

CITY OF MERCED
PLANNING & PERMITTING DIVISION

TYPE OF PROPOSAL: CEQA Initial Study

INITIAL STUDY: #18-10 WELL 3 TANK DEMOLITION PROJECT

LOCATION: On the corner of W. 12th Street and Canal Street (511 W. 12th Street)

ASSESSOR'S PARCEL NUMBER: 031-321-015-000

Please forward any written comments by Tuesday, March 13, 2018 to:

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A. Setting

The project site consists of an approximately 0.34-acre parcel located on the northwest corner of W. 12th Street and Canal Street in the City of Merced; the assessor parcel number (APN) of the site is 031-321-015. The site is covered in a mix of asphalt and gravel and contains underground utilities and above-ground equipment and buildings associated with an operating well (Well 3C), as well as a 300,000 gallon, riveted steel water tank. In addition to the water tank, the site contains a well pump, four 20,000 pound carbon vessels, a backup generator building, a chemical building, a transformer, a diesel convault, and a chlorine and fluorine inject vault. A map of the project site's regional location, an aerial-view image of the project site, and an aerial-view image of the project site with labeled equipment are provided in Attachment A.

The water tank is located on a parcel of land designated for High to Medium Density Residential uses in the City's General Plan (City of Merced 2015a) and zoned as High Medium Density Residential (R-3-1.5). The project site is directly bordered by Sacred Heart Church and auxiliary buildings to the north, a one-story single-family house to the west, Canal Street to the east, and W. 12th Street to the south. One-story multi-family residences are located to the east of the project site across Canal Street, and one-story, single-family residences are located to the south of the project site across W. 12th Street. The project vicinity is developed primarily with one-story single-family and multi-family residences, as well as some two-story apartments. Institutional and public facilities are also located within a few blocks of the project site, including the Merced County Office of Education, Valley High School, and a Police department office. The Golden State Highway (State Route [SR]-99) overpass is located two blocks to the north.

B. Project Description

The applicant is proposing to demolish an inactive water tank on the project site. The water tank was constructed in 1934 does not meet current seismic standards. The tank used to be an active component of the City's water system, serving to maintain system pressure; however, the water tank has not been connected to the well pump since 2016. The water tank is 148 feet in height, 40 feet in diameter, and is mounted on six steel supports set in concrete; a 30-inch wide balcony with handrail circles the tank. The project would include demolition of the water tank, excavation to remove the tank's supporting concrete piers, backfilling, and grading. The exposed water tank footprint would be covered in gravel and/ or paved in asphalt, consistent with existing coverage on the site. The well and other demolition materials would be disposed of at an appropriate receiving facility and steel materials recycled in a fashion that reduces the steel to its raw material form. The demolition schedule and equipment list for demolition activities have not yet been determined.

I. INITIAL FINDINGS

- A. The proposal is a project as defined by CEQA Guidelines Section 15378.
- B. The project is not a ministerial or emergency project as defined under CEQA Guidelines (Sections 15369 and 15369).
- C. The project is therefore discretionary and subject to CEQA (Section 15357).
- D. The project is not Categorically Exempt.
- E. The project is not Statutorily Exempt.

F. Therefore, an Environmental Checklist is required and has been filed.

II. ENVIRONMENTAL IMPACTS

Will the proposed project result in significant impacts in any of the listed categories?

Significant impacts consist of substantial physical impacts to the environment resulting from the project. An economic or social change by itself shall not be considered a significant impact on the environment unless it has a substantial physical effect on existing environmental conditions (Section 15372, State CEQA Guidelines). Appendix G of the CEQA Guidelines contains examples of possible significant effects.

A narrative description of all "potentially significant," "potentially significant unless mitigation incorporated," and "less than significant" project impacts are provided within this Initial Study.

A. Aesthetics

SETTING AND DESCRIPTION

The project site is located on the northwest corner of W. 12th Street and Canal Street in the City of Merced. The project site is immediately surrounded by residential uses and a church and is situated in an urban area developed primarily with one-story multi-family and single-family residences. The project site currently contains a 148-foot tall, 300,000 gallon water tank, associated equipment, and two structures. Due to the height of the water tank, it is visible from both nearby and distant viewpoints. See Attachment A for an aerial image of the project site and surrounding uses. The project site is not located within a designated scenic corridor and is not within the viewshed of a designated scenic vista. The project involves the demolition of a water tank and would not introduce new sources of light or glare to the site.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
A. <u>Aesthetics.</u> Will the project:				
1) Have a substantial adverse effect on a scenic vista?				✓
2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historical buildings within a state scenic highway?				✓
3) Substantially degrade the existing visual character or quality of the site and its surrounding?				✓
4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

1) No Impact

The project would involve demolition of the predominant structure on the project site, a 148-foot tall, 300,000 gallon water tank. It would not involve construction of any new structures that could alter the existing viewshed in the project vicinity. The existing water tank does not significantly contribute to the scenic quality of the site or vicinity. In addition, the project site is not located in a scenic corridor designated in the City’s General Plan or within the viewshed of a designated scenic corridor. Therefore, the project would have no impact on a scenic vista.

2) No Impact

The project site currently contains a 300,000 gallon water tank, associated equipment, and two structures. There are no scenic resources on the site, such as trees, rocks, and outcroppings. The project is not visible from any designated scenic highways, and therefore would have no impact to scenic resources within a scenic highway.

3) No Impact

The project would demolish an existing water tank located in a residential neighborhood. This would arguably improve the visual character of the site by removing a prominent industrial structure from an area that is otherwise primarily residential. The project would have no negative impact to the visual character of the site or surroundings relative to existing conditions.

4) No Impact

The project would not introduce any new operational uses to the site that could be sources of light or glare. The project would have no impact.

B. Agriculture Resources

SETTING AND DESCRIPTION

The project site is located in a developed, urban area of the City of Merced that is designated and zoned for residential uses. The site does not contain agriculture resources.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
B. <u>Agriculture Resources.</u> Will the project:				
1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and monitoring Program of the California Resources Agency, to non-agriculture?				✓
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
3) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				✓
4) Cause development of non-agricultural uses within 1,000 feet of agriculturally zoned property (Right-to-Farm)?				✓

1) No Impact

The project site is located in a developed, urban area in the City of Merced. The project site is not identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) in California Department of Conservation’s Mapping and Monitoring Program (FMMP) maps (California Department of Conservation 2015). The project would have no impact to designated farmland.

2) No Impact

There are no Williamson Act contract lands in this area (California Department of Conservation 2013).

3) No Impact

The project would involve demolition of an existing water tank in an urban area and would not result in changes to the existing environment that could result in conversion of farmland to non-agriculture use. There would be no impact.

4) **No Impact**

The project site is in an urban area with no adjacent agricultural uses. Therefore, the project would not result in the development of non-agricultural uses within 1,000 feet of agriculturally-zoned property. There would be no impact.

C. Air Quality

SETTING AND DESCRIPTION

The project is located in the San Joaquin Valley Air Basin (SJVAB), which occupies the southern half of the Central Valley and is approximately 250 miles in length and, on average, 35 miles in width. The Coast Range, which has an average elevation of 3,000 feet, serves as the western border of the SJVAB. The San Emigdio Mountains, part of the Coast Range, and the Tehachapi Mountains, part of the Sierra Nevada, are both located to the south of the SJVAB. The Sierra Nevada extends in a northwesterly direction and forms the eastern boundary of the SJVAB. The SJVAB is basically flat with a slight downward gradient to the northwest.

The climate of the SJVAB is strongly influenced by the presence of these mountain ranges. The mountain ranges to the west and south induce winter storms from the Pacific to release precipitation on the western slopes, producing a partial rain shadow over the valley. A rain shadow is defined as the region on the leeward side of the mountain where precipitation is noticeably less because moisture in the air is removed in the form of clouds and precipitation on the windward side. In addition, the mountain ranges block the free circulation of air to the east, resulting in the entrapment of stable air in the valley for extended periods during the cooler months.

Winter in the SJVAB is characterized as mild and fairly humid, and the summer is hot, dry, and cloudless. During the summer, a Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind.

Existing Ambient Air Quality

The California Air Resources Board (ARB) and the United States Environmental Protection Agency (EPA) monitor the following air pollutants as indicators of ambient air quality: Ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as “criteria air pollutants.” Table 1 describes health effects associated with criteria pollutants.

The EPA has established National Ambient Air Quality Standards (NAAQS) intended to protect public health and welfare for the following criteria air pollutants: O₃, CO, NO₂, SO₂, PM₁₀ (PM with a diameter of 10 microns or less), PM_{2.5} (PM with a diameter of 2.5 microns or less), and lead. In addition to the criteria pollutants covered by the NAAQS, the ARB has established California Ambient Air Quality Standards (CAAQS) for the following criteria air pollutants: sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter. In most cases, CAAQS are more stringent than NAAQS.

Table 1 Health Effects Associated with Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: pulmonary function decrements and localized lung edema in humans and animals, risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Carbon monoxide (CO)	Reduces oxygen delivery leading to: (1) Aggravation of chest pain (angina pectoris) and other aspects of coronary heart disease; (2) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (3) impairment of central nervous system functions; and (4) possible increased risk to fetuses.
Nitrogen dioxide (NO ₂)	(1) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (2) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (3) contribution to atmospheric discoloration.
Sulfur dioxide (SO ₂)	(1) Bronchoconstriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness during exercise or physical activity in persons with asthma.
Suspended particulate matter (PM ₁₀)	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).
Suspended particulate matter (PM _{2.5})	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma. ¹

1. More detailed discussions on the health effects associated with exposure to suspended particulate matter can be found in the following documents: Office of Environmental Health Hazard Assessment, Particulate Matter Health Effects and Standard Recommendations, www.oehha.ca.gov/air/toxic_contaminants/PM10notice.html#may, May 9, 2002; and EPA, Air Quality Criteria for Particulate Matter, October 2004.

Source: US EPA 2016

Both the ARB and EPA use monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of the designations is to identify those areas with air quality problems and initiate planning efforts (i.e., air quality management planning) for improvement. The three basic designation categories are nonattainment, attainment, and unclassified; unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the nonattainment designation, called nonattainment-transitional. The nonattainment-transitional designation is given to nonattainment areas that are progressing and nearing attainment. As shown below in Table 2, the SJVAB is in nonattainment for federal ozone and PM_{2.5} standards and State ozone, PM₁₀, and PM_{2.5} standards.

Table 2 San Joaquin Valley Attainment Status (Federal and State)

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone - One Hour	No Federal Standard (See note below)	Nonattainment/ Severe
Ozone - Eight Hour	Nonattainment/ Extreme	Nonattainment
PM ₁₀ (Particulate Matter 10 micrometers in diameter)	Attainment	Nonattainment
PM _{2.5} (Particulate Matter 2.5 micrometers in diameter)	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/ Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Note: The Federal One Hour Ozone national Ambient Air Quality Standard was revoked on June 15, 2005.

Source: SJVAPCD 2017

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is responsible for managing air quality in the SJVAB, including Merced County. As required by the CAA, the SJVAPCD prepares air quality management plans that outline strategies to attain ambient air quality standards. It implements these strategies primarily through establishing rules, regulations, and guidance to reduce pollution, and issuing permits for stationary sources of air pollution. The SJVAPCD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA).

Air Quality Plans

The SJVAPCD has adopted numerous attainment plans to reduce ozone and particulate precursor emissions since 1992. Most recently, SJVAPCD adopted the 2016 Ozone Plan to bring the San Joaquin Valley into attainment of the Federal 2008 8-hour ozone standard by December 31, 2031. The Ozone Plan describes a comprehensive stationary and mobile source control strategy to reduce NO_x emissions by over 60 percent between 2012 and 2031. SJVAPCD is currently preparing the 2017 PM_{2.5} Plan as a single comprehensive attainment plan that addresses multiple PM_{2.5} standards under the federal CAA. Most recently, SJVAPCD adopted the 2016 Moderate Area Plan for the 2012 PM_{2.5} Standard, which addresses the EPA federal annual PM_{2.5} standard of 12 µg/m³ established in 2012. The Moderate Area Plan addresses the fact that attainment of the 2012 PM_{2.5} standard by 2021 is impracticable and is physically impossible given that critical mobile source regulations, such as the ARB truck and bus regulation and off-road engine regulation, will not be fully implemented until 2023. The Moderate Area Plan also requests reclassification of the region to Serious Non-attainment with a new attainment deadline of 2025.

In 2007, the SJVAPCD also adopted a PM₁₀ Maintenance Plan to ensure that the continued attainment of EPA's PM₁₀ standard.

Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)

The SJVAPCD has developed an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in CEQA documents. The GAMAQI includes a summary of applicable District rules and regulations, significance thresholds for project-level air quality impacts, and mitigation measures. The latest version of the GAMAQI was adopted on March 19, 2015.

Applicable District Rules and Regulations

The SJVAPCD has established a number of regulations and rules to reduce air pollutant emissions related to construction and operation of development projects. The following regulation would apply to emissions associated with project demolition activities:

- Regulation VIII (Fugitive PM₁₀ Prohibition). Regulation VIII sets forth rules to reduce fugitive dust emissions from a variety of sources including construction, demolition, excavation, extraction, and other earthmoving activities (Rule 8021), and handling, storage, and transport of bulk materials (Rule 8031). As stated in Rule 8021, any earthmoving activities are required to limit visibility of dust emissions (VDE) to 20% opacity in accordance with SJVAPCD methodology, and comply with conditions for a stabilized surface area. Requirements to ensure 20% or less opacity include applying sufficient water to building exterior surfaces, compliance with Rule 8031, applying water within one hour of demolition to unpaved surfaces, and ceasing earthmoving activities when VDE exceeds 20% opacity due to wind.

Thresholds of Significance

The GAMAQI establishes the following thresholds of significance for criteria pollutants emitted by project construction activities, which encompasses demolition and grading activities:

- CO – 100 tons per year (tpy)
- NO_x – 10 tpy
- ROG – 10 tpy
- SO_x – 27 tpy
- PM₁₀ – 15 tpy
- PM_{2.5} – 15 tpy

Methodology

Project emissions were modeled using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 assuming demolition of 915,505 tons of material on a 0.34-acre site; see Attachment B for calculations of demolition debris volume. Because the demolition schedule has not yet been determined, it was assumed that demolition activities would begin in June 2018. Assumptions for construction phases, phase duration, types of equipment, and equipment usage were based on similar projects, but were customized to the particular characteristics of this project. CalEEMod inputs and results are provided in Attachment C. It was assumed that the

project would water exposed surfaces twice a day to comply with Regulation VIII requirements to reduce fugitive dust emissions. Project emissions were compared to SJVAPCD thresholds of significance for construction emissions to determine if the project would have significant air quality impacts.

IMPACT ANALYSIS

The project would involve demolition of an existing water tank and associated activities, such as excavation to remove the water tank supports, grading, hauling of waste materials, and potentially re-paving of the demolition area. Demolition activities would generate emissions primarily from the combustion of diesel used to power large equipment, as well as combustion of fuel from vehicle trips associated with demolition activities, such as employee trips and truck hauling trips. Because the project would not develop a new use on the project site, there would be no operational emissions. Therefore, the scope of this analysis is limited to air quality impacts resulting from project demolition activities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
C. <u>Air Quality.</u> Would the project:				
1) Conflict with or obstruct implementation of the applicable air quality plan?				✓
2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			✓	
3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			✓	
4) Expose sensitive receptors to substantial pollutant concentrations?			✓	
5) Create objectionable odors affecting a substantial number of people?			✓	

1) No Impact

As stated in section 7.12 of the GAMAQI, a project with emissions below the thresholds of significance for criteria pollutants would be determined to “not conflict or obstruct implementation of the District’s air quality plan.” The project would generate short-term emissions associated with demolition of the water tank and associated earthwork and paving activities; it would not generate any long-term emissions.

Table 3 below summarizes the project’s short-term emissions of criteria pollutants, which were modeled using CalEEMod as described above. As indicated in the table, the project would not

exceed significance thresholds for criteria pollutants emitted by demolition activities. Therefore, the project would not conflict with regional air quality plans. Impacts would be less than significant.

Table 3 Project Air Pollutant Emissions (tons/year)

Pollutant	Total Emissions (tons/year)	SJVAPCD Significance Threshold	Significant Impact?
CO	0.2	100	No
NO _x	0.4	10	No
ROG	<0.1	10	No
SO _x	<0.1	27	No
PM ₁₀	9.8	15	No
PM _{2.5}	1.5	15	No

See Attachment C for CalEEMod outputs.

Note: Results were pulled from the "Mitigated Construction" scenario, which incorporates mitigation consistent with SJVAPCD Regulation VIII requirements to reduce fugitive dust.

2) Less Than Significant Impact

See response to item 3 below.

3) Less Than Significant Impact

In accordance with the GAMAQI, a project that emits criteria pollutants at levels below significance thresholds would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. As demonstrated in Table 3, project emissions would fall below SJVAPCD significance thresholds; therefore, the project would not violate an air quality standard or contribute substantially to air quality violation.

The GAMAQI states that a project with criteria pollutants at levels below significance thresholds may still result in a cumulatively considerable net increase of a criteria pollutant. As shown in Table 3, the project would generate short-term emissions that would contribute to ozone, PM₁₀, and PM_{2.5} levels in the SJVAB, which currently exceed State and/or federal AAQS. However, because short-term emissions would be minor and the project would have no operational emissions, the project would not result in a cumulatively considerable net increase of a criteria pollutant. Project impacts to regional air quality would be less than significant.

4) Less Than Significant Impact

The GAMAQI defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include, but are not limited to, residential land uses, schools, hospitals, convalescent homes, and day care centers.

