

# **INITIAL STUDY and ENVIRONMENTAL CHECKLIST**

FOR

MENDOCINO COUNTY CRISIS RESIDENTIAL TREATMENT (CRT) FACILITY

**August 2020**

**Lead Agency:**  
County of Mendocino



**Prepared by:**  
Elizabeth Burks (Principal), Consulting Planner for the County of Mendocino  
LACO Associates  
776 S. State St., Suite 103  
Ukiah, CA 95482  
(707) 462-0222

**LACO Project No. 9528.00**

**State Clearinghouse Number:**

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## I. PROJECT SUMMARY

**Date:** August 2020

**Project Title:** Mendocino County Crisis Residential Treatment (CRT) Facility

**Lead Agency:** County of Mendocino

**Contact/Prepared By:** Elizabeth Burks (Principal), Consulting Planner for the County of Mendocino  
LACO Associates  
776 S. State St., Suite 103  
Ukiah, CA 95482  
(707) 462-0222  
burkse@lacoassociates.com

**Location:** The proposed project is located at 631 S. Orchard Avenue within the City of Ukiah city limits in Mendocino County, on the east side of Orchard Avenue, approximately 450 feet north of its intersection with Gobbi Street, and is identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48 (Site). The Site comprises a total of 0.92 acres and is accessed via South Orchard Avenue (see Figure 1).

**Coastal Zone:** No

**Affected Parcel(s):** Assessor's Parcel Number(s) 002-340-50 and 002-340-48

**Current City of Ukiah Land Use Designation:** Commercial (C) – see Figure 2.

**Current City of Ukiah Zoning Designation:** Community Commercial (C-1) – see Figure 3.

**Anticipated Permits and Approvals:**

- 1) General Plan Conformance Review by the City of Ukiah

**Tribal Cultural Resources:** Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On April 28, 2020 LACO Associates (LACO), on behalf of the County of Mendocino (County), contacted the Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and the contact information for the representatives of the Native American tribes associated with the project area. The NAHC response letter, dated May 1, 2020, indicated that a search of the SLF returned a positive result with connections to the Pinoleville Pomo Nation, and included a list of five (5) Native American tribes with cultural affiliations to the area. The list received from the NAHC included the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians, with contact information for the Chairperson of each Tribe provided.

On June 2, 2020, in compliance with Assembly Bill (AB) 52, LACO, on behalf of the County of Mendocino, sent a consultation letter to each of the five (5) Native American tribes provided in the NAHC response letter,

including the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians. As of the date of this Initial Study, no requests for consultation have been received from any of the five (5) Native American tribes that were sent formal notification of the project in compliance with AB 52, as noted above. As no requests for consultation were received within the 30 day deadline specified by Public Resources Code section 21082.3 (d), the County of Mendocino, as Lead Agency, has deemed the Tribal consultation process complete. Copies of the response letter from the NAHC and the letters sent to the Tribal representatives are included in Appendix B.

**CEQA Requirement:**

The proposed project is subject to the requirements of the California Environmental Quality Act (CEQA). The Lead Agency is the County of Mendocino. The purpose of this Initial Study (IS) is to provide a basis for determining whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration. This IS is intended to satisfy the requirements of the CEQA (Public Resources Code, Div. 13, Sec. 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387).

CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts (CEQA Section 20180(c) (2) and State CEQA Guidelines Section 15070(b) (2)).

Section 15063(d) of the State CEQA Guidelines states that an IS shall contain the following information in brief form:

- 1) A description of the project including the project location
- 2) Identification of the environmental setting
- 3) Identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to provide evidence to support the entries
- 4) Discussion of means to mitigate significant effects identified, if any
- 5) Examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls
- 6) The name of the person or persons who prepared and/or participated in the Initial Study



## II. PROJECT DESCRIPTION

The County of Mendocino (County) is proposing to construct a Crisis Residential Treatment (CRT) Facility on a 0.92-acre site located at 631 S. Orchard Avenue, Ukiah, and identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48 (Site). The Site is owned by the County and is located within the City of Ukiah city limits. The Site has a City of Ukiah land use designation of Commercial (C) (1995) and a zoning designation of Community Commercial (C-1) per the City of Ukiah Zoning Map (2017). No changes to the Site's current land use or zoning designations are proposed under the project.

The project includes the construction and operation of a 3,462 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, a staff office/intake room, den, great room, kitchen, dining area, laundry room, and janitor/storage room. Associated improvements include an outdoor deck oriented to the north and recessed within the building exterior, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, a galvanized steel fence surrounding the proposed CRT Facility with gated pedestrian entrances, and driveways. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored, downcast, and shielded in compliance with regulations set by the International Dark-Sky Association. The project will additionally include a boundary line adjustment to accommodate the footprint of the proposed CRT Facility within one of the resulting parcels.

### Purpose and Need

The CRT Facility will serve as a social rehabilitation facility that will provide adults (18 years and older) (clients) who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization, a positive, short-term (up to 30 days) structured program in a home-like, non-institutional environment. A crisis is a situation in which a person's actions, feelings, or behaviors may potentially lead to them hurting themselves or others or being unable to care for themselves or being unable to function in the community in a healthy manner. The program will be designed to help resolve a crisis before it becomes severe enough to require hospitalization, provide continued stabilization after hospitalization if it is necessary, and assist the client in returning to his or her home environment when the crisis is resolved. The expected outcome of the program is that there will be a reduction in psychiatric hospitalizations, emergency room visits, and inappropriate incarcerations by addressing clients' needs before the crisis becomes severe.

The CRT Facility will fill a gap in the Mendocino County system of care that has been problematic for decades. As described in the Mendocino County Behavioral Health System Program Gap Analysis & Recommendations for Allocation of Measure B Revenues prepared by Kemper Consulting Group and dated August 21, 2018 (Kemper Report), "the current mental health continuum of care...is missing key services that are essential to reducing the need for inpatient psychiatric care, including but not limited to Crisis Residential Treatment, day treatment, and a robust array of community-based wellness and support services" (p. 4). As of 2018, there had been an increasing volume of persons needing mental health assessment, putting increasing strain and costs on hospital Emergency Departments in Mendocino County as they hold patients awaiting mental health assessments and/or placement in out-of-county psychiatric facilities (Kemper Consulting Group, 2018, p. 27).

The project would be constructed using funds from the Mendocino County Behavioral Health Treatment Act (more commonly known as Measure B). Currently, one-fifth of a cent (0.2 percent) is taken from sales tax revenue, an excise tax, to fund facilities and infrastructure for behavioral health aid in Mendocino County. In

approximately three (3) years, that will transfer to one-eighth of a cent (0.125 percent), and will continue on at that rate, unless, or until, the tax is repealed by a majority vote in a general election.

### **Services to be Provided**

The CRT Facility will be operated by 10 full-time staff and two (2) managers with staff working 8- to 10-hour shifts and will be staffed 24 hours per day, seven (7) days per week. A structured program for clients will be provided seven (7) days per week and will generally include:

- Individual plan of treatment
- Individual and group counseling and support
- Crisis Intervention
- Planned activities
- Family counseling (with available family members when indicated in the client's treatment plan)
- Development of community support systems
- Pre-vocational or vocational counseling
- Client Advocacy
- Activity Programs
- Community Living Skills Training
- Educational groups

### **Access**

The Site is bordered to the west by S. Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, and located a short distance from Gobbi Street, a two-lane minor arterial road managed by the City of Ukiah Public Works, to the south, and Highway 101, a four-lane highway managed by the California Department of Transportation (Caltrans), to the east. Currently, the Site has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels. The proposed project includes construction of a new, defined entrance to S. Orchard Avenue on the south end of the Site to accommodate CRT Facility entrance. No modifications to the existing driveway on the north end of the Site, which is used to access properties east of the Site, are proposed as part of the project. The project will additionally include sidewalk improvements in the City of Ukiah right-of-way, connecting the Site development with adjacent uses. A total of 10 standard parking spaces and 1 accessible parking space would be provided on-site to serve the CRT Facility.

### **Utilities and Services**

The Site is located within the service boundaries of the City of Ukiah water and electric distribution, wastewater collection, and storm drain systems. There are currently no on-site utility connections; however, connections to existing utilities located in close vicinity to the Site will be established during project construction. Water service will be extended to the Site by tying in to the existing 8-inch water main with a 2-inch water line. A proposed 6-inch sanitary sewer lateral will be cut in with a wye to the existing 6-inch sanitary sewer line. Both the existing water main and the existing sanitary sewer line are located west of the Site within Orchard Avenue. As noted above, on-site drainage will be managed utilizing post-construction Best Management Practices (BMPs), including bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85<sup>th</sup> percentile rain event, and landscaped areas throughout the Site to encourage natural stormwater infiltration.. Post-construction BMPs will connect to an existing curb inlet near the southeast corner of the Site. Additionally, a connection will be established to the existing electric utility feed located along the south edge of the Site. Natural gas service, if needed, would be provided by Pacific Gas and Electric Company (PG&E).

The City of Ukiah would also provide solid waste collection services through the Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah, which would be collected from a trash bin enclosure to be installed in the southeast portion of the Site. According to the City of Ukiah Utility Services & Billing webpage (2020), as the proposed project would include a commercial facility, garbage service would be setup directly through Ukiah Waste Solutions who operates weekly curbside residential and commercial garbage and recycling collection within the City of Ukiah.

### **Drainage**

As the Site is currently undeveloped with gently sloping topography, stormwater typically infiltrates. Drainage improvements on-site would include post-construction Best Management Practices (BMPs), including bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85<sup>th</sup> percentile rain event, and landscaped areas throughout the Site to encourage natural stormwater infiltration. Drainage across the Site appears to flow to the southeast towards the southern access road. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site.

### **City of Ukiah General Plan Conformance**

The proposed CRT Facility would be licensed and regulated by the Department of Health Care Services in accordance with California Code of Regulations (CCR) Title 22 and would be certified as a Social Rehabilitation Program, licensed as a Social Rehabilitation Facility, as defined by Health and Safety Code 1502(a), and authorized to operate as a Mental Health Rehabilitation Center. The Ukiah City Code (2019) defines a "community care facility" as "the facilities described in Health and Safety Code 1502(a)." In accordance with the Ukiah City Code *Regulations in Community Commercial (C-1) Districts* (2018), the proposed 10-bed CRT Facility (Community care facility) would be a permitted use on-site, subject to the approval of a use permit. However, per Government Code Section 65402(b), as the County proposes to construct a public structure on a County-owned property, the County is under no obligation to conform to City of Ukiah standards with regard to zoning or permitting. California Government Code Section 65402(b) requires that, prior to construction or authorization of construction, a county report the location, purpose, and extent of any proposed public structure to the planning agency having jurisdiction to determine conformity with the adopted general plan. On May 29, 2020, a letter was submitted to the City of Ukiah in accordance with this reporting requirement. No response was received from the City of Ukiah within 40 days of notification of the project. As such, in accordance with California Government Code Section 65402(b), the County has conclusively deemed that the proposed action is in conformity with the adopted general plan.

### **Compatibility with the Mendocino County Airport Comprehensive Land Use Plan**

The Site is located approximately 4,472 feet (0.85 miles) northeast of the Ukiah Municipal Airport. In 1993, the Mendocino County Airport Comprehensive Land Use Plan (ACLUP) was adopted, and later revised in 1996, by the Mendocino County Airport Land Use Commission (ALUC) to provide land use compatibility guidelines for lands near each of the airports in Mendocino County with the intention to avert potential safety problems and ensure unhindered airport operations. In February 2019, the City of Ukiah, with support from the County of Mendocino and the ALUC initiated a planning effort to prepare an updated compatibility plan for the Ukiah Municipal Airport, entitled the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP). A Public Review Draft of the UKIALUCP, dated January 31, 2020, was made available for public review in July 2020. As of the date of this Initial Study, the UKIALUCP has not been adopted by the ALUC. As such, the proposed project's compatibility with the Ukiah Municipal Airport has been determined based on the compatibility criteria established by the 1996 ACLUP and the January 2020 Public Review Draft of the UKIALUCP.

Per the ACLUP (1996), the Site is located within Zone B2 of the Ukiah Municipal Airport, the “Extended Approach/Departure Zone.” Pursuant to Table 2A *Compatibility Criteria* of the ACLUP (1996), Zone B2 is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise, is limited to residential parcels of 2 acres or larger, requires less than 60 people per acre, and recommends 30 percent open land. Prohibited uses within the Zone B2 include schools, day care center, libraries, hospitals, and nursing homes, among other uses. Normally Acceptable Uses in Zone B2 include single-story offices, single-family homes on an existing lot, and low-intensity retail, office, etc., among other uses. The ACLUP (1996) does not provide guidance on the compatibility of community care facilities in Zone B2; however, the proposed use would be consistent with Zone B2 based on consistency with Table 2A *Compatibility Criteria* and similar uses discussed in the ACLUP. The proposed project includes the construction and operation of a 3,462 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, and would be operated by 10 full-time staff and two (2) managers working 8-to-10 hour shifts to provide coverage 24 hours per day, 7 days per week. Even at full client and staffing capacity, the project would be well below maximum density of 60 people per acre allowed in Zone B2 pursuant to Table 2A *Compatibility Criteria* of the ACLUP (1996). In addition, the project supports the Policy 2.1.6 (Infill), which allows new development of a similar intensity to that of surrounding, already existing uses. The Site is located in an urban, built-up environment and is surrounded by public service, commercial, and residential uses of a similar scale to the proposed project.

Per the Public Review Draft of the UKIALUCP dated January 2020, the Site is located within Compatibility Zone 6, the “Traffic Pattern Zone.” Pursuant to Table 3B *Compatibility Zone Delineation* of the Public Review Draft of the UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact, has a maximum sitewide average intensity of 300 people per acre and a maximum single-acre intensity of 1,200 people per acre, and recommends 15 percent open land for the entire zone. Aircraft in Compatibility Zone 5 are typically 1,000 to 1,500 feet above the runway, with airspace concern generally with objects heights at heights greater than 100 feet above runway elevation. According to Table 3A *Basic Compatibility Criteria* of the Public Review Draft of the UKIALUCP (January 2020), Congregate Care facilities, which includes assisted living/residential care facilities are Normally Compatible uses in Compatibility Zone 6. Therefore, the proposed project would be compatible with the Public Review Draft of the UKIALUCP (January 2020).

### III. PROJECT SETTING AND LOCATION

The approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located in an urban built-up environment. Based on a review of Google Earth imagery, it appears that, at least dating back to 1993, the Site has been vacant, and has been used on a limited basis for vehicle parking and for accessing the development located east of the Site. The Site is bordered to the west by S. Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, and single-family residences, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include Gobbi Street, a two-lane minor arterial road managed by the City of Ukiah Public Works, to the south, Highway 101, a four-lane highway managed by Caltrans, to the east, residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, and government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north.

Elevations at the project Site range between approximately 598 feet and 600 feet above mean sea level (amsl). The Site is located in Zone “X” – area of minimal flood hazard – as shown on Federal Emergency Management Agency’s (FEMA) National Flood Hazard Layer FIRMette map number 06045C1514F, effective June 2, 2011. The Site is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. The Site is not known to contain any creeks/streams, riparian areas, or wetlands on-site (USFWS, 2020). According to the

Geotechnical Exploration and GeoHazard Report (Geotech Report) prepared by LACO and dated June 3, 2020, the Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. Local alluvial soils consist of a surficial layer of sandy lean clay that extends to between 11 and 15 feet bgs; well graded sand with clay and gravel that extends to approximately 39 feet bgs; sandy lean clay that extends to approximately 43 feet bgs; clayey sand that extends to approximately 50 feet bgs; and clayey sand with gravel that extended to the maximum depth explored 52 feet bgs. Groundwater was encountered in our borings at depths between 7 and 14 feet bgs (LACO, 2020).

#### IV. ENVIRONMENTAL EFFECTS

An environmental checklist follows this section, and addresses all potential adverse effects resulting from the proposed project. No significant adverse effects are expected from any of the proposed activities.

#### V. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a **"Potentially Significant Impact"** or **"Potentially Significant Unless Mitigation Incorporated"** as indicated by the checklists on the following pages.

	Aesthetics		Agriculture and Forestry Resources		Air Quality
	Biological Resources	X	Cultural Resources		Energy
X	Geology/Soils		Greenhouse Gas Emissions		Hazards & Hazardous Materials
X	Hydrology/Water Quality		Land Use/Planning		Mineral Resources
X	Noise		Population/Housing		Public Services
	Recreation		Transportation		Tribal Cultural Resources
	Utilities/Service Systems		Wildfire		Mandatory Findings of Significance

An explanation for all checklist responses is included, and all answers take into account the whole action involved and the following types of impacts: off-site and on-site; cumulative and project-level; indirect and direct; and construction and operational. The explanation of each issue identifies (a) the threshold of significance, if any, used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance. The mitigation measures recommended for the project are included in Appendix A.

In the checklist the following definitions are used:

**"Potentially Significant Impact"** means there is substantial evidence that an effect may be significant.

**"Potentially Significant Unless Mitigation Incorporated"** means the incorporation of one or more mitigation measures can reduce the effect from potentially significant to a less than significant level.

**"Less Than Significant Impact"** means that the effect is less than significant and no mitigation is necessary to reduce the impact to a lesser level.

**"No Impact"** means that the effect does not apply to the proposed project, or clearly will not impact nor be impacted by the proposed project.

**DETERMINATION: (To be completed by the Lead Agency on the basis of this initial evaluation)**

<input type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
<input checked="" type="checkbox"/>	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 by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Elizabeth Burks (Principal)  
Consulting Planner for the County of Mendocino

I. <b>AESTHETICS.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on aesthetics if it would have a substantial adverse effect on a scenic vista; substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway; substantially degrade the existing visual character or quality of public views of the site and its surroundings (if the project is in a non-urbanized area) or conflict with applicable zoning and other regulations governing scenic quality (if the project is in an urbanized area); or create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

## DISCUSSION

The Site is located within the City of Ukiah city limits in a built-up urban area, surrounded by parcels utilized for a variety of uses including governmental functions, commercial businesses, and residences. The Site is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. Currently, the Site has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels.

Under the proposed project, a Crisis Residential Treatment (CRT) Facility would be constructed on the southern portion of the Site. Conceptual plans for the proposed project indicate that the new CRT Facility would be a one-story structure approximately 3,462 square feet in size. The proposed CRT Facility would include space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. As shown on the attached Site Plan (see Figure 5), associated improvements on-site would include an outdoor deck oriented to the north and recessed within the building exterior, a parking area on the south side of the building, Low Impact Development (LID) features for stormwater capture and treatment, landscaping throughout the Site, and a galvanized steel fence surrounding the proposed CRT Facility. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site, and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored, downcast, and shielded in compliance with regulations set by the International Dark-Sky Association.

The Site is bordered to the west by S. Orchard Avenue, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include

residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

I.a-b) The project would not have a substantial adverse effect on scenic vista, nor substantially damage scenic resources, or views along a state scenic highway. Per Chapter 4 of the 2009 Mendocino County General Plan (pg. 4-31), there are no officially designated State Scenic Highways in Mendocino County, although there are two designated State Scenic Byways through forests, which include the North Central Coast Heritage Corridor on State Route 1 and the Tahoe-Pacific Heritage Corridor encompassing sections of State Route 20 and Highway 101. While not officially designated as State Scenic Highways, Highway 20 through Mendocino County is eligible for designation and Highway 128, which passes through Yolo, Napa, Sonoma, and Mendocino Counties and is 140 miles long, was recently made eligible for designation under Assembly Bill (1998) signed by Governor Gavin Newsom in July 2019. However, Highways 20 and 128 are not in the vicinity of the Site.

The majority of the Site is currently vacant and undeveloped and is located in a built-up urban environmental with no scenic resources or views in the vicinity of the Site. No impact would occur.

I.c) The proposed project would not conflict with applicable zoning and other regulations governing scenic quality. The Site is located within the City of Ukiah city limits and has a City of Ukiah land use designation of Commercial (C) (1995) with a zoning designation of Community Commercial (C-1) per the City of Ukiah Zoning Map (2017). The proposed project would align with the requirements of Article 7. *Regulations in Community Commercial (C-1) Districts* of the Ukiah City Code (adopted 1998) to the extent feasible and would be compatible with the building height, landscaping, and parcel coverage of structures in the surrounding area; however, as noted prior, per Government Code Section 65402(b) (amended 1974), the project has been deemed to be in conformance with the City of Ukiah General Plan and the County is under no obligation to conform to the City zoning requirements. A less than significant impact would occur.

I.d) The proposed development has the potential to increase light and glare and impact nighttime views as compared to existing conditions, as the Site is currently undeveloped. The Application proposes the installation of exterior landscaping, including medium and large trees and hedges along the north, west, and east sides of the Site, which would help to obscure views of the Site and would minimize potential impacts of light and glare from the Site on the surrounding properties. In order to further minimize potential impacts associated with light and glare on surrounding development, the proposed project would include motion-censored, downcast, and shielded exterior lighting in compliance with regulations set by the International Dark-Sky Association. A less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less than Significant Impact** on Aesthetics.



II. AGRICULTURE AND FORESTRY RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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 forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on agriculture and forestry resources if it would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (hereafter "farmland"), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses; conflict with existing zoning for agricultural use or a Williamson Act contract; conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)); Result in the loss of forest land or conversion of forest land to non-forest use; or 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 forestland to non-forest use.

## DISCUSSION

The Site is located within the City of Ukiah city limits on County-owned parcels. The approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

The Site is designated as "Urban and Built-Up Land" under the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation (DOC, 2016), Division of Land Resource Protection, and is not under a Williamson Act Agricultural Preserve contract (Mendocino County Maps - Timber Production & Williamson Act Lands, 2014).

II.a-b) The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, conflict with existing zoning for agricultural use, or a Williamson Act

contract. As noted above, the Site is designated as "Urban and Built-Up Land" under the FMMP of the DOC and is located within the City of Ukiah in a built-up urban environment. No impact would occur.

II.c-d) The Site is neither designated nor zoned as forest land or timberland and there is no forest land in the vicinity of the Site. No impact would occur.

II.e) There are no components of the project that would 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. As described above, the Site is located within the City of Ukiah city limits in an urban built-up environment. No impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have **No Impact** on Agricultural and Forestry Resources.

III. AIR QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on air quality if it would conflict with or obstruct implementation of applicable air quality plans; 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; expose sensitive receptors to substantial pollutant concentrations; or result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

**DISCUSSION:** Air pollution control in the State of California is based on federal, state, and local laws and regulations. According to the 2005 Mendocino County Air Quality Management District (MCAQMD) Particulate Matter Attainment Plan (PM Attainment Plan) (pg. 5), the United States Environmental Protection Agency (EPA), California Air Resources Board (CARB), and regional clean air agencies all regulate air quality. The EPA and the CARB have set thresholds for each of the criteria pollutants, which include: ozone (O<sub>3</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), lead (Lb), sulfur dioxide (SO<sub>2</sub>), particulate matter less than 10 microns in size (PM<sub>10</sub>), and particulate matter less than 2.5 microns in size (PM<sub>2.5</sub>). The standards set by the CARB are generally more stringent than those set by the EPA and the CARB has set additional standards for visibility-reducing particles (of any size), sulfates, and hydrogen sulfide (H<sub>2</sub>S). These standards are based on observable short-term (acute) health effects (MCAQMD, 2005).

The Site is located within the North Coast Air Basin (NCAB) and is subject to the requirements of the MCAQMD. The MCAQMD is responsible for monitoring and enforcing the state and federal Clean Air Acts as well as local air quality protection regulations in the County of Mendocino. The entire NCAB is currently designated as "non-attainment," or in excess of allowable limits, for the state 24-hour allowable limits for breathable particulate matter of 10 microns or less (PM<sub>10</sub>), and as "attainment," or within allowable limits, with respect to the balance of the criteria pollutants. The MCAQMD has been determined to be in "attainment", or within allowable limits, for all federal and state ambient air quality standards, except for the state annual average PM<sub>10</sub> standard and the 24-hour PM<sub>10</sub> standard.

The California Clean Air Act does not require attainment plans or transportation conformity for Districts that exceed the PM<sub>10</sub> standard, but only requires that the Districts make reasonable efforts toward coming into attainment, defined as a five percent reduction in emissions per year, until the standard is attained. Although not required for coming into attainment for the state standard, the MCAQMD adopted the PM Attainment Plan in 2005. The PM Attainment Plan includes a description of local air quality, the sources of local particulate matter (PM) emissions, and recommended control measures to reduce future PM<sub>10</sub> levels. While PM<sub>10</sub> levels have dropped over the last 20 years, due to changing industrial base, enhanced regulations, and increased enforcement by the MCAQMD, the MCAQMD still exceeds the State PM<sub>10</sub> level several times a year. The

majority of these exceedances result from wildfires, residential wood burning, unpaved roads, and construction activities (MCAQMD, 2005).

The project and its emission sources are subject to the rules and regulations contained in the most recent version of the *Rules and Regulations* of the MCAQMD. The MCAQMD has also identified significance thresholds for use in evaluating project impacts under CEQA, provided in Table 1, below. [Please note: the MCAQMD does not specify thresholds for SO<sub>2</sub>. As a result, the Best Available Control Technology (BACT) emission rates for stationary sources, utilized by the North Coast Unified Air Quality Management District (NCUAQMD) specific to SO<sub>2</sub> are used for this analysis.]

Table 1. MCAQMD Significance Thresholds

Criteria Pollutant and Precursors	Construction Related		Operational Related	
	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tons/year) <sup>1</sup>	Indirect Source Average Daily Emissions (lb/day)	Project/Stationary Source Maximum Annual Emissions (tons/year)
ROG	54	10	180	40
NOx	54	10	42	40
PM <sub>10</sub>	82	15	82	15
PM <sub>2.5</sub>	54	10	54	10
Fugitive Dust (PM <sub>10</sub> /PM <sub>2.5</sub> )	Best Management Practices	--	same as above	
Local CO	--	--	125 tons/year	
SO <sub>2</sub> *	--	--	80	40

<sup>1</sup> = Specific maximum allowable annual emissions related to construction were not provided by MCAQMD and were calculated based on the maximum average daily emissions thresholds.

\* = MCAQMD does not specify thresholds for SO<sub>2</sub>. As such, the NCUAQMD threshold for SO<sub>2</sub> is used for this analysis.

Source: MCAQMD, 2010; NCUAQMD, 2015.

The proposed project involves the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility on the currently vacant and undeveloped Site. The CRT would include space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include an outdoor deck, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a perimeter galvanized steel fence surrounding the proposed CRT Facility. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site, and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored, downcast, and shielded in compliance with regulations set by the International Dark-Sky Association.

As the Site is currently vacant, there are no on-site emission sources at the Site. During construction at the Site, the contractor would be expected to use heavy construction machinery and temporary air pollutant emissions would be associated with grading, excavation, and construction on the Site; however, the project would be required to comply with policies regarding the control of fugitive dust during these activities, which have been established by the MCAQMD, maintaining all construction equipment in good working condition, and limiting truck idling on-site to a maximum of five minutes, pursuant to State law. Once construction is complete, emissions from operation of the project would include stationary, mobile, and fugitive sources and would be comprised of direct and indirect emissions, including but not limited to exhaust and fugitive dust from the operation of personal vehicles associated with clients, visitors, and employees traveling to and from

the Site, and service trucks, in addition to operation of the new facilities, including heating and cooling and equipment operation. Continued compliance with MCAQMD emissions standards would be required once the new building has been constructed.

III.a-b) The project would not conflict with or obstruct implementation of any air quality plan or result in a cumulatively considerable net increase of PM<sub>10</sub>, the only criteria pollutant for which the project region is in non-attainment. As noted above, the MCAQMD is in "non-attainment" for PM<sub>10</sub> (MCAQMD, 2005). Therefore, any use or activity that generates unnecessary airborne particulate matter may be of concern to MCAQMD and has the potential to create significant project-specific and cumulative effects to air quality. However, MCAQMD has advised that generally an activity that individually complies with the state and local standards for air quality emissions will not result in a cumulatively considerable net increase in the countywide PM<sub>10</sub> emissions.

Potential air quality impacts associated with the proposed project were modeled using the California Emissions Estimator Model (CalEEMod) model and compared to the significance thresholds shown in Table 1, above. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. This program is the standard for Air Quality and Greenhouse Gas (GHG) analysis within the MCAQMD jurisdiction. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutants and GHG emissions and calculates the benefits achieved from measures chosen by the user (CalEEMOD). Vehicles are known to be a major pollution contributor, producing significant amounts of nitrous oxides (NO<sub>x</sub>), carbon monoxide (CO), ozone (O<sub>3</sub>), and particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and must also be considered when evaluating potential air quality impacts of a proposed project. In both cases the CalEEMod-generated default values for equipment and project phase time frames were used (except where noted in the respective reports).

The CalEEMod results in their entirety are included in Appendix C. The CalEEMod analysis assumes implementation of basic construction- and operational-level mitigation measures, including watering exposed areas and unpaved roads; reducing vehicle speeds on unpaved roads to 10 miles per hour; utilizing low-VOC paints and cleaning supplies; installing high efficiency lighting and low-flow faucets and fixtures; and utilizing a water-efficient irrigation system and landscape. However, as shown in Table 2, below, construction and operational emissions would be below annual and daily thresholds for the listed pollutants even if the specific mitigation measures provided by the CalEEMod model are not implemented. The CalEEMod model assumes that the proposed project would break ground on September 1, 2020 (during the dry season) and be constructed over an approximately 6-month period until the entire project is complete in approximately February 2021. While it is possible the construction would take a total of 6 months to complete, there are likely to be pauses in construction, especially during the rainy season (typically November through March), which may extend the estimated completion date beyond February 2021. The results of the CalEEMod analysis for both construction and operation of the proposed project are shown in Table 2, below.

Table 2. CalEEMod Results for Construction and Operation of the Mendocino County Crisis Residential Treatment Facility over a 6-Month Construction Period and at Full Build-out

Pollutant	Emissions [tons/year (lb/day)]				Thresholds	
	Modeled Unmitigated Construction Emissions	Modeled Mitigated Construction Emissions (including % reduction)	Modeled Unmitigated Operational Emissions	Modeled Mitigated Operational Emissions (including % reduction)	Annual (tons/year) <b>Daily (lb/day)</b>	Thresholds Exceeded?
Carbon monoxide (CO)	0.3045 <b>(8.2651)</b>	0.3045 <b>(8.2651)</b> (no change)	0.4842 <b>(3.7585)</b>	0.4842 <b>(3.7585)</b> (no change)	125 <b>None</b>	No <b>No</b>
Nitrogen oxides (NOx)	0.3555 <b>(9.1622)</b>	0.3555 <b>(9.1622)</b> (no change)	0.2781 <b>(2.0629)</b>	0.2781 <b>(2.0629)</b> (no change)	40 <b>54</b>	No <b>No</b>
Particulate matter (PM <sub>10</sub> ) (total)	0.7235 <b>(57.6958)</b>	0.3733 <b>(29.0772)</b> (-48.57%)	6.9403 <b>(50.4433)</b>	6.9403 <b>(50.4433)</b> (no change)	15 <b>82</b>	No <b>No</b>
Particulate matter (PM <sub>2.5</sub> ) (total)	0.0896 <b>(6.0724)</b>	0.0545 <b>(3.2106)</b> (-40.02%)	0.6996 <b>(5.0876)</b>	0.6996 <b>(5.0876)</b> (no change)	10 <b>54</b>	No <b>No</b>
Reactive organic gases (ROG)	0.0575 <b>(17.8314)</b>	0.0575 <b>(17.8314)</b> (no change)	0.0668 <b>(0.4550)</b>	0.0658 <b>(0.4495)</b> (-1.51%)	40 <b>54</b>	No <b>No</b>
Sulfur oxides (SO <sub>2</sub> )	0.00048 <b>(0.0128)</b>	0.00048 <b>(0.0128)</b> (no change)	0.0011 <b>(0.00808)</b>	0.0011 <b>(0.00808)</b> (no change)	40 <b>80</b>	No <b>No</b>

Source: CalEEMod Results, June 17, 2020 and July 15, 2020, Appendix C.

As shown in Table 2, above, the anticipated emissions associated with construction of the CRT Facility and associated improvements at the site would be well-below MCAQMD annual and daily thresholds of significance for carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), reactive organic gases (ROG), and sulfur oxides (SO<sub>2</sub>) without any mitigation. Compliance with standard regulations of the MCAQMD during project construction would further reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions. Operational emissions would also be well-below MCAQMD's annual and daily thresholds of significance without mitigation; however, with compliance with standard regulations during project operation, ROG emissions would be further reduced.

While the anticipated development at the Site would generate temporary emissions and direct and indirect emissions once construction is complete, the project would not include any source of visible emissions, including intentional fire/burning or manufacturing and would control exhaust emissions from construction equipment by minimizing idling. In addition, the contractor would suppress fugitive dust during construction and operation, pursuant to Rule-1-430 (Fugitive Dust Emissions) of Chapter IV (Prohibitions) of Regulation 1 (Air Pollution Control Rules) of the MCAQMD's Rules and Regulations (February 2011), and would maintain all construction equipment in good working order such that exhaust and fugitive dust emissions are minimized. The project would be subject to current and future regulations adopted by MCAQMD, including the PM Attainment Plan (2005), and compliance with these regulations would ensure the project would not result in a substantial increase of PM<sub>10</sub> within the vicinity of the Site. Based on the aforementioned analysis, the proposed project would not conflict with or obstruct implementation of federal, state, or MCAQMD standards, or MCAQMD's Attainment Plan; violate any air quality standard; or result in a cumulatively

considerable net increase in the PM<sub>10</sub> non-attainment levels in Mendocino County. As such, a less than significant impact would occur.

III.c) Sensitive receptors are generally defined as people that have an increased sensitivity to air pollution or environmental contaminants, and include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). Sensitive receptors in the vicinity of the Site include:

- The project itself;
- Existing single-family residences and a mobile home park located immediately west of the Site;
- River Oak Charter School located approximately 475 feet northwest of the Site;
- A mobile home park located approximately 520 feet east of the Site; and
- Ukiah Senior Center located approximately 625 feet northwest of the Site.

As provided in Table 2, above, emissions associated with construction and operation of the proposed project would not be anticipated to exceed the annual thresholds of significance of the MCAQMD for the six listed pollutants. However, temporary exhaust from construction equipment may, over the course of the 6-month construction period, impact residents living near the Site. However, with suppression of fugitive dust during construction and operation, pursuant to Rule-1-430 (Fugitive Dust Emissions) of Chapter IV (Prohibitions) of Regulation 1 (Air Pollution Control Rules) of the MCAQMD's *Rules and Regulations* (February 2011), and maintaining all equipment in good working condition, fugitive dust and exhaust emissions would be minimized, and a less than significant impact would occur.

III.d) The project would not create substantial emissions (such as odors or dust) adversely affecting a substantial number of people. Temporary odors and dust, typical of construction sites and equipment use, may be generated during the construction phase. However, with suppression of fugitive dust during construction and operation, pursuant to Rule-1-430 (Fugitive Dust Emissions) of Chapter IV (Prohibitions) of Regulation 1 (Air Pollution Control Rules) of the MCAQMD's *Rules and Regulations* (February 2011), and maintaining all equipment in good working condition, fugitive dust and exhaust emissions would be minimized. A less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Air Quality.

IV. BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on biological resources if it would 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 Game or U.S. Fish and Wildlife Service; have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or 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 approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located within the City of Ukiah city limits in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue and single-family residences, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. According to the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper, there are no known



creeks/streams or wetlands on-site (USFWS, 2020). The Site is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. Based on a review of Google Earth imagery, it appears that, at least dating back to 1993, the Site has been vacant, with limited use for vehicle parking and occasional ground disturbance from driving vehicles. Drainage across the Site appears to flow to the southeast. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site.

The Site is not known to contain any wetland or riparian areas (USFWS, 2020). However, as provided by the U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation (IPaC) System, 8 mammal, bird, amphibian, and flowering plant species, listed as threatened or endangered under the Endangered Species Act (ESA), have the potential to occur at the Site. Additionally, per the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB), there are 26 special status species with the potential to occur within the Ukiah Quad, which includes the Site. Furthermore, the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants*, lists 7 rare or endangered plants with the potential to occur within the Ukiah Quad. The candidate, sensitive, or special status species with the potential to occur at the Site are listed in Table 3, below. Because the Site is located in a heavily-trafficked built-up urban environment, surrounded by similar, urban uses, there is limited potential for any special status plant or wildlife species to be present at the Site.

Table 3. Species with the Potential to Occur at or Within Close Vicinity of the Site

Common Name	Scientific Name
<b>Birds</b>	
Northern spotted owl	<i>Strix occidentalis caurina</i>
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Great blue heron	<i>Ardea Herodias</i>
Yellow-breasted chat	<i>Icteria virens</i>
Osprey	<i>Pandion haliaetus</i>
Oak titmouse	<i>Baeolophus inornatus</i>
Lewis' woodpecker	<i>Melanerpes lewis</i>
<b>Mammals</b>	
Fisher	<i>Pekania pennanti</i>
North American porcupine	<i>Erethizon dorsatum</i>
<b>Amphibians</b>	
California Red-legged Frog	<i>Rana draytonii</i>
Foothill yellow-legged frog	<i>Rana boylei</i>
Red-bellied newt	<i>Taricha rivularis</i>
<b>Plants</b>	
Burke's Goldfields	<i>Lasthenia burkei</i>
Contra Costa Goldfields	<i>Lasthenia conjugens</i>
Showy Indian Clover	<i>Trifolium amoenum</i>
Mendocino tarplant	<i>Hemizonia congesta ssp. calyculata</i>
Raiche's manzanita	<i>Arctostaphylos stanfordiana ssp. raichei</i>
Stinkbells	<i>Fritillaria agrestis</i>
Purdy's fritillary	<i>Fritillaria purdyi</i>
California lady's slipper	<i>Cypripedium californicum</i>
Mountain lady's slipper	<i>Cypripedium montanum</i>
Baker's meadowfoam	<i>Limnanthes bakeri</i>
Bristly leptosiphon	<i>Leptosiphon acicularis</i>
Broad-lobed leptosiphon	<i>Leptosiphon latisectus</i>
Baker's navarretia	<i>Navarretia leucocephala ssp. Bakeri</i>
Lobb's aquatic buttercup	<i>Ranunculus lobbii</i>
Great burnet	<i>Sanguisorba officinalis</i>

Source: USFWS, 2020; CDFW, 2020; and CNPS, 2020.

In addition to the species listed in Table 3, above, it should be noted that one (1) mollusk species [Western pearlshell (*Margaritifera falcata*)], one (1) reptile species [Western pond turtle (*Emys marmorata*)], and four (4) fish species [Russian River tule perch (*Hysterocarpus traskii* pomo), Coho salmon – central California coast ESU (*Oncorhynchus kisutch* pop. 4), Steelhead – central California coast DPS (*Oncorhynchus mykiss irideus* pop. 8), and Chinook salmon – California coastal ESU (*Oncorhynchus tshawytscha* pop. 17)] were also identified as having the potential to occur at the Site. However, since the Site does not contain any rivers, streams, or wetland habitat, nor is located in close proximity to any such habitat, there is no potential for these species to occur on-site and they have not been included in Table 3, above.

IV.a) The project would not 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 (CDFW) or U.S. Fish and Wildlife Service (USFWS) based on location of the Site and the surrounding uses.

The approximately 0.92-acre Site is currently undeveloped, and is located in an urban built-up environment. As shown in Table 3, above, there are 28 special status plant and wildlife species with the potential to occur on or within the vicinity of the Site; however, there is limited potential for any special status plant or wildlife species to be present at the Site. As noted above, the Site is located within a heavily-trafficked built-up urban environment and is comprised of ruderal vegetation consisting of non-native grasses and weedy species that does not provide suitable habitat for the above-listed species. A less than significant impact would occur.

IV.b) The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community. No riparian habitat is mapped on-site or within the vicinity (NWI, 2020), and no other sensitive natural communities are located on or adjacent to the Site. No impact would occur.

IV.c) As provided by the USFWS National Wetlands Inventory (NWI) Wetlands Mapper, there are no known creeks/streams or wetlands on-site (USFWS, 2020). The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site. As there are no wetlands in or in close vicinity to the Site, no impact would occur.

IV.d) The project would not be anticipated to substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Although according to the USFWS IPac List, generated April 15, 2020, there is potential for three (3) bird species listed as Threatened under the Endangered Species Act and 16 migratory bird species protected under the Endangered Species Act, Migratory Bird Treaty Act of 1918 (MBTA), the Bald and Golden Eagle Protection Act of 1940, or other regulations to be present at the Site, there is little potential for these native resident bird species to be impacted during project construction and operation, as there are currently no trees on-site that may provide nesting habitat for these native birds. In addition, the Site does not contain any streams, creeks, or wetland areas, and is located within an urban area with no existing wildlife corridors. There are no existing wildlife nursery sites within or near the Site that could be impacted by the project. A less than significant impact would occur.

IV.e) Although the project is not required to follow the City of Ukiah's General Plan policies, the project has been reviewed for consistency with Section 1 (Open Space and Conservation) of Chapter 4 (The Resource Elements) of the City of Ukiah General Plan, which contains goals and policies related to the preservation of biological resources, including but not limited to, open space, the Russian River and its tributaries, creeks and streams, hillside development, oak woodlands, water resources, and native plants and animals.

The proposed project would introduce development to a vacant parcel located within an urban area and covered with non-native grasses and weedy species, with a limited number of landscaping trees planted to the north and southeast of the Site. The project includes substantial landscaping that would introduce native plants to the Site. In addition, during construction of the project, BMPs to prevent erosion and the discharge of sediment would be implemented to protect waterbodies from stormwater pollutants due to project construction. The project would not conflict with any local policies or ordinances related to the protection of biological resources. A less than significant impact would occur.

IV.f) The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, as there are no such plans applicable to the Site. No impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Biological Resources.

<b>V. CULTURAL RESOURCES.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on cultural resources if it would cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5; cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5; or disturb any human remains, including those interred outside of formal cemeteries.

## DISCUSSION

According to Chapter 3 (Development Element) of the Mendocino County General Plan (2009), ten (10) Native American tribes historically had territory in what is now Mendocino County. Native American tribes known to inhabit Mendocino County concentrated mainly along the coast and along major rivers and streams, while mountainous areas and redwood groves were occupied seasonally by some tribes. The first permanent non-native settlers came to Mendocino County in the middle of the 16<sup>th</sup> century, exploring and establishing small outposts. It was almost 300 years before the first permanent non-Spanish settlements in Mendocino County were established in April of 1852 on the coast north of Big River. As European-American settlement expanded in Mendocino County, most of the tribes known to inhabit the land were restricted to reservations and rancherias. During the 19<sup>th</sup> century, other tribes from the interior of California were forced to settle on the Round Valley Reservation in the northeastern portion of Mendocino County. The City of Ukiah (City) is situated in a valley of the Russian River between the Russian River and western hills. The City was first settled in 1856 by Samuel Lowry and has served as the Mendocino County Seat since 1859. Logging, cattle, and agricultural ventures contributed to the early settlement and growth of the City throughout the remainder of the 19<sup>th</sup> and early 20<sup>th</sup> centuries (City of Ukiah, 2019). The City is within the territory of the Northern Pomo. The Pomo often established permanent villages in areas with access to staple foods, often times along eco-tones (transitions between varying environments), with access to good water, and generally flat land. Areas within the Ukiah Valley that are most typically culturally sensitive include those adjacent to streams, springs, and mid-slope benches above watercourses because Native Americans and settlers favored easy access to potable water (ESA, 2013).

Various County and City policies exist related to the protection and preservation of cultural and historical resources, including but not limited to: Chapter 3 (Historic and Archaeological Resources) of the Ukiah General Plan (1995); City Ordinance No. 838 (1983); Chapter 3 of the Mendocino County General Plan (2009), pages 3-94 through 3-95; and Chapter 22.12 of the Mendocino County Code (1987). Chapter 3 (Historic and Archaeological Resources) of the Ukiah Valley General Plan and Growth Management Program (Ukiah General Plan) (1995) states that Ukiah is committed to maintaining cultural resources as a link to past populations, but recognizes that effective cultural resource protection is a balance between preserving and protecting the past and accommodating future growth. Figure V.3-DD of the Ukiah General Plan (1995) identifies areas of high archaeological sensitivity, based on terrain, location of already-recorded sites, and other scientific factors, the majority of which are clustered north of the City. The City additionally maintains a Historic and Architectural Inventory that includes properties within the City limits with historic importance that

were identified in an Historical and Architectural Survey Update prepared for the City by P.S. Preservation Services in 1999 (City of Ukiah, 2019). City Ordinance No. 838 requires City Council approval of the proposed demolition of any building over 50 years old, allowing some review and public input opportunity regarding the potential loss of historically significant buildings (City of Ukiah, 2019). In an effort to protect archaeological and cultural resources, in particular Native American sites, from potential development impacts, the County of Mendocino (County) has adopted an Archaeological Ordinance, Chapter 22.12 of the Mendocino County Code (1987). The ordinance establishes a County Archaeological Commission that evaluates the potential impacts of proposed projects on archaeological resources and recommends measures to reduce or eliminate impacts on these resources. The ordinance additionally includes the "Discovery Clause," which establishes procedures to follow in the event that archaeological or cultural resources or human remains are unearthed during project construction, including but not limited to Site preparation and excavation, in accordance with Mendocino County Code Sections 22.12.090 and 22.12.100. Both Policy DE-115 of Chapter 3 of the Mendocino County General Plan (2009) and Mendocino County Code Sections 22.12.050 through 22.12.100 (1987) include provisions for archaeological sensitivity review, field evaluations, impact mitigations, archaeological discovery, and human remain discovery protocols.

On April 28, 2020, LACO Associates (LACO), on behalf of the County, contacted the Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and the contact information for the representatives of the Native American Tribes associated with the area and the Northwest Information Center (NWIC) located on the Sonoma State University campus to request a Records Search. The NAHC response letter, dated May 1, 2020, indicated that a search of the SLF returned a positive result with connections to the Pinoleville Pomo Nation, and included a list of five (5) Native American tribes with cultural affiliations to the area. The list received from the NAHC included the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians, with contact information for the Chairperson of each Tribe provided. On May 19, 2020, LACO received a letter response from the NWIC (File No. 19-1892), which noted that no previous cultural resource studies have been completed and documented for the Site. In addition, the NWIC stated the Site has a moderate to high potential for containing unrecorded Native American resources and recommended further archival and field study and that the local Native American tribes be contacted regarding traditional, cultural, and religious heritage values. The NWIC additionally recommended that a qualified professional familiar with the architecture and history of Mendocino County conduct a formal CEQA evaluation regarding any building or structure 45 years or older; however, the Site is undeveloped and therefore, no existing structures will be impacted by the proposed project.

