mitigation requiring the truck to be turned off during deliveries, at the Chanticleer Avenue residence, the truck generates 62 dBA L_{eq}. With the implementation of the mitigation (i.e. turning off the truck), the noise drops to 57 dBA L_{eq} (i.e. one decibel over the ambient average of 56 dBA L_{eq}). Given the infrequency of the deliveries and the fact that the residence is nonconforming since it is located in the C-4 zone district (Commercial Services), this excess does not constitute a significant impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*	☐	☐	☒	☐

Discussion: The use of construction and grading equipment would potentially generate vibration in the project area. This impact would be temporary; and therefore, impacts would be considered less than significant

3. *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*	☐	☒	☐	☐

Discussion: In general, the noise generated by the project would not exceed the existing ambient noise level. However, once a month for approximately an hour, there would be a one decibel excess resulting from the semi-tractor grain deliveries. Given that the impact is infrequent and only one decibel over the limit, this impact is not considered to be significant. The project noise engineer provided mitigations to address the noise impacts of the project. Impacts are expected to be less than significant with the implementation of the mitigations described in L-1 above.

4. *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*	☐	☐	☒	☐

Discussion: Noise generated during project construction would increase the ambient noise levels in adjacent areas. Construction would be temporary, however, and given the limited duration of this impact it is considered to be less than significant.

5. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*	☐	☐	☐	☒

Discussion: The proposed project is not within two miles of a public airport. Therefore, the proposed project would not expose people residing or working in the project area. No impact is anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*	☐	☐	☒	☐

Discussion: The proposed project is not within two miles of a private airstrip. It is, however, within about 1,500 feet of Dominican Hospital's helipad. Flights to/from this helipad are relatively infrequent and therefore would result in a less than significant impact to people residing or working in the project area.

M. POPULATION AND HOUSING

Would the project:

1. *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*	☐	☐	☐	☒

Discussion: The proposed project would not induce substantial population growth in an area because the project does not propose any physical or regulatory change that would remove a restriction to or encourage population growth in an area. The project proposes only to construct a brewery and would not induce population growth. No impact would occur.

2. *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*	☐	☐	☐	☒

Discussion: The proposed project would not displace any existing housing. No impact would occur.

3. *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*	☐	☐	☐	☒

Discussion: The proposed project would not displace any people since the project is intended to construct a brewery on commercially-zoned land. No impact would occur.

N. PUBLIC SERVICES

Would the project:

1. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order*

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☒	☐
b. Police protection?	☐	☐	☒	☐
c. Schools?	☐	☐	☒	☐
d. Parks?	☐	☐	☒	☐
e. Other public facilities; including the maintenance of roads?	☐	☐	☒	☐

Discussion (a through e): While the project represents an incremental contribution to the need for services, the increase would be minimal. Moreover, the project meets all of the standards and requirements identified by the local fire agency or California Department of Forestry, as applicable, and school, park, and transportation fees to be paid by the applicant would be used to offset the incremental increase in demand for school and recreational facilities and public roads. Impacts would be considered less than significant.

O. RECREATION

Would the project:

1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐

Discussion: The proposed project would not substantially increase the use of existing neighborhood and regional parks or other recreational facilities. Impacts would be considered less than significant.

2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion: The proposed project does not propose the expansion or construction of additional recreational facilities. No impact would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

P. TRANSPORTATION/TRAFFIC

Would the project:

1. *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*	☐	☐	☒	☐

Discussion: The project would create a small incremental increase in traffic on nearby roads and intersections. Based upon the Institute of Transportation Engineers' data, the County's traffic engineering staff concluded that there were will be fewer than 20 trips during the peak traffic period. This trip calculation accounts for all trips, including employees and in- and out-bound deliveries. Given this, this increase would be less than significant. Further, the increase would not cause the Level of Service at any nearby intersection to drop below Level of Service D, consistent with General Plan Policy 3.12.1.

2. *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*	☐	☐	☐	☒

Discussion: In 2000, at the request of the Santa Cruz County Regional Transportation Commission (SCCRTC), the County of Santa Cruz and other local jurisdictions exercised the option to be exempt from preparation and implementation of a Congestion Management Plan (CMP) per Assembly Bill 2419. As a result, the County of Santa Cruz no longer has a Congestion Management Agency or CMP. The CMP statutes were initially established to create a tool for managing and reducing congestion; however, revisions to those statutes progressively eroded the effectiveness of the CMP. There is also duplication between the CMP and other transportation documents such as the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP). In addition, the goals of the CMP may be carried out through the Regional Transportation Improvement Program and the Regional Transportation Plan. Any functions of the CMP which are useful, desirable and do not already exist in other documents may be incorporated into those documents.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

The proposed project would not conflict with either the goals and/or policies of the RTP or with monitoring the delivery of state and federally-funded projects outlined in the RTIP. No impact would occur.

3.	*Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*	☐	☐	☐	☒

Discussion: No change in air traffic patterns would result from project implementation. Therefore, no impact is anticipated.

4.	*Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*	☐	☐	☐	☒

Discussion: The proposed project consists of the construction on an existing commercial lot. No increase in hazards would occur from project design or from incompatible uses. No impact would occur from project implementation.

5.	*Result in inadequate emergency access?*	☐	☐	☐	☒

Discussion: The project's road access meets County standards and has been approved by the local fire agency or California Department of Forestry, as appropriate.

6.	*Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*	☐	☐	☐	☒

Discussion: The proposed project design would comply with current road requirements to prevent potential hazards to motorists, bicyclists, and/or pedestrians. The project would construct frontage improvements (sidewalk) in conformance with the Chanticleer Avenue plan line. This would enhance pedestrian safety. No impact would occur.

Q. TRIBAL CULTURAL RESOURCES

1. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape,*

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
sacred place, or object with cultural value to a California Native American tribe, and that is:				
A. *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources Code section 5020.1(k), or*	☐	☐	☒	☐
B. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*	☐	☐	☒	☐

Discussion: The project proposes to establish a brewery. Section 21080.3.1(b) of the California Public Resources Code (AB 52) requires a lead agency formally notify a California Native American tribe that is traditionally and culturally affiliated within the geographic area of the discretionary project when formally requested. As of this writing, no California Native American tribes traditionally and culturally affiliated with the Santa Cruz County region have formally requested a consultation with the County of Santa Cruz (as Lead Agency under CEQA) regarding Tribal Cultural Resources. As a result, no Tribal Cultural Resources are known to occur in or near the project area. Therefore, no impact to the significance of a Tribal Cultural Resource is anticipated from project implementation.

R. UTILITIES AND SERVICE SYSTEMS

Would the project:

1. *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*	☐	☐	☐	☒

Discussion: The proposed project's wastewater flows would not violate any wastewater treatment standards. The proposed project would release wastewater into the sewer system. The Department of Public Works, Sanitation section has reviewed and accepted the project as complying with their standards. Therefore, wastewater treatment requirements would not be exceeded. No impacts would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*	☐	☐	☐	☒

Discussion: The project would connect to an existing municipal water supply. The City of Santa Cruz has determined that adequate supplies are available to serve the project (Attachment 5). No impact would occur from project implementation.

3. *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*	☐	☐	☐	☒

Discussion: Drainage analysis of the project drainage calculations prepared Rodney Cahill, P.E. of Mesiti-Miller Engineering, Inc., dated August 25, 2016 concluded that the project would maintain the pre-development runoff rate of the site for the 10-year 15 minutes storm and that the downstream facilities were adequate to receive the project's runoff. Department of Public Works Drainage staff have reviewed the drainage information and accepted the project engineer's conclusion that downstream storm facilities are adequate to handle the increase in drainage associated with the project (Attachment 6). Therefore, no additional drainage facilities would be required for the proposed project. No impacts are expected to occur from the proposed project.

4. *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*	☐	☐	☒	☐

Discussion: The City of Santa Cruz has indicated that adequate water supplies are available to serve the project and has issued a will-serve letter for the proposed project, subject to the payment of fees and charges in effect at the time of service (Attachment 5). The brewer anticipates that the brewery facility would require about 5,425 gallons per day. The development would also be subject to the water conservation requirements. Therefore, existing water supplies would be sufficient to serve the proposed project, and no new entitlements or expanded entitlements would be required. Impacts would be less than significant.

5. *Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected*	☐	☐	☒	☐

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

demand in addition to the provider's existing commitments?

Discussion: The County of Santa Cruz Sanitation District has indicated that adequate capacity is available to serve the project and has issued a will-serve letter for the proposed project, subject to the payment of fees and charges in effect at the time of service (Attachment 5). The brewer anticipates that the brewery would generate about 1,061 gallons of wastewater per day. Based upon the Sanitation District's review of the project, the existing wastewater treatment capacity would be sufficient to serve the proposed project. Please see discussion under Q-2 above. No impact would occur from project implementation.

6. *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*	☐	☐	☒	☐

Discussion: The majority of the solid waste generated by the brewery is in the form of spent grains and yeast. This waste is hauled to an organic pig farm in Hollister, CA twice a week in a truck with an eight foot wide by 16 foot long cargo container. The remaining solid waste generated during operations represents a small incremental increase in solid waste generation. During construction, there will be the short-term generation of construction-related solid waste. However, the impact would not be significant.

7. *Comply with federal, state, and local statutes and regulations related to solid waste?*	☐	☐	☐	☒

Discussion: The project would comply with all federal, state, and local statutes and regulations related to solid waste disposal. No impact would occur.

S. MANDATORY FINDINGS OF SIGNIFICANCE

1. *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Discussion: The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in Section III (A through Q) of this Initial Study. As a result of this evaluation, there is no substantial evidence that significant effects associated with this project would result. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

2. *Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*	☐	☒	☐	☐

Discussion: In addition to project specific impacts, this evaluation considered the projects potential for incremental effects that are cumulatively considerable. As a result of this evaluation, there were determined to be potentially significant cumulative effects related to the project's impact on ambient noise. However, mitigation has been included that clearly reduces these cumulative effects to a level below significance (see L.1. for construction and operational mitigations, pages 33-35). This mitigation includes measures to reduce these impacts to a less than significant level. As a result of this evaluation, there is no substantial evidence that there are cumulative effects associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

3. *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*	☐	☐	☒	☐

Discussion: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in Section III (A through Q). As a result of this evaluation, there were determined to be potentially significant effects to human beings related to the following: Noise. However, mitigation has been included that clearly reduces these effects to a level below significance. As a result of this evaluation, there is no substantial evidence that, after

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

mitigation, there are adverse effects to human beings associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

IV. REFERENCES USED IN THE COMPLETION OF THIS INITIAL STUDY

California Department of Conservation. 1980

Farmland Mapping and Monitoring Program Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance Santa Cruz County U.S. Department of Agriculture, Natural Resources Conservation Service, soil surveys for Santa Cruz County, California, August 1980.

County of Santa Cruz, 2013

County of Santa Cruz Climate Action Strategy. Approved by the Board of Supervisors on February 26, 2013.

County of Santa Cruz, 2015

County of Santa Cruz Local Hazard Mitigation Plan 2015-2020. Prepared by the County of Santa Cruz Office of Emergency Services.

County of Santa Cruz, 1994

1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

MBUAPCD, 2008

Monterey Bay Unified Air Pollution Control District (MBUAPCD), CEQA Air Quality Guidelines. Prepared by the MBUAPCD, Adopted October 1995, Revised: February 1997, August 1998, December 1999, September 2000, September 2002, June 2004 and February 2008.

MBUAPCD, 2013a

Monterey Bay Unified Air Pollution Control District, NCCAB (NCCAB) Area Designations and Attainment Status – January 2013. Available online at http://www.mbuapcd.org/mbuapcd/pdf/Planning/Attainment_Status_January_2013_2.pdf

MBUAPCD, 2013b

Triennial Plan Revision 2009-2011. Monterey Bay Air Pollution Control District. Adopted April 17, 2013.

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Attachment 1

Mitigation Monitoring and Reporting Program

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County of Santa Cruz

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

MITIGATION MONITORING AND REPORTING PROGRAM for Discretion Brewing Application No. 161034

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
Noise					
NOI-1	*Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*	NOI-1 Select an air compressor rated at no more than 93 dBA at three feet.	Applicant	Compliance monitored by the County Planning Department	To be implemented during design and construction
NOI-2		Select refrigeration compressors rated at no more than 81 dBA at five feet each.	Applicant	Compliance monitored by the County Planning Department	To be implemented during design and construction
NOI-3	*A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*	Construct a 10-foot high acoustically-effective barrier along the south side of the outdoor mechanical equipment yard. The barrier height is in reference to the nearest mechanical equipment yard pad elevation. A gate may be incorporated into this barrier. The gate shall fit tight when closed. Stops or astrals shall be placed over the gaps at the strike jamb and at the hinge jamb. The gap at the bottom of the gate shall be no more than one inch high.	Applicant	Compliance monitored by the County Planning Department	To be implemented during design and construction
NOI-4		Construct an eight-foot high acoustically-effective barrier along the south property line extending from the southwesterly corner of the remaining building on the site for a distance of 56 feet to the west. Connect the barrier to the southwest corner of the remaining sheet metal shop building. The barrier height is in reference to the nearest loading area at the roll-up door driveway grade.	Applicant	Compliance monitored by the County Planning Department	To be implemented during design and construction
NOI-5		Delivery truck drivers shall be instructed to turn off their engines during unloading and loading activities.	Applicant	Compliance monitored by the County Planning Department	To be implemented during operations

paid on 2

GEOTECHNICAL INVESTIGATION
DESIGN PHASE

FOR
2725 CHANTICLEER AVENUE
SANTA CRUZ, SANTA CRUZ COUNTY, CALIFORNIA

PREPARED FOR
BOGARD CONSTRUCTION
PROJECT NO. 16-144-SC

PREPARED BY

BUTANO GEOTECHNICAL ENGINEERING, INC.
AUGUST 2016

ATTACHMENT 1

BUTANO GEOTECHNICAL ENGINEERING, INC.
231 GREEN VALLEY ROAD, SUITE E, FREEDOM, CALIFORNIA 95019
PHONE: 831.724.2612
WWW.BUTANOGEOTECH.COM

August 24, 2016
Project No. 16-144-SC

Bogard Construction
350 Coral Street, #A
Santa Cruz, CA 95060

SUBJECT: **GEOTECHNICAL INVESTIGATION - DESIGN PHASE**
Proposed Residential Addition
Proposed Brewery Project
2725 Chanticleer Avenue (APN 025-161-06)
Santa Cruz, Santa Cruz County, California

Dear Bogard Construction:

In accordance with your authorization, we have completed a geotechnical investigation for the subject project. This report summarizes the findings, conclusions, and recommendations from our field exploration, laboratory testing, and engineering analysis. It is a pleasure being associated with you on this project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office.

Sincerely,

BUTANO GEOTECHNICAL ENGINEERING, INC.

Greg Bloom, PE, GE
Principal Engineer
R.C.E. 58819

REGISTERED PROFESSIONAL ENGINEER GREG BLOOM C.E. 58819 exp 6/17 CIVIL STATE OF CALIFORNIA

Amy Power
Staff Engineer
E.I.T. 150450

Appendices:
1. Appendix A Figures and Standard Details
2. Appendix B Field Exploration Program
3. Appendix C Laboratory Testing Program
4. Appendix D Percolation Testing Program

Distribution: (4) Addressee

ATTACHMENT 1

1.0 INTRODUCTION

This report presents the results of our geotechnical investigation for the proposed brewery project at 2725 Chanticleer Avenue in unincorporated Santa Cruz, Santa Cruz County, California.

The purpose of our investigation is to provide preliminary geotechnical design parameters and recommendations for the construction of the proposed brewery and associated improvements. Conclusions and recommendations related to site grading, drainage, and foundations are presented herein.

Anticipated site work consists of the construction of a single story brewery and associated improvements.

This work included site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analyses, and preparation of this report. The scope of services for this investigation is outlined in our agreement dated May 25, 2016.

The recommendations contained in this report are subject to the limitations presented in Section 8.0 of this report. The Association of Engineering Firms Practicing the Geosciences has produced a pamphlet for your information titled *Important Information About Your Geotechnical Report*. This pamphlet has been included with the copies of your report.

2.0 FIELD EXPLORATION AND LABORATORY TESTING PROGRAMS

Our field exploration program included drilling, logging, and interval sampling of four borings on August 2, 2016 with truck-mounted equipment. The borings were advanced to depths ranging from 16 ½ to 26 ½ feet below existing grade. Details of the field exploration program, including the Boring Logs, and the Key to the Logs are presented in Appendix B, Figures B-3 through B-7.

Representative samples obtained during the field investigation were taken to the laboratory for testing. Laboratory tests were used to determine physical and engineering properties of the in-situ soils. Details of the laboratory testing program are presented in Appendix C. Test results are presented on the Boring Logs and in Appendix C.

Six percolation tests were conducted throughout the site. The locations of the percolations tests are shown on the Boring Site Plan, Figure B-2. The percolation testing methods and results are shown in Appendix D.

Boring B4 encountered non-engineered fill consisting of loose clayey sand to a depth of approximately 2 ½ feet below existing grade, and stiff sandy lean clay from a depth of approximately 2 ½ to 16 ½ feet below existing grade.

No groundwater was encountered during drilling; however, water table depths may vary seasonally.

Complete soil profiles are presented on the Boring Logs, Appendix B, Figures B-4 through B-7. The boring locations are shown on the Boring Site Plan, Figure B-2.

4.0 PROJECT DESCRIPTION

Anticipated construction will consist of a new 17,738 square foot brewery and associated improvements.

5.0 GEOTECHNICAL HAZARDS

5.1 General

In our opinion the geotechnical hazards that could potentially affect the proposed project are:

- Intense seismic shaking
- Collateral seismic hazards

5.1.1 Intense Seismic Shaking

The hazard of intense seismic shaking is present throughout central California. Intense seismic shaking may occur at the site during the design lifetime of the proposed structure from an earthquake along one of the regions many faults. Generally, the intensity of shaking will increase the closer the site is to the epicenter of an earthquake, however, seismic shaking is a complex phenomenon and may be modified by local topography and soil conditions. The transmission of earthquake vibrations from the ground into the structure may cause structural damage.

The County of Santa Cruz has adopted the seismic provisions set forth in the 2013 California Building Code to address seismic shaking. The seismic provisions in the 2013 CBC are minimum load requirements for the seismic design for the proposed structure. The provisions set forth in the 2013 CBC will not prevent structural and nonstructural damage from direct fault ground surface rupture, coseismic ground cracking, liquefaction

7.2 Site Grading

7.2.1 Site Clearing

The site should be cleared of loose soil, non-engineered fill, organics, and debris within the project limits.

7.2.2 Preparation of On-Site Soils

Areas to receive fill should be scarified, moisture conditioned, and compacted to a minimum of 90 percent relative compaction.

Paved Areas

The upper 6 inches of subgrade and aggregate baserock should be compacted to a minimum of 95 percent relative compaction. This should extend a minimum of 2 feet laterally of all paved areas.

Site Grading-General

The on-site soil may be re-used as engineered fill once it is processed to remove the majority of the deleterious material.

Imported fill material should be approved by a representative of Butano Geotechnical Engineering, Inc. prior to importing. Imported fill should be primarily granular with no material greater than 2½ inches in diameter and no more than 20 percent of the material passing the #200 sieve. The fines fraction of the fill should not consist of expansive material. The Geotechnical Engineer should be notified not less than 5 working days in advance of placing any fill or base course material proposed for import. Each proposed source of import material should be sampled, tested, and approved by the Geotechnical Engineer prior to delivery of any soils imported for use on the site.

Engineered fill should be compacted to a minimum of 90 percent relative compaction per ASTM1557.

Any surface or subsurface obstruction, or questionable material encountered during grading, should be brought immediately to the attention of the Geotechnical Engineer for proper processing as required.

Utility trenches that are parallel to the sides of a building should be placed so that they do not extend below a line sloping down and away at an inclination of 2:1 H:V from the bottom outside edge of all footings.

Trenches should be capped with 1 1/2 feet of relatively impermeable material. Import material must be approved by the Geotechnical Engineer prior to its use.

Trenches must be shored as required by the local regulatory agency, the State of California Division of Industrial Safety Construction Safety Orders, and Federal OSHA requirements.

7.3 Foundations

7.3.1 Conventional Shallow Foundations

General

Conventional shallow foundations may be used bearing on in-situ stiff sandy lean clay or engineered fill per section 7.2.2. Portions of the site are underlain by up to 3 feet of non-engineered fill which will either need to be penetrated through or over-excavated and replaced as engineered fill.

Footing Dimensions

Footing widths should be based on the allowable bearing value but not less than 15 inches. The recommended depth of embedment is 12 inches if the footings are underlain by in-situ stiff sandy lean clay or engineered fill. The footings should be embedded so that there is a minimum of 8 feet of cover measured horizontally from the base of the footing to daylight. Embedment depths should not be allowed to be affected adversely, such as through erosion, softening, digging, etc. Should local building codes require deeper embedment of the footings or wider footings, the local codes must apply.

Bearing Capacity

The allowable bearing capacity used should not exceed 4,300 psf for footings bearing on stiff in-situ soil or engineered fill. The allowable bearing capacity may be increased by one-third in the case of short duration loads, such as those induced by wind or seismic forces. In the event that footings are founded in structural fill consisting of imported

not limited to specifications for; concrete mix design, puncture resistance of vapor barrier, permeance of vapor barrier, soil flatness, capillary break section, structural section, and testing recommendations.