Lead and Asbestos from Demolition Activities

The project is situated in a residential neighborhood and would potentially expose nearby residents and construction workers to asbestos and lead during demolition. The water tank was constructed in 1934 and is supported by six concrete piers that may contain asbestos, as asbestos began to be used in cement in the early 1900s (Farny and Franz 2012). In addition, the tank and auxiliary equipment may have been coated with lead-based paints, which continue to be used in non-residential buildings and structures (Haas 2014).

Asbestos is categorized as a hazardous air pollutant by the EPA (EPA 2016), and is regulated at the federal level under the Clean Air Act and at the state level under the California Occupational Safety and Health Administration (Cal OSHA); federal requirements are implemented on the regional level by the SJVAPCD. Federal asbestos requirements are listed under the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) (Code of Federal Regulations [CFR] Title 40, Part 61, Subpart M) and require the control of asbestos during the renovation and demolition of buildings. The asbestos NESHAPs require a thorough inspection for asbestos where demolition will occur and specifies work practices to control emissions, such as removing all asbestos-containing materials, adequately wetting all regulated asbestos-containing materials, sealing the material in leak tight containers and disposing of the asbestos-containing waste material as expediently as practicable (EPA 2016). The SJVAPCD enforces the Federal NESHAPs on a regional level and requires eligible projects to conduct an asbestos survey prior to demolition, submit an asbestos notification, demolition permit release, and pay fees (SJVAPCD 2012). At the state level, California Code of Regulations (CCR) §1529 sets requirements for asbestos exposure assessments and monitoring, methods of complying with exposure requirements, safety wear, communication of hazards, and medical examination of workers.

Lead-based materials are also regulated by Cal OSHA. The CCR §1532.1 requires testing, monitoring, containment, and disposal of lead-based materials such that exposure levels do not exceed Cal OSHA standards. Under this rule, construction workers may not be exposed to lead at concentrations greater than fifty micrograms per cubic meter of air averaged over an eight-hour period and exposure must be reduced to lower concentrations if the work day exceeds eight hours. Similarly, CCR §1529 sets requirements for asbestos exposure assessments and monitoring, methods of complying with exposure requirements, safety wear, communication of hazards, and medical examination of workers.

Diesel Exhaust from Demolition Activities

Demolition activities are anticipated to involve the operation of diesel-powered equipment, which emit diesel particulate matter (DPM) in their exhaust. In 1998, the ARB identified DPM as a toxic air contaminant (TAC). The SJVAPCD does not consider construction- and demolition-equipment diesel-related cancer risk to be an issue because of the short-term nature of construction and demolition activities. Cancer health risks associated with exposure to diesel exhaust are typically associated with chronic exposure, in which a 70-year exposure period is often assumed. Although elevated cancer rates can result from exposure periods of less than 70 years, acute exposure to diesel exhaust typically are not anticipated to result in an increased health risk because acute exposure typically does not result in the exposure concentration as necessary to result in a health risk. Because project demolition activities are expected to last less than 90 days, it is not anticipated to cause any health impacts.

5) Less Than Significant Impact

Demolition activities would potentially generate odors associated with fossil fuel-powered equipment, such as diesel exhaust, and petroleum odors. However, odors would be minimal and temporary in nature. The project would not introduce an operational use to the site that could generate odors. Therefore, the project would not create objectionable odors affecting a substantial number of people and impacts would be less than significant.

D. Biological Resources

SETTING AND DESCRIPTION

The project site is located in a developed area of Merced and currently contains a water tank and auxiliary equipment and structures enclosed within fencing. The site is covered entirely in pavement, concrete, or gravel-like material. There is no vegetation within the fencing; a few small shrubs are located along the perimeter of the site, outside the fencing along W. 12th Street.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
D. <u>Biological Resources.</u> Would the project:				
1) Have a substantial adverse effect, either directly or through habitat modification, 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?				✓
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				✓
3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
4) 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?				✓
5) Conflict with any local policies or ordinance protecting biological resources, such as a tree preservation policy or ordinance?				✓
6) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan				✓

1) No Impact

As described above, the project site contains no biological habitat that could support wildlife species and is located in a developed area of Merced. Therefore, the project would not have a substantial adverse effect on a candidate, sensitive, or special status species.

2) No Impact

The project site is located in a developed, urban area. It does not contain, nor is located adjacent to, any riparian habitat or other sensitive natural community. Therefore, the project would have no impact to sensitive natural communities.

3) No Impact

The project site would not have any direct effect on wetlands as no wetlands have been identified in this area. All of the area surrounding the subject site has been modified from its original state and is developed with urban uses.

4) No Impact

The project site is located in developed area of a city and contains no biological habitat that could support the movement of migratory fish or wildlife species or serve as nursery sites. The project would have no impact to wildlife movement.

5) No Impact

The project site does not contain any biological resources. Therefore, activities associated with demolition of the existing water tank on-site would not damage any biological resources and the project would not conflict with any local policies or ordinances protecting biological resources. There would be no impact.

6) No Impact

The proposed project would not have any effects on a habitat conservation plan. There are no adopted habitat conservation plans, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan for the City of Merced.

E. Cultural Resources

SETTING AND DESCRIPTION

The City of Merced area lies within the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur.

Merced County was first explored by Gabriel Moraga in 1806, when he named the Merced River, “El Rio de Nuestra Senora de la Merced.” Moraga’s explorations were designed to locate appropriate sites for an inland chain of missions. Moraga explored the region again in 1808 and 1810.

Archaeology

Archaeological sites are defined as locations containing substantial levels of resources that identify human activity. Very little archaeological survey work has been conducted within the City or its surrounding areas. Creeks, drainage, and sloughs exist in the northern expansion area of the City, and Bear Creek and Cottonwood Creek pass through the developed area. Archaeological sites in the Central Valley are commonly located adjacent to waterways and represent potential for significant archaeological resources.

Paleontology

Paleontological resources (fossils) are the remains or traces of once-living organisms. These include actual bones, shells or other organic remnants, impressions, casts, molds, mineral replacement of organisms, and indirect evidence such as tracks, trails and burrows. Fossils can range in size from microscopic (e.g., radiolarians and foraminiferans) to very large specimens (e.g., large mammal or reptile bones). Fossil remains are the only physical record of the presence of extinct organisms. As such, fossils are important evidence of the evolutionary history of both modern and extinct lineages. Fossils are also important for determining the relative ages of geologic strata and can provide unique, independent data for the correlation of sedimentary units on local and regional scales. Geologic formations are important indicators of the likelihood of encountering paleontological resources.

Historical Resources

In response to community concerns over the loss of some of the City’s historical resources, and the perceived threats to many remaining resources, a survey of historical buildings was undertaken in the City in 1985. The survey focused on pre-1941 districts, buildings, structures, and objects of historical, architectural, and cultural significance. The survey area included a roughly four square-mile area of the central portion of the City.

The National Register of Historical Places, the California Historical Landmarks List, and the California Inventory of Historical Resources identify several sites within the City of Merced. These sites are listed on the Merced Historical Site Survey and maintained by the Merced Historical Society and are listed in the Historical Resources Inventory maintained by the State Office of Historical Preservation. One historical-period structure, Station No. 3 Water Tower is located in the project site and is proposed for demolition. The structure was previously determined to be eligible for listing in the National Register of Historical Places; as a result of that determination, it was automatically listed in the California Register of Historical Resources and is considered a historical resource in accordance with CEQA.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
E. <u>Cultural Resources.</u> Would the project:				
1) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	✓			
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?				✓
3) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✓
4) Disturb any human remains, including those interred outside of formal cemeteries?				✓

1) Potentially Significant Impact

According to CEQA (Section 21084.1) a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. Historical resources are “significantly” affected if there is demolition, destruction, relocation, or alteration of the resource or its surroundings. Generally, when rehabilitation is an option, impacts to historical resources can be mitigated to below a level of significance by following the Secretary of the Interior’s *Guidelines for the Treatment of Historical Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historical Buildings or the Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historical Buildings* [13 PRC 15064.5 (b)(3)].

The project proposes the demolition of the Station No. 3 Water Tower, identified as a significant resource by the Redevelopment Agency of the City of Merced in 1985 and determined eligible for listing in the National Register of Historical Places (NRHP) by the State Historical Preservation Office (SHPO) in 2001; it was automatically listed in the California Register of Historical Resources as a result of this SHPO determination and is therefore considered a historical resource for the purposes of CEQA. A cultural resources records search was conducted by the Central California Information Center (CCIC) at California State University, Stanislaus for the current project. No additional historical resources were identified at or near the project site. Because the project proposes the demolition of a historical resource, the impact of the project is potentially significant and will be analyzed further in an environmental impact report (EIR).

2) No Impact

The project is not expected to alter or destroy any archaeological resources. A cultural resources records search was conducted by the Central California Information Center (CCIC) at California State University, Stanislaus as part of the City’s General Plan update. No archeological resources were identified as occurring on the project site. Ground disturbance for the proposed project

would be limited to the removal of subsurface components of the water tank (footings, etc.), and would thus be occurring in previously disturbed sediments. No impacts would result.

3) No Impact

The project is not expected to alter or destroy any paleontological resource, site, or unique geologic feature. The project site is located within the Riverbank geologic formation, which is considered sensitive for paleontological resources. However, ground disturbance for the proposed project would be limited to the removal of subsurface components of the water tank (footings, etc.) and would thus be occurring in previously disturbed sediments. Therefore, no impacts would result.

4) No Impact

The proposed project would not disturb any human remains, including those interred outside of formal cemeteries, alter or affect unique ethnic cultural values or restrict religious or sacred uses. There are no known internment facilities in the project area. Ground disturbance for the proposed project would be limited to the removal of subsurface components of the water tank (footings, etc.), and would thus be occurring in previously disturbed sediments. Therefore, no impacts would result.

F. Geology and Soils

SETTING AND DESCRIPTION

The City of Merced is located approximately 150 miles southeast of San Francisco along the west side of the southern portion of the San Joaquin Valley. The valley is a broad lowlands bounded by the Sierra Nevada to the east and Coastal Ranges to the west. As described in the City’s General Plan, no liquefaction hazard zones have been identified in the City, and the City is not vulnerable to landslides as the topography is generally flat with slopes of 0 to 3 percent. As in most parts of California, however, Merced experiences seismic activity. No fault has been identified in Merced, but the City is located within 58 miles of the San Andreas Fault; the City is within 54 miles of an additional eight faults, with the closest fault, the Bowie Flat Fault, located approximately 19 miles away (City of Merced 2016a, Geocon 2013).

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
F. <u>Geology and Soils.</u> Would the project:				
1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?				✓
b) Strong seismic ground shaking?				✓
c) Seismic-related ground failure, including liquefaction?				✓
d) Landslides?				✓
2) Result in substantial soil erosion or loss of topsoil?				✓
3) 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?				✓
4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				✓

5) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✓
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1) No Impact

The water tank (“Tank 3”) proposed for demolition was constructed in 1934 does not meet current seismic standards. Therefore, the project would remove an existing seismic hazard, would be a beneficial impact. The project would not introduce a new structure or a new use that would bring people to the site. No adverse impacts would result from the project.

2) No Impact

The project would involve minimal earthwork associated with excavation and removal of the water tank concrete foundation and replacement of holes with fill. Soil exposure would occur for approximately two months on a small portion of a 0.34-acre site that is mostly covered in gravel or asphalt and is topographically flat. Therefore, the project would not result in soil erosion or loss of topsoil. No impacts would result from the project.

3) No Impact

Project activities would occur on a developed site located in an urban area with level terrain and no identified ground failure hazard, including liquefaction, subsidence, or landslide (Geocon 2013). The project would not introduce any new structures to the site that could contribute to soil instability and any areas trenched or excavated as part of project activities would be backfilled, graded, and either paved or covered in gravel. No impacts would result from the project.

4) No Impact

The project would not introduce a new use or structure to the site that would result in substantial risk to life or property due to the presence of expansive soils on site. No impacts would result

5) No Impact

The project would not involve use of septic tanks or alternative waste water disposal systems. The project would have no impact.

G. Greenhouse Gas Emissions

SETTING AND DESCRIPTION

Background

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHG). GHGs contribute to the "greenhouse effect," which is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it warms the planet by approximately 60° Fahrenheit. Emissions from human activities since the beginning of the industrial revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature.

GHGs occur naturally and from human activities. Human activities that produce GHGs are the burning of fossil fuels (coal, oil and natural gas for heating and electricity, gasoline and diesel for transportation); methane from landfill wastes and raising livestock, deforestation activities; and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Since 1750, it is estimated that the concentrations of carbon dioxide, methane, and nitrous oxide in the atmosphere have increased over by 36 percent, 148 percent, and 18 percent respectively, primarily due to human activity. Emissions of GHGs affect the atmosphere directly by changing its chemical composition while changes to the land surface indirectly affect the atmosphere by changing the way in which the Earth absorbs gases from the atmosphere. Potential impacts of global climate change in California may include loss of snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CEC 2009).

In response to an increase in man-made GHG concentrations over the past 150 years, California has implemented AB 32, the "California Global Warming Solutions Act of 2006." AB 32 requires achievement by 2020 of a statewide GHG emissions limit equivalent to 1990 emissions and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. On September 8, 2016, the governor signed Senate Bill 32, which requires the ARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. On December 14, 2017, the ARB adopted the 2017 Scoping Plan to provide a framework for achieving the 2030 target set forth by SB 32. Measures contained in the Scoping Plan provide for statewide emission reductions that would contribute to a decrease in long-term emissions associated with development projects.

In August 2012, the City approved a Climate Action Plan (CAP) that provides strategies and implementation measures to reduce the City's GHG emissions (City of Merced 2012a). The CAP sets a 2020 emission target for the City of 349,981 metric tons of carbon dioxide equivalent (MT of CO₂e); this is equivalent to the City's estimated 1990 emission level, which is consistent with

the statewide goal set forth in AB 32 of reducing emissions to 1990 levels by 2020. However, the City’s CAP does not qualify as a greenhouse gas reduction plan under CEQA guideline 15183.5 and does not account for the emissions target established in SB 32.

The SJVAPCD provides guidance for assessing the significance of GHG emissions, which it applies to projects for which it is the lead agency. It recommends the following tiered approach:

- Tier 1: A project is considered less than significant if it complies with an adopted statewide, regional, or local plan for reduction of GHG emissions
- Tier 2: A project is considered less than significant if it complies with best performance standards (BPS),
- Tier 3: A project is considered less than significant if it would achieve a 29 percent reduction in emissions relative to business as usual (BAU).

The Tier 1 approach is not applicable to the project as Merced does not have a GHG reduction plan that meets CEQA Guidelines criteria. The Tier 2 and Tier 3 approaches are intended to address operational emissions, and, therefore also do not apply to this project; the SJVAPCD considers construction emissions, which derive primarily from fuel combustion, to be already accounted for under California’s Cap and Trade bill, which requires fuel suppliers to reduce their product-related emissions (Yang 2017). Therefore, the guidance provided by the SJVAPCD for determining the significance a project’s GHG impact does not apply to the project. In lieu of applicable SJVAPCD guidance, the significance of the project’s emissions is assessed by comparing the magnitude of project emissions to the bright line threshold set by the Bay Area Air Quality Management District (BAAQMD) for projects of 1,100 metric tons of CO₂ equivalent (MT CO₂e) per year (BAAQMD 2017).

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
G. <u>Greenhouse Gas Emissions.</u>				
Would the project:				
1) Generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment?			✓	
2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✓

1) Less Than Significant Impact

Project demolition would generate short-term GHG emissions associated with the use of diesel-powered demolition equipment, hauling truck trips, and employee vehicle trips. Based on modeling of project emissions in CalEEMod (previously described in Section C, *Air Quality*), project demolition activities would generate a one-time annual emission of approximately 38 MT CO₂e; see Attachment C for CalEEMod outputs. The project would have no operational emissions as it would remove an existing use and would not develop a new use or alter an existing use on the project site. Project emissions would be well below the 1,100 MT CO₂e established by the BAAQMD for projects. Due to the minimal amount of emissions generated by the project and absence of operational emissions, the project would have a less than significant impact.

2) No Impact

As described above, the project would have no long-term operational emissions and would emit a minimal amount of GHGs during demolition activities. Consequently, it would not conflict with AB 32 or SB 32, which establish annual emission targets for 2020 and 2030, respectively. Because the project would not involve the development of a land use or alteration of a land use, it also would not conflict with the 2014-2040 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS) prepared by the Merced County Association of Governments, which sets forth future land use and transportation strategies to meet passenger vehicle GHG emission reduction targets in accordance with SB 375. The City's General Plan and CAP contain local policies to reduce GHG emissions, but all policies apply to new development or operation of uses and do not apply to the project. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs. There would be no impact.

H. Hazards and Hazardous Materials

SETTING AND DESCRIPTION

Hazardous Materials

A substance may be considered hazardous due to a number of criteria, including toxicity, ignitability, corrosivity, or reactivity. The term “hazardous material” is defined in law as any material that, because of quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment. Hazardous waste storage, transport, and disposal is regulated by a number of federal and state regulations, including the Resource Conservation and Recovery Act (RCRA), which is administered by the EPA, Hazardous Materials Transportation Uniform Safety Act of 1990, which is administered primarily by the US Department of Transportation, and California Code of Regulations Title 22, Division 4.5, Environmental Health Standards for the Management of Hazardous Waste, which is administered by the Department of Toxic Substances Control (DTSC).

Airports

The nearest airport or airstrip to the City of Merced is the Merced Regional Airport, located approximately 1.36 miles southwest of the project site. The project site lies in the airport’s influence area, along the northern boundary of Compatibility Zone D, which indicates overflight areas (Merced County Airport Land Use Commission 2012). The next closest airport is the Merced County Castle Airport, located approximately six miles northwest of the project site; the project site lies outside of the Castle Airport are of influence. Potential hazards to flight include physical obstructions and other land use characteristics that can affect flight safety, which include: visual hazards such as distracting lights, glare, and sources of smoke; electronic interference with aircraft instruments or radio communications; and uses which may attract flocks of birds. In order to safeguard an airport’s long-term usability, preventing encroachment of objects into the surrounding airspace is imperative.