On June 2, 2020, in compliance with Assembly Bill (AB) 52, LACO, on behalf of the County, sent a consultation letter to each of the five (5) Native American tribes provided in the NAHC response letter, including the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians. As of the date of this Initial Study, no requests for consultation or any other responses have been received from any of the five (5) Native American Tribes that were sent formal notification of the project in compliance with AB 52. Copies of the request letters sent to the NAHC, NWIC, and Native American tribes, in addition to the responses from NAHC and NWIC, are included in Appendix B. No further field study was initiated because the Site is located in an urban built-up environment, is not identified as an area of high archaeological sensitivity in the City of Ukiah General Plan (City of Ukiah, 1995), and further study was not requested by the Native American Tribes contacted.

V.a) The project is not anticipated to have an adverse effect on historical resources. No structures are being demolished or altered as a result of the project and no historical resources are identified at or near the Site,

per Figure V.3-DD of the Ukiah General Plan (1995) and the City Historic and Architectural Inventory (1999). As a result, no impact would occur.

V.b-c) The project is not anticipated to cause a substantial adverse change in the significance of an archaeological resource or disturb any human remains. Although no further field study was initiated because the Site is located in an urban built-up environment, is not identified as an area of high archaeological sensitivity in the City of Ukiah General Plan (City of Ukiah, 1995), and further study was not requested by the Native American Tribes contacted, there is the possibility that an archaeological resource or human remains could be inadvertently discovered due to the ground-disturbing activities required during project construction and the potential for cultural resources in the area noted in the letter from the NWIC, discussed above, the incorporation of Mitigation Measure CUL-1, which requires that the contractor implement standard protocol similar to the County's "Discovery Clause" during project construction, will ensure that cultural resources are not adversely impacted by the project, and that implementation of the proposed project will be consistent with Mendocino County policies for protection of cultural resources, including human remains. With mitigation incorporated, a less than significant impact would occur.

#### **MITIGATION MEASURES**

**CUL-1:** CUL-1: In the event archaeological resources or human remains are inadvertently unearthed or discovered during construction, all further excavation and disturbances within 100 feet of the discovery shall be halted, and the Director of Planning and Building Services (PBS), in the case of the discovery of archaeological resources, or the Sheriff-Coroner, in the case of the discovery of human remains, shall be immediately notified.

For the discovery of archaeological resources, all activity in the vicinity of the resource(s) shall cease until the discovery can be evaluated by the Director of PBS or a duly authorized representative, in consultation with the Mendocino County Archaeological Commission (Commission). If the Director of PBS does not arrange for an inspection of the area of discovery within 72 hours of receiving the notification and has not issued an order to cease and desist for a longer period of time, the excavation and disturbance of the site may resume. If the Commission, or an authorized representative, determines that the resource(s) is one of archaeological significance, the person who made the discovery shall be notified and an appropriate treatment plan for the resources shall be developed. The Commission shall consult with archaeologists and Native American representatives, as deemed necessary, in determining appropriate treatment for prehistoric or Native American cultural resources. In considering any suggested mitigation proposed by the archaeologist and Native American representative, the Commission will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the project area while mitigation for cultural resources is being carried out.

For the discovery of human remains, all activity in the vicinity of the discovery shall cease until specifically authorized by the Sheriff-Coroner. The Sheriff-Coroner shall notify a designated representative of the Commission and if the remains are considered to be those of a Native American Indian, the Sheriff-Coroner shall also make notification as required by Section 7050.5 of the California Health and Safety Code. The Sheriff-Coroner shall determine, in consultation with the Commission and Native American representatives, as deemed necessary, the jurisdiction and custody of the human remains. Should human remains be discovered as part of an archaeological site, the Sheriff-Coroner or the Commission on behalf of the Sheriff-Coroner shall additionally solicit recommendations of the Native American Heritage Commission. No further excavation or disturbance within 100 feet of the point of discovery may proceed until the lapse of 30 days or written approval of the Commission, whichever occurs first.

## **FINDINGS**

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Cultural Resources.

VI. ENERGY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on energy if it would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation.

## DISCUSSION

On October 7, 2015, Governor Edmund G. Brown, Jr. signed into law Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015, which sets ambitious annual targets for energy efficiency and renewable electricity aimed at reducing greenhouse gas (GHG) emissions. According to the Final Commission Report of the California Energy Commission (CEC), dated October 2017, SB 350 requires the CEC to establish annual energy efficiency targets that will achieve a cumulative doubling of statewide energy efficiency savings and demand reductions in electricity and natural gas final end uses by January 1, 2030. This mandate is one of the primary measures to help the state achieve its long-term climate goal of reducing GHG emissions to 40 percent below 1990 levels by 2030. The proposed SB 350 doubling target for electricity increases from 7,286 gigawatt hours (GWh) in 2015 up to 82,870 GWh in 2029. For natural gas, the proposed SB 350 doubling target increases from 42 million of therms (MM) in 2015 up to 1,174 MM in 2029 (CEC, 2017).

Under the proposed project, the County of Mendocino proposes the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility and associated improvements including an outdoor deck, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a galvanized steel fence surrounding the proposed CRT Facility. Construction of the proposed project would be subject to Part 6 (California Energy Code) of Title 24 of the California Code of Regulations, which contains energy conservation standards applicable to residential and non-residential buildings throughout California (CEC, 2020).

XIX.a-b) The proposed project would not be anticipated to result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy or wasteful use of energy resources, nor would the proposed project conflict with or obstruct a State or local plan for renewable energy or energy efficiency. As discussed above, the County of Mendocino is proposing construction of new Crisis Residential Treatment (CRT) Facility and associated improvements on-site.

The consumption of energy would occur during construction through the use of fossil fuels and electricity in construction equipment and vehicles. Construction would occur during normal business hours, typically 7:00 am to 6:00 pm, Monday through Friday, and would be temporary in nature. The contractor would keep all construction equipment in good working order and would limit idling of vehicles and equipment during construction, in accordance with California Code of Regulations, Title 13, Section 2485: *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling* (adopted 2005), which limits idling from both on-road and off-road diesel-powered equipment and is enforced by the California Air Resources Board (ARB). Therefore, it is anticipated that the construction phase of the project would not result in wasteful, inefficient, and unnecessary consumption of energy.



Operation of the project would be subject to Part 6 (California Energy Code) of Title 24 of the California Code of Regulations, which contains energy conservation standards applicable to residential and non-residential buildings throughout California to ensure new and existing buildings achieve energy efficiency and preserve outdoor and indoor environmental quality. Additionally, medium and large shade trees are proposed to be planted throughout the Site, helping to facilitate energy conservation within the proposed CRT Facility structure. While no on-site renewable energy is proposed, the Site is located within the service boundaries of the City of Ukiah Electric Utility, which, according to the 2018 Power Content Label, receives approximately 29 percent of its power from eligible renewable sources. Therefore, a less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Energy.

<b>VII. GEOLOGY AND SOILS. Would the project:</b>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on geology and soils if it would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: 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, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides; result in substantial soil erosion or the loss of topsoil; 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; be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property; have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

## DISCUSSION

A *Geotechnical Exploration and GeoHazard Report* (Geotech Report) was prepared by LACO Associates (LACO) on June 3, 2020 (see Appendix D), in order to explore the surface and subsurface conditions and develop recommendations regarding the following: California Geological Survey (CGS) Note 48-compliant geohazards evaluation; anticipated excavation characteristics; Site preparation and earthwork recommendations, including Site and subgrade preparation, subdrains, on-site fill material suitability, import

fill recommendations, placement, and compaction requirements; utility trench excavation and backfill recommendations; foundation type(s) for the planned buildings, and design criteria for the recommended foundation type(s), consistent with the 2019 California Building Code (CBC), including allowable bearing capacity and minimum embedment depths; estimates of foundation settlement; seismic design criteria consistent with the 2019 CBC Chapter 16; liquefaction-induced total and differential settlement and lateral spreading; seismic design parameters based on Site-specific ground motion analysis for Item 15 CGS 48 Check List following procedures outlined in 2019 CBC and American Society of Civil Engineers (ASCE) 7-16; pavement design recommendations; exterior flatwork recommendations; soil corrosivity; and construction considerations.

The Site is undeveloped and grass-covered, is situated between 598 and 600 feet above mean sea level (amsl), and gently slopes to the southeast. As noted in the Geotech Report, on March 3, 2020, LACO explored subsurface conditions by drilling four (4) borings (B1 through B4) to a maximum depth of 52 feet below ground surface (bgs). Laboratory tests were performed on select soil samples by LACO's materials testing laboratory to evaluate and characterize the soils. The Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. Local alluvial soils consist of a surficial layer of sandy lean clay that extends to between 11 and 15 feet bgs; well graded sand with clay and gravel that extends to approximately 39 feet bgs; sandy lean clay that extends to approximately 43 feet bgs; clayey sand that extends to approximately 50 feet bgs; and clayey sand with gravel that extended to the maximum depth explored 52 feet bgs. Groundwater was encountered in the borings at depths between 7 and 14 feet bgs (LACO, 2020).

According to the Geotech Report (LACO, 2020), the Site is located in the California Coast Ranges Geomorphic Province, a seismically active and geologically complex province due to historic and ongoing tectonic deformation that is characterized by northwest trending faults and topographic and geologic features. Potential geologic hazards assessed for the project include the following: soil corrosivity, seismic ground shaking, volcanism, liquefaction and related phenomena, settlement, flooding, high groundwater, and expansive soils. The seismicity of the area is dominated by the presence of the San Andreas Fault system, with the nearest potentially active fault is the northern section of Maacama fault zone, located approximately 1.3 miles east of the Site. However, the Site is not located within a "Fault Rupture Hazard Zone" or within an area currently designated as a "Seismic Hazard Zone" by the State and based on the distance between the Site and the closest active fault, the Maacama fault zone, the potential for surface fault rupture to occur within the Site is low (LACO, 2020).

Based on the exploration program, the Geotech Report (LACO, 2020) concludes that, from a geotechnical standpoint, the project is feasible. LACO found a low potential for soil corrosivity, liquefaction-induced lateral spreading, slope instability, lurching, flooding, tsunami inundation, and volcanism, and a low susceptibility to static settlement. The primary geotechnical concerns at the Site are the presence of relatively soft, moderately expansive surface soils, and the presence of potentially liquefiable soils.

VII.a.i) The Site is situated within a seismically active area proximal to multiple seismic sources capable of generating moderate to large ground motions. Given the proximity of the proposed project to active seismic sources (the Maacama Fault Zone and San Andreas Fault), there is a high probability that the Site will experience strong ground shaking during the economic lifespan (50 years) of the project. However, as the Site is not located within a "Fault Rupture Hazard Zone" or within an area currently designated as a "Seismic Hazard Zone" by the State and based on the distance between the Site and the closest active fault, the Maacama fault zone, the potential for surface rupture at the Site is considered low. A less than significant impact would occur.

VII.a.ii) As noted above, there are no mapped faults or Alquist-Priolo special studies zones traversing the Site. However, since the project area is situated within a seismically active region and given the proximity of significant active faults to the Site, the Site will likely experience strong ground shaking during the economic life span of any development on the Site and the risk of ground shaking at the site is high.

The proposed project would be subject to the recommendations contained in the Geotech Report (LACO, 2020) and the latest version of the California Building Code (CBC), to reduce any potential geological risks. Furthermore, the Geotech Report (LACO, 2020) provides several recommendations pertaining to Site development, including Site grading and preparation, footings, concrete slab-on-grade floors, asphalt pavement, and seismic design parameters. These recommendations are included as Mitigation Measure GEO-1, below, in order to reduce potential seismic risks. Mitigation Measure GEO-1 requires compliance with the design recommendations provided in the Geotech Report (LACO, 2020), and with adherence to the requirements of the latest version of the CBC, the proposed project, would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. With mitigation incorporated, a less than significant impact would occur.

VII.a.iii) As noted in the Geotech Report (LACO, 2020), due to the liquefiable layer observed between 6.25 and 9 feet bgs, there is the potential for liquefaction-induced settlement and bearing capacity failure (two of three potential consequences of liquefaction identified in the Geotech Report) during a major earthquake. Recommendations related to Site grading and preparation and footings were provided in the Geotech Report and included as Mitigation Measure GEO-1, below, in order to reduce the potential for liquefaction-induced settlement and bearing capacity failure. With mitigation incorporated, a less than significant impact would occur.

VII.a.iv) Landslides generally occur on relatively steep slopes and/or on slopes underlain by weak sediments. As noted in the Geotech Report (LACO, 2020), the Site is located at an elevation between 598 and 600 feet amsl and gently slopes to the east. Given the relatively low slopes, both on and adjacent to the Site, no impact would occur.

VII.b) On-site development would require excavation and groundbreaking activities. All development activities, including the proposed CRT Facility, would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and Best Management Practices (BMPs) for minimizing erosion resulting from construction, avoiding runoff into sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed surfaces as soon as feasible after construction is complete. In compliance with these regulations, the project contractor would be required to implement the BMPs provided on the approved Erosion and Sediment Control Plan (ESCP) prepared for the project, which may include, but are not limited, to straw bales, fiber rolls, and/or silt fencing structures, and a less than significant impact would occur.

VII.c) As previously discussed, based on the exploration program provided in the Geotech Report (LACO, 2020), the project is feasible from a geotechnical standpoint. LACO found a low potential for soil corrosivity, liquefaction-induced lateral spreading, slope instability, lurching, flooding, tsunami inundation, and volcanism, and a low susceptibility to static settlement. However, as noted, the primary geotechnical concerns at the Site are the presence of relatively soft, moderately expansive surface soils and the presence of potentially liquefiable soils. As such, there is the potential for liquefaction, settlement, and soil swelling or shrinkage. Additionally, although the Site is not located within a mapped Alquist-Priolo special study zone, the Site is located within a seismically active region and would likely experience ground shaking during the economic lifespan of the project. Several recommendations were provided in the Geotech Report (LACO,

2020) in order to minimize and reduce the potential for such risks, which have been included under Mitigation Measure GEO-1. With mitigation incorporated, potential geological risks would be minimized and a less than significant impact would occur.

VII.d) Expansive soils generally consist of cohesive fine-grained clay soils and represent a significant structural hazard to buildings founded on them as they have a tendency to undergo volume changes (shrink or swell) with changes in moisture content. As previously discussed, the Site contains relatively soft, moderately expansive surface soils. Laboratory tests provided in the Geotech Report (LACO, 2020) found that the upper five feet of surface soils have a plasticity index (PI) between 11 and 16 with an expansion index (EI) of 60, resulting in a moderate expansive potential. Foundations will be constructed following the recommendations provided in the Geotech Report (LACO, 2020) and included under Mitigation Measure GEO-1, including removing soils in building areas to a minimum depth of 30 inches and replacing them with an engineered fill pad consisting of soils that meet the selected fill criteria. With mitigation incorporated, a less than significant impact would occur.

VII.e) The project will be served by community water and sanitary sewer systems. The Site is located within the service boundaries of the City of Ukiah water and electric distribution, sewer collection, and storm drain systems. The Site has existing connections to the water and electric distribution systems along the southern perimeter of the Site. There are currently no on-site connections to the sewer collection nor storm drain systems; however, a sewer main and a storm drain pipe are located adjacent to the west of the Site in Orchard Avenue. Connections will be established to each during project construction. Since the project would not require the use of septic tanks or alternative wastewater disposal systems, no impact would occur.

VII.f) Based on a query of the University of California Museum of Paleontology (UCMP), the majority of paleontological resources found in Mendocino County were located in proximity to the coast. As such, the probability of a unique paleontological resource or site or unique geologic feature at the Site is low. However, as the Site has not been substantially excavated, there is the possibility that unique paleontological resources or sites or unique geologic features could exist on the Site. Mitigation Measure GEO-2, which includes halting construction until the resource can be evaluated and mitigated for, if needed, has been included to prevent significant impacts to fossils or fossil-bearing deposits in the event they are encountered during project construction. With mitigation incorporated, a less than significant impact would occur.

## **MITIGATION MEASURES**

**GEO-1:** The project shall comply with the recommendations pertaining to site grading and preparation, footings, concrete slab-on-grade floors, asphalt pavement, and seismic design parameters provided in the *Geotechnical Exploration and GeoHazard Report* (Geotech Report), prepared by LACO Associates and dated June 3, 2020 (see Appendix D). Prior to issuance of building permits, the County of Mendocino Department of Planning and Building Services shall review and approve of the site development plans, which must demonstrate project compliance with the recommendations of the Geotech Report (LACO, 2020), in addition to any seismic requirements of the latest adopted edition of the CBC. In addition, all soil engineering recommendations and structural foundations shall be designed by a licensed Professional Engineer. All on-site geotechnical engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.

**GEO-2:** In the event that fossils or fossil-bearing deposits are discovered during project construction, the contractor shall notify a qualified paleontologist to examine the discovery and excavations within 50 feet of the find shall be temporarily halted or diverted. The area of discovery shall be protected to ensure that fossils are not removed, handled, altered, or damaged until the Site is properly evaluated, and further action is

determined. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the County of Mendocino for review and approval prior to implementation.

## **FINDINGS**

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Geology and Soils.

VIII. GREENHOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on greenhouse gas emissions if it would generate greenhouse gas emissions (GHG), either directly or indirectly, that may have a significant impact on the environment; or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

## DISCUSSION

The Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32, is a State law that establishes a comprehensive program to reduce greenhouse gas (GHG) emissions from all sources throughout the State. AB 32 requires the State to reduce its total GHG emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario. Pursuant to the AB 32 Scoping Plan (last reviewed in 2018), the California Air Resources Board (CARB) must adopt regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. The following major GHGs and groups of GHGs being emitted into the atmosphere are included under AB 32: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>). The 2020 GHG emissions statewide limit set by AB 32, equal to the 1990 level, is 431 million metric tonnes of carbon dioxide equivalent (MMTCO<sub>2</sub>e). In addition, in 2016, Senate Bill (SB) 32 was signed into law to codify the reduction target to reduce GHG emissions to 40 percent below the 1990 levels by 2030 (CARB, 2018).

CARB, in its *California Greenhouse Gas Emissions for 2000 to 2017* (California GHG Emission Inventory), 2019 edition, states that GHG emissions within the State of California have followed a declining trend since 2007. In 2017, statewide GHG emissions were 424 million metric tons of CO<sub>2</sub> equivalent (MMTCO<sub>2</sub>e), 5 MMTCO<sub>2</sub>e lower than 2016 levels and lower than the 2020 statewide GHG limit of 431 MMTCO<sub>2</sub>e. The transportation section remains the largest source of GHG emissions in the State, accounting for 41 percent of the State's GHG emissions in 2017 (CARB, 2019).

As noted above, the Site is located within the North Coast Air Basin (NCAB) and is subject to the requirements of the Mendocino County Air Quality Management District (MCAQMD). The MCAQMD is responsible for monitoring and enforcing federal, state, and local air quality standards in the County of Mendocino. As shown in Table 4, below, the MCAQMD has adopted thresholds of significance (effective June 2, 2010) for use in determining whether GHG emissions from a project in Mendocino County would be considered significant, provided in Table 4, below. The MCAQMD has not adopted construction related thresholds and therefore only operational related significance thresholds are shown below. As the proposed project does not include a stationary source, the proposed project would be evaluated against the annual emissions threshold of 1,100 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e). The alternative annual emissions threshold of 4.6 MTCO<sub>2</sub>e per service population (SP) per year would not be relevant to the project as Mendocino County does not have a qualified GHG reduction plan and the project is not a high-density project whose impacts would be more appropriately quantified by a service population threshold to reflect the per-person emission efficiency.

Table 4: MCAQMD Operational Related GHG Significance Thresholds

Project Type	Maximum Annual Emissions
Projects other than Stationary Sources	1,100 MTCO <sub>2</sub> e per year OR 4.6 MTCO <sub>2</sub> e per service population per year
Stationary Sources	10,000 MTCO <sub>2</sub> e per year

MTCO<sub>2</sub>e= Metric Tons of Carbon Dioxide Equivalents  
Source: MCAQMD, 2010

The California Emissions Estimator Model (CalEEMod) was utilized to quantify potential criteria pollution and GHG emissions associated with both construction and operation of the proposed project. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutants and GHG emissions along with calculating the benefits achieved from measures chosen by the user (CalEEMod). The results of the CalEEMod analysis in their entirety are included in Appendix C.

Since the proposed project would result in new development on the currently vacant Site, it is anticipated that emissions in the vicinity of the project Site would be anticipated to increase. According to the CalEEMod results for the proposed project and as shown in Table 5, below, construction activities (both unmitigated and mitigated) would result in approximately 43.0161 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e) over the anticipated 6-month construction period (assuming 5 work days per week), and the project's unmitigated operational emissions of CO<sub>2</sub> equivalent gasses would be approximately 134.5564 MTCO<sub>2</sub>e per year, with mitigated operational emissions of approximately 134.1672 MTCO<sub>2</sub>e per year. It is anticipated that mobile sources would account for approximately 73.8 percent of the project's anticipated annual operational emissions (both unmitigated and mitigated). Compared to the emission amounts provided in the California GHG Emission Inventory (CARB, 2019), construction and operation of the proposed project would account for approximately 0.000011 and 0.000032 percent of the State's total GHG emissions recorded in 2017 (424 MMTCO<sub>2</sub>e), respectively. Compared to the relevant MCAQMD significance threshold for GHG emissions (MCAQMD, 2010), the operational related GHG emissions from the project would account for approximately 12.23 percent for unmitigated emissions and for 12.20 percent mitigated emissions.

Table 5: Construction, Operational, and Mobile Greenhouse Gas Emissions of the Proposed Project

Emission Category	CO <sub>2</sub> e Emissions (Metric tons/year)	
	Unmitigated	Mitigated
Construction <sup>1</sup>	<b>43.0161</b>	<b>43.0161</b>
Operational	<b>134.5564</b>	<b>134.1672</b>
Area	0.00045	0.00045
Energy	15.4273	15.2983
Mobile	98.9740	98.9740
Stationary	0	0
Waste	18.7934	18.7934
Water	1.3616	1.1010

CO<sub>2</sub>e= Carbon Dioxide Equivalents

<sup>1</sup>= Analysis assumes a 6-month construction period, beginning on September 1, 2020, and ending on February 18, 2021. Once construction activities are completed, only operational emissions would be anticipated at the Site.

Source: CalEEMod Model Results, June 17, 2020, Appendix C.



As previously mentioned, while no on-site renewable energy is proposed, the Site is located within the service boundaries of the City of Ukiah Electric Utility, which, according to the 2018 Power Content Label, receives approximately 29 percent of its power from eligible renewable sources, with an additional 15 percent of the power coming from large hydroelectric sources. Although the State of California does not consider power from large hydroelectric dams to be renewable, power from large hydroelectric dams helps the City of Ukiah to decrease its reliance on standard electrical services, which are typically generated from fossil fuels, such as coal and natural gas.

VIII.a) The project would have a less than significant impact on greenhouse gas (GHG) emissions as neither construction nor operation of the project would generate significant amounts of GHGs. As noted above, construction activities (both unmitigated and mitigated) would result in approximately 43.0161 MTCO<sub>2</sub>e, and the project's unmitigated operational emissions of CO<sub>2</sub>e would be approximately 134.5564 MTCO<sub>2</sub>e per year, with mitigated operational emissions of approximately 134.1672 MTCO<sub>2</sub>e per year, which would account for significantly less than one percent of the State's total GHG emissions recorded in 2017. In addition, as discussed under Section III, Air Quality, above, the proposed project would increase emissions within the vicinity of the Site. However, as previously discussed, compliance with MCAQMD standards and regulations, including obtaining all necessary permits for equipment through the MCAQMD, and California Code of Regulations, Title 13, Section 2485: *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling* (adopted 2005), which limits idling of both on-road and off-road diesel-powered equipment and is enforced by the California Air Resources Board (CARB), would limit the potential for GHG emissions during construction. Compliance would require that the contractor keep all construction equipment in good working order and limit idling of vehicles and equipment during construction. Therefore, a less than significant impact would occur.

VIII.b) The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Action Item RM-50.2 in Chapter 4 of the Mendocino County General Plan (2009) requires the County to "create a greenhouse gas reduction plan for the unincorporated areas of the county that sets specific reduction strategies and targets to meet." Although the County has not yet prepared and adopted this plan, a significant amount of GHG emissions is not anticipated under the project, as described above. In addition, the proposed project would not conflict with local, MCAQMD, State, or federal regulations pertaining to GHG emissions. A less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Greenhouse Gas Emissions.

IX. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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 or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on hazards and hazardous materials if it were to 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; emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school; 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 create a significant hazard to the public or the environment; result in a safety hazard or excessive noise for people residing or working in the project area if 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; or impair the implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan; or expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

## DISCUSSION

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or has characteristics defined as hazardous by a federal, state, or local agency. Chemical and physical properties such as toxicity, ignitability, corrosiveness, and reactivity cause a substance to be considered hazardous. These properties are defined in the California Code of Regulations, Title 22, Article 3: Characteristics of Hazardous Waste (effective July 1, 1991). A "hazardous waste" includes any hazardous material that is discarded, abandoned, or will be recycled. The criteria that render a material hazardous also

cause a waste to be classified as hazardous, per California Health and Safety Code, Chapter 6.5, Section 25117 (effective January 1, 1997).

The Site does not include any known hazardous waste sites, as mapped by the State Water Resources Quality Control Board (SWRQCB) or the California Department of Toxic Substances Control (DTSC). The Site or immediate vicinity does not include any known hazardous waste sites as mapped by the California Department of Toxic Substances Control (DTSC). As provided on the SWRQCB's GeoTracker, 6 listed sites are located within one-half mile of the Site, as provided in Table 6, below.

Table 6: GeoTracker-Listed Hazardous Materials Sites within Close Proximity (0.5 miles) to Site

ID	Name & Case No.	Case Type	Location	Distance & Direction to Site	Cleanup Status
1	Express Mart [T10000012680; RB Case #: 1TMC640]	LUST Cleanup Site	390 East Gobbi Street	603 feet SW of Site	Open – Assessment & Interim Remedial Action
2	Fast and Easy Mart [T0604516589; RB Case #: 1TMC532]	LUST Cleanup Site	390 East Gobbi Street	603 feet SW of Site	Completed – Case Closed
3	Coca-Cola of Ukiah [T0604500136; RB Case #: 1TMC155]	LUST Cleanup Site	650 Babcock Lane	1,585 feet SW of Site	Completed – Case Closed
4	Chevron #9-6361 [T0604500008; RB Case #: 1TMC008]	LUST Cleanup Site	605 East Perkins Street	1,635 feet N of Site	Completed – Case Closed
5	Dibble Investments/ Chevron [T0604500053; RB Case #: 1TMC062]	LUST Cleanup Site	187 East Gobbi Street	1,765 feet SW of Site	Completed – Case Closed
6	BP, East Perkins [T0604500180; RB Case #: 1TMC207]	LUST Cleanup Site	596 East Perkins Street	1,790 feet N of Site	Completed – Case Closed

LUST = Leaking Underground Storage Tank

Source: SWRCB, 2020

The project would require the transport, use, storage, and disposal of small quantities of hazardous materials common for equipment and property maintenance and operation, such as gasoline, diesel fuel, hydraulic fluids, oils, lubricants, and cleaning solvents and supplies. All hazardous materials would be utilized and disposed of in accordance with all applicable federal and state regulations.

IX.a-b) It is anticipated that the proposed project would require the routine transport, use, or disposal of hazardous materials common to medical facilities, such as cleaning supplies, as well as the construction process, such as gasoline, diesel fuel, hydraulic fluids, oils, lubricants, and cleaning solvents. However, the types and quantities of hazardous materials to be used are not expected to pose a significant risk to the public and/or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Any hazardous materials transported, used, or disposed of on-site would be managed in accordance with federal, state, and local regulations. A less than significant impact would occur.

IX.c) River Oak Charter School is located 475 feet (0.09 miles) northwest of the Site and Oak Manor Elementary School is located approximately 1,115 feet (0.21 miles) east of the Site. As noted above, it is

anticipated that the proposed project would require the routine transport, use, or disposal of hazardous materials common to medical facilities, such as cleaning supplies, as well as the construction process, such as gasoline, diesel fuel, hydraulic fluids, oils, lubricants, and cleaning solvents. However, the types and quantities of hazardous materials to be used are not expected to pose a significant risk to the public and/or environment, including existing schools. A less than significant impact would occur.

IX.d) As shown in Table 6, above, six (6) listed hazardous materials sites listed on the SWRCB's GeoTracker database are located within one-half mile of the project Site. No hazardous materials sites within the vicinity of the Site are included on DTSC's EnviroStor database. Of the 6 total sites, all are LUST sites, and all but one (1) case have been completed and closed. The Site is not included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. The one (1) remaining open LUST site is not located immediately adjacent to the Site (located 603 feet southwest of the Site) and is in the cleanup process under the authority and oversight of the NCRWQCB. No impact would occur.

IX.e) The Site is located approximately 4,472 feet (0.85 miles) northeast of the Ukiah Municipal Airport. Per the Mendocino County Airport Comprehensive Land Use Plan (ACLUP), dated June 6, 1996, the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone", which is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise, is limited to residential parcels of 2 acres or larger, requires less than 60 people per acre, and recommends 30 percent open land. Prohibited uses within the Zone B2 include schools, day care center, libraries, hospitals, and nursing homes, among other uses. Normally Acceptable Uses in Zone B2 include single-story offices, single-family homes on an existing lot, and low-intensity retail, office, etc., among other uses. In addition, per the Public Review Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP) dated January 2020, the Site is located within Compatibility Zone 6, the "Traffic Pattern Zone." Pursuant to Table 3B *Compatibility Zone Delineation* of the Public Draft UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact, has a maximum sitewide average intensity of 300 people per acre and a maximum single-acre intensity of 1,200 people per acre, and recommends 15 percent open land for the entire zone. Aircraft in Compatibility Zone 5 are typically 1,000 to 1,500 feet above the runway, with airspace concern generally with objects heights at heights greater than 100 feet above runway elevation.

The ACLUP (1996) does not provide guidance on the compatibility of community care facilities in the B2 zone; however, the proposed use would be consistent with Zone B2 based on consistency with Table 2A *Compatibility Criteria* and similar uses discussed in the ACLUP. The proposed project includes the construction and operation of a 3,090 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, and would be operated by 10 full-time staff and two (2) managers working 8-to-10 hour shifts to provide coverage 24 hours per day, 7 days per week. Even at full client and staffing capacity, the project would be well below maximum density of 60 people per acre allowed in Zone B2 pursuant to Table 2A of the ACLUP (1996). In addition, the project supports the Policy 2.1.6 (Infill), which allows new development of a similar intensity to that of surrounding, already existing uses. The Site is located in an urban, built-up environment and is surrounded by public service, commercial, and residential uses of a similar scale to the proposed project. The proposed project would be consistent with the uses normally acceptable in Zone B2 and would comply with the development and density requirements. According to Table 3A *Basic Compatibility Criteria* of the Public Draft UKIALUCP (January 2020), Congregate Care facilities, which includes assisted living/residential care facilities are Normally Compatible uses in Compatibility Zone 6. Therefore, the proposed project would be compatible with both the ACLUP (1996) and the Public Review Draft of the UKIALUCP (January 2020). A less than significant impact would occur.

VIII.f) The County of Mendocino has adopted numerous plans related to hazard management and mitigation, and emergency response, including but not limited to: Community Wildfire Protection Plan, Hazardous Waste Management Plan, Operational Area Emergency Operations Plan, and Multi-Jurisdictional Hazard Mitigation Plan, in which the City of Ukiah (City) is a participant. In addition, the Safety Element of the City of Ukiah General Plan aims at protecting people and property from natural hazards and other locally relevant safety issues.

The County of Mendocino adopted the *Mendocino County Operational Area Emergency Operations Plan* (County EOP) on September 13, 2016, under Resolution Number 16-119. As noted on the Plans and Publications webpage of the Mendocino County Office of Emergency Services (MCOES), the County EOP, which complies with local ordinances, state law, and state and federal emergency planning guidance, serves as the primary guide for coordinating and responding to all emergencies and disasters within the County. The purpose of the County EOP is to "facilitate multi-agency and multi-jurisdictional coordination during emergency operations, particularly between Mendocino County, local and tribal governments, special districts as well as state and Federal agencies" (MCOES – Plans and Publications, 2019). The proposed development would be compatible with existing surrounding development and would be designed to current standards with suitable road widths and turn radii to accommodate emergency vehicles. A less than significant impact would occur.

VIII.g) The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The Site is located within a "Moderate" Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan, in an urban built-up environment within the City of Ukiah city limits. Additionally, the Site is located within the Local Responsibility Area (LRA) (Mendocino County Maps – Ukiah Valley – Fire Responsibility Areas, 2019) and, per the City of Ukiah website (2020), is served by the Ukiah Valley Fire Authority, a cooperation between the City of Ukiah Fire Department and the Ukiah Valley Fire District. The nearest fire station to the Site is the Ukiah Valley Fire District located approximately 1.43 miles southwest of the Site. The CRT Facility would be constructed in accordance with state and local standards, including safety and emergency access requirements. By meeting current standards and design requirements and with sufficient fire protection services available to serve the Site, a less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Hazards or Hazardous Materials.

<b>X. HYDROLOGY AND WATER QUALITY.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on hydrology and water quality if it would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality; substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin; substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flows; in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

## DISCUSSION

The National Pollutant Discharge Elimination System (NPDES) permit program of the U.S. Environmental Protection Agency (EPA) addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. Created in 1972 by the Clean Water Act, the NPDES permit program grants authority to state governments to perform many permitting, administrative, and enforcement aspects of the program. Within California, the NPDES permit program is administered by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards.

Discharges of storm water and non-storm water from the Municipal Separate Storm Sewer System (MS4) within the jurisdictional boundary of the City of Ukiah are subject to the waste discharge requirements NPDES Permit No. CA0025054, pursuant to Order No. R1-2015-0030 (Order) issued by the North Coast Regional Water Quality Control Board (NCRWQCB), adopted October 8, 2015. The City of Ukiah is a Co-Permittee with other municipalities located within the Russian River Watershed, including the Cities of Cloverdale, Cotati, Healdsburg, Rohnert Park, Santa Rosa, Sebastopol; the County of Sonoma; the Sonoma County Water Agency; and the Town of Windsor. The Co-Permittees are required to regulate the discharges of storm water and non-storm water from the MS4s within their jurisdictions in accordance with the Order. The Order includes requirements pertaining to the development of a Public Information and Participation Program (PIPP); Industrial/Commercial Facilities Program; Industrial and Construction Site Regulation program; Planning and Land Development program, which includes the implementation and enforcement of a Low Impact Development (LID) Manual; Development Construction Program; Public Agency Activities program; Illicit Connection and Illicit Discharges Elimination Program; and Special Projects (NCRWQCB, 2015). The City of Ukiah has adopted the Low Impact Development (LID) Technical Design Manual prepared by the City of Santa Rosa and County of Sonoma (LID Manual), which provides technical design guidelines for projects that require the implementation of permanent storm water Best Management Practices (BMPs) (City of Santa Rosa, 2011).

All development activities proposed on-site would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and BMPs designed to prevent, at a minimum, erosion resulting from construction activities and minimize the discharge of sediment and other pollutants associated with construction sites. In compliance with these regulations, the project contractor would be required to implement the BMPs provided on the approved Erosion and Sediment Control Plan (ESCP) prepared for the project, which may include, but are not limited to straw bales, fiber rolls, and/or silt fencing structures. These BMPs would aid in limiting erosion and unauthorized discharges by preventing runoff from reaching sensitive habitat areas, limiting ground disturbance to the minimum necessary, and stabilizing disturbed surfaces as soon as feasible after construction is complete.

The 0.92-acre Site is situated between 598 and 600 feet above mean sea level (amsl) and is undeveloped with a vegetative cover primarily consisting of grasses and weedy species and a limited number of landscaping trees planted to the north and southeast of the Site. The Site is located in Zone "X" – area of minimal flood hazard – as shown on Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer FIRMette map number 06045C1514F, effective June 2, 2011. Drainage across the Site appears to flow to the southeast. The Site is located within the Russian River Hydrologic Unit, Upper Russian River Hydrologic Area, Ukiah Hydrologic Subarea and the nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, located approximately 0.85 miles east of the Site. The Russian River is on the State Water Resources Control Board's (SWRCB) 303(d) list of impaired water bodies for water temperature and sedimentation/siltation. The Russian River provides habitat for Chinook salmon and steelhead trout, which are listed as threatened species under the federal Endangered Species Act (City of Ukiah, 2019).

The project proposes the construction and operation of a 3,462 square-foot, one-story, CRT Facility. Associated improvements include an outdoor deck, a parking area, LID features for stormwater capture and treatment, landscaping, a galvanized steel fence surrounding the proposed CRT Facility with gated pedestrian entrances, and driveways. Landscaping, including medium and large trees and shrubs along the east and wide sides of the Site, and bioretention facilities located south of the structure, would be placed outside the proposed fence. Additional landscaping would be placed within the fence, including a garden area and various plantings surrounding the structure. All exterior lighting would be motion-censored,

downcast, and shielded in compliance with regulations set by the International Dark-Sky Association. Drainage improvements proposed to be developed as part of the project include post-construction BMPs, which include bioretention facilities, sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85<sup>th</sup> percentile rain event to accommodate flows from the proposed impervious surfaces, and natural stormwater filtration in landscaped areas throughout the Site to encourage natural stormwater infiltration.. Flows from the post-construction BMPs will be directed towards an existing drainage inlet located near the southeast corner of the Site. The project additionally includes the construction of pedestrian facilities, including curb, gutter, and sidewalk along the west side of the Site. Stormwater from these proposed surfaces and off-site flows would be directed to the storm drain collection system.

X.a) The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. As discussed above, as the Site is located within the City of Ukiah jurisdictional boundaries, the proposed development is subject to the Planning and Land Development program of NPDES Order No. R1-2015-0030 (Order), which includes compliance with the Low Impact Development (LID) Manual prepared by the City of Santa Rosa and the County of Sonoma, dated August 2011. Construction activities would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and Best Management Practices (BMPs) designed to prevent, at a minimum, erosion resulting from construction activities and minimize the discharge of sediment and other pollutants associated with construction sites. The Geotechnical Exploration and GeoHazard Report (Geotech Report) prepared by LACO Associates (LACO) on June 3, 2020, notes that shallow groundwater levels were encountered between 7 and 13 feet below ground surface (bgs) during on-site exploration, but that groundwater may not be a concern if construction is performed during the dry months of summer or early fall. Should groundwater be encountered during excavation related to concrete foundation installation, construction shall be performed in accordance with Mitigation Measure HYDRO-1, below, in order to reduce potential impacts to groundwater quality.

Additionally, the proposed development would be provided water service by the City of Ukiah and wastewater collection service by the Ukiah Valley Sanitation District (UVSD). These service providers are required to operate in compliance with all water quality standards and waste discharge requirements. Through proper implementation of appropriate BMPs, compliance with the aforementioned regulations, and the incorporation of Mitigation Measure HYDRO-1 to limit the potential for impacts to groundwater during excavation related to the placement of concrete, the proposed project would not violate any water quality standards or waste discharge requirements. With mitigation incorporated, a less than significant impact would occur.

X.b) The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. As noted above, the proposed development would be provided water service by the City of Ukiah and wastewater collection service by the Ukiah Valley Sanitation District (UVSD). As elaborated upon in Section XXIX (Utilities and Service Systems), below, according to the Draft 2015 Urban Water Management Plan, the City of Ukiah's diverse water supply sources are considered adequate for existing and projected water demands (City of Ukiah, 2016) and as of 2019, the Ukiah Wastewater Treatment Plant (UWWTP) has a current capacity to add nearly 1,603 equivalent sewer service units (ESSUs) before reaching capacity (Ukiah 2040, 2020). As such, these service providers have adequate capacity to serve the proposed development.

Additionally, the Site is located within the boundaries of the Ukiah Valley groundwater basin (Basin), which encompasses a surface area of 37,500 acres (59 square miles) (Larry Walker Associates, Inc., 2019). As the Site is currently vacant and undeveloped, the proposed project would increase the amount of impervious



surfaces on-site. However, the project proposal includes landscaping and post-construction Best Management Practices (BMPs), including bioretention facilities, designed in accordance with the LID Manual (City of Santa Rosa, 2011) to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85<sup>th</sup> percentile rain event, and substantial landscaping that would allow for stormwater infiltration and groundwater recharge throughout the Site. With the incorporation of landscaping and post-construction BMPs, development of the 0.92-acre Site would not significantly impact groundwater recharge of the Basin and a less than significant impact would occur.

X.c.i-ii) The proposed project would not alter the existing drainage pattern of the Site in a manner which would result in substantial erosion or siltation on- or off-site or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, since any potential runoff from the Site would be controlled within the guidance of existing regulations. During construction, erosion would be minimized, and runoff would be managed through the implementation of site- BMPs detailed in the Erosion and Sediment Control Plan (ESCP) prepared for the proposed project, which includes physical barriers such as straw bales, fiber rolls, and/or silt fencing structures, and preventative actions such as scheduling construction for the non-rainy season, if possible, soil compaction, and seeding/mulching disturbed areas. In addition, post-construction runoff and stormwater flows would be managed through stormwater facilities designed in accordance with the LID Manual. A less than significant impact would occur.

X.c.iii) The proposed project would not be anticipated to create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. As previously discussed, drainage improvements proposed to be developed as part of the project include post-construction BMPs, which include bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85<sup>th</sup> percentile rain event , and landscaped areas throughout the Site to encourage natural stormwater infiltration. Flows from the post-construction BMPs will be directed towards an existing drainage inlet located near the southeast corner of the Site. The project additionally includes the construction of pedestrian facilities, including curb, gutter, and sidewalk along the west side of the Site. Stormwater from these proposed surfaces and off-site flows would be directed to the storm drain collection system. These on-site stormwater facilities would be designed in accordance with the LID Manual, which would ensure runoff from the Site would not exceed the capacity of the existing stormwater drainage system. A less than significant impact would occur.

X.c.iv) As discussed above, the Site is located in Zone "X" – area of minimal flood hazard – as shown on Federal Emergency Management Agency's (FEMA) National Flood Hazard Layer FIRMette map number 06045C1514F, effective June 2, 2011. On the basis of the FEMA designation, and as provided in the *Geotechnical Exploration and GeoHazard Report* (Geotech Report), the risk of flooding to occur at the Site is low (LACO, 2020). No impact would occur.

X.d) The Site is located in central Mendocino County within the City of Ukiah, approximately 28 miles east of the Pacific Ocean and is therefore not located in a tsunami zone. As noted above, the Site is located in an area of minimal flood hazard (FEMA, 2011). According to the City of Ukiah Final Initial Study and Negative Declaration for 2019-2027 Housing Element, the Site is not located in a seiche zone (City of Ukiah, 2019). No impact would occur.

X.e) As discussed above, the proposed project would be subject to the design standards outlined in Section 9703 of the Ukiah City Code, which include environmental protection and BMPs designed to prevent, at a minimum, erosion resulting from construction activities and minimize the discharge of sediment and other pollutants associated with construction sites. Additionally, the project would be subject to the authority of

the Planning and Land Development program of NPDES Order No. R1-2015-0030 (Order), which includes compliance with the Low Impact Development (LID) Manual prepared by the City of Santa Rosa and the County of Sonoma, dated August 2011. Compliance with these regulations would facilitate the implementation of water quality control efforts at the local and state levels. In addition, there is currently no sustainable groundwater management plan for the Ukiah Valley groundwater basin; however, a Groundwater Sustainability Plan (GSP) is currently under development by the Ukiah Valley Basin Groundwater Sustainability Agency (UVBGSA). The project would include post-construction BMPs to encourage the capture, treatment, and eventual infiltration of runoff from the Site and the Site would be provided water service by the City of Ukiah and wastewater collection service by the Ukiah Valley Sanitation District (UVSD). Both of these service providers operate in compliance with the applicable water quality control plans. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. A less than significant impact would occur.

#### **MITIGATION MEASURES**

**HYDRO-1:** In the event groundwater is encountered during foundation excavation activities, the contractor shall dewater the excavation area prior to placing concrete. Extracted groundwater shall be discharge in a manner that does not cause erosion at the discharge point. Any dewatering activities on-site shall be conducted under the supervision of a Qualified Stormwater Practitioner (QSP).

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Hydrology and Water Quality.

<b>XI. LAND USE AND PLANNING.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on land use and planning if it would physically divide an established community or cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

## DISCUSSION

The County of Mendocino (County) is proposing to construct a Crisis Residential Treatment (CRT) Facility on a 0.92-acre site located at 631 S. Orchard Avenue, Ukiah, and identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48 (Site). The Site is owned by the County and is located within the City of Ukiah city limits. The Site has a City of Ukiah land use designation of Commercial (C) (1995) (see Figure 2), a zoning designation of Community Commercial (C-1) per the City of Ukiah Zoning Map (2017) (see Figure 3), and per the 1996 Mendocino County Airport Comprehensive Land Use Plan (ACLUP), the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone" (see Figure 4). It should additionally be noted that in accordance with the January 2020 Public Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP), the Site is located within Compatibility Zone 6, the "Traffic Pattern Zone" of the Ukiah Municipal Airport (January 2020); however, as of the date of this Initial Study, the UKIALUCP has not been adopted by the Mendocino County Airport Land Use Commission (ALUC). No changes to the Site's current land use or zoning designations are proposed under the project.

The proposed CRT Facility would be licensed and regulated by the Department of Health Care Services in accordance with California Code of Regulations (CCR) Title 22 and would be certified as a Social Rehabilitation Program, licensed as a Social Rehabilitation Facility, as defined by Health and Safety Code 1502(a), and authorized to operate as a Mental Health Rehabilitation Center. The Ukiah City Code (2019) defines a "community care facility" as "*the facilities described in Health and Safety Code 1502(a).*" In accordance with the *Permitted Uses* in the Community Commercial (C-1) Districts (adopted 2018), the proposed 10-bed CRT Facility (Community care facility) would be a permitted use on-site, subject to the approval of a use permit. However, per California Government Code Section 65402(b), as the County proposes to construct a public structure on a County-owned property, the County is under no obligation to conform to City of Ukiah standards with regard to zoning or permitting. California Government Code Section 65402(b) requires that, prior to construction or authorization of construction, a county report the location, purpose, and extent of any proposed public structure to the planning agency having jurisdiction to determine conformity with the adopted general plan. On May 29, 2020, a letter was submitted to the City of Ukiah in accordance with this reporting requirement. No response was received from the City of Ukiah within 40 days of notification of the project. As such, in accordance with California Government Code Section 65402(b), the County has conclusively deemed that the proposed action is in conformity with the adopted general plan.