7.3.3 Settlements

Total and differential settlements beneath are expected to be within tolerable limits under static conditions. Vertical movements are not expected to exceed 1 inch. Differential movements are expected to be within the normal range (½ inch) for the anticipated loads.

7.4 Retaining Structures

7.4.1 Lateral Earth Pressures

The lateral earth pressures presented in Table 2 are recommended for the design of retaining structures with native backfill. Should the slope behind the retaining walls be other than level, supplemental design criteria will be provided for the active earth or at-rest pressures for the particular slope angle.

Table 2. Lateral Earth Pressures

Soil Profile	Soil Pressure (psf/ft)	
	Active	At-rest
Level	37	56
2:1	60	80

If desired, an earthquake load (ultimate) may be considered for critical walls. A seismic load of $10H^2$ and $15H^2$ may be applied at a height of 0.6H from the base of the wall for unrestrained and restrained walls respectively. A factor of safety of 1.1 is considered appropriate with respect to earthquake loading.

Pressure due to any surcharge loads from adjacent footings, traffic, etc., should be analyzed separately. Pressures due to these loading can be supplied upon receipt of the appropriate plans and loads. Refer to Appendix A, Figure A-1-Surcharge Pressure Diagram.

submitting the plans and contract bidding. Additional field exploration and laboratory testing may be required upon review of the final project design plans.

7.6 Observation and Testing

Field observation and testing should be provided by a representative of Butano Geotechnical Engineering, Inc. to enable them to form an opinion regarding the adequacy of the site preparation, the adequacy of fill materials, and the extent to which the earthwork is performed in accordance with the geotechnical conditions present, the requirements of the regulating agencies, the project specifications, and the recommendations presented in this report.

Butano Geotechnical Engineering, Inc. should be notified **at least 5 working days** prior to any site clearing or other earthwork operations on the subject project in order to observe the stripping and disposal of unsuitable materials and to ensure coordination with the grading contractor. During this period, a preconstruction meeting should be held on the site to discuss project specifications, observation and testing requirements and responsibilities, and scheduling.

8.0 LIMITATIONS

The recommendations contained in this report are based on our field explorations, laboratory testing, and our understanding of the proposed construction. The subsurface data used in the preparation of this report was obtained from the borings drilled during our field investigation. Variation in soil, geologic, and groundwater conditions can vary significantly between sample locations. As in most projects, conditions revealed during construction excavation may be at variance with preliminary findings. If this occurs, the changed conditions must be evaluated by the Project Geotechnical Engineer, and revised recommendations be provided as required. In addition, if the scope of the proposed construction changes from the described in this report, our firm should also be notified.

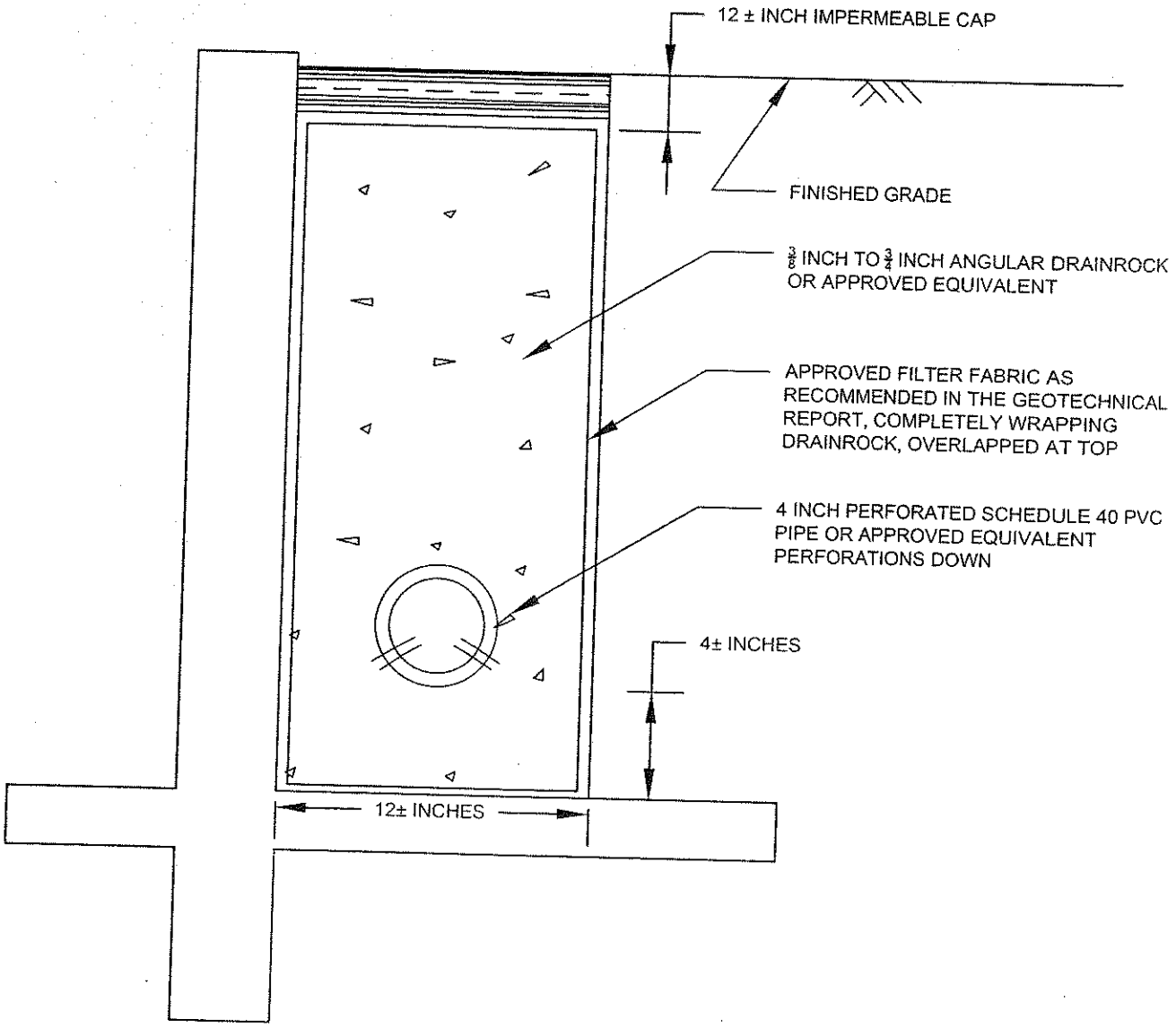
Our investigation was performed in accordance with the usual and current standards of the profession, as they relate to this and similar localities. No other warranty, expressed or implied, is provided as to the conclusions and professional advice presented in this report.

This report is issued with the understanding that it is the responsibility of the Owner, or of his Representative, to ensure that the information and recommendations contained herein are brought to the attention of the Engineer for the project and incorporated into the plans, and that it is ensured that the Contractor and Subcontractors implement such

APPENDIX A

FIGURES AND STANDARD DETAILS

Surcharge Pressure Diagram	Figure A-1
Retaining Wall Backdrain Detail	Figure A-2
Key and Bench Detail	Figure A-3



NOTES:

1. DRAWING IS NOT TO SCALE.
2. 2±% GRADIENT TO PIPE AND TRENCH BOTTOM CONNECTED TO A CLOSED CONDUIT THAT DISCHARGES TO AN APPROVED LOCATION.

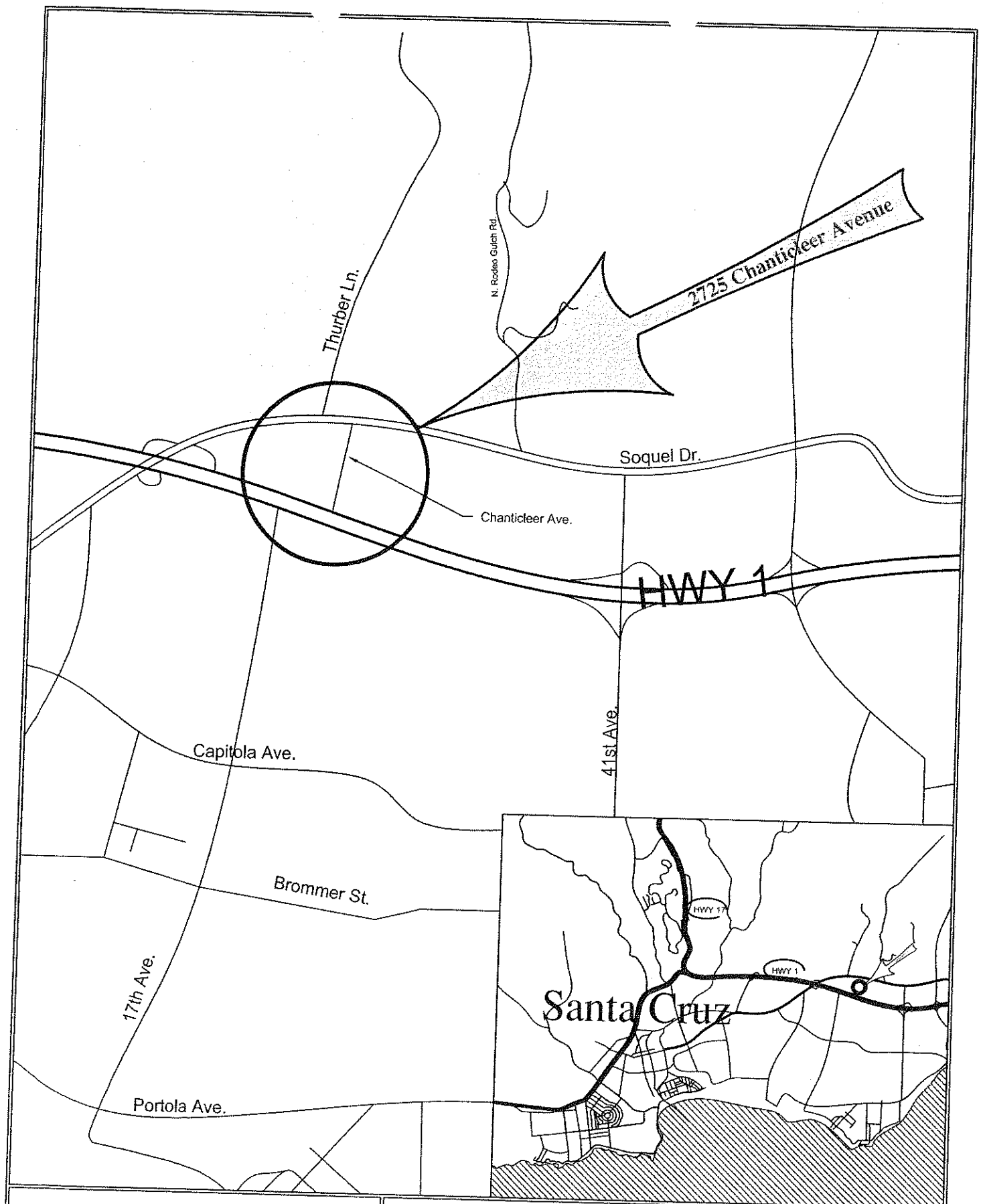
N.T.S.

BUTANO GEOTECHNICAL ENGINEERING, INC.	**TYPICAL RETAINING WALL BACKDRAIN DETAIL**	FIGURE A-2

APPENDIX B

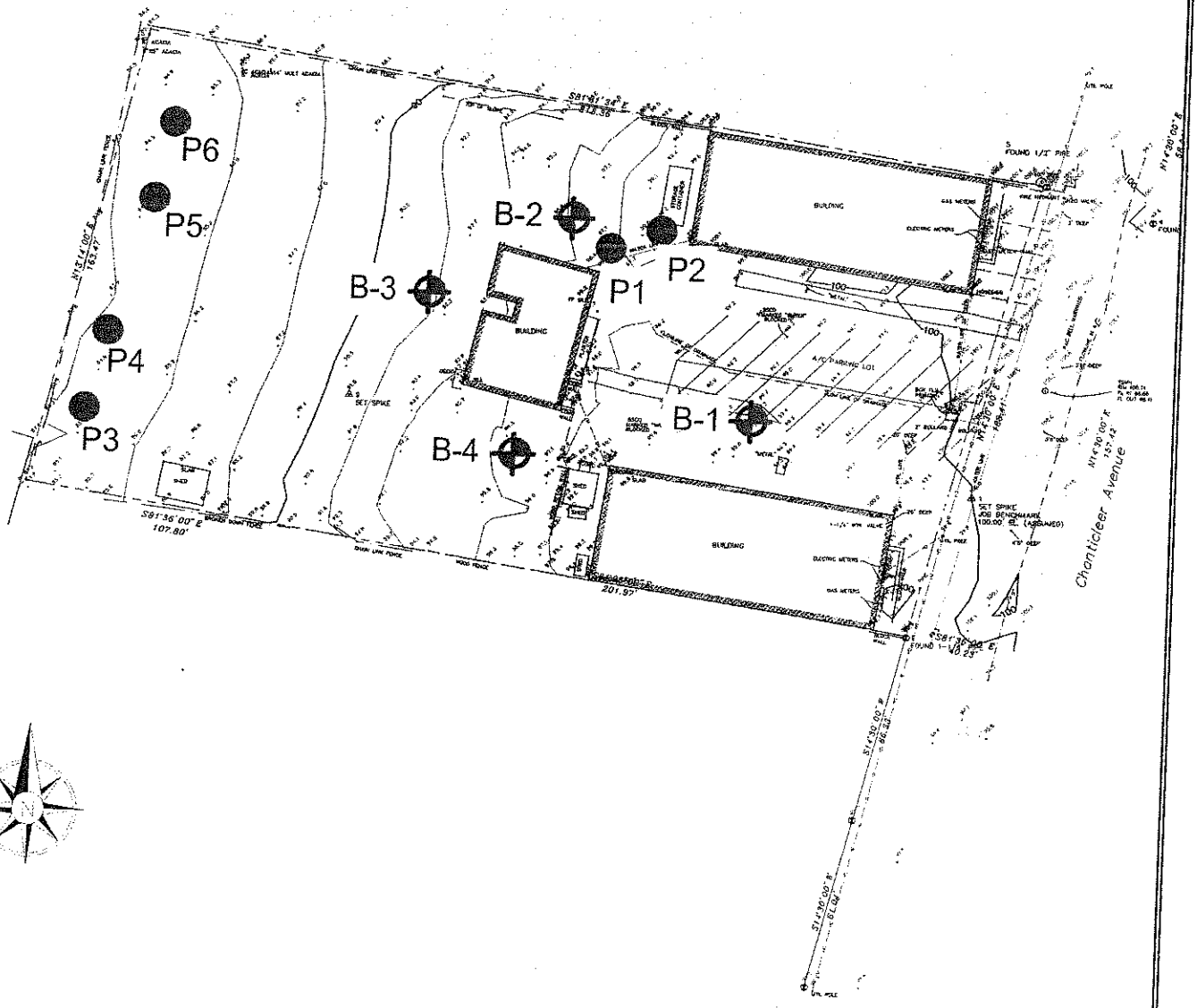
FIELD EXPLORATION PROGRAM

Field Exploration Procedures	Page B-1
Site Location Plan	Figure B-1
Boring Site Plan	Figure B-2
Key to the Logs	Figure B-3
Logs of the Borings	Figures B-4 through B-7



BUTANO GEOTECHNICAL ENGINEERING, INC.	**SITE LOCATION PLAN** 2725 Chanticleer Avenue	FIGURE B-1

ATTACHMENT 1



B-X Exploratory Boring ● **PX Percolation Test Hole**

Scale: 1" = 60'

Note: Topographic survey map by Edmundson & Associates Land Surveying, Job No. 15165, November 4, 2015.

LICENSED LAND SURVEYOR
GLIN S. EDMUNDSON
No. 8907
STATE OF CALIFORNIA

BUTANO GEOTECHNICAL ENGINEERING, INC.	**BORING SITE PLAN** 2725 Chanticleer Avenue	FIGURE B-2

ATTACHMENT 1

LOG OF EXPLORATORY BORING

Project No.: 16-144-SC
Project: 2725 Chanticleer Ave.
Date: August 2, 2016
Logged By: AP

Boring: B1
Location:
Elevation:
Method of Drilling: 6 inch solid stem truck mounted auger

2" Ring Sample | 2.5" Ring Sample | Bulk Sample | Terzaghi Split Spoon Sample | Static Water Table

Depth (ft.)	Soil Type	Undisturbed	Bulk	Description	Blows / Foot	N_{60}	Dry Density (pcf)	Moisture Content (%)	Expansion Index	Unconfined Comp.(psf)	Particle Size	Atterberg Limits L.L.	Atterberg Limits P.I.
	CL	✓		2 1/2" AC over 4 1/2" baserock. Brown sandy LEAN CLAY, trace gravel, very stiff, moist.	34	17	94.0	27.8					
		✓			13	10		30.8			✓		
5		✓	✓		35	17	92.8	27.9	8	6,100			
10		✓		Coarsening sand grains.	20	16		21.5					
15		✓		Stiff.	13	10		29.0					
20		✓			11	10		22.3					
25	SP-SC			Poorly-graded SAND with clay, very dense, damp (Purisima Formation sandstone - Tp).	69	63		9.1			✓		
30				Drilling terminated at a depth of 26 1/2 feet. No groundwater was encountered during drilling.									
35													

BUTANO GEOTECHNICAL ENGINEERING, INC.

FIGURE B-4

ATTACHMENT 1

LOG OF EXPLORATORY BORING

Project No.: 16-144-SC
Project: 2725 Chanticleer Ave.
Date: August 2, 2016
Logged By: AP

Boring: B3
Location:
Elevation:
Method of Drilling: 6 inch solid stem truck mounted auger

2" Ring Sample | 2.5" Ring Sample | Bulk Sample | Terzaghi Split Spoon Sample | Static Water Table

Depth (ft.)	Soil Type	Undisturbed	Bulk	Description	Blows / Foot	N_{60}	Dry Density (pcf)	Moisture Content (%)	Expansion Index	Unconfined Comp. (psf)	Particle Size	Other Tests: Swell (psf)	Other Tests
	SC			Black-brown clayey SAND with gravel (FILL).	32	12		22.8					
	CL			Brown sandy LEAN CLAY, stiff, moist.	15	12		19.2					
5				Very stiff.	27	23		23.1					
10				Coarsening sand, some gravel.	14	11		26.8					
15					21	17		18.6					
				Boring terminated at a depth of 16 1/2 feet. No groundwater encountered during drilling.									
20													
25													
30													
35													

BUTANO GEOTECHNICAL ENGINEERING, INC.

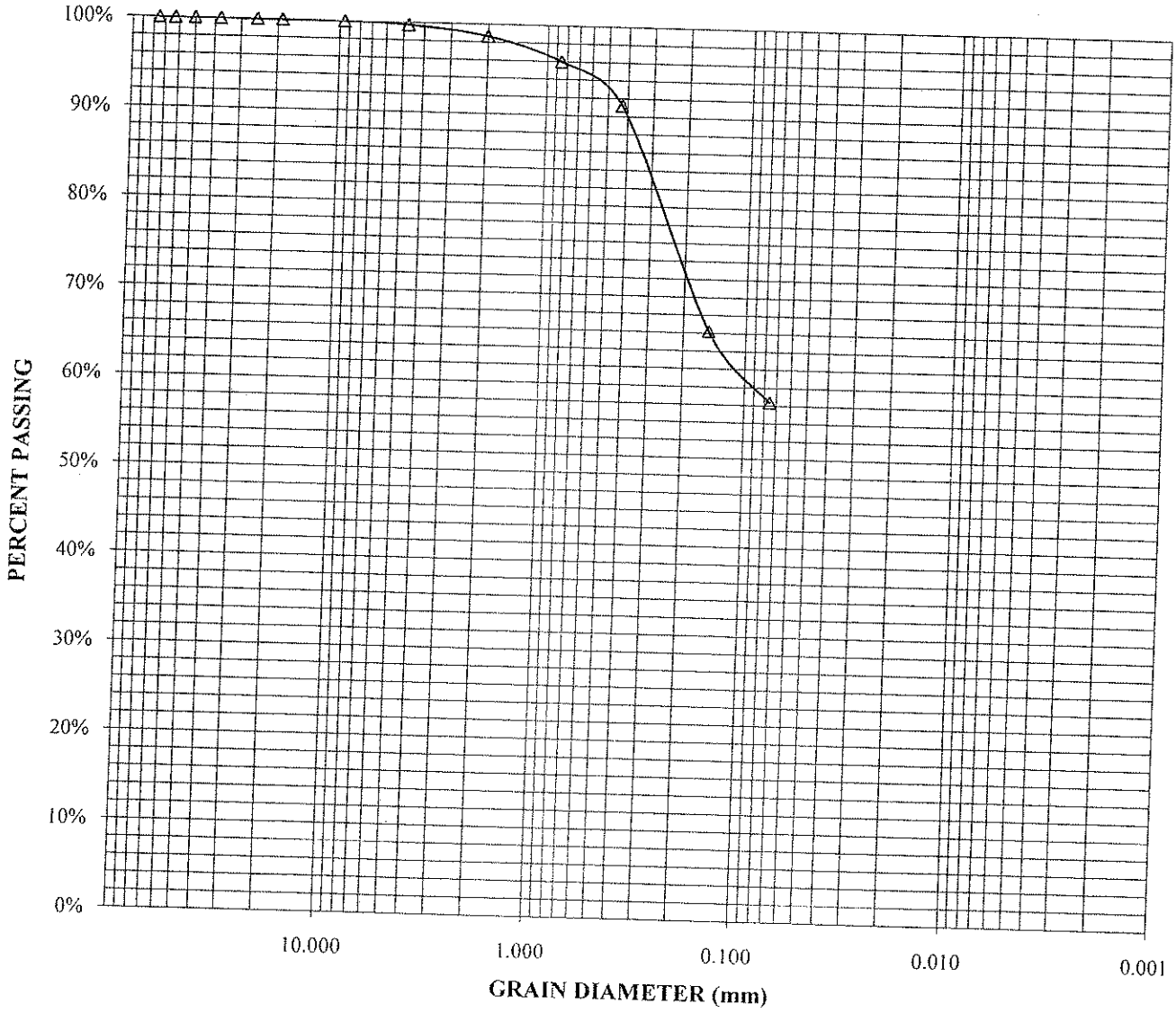
FIGURE B-6

APPENDIX C

LABORATORY TESTING PROGRAM

Laboratory Testing Procedures	Page C-1
Particle Size Analysis	Figure C-1 and C-2

BORING:	B1	PERCENT PASSING No. 4	PERCENT PASSING No. 200
DEPTH (ft):	4.0		
SOIL TYPE (USCS):	CL	99.7%	58.4%



BUTANO GEOTECHNICAL ENGINEERING, INC.	GRAIN SIZE DISTRIBUTION	FIGURE
	2725 Chanticleer Avenue	C-1

APPENDIX D

PERCOLATION TESTING PROCEDURES

Constant head percolation tests were performed at six locations on the parcel (P1 through P6). The holes were filled with water to a height of approximately 12 inches from the base of the hole. The approximate locations of the test holes are shown on the boring site plan in Appendix B, Figure B-2

The holes were logged in the field during the drilling process.