Wildland and Urban Fire Hazards

Both urban and wildland fire hazard potential exists in the City of Merced and surrounding areas, creating the potential for injury, loss of life, and property damage. Urban fires primarily involve the uncontrolled burning of residential, commercial, or industrial structures due to human activities. Wildland fires affect grassland, brush or woodlands, and any structures on or near these fires. Such fires can result from either human made or natural causes.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
H. <u>Hazards and Hazardous Materials.</u>				
Would the project:				
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
2) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			✓	
4) Be located on a site which is included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				✓
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			✓	
6) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
7) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
8) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	

1) Less Than Significant Impact

Demolition activities of the proposed project may involve the temporary use, storage, transport, and disposal of oil, gasoline, diesel fuel, paints, solvents, and other hazardous materials. All activities would be required to adhere to all applicable federal and state health and safety standards, including Cal OSHA requirements to protect construction workers from exposure to hazardous materials and California Fire Code requirements for safe storage and use of hazardous materials during demolition. In addition, the project would not introduce an operational use to the site and thus, would not result in long-term, routine use, storage, and transport of hazardous materials. Project impacts would be less than significant.

2) Less Than Significant Impact

See response to item 3 below.

3) Less Than Significant Impact

The project would involve demolition of an existing 300,000 gallon steel water tank. As previously discussed in Section C, Air Quality, the water tank and supporting piers may contain lead and asbestos. Demolition activities would be required to comply with federal, State, and regional requirements to prevent hazardous levels of exposure to lead and asbestos during demolition activities, including compliance with Cal OSHA lead-related requirements contained in CCR §1532.1 by Cal OSHA, and asbestos requirements contained in CFR Title 40, Part 61, Subpart M and CCR §1529. In addition, as discussed under checklist item 1 above, construction activities would be required to comply with regulations regarding use, storage, transport, and disposal of hazardous materials. Therefore, the project would not create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, or emit hazardous emissions, substances, or waste within one-quarter mile of an existing or proposed school. Project impacts would be less than significant.

4) No Impact

The California Department of Toxic Substances Control’s (DTSC) EnviroStor database was used to search for superfund sites, leaking underground storage tanks (LUST), hazardous waste, and other cleanup sites in and near the project site. No hazardous sites were identified within a 1,000-foot radius of the project site. Therefore, the project would not result in a significant hazard to the public or the environment. There would be no impact.

5) Less Than Significant Impact

The project site is located in the airport influence area of the Merced Regional Airport, within compatibility zone D, which indicates that the project site would be exposed to over-flights. Over-flights would not present a safety hazard to workers involved in demolition of a water tank; rather than indicating an area where flight activities would pose a safety hazard, the compatibility zone D designation is intended to restrict land uses that could result in high levels of collateral damage should a collision occur, such as oil refineries and landfills, or that would interfere with flight activities (Merced County Land Use Commission). Therefore, no at-risk population working at the site would be exposed to hazards from flight activity. In addition, the project would benefit flight safety by removing a 148-foot tall water tank from airspace. The project would have a less than significant impact.

6) No Impact

The project site is not located near any private airstrips. The project would have no impact.

7) Less Than Significant Impact

The project would not introduce a new use or structure to the project site that would alter or otherwise interfere with a public right-of-way, or otherwise interfere with emergency response or evacuation. Demolition activities would be limited in time and scale and would be required to comply with applicable California Fire Code requirements to maintain adequate egress, fire fighter access, and otherwise ensure fire safety. Therefore, the project would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

8) Less Than Significant Impact

According to the EIR prepared for the *Merced Vision 2030 General Plan*, the risk for wildland fire in the City of Merced is minimal. According to CAL FIRE, Merced County has no Very High Severity Zones in any of its Local Areas of Responsibility (LAR), including the City of Merced (CAL FIRE 2008). Because the project is located in an urban area without high risk of wildfires and would not involve a permanent new use, the project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. The project's impact would be less than significant.

I. Hydrology and Water Quality

SETTING AND DESCRIPTION

The project site is located in an urban environment with a City-managed storm drain system. The site has a flat topography and is currently covered in a mix of asphalt and gravel. Stormwater would either percolate on-site in areas of gravel cover, or would travel off-site onto W. 12th Street or Canal Street, and enter City storm drains.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>I. Hydrology and Water Quality.</u> Would the project:				
1) Violate any water quality standards or waste discharge requirements?			✓	
2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			✓	
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			✓	
4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
5) 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?			✓	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
6) Otherwise substantially degrade water quality?			✓	
7) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				✓
9) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✓
10) Inundation by seiche, tsunami, or mudflow?				✓

1) Less Than Significant Impact

The project would involve demolition of an existing water tank on a site that also contains an operating well-pump and auxiliary equipment. The project would be limited to demolition of the water tank and activities to restore the water tank footprint to a paved or graveled surface consistent with existing grade and coverage on-site. Existing equipment and structures on the site would remain intact and would not be impaired or substantially altered by project activities. Thus, the project would not alter drainage patterns on the site or vicinity. In addition, the project would not introduce a new use or structure to the site and thus would not result in any operational waste discharges to a water source, or generate any runoff or pollutants once project activities are complete.

Project demolition activities would involve some excavation and grading, as well as demolition of the water tank. These activities would expose soil and involve use of diesel-powered construction equipment that could contribute sediment and pollutants to runoff during a storm event. Project demolition activities would be required to comply with Section 15.50.120 of the Merced Municipal Code (MMC), which requires all construction projects having soil disturbance or activities exposed to storm water to, at a minimum, implement best management practices (BMP) for erosion and sediment controls, soil stabilization, dewatering, dewatering source controls, pollution prevention measures, and prohibited discharges, as applicable. Potential BMPs for the project include covering waste piles, soil piles, and exposed areas, removing demolition waste in a timely manner, ensuring construction equipment is properly maintained and in good repair, and properly storing and transporting fuel and other potential pollutant sources on site.

2) Less Than Significant Impact

The project would not develop an operational use that would draw upon City groundwater supplies. In addition, the project would not substantially alter groundwater recharge as the project would not substantially alter drainage on the site. Therefore, the project would not substantially deplete groundwater supplies or interfere with groundwater recharge. The project's impact to groundwater would be less than significant.

3) Less Than Significant Impact

See response to item 1 above.

4) Less Than Significant Impact

See response to item 1 above.

5) Less Than Significant Impact

See response to item 1 above.

6) Less Than Significant Impact

See response to item 1 above.

7) No Impact

The project would not involve development of dwelling units. Therefore, the project would not place housing in a flood hazard area.

8) No Impact

The project would not involve development of any new structures. Therefore, it would not place a structure in a flood hazard area that could impede or redirect flood flows.

9) No Impact

The project would not involve the development of any dwelling units or other structures. Therefore, it would not expose people or structures to risks from flooding.

10) No Impact

The project would not involve the development of any dwelling units or other structures. Therefore, it would not expose people or structures to inundation by seiche, tsunami, or mudflow.

J. Land Use and Planning

SETTING AND DESCRIPTION

The project site is located within the City Limits of Merced and within its Specific Urban Development Plan and Sphere of Influence (SUDP/SOI). The project site is currently developed with a water tank, well pump, and auxiliary equipment and structures. The site is designated for High to Medium Density Residential uses in the City’s General Plan (City of Merced 2015a) and zoned High Medium Density Residential (R-3-1.5). Table 4 shows the surrounding land uses.

Table 4 Surrounding Land Uses

	Land Use	Zoning Designation	City General Plan Land Use Designation
North	Church	R-3-1.5	High to Medium Density
South	Single-Family Residential (across W. 12 th Street)	R-2	Low to Medium Density
East	Multi-Family Residential (across Canal Street)	R-4	High Density
West	Multi-Family Residential (across Canal Street)	R-3-1.5	High to Medium Density

Source: Merced 2012c, Merced 2017

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
J. <u>Land Use and Planning.</u> Would the project:				
1) Physically divide an established community?				✓
2) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
3) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓

1) No Impact

The project would remove an existing water tank from the project site. It would not introduce a new structure or alter the existing use of the project site in such a way as to physically divide the surrounding residential community. The project would have no impact.

2) Less Than Significant Impact

The project would remove an existing use (a water tank) from the project site, rather than introduce a new land use. Therefore, the project would not conflict with land use designations and zoning for the site, which identify the project site for residential uses. In addition, the project would not conflict with the following applicable General Plan policy:

- S-2.2 Provide adequate storage facilities to insure an adequate supply of water in the event of seismic activity. An evaluation of the seismic safety of the water system, including the elevated water towers, should be completed as part of the update of the Water Master Plan.

The water tank on the project site (“Tank 3”) is one of the City’s four elevated storage tanks that have a combined capacity of 1.5 million gallons (MG) (Merced 2014). The other three elevated water tanks (Tanks 1, 2, and 7), remain connected to well pumps and continue to store water when water demand falls below baseline water production flow rate; however, Tank 3 no longer provides storage as it has been disconnected from Well 3C since 2016.

As stated in the City’s *Water System Master Plan*, to comply with design and operational criteria, the water system must provide emergency storage of at least 100 percent of average day demand (Merced 2014). In 2012, the average day demand was 23.4 MG, while the water system, including elevated storage tanks and groundwater wells, had a total storage capacity of approximately 46 MG. Therefore, removal of the water tank, which has a storage capacity of 0.3 MG, would not substantially impact the City’s emergency storage capacity. The project would have a less than significant impact in regards to applicable land use plans, goals, and policies.

3) No Impact

No Habitat Conservation Plans or Natural Community Conservation Plans have been adopted by the City of Merced. Therefore, there would be no impact.

K. Mineral Resources

SETTING AND DESCRIPTION

As stated in the City’s General Plan, the City of Merced does not contain any mineral resources that require managed production, according to the State Mining and Geology Board (City of Merced 2016b). The City also does not contain any Mineral Resource Zones, which are areas identified as possessing minerals of state-wide or regional significance (Merced 2016).

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
K. <u>Mineral Resources.</u> Would the project:				
1) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
2) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				✓

1) No Impact

The City of Merced does not contain mineral resources of statewide or regional importance. The project would have no impact.

2) No Impact

The City of Merced does not have any mineral resource recovery sites. Therefore, the project would have no impact on the availability of mineral resource recovery sites.

L. Noise

SETTING AND DESCRIPTION

Noise and Vibration Background

Noise

Noise is unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). Because of the way the human ear works, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Excessive noise poses a health concern to humans and wildlife as it interferes with key biological functions, such as sleeping, and can cause high levels of distress and irritation. Excessive noise can also interfere with noise-sensitive activities, such as music recording and learning. Some land uses are considered more sensitive to noise levels than other uses and are referred to as sensitive receptors. Sensitive receptors can include residences, schools, nursing homes, hospitals, and some public facilities, such as libraries.

The noise level experienced at a receptor depends on the distance between the source and the receptor, the presence or absence of noise barriers and other shielding devices, and the amount of noise attenuation (lessening) provided by the intervening terrain. For stationary sources, such as construction equipment, noise decreases by about six weighted decibels (dBA) for every doubling of distance. For line sources, such as motor or vehicular traffic, noise decreases by about three dBA for every doubling of the distance from the roadway. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance, while noise from heavily traveled roads typically attenuates at about three dBA per doubling of distance. Noise levels may be reduced by the introduction of intervening structures. For example, a single row of buildings between the receptor and the noise source reduces the noise level by about five dBA, while a solid wall or berm that breaks the line-of-sight reduces noise levels by five to 10 dBA. The construction style for dwelling units in California generally provides a reduction of exterior-to-interior noise levels of about 30 dBA with closed windows (Federal Highway Administration [FHWA] 2006).

Vibration

Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas noise is simply carried through the air. Thus, vibration is generally felt rather than heard. The ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB) in the U.S. The vibration velocity level threshold of perception for humans is approximately 65 VdB. At high levels, vibration can pose a health concern to humans and wildlife and can also cause physical impacts to structures, particularly fragile structures. Certain types of construction equipment, such as pile

drivers and jackhammers, generate high levels of groundborne vibration. As with noise, distance and intervening structures attenuate vibration levels experienced by receptors.

Regulatory Setting

Noise

The Noise Element of the City’s General Plan establishes goals and policies to protect residents from the harmful effects of excessive noise. Most of these policies apply to projects involving development of sensitive land uses and do not apply to the proposed project, which would involve only temporary demolition activities. The following policy and implementing action are applicable to the project:

- Policy N-1.3 Reduce equipment noise levels
 - Implementing Action 1.3a Limit operating hours for noisy construction equipment used in the City of Merced.

Figure 10.1 of the Noise Element provides land use compatibility guidelines for new development that establish acceptable ambient noise levels for different land uses. For residential uses and institutional uses, such as churches, an ambient noise level up to 60 dBA CNEL is considered acceptable and a noise level of 60 to 70 dBA CNEL is considered conditionally acceptable. The Noise Element also references standards contained in the State’s “Model Community Noise Control Ordinance” for exterior noise from stationary sources associated with operational uses and interior noise in sleeping areas, which are provided below in Table 5. Typically, these types of standards do not apply to construction (including demolition) noise. The City has not yet adopted a Noise Control Ordinance that codifies these State recommended interior and exterior standards, and the MMC does not contain any regulations addressing construction noise or equipment noise.

Table 5 “Model Community Noise Control Ordinance” - Exterior and Interior Noise Standards

	Noise Level (dBA Hourly L50/ Leq)
Exterior Noise Thresholds for Stationary Sources	
Daytime (7 AM – 10 PM)	55
Nighttime (10 PM – 7 AM)	45
Interior Noise Thresholds for Sleeping Areas	
Nighttime (10 PM – 7 AM)	45

Source: City of Merced 2012c

Vibration

The EIR for the City of Merced 2030 General Plan EIR states that vibration levels should not exceed a peak particle velocity of 0.1 inch/ second at a distance of 25 feet (City of Merced 2015b).

Project Setting

The project site is situated in a residential neighborhood and surrounded by sensitive receptors in all directions. The nearest residential structure is located six feet to the west of the project site boundary, and the next closest sensitive receptor is a church located 41 feet to the north of the

project site boundary. These receptors are located approximately 50 feet or more from where construction would occur on site.

On September 13, 2017, Rincon Consultants, Inc. took two noise measurements to determine ambient noise levels at the project site and at nearby sensitive receptors. Noise measurements were captured on a weekday over a 15-minute period using an ANSI Type II integrating sound meter. Table 6 provides the noise measurement results. Attachment D provides noise measurement data sheets and a map of measurement locations. These noise measurements serve as a baseline for existing noise conditions in the vicinity of the project site.

Table 6 Noise Measurement Results

Measurement Number	Measurement Location	Primary Noise Source	Sample Time	Leq [15] (dBA)
1 ¹	On project site, to the south of the water tank.	Roadway noise from SR-99	11:50 AM - 12:05 PM	59.1
2	In front of a residential receptor on the southern side of W. 12 th Street, across from the project site.	Roadway noise from SR-99	12:11 – 12:26 PM	58.1

1. The on-site well pump was off while noise measurements were being taken.

Source: Field visit using ANSI Type II Integrating sound level meter, September 13, 2017. Attachment D provides noise measurement data sheets and measurement locations.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
K. <u>Noise.</u> Would the project result in:				
1) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				✓
2) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
3) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
4) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		✓		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
6) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

1) No Impact

The project would not introduce a new use or alter an existing use on the project site. Therefore, the City’s land use compatibility guidelines do not apply to the project and the project would not generate long-term noise from operational sources that would be subject to State-recommended exterior or interior noise levels referenced in the City’s General Plan. Therefore, the project would not be subject to any local noise standards. There would be no impact.

2) Less Than Significant Impact

Project demolition activities would involve operation of typical construction equipment and would not require the use of equipment that generate high levels of ground-borne vibration, such as pile drivers or vibratory rollers. Table 8 shows the vibration levels associated with the highest-impact construction equipment that would be used by the project. None of the equipment would generate vibration levels exceeding the threshold level presented in the EIR for the General Plan of 0.1 inches/second peak particle velocity at 25 feet. Therefore, the project would have a less than significant environmental impact due to groundborne vibration.

Table 7 Vibration Levels by Phase

Construction Equipment	Peak Particle Velocity at 25 feet
Bulldozer (large)	0.089
Bulldozer (small)	0.003
Loaded Trucks	0.076
Jackhammer	0.035

Source: Harris Miller Miller & Hanson, Inc. 1995

3) No Impact

The project would not introduce a new use or alter an existing use on the project site. Therefore, it would not have a long-term impact on ambient noise levels. There would be no impact.

4) Less Than Significant Impact with Mitigation

Project demolition activities would generate noise from the operation of heavy construction equipment and demolition itself. Thus, the project would cause a temporary increase ambient noise levels on the project site and vicinity during demolition activities, which would extend for approximately 30 days.

To determine the project's impact on ambient noise, construction noise levels were modeled by phase for the two sensitive receptors nearest to the project site using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). RCNM predicts noise levels at receptors for a variety of construction operations using reference noise levels for standard construction equipment and acoustical propagation formulas. Because both the residential building to the west and the church building to the north of the project site are located approximately 50 feet from the water tank footprint, a single receptor was modeled at a distance of 50 feet. RCNM was run for two construction phases (Site Clearing and Demolition and Site Restoration) using the same equipment list used for emissions modeling in CalEEMod, plus a jackhammer, which may potentially be used to remove concrete supports; the complete equipment list is provided in Attachment C. Assumptions for construction phases, phase duration, types of equipment, and equipment usage were based on similar projects, but were customized to the particular characteristics of this project. Noise Measurement 2 (58.1 Leq dBA) was input as the baseline noise level.