The Site is located approximately 4,472 feet (0.85 miles) northeast of the Ukiah Municipal Airport. In 1993, the Mendocino County Airport Comprehensive Land Use Plan (ACLUP) was adopted, and later revised in 1996, by the Mendocino County Airport Land Use Commission (ALUC) to provide land use compatibility guidelines

for lands near each of the airports in Mendocino County with the intention to avert potential safety problems and ensure unhindered airport operations. In February 2019, the City of Ukiah, with support from the County of Mendocino and the ALUC initiated a planning effort to prepare an updated compatibility plan for the Ukiah Municipal Airport, entitled the UKIALUCP. A Public Review Draft of the UKIALUCP, dated January 31, 2020, was made available for public review in July 2020. As of the date of this Initial Study, the UKIALUCP has not been adopted by the ALUC. As such, the proposed project's compatibility with the Ukiah Municipal Airport has been determined based on the compatibility criteria established by the 1996 ACLUP and the January 2020 Public Review Draft of the UKIALUCP.

As noted above, per the ACLUP (1996), the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone." Pursuant to Table 2A *Compatibility Criteria* of the ACLUP (1996), Zone B2 is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise, is limited to residential parcels of 2 acres or larger, requires less than 60 people per acre, and recommends 30 percent open land. Prohibited uses within the Zone B2 include schools, day care center, libraries, hospitals, and nursing homes, among other uses. Normally Acceptable Uses in Zone B2 include single-story offices, single-family homes on an existing lot, and low-intensity retail, office, etc., among other uses. The ACLUP (1996) does not provide guidance on the compatibility of community care facilities in the B2 zone; however, the proposed use would be consistent with the B2 zone based on consistency with Table 2A *Compatibility Criteria* and similar uses discussed in the ACLUP. The proposed project includes the construction and operation of a 3,462 square-foot, one-story, CRT Facility with space for up to 10 beds for clients, and would be operated by 10 full-time staff and two (2) managers working 8-to-10 hour shifts to provide coverage 24 hours per day, 7 days per week. Even at full client and staffing capacity, the project would be well below maximum density of 60 people per acre allowed in Zone B2 pursuant to Table 2A of the ACLUP (1996). In addition, the project supports the Policy 2.1.6 (Infill), which allows new development of a similar intensity to that of surrounding, already existing uses. The Site is located in an urban, built-up environment and is surrounded by public service, commercial, and residential uses of a similar scale to the proposed project.

Per the Public Draft UKIALUCP dated January 2020, the Site is located within Compatibility Zone 6, the Traffic Pattern Zone." Pursuant to Table 3B Compatibility Zone Delineation of the Public Draft UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact, has a maximum sitewide average intensity of 300 people per acre and a maximum single-acre intensity of 1,200 people per acre, and recommends 15 percent open land for the entire zone. Aircraft in Compatibility Zone 5 are typically 1,000 to 1,500 feet above the runway, with airspace concern generally with objects heights at heights greater than 100 feet above runway elevation. According to Table 3A Basic Compatibility Criteria of the Public Draft UKIALUCP (January 2020), Congregate Care facilities, which includes assisted living/residential care facilities are Normally Compatible uses in Compatibility Zone 6. Therefore, the proposed project would be compatible with the Public Draft UKIALUCP (January 2020).

XI.a) The project is proposed on a currently vacant undeveloped Site located in an urban, built-up environment. No aspect of the proposed project would physically divide the community; therefore, no impact would occur.

XI.b) The proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect as the project is consistent with all applicable land use plans, policies, and regulations, including the City of Ukiah General Plan the Mendocino County Airport Comprehensive Land Use Plan (ACLUP), and the Public Review Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP). As noted above, pursuant to California Government Code Section 65042(b),

in a letter dated May 29, 2020, the County reported the location, purpose, and extent of the proposed CRT Facility to the City of Ukiah to determine conformity with the adopted City of Ukiah General Plan. No response was received from the City of Ukiah within 40 days of notification of the project. As such, in accordance with California Government Code Section 65402(b), the County has conclusively deemed that the proposed action is in conformity with the adopted general plan. A less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less than Significant Impact** on Land Use and Planning.

<b>XII. MINERAL RESOURCES.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on mineral resources if it would 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 or 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 proposed project is not located in an area of known rock, aggregate, sand, or other mineral resource deposits of local, regional, or state residents. There are no known mineral resources of significance on the Site that would be made unavailable by the proposed project. Furthermore, the project Site is not utilized for Surface Mining and Reclamation Act (SMARA) activities.

XII.a-b) The proposed project area does not contain mineral resources that are of value locally, to the region, or to residents of the City, County or state. According to the Mineral Land Classification Studies Index of the California Department of Conservation (DOC, 2015), the proposed project is not located in an area with known mineral resources. The proposed project area is not identified as a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, the proposed project would not interfere with materials extraction or otherwise cause a short-term or long-term decrease in the availability of mineral resources. No impact would occur.

### MITIGATION MEASURES

No mitigation required.

### FINDINGS

The proposed project would have **No Impact** on Mineral Resources.

<b>XIII. NOISE.</b> Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of private airstrip or 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on noise if it would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or generation of excessive groundborne vibration or groundborne noise levels; or expose people residing or working in the project area to excessive noise levels (for a project located within the vicinity of a private airstrip or an airport or an airport land use plan, or where such as plan has not been adopted, within two miles of a public airport or public use airport).

## DISCUSSION

Noise is typically defined as unwanted sound. In any one location, the noise level will vary over time, from the lowest background or ambient noise level to temporary increases caused by traffic or other sources. Acceptable levels of noise vary depending on the land use. Generally speaking, land uses considered noise-sensitive are those in which noise can adversely affect the people performing general activities on the land. For example, a residential land use where people live, sleep, and study is generally considered sensitive to noise because noise can disrupt these activities. Churches, schools, and certain kinds of outdoor recreation are also usually considered noise-sensitive. State and federal standards have been established as guidelines for determining the compatibility of a particular use with its noise environment. The Noise Element of the City of Ukiah General Plan (2004) establishes maximum exterior noise level standards for affected land uses, which are consistent with state guidance and apply to all development projects. Additional regulations relevant to the general project area that may be used to evaluate noise-related impacts of development, depending on the location of proposed development, include the City of Ukiah Noise Ordinance (Division 7, Chapter 1, Article 6) (adopted 1980), the Noise Element of the Mendocino County General Plan (2009), the Mendocino County Airport Comprehensive Land Use Plan (ACLUP) (last updated 1996), and the Public Draft of the Ukiah Municipal Airport Land Use Compatibility Plan (UKIALUCP).

The City of Ukiah Noise Ordinance (1980) establishes maximum exterior noise level standards that apply to specific zoning districts within the City of Ukiah (see Table 7, below).

Table 7. City of Ukiah Noise Ordinance Ambient Base Noise Level

Zoning District	Time Period	Noise Level Standards (dBA)
R1 & R2	10 pm to 7 am	40
R1 & R2	7 pm to 10 pm	45
R1 & R2	7 am to 7 pm	50
R3	10 pm to 7 am	45
R3	7 am to 10 pm	50
Commercial	10 pm to 7 am	60
Commercial	7 am to 10 pm	65
Industrial (M)	Anytime	70

Source: City of Ukiah, 1980

Additional pertinent policies in the City of Ukiah Noise Ordinance (1980) include:

Section 6053 – Machinery, Equipment, Fans, and Air Conditioning: *"It shall be unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the ambient base noise level by more than five (5) decibels between seven o'clock (7:00) P.M. and seven o'clock (7:00) A.M. (Ord. 748, Article 1, adopted 1980)."*

Section 6054 – Construction of Buildings and Projects: *"It shall be unlawful for any person within a residential zone, or within a radius of five hundred feet (500') therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist or any other construction type device (between the hours of 7:00 P.M. of one day and 7:00 A.M. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the Director of Public works. No permit shall be required to perform emergency work as defined in §6046 of this Article. (Ord. 748, Article 1, adopted 1980)."*

The approximately 0.92-acre Site is currently undeveloped, with no existing structures or utilities on-site and is located in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue and single family residences, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

The noise environment surrounding the Site is influenced by traffic on Highway 101, Orchard Avenue, and Gobbi Street, local traffic associated with surrounding businesses, facilities, and residences, and occasionally, air traffic associated with the Ukiah Municipal Airport. Noise levels are relatively high during business hours, typically 7:00 am to 7:00 pm, due to the amount and proximity of traffic on Highway 101 and surrounding roads. Sensitive receptors that could be affected by noise from the Site include the single-family residences located 70 feet directly west of the Site, hotels located 100 feet to the northeast and 270 feet south of the Site, and mobile homes located 230 feet due west of the Site.

Construction of the proposed project would generate short-term noise corresponding to the phase of construction and the noise generating equipment used during those phases. Construction activities could involve excavation, grading, drilling, trenching, earth movement, and vehicle travel to and from the Site.



Operation of the proposed project would generate minimal noise and would be generally consistent with that of a single family residence or office building.

XIII.a) The proposed project would result in a temporary increase in noise levels surrounding the Site during construction, but would not be expected to generate operational noise in excess of what is common for the proposed uses and for development in the general vicinity of the Site. The Site is located in an urban built-up environment and surrounded by residential, public service, and commercial uses, as described above. Sensitive receptors that could be affected by noise from the Site include the single-family residences located 70 feet directly west of the Site, hotels located 100 feet to the northeast and 270 feet south of the Site, and mobile homes located 230 feet due west of the Site.

During construction, temporary noise would be anticipated as a result of utilizing standard heavy equipment, which may include, but is not limited to the following: excavator, cement mixer, dump truck, water truck, and backhoe. These noise impacts would be temporary in nature; however, to limit the potential impact of the noise associated with project construction on the nearby sensitive receptors, hours of construction should be limited and noise reducing Best Management Practices (BMPs) should be implemented during the period of project construction, as detailed in Mitigation Measure NOISE-1.

Upon build-out of the Site, operational noise would be associated with use and operation of the CRT Facility, in addition to employees and clients traveling to and leaving from the Site. The 10- bed CRT Facility would be operated by ten (10) full-time staff and two (2) managers working 8-to-10-hour shifts to keep the CRT Facility staffed 24 hours per day, 7 days per week. The staff would be responsible for ensuring clients do not exceed established noise standards. The majority of activities associated with the CRT Facility would include but not be limited to counseling, activity programs, educational groups, etc. These activities would typically occur within the building and would have a minimal impact on the ambient noise of the surrounding properties. In addition, the structure would be constructed to meet the standards of the Uniform Building Code, including the interior noise level requirements, and while the proposed improvements include outdoor space for clients and employees of the CRT Facility, as shown on the Site Plan (see Figure 5), the outdoor deck would be oriented to the north, away from the existing single-family residences, and would be recessed within the building exterior. As such, operational noise is not anticipated to have an impact on nearby uses. The proposed 3,462 square-foot, one-story CRT Facility and associated improvements is similar to and compatible with the residential, public service, and commercial uses that already exist in the area.

With mitigation incorporated, a less than significant impact would occur.

XIII.b) With the exception of minor nearby vibrations created from standard heavy equipment, there are no elements of the proposed project that would create either temporary or permanent ground borne vibrations or noise levels. A less than significant impact would occur.

XIII.c) The Site is located approximately 4,500 feet (0.85 miles) northeast of the Ukiah Municipal Airport. Per the Mendocino County Airport Comprehensive Land Use Plan (ACLUP), the Site is located within Zone B2 of the Ukiah Municipal Airport, the "Extended Approach/Departure Zone", which is associated with moderate risk (aircraft commonly below 800 feet above ground level) and significant noise. In addition, per the Public Review Draft of the UKIALUCP dated January 2020, the Site is located within Compatibility Zone 6 the "Traffic Pattern Zone." Pursuant to Table 3B *Compatibility Zone Delineation* of the Public Draft of the UKIALUCP (January 2020), Compatibility Zone 6 is associated with low risk and a low noise impact. As the majority of activities associated with the CRT Facility would typically occur within the building and the structure would be constructed to meet the standards of the Uniform Building Code, including the interior noise level

requirements, the project would not expose clients and staff to excessive noise levels due to the Ukiah Municipal Airport and a less than significant impact would occur.

#### **MITIGATION MEASURES**

**NOISE-1:** Implementation of the following measures are required during the duration of the project construction period to reduce potential noise impacts on the nearby sensitive receptors:

- Construction shall be limited to between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, with no construction activities permitted on Saturday, Sunday, or holidays;
- All internal combustion engine-driven equipment shall be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment. Air compressors and pneumatic equipment shall be equipped with mufflers and impact tools shall be equipped with shrouds or shields.
- All unnecessary idling of internal combustion engines on-site shall be prohibited.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Noise.

<b>XIV. POPULATION AND HOUSING.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on population and housing if it would induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure); or displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

## DISCUSSION

Based on the U.S. Census Bureau Quick Facts, Mendocino County had a population of approximately 86,749 persons as of July 1, 2019, a decrease of approximately 1.3 percent since April 1, 2018. There were an estimated 40,926 housing units as of July 1, 2018, with 2.50 persons per household. Based on estimates from the 2018 American Community Survey of the U.S. Census Bureau, Ukiah city, a census-designated place, had a population of 15,946 persons, with 5,923 total occupied housing units and an average household size of 2.59 persons in 2018. Approximately 18.4 percent of the persons living in Mendocino County reside in the City of Ukiah, based on the aforementioned estimates.

The project includes the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility. The proposed CRT Facility would serve as a social rehabilitation facility for clients who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization and who might otherwise face voluntary or involuntary commitment, a positive, short-term (up to 30 days) structured program in a home-like environment (non-institutional). The CRT Facility would be equipped with space for up to 10 beds for clients and be operated by ten (10) full-time staff and two (2) managers working 8- to 10-hour shifts to keep the CRT Facility staffed 24 hours per day, 7 days per week.

XIV.a) The proposed project would not induce substantial unplanned population growth in the area as the project entails beds for up to 10 clients for short-term stay and up to a total of 12 employees are anticipated under operation of the project. While some staff members may relocate to the Ukiah area to work at the proposed CRT Facility, a portion of the staff may commute from their current residences within surrounding communities. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). As previously discussed, under Section III (Air Quality), above, for the purposes of this Initial Study, it is assumed that the proposed project would break ground on September 1, 2020, and be constructed over an approximately 6-month period until the entire project is complete February 18, 2021. Because construction of the project would be temporary in nature, it is anticipated that most, if not all, of the construction workers would be local, although some workers may relocate to the area for the duration of the construction period. In addition, the Site is located in an urban built-up environment within the City of Ukiah and while there is currently no development on-site that would warrant utility connections, all utility lines are located in close vicinity to the Site and serve the surrounding built-up parcels. Although there may be a minimal increase in

employees and population in the area as a result of the project, the population would be limited, and no significant infrastructure improvements would be required to serve the project. As such, a less than significant impact would occur.

XIV.b). The proposed project would not displace any residents or housing, as the Site is vacant and no residential units are currently located on-site; therefore, no impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Population and Housing.

<b>XV. PUBLIC SERVICES.</b> 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 to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on public services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for (a) fire protection, (b) police protection, (c) schools, (d) parks, or (e) other public facilities.

## DISCUSSION

There are no elements of the proposed project that would impact the ability of the County or other local services providers to provide public services to the Site or local community. The project includes the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility with space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include an outdoor deck, a parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a galvanized steel fence surrounding the proposed CRT Facility. The proposed driveways and parking area would be designed to current standards with suitable road widths and turn radii to accommodate emergency vehicles.

While it is expected that most, if not all, of the Site's employees (12 maximum) would already live locally, it is possible that some workers may relocate from another location since the proposed CRT Facility would fill a current gap in the Mendocino County system of care. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). Since a significant population is not expected as a result of the project, significant impacts on public services are also not anticipated.

XV.a) As previously discussed, the Site is located within the Local Responsibility Area (LRA) (Mendocino County Maps – Ukiah Valley – Fire Responsibility Areas, 2019) and is mapped as located within an area with "Moderate" Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan. Per the City of Ukiah website (2020), the Site is served by the Ukiah Valley Fire Authority (UVFA), a cooperation between the City of Ukiah Fire Department and the Ukiah Valley Fire District. The UVFA was formed in an effort to consolidate overhead for the two organizations while maintaining comprehensive coverage for both the City and surrounding valley. As of April 2015, as detailed on the City of Ukiah website, each agency has retained its own personnel and equipment ownership; a Fire Chief is shared, as are two coordinated fire stations serving the City and the District. The nearest fire station to the Site is the Ukiah Valley

Fire District located approximately 1.43 miles southwest of the Site. The Ukiah Valley Fire Authority station 643 is located 1.96 miles northwest of the Site. In addition, on April 29, 2020, the Fire Marshall of the Ukiah Valley Fire District reviewed the preliminary design and confirmed that the proposed gate widths and turning radii are sufficient for emergency access.

Although the project would develop the currently vacant and undeveloped Site, a significant population increase is not anticipated as a result of the project and the project would be located within the service boundaries of the Ukiah Valley Fire Authority. A less than significant impact would occur.

XV.b) Since the Site is located within the City of Ukiah, the Site and surrounding area is currently and would continue to be served by the Ukiah Police Department (Ukiah PD). The Ukiah PD is located at 300 Seminary Avenue in Ukiah, California, approximately 0.60 miles west of the Site. Although the project would develop the currently vacant and undeveloped Site, a significant population increase is not anticipated as a result of the project and the project would be located within the service boundaries of the Ukiah PD. In addition, it is anticipated that the project would help to decrease the burden on Ukiah PD staff who may currently be partially responsible for attending to adults in the City of Ukiah experiencing an acute psychiatric episode or crisis. As noted above, the proposed CRT Facility would serve as a social rehabilitation facility for clients who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization, a positive, short-term (up to 30 days) structured program in a home-like environment (non-institutional) who might otherwise face voluntary or involuntary commitment. The expected outcome of the program to be instituted at the CRT Facility is that there would be a reduction in psychiatric hospitalizations, emergency room visits, and inappropriate incarcerations by addressing clients before the crisis becomes severe (Kemper, 2018). Therefore, a less than significant impact would occur.

XV.c) The Site is located within the Ukiah Unified School District (UUSD) (Mendocino County Maps - School Districts, 2014), which is comprised of six (6) elementary schools, two (2) middle schools, two (2) high schools, one (1) adult school, and the Ukiah Independent Study Academy. River Oak Charter School, which is not affiliated with the UUSD, is located approximately 475 feet (0.09 miles) northwest of the Site and Oak Manor Elementary School, which is affiliated with the UUSD, is located approximately 1,115 feet (0.21 miles) east of the Site. The proposed project does not involve the development of any residential units; however, since the proposed CRT Facility would fill a current gap in the Mendocino County system of care, it is anticipated that some staff new to the Mendocino County system of care would be necessary to serve the new CRT Facility. However, as discussed under Section XIV (Population and Housing), above, while some of the new staff members may relocate to Ukiah to work at the new CRT Facility, some staff may commute from their current residences within surrounding communities. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). As a result, the proposed project would not be anticipated to result in substantial population growth or a significant increase in the student population. Therefore, it is anticipated that any new students as a result of the proposed project could be adequately accommodated by the existing schools within the UUSD and a less than significant impact would occur.

XV.d) As detailed in Section XVI (Recreation), below, 12 parks and recreational facilities are located within 2 miles of the Site, including Oak Manor Park, which is located approximately 0.23 miles east of the Site, and Orchard Park, located approximately 0.3 miles south of the Site. Although the amount of development would increase at the currently undeveloped Site, no residential units are proposed nor is a significant population increase anticipated as a result of the project. As a result, the use of existing park and recreational facilities would not substantially increase as a result of the project and there would not be a need for a new or physically-altered park facility. A less than significant would occur.

XV.e) There are no elements of the proposed project that would impact other public facilities, such regional hospitals. The project involves the construction of a new Crisis Residential Treatment (CRT) Facility that would serve clients who are experiencing an acute psychiatric episode or crisis, but do not meet the criteria for inpatient psychiatric hospitalization and who might otherwise face voluntary or involuntary commitment, a positive, short-term (up to 30 days) structured program in a home-like environment (non-institutional). As the County of Mendocino currently lacks a CRT Facility in the County of Mendocino, individuals experiencing an acute psychiatric episode or crisis are oftentimes placed in out-of-county psychiatric facilities, incarcerated, and/or end up in emergency rooms. As such, this project would lead to a decrease in the strain on other public facilities, such as regional hospitals, and a less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less than Significant Impact** on Public Services.

<b>XVI. RECREATION.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on recreation if it would 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, or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

## DISCUSSION

The Site is located within the vicinity of the following neighborhood parks and recreational facilities:

- Oak Manor Park, located approximately 0.23 miles east of the Site;
- Orchard Park, located approximately 0.3 miles south of the Site;
- McGarvey Park, located approximately 0.68 miles northwest of the Site;
- Riverside Park, located approximately 0.70 miles east of the Site;
- Ukiah Sports Complex, located approximately 0.87 miles northeast of the Site;
- Observatory Park, located approximately 0.89 miles southwest of the Site;
- Pomolita Field, located approximately 1.11 miles northwest of the Site;
- Todd Grove Park, located approximately 1.13 miles northwest of the Site;
- Anton Stadium, located approximately 1.21 miles northwest of the Site;
- Vinewood Park, located approximately 1.24 miles northwest of the Site;
- Ukiah Valley Golf Course, located approximately 1.31 miles northwest of the Site;
- Alex Rorabaugh Center, located approximately 1.57 miles southwest of the Site; and
- Low Gap Park and Low Gap Dog Park, located approximately 1.73 miles northwest of the Site.

XVI.a-b) No residential units would be constructed, nor is the population expected to substantially increase, as a result of the proposed project. While some staff members may relocate to the Ukiah area to work at the proposed Crisis Residential Treatment (CRT) Facility, some staff may commute from their current residences within surrounding communities. In addition, the clients who would receive services from the proposed CRT Facility would largely be those who reside in the County and their stay at the CRT Facility would be short-term (less than 30 days). As a result, a substantial population increase is not anticipated and the use of existing park and recreational facilities would not be expected to substantially increase as a result of the project. Therefore, there would not be a need for a new or physically-altered park or recreational facility and a less than significant impact would occur.

## MITIGATION MEASURES

No mitigation required.

## FINDINGS

The proposed project would have a **Less than Significant Impact** on Recreation.



<b>XVII. TRANSPORTATION.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on transportation if it would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities; conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b); substantially increase hazards due to a geometric design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or result in inadequate emergency access.

## DISCUSSION

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law, initiating an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA, with the goal to better measure the actual transportation-related environmental impacts of a given project. Traditionally, transportation impacts had been evaluated by using Level of Service (LOS) analysis. Starting July 1, 2020, lead agencies are required to analyze the transportation impacts of new projects using vehicle miles traveled (VMT), instead of LOS. According to the *SB 743 Frequently Asked Questions* provided by the Governor's Office of Planning and Research (OPR), VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto the roads, the project may cause a significant transportation impact. VMT analysis is intended to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations (OPR, 2020). On May 20, 2020, Fehr & Peers, on behalf of the Mendocino Council of Governments (MCOG), prepared a *Senate Bill 743 Vehicle Miles Traveled Regional Baseline Study* (SB 743 Baseline Study) to provide an overview of SB 743, summarize VMT data available for Mendocino County, discuss alternatives for and recommend VMT measurement methods and thresholds for lead agencies in Mendocino County, and recommend transportation demand management (TDM) strategies for reducing VMT on projects in Mendocino County.

The Site is bordered to the west by S. Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, and located a short distance from Gobbi Street, a two-lane minor arterial road managed by the City of Ukiah Public Works, to the south, and Highway 101, a four-lane highway managed by Caltrans, to the east. Currently, the Site has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels. Numerous Mendocino Transit Authority (MTA) bus stops are located in close proximity to the Site, including at distances of approximately 145 feet south, 260 feet north, and 1,100 feet north of the Site. In addition to sidewalks along the frontage of the majority of properties in the vicinity of the Site, pedestrian improvements include a trail and pedestrian bridge over Highway 101, located approximately 815 feet northeast of the Site.

The proposed project includes construction of a new, defined entrance to S. Orchard Avenue on the south end of the Site to accommodate the CRT Facility entrance. No modifications to the existing driveway on the north end of the Site, which is used to access properties east of the Site, are proposed as part of the project. The project will additionally include sidewalk improvements in the City of Ukiah right-of-way, connecting the Site development with adjacent uses. A total of 10 standard parking spaces, and 1 accessible parking space would be provided on-site to serve the CRT Facility.

Anticipated trip generation associated with the proposed project was modeled using the California Emissions Estimator Model (CalEEMod). As described in Section II (Air Quality), above, CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. Based on the CalEEMod analysis, included in Appendix C, the project is anticipated to generate an average of 125 trips per weekday, 31 trips on Saturdays, and less than 6 trips on Sundays, for an annual VMT of 185,043 and an average daily VMT of 507 miles. However, it should be noted that for the purposes of the CalEEMod analysis, the CRT Facility was designated as a medical office, which would be anticipated to generate a greater number of daily trips than a residential treatment facility, such as the proposed CRT Facility, as patients would generally arrive to and leave from a medical office in the same day. In contrast, clients at the proposed CRT Facility would stay, and generally not be allowed to leave, for up to 30 days at a time. As such, the average daily trip rate and annual VMT estimated using CalEEMod most likely overestimates the anticipated trip generation of the proposed project.

XVII.a) The proposed project would not conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths. It is expected that construction of the project will result in a slight increase in traffic to and from the Site, as construction workers arrive and leave the Site at the beginning and end of the day, in addition to minor interruption of traffic on adjacent streets when heavy equipment necessary for project construction is brought to and removed from the Site. However, once construction is complete, the construction workers and equipment would no longer be required at the Site. Upon build-out of the Site, staff (12 maximum) and clients (up to 10 persons per night maximum) would travel to and leave the Site at the end of their shifts or stay. The temporary traffic increases during construction and vehicle and pedestrian increases during operation of the project are not anticipated to significantly impact the capacity of the street system or the overall effectiveness of the circulation system. Additionally, the project is not anticipated to substantially impact alternative transportation facilities, such as transit, bicycle, or pedestrian facilities, as the Site is located adjacent to Orchard Avenue, a two-lane minor arterial road managed by the City of Ukiah Public Works, along which a number of Mendocino Transit Authority (MTA) bus stops are located, and in close vicinity to Gobbi Street, Highway 101, and a pedestrian highway overcrossing. As the project proposes to construct sidewalks along the project's currently undeveloped frontage, the project would provide additional pedestrian connectivity in the area. A less than significant impact would occur.

XVII.b) CEQA Guidelines Section 15064.3, subdivision (b) indicates that a land use project would have a significant impact if the project results in vehicle miles traveled (VMT) exceeding an applicable threshold of significance, but that projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant impact. CEQA Guidelines Section 15064.3 further notes that if existing models or methods are not available to estimate a project's expected VMTs, a lead agency may analyze the project's expected VMT qualitatively. As of the date of this Initial Study, the County of Mendocino and City of Ukiah have not established thresholds of

significance for VMT consistent with SB 743 and CEQA Guidelines Section 15064.3, subdivision (b). Although the County of Mendocino and the City of Ukiah have not established thresholds of significance for VMT, the SB 743 Baseline Study (MCOG, 2020) recommends that lead agencies in Mendocino County implement screening criteria to simplify analysis for smaller projects.

Since the Site is currently undeveloped, any development on-site will increase VMT. Under the proposed project, VMT will be attributed to employees and clients traveling to and from the Site, with the majority of daily trips attributed to employees, as clients would stay at the proposed CRT Facility, and generally not be allowed to leave, for up to 30 days at a time. Using the recommending screening criteria adapted from the OPR *Technical Advisory* for the SB 743 Baseline Study (MCOG, 2020), the project may be presumed to cause a less-than-significant VMT impact as the project is anticipated to generate less than 640 VMT per day, as described above, and is consistent with the City of Ukiah General Plan and the 2017 Mendocino County Regional Transportation Plan. In addition, the Site is located in an urban built-up environment in close proximity to major roadways of the City of Ukiah and the County of Mendocino. The Site is located adjacent to Orchard Avenue and a short distance from Gobbi Street, Highway 101, numerous Mendocino Transit Authority (MTA) bus stops, and a pedestrian highway overcrossing. Consistent with CEQA Guidelines Section 15064.3, described above, as the Site is located within one-half mile of numerous transit stops and principal transit corridors of the surrounding community, the project should be presumed to cause a less than significant impact. Based on the analysis presented above, a less than significant impact would occur.

XVII.c) The proposed project is not be anticipated to substantially increase hazards due to design features or incompatible uses. As discussed above, the Site currently has no defined entrance and is accessed primarily on the north end via a paved entrance to S. Orchard Avenue that serves adjacent parcels. The proposed project includes construction of a new, defined entrance to S. Orchard Avenue on the south end of the Site to accommodate the CRT Facility entrance. No modifications to the existing driveway on the north end of the Site, which is used to access properties east of the Site, are proposed as part of the project. The project will additionally include sidewalk improvements in the City of Ukiah right-of-way, connecting the Site development with adjacent uses. As demonstrated by the proposed design improvements shown on the attached Site Plan (see Figure 5), the Site has been designed to provide ample access, driveway width, and turning radii. A less than significant impact would occur.

XVII.d) The proposed project will not result in inadequate emergency access, as the project has been designed to meet pertinent design criteria to provide adequate emergency access. The attached project Site Plan (see Figure 5) proposes a general site layout with ample space surrounding all proposed development to provide adequate emergency access. In addition, on April 29, 2020, the Fire Marshall of the Ukiah Valley Fire District reviewed the preliminary design and confirmed that the proposed gate widths and turning radii are sufficient for emergency access. A less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Transportation.

XVIII. TRIBAL CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) 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 §5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code §5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Thresholds of Significance:** The project would have a significant effect on Tribal Cultural Resources if it would cause a substantial adverse change in the significance of a cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Places or in a local register of historical resources as defined in Public Resources Code §5020.1(k), or is 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 §5024.1.

## DISCUSSION

According to Chapter 3 (Development Element) of the Mendocino County General Plan (2009), ten (10) Native American tribes historically had territory in what is now Mendocino County. Native American tribes known to inhabit Mendocino County concentrated mainly along the coast and along major rivers and streams, while mountainous areas and redwood groves were occupied seasonally by some tribes. The first permanent non-native settlers came to Mendocino County in the middle of the 16th century, exploring and establishing small outposts. As European-American settlement expanded in Mendocino County, most of the tribes known to inhabit the land were restricted to reservations and rancherias. During the 19th century, other tribes from the interior of California were forced to settle on the Round Valley Reservation in the northeastern portion of Mendocino County. The entire southern third of Mendocino County was the home of groups of Central Pomo. To the north of the Central Pomo groups were the Northern Pomo, who controlled a strip of land extending from the coast to Clear Lake. The Coast Yuki claimed a portion of the coast from Fort Bragg north to an area slightly north of Rockport. They were linguistically related to a small group, called the Huchnom, living along the South Eel River north of Potter Valley. Both of these smaller groups were related to the Yuki, who were centered in Round Valley. At the far northern end of the county, several groups extended south from Humboldt County. The territory of the Cahto was bounded by Branscomb, Laytonville, and

Cummings. The North Fork Wailaki was almost entirely in Mendocino County, along the North Fork of the Eel River. Other groups in this area included the Shelter Cove Sinkhole, the Eel River, and the Pitch Wailaki. The City of Ukiah (City) is situated in a valley of the Russian River between the Russian River and western hills and is within the territory of the Northern Pomo. The Pomo often established permanent villages in areas with access to staple foods, often times along eco-tones (transitions between varying environments), with access to good water, and generally flat land. Areas within the Ukiah Valley that are most typically culturally sensitive include those adjacent to streams, springs, and mid-slope benches above watercourses because Native Americans and settlers favored easy access to potable water (ESA, 2013).

On June 2, 2020, in compliance with Assembly Bill (AB) 52, LACO, on behalf of the County of Mendocino (County), sent a consultation letter to each of the five (5) Native American Tribes provided in the NAHC response letter, including the Coyote Valley Band of Pomo Indians, Guidiville Indian Rancheria, Hopland Band of Pomo Indians, Pinoleville Pomo Nation, and Redwood Valley or Little River Band of Pomo Indians. As of the date of this Initial Study, no requests for consultation have been received from any of the five (5) Native American Tribes that were sent formal notification of the project pursuant to AB 52, and no responses or other communications have been received from the Tribal community, in general, regarding the project. As no requests for consultation were received within the 30 day deadline specified by Public Resources Code Section 21082.3 (d), the County, as Lead Agency, has deemed the Tribal consultation process complete. Copies of the response letter from the NAHC and the letters sent to the Tribal representatives are included in Appendix B.

a.i-ii) As discussed in Section V (Cultural Resources), above, no historical resources are identified at or near the Site, per Figure V.3-DD of the Ukiah General Plan (1995) and the City Historic and Architectural Inventory (1999), and as of the date of this Initial Study, no response has been received from the Tribal consultation effort and there are no known Tribal cultural resources in the project area. A less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Tribal Cultural Resources.

<b>XVIX. UTILITIES AND SERVICE SYSTEMS.</b> Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on utilities and service systems if it would require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years; result in a determination by the wastewater treatment provider, which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments; generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

## DISCUSSION

The Site is located within the service boundaries of the City of Ukiah water and electric distribution, wastewater collection, and storm drain systems. There are currently no on-site utility connections; however, connections to existing utilities located in close vicinity to the Site will be established during project construction. Water service will be extended to the Site by tying in to the existing 8-inch water main with a 2-inch water line. A proposed 6-inch sanitary sewer lateral will be cut in with a wye to the existing 6-inch sanitary sewer line. Both the existing water main and the existing sanitary sewer line are located west of the Site within Orchard Avenue. As noted above, on-site drainage would be controlled using post-construction Best Management Practices (BMPs), including bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85<sup>th</sup> percentile rain event and landscaped areas throughout the Site to encourage natural stormwater infiltration.. Additionally, a connection will be

established to the existing electric utility feed located along the south edge of the Site. Natural gas service, if needed, would be provided by Pacific Gas and Electric Company (PG&E).

The City of Ukiah would also provide solid waste collection services through the Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah, which would be collected from a trash bin enclosure to be installed in the southeast portion of the Site. According to the City of Ukiah Utility Services & Billing webpage (2020), as the proposed project would include a commercial facility, garbage service would be setup directly through Ukiah Waste Solutions who operates weekly curb-side residential and commercial garbage and recycling collection within the City of Ukiah.

### **Electricity**

Electricity would be provided to the Site by the City of Ukiah Electric Utility Department. As noted above, an electric utility line is located along the southern portion of the Site. Ukiah's electric utility is part of the Northern California Power Agency (NCPA) – a consortium of municipally owned power companies that maintains its own power-generating capabilities (City of Ukiah, 2020b). The City of Ukiah maintains and operates the Lake Mendocino Hydroelectric Plant, which provides a portion of the City's renewable energy supply. According to the 2018 Power Content Label, the City of Ukiah Electric Utility receives approximately 29 percent of its power from eligible renewable sources, with an additional 15 percent of the power coming from large hydroelectric sources. Although the State of California does not consider power from large hydroelectric dams to be renewable, power from large hydroelectric dams helps the City of Ukiah to decrease its reliance on standard electrical services, which are typically generated from fossil fuels, such as coal and natural gas (City of Ukiah, 2020b).

### **Water Service**

Water would be provided to the Site by the City of Ukiah Water Utility. According to the Draft 2015 Urban Water Management Plan (2016), the City of Ukiah's water distribution system is supplied from diverse water sources, including groundwater from the Ukiah Valley Groundwater Basin, surface water from the Russian River underflow, and surface water from the Russian River which is treated at the water treatment plant and piped throughout the water distribution system. The City of Ukiah's primary water source is the underflow from the Russian River, which is classified as Ground Water under Direct Influence for Surface Water (City of Ukiah, 2020e). This water is supplied by the Ranney collector, which can be used only when turbidity in the Russian River is low, and a well that both draw from an alluvial zone along the Russian River and can supply up to approximately 6,123 acre-feet per year (ac-ft/yr), combined, when operated continuously. However, the City of Ukiah's surface water rights could provide for up to 16,507 ac-ft/yr, under a Pre-1914 Appropriative Right and Water Right Permit 12952 (Application 15704), under which the aforementioned surface water supplies are regulated. Groundwater is supplied by four (4) groundwater wells that have a total capacity of 3,700 ac-ft/yr, combined. The City additionally has a water supply agreement with the Russian River Flood Control District (Flood Control District) that allows the purchase of up to 800 ac-ft/yr under the Flood Control District's water rights permit (City of Ukiah, 2016).

As of 2015, the City of Ukiah supplied approximately 2,534 acre-feet (ac-ft) of water to approximately 4,781 residential and non-residential connections located within its water service area. Although the City of Ukiah's water supply sources are considered adequate for existing and projected water demands, the City is actively growing its groundwater and recycled water supply to improve the reliability of the overall water supply (City of Ukiah, 2016).

### **Wastewater Collection Service**

Wastewater generated on-site would be collected by the Ukiah Valley Sanitation District (UVSD) and treated at the Ukiah Wastewater Treatment Plant (UWWTP), which is owned and operated by the City of Ukiah. The UWWTP is responsible for the treatment and disposal of wastewater from the City of Ukiah and the nearby UVSD (City of Ukiah, 2020d). The UVSD contracts via a Participation Agreement to the City of Ukiah for use of the UWWTP and for maintenance of its collection system (UVSD, 2018). The UWWTP is located southeast of the City of Ukiah on Plant Road and has been operational since 1958. In 2009, the UWWTP underwent a three year, \$56.5 million improvement project that was completed to ensure continued compliance with permit requirements and meet future demand growth. In recent years the City of Ukiah has also expanded its recycled water delivery program, which is intended to offset groundwater pumping and diversions of the Russian River for non-potable water uses (City of Ukiah, 2016).

Primary treatment removes floating material, oils and greases, sand and silt and organic solids heavy enough to settle in water. Secondary treatment biologically removes most of the suspended and dissolved organic material (City of Ukiah, 2020d). The UWWTP discharges disinfected secondary effluent to three percolation/evaporation ponds located at the UWWTP on a year-round basis, and discharges disinfected tertiary effluent to the Russian River as needed during wet weather months (City of Ukiah, 2016). The UWWTP has a current treatment capacity of approximately 3,136 ac-ft/yr of dry weather flow and 22,402 ac-ft/yr of peak wet weather flow (City of Ukiah, 2020d). According to data collected from the Department of Water Resources (DWR), the UWWTP collected 2,997 ac-ft of wastewater in 2015 (City of Ukiah, 2016). As of 2019, the UWWTP has a current capacity to add nearly 1,603 equivalent sewer service units (ESSUs) before reaching capacity (Ukiah2040, 2020).

### **Storm Drainage System**

As noted discussed in Section IX (Hydrology and Water Quality), above, the City of Ukiah Storm Water Utility manages a series of drainage inlets throughout the City, which flow directly into creeks, and eventually the Russian River. Drainage across the Site appears to flow to the southeast. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site. Street and pedestrian improvements including curb, gutter, sidewalk, and storm drain inlets are located on both sides of Orchard Avenue, up to and surrounding the Site, and within the parking lots of surrounding commercial developments. As the Site is currently undeveloped, it is the only property within the general vicinity of the Site that does not include curb, gutter, and sidewalk along its frontage.

Drainage improvements proposed to be developed as part of the project include post-construction BMPs, which include bioretention facilities sized to capture and treat runoff from the proposed impervious surfaces produced by the 24 hour 85<sup>th</sup> percentile rain event and landscaped areas throughout the Site to encourage natural stormwater infiltration.. Flows from the post-construction BMPs will be directed towards an existing drainage inlet located near the southeast corner of the Site. The project additionally includes the construction of pedestrian facilities, including curb, gutter, and sidewalk along the west side of the Site. Stormwater from these proposed surfaces and off-site flows would be directed to the storm drain collection system.

### **Solid Waste Service**

As noted above, Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah, provides weekly curb-side residential and commercial garbage, recycling, and green waste collection within the City of Ukiah. Waste collected by Ukiah Waste Solutions is taken to the Ukiah Transfer Station and Recycling Center located at 3515 Taylor Drive in Ukiah for processing and transport. As noted in Chapter 3



(Development Element) of the Mendocino County General Plan (2009), there are no remaining operating landfills in Mendocino County, and, as a result, solid waste generated within the County is exported for disposal to the Potrero Hills Landfill in Solano County. Based on information provided on CalRecycle's website (2019), the Potrero Hills Landfill has a maximum permitted throughput of 4,330 tons per day and a remaining capacity of 13.872 million cubic yards, and is estimated to remain in operation until February 2048.

### **Telecommunications**

Various telecommunication companies provide telecommunications to the surrounding area.

XVIX.a) As noted above, the proposed project will require new connections to the City of Ukiah water and electric distribution, wastewater collection, and storm drain systems. The Site is currently undeveloped and new infrastructure will be required to establish these connections; however, the Site is located in an urban, built-up environment in which connections to each of these utilities exist on all surrounding parcels and, as discussed above, the City has ample capacity to supply the needed utilities to the Site. Additionally, as discussed in Section IX (Hydrology and Water Quality), above, in order to ensure significant environmental effects would not occur, the respective utility providers and installers would implement applicable Best Management Practices (BMPs) to reduce the potential for impacts, including but not limited to erosion during construction, to occur. As such, a less than significant impact would occur.

XVIX.b) Water to the Site would be provided by the City of Ukiah Water Utility. As discussed above, according to the City of Ukiah 2015 Urban Water Management Plan, the City of Ukiah's diverse water supply sources are considered adequate for existing and projected water demands (City of Ukiah, 2016). A less than significant impact would occur.

XVIX.c) Wastewater collection service at the Site would be provided by the Ukiah Valley Sanitation District (UVSD). As noted above, wastewater collected by the UVSD is treated at the Ukiah Wastewater Treatment Plant (UWWTP). The proposed project has received a will serve letter from the UVSD, implying that the UVSD has adequate capacity to serve the project's projected demand. A less than significant impact would occur.

XVIX.d-e) A significant amount of solid waste is not anticipated under the project and all solid waste generated under the project would be disposed of in accordance to all federal, state, and local statutes and regulations related to solid waste including state and local waste diversion requirements. As noted above, the project would be served by Ukiah Waste Solutions, a component of C&S Waste Solutions located in Ukiah. A trash bin for collecting solid waste generated on-site would be located in the southeast portion of the Site. Solid waste collected by Ukiah Waste Solutions would eventually be disposed of at Potrero Hills Landfill, which has a remaining capacity of 13.872 million cubic yards (CalRecycle, 2019). As such, the proposed would not negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals. A less than significant impact would occur.

### **MITIGATION MEASURES**

No mitigation required.

### **FINDINGS**

The proposed project would have a **Less Than Significant Impact** on Utilities and Service Systems.

<b>XX. WILDFIRE.</b> If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on wildfire if it would impair an adopted emergency response plan or emergency evacuation plan; due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges.

## DISCUSSION

The Site is located within the Local Responsibility Area (LRA) (Mendocino County Maps – Ukiah Valley – Fire Responsibility Areas, 2019) and per the City of Ukiah website (2020), is served by the Ukiah Valley Fire Authority, a cooperation between the City of Ukiah Fire Department and the Ukiah Valley Fire District. The Site is mapped as located within an area with “Moderate” Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan. The nearest fire station to the Site is the Ukiah Valley Fire District, located approximately 1.43 miles southwest of the Site.

XX.a) The County of Mendocino County adopted a *Mendocino County Operational Area Emergency Operations Plan* (County EOP) on September 13, 2016, under Resolution Number 16-119. As noted on the Plans and Publications webpage of the Mendocino County Office of Emergency Services (MCOES), the County EOP, which complies with local ordinances, state law, and state and federal emergency planning guidance, serves as the primary guide for coordinating and responding to all emergencies and disasters within the County. The purpose of the County EOP is to “*facilitate multi-agency and multi-jurisdictional coordination during emergency operations, particularly between Mendocino County, local and tribal governments, special districts as well as state and Federal agencies*” (MCOES – Plans and Publications, 2019).

As discussed under Section IX (Hazards and Hazardous Materials), above, there are no components of the project that would impair an adopted emergency response plan or emergency evaluation plan, including the adopted County EOP. The Site is located with the LRA and within a “Moderate” Fuel Rank fire hazard severity zone per Figure C-13 of the 2014 Mendocino County Multi-Hazard Mitigation Plan. The CRT Facility

would be constructed in accordance with state and local standards, including safety and emergency access requirements. As such, there are no components of the project that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. A less than significant impact would occur.

XX.b) Under the proposed project, it is not anticipated that wildfire risks would be exacerbated due to slope, prevailing winds, and other factors. The Site is flat, with elevations at the Site ranging between approximately 598 feet and 600 feet above mean sea level. In addition, the Site is located in an urban built-up environment where there is a low threat of wildfire. No impact would occur.

XX.c) The Site would be served natural gas by Pacific Gas & Electric (PG&E), electricity, water and wastewater service by the City of Ukiah, and solid waste services by a local waste hauler. While there is currently no development on-site that would warrant connections, all utility lines are located in close vicinity to the Site and serve all surrounding parcels, and connections to the proposed CRT Facility would be established as part of the project. As such, the project would not require the installation or maintenance of infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No impact would occur.

XX.d) The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage challenges, as the Site is flat, with elevations at the Site ranging between approximately 598 and 600 feet above mean sea level, and is surrounded by a built-up urban environment. In addition, Low Impact Development (LID) stormwater retention features would be constructed on-site to capture and treat increased stormwater flows due to the proposed impervious surfaces. As such, a less than significant impact would occur.

#### **MITIGATION MEASURES**

No mitigation required.

#### **FINDINGS**

The proposed project would have a **Less than Significant Impact** on Wildfire.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially 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, substantially 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) 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).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**THRESHOLDS OF SIGNIFICANCE:** The project would have a significant effect on mandatory findings of significance if it would have the potential to substantially 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, substantially 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; 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.); or have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

## DISCUSSION

Certain mandatory findings of significance must be made to comply with CEQA Guidelines §15065. The proposed project has been analyzed and it has been determined that it would not:

- Substantially degrade environmental quality;
- Substantially reduce fish or wildlife habitat;
- Cause a fish or wildlife population to fall below self-sustaining levels;
- Threaten to eliminate a plant or animal community;
- Reduce the numbers or range of a rare, threatened, or endangered species;
- Eliminate important examples of the major periods of California history or pre-history;
- Achieve short term goals to the disadvantage of long term goals;
- Have environmental effects that will directly or indirectly cause substantial adverse effects on human beings; or
- Have possible environmental effects that are individually limited but cumulatively considerable when viewed in connection with past, current, and reasonably anticipated future projects.