Test holes were drilled with 5-inch diameter solid stem tractor mounted equipment. Perforated pipe was inserted to prevent potential collapse of the test holes and approximately 2 to 3 inches of clean, crushed ⅜" gravel was placed at the bottom of the holes as well as around the annulus of the pipe. The test holes were pre-soaked 24 hours prior to percolation testing.

The percolation rates for P1 through P6 were recorded every 30 minutes.

The following rate reports the average of 3 consecutive measurements within 10% of each other.

Infiltration was calculated using the infiltration reduction factor as defined by the Southeast Michigan Council of Governments Low Impact Development Manual. The reduction factor is defined as:

$$Rf = \frac{(2 * d1 - \Delta D)}{\emptyset} + 1$$

Where: Rf = Reduction Factor
d1 = Initial Water Depth (in)
ΔD = Percolation Rate (in/hr)
Ø = Hole Diameter (in)

Percolation Test Hole	Depth (ft)	Soil (USCS)	Percolation Rate (in/hr)	Infiltration Rate (in/hr)
P1	1	SM (silty sand)	8.7	4.19
P2	2	SM (silty sand)	3.8	0.97
P3	2	CL (sandy lean clay)	0.13	0.02
P4	4	CL (sandy lean clay)	1.0	0.17
P5	2	CL (sandy lean clay)	1.3	0.32
P6	4	CL (sandy lean clay)	0.50	0.05

PROGRAM STATEMENT
Discretion Brewing - Development Permitting
2725 Chanticleer Ave, Santa Cruz, CA 95065-1841
APN 025-161-06

1. What different functions will there be on site?
   Response:
   This project consists of an approximately 17,739 square foot high bay steel building with 5,435 SF of mezzanine storage space. Functions include: office/admin work, receiving raw materials, dry storage, cold storage, milling grain, steeping milled grain with hot water, separating steeped liquid from grain, boiling the resulting liquid with hops, cooling the boiled liquid, fermenting the liquid with yeast to make beer, filtering beer, cleaning of equipment, packaging beer in kegs, cans and bottles, loading delivery truck(s), delivering beer to customers. The brewery will be for production only, with no tasting room. The break room will be used by brewery staff for meal breaks. The new structure will be located at 2725 Chanticleer Avenue, Santa Cruz, California APN 02516106 (51,253 SF), to the west of the existing buildings and parking lot. This will be an independent structure, there will be no modification of existing buildings. The existing building to remain is used by Doerksen Precision Products.

2. Will the general public be on site on a regular basis, or just production-related personnel such as employees, vendors, etc.?
   Response:
   This will be a production facility with no retail space. Occasionally, invited guests will visit the facility. The current tasting room and restaurant located on 41st Avenue is to remain and will maintain the beer tasting function.

3. What will be the days and hours of operation?
   Response:
   Hours will initially be Mon-Fri 7:00 AM - 6:00 PM; Sat-Sun 11:00AM - 5:00PM eventually, Mon-Sun 7:00 AM - 11:00 PM. We do not anticipate the need, nor have any desire to, but want to reserve the right to operate 24 hrs/7 days per week. All work will be indoors. The building will be designed to contain noise under the limits outlined in County code '8.30.010 Offensive noise'

4. How many employees will there be, will they all be there at the same time, and where will they park?
   Response:
   Approximately 15 on 1st shift and less than 10 on 2nd shift. Many of our employees ride bicycles to work. The rest will park at the off-street parking spaces provided.

5. How many deliveries will there be per week?
   Response:
   Approximately 10 deliveries per week, including FedEx, UPS etc.

6. What is the largest truck that will enter the site, and how many times per week?
   Response:
   Most deliveries will be by typical box truck, but the largest would be an occasional delivery by a tractor-semitrailer (single trailer).The design includes a uniform slope that will allow a semi to reverse in from the road to the rear receiving roll up door.

7. How many visitors will there be per week, and where will they park?
   Response:
   We don't anticipate many visitors at any given time. They would park at the off-street parking space provided.

8. What function will the existing building to remain have?
   Response:
   The current business, Doerksen Precision Products will remain. This business is involved in machining and fabricating parts for multiple industries.

9. How many employees and/or visitors will be there at the existing building? And where will they park?
   Response:
   Doerksen Precision Products currently has eight employees and an occasional customer that will park on site.

10. How much waste as a result of the brewing process will be produced on site, and how will it be removed from the site?
    Response:
    The most significant byproduct of the brewing process is spent grains. At full production (year 3 or later), approx 9,400 lbs/week of spent grain held onsite in a silo designed for this purpose to be removed by truck and delivered to local organic farmers in the county. In the first year, estimated amount will be substantially less: approx 2,800 lbs/week of spent grain.

11. How much paper waste and recycling will be produced per week?
    Response:
    1 standard size dumpster each for paper waste and recycling. No significant glass waste will be produced.

12. What sort of emissions, and approximate volumes, will be released into the air?

    Response:
    Steam from boiling beer vented through 10" pipe intermittently for a total of about 8 hrs/day. An insignificant amount of CO_2 produced by the natural fermentation of beer.

13. What are noise levels dB likely to be sustained during hours of operations?
    Response:
    All factory functions will be indoors except for shipping and receiving. Noise exterior to the insulated building should be nominal. Inside the building, our goal is less than 85 decibels. Noise will be kept under the limits stated in the County code: '8.30.010 Offensive noise'.

Annette Olson

From: David Rhodes <David@madi-arch.com>
Sent: Monday, December 19, 2016 3:14 PM
To: Annette Olson
Cc: Andrew Fullerton
Subject: RE: Discretion Brewers Planning Approval

Hi Annette,

Please see response from brewmaster Michael Demers regarding beer production:

For reference, 1 barrel of beer (BBL) = 31 gallons.
In the first year, we should produce 3,000 BBL.
By year 5, we hope to produce 10,000 BBL.
The maximum annual capacity of the brewery will be 25,000 BBL.

Let me know if you need anything else.

David

ATTACHMENT 2

Michael L. Bench
Consulting Arborist
(831) 594-5151

7327 Langley Canyon Road
Prunedale, California 93907

A Cursory Evaluation of the Existing Trees
2725 Chanticleer Avenue
Santa Cruz, California

Assignment
I was asked by Mr. David Rhodes, Architect, MADI Architecture, to inventory and to evaluate the existing trees on the property located at 2725 Chanticleer Avenue, Santa Cruz, California.

Methods
I measured the trunks of the trees using a diameter tape at 4 ½ feet above soil grade (referred to as DBH or Diameter at Breast Height), according to the International Society of Arboriculture (ISA) standards. The canopy height and spread were estimated using visual references only. Trunk measurements were rounded up to the nearest inch.

Observations
I inspected the trees on August 4, 2016.

There are 8 existing trees on this property. These trees are listed by number on the attached List of Trees, which follows this text. This Data Sheet provides the basic data about each tree, including the species, the trunk diameter(s), height, spread, health, structural integrity. The health and structure of each specimen is rated on a scale of 1-5: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Extremely Poor.

The locations of the trees are shown on the attached two Site Plan mark-ups:

1. The Topographic Survey Map, prepared by Edmundson and Associates, 11-4-15.
2. The Site Plan of the Proposed New Structures, prepared by MADI, A1.1, 1-7-15.

Tree # 1, a 39 inch DBH (Diameter at Breast Height = 54 inches above grade) Linden (*Liriodendron tulipifera*), is located on the property boundary, but approximately 90% of the trunk is located on the adjacent property toward the north. The roots of this tree have raised the paving around the trunk. This indicates that a percentage of the roots of this tree are located just under the surface of the existing paving.

Tree # 2, a 7 inch diameter DBH Coast Live Oak (*Quercus agrifolia*) would be removed during the construction of the proposed plan.

Trees # 3-8, are all Silver wattle (*Acacia dealbata*), located in a cluster at the northwest corner of the property. This species, *Acacia dealbata*, produces viable seeds, which tend to propagate profusely. For this reason, it is often regarded as an invasive species. It grows rapidly and can out compete with our indigenous oak species. At some locations it is regarded as a nuisance tree.

Risks to the Existing Trees by Proposed Construction
It appears that a percentage of the surface roots of Tree # 1 would be removed or damaged by construction of the proposed adjacent parking lot and the Trash Enclosure. It is not known whether or not all of the roots of Tree # 1 are located near the surface. The roots of most trees typically exist in the top 24 inches of soil but occasionally in the top 12 inches of soil. The depth of roots is often determined by the soil profile rather than the growth habit of the tree. However, roots of virtually all species grow lateral not vertical, except in rare unusual locations. The root systems of trees tend to look like the bottom of a wine glass, only wider.

The concrete pad for a Trash Enclosure tends to require a deeper footing than other slab construction because of the abuse the concrete must endure when the heavy garbage binds are set down. I have seen the footings of trash enclosures with a 24 inch footing or more. Concerning Tree # 1, I expect all of the roots would be severed in the area of the Trash Enclosure to construct the footing. For this reason, I recommend that the nearest edge of the trash enclosure footing be a minimum of 20 feet from the trunk of Tree # 1.

The impact to the roots of Tree # 1 posed by the grading and construction of the adjacent parking lot would depend on the depth of the root mass. I suggest one of the following options.

Option A –Tree # 1
This alternative would be simply to maintain a safe distance from the trunk for any grading or excavation, which would result in root losses. For a tree of this size using this method, I recommend a distance of 18 feet from the nearest edge of the trunk. Even at this distance some root damage would be expected, and for that reason, it would be essential to irrigate the tree thoroughly and regularly for at least 1 year. Paving could be layed inside of this 18 foot area, but the sub-surface stabilization within this area would have to be eliminated. Also, the compaction within this area would have to be limited to 80%.

Option B – Tree # 1
This alternative would be to locate the extent of the root mass under the existing paving using an "Air Spade" or a "Water jet Spade" combined with hand digging. This would require that the existing paving be peeled off of the surface without disturbing the material (containing roots) below the existing paving for the area within 20 feet of the trunk. Then perform exploratory excavation using one of the two methods (Air Spade or Water Jet), which would remove the soil without significantly damaging the existing roots. Once the roots in this are would be exposed, they would require inspection by the project arborist.

The objective would be to determine which roots could be severed and which roots must be preserved. Procedures for preservation would also be required. By this method, the planned features near this tree would be determined by the design team following this exploratory excavation. Roots are often not located where we presume. I have had some projects, in which no significant roots existed in the area of proposed construction, but this could not be anticipated by visual inspection alone. In my opinion, ground penetrating radar has not been developed to a level sophisticated enough to be used for this purpose.

Trees # 2-8
Tree # 2 would be removed by the proposed plan.

It appears that Acacia Trees # 3-8 would suffer some root losses by grading for the new Brewery building. Should the grading be kept a minimum of 8 feet from the trunks of individual trees, they should all survive. However, the urban forest in this area would be better served over the long term, in my opinion, by removing these Acacia trees and replacing them with Coast live oak (*Q. agrifolia*) specimens.

Tree Protection Plan

1. If Tree # 1 would be expected to survive in good condition, its root zone and canopy must be protected during demolition and construction. The most effective way to achieve this objective would be to install Tree Protective Fencing. It would be essential to install tree protective fencing prior to the arrival of demolition equipment. The location of the Tree Protective Fencing must be directed by the project arborist, but located at or near the drip line of Tree # 1 to the extent feasible. This fencing must protect a sufficient portion of the root zone to be effective. In my experience, the protective fencing must:
   - Consist of chain link fencing and having a minimum height of 6 feet.
   - Be mounted on steel posts driven approximately 18-24 inches into the soil.
   - Fencing posts must be located a maximum of 10 feet on center.
   - Protective fencing must be installed prior to the arrival of materials, vehicles, or equipment.
   - Protective fencing must not be moved, even temporarily, and must remain in place until all construction is completed, unless approved and directed by the Project Arborist.

   Note: Depending on the construction schedule, the Tree Protective Fencing may require removal (or partial removal) at the supervision of the Project Arborist and replacement one or more times during construction.

2. There must be no grading, trenching, or surface scraping inside the dripline of protected trees, unless specifically approved by the Project Arborist.

3. If any underground utilities would be replaced or upgraded within the drip line of Tree # 1, the tree may be adversely impacted. It would be preferred that no trenching for utilities be done inside the dripline of Tree # 1. However, if trenching for utilities must be done inside the dripline of Tree # 1, the root

damage must be inspected and documented by the Project Arborist.

4. I recommend that Tree # 1 must be irrigated throughout the entire construction period during the dry months (any month receiving less than 1 inch of rainfall). Irrigate a minimum of 10 gallons for each inch of trunk diameter every two weeks. A soaker hose or a drip line is preferred for this purpose, but the soaker hose(s) must be located near the dripline (not near the trunk) to be effective.

5. I recommend that the entire area inside the Tree Protective Fencing for Trees # 1 must be mulched. Mulching consists of a protective material (wood chips, gravel) being spread over the root zone inside the dripline. This material must be 4 inches in depth after spreading, which must be done by hand. I prefer course wood chips because it is organic, and degrades naturally over time.

6. Any pruning must be done by an arborist certified by the ISA (International Society of Arboriculture) and the pruning must be done according to ISA ANSI A300 standards (2008) and according to Western Chapter Standards, 1998.

7. Sprinkler irrigation if planned in the Landscape Plan, must not be designed to strike the trunks of Tree # 1, because of potential high risk of disease infection.

8. Landscape irrigation trenches must be a minimum distance of 10 times the trunk diameter from the trunks of protected trees.

9. Landscape materials (cobbles, decorative bark, stones, fencing, etc.) must not be installed directly in contact with the bark of trees because of the risk of serious disease infection.

Respectfully submitted,

Michael L. Bench, Consulting Arborist
International Society of Arboriculture Certification # WE 1897A
American Society of Consulting Arborists Member

Attachments: List of Trees
Tree Map – Existing Buildings and Topography
Tree Map – Proposed New Buildings and Hardscape
Assumptions and Limiting Conditions Declaration

2725 Chanticleer Avenue

List of Trees
(Existing)

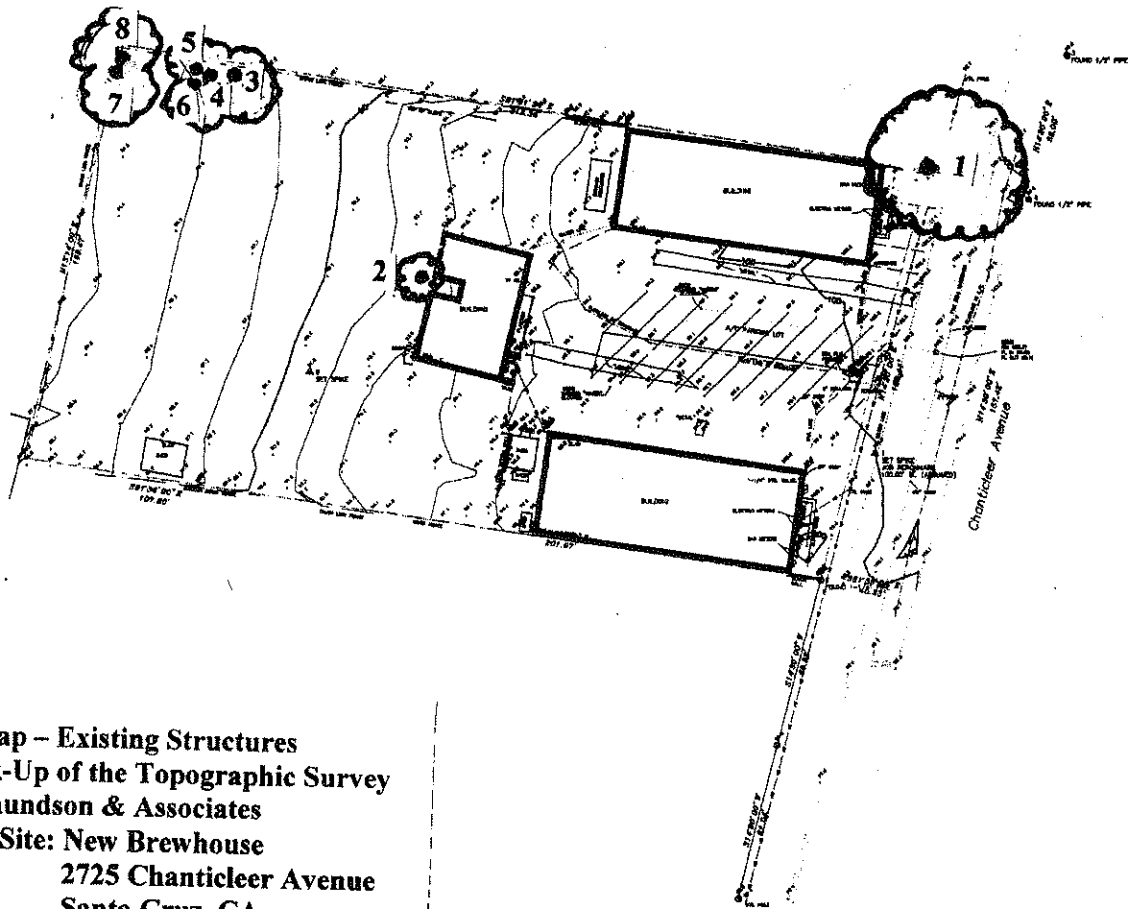
Santa Cruz, California

	Field Data Sheet	Trunk Diameter In Inches	Canopy Height In Feet	Canopy Diameter In Feet	Health 1 - 5 = Good to Poor	Structure 1 - 5 = Good to Poor		DBH = Diameter at Breast Height = 54 inches Above Grade (E) = Estimated CD w/ IB = Co-Dominant Leaders with Imbedded Bark, a Structural Weakness
Tree #	Tree Name	DBH	Canopy Height	Canopy Spread	Health / Structure	Structure Integrity	Overall Condition	Notes
1	Linden (Liriodendron	39	20	40	1	4	Good	Topped for Line Clearing
2	Coast live oak (Quercus agrifolia)	7	15	15	1	1	Excellent	
3	Silver Wattle (Acacia dealbata)	9 / 6 / 5 / 4	20	20	1	4	Fair/Good	CD w/ IB
4	Silver Wattle	9 / 7	25	15	1	4	Fair/Good	CD w/ IB
5	Silver Wattle	4	20	10	1	2	Good	
6	Silver Wattle	5	20	10	1	2	Good	
7	Silver Wattle	12	25	20	1	4	Fair/Good	CD w/ IB
8	Silver Wattle	11	30	20	1	4	Fair/Good	CD w/ IB

ATTACHMENT 3

Prepared by
Michael L. Bench,
Consulting Arborist

Site Observations:
August 4, 2016



Tree Map – Existing Structures
A Mark-Up of the Topographic Survey
By Edmundson & Associates
Project Site: New Brewhouse
2725 Chanticleer Avenue
Santa Cruz, CA
Observations: 8-04-16
Michael L. Bench
Consulting Arborist

LEGEND

Survey control point found as noted
Survey control point set as noted
Property line, lands of
Other property line
Centre of Right of Way
Edge of Right of Way
Structure line
Fence
Tie line
Edge of pavement
Tree
Record data

Elevations are based on assumed datum. Bench mark = 4" Spike (Point 1 on map) Elevation 100.00' (Assumed)

NOTE: This is not a boundary survey. Property lines are shown for orientation only and are based on recorded data. They may be discovered to be different, subject to the results of a complete boundary survey.