Table 8 Construction Noise Levels by Phase

Construction Phase	Equipment	Construction Noise Level (dBA Leq) at 50 feet
Site Clearing and Demolition	Concrete/Industrial Saw, Excavator, Aerial Lift, Dozer, Generator, Tractor/ Backhoe/Loader	89
Site Restoration	Tractor/ Backhoe/Loader, Paving Equipment	85

See Attachment E for RCNM worksheets. See Attachment C for the construction equipment list generated by CalEEMod.

Table 8 shows estimated noise levels during each construction phase at the two nearest sensitive receptors, which are located approximately 50 feet from the construction area. Construction activities would expose these sensitive receptors to noise levels as high as 88 dBA Leq, which substantially exceeds the existing ambient noise level in the project vicinity of approximately 58 dBA Leq.

Mitigation Measures:

The Noise Element's Implementing Action 1.3a directs the City to reduce equipment noise levels by limiting operating hours for noisy construction equipment. In accordance with Action 1.3a, Mitigation Measure N-1 would restrict the hours when project demolition activities can take place. This would limit construction noise impacts to daytime hours, when most residents would be awake and many residents would be away from home. Mitigation Measure N-2 would further

reduce construction noise impacts by requiring that control measures be applied to construction equipment and demolition activities. Demolition activities would be temporary, lasting approximately 30 days, and would not result in a permanent, substantial increase in ambient noise levels. Therefore, the project would be consistent with applicable noise standards and, the project's temporary impact to ambient levels would be reduced to a less than significant level with incorporation of Mitigation Measures N-1 and N-2.

N-1) **Prohibited Hours for Construction Activity.** Project construction activities shall be prohibited outside the hours of 7 AM to 6 PM Monday through Friday, and 9 AM to 6 PM on Saturdays. Construction activities shall be prohibited on Sundays and federal holidays.

N-2) **Construction Noise Reduction Measures.** The construction contractor shall implement the following measures to reduce construction noise impacts on nearby sensitive receptors:

- Construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise suppression devices (i.e., mufflers, silencers, wraps, etc.).
- All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded.
- Electrical power shall be used to run air compressors and similar power tools.
- All fixed and/or stationary equipment (e.g., generators, compressors, rock crushers, cement mixers) shall be located as far as possible from noise-sensitive receptors.

5) **No Impact**

The project does not involve construction of any habitable structures, or any structures where people would work; therefore, it would not expose people residing or working in the project area to excessive airport noise levels. In addition, the project site lies outside of the airport's 55 CNEL noise contour and would not be exposed to excessive noise associated with airport activity (City of Merced 2012c). Therefore, the project would not expose people residing or working in the project area to excessive airport noise levels. There would be no impact.

6) **No Impact**

The project site is not located within the vicinity of a private airstrip. Therefore, there would be no impact.

M. Population and Housing

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
L. <u>Population and Housing.</u> Would the project:				
1) Induce substantial population growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
2) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
3) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

1) No Impact

The project would involve demolition of a water tank. It would not involve development of new dwelling units, commercial space, or other type of structure or infrastructure that would support population growth, displace existing housing, or displace residents. There would be no impact to population and housing.

2) No Impact

See response to item 1 above.

3) No Impact

See response to item 1 above.

N. Public Services

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
M. <u>Public Services.</u> Would the project:				
1) 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 following public services:				
Fire Protection?				✓
Police Protection?				✓
Schools?				✓
Parks?				✓
Other Public Facilities?				✓

1) No Impact

As discussed in Section L, *Population and Housing*, the project would not contribute to population growth; the project would not involve development of new dwelling units or work spaces. Therefore, it would not increase demand for public services and no new or expanded public services facilities would be required as a result of the project. The project would have no impact on the environment associated with provision of public services.

O. Recreation

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
N. <u>Recreation.</u> Would the project:				
1) Increase the use of neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
2) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓

1) No Impact

As discussed in Section L, *Population and Housing*, the project would not contribute to population growth. Therefore, it would not increase use of recreational facilities or contribute to deterioration of existing facilities. The project would have no impact on recreational facilities.

2) No Impact

The project does not include recreational facilities. Because the project would not contribute to population growth, it would not contribute to the need for construction or expansion of recreational facilities. The project would have no impact on the environment associated with provision of recreational facilities.

P. Transportation/Traffic

SETTING AND DESCRIPTION

The project is located at the northwest corner of W. 12th Street and Canal Street, which are both local roads. Vehicle access to the site is provided along W. 12th Street.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
O. <u>Transportation/Traffic.</u> Would the project:				
1) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e. result in a substantial increase in either vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				✓
2) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roadways?				✓
3) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
4) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				✓
5) Result in inadequate emergency access?				✓
6) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?				✓

1) No Impact

The project would not develop any new operational uses on the project site. Therefore, the project would not generate new vehicle trips that would contribute to area traffic. The project would have no impact.

2) No Impact

See response to item 1.

3) No Impact

The project would not result in any changes to air traffic patterns. The project would remove an existing structure from a site within the over-flight zone (Compatibility Zone D) of the Merced Regional Airport.

4) No Impact

The project would not introduce new physical structures to the project site or alter existing features that could result in a design hazard. The project would involve removal of an existing water tank and grading and covering of the tank footprint with gravel and/or asphalt in a manner consistent with the rest of the site. All other existing equipment and structures on-site would remain intact and would not be altered by the project. The project would have no impact associated with design hazards.

5) No Impact

The project site is 0.34 acre with a chain link fence around its perimeter. The project site contains a well pump and associated above-ground equipment. Most of the site is exposed, except for two small structures—a chemical building and a structure to house the backup generator (see Attachment A, Figure A-3). The project site is bounded by local roads to the south and east, and by an alley to the north. Vehicle access is provided along W. 12th. Emergency response would be able to access the site from the vehicle access gate, as well as the adjacent roadways and alley, if necessary. Therefore, the project would not obstruct emergency access to the site.

6) No Impact

The project would not conflict with any policies, plans, or programs supporting alternative transportation as it would not develop any new structures, generate vehicle trips, or contribute to population growth.

Q. Tribal Cultural Resources

SETTING AND DESCRIPTION

The project is located at the northwest corner of W. 12th Street and Canal Street, which are both local roads. Vehicle access to the site is provided along W. 12th Street.

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>O. <u>Tribal Cultural Resources.</u></p> <p>Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p>				
<p>1) 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 section 5020.1(k), or 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 Cod Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.</p>				✓

1) No Impact

The project site does not contain a tribal cultural resource listed, or eligible for listing in a register of historical resources or a resource identified by the lead agency. The City has not received a request for notification from any Native American tribes traditionally and culturally affiliated with the geographic area of the proposed project; thus, tribes were not required to be contacted for consultation, in accordance with AB 52.

R. Utilities and Service Systems**IMPACT ANALYSIS**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
P. <u>Utilities and Service Systems.</u> Would the project:				
1) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
2) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
3) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
4) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓
5) 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?				✓
6) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			✓	
7) Comply with federal, state, and local statutes and regulations related to solid waste?			✓	

1) No Impact

The project would not develop a new operational use or alter an existing operational use on the project site. Therefore, the project would not generate wastewater and would have no impacts related to wastewater treatment quality.

2) No Impact

See response above.

3) No Impact

The project would not develop a new operational use or substantially alter drainage on the project site. Therefore, the project would not generate additional runoff and would not require the construction of new storm water drainage facilities or expansion of existing facilities. The project would have no impact related to the provision of storm water drainage facilities.

4) No Impact

The project would not develop a new operational use or alter an existing operational use on the project site. Therefore, the project would have no operational water demand. The project would have no impact related to water supply.

5) No Impact

Refer to item 1 above.

6) Less Than Significant Impact

The City of Merced is served by the Highway 59 Landfill and the Highway 59 Compost Facility, located at 6040 North Highway 59. The County of Merced is the contracting agency for landfill operations and maintenance, while the facilities are owned by the Merced County Association of Governments. The City of Merced provides services for all refuse pick-up within the City limits.

The project would not involve the development or alteration of an operational use that would generate waste continually. However, demolition of the water tank would generate short-term demolition waste that would require disposal in a landfill or, potentially, a hazardous waste disposal site (e.g., if materials are found to contain lead, asbestos, or other hazardous material). The City of Merced is served by the Highway 59 Landfill, which had a remaining capacity of 28,025,334 cubic yards (cy) as of September 2005; the landfill is expected to cease operations in 2030 (CalRecycle 2005). Based on the dimensions of the water tank, the project would generate approximately 500 cubic yards of demolition waste, which comprises less than 0.002 percent (i.e., $500 \text{ cy} / 28,025,335 \text{ cy} \times 100$) of remaining landfill capacity; see Attachment B for calculations of project demolition waste. Therefore, the project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. The project would have a less than significant impact.

7) Less Than Significant Impact

All demolition activities on the site would be required to comply with all local, state, and federal regulations regarding solid waste, including recycling, as a condition of approval. The project would have a less than significant impact.

S. Mandatory Findings of Significance

IMPACT ANALYSIS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Q. <u>Mandatory Findings of Significance.</u> Would the project:				
1) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	✓			
2) 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 probably future projects?)			✓	
3) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

1) Potentially Significant Impact

The project would have no impact to biological habitat, wildlife or plant species, or natural communities. However, the project would involve demolition of a water tank currently listed in the California Register of Historical Resources. Therefore, the project would have a potentially significant impact to an important historical example. This issue will be analyzed in greater detail in an EIR.

2) Less Than Significant Impact

As described in the discussion of environmental checklist Sections A through R, the project would have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated with respect to all environmental issues, except for historical resources. For some resource areas (i.e., agricultural, biological, mineral), the project would have no impact

relative to existing conditions and thus would not contribute to cumulative impacts to these areas. Other issues (e.g., geology, hazards and hazardous materials, cultural resources) are inherently site-specific in nature and an impact at one site does not create additive effects at another site.

There are no other planned or pending projects in the immediate vicinity of the project site that would have long-term impacts to area-specific resources, such as aesthetic resources. A number of commercial/ retail projects, however, are planned within a quarter mile of the project, north of SR-99 near Martin Luther King Boulevard and 16th Street. While construction of these projects could contribute cumulatively to short-term noise in the project area, the project's contribution would be less than significant with mitigation incorporated and therefore, the project would not have a significant cumulative impact. Construction traffic from other area projects would not be a concern, as construction vehicles would likely access pending development project sites via SR-99, which lies to the north of the project site, and would not need to pass through the project area's residential neighborhood. In addition, the project would not introduce or alter an operational use and therefore would not contribute to cumulative long-term impacts related to public facilities and VMT, such as utilities, public services, air quality, and greenhouse gases. Therefore, the project's cumulative impacts would be less than significant.

3) Less Than Significant Impact

As described in the discussion of environmental review checklist Sections A through R, the project would have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated with respect to all environmental issues, with the exception of a potentially significant impact to a historical resource. Therefore, the project would not have environmental effects which would cause direct or indirect substantial adverse effects on human beings, such as effects related to air quality, greenhouse gas emissions, hazardous materials, geological hazards, water quality, and traffic hazards. The project would have a less than significant impact.

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Yang, Sharla. 2017. San Joaquin Valley Air Pollution Control District. Personal communication via phone regarding District guidance for assessing significance of project GHG emissions with Smadar Levy, Associate Planner, Rincon Consultants, Inc. December 14, 2017.

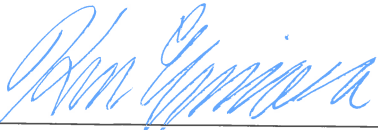
U. Environmental Determination

On the basis of this initial environmental evaluation:

I find that the project could have a significant effect on the environment, and an

X

ENVIRONMENTAL IMPACT REPORT is required.



Kim Espinosa, Planning Manager
Environmental Coordinator
City of Merced

February 5, 2018

Distributed for Public Review: February 12, 2018

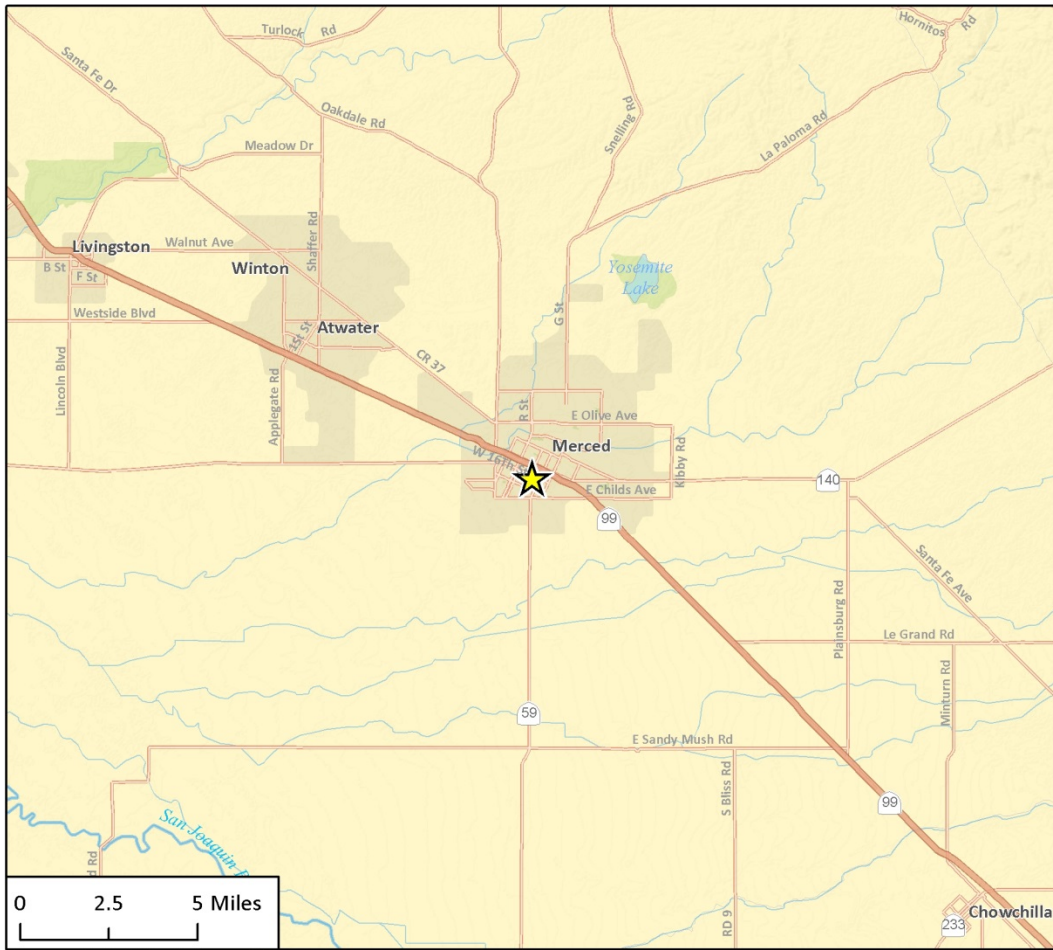
Attachments:

- A) Regional Location, Project Location, and Project Site Equipment Maps
- B) Demolition Debris Calculations (includes water tower engineering plans)
- C) Air Quality and Greenhouse Gas Emissions Modeling (CalEEMod)
- D) Noise Measurement Data
- E) Construction Noise Modeling (RCNM)

ATTACHMENT A

Regional Location, Project Location, and Project Site Equipment Maps

Figure A-1. Regional Location



Imagery provided by ESRI and its licensors © 2017.