Potential environmental impacts from the construction and operation of a 3,462 square-foot, one-story, Crisis Residential Treatment (CRT) Facility with space for up to 10 beds for clients and associated improvements, have been analyzed in this document and mitigation measures have been included in the document to ensure impacts would be held to a less than significant level.

XXI.a) The project does not have the potential to substantially 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, substantially 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. The vacant Site does not provide habitat for any fish or wildlife species, nor does the Site support any notable plant or animal communities. There are no important examples of California Pre-history or history located on the Site. Mitigation has been applied to reduce any potential environmental impacts to levels that are less than significant.

XXI.b) No cumulative impacts have been identified as a result of the proposed project. The project is a small-scale (10-beds, maximum of 12 employees) infill project and will be served by community services. Individual impacts from the project would not significantly contribute to cumulative impacts in the area. The project is anticipated with the expected level of growth and density of use on the site. A less than significant impact would occur.

XXI.c) The project will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly. Concerns related to the suitability of soils on-site for this type of construction are mitigated by Mitigation Measures GEO-1 and GEO-2, which reduce the threat of building failure to a level that is less than significant and concerns related to the impact of construction noise on nearby sensitive receptors are mitigated by Mitigation Measure NOISE-1. A less than significant impact would occur.

#### **MITIGATION MEASURES**

Refer to Mitigation Measures CUL-1 in Section V (Cultural Resources), GEO-1 and GEO-2 in Section VII (Geology and Soils), HYDRO-1 in Section X (Hydrology and Water Quality), and NOISE-1 in Section XIII (Noise), above.

#### **FINDINGS**

The proposed project would have a **Less Than Significant Impact with Mitigation Incorporated** on Mandatory Findings of Significance.

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<https://uvsd.org/index.html>.

## FIGURES

<b>Figure 1</b>	<b>Location Map</b>
<b>Figure 2</b>	<b>City of Ukiah Land Use Designation</b>
<b>Figure 3</b>	<b>City of Ukiah Zoning Designation</b>
<b>Figure 4</b>	<b>Airport Zone Compatibility Map (1996)</b>
<b>Figure 5</b>	<b>Site Plan</b>

# LACO

EUREKA • UKIAH • SANTA ROSA

1-800-515-5054 www.lacoassociates.com

PROJECT MENDOCINO COUNTY CRT FACILITY

CLIENT NACHT & LEWIS ARCHITECTS INC.

LOCATION 631 SOUTH ORCHARD AVENUE, UKIAH, CA

SITE VICINITY MAP

BY CRP

CHECK RMD

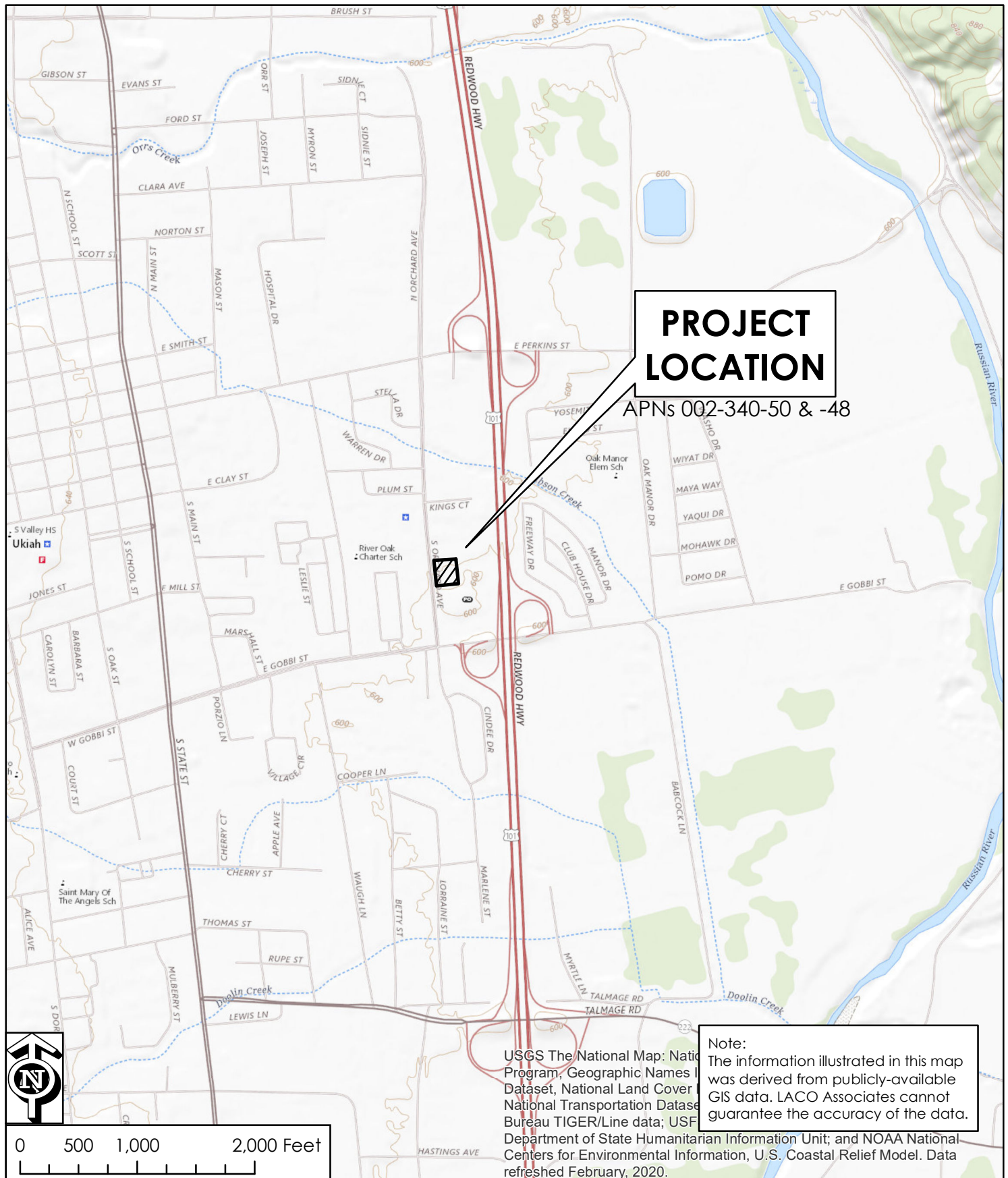
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Figure 2 – City of Ukiah General Plan Land Use

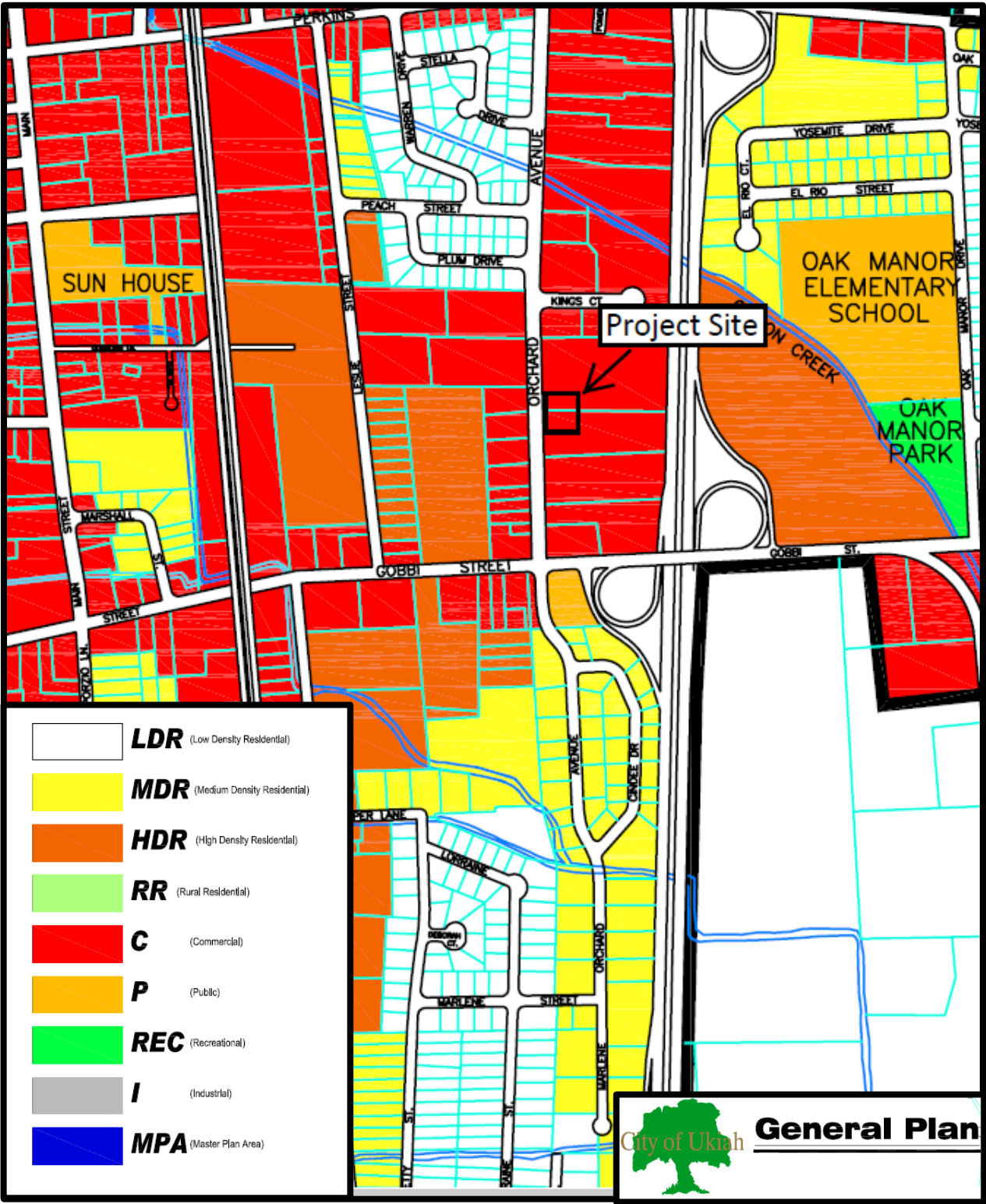




Figure 3 – City of Ukiah Zoning

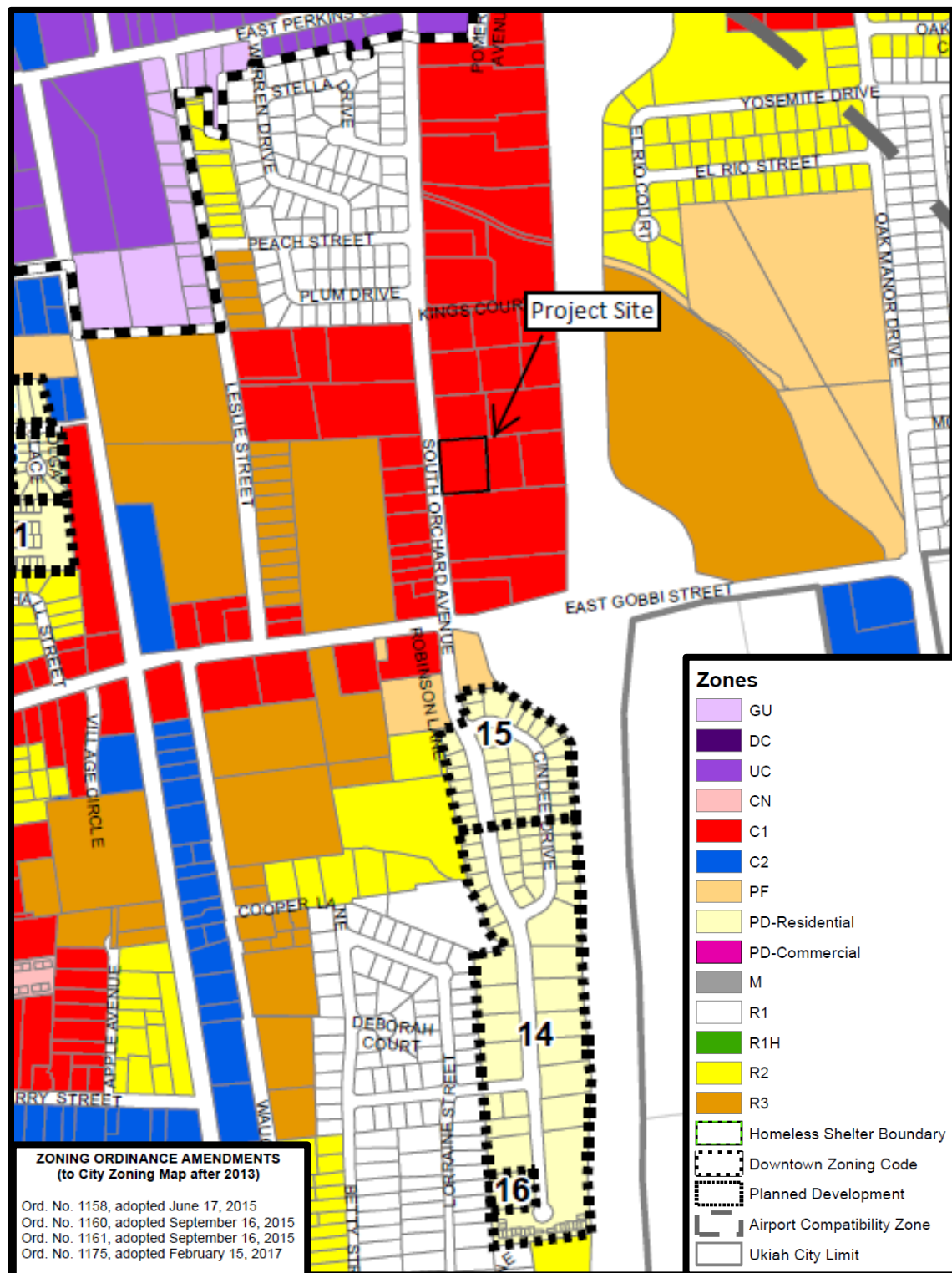
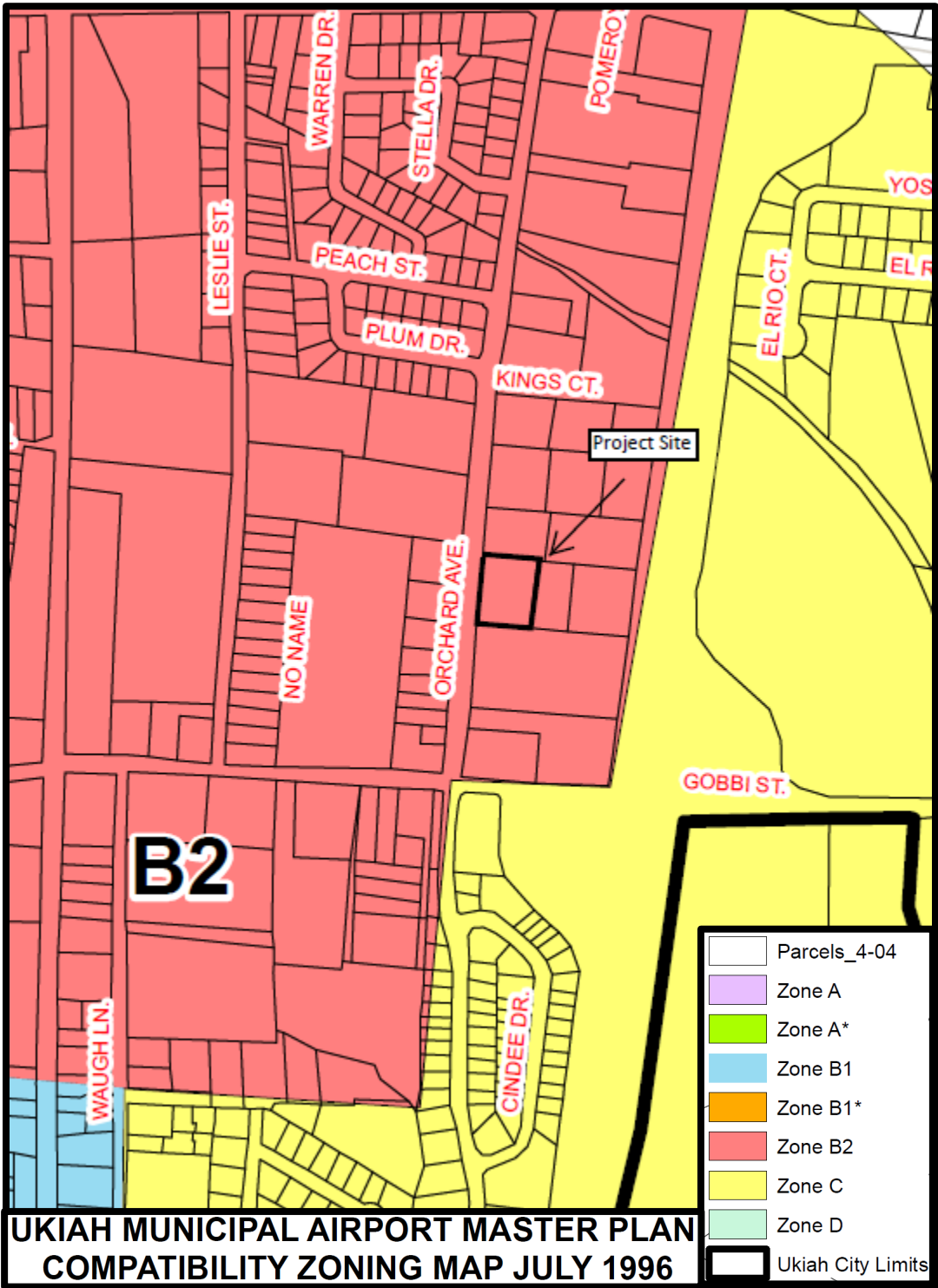
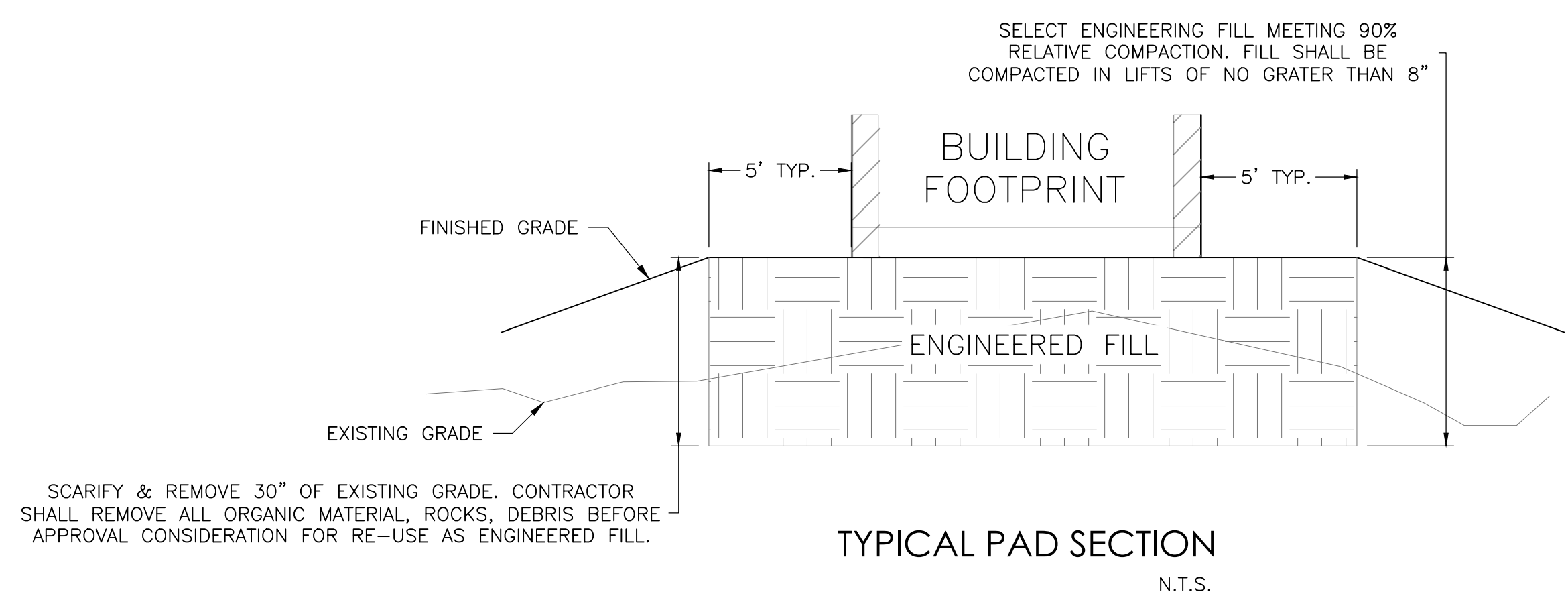
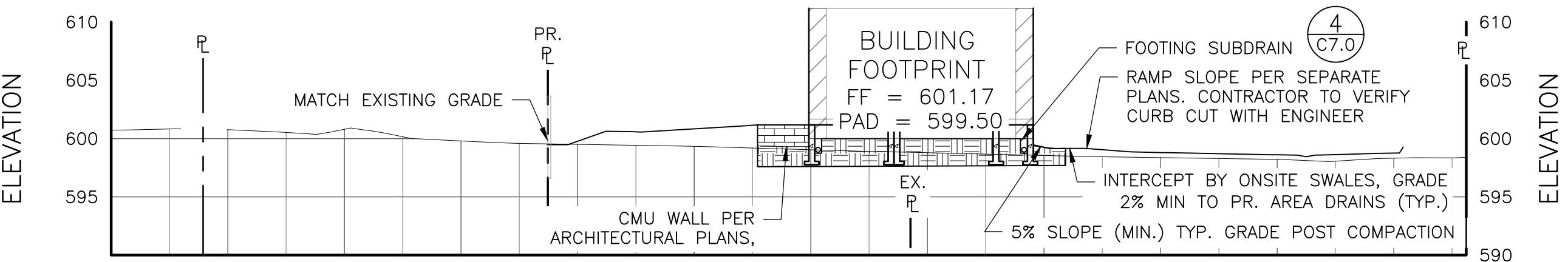
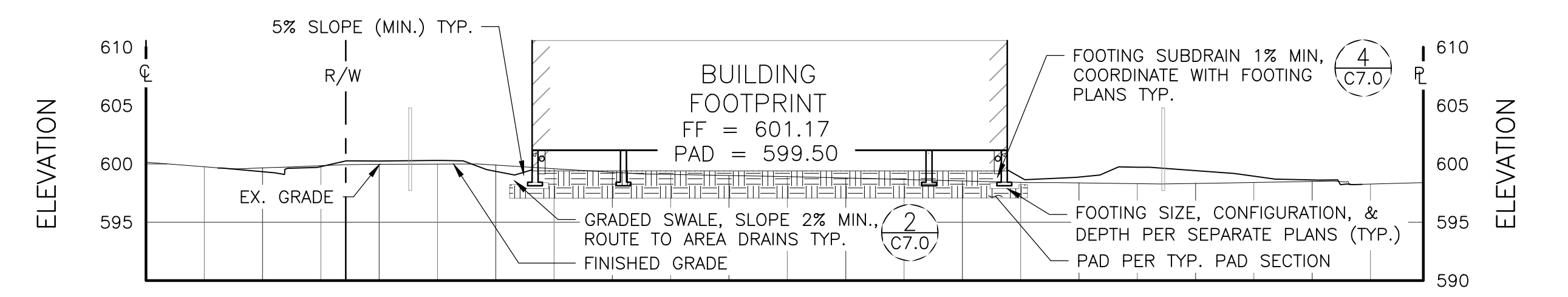
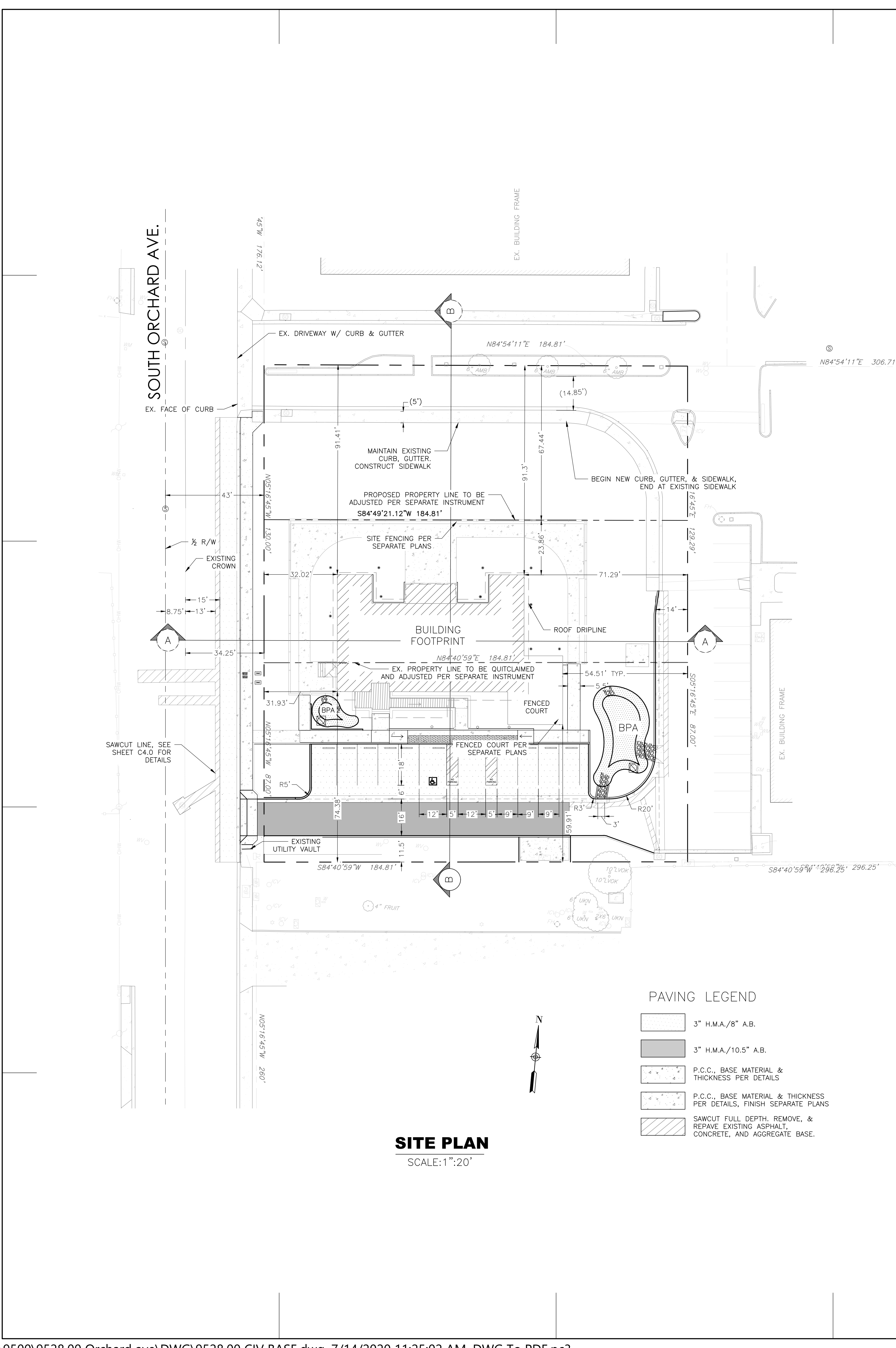


Figure 4 – Airport Zone Compatibility Map





ONE INCH = TWENTY FEET  
ONE-SIXTEENTH INCH = ONE FOOT  
ONE-EIGHTH INCH = ONE FOOT  
ONE-FOURTH INCH = ONE FOOT  
ONE-HALF INCH = ONE FOOT  
THREE-QUARTERS INCH = ONE FOOT  
ONE INCH = ONE FOOT  
ONE AND ONE-HALF INCH = ONE FOOT



**RECORD DRAWING**  
THIS TRACING, DUPLICATE OR ELECTRONIC FILE HAS BEEN REVISED TO RECORD MODIFICATIONS REPORTED BY THE CONTRACTOR.  
NACHT & LEWIS ARCHITECTS AND THEIR CONSULTANTS HAVE NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE MODIFICATIONS, TO THE ORIGINAL CONTRACT DOCUMENTS, REPORTED BY THE CONTRACTOR.

AGENCY APPROVAL

COUNTY OF MENDOCINO BEHAVIORAL HEALTH  
CRISIS RESIDENTIAL TREATMENT FACILITY (CRT)  
UKIAH, CALIFORNIA  
COUNTY OF MENDOCINO

CLIENT  
**LACO**  
EUREKA • UKIAH • SANTA ROSA • CHICO  
REGISTERED PROFESSIONAL ENGINEER  
No. 69388  
CIVIL  
STATE OF CALIFORNIA  
CONSULTANT  
**nacht&lewis**  
600 O Street, Suite 100  
Sacramento, CA 95811  
www.nachtlewis.com  
P 916.329.4000

ARCHITECT

REVISIONS		
NO.	DESCRIPTION	DATE

**DATE** 07/06/20  
**JOB NO.** Y1959.00  
**SHEET TITLE**  
**SHEET NO.**

**SITE PLAN & TYPICAL BLDG SECTIONS**

C1.0



## APPENDIX A

### **Mitigation and Monitoring Program (MMRP)**

**Mitigation Monitoring and Reporting Program  
County of Mendocino  
Mendocino County Crisis Residential Treatment (CRT) Facility**

Impact	Mitigation Measure	Implementation Responsibility	Monitoring/ Reporting Responsibility	Timing
<b>Cultural Resources</b>	<p><b>CUL-1:</b> In the event archaeological resources or human remains are inadvertently unearthed or discovered during construction, all further excavation and disturbances within 100 feet of the discovery shall be halted, and the Director of Planning and Building Services (PBS), in the case of discovery of archaeological resources, or the Sheriff-Coroner, in the case of discovery of human remains, shall be immediately notified.</p> <p>For the discovery of archaeological resources, all activity in the vicinity of the resource(s) shall cease until the discovery can be evaluated by the Director of PBS or a duly authorized representative, in consultation with the Mendocino County Archaeological Commission (Commission). If the Director of PBS does not arrange for an inspection of the area of discovery within 72 hours of receiving the notification and has not issued an order to cease and desist for a longer period of time, the excavation and disturbance of the site may resume. If the Commission, or an authorized representative, determines that the resource(s) is one of archaeological significance, the person who made the discovery shall be notified and an appropriate treatment plan for the resources shall be developed. The Commission shall consult with archaeologists and Native American representatives, as deemed necessary, in determining appropriate treatment for prehistoric or Native American cultural resources. In considering any suggested mitigation proposed by the archaeologist and Native American representative, the</p>	Project Contractor	County of Mendocino	During construction

	<p>Commission will determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) will be instituted. Work may proceed in other parts of the project area while mitigation for cultural resources is being carried out.</p> <p>For the discovery of human remains, all activity in the vicinity of the discovery shall cease until specifically authorized by the Sheriff-Coroner. The Sheriff-Coroner shall notify a designated representative of the Commission and if the remains are considered to be those of a Native American Indian, the Sheriff-Coroner shall also make notification as required by Section 7050.5 of the California Health and Safety Code. The Sheriff-Coroner shall determine, in consultation with the Commission and Native American representatives, as deemed necessary, the jurisdiction and custody of the human remains. Should human remains be discovered as part of an archaeological site, the Sheriff-Coroner or the Commission on behalf of the Sheriff-Coroner shall additionally solicit recommendations of the Native American Heritage Commission. No further excavation or disturbance within 100 feet of the point of discovery may proceed until the lapse of 30 days or written approval of the Commission, whichever occurs first.</p>			
<b>Geology and Soils</b>	<p><b>GEO-1:</b> The project and potential future development at the Site shall comply with the recommendations pertaining to site grading and preparation, footings, concrete slab-on-grade floors, asphalt pavement, and seismic design parameters provided in the <i>Geotechnical Exploration and GeoHazard Report</i> (Geotech Report), prepared by LACO Associates and dated June 3, 2020 (see Appendix D). Prior to issuance of building permits, the</p>	Project Contractor	County of Mendocino	During project design phase/ During construction

	<p>County of Mendocino Department of Planning and Building Services shall review and approve of the site development plans, which must demonstrate project compliance with the recommendations of the Geotech Report (LACO, 2020), in addition to any seismic requirements of the latest adopted edition of the CBC. In addition, all soil engineering recommendations and structural foundations shall be designed by a licensed Professional Engineer. All on-site geotechnical engineering activities shall be conducted under the supervision of a licensed Geotechnical Engineer or Certified Engineering Geologist.</p>			
	<p><b>GEO-2:</b> In the event that fossils or fossil-bearing deposits are discovered during project construction, the contractor shall notify a qualified paleontologist to examine the discovery and excavations within 50 feet of the find shall be temporarily halted or diverted. The area of discovery shall be protected to ensure that fossils are not removed, handled, altered, or damaged until the Site is properly evaluated, and further action is determined. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be</p>	<p>Project Contractor</p>	<p>County of Mendocino and Qualified Paleontologist</p>	<p>During construction</p>

	submitted to the County of Mendocino for review and approval prior to implementation.			
<b>Hydrology and Water Quality</b>	<b>HYDRO-1:</b> In the event groundwater is encountered during foundation excavation activities, the contractor shall dewater the excavation area prior to placing concrete. Extracted groundwater shall be discharge in a manner that does not cause erosion at the discharge point. Any dewatering activities on-site shall be conducted under the supervision of a Qualified Stormwater Practitioner (QSP).	Project Contractor	County of Mendocino	During construction
<b>Noise</b>	<p><b>NOISE-1:</b> Implementation of the following measures are required during the duration of the project construction period to reduce potential noise impacts on the nearby sensitive receptors:</p> <ul style="list-style-type: none"> <li>• Construction shall be limited to between the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, with no construction activities permitted on Saturday, Sunday, or holidays;</li> <li>• All internal combustion engine-driven equipment shall be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment. Air compressors and pneumatic equipment shall be equipped with mufflers and impact tools shall be equipped with shrouds or shields.</li> <li>• All unnecessary idling of internal combustion engines on-site shall be prohibited.</li> </ul>	Project Contractor	County of Mendocino	During construction

## APPENDIX B

### **Cultural Resources Correspondence**



April 27, 2020

9528.00

Northwest Information Center  
Sonoma State University  
150 Professional Center Drive, Suite E  
Rohnert Park, California 94928

Attention: Bryan Much, Coordinator

Subject: Request for Records Search Summary for Two (2) Assessor's Parcel Numbers (APNs) in the City of Ukiah, California – APNs: 002-340-50 and 002-340-48  
631 South Orchard Avenue, Ukiah, Mendocino County, California

Dear Mr. Much:

On behalf of the County of Mendocino (County), LACO Associates (LACO) would like to make a Non-Confidential Records Search Summary request for the property identified as Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48, located at 631 South Orchard Avenue, within the City of Ukiah, Mendocino County (Site). The County is lead agency under the California Environmental Quality Act (CEQA) and LACO is in the process of preparing a CEQA document for the project on behalf of the County. The County will not be sending you a separate request, pursuant to its Memorandum of Understanding. A site vicinity map depicting the area of potential effect is enclosed for your reference.

The County is proposing to construct a Crisis Residential Treatment (CRT) Facility on the approximately 0.92-acre Site. The project includes the construction and operation of a one-story, CRT Facility with space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include outdoor decks, a CRT parking area, a bioretention area, and landscaping. Future improvements at the Site may include a building for medical offices and a garden or open space area, to be located in the northern portion of the Site. The Site is currently undeveloped, with no existing structures on-site and is located in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

We are respectfully requesting a Records Search Summary be conducted for the Site pursuant to the County's MOU. Please indicate LACO Project Number 9528.00 on the invoice.

I look forward to your response. If you have any questions or require any additional information, please do not hesitate to contact me. I can be reached at [dalsker@lacoassociates.com](mailto:dalsker@lacoassociates.com) or (707) 443-5054.

Sincerely,

Rebecca Dalske  
Planner III

Enclosure (Site Vicinity Map)

21 W. Fourth Street Eureka, CA 95501 707 443-5054 – Fax 707 443-0553	776 S. State Street, Suite 103 Ukiah, CA 95482 707 462-0222 – Fax 707 462-0223	3490 Regional Parkway, Suite A Santa Rosa, CA 95403 707 525-1222 – Fax 707 545-7821	932 B W. Eighth Avenue Chico, CA 95926 530 801-6170 – Fax 707 462-0223
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# LACO

EUREKA • UKIAH • SANTA ROSA

1-800-515-5054 www.lacoassociates.com

PROJECT MENDOCINO COUNTY CRT FACILITY

CLIENT NACHT & LEWIS ARCHITECTS INC.

LOCATION 631 SOUTH ORCHARD AVENUE, UKIAH, CA

SITE VICINITY MAP

BY CRP

CHECK RMD

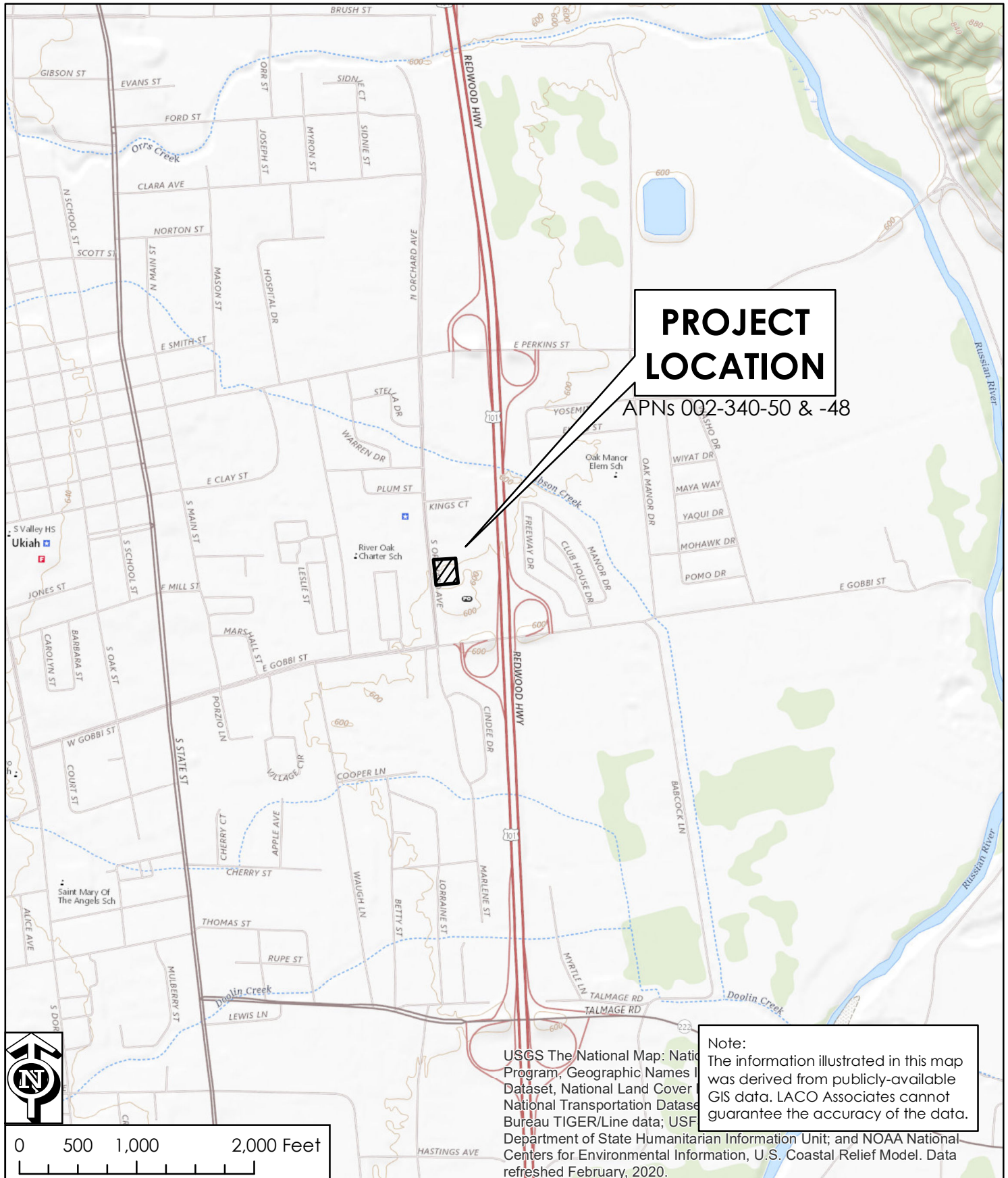
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JOB NO.

9528.00



Date: 4/28/2020 Time: 8:34:15 AM

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April 27, 2020

9528.00

Native American Heritage Commission  
1550 Harbor Boulevard, Suite 100  
West Sacramento, California 95691

Subject: Request for Native American Contact List and Sacred Lands File Search for Two (2) Assessor's Parcel Numbers (APNs 002-340-50 & 002-340-48) in the City of Ukiah, Mendocino County, California. Lying within Lot 24 of the Yokayo Rancho

Dear Native American Contact List Coordinator:

On behalf of the County of Mendocino (County), LACO Associates (LACO) would like to make a Native American Contact List and Sacred Lands File Search Request for the property identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48, located at 631 South Orchard Avenue, within the City of Ukiah, Mendocino County (Site). The County is lead agency under the California Environmental Quality Act (CEQA), is in the process of preparing a CEQA document for the project, and will not be sending you a separate request. A site vicinity map depicting the area of potential effect is enclosed for your reference.

The County is proposing to construct a Crisis Residential Treatment (CRT) Facility on the approximately 0.92-acre Site. The project includes the construction and operation of a one-story, CRT Facility with space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include outdoor decks, a CRT parking area, a bioretention area, and landscaping. Future improvements at the Site may include a building for medical offices and a garden or open space area, to be located in the northern portion of the Site. The Site is currently undeveloped, with no existing structures on-site and is located in an urban built-up environment. The Site is bordered to the west by S. Orchard Avenue, to the south by the United States Postal Service, to the east by a family services agency, and to the north by a commercial business. Nearby uses include residences and commercial businesses to the west, churches to the south and northwest, motels to the south and northeast, government buildings, such as the Department of Motor Vehicles, the Ukiah Unified School District, and the U.S. Social Security Administration to the north, and Highway 101 to the east.

We respectfully request a list of Native American Tribes that we should consult with as we proceed with preparing the CEQA document for the proposed project. Additionally, we respectfully request a Sacred Lands File search to determine whether the Site may potentially contain cultural resources.

Please return the contact list and results of the Sacred Lands File search via e-mail to [dalsker@lacoassociates.com](mailto:dalsker@lacoassociates.com) or by mail to 776 S. State St., Suite 103, Ukiah, California 95482. Please contact me with any questions by e-mail or phone at (707) 443-5054. Thank you for your assistance.

Sincerely,



Rebecca Dalske  
Planner III

Enclosure (Site Vicinity Map)

# LACO

EUREKA • UKIAH • SANTA ROSA

1-800-515-5054 www.lacoassociates.com

PROJECT MENDOCINO COUNTY CRT FACILITY

CLIENT NACHT & LEWIS ARCHITECTS INC.

LOCATION 631 SOUTH ORCHARD AVENUE, UKIAH, CA

SITE VICINITY MAP

BY CRP

CHECK RMD

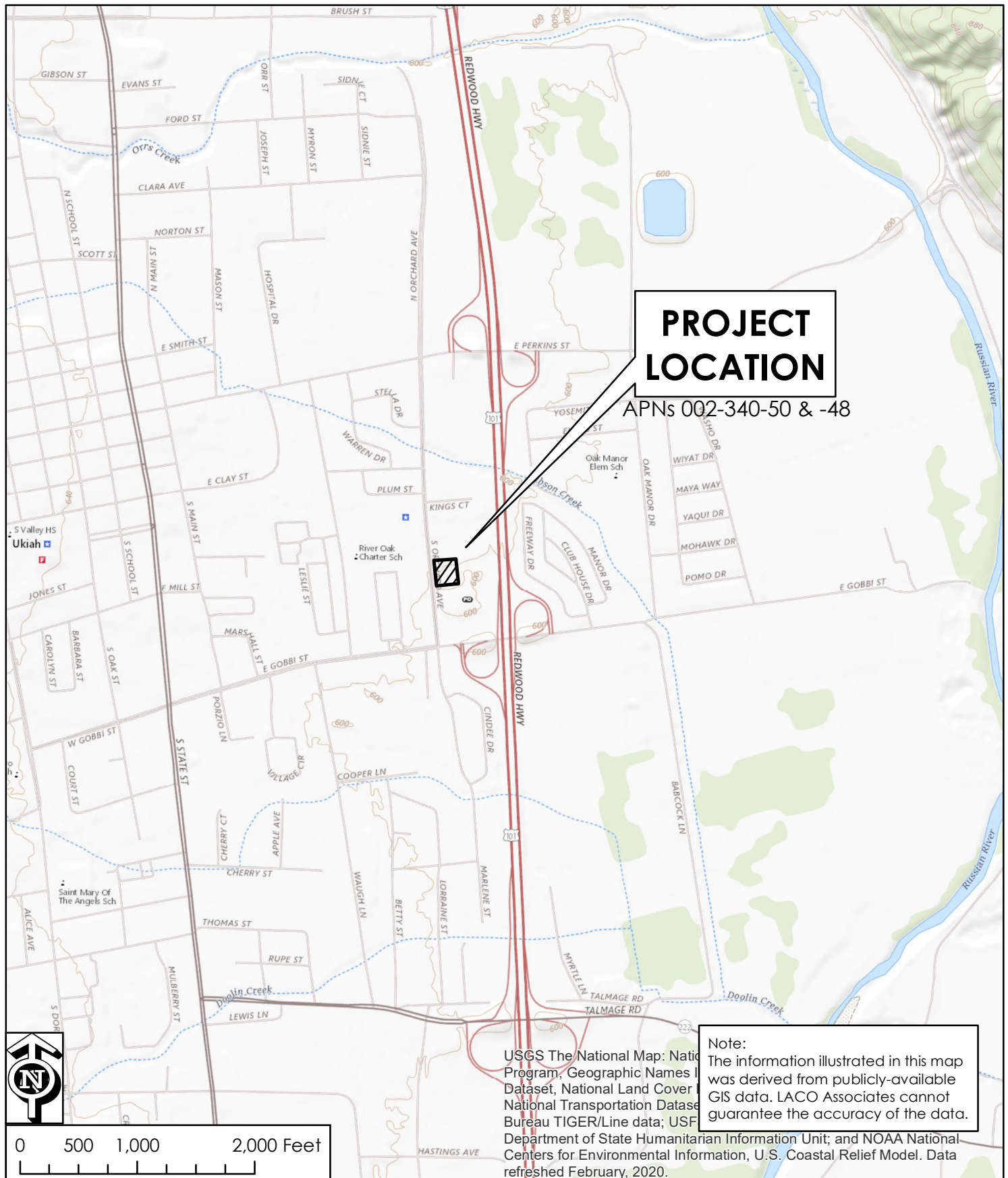
DATE 4/28/2020

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Date: 4/28/2020 Time: 8:34:15 AM

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## Local Government Tribal Consultation List Request

### Native American Heritage Commission

1550 Harbor Blvd, Suite 100  
West Sacramento, CA 95691  
916-373-3710  
916-373-5471 – Fax  
[nahe@nahe.ca.gov](mailto:nahe@nahe.ca.gov)

#### Type of List Requested

☒ **CEQA Tribal Consultation List (AB 52)** – *Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2*

☐ **General Plan (SB 18)** – *Per Government Code § 65352.3.*

#### Local Action Type:

☐ General Plan

☐ General Plan Element

☐ General Plan Amendment

☐ Specific Plan

☐ Specific Plan Amendment

☐ Pre-planning Outreach Activity

#### Required Information

Project Title: Mendocino County Crisis Residential Treatment (CRT) Facility Project

Local Government/Lead Agency: County of Mendocino

Contact Person: LACO Associates: Rebecca Dalske

Street Address: 776 South State St., Suite 103

City: Ukiah

Zip: 95482

Phone: (707) 443-5054

Fax: \_\_\_\_\_

Email: dalsker@lacoassociates.com

#### Specific Area Subject to Proposed Action

County: Mendocino

City/Community: Ukiah

#### Project Description:

The County of Mendocino is proposing to construct a Crisis Residential Treatment (CRT) Facility on the approximately 0.92-acre property identified by Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48, located at 631 South Orchard Avenue, within the City of Ukiah (Site). The project includes the construction and operation of a one-story, CRT Facility with space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include outdoor decks, a CRT parking area, a bioretention area, and landscaping. Future improvements at the Site may include a building for medical offices and a garden or open space area, to be located in the northern portion of the Site. The Site is currently undeveloped, with no existing structures on-site and is located in an urban built-up environment.