EDMUNDSON & ASSOCIATES LAND SURVEYING
1512 SCHAFFER AVENUE
SANTA CRUZ, CA 95062
PHONE (831) 425-1706
FAX (831) 425-1796

TOPOGRAPHIC SURVEY MAP
OF ASSESSOR'S PARCEL NO. 035-161-08

Scale 1" = 20'	Santa Cruz County	File 15165E.DWG
Nov. 4, 2015	California	FB 198/3
Prepared for Moehl-Miller Engineering		
1		Job #15165

ATTACHMENT 3

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

7 October 2016

David Rhodes – MADI Group Inc.
303 Potrero Street, Suite 7B
Santa Cruz, CA 95060

Subject: Review of Geotechnical Investigation for 2725 Chanticleer Avenue by Butano Geotechnical Engineering, Inc - Project No. 16-144-SC, dated 24 August 2016

Site: 2725 Chanticleer Avenue
APN 025-161-06
Application No: REV161088

Dear Mr. Rhodes:

The purpose of this letter is to inform you that the Planning Department has accepted the subject report and the following items shall be required:

1. All project design and construction shall comply with the recommendations of the report.

2. Final plans shall reference the report and include a statement that the project shall conform to the report's recommendations.

3. After plans are prepared that are acceptable to all reviewing agencies, please submit a completed Soils (Geotechnical) Engineer Plan Review Form to Environmental Planning. The author of the soils report shall sign and stamp the completed form. *Please note that the plan review form must reference the final plan set by last revision date.* Any updates to report recommendations necessary to address conflicts between the report and plans must be provided via a separate addendum to the soils report.

   Electronic copies of all forms required to be completed by the Geotechnical Engineer may be found on our website: www.sccoplanning.com, under "Environmental", "Geology & Soils", "Assistance & Forms".

After building permit issuance the soils engineer *must remain involved with the project* during construction. Please review the Notice to Permits Holders (attached).

Our acceptance of the report is limited to its technical content. Other project issues such as zoning, fire safety, septic or sewer approval, etc. may require resolution by other agencies.

Please note that this determination may be appealed within 14 calendar days of the date of service. Additional information regarding the appeals process may be found online at: http://www.sccoplanning.com/html/devrev/plnappeal_bldg.htm

ATTACHMENT 4

Please call the undersigned at (831) 454-3168 or email: Rick.Parks@santacruzcounty.us if we can be of any further assistance.

Sincerely,

Rick Parks, GE 2603
Civil Engineer – Environmental Planning Section
County of Santa Cruz Planning Department

Cc: Antonella Gentile, Environmental Planning
Butano Geotechnical Engineering, Inc. Attn: Greg Bloom, GE

NOTICE TO PERMIT HOLDERS WHEN A SOILS REPORT HAS BEEN PREPARED, REVIEWED AND ACCEPTED FOR THE PROJECT

After issuance of the building permit, the County requires your soils engineer to be involved during construction. Several letters or reports are required to be submitted to the County at various times during construction. They are as follows:

1. **When a project has engineered fills and / or grading**, a letter from your soils engineer must be submitted to the Environmental Planning section of the Planning Department prior to foundations being excavated. This letter must state that the grading has been completed in conformance with the recommendations of the soils report. Compaction reports or a summary thereof must be submitted.

2. **Prior to placing concrete for foundations**, a letter from the soils engineer must be submitted to the building inspector and to Environmental Planning stating that the soils engineer has observed the foundation excavation and that it meets the recommendations of the soils report.

3. **At the completion of construction,** a *Soils (Geotechnical) Engineer Final Inspection Form* from your soils engineer is required to be submitted to Environmental Planning that includes copies of all observations and the tests the soils engineer has made during construction and is stamped and signed, certifying that the project was constructed in conformance with the recommendations of the soils report.

   If the *Final Inspection Form* identifies any portions of the project that were not observed by the soils engineer, you may be required to perform destructive testing in order for your permit to obtain a final inspection. The soils engineer then must complete and initial an *Exceptions Addendum Form* that certifies that the features not observed will not pose a life safety risk to occupants

CITY OF
SANTA CRUZ

WATER DEPARTMENT

212 Locust Street, Suite C Santa Cruz CA 95060 Phone (831) 420-5200 Fax (831) 420-5201

February 9, 2016

David Rhodes
303 Potrero Street
Suite 7B
Santa Cruz, CA 95060

Re: APN 025-161-06 (2725 CHANTICLEER AVE #7, SANTA CRUZ, CA 95065)
PROPOSED BREWERY ON (E) COMMERCIAL LOT

Dear Mr. Rhodes:

This letter is to advise you that the subject parcel is located within the service area of the Santa Cruz Water Department and potable water is currently available for normal domestic use and fire protection. Service will be provided to each and every lot of the development upon payment of the fees and charges in effect at the time of service application and upon completion of the installation, at developer expense, of any water mains, service connections, fire hydrants and other facilities required for the development under the rules and regulations of the Santa Cruz Water Department. The development will also be subject to the City's Landscape Water Conservation requirements.

At the present time:

- the required water system improvements are not complete; and
- financial arrangements have not been made to the satisfaction of the City to guarantee payment of all unpaid claims.

This letter will remain in effect for a period of two years from the above date. It should be noted, however, that the City Council may elect to declare a moratorium on new service connections due to drought conditions or other water emergency. Such a declaration would supersede this statement of water availability.

If you have any questions regarding service requirements, please call the Engineering Division at (831) 420-5210. If you have questions regarding landscape water conservation requirements, please contact the Water Conservation Office at (831) 420-5230.

Sincerely,

Rosemary Menard

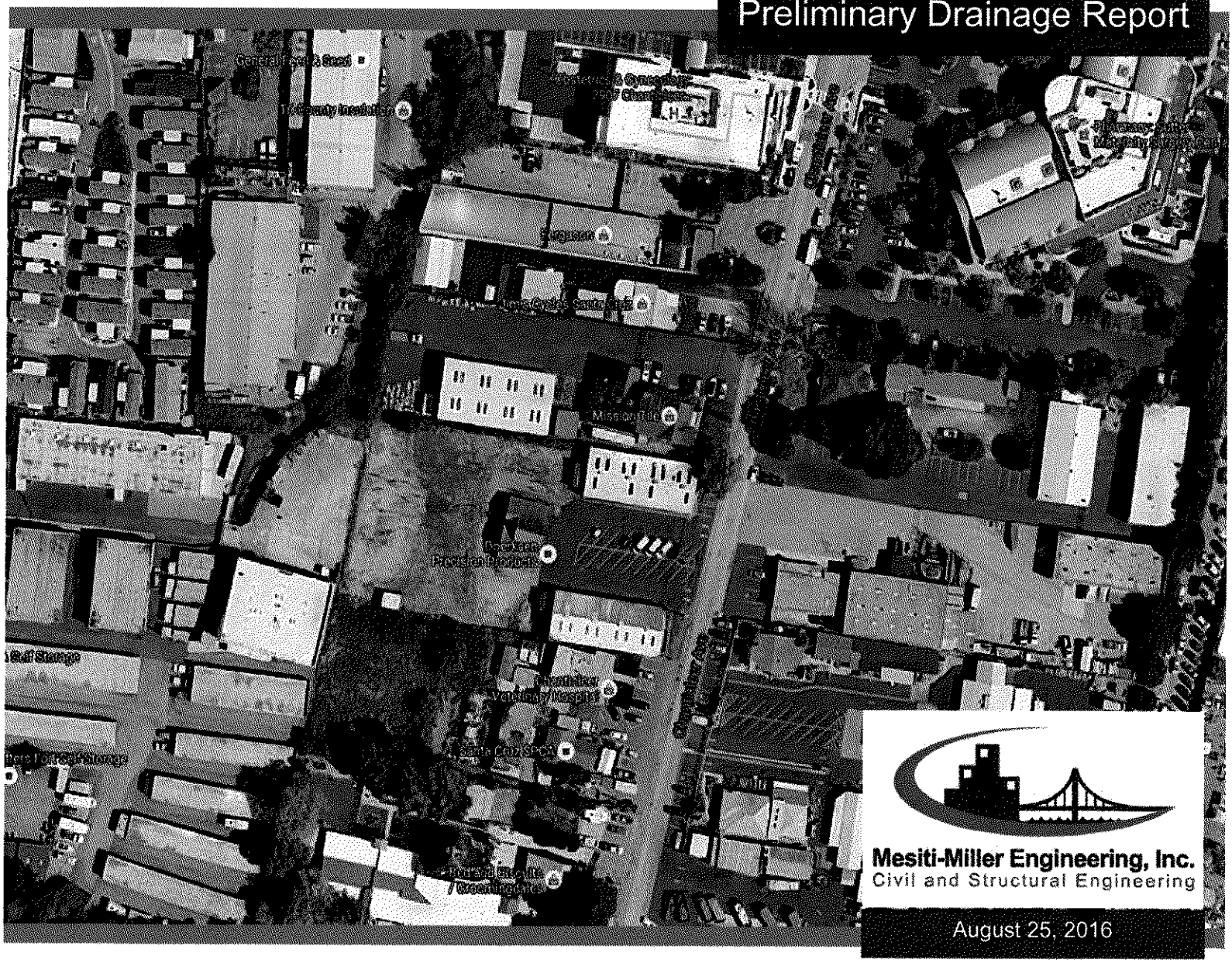
Rosemary Menard
Water Director

RM/js
Cc SCWD Engineering

ATTACHMENT 5

Brewhouse at 2725 Chanticleer Avenue

Preliminary Drainage Report



Mesiti-Miller Engineering, Inc.
Civil and Structural Engineering

August 25, 2016

ATTACHMENT 8

Mesiti-Miller Engineering, Inc.
Civil and Structural Engineering

August 25, 2016

Ralph Le Roux
MADI
303 Potrero Street
Suit 07B
Santa Cruz, CA 95060

Re: Brewhouse at 2725 Chanticleer Avenue
Preliminary Drainage Report
MME File No: 15156

Dear Mr. Le Roux,

This report was prepared in support of the Development Permit Application for the New Brewhouse to be constructed at the above address. Please submit this report to the Santa Cruz County Planning Department with our civil engineering plans.

Downstream Drainage Discussion

The existing runoff from the property flows west across a private parking lot for approximately 90 feet and into a privately maintained culvert before flowing through a Caltrans culvert below Highway 1. The proposed plan will not alter drainage patterns. A detention and retention facility will be provided to match pre and post-development flow rates for the 2 and 10 year storms in accordance with County criteria as discussed later in this report.

Figure 1 - Photo shows runoff from the property flowing west across the rear property line

ATTACHMENT 6

Based on site observations, the privately maintained culverts are in good condition and also have adequate flow capacity based on our review of the Master Plan analysis.

Figure 2 - Existing privately maintained twin 48" Ø culvert inlet located approximately 90 feet downstream of the project property. Photograph taken December 18, 2015, 2:00pm.

The twin 48" Ø RCP private culverts inlet (Node ID Z5_IL_5149) depicted above are large enough and have adequate flow capacity as demonstrated by the availability of 2.6 feet of headroom between the 100 year water level and the ground level.

Invert	100.00
10 yr	102.63
25 yr	102.91
100 yr	103.16
Ground	105.76

Source: Proposed Drainage Master Plan, Schaaf & Wheeler, August 2013

The project owner has discussed the Brewhouse project with the downstream property owner and has received positive feedback. We understand a written agreement will be developed following development permit approval prior to building permit approval acknowledging the drainage conditions. We also understand typical requirements for annual cleaning at the inlets and outlets of the culverts, to keep them free of debris, would be appropriate.

Downstream of the private culvert the Caltrans culvert under Highway 1 was observed and also appeared to be in good condition.

Figure 3 - Existing Caltrans culvert underneath Highway 1, downstream of private twin 48" Ø culvert culvert. Photograph taken December 18, 2015, 2:15pm.

Regional Drainage Discussion

The sites on either side of the property slope both slope mainly west and slightly away from the property and do not direct flow toward the project property.

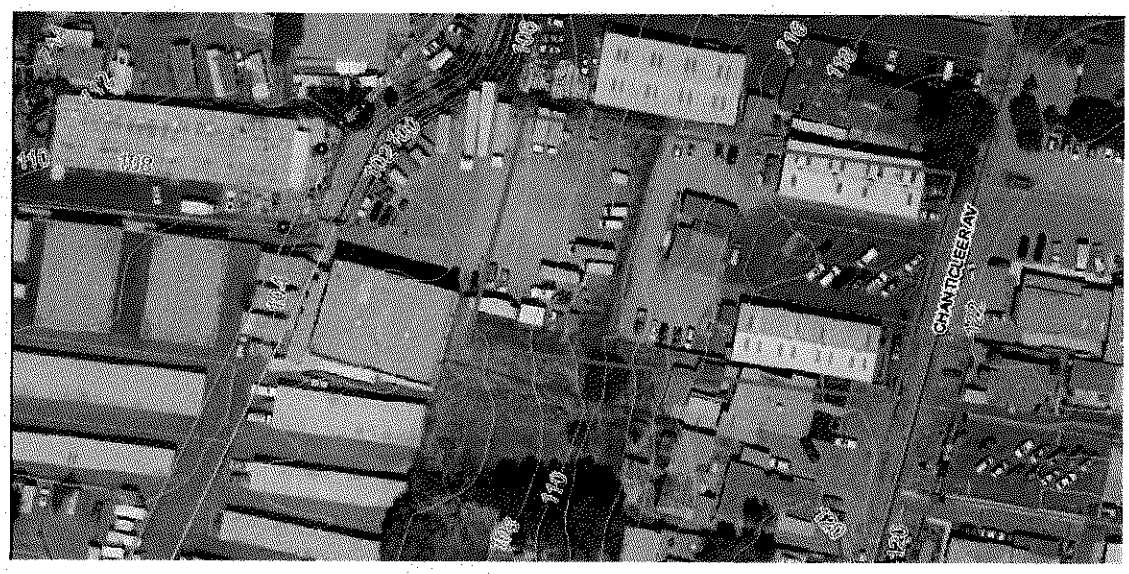


Figure 4 - Regional slope is to the west

Figure 5 - Photo looking north showing road drainage away from the property

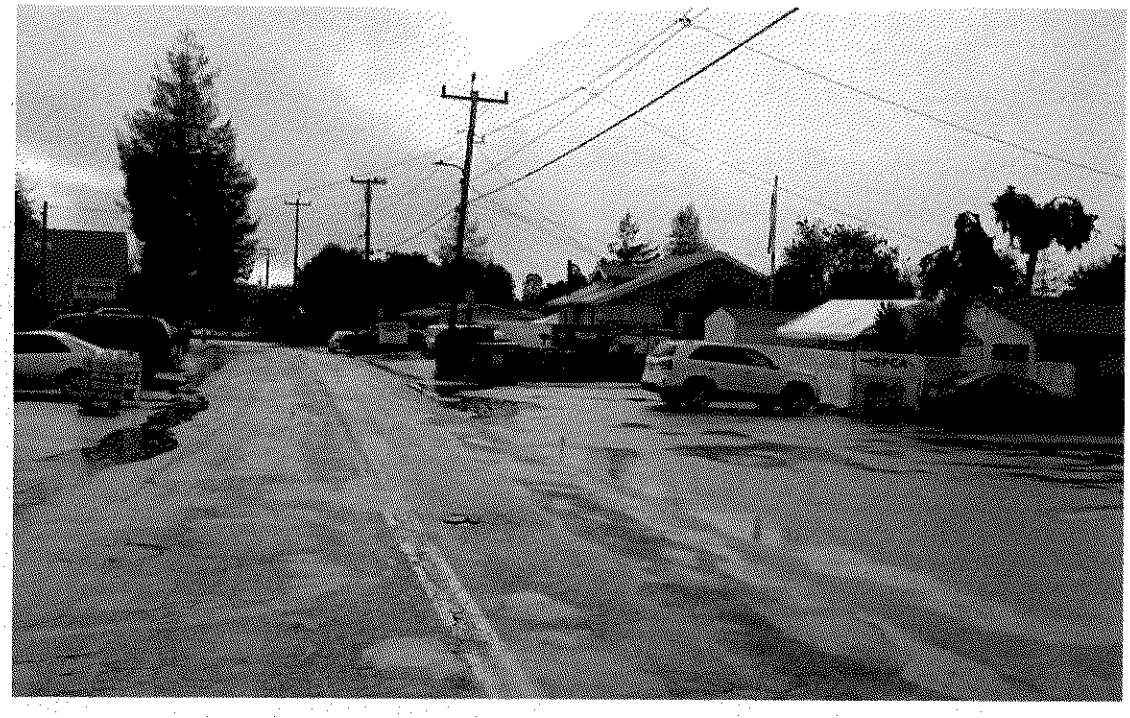


Figure 6 - Photo from project frontage looking south showing road drainage heading south

The project will be required to construct curb, gutter, and sidewalk along the street frontage and this will be designed to keep street drainage contained in the road and will improve existing conditions.

Figure 7 - Photo looking north showing the northern neighboring property does not contribute flow to the project property

Figure 8 - Photo looking south shows how the southern neighboring property draining to the west

Stormwater Management Strategy

The stormwater management strategy was to minimize impervious areas and to provide a large drainage management area at the downstream property. We prepared a preliminary analysis to demonstrate compliance with the County design criteria to maintain pre- and post-development discharge rates for preliminary design and to show the project is feasible. Final design calculations will be more detailed and we will fully develop the final design.

Impervious areas were minimized by specifying pervious pavers for all of the driveway, parking, and courtyard areas. Almost all regular asphalt and concrete was eliminated from the project to minimize the drainage impact. Refer to the project site plans for pervious paver extents and preliminary details. During final design we will fine tune the depth of the drain rock below the pavers to provide the correct amount of storage depth. We will also design the elevation of the perforated pipe system to be set up above the bottom of the rock layer to allow for infiltration and groundwater recharge to the maximum extent feasible.

A large 160 feet by 20 feet drainage management area was set aside at the downstream western property line to accommodate a mitigation system. This is approximately 6% of the 1.18 acre lot and in excess of the typical sizing factor of 4% (Central Coast Regional Water Quality Control Board, Phase II Small MS4 General Permit, Low Impact Design Standards, 2013). For the purpose of preliminary sizing using the Santa Cruz County standard detention and retention spreadsheets, we included all of the pervious pavers area at the standard ratio of 50%, in addition to all of the proposed impervious areas needed for the new brewhouse, and all of the existing building area to remain. In effect, the drainage management area will mitigate for not only the new development but also the existing building. During final design we may be able to design and demonstrate the pervious pavers are self mitigating, pending final geotechnical data and construction cost considerations.

The drainage management area will feature a 12" tall mound along the rear property line containing a 8 foot wide and 12" deep swale that will act as a detention pond during the 10-year storm. A surface release weir an channel will be sized and constructed through the mound in the center to release the pre-development 10-year 15 minute flow rate. The base of the swale will be underlain by a 4 foot deep by 8 feet wide gravel infiltration trench that will be sized to retain and infiltrate the 2 year 2 hour flow. The dimensions of this feature were designed based on site-specific tests that determined an appropriate percolation rate for design would be 0.75 inches per hour. This figure was determined by averaging the results of the 4 foot deep and 5 inch diameter perforated pipe test holes located along the rear lot line that best represent the proposed gravel infiltration trench (Geotechnical Investigation Butano Engineering, August 2016).

The potential pollutant sources from the Brewhouse are minimal and low risk. The brewing process uses edible ingredients such as water, barley, wheat, and hops with small amounts of yeast and is a similar process to baking bread. The parking area and driveways will have typical vehicular pollutants and these will be mitigated by the pervious paver system and vegetated retention and detention swale. The roof will be clean and any atmospheric pollutants such as dust will be mitigated by the bio-retention swale.