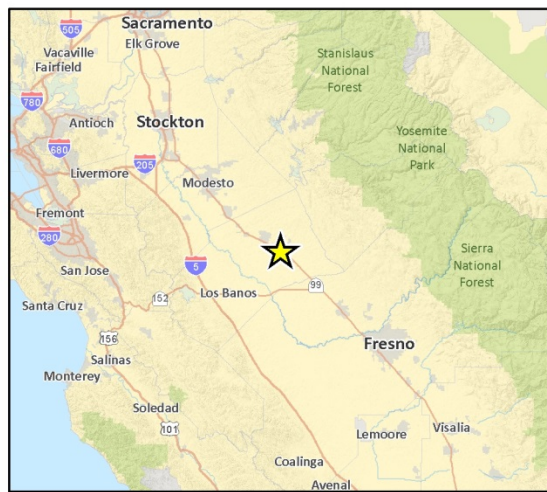
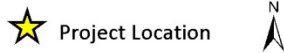
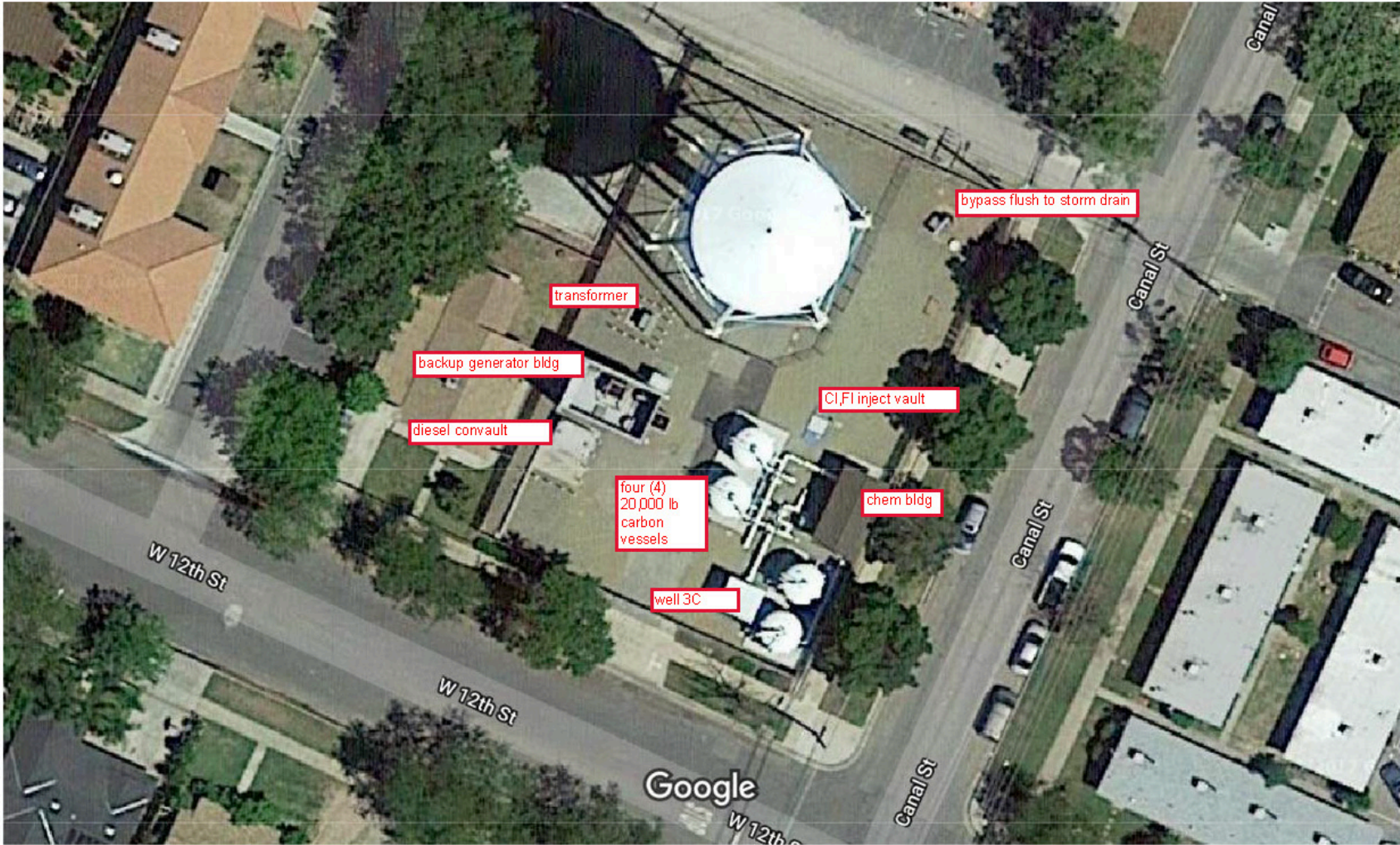


Fig. 1. Regional Location

Figure A-2. Project Location



Figure A-3. Project Site Equipment



Source: City of Merced

ATTACHMENT B

Demolition Debris Calculations

Demolition Debris Calculations

Summary

Volume of steel (i.e., tower components only)	248.4731361 cy
Weight of cast steel* (lbs)	3312500 lbs
Weight of steel (tons)	1656.25 tons
Volume of concrete	244.999755 cy
Weight of concrete (from supports)*	913849.0862 tons
Total volume of debris	493.4728911 cy
Total weight of debris	915,505.34 tons

* Source of conversion factors: Swaploader U.S.A. LTD. Cubic Yardage Calculation Sheet - taken from EPA and NTEA.
https://www.swaploader.com/wp-content/uploads/2015/02/Cubic_Yardage_Chart.pdf. (accessed December 2017)

Tank

Given

radius	20 feet
height of tank	24 feet
height of finial	12 feet
thickness of steel	1 inch

Calculations

		Area (feet)
bottom of tank (circle)	πr^2	1256.637
body of tank (rolled rectangle)	$2\pi r \cdot h$	3015.929
finial (cone)	$\pi r(\text{rt} (h^2 + r^2))$	2722.115
tank bottom (half of a sphere)	$1/2(4\pi r^2)$	2513.274

Tower cylinder

radius	2 feet	
height	112 feet	
	Area (feet)	
tower cylinder (rolled rectangle)	$2\pi r \cdot h$	1407.434

handrail

height	30 in	
radius	25 feet	
	Area (feet)	
rolled rectangle	$2\pi r \cdot h$	392.6991

Posts - 6

height	148 feet
radius	17 inches

volume of a cylinder
6 posts

$$\pi r^2 h$$

Cylinder rods -12

height
radius

25 feet
0.75 in

volume of a cylinder
12 rods

$$\pi r^2 h$$

Tower rods -36

height
radius

41 feet
1.5 inch

volume of a cylinder
36 rods

$$\pi r^2 h$$

Concrete supports-6

base 1
base 2
height
length

6 feet
15 feet
7 feet
15 feet

Volume of trapezoidal prism
6 supports

$$(b_1 + b_2) / 2 \times h \times l$$

0.0833 foot

Volume (cu. Ft.)

Volume (cu. Yd.)

104.6778672	3.876954168
251.2268813	9.304690004
226.7521889	8.398220819
209.3557344	7.753908336

Volume (cu. Ft.)

Volume (cu. Yd.)

117.2392113	4.342188668
-------------	-------------

2.5 feet

Volume (cu. Ft.)

Volume (cu. Yd.)

98.17477042	3.636098972
-------------	-------------

(guestimate)

1.42 feet

Volume (cu. Ft.)

Volume (cu. Yd.)

937.5366992

34.72354673

208.3412804

0.0625 feet

Volume (cu. Ft.)

Volume (cu. Yd.)

0.306796158

0.011362809

0.136353711

0.125 feet

Volume (cu. Ft.)

Volume (cu. Yd.)

2.012582794

0.074540029

2.683441041

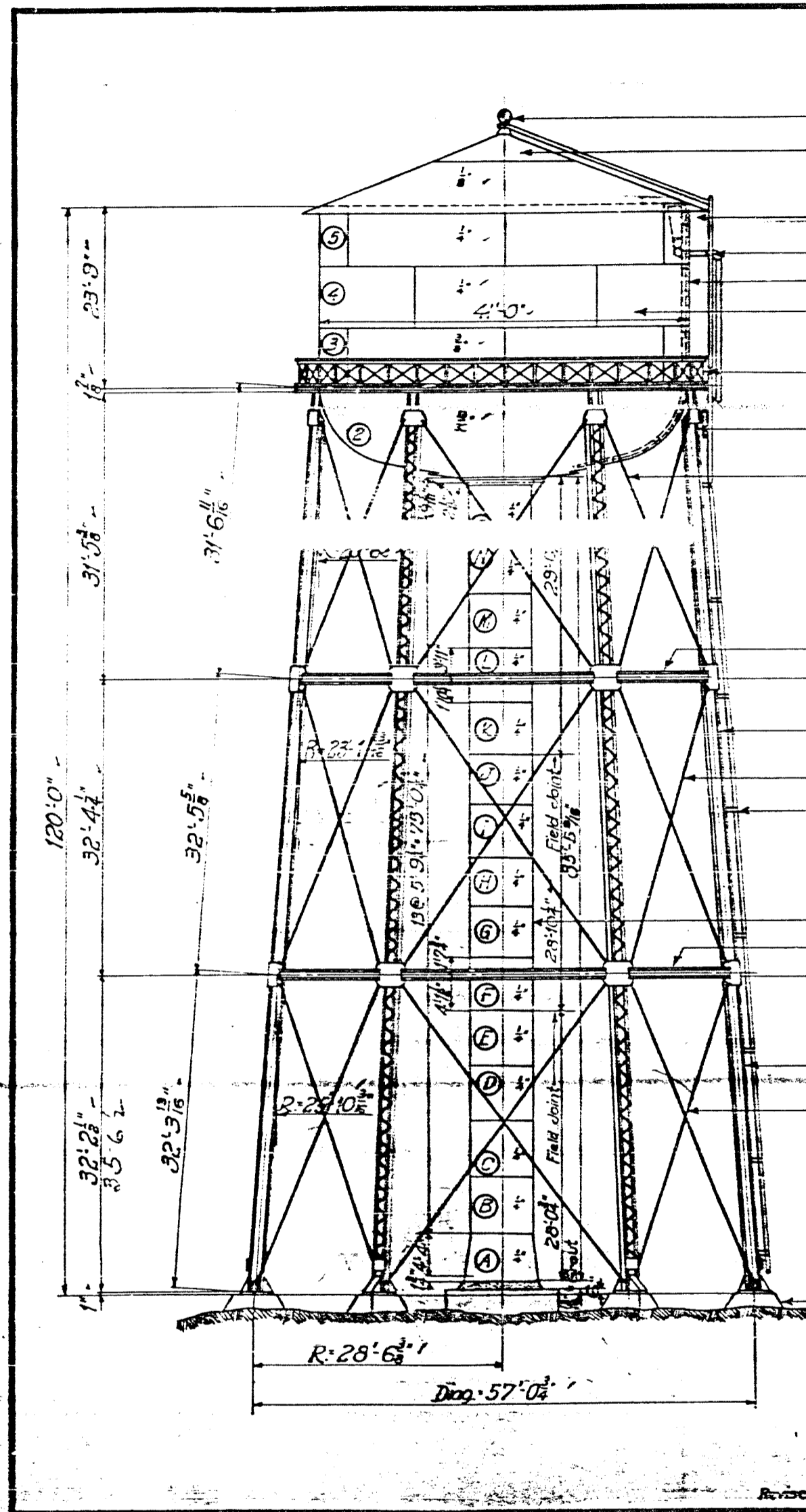
Volume (cu. Ft.)

Volume (cu. Yd.)

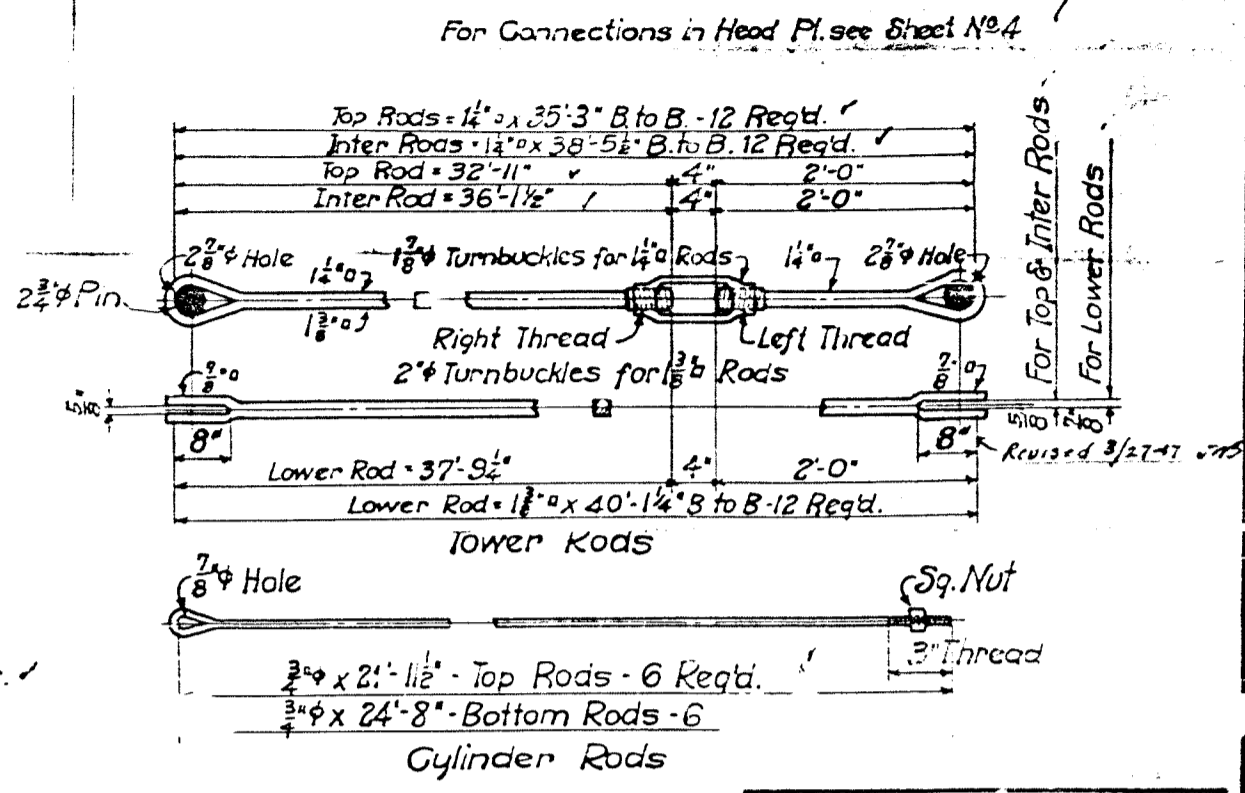
1102.5

40.8332925

244.999755



- Std. 12" C.I. Finial Patt. No. 501.
- Std. Conical Steel Roof and Framing.
(Door in Roof to right of Ladder)
- Overflow - Special
- Std. Revolving Ladder
- Std. Inside Ladder
- Std. 300,000 Gallon Tank.
4'0" Diam. x 23'9" High.
- Std. 24" Balcony and Hand Rail.
- 6 Posts - { 2 @ 15" x 45" x 33'6" / 1 Cov. Pl. - 17' x 8" x 30'6" }
- 12 Tower Rods - 1 1/2" x 35'3" B. to B.
- Paint - 1 Shop Coat of Std. Black Graphite.
1 Field
- 6 Cylinder Rods - 3/4" x 21'1 1/2" B. to E.
- 6 Struts - 4 @ 15" x 2 1/2" x 2 1/2" x 23'1 1/2" C. to C. of Posts.
- 6 Posts - { 2 @ 15" x 45" x 32'5 1/2" / 1 Cov. Pl. - 17' x 8" x 32'5 1/2" }
- 12 Tower Rods - 1 1/2" x 38'5 1/2" B. to B.
- Std. Ladder on 1 Post.
- Grating over top of Cylinder
- Std. Cylinder - 4'0" Diam x 86'0" High.
- 6 Cylinder Rods - 3/4" x 24'8" B. to E.
- 6 Struts - 4 @ 15" x 2 1/2" x 2 1/2" x 25'10 3/8"
- 6 Posts - { Base Plates - 28" x 1' x 3'8" / 2 @ 15" x 45" x 32'4 3/8" / 1 Cov. Pl. - 17' x 8" x 30'11 1/8" }
- 12 Tower Rods - 1 1/2" x 40'1 1/2" B. to B.
- Std. 12" x 18" Manhole Cover Patt. No. 479
- Std. 6" Blow Off Valve.
- Inlet Pipe - 16" C.I. - We furnish.
- Outlet Pipe - 16" C.I. - We furnish.
- Foundations - Special - They furnish.
- Anchor Bolts - 2" x 6'0" long.
- 2 1/2" Bored Hole in Ctr. of Stone.
- Inspection - G.H. Nickerson - Consulting Engr.

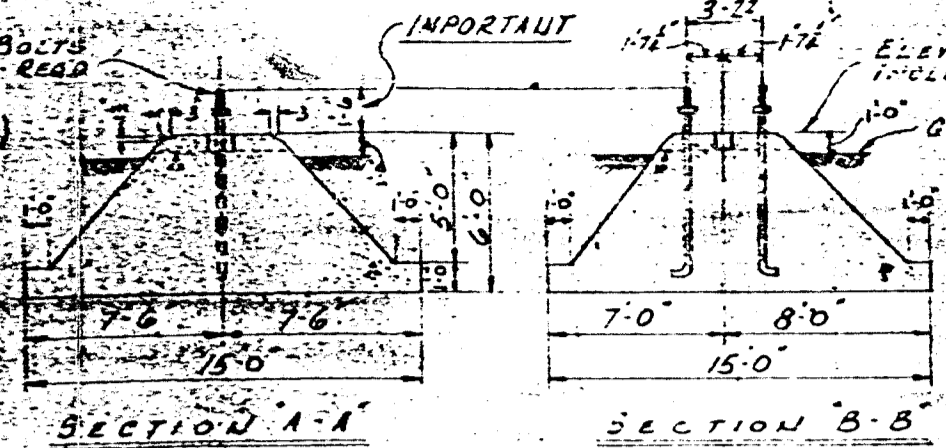
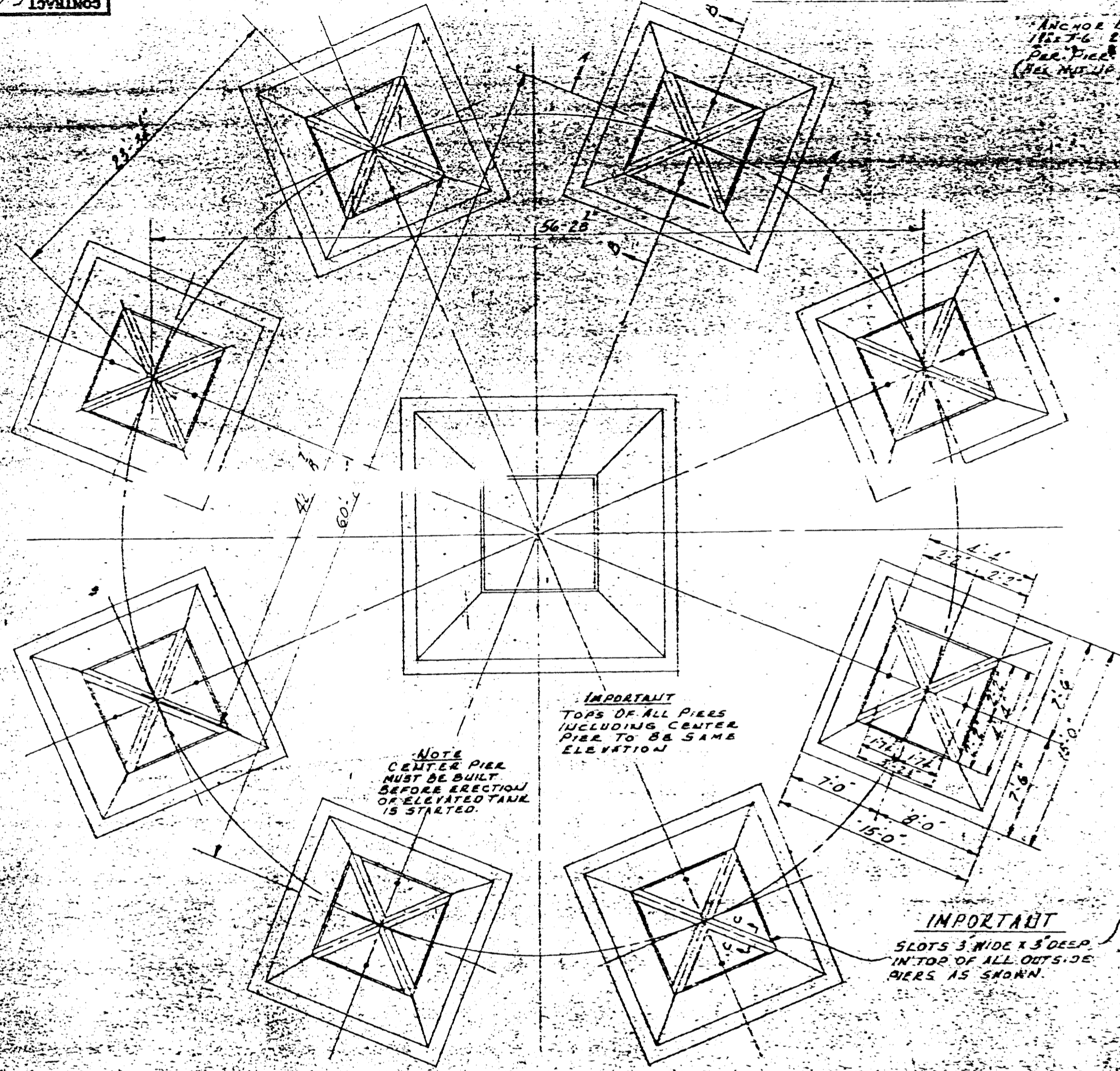