#### Additional Request

☒ **Sacred Lands File Search - Required Information:**

USGS Quadrangle Name(s): Ukiah

Lying within Lot 24 of the Yokayo Rancho

Township: \_\_\_\_\_

Range: \_\_\_\_\_

Section(s): \_\_\_\_\_



## NATIVE AMERICAN HERITAGE COMMISSION

May 1, 2020

Rebecca Dalske, Associate Planner  
LACO AssociatesVia Email to: [dalsker@lacoassociates.com](mailto:dalsker@lacoassociates.com)CHAIRPERSON  
**Laura Miranda**  
LuiseñoVICE CHAIRPERSON  
**Reginald Pagaling**  
ChumashSECRETARY  
**Merri Lopez-Keifer**  
LuiseñoPARLIAMENTARIAN  
**Russell Attebery**  
KarukCOMMISSIONER  
**Marshall McKay**  
WintunCOMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
ApacheCOMMISSIONER  
**Julie Tumamait-**  
**Stenslie**  
ChumashCOMMISSIONER  
**[Vacant]**COMMISSIONER  
**[Vacant]**EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

**Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Mendocino County Crisis Residential Treatment (CRT) Facility Project, Ukiah, Mendocino County**

Dear Ms. Dalske:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

*Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.*

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Pinoleville Pomo Nation on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: [Sarah.Fonseca@nahc.ac.gov](mailto:Sarah.Fonseca@nahc.ac.gov).

Sincerely,



Sarah Fonseca  
Cultural Resources Analyst

Attachment



**Native American Heritage Commission  
Tribal Consultation List  
Mendocino County  
5/1/2020**

***Coyote Valley Band of Pomo  
Indians***

Michael Hunter, Chairperson  
P.O. Box 39/ 7901 Hwy 10, North Pomo  
Redwood Valley, CA, 95470  
Phone: (707) 485 - 8723  
Fax: (707) 485-1247

***Guidiville Indian Rancheria***

Merlene Sanchez, Chairperson  
P.O. Box 339 Pomo  
Talmage, CA, 95481  
Phone: (707) 462 - 3682  
Fax: (707) 462-9183  
admin@guidiville.net

***Hopland Band of Pomo Indians***

Sonny Elliott, Chairperson  
3000 Shanel Road Pomo  
Hopland, CA, 95449  
Phone: (707) 472 - 2100  
Fax: (707) 744-1506  
sjelliott@hoplandtribe.com

***Pinoleville Pomo Nation***

Leona Williams, Chairperson  
500 B Pinoleville Drive Pomo  
Ukiah, CA, 95482  
Phone: (707) 463 - 1454  
Fax: (707) 463-6601

***Redwood Valley or Little River  
Band of Pomo Indians***

Debra Ramirez, Chairperson  
3250 Road I Pomo  
Redwood Valley, CA, 95470  
Phone: (707) 485 - 0361  
Fax: (707) 485-5726  
rvrsecretary@comcast.net

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Mendocino County Crisis Residential Treatment (CRT) Facility Project, Mendocino County.

CALIFORNIA  
HISTORICAL  
RESOURCES  
INFORMATION  
SYSTEM



ALAMEDA  
COLUSA  
CONTRA COSTA  
DEL NORTE

HUMBOLDT  
LAKE  
MARIN  
MENDOCINO  
MONTEREY  
NAPA  
SAN BENITO

SAN FRANCISCO  
SAN MATEO  
SANTA CLARA  
SANTA CRUZ  
SOLANO  
SONOMA  
YOLO

**Northwest Information Center**  
Sonoma State University  
150 Professional Center Drive, Suite E  
Rohnert Park, California 94928-3609  
Tel: 707.588.8455  
nwic@sonoma.edu  
<http://www.sonoma.edu/nwic>

May 19, 2020

File No.: 19-1892

Rebecca Dalske, Planner  
LACO Associates  
776 S. State Street, Suite 103  
Ukiah, CA 95482

re: APNs 002-340-50 and 002-340-48 at 631 South Orchard Avenue, Ukiah

Dear Rebecca Dalske,

Records at this office were reviewed to determine if this project could adversely affect cultural resources. Please note that use of the term cultural resources includes both archaeological sites and historical buildings and/or structures. The review for possible historic-era building/structures, however, was limited to references currently in our office and should not be considered comprehensive.

**Project Description:** to construct a Crisis Residential Treatment (CRT) Facility on the approximately 0.92-acre Site. The project includes the construction and operation of a one-story, CRT Facility with space for up to 10 beds for clients, a staff office/intake room, laundry room, kitchen, dining room, living space, and den. Associated improvements include outdoor decks, a CRT parking area, a bioretention area, and landscaping. Future improvements at the Site may include a building for medical offices and a garden or open space area, to be located in the northern portion of the Site. The Site is currently undeveloped, with no existing structures on-site and is located in an urban built-up environment.

**Previous Studies:**

XX This office has no record of any previous cultural resource studies for the proposed project area (see *recommendation below*).

**Archaeological and Native American Resources Recommendations:**

XX The proposed project area has the possibility of containing unrecorded archaeological site(s). Based on an evaluation of the environmental setting and features associated with known sites, Native American resources in this part of Mendocino County have been found near oak woodland, as well as near a variety of plant and animal resources. The proposed project area is located in an alluvial valley located west of Russian River, south of Gibson Creek and north of an unnamed tributary. Given the similarity of one or more of these environmental factors, there is a moderate to high potential for unrecorded Native American resources in the proposed project area. Therefore, a study is recommended prior to commencement of project activities.

We recommend a qualified archaeologist conduct further archival and field study to identify cultural resources. Field study may include, but is not limited to, pedestrian survey, hand auger sampling, shovel

test units, or geoarchaeological analyses as well as other common methods used to identify the presence of archaeological resources. Please refer to the list of consultants who meet the Secretary of Interior's Standards at <http://www.chrisinfo.org>.

XX We recommend you contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at (916)373-3710.

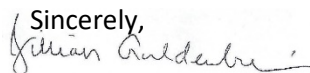
#### **Built Environment Recommendations:**

XX Since the Office of Historic Preservation has determined that any building or structure 45 years or older may be of historical value, if the project area contains such properties, it is recommended that prior to commencement of project activities, a qualified professional familiar with the architecture and history of Mendocino County conduct a formal CEQA evaluation.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

For your reference, a list of qualified professionals in California that meet the Secretary of the Interior's Standards can be found at <http://www.chrisinfo.org>. If archaeological resources are encountered during the project, work in the immediate vicinity of the finds should be halted until a qualified archaeologist has evaluated the situation. If you have any questions please give us a call (707) 588-8455.

Sincerely,  


Jillian Guldenbrein  
Researcher



## APPENDIX C

### **California Emissions Estimator Model (CalEEMod) Report for CRT Facility**

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**Mendocino County Crisis Residential Treatment Facility****Mendocino-Inland County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	3.46	1000sqft	0.08	3,462.00	0
User Defined Commercial	0.00	User Defined Unit	0.59	0.00	0
Other Asphalt Surfaces	5.20	1000sqft	0.12	5,200.00	0
Parking Lot	15.00	Space	0.13	6,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	86
<b>Climate Zone</b>	1			<b>Operational Year</b>	2021
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	641.35	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - Entire Site is approximately 0.92 acres in size. Project includes the development of a one-story, 3,462 sf community care facility with 15 parking spaces (12 standard spaces, 1 accessible space, and 2 electric vehicle charging spaces), associated driveways, a pervious walking trail, and landscaping.

Construction Phase - No demolition to occur under project. Otherwise default assumptions.

Off-road Equipment - No demolition to occur under project.

Off-road Equipment - Default assumptions.

Off-road Equipment - Default assumptions.

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

Off-road Equipment - Default assumptions.  
Off-road Equipment - Default assumptions.

Off-road Equipment - Default assumptions.

Demolition - No demolition to occur under project.

Trips and VMT - No demolition to occur under project. Otherwise default assumptions.

On-road Fugitive Dust - No demolition to occur under project. Otherwise default assumptions.

Grading - Default assumptions.

Architectural Coating - Default assumptions.

Vehicle Trips - Default assumptions.

Vehicle Emission Factors - Default assumptions.

Vehicle Emission Factors - Default assumptions.

Vehicle Emission Factors - Default assumptions.

Road Dust - Default assumptions. Analysis assumes vehicles on unpaved roads would be limited to 10mph.

Woodstoves - N/A

Consumer Products - Default assumptions.

Area Coating - Default assumptions.

Landscape Equipment - Default assumptions.

Energy Use - Default assumptions.

Water And Wastewater - Default assumptions.

Solid Waste - Default assumptions.

Operational Off-Road Equipment - N/A

Stationary Sources - Emergency Generators and Fire Pumps - Analysis assumes a 1 megawatt (1,341 horsepower) emergency generator would be on-site for the proposed community care facility.

Stationary Sources - Emergency Generators and Fire Pumps EF - Default assumptions.

Stationary Sources - Process Boilers - N/A

Stationary Sources - Process Boilers EF - N/A

Stationary Sources - User Defined - N/A

Land Use Change - Analysis assumes approximately 0.92 acres of grassland (vacant lot covered in grasses and weedy species) would be removed under the project.

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

Sequestration - Analysis assumes the equivalent of 6 soft maple trees will be planted.

Construction Off-road Equipment Mitigation - Default assumptions.

Mobile Land Use Mitigation -

Area Mitigation - Default assumptions

Energy Mitigation - Analysis assumes high efficiency lighting and energy efficient appliances will be installed.

Water Mitigation - Analysis assumes low-flow fixtures and water-efficient irrigation systems will be installed on-site.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	PhaseEndDate	9/14/2020	8/31/2020
tblLandUse	LotAcreage	0.00	0.59
tblRoadDust	MeanVehicleSpeed	40	10
tblSequestration	NumberOfNewTrees	0.00	6.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00

## 2.0 Emissions Summary

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## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**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					
2020	0.0360	0.3555	0.3045	4.8000e-004	0.7032	0.0203	0.7235	0.0709	0.0187	0.0896	0.0000	42.6987	42.6987	0.0127	0.0000	43.0161
2021	0.0575	0.1242	0.1208	1.9000e-004	0.3397	6.7300e-003	0.3464	0.0341	6.2200e-003	0.0403	0.0000	17.0099	17.0099	4.8600e-003	0.0000	17.1315
Maximum	0.0575	0.3555	0.3045	4.8000e-004	0.7032	0.0203	0.7235	0.0709	0.0187	0.0896	0.0000	42.6987	42.6987	0.0127	0.0000	43.0161

**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					
2020	0.0360	0.3555	0.3045	4.8000e-004	0.3530	0.0203	0.3733	0.0358	0.0187	0.0545	0.0000	42.6987	42.6987	0.0127	0.0000	43.0161
2021	0.0575	0.1242	0.1208	1.9000e-004	0.1702	6.7300e-003	0.1770	0.0171	6.2200e-003	0.0233	0.0000	17.0099	17.0099	4.8600e-003	0.0000	17.1315
Maximum	0.0575	0.3555	0.3045	4.8000e-004	0.3530	0.0203	0.3733	0.0358	0.0187	0.0545	0.0000	42.6987	42.6987	0.0127	0.0000	43.0161

	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
Percent Reduction	0.00	0.00	0.00	0.00	49.83	0.00	48.57	49.54	0.00	40.02	0.00	0.00	0.00	0.00	0.00	0.00

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	11-30-2020	0.2762	0.2762
2	12-1-2020	2-28-2021	0.2936	0.2936
		Highest	0.2936	0.2936

## 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	0.0187	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.2000e-004	4.2000e-004	0.0000	0.0000	4.5000e-004
Energy	3.6000e-004	3.3200e-003	2.7900e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	15.3598	15.3598	6.0000e-004	1.8000e-004	15.4273
Mobile	0.0477	0.2748	0.4812	1.0800e-003	6.9386	1.4600e-003	6.9401	0.6980	1.3800e-003	0.6993	0.0000	98.8179	98.8179	6.2400e-003	0.0000	98.9740
Stationary	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
Waste						0.0000	0.0000		0.0000	0.0000	7.5858	0.0000	7.5858	0.4483	0.0000	18.7934
Water						0.0000	0.0000		0.0000	0.0000	0.1377	0.7676	0.9054	0.0142	3.4000e-004	1.3616
Total	0.0668	0.2781	0.4842	1.1000e-003	6.9386	1.7100e-003	6.9403	0.6980	1.6300e-003	0.6996	7.7235	114.9458	122.6693	0.4693	5.2000e-004	134.5567

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**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	0.0177	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.2000e-004	4.2000e-004	0.0000	0.0000	4.5000e-004
Energy	3.6000e-004	3.3200e-003	2.7900e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	15.2314	15.2314	5.9000e-004	1.7000e-004	15.2983
Mobile	0.0477	0.2748	0.4812	1.0800e-003	6.9386	1.4600e-003	6.9401	0.6980	1.3800e-003	0.6993	0.0000	98.8179	98.8179	6.2400e-003	0.0000	98.9740
Stationary	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
Waste						0.0000	0.0000		0.0000	0.0000	7.5858	0.0000	7.5858	0.4483	0.0000	18.7934
Water						0.0000	0.0000		0.0000	0.0000	0.1102	0.6258	0.7360	0.0114	2.7000e-004	1.1010
<b>Total</b>	<b>0.0658</b>	<b>0.2781</b>	<b>0.4842</b>	<b>1.1000e-003</b>	<b>6.9386</b>	<b>1.7100e-003</b>	<b>6.9403</b>	<b>0.6980</b>	<b>1.6300e-003</b>	<b>0.6996</b>	<b>7.6960</b>	<b>114.6755</b>	<b>122.3715</b>	<b>0.4665</b>	<b>4.4000e-004</b>	<b>134.1672</b>

	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
<b>Percent Reduction</b>	<b>1.51</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.36</b>	<b>0.24</b>	<b>0.24</b>	<b>0.61</b>	<b>15.38</b>	<b>0.29</b>

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**2.3 Vegetation****Vegetation**

	CO2e
Category	MT
New Trees	5.1960
Vegetation Land Change	-3.9652
<b>Total</b>	<b>1.2308</b>

**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	9/1/2020	8/31/2020	5	0	
2	Site Preparation	Site Preparation	9/15/2020	9/15/2020	5	1	
3	Grading	Grading	9/16/2020	9/17/2020	5	2	
4	Building Construction	Building Construction	9/18/2020	2/4/2021	5	100	
5	Paving	Paving	2/5/2021	2/11/2021	5	5	
6	Architectural Coating	Architectural Coating	2/12/2021	2/18/2021	5	5	

**Acres of Grading (Site Preparation Phase): 0.5****Acres of Grading (Grading Phase): 0****Acres of Paving: 0.25**



## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 5,193; Non-Residential Outdoor: 1,731; Striped Parking Area: 672**  
**(Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**



## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

### 3.2 Demolition - 2020

### Unmitigated Construction Off-Site

[illegible]

### Mitigated Construction On-Site

[illegible]

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**3.2 Demolition - 2020****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	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
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**3.3 Site Preparation - 2020****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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-004	4.2200e-003	2.0500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314
<b>Total</b>	<b>3.4000e-004</b>	<b>4.2200e-003</b>	<b>2.0500e-003</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>1.7000e-004</b>	<b>4.4000e-004</b>	<b>3.0000e-005</b>	<b>1.5000e-004</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>0.4280</b>	<b>0.4280</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.4314</b>

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**3.3 Site Preparation - 2020****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	2.0000e-005	2.0000e-005	1.5000e-004	0.0000	6.0900e-003	0.0000	6.0900e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0177	0.0177	0.0000	0.0000	0.0177
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>6.0900e-003</b>	<b>0.0000</b>	<b>6.0900e-003</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>0.0177</b>	<b>0.0177</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0177</b>

**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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-004	4.2200e-003	2.0500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314
<b>Total</b>	<b>3.4000e-004</b>	<b>4.2200e-003</b>	<b>2.0500e-003</b>	<b>0.0000</b>	<b>2.7000e-004</b>	<b>1.7000e-004</b>	<b>4.4000e-004</b>	<b>3.0000e-005</b>	<b>1.5000e-004</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>0.4280</b>	<b>0.4280</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.4314</b>

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**3.3 Site Preparation - 2020****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	2.0000e-005	2.0000e-005	1.5000e-004	0.0000	3.0500e-003	0.0000	3.0500e-003	3.1000e-004	0.0000	3.1000e-004	0.0000	0.0177	0.0177	0.0000	0.0000	0.0177
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>3.0500e-003</b>	<b>0.0000</b>	<b>3.0500e-003</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>0.0177</b>	<b>0.0177</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0177</b>

**3.4 Grading - 2020****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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7000e-004	7.8700e-003	7.6200e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	1.0408	1.0408	2.0000e-004	0.0000	1.0457
<b>Total</b>	<b>8.7000e-004</b>	<b>7.8700e-003</b>	<b>7.6200e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>4.7000e-004</b>	<b>1.2200e-003</b>	<b>4.1000e-004</b>	<b>4.5000e-004</b>	<b>8.6000e-004</b>	<b>0.0000</b>	<b>1.0408</b>	<b>1.0408</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>1.0457</b>

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**3.4 Grading - 2020****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	8.0000e-005	7.0000e-005	6.2000e-004	0.0000	0.0244	0.0000	0.0244	2.4400e-003	0.0000	2.4400e-003	0.0000	0.0708	0.0708	1.0000e-005	0.0000	0.0710
<b>Total</b>	<b>8.0000e-005</b>	<b>7.0000e-005</b>	<b>6.2000e-004</b>	<b>0.0000</b>	<b>0.0244</b>	<b>0.0000</b>	<b>0.0244</b>	<b>2.4400e-003</b>	<b>0.0000</b>	<b>2.4400e-003</b>	<b>0.0000</b>	<b>0.0708</b>	<b>0.0708</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0710</b>

**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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7000e-004	7.8700e-003	7.6200e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	1.0408	1.0408	2.0000e-004	0.0000	1.0457
<b>Total</b>	<b>8.7000e-004</b>	<b>7.8700e-003</b>	<b>7.6200e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>4.7000e-004</b>	<b>1.2200e-003</b>	<b>4.1000e-004</b>	<b>4.5000e-004</b>	<b>8.6000e-004</b>	<b>0.0000</b>	<b>1.0408</b>	<b>1.0408</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>1.0457</b>

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**3.4 Grading - 2020****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	8.0000e-005	7.0000e-005	6.2000e-004	0.0000	0.0122	0.0000	0.0122	1.2300e-003	0.0000	1.2300e-003	0.0000	0.0708	0.0708	1.0000e-005	0.0000	0.0710
<b>Total</b>	<b>8.0000e-005</b>	<b>7.0000e-005</b>	<b>6.2000e-004</b>	<b>0.0000</b>	<b>0.0122</b>	<b>0.0000</b>	<b>0.0122</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>1.2300e-003</b>	<b>0.0000</b>	<b>0.0708</b>	<b>0.0708</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0710</b>

**3.5 Building Construction - 2020****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	0.0323	0.3320	0.2770	4.3000e-004		0.0196	0.0196		0.0180	0.0180	0.0000	37.5227	37.5227	0.0121	0.0000	37.8261
<b>Total</b>	<b>0.0323</b>	<b>0.3320</b>	<b>0.2770</b>	<b>4.3000e-004</b>		<b>0.0196</b>	<b>0.0196</b>		<b>0.0180</b>	<b>0.0180</b>	<b>0.0000</b>	<b>37.5227</b>	<b>37.5227</b>	<b>0.0121</b>	<b>0.0000</b>	<b>37.8261</b>



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**3.5 Building Construction - 2020****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	4.6000e-004	9.7200e-003	3.1600e-003	2.0000e-005	0.1236	7.0000e-005	0.1237	0.0124	6.0000e-005	0.0125	0.0000	2.0249	2.0249	1.0000e-004	0.0000	2.0274
Worker	1.8800e-003	1.6300e-003	0.0139	2.0000e-005	0.5482	2.0000e-005	0.5482	0.0550	2.0000e-005	0.0550	0.0000	1.5939	1.5939	1.2000e-004	0.0000	1.5968
<b>Total</b>	<b>2.3400e-003</b>	<b>0.0114</b>	<b>0.0170</b>	<b>4.0000e-005</b>	<b>0.6718</b>	<b>9.0000e-005</b>	<b>0.6718</b>	<b>0.0674</b>	<b>8.0000e-005</b>	<b>0.0674</b>	<b>0.0000</b>	<b>3.6188</b>	<b>3.6188</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>3.6243</b>

**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	0.0323	0.3320	0.2770	4.3000e-004		0.0196	0.0196		0.0180	0.0180	0.0000	37.5226	37.5226	0.0121	0.0000	37.8260
<b>Total</b>	<b>0.0323</b>	<b>0.3320</b>	<b>0.2770</b>	<b>4.3000e-004</b>		<b>0.0196</b>	<b>0.0196</b>		<b>0.0180</b>	<b>0.0180</b>	<b>0.0000</b>	<b>37.5226</b>	<b>37.5226</b>	<b>0.0121</b>	<b>0.0000</b>	<b>37.8260</b>

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**3.5 Building Construction - 2020****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	4.6000e-004	9.7200e-003	3.1600e-003	2.0000e-005	0.0620	7.0000e-005	0.0621	6.2500e-003	6.0000e-005	6.3200e-003	0.0000	2.0249	2.0249	1.0000e-004	0.0000	2.0274
Worker	1.8800e-003	1.6300e-003	0.0139	2.0000e-005	0.2747	2.0000e-005	0.2747	0.0276	2.0000e-005	0.0276	0.0000	1.5939	1.5939	1.2000e-004	0.0000	1.5968
<b>Total</b>	<b>2.3400e-003</b>	<b>0.0114</b>	<b>0.0170</b>	<b>4.0000e-005</b>	<b>0.3367</b>	<b>9.0000e-005</b>	<b>0.3368</b>	<b>0.0339</b>	<b>8.0000e-005</b>	<b>0.0339</b>	<b>0.0000</b>	<b>3.6188</b>	<b>3.6188</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>3.6243</b>

**3.5 Building Construction - 2021****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	9.6900e-003	0.0998	0.0908	1.4000e-004		5.5900e-003	5.5900e-003		5.1500e-003	5.1500e-003	0.0000	12.5103	12.5103	4.0500e-003	0.0000	12.6114
<b>Total</b>	<b>9.6900e-003</b>	<b>0.0998</b>	<b>0.0908</b>	<b>1.4000e-004</b>		<b>5.5900e-003</b>	<b>5.5900e-003</b>		<b>5.1500e-003</b>	<b>5.1500e-003</b>	<b>0.0000</b>	<b>12.5103</b>	<b>12.5103</b>	<b>4.0500e-003</b>	<b>0.0000</b>	<b>12.6114</b>

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**3.5 Building Construction - 2021****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	1.3000e-004	2.9700e-003	9.4000e-004	1.0000e-005	0.0412	1.0000e-005	0.0412	4.1400e-003	1.0000e-005	4.1500e-003	0.0000	0.6703	0.6703	3.0000e-005	0.0000	0.6710
Worker	5.9000e-004	4.9000e-004	4.1900e-003	1.0000e-005	0.1827	1.0000e-005	0.1827	0.0183	1.0000e-005	0.0183	0.0000	0.5161	0.5161	4.0000e-005	0.0000	0.5170
<b>Total</b>	<b>7.2000e-004</b>	<b>3.4600e-003</b>	<b>5.1300e-003</b>	<b>2.0000e-005</b>	<b>0.2239</b>	<b>2.0000e-005</b>	<b>0.2239</b>	<b>0.0225</b>	<b>2.0000e-005</b>	<b>0.0225</b>	<b>0.0000</b>	<b>1.1864</b>	<b>1.1864</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>1.1880</b>

**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	9.6900e-003	0.0998	0.0908	1.4000e-004		5.5900e-003	5.5900e-003		5.1500e-003	5.1500e-003	0.0000	12.5102	12.5102	4.0500e-003	0.0000	12.6114
<b>Total</b>	<b>9.6900e-003</b>	<b>0.0998</b>	<b>0.0908</b>	<b>1.4000e-004</b>		<b>5.5900e-003</b>	<b>5.5900e-003</b>		<b>5.1500e-003</b>	<b>5.1500e-003</b>	<b>0.0000</b>	<b>12.5102</b>	<b>12.5102</b>	<b>4.0500e-003</b>	<b>0.0000</b>	<b>12.6114</b>

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**3.5 Building Construction - 2021****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	1.3000e-004	2.9700e-003	9.4000e-004	1.0000e-005	0.0207	1.0000e-005	0.0207	2.0800e-003	1.0000e-005	2.1000e-003	0.0000	0.6703	0.6703	3.0000e-005	0.0000	0.6710
Worker	5.9000e-004	4.9000e-004	4.1900e-003	1.0000e-005	0.0916	1.0000e-005	0.0916	9.2000e-003	1.0000e-005	9.2100e-003	0.0000	0.5161	0.5161	4.0000e-005	0.0000	0.5170
<b>Total</b>	<b>7.2000e-004</b>	<b>3.4600e-003</b>	<b>5.1300e-003</b>	<b>2.0000e-005</b>	<b>0.1122</b>	<b>2.0000e-005</b>	<b>0.1123</b>	<b>0.0113</b>	<b>2.0000e-005</b>	<b>0.0113</b>	<b>0.0000</b>	<b>1.1864</b>	<b>1.1864</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>1.1880</b>

**3.6 Paving - 2021****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	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	3.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.1300e-003</b>	<b>0.0168</b>	<b>0.0177</b>	<b>3.0000e-005</b>		<b>8.8000e-004</b>	<b>8.8000e-004</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.3481</b>	<b>2.3481</b>	<b>6.8000e-004</b>	<b>0.0000</b>	<b>2.3652</b>

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**3.6 Paving - 2021****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	3.6000e-004	3.0000e-004	2.5100e-003	0.0000	0.1096	0.0000	0.1096	0.0110	0.0000	0.0110	0.0000	0.3097	0.3097	2.0000e-005	0.0000	0.3102
<b>Total</b>	<b>3.6000e-004</b>	<b>3.0000e-004</b>	<b>2.5100e-003</b>	<b>0.0000</b>	<b>0.1096</b>	<b>0.0000</b>	<b>0.1096</b>	<b>0.0110</b>	<b>0.0000</b>	<b>0.0110</b>	<b>0.0000</b>	<b>0.3097</b>	<b>0.3097</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3102</b>

**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	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	3.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.1300e-003</b>	<b>0.0168</b>	<b>0.0177</b>	<b>3.0000e-005</b>		<b>8.8000e-004</b>	<b>8.8000e-004</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.3481</b>	<b>2.3481</b>	<b>6.8000e-004</b>	<b>0.0000</b>	<b>2.3652</b>

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**3.6 Paving - 2021****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	3.6000e-004	3.0000e-004	2.5100e-003	0.0000	0.0549	0.0000	0.0550	5.5200e-003	0.0000	5.5200e-003	0.0000	0.3097	0.3097	2.0000e-005	0.0000	0.3102
<b>Total</b>	<b>3.6000e-004</b>	<b>3.0000e-004</b>	<b>2.5100e-003</b>	<b>0.0000</b>	<b>0.0549</b>	<b>0.0000</b>	<b>0.0550</b>	<b>5.5200e-003</b>	<b>0.0000</b>	<b>5.5200e-003</b>	<b>0.0000</b>	<b>0.3097</b>	<b>0.3097</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3102</b>

**3.7 Architectural Coating - 2021****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	0.0440					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
<b>Total</b>	<b>0.0446</b>	<b>3.8200e-003</b>	<b>4.5400e-003</b>	<b>1.0000e-005</b>		<b>2.4000e-004</b>	<b>2.4000e-004</b>		<b>2.4000e-004</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>0.6383</b>	<b>0.6383</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.6394</b>

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**3.7 Architectural Coating - 2021****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	2.0000e-005	2.0000e-005	1.4000e-004	0.0000	6.0900e-003	0.0000	6.0900e-003	6.1000e-004	0.0000	6.1000e-004	0.0000	0.0172	0.0172	0.0000	0.0000	0.0172
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>6.0900e-003</b>	<b>0.0000</b>	<b>6.0900e-003</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>0.0172</b>	<b>0.0172</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0172</b>

**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	0.0440					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
<b>Total</b>	<b>0.0446</b>	<b>3.8200e-003</b>	<b>4.5400e-003</b>	<b>1.0000e-005</b>		<b>2.4000e-004</b>	<b>2.4000e-004</b>		<b>2.4000e-004</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>0.6383</b>	<b>0.6383</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.6394</b>

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**3.7 Architectural Coating - 2021****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	2.0000e-005	2.0000e-005	1.4000e-004	0.0000	3.0500e-003	0.0000	3.0500e-003	3.1000e-004	0.0000	3.1000e-004	0.0000	0.0172	0.0172	0.0000	0.0000	0.0172
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>3.0500e-003</b>	<b>0.0000</b>	<b>3.0500e-003</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>0.0172</b>	<b>0.0172</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0172</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**



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	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	0.0477	0.2748	0.4812	1.0800e-003	6.9386	1.4600e-003	6.9401	0.6980	1.3800e-003	0.6993	0.0000	98.8179	98.8179	6.2400e-003	0.0000	98.9740
Unmitigated	0.0477	0.2748	0.4812	1.0800e-003	6.9386	1.4600e-003	6.9401	0.6980	1.3800e-003	0.6993	0.0000	98.8179	98.8179	6.2400e-003	0.0000	98.9740

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	125.08	31.02	5.37	185,043	185,043
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
Total	125.08	31.02	5.37	185,043	185,043

## 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
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
User Defined Commercial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

## 4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Medical Office Building	0.482880	0.047259	0.194207	0.134290	0.040793	0.006520	0.016829	0.066591	0.001581	0.001384	0.005439	0.001112	0.001115
Other Asphalt Surfaces	0.482880	0.047259	0.194207	0.134290	0.040793	0.006520	0.016829	0.066591	0.001581	0.001384	0.005439	0.001112	0.001115
Parking Lot	0.482880	0.047259	0.194207	0.134290	0.040793	0.006520	0.016829	0.066591	0.001581	0.001384	0.005439	0.001112	0.001115
User Defined Commercial	0.482880	0.047259	0.194207	0.134290	0.040793	0.006520	0.016829	0.066591	0.001581	0.001384	0.005439	0.001112	0.001115

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	11.6214	11.6214	5.3000e-004	1.1000e-004	11.6670
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	11.7498	11.7498	5.3000e-004	1.1000e-004	11.7959
NaturalGas Mitigated	3.6000e-004	3.3200e-003	2.7900e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.6099	3.6099	7.0000e-005	7.0000e-005	3.6314
NaturalGas Unmitigated	3.6000e-004	3.3200e-003	2.7900e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.6099	3.6099	7.0000e-005	7.0000e-005	3.6314

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**5.2 Energy by Land Use - Natural Gas****Unmitigated**

	Natural Gas 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					
Medical Office Building	67647.5	3.6000e-004	3.3200e-003	2.7900e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.6099	3.6099	7.0000e-005	7.0000e-005	3.6314
Other Asphalt Surfaces	0	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
Parking Lot	0	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
User Defined Commercial	0	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
<b>Total</b>		<b>3.6000e-004</b>	<b>3.3200e-003</b>	<b>2.7900e-003</b>	<b>2.0000e-005</b>		<b>2.5000e-004</b>	<b>2.5000e-004</b>		<b>2.5000e-004</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>3.6099</b>	<b>3.6099</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>3.6314</b>

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## 5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas 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					
Medical Office Building	67647.5	3.6000e-004	3.3200e-003	2.7900e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.6099	3.6099	7.0000e-005	7.0000e-005	3.6314
Other Asphalt Surfaces	0	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
Parking Lot	0	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
User Defined Commercial	0	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
<b>Total</b>		<b>3.6000e-004</b>	<b>3.3200e-003</b>	<b>2.7900e-003</b>	<b>2.0000e-005</b>		<b>2.5000e-004</b>	<b>2.5000e-004</b>		<b>2.5000e-004</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>3.6099</b>	<b>3.6099</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>3.6314</b>

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**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	38289.7	11.1389	5.0000e-004	1.0000e-004	11.1826
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	2100	0.6109	3.0000e-005	1.0000e-005	0.6133
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>11.7498</b>	<b>5.3000e-004</b>	<b>1.1000e-004</b>	<b>11.7959</b>

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**5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	37848.3	11.0105	5.0000e-004	1.0000e-004	11.0537
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	2100	0.6109	3.0000e-005	1.0000e-005	0.6133
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>11.6214</b>	<b>5.3000e-004</b>	<b>1.1000e-004</b>	<b>11.6670</b>

**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

Use Low VOC Cleaning Supplies

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	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	0.0177	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.2000e-004	4.2000e-004	0.0000	0.0000	4.5000e-004
Unmitigated	0.0187	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.2000e-004	4.2000e-004	0.0000	0.0000	4.5000e-004

## 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	4.4000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0142					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.2000e-004	4.2000e-004	0.0000	0.0000	4.5000e-004
<b>Total</b>	<b>0.0187</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.2000e-004</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.5000e-004</b>

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**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	4.4000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0132					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.2000e-004	4.2000e-004	0.0000	0.0000	4.5000e-004
<b>Total</b>	<b>0.0177</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.2000e-004</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>4.5000e-004</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Use Water Efficient Landscaping



## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.7360	0.0114	2.7000e-004	1.1010
Unmitigated	0.9054	0.0142	3.4000e-004	1.3616

## 7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	0.434163 / 0.0826976	0.9054	0.0142	3.4000e-004	1.3616
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.9054</b>	<b>0.0142</b>	<b>3.4000e-004</b>	<b>1.3616</b>

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	0.34733 / 0.0776531	0.7360	0.0114	2.7000e-004	1.1010
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.7360</b>	<b>0.0114</b>	<b>2.7000e-004</b>	<b>1.1010</b>

**8.0 Waste Detail**

---

**8.1 Mitigation Measures Waste**

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.5858	0.4483	0.0000	18.7934
Unmitigated	7.5858	0.4483	0.0000	18.7934

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	37.37	7.5858	0.4483	0.0000	18.7934
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>7.5858</b>	<b>0.4483</b>	<b>0.0000</b>	<b>18.7934</b>

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	37.37	7.5858	0.4483	0.0000	18.7934
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>7.5858</b>	<b>0.4483</b>	<b>0.0000</b>	<b>18.7934</b>

**9.0 Operational Offroad**

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

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	0	1341	0.73	Diesel

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

**User Defined Equipment**

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

Equipment Type	Number
----------------	--------

**10.1 Stationary Sources****Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750 - 9999 HP)	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
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**11.0 Vegetation**

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	1.2308	0.0000	0.0000	1.2308

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Annual

**11.1 Vegetation Land Change****Vegetation Type**

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	0.92 / 0	-3.9652	0.0000	0.0000	-3.9652
<b>Total</b>		<b>-3.9652</b>	<b>0.0000</b>	<b>0.0000</b>	<b>-3.9652</b>

**11.2 Net New Trees****Species Class**

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Soft Maple	6	5.1960	0.0000	0.0000	5.1960
<b>Total</b>		<b>5.1960</b>	<b>0.0000</b>	<b>0.0000</b>	<b>5.1960</b>

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Summary Report

**Mendocino County Crisis Residential Treatment Facility****Mendocino-Inland, Summary Report****1.0 Project Characteristics**

---

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	3.46	1000sqft	0.08	3,462.00	0
User Defined Commercial	0.00	User Defined Unit	0.59	0.00	0
Other Asphalt Surfaces	5.20	1000sqft	0.12	5,200.00	0
Parking Lot	15.00	Space	0.13	6,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	86
<b>Climate Zone</b>	1			<b>Operational Year</b>	2021
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	641.35	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments**

Only CalEEMod defaults were used.

Project Characteristics -

**2.0 Peak Daily Emissions**

---

## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Summary Report

**Peak Daily Construction Emissions****Peak Daily Construction Emissions**

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Year	Phase	lb/day											
2020	Demolition	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S
2020	Site Preparation	0.7316 W	8.4714 W	4.4154 W	0.0101 S	16.7941 S	1.9613 S	0.7316 W	8.4714 W	4.4154 W	0.0101 S	8.8445 S	1.1664 S
2020	Grading	0.9600 W	7.9543 W	8.2651 W	0.0128 S	33.0769 S	4.0505 S	0.9600 W	7.9543 W	8.2651 W	0.0128 S	17.1777 S	2.4606 S
2020	Building Construction	0.9300 W	9.1622 W	7.8637 W	0.0125 S	23.9472 W	2.8292 W	0.9300 W	9.1622 W	7.8637 W	0.0125 S	12.2584 W	1.6603 W
2021	Building Construction	0.8387 W	8.2685 W	7.6934 W	0.0124 S	23.8716 W	2.7596 W	0.8387 W	8.2685 W	7.6934 W	0.0124 S	12.1828 W	1.5907 W
2021	Paving	1.0109 W	6.8509 W	8.1356 W	0.0127 S	57.6958 S	6.0724 S	1.0109 W	6.8509 W	8.1356 W	0.0127 S	29.0772 S	3.2106 S
2021	Architectural Coating	17.8314 W	1.5342 W	1.8757 W	3.0500e-003 S	3.2798 S	0.4132 S	17.8314 W	1.5342 W	1.8757 W	3.0500e-003 S	1.6899 S	0.2542 S
	Peak Daily Total	17.8314 W	9.1622 W	8.2651 W	0.0128 S	57.6958 S	6.0724 S	17.8314 W	9.1622 W	8.2651 W	0.0128 S	29.0772 S	3.2106 S
	Air District Threshold												
	Exceed Significance?												

**Peak Daily Operational Emissions****Peak Daily Operational Emissions**



## Mendocino County Crisis Residential Treatment Facility - Mendocino-Inland County, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
	Operational Activity	lb/day											
On-Site	Stationary	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S
On-Site	Area	0.1024 S	2.0000e-005 S	2.4300e-003 S	0.0000 S	1.0000e-005 S	1.0000e-005 S	0.0969 S	2.0000e-005 S	2.4300e-003 S	0.0000 S	1.0000e-005 S	1.0000e-005 S
On-Site	Energy	2.0000e-003 S	0.0182 S	0.0153 S	1.1000e-004 S	1.3800e-003 S	1.3800e-003 S	2.0000e-003 S	0.0182 S	0.0153 S	1.1000e-004 S	1.3800e-003 S	1.3800e-003 S
Off-Site	Mobile	0.3506 S	2.0447 W	3.7408 W	7.9700e-003 S	50.4419 W	5.0862 W	0.3506 S	2.0447 W	3.7408 W	7.9700e-003 S	50.4419 W	5.0862 W
	Peak Daily Total	0.4550 S	2.0629 W	3.7585 W	8.0800e-003 S	50.4433 W	5.0876 W	0.4495 S	2.0629 W	3.7585 W	8.0800e-003 S	50.4433 W	5.0876 W
	Air District Threshold												
	Exceed Significance?												

## 3.0 Annual GHG Emissions

## Annual GHG

## Annual GHG

		Unmitigated				Mitigated			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
GHG Activity	Year	MT/yr							
Construction	2020	42.6987	0.0127	0.0000	43.0161	42.6987	0.0127	0.0000	43.0161
Construction	2021	17.0099	4.8600e-003	0.0000	17.1315	17.0099	4.8600e-003	0.0000	17.1315
Operational	2021	122.6122	0.4693	5.2000e-004	134.4995	122.3144	0.4665	4.4000e-004	134.1101
	Total								
	Significance Threshold								
	Exceed Significance?								

## APPENDIX D

### **Geotechnical Exploration and GeoHazard Report**



June 3, 2020

9528.00

Nacht & Lewis  
600 Q Street, Suite 100  
Sacramento, California, 95811

Attention: Eric Fadness

Sent via email: EFadness@nachtlewis.com

Subject: Geotechnical Exploration and GeoHazard Report  
Mendocino County Crisis Residential Treatment Facility  
631 South Orchard Avenue, Ukiah, California

Dear Mr. Fadness:

LACO Associates (LACO) is pleased to submit this report presenting the results of our Geotechnical Exploration and GeoHazard Report for the proposed crisis residential treatment facility.

## EXECUTIVE SUMMARY

LACO Associates has completed a geotechnical exploration for the proposed crisis residential treatment facility located at 631 South Orchard Avenue in Ukiah, California. This Executive Summary is provided as a brief overview of our geotechnical engineering evaluation for the project and is not intended to replace more detailed information contained elsewhere in this report.

A total of four borings (B1 through B4) were drilled for this exploration: 1 boring (B2) to a depth of 52 feet below ground surface (bgs) and 3 borings to between 15 and 15.5 feet bgs. Borings indicate the Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. The results of our exploration indicate that the project is feasible from a geotechnical standpoint. New buildings may be supported on shallow footings bearing on a minimum 12-inch engineered pad of select fill constructed following the Site Preparation and Grading section (Section 6.1).

To check for conformance of final design with the recommendations contained in this report, LACO should perform the following:

- Review the completed project plans and specifications;
- Observe and test (as necessary) the earthwork and foundation phases of construction to confirm that subsurface conditions exposed during construction are consistent with our subsurface exploration and allow design changes in the event that subsurface conditions differ from those anticipated; and,
- Observe subdrain installations.

21 W. Fourth Street  
Eureka, CA 95501

707 443-5054 – Fax 707 443-0553

776 S. State Street, Suite 103  
Ukiah, CA 95482

707 462-0222 – Fax 707 462-0223

3490 Regional Parkway, Suite A  
Santa Rosa, CA 95403

707 525-1222 – Fax 707 545-7821

932 B W. Eighth Avenue  
Chico, CA 95926

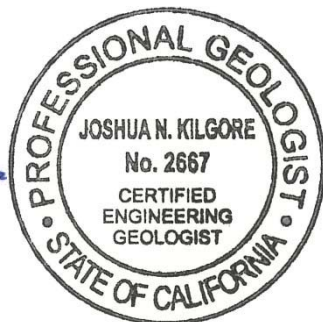
530 801-6170 – Fax 707 462-0223

If you have any questions, please contact us at (707) 525-1222.

Sincerely,  
LACO Associates



Joshua N. Kilgore, C.E.G.  
Senior Engineering Geologist





J. Erich Rauber, P.E., G.E.  
Senior Geotechnical Engineer



CRG/JNK/JER:mmm

# Geotechnical Exploration and GeoHazard Report for Mendocino County Crisis Residential Treatment Facility

631 South Orchard Avenue, Ukiah, California

June 3, 2020

Prepared for:  
Nacht & Lewis

Prepared By:  
LACO Associates, Inc  
776 South State Street, Suite 103  
Ukiah, California 95482  
707-462-0222

Project No. 9528.00

## LACO

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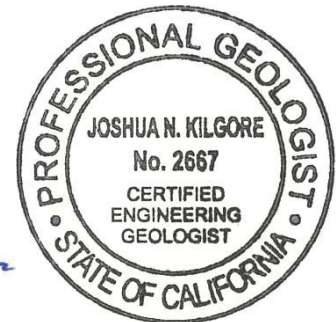
800 515-5054

[www.lacoassociates.com](http://www.lacoassociates.com)

Eureka | Ukiah | Santa Rosa | Chico



Joshua N. Kilgore, C.E.G.  
C.E.G. 2667, EXP 08/31/2020  
Senior Engineering Geologist



J. Erich Rauber, P.E., G.E.  
G.E. 2887, Exp 09/30/2021  
Senior Geotechnical Engineer



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Boring Logs

## **A p p e n d i x   2**

Laboratory Test Results

## **A p p e n d i x   3**

Liquefaction Analysis



## 1.0 INTRODUCTION

This report presents the results of a geotechnical exploration performed by LACO Associates (LACO) for a planned new crisis residential treatment facility (CRT) at 631 South Orchard Street in Ukiah, California [Assessor's Parcel Numbers (APNs) 002-340-50 and 002-340-48; the Site]. As shown on the Vicinity Map (Figure 1), the Site is located in the Ukiah Valley on the west side of U.S. Highway 101, approximately 750 feet northwest of the East Gobbi Street exit (latitude: 39.1463, longitude: -123.1983). The planned developments will be situated on an undeveloped parcel adjacent to South Orchard Street (APN 002-340-44), shown on the Site Plan (Figure 2).

### 1.1 Project Description

Based on a pre-design site plan provided by Nacht & Lewis, dated March 11, 2020, and Exhibit A of the service agreement between the County of Mendocino and Nacht & Lewis, dated November 14, 2019, it is our understanding that the project includes the construction and operation of a 3,090-square foot, one-story, Crisis Residential Treatment (CRT) Facility, outdoor decks, a CRT parking area, Low Impact Development (LID) features for stormwater capture and treatment, landscaping, and a perimeter galvanized steel fence. We understand that a Crisis Stabilization Unit (CSU) is planned north of the CRT. Construction details were not available at the time of this report; when construction details are available, the CSU will be addressed in a separate report. We anticipate that the proposed structure will be of wood or metal frame construction with concrete slab-on-grade or joist supported raised wood floors and that anticipated loads will be on the order of one kip per linear foot. We anticipate that Site grading will be minor and limited to those necessary to improve the near-surface soils with cuts and fills of less than three feet.