Respectfully yours,

RCahill

Rodney Cahill, P.E., LEED AP, QSD/QSP
Principal

List of Appendices

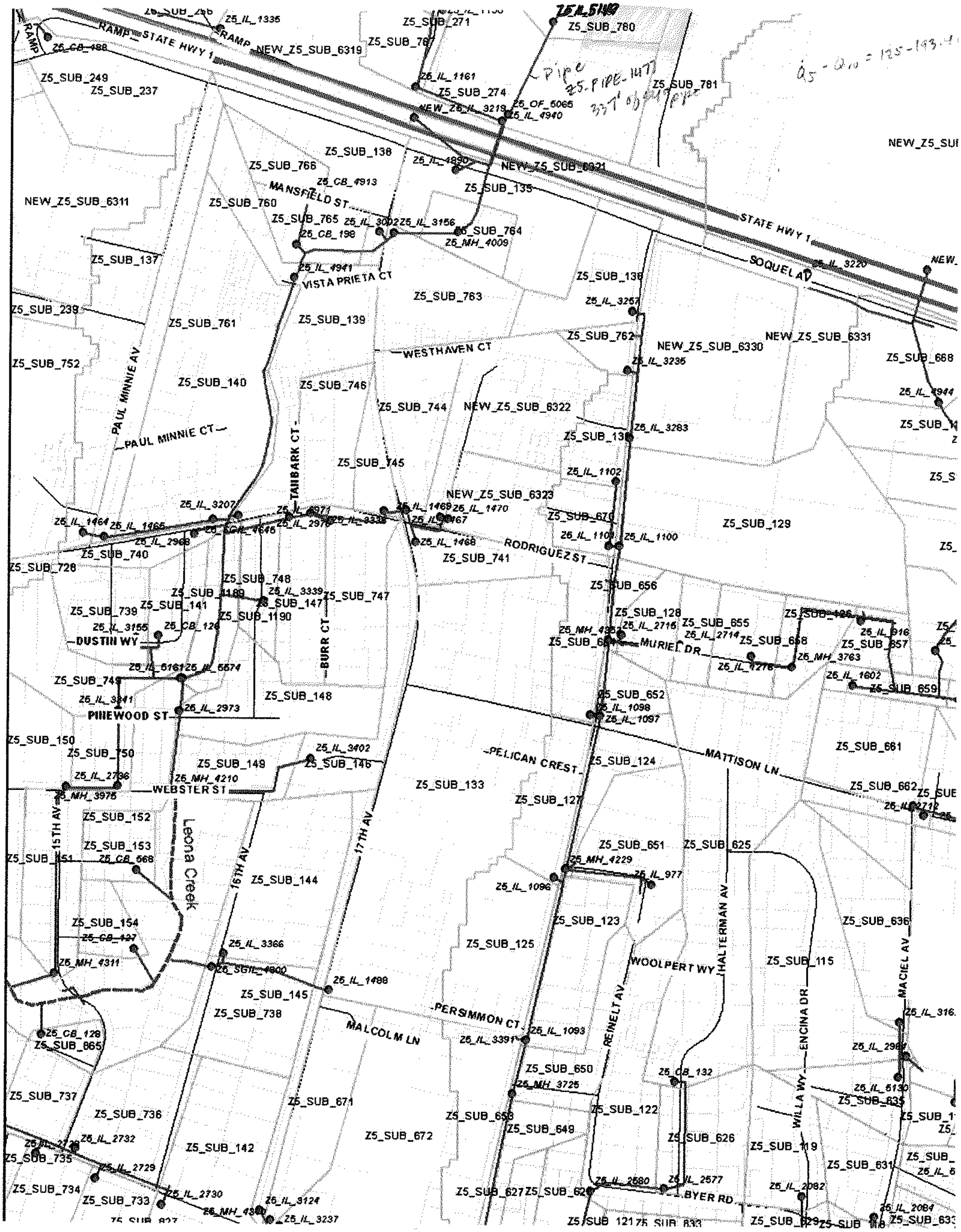
Appendix A - Zone 5 Storm Drain Master Plan Map and Hydraulic Grade Line Table
Appendix B - Retention and Detention Sizing Calculations
Appendix C - Soil Survey

i:\15156 madi - ce se for brewery building\calcs\drainage\preliminary drainage report\mme_preliminary_drainage_report 2016 08 25.doc

ATTACHMENT 6

APPENDIX A

Zone 5 Master Plan Map and Hydraulic Grade Line Table



ATTACHMENT 6

*The term "NEW" in a Node ID does not reflect the age or condition of the actual link. It is modeling nomenclature only.

Zone 5 West Existing Nodes

Node ID*	County Grid #	Ground El. (ft)	Invert El. (ft)	Max HGL (ft)			
				5Yr	10Yr	25Yr	100Yr
Z5_IL_5125	M3	18.00	14.00	16.36	16.83	17.42	17.90
Z5_IL_5130	J4	74.41	68.91	69.47	69.55	69.66	69.80
Z5_IL_5138	G4	134.00	125.02	128.49	129.39	129.65	129.95
Z5_IL_5140	G4	128.00	126.00	128.38	128.92	129.78	131.08
Z5_IL_5142	G4	126.00	122.00	123.34	123.46	123.49	123.54
Z5_IL_5145	H4	106.13	102.00	104.24	104.46	104.66	104.85
Z5_IL_5149	H3	105.76	100.00	102.38	102.63	102.91	103.16
Z5_IL_5156	K3	74.00	69.50	69.76	69.81	69.87	74.21
Z5_IL_5161	J3	82.40	78.00	80.63	81.19	82.30	83.99
Z5_IL_5163	J3	90.00	84.00	85.91	86.27	86.63	87.04
Z5_IL_5165	M1	26.24	24.57	25.36	26.49	27.75	30.38
Z5_IL_5175	L4	64.00	57.65	58.39	58.61	61.10	65.04
Z5_IL_5216	M1	25.85	21.85	22.33	22.40	22.50	22.63
Z5_IL_5280	M4	41.74	36.49	36.49	36.49	36.49	36.49
Z5_IL_5299	L2	54.00	49.00	53.73	53.98	54.04	54.09
Z5_IL_5318	H3	92.02	86.67	93.34	94.71	96.07	97.93
Z5_IL_5386	H4	114.20	112.20	114.48	115.30	116.55	118.22
Z5_IL_5389	J2	74.00	69.00	69.88	71.92	72.07	73.41
Z5_IL_5391	K4	73.36	67.82	68.03	68.06	68.09	68.13
Z5_IL_5443	K4	73.44	71.44	71.44	71.44	71.44	71.44
Z5_IL_5505	K3	70.00	67.58	71.10	72.09	73.40	75.80
Z5_IL_5565	K4	55.93	51.34	51.39	51.40	51.42	51.43
Z5_IL_5566	K4	54.19	52.31	52.37	52.38	52.39	52.41
Z5_IL_5570	M3	16.00	12.32	12.54	12.57	12.61	12.65
Z5_IL_5571	M3	16.00	12.19	12.26	12.27	12.28	12.30
Z5_IL_5574	J3	84.17	78.00	78.09	78.11	78.12	78.14
Z5_IL_915	J4	107.49	102.82	102.82	102.82	102.82	102.82
Z5_IL_916	J4	106.54	101.77	101.92	101.94	101.98	102.03
Z5_IL_976	J4	96.00	92.32	92.32	92.32	92.32	93.86
Z5_IL_977	J4	96.00	92.97	93.21	93.25	93.31	93.78
Z5_IL_990	K3	72.00	66.75	66.98	67.01	67.04	67.08
Z5_IL_992	J3	86.00	81.68	81.68	83.62	85.12	86.43
Z5_IL_993	J3	86.00	81.38	81.61	83.53	84.79	86.43
Z5_IL_994	J3	86.00	83.00	83.15	83.20	84.80	86.44
Z5_MH_3712	J4	107.08	96.57	97.78	98.49	100.46	101.96
Z5_MH_3714	J4	95.47	81.14	83.00	83.35	83.95	87.97
Z5_MH_3716	M3	54.00	51.25	52.50	52.83	53.34	53.88
Z5_MH_3717	M3	52.29	46.24	46.89	46.99	47.11	48.36
Z5_MH_3718	M3	53.80	51.10	51.32	51.36	51.40	51.45
Z5_MH_3719	M3	43.42	37.30	37.86	37.96	38.08	38.29
Z5_MH_3720	M3	39.60	35.50	35.83	35.88	35.94	36.02
Z5_MH_3721	K3	78.00	67.52	69.75	71.02	74.76	78.00
Z5_MH_3722	K3	82.00	70.00	71.54	71.98	75.52	81.57
Z5_MH_3723	K3	84.00	72.68	74.32	74.64	77.80	84.00
Z5_MH_3724	K3	84.71	73.38	75.02	75.34	78.42	84.71
Z5_MH_3725	J3	89.48	83.29	84.52	84.72	84.97	89.50
Z5_MH_3726	H3	102.00	92.61	97.29	98.99	100.37	102.57
Z5_MH_3727	K4	72.00	64.50	64.79	64.84	64.90	64.98
Z5_MH_3728	K4	65.47	58.47	58.68	58.72	58.76	58.82
Z5_MH_3729	G3	115.19	107.58	110.61	110.12	111.89	111.00
Z5_MH_3730	G3	116.00	107.20	109.72	109.99	110.15	110.62
Z5_MH_3731	G3	116.01	107.29	110.10	110.44	110.63	111.14
Z5_MH_3732	G3	120.14	110.99	112.11	112.22	112.33	112.74
Z5_MH_3733	G3	121.78	115.49	116.25	116.28	116.29	116.30
Z5_MH_3734	G3	107.65	102.80	103.73	104.21	105.98	108.38
Z5_MH_3735	G3	102.00	96.31	101.15	102.83	104.88	108.01
Z5_MH_3736	G3	124.00	119.71	124.00	124.01	124.15	124.54
Z5_MH_3737	G3	126.32	124.48	125.55	126.43	126.61	126.94
Z5_MH_3738	G3	132.00	125.84	132.00	131.05	132.00	131.74

APPENDIX B

Retention and Detention Sizing Calculations

PROJECT: Example Project - APN: 025-161-06 **Application:** **Calc by:** DAM **Date:** 8/23/2016

RUNOFF DETENTION BY THE MODIFIED RATIONAL METHOD

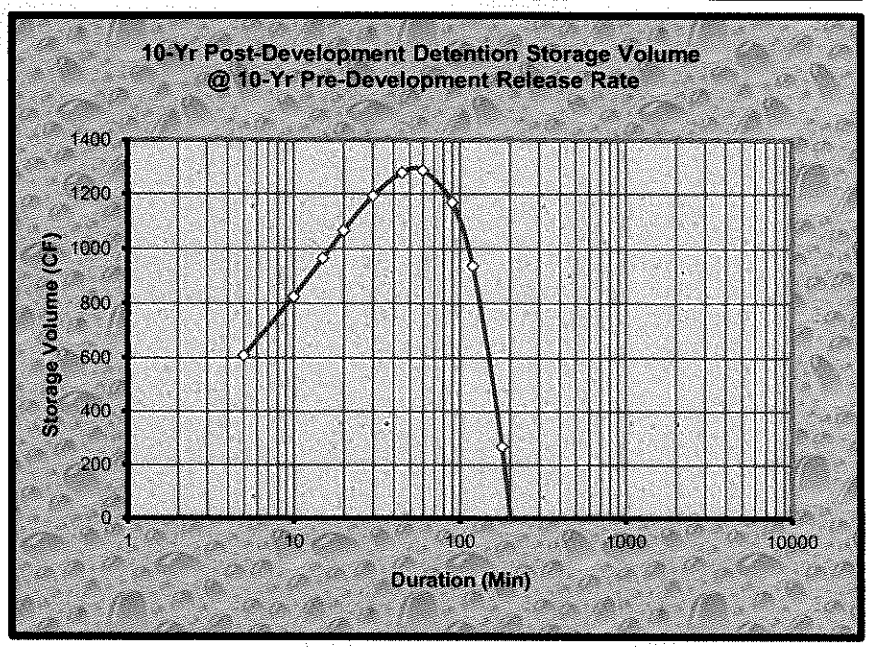
Data Entry: PRESS TAB & ENTER DESIGN VALUES SS Ver: 1.0

Site Location P60 Isopleth:	1.50		Fig. SWM-2 in County Design Criteria
Rational Coefficients Cpre:	0.30		See note # 2
Cpost:	0.90		See note # 2
Impervious Area:	34751	ft^2	See note # 2 and # 4

STRUCTURE DIMENSIONS FOR DETENTION

1288	ft^3 storage volume calculated			
100	% void space assumed			
1288	ft^3 excavated volume needed			
Structure	Length	Width*	Depth*	*For pipe, use the square
Ratios	163.00	8.00	1.00	root of the sectional area
Dimen. (ft)	**162.34**	**7.97**	**1.00**	

10 - YEAR DESIGN STORM				DETENTION @ 15 MIN.	
Storm Duration (min)	10 - Year Intensity (in/hr)	10 - Yr. Release Qpre (cfs)	10 - Year Qpost (cfs)	Detention Rate To Storage (cfs)	Specified Storage Volume (cf)
1440	0.26	0.062	0.186	-0.243	-26275
1200	0.28	0.067	0.201	-0.228	-20550
960	0.31	0.074	0.221	-0.208	-15004
720	0.34	0.083	0.250	-0.180	-9706
480	0.41	0.099	0.296	-0.133	-4786
360	0.46	0.112	0.335	-0.094	-2551
240	0.55	0.133	0.398	-0.032	-571
180	0.62	0.150	0.449	0.020	268
120	0.74	0.178	0.533	0.104	937
90	0.83	0.201	0.603	0.173	1170
60	0.99	0.239	0.716	0.286	1288
45	1.12	0.269	0.808	0.379	1280
30	1.33	0.320	0.960	0.531	1194
20	1.57	0.380	1.140	0.711	1066
15	1.78	**0.429**	1.288	0.859	966
10	2.11	0.510	1.529	1.100	825
5	2.83	0.684	2.052	1.623	608



Notes & Limitations on Use:

1) The modified rational method, and therefore the standard calculations are applicable in watersheds up to 20 acres in size.
2) Required detention volume determinations shall be based on all net new impervious area both on and off-site, resulting from the proposed project. Pervious areas shall not be included in detention volume sizing; an exception may be made for incidental pervious areas less than 10% of the total area.
3) Gravel packed detention chambers shall specify on the plans, aggregate that is washed, angular, and uniformly graded (of single size), assuring void space not less than 35%.
4) A map showing boundaries of both regulated impervious areas and actual drainage areas routed to the hydraulic control structure of the detention facility is to be provided, clearly distinguishing between the two areas, and noting the square footage.
5) The EPA defines a class V injection well as any bored, drilled, or driven shaft, or dug hole that is deeper than its widest surface dimension, or an improved sinkhole, or a subsurface fluid distribution system. Such storm water drainage wells are "authorized by rule". For more information on these rules, contact the EPA. A web site link is provided from the County DPW Stormwater Management web page.
6) Refer to the County of Santa Cruz Design Criteria, for complete method criteria.

ATTACHMENT 6

PROJECT: Example Project - APN: 025-161-06 Application: **Calc by:** DAM **Date:** 8/23/2016

RUNOFF RETENTION BY THE STORAGE PERCOLATION METHOD

Data Entry: PRESS TAB KEY & ENTER DESIGN VALUES

Site Location P60 Isopleth:	1.50	Fig. SWM-2
Rational Coefficients Cpre:	0.30	
Cpost:	0.90	
Impervious Area:	34751	ft^2
Saturated Soil Permeability:	0.60	in/hr

Notes & Limitations on Use:

Saturated soil permeability values may be used conservatively from the USDA-NRCS soil survey, or use actual test values.
Site selection and design shall give proper consideration to the path for excess flows downstream of the designated retention area.
Retention site location on, or immediately above, slopes exceeding 15% will require consulting a geotechnical engineer.
Gravel packed structures shall use washed, angular, uniformly graded aggregate providing not less than 35% void space.
Refer to the County of Santa Cruz Design Criteria, Stormwater Management - Section H, for complete method criteria.

SS Ver:1.0

2 - YEAR DESIGN STORM				RETENTION @ 120 MIN.		DETENTION @ 60 MIN.	
Storm Duration (min)	2 - Year Intensity (in/hr)	Qpre (cfs)	Qpost (cfs)	Retention Rate To Storage (cfs)	Specified Retained Volume (cf)	Detention Rate To Storage (cfs)	Specified Detained Volume (cf)
1440	0.16	0.040	0.119	0.005	-1516	-0.034	-2903
1200	0.18	0.043	0.129	0.015	-547	-0.024	-1731
960	0.20	0.047	0.141	0.028	328	-0.011	-649
720	0.22	0.053	0.160	0.046	1071	0.007	305
480	0.26	0.063	0.190	0.076	1612	0.037	1066
360	0.30	0.071	0.214	0.100	1762	0.062	1331
240	0.35	0.085	0.254	0.141	1777	0.102	1466
180	0.40	0.096	0.287	0.174	1704	0.135	1456
120	0.47	0.114	0.341	0.228	1540	0.189	1359
90	0.53	0.129	0.386	0.272	1404	0.233	1258
60	0.63	0.153	0.458	0.344	1207	0.305	1099
45	0.71	0.172	0.517	0.404	1072	0.365	985
30	0.85	0.205	0.614	0.501	897	0.462	831
20	1.01	0.243	0.730	0.616	742	0.577	692
15	1.14	0.275	0.824	0.710	645	0.672	604
10	1.35	0.326	0.979	0.865	526	0.826	496
5	1.81	0.438	1.313	1.199	368	1.161	348

STRUCTURE DIMENSIONS FOR RETENTION

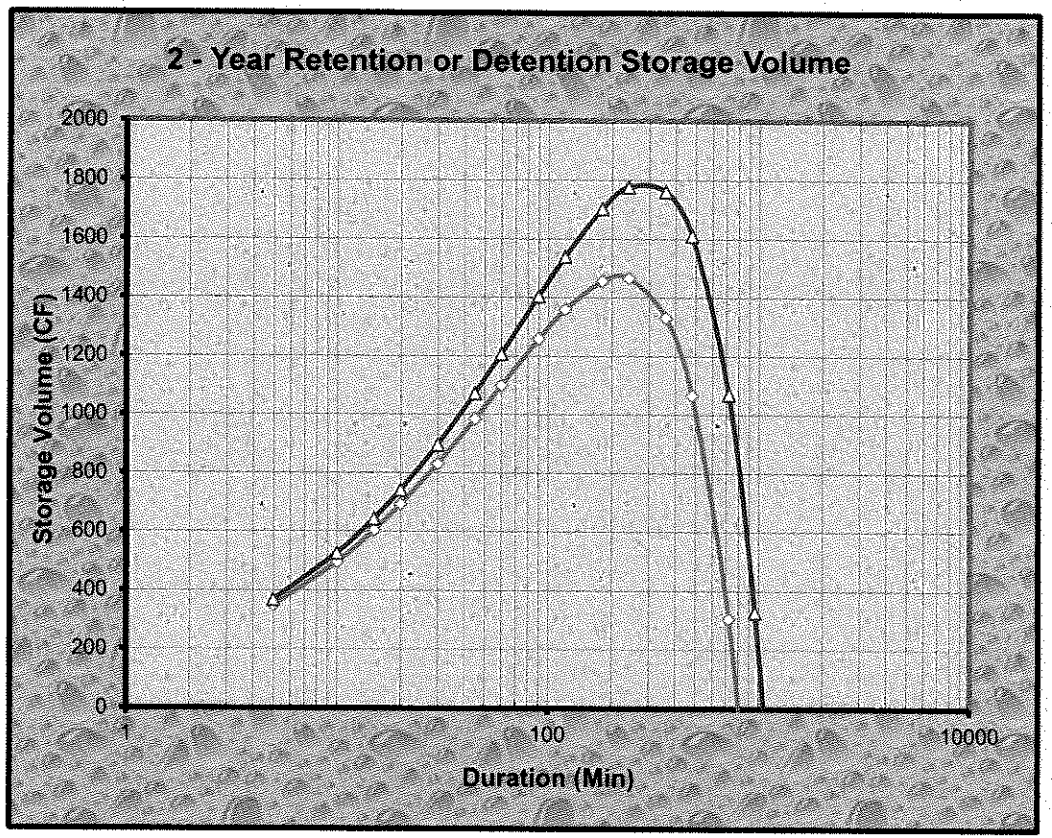
1777	ft^3 storage volume calculated			
30	% void space assumed			
5923	ft^3 excavated volume needed			
Structure Ratios	Length	Width*	Depth* #	
	163.00	8.00	4.67	
Dimen. (ft)	**161.50**	**7.93**	**4.63**	
2848	ft^2 internal surface area			
1994	ft^2 effective surface area			
17.8	hrs estimated structure drainage time			

* For pipe, use the square root of the sectional area.
\# If cell values displayed are corrupted, enter zero for depth, then re-enter a positive numeric value within allowed range.

STRUCTURE DIMENSIONS FOR DETENTION

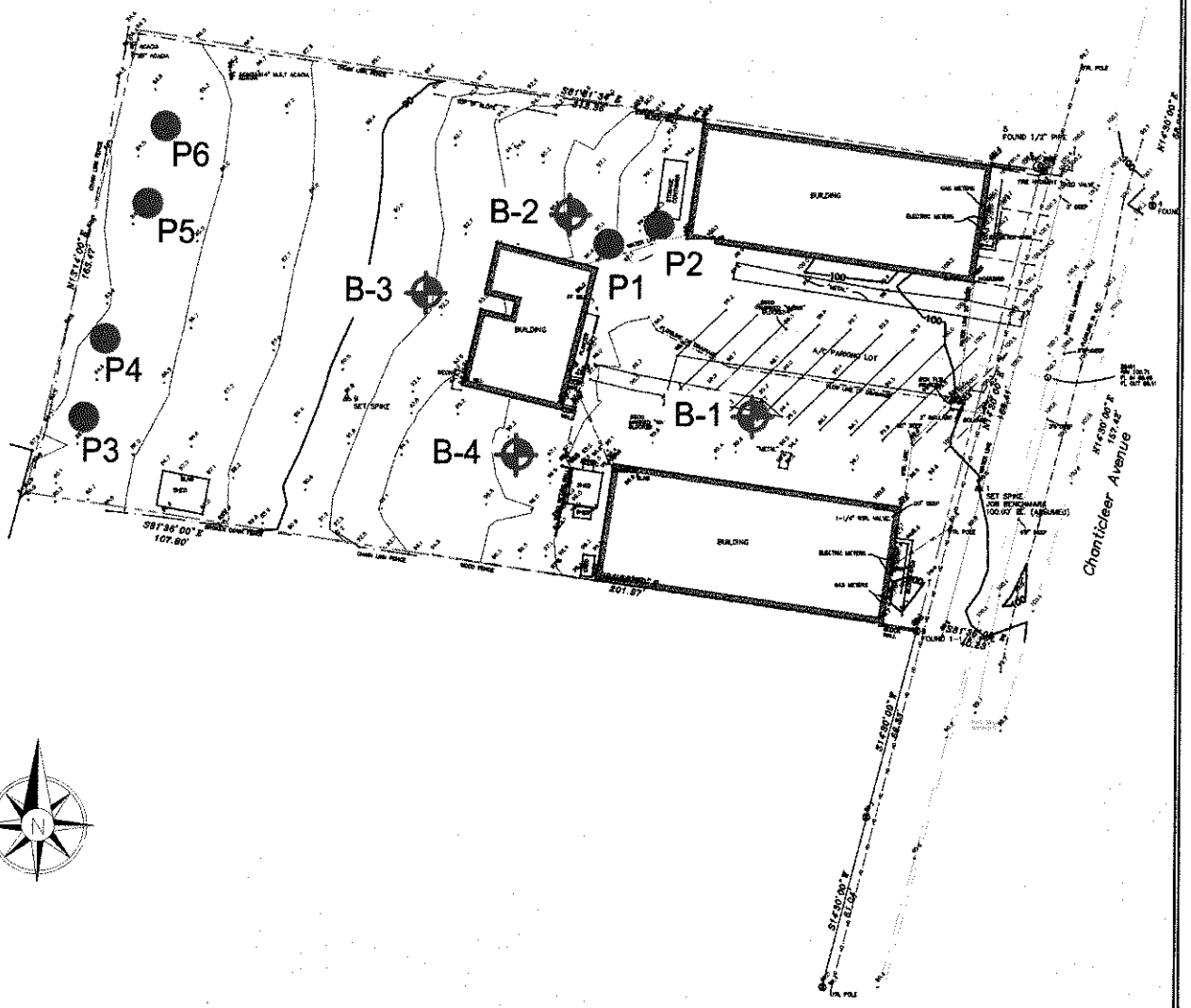
1466	ft^3 storage volume calculated		
100	% void space assumed		
1466	ft^3 excavated volume needed		
Structure Ratios	Length	Width*	Depth*
	25.00	2.00	2.00
Dimen. (ft)	**61.19**	**4.89**	**4.89**

ATTACHMENT 3


2 - Year Retention or Detention Storage Volume
Storage Volume (CF)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1
100
10000
Duration (Min)

APPENDIX C

Soil Survey



B-X Exploratory Boring ● **PX Percolation Test Hole**

Scale: 1" = 60'

Note: Topographic survey map by Edmundson & Associates Land Surveying, Job No. 15165, November 4, 2015.