DRAWINGS	
INDEX	DESCRIPTION
Sheet #1	General Plan
Sheet #3	Roof
11-690	Roof Framing
22-480	Tank Revised
Sheet #4	Cylinder
3-480	Balcony and Hand Rail
44-400	No. 2 Plates Revised
55-240	Top Posts Revised
66-250	Inter Posts Revised
77-240	Lower Posts Revised
88-240	Struts
9-181	6" Blow Off Valve
0-209	Inside Ladder
0-200	Revolving Ladder
Sheet #2	Foundation
9-161	Manhole Cover
9-111	Pins (Revised)
Sheet #5	Overflow
0-101	Post Ladder

General Plan
For 300,000 Gallon Ry. Tank & Tower
With 4'0" Cylinder
Height to Balcony - 96'3"
For the Crocker-Huffman Land & Water Co.
At Merced, California.
Chicago Bridge & Iron Works

CONTRACT NUMBER 5-6540

NOT DRAWN TO SCALE



NOTE
 THAT ANCHOR BOLT IS VERTICAL
 AND THAT CENTER OF PIER AT BOTTOM
 IS OFF SET TOWARD THE OUTSIDE AS SHOWN
 IN SECTION B-B

NOTE CAREFULLY

BE SURE THAT THE BOTTOMS OF THE CONCRETE PIERS ARE UPON FIRM SOIL THAT WILL SAFELY SUSTAIN A LOAD OF 2250 PSI WITHOUT EARTHQUAKE RESISTANCE. THE FOUNDATION PIERS SHOWN ON THIS DRAWING HAVE BEEN DESIGNED ON THE ASSUMPTION THAT THE ABOVE CONDITIONS WILL BE STRICTLY FULFILLED. PIERS SHALL BE REDESIGNED IF NECESSARY.

PIERS SHALL BE BUILT OF CONCRETE CONTAINING NOT LESS THAN 5 SACKS OF CEMENT PER CU. YD. AND NOT MORE THAN 6 1/2 GALLONS OF WATER PER SACK OF CEMENT, INCLUDING THE WATER CONTAINED IN AGGREGATE. PROPORTIONS OF AGGREGATE WILL VARY WITH SIZE USED. AN APPROXIMATE MIX FOR 12" MAXIMUM SIZE AGGREGATE IS 1:2.5:4.

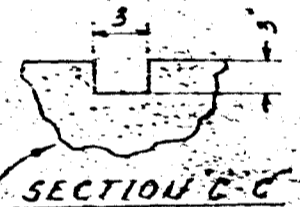
TOP PORTIONS OF PIERS TO BE FINISHED SMOOTH TO A POINT 3 INCHES BELOW GROUND LEVEL.

ANCHOR BOLTS ARE FURNISHED BY C. B. & I. CO. ALL OTHER MATERIAL FURNISHED BY OTHERS.

IMPORTANT
 TOPS OF ALL PIERS INCLUDING CENTER PIER TO BE SAME ELEVATION

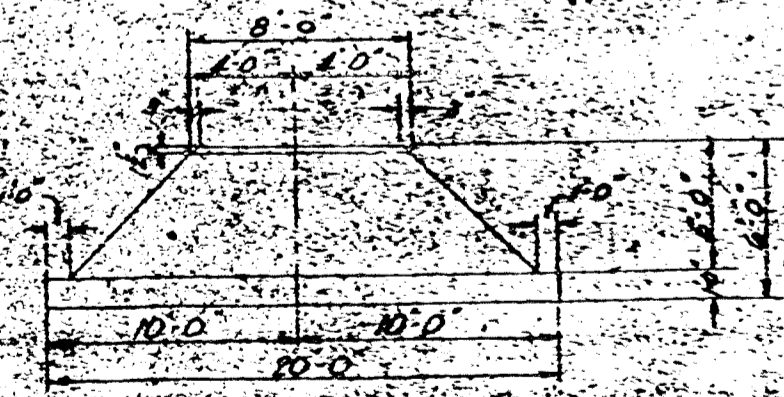
NOTE
 CENTER PIER MUST BE BUILT BEFORE ERECTION OF ELEVATED TANK IS STARTED.

IMPORTANT
 SLOTS 3" WIDE X 3" DEEP IN TOP OF ALL OUTSIDE PIERS AS SHOWN.



DESIGNED FOR 6% EARTHQUAKE FORCE IN ACCORDANCE WITH UNIFORM BUILDING CODE.

IMPORTANT
 CHICAGO BRIDGE & IRON CO'S. GUARANTEE DOES NOT COVER THE SUPPORTING POWER OF THE SOIL UNDER THE FOUNDATION, NOR ANY MATERIAL FURNISHED OR WORK DONE BY OTHERS.

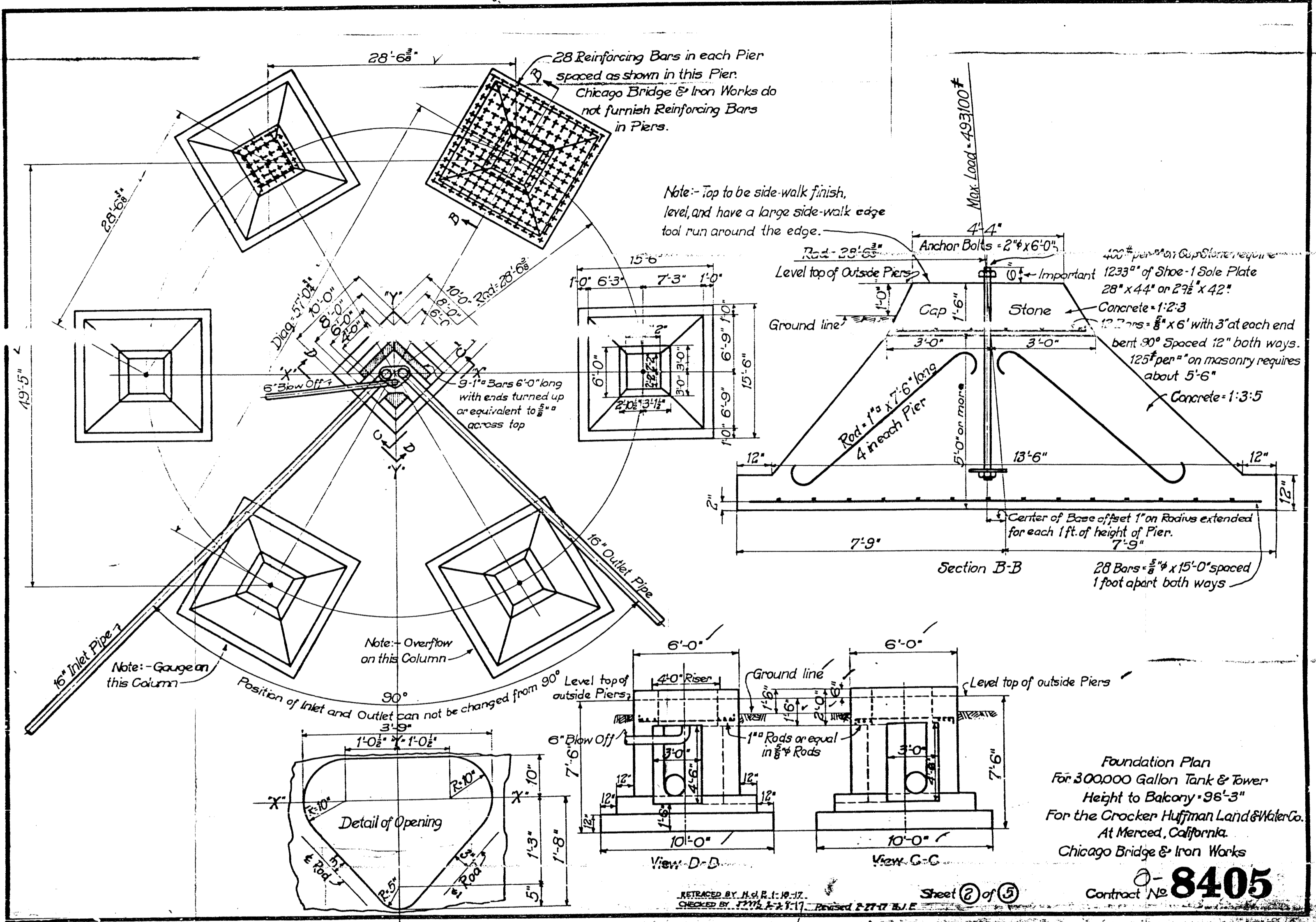


ELEVATION OF CENTER PIER

FOUNDATION LOADS	
OUTSIDE PIERS	CENTER PIER
WATER 361,000	612,000
METAL 33,400	125,500
CONCRETE 31,000	183,500
TOTAL 725,400	921,000
EARTHQUAKE 178,700	
TOTAL 904,100	

PURCHASER'S ORDER NO.		PURCHASER'S BIRTH NO.	
NO.	DATE	BY	REMARKS

PLANS MADE AT CHICAGO



28 Reinforcing Bars in each Pier spaced as shown in this Pier.
Chicago Bridge & Iron Works do not furnish Reinforcing Bars in Piers.

Note: - top to be side-walk finish, level, and have a large side-walk edge tool run around the edge.

Section B-B
 Max. Load - 493,100#
 Level top of Outside Piers
 Rod - 28' 6"
 Anchor Bolts = 2" x 6'-0"
 Cap 1'-6"
 Stone
 Concrete = 1:2:3
 12 Bars = 3/8" x 6' with 3" at each end bent 90° Spaced 12" both ways.
 125# per sq ft on masonry requires about 5'-6"
 Concrete = 1:3:5
 Rod = 1" x 7'-6" long 4 in each Pier
 5'-0" or more
 18'-6"
 12"
 12"
 7'-9"
 Center of Base offset 1" on Radius extended for each 1 ft. of height of Pier.
 7'-9"
 28 Bars = 3/8" x 15'-0" spaced 1 foot apart both ways

View D-D
 6'-0"
 4'-0" Riser
 Ground line
 Level top of outside Piers
 6" Blow Off
 1" Rods or equal in 3/8" Rods
 3'-0"
 10'-0"
 12"
 12"
 7'-6"
 View C-C
 6'-0"
 Level top of outside Piers
 7'-6"
 10'-0"

Detail of Opening
 1'-0 1/2" x 1'-0 1/2"
 R-10"
 1'-3"
 1'-8"
 5"
 10"
 1'-0"
 1'-0"

Foundation Plan
 For 300,000 Gallon Tank & Tower
 Height to Balcony - 96'-3"
 For the Crocker Huffman Land & Water Co.
 At Merced, California.
 Chicago Bridge & Iron Works

RETRACTED BY H. & R. 1-19-17.
 CHECKED BY J. W. L. 1-2-17. Revised 2-27-17 H. & R.

Sheet (2) of (5)
 Contract No. 8405

ATTACHMENT C

Air Quality and Greenhouse Gas Emissions Modeling (CalEEMod)

Merced Well 3 Tank - Merced County, Annual

**Merced Well 3 Tank
Merced County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.34	Acre	0.34	14,810.40	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	49
Climate Zone	3			Operational Year	2019
Utility Company	Turlock Irrigation District				
CO2 Intensity (lb/MW hr)	790	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Merced is powered by the Merced Irrigation District, which is not in Caleemod. Turlock Irrigation District is right next door and also generates hydroelectric power, so used that instead.

Land Use -

Construction Phase - Schedule based on Castlewood Tanks Replacement Project.

Off-road Equipment -

Off-road Equipment - Unit amount and hours based on Castlewood tanks replacement project.

Off-road Equipment - Unit amount and hours based on Castlewood tanks replacement project.

Demolition -

Energy Use -

Construction Off-road Equipment Mitigation - Project would comply with Regulation VIII.

Merced Well 3 Tank - Merced County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	PhaseEndDate	6/15/2018	7/6/2018
tblConstructionPhase	PhaseEndDate	6/22/2018	7/13/2018
tblConstructionPhase	PhaseStartDate	6/16/2018	7/9/2018
tblOffRoadEquipment	HorsePower	132.00	97.00
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	1.00	7.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblTripsAndVMT	HaulingTripNumber	90,525.00	0.00

2.0 Emissions Summary

Merced Well 3 Tank - Merced County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-4-2018	9-3-2018	0.3837	0.3837
		Highest	0.3837	0.3837

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	1.2700e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

Merced Well 3 Tank - Merced 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	1.2700e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Clearing and Demolition	Demolition	6/4/2018	7/6/2018	5	25	
2	Site Restoration	Paving	7/9/2018	7/13/2018	5	5	

Merced Well 3 Tank - Merced County, Annual

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.34

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Clearing and Demolition	Aerial Lifts	1	6.00	63	0.31
Site Clearing and Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Site Clearing and Demolition	Excavators	1	7.00	158	0.38
Site Clearing and Demolition	Generator Sets	1	5.00	84	0.74
Site Clearing and Demolition	Rubber Tired Dozers	1	7.00	247	0.40
Site Clearing and Demolition	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Restoration	Cement and Mortar Mixers	0	6.00	9	0.56
Site Restoration	Pavers	0	7.00	130	0.42
Site Restoration	Paving Equipment	1	5.00	97	0.37
Site Restoration	Rollers	0	7.00	80	0.38
Site Restoration	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Site Clearing and Demolition	Cranes	1	7.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Clearing and Demolition	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Restoration	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Merced Well 3 Tank - Merced County, Annual

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Site Clearing and Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.7955	0.0000	9.7955	1.4831	0.0000	1.4831	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0359	0.3623	0.2229	3.9000e-004		0.0192	0.0192		0.0181	0.0181	0.0000	35.1280	35.1280	8.3100e-003	0.0000	35.3357
Total	0.0359	0.3623	0.2229	3.9000e-004	9.7955	0.0192	9.8146	1.4831	0.0181	1.5012	0.0000	35.1280	35.1280	8.3100e-003	0.0000	35.3357

Merced Well 3 Tank - Merced County, Annual

3.2 Site Clearing and Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2600e-003	9.4000e-004	9.5900e-003	2.0000e-005	1.7900e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7344	1.7344	7.0000e-005	0.0000	1.7361
Total	1.2600e-003	9.4000e-004	9.5900e-003	2.0000e-005	1.7900e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7344	1.7344	7.0000e-005	0.0000	1.7361

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					4.4080	0.0000	4.4080	0.6674	0.0000	0.6674	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0359	0.3623	0.2229	3.9000e-004		0.0192	0.0192		0.0181	0.0181	0.0000	35.1280	35.1280	8.3100e-003	0.0000	35.3357
Total	0.0359	0.3623	0.2229	3.9000e-004	4.4080	0.0192	4.4271	0.6674	0.0181	0.6855	0.0000	35.1280	35.1280	8.3100e-003	0.0000	35.3357

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3.2 Site Clearing and Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2600e-003	9.4000e-004	9.5900e-003	2.0000e-005	1.7900e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7344	1.7344	7.0000e-005	0.0000	1.7361
Total	1.2600e-003	9.4000e-004	9.5900e-003	2.0000e-005	1.7900e-003	2.0000e-005	1.8100e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7344	1.7344	7.0000e-005	0.0000	1.7361

3.3 Site Restoration - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.8000e-004	7.5100e-003	6.4900e-003	1.0000e-005		5.3000e-004	5.3000e-004		4.9000e-004	4.9000e-004	0.0000	0.7962	0.7962	2.5000e-004	0.0000	0.8024
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.8000e-004	7.5100e-003	6.4900e-003	1.0000e-005		5.3000e-004	5.3000e-004		4.9000e-004	4.9000e-004	0.0000	0.7962	0.7962	2.5000e-004	0.0000	0.8024