### 1.2 Scope of Services

As described in our Services Agreement dated January 15, 2020, our scope of services was limited to reviewing available documents, performing a site reconnaissance of one (1) development location and mark proposed exploration locations, notify utility companies via Underground Service Alert (USA) of proposed exploration, obtaining a drilling permit from the Mendocino County Environmental Health Department (MCEHD), exploring surface and subsurface conditions, obtaining soil samples, and performing laboratory tests to develop recommendations regarding:

- California Geological Survey (CGS) Note 48-compliant geohazards evaluation;
- Anticipated excavation characteristics;
- Site preparation and earthwork recommendations, including Site and subgrade preparation, subdrains, onsite fill material suitability, import fill recommendations, placement, and compaction requirements;
- Utility trench excavation and backfill recommendations;
- Foundation type(s) for the planned buildings, and design criteria for the recommended foundation type(s), consistent with the 2019 California Building Code (CBC), including allowable bearing capacity and minimum embedment depths;
- Estimates of foundation settlement;
- Seismic design criteria consistent with the 2019 CBC Chapter 16;
- Liquefaction-induced total and differential settlement and lateral spreading. As described in the CBC guidelines, and in accordance with CGS Special Publication 117, this analysis will be based on cyclic stress ratios calculated from the maximum considered earthquake ground motions for the Site,

and cyclic resistance ratios based on soil properties and groundwater conditions encountered in the upper 50 feet;

- Seismic design parameters based on Site-specific ground motion analysis for Item 15 CGS 48 Check List following procedures outlined in 2019 CBC and American Society of Civil Engineers (ASCE) 7-16;
- Pavement design recommendations;
- Exterior flatwork recommendations;
- Soil corrosivity; and
- Construction considerations.

## 2.0 EXPLORATION

Our exploration consisted of reviewing published geotechnical reports and maps related to the surface topography and geology of the Site vicinity and performing a subsurface exploration. Documents reviewed are presented in the References section (Section 10.0) of this report.

On March 3, 2020, LACO explored subsurface conditions by drilling four borings (B1 through B4) to a maximum depth of 52 feet below ground surface (bgs) at the approximate locations shown in Figure 2. Borings were drilled by Clear Heart Drilling, using a track mounted DSR-5K1 rig equipped with 6-inch outer diameter (OD) hollow stem augers. Our geologist logged the borings and obtained both disturbed and relatively undisturbed soil samples for visual classification and laboratory testing. Soils were logged in general accordance with the American Society for Testing and Materials (ASTM) Test Procedure D2488 Visual-Manual Procedures. Borings logs are presented in Appendix 1.

LACO obtained soil samples from borings with split-spoon samplers that were driven with a 140-pound auto-trip hammer falling 30 inches. The samplers included a 1.5-inch inside diameter (ID) Standard Penetration Test (SPT) sampler and a 2.5-inch ID modified California sampler. The number of hammer blows required to drive the samplers were recorded and are presented on the boring logs. Blow counts were converted to SPT values using a 0.65 conversion factor.

### 2.1 Laboratory Testing

Relatively undisturbed and disturbed soil samples collected during the field exploration were submitted to LACO's materials laboratory for testing. Laboratory tests were performed on select soil samples and included the following:

- Particle Size Analysis – Finer than #200 Sieve (ASTM D1140);
- Coarse and Fine Sieve (ASTM C136);
- Atterberg Limits (ASTM D4318);
- Unconfined Compressive Strength (ASTM D2166);
- Expansion Index (ASTM D4829);
- Moisture Content (ASTM D2216);
- Density of Soils in Place (ASTM D2937); and,
- Soil Corrosivity.

Laboratory test results are included as Appendix 2 and summarized in the boring logs and Table 1. LACO will archive the soil samples collected for this project for 60-days following the issuance of this Report. Unless directed otherwise by the Client, all samples will be discarded after the 60-day archive period.

Table 1. Laboratory Test Results

Boring	Depth (feet bgs)	USCS Soil Type	ASTM D1140	ASTM D2166		ASTM D2216/D2937		ASTM D2166	ASTM D4829
			Fines Content  (percent finer than No. 200 sieve)	Liquid Limit  (percent)	Plasticity Index  (percent)	Moisture Content  (percent)	Density of Soils in Place  (pcf)	Unconfined Shear Strength  (psf)	Expansion Index
B1	2.0	SC	47.9	27	11	-	-	-	-
B1	5.5	CL	68.0	30	13	-	-	-	-
B1	8.5	CL	-	-	-	21.3	102.0	-	-
B2	2.0	CL	72.0	36	16	-	-	-	-
B2	3.5	CL	-	-	-	16.1	109.1	-	-
B2	8.5	SC	24.4	-	-	-	-	-	-
B2	11.5	SW-SC	17.8	-	-	-	-	-	-
B2	13.0	SW-SC	8.6	-	-	-	-	-	-
B2	16.0	SW-SC	13.5	-	-	-	-	-	-
B2	26.0	SW-Sc	9.8	-	-	-	-	-	-
B2	31.5	SW-SC	7.3	-	-	-	-	-	-
B2	40.0	CL	-	-	-	21.3	105.7	-	-
B2	46.0	SC	25.8	26	9	-	-	-	-
B3	2.0	CL	-	-	-	-	-	1,000	-
B4	2.0	CL	-	-	-	-	-	-	60

bgs – below ground surface  
USCS – Unified Soil Classification System  
pcf – pounds per cubic foot  
psf – pounds per square foot  
NP – non plastic

## 3.0 SITE AND SUBSURFACE CONDITIONS

### 3.1 Site Conditions

The Site is located on a 0.865-acre parcel that is between 600 and 598 feet above mean sea level and gently slopes to the southeast. It is undeveloped and grass covered and is bounded by South Orchard Street to the east, access driveways to the north and south, and a parking lot to the west. Drainage across the Site appears to flow to the southeast towards the southern access road. The nearest body of water is Gibson Creek, which is located approximately 1,300 feet east of the Site. Regional drainage is controlled by the Russian River, which is located approximately 0.85 miles east of the Site.

### 3.2 Geologic Setting

The Site is in the California Coast Ranges Geomorphic Province (CGS, 2002). This province is seismically active and geologically complex due to historic and ongoing tectonic deformation that is characterized by northwest trending faults and topographic and geologic features. The California Coast Range province

extends west to the Pacific Ocean, east to the Great Valley, north to Oregon, and south to the Transverse Ranges. The complex structure of the Coast Range Geomorphic Province began with a period of plate convergence during late Jurassic, which involved eastward thrusting of oceanic crust beneath the coastal crust, and was characterized by the accretion of material to the continent and the formation of east-dipping thrust and reverse faults. Beginning in the mid-Cenozoic and continuing to the present, the plate boundary was dominated by right-lateral, strike-slip deformation, which was superimposed on the existing structures. This is characterized by the northwest-trending nearly vertical faults of the San Andreas system.

The oldest bedrock units in the Coast Ranges Geomorphic Province are those of the Jurassic-Cretaceous Franciscan Complex and the Great Valley Sequence. Younger bedrock units consist of the Tertiary-aged Sonoma Volcanic Group, the Plio-Pleistocene-age Clear Lake Volcanics, and Sedimentary rock formations such as the Petaluma, Wilson Grove, and Huichica. Quaternary-aged alluvium generally covers the bedrock in the valleys and low-lying areas.

As shown on the Geologic Map (Figure 3), the Site is underlain by Quaternary (present to 2.6 million years old) nonmarine terrace deposits (Qt, Jennings and Strand, 1960). These deposits are generally described as unconsolidated interbedded silts, sands, gravels, and clays. The Site is not published on available slope stability maps.

### **3.3 Subsurface Conditions**

Our exploration indicates the Site is blanketed by interbedded alluvial soils comprised of primarily clays, sands, and gravels. Local alluvial soils consist of a surficial layer of sandy lean clay that extends to between 11 and 15 feet bgs; well graded sand with clay and gravel that extends to approximately 39 feet bgs; sandy lean clay that extends to approximately 43 feet bgs; clayey sand that extends to approximately 50 feet bgs; and clayey sand with gravel that extended to the maximum depth explored 52 feet. Surficial sandy lean clay was generally dark yellowish brown mottled with gray, moist, and medium stiff to stiff with fine sand. Well graded sand with clay and gravel was generally dark brown, wet, and medium dense with fine to coarse sand and fine to coarse subrounded gravel. Sandy lean clay at depth was generally dark yellowish-brown mottled gray, moist to wet, and medium stiff with fine sand. Clayey sand was generally gray, moist to wet, and medium dense with fine sand. Clayey sand with gravel was generally dark, moist, and very dense with fine to coarse sand and fine to coarse subrounded to subangular gravel. Geologic cross sections between borings B1 and B4, and B2 and B3 are presented in Figures 4A-B (Geologic Cross Section A-A' and Geologic Cross Section B-B', respectively).

### **3.4 Groundwater Conditions**

Groundwater was encountered in our borings at depths between 7 and 14 feet bgs. Groundwater level measurements in monitoring wells at an Express Mart (North Coast Regional Water Quality Control Board Case No. 1NMC640), approximately 1,000 feet southwest of the Site, in December 2011, varied between 16.38 to 16.77 feet bgs. An undated measurement was taken from the same monitoring wells and varied between 6.01 and 7.22 feet bgs (<https://geotracker.waterboards.ca.gov/>).

## **4.0 GEOLOGIC HAZARDS**

Potential geologic hazards assessed for the project include soil corrosivity, seismic ground shaking, volcanism, liquefaction and related phenomena, settlement, flooding, high groundwater, and expansive soils. An evaluation of these potential hazards is presented below.

## 4.1 Soil Corrosivity

Corrosion is the deterioration of metal through a chemical reaction with its environment. Factors that contribute to corrosion potential include the presence of soluble salts, soil and water resistivity, soil and water pH, and the presence of oxygen.

A composite soil sample from boring B3 between 3 to 4 feet was analyzed for sulfate, chloride, and sulfide, resistivity, oxidation/reduction potential, and pH; results are presented in Appendix 2 and summarized in Table 2.

Table 2: Summary of Corrosivity Test Results

Sample	Depth (ft)	pH	Min. Resistivity (Ohm-cm)	Electrical Conductivity (µmhos/cm)	Sulfate (ppm)	Chloride (ppm)
B3	3/3.5	6.95	1,922	520	9	30

ppm – parts per million

ft – feet

For structural elements, the California Department of Transportation (CalTrans) considers a site to be corrosive if one or more of the following conditions exist for the representative soil and/or water samples taken at the Site: chloride concentration is 500 ppm or greater, sulfate concentration is 2,000 ppm or greater, or the pH is 5.5 or less. A minimum resistivity value for soil and/or water less than 1,000 ohm-cm indicates the presence of high quantities of soluble salts and a higher propensity for corrosion (CalTrans, 2012). On this basis, we conclude Site soils have a relatively low corrosion potential.

## 4.2 Seismic Ground Shaking

The Site is situated within a seismically active area proximal to multiple seismic sources capable of generating moderate to large ground motions. Given the proximity of the new buildings to active seismic sources (the Maacama Fault Zone and San Andreas Fault), there is a high probability that the Site will experience strong ground shaking during the economic lifespan (50 years) of the project.

The seismicity of the area is dominated by the presence of the San Andreas Fault system, which forms the boundary between the Pacific and North American Plates. The northward movement of the Pacific Plate relative to the North American Plate is accommodated across a complex system of strike-slip, right-lateral, parallel, and sub-parallel faults which include the San Andreas, Maacama-Garberville, Bartlett Springs, and Concord-Green Valley Faults, among others. The nearest potentially active fault is the northern section of Maacama fault zone, located approximately 1.3 miles east of the Site. The northern section of the Maacama fault zone is a 66.5-mile long right-lateral strike-slip fault with an average strike and dip of N24°W and 90°, respectively (Hart and Bryant, 2001).

The Site is not located within a "Fault Rupture Hazard Zone" (Bryant and Hart, 2007) or within an area currently designated as a "Seismic Hazard Zone" by the state, shown in Figure 5 (Alquist-Priolo Map). Based on the distance between the Site and the closest active fault, the Maacama fault zone, we judge the potential for surface fault rupture to occur within the Site is low. General seismic design parameters are presented in the Recommendations section (Section 6.0) of this report.

### 4.3 Liquefaction

Liquefaction is a phenomenon in which loosely deposited granular soils with silt and clay contents of less than approximately 35 percent and generally less than 50 feet bgs that extend below the groundwater table undergo momentary loss of shear strength when subjected to strong earthquake-induced ground shaking. The occurrence of this phenomenon is dependent on many complex factors including the intensity and duration of ground shaking, particle size distribution, and density of the soil.

To, date no seismic hazard maps have been produced evaluating the liquefaction potential for the Site and vicinity. To evaluate the potential for liquefaction-induced settlement to occur at the Site, we utilized the results of field and laboratory tests, Standard Penetration Test (SPT) data obtained in the field, input parameters presented in Table 3, and the computer program LiqSVs developed by GeoLogismiki®.

Table 3. Liquefaction Analysis Input Parameters

Calculation Method	Maximum Moment Magnitude	PGA <sub>M</sub>
NCEER 1998	7.4	0.85

In our analysis, we used field and laboratory data from boring B2, a groundwater level during drilling of 7 feet bgs, and, based on relatively nearby monitoring wells, a groundwater level at 6 feet bgs during a hypothetical seismic event. Maximum moment magnitude was estimated from the Maacama-Garberville seismic source, approximately 1.3 miles east of the Site. Risk-Targeted maximum considered earthquake peak ground acceleration adjusted for Site Class effects (PGA<sub>M</sub>) was estimated in accordance with Section 11.8.3 of ASCE 7-16. Fine-grained soils with a plasticity index (PI) of 7 or greater tend to exhibit clay-like behavior and the fine-grained fraction tends to control when that fraction exceeds 35 percent (Boulanger and Idriss, 2006). Therefore, soils that have more than 35 percent passing No. 200 sieve and a PI of 7 or greater were input into LiqSVs as non-liquefiable layers. Due to the relatively high concentration of fines (26%), Plasticity Index of 17, and the relative depth, we consider the layer of clayey sand encountered between 43 and 50 feet non-liquefiable.

Liquefaction has three potential consequences: liquefaction-induced settlement, bearing capacity failure, and lateral spreading toward a free face. Each is evaluated in the following paragraphs.

#### 4.3.1 Liquefaction-Induced Settlement

Our evaluations indicate layers susceptible to liquefaction were encountered in boring B2 at depths between 6.25 to 9 feet bgs and 11 to 17 feet bgs. Liquefaction-induced settlement was calculated to be less than 0.9 and 1.5 inches for the respective layers. On this basis, we estimate total liquefaction-induced settlement will be less than 2.4 inches. Provided the near-surface soils are improved by site grading; we estimate the potential for total liquefaction-induced settlement will be approximately 2.4 inches with differential liquefiable settlement less than 2.1 inches over distances of 20 feet. The results of our analyses are presented in Appendix 3.

#### 4.3.2 Bearing Capacity Failure

Bearing capacity failure is sudden and extreme settlement of foundations that typically occurs when the liquefied layer is relatively close (typically within two times the footing width, depending on the loads) to the bottom of the foundation. Due to the liquefiable layer between 6.25 and 9 feet bgs (approximately 3 times the footing width), we judge that there is the potential for bearing capacity failure during a major

earthquake. Provided the Site's near-surface soils are improved according to the specification of this report and footing widths do not exceed 24 inches, we judge that the potential for bearing capacity failure can be minimized to negligible.

#### **4.3.3      *Lateral Spreading***

Lateral spreading can occur where continuous layers of liquefiable soil extend to a free face, such as a creek bank. Due to the flat nature of the Site, we judge the potential for liquefaction-induced lateral spreading at the Site is low.

### **4.4          Static Settlement**

Static settlement is the result of compressive deformation of soil beneath an applied load. The compressive deformation generally results from a reduction in voids within the soil. In dry granular soils, the compression of the soil occurs relatively rapidly. However, in saturated soils, the voids are filled with water that must be drained to accommodate the compression. In cohesive soils, the rate at which water moves through the soil is slow. As a result, settlement of saturated fine-grained soils can occur very slowly. Our exploration indicates soils beneath the Site are cohesive from ground surface to between 11 to 15 feet and primarily granular with interbedded fine-grained soils between 15 and 52 feet bgs.

Near surface cohesive soils appear to be in a relatively thin layer and overconsolidated. Granular soils are relatively deep and are anticipated to receive a minimal increase in pressure from new building loads. On this basis we judge that soils beneath new buildings have a low susceptibility to static settlement. Total foundation settlement is estimated to be on the order of ½ inch over the course of the project construction and differential settlement less than ¼ inch between adjacent footings or along a continuous foundation.

#### **4.4.1      *Densification***

Densification is the settlement of loose, granular soils above the groundwater level due to earthquake shaking. Typically, soils susceptible to liquefaction are similarly susceptible to densification when not saturated. As discussed in the liquefaction section (Section 4.3) of this memorandum, the soils above the water table at the Site consist of primarily cohesive soils. However, should groundwater levels drop below the potentially liquefiable layers encountered at 6.25 feet and 11 feet bgs, they may densify in lieu of liquefying. In such case, densification at the Site should be anticipated to be approximately 0.9 and 1.5 inches for the respective layers, resulting in total settlement of less than 1.4 inches.

### **4.5          Slope Instability**

Given the relatively low slopes, both on and adjacent to the Site, we consider the potential for slope instability to adversely affect the Site to be negligible.

### **4.6          Lurching**

Seismic slope failure, or lurching, is a phenomenon that occurs during earthquakes when slopes or man-made embankments yield and displace in the unsupported direction. Due to the flat nature of the Site and the lack of man-made embankments at the Site, we consider the potential for lurching to be low.



## **4.7 Flooding**

According to the FEMA Flood Insurance Rate Map, Map Number 06045C1514F, effective June 2, 20011, the Site is not located in an area designated as a flood hazard zone, indicating an area of minimal flooding potential (FEMA, 2011). On this basis, we conclude the risk of flooding to occur at the Site is low.

## **4.8 Tsunami Inundation**

According to the CGS Tsunami inundation hazard maps (CGS, 2009), the Site is not located in an area anticipated to experience inundation. On this basis, we conclude the risk of tsunami inundation is low.

## **4.9 Volcanism**

According to the United States Geologic Survey (USGS) Volcano Hazards Program, the Site is not situated in a volcanically active area. The nearest volcano (Mt. Konocti) is located approximately 26 miles to the southeast. The likelihood of the Site experiencing active volcanism is low (USGS, 2017).

## **4.10 Soil Swelling or Shrinkage Potential**

Expansive soils have a tendency to undergo volume changes (shrink or swell) with changes in moisture content. They generally consist of cohesive fine-grained clay soils and represent a significant structural hazard to buildings founded on them. The soils encountered during our field exploration consist primarily of granular soils (sands and gravels) and low to medium plasticity silts and clays. Laboratory tests indicate the upper five feet of surface soils have a plasticity index (PI) between 11 and 16 with an expansion index (EI) of 60, resulting in a moderate expansive potential. Provided foundations are constructed following the recommendations of this report, we judge that the potential risk of expansive soils detrimentally affecting the proposed project can be minimized to negligible.

# **5.0 CONCLUSIONS**

The results of our exploration program indicate the project is feasible from a geotechnical standpoint. The primary geotechnical concerns at the Site is the presence of relatively soft, moderately expansive surface soils, and presence of potentially liquefiable soils. New buildings may be supported on shallow footings bearing on a minimum 12-inch engineered pad of select fill constructed following the Site Preparation and Grading section (Section 6.1).

If designed and constructed per the following recommendations, we estimate total settlement resulting from the imposed foundation loads will be less than ½ inch and differential settlement will be less than ¼ inch over distances of approximately 20 feet. As discussed above, we estimate the potential for liquefaction induced settlement will be less than 2.4 inches, with differential settlement over distances of approximately 20 feet estimated to be less than 1.2 inches.

# **6.0 RECOMMENDATIONS**

## **6.1 Site Preparation and Grading**

To mitigate relatively soft and moderately expansive surface soils, we recommend soils in building areas be removed to a minimum depth of 30 inches and replaced with an engineered fill pad consisting of soils that



meet our select fill criteria (below). Areas to be graded should be stripped of any vegetation and topsoil containing organic material. Bushes and designated trees should be removed and their roots grubbed. These materials are not suitable for re-use as select fill. Prior to placement and compaction of select fill, soft or weak and porous surface soils, as determined by a representative of the project geotechnical engineer in the field, should be removed to their full depth. We anticipate that these excavations will extend approximately 30 inches below grade. Excavations for engineered fill pads should be overbuild a minimum of three feet beyond the footprint of the structure, where obtainable. Following the excavation, a representative of the project geotechnical engineer in the field should approve the subgrade to ensure a firm and unyielding subgrade.

Prior to placing fill, the exposed soil subgrade should be scarified to a depth of 6 inches, moisture conditioned near optimum moisture content and compacted to at least 90 percent relative compaction.<sup>1</sup> Material proposed for use as select fill should be free of organic or other deleterious material and rocks with a maximum dimension greater than 3 inches, and should meet the following criteria:

Fraction Finer than No. 200 Sieve:	Between 5 percent and 60 percent
Plasticity Index:	15 percent or less
Liquid Limit:	35 percent or less

Our exploration indicates that on-site soils are not in general suitable for use as select engineered fill. Granular soils may have to be imported and mixed with proposed on-site soils to generate suitable select engineered fill. Material proposed for use as select fill should be observed and tested by the geotechnical engineer for conformance to the criteria listed above prior to importation to the Site. Fill should be placed in lifts no greater than 8 inches in loose thickness, moisture conditioned to at least 2 percent wet of optimum moisture content, and compacted into select engineered fill with at least 90 percent relative compaction. In areas to receive vehicular loads, the upper 6 inches of soil subgrade should be compacted to at least 95 percent relative compaction and be firm and unyielding when subjected to proof-rolling during construction.

## **6.2 Footings**

Footing excavations should be free of standing water or loose debris before placement of concrete. If shrinkage cracks appear in the footing excavations, they should be thoroughly saturated prior to concrete placement. Footings adjacent to existing utility trenches or other footings should be deepened enough to bear below a 1:1 (horizontal to vertical) plane extending upwards from the bottom edge of the utility trench or footing excavation. A representative of the project geotechnical engineer should observe the footing excavations prior to the placement of reinforcing steel and concrete forms to check that suitable bearing materials are exposed, and proper cleanout achieved.

### **6.1.1 Footings on Select Engineered Fill**

Buildings may be supported by footings bearing entirely on a engineered fill pad, compacted following the recommendations presented in the Site Preparation and Grading section (Section 6.1). Footings should bear

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<sup>1</sup> Relative compaction refers to the ratio of the in place dry density of the soil to the maximum dry density as described in the latest addition of the ASTM D1557 compaction test procedure. Optimum Moisture Content is the water content as a percentage of the dry weight of the soil corresponding to the maximum dry density.

on a minimum of 12-inches of select engineered fill, be at least 12 inches wide, 12 inches deep, and designed using maximum allowable bearing pressures presented in Table 4.

Table 4. Maximum Allowable Bearing Pressures for Footings on Select Engineered Fill

Loading Condition	Maximum Allowable Bearing Pressure (psf)
Dead Load	2,500
Dead plus Live Loads	3,750
Total, including Wind or Seismic	5,000

psf-pounds per square foot

Resistance to lateral loads can be provided via skin friction between the footing bottoms and underlying soil, and passive earth pressures acting on the vertical faces of foundations. Use a friction factor of 0.35 between footing bottoms and the underlying soil and a passive soil pressure of 300 pounds per cubic foot (pcf) equivalent fluid pressure. When calculating passive pressure, ignore the upper foot unless confined by concrete or asphalt pavement. If friction and passive resistances are to be combined, reduce the lesser value by 50 percent.

### 6.3 Concrete Slab-on-Grade Floors

Concrete slab-on-grade floors should be prepared after footings have been poured and utility trenches in the building footprint installed and properly backfilled. The upper 6 inches of select engineered fill should be scarified to a depth of 6 inches, moisture conditioned wet of the optimum moisture content, and compacted to at least 90 percent relative compaction.

To provide a capillary moisture break between the slab and the supporting soil, we recommend the concrete slab to be constructed on a 4-inch-thick layer of clean  $\frac{3}{4}$ -inch crushed rock. The crushed rock should be placed as soon as possible after moisture conditioning and compaction of the select subgrade materials to reduce the potential for drying and cracking of the subgrade soil. Where the risk of moisture vapor movement through the slab may be detrimental to its intended use, the capillary break material should be covered by an impermeable membrane consisting of 15-mil Stego® Wrap sheeting, or equivalent, installed in accordance with the manufacturer's recommendations.

Special precautions should be taken during the placement and curing of concrete slabs. Excessive slump (high water-cement ration) of the concrete and/or improper curing procedures used during either hot- or cold-weather conditions could lead to excessive shrinkage, cracking, or curling of the slabs. High water-cement ration and/or improper curing also greatly increase the water vapor permeability of concrete. We recommend the concrete placement and curing operations be performed in accordance with the American Concrete Institute (ACI) manual.

Slab underdrains should be installed to intercept groundwater that may seep and collect in the slab rock. Slab underdrains should consist of 6-inch-wide trenches that extend at least 12 inches below the bottom of the slab rock and are sloped to drain by gravity. The slab underdrain trenches should be spaced no further than 20 feet, both ways. Additional drain trenches should be installed, as necessary, to drain all isolated under slab areas. Slab subdrains have been detailed in Figure 6 (Slab-on-Grade Subdrain).

### 6.1.2 Walkways and Courtyard Areas

Exterior concrete slab-on-grades for walkways and courtyards can be supported on a minimum of 12 inches of engineered fill prepared in accordance with the Site Preparation and Grading section (Section 6.1). Excavation of soft or weak near-surface soils should extend a minimum of 3 feet beyond the edge of exterior slabs; the exposed soil should be evaluated by a representative of the project geotechnical engineer in the field. Prior to fill placement, the subgrade should be scarified to a depth of 6 inches, moisture conditioned within 2 percent wet of the optimum moisture content, and compacted to at least 90 percent relative compaction.

## 6.4 Asphalt Pavement

Soil subgrade in pavement areas should consist of a minimum of 12 inches of select engineered fill the upper 6 inches of which is compacted to 95 percent relative compaction, and is firm and unyielding when subjected to proof-rolling as observed by a representative of the project geotechnical engineer in the field. Minimum pavement section thicknesses are presented in Table 6. They are based on (1) a R-value of 13 for driveways and parking areas and (2) CalTrans flexible pavement design procedures.

Table 6. Minimum Pavement Section Thicknesses with Corresponding Traffic Index

Pavement Section Use Area	Traffic Index (TI)	HMA Thickness (inches)	Class 2 Aggregate Base Thickness (inches)
Parking Lot	4.5	2.5	8.0
Access Driveways	5.5	3.0	10.5

HMA-Hot Mix Asphalt

Hot mix asphalt (HMA) and Class 2 aggregate base materials should meet the requirements specified in the latest edition of the CalTrans Standard Specifications. The Class 2 aggregate base should be compacted to at least 95 percent relative compaction prior to HMA placement.

## 6.5 Seismic Design Parameters

Section 1613A of the 2019 California Building Code (CBC) mandates that structures be designed and constructed to resist earthquake damages in pursuant to ASCE 7-16 and modifications included in Section 1613A (ASCE, 2016; CBC, 2019). Earthquake design parameters are based on the maximum considered earthquake ground motion, defined as the motion caused by an event with a 2 percent probability of exceedance within a 50-year period (recurrence interval of approximately 2,500 years). Per Section 20.3.1 of ASCE 7-16, the Site should be assigned Site Class F due to the presence of potentially liquefiable soils. However, structures with fundamental periods of vibration equal to or less than 0.5 seconds do not require a Site-specific response analysis to determine spectral accelerations for liquefiable soils. Therefore, the Site Class was estimated using uncorrected blow counts from Boring B2, shown in Table 7, resulting in Site Class D.

Table 7: Site Classification by Average SPT Blow Counts

Layer by USCS Classification	Depth (ft)	Thickness (di) (feet)	Average SPT blow counts within layer (Ni)	$\frac{di}{Ni}$
CL	0-6.25	6.25	10.5	0.595
SC	6.25-9	2.75	8.0	0.344
CL	9-11	2.0	6.0	0.333

SW-SC	11-38.5	27.5	25.7	1.069
CL	38.5-43	4.5	14.0	0.300
SC	43-50	7	13.0	0.538
SW	50-50.5	0.5	51.0	0.010
SC	50.5-52	1.5	69.0	0.022
<b>Sum</b>		<b>52</b>		<b>3.21</b>

Seismic design parameters  $S_s$  and  $S_1$  for the Site were generated using Seismic Design Maps tool co-developed by the Structural Engineers Association of California (SEAOC) and California's Office of Statewide Health Planning and Development (OSHPD), Site Class D, and the following location: 38.1463 °N, -122.1983 °E (SEAOC and OSHPD, 2020).

$$S_s = 2.017$$

$$S_1 = 0.774$$

where:

$S_s$  Mapped spectral response acceleration, 5 percent damped, at 0.2 second period [times the acceleration of gravity (g)].

$S_1$  Mapped spectral response acceleration, 5 percent damped, at 1.0 second period (times g).

Structures on Site Class D with a  $S_1$  greater than or equal to 0.2 require a Site-specific response analysis unless designed following the exceptions presented in Section 11.4.8 of ASTM 7-16. It is our assumption that structures can be designed following the exceptions presented in Section 11.4.8 (summarized below) and that a Site-specific response analysis is not required.

*Structures on Site Class D sites with  $S_1$  greater than or equal to 0.2, provided the value of the seismic response coefficient  $C_s$  is determined by Eq. (12.8-2) for values of  $T \leq 1.5 \cdot T_s$  and taken as equal to 1.5 times the value computed in accordance with either Eq. (12.8-3) for  $T_L \geq T > 1.5 \cdot T_s$  or Eq. (12.8-4) for  $T > T_L$ .*

**Should the fundamental period of vibration of any structure prove to be greater than 0.5 seconds or the exceptions presented in Section 11.4.8 prove unachievable during the design of a structure, a Site-specific response analysis can be provided in a supplemental document, under a separate agreement.**

Provided the stated exceptions are incorporated into the design of all structures, seismic design parameters presented in Table 8 may be utilized. Structures should be assigned a seismic design category of E for structures with risk category I, II or III and a seismic design category of F for structures with a risk category of IV.

Table 8. Summary of Seismic Design Parameters

Site Class	$F_a$	$F_v$	$S_s$	$S_1$	$S_{MS}$	$S_{M1}$	$S_{DS}$	$S_{D1}$	$T_s$
D	1.0	1.7*	2.018	0.775	2.018	1.318*	1.345	0.878*	0.653

\*Values  $F_v$ ,  $S_{M1}$ , and  $S_{D1}$  may only be used for calculation of  $T_s$ .

The factors are defined as follows:

- $F_a$  – Short period coefficient to modify 0.2 second period of mapped spectral response accelerations.
- $F_v$  – Long-period coefficient to modify 1.0 second period of mapped spectral response accelerations.
- $S_{MS}$  – Maximum considered earthquake spectral response acceleration, 5 percent damped, at 0.2 seconds (times g).
- $S_{M1}$  – Maximum considered earthquake spectral response acceleration, 5 percent damped, at 1.0 second period (times g).
- $S_{DS}$  – Design spectral response acceleration, 5 percent damped, at 0.2 second period (times g).
- $S_{D1}$  – Design spectral response acceleration, 5 percent damped, at 1.0 second period (times g).
- $T_s$   $S_{D1}/S_{DS}$ .

## 7.0 CONSTRUCTION CONSIDERATIONS

### 7.1 Groundwater

Shallow groundwater levels were encountered between 7 and 13 feet bgs during our exploration. Provided construction is performed during the dry months of summer or early fall, it may not be a concern. However, if groundwater accumulates in foundation excavation, it should be pumped out prior to concrete placement.

### 7.2 Utility Trench Backfill

Trench backfill quality and compaction should generally conform to the requirements of the Site Preparation and Grading section (Section 6.1) of this memorandum. Where trenches closely parallel a shallow foundation element and the trench bottom is within a 2:1 plane projected outward and downward from the foundation, concrete slurry (two-sack minimum) should be used to backfill that portion of the trench below this plane. The use of slurry backfill is not required where a narrow trench crosses a footing at or near a right angle.

### 7.3 Temporary Slopes and Trench Excavations

The contractor should be responsible for the stability of all temporary slopes and trenches excavated at the Site and the design and construction of any required shoring. Shoring and bracing, if necessary, should be designed and constructed in accordance with all applicable local, state, and federal safety regulations, including the current Occupational Hazards and Safety Administration (OSHA) excavation and trench safety standards. Because of the potential for variable soil conditions, field modifications of temporary cut slopes may be required. Unstable materials encountered on the slopes during the excavation should be trimmed off, even if this requires cutting the slope back at flatter inclinations.

### 7.4 Surface Drainage

The Site should generally be graded to provide positive drainage away from foundations. A minimum gradient of 3 percent should be maintained for hardscaped areas. A minimum 5 percent gradient should be maintained for landscaped areas within 10 feet of a structure. The grading or landscaping design and construction should not allow water to pond on the Site nor to migrate beneath any structure. Runoff from hardscaped areas, roofs, patios, and other impermeable surfaces should be contained, controlled, and collected in a tight-line pipe that outlets into the Site storm drainage system.

## **7.5 Subsurface drainage**

Given the historic high groundwater conditions and low-permeability surface soils, we recommend slab subdrains should be installed to dispose of surface and/or groundwater that may seep and collect around footings and within the slab rock. Subdrains should be constructed as shown in Figures 6 and 7.

## **8.0 FUTURE GEOTECHNICAL SERVICES**

To check for conformance of final design with the recommendations contained in this report, LACO should perform the following:

- Review the completed project plans and specifications;
- Observe and test (as necessary) the earthwork and foundation phases of construction to confirm that subsurface conditions exposed during construction are consistent with our subsurface exploration and allow design changes in the event that subsurface conditions differ from those anticipated; and,
- Observe subdrain installations.

These services and associated fees are not included in LACO's current scope of services. LACO can provide a scope and fee estimate for these services at the time the project plans are near completion and when project construction schedules are known.

## **9.0 LIMITATIONS**

This memorandum has been prepared for the exclusive use of Nacht & Lewis, its contractors and consultants, and appropriate public authorities for specific application to development of the Site. LACO has exercised a standard of care equal to that generated for this industry to ensure that the information contained in this memorandum is current and accurate. The opinions presented in this memorandum are based upon information obtained from subsurface excavations, a site reconnaissance, review of geologic maps and data available to us, and upon local experience and engineering judgment, and have been formulated in accordance with generally accepted geotechnical engineering practices that exist in California at the time this memorandum was prepared. In addition, geotechnical issues may arise that are not apparent at this time. No other warranty, expressed or implied, is made or should be inferred.

Data generated for this memorandum represent information gathered at that time and at the widely spaced locations indicated. Subsurface conditions may be highly variable and difficult to predict. As such, the recommendations included in this memorandum are based, in part, on assumptions about subsurface conditions that may only be observed and/or tested during subsequent project earthwork. Accordingly, the validity of these recommendations is contingent upon review of the subsurface conditions exposed during construction in order to check that they are consistent with those characterized in this memorandum. Upon request, LACO can discuss the extent of (and fee for) observations and tests required to check the validity of the recommendations presented herein.

The opinions presented in this memorandum are valid as of the present date for the property evaluated. Changes in the condition of the property can occur over time, whether due to natural processes or the works of man, on this or adjacent properties. In addition, changes in applicable standards of practice can occur, whether from legislation or the broadening of knowledge. Accordingly, the opinions presented in this memorandum may be invalidated, wholly or partially, by changes outside our control. Therefore, this memorandum is subject to review and should not be relied upon after a period of three years, nor should it

be used, or is it applicable, for any property other than that evaluated. This memorandum is valid solely for the purpose, site, and project described in this document. Any alteration, unauthorized distribution, or deviation from this description will invalidate this memorandum. LACO assumes no responsibility for any third-party reliance on the data presented. Additionally, the data presented should not be utilized by any third-party to represent data for any other time or location.

## 10.0 REFERENCES

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## FIGURES

<b>Figure 1</b>	<b>Vicinity Map</b>
<b>Figure 2</b>	<b>Site Plan</b>
<b>Figure 3</b>	<b>Geologic Map</b>
<b>Figure 4</b>	<b>Geologic Cross Sections</b>
<b>Figure 5</b>	<b>Alquist Priolo Map</b>
<b>Figure 6</b>	<b>Slab-on-Grade Subdrain</b>
<b>Figure 7</b>	<b>Perimeter Subdrain</b>

# LACO

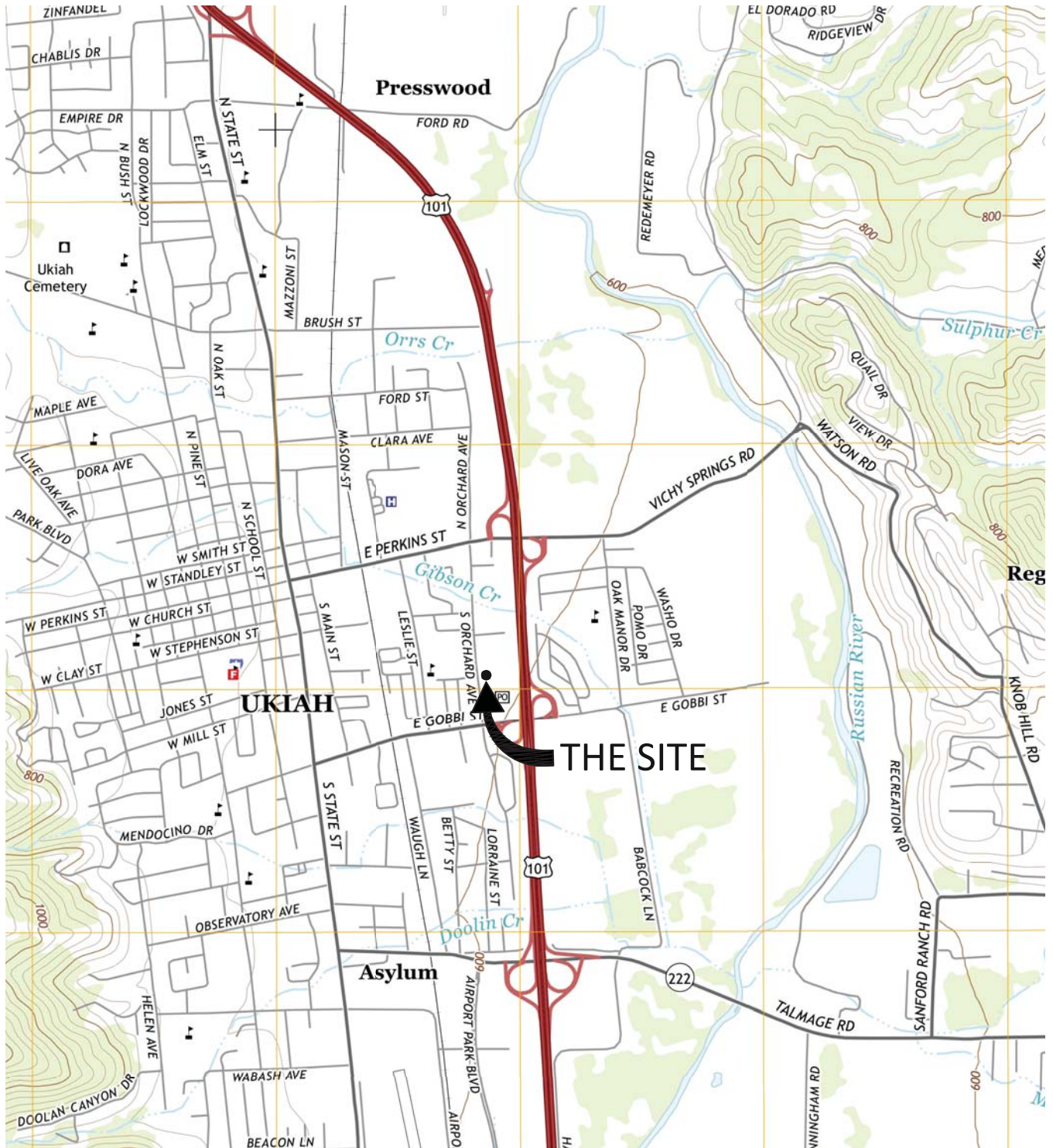
EUREKA • UKIAH • SANTA ROSA

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PROJECT	MENDOCINO COUNTY CRT	BY	CRGT	FIGURE	1
CLIENT	NACHT & LEWIS	DATE	4/15/20	JOB NO.	
LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK		
	VICINITY MAP	SCALE	AS SHOWN		9528.00

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SCALE: 1"=2000'



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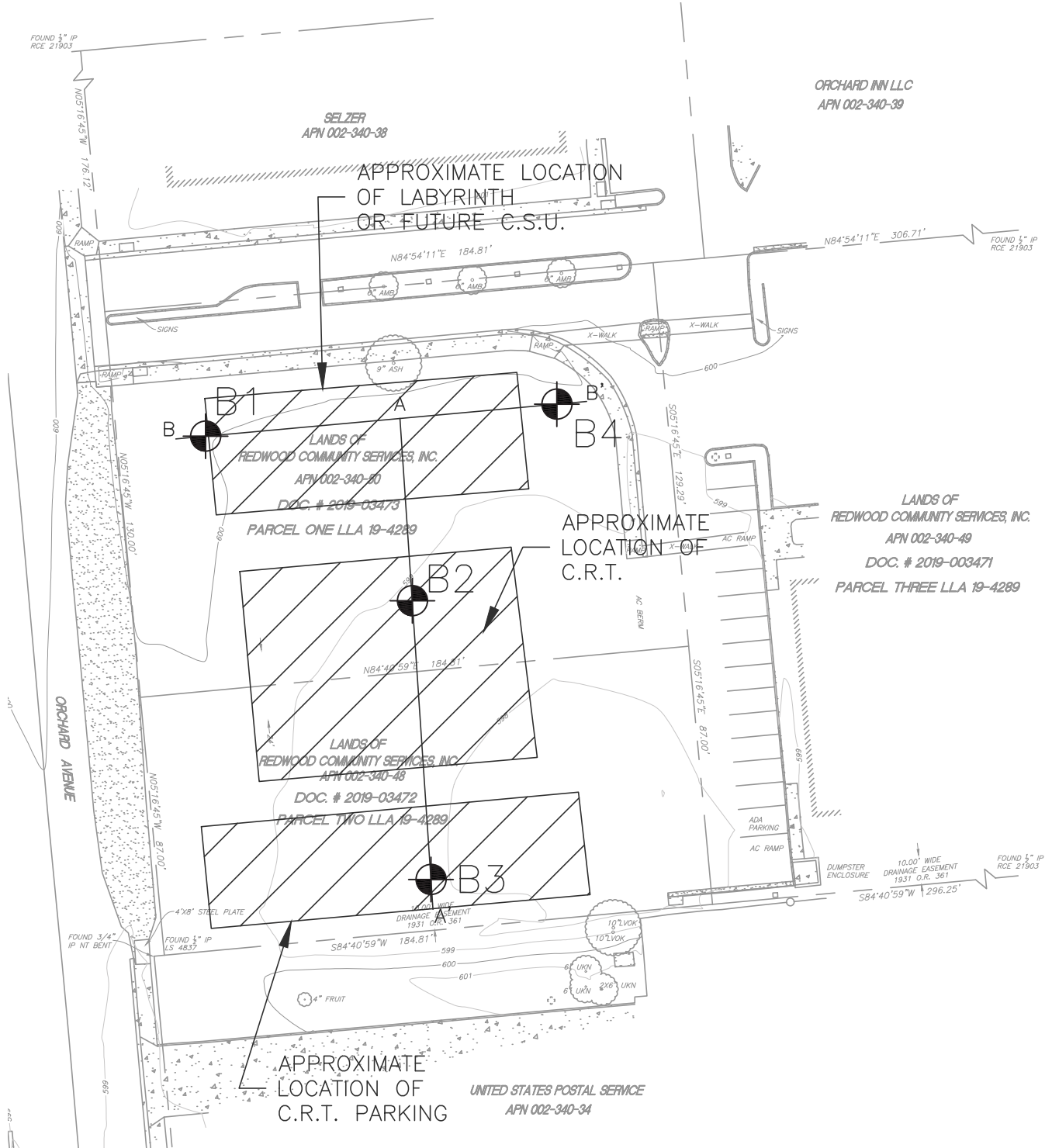
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PROJECT	MENDOCINO COUNTY CRT
CLIENT	NACHT & LEWIS
LOCATION	631 SOUTH ORCHARD STREET, UKIAH
	SITE PLAN

BY	CRGT
DATE	4/21/20
CHECK	JNK
SCALE	AS SHOWN

FIGURE	2
JOB NO.	9528.00

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SCALE: 1"=50'