LICENSED LAND SURVEYOR OLIN S. EDMUNDSON No. 6307 STATE OF CALIFORNIA

BUTANO	**BORING SITE PLAN**	FIGURE
GEOTECHNICAL ENGINEERING, INC.	2725 Chanticleer Avenue	B-2

ATTACHMENT 6

LOG OF EXPLORATORY BORING

Project No.: 16-144-SC
Project: 2725 Chanticleer Ave.
Date: August 2, 2016
Logged By: AP

Boring: B1
Location:
Elevation:
Method of Drilling: 6 inch solid stem truck mounted auger

2" Ring Sample | 2.5" Ring Sample | Bulk Sample | Terzaghi Split Spoon Sample | Static Water Table

Depth (ft.)	Soil Type	Undisturbed	Bulk	Description	Blows / Foot	N_{60}	Dry Density (pcf)	Moisture Content (%)	Expansion Index	Unconfined Comp.(psf)	Particle Size	Atterberg Limits L.L.	Atterberg Limits P.I.
				2 1/2" AC over 4 1/2" baserock.									
	CL			Brown sandy LEAN CLAY, trace gravel, very stiff, moist.	34	17	94.0	27.8					
					13	10		30.8			✓		
5									8				
					35	17	92.8	27.9		6,100			
10				Coarsening sand grains.	20	16		21.5					
15				Stiff.	13	10		29.0					
20					11	10		22.3					
25	SP-SC			Poorly-graded SAND with clay, very dense, damp (Purisima Formation sandstone - Tp).	69	63		9.1			✓		
30				Drilling terminated at a depth of 26 1/2 feet. No groundwater was encountered during drilling.									
35													

BUTANO GEOTECHNICAL ENGINEERING, INC.

FIGURE B-4

ATTACHMENT 6

LOG OF EXPLORATORY BORING

Project No.: 16-144-SC
Project: 2725 Chanticleer Ave.
Date: August 2, 2016
Logged By: AP

Boring: B2
Location:
Elevation:
Method of Drilling: 6 inch solid stem truck mounted auger

2" Ring Sample | 2.5" Ring Sample | Bulk Sample | Terzaghi Split Spoon Sample | Static Water Table

Depth (ft.)	Soil Type	Undisturbed	Bulk	Description	Blows / Foot	N_{60}	Dry Density (pcf)	Moisture Content (%)	Expansion Index	Unconfined Comp. (psf)	Particle Size	Other Tests
	SM (FILL)			Brown silty SAND with gravel (FILL), medium dense to dense, slightly damp.	77	28		8.6				
					35	32		7.9				
5	CL			Brown sandy LEAN CLAY, stiff, moist.	16	13		28.4				
10				Very stiff.	23	19		21.0				
15	SP-SM			Brown poorly-graded SAND with silt, gravel, medium dense, damp.	33	30		16.5				
				Drilling terminated at a depth of 16 1/2 feet. No groundwater encountered during drilling.								
20												
25												
30												
35												

BUTANO GEOTECHNICAL ENGINEERING, INC.

FIGURE B-5

ATTACHMENT 6

LOG OF EXPLORATORY BORING

Project No.: 16-144-SC
Project: 2725 Chanticleer Ave.
Date: August 2, 2016
Logged By: AP

Boring: B3
Location:
Elevation:
Method of Drilling: 6 inch solid stem truck mounted auger

2" Ring Sample | 2.5" Ring Sample | Bulk Sample | Terzaghi Split Spoon Sample | Static Water Table

Depth (ft.)	Soil Type	Undisturbed	Bulk	Description	Blows / Foot	N_{60}	Dry Density (pcf)	Moisture Content (%)	Expansion Index	Unconfined Comp. (psf)	Particle Size	Other Tests: Swell (psf)	Other Tests
	SC			Black-brown clayey SAND with gravel (FILL).	32	12		22.8					
	CL			Brown sandy LEAN CLAY, stiff, moist.	15	12		19.2					
5				Very stiff.	27	23		23.1					
10				Coarsening sand, some gravel.	14	11		26.8					
15					21	17		18.6					
20				Boring terminated at a depth of 16 1/2 feet. No groundwater encountered during drilling.									
25													
30													
35													

BUTANO GEOTECHNICAL ENGINEERING, INC.

FIGURE B-6

ATTACHMENT 6

LOG OF EXPLORATORY BORING

Project No.: 16-144-SC
Project: 2725 Chanticleer Ave.
Date: August 2, 2016
Logged By: AP

Boring: B4
Location:
Elevation:
Method of Drilling: 6 inch solid stem truck mounted auger

2" Ring Sample | 2.5" Ring Sample | Bulk Sample | Terzaghi Split Spoon Sample | Static Water Table

Depth (ft.)	Soil Type	Undisturbed	Bulk	Description	Blows / Foot	N_{60}	Dry Density (pcf)	Moisture Content (%)	Expansion Index	Unconfined Comp. (psf)	Particle Size	Other Tests	
	CL (FILL)			Black-tan-brown-red clayey SAND, loose, slightly damp (FILL).	13	5		18.0					
	CL			Brown sandy LEAN CLAY with trace gravel, stiff, moist.	11	8		35.7					
5					10	8		33.2					
10					11	8		24.7					
15				Increase in sand.	18	14		23.7					
20				Drilling terminated at a depth of 16 1/2 feet. No groundwater encountered during drilling.									
25													
30													
35													

BUTANO GEOTECHNICAL ENGINEERING, INC.

FIGURE B-7

ATTACHMENT 6

APPENDIX D

PERCOLATION TESTING PROCEDURES

Constant head percolation tests were performed at six locations on the parcel (P1 through P6). The holes were filled with water to a height of approximately 12 inches from the base of the hole. The approximate locations of the test holes are shown on the boring site plan in Appendix B, Figure B-2

The holes were logged in the field during the drilling process.

Test holes were drilled with 5-inch diameter solid stem tractor mounted equipment. Perforated pipe was inserted to prevent potential collapse of the test holes and approximately 2 to 3 inches of clean, crushed ⅜" gravel was placed at the bottom of the holes as well as around the annulus of the pipe. The test holes were pre-soaked 24 hours prior to percolation testing.

The percolation rates for P1 through P6 were recorded every 30 minutes.

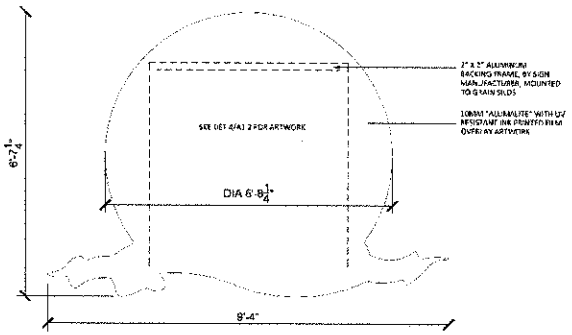
The following rate reports the average of 3 consecutive measurements within 10% of each other.

Infiltration was calculated using the infiltration reduction factor as defined by the Southeast Michigan Council of Governments Low Impact Development Manual. The reduction factor is defined as:

$$Rf = \frac{(2 * d1 - \Delta D)}{\emptyset} + 1$$

Where: Rf = Reduction Factor
d1 = Initial Water Depth (in)
ΔD = Percolation Rate (in/hr)
Ø = Hole Diameter (in)

Percolation Test Hole	Depth (ft)	Soil (USCS)	Percolation Rate (in/hr)	Infiltration Rate (in/hr)
P1	1	SM (silty sand)	8.7	4.19
P2	2	SM (silty sand)	3.8	0.97
P3	2	CL (sandy lean clay)	0.13	0.02
P4	4	CL (sandy lean clay)	1.0	0.17
P5	2	CL (sandy lean clay)	1.3	0.32
P6	4	CL (sandy lean clay)	0.50	0.05

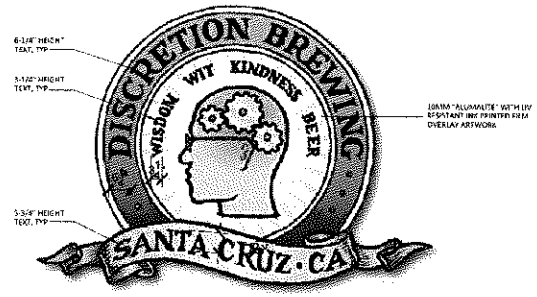


AREA: 37.69 SF

3 WALL MOUNTED SIGNAGE
3/4" = 1'-0"

ON GRAIN SILOS

ILLUMINATED (INDIRECT) BY ADJACENT OVERHEAD LIGHTS



4 WALL MOUNTED SIGN
3/4" = 1'-0"

ARTWORK SIZING

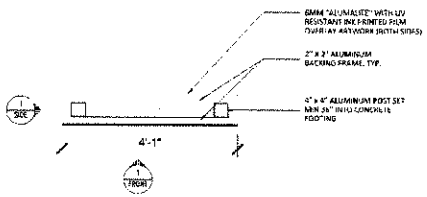
ILLUMINATED (INDIRECT) BY ADJACENT OVERHEAD LIGHTS

NOTES:

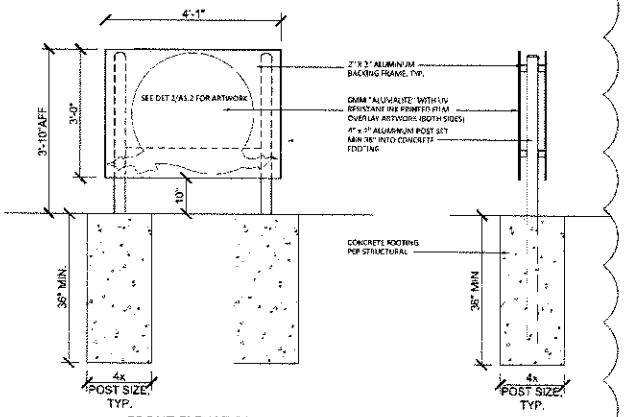
SITE & BUILDING SIGNAGE	DET.	AREA
MONUMENT SIGN (AREA OF ONE SIDE ONLY)	1/A1.2	12.25 S.F.
BUILDING SIGN @ GRAIN MILLS	3/A1.2	37.69 S.F
TOTAL SIGNAGE AREA FOR PROJECT		49.94 S.F.

MAX ALLOWABLE SIGNAGE PER SANTA CRUZ COUNTY CODE IS 50SF PER PARCEL

OWNER TO PROVIDE NEIGHBORHOOD NOTIFICATION OF PROPOSED DEVELOPMENT IN ACCORDANCE WITH SANTA CRUZ COUNTY CODE SECTIONS 18.10.222 THROUGH 18.10.224



PLAN VIEW



FRONT ELEVATION

SIDE ELEVATION

AREA: 12.25 SF

1 MONUMENT SIGN
3/4" = 1'-0"

ON CHANTICLEER AVE

ILLUMINATED (INDIRECT) BY ADJACENT IN-GROUND LIGHT

2 MONUMENT SIGN
3/4" = 1'-0"

ARTWORK SIZING

ILLUMINATED (INDIRECT) BY ADJACENT IN-GROUND LIGHT

BREWERY

2769 41st Avenue, Soquel, CA

ARCHITECT

MADI ARCHITECTURE DESIGN INFINITY · ARCHITECTURE + PLANNING

CONTRACTOR

BOGARD CONSTRUCTION, INC. Since 1947

NEW BREWHOUSE

3725 Chanticleer Avenue, 41, Santa Cruz, CA 95065

COMMERCIAL DEVELOPMENT PERMIT - APN 02516106

Oct 3, September 30, 2016

REVISIONS:

1. COUNTY COMMENTS - 5/30/16

© 2016

SIGNAGE DETAILS

A1.2

ATTACHMENT 2

EDWARD L. PACK ASSOCIATES. INC.

1975 HAMILTON AVENUE
SUITE 26
SAN JOSE, CA 95125

Acoustical Consultants

TEL: 408-371-1195
FAX: 408-371-1196
www.packassociates.com

August 30, 2016
Project No. 48-045

Mr. Jared Bogard
Bogard Construction
350-A Coral Street
Santa Cruz, CA 95060

Subject: Noise Assessment Study for the Planned Discretion Brewery, 2725 Chanticleer Avenue, Santa Cruz County

Dear Mr. Bogard:

This report presents the results of a noise assessment study for the planned Discretion Brewery at 2725 Chanticleer Avenue in Santa Cruz County, as shown on the Grading Plan, Ref., (a). The project-generated noise levels were evaluated against the standards of the Santa Cruz County Noise Element, Ref. (b). The results of the analysis reveal that the noise levels generated by outdoor mechanical equipment and loading dock operations will exceed the limits of the standards at the north property line, at the south property line and at the residence across Chanticleer Avenue from the site. The noise levels at the remaining property line will be within the limits of the standards. Noise mitigation measures will be required for the north and south property lines and at the Chanticleer residence. The recommended measures are described in Section II of this report.

Sections I and II of this report contain description of the noise standards and the existing ambient noise environment. Subsequent sections contain the project-generated noise analysis and recommendations for noise control. Appendices A, B and C, attached, contain the list of references, descriptions of standards, definitions of the terminology, descriptions of the acoustical instrumentation used for the field survey and the on-site noise measurement data and calculation tables.

I. Noise Standards

The Santa Cruz County Noise Element utilizes the hourly average (L_{eq}) noise descriptor and maximum (L_{max}) noise descriptor for stationary noise sources, such as mechanical equipment. The standards shown in Table 6-2 of the Noise Element specify limits of 50 A-weighted decibels (dBA) L_{eq} during the daytime hours of 7:00 a.m. to 10:00 p.m. and to 45 dBA L_{eq} during the nighttime hours of 10:00 p.m. to 7:00 a.m. Maximum noise levels are limited to 70 dBA during the daytime and to 65 dBA during the nighttime. The nighttime noise limits are applicable to noise sensitive land uses that operate or are occupied during nighttime hours.

The allowable noise shall levels shall be raised to the ambient noise levels where the ambient levels exceed the allowable levels.

The noise standards of the Santa Cruz County Noise Element are applicable to the property lines to the north, west and south, and to the Mobile Home Park to the west of the site.

The noise limits applicable to the project, which are based on Table 6-2 of the Noise Element with ambient noise level adjustments, are:

North PL	52 dBA L_{eq}	70 dBA L_{max}
West PL	56 dBA L_{eq}	70 dBA L_{max}
South PL	57 dBA L_{eq}	70 dBA L_{max}
Chanticleer Residence	56 dBA L_{eq}	70 dBA L_{max} daytime,
	45 dBA L_{eq}	65 dBA L_{max} nighttime

The uses adjacent to the project site are commercial/industrial uses and are not noise sensitive. Although the adjacent veterinary hospital/kennel operates at night, the facility is not considered noise sensitive as people do not sleep at the facility. The single-family residence across Chanticleer Avenue to the northeast is the nearest noise sensitive use with nighttime occupation.

II. Existing Noise Environment

To determine the existing ambient noise levels at the surrounding property boundaries, continuous recordings of the sound levels were made at three locations. Location 1 was along the north property line. Location 2 was along the west property line and Location 3 was along the south property line. The noise level measurements were made on August 17-18, 2016 for a continuous period of 24 hours at each location. Ambient noise measurements could not be performed at the residence across Chanticleer Avenue as no secure location was available for a sound meter setup. The measurement locations are shown on Figure 1 on page 3.

The noise levels were recorded and processed using Larson-Davis LDL 812 Precision Integrating Sound Level Meters. The meter yields, by direct readout, a series of descriptors of the sound levels versus time, as described in Appendix B. The measured descriptors included the L_1, L_{10}, L_{50}, and L_{90} descriptors, i.e., those levels exceeded for 1%, 10%, 50%, and 90% of the time. Also measured were the minimum and maximum levels and the continuous equivalent-energy levels (L_{eq}). The measured L_{eq}'s are provided in the data tables in Appendix C and in the chart on page 9.

As shown in the Appendix C tables and on the chart, the L_{eq}'s at measurement Location 1 along the north property line ranged from 49.9 to 55.8 during the daytime and from 43.8 to 51.9 dBA at night. The lowest L_{eq} during the daytime hours of operation was 52.2 dBA.

The L_{eq}'s at measurement Location 2 along the west property line ranged from 48.4 to 61.8 dBA during the daytime and from 39.4 to 54.0 dBA at night. The lowest L_{eq} during daytime hours of operation was 55.7 dBA.

The L_{eq}'s at measurement Location 3 along the south property line ranged from 52.7 to 62.0 dBA during the daytime and from 40.8 to 54.1 dBA at night. The lowest L_{eq} during daytime hours of operation was 55.4 dBA.

The L_{eq}'s at the residence along Chanticleer Avenue are estimated as noise measurements could not be performed. The lowest L_{eq} during the daytime hours of operation is estimated to be 56 dBA, based on the proximity to Soquel Avenue and the surrounding commercial uses, including Chanticleer Avenue traffic. The lowest nighttime L_{eq} could be as low as 45 dBA.

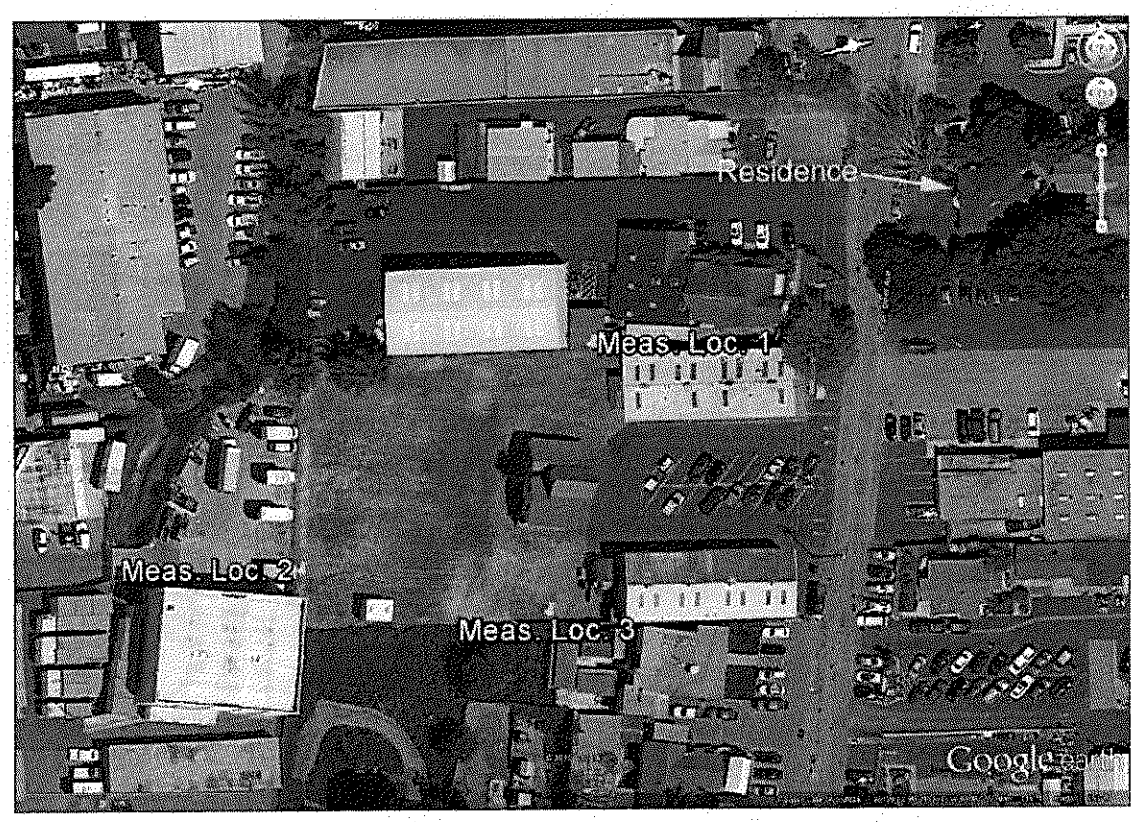


FIGURE 1 – Noise Measurement Locations

III. Project-Generated Noise Levels

To determine the project-generated noise levels for evaluations against the standards of the Santa Cruz County Noise Element, a list of equipment and operational information was compiled. Noise data for each source were provided by the equipment manufacturers, the project sponsor and past noise studies of similar equipment and activity, Ref's. (c,d,e,f,g). Operational information was provided by the project architect, Ref. (h).