Merced Well 3 Tank - Merced County, Annual

3.3 Site Restoration - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0964	0.0964	0.0000	0.0000	0.0965
Total	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0964	0.0964	0.0000	0.0000	0.0965

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	7.8000e-004	7.5100e-003	6.4900e-003	1.0000e-005		5.3000e-004	5.3000e-004		4.9000e-004	4.9000e-004	0.0000	0.7962	0.7962	2.5000e-004	0.0000	0.8024
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.8000e-004	7.5100e-003	6.4900e-003	1.0000e-005		5.3000e-004	5.3000e-004		4.9000e-004	4.9000e-004	0.0000	0.7962	0.7962	2.5000e-004	0.0000	0.8024

Merced Well 3 Tank - Merced County, Annual

3.3 Site Restoration - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0964	0.0964	0.0000	0.0000	0.0965
Total	7.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0964	0.0964	0.0000	0.0000	0.0965

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Merced Well 3 Tank - Merced County, Annual

	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	0.0000	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
Unmitigated	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.477385	0.032954	0.155020	0.127450	0.023126	0.005418	0.015590	0.149182	0.002365	0.002469	0.006628	0.001652	0.000762

5.0 Energy Detail

Historical Energy Use: N

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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					
Other Non-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
Total		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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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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			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	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	1.2700e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	1.2700e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

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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	3.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	1.2700e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

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	3.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	1.2700e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

7.0 Water Detail

Merced Well 3 Tank - Merced County, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

ATTACHMENT D

Noise Measurement Data

Freq Weight : A
 Time Weight : FAST
 Level Range : 40-100
 Max dB : 71.3 - 2017/09/13 11: 53: 17
 Level Range : 40-100
 SEL : 88.6
 Leq : 59.1

No. s	Date Time	(dB)					
1	2017/09/13 11: 48: 29	58.2	58.6	57.7	57.4	56.9	
6	2017/09/13 11: 48: 34	56.4	56.8	57.0	58.1	58.8	
11	2017/09/13 11: 48: 39	58.0	58.4	57.9	58.1	59.0	
16	2017/09/13 11: 48: 44	58.6	59.0	58.9	59.1	58.6	
21	2017/09/13 11: 48: 49	59.1	60.2	58.3	58.0	58.7	
26	2017/09/13 11: 48: 54	57.7	57.3	56.9	57.0	56.5	
31	2017/09/13 11: 48: 59	57.4	57.6	57.5	56.5	56.2	
36	2017/09/13 11: 49: 04	56.9	56.6	57.1	57.6	57.9	
41	2017/09/13 11: 49: 09	58.6	58.4	59.7	59.5	58.8	
46	2017/09/13 11: 49: 14	59.5	58.3	57.0	56.9	56.7	
51	2017/09/13 11: 49: 19	56.8	57.3	55.8	56.0	55.0	
56	2017/09/13 11: 49: 24	55.0	56.2	56.1	56.5	58.5	
61	2017/09/13 11: 49: 29	56.6	56.8	58.0	57.7	59.2	
66	2017/09/13 11: 49: 34	59.4	60.5	60.4	60.4	58.7	
71	2017/09/13 11: 49: 39	58.9	59.1	58.2	59.1	59.1	
76	2017/09/13 11: 49: 44	58.0	59.4	60.2	59.6	59.8	
81	2017/09/13 11: 49: 49	59.3	58.8	58.7	59.3	61.9	
86	2017/09/13 11: 49: 54	62.7	63.0	66.1	67.3	67.7	
91	2017/09/13 11: 49: 59	66.1	65.0	63.9	62.8	59.9	
96	2017/09/13 11: 50: 04	58.9	57.7	57.0	57.5	56.3	
101	2017/09/13 11: 50: 09	57.3	58.8	57.2	59.8	57.2	
106	2017/09/13 11: 50: 14	58.5	58.6	58.7	58.9	58.0	
111	2017/09/13 11: 50: 19	58.3	58.2	57.9	59.2	60.5	
116	2017/09/13 11: 50: 24	59.3	60.2	59.6	63.7	60.0	
121	2017/09/13 11: 50: 29	61.6	60.2	61.0	60.0	60.0	
126	2017/09/13 11: 50: 34	58.9	58.5	58.0	57.2	57.5	
131	2017/09/13 11: 50: 39	57.3	57.1	58.1	58.3	60.2	
136	2017/09/13 11: 50: 44	62.5	59.4	58.4	58.0	58.1	
141	2017/09/13 11: 50: 49	61.6	59.0	59.5	58.6	57.3	
146	2017/09/13 11: 50: 54	57.0	56.1	54.8	56.0	58.7	
151	2017/09/13 11: 50: 59	56.3	55.7	55.2	54.1	53.8	
156	2017/09/13 11: 51: 04	53.5	52.9	53.5	54.5	55.4	
161	2017/09/13 11: 51: 09	53.9	56.7	56.2	54.4	55.1	
166	2017/09/13 11: 51: 14	54.6	54.0	54.2	54.5	54.2	
171	2017/09/13 11: 51: 19	55.4	54.1	53.7	53.2	53.8	
176	2017/09/13 11: 51: 24	53.7	57.1	56.9	57.6	59.4	
181	2017/09/13 11: 51: 29	60.4	63.4	61.1	59.6	61.5	
186	2017/09/13 11: 51: 34	60.2	59.4	59.3	59.3	58.8	
191	2017/09/13 11: 51: 39	59.3	59.2	59.5	59.2	58.8	
196	2017/09/13 11: 51: 44	58.8	60.3	60.2	60.2	58.9	
201	2017/09/13 11: 51: 49	59.2	59.4	59.5	59.7	59.1	
206	2017/09/13 11: 51: 54	58.3	58.8	58.3	58.7	61.3	
211	2017/09/13 11: 51: 59	62.3	60.9	60.5	61.8	61.0	
216	2017/09/13 11: 52: 04	60.7	60.7	59.8	59.0	58.6	
221	2017/09/13 11: 52: 09	57.5	56.6	56.3	55.9	55.8	
226	2017/09/13 11: 52: 14	56.1	55.4	55.5	56.2	56.1	
231	2017/09/13 11: 52: 19	56.4	56.6	56.2	56.0	57.4	
236	2017/09/13 11: 52: 24	58.0	57.6	57.3	58.5	58.7	
241	2017/09/13 11: 52: 29	58.8	58.5	59.9	60.3	59.1	
246	2017/09/13 11: 52: 34	59.7	60.7	59.5	60.4	60.3	
251	2017/09/13 11: 52: 39	59.3	58.3	58.3	59.3	58.6	
256	2017/09/13 11: 52: 44	57.8	59.1	60.8	59.7	58.7	
261	2017/09/13 11: 52: 49	60.4	58.3	59.0	61.3	59.2	
266	2017/09/13 11: 52: 54	59.2	61.3	63.3	58.0	58.7	
271	2017/09/13 11: 52: 59	60.3	62.6	60.8	64.0	62.3	
276	2017/09/13 11: 53: 04	62.4	60.2	59.1	59.7	58.7	
281	2017/09/13 11: 53: 09	58.9	58.7	58.9	58.4	58.1	
286	2017/09/13 11: 53: 14	67.2	66.7	69.7	63.6	64.7	
291	2017/09/13 11: 53: 19	60.8	58.2	59.2	58.7	58.4	
296	2017/09/13 11: 53: 24	57.7	61.3	58.9	60.8	59.8	
301	2017/09/13 11: 53: 29	59.7	59.8	59.4	59.2	59.3	
306	2017/09/13 11: 53: 34	62.0	62.3	62.4	61.8	61.6	
311	2017/09/13 11: 53: 39	61.0	59.9	60.1	60.0	59.7	
316	2017/09/13 11: 53: 44	58.4	58.3	56.7	56.5	55.3	
321	2017/09/13 11: 53: 49	54.9	55.1	55.0	55.8	56.5	
326	2017/09/13 11: 53: 54	57.1	57.5	58.5	59.2	59.8	
331	2017/09/13 11: 53: 59	59.8	59.6	59.9	59.4	59.4	
336	2017/09/13 11: 54: 04	60.8	60.4	60.1	60.2	60.3	
341	2017/09/13 11: 54: 09	60.5	59.7	59.3	58.6	58.0	
346	2017/09/13 11: 54: 14	57.7	57.6	56.5	56.4	56.0	
351	2017/09/13 11: 54: 19	55.6	55.3	55.1	55.7	54.9	
356	2017/09/13 11: 54: 24	54.9	57.0	55.3	56.2	56.4	
361	2017/09/13 11: 54: 29	55.3	56.7	57.5	56.7	58.1	
366	2017/09/13 11: 54: 34	57.8	57.5	58.2	59.2	58.5	
371	2017/09/13 11: 54: 39	59.1	61.1	60.4	60.5	60.8	
376	2017/09/13 11: 54: 44	60.8	59.7	58.5	59.1	58.2	
381	2017/09/13 11: 54: 49	56.6	56.7	56.3	56.4	57.0	
386	2017/09/13 11: 54: 54	56.6	56.6	57.5	57.2	58.0	
391	2017/09/13 11: 54: 59	59.7	58.9	58.8	59.1	59.3	
396	2017/09/13 11: 55: 04	59.9	59.7	59.6	59.0	60.6	
401	2017/09/13 11: 55: 09	59.9	60.1	59.5	60.4	59.5	
406	2017/09/13 11: 55: 14	59.6	60.5	60.6	60.8	60.3	
411	2017/09/13 11: 55: 19	59.5	59.7	59.7	61.3	61.0	
416	2017/09/13 11: 55: 24	61.8	62.2	60.8	60.9	62.1	
421	2017/09/13 11: 55: 29	62.5	61.8	61.9	59.8	62.9	

426	2017/09/13	11:55:34	61.2	60.9	59.0	59.4	59.2
431	2017/09/13	11:55:39	58.8	59.5	59.1	58.4	58.6
436	2017/09/13	11:55:44	58.2	58.1	58.4	61.0	59.6
441	2017/09/13	11:55:49	60.4	59.4	58.1	57.9	57.6
446	2017/09/13	11:55:54	58.7	58.1	59.2	59.3	58.8
451	2017/09/13	11:55:59	58.8	57.6	59.2	58.0	58.0
456	2017/09/13	11:56:04	57.3	57.0	56.6	55.9	56.0
461	2017/09/13	11:56:09	55.8	56.0	56.0	57.2	56.2
466	2017/09/13	11:56:14	56.6	57.9	58.2	57.1	56.1
471	2017/09/13	11:56:19	57.7	56.2	57.6	57.8	56.0
476	2017/09/13	11:56:24	56.0	56.5	55.9	55.8	56.4
481	2017/09/13	11:56:29	58.8	62.2	59.6	59.3	59.0
486	2017/09/13	11:56:34	59.4	58.9	58.8	59.3	59.4
491	2017/09/13	11:56:39	59.3	59.5	58.7	58.7	59.3
496	2017/09/13	11:56:44	59.7	61.4	60.5	60.7	59.8
501	2017/09/13	11:56:49	57.6	59.2	57.9	57.1	58.1
506	2017/09/13	11:56:54	57.8	57.2	56.1	56.0	56.5
511	2017/09/13	11:56:59	56.9	57.0	56.8	57.2	59.3
516	2017/09/13	11:57:04	60.4	58.8	58.5	57.1	57.2
521	2017/09/13	11:57:09	57.3	56.8	57.6	58.0	58.5
526	2017/09/13	11:57:14	59.3	58.9	59.9	59.6	60.3
531	2017/09/13	11:57:19	59.2	60.0	59.0	59.0	59.3
536	2017/09/13	11:57:24	58.5	59.3	60.2	61.3	61.2
541	2017/09/13	11:57:29	58.7	59.1	59.4	59.0	58.5
546	2017/09/13	11:57:34	59.9	59.9	59.5	59.7	59.7
551	2017/09/13	11:57:39	57.8	57.5	57.1	56.9	56.5
556	2017/09/13	11:57:44	57.1	57.8	60.3	59.3	60.1
561	2017/09/13	11:57:49	61.6	60.5	61.2	59.0	59.9
566	2017/09/13	11:57:54	59.3	60.9	59.0	59.7	58.5
571	2017/09/13	11:57:59	59.1	59.3	58.8	60.1	58.0
576	2017/09/13	11:58:04	59.3	58.3	59.8	58.8	57.9
581	2017/09/13	11:58:09	57.8	55.7	54.9	56.0	55.7
586	2017/09/13	11:58:14	54.2	54.3	54.3	57.8	55.4
591	2017/09/13	11:58:19	56.7	58.3	57.1	61.0	59.1
596	2017/09/13	11:58:24	57.5	58.2	59.4	60.2	60.5
601	2017/09/13	11:58:29	59.5	61.6	60.5	60.0	58.9
606	2017/09/13	11:58:34	58.4	58.4	59.1	58.1	58.4
611	2017/09/13	11:58:39	57.2	58.0	57.9	59.8	58.0
616	2017/09/13	11:58:44	58.8	59.5	60.8	58.4	60.1
621	2017/09/13	11:58:49	59.4	59.5	58.4	60.2	61.6
626	2017/09/13	11:58:54	61.1	60.3	62.1	60.3	59.9
631	2017/09/13	11:58:59	60.2	60.3	59.5	59.6	59.6
636	2017/09/13	11:59:04	60.3	59.6	59.4	60.5	59.2
641	2017/09/13	11:59:09	58.5	58.4	56.3	56.1	55.7
646	2017/09/13	11:59:14	55.1	55.1	55.2	57.9	60.8
651	2017/09/13	11:59:19	64.3	59.7	61.4	58.1	57.8
656	2017/09/13	11:59:24	57.3	56.8	58.0	58.3	58.5
661	2017/09/13	11:59:29	57.2	57.4	58.3	59.4	58.7
666	2017/09/13	11:59:34	58.4	58.7	59.1	59.4	57.5
671	2017/09/13	11:59:39	60.5	59.1	59.1	58.4	61.5
676	2017/09/13	11:59:44	58.7	58.4	58.1	58.0	59.2
681	2017/09/13	11:59:49	59.2	58.6	57.7	58.1	57.7
686	2017/09/13	11:59:54	57.0	57.5	57.9	58.0	57.7
691	2017/09/13	11:59:59	58.3	57.6	57.3	58.6	59.0
696	2017/09/13	12:00:04	58.5	57.9	57.7	59.2	58.3
701	2017/09/13	12:00:09	58.8	59.6	60.1	60.7	60.6
706	2017/09/13	12:00:14	60.6	60.3	59.5	60.0	60.0
711	2017/09/13	12:00:19	58.7	58.9	59.2	58.8	57.4
716	2017/09/13	12:00:24	57.9	59.1	58.2	57.2	57.5
721	2017/09/13	12:00:29	58.5	57.8	57.0	57.0	57.4
726	2017/09/13	12:00:34	57.8	59.0	59.0	58.2	58.3
731	2017/09/13	12:00:39	57.2	57.2	59.0	58.0	57.3
736	2017/09/13	12:00:44	57.6	57.8	57.9	57.8	57.7
741	2017/09/13	12:00:49	57.7	58.8	57.9	58.5	58.6
746	2017/09/13	12:00:54	58.1	59.5	58.5	58.4	61.3
751	2017/09/13	12:00:59	59.1	58.9	58.3	58.1	59.3
756	2017/09/13	12:01:04	58.5	58.0	58.3	59.3	59.0
761	2017/09/13	12:01:09	57.7	58.4	57.5	58.1	59.1
766	2017/09/13	12:01:14	59.1	58.4	57.8	57.1	57.4
771	2017/09/13	12:01:19	58.0	56.8	57.2	56.7	57.8
776	2017/09/13	12:01:24	58.5	57.7	59.0	57.5	57.7
781	2017/09/13	12:01:29	58.7	58.7	59.0	58.3	60.0
786	2017/09/13	12:01:34	58.1	57.9	56.9	57.0	56.7
791	2017/09/13	12:01:39	56.9	58.0	59.9	59.5	60.7
796	2017/09/13	12:01:44	60.9	62.4	60.6	61.9	61.2
801	2017/09/13	12:01:49	60.0	60.1	60.2	60.8	60.9
806	2017/09/13	12:01:54	61.0	61.9	62.0	60.9	62.0
811	2017/09/13	12:01:59	60.7	60.6	62.5	61.4	60.8
816	2017/09/13	12:02:04	61.6	59.9	60.6	60.8	61.0
821	2017/09/13	12:02:09	60.2	62.0	60.2	59.8	60.1
826	2017/09/13	12:02:14	59.9	59.2	59.0	57.9	58.1
831	2017/09/13	12:02:19	57.6	57.8	58.6	59.3	58.3
836	2017/09/13	12:02:24	58.2	56.7	58.3	56.8	56.6
841	2017/09/13	12:02:29	55.8	55.6	56.0	55.9	55.7
846	2017/09/13	12:02:34	55.3	55.3	56.1	56.2	57.0
851	2017/09/13	12:02:39	57.5	56.6	58.6	57.9	58.9
856	2017/09/13	12:02:44	58.8	58.9	58.7	58.5	58.1
861	2017/09/13	12:02:49	58.8	58.4	59.7	59.6	59.4
866	2017/09/13	12:02:54	59.3	58.0	57.9	58.8	57.9
871	2017/09/13	12:02:59	59.0	57.2	57.3	57.1	57.4
876	2017/09/13	12:03:04	57.2	58.4	57.6	58.5	57.8
881	2017/09/13	12:03:09	58.0	58.3	59.1	59.7	59.1
886	2017/09/13	12:03:14	59.9	60.0	59.5	59.9	60.6
891	2017/09/13	12:03:19	59.7	59.3	59.6	59.1	61.0
896	2017/09/13	12:03:24	61.2	59.8	60.0	59.4	59.9