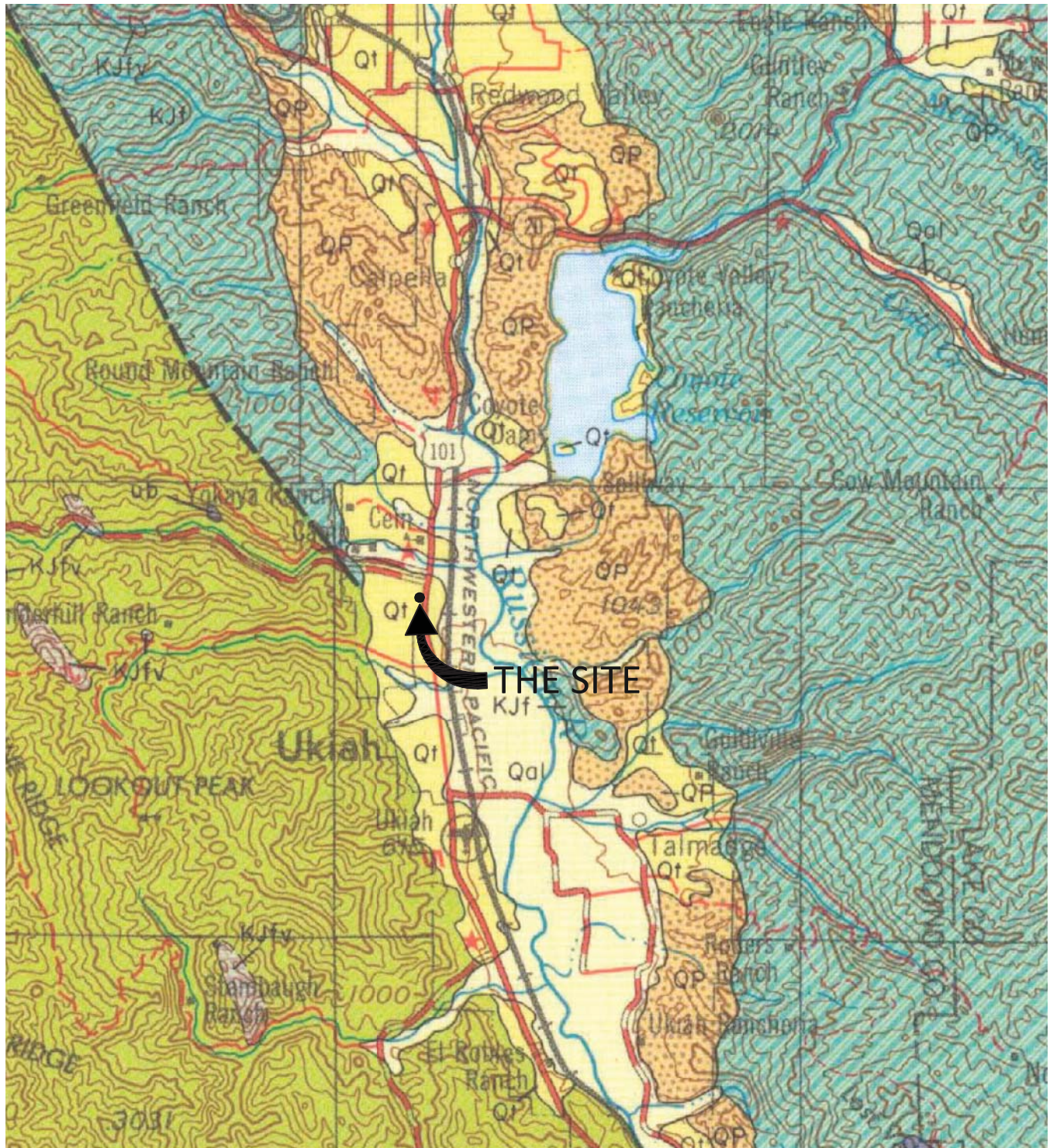
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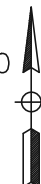
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PROJECT	MENDOCINO COUNTY CRT	BY	CRGT	FIGURE
CLIENT	NACHT & LEWIS	DATE	4/22/20	3A
LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK	JOB NO.
	GEOLOGIC MAP	SCALE	AS SHOWN	9528.00

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SCALE: 1"=10000'



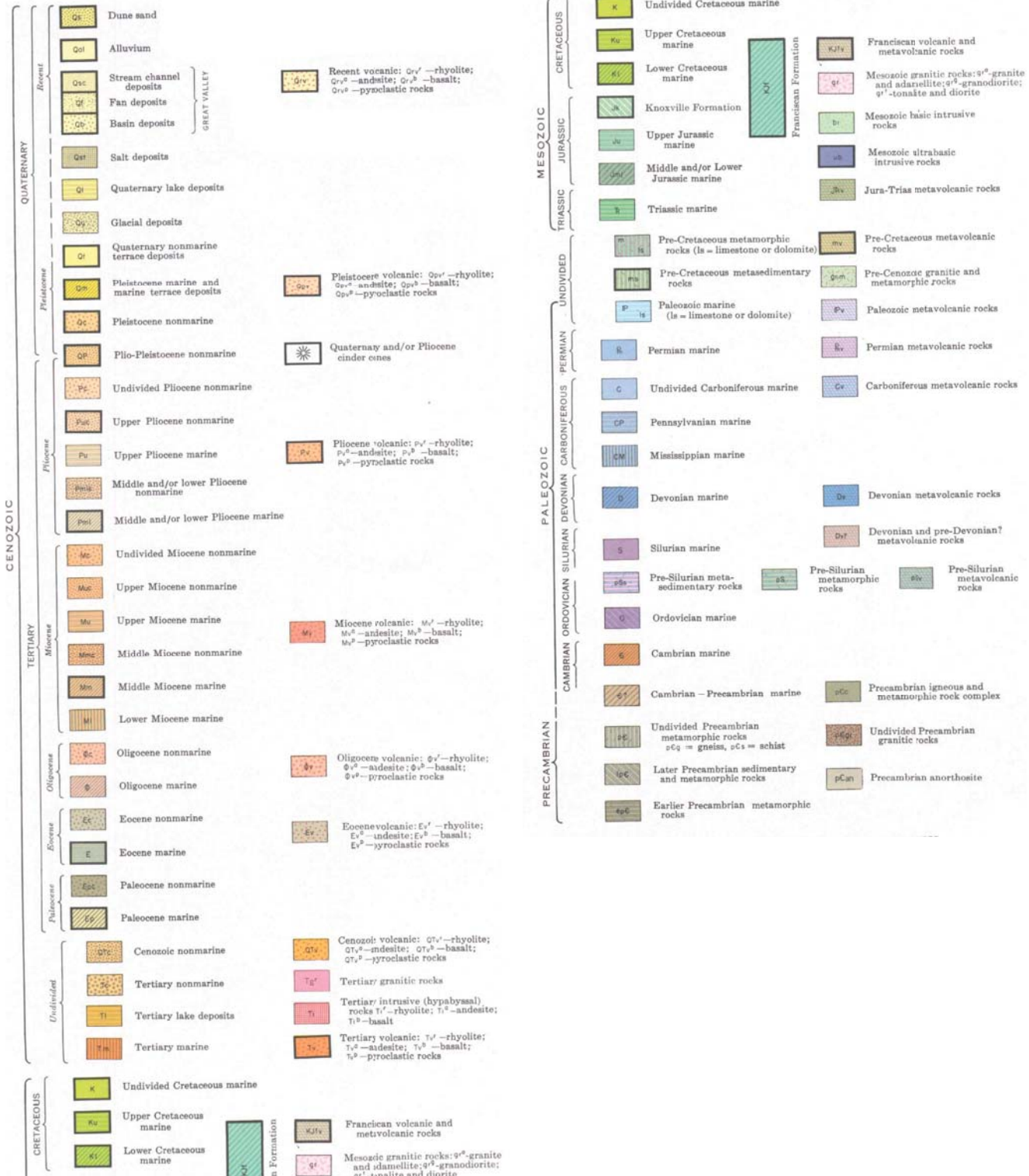


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**EXPLANATION**

## SEDIMENTARY AND METASEDIMENTARY ROCKS

## IGNEOUS AND META-IGNEOUS ROCKS

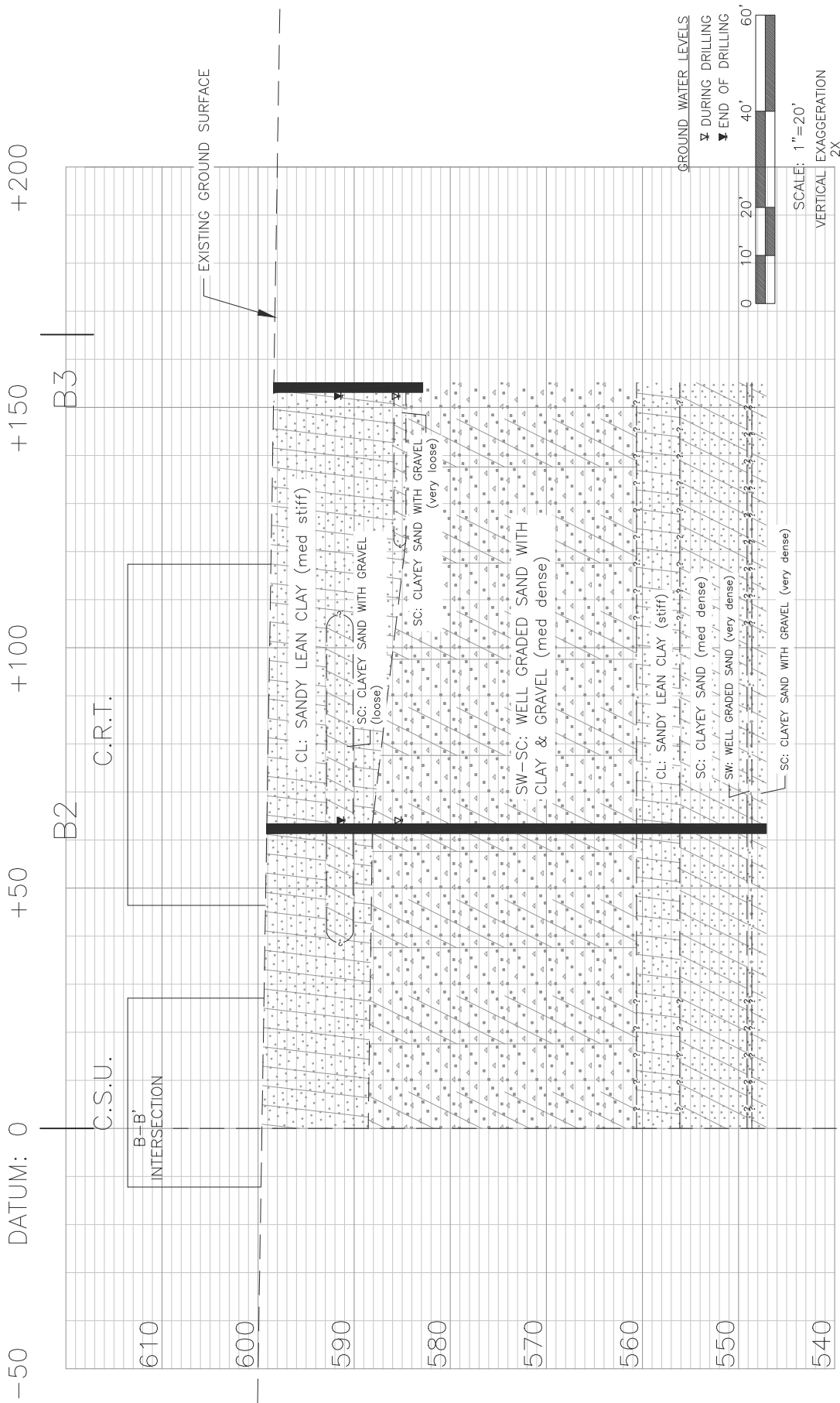


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S 4°E

A

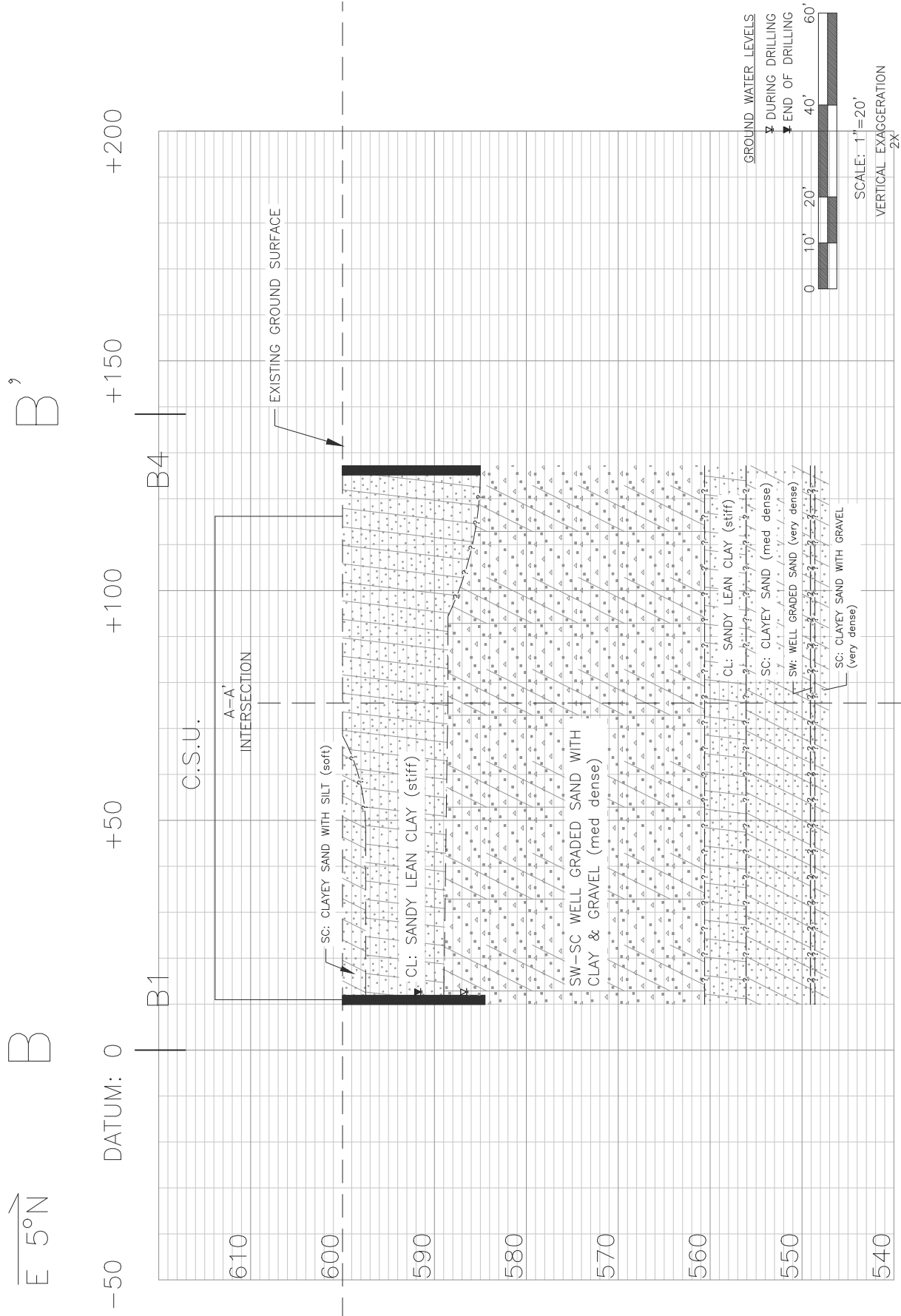
A'



DRAWN	CRGT
CHECK	JRK
APPROVED	JRK
DATE	4/27/20
JOB NUMBER	9528.00
FIGURE	4A

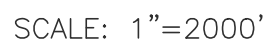
MENDOCINO COUNTY CRT  
GEOLOGIC CROSS SECTION A-A'  
631 S. ORCHARD AVE, UKIAH, CALIFORNIA  
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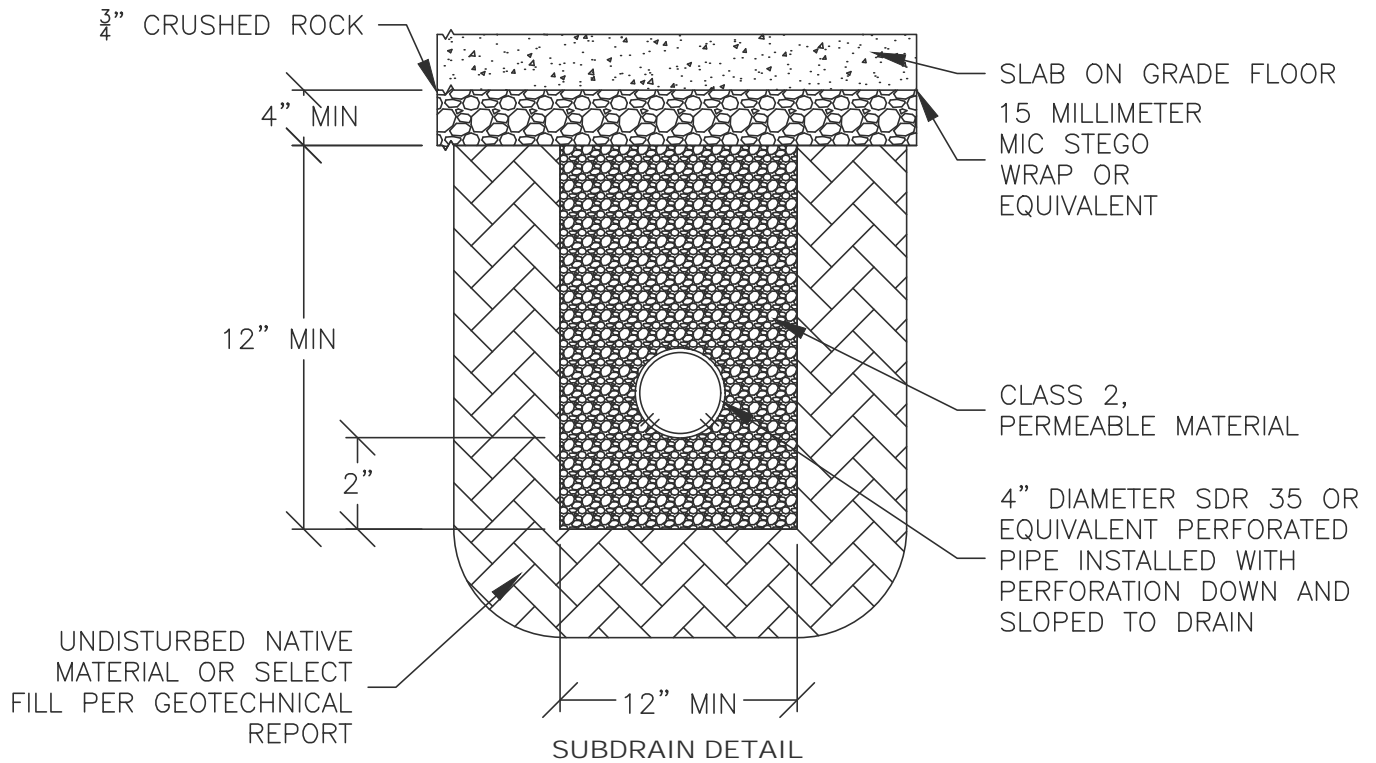
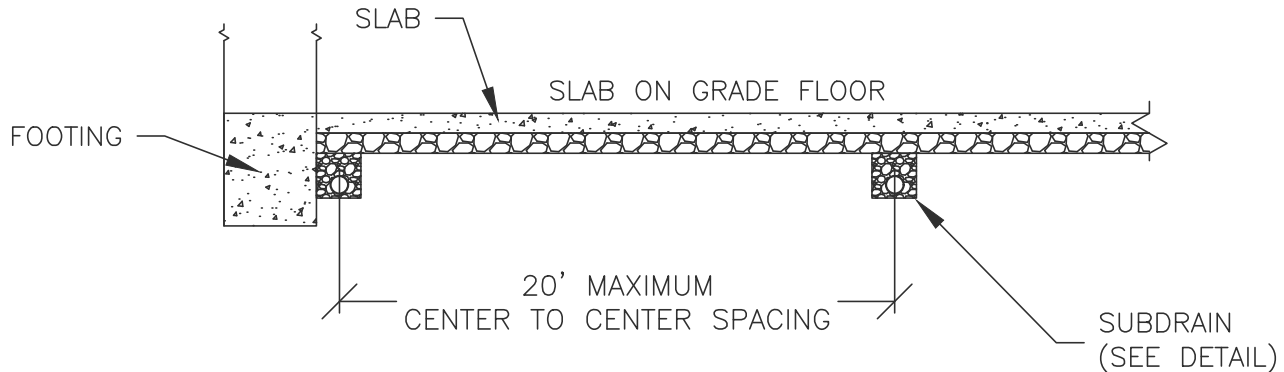
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PROJECT	MENDOCINO COUNTY CRT
CLIENT	NACHT & LEWIS
LOCATION	631 SOUTH ORCHARD STREET, UKIAH
	SLAB-ON-GRADE SUBDRAIN

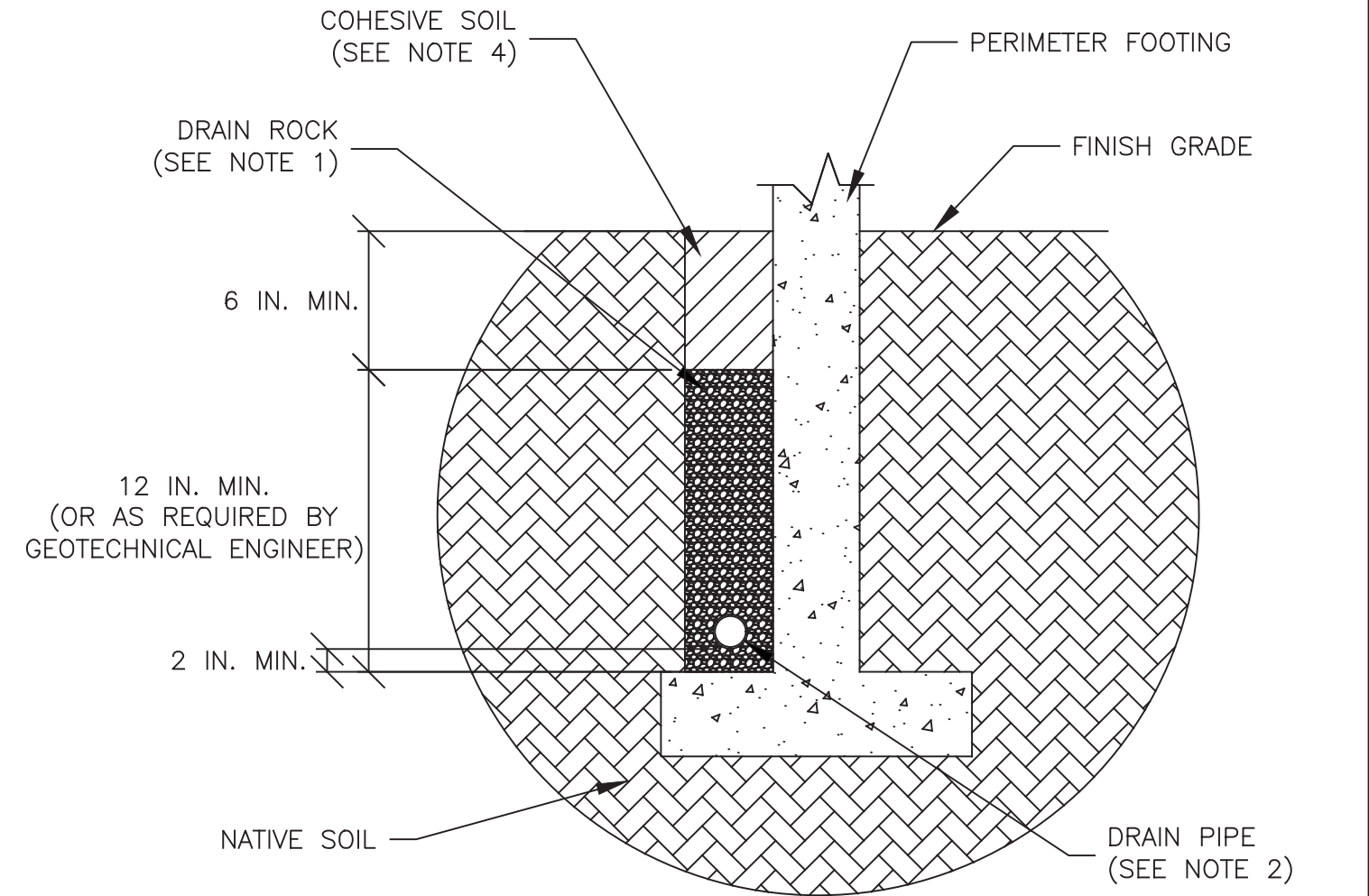
BY	CRGT
DATE	4/15/20
CHECK	JN
SCALE	NTS

FIGURE	6
JOB NO.	9528.00

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	CLIENT	NACHT & LEWIS	DATE	4/15/20	
	LOCATION	631 SOUTH ORCHARD STREET, UKIAH	CHECK	JNK	JOB NO.  9528.00
	PERIMETER SUBDRAIN		SCALE	NTS	
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- NOTES:
- (1) Drain rock should meet the Class 2 permeable material requirements in the latest version of the Caltrans standard specifications.
  - (2) Drain pipe should be SDR 35 or equivalent, placed with perforation down, and sloped at a minimum of 1 percent to drain to gravity outlet.
  - (3) A clean-out pipe with cap should be installed at the up-slope end of perforated pipe, and pipe elbows should be 45 degrees or less (for "snake" access)
  - (4) Top 12 inches of fill above back drain should contain at least 20 percent clay to limit surface water from flowing into the drain rock.

## APPENDIX 1

### **Boring Logs**

<b>CLIENT</b> <u>Nacht &amp; Lewis</u>	<b>PROJECT NAME</b> <u>Mendocino County CRT</u>
<b>PROJECT NUMBER</b> <u>9528.00</u>	<b>PROJECT LOCATION</b> <u>631 S. Orchard Ave, Ukiah</u>
<b>DATE STARTED</b> <u>4/3/20</u> <b>COMPLETED</b> <u>4/3/20</u>	<b>GROUND ELEVATION</b> <u>600 feet</u> <b>HOLE SIZE</b> <u>inches</u>
<b>DRILLING CONTRACTOR</b> <u>Clear Heart Drilling</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger</u>	▽ <b>AT TIME OF DRILLING</b> <u>13.50 feet / Elevation 586.50 feet</u>
<b>LOGGED BY</b> <u>KRM</u> <b>CHECKED BY</b> <u>JNK</u>	▼ <b>AT END OF DRILLING</b> <u>8.50 feet / Elevation 591.50 feet</u>
<b>NOTES</b> <u>Mod Cal blows converted to SPT blows (*0.64)</u>	

GEOTECH BORING NEW - GINT STD US LAB.GDT - 6/2/20 09:09 - P:\950019528 NACHT & LEWIS\9528.00 MENDOCINO COUNTY PSYCHIATRIC HEALTH FACILITY\08 GEOLOGY\9528.00 GINT FILE.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0													
		(SC) Dark Yellowish Brown Clayey Sand with Silt moist, soft fine sand	MC	83	3-2-2 (4)					27	11	16	48
		(CL) Dark Brown Sandy Lean Clay moist, stiff fine sand	MC	90	3-4-7 (11)								
5			MC	100	3-4-5 (9)					30	13	17	68
		▼ becomes reddish brown minor fine to 1 inch diameter subrounded gravel present (<15%)	MC	80	3-5-6 (11)		102	21					
10													
		(SW-SC) Dark Yellowish Brown Well Graded Sand with Clay moist, medium dense fine to coarse sand	MC	97	10-12-10 (22)								
15			SPT	83	10-11-11 (22)								

Bottom of borehole at 15.5 feet.

<b>CLIENT</b> <u>Nacht &amp; Lewis</u>	<b>PROJECT NAME</b> <u>Mendocino County CRT</u>
<b>PROJECT NUMBER</b> <u>9528.00</u>	<b>PROJECT LOCATION</b> <u>631 S. Orchard Ave, Ukiah</u>
<b>DATE STARTED</b> <u>4/3/20</u> <b>COMPLETED</b> <u>4/3/20</u>	<b>GROUND ELEVATION</b> <u>599 feet</u> <b>HOLE SIZE</b> <u>inches</u>
<b>DRILLING CONTRACTOR</b> <u>Clear Heart Drilling</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger</u>	▽ <b>AT TIME OF DRILLING</b> <u>8.00 feet / Elevation 591.00 feet</u>
<b>LOGGED BY</b> <u>KRM</u> <b>CHECKED BY</b> <u>JNK</u>	▼ <b>AT END OF DRILLING</b> <u>14.00 feet / Elevation 585.00 feet</u>
<b>NOTES</b> <u>Mod Cal blows converted to SPT blows (*0.64)</u>	

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DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0													
		(CL) Dark Yellowish Brown Sandy Lean Clay moist, medium stiff to stiff fine sand	MC	90	3-3-4 (7)								
			MC	83	4-6-8 (14)								
5		minor fine subrounded gravel	MC	87	3-3-4 (7)			109	16	36	16	20	72
		(SC) Dark Brown Clayey Sand with Gravel wet, loose											
		▽ fine to coarse sand, fine to 2 inch diameter subrounded to rounded gravel	MC	100	7-4-4 (8)								24
10		(CL) Dark Brown Sandy Lean Clay wet, stiff fine sand	MC	100	2-3-7 (10)								
		(SW-SC) Dark Brown Well Graded Sand with Clay and Gravel wet, medium dense											
		▼ fine to coarse sand, fine to 3 inch diameter rounded to subrounded gravel	MC	73	7-8-9 (17)								18
15		increased fine content	MC	50	8-7-4 (11)								9
20			SPT	67	6-8-16 (24)								14
25		becomes dense, Well Graded Sand with Clay and Gravel fine to coarse sand, fine to 2+ inch rounded to subrounded gravel	SPT	67	12-15-15 (30)								10
30													
		Difficulty drilling - heaving conditions. Sample at 30 feet mainly slough, resampled at 31.5 feet	SPT	17	8-15-17 (32)								
			SPT	72	6-8-13 (21)								7
35													

(Continued Next Page)

CLIENT Nacht & Lewis

PROJECT NAME Mendocino County CRT

PROJECT NUMBER 9528.00

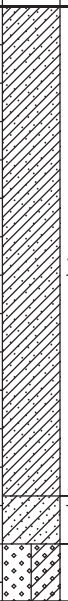
PROJECT LOCATION 631 S. Orchard Ave, Ukiah

GEOTECH BORING NEW - GINT STD US LAB.GDT - 6/2/20 09:09 - P:\950019528 NACHT & LEWIS\9528.00 MENDOCINO COUNTY PSYCHIATRIC HEALTH FACILITY\08 GEOLOGY\9528.00 GINT FILE.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
35		(SW-SC) Dark Brown Well Graded Sand with Clay and Gravel wet, medium dense fine to coarse sand, fine to 3 inch diameter rounded to subrounded gravel <i>(continued)</i> Difficulty drilling - heaving conditions.	SPT	94	10-18-27 (45)								
40		(CL) Dark Yellowish Brown mottled with Gray Sandy Lean Clay moist to wet, stiff fine sand attempted Mod Cal but difficulty with sampler due to heaving conditions, switched to SPT	SPT	94	6-6-9 (15)			106	21				
45		(SC) Gray Clayey Sand moist to wet, medium dense fine sand	MC	90	3-5-8 (13)					30	13	17	26
50		(SW) Dark Brown Well Graded Sand moist, very dense fine to coarse sand Began to sample with Mod Cal but refusal in first 6 inch interval on very dense material. Switched to SPT.	MC SPT	100 67	51 38-37-32 (69)								
		(SC) Dark Brown Clayey Sand with Gravel moist, very dense fine to coarse sand, fine to 2+ inch subrounded to subangular gravel											








Bottom of borehole at 52.0 feet.

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DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0													
		(CL) Dark Yellowish Brown Sandy Lean Clay moist, medium stiff fine sand, fine to 1/2 inch diameter rounded gravel	MC	87	3-3-4 (7)	UC: 1000							
		MC	87	3-4-6 (10)									
5		MC	100	4-4-5 (9)									
		MC	100	3-5-6 (11)									
10		MC	93	2-2-2 (4)									
		mottled with reddish brown moist fine to 1 inch diameter subrounded to rounded gravel											
		(SC) Dark Yellowish Brown Clayey Sand with Gravel wet at 13 feet, very loose fine to coarse sand, fine to 3/4 inch diameter rounded to subrounded gravel. Coarsens with depth	SPT	86	5-6-6 (12)								
15		(SW-SC) Dark Yellowish Brown Well Graded Sand with Gravel and Clay wet, medium dense fine to coarse sand, fine to 3/4 inch diameter subrounded to rounded gravel some fine sand lenses											
Bottom of borehole at 15.5 feet.													

<b>CLIENT</b> <u>Nacht &amp; Lewis</u>	<b>PROJECT NAME</b> <u>Mendocino County CRT</u>
<b>PROJECT NUMBER</b> <u>9528.00</u>	<b>PROJECT LOCATION</b> <u>631 S. Orchard Ave, Ukiah</u>
<b>DATE STARTED</b> <u>4/3/20</u> <b>COMPLETED</b> <u>4/3/20</u>	<b>GROUND ELEVATION</b> <u>600 feet</u> <b>HOLE SIZE</b> <u>inches</u>
<b>DRILLING CONTRACTOR</b> <u>Clear Heart Drilling</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger</u>	<b>AT TIME OF DRILLING</b> <u>--- Note Encountered</u>
<b>LOGGED BY</b> <u>KRM</u> <b>CHECKED BY</b> <u>JNK</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b> <u>Mod Cal blows converted to SPT blows (*0.64)</u>	

GEOTECH BORING NEW - GINT STD US LAB.GDT - 6/2/20 09:09 - P:\950019528 NACHT & LEWIS\9528.00 MENDOCINO COUNTY PSYCHIATRIC HEALTH FACILITY\108 GEOLOGY\9528.00 GINT FILE.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			FINES CONTENT (%)
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0													
		(CL) Dark Brown Sandy Lean Clay moist, stiff fine sand	 MC	87	6-5-4 (9)								
			 MC	87	3-5-6 (11)								
5		minor fine to 1 inch diameter subrounded to subangular gravel	 MC	100	3-4-5 (9)								
			 MC	100	2-4-6 (10)								
10		becomes Dark Yellowish Brown fine to 1 inch diameter subrounded gravel	 MC	100	4-4-4 (8)								
			 SPT	100	4-6-9 (15)								
15													

Bottom of borehole at 15.0 feet.


















CLIENT Nacht & Lewis

PROJECT NAME Mendocino County CRT

PROJECT NUMBER 9528.00

PROJECT LOCATION 631 S. Orchard Ave, Ukiah

### UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS				TYPICAL NAMES	
COARSE GRAINED SOILS More than Half > #200 sieve	GRAVELS  MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP		POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC		CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS  MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS
			SP		POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC		CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS More than Half < #200 sieve	SILTS AND CLAYS  LIQUID LIMIT LESS THAN 50		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL		ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS  LIQUID LIMIT GREATER THAN 50		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

### KEY TO TEST DATA

	Modified California (MC)	RV	R-Value	LL	Liquid Limit (%)		
	Standard Penetration Test (SPT)	SA	Sieve Analysis	PI	Plastic Index (%)		
	Pushed Shelby Tube (ST)	SW	Swell Test	Gs	Specific Gravity	Shear Strength (psf)	Confining Pressure (psf)
	Auger Cuttings	CP	Compaction	MA	Particle Size Analysis		
	Grab Sample (GB)	TC	Cyclic Triaxial	Tx	Unconsolidated Undrained Triaxial	320	(2600)
	Continuous Core Sample (CC)	EI	Expansion Index	TxCU	Consolidated Undrained Triaxial	320	(2600)
c	Cohesion	Perm	Permeability	DS	Consolidated Drained Direct Shear	2750	(2000)
	Friction Angle	Consol	Consolidation	FVS	Field Vane Shear	470	
MC	Moisture Content		Shear Strength	UC	Unconfined Compression	2000	
DD	Dry Density		Water Level at Time of Drilling	LVS	Laboratory Vane Shear	700	
PP	Pocket Penetrometer		Water Level after Drilling				

NOTES: The lines separating soil layers are approximate boundaries.

Blow counts represent the number of blows of a 140-pound hammer falling 30 inches to drive an 18-inch sampler the final 12 inches.

Modified California Sampler blow counts have been converted to standard N-value blow counts using Burmister's energy input factor of 0.65.

## LACO ROCK CLASSIFICATION SYSTEM

**Consolidation of Sedimentary Rocks:** Usually determined from unweathered samples. Largely dependent on cementation.

unconsolidated
poorly consolidated
moderately consolidated
well consolidated

### Bedding of Sedimentary Rocks

Splitting Property	Thickness	Stratification
Massive	greater than 4.0 feet	very thick bedded
Blocky	2.0 to 4.0 feet	thick-bedded
Slabby	0.2 to 2.0 feet	thin-bedded
Flaggy	0.05 to 0.2 feet	very thin-bedded
Shaly or Platy	0.01 to 0.05 feet	laminated
Papery	less than 0.01 feet	thinly laminated

### FRACTURING

Intensity	Size of Pieces in Feet
Very little fractured	Greater than 4.0
Occasionally fractured	1.0 to 4.0
Moderately fractured	0.5 to 1.0
Closely fractured	0.1 to 0.5
Intensely fractured	0.05 to 0.1
Crushed	less than 0.05

### HARDNESS

Soft	Reserved for plastic material alone
Low Hardness	Can be gouged deeply or carved easily with a knife blade
Moderately Hard	Can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away
Hard	Can be scratched with difficulty; scratch produces little powder and is often faintly visible
Very Hard	Cannot be scratched with knife blade; leaves a metallic streak

### Strength

Plastic	very low strength
Friable	crumbles easily by rubbing with fingers
Weak	an unfractured specimen of such material will crumble under light hammer blows
Moderately Strong	specimen will withstand a few heavy hammer blows before breaking
Strong	specimen will withstand a few heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments
Very Strong	specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments

**Weathering:** The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation and freezing and thawing

Deep	moderate to complete mineral decomposition, extensive disintegration, deep and thorough discoloration, many fractures. all extensively coated or filled with oxides, carbonates and/or clay or silt.
Moderate	slight change or partial decomposition of minerals, little disintegration, cementation little to unaffected. moderate to occasionally intense discoloration moderately coated fractures.
Little	no megascopic decomposition of minerals, little or no effect on normal cementation, slight and intermittent or localized discoloration. few stains on fracture surfaces.
Fresh	unaffected by weathering agents. no disintegration or discoloration. fractures usually less numerous than joints.

## APPENDIX 2

### **Laboratory Test Results**



**FINER THAN #200 SIEVE**  
**ASTM C117/ASTM D-1140**

PROJECT	Mendocino County PFH, CST and CRT	JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis	SAMPLE ID	280	1 of 1
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE 5/13/20
SOIL TYPE	Brown Clayey Sand (SC)	CHECKED BY	GF	CHECK DATE 5/14/20

**B1 @ 2.0'-2.5'**

(B)	Net sample (Dry)	162.8	gms
(C)	Dry sample after washing	84.8	gms
	Total Material finer than 200 sieve	78.0	gms

(A)	% Material finer than 200 sieve	<b>47.9%</b>
	$A = [(B-C)/B] \times 100$	



**FINER THAN #200 SIEVE**  
**ASTM C117/ASTM D-1140**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE	5/27/20	
		CHECKED BY	GF	CHECK DATE	5/28/20	

<b>B2 @ 11.0'-11.5'</b>		SC	
(B)	Net sample (Dry)	434.8	gms
(C)	Dry sample after washing	357.2	gms
	Total Material finer than 200 sieve	77.6	gms

(A) % Material finer than 200 sieve **17.8%**  
 $A = [(B-C)/B] \times 100$

<b>B2 @ 16.0'-16.5'</b>	GC		
(B)	Net sample (Dry)	572.9	gms
(C)	Dry sample after washing	495.4	gms
	Total Material finer than 200 sieve	77.5	gms

(A) % Material finer than 200 sieve **13.5%**  
 $A = [(B-C)/B] \times 100$

<b>B2 @ 25.0'-26.5'</b>		GP-GC	
(B)	Net sample (Dry)	602.6	gms
(C)	Dry sample after washing	543.6	gms
	Total Material finer than 200 sieve	59.0	gms

(A) % Material finer than 200 sieve **9.8%**  
 $A = [(B-C)/B] \times 100$



**FINER THAN #200 SIEVE**  
**ASTM C117/ASTM D-1140**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE	5/21/20	
		CHECKED BY	GF	CHECK DATE	5/22/20	

<b>B1 @ 5.5'-6.0'</b>	CL
(B) Net sample (Dry)	187.7 gms
(C) Dry sample after washing	61.0 gms
Total Material finer than 200 sieve	126.7 gms
(A) % Material finer than 200 sieve	<b>68%</b>
$A = [(B-C)/B] \times 100$	

<b>B2 @ 2.0'-2.5'</b>	CL
(B) Net sample (Dry)	192.6 gms
(C) Dry sample after washing	54.0 gms
Total Material finer than 200 sieve	138.6 gms
(A) % Material finer than 200 sieve	<b>72.0%</b>
$A = [(B-C)/B] \times 100$	

<b>B2 @ 8.5'-9.0'</b>	GC
(B) Net sample (Dry)	381.8 gms
(C) Dry sample after washing	288.6 gms
Total Material finer than 200 sieve	93.2 gms
(A) % Material finer than 200 sieve	<b>24.4%</b>
$A = [(B-C)/B] \times 100$	

<b>B2 @ 31.5'-33.0'</b>	SP-SC
(B) Net sample (Dry)	452.5 gms
(C) Dry sample after washing	419.4 gms
Total Material finer than 200 sieve	33.1 gms
(A) % Material finer than 200 sieve	<b>7.3%</b>
$A = [(B-C)/B] \times 100$	

<b>B2 @ 46.0'-46.5'</b>	SC
(B) Net sample (Dry)	112.5 gms
(C) Dry sample after washing	83.5 gms
Total Material finer than 200 sieve	29.0 gms
(A) % Material finer than 200 sieve	<b>25.8%</b>
$A = [(B-C)/B] \times 100$	



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## SIEVE ANALYSIS WORKSHEET (ASTM C-136)

Project No.	9528.00		Material Desc.		Brm Sand W/ Clay & Gravel (SP-SC)		Tested By:		GF		Date:		5/21/20	
Client:	Nacht & Lewis		Manufacturer				Checked By:		GF		Date:		5/22/20	
Sample ID:	B2 @ 13.0'-13.5		Sample Location				Initial Weight:		622.8 gm		% Difference		> 0.3%	
Partial Weight (gm)	(37.5mm) Ret. 1 1/2		(37.5mm x 19mm) 1 1/2 x 3/4		(19mm x 4.75mm) 3/4 x #4		Pass (4.75mm) #4							
% Used					622.8		622.8							
Size of Sample (gm)					100.00%		622.8		0.00%					
	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	Sample Grading	Specs.			
(75mm) 3										100				
(62.5mm) 2 1/2										100				
(50mm) 2										100				
(37.5mm) 1 1/2										100				
(25mm) 1										100				
(19mm) 3/4										100				
(12.5mm) 1/2										100				
(9.5mm) 3/8										95				
(4.75mm) 4										80				
(2.38mm) 8										61				
(1.19mm) 16										38				
(600µm) 30										24				
(300µm) 50										16				
(150µm) 100										11				
(75µm) 200										8.6				
Wash Wt.										8				



# **ATTERBERG LIMITS** **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B1 @ 2.0'-2.5'	TEST BY	GF	DATE	5/13/20	
SOIL TYPE	Brown Clayey Sand (SC)	CHECKED BY	GF	CHECK DATE	5/14/20	

## **PLASTIC LIMIT**

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	24.88	24.41	
Tare + Dry Soil (gm)	22.39	22.05	
Water (gm)	2.49	2.36	
Tare (gm)	13.24	13.36	
Dry Soil (gm)	9.15	8.69	
Water Content (%)	27.2%	27.2%	
* Number of Blows	25	25	

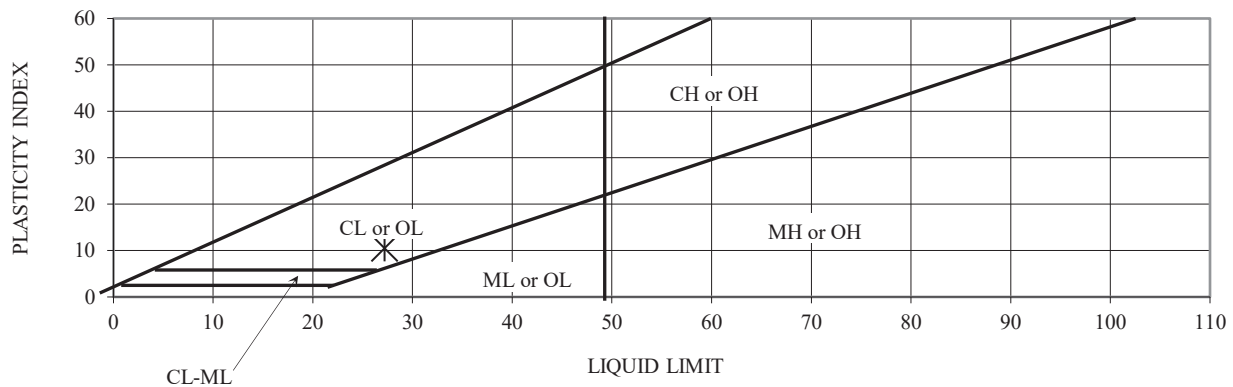
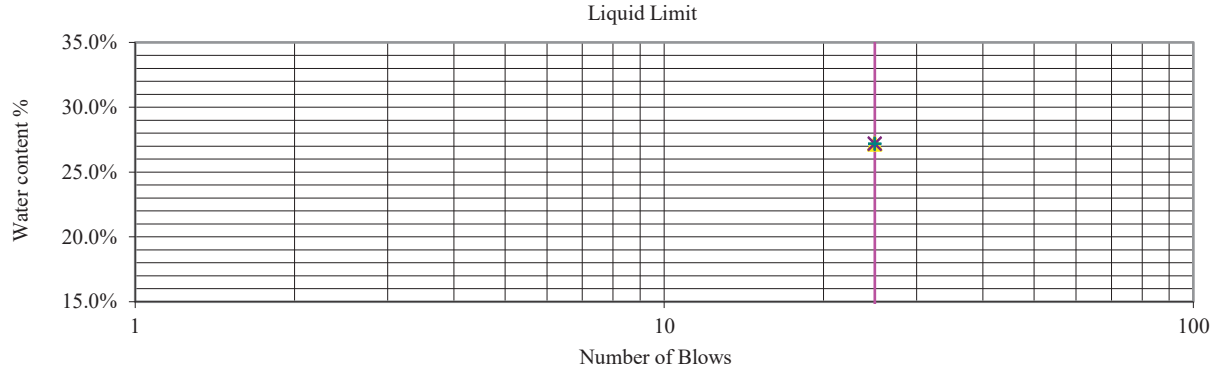
\* Groove closure = 13mm

Run 1	Run 2	Run 3
14.52	14.65	
13.49	13.60	
1.03	1.05	
7.35	7.27	
6.14	6.33	
16.8%	16.6%	

**LIQUID LIMIT = 27**

**PLASTIC LIMIT = 17**

**PLASTIC INDEX = 11**







# **ATTERBERG LIMITS** **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B2 @ 2.0'-2.5'	TEST BY	GF	DATE	5/21/20	
SOIL TYPE	Brn Clay W/ Sand (CL)	CHECKED BY	GF	CHECK DATE	5/22/20	