Table I on page 6 provides the results of the noise level analysis of the outdoor equipment for each of the four receptor locations. Shown in the Table are main noise sources, their reference sound levels and distance, the distance to the property line, the unadjusted sound level at the property line, adjustments for environmental factors such as sound reflections, adjustments for noise shielding from the project building, the final sound level (L_{max}) at the property line, the duration in each hour the source operates and the hourly average noise level ($L_{eq(h)}$). The combined sound levels are shown at the bottom of each L_{max} and $L_{eq(h)}$ column.

Table II on page 7 provides the same analysis described above but for the indoor equipment planned for the brewery. Rather that noise shielding by the building, the building Transmission Loss (TL) is used to describe the noise reduction by the building shell. Note that because this project is a design-build facility, noise data and other information on the brewhouse pumps and the grain mill are not available. The pumps and grain mill operation are expected not to generate significant levels of noise. Since these items will be located inside the building, we do not expect any significant levels of noise emission or transmission to the adjacent and nearby properties.

The only nighttime or 24-hour operations are the glycol chiller and the refrigeration compressors. These three items cycle on and off, depending upon the need for cooling. Their sound levels are within the 45 dBA nighttime limit at the Chanticleer Avenue residence.

TABLE I

Outdoor Equipment Noise Analysis

North PL Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Shielding	Final SL	Dur / hr	Leq(h)
Glycol Chiller	81	5	70	58	6	15	49	10	41
Air Compressor	100	3	70	73	6	17	62	20	57
Walk in Comp	84	5	70	61	6	17	50	10	43
Walk in Comp	84	5	70	61	6	17	50	10	43
Semi Truck	75	30	80	66		0	66	60	66
Panel Truck	73	10	130	51		10	41	60	41
Forklift	52	30	130	39		10	29	60	29
						TOTAL			67

West PL Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Shielding	Final SL	Dur / hr	Leq(h)
Glycol Chiller	81	5	160	51	6	15	42	10	34
Air Compressor	100	3	160	65	6	16	56	20	51
Walk in Comp	84	5	160	54	6	16	44	10	36
Walk in Comp	84	5	160	54	6	16	44	10	36
Semi Truck	75	30	235	57		11	46	60	46
Panel Truck	73	10	150	49		15	34	60	34
Forklift	52	30	150	38		15	23	60	23
						TOTAL			52

South PL Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Shielding	Final SL	Dur / hr	Leq(h)
Glycol Chiller	81	5	92	56	9	0	65	10	57
Air Compressor	100	3	92	70	9	0	79	20	74
Walk in Comp	84	5	92	59	9	0	68	10	60
Walk in Comp	84	5	92	59	9	0	68	10	60
Semi Truck	75	30	120	63		0	63	60	63
Panel Truck	73	10	60	57		0	57	60	57
Forklift	52	30	60	46		0	46	60	46
						TOTAL			75

Chanticleer S.F. Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Shielding	Final SL	Dur / hr	Leq(h)
Glycol Chiller	81	5	228	48	3	14	37	10	29
Air Compressor	100	3	228	62	3	15	50	20	45
Walk in Comp	84	5	228	51	3	16	38	10	31
Walk in Comp	84	5	228	51	3	16	38	10	31
Semi Truck	75	30	170	60	2	0	62	60	62
Panel Truck	73	10	252	45	1	12	33	60	33
Forklift	52	30	252	34	1	12	22	60	22
						TOTAL	49		62

TABLE II
Indoor Equipment

North PL Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Bldg. TL	Final SL	Dur / hr	Leq(h)
Centrifuge	84	5	90	59	15	35	39	60	39
Bottling Line	90	2	60	60	15	35	40	60	40
Pump	85	3	100	55	15	35	35	60	35
Air Dryer	85	3	100	55	15	35	35	20	30
						TOTAL			44

West PL Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Bldg. TL	Final SL	Dur / hr	Leq(h)
Centrifuge	84	5	70	61	15	33	43	60	43
Bottling Line	90	2	110	55	15	33	37	60	37
Pump	85	3	110	54	15	33	36	60	36
Air Dryer	85	3	100	55	15	33	37	20	32
						TOTAL			45

South PL Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Bldg. TL	Final SL	Dur / hr	Leq(h)
Centrifuge	84	5	73	61	15	35	41	60	41
Bottling Line	90	2	63	60	15	35	40	60	40
Pump	85	3	94	55	15	35	35	60	35
Air Dryer	85	3	94	55	15	35	35	20	30
						TOTAL			44

Chanticleer S.F. Item	Ref. SL	d	d to PL	SL @ PL	Env. Adj.	Bldg. TL	Final SL	Dur / hr	Leq(h)
Centrifuge	84	5	300	48	15	33	30	60	30
Bottling Line	90	2	300	46	15	33	28	60	28
Pump	85	3	300	45	15	33	27	60	27
Air Dryer	85	3	300	45	15	33	27	20	22
						TOTAL	36		34

The result of the analysis reveals that the equipment in the outdoor yard (glycol chiller, air compressor and refrigeration compressors) will exceed the limits of the standards at the south property line between the existing sheet metal shop building and the project building. The air compressor will also exceed the limits of the standards at the north property line.

The delivery of grain using a semi-tractor trailer truck will exceed the limits of the standards at the north property line, at the south property line and at the residence across Chanticleer Avenue. Deliveries using a panel truck in the loading area at the roll-up door will exceed the limits of the standards south property line.

The recommendation (see Section IV, below) for the semi-tractor trailer truck/grain unloading will reduce this source noise level from 62 dBA $L_{eq(h)}$ to 57 dBA $L_{eq(h)}$ leaving a 1 decibel excess.

Important Note: Because physical barriers (sound barriers) will not be practical to shield the Chanticleer residence from the semi-tractor trailer delivering grain, this noise excess cannot be feasibly mitigated completely. A 1 decibel excess is expected after mitigation. This noise source occurs for one hour per month during daytime hours. We do not expect that this source will have a significant effect on the residence as the noise levels will not be extreme and the existing noise environment contains similar types of noise that occur more frequently.

Noise from the indoor operations will add up to 1 decibel to the outdoor noise level only at the west property line. Note that 52 dBA L_{eq} + 45 dBA L_{eq} = 53 dBA L_{eq}. The total noise level at this location will remain within the 56 dBA L_{eq} ambient adjusted limit of the standards.

As the noise levels from the outdoor mechanical equipment, loading dock and grain deliveries will exceed the limits of the standards, noise mitigation measures will be required. The recommended measures are described in Section IV, below.

IV. Recommendations

To achieve compliance with the standards of the Santa Cruz County Noise Element, the following noise control measures will be required:

- Select an air compressor rated at no more than 93 dBA @ 3 ft. Housed compressors or rotary screw compressors will usually achieve this standard.

- Select refrigeration compressors rated at no more than 81 dBA @ 5 ft. each.

- Construct a 10 ft. high acoustically-effective barrier along the south side of the outdoor mechanical equipment yard. The barrier height is in reference to the nearest mechanical equipment yard pad elevation. A gate may be incorporated into this barrier. The gate shall fit tight when closed. Stops or astragals shall be placed over the gaps at the strike jamb and at the hinge jamb. The gap at the bottom of the gate shall be no more than 1" high.

- Construct an 8 ft. high acoustically-effective barrier along the south property line extending from the southwesterly corner of the remaining building on the site for a distance of 56 ft. to the west. Connect the barrier to the southwest corner of the remaining sheet metal shop building. The barrier height is in reference to the nearest loading area at the roll-up door driveway grade.

- Please see Figure 2 for the locations of the recommended noise control barriers.

- Instruct delivery truck drivers to turn their engines off during unloading and loading activity.

The implementation of the above recommended measures will reduce equipment and trucking noise for compliance with the standards of the Santa Cruz County Noise Element, with the exception of grain deliveries via semi-tractor trailer at the north property line and at the Chanticleer Avenue residence.

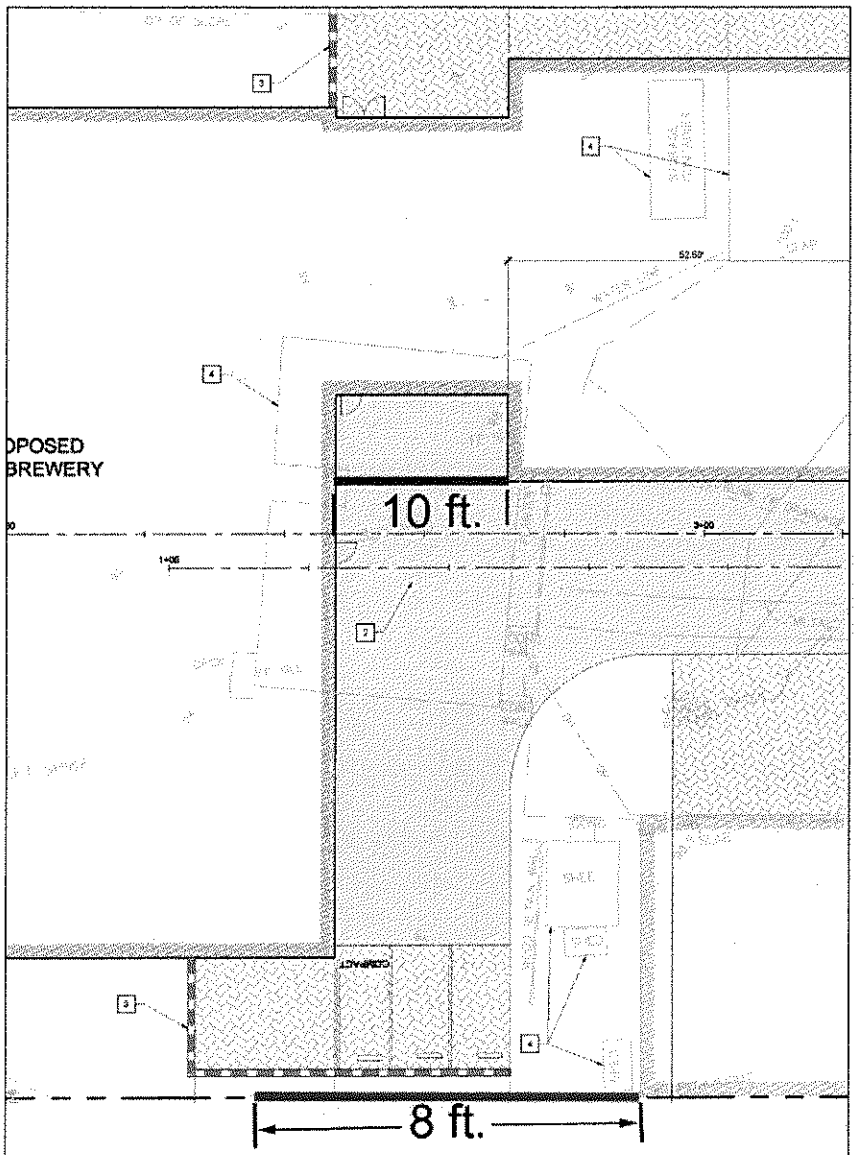


FIGURE 2
Locations and heights of the recommended noise control barriers. See test for further requirements.

EDWARD L. PACK ASSOCIATES, INC. 8/30/2016

This report presents the results of a noise assessment study for the planned Discretion Brewery at 1725 Chanticleer Avenue in Santa Cruz County. The study findings and recommendations are based on manufacturers' and project sponsor's sound data and other information and are correct to the best of our knowledge. However, significant changes in the equipment, operational conditions, noise regulations or other changes beyond our control may produce long-range noise results different than those reported herein.

If you have any questions or would like an elaboration on this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

Attachments: Appendices A and B

APPENDIX A

References:

(a) Grading Plan, New Brewhouse, by Mesiti-Miller Engineering, Inc., November 25, 2015

(b) Santa Cruz County General Plan, Chapter 6, Public Safety and Noise, Figure 6-2, page 6-33, May 24, 1994

(c) Speedaire Electric Compressor Technical Specs, Provided by Mr. Michael Demers, Discretion Brewery, via email to Edward L. Pack Associates, Inc., May 4, 2016

(d) Brewery Equipment Noise Source Data Provided by Mr. Michael Demers, Discretion Brewery, via email to Edward L. Pack Associates, Inc., May 4, 2016

(e) Bottling Line Noise Level Data Provided by Mr. Michael Demers, Discretion Brewery, via email to Edward L. Pack Associates, Inc., May 4, 2016

(f) "Noise Level Study of Loading Operations, Home Depot, Hamilton Avenue, Campbell", by Edward L. Pack Associates, Inc., Project No. 25-030, June 23, 1993

(g) "Noise Assessment Study for the Planned Thien Thanh Supermarket Expansion", by Edward L. Pack Associates, Inc., Project No. 47-045, July 24, 2015

(h) Information of Delivery Trucking and Brewhouse Operations Provided by Mr. Andrew Fullerton, MADI Architects, via email to Edward L. Pack Associates, Inc., August 23 and 25, 2016

APPENDIX B

Noise Standards, Terminology, Instrumentation,

1. Noise Standards

A. Santa Cruz County "Noise Element" Standards

The noise section of the Santa Cruz County General Plan, adopted May 24, 1994, identifies an exterior limit of 60 dB Day-Night Level (DNL) at outdoor living or recreation areas of residential developments, as shown in Figure 6-1 under Policy 6.9.1. This standard applies at the property line of residential areas impacted by transportation related noise sources. At interior living spaces of residential area, the standards established an interior limit of 45 dB DNL for noise levels due to exterior sources.

Figure 6-2 identifies limits on maximum allowable noise exposure for stationary noise sources under Policy 9.6.4 "Commercial and Industrial Development".

	Daytime 7 AM to 10 PM	Nighttime 10 PM to 7 AM
Hourly L_{eq}- average hourly noise level, dB	50	45
Maximum Level, dB	70	65
Maximum Level dB - Impulsive Noise	65	60

The allowable sound levels shall be raised to the ambient level where the ambient levels exceed the allowable levels. Allowable levels shall be reduced by 5 dB if the ambient hourly L_{eq} is at least 10 dB lower than the allowable level.

2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Sound Level Meters and Noise Analyzers. Some of the statistical levels used to describe community noise are defined as follows:

L_1 - A noise level exceeded for 1% of the time.

L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.

L_{50} - The noise level exceeded 50% of the time representing an "average" sound level.

L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.

L_{eq} - The continuous equivalent-energy level is that level of a steady-state noise having the same sound energy as a given time-varying noise. The L_{eq} represents the decibel level of the time-averaged value of sound energy or sound pressure squared and is used to calculate the DNL and CNEL.

B. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the precision acoustical instruments shown below. The acoustical instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters was provided by a microphone extended to a height of 5 ft. above the ground. The meter conforms to ANSI S1.4 for Type 1 instruments. The "A" weighting network and the "Fast" response setting of the meter were used in conformance with the applicable ISO and IEC standards. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis 2900 Real Time Analyzer
Larson Davis 831 Precision Integrating Sound Level Meter
Tascam DR-40 Linear PCM Digital Audio Recorder

APPENDIX C

Noise Measurement Data and Calculation Tables

ATTACHMENT 8

DNL CALCULATIONS

CLIENT: BOGARD CONSTRUCTION
FILE: 48-045
PROJECT: DISCRETION BREWERY
DATE: 8/17-18/2016
SOURCE: EXISTING AMBIENT

LOCATION 1 North PL

TIME		10^Leq/10		
7:00 AM	52.4	173780.1		
8:00 AM	55.8	380189.4		
9:00 AM	55.6	363078.1		
10:00 AM	53.6	229086.8		
11:00 AM	54.2	263026.8		
12:00 PM	53.1	204173.8		
1:00 PM	53.2	208929.6		
2:00 PM	53.1	204173.8		
3:00 PM	53.1	204173.8		
4:00 PM	52.2	165958.7		
5:00 PM	51.7	147910.8		
6:00 PM	51.7	147910.8		
7:00 PM	51.9	154881.7		
8:00 PM	51.1	128825.0		
9:00 PM	49.9	97723.7	SUM=	3073823
10:00 PM	48.2	66069.3	Ld=	64.9
11:00 PM	47.4	54954.1		
12:00 AM	45.0	31622.8		
1:00 AM	43.9	24547.1		
2:00 AM	43.8	23988.3		
3:00 AM	44.0	25118.9		
4:00 AM	46.6	45708.8		
5:00 AM	50.1	102329.3		
6:00 AM	51.9	154881.7	SUM=	529220
			Ln=	57.2

Daytime Level= 64.9
Nighttime Level= 67.2
DNL= 55
24-Hour Leq= 51.8

LOCATION 2 West PL

TIME	Leq	10^Leq/10		
7:00 AM	56.6	457088.2		
8:00 AM	61.8	1513561.2		
9:00 AM	61.0	1258925.4		
10:00 AM	59.4	870963.6		
11:00 AM	58.2	660693.4		
12:00 PM	57.8	602559.6		
1:00 PM	57.2	524807.5		
2:00 PM	57.1	512861.4		
3:00 PM	55.7	371535.2		
4:00 PM	56.5	446683.6		
5:00 PM	54.9	309029.5		
6:00 PM	51.1	128825.0		
7:00 PM	50.7	117489.8		
8:00 PM	49.5	89125.1		
9:00 PM	48.4	69183.1	SUM=	7933332
10:00 PM	47.1	51286.1	Ld=	69.0
11:00 PM	45.2	33113.1		
12:00 AM	42.8	19054.6		
1:00 AM	40.6	11561.1		
2:00 AM	39.4	8709.6		
3:00 AM	41.2	13182.6		
4:00 AM	46.9	48977.9		
5:00 AM	49.8	95499.3		
6:00 AM	54.0	251188.6	SUM=	532573
			Ln=	57.3

Daytime Level= 69.0
Nighttime Level= 67.3
DNL= 57
24-Hour Leq= 55.5

LOCATION 3 South PL

TIME	Leq	10^Leq/10		
7:00 AM	55.4	346736.9		
8:00 AM	58.8	758577.6		
9:00 AM	59.4	870963.6		
10:00 AM	60.6	1148153.6		
11:00 AM	60.1	1023293.0		
12:00 PM	59.4	870963.6		
1:00 PM	61.1	1288249.6		
2:00 PM	61.7	1479108.4		
3:00 PM	62.0	1584893.2		
4:00 PM	58.2	660693.4		
5:00 AM	57.2	524807.5		
6:00 AM	55.3	338844.2		
7:00 PM	55.6	363078.1		
8:00 PM	54.3	269153.5		
9:00 PM	52.7	186208.7	SUM=	11713725
10:00 PM	50.8	120226.4	Ld=	70.7
11:00 PM	49.2	83176.4		
12:00 AM	45.7	37153.5		
1:00 AM	41.5	14125.4		
2:00 AM	40.8	12022.6		
3:00 AM	42.9	19498.4		
4:00 AM	51.8	151356.1		
5:00 AM	53.6	229086.8		
6:00 AM	54.1	257039.6	SUM=	923685
			Ln=	59.7

Daytime Level= 70.7
Nighttime Level= 69.7
DNL= 59
24-Hour Leq= 57.2

Annette Olson

From: Annie Murphy
Sent: Friday, December 09, 2016 11:31 AM
To: Annette Olson
Subject: FW: Chanticleer

Hi Annette,
Sorry for the delay in getting back to you.
Is this the property in question?

Annie

From: Annie Murphy
Sent: Friday, March 25, 2016 2:18 PM
To: Annette Olson
Subject: RE: Chanticleer

Annette,
I visited the property at 2725 Chanticleer Ave, and evaluated the exterior of the barn located at the rear of the parcel. The property is not included in the County Historic Resources Inventory. The barn appears to be in poor condition, with large cracks visible at the exterior walls, and the roof in poor condition and sloping. In addition, the original historic setting of the barn has been altered, as the surrounding land uses and structures are now commercial and industrial. The structure is not representative of a distinct architectural style, and is not known to be associated with a person or historic event or theme of local, state or national importance. Based upon this preliminary evaluation and available evidence, the structure would not appear to be eligible for listing as a historic resource in the Santa Cruz Historic Resources Inventory or the California Register of Historical Resources, and the demolition of the barn would not result in an impact to historic resources under CEQA. No further historic evaluation is required.