Freq Weight : A
 Time Weight : FAST
 Level Range : 40-100
 Max dB : 71.4 - 2017/09/13 12: 10: 19
 Level Range : 40-100
 SEL : 87.6
 Leq : 58.1

No. s	Date Time	(dB)				
1	2017/09/13 12: 08: 41	58.6	59.0	59.1	59.3	59.6
6	2017/09/13 12: 08: 46	59.9	60.1	58.7	58.1	57.7
11	2017/09/13 12: 08: 51	57.6	58.5	58.6	58.7	58.7
16	2017/09/13 12: 08: 56	57.5	57.5	56.9	56.4	56.6
21	2017/09/13 12: 09: 01	56.1	55.7	55.1	55.7	55.9
26	2017/09/13 12: 09: 06	56.0	56.2	57.5	57.9	59.3
31	2017/09/13 12: 09: 11	60.3	61.8	59.9	59.9	60.9
36	2017/09/13 12: 09: 16	60.2	59.4	60.0	59.6	59.2
41	2017/09/13 12: 09: 21	60.0	59.4	59.2	59.0	58.6
46	2017/09/13 12: 09: 26	59.2	58.8	57.8	57.3	57.4
51	2017/09/13 12: 09: 31	57.3	57.6	57.7	56.5	56.5
56	2017/09/13 12: 09: 36	56.2	56.3	56.0	56.4	58.4
61	2017/09/13 12: 09: 41	59.9	64.1	55.8	55.5	55.0
66	2017/09/13 12: 09: 46	56.3	57.8	55.9	56.4	56.8
71	2017/09/13 12: 09: 51	55.9	55.6	56.0	56.1	55.0
76	2017/09/13 12: 09: 56	56.1	55.3	55.5	56.9	56.1
81	2017/09/13 12: 10: 01	55.7	56.1	57.1	56.1	55.9
86	2017/09/13 12: 10: 06	56.6	56.3	56.0	56.3	54.4
91	2017/09/13 12: 10: 11	54.6	55.0	59.4	57.6	60.6
96	2017/09/13 12: 10: 16	64.0	69.7	70.4	64.3	65.5
101	2017/09/13 12: 10: 21	60.5	60.1	57.4	55.7	56.3
106	2017/09/13 12: 10: 26	58.2	56.8	58.3	58.7	58.4
111	2017/09/13 12: 10: 31	58.8	60.4	58.4	58.4	60.2
116	2017/09/13 12: 10: 36	58.7	58.6	58.1	57.9	57.3
121	2017/09/13 12: 10: 41	58.3	57.8	60.3	57.3	57.1
126	2017/09/13 12: 10: 46	57.4	57.2	56.4	57.1	55.3
131	2017/09/13 12: 10: 51	54.7	55.8	55.4	57.0	55.6
136	2017/09/13 12: 10: 56	59.0	60.1	57.2	56.5	56.3
141	2017/09/13 12: 11: 01	59.4	55.9	56.8	58.4	61.7
146	2017/09/13 12: 11: 06	60.2	59.8	56.6	56.2	59.1
151	2017/09/13 12: 11: 11	60.1	61.6	62.3	63.0	60.2
156	2017/09/13 12: 11: 16	59.8	58.2	60.2	58.6	57.7
161	2017/09/13 12: 11: 21	58.5	59.7	58.0	60.2	63.4
166	2017/09/13 12: 11: 26	59.7	59.8	61.8	62.1	61.6
171	2017/09/13 12: 11: 31	59.3	59.5	59.2	57.1	57.3
176	2017/09/13 12: 11: 36	59.4	58.1	58.3	58.3	56.4
181	2017/09/13 12: 11: 41	59.5	57.6	59.3	60.9	59.0
186	2017/09/13 12: 11: 46	58.2	58.6	58.0	59.5	57.9
191	2017/09/13 12: 11: 51	56.1	56.9	55.8	55.4	55.2
196	2017/09/13 12: 11: 56	55.4	55.6	55.3	54.4	56.1
201	2017/09/13 12: 12: 01	53.7	54.0	53.2	52.8	56.2
206	2017/09/13 12: 12: 06	54.1	54.7	57.8	58.1	58.1
211	2017/09/13 12: 12: 11	54.8	54.5	55.2	54.8	55.5
216	2017/09/13 12: 12: 16	54.6	55.4	55.1	54.2	55.3
221	2017/09/13 12: 12: 21	55.0	53.9	54.7	54.1	56.2
226	2017/09/13 12: 12: 26	54.4	54.1	54.7	56.1	55.9
231	2017/09/13 12: 12: 31	57.1	56.6	57.4	58.8	56.7
236	2017/09/13 12: 12: 36	58.5	55.6	55.3	55.6	58.5
241	2017/09/13 12: 12: 41	56.7	56.0	55.2	55.0	56.1
246	2017/09/13 12: 12: 46	54.8	53.1	57.3	55.8	54.9
251	2017/09/13 12: 12: 51	54.7	56.4	56.5	54.9	54.2
256	2017/09/13 12: 12: 56	54.9	56.0	54.2	53.6	54.1
261	2017/09/13 12: 13: 01	53.8	56.1	55.0	53.1	55.1
266	2017/09/13 12: 13: 06	53.7	57.5	57.0	55.8	53.9
271	2017/09/13 12: 13: 11	54.2	57.4	52.8	52.4	52.9
276	2017/09/13 12: 13: 16	53.5	54.3	53.3	54.2	53.9
281	2017/09/13 12: 13: 21	54.9	54.0	56.3	55.6	54.7
286	2017/09/13 12: 13: 26	55.1	54.0	56.4	56.0	54.2
291	2017/09/13 12: 13: 31	54.6	54.5	57.3	55.4	57.1
296	2017/09/13 12: 13: 36	56.0	57.8	55.4	54.6	55.7
301	2017/09/13 12: 13: 41	55.8	59.7	55.6	55.0	55.7
306	2017/09/13 12: 13: 46	58.2	56.6	59.0	56.6	57.9
311	2017/09/13 12: 13: 51	56.8	59.9	57.7	56.2	56.1
316	2017/09/13 12: 13: 56	55.0	55.1	56.1	57.0	58.4
321	2017/09/13 12: 14: 01	56.9	57.5	58.2	58.2	58.0
326	2017/09/13 12: 14: 06	56.7	56.4	58.1	58.9	57.2
331	2017/09/13 12: 14: 11	57.8	63.9	62.6	60.0	63.6
336	2017/09/13 12: 14: 16	59.2	60.5	61.3	59.6	59.6
341	2017/09/13 12: 14: 21	59.6	62.3	60.2	61.5	59.7
346	2017/09/13 12: 14: 26	57.4	57.2	58.4	55.9	56.6
351	2017/09/13 12: 14: 31	59.1	61.5	63.7	58.8	57.7
356	2017/09/13 12: 14: 36	58.5	59.2	58.5	58.9	58.8
361	2017/09/13 12: 14: 41	59.6	59.7	59.1	60.1	60.5
366	2017/09/13 12: 14: 46	61.3	60.7	59.0	59.4	63.3
371	2017/09/13 12: 14: 51	59.5	59.6	60.8	66.2	62.3
376	2017/09/13 12: 14: 56	60.3	60.7	63.9	59.8	60.1
381	2017/09/13 12: 15: 01	58.8	60.1	59.9	59.9	59.0
386	2017/09/13 12: 15: 06	58.6	59.4	59.3	59.4	58.7
391	2017/09/13 12: 15: 11	60.3	59.0	59.4	59.1	59.2
396	2017/09/13 12: 15: 16	62.8	65.0	61.0	60.4	62.9
401	2017/09/13 12: 15: 21	61.1	59.9	59.8	58.7	58.8
406	2017/09/13 12: 15: 26	59.6	58.2	60.5	57.4	56.5
411	2017/09/13 12: 15: 31	56.7	58.0	57.1	57.0	57.0
416	2017/09/13 12: 15: 36	56.5	55.8	56.2	57.8	56.6
421	2017/09/13 12: 15: 41	56.5	57.4	59.7	58.6	60.2

426	2017/09/13	12:15:46	61.0	59.7	58.9	57.6	57.8
431	2017/09/13	12:15:51	57.1	55.8	57.1	57.8	56.7
436	2017/09/13	12:15:56	57.2	55.4	55.8	55.7	56.3
441	2017/09/13	12:16:01	57.1	56.9	58.0	58.6	59.0
446	2017/09/13	12:16:06	61.2	57.0	57.2	59.1	58.7
451	2017/09/13	12:16:11	57.4	58.7	58.1	58.1	57.9
456	2017/09/13	12:16:16	56.4	56.8	55.9	55.6	59.1
461	2017/09/13	12:16:21	59.6	55.5	56.5	54.6	55.0
466	2017/09/13	12:16:26	57.8	55.5	55.3	54.1	54.1
471	2017/09/13	12:16:31	54.4	55.3	57.8	57.1	58.1
476	2017/09/13	12:16:36	59.7	58.8	57.8	57.4	57.6
481	2017/09/13	12:16:41	57.4	57.8	56.6	58.0	57.6
486	2017/09/13	12:16:46	57.4	58.1	58.3	58.2	56.6
491	2017/09/13	12:16:51	57.5	57.3	57.1	57.8	58.1
496	2017/09/13	12:16:56	60.4	59.1	61.7	62.5	59.5
501	2017/09/13	12:17:01	58.8	58.1	57.1	56.9	57.3
506	2017/09/13	12:17:06	59.9	58.4	57.7	58.6	58.7
511	2017/09/13	12:17:11	60.0	58.8	60.5	60.7	60.2
516	2017/09/13	12:17:16	60.2	60.4	61.0	58.2	58.5
521	2017/09/13	12:17:21	58.8	58.8	58.9	59.9	57.8
526	2017/09/13	12:17:26	59.0	59.1	60.5	59.4	60.0
531	2017/09/13	12:17:31	58.4	58.6	57.6	58.5	59.9
536	2017/09/13	12:17:36	63.1	61.7	60.2	58.4	58.9
541	2017/09/13	12:17:41	57.6	57.2	56.9	59.5	62.4
546	2017/09/13	12:17:46	59.9	59.1	58.4	58.6	58.2
551	2017/09/13	12:17:51	59.2	57.1	59.3	58.1	55.8
556	2017/09/13	12:17:56	56.0	55.5	61.6	60.3	56.7
561	2017/09/13	12:18:01	56.6	59.6	56.7	55.1	58.2
566	2017/09/13	12:18:06	57.6	55.0	55.7	56.8	57.6
571	2017/09/13	12:18:11	56.7	57.7	56.7	57.2	57.1
576	2017/09/13	12:18:16	56.3	56.7	57.0	57.5	58.9
581	2017/09/13	12:18:21	57.2	64.4	57.7	57.3	57.0
586	2017/09/13	12:18:26	58.7	59.5	56.5	57.2	58.5
591	2017/09/13	12:18:31	58.3	58.1	58.2	65.2	58.8
596	2017/09/13	12:18:36	57.8	59.0	59.4	59.6	59.6
601	2017/09/13	12:18:41	59.5	57.8	57.5	57.5	57.7
606	2017/09/13	12:18:46	56.5	57.5	56.7	58.0	57.3
611	2017/09/13	12:18:51	57.2	56.5	57.1	57.7	57.8
616	2017/09/13	12:18:56	57.8	59.6	57.3	58.5	60.0
621	2017/09/13	12:19:01	57.6	59.3	57.5	59.0	58.1
626	2017/09/13	12:19:06	59.0	57.7	58.5	57.9	58.4
631	2017/09/13	12:19:11	58.6	58.3	58.1	58.1	58.0
636	2017/09/13	12:19:16	57.8	57.9	56.4	56.9	57.7
641	2017/09/13	12:19:21	58.4	58.0	57.9	57.2	58.8
646	2017/09/13	12:19:26	57.8	57.9	58.6	58.3	59.4
651	2017/09/13	12:19:31	59.3	57.5	57.8	58.8	58.8
656	2017/09/13	12:19:36	58.2	58.7	59.2	60.7	62.4
661	2017/09/13	12:19:41	63.4	68.9	66.7	63.4	59.4
666	2017/09/13	12:19:46	57.8	56.2	57.2	55.7	56.5
671	2017/09/13	12:19:51	57.2	58.4	59.7	56.9	57.1
676	2017/09/13	12:19:56	56.6	55.9	56.6	57.4	56.7
681	2017/09/13	12:20:01	56.4	57.7	57.0	56.5	55.3
686	2017/09/13	12:20:06	56.2	55.0	54.5	54.6	54.6
691	2017/09/13	12:20:11	53.9	55.0	54.6	54.2	55.0
696	2017/09/13	12:20:16	54.2	55.0	55.7	56.0	55.4
701	2017/09/13	12:20:21	56.1	57.3	56.0	56.2	56.9
706	2017/09/13	12:20:26	56.8	56.4	55.9	56.6	57.1
711	2017/09/13	12:20:31	55.1	56.4	55.4	55.7	55.7
716	2017/09/13	12:20:36	55.2	54.9	55.4	55.6	54.8
721	2017/09/13	12:20:41	54.9	54.8	55.6	55.1	54.7
726	2017/09/13	12:20:46	55.5	56.0	55.3	54.6	54.6
731	2017/09/13	12:20:51	56.0	54.7	54.9	55.5	54.8
736	2017/09/13	12:20:56	55.3	55.2	55.7	55.5	56.1
741	2017/09/13	12:21:01	56.6	55.4	56.5	57.8	56.8
746	2017/09/13	12:21:06	57.7	58.1	59.0	58.6	58.0
751	2017/09/13	12:21:11	57.9	56.9	57.6	56.7	56.6
756	2017/09/13	12:21:16	56.1	55.5	56.1	56.4	54.7
761	2017/09/13	12:21:21	54.4	54.7	56.0	53.8	54.2
766	2017/09/13	12:21:26	54.4	54.8	54.9	55.6	56.9
771	2017/09/13	12:21:31	57.7	58.8	58.0	59.2	59.1
776	2017/09/13	12:21:36	58.0	59.7	57.5	58.3	58.3
781	2017/09/13	12:21:41	58.3	57.8	57.2	58.0	59.6
786	2017/09/13	12:21:46	58.8	58.2	58.0	58.1	58.1
791	2017/09/13	12:21:51	56.4	56.9	57.6	56.4	56.6
796	2017/09/13	12:21:56	57.8	56.4	54.3	54.6	55.6
801	2017/09/13	12:22:01	55.9	55.6	58.2	57.2	54.4
806	2017/09/13	12:22:06	55.0	55.9	54.6	53.2	55.7
811	2017/09/13	12:22:11	55.7	54.3	56.0	55.9	57.2
816	2017/09/13	12:22:16	55.7	56.2	58.1	57.4	56.6
821	2017/09/13	12:22:21	56.4	58.3	57.9	57.7	57.5
826	2017/09/13	12:22:26	56.1	56.9	56.3	57.6	57.6
831	2017/09/13	12:22:31	57.8	57.3	57.0	56.4	55.0
836	2017/09/13	12:22:36	56.0	57.1	56.1	57.5	57.1
841	2017/09/13	12:22:41	57.5	56.6	56.4	58.1	56.8
846	2017/09/13	12:22:46	56.7	58.0	57.1	55.4	56.0
851	2017/09/13	12:22:51	55.2	55.0	54.7	54.9	54.9
856	2017/09/13	12:22:56	54.8	54.7	53.6	55.2	56.1
861	2017/09/13	12:23:01	57.5	56.1	55.6	55.4	55.7
866	2017/09/13	12:23:06	54.3	54.1	53.9	54.7	54.0
871	2017/09/13	12:23:11	56.2	52.8	53.2	53.6	52.9
876	2017/09/13	12:23:16	53.9	54.2	54.3	54.3	53.8
881	2017/09/13	12:23:21	54.3	52.6	52.9	52.3	54.6
886	2017/09/13	12:23:26	54.9	55.5	60.7	65.0	63.2
891	2017/09/13	12:23:31	58.4	59.6	57.0	56.4	55.2
896	2017/09/13	12:23:36	54.5	54.2	54.9	56.3	54.7

ATTACHMENT E

Construction Noise Modeling (RCNM)

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/20/2017
 Case Description: Site Clearing and Demolition

**** Receptor #1 ****

Description	Baselines (dBA)		
	Land Use	Daytime	Evening Night
Residence and Church	Residential	58.1	58.1 58.1

Description	Equipment					
	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Saw	No	20	89.6	50.0	50.0	0.0
Excavator	No	40	80.7	50.0	50.0	0.0
All Other Equipment > 5 HP	No	50	85.0	50.0	50.0	0.0
Dozer	No	40	81.7	50.0	50.0	0.0
Generator	No	50	80.6	50.0	50.0	0.0
Tractor	No	40	84.0	50.0	50.0	0.0
Jackhammer	Yes	20	88.9	50.0	50.0	0.0

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw N/A N/A	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator N/A	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP N/A N/A	85.0	82.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer N/A	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator N/A	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor N/A	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jackhammer N/A N/A	88.9	81.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total N/A	89.6	88.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 12/13/2017
 Case Description: Site Restoration

**** Receptor #1 ****

Description	Baselines (dBA)			
	Land Use	Daytime	Evening	Night
Residence and Church	Residential	58.1	58.1	58.1

Description	Equipment					
	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Pavement Scarafier	No	20	89.5	50.0	50.0	0.0
Tractor	No	40	84.0	50.0	50.0	0.0

Equipment Lmax Leq	Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Pavement Scarafier N/A N/A	89.5	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor N/A	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total N/A	89.5	84.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A