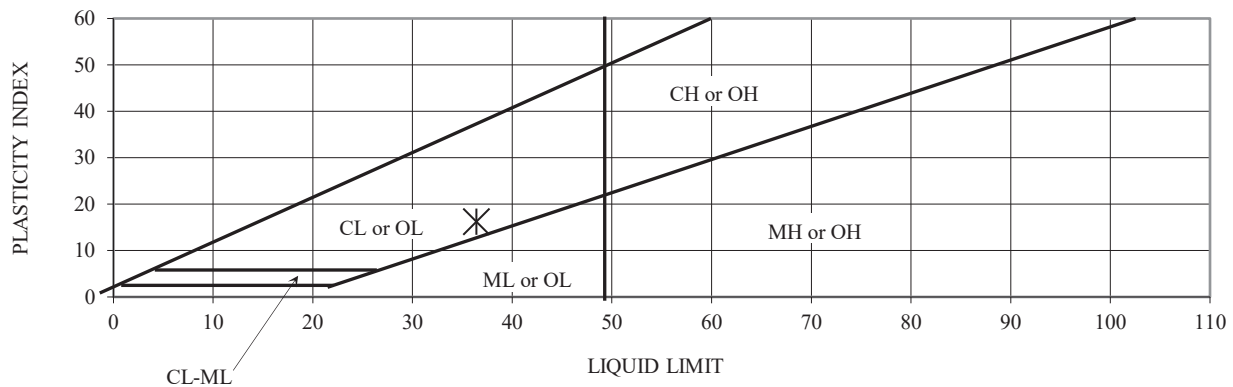
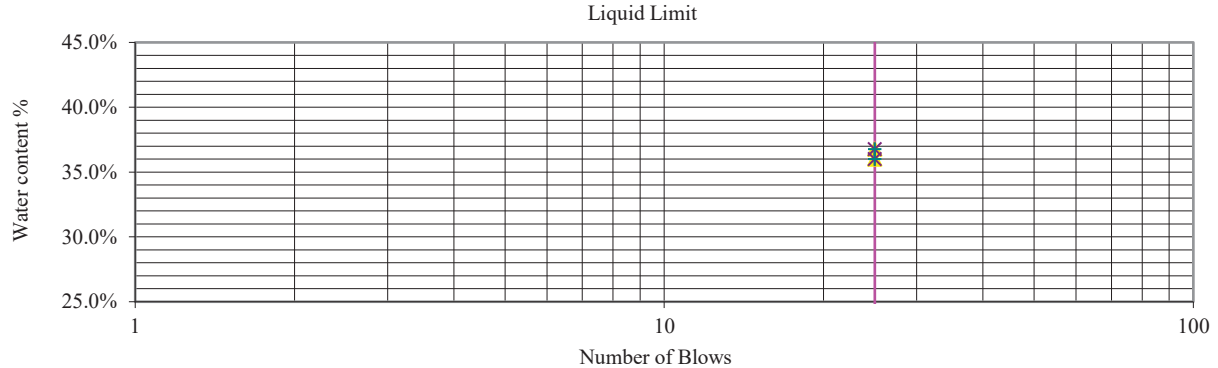
## **PLASTIC LIMIT**

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	22.74	23.51	
Tare + Dry Soil (gm)	20.24	20.81	
Water (gm)	2.50	2.70	
Tare (gm)	13.44	13.31	
Dry Soil (gm)	6.80	7.50	
Water Content (%)	36.8%	36.0%	
* Number of Blows	25	25	

\* Groove closure = 13mm

Run 1	Run 2	Run 3
14.30	14.07	
13.14	12.94	
1.16	1.13	
7.43	7.30	
5.71	5.64	
20.3%	20.0%	

**LIQUID LIMIT = 36**  
**PLASTIC LIMIT = 20**  
**PLASTIC INDEX = 16**





# **ATTERBERG LIMITS** **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B1 @ 5.5'-6.0'	TEST BY	GF	DATE	5/21/20	
SOIL TYPE	Brn Sandy Clay (CL)	CHECKED BY	GF	CHECK DATE	5/22/20	

## **PLASTIC LIMIT**

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	22.52	23.04	
Tare + Dry Soil (gm)	20.40	20.83	
Water (gm)	2.12	2.21	
Tare (gm)	13.32	13.43	
Dry Soil (gm)	7.08	7.40	
Water Content (%)	29.9%	29.9%	
* Number of Blows	25	25	

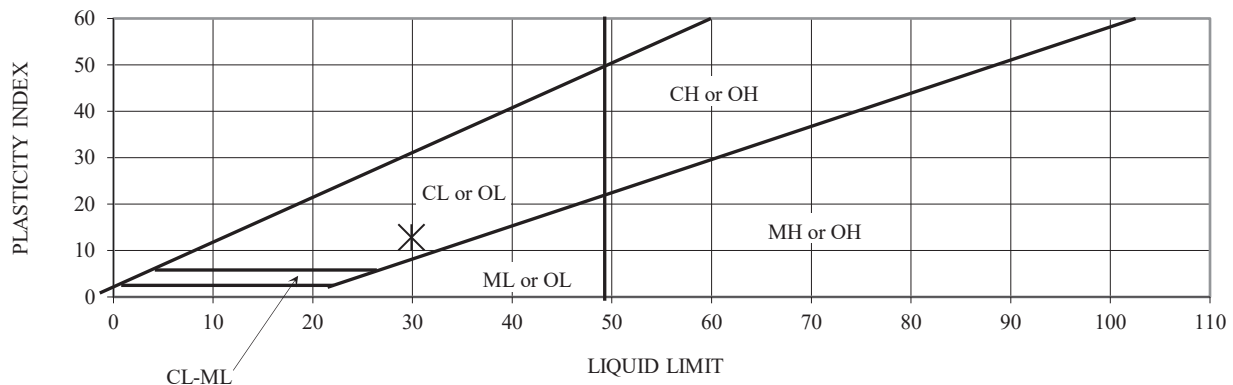
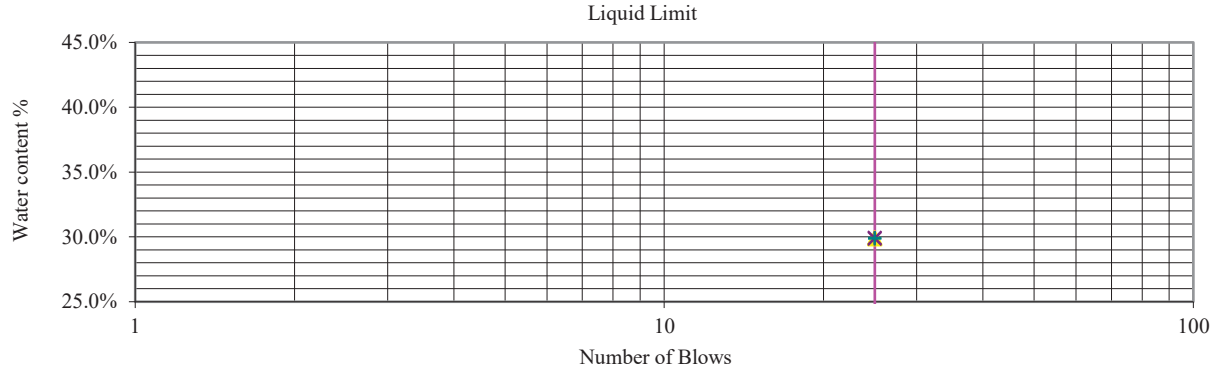
\* Groove closure = 13mm

Run 1	Run 2	Run 3
14.43	14.35	
13.39	13.33	
1.04	1.02	
7.37	7.27	
6.02	6.06	
17.3%	16.8%	

**LIQUID LIMIT = 30**

**PLASTIC LIMIT = 17**

**PLASTIC INDEX = 13**





# **ATTERBERG LIMITS** **ASTM D-4318**

PROJECT	Mendocino County CRT			JOB NO.	9528.00	SHEET
CLIENT	Nacht & Lewis			SAMPLE ID	280	1 of 1
SOURCE	B2 @ 46.0'-46.5'	TEST BY	GF	DATE	5/21/20	
SOIL TYPE	Gray Clayey Sand (SC)	CHECKED BY	GF	CHECK DATE	5/22/20	

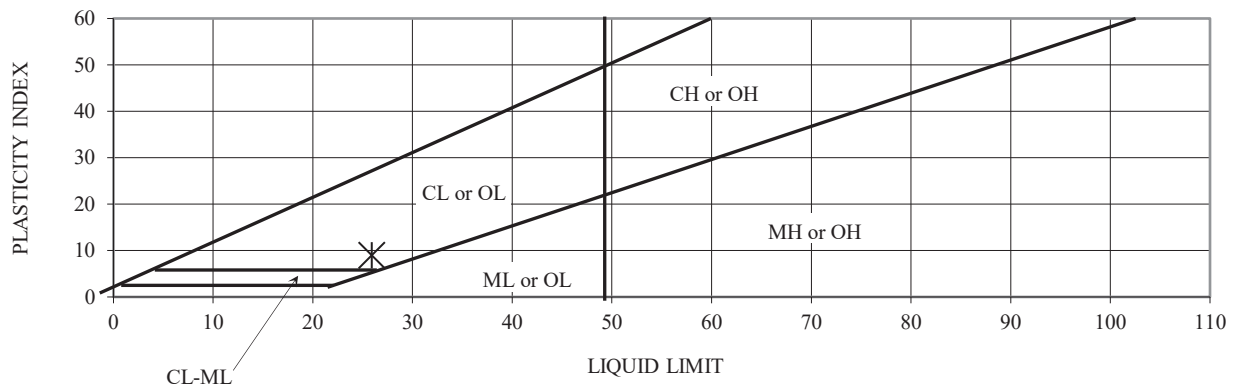
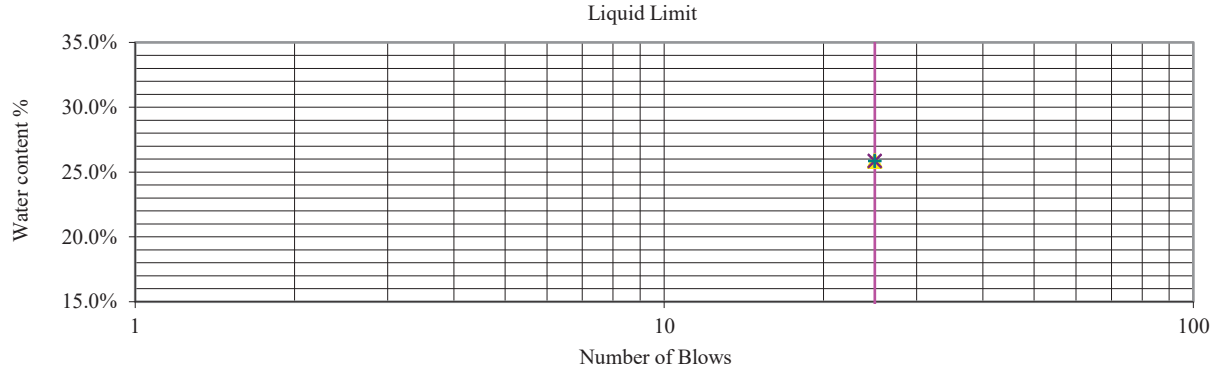
## **PLASTIC LIMIT**

	Point 1	Point 2	Point 3
Tare + Wet Soil (gm)	25.68	25.61	
Tare + Dry Soil (gm)	23.11	23.06	
Water (gm)	2.57	2.55	
Tare (gm)	13.16	13.21	
Dry Soil (gm)	9.95	9.85	
Water Content (%)	25.8%	25.9%	
* Number of Blows	25	25	

\* Groove closure = 13mm

Run 1	Run 2	Run 3
14.47	14.67	
13.41	13.64	
1.06	1.03	
7.23	7.48	
6.18	6.16	
17.2%	16.7%	

**LIQUID LIMIT = 26**  
**PLASTIC LIMIT = 17**  
**PLASTIC INDEX = 9**





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**ASTM D4829****EXPANSION INDEX**

Page

1

Project No.

9528.00

Project

Mendocino County CRT

Tested By

GF

Date

5/24/20

Location

631 S. Orchard Ave., Ukiah

Checked By

GF

Date

5/26/20

Client

Nacht &amp; Lewis

Sample ID:

280

DATE	TIME	TIME (minutes)	READING (in)
5/23/2020	11:05:00		0.150
	11:15:00		0.150
	11:35:00		0.180
5/24/2020	11:10:00		0.210
	11:50:00		0.210

D<sub>1</sub> INITIAL READING (in) 0.1500D<sub>2</sub> FINAL READING (in) 0.2100

ΔH CHANGE IN HEIGHT (in) 0.06

H<sub>1</sub> INITIAL HEIGHT (in) 1

EI= 60

Wet soil + ring 743.5 gm

Ring 364.2 gm

Volume of ring 205.93 cm<sup>3</sup>Wet Density 115.0 lb/ft<sup>3</sup>

Wet soil + pan 158.8 gm

Dry soil + pan 148.9 gm

Pan 65.8 gm

Total water 9.9 gm

Dry soil 83.1 gm

Percent H<sub>2</sub>O = 11.9 %Dry Density = 102.7 lb/ft<sup>3</sup>

Notes: Water content adjusted to achieve saturation of 50% ± 2%

Sample tested was saturated at = 50.2%



**MOISTURE / DENSITY**  
**ASTM D-2216 / 2937**

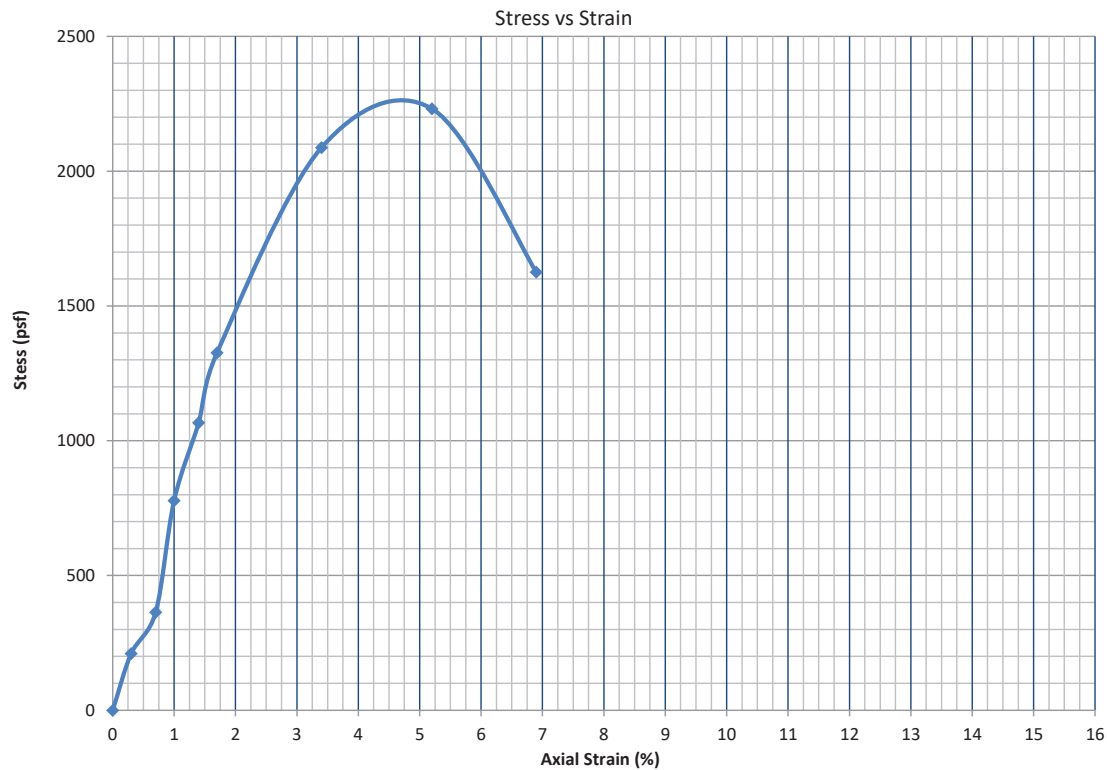
PROJECT	Mendocino County CRT		SHEET	1/1	
CLIENT	Nacht & Lewis	JOB NO.	9528.00	LAB ID	280
LOCATION	631 S. Orchard Ave., Ukiah	TEST BY	GF	DATE	5/21/20
		CHECKED BY	GF	CHECK DATE	5/22/20

SAMPLE LOCATION	B1	B2	B2		
DEPTH (ft)	8.5'-9.0'	3.5'-4.0'	40.0'-41.5'		
SOIL TYPE (USCS)	CL	CL	CL		
WET SOIL+PAN+TUBE	220.2	228.7	238.0		
DRY SOIL + PAN + TUBE	192.8	206.1	207.7		
PAN + TUBE	64.2	65.7	65.5		
MOISTURE CONTENT (%)	21.3	16.1	21.3		
TUBE DIAMETER (cm)	6.17	6.10	3.81		
TOTAL TUBE LENGTH (cm)	15.2	15.2	15.2		
EMPTY TUBE LENGTH (cm)	0.0	0.3	0.8		
NET SPECIMEN LENGTH (cm)	15.2	15.0	14.4		
TARE WEIGHT OF TUBE (gm)	0.0	258.2	0.0		
NET WET SOIL + TUBE (gm)	902.5	1144.5	337.9		
WET SOIL (gm)	902.5	886.3	337.9		
VOLUME OF WET SOIL (cf)	0.016	0.015	0.006		
WET DENSITY (pcf)	123.7	126.7	128.2		
DRY DENSITY (pcf)	102.0	109.1	105.7		
VOID RATIO	0.6	0.5	0.6		
% SATURATION	90.5	82.4	99.5		



**Unconfined Compressive Strength Test**  
**ASTM D-2166**

PROJECT	Mendocino County CRT	JOB NO.	9528	PM	KD	SHEET	1 of 1
CLIENT	Nacht & Lewis	SAMPLE ID	B3	TEST BY	GF	DATE	5/21/20
LOCATION	631 S. Orchard Ave., Ukiah	SAMPLE DEPTH	2.0'-2.5'	CHECKED BY	GF	DATE	5/22/20
SOIL TYPE	Brn Clay (CL)	COMMENTS					



Failure strain	5.2 %
Unconfined Compressive Strength	2168 psf
Undrained shear strength	1084 psf
Strain rate	1 %/min

Sample height	5.80 in
Sample diameter	2.43 in
Height / diameter ratio	2.39
Moisture content	22.5 %
Void ratio	4.23
Saturation	%
Specific gravity (assumed)	2.70

---

## MATERIAL TEST REPORT

---

**Date Of Issue :** 6/2/2020

**Re:** Mendocino County PHF, CSU & CRT  
631 S Orchard Street  
Ukiah, CA 95482

**Permit#** N/A

**CEL#** 4055694PW

**LAB#** 10S200602-3

---

### MATERIAL/SAMPLE DATA

---

**Material:** Dark Brown Sandy Clay

**Source:** N/A

**Location:** N/A

**Sample Date:** 05/26/2020

**Sampled By:** Others

---

### TESTS COMPLETED

---

Consolidated Engineering Laboratories has performed testing of materials for the above project as noted below.

Testing was performed in accordance with the indicated test method. Results as follows:

**1 Resistance "R" Value of Untreated Soils ASTM D 2844**

**Date Tested:** 06/02/2020

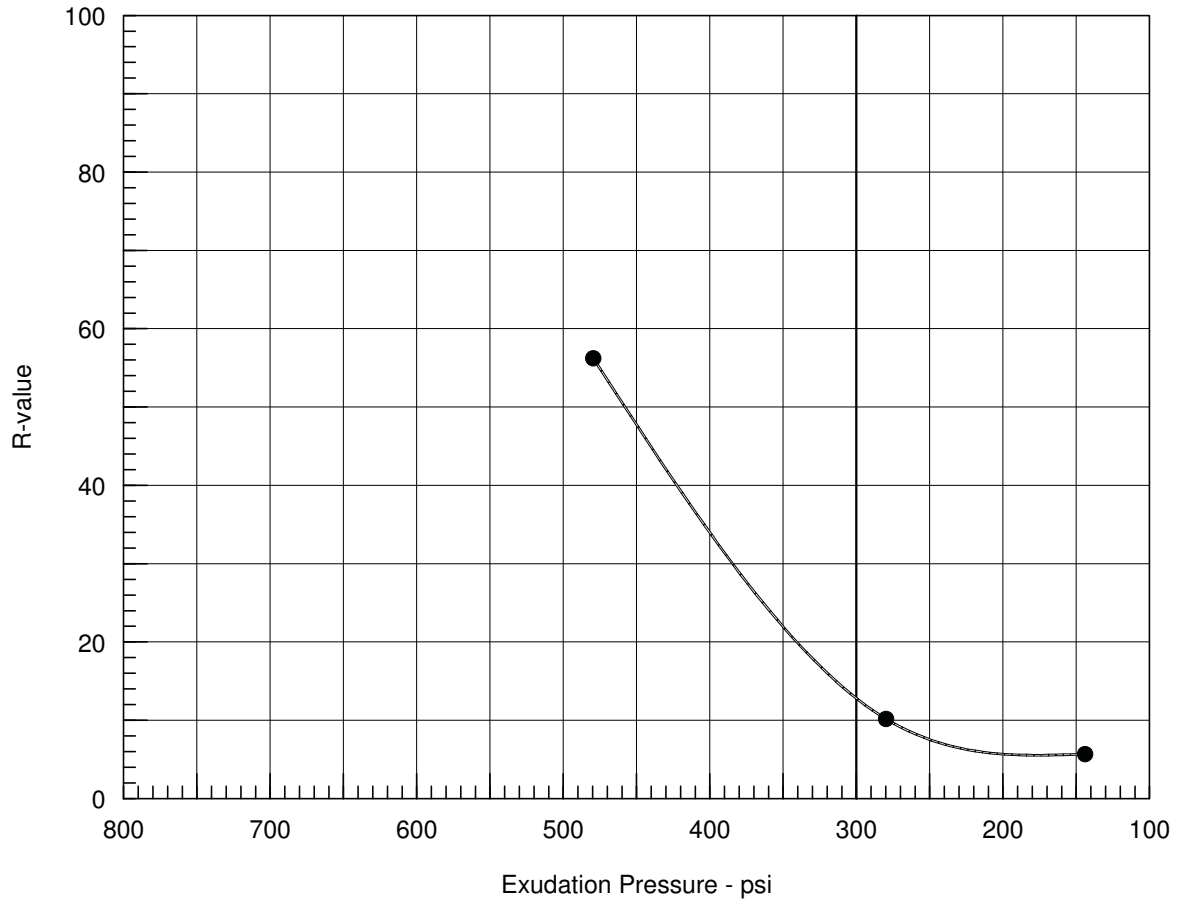
Please refer to the attached data sheets for results.

**CC: Respectfully Submitted: Greg D. LeRoy, PE, Laboratory Director**

Placeholder (ER)

LACO (ER)

# R-VALUE TEST REPORT



**Resistance R-Value and Expansion Pressure - Cal Test 301**

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	90	116.1	14.4	0.00	134	2.50	280	10	10
2	50	113.4	15.4	0.00	146	2.65	144	5	6
3	250	121.2	11.7	0.00	59	2.45	480	56	56

Test Results	Material Description
R-value at 300 psi exudation pressure = 13	Dark Brown Sandy Clay Sampled by Others on 5/26/2020
<b>Project No.:</b> 4055694PW <b>Project:</b> Mendocino County PHF, CSU & CRT <b>Location:</b> N/A / N/A <b>Sample Number:</b> 10S200602-3 <b>Date:</b> 6/2/2020	<b>Tested by:</b> JC <b>Checked by:</b> GL <b>Remarks:</b>
<b>R-VALUE TEST REPORT</b> <b>CONSOLIDATED ENGINEERING LABORATORIES</b>	<b>Figure 10S200602-3</b>





# ETS

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so that both benefit.**

COMPANY: LACO Associates, 3450 Regional Parkway, Suite B2, Santa Rosa, CA 95407	ANALYST(S) L. Quijano G. Hernandez	SUPERVISOR S. Santos LAB DIRECTOR G.S. Conrad PhD
ATTN: Coleton R. Golden-Tudor	DATE of COMPLETION 5/15/2020	
JOB NAME: Mendocino County PHF, CST, CRT	DATE RECEIVED 5/6/2020	
JOB #: 9538.00		

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SOIL pH -log[H <sup>+</sup> ]	NOMINAL MIN RESISTIVITY ohm-cm	ELECTRICAL CONDUCTIVITY µmhos/cm	SULFATE SO <sub>4</sub> ppm	CHLORIDE Cl ppm
08368-1	MC1-PCC/C	Native Soil B3 @ 3-3.5'/B3 @ 3.5-4'	6.95	1,922	[520]	9	30
Method	Detection	Limits --->	---	1	0.1	1	1

LAB SAMPLE NUMBER	SAMPLE ID	DESCRIPTION of SOIL and/or SEDIMENT	SALINITY ECe mmhos/cm	SOLUBLE SULFIDES (S=) ppm	SOLUBLE CYANIDES (CN=) ppm	REDOX mV	PERCENT MOISTURE %
08368-1	MC1-PCC/C	Native Soil B3 @ 3-3.5'/B3 @ 3.5-4'		0.261		+344.2	
Method	Detection	Limits --->	---	0.1	0.1	1	0.1

### COMMENTS

Resistivity is nearly 2,000 ohm-cm, i.e., mediocre, and soil reaction (i.e., pH) is near neutral but very slightly acidic; sulfate is very low (i.e., @ <200 ppm), as is chloride (@ <100 ppm); redox is mildly reduced (300-400 mV); sulfides are at a trace level (@ 0.1-1 ppm) [see table below on right for the assigned point values and ranges]. CalTrans (CT) times to perforation of galvanized steel and full depth pitting times (following Uhlig) for this soil are determined based on pertinent parameters [see table at left below]. Sulfate should not have any adverse impact on concrete, cement, mortar or grout; similarly, chloride should not have any adverse impact on rebar or buried steel. Lime or mild cement (@ 1%-2%) treatment to raise soil pH would be of some potential benefit for galvanized steel, but not other steels due to passivation. To increase steel longevity any more in this soil would require upgrading or other actions. At times, structural strength considerations may require heavier gauge steel than are used in the presented examples such that perf and pitting to depth times can be beyond the specified life span. Where this is not the case then cathodic protection along with coating or wrapping steel assets is one potential solution. Other options can include increased and/or specialized engineering fill, use of polymer coating, or the use of plastic, fiberglass or concrete assets. Based on these results, standard concrete mixes and rebar may be acceptable for many routine projects, but modestly elevated sulfides could be a concern in certain in cases where greater longevity or resistance might be desirable necessitating some action such as remediation or upgrading (e.g. ASTM Type II concrete, heavier gauge rebar, etc.).

SAMPLE ID	CT 18 ga	CT 12 ga	2 mm (Uhlig)	PARAMETER/ID	MC1-PCC/C	Total Point Range
MC1-PCC/C	>20 yrs	~45 yrs	~20 yrs	pH	Ø	
treated	>32 yrs	<72 yrs	~22 yrs	Rs	1-6	
				SO <sub>4</sub>	Ø	3-11.5
				Cl	Ø	
				Redox	Ø-3.5	
				Sulfides	2	

\\NOTES: Methods are from following sources: extractions by Cal Trans protocols as per Cal Test 417 (SO<sub>4</sub>), 422 (Cl), and 532/643 (pH & resistivity); &/or by ASTM Vol. 4.08 & ASTM Vol. 11.01 (=EPA Methods of Chemical Analysis, or Standard Methods); pH - ASTM G 51; Spec. Cond. - ASTM D 1125; resistivity - ASTM G187; redox - Pt probe/ISE; sulfate - extraction Title 22, detection ASTM D 516 (=EPA 375.4); chloride - extraction Title 22, detection ASTM D 512 (=EPA 325.3); sulfides - extraction by Title 22, and detection EPA 376.2 (=SMEWW 4500-S= D); cyanides - extraction by Title 22, and detection by ASTM D 4374 (=EPA 335.2).

## APPENDIX 3

### **Liquefaction Analysis**

## SPT BASED LIQUEFACTION ANALYSIS REPORT

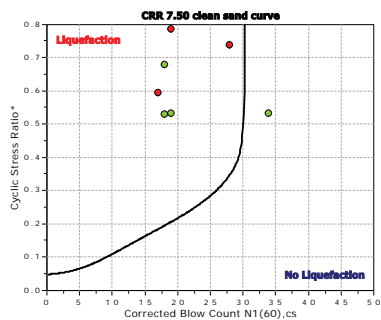
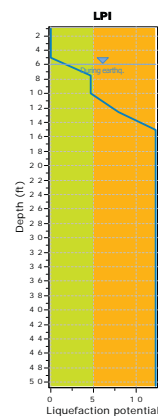
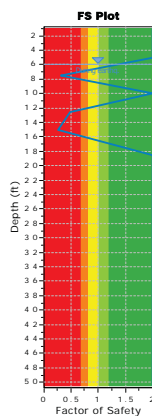
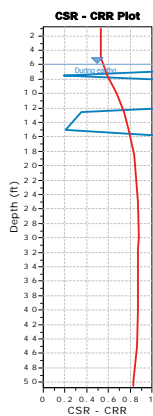
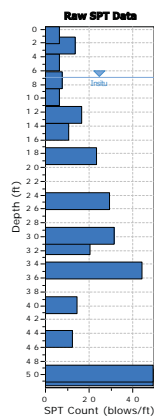
**Project title : Mendocino County CRT**

**SPT Name: B2**

**Location : 631 S Orchard Avenue, Ukiah**

### :: Input parameters and analysis properties ::

Analysis method:	NCEER 1998	G.W.T. (in-situ):	7.00 ft
Fines correction method:	NCEER 1998	G.W.T. (earthq.):	6.00 ft
Sampling method:	Standard Sampler	Earthquake magnitude $M_w$ :	7.40
Borehole diameter:	65mm to 115mm	Peak ground acceleration:	0.85 g
Rod length:	3.30 ft	Eq. external load:	0.00 tsf
Hammer energy ratio:	1.40		



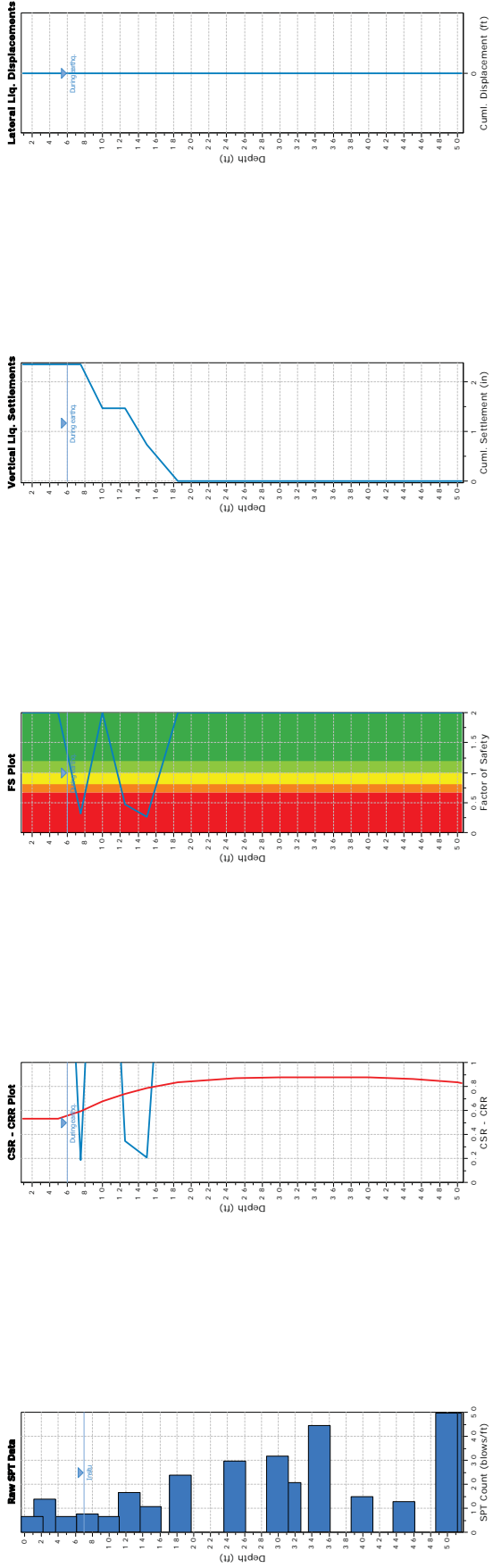
### F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

### LPI color scheme

- Very high risk
- High risk
- Low risk

**:: Overall Liquefaction Assessment Analysis Plots ::**



**:: Field input data ::**

Test Depth (ft)	SPT Field Value (blows)	Fines Content (%)	Unit Weight (pcf)	Infl. Thickness (ft)	Can Liquefy
1.00	7	72.00	109.00	2.50	No
2.50	14	72.00	109.00	2.00	No
5.00	7	72.00	109.00	1.75	No
7.50	8	24.00	110.00	2.75	Yes
10.00	7	72.00	109.00	2.00	No
12.50	17	11.40	110.00	3.50	Yes
15.00	11	11.40	110.00	2.50	Yes
18.50	24	11.40	110.00	5.50	Yes
25.00	30	11.40	120.00	5.50	Yes
30.00	32	11.40	120.00	3.50	Yes
31.50	21	11.40	120.00	2.50	Yes
35.00	45	11.40	120.00	4.50	Yes
40.00	15	75.00	110.00	4.50	No
45.00	13	26.00	110.00	7.00	No
50.00	50	10.00	110.00	0.50	Yes
50.50	50	30.00	120.00	1.50	Yes

**Abbreviations**

Depth: Depth at which test was performed (ft)  
 SPT Field Value: Number of blows per foot  
 Fines Content: Fines content at test depth (%)  
 Unit Weight: Unit weight at test depth (pcf)  
 Infl. Thickness: Thickness of the soil layer to be considered in settlements analysis (ft)  
 Can Liquefy: User defined switch for excluding/including test depth from the analysis procedure

**:: Cyclic Resistance Ratio (CRR) calculation data ::**

Depth (ft)	SPT Field Value	Unit Weight (pcf)	$\alpha_r$ (tsf)	$u_0$ (tsf)	$\sigma'_{vo}$ (tsf)	$C_H$	$C_E$	$C_B$	$C_R$	$C_S$	$(N_1)_{60}$	Fines Content (%)	$\alpha$	$\beta$	$(N_1)_{60cs}$	CRR <sub>7.5</sub>
1.00	7	109.00	0.05	0.00	0.05	1.70	1.40	1.00	0.75	1.00	12	72.00	5.00	1.20	19	4.000
2.50	14	109.00	0.14	0.00	0.14	1.66	1.40	1.00	0.75	1.00	24	72.00	5.00	1.20	34	4.000
5.00	7	109.00	0.27	0.00	0.27	1.51	1.40	1.00	0.75	1.00	11	72.00	5.00	1.20	18	4.000
7.50	8	110.00	0.41	0.02	0.39	1.40	1.40	1.00	0.75	1.00	12	24.00	4.18	1.11	17	0.185
10.00	7	109.00	0.55	0.09	0.45	1.35	1.40	1.00	0.85	1.00	11	72.00	5.00	1.20	18	4.000
12.50	17	110.00	0.68	0.17	0.51	1.31	1.40	1.00	0.85	1.00	26	11.40	1.35	1.03	28	0.348
15.00	11	110.00	0.82	0.25	0.57	1.26	1.40	1.00	0.85	1.00	17	11.40	1.35	1.03	19	0.206
18.50	24	110.00	1.01	0.36	0.65	1.21	1.40	1.00	0.95	1.00	39	11.40	1.35	1.03	41	4.000
25.00	30	120.00	1.40	0.56	0.84	1.10	1.40	1.00	0.95	1.00	44	11.40	1.35	1.03	47	4.000
30.00	32	120.00	1.70	0.72	0.99	1.03	1.40	1.00	1.00	1.00	46	11.40	1.35	1.03	49	4.000
31.50	21	120.00	1.79	0.76	1.03	1.01	1.40	1.00	1.00	1.00	30	11.40	1.35	1.03	32	4.000
35.00	45	120.00	2.00	0.87	1.13	0.97	1.40	1.00	1.00	1.00	61	11.40	1.35	1.03	64	4.000
40.00	15	110.00	2.28	1.03	1.25	0.92	1.40	1.00	1.00	1.00	19	75.00	5.00	1.20	28	4.000
45.00	13	110.00	2.55	1.19	1.37	0.88	1.40	1.00	1.00	1.00	16	26.00	4.39	1.12	22	4.000
50.00	50	110.00	2.83	1.34	1.49	0.84	1.40	1.00	1.00	1.00	59	10.00	0.87	1.02	61	4.000
50.50	50	120.00	2.86	1.36	1.50	0.84	1.40	1.00	1.00	1.00	59	30.00	4.71	1.15	73	4.000



**:: Cyclic Resistance Ratio (CRR) calculation data ::**

Depth (ft)	SPT Field Value	Unit Weight (pcf)	$\sigma_v$ (tsf)	$u_0$ (tsf)	$\sigma'_{vo}$ (tsf)	$C_N$	$C_E$	$C_B$	$C_R$	$C_S$	$(N_1)_{60}$	Fines Content (%)	$\alpha$	$\beta$	$(N_1)_{60cs}$	CRR <sub>7.5</sub>
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**Abbreviations**

$\sigma_v$ : Total stress during SPT test (tsf)  
 $u_0$ : Water pore pressure during SPT test (tsf)  
 $\sigma'_{vo}$ : Effective overburden pressure during SPT test (tsf)  
 $C_N$ : Overburden correction factor  
 $C_E$ : Energy correction factor  
 $C_B$ : Borehole diameter correction factor  
 $C_R$ : Rod length correction factor  
 $C_S$ : Liner correction factor  
 $N_{1(60)}$ : Corrected  $N_{SPT}$  to a 60% energy ratio  
 $\alpha, \beta$ : Clean sand equivalent clean sand formula coefficients  
 $N_{1(60)cs}$ : Corrected  $N_{1(60)}$  value for fines content  
 $CRR_{7.5}$ : Cyclic resistance ratio for M=7.5

**:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::**

Depth (ft)	Unit Weight (pcf)	$\alpha_{v,eq}$ (tsf)	$u_{0,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	$r_d$	$\alpha$	CSR	MSF	$CSR_{eq,M=7.5}$	$K_{\sigma\sigma}$	$CSR^*$	FS	
1.00	109.00	0.05	0.00	0.05	1.00	1.00	0.552	1.03	0.534	1.00	0.534	2.000	🟢
2.50	109.00	0.14	0.00	0.14	1.00	1.00	0.550	1.03	0.532	1.00	0.532	2.000	🟢
5.00	109.00	0.27	0.00	0.27	0.99	1.00	0.547	1.03	0.529	1.00	0.529	2.000	🟢
7.50	110.00	0.41	0.05	0.36	0.98	1.00	0.614	1.03	0.594	1.00	0.594	0.311	🔴
10.00	109.00	0.55	0.12	0.42	0.98	1.00	0.701	1.03	0.678	1.00	0.678	2.000	🟢
12.50	110.00	0.68	0.20	0.48	0.97	1.00	0.765	1.03	0.739	1.00	0.739	0.471	🔴
15.00	110.00	0.82	0.28	0.54	0.97	1.00	0.813	1.03	0.786	1.00	0.786	0.263	🔴
18.50	110.00	1.01	0.39	0.62	0.96	1.00	0.863	1.03	0.834	1.00	0.834	2.000	🟢
25.00	120.00	1.40	0.59	0.81	0.94	1.00	0.901	1.03	0.871	1.00	0.871	2.000	🟢
30.00	120.00	1.70	0.75	0.95	0.92	1.00	0.907	1.03	0.877	1.00	0.877	2.000	🟢
31.50	120.00	1.79	0.80	1.00	0.91	1.00	0.906	1.03	0.876	1.00	0.876	2.000	🟢
35.00	120.00	2.00	0.90	1.10	0.89	1.00	0.897	1.03	0.867	0.99	0.874	2.000	🟢
40.00	110.00	2.28	1.06	1.22	0.85	1.00	0.880	1.03	0.850	0.97	0.875	2.000	🟢
45.00	110.00	2.55	1.22	1.34	0.80	1.00	0.848	1.03	0.820	0.95	0.859	2.000	🟢
50.00	110.00	2.83	1.37	1.46	0.75	1.00	0.808	1.03	0.781	0.94	0.832	2.000	🟢
50.50	120.00	2.86	1.39	1.47	0.75	1.00	0.803	1.03	0.776	0.94	0.829	2.000	🟢

**Abbreviations**

$\sigma_{v,eq}$ : Total overburden pressure at test point, during earthquake (tsf)  
 $u_{0,eq}$ : Water pressure at test point, during earthquake (tsf)  
 $\sigma'_{vo,eq}$ : Effective overburden pressure, during earthquake (tsf)  
 $r_d$ : Nonlinear shear mass factor  
 $\alpha$ : Improvement factor due to stone columns  
 $CSR$ : Cyclic Stress Ratio (adjusted for improvement)  
 $MSF$ : Magnitude Scaling Factor  
 $CSR_{eq,M=7.5}$ : CSR adjusted for M=7.5  
 $K_{sigma}$ : Effective overburden stress factor  
 $CSR^*$ : CSR fully adjusted  
 $FS$ : Calculated factor of safety against soil liquefaction

**:: Liquefaction potential according to Iwasaki ::**

Depth (ft)	FS	F	wz	Thickness (ft)	$I_L$
1.00	2.000	0.00	9.85	1.50	0.00
2.50	2.000	0.00	9.62	1.50	0.00
5.00	2.000	0.00	9.24	2.50	0.00

**:: Liquefaction potential according to Iwasaki ::**

Depth (ft)	FS	F	wz	Thickness (ft)	I <sub>L</sub>
7.50	0.311	0.69	8.86	2.50	4.65
10.00	2.000	0.00	8.48	2.50	0.00
12.50	0.471	0.53	8.10	2.50	3.26
15.00	0.263	0.74	7.71	2.50	4.33
18.50	2.000	0.00	7.18	3.50	0.00
25.00	2.000	0.00	6.19	6.50	0.00
30.00	2.000	0.00	5.43	5.00	0.00
31.50	2.000	0.00	5.20	1.50	0.00
35.00	2.000	0.00	4.67	3.50	0.00
40.00	2.000	0.00	3.90	5.00	0.00
45.00	2.000	0.00	3.14	5.00	0.00
50.00	2.000	0.00	2.38	5.00	0.00
50.50	2.000	0.00	2.30	0.50	0.00

**Overall potential I<sub>L</sub> : 12.25**I<sub>L</sub> = 0.00 - No liquefactionI<sub>L</sub> between 0.00 and 5 - Liquefaction not probableI<sub>L</sub> between 5 and 15 - Liquefaction probableI<sub>L</sub> > 15 - Liquefaction certain**:: Vertical settlements estimation for dry sands ::**

Depth (ft)	(N <sub>1</sub> ) <sub>60</sub>	τ <sub>av</sub>	p	G <sub>max</sub> (tsf)	a	b	γ	ε <sub>15</sub>	N <sub>c</sub>	ε <sub>Nc</sub> (%)	Δh (ft)	ΔS (in)
1.00	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.000
2.50	24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.000
5.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.000

**Cumulative settlements: 0.000****Abbreviations**τ<sub>av</sub>: Average cyclic shear stress

p: Average stress

G<sub>max</sub>: Maximum shear modulus (tsf)

a, b: Shear strain formula variables

γ: Average shear strain

ε<sub>15</sub>: Volumetric strain after 15 cyclesN<sub>c</sub>: Number of cyclesε<sub>Nc</sub>: Volumetric strain for number of cycles N<sub>c</sub> (%)

Δh: Thickness of soil layer (in)

ΔS: Settlement of soil layer (in)

**:: Vertical settlements estimation for saturated sands ::**

Depth (ft)	D <sub>50</sub> (in)	q <sub>c</sub> /N	e <sub>v</sub> (%)	Δh (ft)	s (in)
7.50	0.00	5.00	2.67	2.75	0.881
10.00	0.00	5.00	0.00	2.00	0.000
12.50	0.00	5.00	1.77	3.50	0.745
15.00	0.00	5.00	2.44	2.50	0.731
18.50	0.00	5.00	0.00	5.50	0.000
25.00	0.00	5.00	0.00	5.50	0.000
30.00	0.00	5.00	0.00	3.50	0.000

**:: Vertical settlements estimation for saturated sands ::**

Depth (ft)	D <sub>50</sub> (in)	q <sub>c</sub> /N	e <sub>v</sub> (%)	Δh (ft)	s (in)
31.50	0.00	5.00	0.00	2.50	0.000
35.00	0.00	5.00	0.00	4.50	0.000
40.00	0.00	5.00	0.00	4.50	0.000
45.00	0.00	5.00	0.00	7.00	0.000
50.00	0.00	5.00	0.00	0.50	0.000
50.50	0.00	5.00	0.00	1.50	0.000

**Cumulative settlements: 2.357****Abbreviations**

D<sub>50</sub>: Median grain size (in)  
 q<sub>c</sub>/N: Ratio of cone resistance to SPT  
 e<sub>v</sub>: Post liquefaction volumetric strain (%)  
 Δh: Thickness of soil layer to be considered (ft)  
 s: Estimated settlement (in)

**:: Lateral displacements estimation for saturated sands ::**

Depth (ft)	(N <sub>1</sub> ) <sub>60</sub>	D <sub>r</sub> (%)	Y <sub>max</sub> (%)	d <sub>z</sub> (ft)	LDI	LD (ft)
1.00	12	48.50	0.00	2.50	0.000	0.00
2.50	24	68.59	0.00	2.00	0.000	0.00
5.00	11	46.43	0.00	1.75	0.000	0.00
7.50	12	48.50	34.10	2.75	0.000	0.00
10.00	11	46.43	0.00	2.00	0.000	0.00
12.50	26	71.39	14.50	3.50	0.000	0.00
15.00	17	57.72	22.70	2.50	0.000	0.00
18.50	39	87.43	0.00	5.50	0.000	0.00
25.00	44	100.00	0.00	5.50	0.000	0.00
30.00	46	100.00	0.00	3.50	0.000	0.00
31.50	30	76.68	0.00	2.50	0.000	0.00
35.00	61	100.00	0.00	4.50	0.000	0.00
40.00	19	61.02	0.00	4.50	0.000	0.00
45.00	16	56.00	0.00	7.00	0.000	0.00
50.00	59	100.00	0.00	0.50	0.000	0.00
50.50	59	100.00	0.00	1.50	0.000	0.00

**Cumulative lateral displacements: 0.00****Abbreviations**

D<sub>r</sub>: Relative density (%)  
 Y<sub>max</sub>: Maximum amplitude of cyclic shear strain (%)  
 d<sub>z</sub>: Soil layer thickness (ft)  
 LDI: Lateral displacement index (ft)  
 LD: Actual estimated displacement (ft)



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