Annie Murphy
Planner, Policy Section
Santa Cruz County Planning Department
701 Ocean St., Santa Cruz CA
Ph: 831-454-3111
Annie.Murphy@santacruzcounty.us

From: Annette Olson
Sent: Friday, March 25, 2016 1:40 PM
To: Annie Murphy
Subject: Chanticleer

Hi Annie.
Any luck looking at the barn structure on the proposed Discretion Brewery site? Just curious what your conclusion is if you had time to drive by. I'm also wondering if you've been able to catch Kathy to ask her about the Cemex smokestack. Thanks and have a lovely Easter.
-Annette

Annette Olson
Development Review Planner

ATTACHMENT 9

Discretion Brewing Facility

Santa Cruz County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	51.00	1000sqft	1.17	51,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	5			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - 4,650 cubic yards of fill.

Grading - Most of the site would require grading to achieve the proper grade. 4,650 cubic yards of fill required.

Demolition -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	10.00
tblConstructionPhase	PhaseEndDate	6/30/2017	7/1/2017
tblGrading	AcresOfGrading	3.75	1.00
tblProjectCharacteristics	OperationalYear	2014	2018

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2280	1.5890	1.3053	1.9100e-003	0.0463	0.0970	0.1434	0.0198	0.0928	0.1126	0.0000	161.8725	161.8725	0.0321	0.0000	162.5467
2018	0.7075	0.7844	0.6986	1.1200e-003	9.3500e-003	0.0464	0.0557	2.5300e-003	0.0446	0.0472	0.0000	93.3487	93.3487	0.0171	0.0000	93.7081
Total	**0.9356**	**2.3734**	**2.0038**	**3.0300e-003**	**0.0557**	**0.1434**	**0.1991**	**0.0223**	**0.1374**	**0.1598**	**0.0000**	**255.2211**	**255.2211**	**0.0492**	**0.0000**	**256.2548**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2280	1.5890	1.3053	1.9100e-003	0.0463	0.0970	0.1434	0.0198	0.0928	0.1126	0.0000	161.8723	161.8723	0.0321	0.0000	162.5466
2018	0.7075	0.7844	0.6986	1.1200e-003	9.3500e-003	0.0464	0.0557	2.5300e-003	0.0446	0.0472	0.0000	93.3486	93.3486	0.0171	0.0000	93.7080
Total	**0.9356**	**2.3734**	**2.0038**	**3.0300e-003**	**0.0557**	**0.1434**	**0.1991**	**0.0223**	**0.1374**	**0.1598**	**0.0000**	**255.2209**	**255.2209**	**0.0492**	**0.0000**	**256.2545**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2583	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2700e-003	1.2700e-003	0.0000	0.0000	1.3400e-003
Energy	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	192.5872	192.5872	6.8900e-003	2.4300e-003	193.4849
Mobile	0.1953	0.4237	2.1190	4.1000e-003	0.2907	5.2200e-003	0.2959	0.0779	4.8100e-003	0.0827	0.0000	301.4194	301.4194	0.0160	0.0000	301.7558
Waste						0.0000	0.0000		0.0000	0.0000	12.8372	0.0000	12.8372	0.7587	0.0000	28.7689
Water						0.0000	0.0000		0.0000	0.0000	3.7416	18.5648	22.3064	0.3851	9.2500e-003	33.2612
Total	**0.4607**	**0.4879**	**2.1736**	**4.4900e-003**	**0.2907**	**0.0101**	**0.3008**	**0.0779**	**9.6900e-003**	**0.0876**	**16.5788**	**512.5728**	**529.1515**	**1.1667**	**0.0117**	**557.2721**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2583	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2700e-003	1.2700e-003	0.0000	0.0000	1.3400e-003
Energy	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	192.5872	192.5872	6.8900e-003	2.4300e-003	193.4849
Mobile	0.1953	0.4237	2.1190	4.1000e-003	0.2907	5.2200e-003	0.2959	0.0779	4.8100e-003	0.0827	0.0000	301.4194	301.4194	0.0160	0.0000	301.7558
Waste						0.0000	0.0000		0.0000	0.0000	6.4186	0.0000	6.4186	0.3793	0.0000	14.3844
Water						0.0000	0.0000		0.0000	0.0000	3.2792	16.2702	19.5493	0.3375	8.0900e-003	29.1449
Total	**0.4607**	**0.4879**	**2.1736**	**4.4900e-003**	**0.2907**	**0.0101**	**0.3008**	**0.0779**	**9.6900e-003**	**0.0876**	**9.6977**	**510.2781**	**519.9759**	**0.7397**	**0.0105**	**538.7713**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**41.51**	**0.45**	**1.73**	**36.60**	**9.93**	**3.32**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2017	6/28/2017	5	20	
2	Site Preparation	Site Preparation	6/29/2017	7/1/2017	5	2	
3	Grading	Grading	7/2/2017	7/14/2017	5	10	
4	Building Construction	Building Construction	7/15/2017	4/20/2018	5	200	
5	Paving	Paving	4/21/2018	5/4/2018	5	10	
6	Architectural Coating	Architectural Coating	5/5/2018	5/18/2018	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,500; Non-Residential Outdoor: 25,500 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

ATTACHMENT 10

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	226	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Paving	Pavers	1	6.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Rubber Tired Dozers	1	6.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	174	0.41
Paving	Paving Equipment	1	8.00	130	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	25.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7600e-003	0.0000	2.7600e-003	4.2000e-004	0.0000	4.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4126
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**2.7600e-003**	**0.0161**	**0.0188**	**4.2000e-004**	**0.0150**	**0.0154**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4126**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	2.9200e-003	3.7500e-003	1.0000e-005	2.1000e-004	4.0000e-005	2.5000e-004	6.0000e-005	4.0000e-005	1.0000e-004	0.0000	0.8085	0.8085	1.0000e-005	0.0000	0.8087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	7.7000e-004	6.9400e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9141	0.9141	6.0000e-005	0.0000	0.9154
Total	**7.9000e-004**	**3.6900e-003**	**0.0107**	**2.0000e-005**	**1.2400e-003**	**5.0000e-005**	**1.2900e-003**	**3.3000e-004**	**5.0000e-005**	**3.8000e-004**	**0.0000**	**1.7227**	**1.7227**	**7.0000e-005**	**0.0000**	**1.7240**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7600e-003	0.0000	2.7600e-003	4.2000e-004	0.0000	4.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0272	0.2659	0.2087	2.4000e-004		0.0161	0.0161		0.0150	0.0150	0.0000	22.2938	22.2938	5.6600e-003	0.0000	22.4125
Total	**0.0272**	**0.2659**	**0.2087**	**2.4000e-004**	**2.7600e-003**	**0.0161**	**0.0188**	**4.2000e-004**	**0.0150**	**0.0154**	**0.0000**	**22.2938**	**22.2938**	**5.6600e-003**	**0.0000**	**22.4125**

ATTACHMENT 10

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	2.9200e-003	3.7500e-003	1.0000e-005	2.1000e-004	4.0000e-005	2.5000e-004	6.0000e-005	4.0000e-005	1.0000e-004	0.0000	0.8085	0.8085	1.0000e-005	0.0000	0.8087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	7.7000e-004	6.9400e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9141	0.9141	6.0000e-005	0.0000	0.9154
Total	**7.9000e-004**	**3.6900e-003**	**0.0107**	**2.0000e-005**	**1.2400e-003**	**5.0000e-005**	**1.2900e-003**	**3.3000e-004**	**5.0000e-005**	**3.8000e-004**	**0.0000**	**1.7227**	**1.7227**	**7.0000e-005**	**0.0000**	**1.7240**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**5.8000e-003**	**1.3100e-003**	**7.1100e-003**	**2.9500e-003**	**1.2000e-003**	**4.1500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0563	0.0563	0.0000	0.0000	0.0563
Total	**3.0000e-005**	**5.0000e-005**	**4.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0563**	**0.0563**	**0.0000**	**0.0000**	**0.0563**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3100e-003	0.0242	0.0159	2.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	1.5895	1.5895	4.9000e-004	0.0000	1.5997
Total	**2.3100e-003**	**0.0242**	**0.0159**	**2.0000e-005**	**5.8000e-003**	**1.3100e-003**	**7.1100e-003**	**2.9500e-003**	**1.2000e-003**	**4.1500e-003**	**0.0000**	**1.5895**	**1.5895**	**4.9000e-004**	**0.0000**	**1.5997**

ATTACHMENT C

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0563	0.0563	0.0000	0.0000	0.0563
Total	**3.0000e-005**	**5.0000e-005**	**4.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0563**	**0.0563**	**0.0000**	**0.0000**	**0.0563**

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0231	0.0000	0.0231	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4200e-003	0.0989	0.0659	7.0000e-005		5.3300e-003	5.3300e-003		4.9000e-003	4.9000e-003	0.0000	6.5281	6.5281	2.0000e-003	0.0000	6.5701
Total	**9.4200e-003**	**0.0989**	**0.0659**	**7.0000e-005**	**0.0231**	**5.3300e-003**	**0.0284**	**0.0125**	**4.9000e-003**	**0.0174**	**0.0000**	**6.5281**	**6.5281**	**2.0000e-003**	**0.0000**	**6.5701**

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	2.4000e-004	2.1400e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2813	0.2813	2.0000e-005	0.0000	0.2817
Total	**1.6000e-004**	**2.4000e-004**	**2.1400e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2813**	**0.2813**	**2.0000e-005**	**0.0000**	**0.2817**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0231	0.0000	0.0231	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4200e-003	0.0989	0.0659	7.0000e-005		5.3300e-003	5.3300e-003		4.9000e-003	4.9000e-003	0.0000	6.5281	6.5281	2.0000e-003	0.0000	6.5701
Total	**9.4200e-003**	**0.0989**	**0.0659**	**7.0000e-005**	**0.0231**	**5.3300e-003**	**0.0284**	**0.0125**	**4.9000e-003**	**0.0174**	**0.0000**	**6.5281**	**6.5281**	**2.0000e-003**	**0.0000**	**6.5701**

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	2.4000e-004	2.1400e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2813	0.2813	2.0000e-005	0.0000	0.2817
Total	**1.6000e-004**	**2.4000e-004**	**2.1400e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2813**	**0.2813**	**2.0000e-005**	**0.0000**	**0.2817**

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1773	1.1465	0.8587	1.3200e-003		0.0735	0.0735		0.0709	0.0709	0.0000	110.7284	110.7284	0.0232	0.0000	111.2163
Total	**0.1773**	**1.1465**	**0.8587**	**1.3200e-003**		**0.0735**	**0.0735**		**0.0709**	**0.0709**	**0.0000**	**110.7284**	**110.7284**	**0.0232**	**0.0000**	**111.2163**

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.7300e-003	0.0420	0.0755	1.1000e-004	3.0400e-003	6.5000e-004	3.7000e-003	8.7000e-004	6.0000e-004	1.4700e-003	0.0000	9.8126	9.8126	8.0000e-005	0.0000	9.8142
Worker	5.0900e-003	7.4600e-003	0.0673	1.2000e-004	9.9700e-003	1.0000e-004	0.0101	2.6500e-003	9.0000e-005	2.7400e-003	0.0000	8.8600	8.8600	5.7000e-004	0.0000	8.8719
Total	**0.0108**	**0.0494**	**0.1428**	**2.3000e-004**	**0.0130**	**7.5000e-004**	**0.0138**	**3.5200e-003**	**6.9000e-004**	**4.2100e-003**	**0.0000**	**18.6726**	**18.6726**	**6.5000e-004**	**0.0000**	**18.6861**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1773	1.1465	0.8587	1.3200e-003		0.0735	0.0735		0.0709	0.0709	0.0000	110.7283	110.7283	0.0232	0.0000	111.2162
Total	**0.1773**	**1.1465**	**0.8587**	**1.3200e-003**		**0.0735**	**0.0735**		**0.0709**	**0.0709**	**0.0000**	**110.7283**	**110.7283**	**0.0232**	**0.0000**	**111.2162**

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.7300e-003	0.0420	0.0755	1.1000e-004	3.0400e-003	6.5000e-004	3.7000e-003	8.7000e-004	6.0000e-004	1.4700e-003	0.0000	9.8126	9.8126	8.0000e-005	0.0000	9.8142
Worker	5.0900e-003	7.4600e-003	0.0673	1.2000e-004	9.9700e-003	1.0000e-004	0.0101	2.6500e-003	9.0000e-005	2.7400e-003	0.0000	8.8600	8.8600	5.7000e-004	0.0000	8.8719
Total	**0.0108**	**0.0494**	**0.1428**	**2.3000e-004**	**0.0130**	**7.5000e-004**	**0.0138**	**3.5200e-003**	**6.9000e-004**	**4.2100e-003**	**0.0000**	**18.6726**	**18.6726**	**6.5000e-004**	**0.0000**	**18.6861**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1033	0.6927	0.5534	8.8000e-004		0.0421	0.0421		0.0407	0.0407	0.0000	73.3518	73.3518	0.0147	0.0000	73.6611
Total	**0.1033**	**0.6927**	**0.5534**	**8.8000e-004**		**0.0421**	**0.0421**		**0.0407**	**0.0407**	**0.0000**	**73.3518**	**73.3518**	**0.0147**	**0.0000**	**73.6611**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5300e-003	0.0253	0.0481	7.0000e-005	2.0300e-003	3.9000e-004	2.4200e-003	5.8000e-004	3.6000e-004	9.4000e-004	0.0000	6.4405	6.4405	5.0000e-005	0.0000	6.4416
Worker	2.9200e-003	4.4200e-003	0.0394	8.0000e-005	6.6500e-003	6.0000e-005	6.7100e-003	1.7700e-003	6.0000e-005	1.8200e-003	0.0000	5.6870	5.6870	3.4000e-004	0.0000	5.6942
Total	**6.4500e-003**	**0.0297**	**0.0875**	**1.5000e-004**	**8.6800e-003**	**4.5000e-004**	**9.1300e-003**	**2.3500e-003**	**4.2000e-004**	**2.7600e-003**	**0.0000**	**12.1275**	**12.1275**	**3.9000e-004**	**0.0000**	**12.1357**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1033	0.6927	0.5534	8.8000e-004		0.0421	0.0421		0.0407	0.0407	0.0000	73.3517	73.3517	0.0147	0.0000	73.6610
Total	**0.1033**	**0.6927**	**0.5534**	**8.8000e-004**		**0.0421**	**0.0421**		**0.0407**	**0.0407**	**0.0000**	**73.3517**	**73.3517**	**0.0147**	**0.0000**	**73.6610**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5300e-003	0.0253	0.0481	7.0000e-005	2.0300e-003	3.9000e-004	2.4200e-003	5.8000e-004	3.6000e-004	9.4000e-004	0.0000	6.4405	6.4405	5.0000e-005	0.0000	6.4416
Worker	2.9200e-003	4.4200e-003	0.0394	8.0000e-005	6.6500e-003	6.0000e-005	6.7100e-003	1.7700e-003	6.0000e-005	1.8200e-003	0.0000	5.6870	5.6870	3.4000e-004	0.0000	5.6942
Total	**6.4500e-003**	**0.0297**	**0.0875**	**1.5000e-004**	**8.6800e-003**	**4.5000e-004**	**9.1300e-003**	**2.3500e-003**	**4.2000e-004**	**2.7600e-003**	**0.0000**	**12.1275**	**12.1275**	**3.9000e-004**	**0.0000**	**12.1357**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0300e-003	0.0515	0.0444	7.0000e-005		3.0100e-003	3.0100e-003		2.7800e-003	2.7800e-003	0.0000	6.0173	6.0173	1.8400e-003	0.0000	6.0558
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0300e-003**	**0.0515**	**0.0444**	**7.0000e-005**		**3.0100e-003**	**3.0100e-003**		**2.7800e-003**	**2.7800e-003**	**0.0000**	**6.0173**	**6.0173**	**1.8400e-003**	**0.0000**	**6.0558**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	3.4000e-004	3.0500e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4401	0.4401	3.0000e-005	0.0000	0.4406
Total	**2.3000e-004**	**3.4000e-004**	**3.0500e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4401**	**0.4401**	**3.0000e-005**	**0.0000**	**0.4406**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0300e-003	0.0515	0.0444	7.0000e-005		3.0100e-003	3.0100e-003		2.7800e-003	2.7800e-003	0.0000	6.0172	6.0172	1.8400e-003	0.0000	6.0558
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0300e-003**	**0.0515**	**0.0444**	**7.0000e-005**		**3.0100e-003**	**3.0100e-003**		**2.7800e-003**	**2.7800e-003**	**0.0000**	**6.0172**	**6.0172**	**1.8400e-003**	**0.0000**	**6.0558**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	3.4000e-004	3.0500e-003	1.0000e-005	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4401	0.4401	3.0000e-005	0.0000	0.4406
Total	**2.3000e-004**	**3.4000e-004**	**3.0500e-003**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4401**	**0.4401**	**3.0000e-005**	**0.0000**	**0.4406**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5910					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2792
Total	**0.5925**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2792**

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.1000e-004	9.4000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1354	0.1354	1.0000e-005	0.0000	0.1356
Total	**7.0000e-005**	**1.1000e-004**	**9.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1354**	**0.1354**	**1.0000e-005**	**0.0000**	**0.1356**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5910					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2792
Total	**0.5925**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2792**

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.1000e-004	9.4000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1354	0.1354	1.0000e-005	0.0000	0.1356
Total	**7.0000e-005**	**1.1000e-004**	**9.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1354**	**0.1354**	**1.0000e-005**	**0.0000**	**0.1356**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1953	0.4237	2.1190	4.1000e-003	0.2907	5.2200e-003	0.2959	0.0779	4.8100e-003	0.0827	0.0000	301.4194	301.4194	0.0160	0.0000	301.7558
Unmitigated	0.1953	0.4237	2.1190	4.1000e-003	0.2907	5.2200e-003	0.2959	0.0779	4.8100e-003	0.0827	0.0000	301.4194	301.4194	0.0160	0.0000	301.7558

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	355.47	67.32	34.68	783,826	783,826
Total	355.47	67.32	34.68	783,826	783,826

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.493512	0.037574	0.233760	0.143549	0.049865	0.006906	0.012880	0.004830	0.000942	0.002887	0.009149	0.000702	0.003444

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	122.6977	122.6977	5.5500e-003	1.1500e-003	123.1701
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	122.6977	122.6977	5.5500e-003	1.1500e-003	123.1701
NaturalGas Mitigated	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	69.8895	69.8895	1.3400e-003	1.2800e-003	70.3149
NaturalGas Unmitigated	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	69.8895	69.8895	1.3400e-003	1.2800e-003	70.3149

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.30968e+006	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	69.8895	69.8895	1.3400e-003	1.2800e-003	70.3149
Total		**7.0600e-003**	**0.0642**	**0.0539**	**3.9000e-004**		**4.8800e-003**	**4.8800e-003**		**4.8800e-003**	**4.8800e-003**	**0.0000**	**69.8895**	**69.8895**	**1.3400e-003**	**1.2800e-003**	**70.3149**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.30968e+006	7.0600e-003	0.0642	0.0539	3.9000e-004		4.8800e-003	4.8800e-003		4.8800e-003	4.8800e-003	0.0000	69.8895	69.8895	1.3400e-003	1.2800e-003	70.3149
Total		**7.0600e-003**	**0.0642**	**0.0539**	**3.9000e-004**		**4.8800e-003**	**4.8800e-003**		**4.8800e-003**	**4.8800e-003**	**0.0000**	**69.8895**	**69.8895**	**1.3400e-003**	**1.2800e-003**	**70.3149**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	421770	122.6977	5.5500e-003	1.1500e-003	123.1701
Total		**122.6977**	**5.5500e-003**	**1.1500e-003**	**123.1701**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	421770	122.6977	5.5500e-003	1.1500e-003	123.1701
Total		**122.6977**	**5.5500e-003**	**1.1500e-003**	**123.1701**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2583	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2700e-003	1.2700e-003	0.0000	0.0000	1.3400e-003
Unmitigated	0.2583	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2700e-003	1.2700e-003	0.0000	0.0000	1.3400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1992					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2700e-003	1.2700e-003	0.0000	0.0000	1.3400e-003
Total	**0.2583**	**1.0000e-005**	**6.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2700e-003**	**1.2700e-003**	**0.0000**	**0.0000**	**1.3400e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1992					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	6.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2700e-003	1.2700e-003	0.0000	0.0000	1.3400e-003
Total	**0.2583**	**1.0000e-005**	**6.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2700e-003**	**1.2700e-003**	**0.0000**	**0.0000**	**1.3400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

Use Water Efficient Irrigation System

Use Water Efficient Landscaping

ATTACHMENT 10

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.5493	0.3375	8.0900e-003	29.1449
Unmitigated	22.3064	0.3851	9.2500e-003	33.2612

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	11.7937 / 0	22.3064	0.3851	9.2500e-003	33.2612
Total		**22.3064**	**0.3851**	**9.2500e-003**	**33.2612**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	10.336 / 0	19.5493	0.3375	8.0900e-003	29.1449
Total		**19.5493**	**0.3375**	**8.0900e-003**	**29.1449**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.4186	0.3793	0.0000	14.3844
Unmitigated	12.8372	0.7587	0.0000	28.7689

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	63.24	12.8372	0.7587	0.0000	28.7689
Total		**12.8372**	**0.7587**	**0.0000**	**28.7689**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	31.62	6.4186	0.3793	0.0000	14.3844
Total		**6.4186**	**0.3793**	**0.0000**	**14.3844**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation