



CITY OF SANTA MARIA
INITIAL ENVIRONMENTAL STUDY
NEGATIVE DECLARATION
JUNE 2022

RAY WATER PROJECT SP2021-0008

Betteravia Road between Rayville Lane and A Street

PROJECT SUMMARY

| | |
|---------------------------------|--|
| Project Description | The proposed project consists of consolidating Ray Water Company with the City of Santa Maria's water system. The proposed project consists of a water main, a distribution line, and service connections. In total, these components include 4,860 linear feet (0.92 miles) of new pipelines. |
| Location | Betteravia Road between Rayville Lane and A Street |
| Assessor's Parcel No. | Betteravia Road right-of-way, 111-030-005, 111-030-006, 111-030-007, 111-030-008, 111-030-009, 111-030-011, 111-030-012, 111-030-013, 111-040-010 |
| General Plan Designation | Right-of-Way (no designation) – City of Santa Maria General Industry – Santa Barbara County |
| Zoning | Right-of-Way (no designation) – City of Santa Maria M-2 (General Industry) – Santa Barbara County |
| Size of Site | 0.3 acres of temporary disturbance |
| Present Use | Road right-of-way; residential |
| Proposed Uses | Road right-of-way; residential (no change) |
| Access | Betteravia Road |
| Surrounding Uses/Zoning | |
| North | Agricultural and Industrial |
| South | Agricultural |
| East | Residential and Commercial |
| West | Industrial and Agricultural |
| Parking | During construction, the project site would be accessed by Betteravia Road. The project's staging area would be located along the northern edge of the water main along an undeveloped portion of Betteravia Road. |
| Setbacks | NA |
| Height | NA |
| Related files/Actions | NA |
| Applicant/Agent/Owner | Ray Water Company |

GENERAL AREA DESCRIPTION:

The proposed project is located on the western edge of the City of Santa Maria. The proposed project components are primarily within the Betteravia Road right-of-way, with some components located to the south of Betteravia Road, on Rayville Lane. The west portion of the proposed project is located within unincorporated Santa Barbara County and the east portion (the majority of the project) is located within the City of Santa Maria.

Regional access to the project site is provided from U.S. Route 101 and Betteravia Road. The proposed project is surrounded primarily by agricultural and industrial uses. In addition, residential and commercial office uses are located to the east of the project. The project site currently consists of paved road right-of-way and industrial land. It should be noted that although the area in and around Rayville Lane is designated as industrial land, there are existing residences that the proposed project will serve.

The eastern portion of the project area is governed by the Santa Maria General Plan. This area does not have a land use designation because it is within the right-of-way of Betteravia Road. The western portion of the project area is governed by the Santa Barbara County Comprehensive Plan and is designated as General Industry. It should be noted that the area within the jurisdiction of Santa Barbara County is located within the City of Santa Maria Sphere of Influence.

ENVIRONMENTAL SETTING:

The proposed project alignment is primarily within the Betteravia Road right-of-way. A portion of the project site has been used for petroleum production in the past. The project alignment is relatively flat. The project alignment is mostly surrounded by agricultural and industrial uses. Two vegetation types were mapped within the biological survey area: riparian and ruderal; however, only ruderal vegetation is present within the proposed project alignment.

PROJECT DESCRIPTION:

The proposed project consists of consolidating Ray Water Company with the City of Santa Maria's water system. The proposed project consists of a water main, a distribution line, and service connections. In total, these components include 4,860 linear feet (0.92 miles) of new pipelines. These components are explained in more detail below.

Water Main

The water main will extend from the intersection Mahoney Road and Rayville Lane to the intersection of Betteravia Road and A Street to connect with the City of Santa Maria water system. The water main will be approximately 3,400 feet in length.

Distribution Line

At the intersection of Mahoney Road and Rayville Lane, the water main transitions into an eight (8) inch water distribution line. This distribution line runs south down Rayville Lane. The distribution line will connect the water main described above to each of the service connections described below. This line will be approximately 500 feet in length.

Service Connections

The proposed project includes 15 service connections on Rayville Lane. Each service connection from the distribution line to the residences may vary in length; an average of 60 linear feet per connection has been used to generate a total approximate length of 780 feet for all of the service connections. A typical service line is one (1) to (2) inches in diameter.

PROJECT REVIEW:

The environmental impacts associated with the proposed project were determined using the City of Santa Maria Staff Project Environmental Checklist (attached), on-site inspection, various computer models, and information provided by the applicant. Potentially significant adverse environmental impacts were identified in the areas of Biological Resources, Cultural Resources, Hazards and Hazardous Materials, and Tribal Cultural Resources.

Based on the above-mentioned sources, no adverse impacts are associated with Aesthetics, Agriculture and Forest Resources, Air Quality, Energy, Geology and Soils, Greenhouse Gas Emissions, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems or Wildfire.

The following discussion of the potential adverse environmental impacts includes mitigation measures which would reduce all identified impacts to a level of insignificance and are recommended to be included in the conditions of approval for the project. If the decision makers wish to delete a mitigation measure which is proposed to mitigate a significant impact, an alternative mitigation measure should be agreed to by the applicant and made part of the project. Verification that these mitigation measures have been implemented will be monitored as described in Section 8 of the City of Santa Maria's Environmental Procedures.

Biological Resources

Nesting raptors and other protected avian species have the potential to occur within the project site. Construction activities may result in direct mortality of individuals or disturbance of nests. This is considered a less than significant impact with mitigation incorporated, see Mitigation Measure BIO-1 below.

The floristic alliance occurring within the riparian habitat near the proposed project alignment is listed as sensitive on the California Department of Fish and Wildlife's (CDFW's) California's Natural Communities List and in the Resources Management Element of the Santa Maria General Plan. Riparian habitat is under CDFW jurisdiction per Fish and Wildlife Code Section 1602. The project will not result in direct impacts to riparian habitat; however, if an accident during construction were to result in the release of hazardous materials (e.g., fuel for construction equipment, oil, solvents, or paints) into the environment, there is a potential to degrade the adjacent riparian habitat. The project is subject to existing regulatory requirements pertaining to the use and disposal of hazardous materials. This is considered a less than significant impact with mitigation incorporated, see Mitigation Measure BIO-2 below.

A ditch is present within the biological survey area that conveys waters of the state likely under the jurisdiction of the Regional Water Quality Control Board (RWQCB) and CDFW. In addition,

wetlands under RWQCB jurisdiction may be present where the ditch flows through the riparian habitat. The project will not result in direct impacts to the potential wetlands; however, if an accident during construction were to result in the release of hazardous materials (e.g., fuel for construction equipment, oil, solvents, or paints) into the environment, there is a potential to degrade the adjacent habitat and impact water quality. The project has the potential to directly impact waters of the state where the project intersects the culvert that runs under West Betteravia Road or if work were to occur outside of the project limits. These are considered a less than significant impact with mitigation incorporated, see Mitigation Measures BIO-2, BIO-3, and BIO-4 below.

BIO-1 To avoid and reduce impacts to nesting raptors and other nesting avian species, construction activities can be timed to avoid the nesting season period. Specifically, construction activities can be scheduled after September 1 and before January 31 to avoid impacts to these species. Alternatively, if avoidance of the nesting period is not feasible, a qualified biologist shall be retained to conduct pre-construction surveys for nesting raptors and other protected avian species within 250 feet of proposed construction activities if construction occurs between February 1 and August 31. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). Because some bird species nest early in spring and others nest later in summer, some breed multiple times in a season, surveys for nesting birds may be required to continue during construction to address new arrivals. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans.

If raptors or other protected avian species nests are identified during the pre-construction surveys, the qualified biologist will notify the project applicant and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place as determined by the qualified biologist to ensure avoidance of impacts to the individuals. The buffer will remain in place until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

BIO-2 Cleaning and refueling of equipment and vehicles will occur only within designated staging areas on paved or graded parking areas. No maintenance, cleaning or fueling of equipment will occur within riparian areas, or within 100 feet of such areas if possible. At a minimum, all equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills. During construction, all project-related spills of hazardous materials within or adjacent to proposed project area will be cleaned up immediately. Spill prevention and clean-up materials will be onsite at all times during construction. Construction materials/debris will also be stored within the designated staging areas. No debris, soil, silt, sand, oil, petroleum products, cement, concrete, or washings thereof will be allowed to enter into, or be placed where they may be washed by rainfall or runoff, into riparian habitat.

BIO-3 The project shall avoid work within the potential waters of the state to the extent feasible. No Staging shall occur within potential waters of the state. Protective fencing shall be placed so as to keep construction vehicles and personnel from impacting potential waters of the state adjacent to the proposed project area outside of work limits. Typically, protective fencing, also

referred to as Environmentally Sensitive Area (ESA) fencing, is four feet in height and is made of a highly visible color of polypropylene plastic.

BIO-4 If avoidance of waters of the state is not feasible, the project applicant shall comply with the Clean Water Act and Fish and Wildlife Code and coordinate with the RWQCB to obtain a Water Quality Certification and CDFW to obtain a Section 1602 Lake and Streambed Alteration Agreement prior to construction. All measures included in the permits to avoid, reduce, or mitigate impacts to waters of the state shall be implemented. These measures may include, but not be limited to, construction timing restrictions, monitoring, and reporting.

Cultural Resources

Public Resources Code §21083.2 requires that lead agencies evaluate potential impacts to archaeological resources. Specifically, lead agencies must determine whether a project may have a significant effect or cause a substantial adverse change in the significance of an archaeological resource. The findings of the Phase I cultural report did not document any confirmed evidence of an archaeological resource. Accordingly, the project would not significantly impact a known archaeological resource. Although not anticipated, there is the potential for inadvertent discovery of archaeological resources during construction, which may result in potential inadvertent damage or disturbance to a resource. This is considered a less than significant impact with mitigation incorporated, see Mitigation Measure CR-1 below.

Human graves are often associated with prehistoric occupation sites. Section 7050.5 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial and Section 5097.99 of the Public Resources Code defines the obtaining or possession of Native American remains or grave goods to be a felony.

Although not anticipated, there is the potential for inadvertent discovery of human remains and potential inadvertent damage or disturbance during construction. This is a less than significant impact with mitigation incorporated, see Mitigation Measure CR-2 below.

CR-1 If archaeological resources are unexpectedly discovered during construction, work shall be halted within 50 meters (±160 feet) of the find until it can be evaluated by a qualified professional archaeologist. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented, with the concurrence of the City of Santa Maria.

CR-2 If human remains are unexpectedly discovered during construction, work shall be halted within 50 meters (±160 feet) of the find. The County Coroner shall be notified in accordance with provisions of Public Resources Code 5097.98-99 in the event human remains are found and the Native American Heritage Commission shall be notified in accordance with the provisions of Public Resources Code section 5097 if the remains are determined to be of Native American origin. The Commission will designate a Most Likely Descendant who will be authorized to provide recommendations for management of the Native American human remains. (California Public Resources Code Section 5097.98; and Health and Safety Code Section 7050.5)

Hazards and Hazardous Materials

There are typically two types of hazardous materials releases that could occur during construction: (1) the accidental release of hazardous materials that are routinely used during construction activities; and (2) the potential for construction activities to encounter and excavate contaminated soil or groundwater that are already present at the construction site and thus release it to expose new receptors to the hazard.

Hazardous materials that could be used during construction activities include typical construction equipment fluids. Storage and use of hazardous materials at construction sites could potentially result in the accidental release of small quantities of hazardous materials, which could pose a risk to construction workers and the environment, such as degradation of soil and/or surface water quality. However, the construction contractor would be required to prepare a Water Pollution Control Plan. The Water Pollution Control Plan would list the hazardous materials (including petroleum products) proposed for use and describe measures for preventing spills, inspecting equipment and fuel storage, and providing immediate response to spills. Through compliance with applicable hazardous materials storage and storm water permitting regulations, the impacts from potential releases of hazardous materials or petroleum products during construction would be less than significant.

The greatest potential for encountering contaminated soil and groundwater during construction would be in areas where past or current land uses have resulted in soil contamination. Nine (9) environmental cases were identified using GeoTracker that may have potentially affected soil or subsurface conditions at project sites. Two (2) of these sites are listed as "Open;" the remainder are considered "Completed – Case Closed," meaning that a closure letter or other formal closure decision document has been issued for the site.

Encountering soil or groundwater contamination could result in exposures to construction workers, the public, or the environment, resulting in a potentially significant impact. Construction within the former Jim O'Donnell Lease could result in exposure to petroleum hydrocarbon-impacted soil. Soil disturbance during construction could further disperse existing contamination into the environment and expose construction workers or the public to contaminants. Specifically, construction of the distribution line located just to the south of the intersection of Rayville Lane and Mahoney Road has the potential to encounter petroleum hydrocarbon-impacted soil found in the "Historic Lease Roads." It should be noted that the Site Assessment Report and Site Restoration Plan (SARSRP) prepared by AECOM found that the hydrocarbon-impacted soils found in the "Historic Lease Roads" is considered to be non-hazardous.

There is also potential to encounter this material during trenching of Betteravia Road and Mahoney Road, however, this is not certain. The presence of these hazards cannot be determined using historic aerial photographs and assuming the presence of hydrocarbon-impacted soils would be speculation. In addition, construction of the distribution lateral to APN 111-030-01 has the potential to encounter the "Sump of Unknown Origin." It should be noted that the "Sump of Unknown Origin," while within the same vicinity as the other lease features, is not associated with the former Jim O'Donnell Lease. A responsible party has not been identified for this feature. The "Sump of Unknown Origin" has the potential to contain hazardous hydrocarbon-impacted material.

Potential impacts associated with encountering hazardous materials at the former Jim O'Donnell Lease are considered potentially significant.

A Soils Management Plan (SMP) will be prepared by the responsible party for the former Jim O'Donnell Lease prior to construction of the proposed project. The SMP will include contact from the responsible party and process for cleanup of contaminated soils. It should be noted that the remediation of the "Sump of Unknown Origin" would not be covered in the SMP, as a responsible party has not been identified for that feature. The required SMP together with Mitigation Measure HM-1, included below, would reduce the impact from encountering contaminated soil during construction to a less than significant level. This impact is considered ***less than significant with mitigation incorporated***.

Operation of the proposed project would not result in exposure to hazardous materials because all components of the project would be underground. Any potential hazardous materials on the site would not be accessible to the public or nearby residents.

HM-1 The applicant's contractor shall immediately stop work and notify Santa Barbara County Public Health Department – Environmental Health Services Division at (805) 346-8216, if soil contamination is suspected or encountered during construction activities (e.g., unusual soil discoloration or strong odor). In addition, the applicant's contractor shall contact the project engineers and the City of Santa Maria Public Works Department. All work in the area of suspected contamination shall cease, the work area shall be sectioned off, until appropriate health and safety procedures have been determined and implemented.

Tribal Cultural Resources

There are no historical structures on the site. Records indicate that the project site, which is primarily within the road right-of-way and contains several residences on Rayville Lane, is not listed on the California Register of Historic Places or on Santa Barbara County's local list. Professional archaeologists studied a project boundary larger than the proposed project site disturbance. After initial consultation, a field survey of the project area was completed. The studies indicate the area of proposed development is not within an archaeological site eligible to be designated as a historical resource applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. Should archaeological resources be unexpectedly discovered during construction, work shall be halted until it can be evaluated by a qualified professional archaeologist and determined to be significant, and appropriate mitigation measures formulated and implemented, as identified in Mitigation Measures CR-1 and CR-2. The project would have a less than significant impact on tribal cultural resources. These mitigation measures are included above under the Cultural Resources Heading.

ENVIRONMENTAL RECOMMENDATION:

Based on the information available at the time of preparation this report and, without benefit of additional information which may come to light at the public hearing, the Environmental Officer recommends that a Mitigated Negative Declaration be filed for the Ray Water Project based upon information contained in SP2021-0008.

PREPARED BY:



City of Santa Maria
Community Development Department
110 South Pine Street, #101
Santa Maria, CA 93458

A handwritten signature in black ink, appearing to read "Dana Eady", written over a horizontal line.

Dana Eady, Environmental Analyst

A handwritten date "June 7, 2022" written in black ink over a horizontal line.

Date

A handwritten signature in blue ink, appearing to read "Chuen Ng", written over a horizontal line.

Chuen Ng, Environmental Officer

A handwritten date "6/7/2022" written in blue ink over a horizontal line.

Date



CITY OF SANTA MARIA
Environmental Checklist / Initial Study
RAY WATER PROJECT / (SP2021-0008)

1. Project Title and Location

Ray Water Company

City of Santa Maria Assessor's Parcel Numbers:

- Right-of-Way, Betteravia Road

County of Santa Barbara Assessor's Parcel Numbers:

- Right-of-Way, Betteravia Road
- 111-030-005 (3.01 acres)
- 111-030-006 (0.30 acres)
- 111-030-007 (0.20 acres)
- 111-030-008 (0.33 acres)
- 111-030-009 (0.43 acres)
- 111-030-011 (0.49 acres)
- 111-030-012 (0.25 acres)
- 111-030-013 (0.22 acres)
- 111-040-010 (1.40 acres)

2. Lead Agency, Contact and Preparer

City of Santa Maria
Dana Eady, Planning Division Manager
Community Development Department
110 South Pine Street, #101
Santa Maria, CA 93458
(805) 925-0951, x2444
deady@cityofsantamaria.org

3. Project Sponsor's Name and Address

Ray Water Company
Kristy Gilbertson, Ray Water Company Representative
(805) 680-7841
rsksg@aol.com

4. General Plan Designation

City of Santa Maria, *Mahoney Ranch North Specific Plan*

- Right-of-Way (no designation)

County of Santa Barbara

- General Industry

5. Zoning Designation

City of Santa Maria

- Right-of-Way (no designation)

County of Santa Barbara

- M-2 (General Industry)

6. Brief Description of Project

The primary source for the project description provided below is the Engineering Report for Ray Water Company, prepared by Weber, Hayes & Associates, dated October 22, 2021. This document is included in **Appendix A** to this document. Additional information was received via email correspondence from Weber, Hayes & Associates in August 2021.

6.1 INTRODUCTION

This Initial Study has been prepared to evaluate the potential environmental effects associated with the Ray Water Project (“project” or “proposed project”), located in the City of Santa Maria and unincorporated Santa Barbara County. This document has been prepared in accordance with the California Environmental Quality Act (“CEQA”), Public Resources Code §21000 et. seq., and the State CEQA Guidelines, California Code of Regulations (“CCR”) §15000 et. seq.

An Initial Study is an informational document prepared by a Lead Agency to determine if a project may have a significant effect on the environment (CEQA Guidelines §15063, subd. (a)). If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (“EIR”) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the Lead Agency determines that revisions in the project plans or proposals made by or agreed to by the applicant to mitigate the potentially significant effects to a less than significant level, a Mitigated Negative Declaration (“IS/MND”) may be prepared instead of an EIR (CEQA Guidelines §15070, subd. (b)). The Lead Agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/MND conforms to the content requirements under CEQA Guidelines §15071.

The City of Santa Maria is acting as the Lead Agency pursuant to CEQA Guidelines §15050(a). As the Lead Agency, the City of Santa Maria prepared this IS/MND pursuant to CEQA Guidelines §15063, §15070, and §15152. This IS/MND will be circulated for agency and public review during a 30-day public review period pursuant to CEQA Guidelines §15073. Comments received by the City of Santa Maria on this IS/MND will be reviewed and considered as part of the deliberative process in accordance with CEQA Guidelines §15074.

The following section is consistent with the requirements of CEQA Guidelines §15124 to the extent that it is applicable to the project. This section contains a detailed description of the project location, historical background and context, project components and relevant project characteristics, project goals and objectives, and applicable regulatory requirements.

6.2 PROJECT LOCATION

The proposed project, described below, is located on the western edge of the City of Santa Maria. The proposed project components, described below in **Section 6.5**, are primarily within the Betteravia Road right-of-way, with some components located to the south of Betteravia Road, on Rayville Lane. The west portion of the proposed project is located within unincorporated Santa Barbara County and the east portion (the majority of the project) is located within the City of Santa Maria (see **Figure 1. Regional Project Map** and **Figure 2. Project Location**). The proposed project would be located on the following assessor's parcels on Rayville Lane:

- 111-030-005
- 111-030-006
- 111-030-007
- 111-030-008
- 111-030-009
- 111-030-011
- 111-030-012
- 111-030-013
- 111-040-010

Regional access to the project site is provided from U.S. Route 101 and Betteravia Road. The proposed project is surrounded primarily by agricultural and industrial uses. In addition, residential and commercial office uses are located to the east of the project. The project site currently consists of paved road right-of-way and industrial land. It should be noted that although the area in and around Rayville Lane is designated as industrial land, there are existing residences that the proposed project will serve.


6.3 EXISTING GENERAL PLAN LAND USE DESIGNATION

The eastern portion of the project area is governed by the Santa Maria General Plan. This area does not have a land use designation because it is within the right-of-way of Betteravia Road. The western portion of the project area is governed by the Santa Barbara County Comprehensive Plan and is designated as General Industry. See **Figure 3. Land Use Map**. It should be noted that the area within the jurisdiction of Santa Barbara County is located within the City of Santa Maria Sphere of Influence (City of Santa Maria, 2011).


6.4 PROJECT BACKGROUND

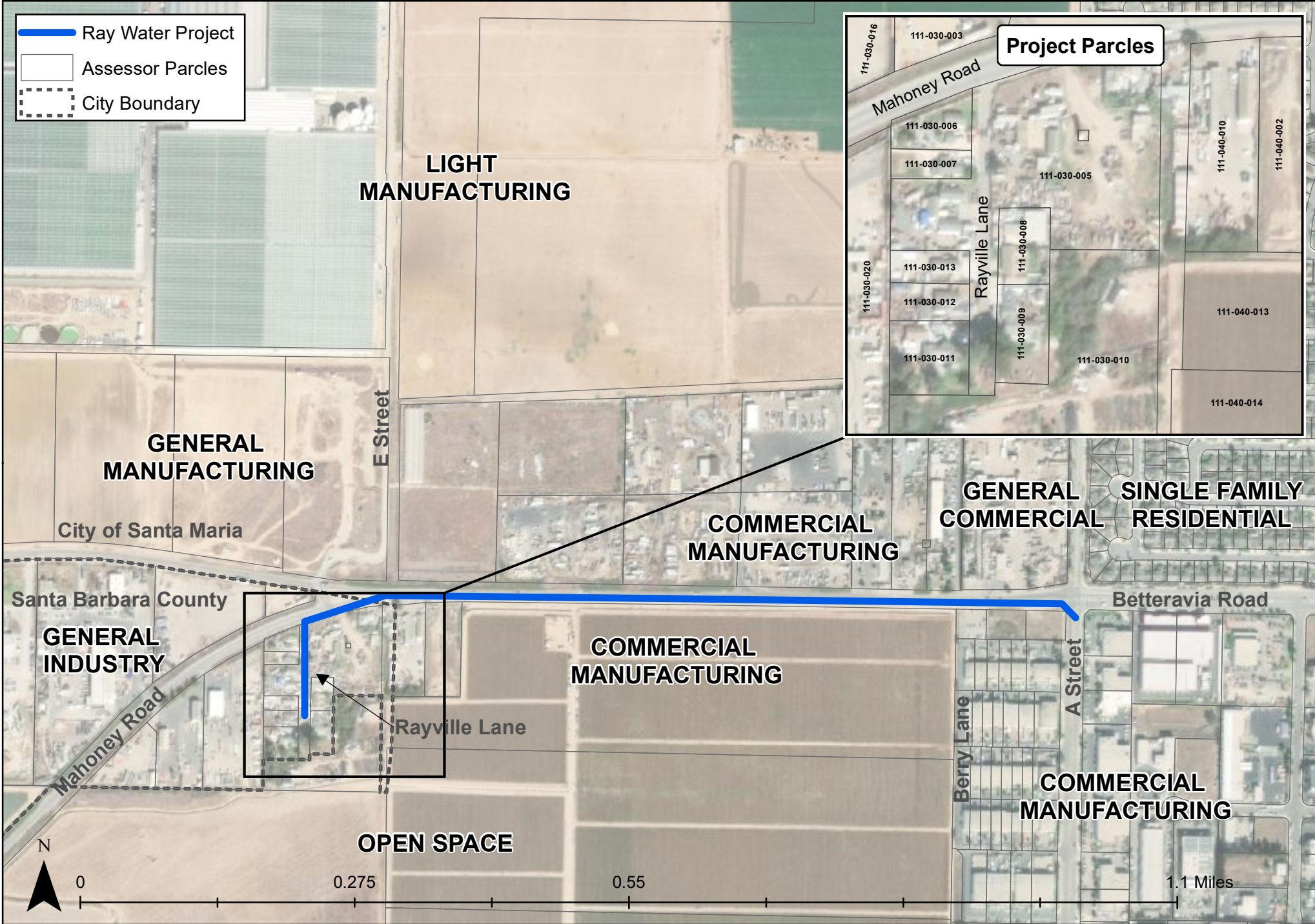
Ray Water Company ("RWC") is a small water company located just outside the City of Santa Maria's city limits. RWC was issued a Santa Barbara County water system permit in 1976 but existed prior to that. Over the years, RWC has had ongoing difficulties meeting regulatory requirements – primarily due to aging and outdated infrastructure. Based on these challenges, RWC received a Technical Assistance Grant to help bring their water system into regulatory compliance.



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| <p>Title: Regional Project Map</p> | <p>Date: <u>09/15/2021</u></p> <p>Scale: <u>1 inch = 1.26 miles</u></p> <p>Project: <u>2020-40</u></p> | <p> Monterey San Jose Denise Duffy and Associates, Inc. Environmental Consultants Resource Planners 947 Cass Street, Suite 5 Monterey, CA 93940 (831) 373-4341</p> | <p>Figure 1</p> |
|---|--|--|----------------------------|



| | | | |
|---|---|---|--------------------------|
| <p>Title:</p> <h2>Project Location</h2> | <p>Date: 09/15/2021</p> <p>Scale: 1 inch = 0.14 miles</p> <p>Project: 2020-40</p> |  <p>Monterey San Jose Denise Duffy and Associates, Inc. Environmental Consultants Resource Planners 947 Cass Street, Suite 5 Monterey, CA 93940 (831) 373-4341</p> | <p>Figure</p> <h1>2</h1> |
|---|---|---|--------------------------|



| | | | |
|--|---|---|-------------------------------|
| <p>Title:</p> <p>Land Use Map</p> | <p>Date: 09/16/2021</p> <p>Scale: 1 inch = 0.12 miles</p> <p>Project: 2020-40</p> | <p>Monterey San Jose</p> <p>Denise Duffy and Associates, Inc.</p> <p>Environmental Consultants Resource Planners</p> <p>947 Cass Street, Suite 5</p> <p>Monterey, CA 93940</p> <p>(831) 373-4341</p> | <p>Figure</p> <p>3</p> |
|--|---|---|-------------------------------|

6.4.1 Existing System

RWC has been governed by various appointed residents of the water system, which have changed over time. Currently, ownership is equally distributed among ten residents. There are a total of 13 service connections (11 residential, 2 commercial). The total population served is approximately 45 residents. The service area boundaries are shown on **Figure 4. Site Plans**.

Based on State Water Resources Control Board (“SWRCB”) 2020 data for the City of Santa Maria water usage, the average daily demand (“ADD”) is 65.4 gallons per day (per resident) and the maximum daily demand (“MDD”) is 108.56 gallons per resident. The RWC system currently serves 45 residents, therefore, the entire RWC MDD is 4,885 gallons per day. RWC utilizes groundwater as its drinking water source. The capacity of this source is unknown, because RWC does not meter the well or regularly monitor depth to groundwater. In addition, the RWC system uses one steel water storage tank. Santa Barbara County documentation indicates that the steel tank is 32-feet tall, 12-feet in diameter, with a capacity of approximately 25,000-gallons.

RWC has received numerous notices of violation (from Santa Barbara County) dating back to 1980. The most relevant violation includes repeated nitrate concentrations above the maximum contaminant levels (“MCL”), starting at least as early as June 24, 1980. Other violations included (but not limited to) coliform bacteria detections, failure to perform the required analytical testing, failure to properly inform residents of MCL exceedances, and failure to resolve the nitrate issue.

Santa Barbara County issued RWC an enforcement action Compliance Order on March 6, 2020 due to ongoing nitrate concentrations above the MCL. The Compliance Order required RWC to inform all residents of the elevated nitrate concentrations, submit a progress report, and submit a corrective action plan to resolve the nitrate issue. The proposed project is a result of this Compliance Order.

6.5 PROJECT DESCRIPTION

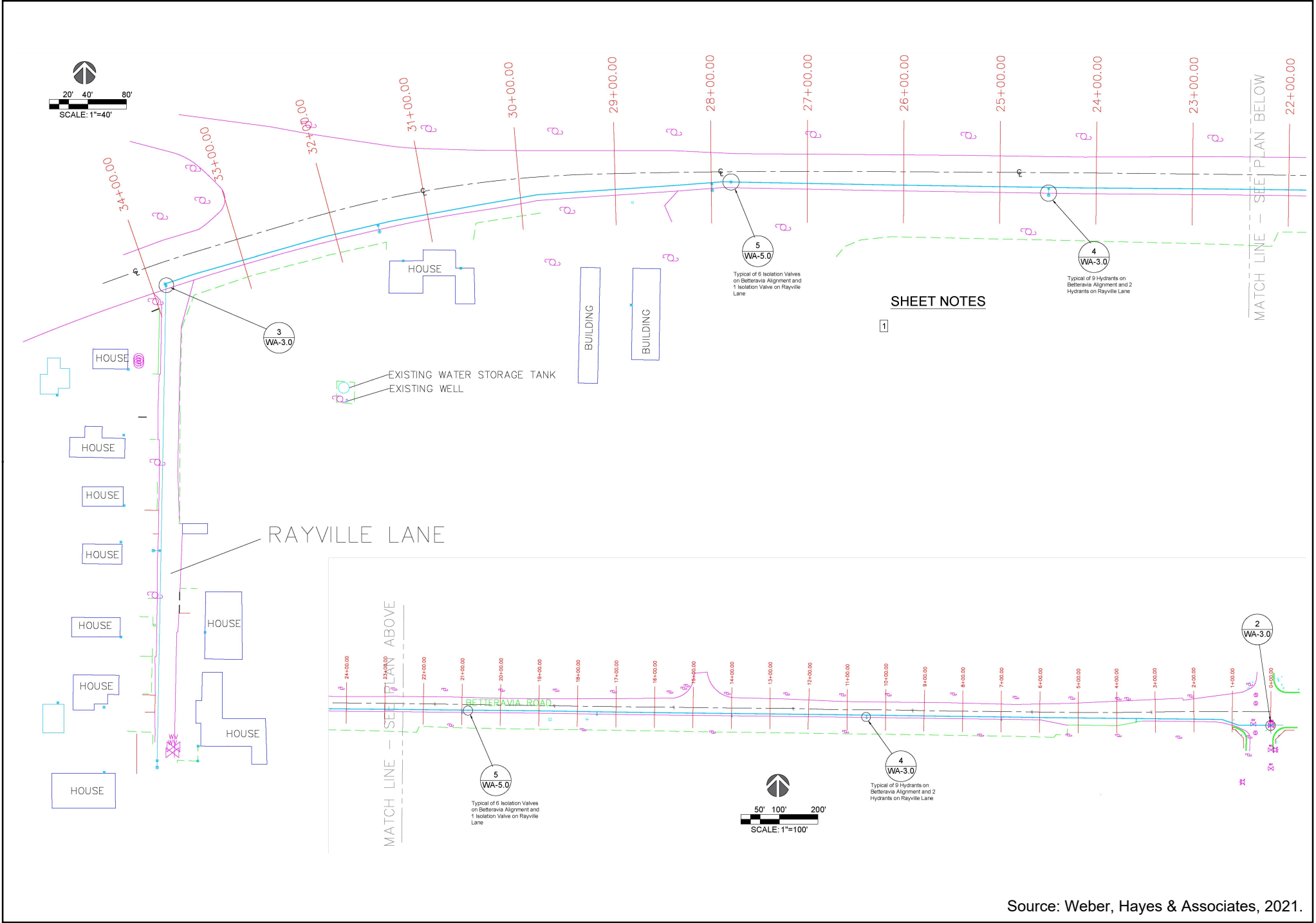
6.5.1 Project Objectives

The primary project goal is to provide RWC residents with safe and reliable drinking water. To best meet the primary goal, the project’s key objectives are:

- Supply safe and reliable drinking water;
- Comply with regulatory requirements;
- Meet the water system’s O&M needs;
- Be financially viable;
- Satisfy public concerns; and
- Meet environmental requirements.

6.5.2 Project Components

The proposed project consists of consolidating RWC with the City of Santa Maria’s water system. The proposed project consists of a water main, a distribution line, and service connections. In total, these components include 4,860 linear feet (0.92 miles) of new pipelines. These components are explained in more detail below.



Source: Weber, Hayes & Associates, 2021.



Title:

Site Plans

Date: 09/16/2021

Scale: NA

Project: 2020-40

Denise Duffy and Associates, Inc.
Environmental Consultants Resource Planners
947 Cass Street, Suite 5
Monterey, CA 93940
(831) 373-4341

Monterey | San Jose

Figure

4

Water Main

The water main will extend from the intersection Mahoney Road and Rayville Lane to the intersection of Betteravia Road and A Street to connect with the City of Santa Maria water system. The water main will be approximately 3,400 feet in length. See **Figure 4. Site Plans** for more information.

Distribution Line

At the intersection of Mahoney Road and Rayville Lane, the water main transitions into an eight (8) inch water distribution line. This distribution line runs south down Rayville Lane. The distribution line will connect the water main described above to each of the service connections described below. This line will be approximately 500 feet in length. See **Figure 4.**

Service Connections

The proposed project includes 15 service connections on Rayville Lane, see **Figure 4.** Each service connection from the distribution line to the residences may vary in length; an average of 60 linear feet per connection has been used to generate a total approximate length of 780 feet for all of the service connections. A typical service line is one (1) to (2) inches in diameter.

6.5.3 Project Construction

Site Preparation and Trenching

The project site is generally flat and consists of existing road right-of-way and general industrial uses. The proposed project includes trenching of approximately 13,100 square feet (0.3 acres). Site preparation activities are anticipated to be completed within approximately 10 days and trenching activities are anticipated to be completed within 60 days. The proposed project involves approximately 56,700 cubic feet (2,100 cubic yards) of cut and the same amount of fill. This estimate includes the water main, distribution line, and service lines. The project would require some import or export of cut and fill materials. Sand would be imported for the utility trenches and a minimal amount of material would be exported. The water main trench will be between 24 and 36-inches wide; and the distribution line trench will be between 24 and 32-inches wide.

Schedule

Construction is anticipated to occur over the course of approximately three (3) months (Mixan. 2021).¹ Construction is expected to begin in February 2023.² Construction activities would include site preparation, trenching, and paving. The anticipated schedule of these construction activities is as follows:

1. Site Preparation: This construction phase will last approximately 10 days.
2. Trenching: This construction phase will last approximately 60 days.
3. Paving: This construction phase will last approximately 60 days.

¹ A local contractor has estimated that it would take 28 days to complete the proposed project, however, considering all aspects of construction and accounting for potential delays, the project engineer predicts that a three-month construction period is reasonable (Mixan. 2021).

² The Draft Engineering Report dated July 2, 2021, states that construction will begin between August 17, 2022 and February 17, 2023. Assuming that this project may encounter typical delays and postponements, this analysis uses a start date estimate of February 2023.

The construction contractor will determine the precise sequencing of the construction phase above. Due to the linear nature of the proposed project, it is probable that multiple construction phases will occur simultaneously.

Construction Circulation and Access

During construction, the project site would be accessed by Betteravia Road. It is currently unknown how many vehicle trips would be generated by the construction of the proposed project. The project's staging area would be located along the northern edge of the water main along an undeveloped portion of Betteravia Road.

6.5.4 Project Operation

With the exception of fire hydrants, the entirety of the proposed project will be underground after construction is complete. It is not expected that operation of the proposed project will require maintenance on a regular basis. It is not anticipated that the City of Santa Maria will need to hire additional employees to accommodate the additional connections generated by the proposed project. The proposed project would require little to no vehicle trips during operation of the proposed project.

Once operational, the RWC will no longer exist and current RWC customers would receive water directly from the City of Santa Maria.

7. Surrounding Land Uses and Setting

North: Agricultural and Industrial

South: Agricultural

East: Residential and Commercial

West: Industrial and Agricultural

8. Other Public Agencies Whose Approval is Required

State

- State Water Resources Control Board – State Revolving Fund Financing Approval
- California Department of Fish and Wildlife – Section 1602 Lake and Streambed Alteration Agreement*

Regional/Local

- Regional Water Quality Control Board – Water Quality Certification*
- City of Santa Maria – Outside Users Agreement
- City of Santa Maria Public Works – Encroachment Permit
- Santa Barbara County Public Works (Orta. 2021) – Encroachment Permit

*These permits may not be applicable if the applicant can work within the potential waters of the state, see Mitigation Measure BIO-4 for more information

1. AESTHETICS

| Except as provided in Public Resources Code Section 21099, would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|-------------------------------------|
| a. Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SETTING:

The proposed project is located within the Santa Maria Valley. The City of Santa Maria is located to the east of the proposed project area. There are no State-designated scenic highways located within the vicinity of the proposed project, the nearest State-designated scenic highway is U.S. Route 101 which is designated as eligible for scenic highway status and is located approximately two (2) miles to the east (Caltrans. 2021). In addition, there are no County-designated scenic highways within the vicinity of the proposed project area.

The eastern portion of the proposed project area is within a paved road right-of-way and the western portion of the proposed project is in an industrial area, however, there are a number of residences located within the industrial area. The lands surrounding the proposed project area are primarily agricultural and industrial. In addition, there is an agricultural ditch located to the south of a portion of the proposed project site, see **Section 4. Biological Resources** for more information. The aesthetic quality of the site has previously been altered by the current uses described above. Vehicle traffic on Betteravia Road is the primary source of public viewership for the proposed project. See **Figure 5. Site Photos**. The topography of the proposed project site and surrounding area is flat.

Construction of the proposed project will include trenching with the use of heavy equipment. Construction of the proposed project would not require any nighttime construction, and, therefore, construction activities would not result in any new nighttime lighting or glare. Construction is anticipated to last approximately three months.



Photo 1. View from Betteravia Road, looking south toward Rayville Lane.

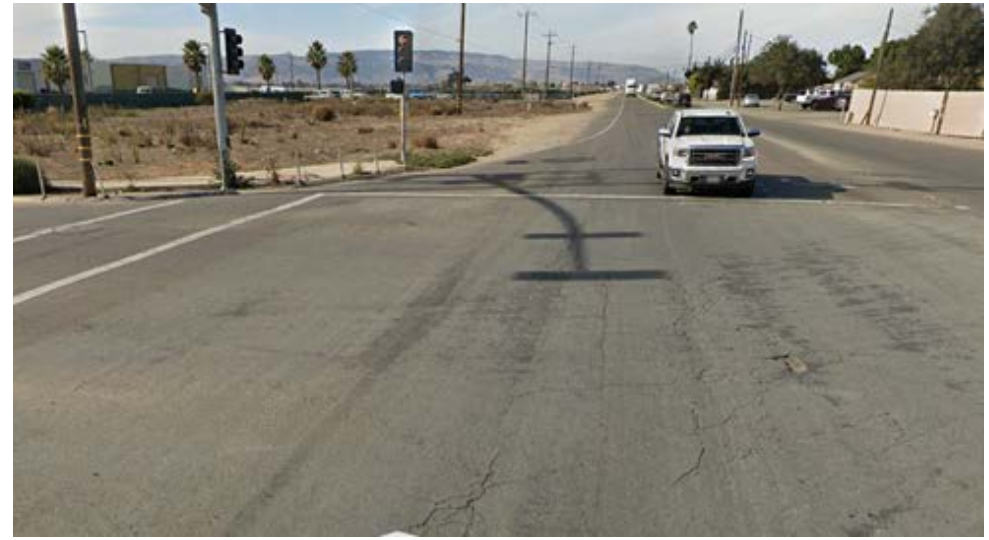


Photo 2. View from corner of A Street and Betteravia Road, looking west down Betteravia Road.



Photo 3. View from part way down distribution main, looking west down Betteravia Road.



Photo 4. View from part way down the distribution main alignment, looking east up Betteravia Road.



Title:

Site Photos

Date: 09/15/2021
Scale: NA
Project: 2020-40



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Figure
5

Once operational, the distribution pipeline and laterals would be entirely underground; the components of the project would not be visible.

IMPACT DISCUSSION:

- a. The majority of the project site is located within existing right-of-ways and disturbed areas. With the exception of fire hydrants, all the project components would be underground and would not be visible after construction is complete. The project would not impact scenic vistas and is not located within a scenic corridor. Construction of the project may be temporarily visible from a small number of private residences and vehicles traveling on Betteravia Road. Impacts to private views in a project's immediate vicinity are not considered under CEQA. The proposed project would have a ***less than significant impact*** on scenic vistas.
- b. There are no scenic resources within the immediate vicinity of the project. Construction and operation of the project would result in a ***less than significant impact*** to scenic resources.
- c. The existing visual character of the project site is comprised of rural land uses, including agriculture and residential. The site's overall visual quality is considered low due to the surrounding agricultural open space and industrial use. The residential land within the vicinity of the project site does not enhance the area's aesthetic value. Construction impacts would include the presence of construction vehicles, equipment and materials, stockpiles, and exposed soils. These impacts would be temporary in nature. Once the proposed project is completed, the land would be restored to its pre-construction condition. For these reasons, the proposed project would result in a ***less than significant impact*** on the existing visual character or quality of public views of the site and its surroundings.
- d. The proposed project does not propose any new sources of light or glare, as the new water main, distribution line, and service connections will be underground and therefore would not include nighttime lighting. Construction will not occur at night; therefore, no safety lighting will be needed. The proposed project would have ***no impact*** resulting from light and glare.

2. AGRICULTURE AND FOREST RESOURCES

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

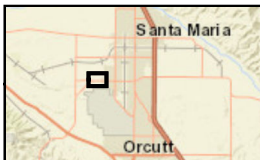
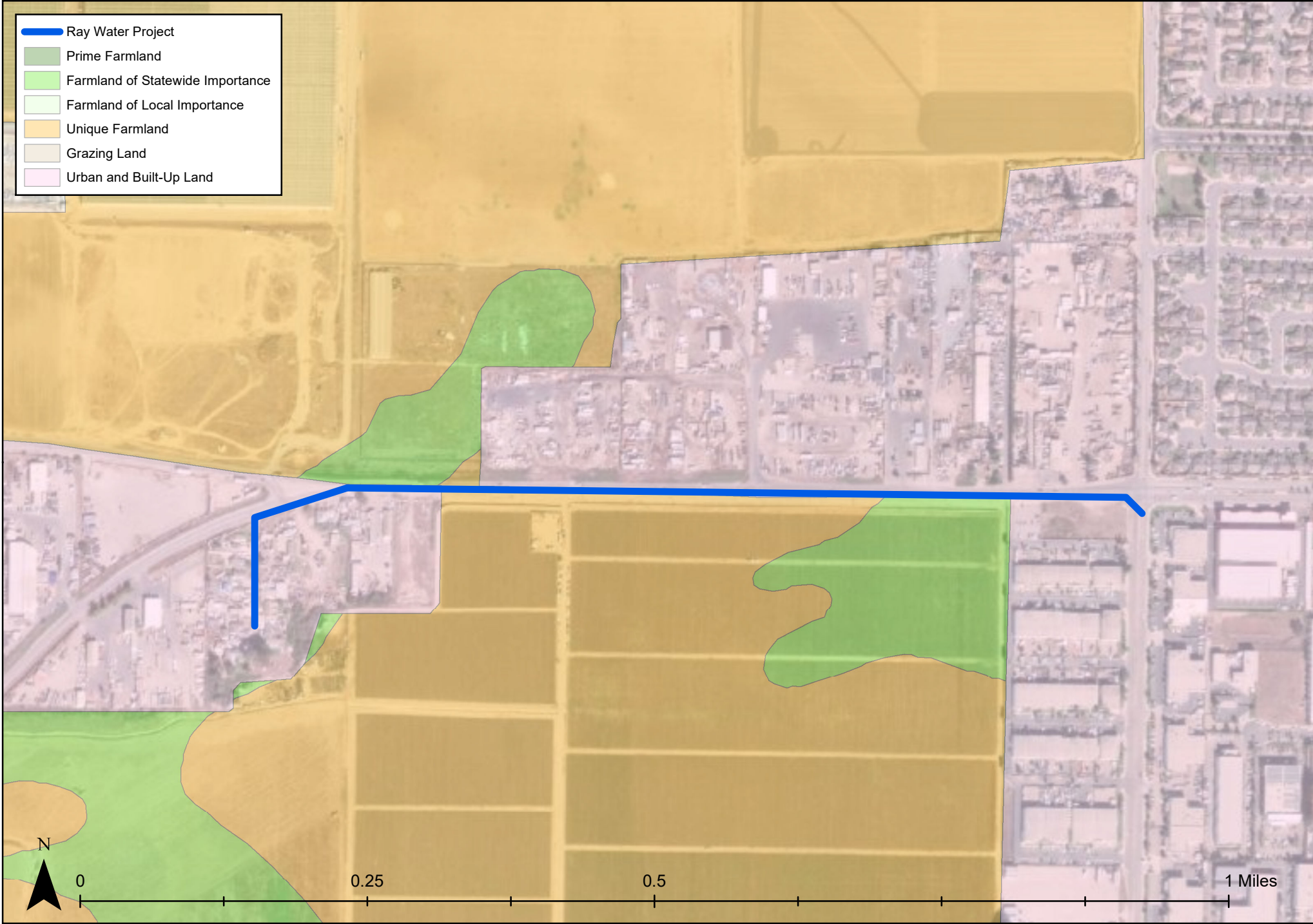
| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

SETTING:

Agriculture has historically played an important role in the economy and development of Santa Maria and the Santa Maria Valley. Soil quality, water supply, year-round growing season, and level topography have made the Santa Maria Valley one of the most productive agricultural regions in the country.

Areas to the north and south of the proposed project area are currently utilized for agriculture. A portion of the proposed project area is zoned as General Industrial, and the remainder is within the right-of-way. The proposed project area is not under a Williamson Act contract, nor is it zoned for an agricultural use (SBC Atlas. 2021). Neither construction nor operation of the proposed project would encroach into agricultural land. See **Figure 6. Important Farmlands**.

According to California Public Resources Code (PRC) Section 12220(g), forest land is defined as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Timberland is defined as land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection, as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. The project site does not support any forest land or timberland.



Title:

Important Farmlands Map

Date: 09/15/2021
 Scale: 1 inch = 0.11 miles
 Project: 2020-40



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Figure
6

IMPACT DISCUSSION:

- a. The project site includes lands designated as “Urban and Built-Up,” and “Other,” on the Important Farmlands Map for Santa Barbara County prepared by the Farmland Mapping and Monitoring Program of the California Resources Agency (California Department of Conservation. 2021). The water main and distribution pipeline are located within the Betteravia Road right-of-way, and the service lines would be located within Rayville Lane. Land designated as “Unique Farmland,” and “Farmland of Statewide Importance” is located on either side of Betteravia Road, however, these areas are not part of the proposed project and therefore will not be encroached upon. The proposed project would have **no impact** resulting from the conversion of prime farmland, unique farmland, or farmland of statewide importance.
- b. The project site is not located on or near land enrolled under the Williamson Act. For this reason, the proposed project would have **no impact** resulting from a conflict with existing zoning for agricultural use, or a Williamson Act contract.
- c. The project site does not contain any forest land as defined in Public Resources Code Section 12220(g), timberland as defined by Public Resources Code Section 4526, or property zoned for Timberland Production as defined by Government Code Section 51104(g). The proposed project would have **no impact** resulting from a conflict in zoning for these land uses.
- d. As mentioned above, there is no forest land within the project vicinity. **No impact** would result from the conversion of forest land to a non-forest use.
- e. The proposed project would not involve changes in the existing environment, which could result in conversion of farmland or agricultural land due to their location or nature. Construction impacts adjacent to agricultural resources would occur within existing disturbed areas and would be temporary in nature. The proposed project is a water system improvement project and would not convert any land for other use. For these reasons, this is considered a **less than significant impact**.

3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|--------------------------|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|--------------------------|
| c. Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

SETTING:

An Air Quality Memorandum was prepared for the proposed project, which is contained in **Appendix B** of this document.

The project lies within the South Central Coast Air Basin ("SCCAB"). The Santa Barbara County Air Pollution Control District ("SBCAPCD") is the local agency authorized to regulate stationary air quality sources in the project area. The Federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these Acts, the U.S. Environmental Protection Agency ("EPA") and the California Air Resources Board ("CARB") have established ambient air quality standards for specific "criteria" pollutants, designed to protect public health and welfare. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), particulate matter (PM₁₀), sulfur dioxide (SO₂), and lead (Pb). Secondary criteria pollutants include ozone (O₃), and fine particulate matter (PM_{2.5}).

The EPA administers National Ambient Air Quality Standards ("NAAQS") under the Federal Clean Air Act. The EPA sets the NAAQS and determines if areas meet those standards. Violations of ambient air quality standards are based on air pollutant monitoring data and evaluated for each air pollutant. Areas that do not violate ambient air quality standards are considered to have attained the standard.

The SBCAPCD monitors air pollutant levels to ensure that air quality standards are met and, if not met, develop strategies to meet the standards. Depending on whether or not the standards are met or exceeded, the SCCAB is classified as being in "attainment" or as "non-attainment." See **Table 1. Santa Barbara County Air Pollution Control District Attainment Status** below for a summary of the attainment status for SBCAPCD.

Table 1.
Santa Barbara County Air Pollution Control District Attainment Status

| Pollutant | State Designation | National Designation |
|---|-------------------|---------------------------|
| Ozone (O ₃) | Attainment | Unclassified / Attainment |
| Inhalable Particulates (PM ₁₀) | Nonattainment | Attainment |
| Fine Particulates (PM _{2.5}) | Unclassified | Unclassified / Attainment |
| Carbon Monoxide (CO) | Attainment | Attainment |
| Nitrogen Dioxide (NO ₂) | Attainment | Unclassified / Attainment |
| Sulfur Dioxide (SO ₂) | Attainment | - |
| Lead | Attainment | Unclassified |
| Source: Santa Barbara County Attainment & Nonattainment Classification Summary, https://www.ourair.org/air-quality-standards/ | | |

Plans to attain these standards already accommodate the future growth projections available at the time these plans were prepared. Any development project capable of generating air pollutant emissions exceeding regionally established criteria is considered significant for purposes of CEQA analysis, whether or not such emissions have been accounted for in regional air planning. Any project that would directly cause or substantially contribute to a localized violation of an air quality standard would generate substantial air pollution impacts. The same is true for a project that generates a substantial increase in health risks from toxic air contaminants or introduces future occupants to a site exposed to substantial health risks associated with such contaminants.

The 2019 Ozone Plan is the ninth triennial update to the initial state Air Quality Attainment Plan ("AQAP") adopted by the SBCAPCD Board of Directors in 1991 (SBCAPCD. 2019). SBCAPCD's 2019 Ozone Plan still serves as an important regulatory tool to maintain attainment status and address the many factors that threaten to increase regional NO_x and volatile organic compounds ("VOC") emissions in the future. To be determined to be consistent with the current air quality attainment plan (2019 Ozone Plan), the proposed project's direct and indirect emissions must be accounted for in the growth assumptions in the 2019 Ozone Plan, and the proposed project must be consistent with the policies adopted in the 2019 Ozone Plan. Additionally, in determining consistency with the 2019 Ozone Plan, commercial and industrial projects must be tracked pursuant to the local Congestion Management Plan ("CMP") and are determined to be consistent with the 2019 Ozone Plan if they are consistent with SBCAPCD rules and regulations. The Ozone Plan relies primarily on the land use and population projections provided by Santa Barbara Council of Associated Governments ("SBCAG") and CARB on-road emissions forecast as a basis for vehicle emission forecasting (SBCAPCD. 2017).

Common sources of odors and odor complaints include wastewater treatment plants, transfer stations, coffee roasters, painting/coating operations, and landfills. The proposed project is located in an industrial/agricultural area and would not generate significant odors during construction or operation.

Sensitive receptors are more susceptible to the effects of air pollution than the general population. Land uses that are considered sensitive receptors include residences, schools, and health care facilities. Sensitive receptors in the vicinity of the proposed project consist of residences of Rayville Lane and residences located to the northeast of the A Street and Betteravia Road intersection.

IMPACT DISCUSSION:

- a) CEQA Guidelines §15125(b) requires that a project be evaluated for consistency with applicable regional plans, including the Ozone Plan. The SBCAPCD is required to update their Ozone Plan once every three years; the most recent update was adopted in December 2019. This plan addresses attainment of the State ozone standard and Federal air quality standard. The Ozone

Plan accommodates growth by projecting growth in emissions based on population forecasts prepared by the Santa Barbara County Association of Governments (SBCAG) and other indicators. Consistency determinations are issued for commercial, industrial, residential, and infrastructure related projects that have the potential to induce population growth. A project is considered inconsistent with the Ozone Plan if it has not been accommodated in the forecast projections considered in the Ozone Plan. The project does not include new housing or commercial development, and operation and maintenance of the project components would not require new employees. The proposed project would not cause and/or otherwise induce population growth, as the new water system improvements would serve only existing Ray Water Company customers. In addition, due to the lack of operational emissions, the proposed project would not cause any long-term adverse air quality affects. As a result, the proposed project would result in **a less than significant impact** resulting from conflicts with and/or otherwise obstruct the implementation of SBCAPCD's Ozone Plan AQAP.

- b. The SBCAPCD is currently designated "attainment" for the federal 8-hour ozone standard of 0.070 parts per million ("ppm"). Effective July 1, 2020, Santa Barbara County has been designated as attainment for the state ozone standards as well. The county is designated unclassifiable/attainment for the federal PM_{2.5} standard, unclassified for the state PM_{2.5} standard, and nonattainment for the state PM₁₀ standard.

Construction Emissions

Based on the 90% Design Plans and information provided by Weber Hayes Associates ("WHA"), short-term construction emissions associated with the proposed project were estimated using the California Emission Estimator Model ("CalEEMod").

SBCAPCD has not established quantitative thresholds of significance for short-term air pollutant emissions. However, the SBCAPCD recommends lead agencies to use a 25 tons/year significance threshold for construction emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_x), as well as other criteria emissions with the exception of carbon monoxide (CO). A comparison of estimated construction emissions and applicable SBCAPCD-recommended thresholds are provided in **Table 2**, below.

Table 2.
Construction Air Pollutant Emissions for the Ray Water Project

| | Emissions in Pounds/Day | | | | | |
|---|-------------------------|-----------------|-----|-----------------|------------------|-------------------|
| | ROG | NO _x | CO | SO _x | PM ₁₀ | PM _{2.5} |
| Significance Threshold (SBCAPCD) | 25 | 25 | NA | 25 | 25 | 25 |
| Ray Water Project Emissions | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Exceed Threshold? | No | No | NA | No | No | No |
| Source: Summary of Air Quality Modeling for Ray Water Company, Denise Duffy and Associates, 2021. | | | | | | |

Construction of the proposed project would emit small amounts of the pollutants included in **Table 2** above, however, when rounded to the nearest tenth of a pound per day, the estimates all round down to zero. The proposed project would not result in the exceedance of any short-term construction threshold as recommended by SBCAPCD. However, because Santa Barbara County violates the state standard for PM₁₀, dust control measures are required for all projects involved in earthmoving activities regardless of the significance of the fugitive dust impacts. Therefore, the standard construction best management practices identified below would be incorporated into the proposed project in accordance with local regulatory policies.

During site preparation and construction activities, the following measures shall be implemented, to the extent feasible, to minimize short-term construction fugitive dust emissions:

1. During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 miles per hour. Reclaimed water should be used whenever feasible. However, reclaimed water should not be used in or around crops for human consumption.
2. Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less on unpaved areas.
3. If importation, exportation, and/or stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.
4. Gravel pads shall be installed at all access points to prevent tracking of mud onto public roads.
5. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.
6. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SBCAPCD prior to grading/building permit issuance and/or map clearance.

Operational Emissions

Operation of the proposed project would not result in a significant impact due to air pollution emissions since the only operational effects would be related to minimal vehicle trips to the site for maintenance activities. In addition, the proposed project would not require any new staff. There would be an incremental increase in the amount of power required by the City of Santa Maria water system to serve the new connections. This would result in a nominal increase in emissions related to electricity production.

Based on the above analysis, the project would have a ***less than significant impact*** resulting from a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

- c. Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. CARB identifies sensitive receptors as “land uses where sensitive individuals are most likely to spend time,” such as “schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential

communities" (CARB. 2005). Because the project includes the installation of new water connections, construction will occur within the immediate vicinity of residences, specifically along Rayville Lane.

Implementation of the project would result in short-term emissions of fugitive dust associated with construction activities. However, as noted in **Table 2**, above, the project would not result in emissions that would exceed SBCAPCD's significance thresholds. Applicable SBCAPCD thresholds are designed to be protective of public health. Compliance with applicable SBCAPCD regulations would minimize potential nuisance impacts to occupants of nearby land uses. For these reasons, construction activities would be considered to have a ***less than significant impact*** to nearby sensitive residential receptors.

- d. There may be intermittent odors from construction associated with diesel exhaust that could be noticeable at times to residences in close proximity. However, given the limited construction duration, potential intermittent odors are not anticipated to result in odor complaints and would not affect a substantial number of people. Operation of the project would not result in other emissions that would adversely affect a substantial number of people. A ***less than significant impact*** would result from other emissions, including odors.

4. BIOLOGICAL RESOURCES

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|--------------------------|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SETTING:

DD&A Natural Resources Division prepared a Biological Resources Report for the project, contained in **Appendix C**. The report describes the existing biological resources within and adjacent to the project site, including any special-status species or sensitive habitats known or with the potential to occur within and adjacent to the site. This report also assesses the potential impacts to biological resources that may result from the project, and recommends appropriate avoidance, minimization, and mitigation measures necessary to reduce those impacts to a less-than-significant level in accordance with CEQA (DD&A. 2021).

The project is located on the western edge of the City of Santa Maria; however, a portion of the project site is also located within unincorporated Santa Barbara County. The proposed project components are primarily within the Betteravia Road right-of-way, with some components located to south of West Betteravia Road, on Rayville Lane. This analysis includes an analysis of the entire Ray Water Company service area, which is larger than the project's impact area.

Two vegetation types were mapped within the survey area: riparian and ruderal; however, only ruderal vegetation is present within the project site. No special-status species have the potential to occur within the survey area based on lack of appropriate habitat, and no known occurrences within the vicinity of the project. Raptors and other avian species protected under California Fish and Wildlife Code have the potential to nest within trees present within and adjacent to the survey area and project site. All other species evaluated have a low potential to occur, are assumed unlikely to occur, or were determined not present within the survey area.

The survey results include mapping and quantification of the acreage of two vegetation types within the survey area, as shown in **Figure 7. Habitat Types.**³ **Table 3. Summary of Vegetation Types** provides a summary of the acreage of each area:

Table 3.
Summary of Vegetation Types

| Vegetation Type | Area | |
|---------------------|-------------|-----------------------|
| | Survey Area | Project Site |
| Ruderal / Disturbed | 6.3 acres | 1.5 acres |
| Riparian | 0.7 acres | 0 |
| Developed | 11.1 acres | 0.8 acre ⁴ |

The floristic alliance occurring within the riparian habitat is listed as sensitive on the California Department of Fish and Wildlife's ("CDFW's") List Vegetation Alliances and Associations (CDFW. 2020). Portions of the riparian area may be federal wetlands and a drainage is present within the survey area, which may be jurisdictional other waters of the U.S. or state, regulated by the U.S. Army Corps of Engineers ("ACOE") and/or California Regional Water Quality Control Board ("RWQCB"). There are no adopted Habitat Conservation Plans ("HCP") or Natural Community Conservation Plans ("NCCP") associated with the evaluation area.

Vegetation Types

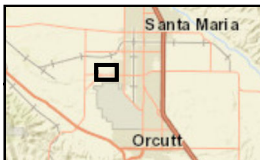
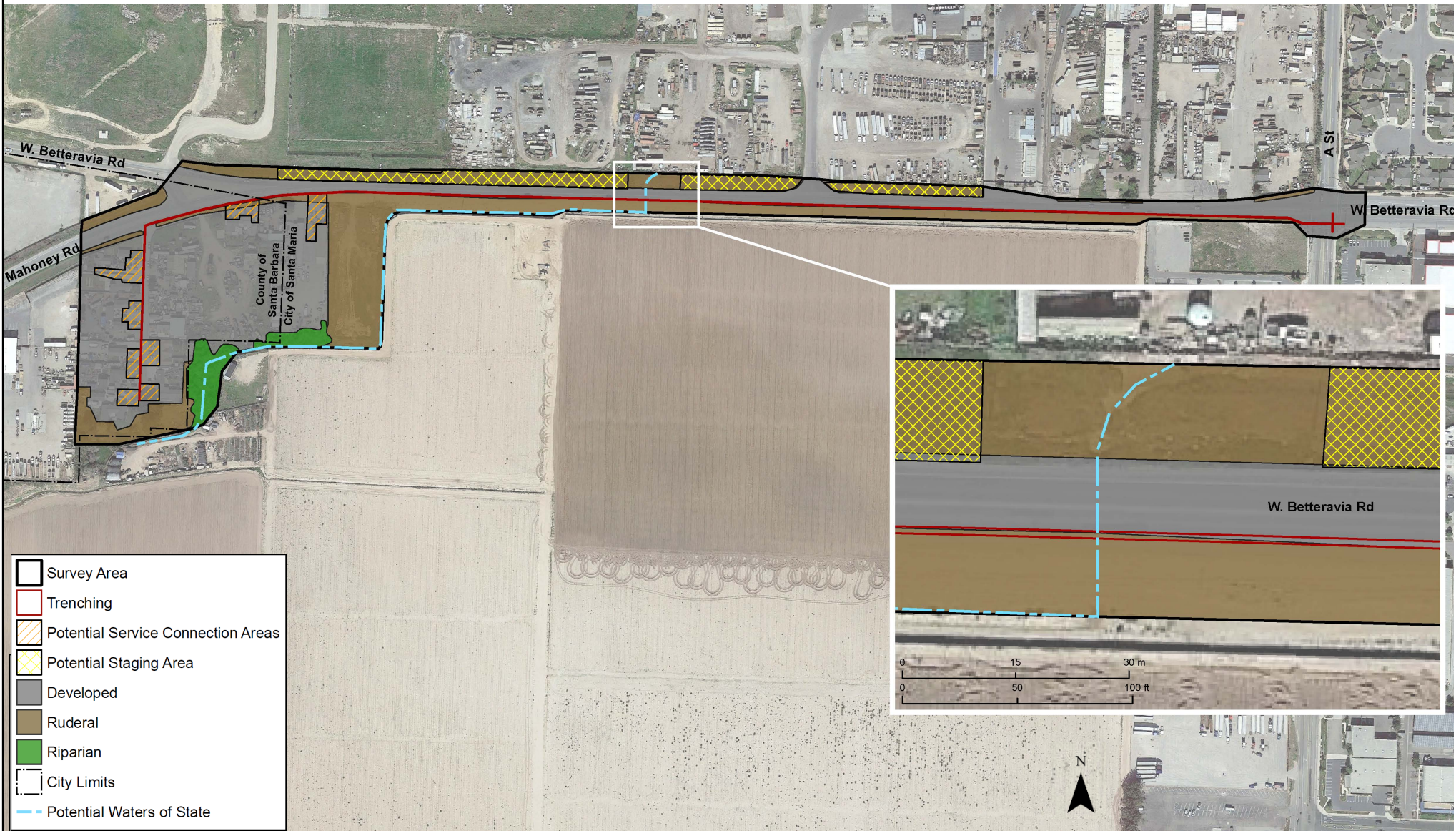
Ruderal/Disturbed

Ruderal areas are those areas which have been disturbed by human activities and are dominated by nonnative annual grasses and other "weedy" species. Most of the undeveloped portions of the survey area consist of ruderal habitat dominated by non-native weedy plant species, such as hottentot fig (*Carpobrotus* sp.), cheeseweed (*Malva parviflora*), wild radish (*Raphanus sativus*), mustard (*Brassica* sp.), ripgut brome (*Bromus diandrus*), filaree (*Erodium* sp.), and telegraph weed (*Heterotheca grandiflora*). Approximately 6.3 acres of ruderal/disturbed areas are present within the survey area; however, only 1.5 acres would be impacted by the project, associated mostly with staging on the south side of West Betteravia Road.

Ruderal areas have low biological value because they are generally dominated by non-native plant species and consist of relatively low-quality habitat from a wildlife perspective. Common wildlife species which do well in urbanized and disturbed areas that may occur within the ruderal habitat include American crow (*Corvus brachyrhynchos*), Steller's jay (*Cyanocitta stelleri*), striped skunk (*Mephitis mephitis*), scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), western fence lizard (*Sceloporus occidentalis*), and rock dove (*Columba livia*).

³ The survey area represents a larger study area and potential impacts are greater than the actual project impact area, as noted earlier.

⁴ Please note that the exact locations of the service connections have not yet been determined. As such, this number includes the general areas shown for service connections on **Figure 4**. The actual work area will likely be less.



Title:

Habitat Types

Date: 09/16/2021

Scale: NA

Project: 2020-40



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Figure

7

Riparian

Riparian habitats are those plant communities supporting woody vegetation found along rivers, creeks, streams, canyon bottom drainages, and seeps. They can range from a dense thicket of shrubs to a closed canopy of large mature trees. Within the survey area, this habitat type is dominated by Arroyo willow (*Salix lasiolepis*). Approximately 0.7 acres of riparian habitat are present within the survey area; however, the project will not impact the riparian habitat.

Riparian areas provide habitat for many wildlife species, particularly birds and herpetofauna. Common species that may be found within the riparian habitat in the site includes Sierran treefrog (*Pseudacris sierra*), red-winged blackbird (*Agelaius phoeniceus*), and song sparrow (*Melospiza melodia*).

Developed

Developed areas within the survey area include roadways, residences, businesses, and associated yards. Vegetation within these areas consist only of ornamental plants, lawns, and sparse weeds. As such, developed areas are considered to have no biological value. Approximately 11.1 acres of developed areas is present within the survey area; however, only approximately 0.8 acres will be impacted by the project.

Special-Status Species

Raptors and other avian species protected under California Fish and Wildlife Code have the potential to nest within trees present within and adjacent to the project site. All other special-status wildlife species, including the California tiger salamander ("CTS") and the California red-legged frog ("CRLF"), are assumed unlikely to occur or have a low potential to occur, and therefore are unlikely to be impacted by the project. For further explanation regarding the likelihood of occurrence for special status species at the proposed project site, see Appendix B. Special Status Species Table, of **Appendix C. Biological Resources Report**. No special-status plant species were observed during the field survey, and none are expected to occur based on the lack of suitable habitat within the project site. Therefore special-status plant species are unlikely to be impacted by the project and are not discussed further.

Raptors, their nests, and other nesting birds are protected under California Fish and Wildlife Code. While the life histories of these species vary, overlapping nesting (approximately February through August) and foraging similarities allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest habitats, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through August, with peak activity May through July. Prey for these species includes small birds, small mammals, and some reptiles and amphibians, and many raptor species hunt in open woodland and along habitat edges. Various species of raptors, such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), American kestrel (*Falco sparverius*), and turkey vulture (*Cathartes aura*), have a potential to nest within any of the large trees present within the survey area.

IMPACT DISCUSSION:

- a. Nesting raptors and other protected avian species have the potential to occur within the project site. Construction activities may result in direct mortality of individuals or disturbance of nests.

This is considered a ***less than significant impact with mitigation incorporated***, see Mitigation Measure BIO-1 below.

- b. The floristic alliance occurring within the riparian habitat is listed as sensitive on the CDFW's California's Natural Communities List (CDFW. 2020) and in the Resources Management Element of the Santa Maria General Plan (City of Santa Maria. 2009). Riparian habitat is under CDFW jurisdiction per Fish and Wildlife Code Section 1602. The project will not result in direct impacts to riparian habitat; however, if an accident during construction were to result in the release of hazardous materials (e.g., fuel for construction equipment, oil, solvents, or paints) into the environment, there is a potential to degrade the adjacent riparian habitat. The project is subject to existing regulatory requirements pertaining to the use and disposal of hazardous materials. This is considered a ***less than significant impact with mitigation incorporated***, see Mitigation Measure BIO-2 below.
- c. A ditch is present within the survey area that conveys waters of the state likely under the jurisdiction of the RWQCB and CDFW. In addition, wetlands under RWQCB jurisdiction may be present where the ditch flows through the riparian habitat. The project will not result in direct impacts to the potential wetlands; however, if an accident during construction were to result in the release of hazardous materials (e.g., fuel for construction equipment, oil, solvents, or paints) into the environment, there is a potential to degrade the adjacent habitat and impact water quality. The project has the potential to directly impact waters of the state where the project intersects the culvert that runs under West Betteravia Road or if work were to occur outside of the project limits. These considered a ***less than significant impact with mitigation incorporated***, see Mitigation Measures BIO-2, BIO-3, and BIO-4 below.
- d. With the exception of fire hydrants, all project features would be below ground and would not permanently remove any wildlife habitat. The majority of the project site and the surrounding areas are developed and disturbed and provide little habitat for wildlife species. As a result, the development of the project, would not 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. This represents a ***less than significant impact*** and no mitigation is required.
- e. The project will not conflict with the City of Santa Maria General Plan, nor with the Santa Barbara County Comprehensive Plan; therefore ***no impact*** would result from implementation of the project.
- f. There are no adopted HCPs, NCCPs, or other approved local, regional or state habitat conservation plans located within the project area. ***No impact*** would result from conflict with these plans.

Mitigation Measures incorporated into the project:

- BIO-1** To avoid and reduce impacts to nesting raptors and other nesting avian species, construction activities can be timed to avoid the nesting season period. Specifically, construction activities can be scheduled after September 1 and before January 31 to avoid impacts to these species. Alternatively, if avoidance of the nesting period is not feasible, a qualified biologist shall be retained to conduct pre-construction surveys for nesting raptors and other protected avian species within 250 feet of proposed construction activities if construction occurs between

February 1 and August 31. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). Because some bird species nest early in spring and others nest later in summer, some breed multiple times in a season, surveys for nesting birds may be required to continue during construction to address new arrivals. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans.

If raptors or other protected avian species nests are identified during the pre-construction surveys, the qualified biologist will notify the project applicant and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place as determined by the qualified biologist to ensure avoidance of impacts to the individuals. The buffer will remain in place until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

- BIO-2** Cleaning and refueling of equipment and vehicles will occur only within designated staging areas on paved or graded parking areas. No maintenance, cleaning or fueling of equipment will occur within riparian areas, or within 100 feet of such areas if possible. At a minimum, all equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills. During construction, all project-related spills of hazardous materials within or adjacent to proposed project area will be cleaned up immediately. Spill prevention and clean-up materials will be onsite at all times during construction. Construction materials/debris will also be stored within the designated staging areas. No debris, soil, silt, sand, oil, petroleum products, cement, concrete, or washings thereof will be allowed to enter into, or be placed where they may be washed by rainfall or runoff, into riparian habitat.
- BIO-3** The project shall avoid work within the potential waters of the state to the extent feasible. No Staging shall occur within potential waters of the state. Protective fencing shall be placed so as to keep construction vehicles and personnel from impacting potential waters of the state adjacent to the proposed project area outside of work limits. Typically, protective fencing, also referred to as Environmentally Sensitive Area ("ESA") fencing, is four feet in height and is made of a highly visible color of polypropylene plastic.
- BIO-4** If avoidance of waters of the state is not feasible, the project applicant shall comply with the Clean Water Act and Fish and Wildlife Code and coordinate with the RWQCB to obtain a Water Quality Certification and CDFW to obtain a Section 1602 Lake and Streambed Alteration Agreement prior to construction. All measures included in the permits to avoid, reduce, or mitigate impacts to waters of the state shall be implemented. These measures may include, but not be limited to, construction timing restrictions, monitoring, and reporting.

5. CULTURAL RESOURCES

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

SETTING:

A Phase 1 Cultural Resource Inventory was prepared for the project by Albion Environmental, Inc. (Albion. 2021). This document is included as **Appendix D** to this document. Albion's study was conducted to comply with requirements under CEQA guidelines (Public Resources Code 21000 et seq.). The purpose of this Phase I cultural resource inventory was to document cultural resource identification efforts for the project. The study included archival and background research, a search of records at the California Historical Resources Information System's Central Coast Information Center ("CCoIC"), Native American stakeholder outreach; and a pedestrian survey of the proposed project area.

A search of records at the CCoIC indicated that four previous cultural resource studies have been conducted within the project area and that two previous cultural resource studies have been conducted within a 1/4-mile radius of the project area. According to the record search, there are no previously identified cultural resources within the project area and no cultural resources within a 1/4-mile radius of the project area.

After reviewing the record search results, Albion conducted an intensive pedestrian survey of the project area. During the survey, ground surface visibility was generally poor due to the project area being covered by existing roadway/roadside, residential development, hardscaping, and landscaping. Visual inspection of the project area revealed no archaeological materials on the surface of the project area and no evidence of intact precolonial or historic-era archaeological deposits within the project area. Albion's investigation indicates that a historical resource or potentially significant cultural materials are not located in the project area.

The Native American Heritage Commission ("NAHC") provided the results of a Sacred Lands File search and list of Tribal stakeholders on July 14, 2021. According to the NAHC, the Sacred Lands File search is negative. The Native American stakeholder list includes groups or individuals who may have knowledge of cultural resources in the area. Letters containing a brief project description and maps of the proposed Project Area were sent via USPS certified mail on July 15, 2021. To date, Albion's outreach effort documented Tribal concerns about receiving information regarding the project and the records search

results, as well as being involved in formal Assembly Bill 52 consultation regarding the project with the Santa Ynez Band of Chumash Indians, this is discussed further in **Section 18. Tribal Resources**.

Prehistorically, the San Luis Obispo, Santa Barbara, and Ventura regions were home to the maritime Chumash, considered one of the most complex hunter-gatherer societies on earth. They had economic and socio-political systems unusually complex relative to most ethnographically known hunter-gatherers.

The project Area was part of the Rancho Punta de Laguna, a 26,648-acre Mexican Era granted by Governor Manuel Micheltorena to Luis Arellanes and Emigdio Miguel Ortega in 1844. Following the Land Act of 1851, Luis Arellanes and Emigdio Miguel Ortega filed a claim for Rancho Punta de Laguna from the Public Land Commission in 1852, and had the grant patented in 1873.

An aerial image from 1943 shows the project area and general vicinity, which illustrates the area was largely farmland and farm residences. This continues to be the case in consulted aerial images from 1956 and 1970. Within the project area, no building or other built environment resources had been developed at the time of the photographs except for the extreme western and eastern ends of the project area, which show apparent residences within the immediate vicinity. The western end, at Rayville Lane, retains business and residential structures clustered around the lane, while the eastern end is a now-vacant lot abutting A Street, which is surrounded by apartment complexes, industrial yards, and residential development. The two apparent residential structures visible in the 1943 (and 1956) aerial photographs at the corner of Betteravia Road and A Street are replaced with one structure in the 1970 aerial photograph.

IMPACT DISCUSSION:

- a. CEQA Guidelines §15064.5 describes a historical resources as: 1) any resource that is listed in, or determine to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources; 2) a resource included in a local register of historical resources; and, 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant based on substantial evidence in light of the whole record. The fact that a resource is not listed in or determined to be eligible for listing does not preclude a lead agency from determining that the resource may be a historical resource (CEQA Guidelines §15064.5(4)). A substantial change includes the physical demolition, destruction, relocation, or alteration of a resource or its immediate surroundings such that the significance would be materially impaired (CEQA Guidelines §15064.5(b)).

The project would not cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5. The project area does not contain any historic resources listed in the California Inventory of Historical Resources, California Historical Landmarks, or the National Register of Historic Places. There are no structures or other items of historic significance within the project area. Therefore, the project will have **no impact** on historical resources as defined in CEQA Section 15064.5.

- b. Public Resources Code §21083.2 requires that lead agencies evaluate potential impacts to archaeological resources. Specifically, lead agencies must determine whether a project may have a significant effect or cause a substantial adverse change in the significance of an archaeological resource. The findings of the Phase I cultural report did not document any confirmed evidence of an archaeological resource. Accordingly, the project would not significantly impact a known archaeological resource. Although not anticipated, there is the potential for inadvertent discovery of archaeological resources during construction, which may result in

potential inadvertent damage or disturbance to a resource. This is considered ***a less than significant impact with mitigation incorporated***, see Mitigation Measure CR-1 below.

- c. Human graves are often associated with prehistoric occupation sites. Section 7050.5 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial and Section 5097.99 of the Public Resources Code defines the obtaining or possession of Native American remains or grave goods to be a felony.

Although not anticipated, there is the potential for inadvertent discovery of human remains and potential inadvertent damage or disturbance during construction. This is a ***less than significant impact with mitigation incorporated***, see Mitigation Measure CR-2 below.

Mitigation Measure(s) incorporated into the project:

- CR-1** If archaeological resources are unexpectedly discovered during construction, work shall be halted within 50 meters (± 160 feet) of the find until it can be evaluated by a qualified professional archaeologist. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented, with the concurrence of the City of Santa Maria.
- CR-2** If human remains are unexpectedly discovered during construction, work shall be halted within 50 meters (± 160 feet) of the find. The County Coroner shall be notified in accordance with provisions of Public Resources Code 5097.98-99 in the event human remains are found and the Native American Heritage Commission shall be notified in accordance with the provisions of Public Resources Code section 5097 if the remains are determined to be of Native American origin. The Commission will designate a Most Likely Descendant who will be authorized to provide recommendations for management of the Native American human remains. (California Public Resources Code Section 5097.98; and Health and Safety Code Section 7050.5)

6. ENERGY

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

SETTING:

The proposed project includes a connection to the City of Santa Maria water distribution system. Operation of the proposed project would result in an incremental increase in the City of Santa Maria's

energy usage; however, this increase would be offset by the reduction in energy used by the existing well that currently serves Rayville Lane. Pacific Gas and Electric Company (“PG&E”) has historically been the primary electricity provider for the City of Santa Maria.

Beginning in January 2021, Santa Maria customers began to receive their electricity from Central Coast Community Energy (“3CE”) (previously known as Monterey Bay Community Power [“MBCP”]). 3CE is a community choice energy agency that has committed to providing its customers with 100% carbon-free energy by the year 2030 (3CE. 2021). Community choice energy agencies allow local governments to procure power on behalf of their residents, businesses, and municipal accounts from an alternative supplier while still receiving transmission and distribution service from their existing utility provider (in this case, PG&E). This is typically an attractive option for communities that want more local control over their electricity sources, more clean energy than their default utility offers, and/or lower electricity prices. Per Public Utilities Code Section 366.2, customers have the right to opt-out of the community choice energy program and continue to receive service from the incumbent utility (PG&E) if they so choose (City of Santa Maria. 2019).

The City of Santa Maria has not adopted a climate action plan; however, the General Plan Resources Management Element includes goals for achieving increased energy conservation use. The Resources Management Element encourages increasing the energy efficiency of buildings, appliances, buildings, and promotes the development and use of alternative forms of energy. Current measures applied in the city include energy-conserving building standards, recycling, and transportation system improvements. The Resources Management Element also identifies energy conservation policies. These policies include encouraging the use of innovative site and building orientation and landscaping to maximize energy efficiency. And, includes policies regarding fuel efficiency standards and promotes the development of alternative energy sources (City of Santa Maria. 2001).

IMPACT DISCUSSION:

- a. Electricity and natural gas for the project site will be provided by PG&E. The project’s construction and operational energy usage are included in **Appendix B**, based on GHG and modeling using CalEEMod, version 2020.4.0. Electricity and natural gas consumption are compared to existing consumption in the PG&E service areas. Project modeling provides an estimate of construction and operational emissions and energy consumption. The project will not consume large amounts of energy outside the functions commonly found within water systems. The anticipated construction schedule assumes that the project would be built out over a maximum of three months. The construction phase would require energy for the preparation of the site (e.g., excavation, and grading), and the actual construction of the facilities. Petroleum based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks. The overall construction of the project has been designed to be energy-efficient in order to avoid excess fuel and rental equipment costs. During operation, the project would consume energy in the form of electricity primarily for pumping for water distribution. Based on the discussion above, the project would result in a **less than significant impact** during the construction and operational phases related to energy use.
- b. The project would comply with existing state energy standards and would not conflict with or obstruct a state or local plan for renewable energy or energy-efficiency. The project would be designed to comply with the California Green Building Code, Title 24 energy efficiency requirements, 2019 California Building Energy Standards requirements, and Assembly Bill (“AB”) 1881 water-efficient landscape requirements. The project would result in a **less than significant**

impact resulting from conflict or obstruction with a state or local plan for renewable energy or energy efficiency

7. GEOLOGY AND SOILS

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii. Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii. Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv. Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Be located on expansive soil, as defined in Table 18-1-B of the most recent Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

SETTING:

The proposed project is located within the Santa Maria Valley, an east–west trending alluvial valley bounded to the north by the San Rafael Range and to the south by the Casmalia Range and the Solomon Hills. The Santa Maria River traverses the valley from east to west, emptying into the Pacific Ocean just west of the town of Guadalupe. The Santa Maria River is formed by the convergence of the Cuyama and the Sisquoc Rivers at Fugler Point near Garey.

The Santa Maria basin⁵ is a significant hydrocarbon-producing (i.e., oil and gas) coastal (and off-shore) basin in California. The basin lies at the juncture between the north–west-trending southern Coast Range province and the east–west-trending Transverse Range province. The basin contains a relatively thick Miocene through Holocene age sequence of sedimentary rocks, some of which are prolific petroleum producing formations and others that are highly productive groundwater aquifers (U.S. Department of the Interior. 2004).

The Santa Maria Valley is located within a structural fold and thrust fault area; the axes of most of the structural elements in the region run northwest–southeast, parallel to the valley. The Santa Maria basin and adjacent southern Coast Ranges have been subjected to considerable uplift during the last two million to five million years and are considered to be seismically active. Relatively little direct evidence of active faulting (such as offset of bedding or structures observed at a surface fault) has been observed in the region; however, broad bands of seismicity unrelated to surface faults and other evidence indicate the region is seismically active.

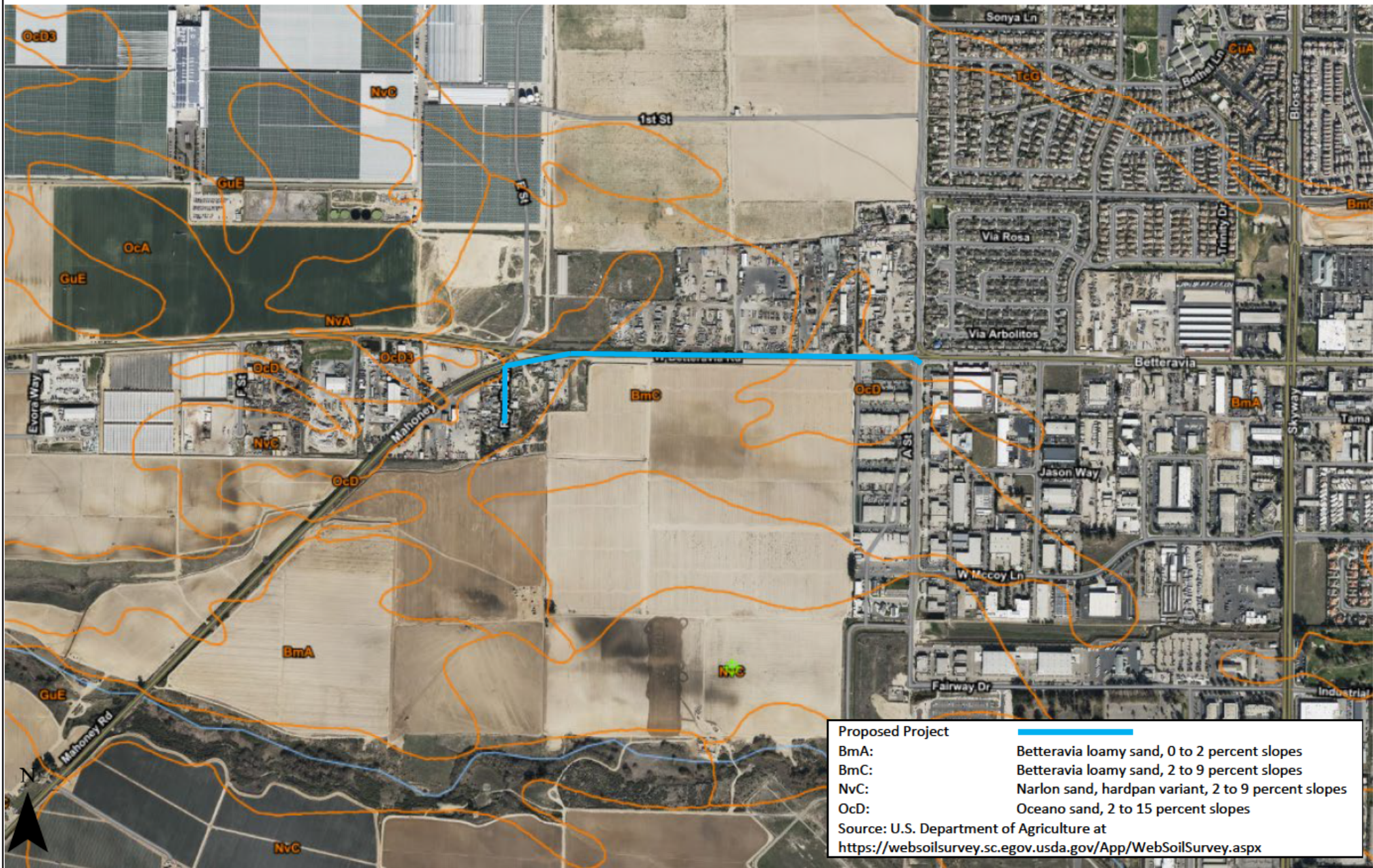
According to the City of Santa Maria General Plan Safety Element, several active, potentially active, and inactive faults exist within the basin and region, and generally trend north–west (City of Santa Maria. 1995). The major faults include the Santa Maria, Santa Maria River, and Casmalia Faults. None of these faults qualify for Earthquake Fault Zone status as identified by the State Geologist under the Alquist-Priolo Earthquake Fault Zones Act.

The City of Santa Maria General Plan Safety Element also states that the liquefaction potential from ground shaking is generally low within the City of Santa Maria due to the relatively deep groundwater levels that are ordinarily over 70 feet below the ground surface. However, several areas of perched groundwater in the vicinity of the Santa Maria Public Airport could cause liquefaction during an earthquake. The proposed project area has a low liquefaction potential.

Landslides could potentially occur in areas with steep slopes. The proposed project area is not located within a designated landslide zone or within an area with steep slopes or shallow groundwater that indicate a potential for landslides to occur. The project site is relatively flat and is not located in the vicinity of slopes that would be susceptible to landslides.

The proposed project area is underlain primarily by Oceano sand, 2% to 15% slopes and Betteravia loamy sand, 2% to 9% slopes (U.S. Department of Agriculture. 2021). There are also small portions of the project area that are underlain by Betteravia loamy sand, 0% to 2% slopes and Narlon sand, hardpan variant, 2% to 9% slopes. See **Figure 8. Geology Map** for more information (U.S. Department of Agriculture. 1972).

⁵ A geological basin is a large low-lying area.



Source: USDA, January 2022



Title:
Geology Map

Date: 01/24/2022
 Scale: N/A
 Project: 2020-40



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Figure
8

- Betteravia loamy sand, 0% to 2% slopes – Permeability is very slow. Surface runoff is very slow, and the hazard of water erosion is none to slight. The hazard for soil blowing is high. Fertility is very low.
- Betteravia loamy sand, 2% to 9% slopes – Permeability is very slow. Surface runoff is low to medium, and the hazard of water erosion is light to moderate. The hazard for soil blowing is high. Fertility is very low.
- Narlon sand, hardpan variant, 2% to 9% slopes – Permeability is very low. A perched water table sometimes forms after rain or irrigation. Surface runoff is medium, and the hazard of soil blowing is high. Fertility is very low.
- Oceano sand, 2% to 15% slopes – Permeability is rapid. Surface runoff is slow to medium, and the hazard of soil blowing is very high. Fertility is very low.

IMPACT DISCUSSION:

- a.i. Although the project site is in a region with several active faults, it is not mapped within an Alquist-Priolo Earthquake Fault Zone. The nearest fault is the Santa Maria Fault, located 3.5 miles to the northeast (California Department of Conservation. 2021). In addition, the project would be subject to standard construction standards and seismic requirements. This is considered a ***less than significant impact***.
- a.ii. Seismic ground shaking is influenced by the proximity of the site to an earthquake fault, the intensity of the seismic event, and the underlying soil composition. As described above, the project site is located within 3.5 miles of the Santa Maria fault. The Safety Element in the City's General Plan identifies the project site as being located within Zone B, which is described as being underlain by Pleistocene age non-marine terrace deposits. Zone B is the less hazardous of the two zones (Zone A and Zone B). In addition, the Probabilistic Seismic Hazard Maps on the California Department of Conservation's website indicate that the entire Santa Maria Valley is located in a lower hazard area (California Department of Conservation. 2016). The effect of seismic ground shaking would be minimized through the implementation of the seismic requirements and applicable City standards for earthquake-resistant construction; therefore, potential impacts would be ***less than significant***.
- a.iii. Liquefaction tends to occur in loose, saturated and fine-grained cohesionless sands, coarse silts or clays with a low plasticity. In order for liquefaction to occur there must be the proper soil type, soil saturation, and cyclic accelerations of sufficient magnitude to progressively increase the water pressures within the soil mass. Non-cohesive soil shear strength is developed by the point-to-point contact of the soil grains. As the water pressures increase in the void spaces surrounding the soil grains the soil particles become supported more by the water than the point-to-point contact. When the water pressures increase sufficiently, the soil grains begin to lose contact with each other resulting in the loss of shear strength and continuous deformation of the soil where the soil appears to liquefy.

According to the City of Santa Maria General Plan, the proposed project area has a low liquefaction potential. Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face or fails on an inclined topographic slope. Due to the relatively flat project site and low liquefaction potential, the risk of lateral spreading is also considered to be low. The proposed project would result in a ***less than significant impact*** resulting from its potential to cause substantial adverse effects involving seismic-related ground failure, including liquefaction.

- a.iv. The subject site and immediate vicinity are relatively flat to gently sloping. The potential for landsliding to occur and adversely affect the proposed development is considered negligible. This is considered a ***less than significant impact***.
- b. The underlying soil is primarily Oceano sand, 2% to 15% slopes and Betteravia loamy sand, 2% to 9% slopes. These soils have been severely eroded through soil blowing, Surface runoff medium to low, and the hazard of soil blowing is high. Construction activities may result in wind driven and, to a lesser degree, water driven soil erosion. Best management practices (“BMPs”) would be implemented by the construction contractor during construction to reduce soil erosion. Applicable measures may include the following:
- Stockpiling and disposing of demolition debris, concrete, and soil.
 - Protecting existing storm drain inlets and stabilizing disturbed areas.
 - Hydroseeding/re-vegetating disturbed areas.
 - Minimizing areas of impervious surfaces.
 - Implementing runoff controls (e.g., percolation basins and drainage facilities).
 - Properly managing construction materials.
 - Managing waste, aggressively controlling litter, and implementing sediment controls.
 - Limiting grading to the minimum area necessary for construction and operation of the project.

For these reasons, this constitutes a ***less than significant impact***.

- c. See impact discussions for a.i-a.iv above. Any impact resulting from unstable soil would be temporary, as construction is anticipated to last three months. Risks to life and property would not occur during operation of the project, because the project will be entirely underground. The project contractor would fully comply with all state, federal, and other laws, rules, regulations to ensure worker safety during construction. This represents a ***less than significant impact***.
- d. According to the Safety Element of the City’s General Plan, the project site is not located within an area with expansive soils. Construction of the project would be required to comply with the most recent regulatory requirements, which would ensure the protection of structures and occupants from geo-seismic hazards, such as expansive soils; therefore, impacts would be ***less than significant***.
- e. The project is a water distribution system improvements project and does not propose any septic tanks or alternative wastewater disposal systems. ***No impact*** would occur.
- f. The City’s General Plan Safety Element identifies the project site as being underlain by Pleistocene age non-marine terrace deposits, a young substrate generally considered to have a very low potential to contain unique geologic or paleontological resources (U.S. Department of the Interior. 1950). As such, the project would not result in the risk of encountering underlying formations that have a potential for paleontological resources. Therefore, potential impacts to a unique paleontological resource or site, or unique geologic feature would be ***less than significant***.

8. GREENHOUSE GAS EMISSIONS

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

SETTING:

Greenhouse gases (“GHGs”) are gases that absorb and re-emit infrared radiation in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills.

In 2007 the County of Santa Barbara (“County”) completed a GHG emissions inventory for the unincorporated county using 2007 as the base year. In 2010 the County updated the 2007 emissions inventory as a result of changes to the regulatory structure since the creation of the initial inventory, including an update to the State CEQA Guidelines. Emissions from unincorporated county sources totaled 1,192,970 MTCO₂e in the baseline year 2007, with transportation sources identified as the largest contributor, accounting for approximately 44% of total countywide emissions. Residential energy uses were the second-largest contributor, accounting for approximately 16% of total emissions, followed by commercial energy uses, offroad uses, and solid waste. Other major emission sources included agriculture, water and wastewater, industrial energy, and aircraft (Santa Barbara County. 2015).

The significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds or consistency with a regional GHG reduction plan (such as a Climate Action Plan). The SBCAPCD has developed a GHG threshold of 10,000 MTCO₂e/ year for stationary source projects, which includes equipment, processes, and operations that require an APCD permit to operate.

State Requirements

Assembly Bill 32

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 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels) and the adoption of regulations to require reporting and verification of statewide GHG emissions.

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill (“SB”) 32 into law. SB 32 extends GHG reduction goals beyond the initial target year of 2020 in AB 32, directing the CARB to ensure that GHGs are reduced to 40% below the 1990 level by 2030.

Climate Change Scoping Plan

CARB’s 2017 Climate Change Scoping Plan reflects the statewide GHG emissions reductions of 40 percent below 1990 emissions levels by 2030, as mandated by SB 32. A significant part of achieving the SB 32 goals are strategies to promote sustainable communities, such as the promotion of zero net energy buildings, and improved transportation choices that result in reducing vehicle miles traveled (“VMT”). Other measures include the increased use of low-carbon fuels and cleaner vehicles.

Executive Order B-55-18

Executive Order (“EO”) B-55-18 was issued in September 2018, establishing a new statewide goal to achieve “carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.”

Local Requirements

The Regional Transportation Plan (“RTP”) and Sustainable Communities Strategy (“SCS”), both prepared by SBCAG, are local plans that include goals and policies related to the reduction of GHG emissions. The RTP is a long-range planning document that defines how the region plans to invest in the transportation system over the next twenty years based on regional goals, multi-modal transportation needs for people and goods, and estimates of available funding. The RTP includes the SCS as required by SB 375⁶. The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, will reduce GHG emissions from passenger vehicles and light trucks to achieve the GHG reduction targets set by the California Air Resources Board. The future land use and transportation scenario presented in the SCS must accommodate forecast population, employment, and housing sufficient to meet the needs of all economic segment of population, including the State-mandated Regional Housing Needs Assessment (“RHNA”), while considering State housing goals.

⁶ SB 375 directs CARB to set regional targets for reducing greenhouse gas emissions. The law establishes a “bottom up” approach to ensure that cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce GHG emissions from motor vehicle trips.

IMPACT DISCUSSION:

- a. As discussed in above, implementation, construction, and operation of the project will not exceed established thresholds for air quality emissions. Operation of the project would not generate emissions since the project consists primarily of linear pipelines with no increase in staff. Limited vehicular trips to the site will be required intermittently for maintenance. Project construction would generate an estimated on-time emission of 3.02 MT of CO₂e. This falls far below the threshold on 10,000 MT of CO₂e per year. For this reason, this is considered a ***less than significant impact***.
- b. The project would be consistent with the City of Santa Maria General Plan, the SBCAG 2040 Regional Transportation Plan and Sustainable Communities Strategies (RTP and SCS), the 2017 Climate Change Scoping Plan, and Executive Order B-55-18, which are regulations adopted to implement a statewide, regional, or local plan to reduce or mitigate greenhouse gas emissions. Based on the modeling results, project-related GHG emissions would not exceed defined significance threshold established. Furthermore, the operational component of the project would not result in an increase in existing operation and maintenance related emissions. This represents a ***less than significant impact***.

9. HAZARDS AND HAZARDOUS MATERIALS

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|------------------------------|--------------------------|
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | ■ | <input type="checkbox"/> |
| f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | ■ | <input type="checkbox"/> |
| g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? | <input type="checkbox"/> | <input type="checkbox"/> | ■ | <input type="checkbox"/> |

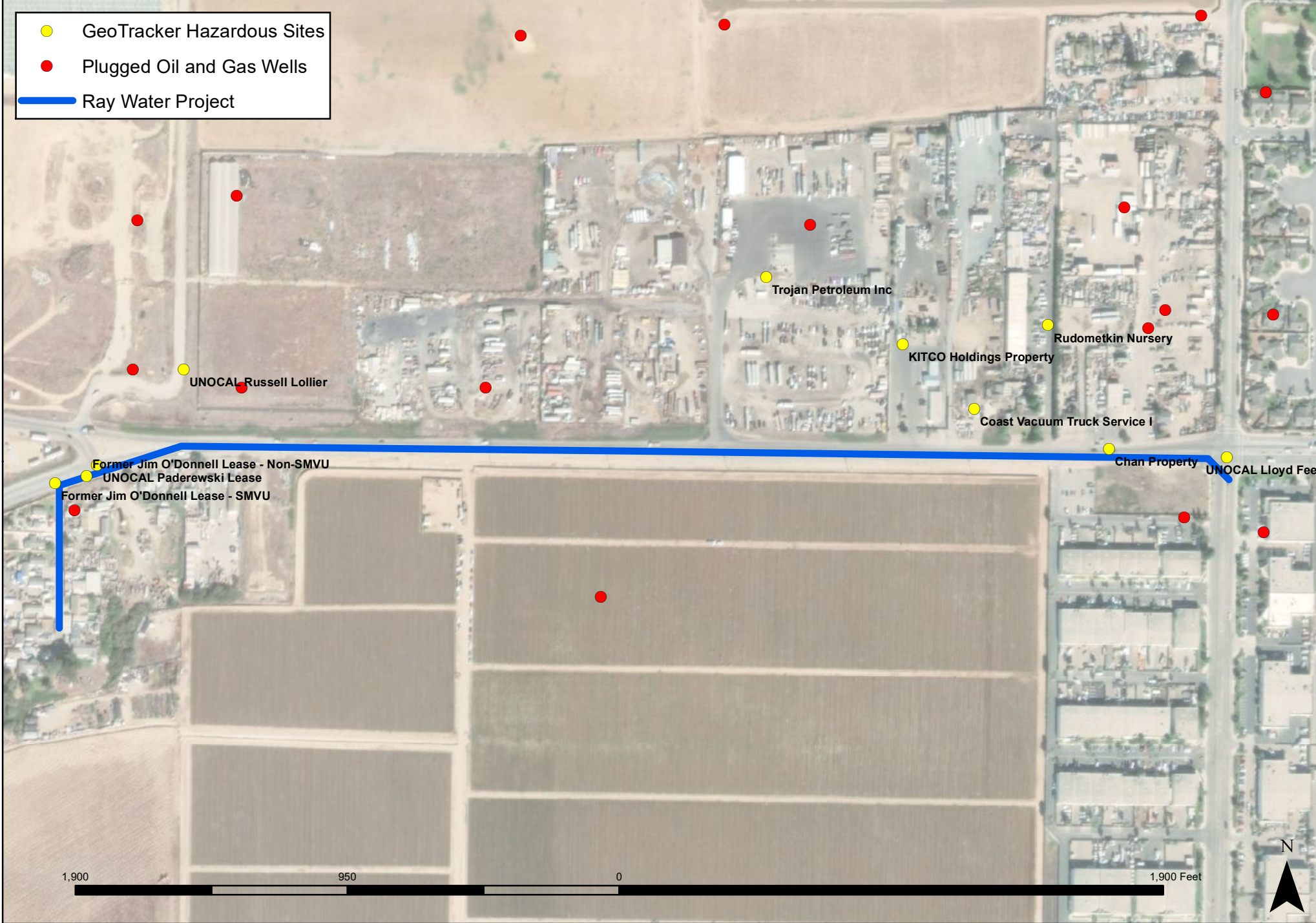
SETTING:

The Hazardous Waste and Substances Site (“Cortese”) List is a planning tool used by the state, local agencies, and developers to comply with CEQA requirements related to the disclosure of information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California EPA (“CalEPA”) to develop at least annually an updated Cortese List. Various state and local government agencies are required to track and document hazardous material release information for the Cortese List. The proposed project area is not within 0.25 miles of a hazardous materials site on the Cortese Site.

The California Department of Toxic Substance Control (“DTSC”) EnviroStor database tracks DTSC cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination, such as federal superfund sites, state response sites, voluntary cleanup sites, school cleanup sites, school investigation sites, and military evaluation sites.

The SWRCB GeoTracker database contains records for sites that impact, or have the potential to impact, water in California, such as Leaking Underground Storage Tank (“LUST”) sites, Department of Defense sites, and Cleanup Program Sites (SWRCB. 2021). **Table 4** below includes a summary of the sites that are within 0.25 miles of the project site. These sites are also shown in **Figure 9. Hazardous Sites with Project Vicinity**.

- GeoTracker Hazardous Sites
- Plugged Oil and Gas Wells
- Ray Water Project



Title:

Hazardous Sites within Project Vicinity

Date: 09/16/2021
 Scale: 1 inch = 433 feet
 Project: 2020-40



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Figure
 9

Table 4.
Geotracker Sites within 0.25 Mile of the Project

| Site | GeoTracker Number | Site Type | Cleanup Status |
|---------------------------------------|-------------------|----------------------|--|
| Former Jim O'Donnell Lease - SMVU | T10000004137 | Cleanup Program Site | Open – Site Assessment as of 6/13/2012 |
| Former Jim O'Donnell Lease - NON-SMVU | T10000004139 | Cleanup Program Site | Open – Site Assessment as of 6/13/201 |
| Trojan Petroleum, Inc. | T0608300727 | LUST Cleanup Site | Completed – Case closed as of 5/17/2012 |
| Kitco Holdings Property | T10000006621 | Cleanup Program Site | Completed – Case closed as of 7/10/2003 |
| Coast Vacuum Truck Service I | T0608300515 | LUST Cleanup Site | Completed – Case closed as of 2/17/1993 |
| Rudometkin Nursery | T0608300743 | LUST Cleanup Site | Completed – Case closed as of 8/5/1993 |
| Chan Property | T10000005124 | Cleanup Program Site | Completed – Case closed as of 4/4/1994 |
| Unocal Lloyd Fee | T10000012516 | Cleanup Program Site | Completed – Case closed as of 10/29/2002 |
| Patricia Wells | T10000006394 | Cleanup Program Site | Completed – Case closed as of 5/12/2000 |

As noted above, there are two sites that are considered “Open:” 1) Former Jim O'Donnell Lease – SMVU (Santa Maria Valley Oil and Gas Unit), and 2) Former Jim O'Donnell Lease – Non-SMVU. These sites represent a former oil field property, the Jim O'Donnell Lease.

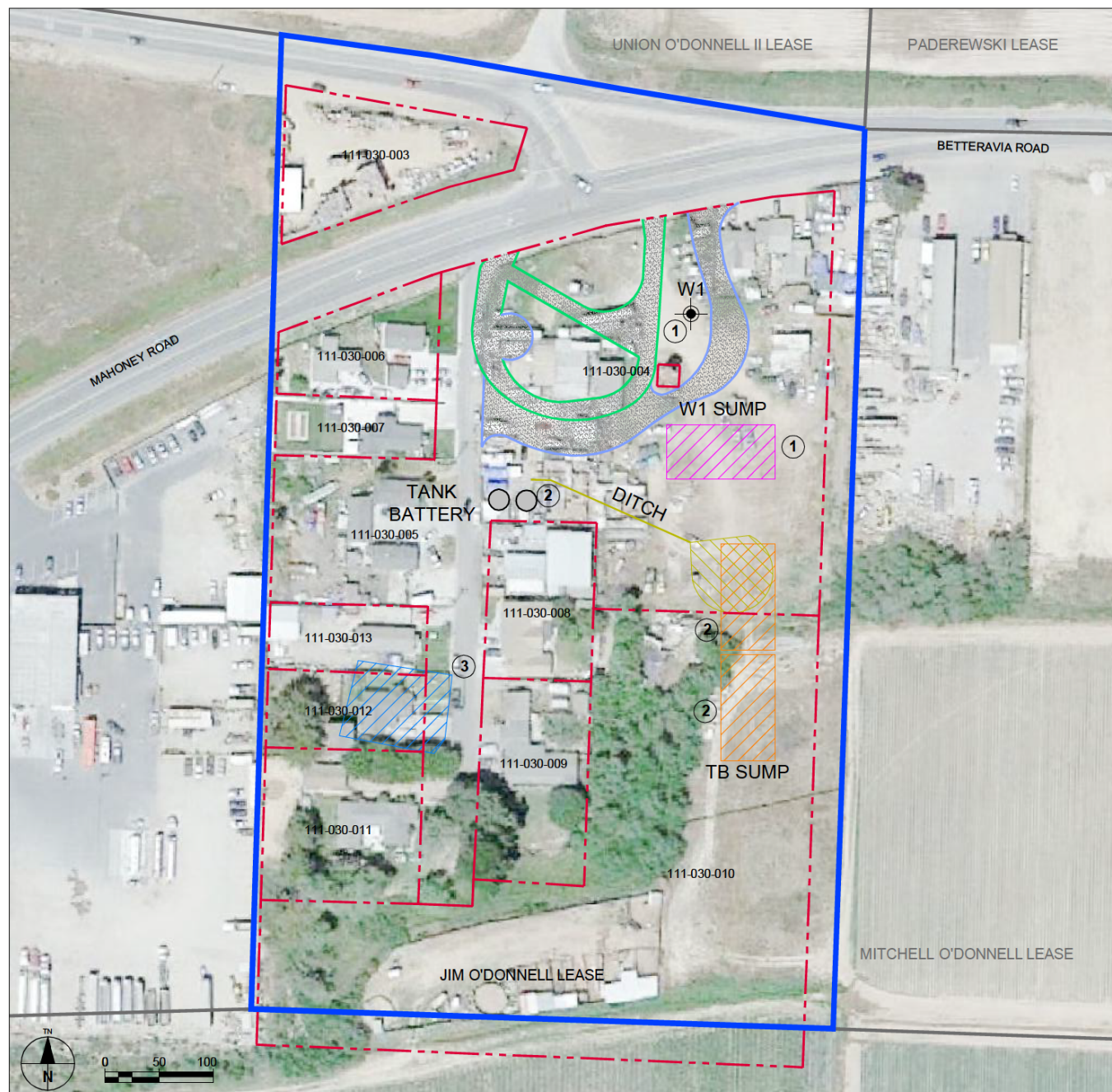
In addition to the Jim O'Donnell Lease, the project also falls within two other former oil leases: the Mitchell O' Donnell Lease Tract 94, and the Mitchell O'Donnell Lease Tract 95. The abandonment and associated documentation for the two (2) Mitchell O'Donnell Leases predates the requirements for that documentation to be uploaded to the Geotracker Database. All of the former oil leases mentioned as well as the surrounding area are located in an area designated as the Santa Maria Valley Oil and Gas Field. Below are the descriptions of each of the former oil lease properties.

The distribution line and the service connection components of the project are located within the former Jim O'Donnell Lease. The description of the former oil field property as well as the discussion of the chemicals of concern at the Former Jim O'Donnell Lease included below were summarized from the Site Assessment Report and Site Restoration Plan (“SARSRP”) for the Former Jim O'Donnell Lease, prepared by AECOM dated October 9, 2013. The Jim O'Donnell Lease contains relic oil and gas features including and abandoned oil well and associated sump, a former tank battery and associated sump, a sump feature of unknown origin, lease roads, and pipeline, these features are shown on **Figure 10.**

Historic Oil Field Features. These elements were identified using historical documents including aerial photographs. These seven features are all within the lease area; however, the tank battery and associated sump as well as the lease roads and pipelines are within the Santa Maria Valley Oil and Gas Unit (“SMVU”), whereas the abandoned oil and well sump are not within the SMVU (i.e., Non-SMVU).

The SMVU is an administrative boundary created by former participating oil companies in the Santa Maria Valley for company-specific financial purposes and not a physical boundary found on a map. As such, Geotracker identifies these as two separate cases, each case is associated with a responsible party and a clean-up objective. The sump of unknown origin is not part of the SMVU or the Non-SMVU.

Between August 2012 and August 2013 site assessment activities were performed including research of previously prepared documentation and aerial photographs, the preparation of a Health and Safety Plan, soil borings, trenching, a geophysical survey, and laboratory analysis. Soil samples were collected from each of the features and were analyzed for total petroleum hydrocarbons (“TPH”), volatile organic compounds (“VOCs”), and polynuclear aromatic hydrocarbons (“PAHs”). Select soil samples were also analyzed for semi-volatile organic compounds (“SVOCs”), polychlorinated biphenyls (“PCBs”), pesticides,



LEGEND

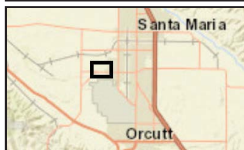
- HISTORIC WELL HEAD AS INTERPRETED FROM HISTORICAL AERIAL PHOTOGRAPHY
- HISTORIC TANK BATTERY/AST AS INTERPRETED FROM HISTORICAL AERIAL PHOTOGRAPHY
- LEASE BOUNDARY
- ASSESSOR'S PARCEL BOUNDARY
- HISTORICAL LEASE ROAD AS INTERPRETED FROM HISTORICAL AERIAL PHOTO 1943
- HISTORICAL LEASE ROAD AS INTERPRETED FROM HISTORICAL AERIAL PHOTO 1954 AND 1963
- SUSPECTED SUMP LOCATIONS INTERPRETED FROM HISTORICAL AERIAL PHOTOGRAPHY 1943 (UNIT)
- SUSPECTED SUMP LOCATIONS INTERPRETED FROM HISTORICAL AERIAL PHOTOGRAPHY 1943 (NON-UNIT)
- SUMP OF UNKNOWN ORIGIN LOCATION INTERPRETED FROM HISTORICAL AERIAL PHOTOGRAPHY 1943 NOT A PART OF THIS PROJECT
- SUSPECTED SUMP LOCATIONS INTERPRETED FROM HISTORICAL AERIAL PHOTOGRAPHY 1954 (UNIT)

NOTES:

- ① THESE FEATURES ARE ADDRESSED IN THE REPORT TITLED "SITE ASSESSMENT WORK PLAN FORMER JIM O'DONNELL LEASE NON-UNIT"
- ② THESE FEATURES ARE ADDRESSED IN THE REPORT TITLED "SITE ASSESSMENT WORK PLAN FORMER JIM O'DONNELL LEASE UNIT"
- ③ THIS ORPHAN SUMP FEATURE OF UNKNOWN ORIGIN IS NOT INCLUDED AS PART OF THIS PROJECT.

THIS REPORT ONLY ADDRESSES THE UNIT PORTION OF THE LEASE.

Source: AECOM, July 2013



Title:

Historic Oil Features

Date: 7/16/2013
Scale: 4cm = 100ft.
Project: 2020-40



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Figure
10

and CAM 17⁷. Based on analytical results the separate reports were prepared for the SMVU and Non-SMVU lease features. These reports are referred to as titled *Site Assessment Report and Site Assessment Plans* (“SAPSAPs”), and were prepared by AECOM. The SARSRPs concluded that non-hazardous petroleum hydrocarbon-impacted soil requiring remediation is present at features associated with the tank battery sump and lease roads (see **Figure 10**). Additionally, benzene and TPH in excess of the Santa Barbara County Environmental Health Services (“SBCEHS”) and California Department of Public Health maximum contaminant level (“CDPH MCL”) were present in the groundwater assessment sample.

By law, the parties responsible (referred to as the “responsible party” in this document) for the transportation, use, storage, and disposal of hazardous substances and oil are liable for costs. This liability applies to the cost of containment, cleanup, and damages resulting from a release related to their own activities. EPA's goal is to identify the responsible parties and ensure that they pay these costs (USEPA, 2022).

The water main component of the project is located within the former Mitchell O'Donnell Lease, Tracts 94 and 95.

The project site is located primarily within existing road right-of-ways and previously disturbed areas and it is not within the vicinity of hazardous waste facilities. No hazardous materials are anticipated to be stored on-site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment. In addition, there are no schools within 0.25 miles of the proposed project area.

The Santa Barbara County Association of Governments (“SBCAG”) serves as the Airport Land Use Commission (“ALUC”) for Santa Barbara County (SBCAG, 2021). The ALUC adopted the Santa Barbara County Airport Land Use Plan (“ALUP”) in 1993. This plan covers all of the public airports within Santa Barbara County. In August 2019, the ALUC released draft ALUPs for each of the public airports within Santa Barbara County. The 2019 Draft ALUP was prepared in order to promote compatibility between the Santa Maria Airport and the land uses that surround it, and to serve as a tool for SBCAG, to use in fulfilling its duty to review land use plans and development proposals within the Airport Influence Area (“AIA”). In addition, the 2019 Draft ALUP provides compatibility policies and criteria applicable to local agencies in their preparation or amendment of general plans and to landowners in their design of new development.

Draft ALUPs have been prepared for each of the public airports within Santa Barbara County. When adopted, the ALUP for each airport would replace the 1993 ALUP adopted by SBCAG. The 2019 Draft ALUP identifies policies that have the dual objectives of: (1) protecting against constraints on airport expansion and operations that can result from the encroachment of incompatible land uses, and (2) minimizing the public's exposure to excessive noise and safety hazards (ESA, 2019). To meet these objectives, the 2019 Draft ALUP addresses potential airport compatibility impacts related to four specific airport-related factors:

1. Noise: Exposure to aircraft noise;
2. Safety: Land use that affects safety for both people on the ground and in aircraft;

⁷ This term refers to a group of heavy metals identified in the California Administrative Manual (“CAM”). These metals include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

3. Airspace Protection: Protection of airport airspace; and
4. Overflight: Annoyance and other general concerns related to aircraft overflights.

According to Exhibit A-6, Safety Compatibility Data Map: Santa Maria Airport, a small portion of the proposed project area are within Zone 2 - Inner Approach/Departure Zone (SBCAG. 2019). The majority of the proposed project area is within Zone 4 - Outer Approach/Departure Zone and Zone 6 - Traffic Pattern Zone. The project is not located within an airport noise contour.

IMPACT DISCUSSION:

- a. No hazardous materials are anticipated to be stored on-site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment. These materials would be handled and stored in compliance with all local, State, and Federal regulations pertaining to hazardous materials. This is considered a *less than significant impact*.
- b. There are typically two types of hazardous materials releases that could occur during construction: (1) the accidental release of hazardous materials that are routinely used during construction activities; and (2) the potential for construction activities to encounter and excavate contaminated soil or groundwater that are already present at the construction site and thus release it to expose new receptors to the hazard.

Hazardous materials that could be used during construction activities include typical construction equipment fluids. Storage and use of hazardous materials at construction sites could potentially result in the accidental release of small quantities of hazardous materials, which could pose a risk to construction workers and the environment, such as degradation of soil and/or surface water quality. However, as discussed in **Section 10. Hydrology and Water Quality**, the construction contractor would be required to prepare a Water Pollution Control Plan. The Water Pollution Control Plan would list the hazardous materials (including petroleum products) proposed for use and describe measures for preventing spills, inspecting equipment and fuel storage, and providing immediate response to spills. Through compliance with applicable hazardous materials storage and storm water permitting regulations, the impacts from potential releases of hazardous materials or petroleum products during construction would be less than significant.

The greatest potential for encountering contaminated soil and groundwater during construction would be in areas where past or current land uses have resulted in soil contamination. Properties with known soil and/or groundwater contamination are identified in **Table 4**, above. Nine (9) environmental cases were identified using GeoTracker that may have potentially affected soil or subsurface conditions at project sites. As described above two (2) of these sites are listed as "Open;" the remainder are considered "Completed – Case Closed," meaning that a closure letter or other formal closure decision document has been issued for the site.

Encountering soil or groundwater contamination could result in exposures to construction workers, the public, or the environment, resulting in a potentially significant impact. Construction within the former Jim O'Donnell Lease could result in exposure to petroleum hydrocarbon-impacted soil. Soil disturbance during construction could further disperse existing contamination into the environment and expose construction workers or the public to contaminants. Specifically, construction of the distribution line located just to the south of the intersection of Rayville Lane and Mahoney Road has the potential to encounter petroleum hydrocarbon-impacted soil found in the "Historic Lease Roads" shown on **Figure 10**. It should be noted that the SARSRP prepared

by AECOM found that the hydrocarbon-impacted soils found in the “Historic Lease Roads” is considered to be non-hazardous.

There is also potential to encounter this material during trenching of Betteravia Road and Mahoney Road, however, this is not certain. These hazards are not shown on **Figure 10** because their presence cannot be determined using historic aerial photographs and assuming the presence of hydrocarbon-impacted soils would be speculation (Underwood. 2021). In addition, construction of the distribution lateral to APN 111-030-01 has the potential to encounter the “Sump of Unknown Origin” shown on **Figure 10**. It should be noted that the “Sump of Unknown Origin,” while within the same vicinity as the other lease features, is not associated with the former Jim O’Donnell Lease. A responsible party has not been identified for this feature. The “Sump of Unknown Origin” has the potential to contain hazardous hydrocarbon-impacted material. Potential impacts associated with encountering hazardous materials at the former Jim O’Donnell Lease are considered potentially significant.

A Soils Management Plan (“SMP”) will be prepared by the responsible party for the former Jim O’Donnell Lease prior to construction of the proposed project. The SMP will include contact from the responsible party and process for cleanup of contaminated soils. It should be noted that the remediation of the “Sump of Unknown Origin” would not be covered in the SMP, as a responsible party has not been identified for that feature. The required SMP together with Mitigation Measure HM-1, included below, would reduce the impact from encountering contaminated soil during construction to a less than significant level. This impact is considered ***less than significant with mitigation incorporated***.

Operation of the proposed project would not result in exposure to hazardous materials because all components of the project would be underground. Any potential hazardous materials on the site would not be accessible to the public or nearby residents.

- c. The project site is not located within ¼ mile of any proposed or existing schools. Therefore, ***no impact*** would result.
- d. The project site is not on or within the vicinity of a hazardous site as designated by Government Code Section 65962.5 (i.e., Cortese List). Therefore, ***no impact*** would result.
- e. There are no private airstrips within the vicinity of the project area. The Santa Maria Airport is located approximately one mile to the southeast. Due to the fact that all project features would be underground, operation of the project would not affect airport operations or create a safety hazard.

A small portion of the proposed project area is within Zone 2 - Inner Approach/Departure Zone (SBCAG. 2019). The majority of the proposed project area is within Zone 4 - Outer Approach/Departure Zone and Zone 6 - Traffic Pattern Zone. Proposed uses within these areas would be developed in compliance with applicable standards and regulations set forth in the applicable airport land use plan as well as policies established by the Federal Aviation Administration (“FAA”) and advisory circulars. Table 3-2 Santa Maria Airport Compatibility Criteria in the ALUP includes the safety compatibility of a variety of proposed land use actions. While extension of a water distribution system is not specifically included in this table, it does include a general category of Transportation, Communication, and Utilities. Land uses in this category are all considered compatible uses, except for those in Zone 1. Therefore, construction of the project

would be compatible with the ALUP. The project is not located within an airport noise contour. This is considered a ***less than significant impact***.

- f. The project does not include any characteristics or features that would interfere with an adopted emergency response plan or emergency evacuation plan. Once operational all components of the project would be underground, for these reasons, this is considered a ***less than significant impact***.
- g. The project site is located within an area that is primarily used for agriculture and industrial uses. While there is potential for wildland fires in such a land use type, the project would not increase the risk of wildfires to residents because construction of the project would not involve any equipment or activities that present a severe fire risk. Furthermore, the project consists of water supply improvements that would increase municipal water availability in the area. Implementation of the proposed project would not further expose people or structures to wildland fires, this is considered a ***less than significant impact***. See also **Section 20. Wildfire**.

Mitigation Measure(s) incorporated into the project:

- HM-1** The applicant's contractor shall immediately stop work and notify Santa Barbara County Public Health Department – Environmental Health Services Division at (805) 346-8216, if soil contamination is suspected or encountered during construction activities (e.g., unusual soil discoloration or strong odor). In addition, the applicant's contractor shall contact the project engineers and the City of Santa Maria Public Works Department. All work in the area of suspected contamination shall cease, the work area shall be sectioned off, until appropriate health and safety procedures have been determined and implemented.

10. HYDROLOGY AND WATER QUALITY

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|--------------------------|
| a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | | | | |

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| i. result in substantial erosion or siltation on- or off-site; | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv. impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

SETTING:

The project site is located within the Santa Maria Watershed, one of the largest coastal drainage basins in California, and includes all areas tributary to the Cuyama, Sisquoc, and Santa Maria Rivers. The Santa Maria Watershed overlies the Santa Maria River Valley Groundwater Basin ("SMRVGB"), covering more than 280 square miles in the southwestern corner of San Luis Obispo County and the northwestern corner of Santa Barbara County.

The project area is located within the Santa Maria River Valley Groundwater Basin (3-012.01) (California Department of Water Resources. 2021). The Santa Maria River Valley Groundwater Basin is adjudicated. The adjudication, implemented in 2008, specifies that monitoring shall be sufficient to determine groundwater conditions, land and water uses, sources of water supply, and the disposition of all water supplies in the Santa Maria River Valley Groundwater Basin. In the adjudication process, the Santa Maria Valley River Groundwater Basin was divided into three management areas. The largest was the Santa Maria Valley Management Area, which overlies the City of Santa Maria. The provisions of the adjudication require that an annual assessment be prepared for the Santa Maria Valley Management Area. According to the 2020 Annual Report, the conditions of the Santa Maria Valley Management Area do not satisfy all of the criteria delineated in the adjudication for defining a severe water shortage. As a result, the Annual Report concluded that there is no finding of severe water shortage conditions in the Santa Maria Valley Management Area as of 2020 (Luhdorff and Scalmanini. 2021).

In 2015, the State legislature approved the groundwater management law known as the Sustainable Groundwater Management Act (“SGMA”). The purpose of SGMA is to protect groundwater resources over the long-term. SGMA requires local agencies to form groundwater sustainability agencies (“GSAs”) for the high and medium priority basins. GSAs develop and implement groundwater sustainability plans (“GSPs”) to avoid undesirable results and mitigate overdraft within 20 years (California Department of Water Resources. 2021). The Department of Water Resources (“DWR”) implements regulatory oversight of the GSAs.

DWR designated the Santa Maria River Valley Groundwater Basin as a high priority basin. However, SGMA does not apply to the portion of the Santa Maria River Valley Groundwater Basin that is adjudicated, provided that certain requirements are met. As shown in the map titled, *Santa Maria Basin Fringe Areas Groundwater Sustainability Agencies*, prepared by San Luis Obispo County, dated February 29, 2019, the adjudicated areas of the SMRVGB cover a majority of the basin, and are managed by the Northern Cities Management Area, Nipomo Mesa Management Area, and the Santa Maria Valley Management Area (San Luis Obispo County. 2019)

Historically, the City of Santa Maria pumped water from the SMRVGB as its sole water supply until the City of Santa Maria began receiving State Water Project (“SWP”) water from the Central Coast Water Authority (“CCWA”) in 1997. As stated above, the SMRVGB is currently under a 2008 court-ordered stipulation that allows the City of Santa Maria to obtain its water supply from local groundwater, associated return flows from imported SWP water that may be recaptured in the basin, and a share of the yield of Twitchell Reservoir operations.

The proposed project would require trenching, which could result in minimal erosion of onsite soils and potential sedimentation during heavy wind or rain events. The project would be required to comply with all local, state, and federal requirements. In addition, the BMPs included in **Section 7. Geology and Soils**, would be implemented by the construction contractor to control the discharge of pollutants, including sediment from erosion into local surface water drainages.

According to the Federal Emergency Management Agency (“FEMA”), the proposed project site is not located within the 100-year flood zone (Santa Barbara County. 2021). In addition, the project area is not within a tsunami inundation area (Santa Barbara County. 2017).

IMPACT DISCUSSION:

- a. The proposed project would require on-site trenching, which could result in the erosion of onsite soils and sedimentation during heavy wind or rain events. However, as discussed in **Section 7. Geology and Soils** above, the contractor would implement BMPs to reduce erosion. Additionally, the project would comply with the adopted standards contained within the City of Santa Maria’s Municipal Code, Chapter 8-12 (Wastewater Collection, Treatment, and Disposal) Section 8-12A (Stormwater Runoff Pollution Prevention). With implementation of BMPs and incorporation of the design provisions and permit review and approval procedures associated with the aforementioned municipal code sections, the project would not violate water quality standards and waste discharge requirements; therefore, impacts would be **less than significant**.
- b. The project involves new connections to the City of Santa Maria’s existing water system infrastructure and would not impede sustainable groundwater management in the basin. The City of Santa Maria derives water from multiple supply sources, including local groundwater, purchased water from the SWP, associated return flows recaptured from the Santa Maria

Groundwater Basin, assigned rights to water from the Santa Maria Groundwater Basin, and assigned rights to augmented yield from Twitchell Reservoir. The City's water supply is expected to reliably meet the projected water demand and have an available water supply in excess through 2040, with the majority of the demand being met by imported SWP water. In addition, the RWC currently pumps groundwater from SMRVGB to serve the residents. Once the project is operational, this groundwater will no longer be pumped, resulting in an increase to local groundwater supplies. For these reasons, the project would not lead to a substantial depletion of groundwater supplies, and impacts would be ***less than significant***.

- c.i-iv. The project includes the construction of a water main, distribution line, and new service connections in order to serve the existing area. Construction activities for pipeline installation would involve trenching and other pipeline installation methods that would disturb both paved roadways and unpaved land within the project site, this disturbance would be temporary. Construction would be required to comply with BMPs and City of Santa Maria's Municipal Code requirements which would reduce impacts related to erosion and surface runoff. After construction, the project area would be restored to its original condition, and any drainage pattern within the right-of-way would be returned to existing conditions following project construction activities. In addition, the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. BMPs would be implemented during construction activities to minimize runoff and erosion. Finally, the project would not impede or redirect flood flows, since the project consists of underground pipelines. For these reasons, ***less than significant impacts*** would result from construction and operation of the project.
- d. Tsunamis or "tidal waves" are seismic waves created when displacement of a large volume of seawater occurs as a result of movement on seafloor faults. The project site is located outside a tsunami hazard zone. The project site is not located within any flood zones. Therefore, the project would have ***no impact*** related to the risk release of pollutants due to project inundation due to these areas.
- e. As described above under the project setting, the SMRVGB is part of an adjudicated basin, the DWR considers it already managed by the court and, thus, SGMA groundwater resource planning requirements do not apply (Luhdorff and Scalmanini. 2021). Therefore, the project would have ***less than significant impacts*** regarding conflicting with or obstructing applicable water quality control plans or sustainable groundwater management plans.

11. LAND USE AND PLANNING

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| a. Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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

SETTING:

The proposed project is located within the City of Santa Maria and within unincorporated Santa Barbara County, see **Figure 1**.

The majority of the proposed water main is located within the City of Santa Maria. The water main is within the right-of-way of Betteravia Road. For this reason, it does not have a land use designation or a zoning designation. Surrounding land uses include agriculture and industry to the north, agriculture to the south, residential and commercial to the east, and industrial and agriculture to the west.

A small portion of the water main, the distribution line and the service connections are not located within the City limits, however, they are within the City's sphere of influence. A sphere of influence is a planning boundary outside of an agency's legal boundary that designates the agency's probable future boundary and service area. Factors considered in a sphere of influence review focus on the current and future land use, the current and future need and capacity for service, and any relevant communities of interest (CALAFCO. 2021a).

The Local Agency Formation Commission ("LAFCO") is a State-created agency which exists in every county in California. Santa Barbara County LAFCO coordinates logical and timely changes in local governmental boundaries, conducts special studies that review ways to reorganize, simplify, and streamline governmental structure, and prepares a sphere of influence for each city and special district within each county. LAFCO's efforts are directed toward seeing that services are provided efficiently and economically while agricultural and open-space lands are protected (CALAFCO. 2021b).

Santa Barbara County LAFCO will be responsible for approving the additional connections to the City of Santa Maria water system associated with the proposed project. As described above, the 15 new water connections are located outside the City limits, but within the City's Sphere of Influence. Government Code Section 56133 states:

- a) A city or district may provide new or extended services by contract or agreement outside its jurisdictional boundary only if it first requests and receives written approval from the commission.
- b) The commission may authorize a city or district to provide new or extended services outside its jurisdictional boundary but within its sphere of influence in anticipation of a later change of organization.

As stated above, a small portion of the water main, all of the distribution line, and all of the service connections are located in unincorporated Santa Barbara County. The portion of the water main located

within unincorporated Santa Barbara County is within the right-of-way of Betteravia Road, and therefore does not have a land use designation. The distribution line and service connections are located on Rayville Lane, which is a private road and is zoned as General Industry (M-2) by the Land Use Element of the Santa Barbara County Comprehensive Plan, amended December 2016 (Santa Barbara County. 2016). The General Industry land use is applied to areas to provide for all types of industrial uses while providing the level of project review necessary to ensure that adverse impacts will be minimized and that these uses will be compatible with surrounding properties (Santa Barbara County. 1995). The proposed project area is not within a Santa Barbara County Community Planning area (Santa Barbara County. 2021).

IMPACT DISCUSSION:

- a. The project consists of a water distribution system. The project includes the extension of water lines and construction of water system improvements in order to serve the project area. All pipeline components will be installed underground and will not physically divide the community in any way. No changes in land use are planned and the community would not be divided by the actions of the proposed project. Therefore, the proposed project would not physically divide an established community and ***no impact*** would result.
- b. The project would not conflict with any policy adopted for the purposes of avoiding and/or mitigating an adverse environmental effect. Construction of the project is limited to trenching for pipeline installation primarily within the road right-of-way. As a result, potential impacts would be minimized. Where appropriate, this IS/MND has identified a number of mitigation measures to further ensure that impacts would be less than significant. The improvement of a municipal water system is consistent with the land use designations on the site and within the project area. This is considered a ***less than significant impact***.

12. MINERAL RESOURCES

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|--------------------------|
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

SETTING:

The City of Santa Maria's primary mineral resources are sand, rock, and oil. The Santa Maria River channel is considered to be a valuable mineral resource. The Santa Maria River contains the largest resources of Portland Cement Concrete-grade aggregate and almost 90% of the available alluvial sand

and gravel resources in the Santa Barbara/San Luis Obispo County region. The Santa Maria basin is also a significant hydrocarbon producing basin, historically allowing for the development of the oil industry throughout the region. Many of the area's oil wells have since been capped and abandoned due to the development and urbanization of the City of Santa Maria. Based on the City's Resource Management Element, a portion of the project site is located in MRZ 3, meaning that it is an area containing mineral deposits, the significance of which cannot be evaluated from available data. The other portion of the project does not have a designation (City of Santa Maria. 2001).

The California Department of Conservation, Geologic Energy Management Division's online mapping application, Well Finder, presents California's oil and gas industry information from a geographic perspective. The Well Finder locates oil and gas wells and other types of related facilities throughout the state. According to the Well Finder, there are several plugged/abandoned oil wells within the vicinity of the project area (California Department of Conservation. 2021). One plugged oil well exists within very close proximity of the distribution line, see **Figure 9. Hazardous Sites within Vicinity of the Project.**

IMPACT DISCUSSION:

- a. Based on the Resource Management Element of the Santa Maria General Plan, the project area is located in an area containing mineral deposits, the significance of which cannot be evaluated from available data at the time. Although the project site may overlie valuable oil and gas minerals, oil extraction activity at the site has been abandoned and much of the surrounding area has been built-out with more urban uses. Therefore, the potential for future mining uses at the site is negligible. This constitutes a ***less than significant impact***.
- b. There are no known or mapped mineral resources in the project area and the likelihood of future mining of important resources within the project area is very low. Therefore, this is considered a ***less than significant impact***.

13. NOISE

| Would the project result in: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|--------------------------|
| a. Generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

| Would the project result in: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | | | | |

SETTING:

In the context of this document, “noise” is defined as unwanted sound. The primary source of existing noise in the proposed project area is traffic on adjacent roadways, primarily Betteravia Road.

Community noise levels are typically measured in terms of A-weighted decibels (“dBA”). A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear. Equivalent noise level (Leq) is the average noise level on an energy basis for a specific time period. The duration of noise and the time of day at which it occurs are important factors in determining the impact of noise on communities. The Community Noise Equivalent Level (“CNEL”) and Day-Night Average Level (“Lnd”) account for the time of day and duration of noise generation. These indices are time-weighted average values equal to the amount of acoustic energy equivalent to the time-varying sound over a 24-hour period. The Noise Element of the City’s General Plan includes compatibility standards for noise exposure by land use (City of Santa Maria. 2009). These include interior and exterior noise standards as shown in **Table 5. Interior and Exterior Noise Standards.**

Table 5.
Interior and Exterior Noise Standards

| Category | Land Use Categories Uses | Standard dB CNEL | |
|---------------------------|--|------------------|----------|
| | | Interior | Exterior |
| Residential | Single Family, Duplex, Multiple Family, Mobile Home | 45 | 60 |
| Noise-Sensitive Land Uses | Motel, Hospital, School Nursing Home, Church, Library, and Other | 45 | 60 |
| Commercial | Retail, Restaurant, Professional Offices | 55 | 65 |
| Industrial | Manufacturing, Utilities, Warehousing, Agriculture | 65 | 70 |
| Open Space | Passive Outdoor Recreation | - | 65 |

The County of Santa Barbara General Plan, Noise Element, dated May 2009, provides regulation and guidelines regarding noise (Santa Barbara County. 2009). The County of Santa Barbara noise thresholds for industrial land uses are:

- Under 75 dB CNEL is considered normally acceptable
- Between 70 dB CNEL and 80 dB CNEL is considered conditionally acceptable
- Between 75 dB CNEL and 85 dB CNEL is considered normally unacceptable

IMPACT DISCUSSION:

- Sensitive receptors in the area include nearby residences within the immediate vicinity of the pipelines on Rayville Lane and Betteravia Road. Project construction would generate a temporary increase in noise associated with the use of construction equipment. Noise generated by pipeline installation can vary greatly depending on the specific equipment selected by the construction

contractor. The contractor will be using standard equipment associated with pipeline construction including excavators, loaders, dump trucks, and hauling vehicles. Using guidance provided by the Federal Highway Administration, it is estimated that noise will reach a maximum of 85 decibels at a distance of 50 feet from construction.

Noise impacts to nearby sensitive receptors during construction would be temporary. Assuming installation of the distribution pipeline at a rate of approximately 200 feet per day, pipeline trenching activities would proceed along the project alignment at a rate of approximately 1,000 feet per five working days; approaching and departing any one receptor location over a fairly short duration. Construction phases include site preparation, grading, trenching, and paving that will take place over a maximum of three months. General work hours would be between 7 A.M. to 5 P.M., Monday through Friday.

Construction noise levels exceeding the threshold for more than two weeks would represent a substantial temporary noise increase to nearby residences. The proposed pipeline trenching activities at any one location along the alignment would be limited to a few days. Although, construction noise would exceed the conditionally acceptable significance criteria at most locations along the alignment, the duration would be less than two weeks at any one location, and construction would be limited to daytime hours. Therefore, temporary noise increases due to construction would not be substantial, and noise impacts at this for the project would be ***less than significant***.

The distribution pipeline would not generate any permanent noise during project operation, as it will be entirely underground. The project would result in a ***less than significant impact*** because it will not create a permanent increase in ambient noise levels.

- b. The project is not subject to substantial groundborne vibration, nor would it generate any permanent source of groundborne vibration at nearby sensitive receptors. Construction activities may generate groundborne vibration, however, these activities would be temporary, and the vibration effects of typical construction equipment is not expected to affect nearby sensitive residential receptors. This constitutes a ***less than significant impact***.
- c. The project area is located approximately one mile northwest of the Santa Maria Airport. Based on the ALCP and the City of Santa Maria General Plan Safety Element. The project area is not located within the noise contours for the Santa Maria Airport. Additionally, the proposed project consists of new service connections to the City water system and would not place new development within vicinity of the Santa Maria Airport. Therefore, this is considered a ***less than significant impact***.

14. POPULATION AND HOUSING

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

SETTING:

Since the early 1990s, the City of Santa Maria has experienced a consistent increase in population, largely due to a growing migrant workforce for nearby agriculture. The City of Santa Maria is one of the fastest growing areas in Santa Barbara County, largely due to the affordable housing the City provides relative to other cities in Santa Barbara and San Luis Obispo Counties. The City of Santa Maria has also developed a number of programs and policies to further encourage growth and development.

The project is comprised of a new water main, new distribution line, and 15 new water service connections. The 15 service connections would serve 45 residents on Rayville Lane and Betteravia Road. The new water service connections would be replacing existing service connections associated with RWC. The project would not displace any existing housing.

IMPACT DISCUSSION:

- a. Although the project would include a new water service connection, these connections would only serve existing residences that are currently served by RWC. RWC does not have adequate quality for potable water and connection to the City of Santa Maria water system would provide potable water to the existing residences. Upon project completion, RWC would no longer operate and therefore would no longer pump groundwater to serve its customers. The project will construct needed improvements to deliver a reliable and potable water supply to the community. Therefore, the project would serve an existing community and would not induce substantial population growth in the area. This is a ***less than significant impact***.
- b. The project involves the construction and operation of a new water main, distribution line, and service connections to the City of Santa Maria water system. The new service connection would only serve the existing customers of the RWC. The project would not displace substantial numbers of existing people, housing, or necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would result.

15. PUBLIC SERVICES

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|-------------------------------------|
| a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| i. Fire protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii. Police protection? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii. Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iv. Parks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| v. Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SETTING:

Fire and police protection services for the project area are provided by the City of Santa Maria. Six fire stations serve the City, the nearest station to the proposed project is Station No. 2, located at 416 West Carmen Lane. The City of Santa Maria Police Department provides law enforcement services for the City. Orcutt and the other unincorporated areas of the County are served by the Santa Barbara County Sheriff's Department. The Santa Maria-Bonita School District serves the City's elementary and junior high-schools, where the high-schools are served by the Santa Maria Joint Union High School District.

IMPACT DISCUSSION:

a.i, ii. Because the project is a water supply project, it will have no post-construction impact on the City Fire Department or Police Department. Although unlikely, these departments could be required to respond to potential construction-related emergencies. Construction is expected to be completed within three months and will not significantly impact fire protection or police protection services or require the construction of new or remodeled facilities. This represents a ***less than significant impact***.

a.iii, iv, v. The water supply project would have no physical impact on schools, parks, or other public facilities and would not require the construction of new or remodeled facilities. ***No impact*** would result from implementation of the proposed project

16. RECREATION

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SETTING:

The proposed project is a water system project. The project does not include any recreational facilities. There are not any existing recreational facilities within the vicinity of the proposed project.

IMPACT DISCUSSION:

- a, b. The project is a water system project and would not increase the use of surrounding recreational facilities and would therefore not contribute to the physical deterioration of park facilities or necessitate the construction of new recreational facilities. **No impact** to recreational facilities would result from implementation of the project.

17. TRANSPORTATION

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|--------------------------|
| a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|-------------------------------------|
| c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d. Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SETTING:

The project is located on the western boundary of the City of Santa Maria. Regional access to the project site is provided via Betteravia Road and U.S. Route 101, which is located approximately 2.7 miles to the east of the proposed project area. In the Circulation Element of the City of Santa Maria General Plan, Betteravia Road is considered a primary arterial. Betteravia Road is also considered a Class II Bike Lane (City of Santa Maria. 2011).

The project will require excavation within the Santa Barbara County and City of Santa Maria right-of-way on Betteravia Road for the water main trenching. The project applicant will be responsible for obtaining an encroachment permit from both of these entities prior to the start of construction. The encroachment permit will require a traffic control plan.

The proposed project would not generate any trips after construction has been completed. It is anticipated that construction of the project would result in eight (8) trips per day⁸, resulting in approximately 66 vehicle miles traveled ("VMT")⁹ generated during construction, which is expected to last three months.

IMPACT DISCUSSION:

- a. The proposed project would not generate any vehicle trips once operational. The project would result in a temporary increase in traffic during construction. Construction-related vehicle trips would include workers traveling to and from the project construction sites and staging area(s) and other trucks associated with equipment and material deliveries. Construction worker trips are assumed to be eight (8) daily trips for a three-month project duration. Truck trips for materials and hauling for the distribution system pipeline and well site construction will vary depending on delivery of materials and construction vehicles. Compared to the existing level of traffic traveling on Betteravia Road, the temporary construction related traffic would be minimal. Construction activities along Betteravia Road could include lane narrowing and/or lane closures. No sidewalks or bike lanes exist along the pipeline alignments. Lane closures during pipeline construction activities may be necessary, though are not anticipated. In the event of any type of closure, clear

⁸ In an email dated August 26, 2021, WHA provided an estimate of 500 trips required for construction for the duration of construction. Construction is anticipated to last 3 months, or approximately 60 working days. The total number of trips was divided by the number of working days to calculate the number of trips per day.

⁹ An estimate of 8.3 miles per trip length was used to calculate the VMT. This is consistent with the methodology used by CalEEMod.

signage (e.g., closure and detour signs) must be provided to ensure vehicles, pedestrians and bicyclists are able to adequately reach their intended destinations safely. The construction contractor would prepare a construction Traffic Control Plan as part of the encroachment permit from the City of Santa Maria and Santa Barbara County. This plan should address the construction schedule, street closures and/or detours, construction staging areas and parking, and planned truck routes. Construction is a short-term, temporary activity and construction trips would account for a relatively small portion of existing traffic on area roadways. Construction-related traffic impacts would be reduced through implementation of the required Traffic Control Plan. Therefore, traffic flow impacts during construction would be **less than significant**.

- b. An assessment of VMT required estimating or measuring the full length of trips people take by purpose as work trips, deliveries, shopping, etc. The City of Santa Maria Environmental Procedures and Guidelines includes a list of discretionary development project that are not subject to VMT analysis. Specifically, the City has adopted a screening threshold stating that small discretionary development projects that would generate fewer than 110 daily trips, are not subject to VMT analysis. The proposed project falls within this category. The proposed project would not generate any trips once operational. As stated above, it is estimated that the project would generate eight (8) trips per day during the three-month construction period. The falls below the threshold of 110 trips per day, therefore the project has a **less than significant impact** on the transportation system.
- c. The project would not substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses. The project would not generate any trips once operational. The project does not include the construction of hazardous design features and would not result in incompatible uses with the surrounding developed area. Implementation of a Traffic Control Plan would minimize potential traffic hazards during construction. This constitutes a **less than significant impact**.
- d. The Traffic Control Plan would include traffic control measures in the event of a lane closure and would give priority access to emergency vehicles. The proposed project consists of new pipelines and would not impact emergency access. Therefore, **no impact** would result.

18. TRIBAL CULTURAL RESOURCES

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-----------|
| a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place or 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: | | | | |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|--------------------------|
| i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SETTING:

To recognize California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments, and to respect the interests and roles of project proponents, the State Legislature enacted AB 52 (Gatto. 2014) Native Americans: California Environmental Quality Act. California AB 52, in effect since July 2015, provides CEQA protections for tribal cultural resources. All lead agencies approving projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe, to consult with such tribe regarding the potential impact of a project on tribal cultural resources before releasing an environmental document. Prior to the enactment of AB 52, the State of California found that current laws provided limited protection for sites, features, places, objects, and landscapes with cultural value to California Native American Tribes. Under California Public Resources Code §21074, tribal cultural resources include site features, places, cultural landscapes, sacred places, or objects that are of cultural value to a tribe and that are eligible for or listed on the California Register of Historical Resources ("CRHR") or a local historic register, or that the lead agency has determined to be of significant tribal cultural value.

The City of Santa Maria maintains a list of tribes that are traditionally and culturally affiliated with the geographic area. The City of Santa Maria sent letters to the local Native American the NAHC on August 10, 2021. On August 19, 2021, the City received a letter requesting formal consultation on the proposed project from the Santa Ynez Band of Chumash Indians. A site visit with a representative from the Santa Ynez Bard of Chumash Indians was conducted on October 1, 2021. The representative requested and received a copy of the Phase 1 Cultural Resource Inventory prepared by Albion Environmental, Inc. (**Appendix D**). To date, no additional requests have been made by the Santa Ynez Band of Chumash Indians.

IMPACT DISCUSSION:

- a.i, ii There are no historical structures on the site. Records indicate that the project site, which is primarily within the road right-of-way and contains several residences on Rayville Lane, is not

listed on the California Register of Historic Places or on Santa Barbara County's local list. Professional archaeologists studied a project boundary larger than the proposed project site disturbance. After initial consultation, a field survey of the project area was completed. The studies indicate the area of proposed development is not within an archaeological site eligible to be designated as a historical resource applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. Should archaeological resources be unexpectedly discovered during construction, work shall be halted until it can be evaluated by a qualified professional archaeologist and determined to be significant, and appropriate mitigation measures formulated and implemented, as identified in Mitigation Measures CR-1 and CR-2. The project would have a less-than-significant impact on tribal cultural resources.

Please see **Section 5. Cultural Resources** of this IS/MND and **Appendix D** for additional discussion.

Mitigation Measure(s) incorporated into the project:

CR-1 The full text of this mitigation is included in **Section 5. Cultural Resources**.

CR-2 The full text of this mitigation is included in **Section 5. Cultural Resources**.

19. UTILITIES AND SERVICE SYSTEMS

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

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|--------------------------|
| e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

SETTING:

Ray Water Company is the current water service purveyor to the project area; the project service area's population does not have any water use or connections to the City of Santa Maria water system. The Santa Barbara County Resource Recovery & Waste Management Division (Santa Barbara County) or the City of Santa Maria Utilities Department (City of Santa Maria) is currently responsible for the collection of solid waste in the project area. Waste from the project area is transported to Tajiguas Landfill (Santa Barbara County) or Santa Maria Regional Landfill (City of Santa Maria). Pacific Gas & Electric Co. provides electric service to the proposed project site. Residents in the project area dispose of wastewater through onsite septic systems.

The existing Ray Water Company system currently utilizes a well to pump groundwater as the primary source of water. Numerous investigations have shown that the well has elevated concentrations of nitrate and arsenic. Nitrate concentrations are above the MCL set by the EPA and the State of California, and therefore pose a health risk. Arsenic concentrations are close to, yet just below the MCL. The Ray Water Company system serves 13 service connections along Rayville Lane and Betteravia Road.

The project will construct improvements to the existing system to deliver a reliable and potable water supply to the residents. There are no individual water meters on the existing distribution system currently serving the area. The project will include new individual meters for all homes served by the new system.

WHA prepared an Engineering Report (**Appendix A**) during project development, which explored several alternative methods of supplying potable water to the area. In addition, the Engineering Report found that the ADD is 64.5 gallons per day for each resident in the Ray Water Company system and MDD is 108.6 gallons per day for each resident. The current number of residents served by the Ray Water Company is 45, therefore to entire Ray Water Company MDD is 4,885 gallons per day.

IMPACT DISCUSSION:

- a. The project proposes to eliminate the existing well used by the Ray Water Company and connect to the City of Santa Maria water system. The project would not generate any additional wastewater or exceed or impact wastewater treatment requirements of the applicable Regional Water Quality Control Board. The project would not increase wastewater generation. The project would not require additional construction or relocation of utility facilities which would cause significant environmental effects. The potential adverse environmental effects associated with the water expansion project are fully evaluated in this IS/MND. With implementation of recommended mitigation measures, construction of new water service facilities would result in a ***less than significant impact***.

- b. Water quality test results for the Ray Water Company have exceeded acceptable nitrate levels since 1980, according to the Engineering Report Water quality tests have indicated that the area currently does not have a potable water supply in conformance with state drinking water standards. The project proposes to connect to the existing City of Santa Maria water system. The project includes a water main, distribution line, and individual water service connections. The City of Santa Maria water system receives its water from local groundwater, associated return flows from imported SWP water that may be recaptured in the basin, and a share of the yield of Twitchell Reservoir operations. As stated above, the City's water supply is expected to reliably meet the projected water demand and have an available water supply in excess through 2040, with the majority of the demand being met by imported SWP water. Therefore, this is a ***less than significant impact***.
- c. The primary objective of the project is to provide a high-quality water source, which will provide for long-term water supply reliability for the community. The project does not require wastewater service or expansion. There would be ***no impact*** in connection with the project.
- d. The proposed project would not generate significant solid waste. The landfills that serve the project area: the Tajiguas Landfill and the Santa Maria Regional Landfill, have adequate capacity to serve the existing and future planned development in the region. Therefore, there would be ***no impact*** in connection with the project.
- e. Waste disposal to landfills would be minimized, and all waste would be properly disposed of in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state (California Integrated Waste Management Act of 1989 & California Green Building Standards), and federal regulations related to solid waste. Since the project will require compliance with all county, state, and federal regulations and conditions, there will be no violation of the regulations concerning solid waste disposal as conditions for approval. This constitutes a ***less than significant impact***.

20. WILDFIRE

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|--------------------------------|--|-------------------------------------|--------------------------|
| a. Substantially impair an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

| Would the project: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|------------------------------|-------------------------------------|
| c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SETTING:

Fire Hazard Severity Zones (“FHSZ”) are defined by the California Department of Forestry and Fire Protection (“CALFIRE”) based on the presence of fire-prone vegetation, climate, topography, assets at risk (e.g., high population centers), and a fire protection agency’s ability to provide service to the area (CalFire. 2021). FHSZs are designated as “Very High,” “High,” or “Moderate.” The City and project site is not located within a designated Very High, High, or moderate FHSZ. Wildland fires in the Santa Maria area are characterized as limited grassland and brush fires due to the absence of extensive tracts of mountainous, brush covered terrain. The project site is entirely with previously disturbed areas.

IMPACT DISCUSSION:

- a. The proposed project does not include any characteristics or features that would interfere with an adopted emergency response plan or emergency evacuation plan. The project would not result in the closure of any roads. For these reasons, this is considered a ***less than significant impact***.
- b. The project site is currently used for either industrial activities or is within an existing road right-of-way and is surrounded by agricultural and industrial activities. The site is relatively flat and lacks physical and biological features that would be conducive to wildland fire. The project site is not located within or adjacent to a designated FHSZ or a wildland area. Therefore, the project would not be exposed to risks from wildland fires. This is a ***less than significant impact***.
- c. The site is currently used for either industrial uses or is within an existing road right-of-way and is surrounded by agricultural and industrial uses. The project would include the installation of emergency fire hydrants along the water main alignment, thereby allowing for more efficient firefighting in the unlikely event of a wildfire. The project does not include infrastructure facilities that would exacerbate fire risk, therefore ***no impact*** would result.
- d. As mentioned in the previous discussions above, the project is not located within State Responsibility Area (“SRA”) Fire Hazard Zone, therefore, is not at risk of downslope or downstream flooding or landslides resulting in ***no impact***.

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CONSULTATION AND DATA SOURCES**CONSULTATION SOURCES**

City Departments Consulted

| | |
|-------------------------------------|-------------------------|
| <input type="checkbox"/> | Administrative Services |
| <input type="checkbox"/> | Attorney |
| <input type="checkbox"/> | Fire |
| <input type="checkbox"/> | Library |
| <input type="checkbox"/> | City Manager |
| <input type="checkbox"/> | Police |
| <input checked="" type="checkbox"/> | Public Works |
| <input checked="" type="checkbox"/> | Utilities |
| <input type="checkbox"/> | Recreation and Parks |

State/Federal Agencies Consulted

| | |
|-------------------------------------|------------------------------------|
| <input type="checkbox"/> | Army Corps of Engineers |
| <input type="checkbox"/> | Caltrans |
| <input checked="" type="checkbox"/> | CA Fish and Game |
| <input type="checkbox"/> | Federal Fish and Wildlife |
| <input type="checkbox"/> | FAA |
| <input type="checkbox"/> | Regional Water Quality Control Bd. |
| <input type="checkbox"/> | Integrated Waste Management Bd. |
| <input type="checkbox"/> | Other (list) |

County Agencies/Departments Consulted

| | |
|-------------------------------------|--|
| <input type="checkbox"/> | Air Pollution Control District |
| <input type="checkbox"/> | Association of Governments |
| <input type="checkbox"/> | Flood Control District |
| <input checked="" type="checkbox"/> | Environmental Health |
| <input type="checkbox"/> | Fire (Hazardous Materials) |
| <input checked="" type="checkbox"/> | LAFCO |
| <input type="checkbox"/> | Public Works |
| <input checked="" type="checkbox"/> | Planning and Development |
| <input type="checkbox"/> | Other (list): Certified Unified Program Agency |

Special Districts Consulted

| | |
|--------------------------|-------------------------------------|
| <input type="checkbox"/> | Santa Maria Public Airport |
| <input type="checkbox"/> | Airport Land Use Commission |
| <input type="checkbox"/> | Cemetery |
| <input type="checkbox"/> | Santa-Maria Bonita School District |
| <input type="checkbox"/> | Santa Maria Joint Union High School |
| <input type="checkbox"/> | Laguna County Sanitation District |
| <input type="checkbox"/> | Cal Cities Water Company |

DATA SOURCES

General Plan

| | |
|---|------------------------------|
| X | Land Use Element |
| X | Circulation Element |
| X | Safety Element |
| X | Noise Element |
| X | Housing Element |
| X | Resources Management Element |

Other

| | |
|---|------------------------------|
| X | Agricultural Preserve Maps |
| X | Archaeological Maps/Reports |
| | Architectural Elevations |
| X | Biology Reports |
| X | CA Oil and Gas Maps |
| X | FEMA Maps (Flood) |
| | Grading Plans |
| X | Site Plan |
| | Topographic Maps |
| X | Aerial Photos |
| | Traffic Studies |
| | Trip Generation Manual (ITE) |
| | URBEMIS Air Quality Model |
| X | Zoning Maps |
| | Other (list) |

MANDATORY FINDINGS OF SIGNIFICANCE

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|--|--------------------------------|--|-------------------------------------|--------------------------|
| 1. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

IMPACT DISCUSSION:

- The proposed water main, distribution line, and service connections are primarily within the public right-of-way that does not contain suitable habitat for fish and wildlife species. Mitigation measures are recommended to address potential direct and indirect impacts to nesting raptors that may be present on the project site as well as potential impacts to the riparian and wetland areas adjacent to the proposed project site. Based on this analysis, the project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community or substantially reduce the number or restrict the range of a rare or endangered plant or animal. The proposed water main, distribution line, and service connections would be constructed within existing roadways right-of-way and on a previously disturbed paved road that does not contain important examples of the major periods of California history or prehistory. Additionally, mitigation measures to protect cultural resources require work to stop and finds evaluated should unanticipated archaeological resources be discovered during construction. Therefore, the project would not eliminate important examples of the major periods of California history or prehistory with implementation of mitigation measures identified in this document. This is a ***less than significant impact with mitigation incorporated***.

2. Section 15355 of the CEQA Guidelines defines “cumulative impacts” as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental effects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. It is important to address whether the proposed project would result in an impact that would be found to be cumulatively considerable. Cumulative impacts could occur due to indirect growth-inducing impacts, which includes consideration of whether the project would remove an obstacle to additional growth and development. The project area and community to be served by this project is already receiving waters and developed. The project would not include housing or development in areas that could induce growth and would also not remove any barriers that could result in population growth. As described in the previous analysis, the proposed project would result in less-than-significant impacts to aesthetics, agricultural resources, air quality, biological resources, cultural resources, energy, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, land use and planning, noise, population and housing, public services, utilities/service systems, and wildfire. The majority of project impacts are temporary and localized along the pipelines during the construction period. Upon operation, the project would not have significant adverse environmental impacts or induce new development in the area that could combine with other projects’ effects to create cumulatively significant impacts. Project operational activities would not significantly alter the existing environment, particularly in the distribution pipelines which will be underground. There are no known projects in the immediate project vicinity of a similar nature proposed or reasonably foreseeable for development. When considered cumulatively along with past, current, and probable future projects that may occur in the area, the project’s contribution is considered negligible and would not be cumulatively considerable. This is a ***less than significant impact***.
3. The project would not result in environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. The project involves construction of the proposed components within already developed areas within an established community. Project operational activities would not significantly alter the environmental baseline condition. Construction of the proposed project would result in temporary minor incremental reductions in air quality and traffic in the project vicinity, however, these were found to be minor, temporary and localized. The project would result in less-than-significant impacts to air quality, greenhouse gas emissions, and hazards and hazardous materials. The primary source of criteria air pollutant and GHG emissions would stem from the use of equipment during construction activities. Additionally, the project would not create any significant air emissions or impacts from construction-related noise due to the short-term and localized nature of the project. This is a ***less than significant impact***.

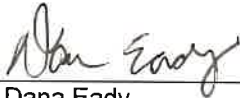
SUMMARY OF POTENTIALLY SIGNIFICANT IMPACTS

| | | | |
|-------------------------------------|----------------------------------|-------------------------------------|------------------------------------|
| <input type="checkbox"/> | Aesthetics | <input type="checkbox"/> | Mineral Resources |
| <input type="checkbox"/> | Agriculture and Forest Resources | <input type="checkbox"/> | Noise |
| <input type="checkbox"/> | Air Quality | <input type="checkbox"/> | Population and Housing |
| <input checked="" type="checkbox"/> | Biological Resources | <input type="checkbox"/> | Public Services |
| <input checked="" type="checkbox"/> | Cultural Resources | <input type="checkbox"/> | Recreation |
| <input type="checkbox"/> | Energy | <input type="checkbox"/> | Transportation |
| <input type="checkbox"/> | Geology and Soils | <input checked="" type="checkbox"/> | Tribal Cultural Resources |
| <input type="checkbox"/> | Greenhouse Gas Emissions | <input type="checkbox"/> | Utilities and Service Systems |
| <input checked="" type="checkbox"/> | Hazards and Hazardous Materials | <input type="checkbox"/> | Wildfire |
| <input type="checkbox"/> | Hydrology and Water Quality | <input checked="" type="checkbox"/> | Mandatory Findings of Significance |
| <input type="checkbox"/> | Land Use and Planning | | |

Determination

On the basis of the Initial Study, the staff of the Community Development Department:

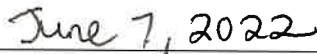
- ☐ Finds that the proposed project is a Class ____ **CATEGORICAL EXEMPTION** and no further environmental review is required.
- ☐ Finds that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- ☒ Finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- ☐ Finds that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- ☐ Finds that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to acceptable standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on the attached sheets. An **ENVIRONMENTAL IMPACT REPORT (EIR)/SUBSEQUENT EIR/SUPPLEMENTAL EIR/ADDENDUM** is required, but it must analyze the effects that remain to be addressed.
- ☐ Finds that although the proposed project could have a significant effect on the environment, because all significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to acceptable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Dana Eady
Environmental Analyst



Chuen Ng
Environmental Officer



Date



Date

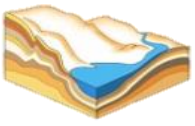


City of Santa Maria
Community Development Department
110 South Pine Street, #101
Santa Maria, CA 93458
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Appendix A

Engineering Report

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WEBER, HAYES & ASSOCIATES
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Engineering Report

Ray Water Company



Santa Maria, California

October 22, 2021

Prepared for:

Ray Water Company

via a Technical Assistance Grant from

California State Water Resources Control Board / University Enterprises, Inc

Technical Assistance Work Plan 6160-A / WHA Project 2t059

Contents

Contents..... i

1. Introduction..... 1

 A. Background 2

 B. Problem Statement 3

 C. Project Objective 4

2. Existing Facilities 5

 A. Water System Description 5

 B. Source..... 7

 C. Treatment..... 8

 D. Storage 8

 E. Distribution System 9

 F. System Deficiencies..... 9

3. Alternatives Analysis - Projects 11

 A. Project Alternative #1 – Take No Action 11

 B. Project Alternative #2 – Treatment System for Nitrate & Arsenic 12

 C. Project Alternative #3 – Drilling a New Well..... 13

 D. Project Alternative #4 – Full Consolidation with Existing Water System 14

 E. Comparison of Various Alternatives..... 15

4. Recommended Option 17

 A. Project Description 17

 B. Preliminary Schedule 18

 C. Comprehensive Response to Climate Change 18

Limitations 24

References 25

Figures

| | |
|----------|---|
| Figure 1 | Location Map with Water Company Service Area Boundaries |
| Figure 2 | Proposed New Water Main Alignment |
| Figure 3 | Schematic of Current Treatment Train |
| Figure 4 | Ray Water Company Distribution System Layout |

Tables

| | |
|----------|--|
| Table 1: | Water Quality Data |
| Table 2: | Engineer's Opinion of Probable Costs for New Distribution System |
| Table 3: | Engineer's Opinion of Probable Costs for Treatment System (Alternative #2) |
| Table 4: | Engineer's Opinion of Probable Costs for New Well (Alternative #3) |
| Table 5: | Engineer's Opinion of Probable Costs for Consolidation (Alternative #4) |
| Table 6: | Alternative Comparison Summary |

Appendices

| | |
|-------------|--|
| Appendix A: | Environmental Analysis of Engineering Alternatives |
| Appendix B: | Consolidation Alternative 90% Design Drawings |
| Appendix C: | Fire Prevention Flow Calculations |

1. Introduction

This is the *Engineering Report* (ER) for the Ray Water Company (RWC), located near the intersection of Betteravia Road and Rayville Lane in Santa Maria, California. See Figure 1 for the project location.

This ER was prepared by Weber, Hayes & Associates on behalf of RWC under a Technical Assistance (TA) Grant from the California State Water Resources Control Board (State Water Board) administered by Sacramento State University / University Enterprises, Inc. (UEI) under TA Work Plan 6160-A, assigned by the State Water Board to UEI.

The intent of this *Engineering Report* (ER) is summarized below:

- Define the problems Ray Water Company (RWC) is facing
- Identify and evaluate alternatives to provide RWC residents with safe and reliable drinking water
- Choose the best alternative and develop a corresponding set of 90% complete technical design drawings to implement the selected alternative

The best alternative was chosen based on the following:

- Ability to supply safe and reliable drinking water and to comply with regulatory requirements
- Meet the water system's Operation and Maintenance (O&M) needs
- Be financially viable
- Satisfy public concerns
- Meet environmental requirements

The most cost-effective long-term solution is RWC consolidation with the City of Santa Maria's water system.

A. Background

Ray Water Company (RWC) is a small water company located just outside the Santa Maria city limits. RWC was issued a Santa Barbara County water system permit in 1976 though it existed prior to that. Over the years, RWC has had ongoing difficulties meeting regulatory requirements – primarily due to aging and outdated infrastructure. Based on these challenges, RWC received a Technical Assistance Grant to help bring their water system into regulatory compliance. This Engineering Report identifies the problems, presents and evaluates alternative solutions, and provides initial plans / design drawings for the solution selected to bring RWC into compliance.

B. Problem Statement

Ray Water Company's (RWC) current water source is a well, which has elevated nitrate and arsenic concentrations. This is the primary problem with RWC. Nitrate concentrations are above the Maximum Contaminant Level (MCL) set by the Environmental Protection Agency (EPA) and the State of California, and therefore pose a health risk. Arsenic concentrations are close to, yet just below the MCL. The recent concentrations and corresponding MCL's are presented in the table below:

Ray Water Company Source Water – Contaminants of Concern

| Analyte | Date | Concentration (mg/L) | MCL (mg/L) |
|--------------|----------|----------------------|------------|
| Nitrate as N | 3/25/21 | 29 | 10 |
| Nitrate as N | 4/22/21 | 28 | 10 |
| Nitrate as N | 2/19/21 | 31 | 10 |
| Nitrate as N | 1/12/21 | 28 | 10 |
| Arsenic | 11/11/20 | 0.0096 | 0.010 |

mg/L = milligrams per Liter

Aside from elevated nitrate and arsenic concentrations, there are various secondary problems at RWC. The complete list of system deficiencies is summarized below in Section 2-F.

C. Project Objective

The overall project objective is to provide Ray Water Company (RWC) residents with safe and reliable drinking water. To this end, the *Engineering Report* (ER) identifies and evaluates alternative solutions, and selects the best option – based on the following:

- Ability to supply safe and reliable drinking water
- Ability to comply with regulatory requirements
- Meet the water system's O&M needs
- Be financially viable
- Satisfy public concerns; and
- Meet environmental requirements

Based on the criteria cited above, the best alternative is consolidation with the City of Santa Maria's water system.

We evaluated four alternatives:

- No Action
- Treating the water from the existing well
- Drilling a new well that will (hopefully) be free of nitrates
- Consolidation with a nearby water system that has a reliable water source

Additional information on each alternative is presented in Section 3, below. The consolidation alternative is discussed further in Section 4. Figure 2 shows the proposed new consolidation water main alignment connecting RWC with the City of Santa Maria's Water System.

2. Existing Facilities

A. Water System Description

Ray Water Company (RWC) operated for some time before its first temporary Water Supply Permit was issued in 1976. RWC has been governed by various appointed residents of the water system, which have changed over time. Ownership of RWC was equally distributed among nine residents in 1976. Currently, ownership is equally distributed among ten residents.

There are a total of 13 service connections (11 residential, 2 commercial). The total population served is approximately 45 residents. The service area boundaries are shown on Figure 1.

The Local Primacy Agency with jurisdiction over Ray Water Company (RWC) is Santa Barbara County, Public Health Department, Environmental Health Services (Santa Barbara County).

Based on State Water Resources Control Board 2020 data for Santa Maria water usage, the Average Daily Demand (ADD) is 65.4 gallons per day (per resident). To determine the Maximum Daily Demand (MDD), we multiplied the ADD by 1.66:

$$65.4 \text{ gal/day} \times 1.66 = 108.56 \text{ gallons MDD per RWC resident}$$

The current number of residents is 45. So, the entire Ray Water Company MDD is:

$$108.56 \times 45 = 4,885 \text{ gallons per day}$$

Ray Water Company currently charges a flat rate of \$100 per month for each of the 13 service connections. The most recent rate increase went into effect on May 1, 2021.

RWC has received numerous notices of violation (from Santa Barbara County) dating back to 1980. The most relevant violation includes repeated nitrate concentrations above the MCL, starting at least as early as June 24, 1980. Other violations included (but not limited to) coliform

bacteria detections, failure to perform the required analytical testing, failure to properly inform residents of MCL exceedances, and failure to resolve the nitrate issue.

Santa Barbara County issued RWC an enforcement action Compliance Order on March 6, 2020 due to ongoing nitrate concentrations above the MCL. The Compliance Order required RWC to inform all residents of the elevated nitrate concentrations, submit a progress report, and submit a corrective action plan to resolve the nitrate issue. This Engineering Report (ER) is part of the response to the Compliance Order.

B. Source

Ray Water Company (RWC) utilizes groundwater as its drinking water source. The capacity of this source is unknown, because RWC does not meter the well or regularly monitor depth to groundwater.

A Santa Barbara County sanitary survey report letter dated September 11, 2017 indicated the following for the existing well:

- 320-feet deep vertical well with a 75-feet annular seal. 6-inch diameter well casing. Well screen from 270 to 320-feet. In late 2016, the 5-Horsepower Submersible pump was replaced and set deeper into the well at 230-feet.

Per our understanding, there is not a current drinking water source assessment and protection (DWSAP) Report for RWC.

The water quality data from 2019 to 2021 is presented in Table 1.

C. Treatment

Ray Water Company (RWC) chlorinates the well source drinking water as a precautionary measure. This is the only water treatment technique used. A chlorine solution is injected into the system prior to storage by a Stenner peristaltic pump with a maximum capacity of 12 gallons per day at 150 psi. The chlorine solution is stored in a 25-gallon plastic container and all disinfection equipment is housed in a small shed. The water storage tank feeds a booster pump, which pressurizes the water through the distribution system. See Figure 3 for a schematic of the treatment train.

D. Storage

Ray Water Company (RWC) uses one steel water storage tank. Santa Barbara County documentation indicates that the steel tank is 32-feet tall, 12-feet in diameter, with a capacity of approximately 25,000-gallons. This tank was originally used to store bulk petroleum products. A "Shell Oil" logo is still faintly visible on the storage tank. According to the contractor who provided the tank, the inside of the tank was cleaned and then sand-blasted until bare metal was visible. Then it was painted with 3 coats of Henry's #107 tank paint manufactured by W. W. Henry Company of Huntington Park, CA, which was specially formulated for coating water tanks (information provided in a letter from the contractor to Santa Barbara County on September 9, 1972).

The storage tank dates to the 1950's and has prevalent rust stains and significant signs of aging. The water tank can only be partially filled, because of holes located higher up on the tank.

Figure 4 shows the water tank location.

E. Distribution System

A 4-inch galvanized steel outlet pipe exits the bottom of the 25,000-gallon storage tank then reduces to 1½-inch and feeds a ½ horsepower booster pump. There are no pressure vessels, so the booster pump supplies all the pressure to the distribution system. The booster pump constantly runs to keep the distribution system pressurized at 40-60 psi. The constant wear on the booster pump necessitates replacement every few years. The booster pump is Sta-Rite Model BMG-41S and was last replaced in 2021, according to RWC. The booster pump feeds a 4-inch steel water main running down Rayville Lane and a 2-inch PVC pipe to the two properties on Betteravia Road: with ¾ and ½-inch laterals to 13 total service connections. See Figure 4 for a layout of the existing distribution system.

In general, the distribution system components are old and near (or beyond) the end of their service life. More details are presented in the section below.

F. System Deficiencies

Ray Water Company system deficiencies include the following:

- Nitrate concentrations above the Drinking Water Maximum Contaminant Level (MCL). Santa Barbara County enforcement action due to ongoing high nitrate concentrations.
- Arsenic concentration close to, yet just below the MCL
- Currently no water meters at the well or service connections
- No emergency power source. If RWC loses power, the customers have no water.
- The electrical system servicing the well is old (circa 1940's) and in need of an upgrade.
- Old, hobbled together, and decayed distribution system piping. Pipe leaks in the ground are common. Most of the steel pipe connections are "frozen" (i.e., fused together). Some

2-inch lines are only open $\frac{3}{4}$ -inch due to rust/mineralization. System pressure is suboptimal (too low).

- Inadequate fire suppression capacity
- No pressure tanks, requiring booster pumps to run constantly to pressurize distribution system
- Water storage tank has holes rusted through it, limiting its capacity, and providing a potential pathway for bacteria and other pathogens to enter the water system

The primary need and overall project objective are to provide Ray Water Company (RWC) residents with safe and reliable drinking water. Four alternatives to reach the project objective are presented and analyzed in the next section.

3. Alternatives Analysis - Projects

To address the project objective described above in Section 1-C, we evaluated four potential alternatives:

- No Action
- Treatment System for Nitrate and Arsenic
- Drilling a New Well
- Full Consolidation with an Existing Water System

The four alternatives are presented in the sections below.

A. Project Alternative #1 – Take No Action

Project Alternative #1 involves taking no corrective actions. This alternative does not address the primary problem of nitrate concentrations above the Maximum Contaminant Level (MCL). The ramification of not addressing this issue includes RMC residents potentially becoming ill. Project Alternative #1 also does not address the various secondary problems presented above in Section 2F.

For these reasons, we do not recommend Alternative #1.

B. Project Alternative #2 – Treatment System for Nitrate & Arsenic

Project Alternative #2 involves installing a Reverse Osmosis (RO) treatment system to remove nitrate from the groundwater. Alternative #2 addresses the primary problem of nitrate concentrations above the Maximum Contaminant Limit (MCL). This treatment system could also remove arsenic from the groundwater.

Alternative #2 would also require an upgraded water distribution system and a new water storage tank. The problems (and corresponding need for upgrade) of these items are explained above in Section 2-F.

The advantages of Alternative #2 include removing nitrate and arsenic from the groundwater. The disadvantages include the following:

- High cost to install RO treatment system, upgraded water distribution system, and new water storage tank. High monthly Operations and Maintenance (O&M) cost to maintain the treatment system, especially to deal with filtrate (high concentration wastewater produced by the system).
- A new water well may need to be installed sometime in the next 20-years as either a back-up or replacement for the existing well. The existing water well is currently operational; but was installed in 1978 (43-years old).
- Ray Water Company (RWC) would remain in operation. Primarily due to financial constraints, RWC has been generally unreliable and inconsistent as water system managers dating back to the 1970's. They have not demonstrated the financial capacity to maintain a relatively complex RO system, nor to consistently perform water quality analytical testing per county/state requirements.

Per the disadvantages listed above, we do not recommend Alternative #2.

Table 2 summarizes costs for a new distribution system. Table 3 summarizes costs for the entire Alternative #2 (new distribution system + treatment system).

C. Project Alternative #3 – Drilling a New Well

Project Alternative #3 involves installing a new well in search of non-impacted groundwater (i.e., groundwater without significant nitrate or arsenic concentrations present).

Alternative #3 addresses the primary problem of elevated nitrate and arsenic concentrations.

Alternative #3 would also require an upgraded water distribution system and water storage tank. The problems (and corresponding need for upgrade) of these items are explained above in Section 2-F.

The advantage of Alternative #3 includes a potentially clean groundwater source.

The disadvantages include the following:

- High cost to install a new well, upgraded water distribution system, and water storage tank. Moderate monthly Operations and Maintenance (O&M) costs to maintain the new well and distribution system. The monthly costs would be difficult to secure payment for over the next few decades.
- There is a significant chance that the new well may also contain elevated nitrate and arsenic concentrations. There is also a chance that other contaminants may be encountered. There is a good possibility that several test wells would be required to locate quality water. Even then, there is no guarantee of finding it.
- Ray Water Company (RWC) would remain in operation. Primarily due to financial constraints, RWC have been generally unreliable and inconsistent as water system managers dating back to the 1970's. They have not shown the financial capacity to maintain a new well and distribution system, nor to consistently perform water quality analytical testing per county/state requirements.

Based on the disadvantages listed above and the uncertainty of finding nitrate-free groundwater, we do not recommend Alternative #3.

Table 2 summarizes costs for a new distribution system. Table 4 summarizes costs for the entire Alternative #3 (new distribution system + new well).

D. Project Alternative #4 – Full Consolidation with Existing Water System

Project Alternative #4 involves full consolidation with an existing water system. A new water main would be constructed between Ray Water Company (RWC) and the City of Santa Maria (City) water system. The City water system is the closest public water system to RWC. The other public water system in the vicinity is Golden State Water Company, which is significantly further away. See Figure 1 for locations.

Alternative #4 addresses the primary problem of elevated nitrate and arsenic concentrations by providing clean and reliable potable water.

Alternative #4 also requires an upgraded water distribution system. The problems (and corresponding need for upgrade) of these items are explained above in Section 2-F. A new water storage tank is not needed, because the City's water system already has sufficient storage capacity.

Local Agency Formation Commission (LAFCO) approval is required for this consolidation project. City of Santa Maria staff plan to complete the LAFCO Out-of-Agency service agreement application. Estimated LAFCO fees are included in Table 5.

The California Public Utilities Commission (CPUC) regulates privately owned water systems. Because the City of Santa Maria water system is not privately-owned, CPUC approval is not required for this project.

The advantages of Alternative #4 include a clean / reliable long-term water source, sharing operations and maintenance costs with a larger community, and transfer of water system management responsibilities to the City.

The disadvantages include moderate initial cost to construct a water main connecting RWC to the City's water system, and to upgrade the existing RWC distribution system.

Alternative #4 is the most reliable and cost-effective long-term solution.

Table 2 summarizes costs for a new distribution system. Table 5 summarizes costs for the entire Alternative #4 (new distribution system + new water main consolidation).

E. Comparison of Various Alternatives

Of the four Project Alternatives presented above, Alternative #4 (full consolidation) most effectively resolves Ray Water Company's issues and meets the project objectives. The long-term sustainability of Alternative #4 is superior to the other Alternatives [including technical, managerial, and financial (TMF) requirements]. This is because the City (and not RWC) would manage all aspects of the water system for the existing RWC residents.

A 20-year period life cycle cost analysis was performed on the four Alternatives. The analysis is summarized in Tables 2 through 5. Table 6 shows a side-by-side comparison of the various alternatives. The life cycle cost analysis indicates that Alternative #4 provides the best long-term, cost-effective solution.

The environmental impacts of the four Alternatives are generally low. Alternative #1 has minor environmental impacts, including high nitrate water entering the septic systems. Alternative #2 has minor environmental impacts, including land disturbance associated with replacing the distribution system and water storage tank; and installing the treatment system. There are also emissions from hauling away the wastewater generated. Alternative #3 has limited environmental impacts including installation of a new well, and land disturbance associated with replacing the distribution system and water storage tank. Alternative #4 has limited environmental impacts including land disturbance associated with installation of a new water

main and replacing the distribution system. A detailed Environmental Analysis of Engineering Alternatives is included in Appendix A.

The Environmental Package *Initial Study* is in the process of being completed by Denise Duffy and Associates. Once complete, the Initial Study will reference the Biologic and Cultural Reports.

The sites and easements required to implement the various alternatives are presented in the table below:

| Alternative # | Sites & Easements Required | Properties or leases need to be acquired for this Alternative? |
|---------------|--|--|
| 1 | None | No |
| 2 | None | No |
| 3 | None | No |
| 4 | Need easement for City water infrastructure on Mahoney Road. City already has existing easements within Betteravia Road | No |
| 4 | Need easement for City water infrastructure on Rayville Lane | No |
| 4 | Need easement for property at far south end of Rayville Lane, so City can flush south end of distribution pipe into an existing agricultural ditch | No |

Alternative #4 (full consolidation) most effectively resolves Ray Water Company's issues and meets the project objective.

4. Recommended Option

A. Project Description

The proposed construction project consists of consolidating Ray Water Company (RWC) with the City of Santa Maria's (City) water system. The individual components include:

- Approximately 3,400-feet of new 12-inch water main extending from RWC east along Betteravia Road to connect with the City water system near the intersection of Betteravia Road and A Street. See Figure 2 for details.
- A new upgraded distribution system extending from the new RWC water main connection to various resident's homes. An 8-inch diameter distribution water line will supply the various service connections to the resident's homes.

Tables 2 & 5, and the 90% design drawings (Appendix B) provide additional project detail.

Appendix C presents fire prevention flow calculations, which indicate that the proposed design meets the California Fire Code standards.

B. Preliminary Schedule

| | |
|---|-------------------|
| Submit Engineering Report (ER) and Draft 90% Plans to TA Team: | October 22, 2021 |
| TA Team Review and response: | Nov 19, 2021 |
| Submit Final Engineering Report and design plans to the TA Team | January 28, 2022 |
| Construction application complete | February 28, 2022 |
| Construction application approved / funding agreement issued | + 6 to 9 months |
| Project bid documents and contractor selection | + 3 to 6 months |
| Project construction | + 3 to 6 months |

C. Comprehensive Response to Climate Change

This section describes climate change preparedness for the project and is organized as follows:

Vulnerability – Describes the effects of climate changes that the proposed project is susceptible to, including critical threshold conditions that may cause damage to the facility or result in loss of services

Adaptation – Describes the applied adaptation measures considered for the project, including adaptation measures deemed unnecessary, and explains why such measures were eliminated

Mitigation – Describes the mitigation measures considered for the project, including mitigation measures deemed unnecessary, and explains why such measures were eliminated

Vulnerability

Vulnerability is used to identify effects of climate change that the project may be susceptible to. Vulnerability includes sea level rise, water supply depletion, adverse water supply quality, flooding/storm surges, wildfires, and drought.

The climate change effects the Project may be susceptible to are discussed below.

Sea Level Rise

The project is not susceptible to sea level rise.

Water Supply Quality issues

the City has the following water sources available for urban water supplies:

- State Water Project (SWP) surface water supplies
- Groundwater from an adjudicated basin

A significant portion of Santa Barbara County is occupied by forest land, and wildfire is a common occurrence in the Region due primarily to the warm, dry climate. Longer and warmer seasons are likely to result in a low to moderate increase in fire risk according to the Integrated Regional Water Management Plan (IRWMP). This could result in increased sedimentation to reservoirs, possibly negatively impacting water quality.

Statewide, rainfall and snowfall are expected to change in terms of both type and timing, also as indicated by the IRWMP. The state has experienced decreased snowpack in the Sierra Nevada, which has implications for SWP deliveries. At the local level, changes in the timing and intensity of precipitation could negatively affect groundwater recharge and the local groundwater supply.

The Coastal Branch of the SWP delivers water originating in Northern California to water agencies in Santa Barbara County including the City of Santa Maria. The Sacramento–San Joaquin River Delta is the central hub of the SWP. Potential impacts to the Delta resulting from

climate change include increased risk of levee failure, reduced water quality, and reduced water supply, all of which could significantly impact SWP operations, and the reliability of the supply of water delivered to the City. Sea-level rise threatens to disrupt deliveries from the SWP if saltwater advances into the Delta and increased quantities of fresh water would need to be released to protect water quality.

Impacts to SWP from climate change and sea level rise have both been taken into account in determining the future reliability and allocations as presented in the 2019 SWP Delivery Capability Report (DWR, 2020). The project will help the residents of RWC deal with reduced SWP allocations by aligning them with the City of Santa Maria.

Flooding/Storm Surges

The project is not susceptible to flooding or storm surges.

Forest Fires

The project is not susceptible to forest fires.

Drought

Longer or more frequent droughts due to climate change may adversely affect all water supplies. This could lead to water supply issues for all of California, including the City of Santa Maria. Water conservation should be practiced to help insure a long-term water supply.

Other

No other vulnerability effects of climate change were identified for the Project.

Adaptation

Adaptation is the term used to identify measures taken as a direct response to climate change effects. Multiple measures can be taken in response to a single vulnerability. For example, in

response to sea level rise an agency may investigate constructing sea walls or levees in order to prevent flooding. Flood contingencies could also be explored to protect the project if the levees fail or in the event of severe storm surges.

Adaptive measures in the Project in response to Climate Change are described below.

Renewable Energy Sources

No renewable energy sources are directly involved with the project. Energy will not be directly involved in the project as water will be delivered from the City of Santa Maria's system. As the overall fraction of renewable energy in the California grid grows, renewable energy will be incorporated into the project.

Drought Resiliency and Flood Contingency

The multiple sources of water for the City of Santa Maria provide some drought resiliency. The project is not subject to flooding.

Permeable Pavements

No permeable pavements are incorporated in the Project.

Elevated Construction, Sea Walls, Levees

No elevated construction, sea walls or levees are necessary for the Project, and none have been incorporated into the Project.

Green Roofing

No green roofing has been incorporated in the Project, as no structures or roofing is involved.

Fire Resistant Water Connections and Hydrants

Fire hydrants and the necessary flow and pressure to ensure their proper operation are part of the Project. Fire resistant water connections are not part of the Project.

Other

No other adaptations were included in the Project.

Mitigation

Mitigation is the term used to identify measures taken to slow or stop changes caused by greenhouse gas emissions in the atmosphere. Measures identified in adaptation may also be used for mitigation. For example, water conservation may be an adaptation response to drought vulnerability but a mitigation measure by reducing the energy consumed to move excessive volumes of water. Green roofing as an adaptation measure will help to reduce the heat island effect of an urban community, and as a mitigation measure will reduce the energy consumed to heat and cool the building.

Mitigation measures taken to reduce concentrations of greenhouse gases in the atmosphere as part of the Project are described below.

Renewable Energy Sources

There is no direct energy use by the project and no renewable energy sources are incorporated in the Project.

Energy Conservation

There is no direct energy use by the project and no energy conservation practices are incorporated in the Project.

Water Conservation

Water conservation components of the Project include:

- New water main and distribution lines which will be “tight” (no leaks)
- Removal of the leaking storage tank
- Water meters for each connection

Other

No other mitigation measures were included in the Project.

Limitations

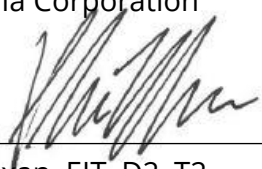
Our service consists of professional opinions and recommendations made in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all others, either expressed or implied. The analysis and conclusions in this report are based on site observations and existing data, some of which have been conducted or collected by others, all of which are necessarily limited. Additional data from future work may lead to modifications of the opinions expressed herein. All work was conducted under the direct supervision of a Professional Engineer, registered in the state of California, and experienced in drinking water system design and water resource engineering.


Thank you for the opportunity to prepare this Engineering Report. If you have any questions or comments regarding this project, please contact us at 831-722-3580.

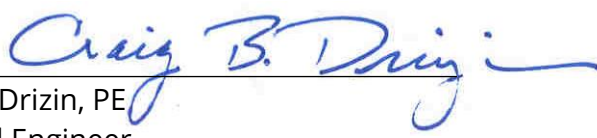
Sincerely yours,

Weber, Hayes and Associates

A California Corporation

By: 
Shawn Mixan, EIT, D2, T2
Project Engineer

And: 
Rich Peterson, EIT
Staff Engineer

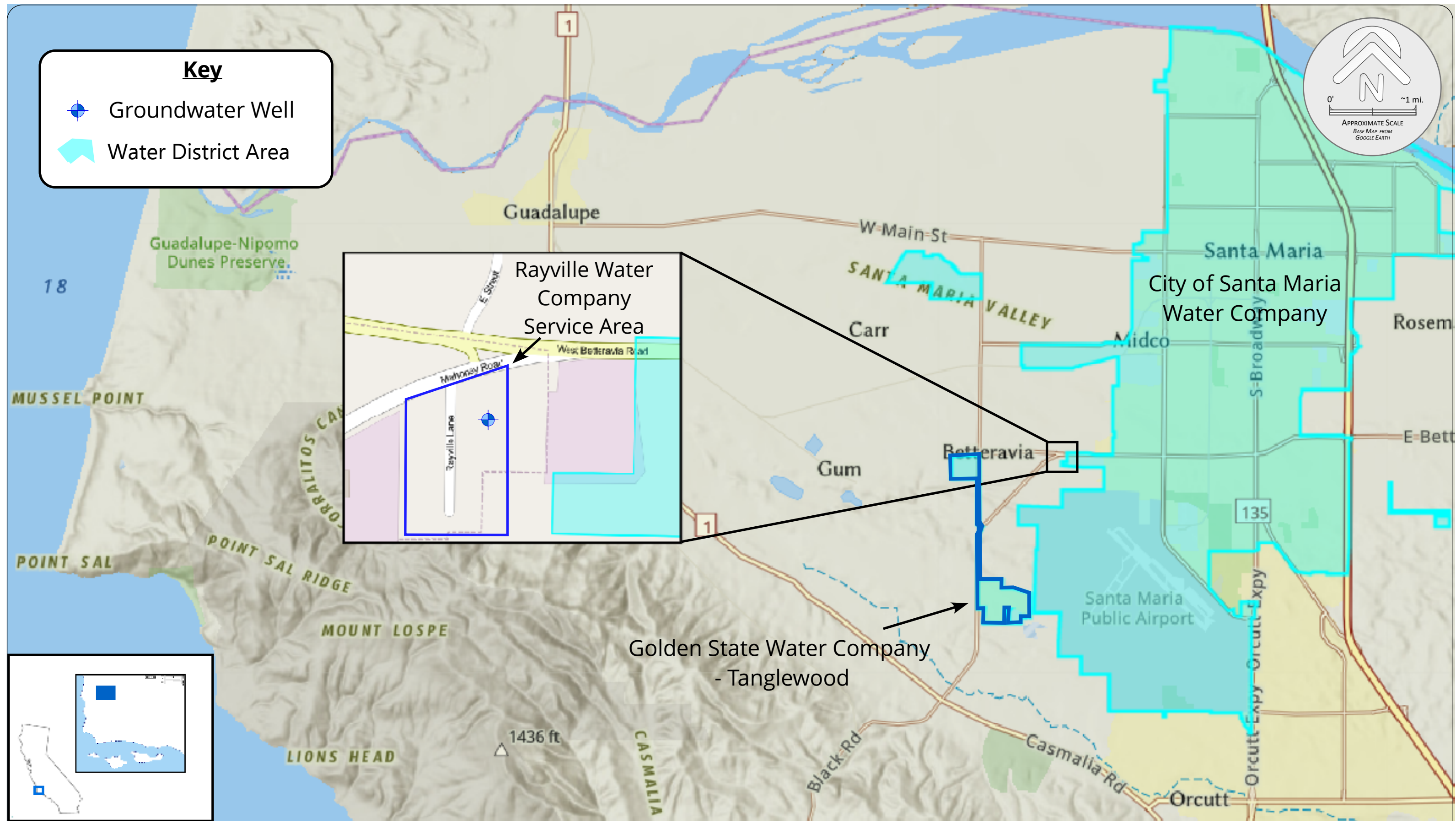
And: 
Craig B. Drizin, PE
Principal Engineer



References

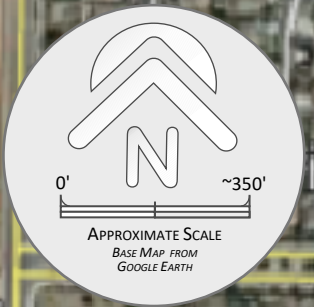
- State Water Resources Control Board water usage data for the City of Santa Maria; June 2014 – April 2021 Urban Water Supplier Monthly Reports (Raw Dataset). File found on Water Board website:
https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.html
- *City of Santa Maria Urban Water Management Plan, 2020 Update*, Provost & Pritchard Consulting Group, June 2021

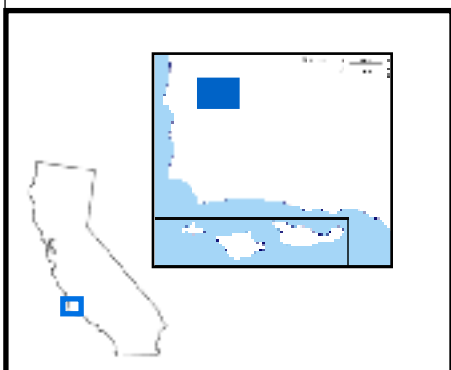
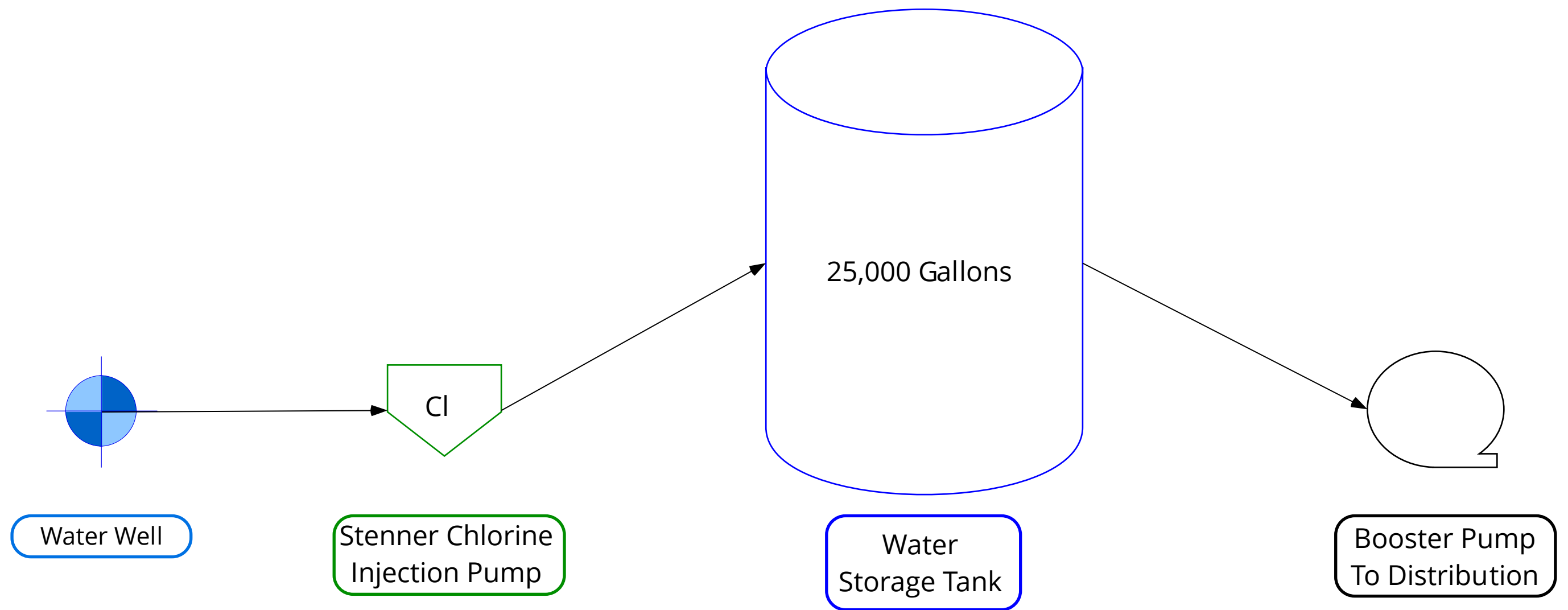
FIGURES



Key

- Connection Point
- New Water Main
- Rayville Lane Distribution







TABLES

Table 1 - Ray Water Company - Water Quality Data

| Analyte | Sample Date | Result | Unit | MCL |
|--------------------------------------|-------------|--------|--------|-------|
| NITRATE (AS N) | 2021-04-22 | 28 | mg/L | 10 |
| NITRATE (AS N) | 2021-03-25 | 29 | mg/L | 10 |
| GROSS ALPHA | 2021-03-02 | 0 | pCi/L | 15 |
| RADIUM 228 | 2021-03-02 | 0 | pCi/L | --- |
| URANIUM (PCI/L) | 2021-03-02 | 3.3 | pCi/L | 20 |
| CARBON TETRACHLORIDE | 2021-03-02 | <0.5 | µg/L | 0.5 |
| TOLUENE | 2021-03-02 | <0.5 | µg/L | 150 |
| BENZENE | 2021-03-02 | <0.5 | µg/L | 1 |
| MONOCHLOROBENZENE | 2021-03-02 | <0.5 | µg/L | 70 |
| ETHYL BENZENE | 2021-03-02 | <0.5 | µg/L | 300 |
| CHLOROMETHANE | 2021-03-02 | <0.5 | µg/L | --- |
| DICHLOROMETHANE | 2021-03-02 | <0.5 | µg/L | 5 |
| TETRACHLOROETHYLENE | 2021-03-02 | <0.5 | µg/L | 5 |
| TRICHLOROFLUOROMETHANE FREON 11 | 2021-03-02 | <5 | µg/L | 150 |
| 1,1-DICHLOROETHANE | 2021-03-02 | <0.5 | µg/L | 5 |
| 1,1-DICHLOROETHYLENE | 2021-03-02 | <0.5 | µg/L | 6 |
| 1,1,1-TRICHLOROETHANE | 2021-03-02 | <0.5 | µg/L | 200 |
| 1,1,2-TRICHLOROETHANE | 2021-03-02 | <0.5 | µg/L | 5 |
| 1,1,2,2-TETRACHLOROETHANE | 2021-03-02 | <0.5 | µg/L | 1 |
| 1,2-DICHLOROETHANE | 2021-03-02 | <0.5 | µg/L | 0.5 |
| 1,2-DICHLOROBENZENE | 2021-03-02 | <0.5 | µg/L | 600 |
| 1,2-DICHLOROPROPANE | 2021-03-02 | <0.5 | µg/L | 5 |
| TRANS-1,2-DICHLOROETHYLENE | 2021-03-02 | <0.5 | µg/L | 10 |
| 1,2,4-TRICHLOROBENZENE | 2021-03-02 | <0.5 | µg/L | 5 |
| 1,3-DICHLOROPROPENE (TOTAL) | 2021-03-02 | <0.5 | µg/L | 0.5 |
| 1,3-DICHLOROBENZENE | 2021-03-02 | <0.5 | µg/L | --- |
| 1,4-DICHLOROBENZENE | 2021-03-02 | <0.5 | µg/L | 5 |
| TRANS-1,3-DICHLOROPROPENE | 2021-03-02 | <0.5 | µg/L | 0.5 |
| CIS-1,3-DICHLOROPROPENE | 2021-03-02 | <0.5 | µg/L | 0.5 |
| VINYL CHLORIDE | 2021-03-02 | <0.5 | µg/L | 0.5 |
| TRICHLOROETHYLENE | 2021-03-02 | <0.5 | µg/L | 5 |
| METHYL-TERT-BUTYL-ETHER (MTBE) | 2021-03-02 | <3 | µg/L | 13 |
| CIS-1,2-DICHLOROETHYLENE | 2021-03-02 | <0.5 | µg/L | 6 |
| STYRENE | 2021-03-02 | <0.5 | µg/L | 100 |
| O-XYLENE | 2021-03-02 | <0.5 | µg/L | --- |
| 1,2,3-TRICHLOROPROPANE (1,2,3-TCP) | 2021-03-02 | <0.005 | µg/L | 0.005 |
| XYLENES (TOTAL) | 2021-03-02 | <0.5 | µg/L | 1,750 |
| TRICHLOROTRIFLUOROETHANE (FREON 113) | 2021-03-02 | <10 | µg/L | 1,200 |
| M,P-XYLENE | 2021-03-02 | <0.5 | µg/L | --- |
| GROSS ALPHA MDA95 | 2021-03-02 | 1.63 | pCi/L | 3 |
| RADIUM 228 MDA95 | 2021-03-02 | 0.624 | pCi/L | 1.001 |
| NITRATE (AS N) | 2021-02-19 | 31 | mg/L | 10 |
| NITRATE (AS N) | 2021-01-12 | 28 | mg/L | 10 |
| NITRATE (AS N) | 2020-12-22 | 30 | mg/L | 10 |
| COLOR | 2020-11-11 | <3 | units | 15 |
| ODOR THRESHOLD @ 60 C | 2020-11-11 | <1 | t.o.n. | 3 |
| SPECIFIC CONDUCTANCE | 2020-11-11 | 1400 | US | 1,600 |

Table 1 - Ray Water Company - Water Quality Data

| Analyte | Sample Date | Result | Unit | MCL |
|---|-------------|--------|-------|----------|
| PH, LABORATORY | 2020-11-11 | 7.57 | units | --- |
| ALKALINITY (TOTAL) AS CaCO ₃ | 2020-11-11 | 400 | mg/L | --- |
| BICARBONATE ALKALINITY | 2020-11-11 | 400 | mg/L | --- |
| CARBONATE ALKALINITY | 2020-11-11 | <10 | mg/L | --- |
| NITRATE (AS N) | 2020-11-11 | 30 | mg/L | 10 |
| NITRITE (AS N) | 2020-11-11 | <0.4 | mg/L | 1 |
| CALCIUM | 2020-11-11 | 170 | mg/L | --- |
| MAGNESIUM | 2020-11-11 | 77 | mg/L | --- |
| SODIUM | 2020-11-11 | 96 | mg/L | --- |
| POTASSIUM | 2020-11-11 | 3.8 | mg/L | --- |
| CHLORIDE | 2020-11-11 | 99 | mg/L | 500 |
| SULFATE | 2020-11-11 | 500 | mg/L | 500 |
| FLUORIDE (F) (NATURAL-SOURCE) | 2020-11-11 | 0.34 | mg/L | 2 |
| ARSENIC | 2020-11-11 | 9.6 | µg/L | 10 |
| BARIUM | 2020-11-11 | 15 | µg/L | 1,000 |
| BERYLLIUM | 2020-11-11 | <1 | µg/L | 4 |
| CADMIUM | 2020-11-11 | <1 | µg/L | 5 |
| CHROMIUM (TOTAL) | 2020-11-11 | 16 | µg/L | 50 |
| COPPER | 2020-11-11 | <2 | µg/L | 1,000 |
| IRON | 2020-11-11 | 82 | µg/L | 300 |
| LEAD | 2020-11-11 | <1 | µg/L | 0.000015 |
| MANGANESE | 2020-11-11 | <10 | µg/L | 50 |
| THALLIUM | 2020-11-11 | <1 | µg/L | 2 |
| NICKEL | 2020-11-11 | 5.8 | µg/L | 100 |
| SILVER | 2020-11-11 | <1 | µg/L | 100 |
| ZINC | 2020-11-11 | <5 | µg/L | 5,000 |
| ANTIMONY | 2020-11-11 | <2 | µg/L | 6 |
| ALUMINUM | 2020-11-11 | <50 | µg/L | 1,000 |
| SELENIUM | 2020-11-11 | 40 | µg/L | 50 |
| CYANIDE | 2020-11-11 | <40 | µg/L | 150 |
| GROSS ALPHA | 2020-11-11 | 3.08 | pCi/L | 15 |
| RADIUM 228 | 2020-11-11 | 0 | pCi/L | --- |
| URANIUM (PCI/L) | 2020-11-11 | 3.6 | pCi/L | 20 |
| BROMODICHLOROMETHANE (THM) | 2020-11-11 | <1 | µg/L | --- |
| CARBON TETRACHLORIDE | 2020-11-11 | <0.5 | µg/L | 0.5 |
| BROMOFORM (THM) | 2020-11-11 | 1.4 | µg/L | --- |
| DIBROMOCHLOROMETHANE (THM) | 2020-11-11 | <1 | µg/L | --- |
| CHLOROFORM (THM) | 2020-11-11 | <1 | µg/L | --- |
| TOLUENE | 2020-11-11 | <0.5 | µg/L | 150 |
| BENZENE | 2020-11-11 | <0.5 | µg/L | 1 |
| BENZO (A) PYRENE | 2020-11-11 | <0.1 | µg/L | 0.2 |
| MONOCHLOROBENZENE | 2020-11-11 | <0.5 | µg/L | 70 |
| CHLOROETHANE | 2020-11-11 | <0.5 | µg/L | --- |
| ETHYL BENZENE | 2020-11-11 | <0.5 | µg/L | 300 |
| HEXACHLOROCYCLOPENTADIENE | 2020-11-11 | <1 | µg/L | 50 |
| HEXACHLOROBUTADIENE | 2020-11-11 | <0.5 | µg/L | --- |
| BROMOMETHANE | 2020-11-11 | <0.5 | µg/L | --- |

Table 1 - Ray Water Company - Water Quality Data

| Analyte | Sample Date | Result | Unit | MCL |
|------------------------------------|-------------|--------|------|-------|
| CHLOROMETHANE | 2020-11-11 | <0.5 | µg/L | --- |
| DICHLOROMETHANE | 2020-11-11 | <0.5 | µg/L | 5 |
| TETRACHLOROETHYLENE | 2020-11-11 | <0.5 | µg/L | 5 |
| TRICHLOROFLUOROMETHANE FREON 11 | 2020-11-11 | <5 | µg/L | 150 |
| 1,1-DICHLOROETHANE | 2020-11-11 | <0.5 | µg/L | 5 |
| 1,1-DICHLOROETHYLENE | 2020-11-11 | <0.5 | µg/L | 6 |
| 1,1,1-TRICHLOROETHANE | 2020-11-11 | <0.5 | µg/L | 200 |
| 1,1,2-TRICHLOROETHANE | 2020-11-11 | <0.5 | µg/L | 5 |
| 1,1,2,2-TETRACHLOROETHANE | 2020-11-11 | <0.5 | µg/L | 1 |
| 1,2-DICHLOROETHANE | 2020-11-11 | <0.5 | µg/L | 0.5 |
| 1,2-DICHLOROBENZENE | 2020-11-11 | <0.5 | µg/L | 600 |
| 1,2-DICHLOROPROPANE | 2020-11-11 | <0.5 | µg/L | 5 |
| TRANS-1,2-DICHLOROETHYLENE | 2020-11-11 | <0.5 | µg/L | 10 |
| 1,2,4-TRICHLOROBENZENE | 2020-11-11 | <0.5 | µg/L | 5 |
| 1,3-DICHLOROPROPENE (TOTAL) | 2020-11-11 | <0.5 | µg/L | 0.5 |
| 1,3-DICHLOROBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| 1,4-DICHLOROBENZENE | 2020-11-11 | <0.5 | µg/L | 5 |
| DICHLORODIFLUOROMETHANE (FREON 12) | 2020-11-11 | <0.5 | µg/L | --- |
| NAPHTHALENE | 2020-11-11 | <0.5 | µg/L | --- |
| TRANS-1,3-DICHLOROPROPENE | 2020-11-11 | <0.5 | µg/L | 0.5 |
| CIS-1,3-DICHLOROPROPENE | 2020-11-11 | <0.5 | µg/L | 0.5 |
| FOAMING AGENTS (MBAS) | 2020-11-11 | <0.05 | mg/L | 0.5 |
| ATRAZINE | 2020-11-11 | <0.5 | µg/L | 1 |
| SIMAZINE | 2020-11-11 | <1 | µg/L | 4 |
| DI(2-ETHYLHEXYL)PHTHALATE | 2020-11-11 | <3 | µg/L | 4 |
| VINYL CHLORIDE | 2020-11-11 | <0.5 | µg/L | 0.5 |
| TRICHLOROETHYLENE | 2020-11-11 | <0.5 | µg/L | 5 |
| HEXACHLOROBENZENE | 2020-11-11 | <0.5 | µg/L | 1 |
| METHYL-TERT-BUTYL-ETHER (MTBE) | 2020-11-11 | <3 | µg/L | 13 |
| TOTAL DISSOLVED SOLIDS | 2020-11-11 | 1000 | mg/L | 1,000 |
| HYDROXIDE ALKALINITY | 2020-11-11 | <10 | mg/L | --- |
| MERCURY | 2020-11-11 | <0.2 | µg/L | 2 |
| CARBON DISULFIDE | 2020-11-11 | <0.5 | µg/L | --- |
| CIS-1,2-DICHLOROETHYLENE | 2020-11-11 | <0.5 | µg/L | 6 |
| STYRENE | 2020-11-11 | <0.5 | µg/L | 100 |
| O-XYLENE | 2020-11-11 | <0.5 | µg/L | --- |
| 1,1-DICHLOROPROPENE | 2020-11-11 | <0.5 | µg/L | --- |
| 2,2-DICHLOROPROPANE | 2020-11-11 | <0.5 | µg/L | --- |
| 1,3-DICHLOROPROPANE | 2020-11-11 | <0.5 | µg/L | --- |
| 1,2,4-TRIMETHYLBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| ISOPROPYLBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| N-PROPYLBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| 1,3,5-TRIMETHYLBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| SEC-BUTYLBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| TERT-BUTYLBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| 1,2,3-TRICHLOROPROPANE (1,2,3-TCP) | 2020-11-11 | <0.005 | µg/L | 0.005 |
| 1,1,1,2-TETRACHLOROETHANE | 2020-11-11 | <0.5 | µg/L | --- |

Table 1 - Ray Water Company - Water Quality Data

| Analyte | Sample Date | Result | Unit | MCL |
|--------------------------------------|-------------|--------|-------|-------|
| DIBROMOMETHANE | 2020-11-11 | <0.5 | µg/L | --- |
| 1,2,3-TRICHLOROBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| ALACHLOR | 2020-11-11 | <1 | µg/L | 2 |
| XYLENES (TOTAL) | 2020-11-11 | <0.5 | µg/L | 1,750 |
| BROMOBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| METHYL ETHYL KETONE | 2020-11-11 | <5 | µg/L | --- |
| METHYL ISOBUTYL KETONE | 2020-11-11 | <5 | µg/L | --- |
| TRICHLOROTRIFLUOROETHANE (FREON 113) | 2020-11-11 | <10 | µg/L | 1,200 |
| TURBIDITY, LABORATORY | 2020-11-11 | 11 | NTU | 5 |
| TOTAL TRIHALOMETHANES | 2020-11-11 | 1.4 | µg/L | 80 |
| MOLINATE | 2020-11-11 | <2 | µg/L | 20 |
| AGGRSSIVE INDEX (CORROSIVITY) | 2020-11-11 | 12.8 | --- | --- |
| THIOBENCARB | 2020-11-11 | <1 | µg/L | 70 |
| 2-CHLOROTOLUENE | 2020-11-11 | <0.5 | µg/L | --- |
| 4-CHLOROTOLUENE | 2020-11-11 | <0.5 | µg/L | --- |
| N-BUTYLBENZENE | 2020-11-11 | <0.5 | µg/L | --- |
| P-ISOPROPYLTOLUENE | 2020-11-11 | <0.5 | µg/L | --- |
| BROMOCHLOROMETHANE | 2020-11-11 | <0.5 | µg/L | --- |
| M,P-XYLENE | 2020-11-11 | <0.5 | µg/L | --- |
| DI(2-ETHYLHEXYL)ADIPATE | 2020-11-11 | <5 | µg/L | 400 |
| ETHYL-TERT-BUTYL ETHER | 2020-11-11 | <3 | µg/L | --- |
| TERT-AMYL-METHYL ETHER (TAME) | 2020-11-11 | <3 | µg/L | --- |
| DIISOPROPYL ETHER | 2020-11-11 | <3 | µg/L | --- |
| GROSS ALPHA MDA95 | 2020-11-11 | 0.841 | pCi/L | 3 |
| RADIUM 228 MDA95 | 2020-11-11 | 0.773 | pCi/L | 1.001 |
| COLIFORM, total | 2019-10-25 | absent | --- | --- |
| E. Coli | 2019-10-25 | absent | --- | --- |

Notes:

MCL = Maximum Contaminant Level

mg/L = milligrams per Liter

pCi/L = picocuries per Liter

µg/L = micrograms per Liter

t.o.n. = threshold odor number

NTU = Nephehelometric Turbidity Units

Result exceeds MCL

Result just below
the MCL



Table 2

Engineer's Opinion of Probable Costs for New Distribution System

| DISTRIBUTION SYSTEM - ITEM | Quantity | Unit | Cost per Unit | COST (\$) |
|--|----------|------|---------------|-----------|
| Distribution System 8-inch (see Figure 2 for alignment) C-900 DR18 PVC & Trenching | 700 | LF | 116 | 81,480 |
| 13 service line laterals to residents (1-inch Type K soft copper lines, Meter stops (valves) are to be 1" size, lockable-style (equal to Ford KV43-444W) and adapted (bushed down) after the service valve to 3/4" size (meter size) | 13 | EA | 4,200 | 54,600 |
| Install Water Meter Box and Customer Service Valve | 13 | EA | 840 | 10,920 |
| Fire Hydrants WA-19D (every 350' max) - see Section F of City's Standard Specifications for details. Price does not include a concrete pad. | 2 | EA | 11,640 | 23,280 |
| Blow off at end of Rayville Lane - WA-24B | 1 | EA | 2,760 | 2,760 |
| 8-inch valve at Betteravia and Rayville Lane | 1 | EA | 2,040 | 2,040 |
| Water sampling ports on distribution line | 1 | EA | 2,500 | 2,500 |
| Traffic control on Rayville Lane | 1 | LS | 5,875 | 5,875 |
| Encroachment permit | 1 | LS | 2,000 | 2,000 |
| Engineering field oversight of project | 120 | HR | 150 | 18,000 |
| Engineering & project administration (including as-built plans & completion report) | --- | --- | --- | 15,000 |
| Distribution System Construction-Related Cost | --- | --- | --- | 218,455 |

Notes

This distribution system cost estimate table includes all distribution system upgrade items, except the items specific to Project Alternatives #2, #3, #4 - such as distribution system components associated with the treatment system (Alt #2); distribution system components associated with the new well (Alt #3); distribution system components associated with the connection to the new water main (Alt #4); and corresponding annual admin, operations / maintenance, and capital costs. These Alternative-specific items are presented on the corresponding Alternative cost estimate tables (Tables 3, 4, and 5).

LS = Lump Sum

LF = Lineal Feet

EA = Each

HR = Hour

Table 3

Engineer's Opinion of Probable Costs for Treatment System (Alternative #2)

| TREATMENT SYSTEM - ITEM | COST (\$) |
|---|------------------|
| Distribution System Upgrade (see Table 2 for a detailed list of costs) | 218,455 |
| Engineering design of treatment system; as built plans | 60,000 |
| Installation of Reverse Osmosis System (to remove nitrate/arsenic concentrations) and calcite re-mineralization | 125,000 |
| New shed with concrete pad for treatment system | 15,000 |
| New piping from well to Reverse Osmosis (RO) system; new piping from RO System to distribution system | 7,500 |
| Install tank to hold brine stream prior to off-haul for disposal at a wastewater treatment plant | 15,000 |
| Removal and disposal of a 25,000-gallon water tank | 10,000 |
| Install new 50,000-gallon water storage tank, and new concrete pad | 175,000 |
| Engineering oversight during treatment system installation | 10,000 |
| Admin Costs - Coordination with RWC Residents | 4,050 |
| Subtotal of Treatment System Construction-Related Costs | 421,550 |
| Annual Operations and Maintenance - service visits | 15,000 |
| Annual Operations and Maintenance - brine stream waste disposal | 200,750 |
| Annual Operations and Maintenance - treatment chemicals & filter replacements | 5,000 |
| 20-Year Operations and Maintenance Cost | 4,415,000 |
| 20-year Capital Expenditures (expect pipe & appurtenances to last 50-years) | 30,000 |
| Project administration (20-years) | 75,000 |
| Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-years) | 4,520,000 |
| Project Lifecycle (20-years) | 5,160,005 |
| Additional Cost if a new well is needed in the next 20-years. Current well was constructed in 1978. Per current water system standards, each water system should have at least 2 wells. | 1,032,000 |
| Total Cost if a new well is needed in the next 20-years | 6,192,005 |

Table 4

Engineer's Opinion of Probable Costs for New Well (Alternative #3)

| NEW WELL - ITEM | COST (\$) |
|---|------------------|
| Distribution System Upgrade (see Table 2 for a detailed list of costs) | 218,455 |
| Hydro-geological analysis to determine ideal location and depth of new well | 12,000 |
| Engineering design (including as-built plans) | 60,000 |
| Engineering oversight during well drilling | 45,000 |
| Mobilization / Demobilization | 10,000 |
| Drill boring for new well (Assume 600 feet deep) | 70,000 |
| Two additional test wells to find viable water (3 test wells total to find one viable location to install well) | 250,000 |
| Install well casing, filter pack, and well seal | 45,000 |
| Well development and pump test | 40,000 |
| E-log & caliper logs | 25,000 |
| Site Clean Up | 5,000 |
| Well surface completion, well pad, and well shed. Well pump, controls, connection, and commissioning | 100,000 |
| Removal and disposal of a 25,000-gallon water tank | 10,000 |
| Install a new 50,000-gallon water storage tank | 175,000 |
| Admin Costs - Coordination with RWC Residents | 4,000 |
| Subtotal of New Well Construction-Related Costs | 851,000 |
| Annual Operations and Maintenance (including potential chlorine treatment) | 12,000 |
| 20-Year Operations and Maintenance Cost | 240,000 |
| 20-year Capital Expenditures (expect pipe & appurtenances to last 50-years) | 25,000 |
| Project administration (20-years) | 60,000 |
| Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-years) | 325,000 |
| Project Lifecycle (20-years) | 1,394,455 |
| Additional cost if clean water cannot be found and reverse osmosis treatment system is needed | 4,941,550 |
| Total project cost if reverse osmosis is needed in addition to the new well | 6,336,005 |

Table 5

Engineer's Opinion of Probable Costs for Consolidation with City's Water System (Alternative #4)

| CONSOLIDATION - ITEM | Quantity | Units | Cost per unit | COST (\$) |
|--|-----------|-----------|---------------|------------------|
| Distribution System Upgrade (see Table 2 for a detailed list of costs) | 1 | LS | 218,455 | 218,455 |
| New Water Main - 12-inch PVC (AWWA C900 Class 150, DR 18) - installed in asphalt | 3,430 | LF | 158 | 543,312 |
| Connection into City's existing 12-inch water main at intersection of Betteravia Road & A Street (with 2 valves) | 1 | LS | 23,400 | 23,400 |
| New Fire Hydrants WA-31 in dirt shoulder (every 350' max) - see Section F of City's Standard Specifications for details. Cost does not include a concrete pad. | 8 | EA | 14,580 | 116,640 |
| New Fire Hydrant WA-31 lateral across Betteravia | 3 | EA | 20,280 | 60,840 |
| 2-inch Air Vac assembly WA-26A in dirt shoulder | 1 | EA | 9,720 | 9,720 |
| Final construction details | 1 | LS | --- | 60,000 |
| Encroachment Permit | 1 | LS | 6,000 | 6,000 |
| Traffic Control along Betteravia new water main alignment | 1 | LS | 17,200 | 17,200 |
| Additional traffic control if 2 flaggers are also needed | 240 | HR | 40 | 9,600 |
| Easement on Mahoney Road for City of Santa Maria water main infrastructure (completed in design phase) | 1 | LS | 0 | 0 |
| Easement on Rayville Lane for City of Santa Maria water main infrastructure (completed in design phase) | 1 | LS | 0 | 0 |
| Easement south of Rayville Lane for City of Santa Maria water distribution pipe flushing (completed in design phase) | 1 | LS | 0 | 0 |
| City "Water Connection Fee & State Water Reimbursement Fee" - for 3/4-inch meters (residential) | 11 | EA | 12,359 | 135,951 |
| City "Water Connection Fee & State Water Reimbursement Fee" - for 3/4-inch meters (commercial) | 2 | EA | 12,359 | 24,718 |
| RWC existing well and well shed destruction | --- | --- | --- | 50,000 |
| Removal and disposal of 25,000-gallon water storage tank | --- | --- | --- | 10,000 |
| Engineering oversight during new water main construction | 240 | HR | 150 | 36,000 |
| Engineering (including as-built plans) | 40 | HR | 150 | 6,000 |
| Admin Costs - LAFCO | --- | --- | --- | 15,000 |
| Admin Costs - Coordination with RWC Residents | 27 | HR | 150 | 4,050 |
| Subtotal of Consolidation Construction-Related Costs | | | | 1,346,886 |
| Annual Operations and Maintenance (City of Santa Maria's responsibility) | -- | -- | -- | 0 |
| 20-Year Operations and Maintenance Cost (City of Santa Maria's responsibility) | -- | -- | -- | 0 |
| 20-year Capital Expenditures (City of Santa Maria's responsibility) | -- | -- | -- | 0 |
| Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-years) | | | | 0 |
| Project Lifecycle Costs (20-years) | -- | -- | -- | 1,346,886 |

Notes

LS = Lump Sum

LF = Lineal Feet

EA = Each

HR = Hour

Table 6
Alternative Comparison Summary

| Consideration | Alt #1 No Action | Alt #2 Reverse Osmosis (R.O.) Treatment System | Alt #3 Install a New Well | Alt #4 Full Consolidation |
|--|--|---|--|---|
| Meets Regulatory Compliance | No | Maybe * | Maybe * | YES |
| Meets O&M Needs | No | YES | Uncertain if clean water could be found | YES |
| Financially Viable | No | Likely Not | Likely Not | YES |
| Long Term Sustainability | No | Likely Not | Likely Not | YES |
| Environmental Concerns | Minor; high nitrate concentrations into the septic systems | Minor to moderate; off-site disposal of brine stream; land disturbance to install new distribution system, treatment system, and water storage tank | Minor; land disturbance from new test well(s), distribution system, and water storage tank | Minor; land disturbance to install new water main and distribution system |
| Satisfy Public Concerns | No | Maybe * | Maybe * | YES |
| Water Rates | \$100 / month | ~\$1,000+ / month | ~ \$150+ / month | ~ \$125 to \$200 / month ¹ |
| Other considerations | | The R.O. treatment system produces a brine + concentrated nitrate waste stream that would not be suitable to flow into septic systems. This waste stream is very expensive to dispose of. | The is no guarantee that we could find nitrate-free water via a new well. It's possible that even with a new well, an expensive treatment system would still be needed. | |
| Total Cost | 0 | 5,160,005 | 1,394,455 | 1,346,886 |
| Total Cost if new well is needed within 20-years for treatment Alt #2; and clean water cannot be found for new well Alt #3 requiring reverse osmosis treatment | 0 | 6,192,005 | 6,336,005 | 1,346,886 |

Notes

Maybe* = This means the outcome is questionable. Primarily because Ray Water Company (RWC) would remain in business and be at least partially responsible for outcomes. Based on past experience and RWC's financial constraints, we were not able to confidently say "YES" for this items. As such, they are labeled "Maybe" and considered questionable.

¹ = This estimate is based on the City of Santa Maria water rates effective 1/1/2022. \$125 per month water bill is for 4 people using 50-gallons each per day. \$200 per month water bill is for 4 people using 100-gallons each per day.

APPENDIX A

Environmental Analysis of Engineering Alternatives

Environmental Analysis of Engineering Alternatives Ray Water Company

The project is needed because the Ray Water Company's (RWC) current water source is a well, which contains nitrate and arsenic concentrations above their respective drinking water Maximum Contaminant Levels. There is also an aging water storage tank, and aged components and appurtenances that are in poor condition and/or nearing the end of their useful life.

Three potential alternatives were considered to solve these problems:

- **Alternative 1** – No Action: Maintain existing system with no improvements. Water supply issues would not be addressed, and supply would still contain nitrates above the MCL
- **Alternative 2** – Treatment System for Nitrate & Arsenic: install a Reverse Osmosis (RO) treatment system to remove nitrate from the groundwater
- **Alternative 3** – Drilling a new well: drill deeper to find groundwater without significant nitrate or arsenic concentrations
- **Alternative 4** – Consolidation with an existing water system

Each of the project alternatives result in varying temporary and permanent environmental impacts, which are compared in the following table. When Alternatives have differing impacts on an environmental factor, the alternative with less impact is preferred and marked with a (+).

| Environmental Alternatives Analysis – Ray Water Company | | | | |
|---|-----------------------------|---|---|---|
| Environmental Factor | Alternative 1: No Action | Alternative 2: Treatment System for Nitrate & Arsenic | Alternative 3: Drill a new well | Alternative 4: Preferred Project – Consolidation |
| Aesthetics | No Impact | No Impact | No Impact | No Impact |
| Agricultural and Forestry Resources | No Impact | No Impact | No Impact | No Impact |
| Air Quality | (+) No Impact | Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be similar to existing. | Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be similar to existing. | Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be similar to existing. |
| Biological Resources | (+) No Impact | <i>In Process</i> | <i>In Process</i> | <i>In Process</i> |

| Environmental Alternatives Analysis – Ray Water Company | | | | |
|---|-----------------------------|---|---|---|
| Environmental Factor | Alternative 1: No Action | Alternative 2: Treatment System for Nitrate & Arsenic | Alternative 3: Drill a new well | Alternative 4: Preferred Project – Consolidation |
| Cultural and Tribal Resources | No Impact | <i>In Process</i> | <i>In Process</i> | <i>In Process</i> |
| Geology and Soils | No Impact | No Impact. No unique geologic features identified. | No Impact. No unique geologic features identified. | No Impact. No unique geologic features identified. |
| Greenhouse Gas Emissions | No Impact | Project construction and operations would adhere to statewide efforts to minimize GHG emissions. Short-term impacts of construction would likely have a less-than-significant impact. | Project construction and operations would adhere to statewide efforts to minimize GHG emissions. Short-term impacts of construction would likely have a less-than-significant impact. | (+) Project construction and operations would adhere to statewide efforts to minimize GHG emissions. Short-term impacts of construction would likely have a less-than-significant impact. |
| Hazards and Hazardous Materials | No Impact | No Impact | No Impact | No Impact. |

| Environmental Alternatives Analysis – Ray Water Company | | | | |
|---|-----------------------------|--|--|--|
| Environmental Factor | Alternative 1: No Action | Alternative 2: Treatment System for Nitrate & Arsenic | Alternative 3: Drill a new well | Alternative 4: Preferred Project – Consolidation |
| Hydrology and Water Quality | (+) No Impact | The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant. | The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant. | The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant. |
| Land Use and Planning | No Impact | No Impact | No Impact | No Impact |
| Mineral Resources | No Impact | The project area is not in an area of known mineral resource potential and would not result in the loss of | The project area is not in an area of known mineral resource potential and would not result in the | The project area is not in an area of known mineral resource potential and would not result in the loss of availability of a |

| Environmental Alternatives Analysis – Ray Water Company | | | | |
|---|-----------------------------|---|---|---|
| Environmental Factor | Alternative 1: No Action | Alternative 2: Treatment System for Nitrate & Arsenic | Alternative 3: Drill a new well | Alternative 4: Preferred Project – Consolidation |
| | | availability of a valuable mineral resource. | loss of availability of a valuable mineral resource. | valuable mineral resource. |
| Noise | No Impact | During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent residences. | During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent residences. | During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent residences. |
| Population and Housing | No Impact | The project would neither induce growth nor displace existing housing. No replacement housing would be required. | The project would neither induce growth nor displace existing housing. No replacement housing would be required. | The project would neither induce growth nor displace existing housing. No replacement housing would be required. |

| Environmental Alternatives Analysis – Ray Water Company | | | | |
|---|---|---|---|---|
| Environmental Factor | Alternative 1: No Action | Alternative 2: Treatment System for Nitrate & Arsenic | Alternative 3: Drill a new well | Alternative 4: Preferred Project – Consolidation |
| Public Services | No Impact –water supply does not meet Nitrate MCL | The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The improvements to the water facilities would ensure that Ray WC had adequate drinking water supplies. | The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The improvements to the water facilities would ensure that Ray WC had adequate drinking water supplies, assuming Nitrate-free water is found. | The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The improvements to the water facilities would ensure that Ray WC had adequate drinking water supplies. |
| Recreation | No Impact | There are no recreational facilities in or adjacent to the project area. | There are no recreational facilities in or adjacent to the project area. | There are no recreational facilities in or adjacent to the project area. |
| Transportation and Traffic | (+) No Impact | No Impact | No Impact | Disruption to local traffic during pipeline installation` |

| Environmental Alternatives Analysis – Ray Water Company | | | | |
|---|-----------------------------|---|------------------------------------|--|
| Environmental Factor | Alternative 1: No Action | Alternative 2: Treatment System for Nitrate & Arsenic | Alternative 3: Drill a new well | Alternative 4: Preferred Project – Consolidation |
| Utilities and Service Systems | No Impact | No Impact | No Impact | Consolidation with City of Santa Maria would have no significant impact. |

APPENDIX B

Consolidation Alternative 90% Design Drawings

Water System Consolidation

Consolidation of Ray Water Company into the City of Santa Maria Water System Rayville Lane and West Betteravia Road Santa Barbara County, CA 30% Plans

Project Team

Project Management & Coordination / Water System Design and Engineering
Craig Drizin
Weber, Hayes and Associates
(831) 722-3580

Environmental Consultants
Denise Duffy
Denise Duffy and Associates
(831) 373-3580

Survey
Kenny Fargen
Fargen Surveys, Inc.
(805) 934-5727

SUMMARY OF WORK

INSTALL

3392 LF 12" AWWA C900 PVC
495 LF 8" AWWA C900 PVC

ABANDON

APROX. 500 LF OLD UNKNOWN WATER MAIN PIPE

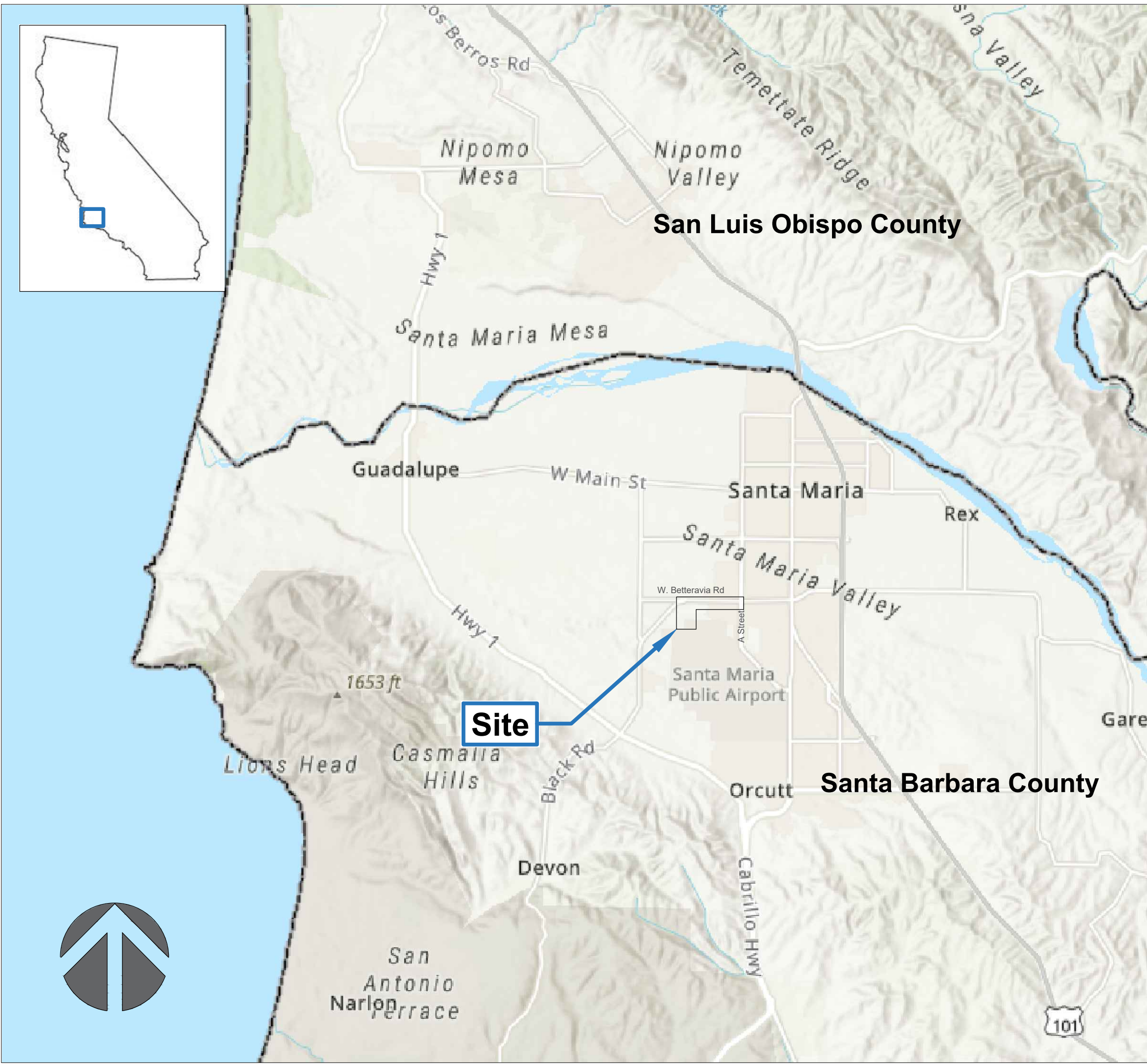
HYDRANT

(12) 6-INCH FIRE HYDRANTS

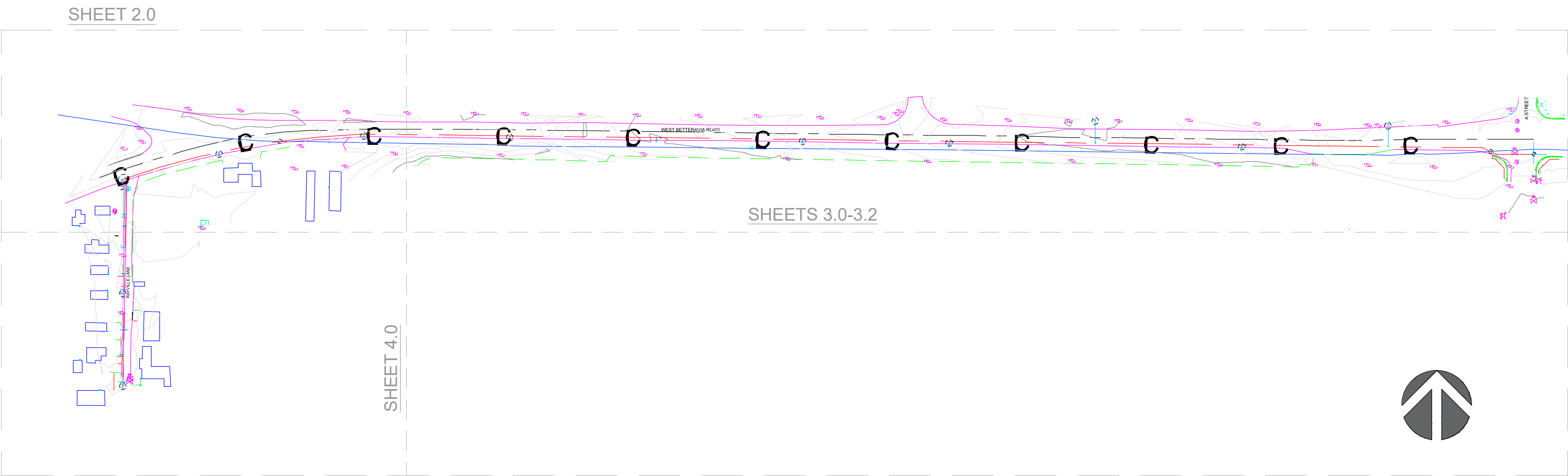
SERVICE

(13) SERVICE CONNECTIONS

TIE-IN




Location Map



LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE ONLY APPROXIMATE. THE EXISTING UTILITIES SHOWN WERE PLOTTED USING INCOMPLETE AND IMPRECISE RECORDS. IT SHOULD BE EXPRESSLY UNDERSTOOD THIS INFORMATION DOES NOT NECESSARILY REPRESENT ACTUAL OR COMPLETE SITE CONDITIONS OR SHOW DETAILS OF EXACT LOCATION, DEPTH OR OTHER CONSTRUCTION FEATURES OF THESE UTILITIES. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO THE COMPLETENESS OR ACCURACY OF THIS INFORMATION IS SET FORTH HEREIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THIS INFORMATION WITH THE AFFECTED UTILITIES PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" AT 1-800-642-2444 OR 8-1-1 FOR THE MARKING OF UNDERGROUND FACILITIES AT LEAST 2 DAYS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL HAND DIG AND LOCATE ALL UTILITIES THAT MAY BE AFFECTED BY THE NEW FACILITIES IN THIS CONTRACT TO VERIFY ACTUAL DEPTH AND LOCATION OF UTILITIES AND REPORT POTENTIAL CONFLICTS TO THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES WHETHER SHOWN OR NOT AND IS RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES.

- Sheet WA-1.0:
- Sheet WA-1.1:
- Sheet WA-2.0:
- Sheet WA-3.0:
- Sheet WA-3.1:
- Sheet WA-3.2:
- Sheet WA-4.0:
- Sheet WA-5.0:
- Sheet WA-6.0:

- Cover Sheet
- General Notes
- Site Layout Plan
- West Betteravia Rd Water Main Alignment
- West Betteravia Rd Water Main Alignment
- West Betteravia Rd Water Main Alignment
- Rayville Lane Water Distribution Plan & Profile
- Construction Details
- Fargen - Topographic Survey

| Ray Water Company Consolidation | | <div><p>Weber, Hayes & Associates Hydrogeology and Environmental Engineering 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com</p></div> | <div>REVISIONS</div> <table><thead><tr><th>REV</th><th>BY</th><th>ITEM</th><th>APPROVED</th><th>DATE</th></tr></thead><tbody><tr><td>A</td><td>RP</td><td>30% DESIGN DEVELOPMENT</td><td>CD</td><td>06/21</td></tr><tr><td>B</td><td>RP</td><td>90% REVIEW</td><td>CD</td><td>10/21</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></tbody></table> | | | | REV | BY | ITEM | APPROVED | DATE | A | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 | B | RP | 90% REVIEW | CD | 10/21 | | | | | | | | | | | <div>CITY OF SANTA MARIA</div> <div>DEPARTMENT OF PUBLIC WORKS</div> <table><thead><tr><th>SCALE</th><th>DATE</th><th>APPROVED:</th></tr></thead><tbody><tr><td> </td><td> </td><td>Kevin P. McCune, RCE 59572</td></tr></tbody></table> | | | SCALE | DATE | APPROVED: | | | Kevin P. McCune, RCE 59572 | <div>DRAWN BY: RP</div> <div>CHECKED BY:</div> <div>DATE: 06/22/2021</div> <div>SHEET 1 OF 9 SHEETS</div> <div>REFERENCES:</div> <div>FILE NO. WA-1.0</div> |
|--|--------------|--|---|----------|-------|--|-----|----|------|----------|------|---|----|------------------------|----|-------|---|----|------------|----|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|-------|------|-----------|--|--|----------------------------|---|
| REV | BY | | ITEM | APPROVED | DATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | RP | | 30% DESIGN DEVELOPMENT | CD | 06/21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | RP | | 90% REVIEW | CD | 10/21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SCALE | DATE | APPROVED: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Kevin P. McCune, RCE 59572 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rayville Lane, Santa Barbara County | Job #: 2T059 | COVER SHEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Water System Consolidation

Consolidation of Ray Water Company into the City of Santa Maria Water System Rayville Lane and West Betteravia Road Santa Barbara County, CA

GENERAL NOTES

1. PLANS
All plans must be signed by the City Engineer within the past year and all work must be performed to the satisfaction of the City Engineer.

These plans shall include all as-built revisions prior to the acceptance of improvements by City.

2. QUALIFICATIONS
The Contractor shall possess a Class "A" General Engineering Contractor license under the provisions of the Business and Professions Code of the State of California to do the type of work contemplated and shall be skilled and regularly engaged in the general class or type of work called for under this contract.

3. CODES
Construction and materials shall be in accordance with the California Waterworks Standards, Title 17 and 22 of the California Code of Regulations, Title 24 California Code of Regulations, California Building Code (CBC), the California Plumbing Code (CPC), the Caltrans Standard Plans and Specifications, Division of the State Architect requirements, State Fire Marshall Regulations, National Electrical Code, Americans with Disabilities Act, all other State and Federal laws, all locally enforced codes and authorities, and the County of Santa Barbara Design Criteria. Should the Contractor discover work within the Plans not in conformance with these requirements, Contractor shall immediately submit a written Request for Information (RFI) to the Owner's Representative.

4. STANDARD SPECIFICATIONS
All wetted components must be NSF 61 certified. Construction must comply with the City of Santa Maria Standards.

Construction and materials shall be as specified and as required by the latest editions of the City of Santa Maria Standard Plans and City of Santa Maria Standard Specifications. Should the Contractor discover work within the Plans not in conformance with these requirements, Contractor shall immediately submit a written Request for Information (RFI) to the Owner's Representative.

5. PERMITS
Contractor shall inform themselves of, and fully adhere to the rules regulations and requirements of all governmental agencies having jurisdiction over the work, and all federal, state, and local laws, codes, and regulations regarding construction activity. Contractor shall investigate and procure any and all permits that may be required on the project.

Contractor to obtain a permit from Department of Industrial Relations, Division of Occupational Safety & Health. Call OSHA at (818) 901-5403 for further information. (Health & Safety Code 17922.5)

Contractor shall obtain an encroachment permit from the City of Santa Maria Department of Public Works - Engineering Division at 110 S. Pine Street, Suite 221, prior to performing any work within public right-of-way or easement.

6. SITE SAFETY
The Contractor agrees that in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for job site conditions, construction means, methods and techniques, and for safety measures, precautions, and programs at the project site during the course of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal work hours. It shall be the Contractor's sole responsibility to design and provide adequate trench and excavation shoring, bracing, formwork, scaffolding, temporary structures, etc., as required for the protection of life and property during construction. Contractor to take necessary precautions against sewage, gases, solvents, compounds, acids, preservatives, fuels, and other hazardous materials. All construction shall be performed in conformance with CalOSHA requirements. The Contractor agrees to defend, indemnify, and hold the Design Engineer of Record harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability rising from the sole negligence of the Design Engineer of Record.

7. PUBLIC SAFETY
The Contractor shall provide for the safety of traffic and the public in accordance with the provisions of Section 7-1.09 of the Standard Specifications whenever the Contractor's operations create a hazardous condition including, but not limited to, fencing, railing, barricades, lights, signs, and other devices to prevent accidents, damage, or injury to the public.

All traffic control devices shall be installed and conform to State of California Manual on Uniform Traffic Control Devices (CA MUTCD).

8. SCOPE
The Contractor shall examine carefully the site of work contemplated and thoroughly review the Plans and Specifications. The submission of a bid shall be conclusive evidence that the contractor has investigated the site and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of work to be

performed, the quantities of materials to be furnished, and as to the requirements of the Plans and Specifications. The Contractor shall make a detailed and thorough study of these Plans and Specifications in their entirety prior to any work on the jobsite. The Contractor is to coordinate these drawings with all other trade disciplines for the completed work.

Contractor shall have copies of the approved plans and specifications for this project on the site at all times, and contractor shall be familiar with all applicable standards and specifications.

9. INTENT
It is the intent of these Plans and General Notes/Specifications that the work shall result in complete, finished, operating, satisfactory, and functional systems and no extra compensation will be allowed for anything omitted but fairly implied for systems' function. Where detail references in the Plans have been omitted, the Contractor is deemed to have estimated the best quality detail. In the event certain features of the construction are not fully shown or detailed on the plans, their construction shall be as shown on the plans or details for similar best quality features. All typical details shall apply unless noted otherwise. The Owner's Representative best quality interpretation is deemed to control.

10. PRECEDENCE
All figured dimensions shall take precedence over scaled measurements. Should a conflict or inconsistency occur in or between the Plans and the Specifications, **the Specifications shall control over the Plans.**

11. ADDENDA
If discrepancies, apparent errors, or omissions are found in the Plans or Specifications, or any differences are found between the Plans and conditions in the field, the Contractor shall submit a written Request For Information (RFI). If the Contractor proceeds with the work affected without instructions from the Owner's Representative, the Contractor shall make good any resulting damage or defect to the satisfaction of the Owner's Representative. Any request for alterations or substitutions must be presented directly to the Owner's Representative in writing, accompanied by a detailed sketch and/or photograph as required, for review, before any approval will be given and before proceeding with the work.

12. VERIFICATION
The Contractor shall be responsible for field-verifying all existing conditions, dimensions, levels, and materials for all layout and construction work and shall submit a Request for Information (RFI) to the Owner's Representative to resolve any discrepancies before proceeding with the work. The Contractor shall adjust, correct, and coordinate the work so that no discrepancies result.

13. NOTICE TO PROCEED
No work shall commence without an official notice to proceed from the Owner.

14. EXISTING FACILITIES
Contractor shall protect all existing facilities and shall repair all damaged areas to original or better condition. Contractor shall do all cutting, fitting, or patching of his work that may be required to make its several parts fit together properly and shall not endanger any other work by cutting, or otherwise altering the total work or any part of it. Contractor shall exercise care to protect any existing construction so that integrity and finish are not impaired. All patching, repairing, and replacing of materials and surfaces cut or damaged in execution of work shall be done with appropriate materials so the surfaces replaced will, upon completion, match surrounding similar surfaces.

Contractor is responsible for preservation and/or perpetuation of all existing monuments which control subdivisions, tracts, boundaries, streets, highways, or other rights-of-way, easements, or provide survey control which will be disturbed or removed due to contractor's work. Contractor shall provide a minimum of ten (10) working days notice to project engineer/surveyor prior to disturbance or removal of existing monuments. Project engineer/surveyor shall coordinate with contractor to reset monuments or provide permanent witness monuments and file the required documentation with the County Surveyor pursuant to Business and Professions Code section 8771.

15. HOUSEKEEPING
The job site shall be maintained daily in a neat, clean, orderly condition free of debris and litter, shall not be unreasonably encumbered with any materials or equipment. Materials stored on the site shall be properly stacked and protected to prevent damage and deterioration until use. Failure to protect materials may be cause for rejection of work. Dust shall be controlled and mud and debris shall be cleaned off public right of ways.

All streets, alleys, vehicular ways, sidewalks, and haul routes shall be kept clean and clear of debris, dirt and dust in a manner acceptable to the City. At minimum, these areas shall be cleaned at the end of each work day. Failure to do so will result in a "Stop Work" notice. Said notice will not be released until the area has been adequately cleaned.

16. WORKING HOURS
Normal working hours shall be limited to times as directed by City of Santa Maria and no work shall be done on Sundays or legal holidays unless written permission is given.

17. SUBMITTALS
Contractor shall provide a traffic control plan to the Department of Public Works at least two (2) weeks prior to commencement of work prior to issuance of encroachment permit (Permit work only)

No work shall commence with unapproved materials. Submittals and shop drawings shall be supplied to the Owner's Representative for review for the following:
a. All material and equipment items
b. Traffic Control Plan
c. Water Pollution Control Plan
d. Utility Interruption Plan

The Contractor shall supply submittals sufficiently detailed to demonstrate compliance with the Plans and Specifications. Each submittal shall be sequentially numbered, dated, titled, and checked by the Contractor. The Owner's Representative will require 10 days for review. The Contractor's responsibility for errors, omissions, and deviations is not relieved by the submittal review.

All compaction test results within right-of-way and easements shall be submitted directly to the Public Works Department Engineering Division by approved testing company at time of first availability of results.

17. OBSERVATION
Contractor shall notify the Department of Public Works at least one (1) working day prior to beginning of construction at (804) 925-0951, ext. 2225.

Contractor shall notify the Owner's Representative 48 hours in advance for the following observations:
a. Utility pipes prior to backfill
b. Reinforcing steel prior to concrete placement
c. Utility pipe pressure and leakage testing

19. UNDERGROUND UTILITIES
Contractor shall contact "Underground Service Alert" (USA) at least two (2) working days prior to beginning of construction at 811. (Government Code Section 4216). It shall be the responsibility of the contractor to verify exact location and depth fo all existing utilities. Trench to be shored in accordance with California OSHA regulations. Contractor shall coordinate new underground piping, connections to existing piping and electrical/internet conduits with civil earthwork.

20. PRODUCTS
All components touching wetted surfaces must be NSF/ANSI 61 Certified.
Engineer must approve any component substitutions

20.1. PVC Pipe
20.1.1. Domestic pipe shall be Schedule 80 PVC or AWWA C900 Class 150.
20.1.2. Fire service pipe shall be AWWA C900 Class 200, UL/FM.
20.1.3. Fittings: AWWA C111, cast iron.
20.1.4. Joints: ASTM D3139 compression gasket ring.
20.1.5. Joint restraint: ASTM F1674 EBBA Iron Megalug Series 1100, 1100SD or 1500 as required or approved equal

20.2. Gate Valves
20.2.1. 2-1/2 inches and Smaller: Brass or Bronze body, non-rising stem, inside screw, single wedge or disc, compression ends, with control rod, and extension box and in accordance with AWWA Standard C800.

20.3. Valve Boxes
20.3.1. Valve Boxes shall be a G-5 box as manufactured by Christy Concrete Products, Inc. or equal and shall be rated for H-20 traffic loading.
20.3.2. Standard gate valve box lids shall be marked "W" or "WATER", with an arrow and an "O.L." to indicate the direction in which the valve opens.

20.4. Underground Pipe Markers
20.4.1. Metallic Pipe: Plastic Ribbon Tape: Bright colored, continuously printed, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.
20.4.2. Non-Metallic Pipe: Trace Wire: Magnetic detectable conductor, brightly colored plastic covering, imprinted with "Water Service" in large letters.

20.5. Bedding and Cover Materials
20.5.1. Bedding and Cover: Clean sand or Controlled Low Strength Material, per Geotechnical Investigation.
20.5.2. Soil Backfill from Above Pipe to Finish Grade: Imported engineered fill or select native fill with no rocks over 2 inches in diameter

20.6. Traffic




CULTURAL

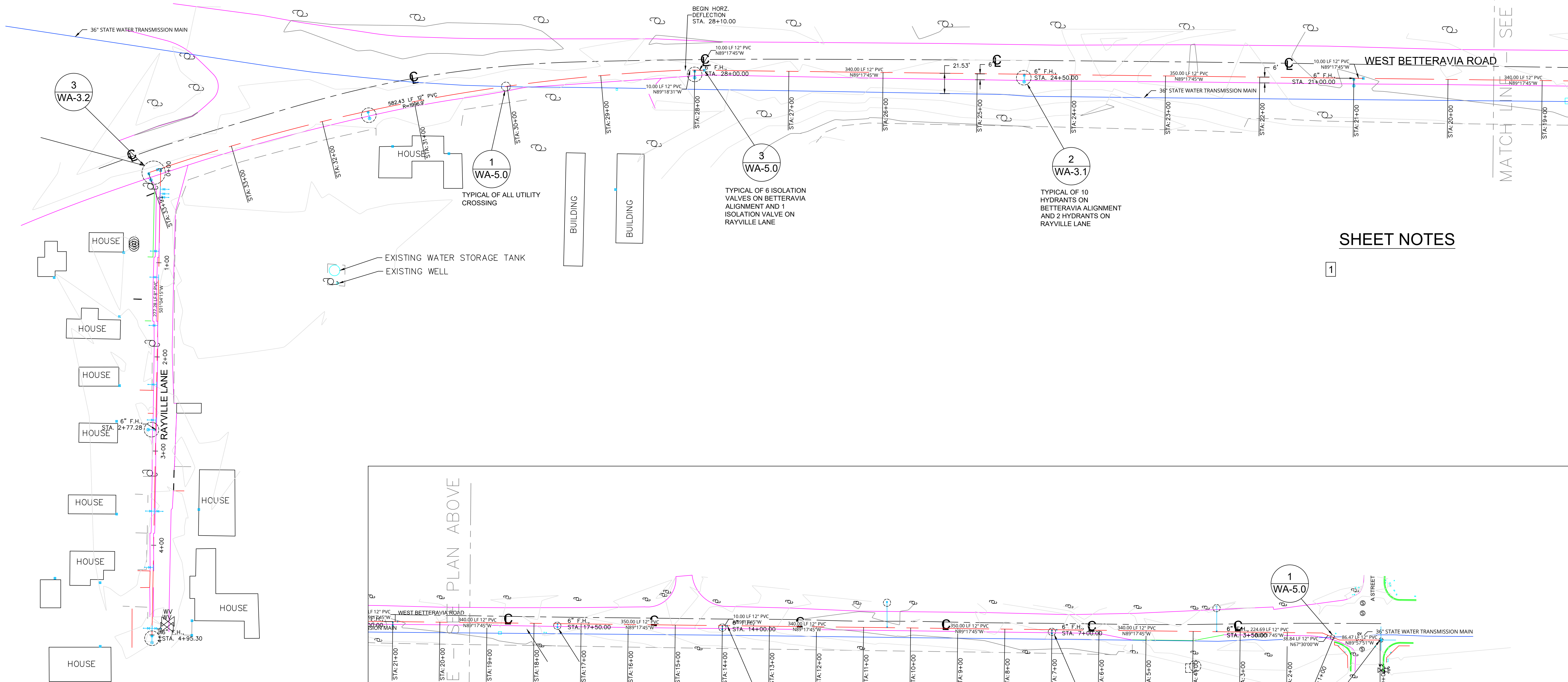
If previously unidentified cultural materials are unearthed during construction, it is CEQA policy that work be halted in that area until a qualified archaeologist can evaluate the nature and significance of the find

BIOLOGICAL

SYMBOLS

- WV WATER VALVE
- FD FIRE HYDRANT
- GV GAS VALVE OR METER
- SM SEWER MANHOLE OR CLEANOUT
- SD STORM DRAIN MANHOLE
- TF TRAFFIC FLOW
- DF DRAINAGE FLOW
- HC HANDICAP SPACE
- AL AREA LIGHT
- SP SIGN POST
- UP UTILITY POLE
- W WELL
- M MONUMENT
- SL STREET LIGHT
- WM WATER METER
- CB CATCH BASIN OR OTHER STRUCTURE AS NOTED

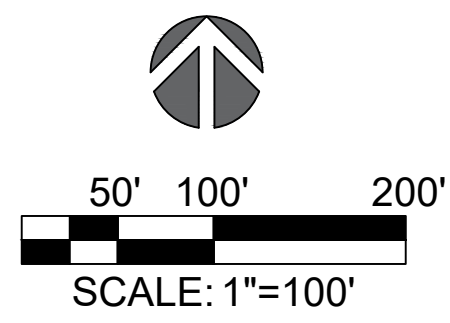
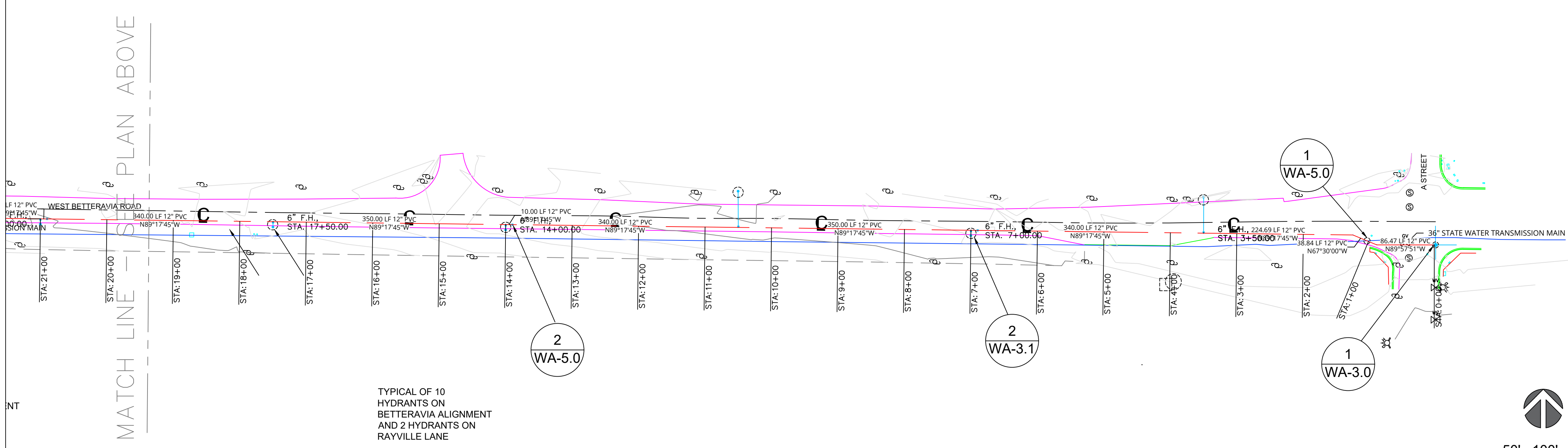
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|--|--|--------------|---|---|----|------------------------|----------|---------------------|----------------------------|------|--------------|---------------------|--|
| Ray Water Company Consolidation | | Job #: 2T059 | <div> Weber, Hayes & Associates <i>Hydrogeology and Environmental Engineering</i> 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com</div> | REVISIONS | | | | CITY OF SANTA MARIA | | | DRAWN BY: RP | | |
| | | | | REV | BY | ITEM | APPROVED | DATE | DEPARTMENT OF PUBLIC WORKS | | | CHECKED BY: | |
| Rayville Lane, Santa Barbara County | | Job #: | |  | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 | SCALE | DATE | APPROVED: | DATE: 6/23/2021 | |
| | | | |  | RP | 90% REVIEW | CD | 10/21 | Kevin P. McCune, RCE 59572 | | | SHEET 2 OF 9 SHEETS | |
| | | | | GENERAL NOTES | | | | | | | | REFERENCES: | |
| | | | | | | | | | | | | FILE NO. WA-1.1 | |




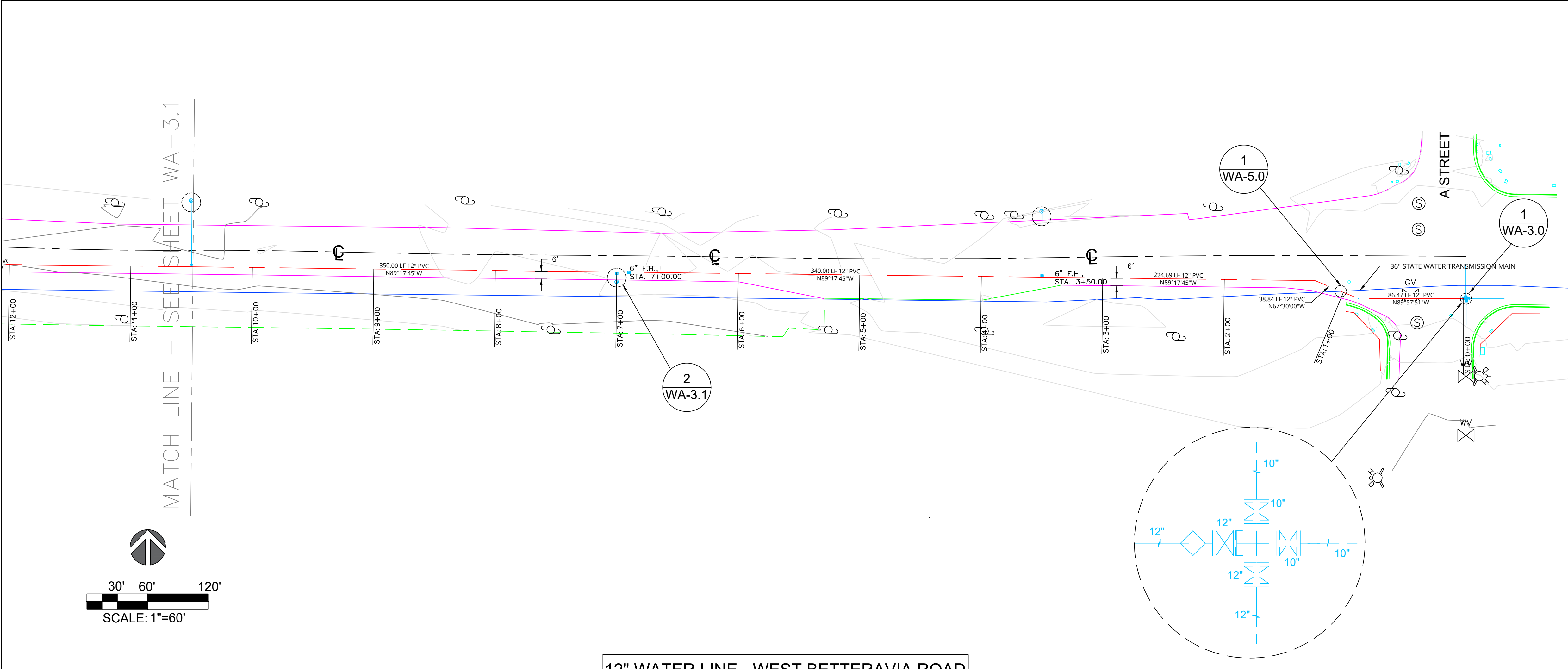
SEE PLAN BELOW
MATCH LINE

SHEET NOTES

1



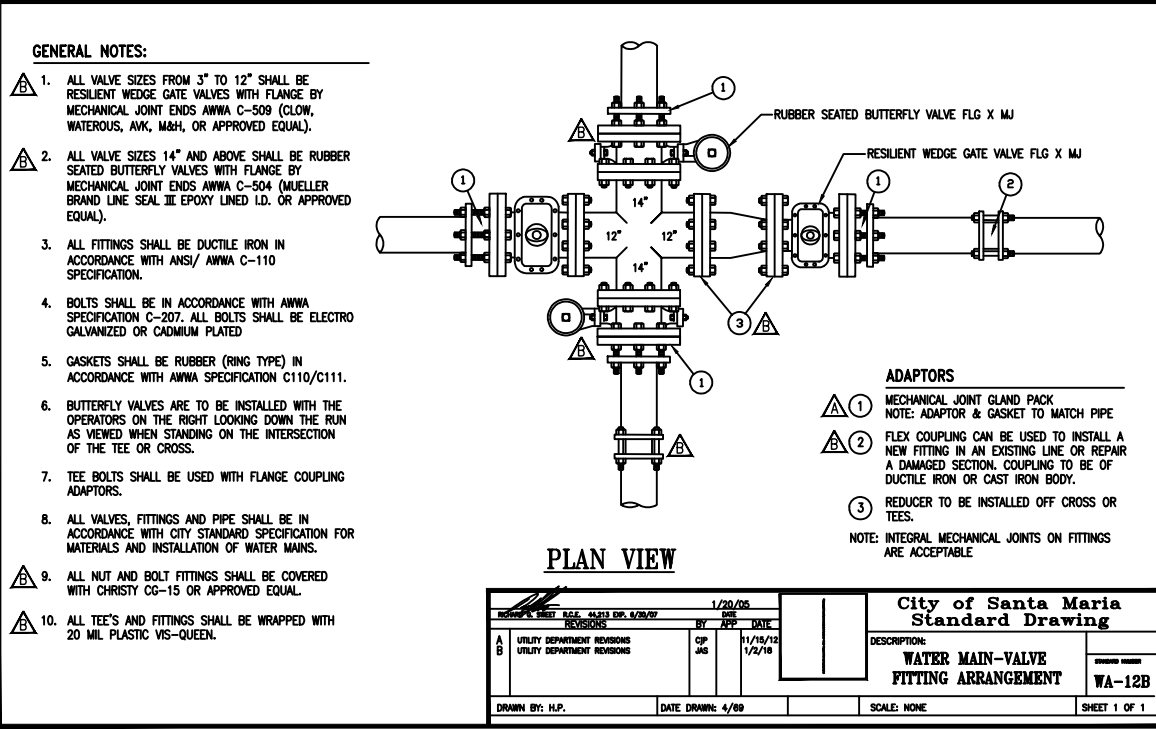
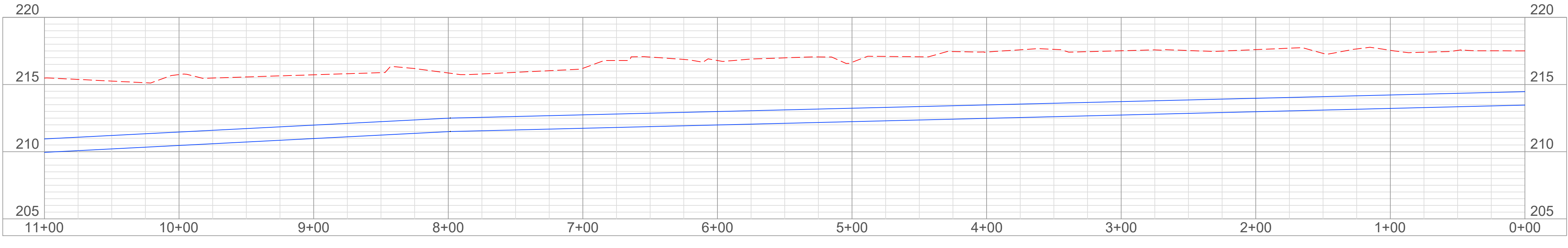
| Ray Water Company Consolidation | |  Weber, Hayes & Associates <i>Hydrogeology and Environmental Engineering</i> 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com | <table><tr><th colspan="4">REVISIONS</th></tr><tr><th>REV</th><th>BY</th><th>ITEM</th><th>APPROVED</th><th>DATE</th></tr><tr><td>Δ</td><td>RP</td><td>30% DESIGN DEVELOPMENT</td><td>CD</td><td>06/21</td></tr><tr><td>Δ</td><td>RP</td><td>30% REVIEW</td><td>CD</td><td>10/21</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table> | | | | REVISIONS | | | | REV | BY | ITEM | APPROVED | DATE | Δ | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 | Δ | RP | 30% REVIEW | CD | 10/21 | | | | | | | | | | | <table><tr><td colspan="3"><i>CITY OF SANTA MARIA</i></td></tr><tr><td colspan="3">DEPARTMENT OF PUBLIC WORKS</td></tr><tr><td>SCALE</td><td>DATE</td><td>APPROVED:</td></tr><tr><td colspan="2"> </td><td>Kevin P. McCune, RCE 59572</td></tr></table> | | | <i>CITY OF SANTA MARIA</i> | | | DEPARTMENT OF PUBLIC WORKS | | | SCALE | DATE | APPROVED: | | | Kevin P. McCune, RCE 59572 | <table><tr><td>DRAWN BY:</td><td>RP</td></tr><tr><td>CHECKED BY:</td><td> </td></tr><tr><td>DATE:</td><td>6/22/2021</td></tr><tr><td>SHEET</td><td>3 OF 9 SHEETS</td></tr><tr><td>REFERENCES:</td><td> </td></tr><tr><td>FILE NO.</td><td>WA-2.0</td></tr></table> | DRAWN BY: | RP | CHECKED BY: | | DATE: | 6/22/2021 | SHEET | 3 OF 9 SHEETS | REFERENCES: | | FILE NO. | WA-2.0 |
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| Rayville Lane, Santa Barbara County | Job #: 2T059 | | | | | | SITE LAYOUT PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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12" WATER LINE - WEST BETTERAVIA ROAD

NOTES

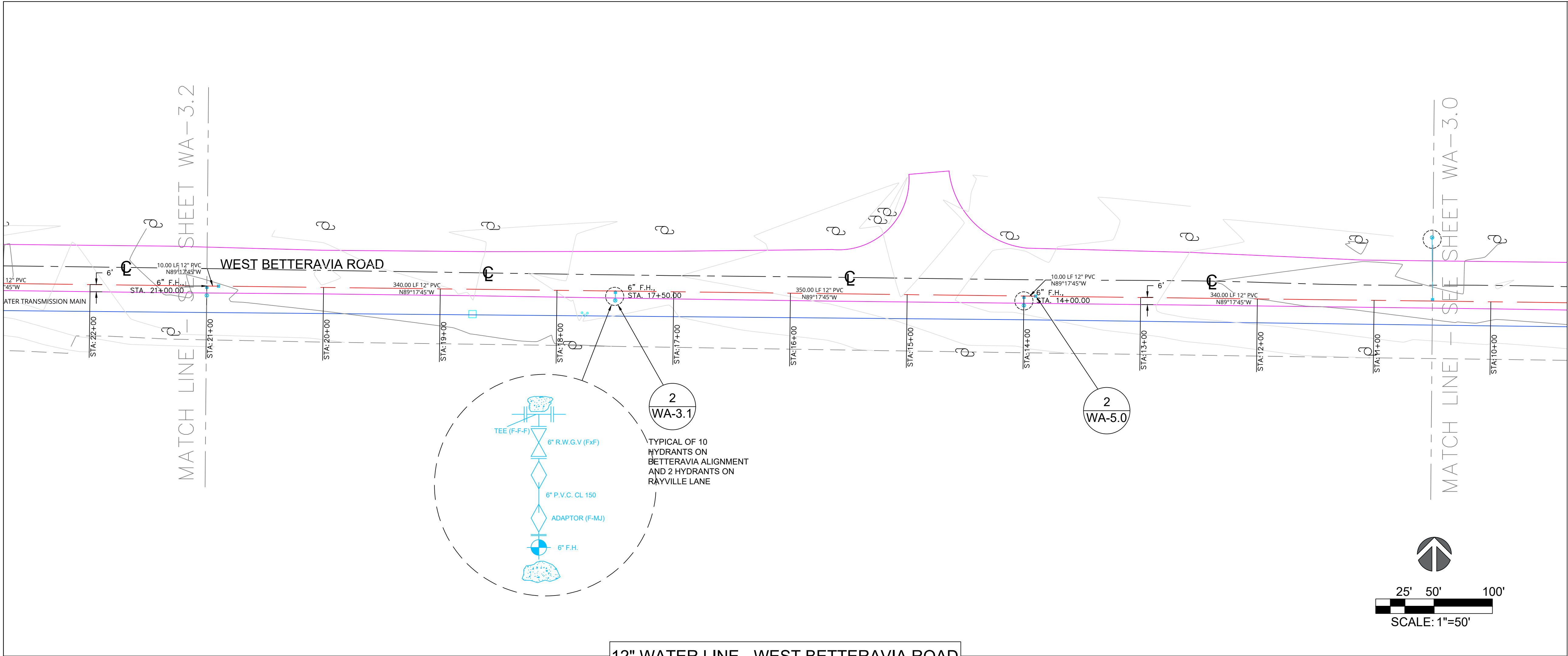
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- CONTRACTOR SHALL LOCATE THE 36" STATE WATER TRANSMISSION MAIN
- PIPE LENGTH LABELS SHOWN IN PLAN VIEW DENOTE THE HORIZONTAL DISTANCE BETWEEN HORIZONTAL FITTINGS, AND DO NOT ACCOUNT FOR VERTICAL BENS OR DEFLECTIONS.
- NEW 12" WATER MAIN SHALL BE 6' FROM THE SOUTH EDGE OF PAVEMENT ON BETTERAVIA RD, AS ACCEPTED BY THE CITY OF SANTA MARIA
- NEW 12" WATER MAIN SHALL BE A MINIMUM OF 10-FEET HORIZONTALLY FROM THE STATE WATER TRANSMISSION MAIN
- ALL WATER MAINS SHALL BE AWWA C900 PVC



WATER MAIN-VALVE FITTING ARRANGEMENT

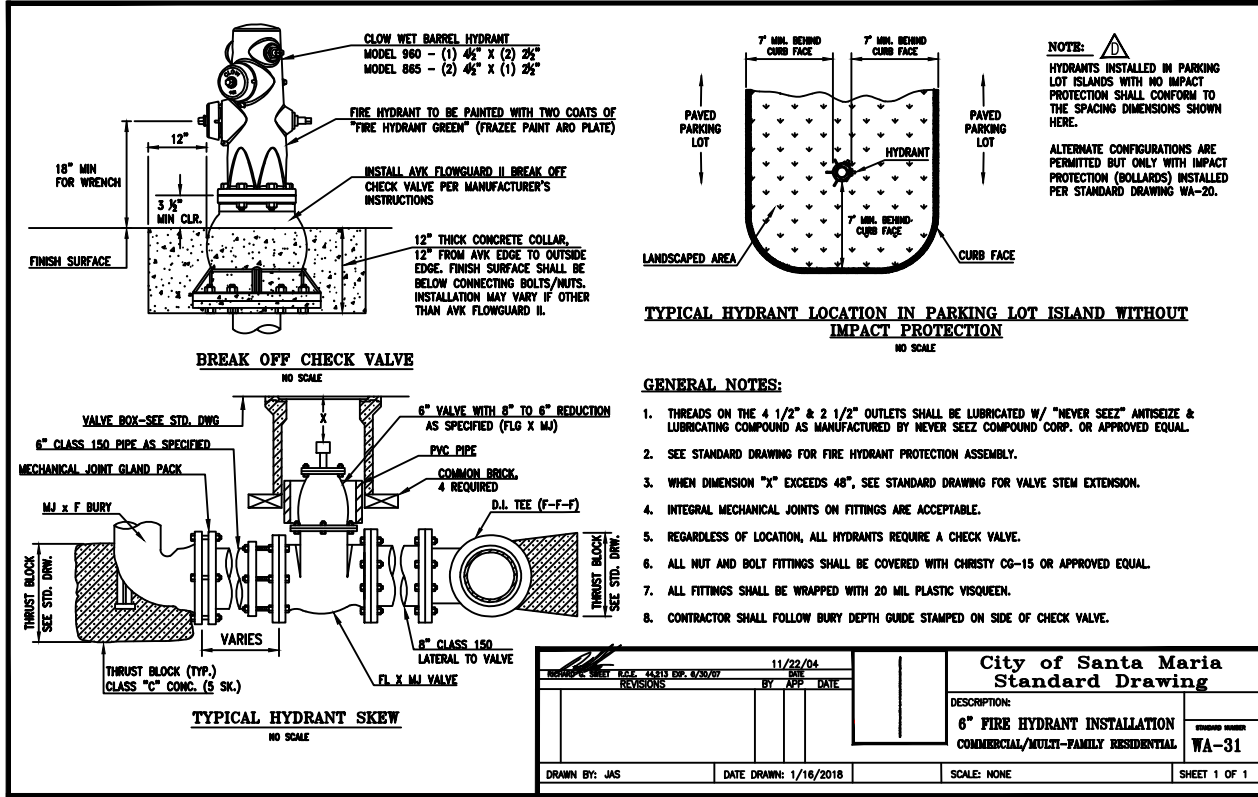
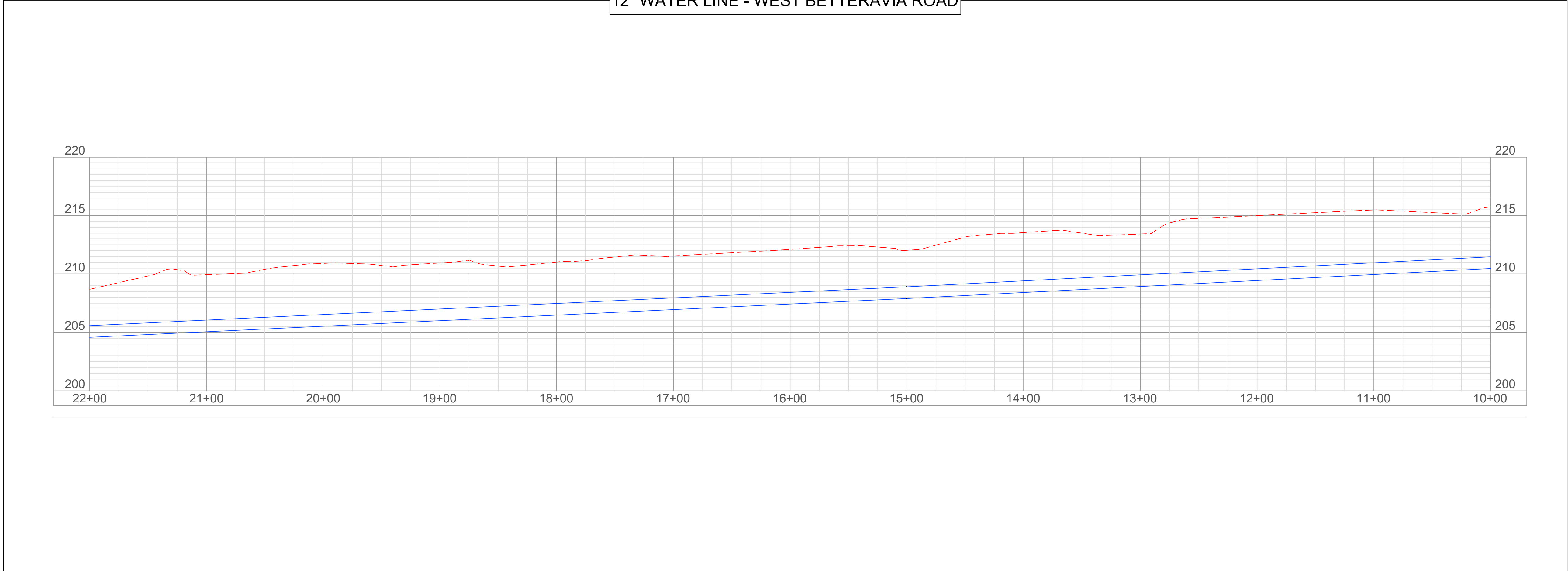
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| Ray Water Company Consolidation | | | REVISIONS | | | | CITY OF SANTA MARIA | | | DRAWN BY: RP | | | |
| | | | REV | BY | ITEM | APPROVED | DATE | DEPARTMENT OF PUBLIC WORKS | | | CHECKED BY: | | |
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| | | B | RP | 30% REVIEW | CD | 10/21 | Kevin P. McCune, RCE 59572 | | | SHEET 4 OF 9 SHEETS | | | |
| Rayville Lane, Santa Barbara County | | Job #: 2T059 | | | | | | WEST BETTERAVIA ROAD ALIGNMENT | | | | REFERENCES: | |
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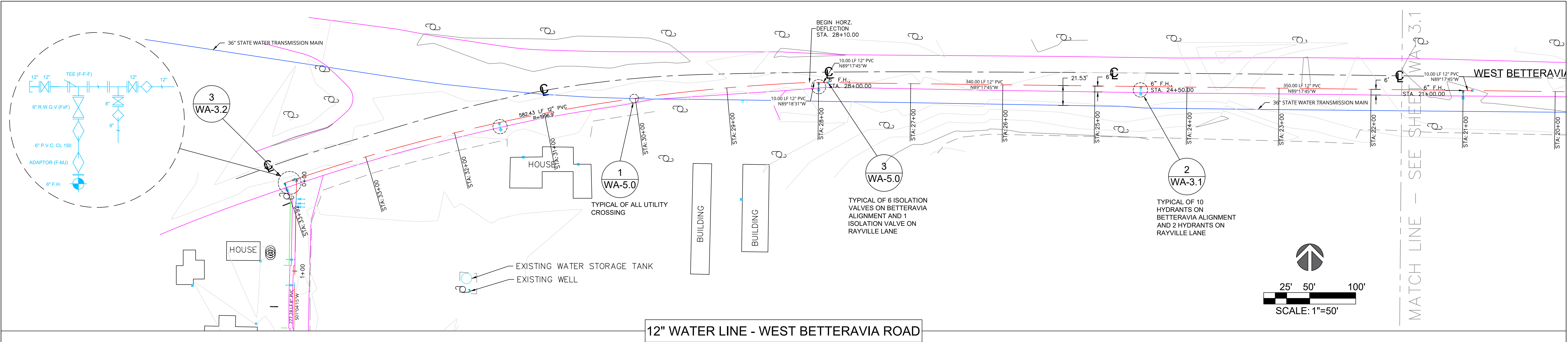
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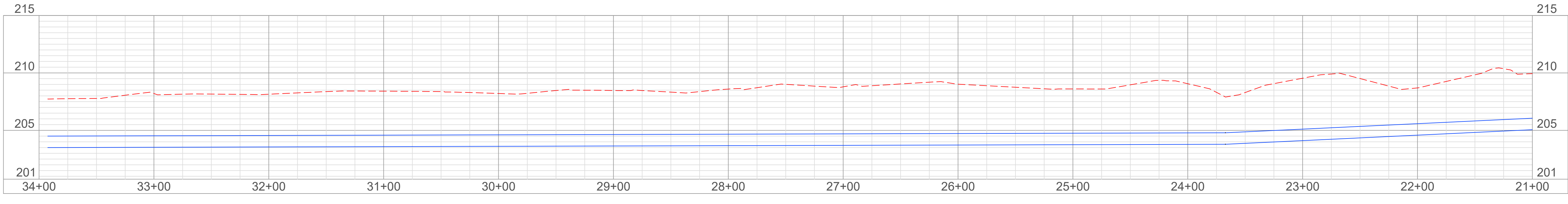
6" FIRE HYDRANT DETAIL

2

| Ray Water Company Consolidation | |  Weber, Hayes & Associates <i>Hydrogeology and Environmental Engineering</i> 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com | <table><tr><th colspan="4">REVISIONS</th></tr><tr><th>REV.</th><th>BY</th><th>ITEM</th><th>APPROVED</th><th>DATE</th></tr><tr><td>1</td><td>RP</td><td>30% DESIGN DEVELOPMENT</td><td>CD</td><td>06/21</td></tr><tr><td>2</td><td>RP</td><td>30% REVIEW</td><td>CD</td><td>10/21</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table> | | | | REVISIONS | | | | REV. | BY | ITEM | APPROVED | DATE | 1 | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 | 2 | RP | 30% REVIEW | CD | 10/21 | | | | | | | | | | | | | | | | <table><tr><td colspan="3">CITY OF SANTA MARIA</td></tr><tr><td colspan="3">DEPARTMENT OF PUBLIC WORKS</td></tr><tr><td>SCALE</td><td>DATE</td><td>APPROVED:</td></tr><tr><td> </td><td> </td><td>Kevin P. McCune, RCE 59572</td></tr></table> | | | CITY OF SANTA MARIA | | | DEPARTMENT OF PUBLIC WORKS | | | SCALE | DATE | APPROVED: | | | Kevin P. McCune, RCE 59572 | DRAWN BY: RP |
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| Rayville Lane, Santa Barbara County | Job #: 2T059 | WEST BETTERAVIA ROAD ALIGNMENT | | | | CHECKED BY: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | DATE: 6/22/2021 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | SHEET 5 OF 9 SHEETS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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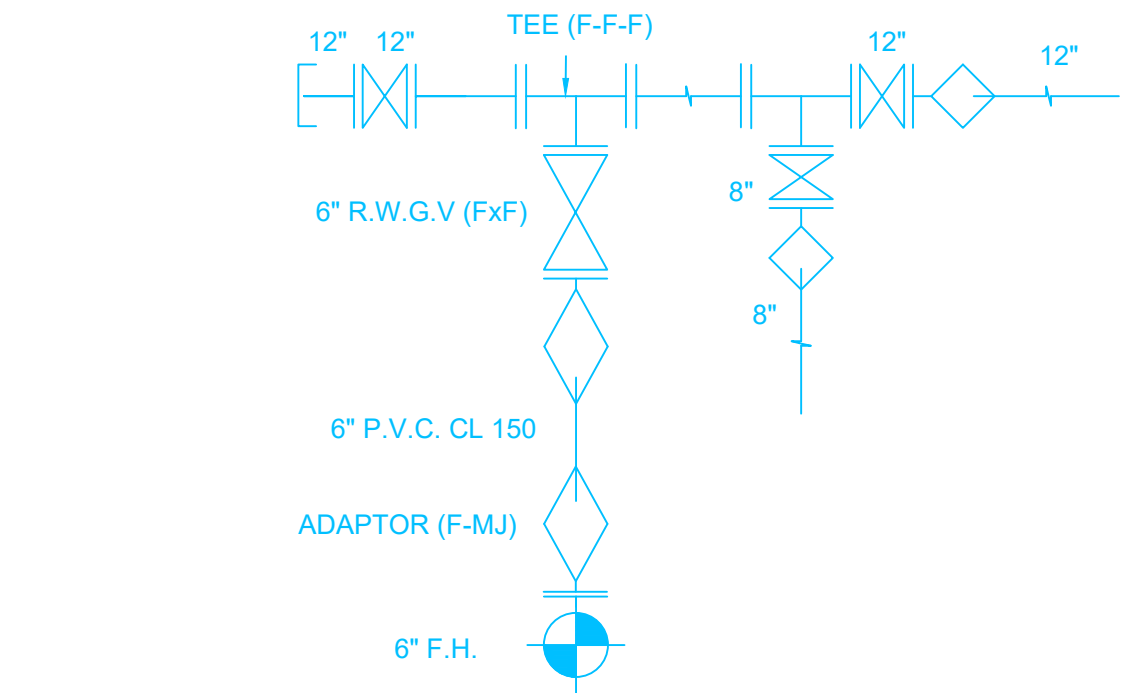
12" WATER LINE - WEST BETTERAVIA ROAD



NOTES

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NEW DISTRIBUTION CONNECTION

3

Ray Water Company Consolidation

Rayville Lane,
Santa Barbara County

Job #: 2T059



REVISIONS

| REV | BY | ITEM | APPROVED | DATE |
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| 1 | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 |
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CITY OF SANTA MARIA

DEPARTMENT OF PUBLIC WORKS

APPROVED: Kevin P. McCune, RCE 59672

WEST BETTERAVIA ROAD ALIGNMENT

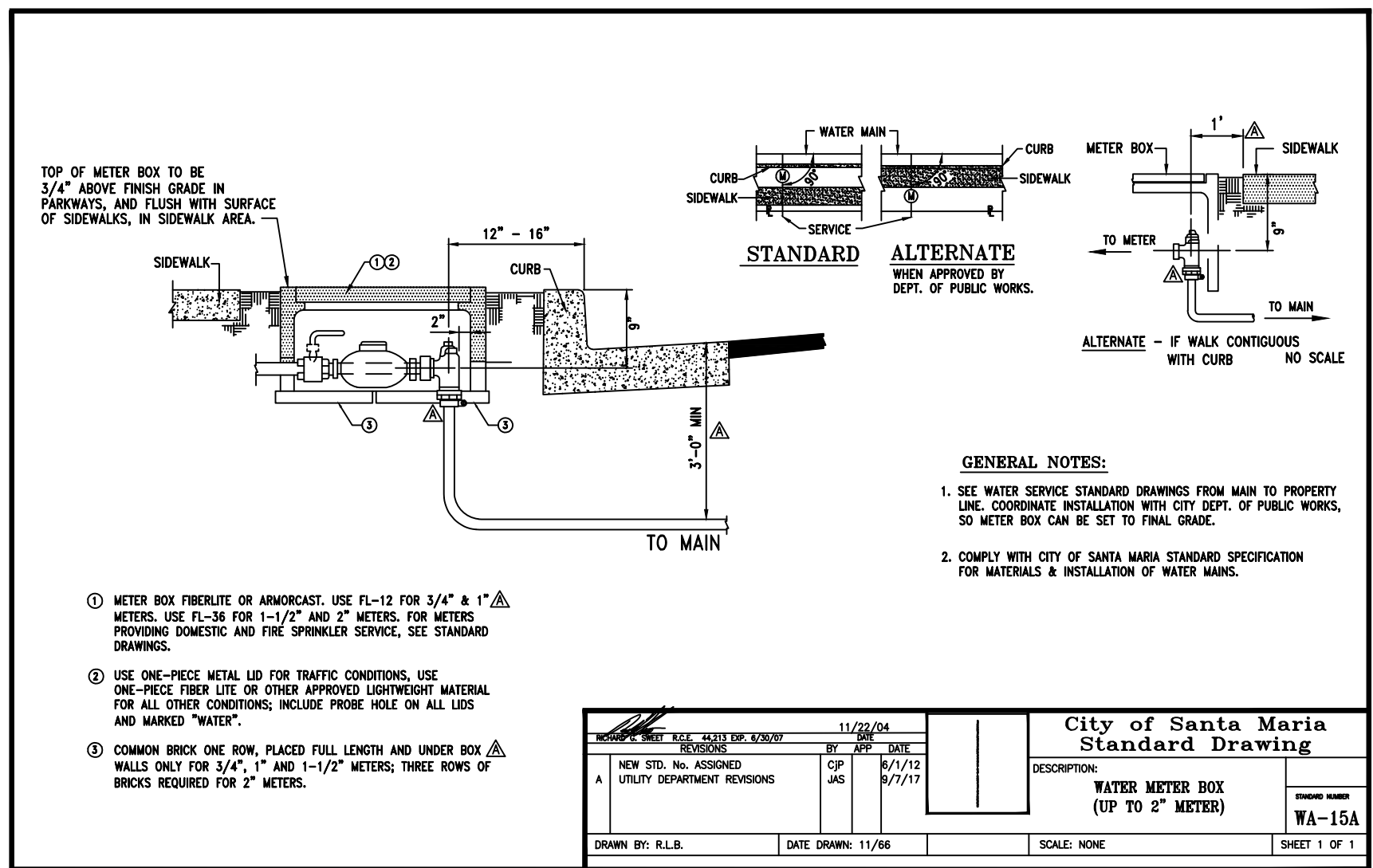
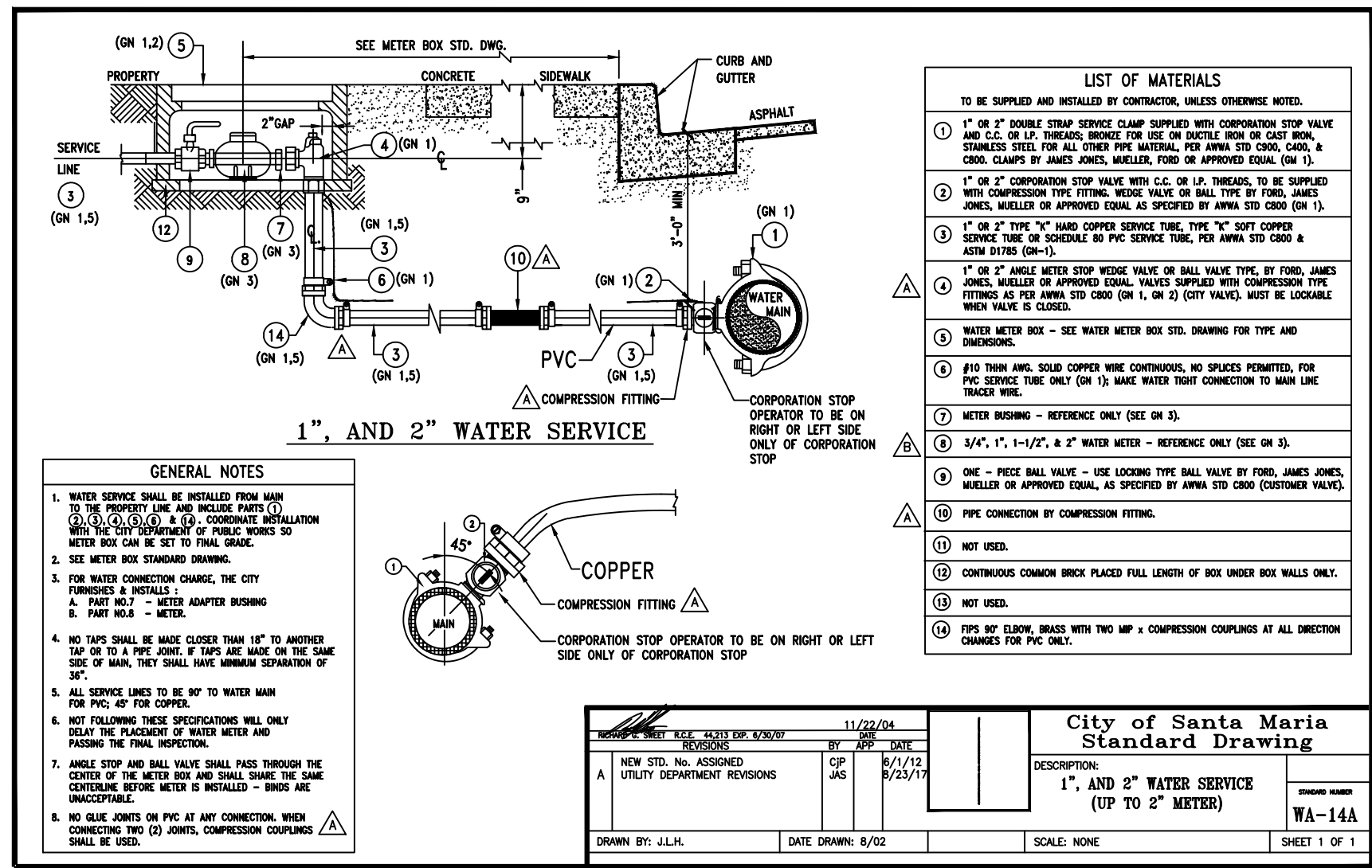
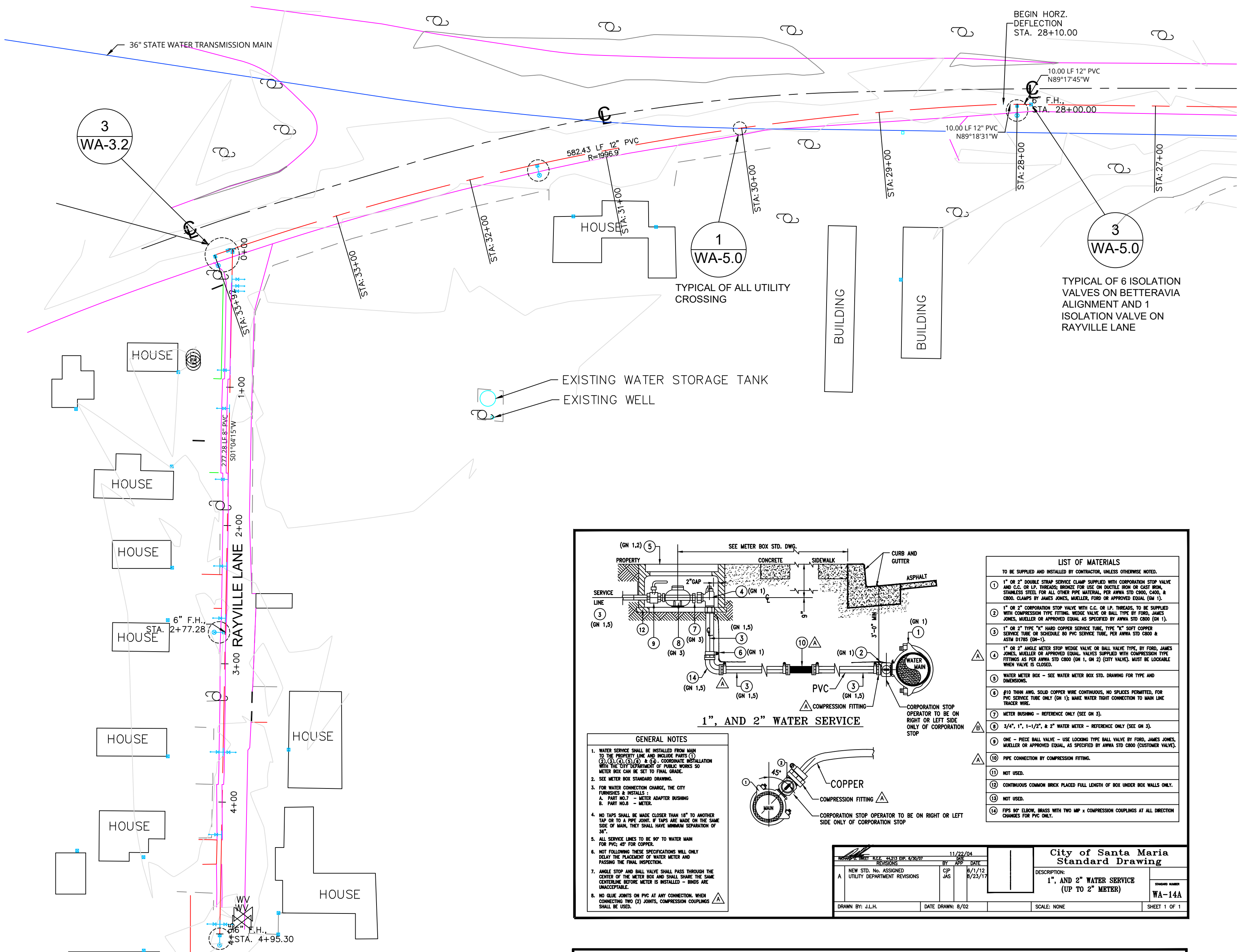
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DATE: 6/22/2021

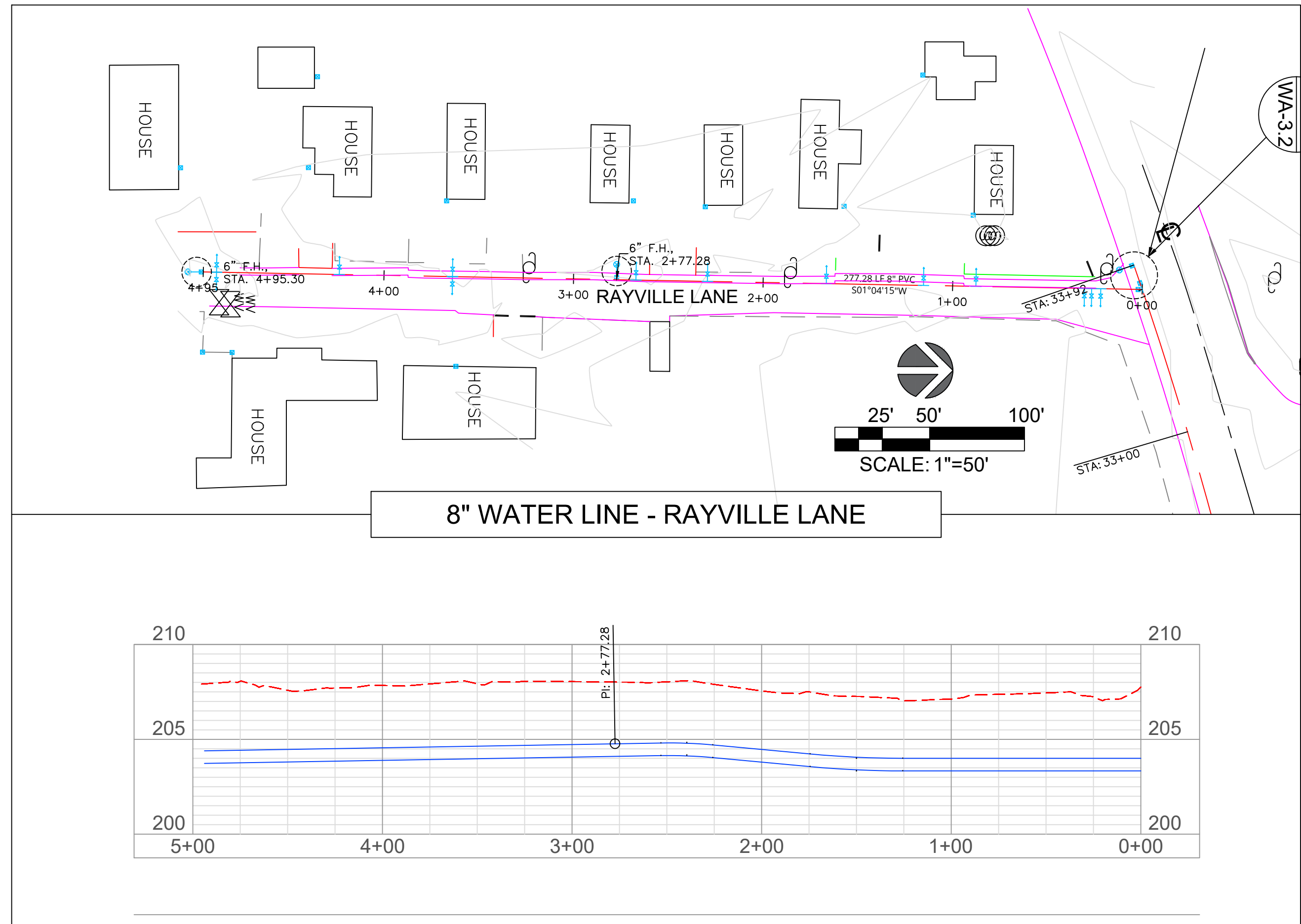
SHEET 6 OF 9 SHEETS

FILE NO.
WA-3.2



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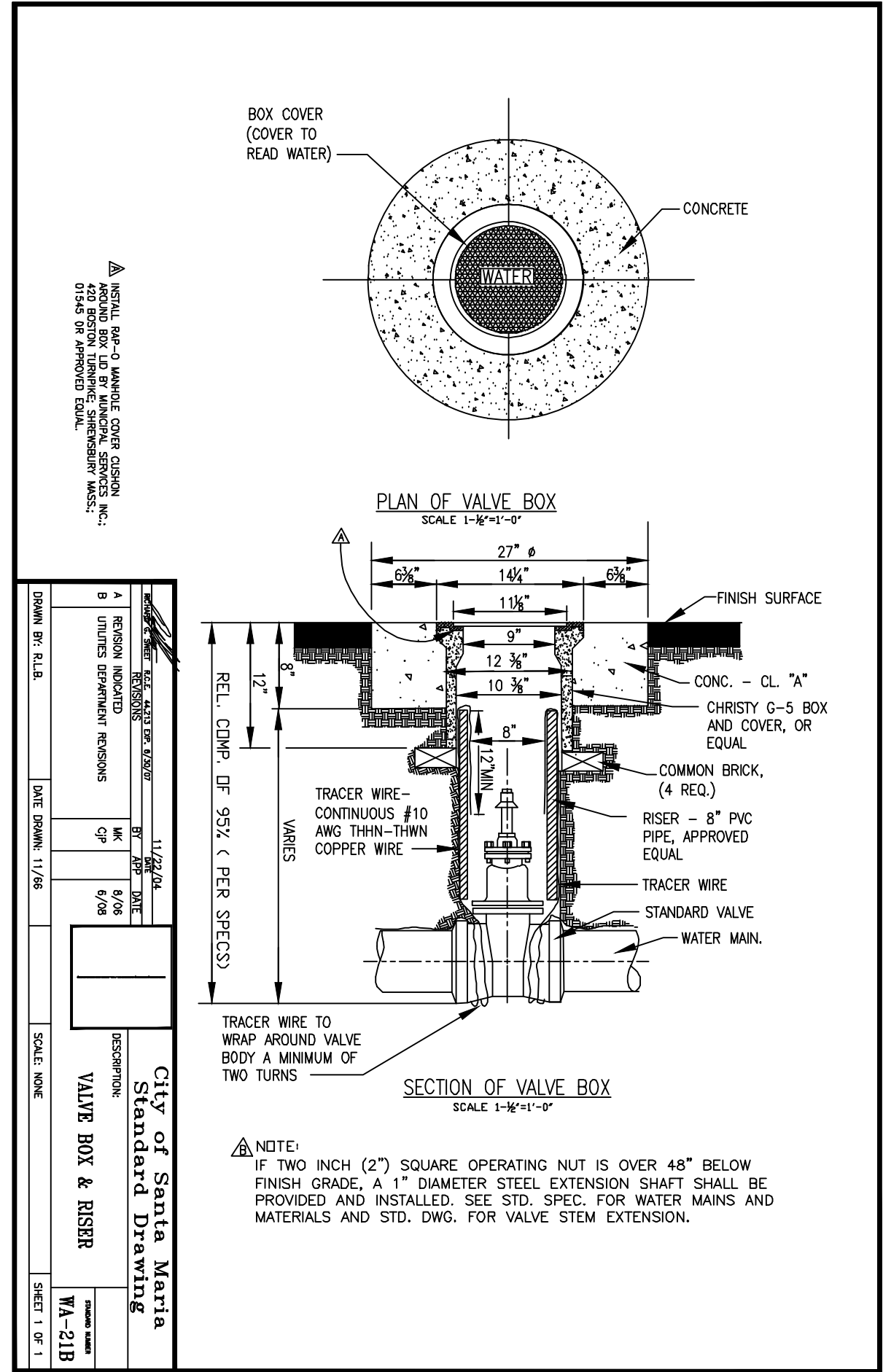
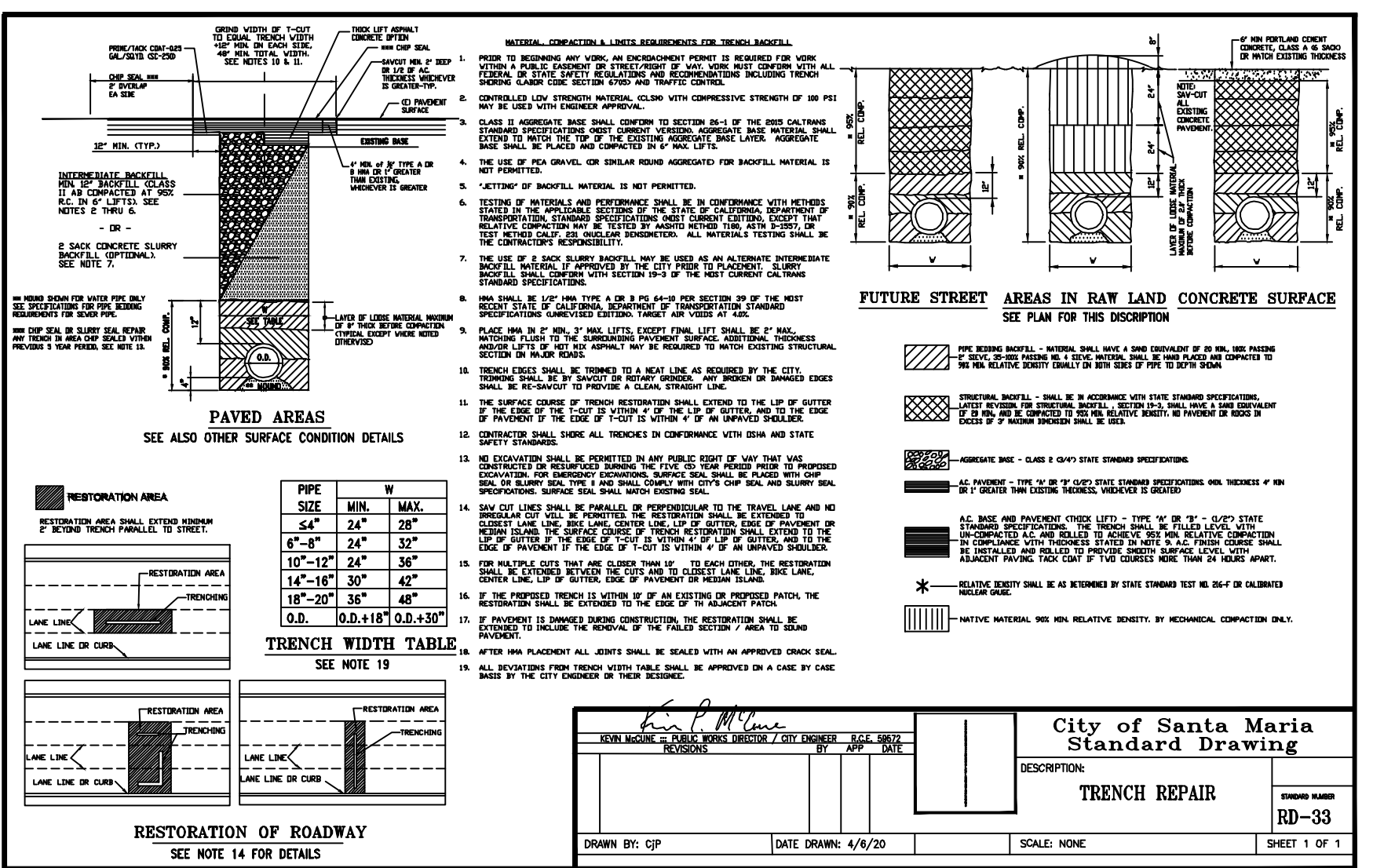
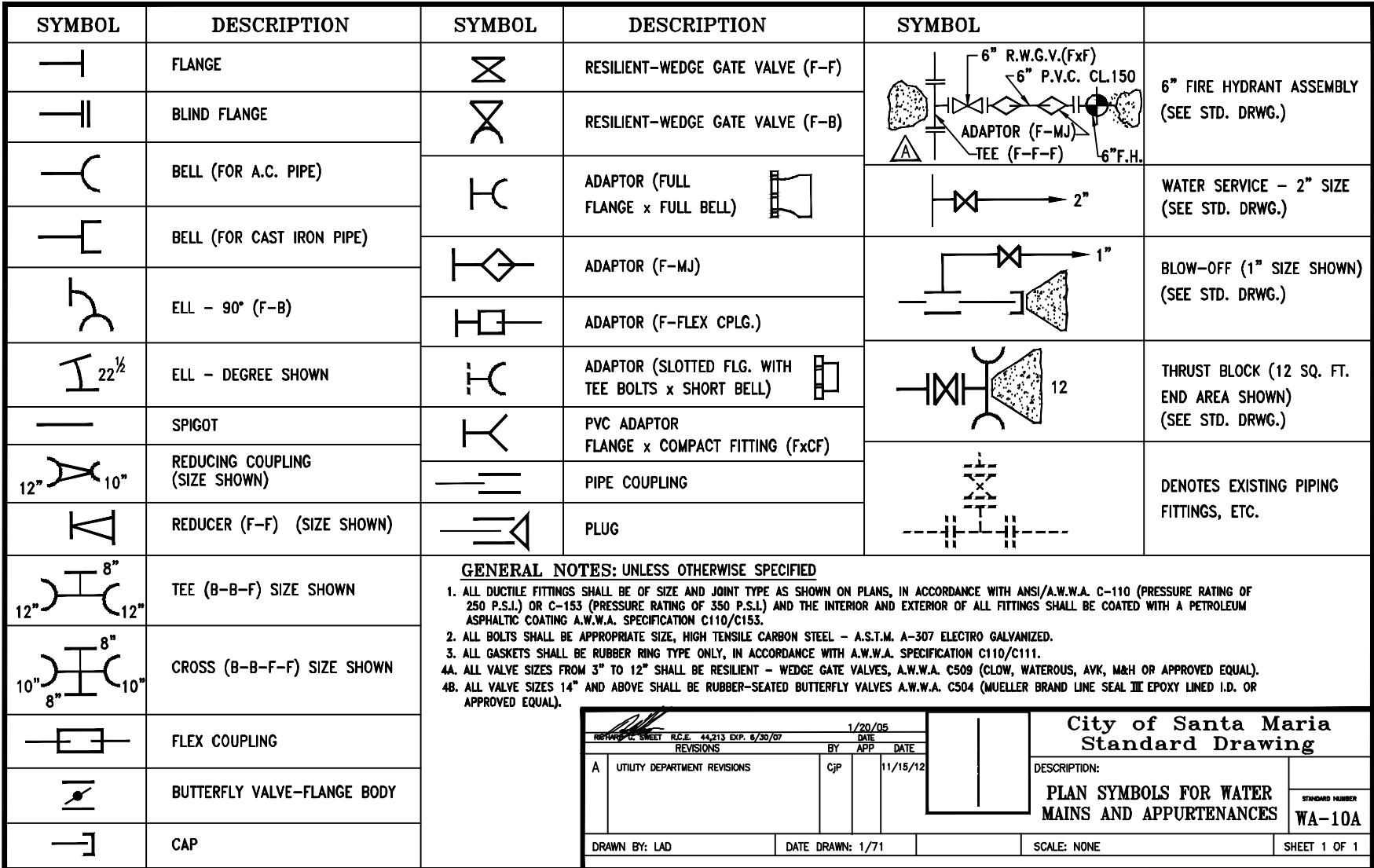
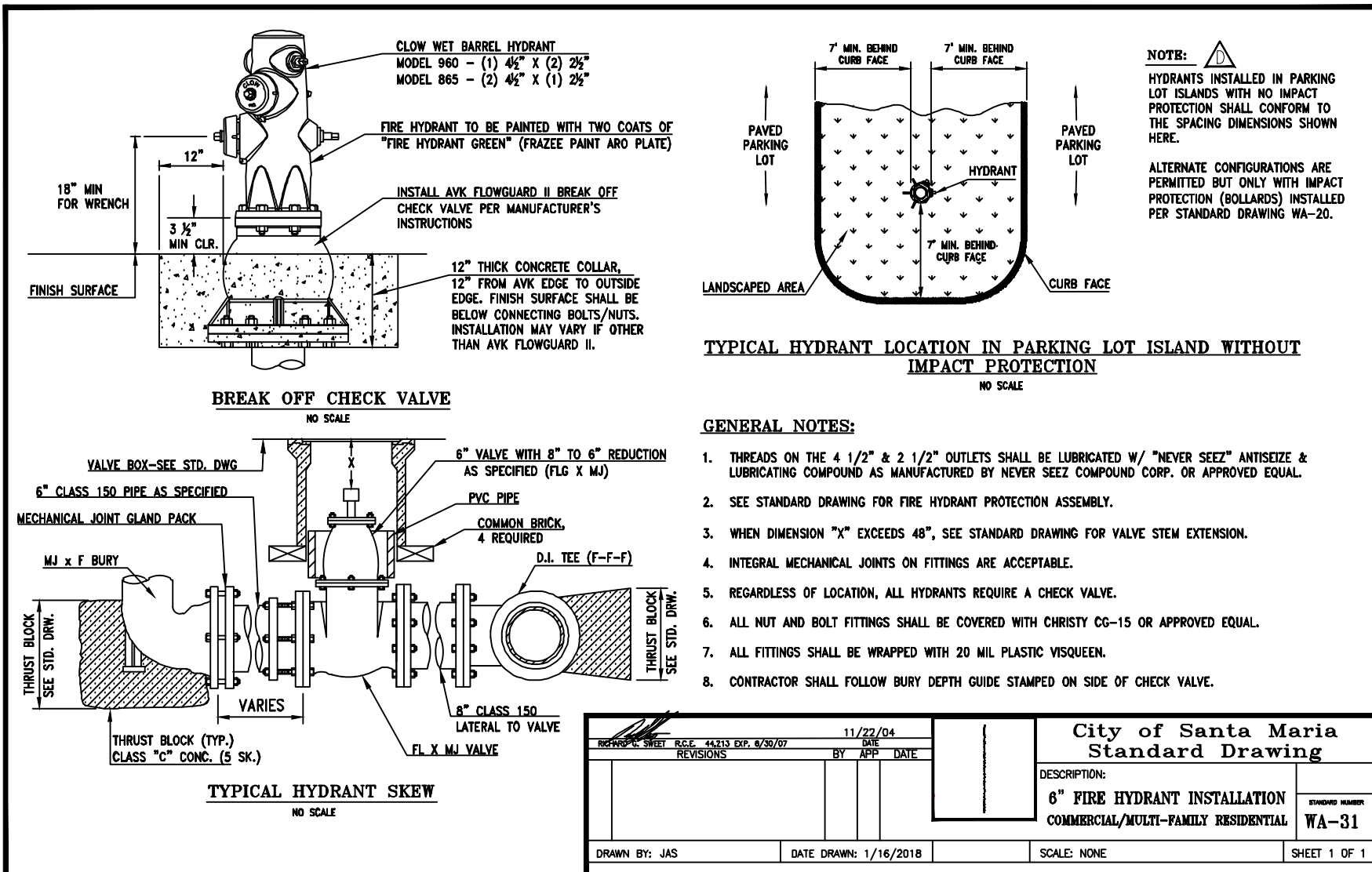
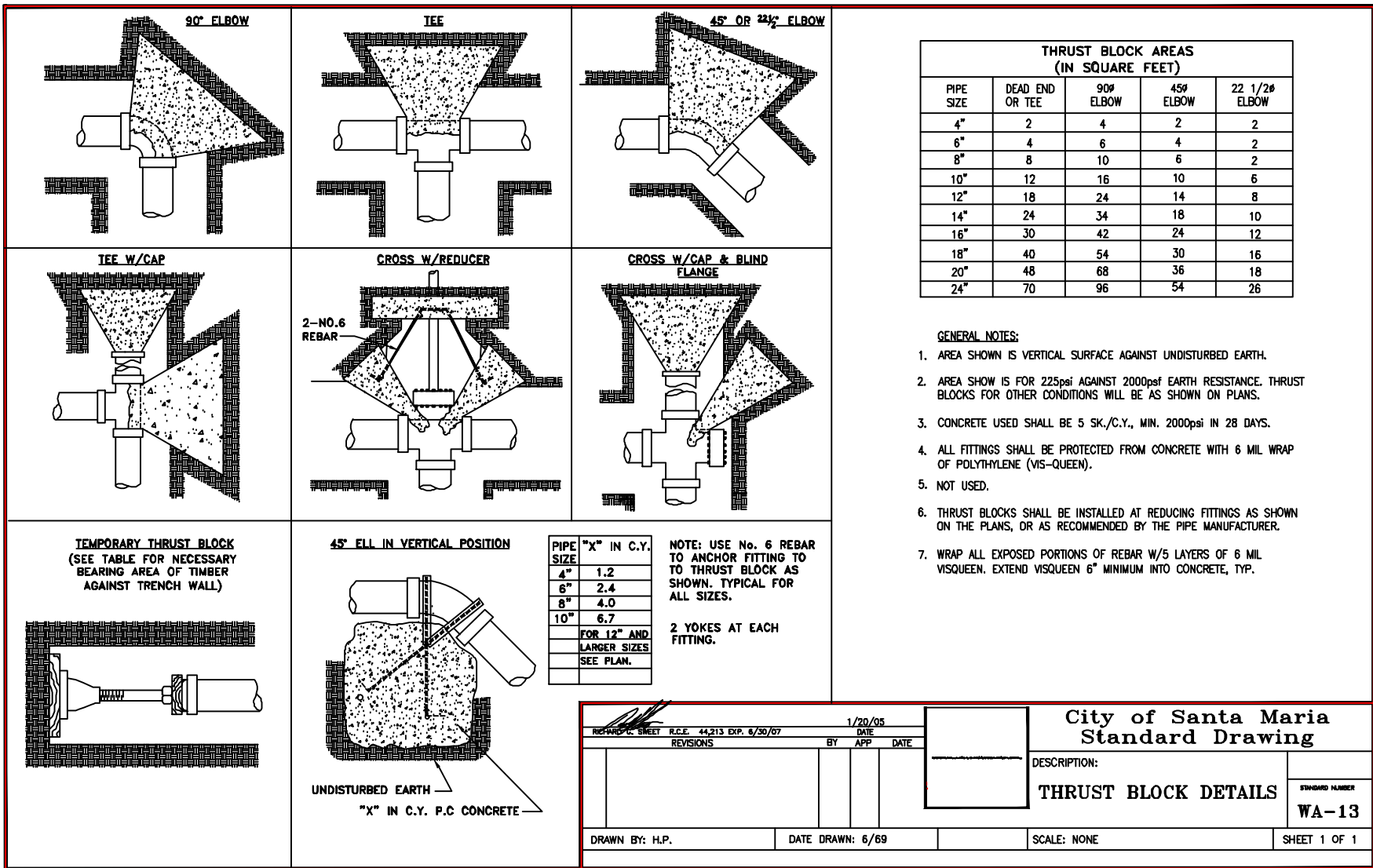
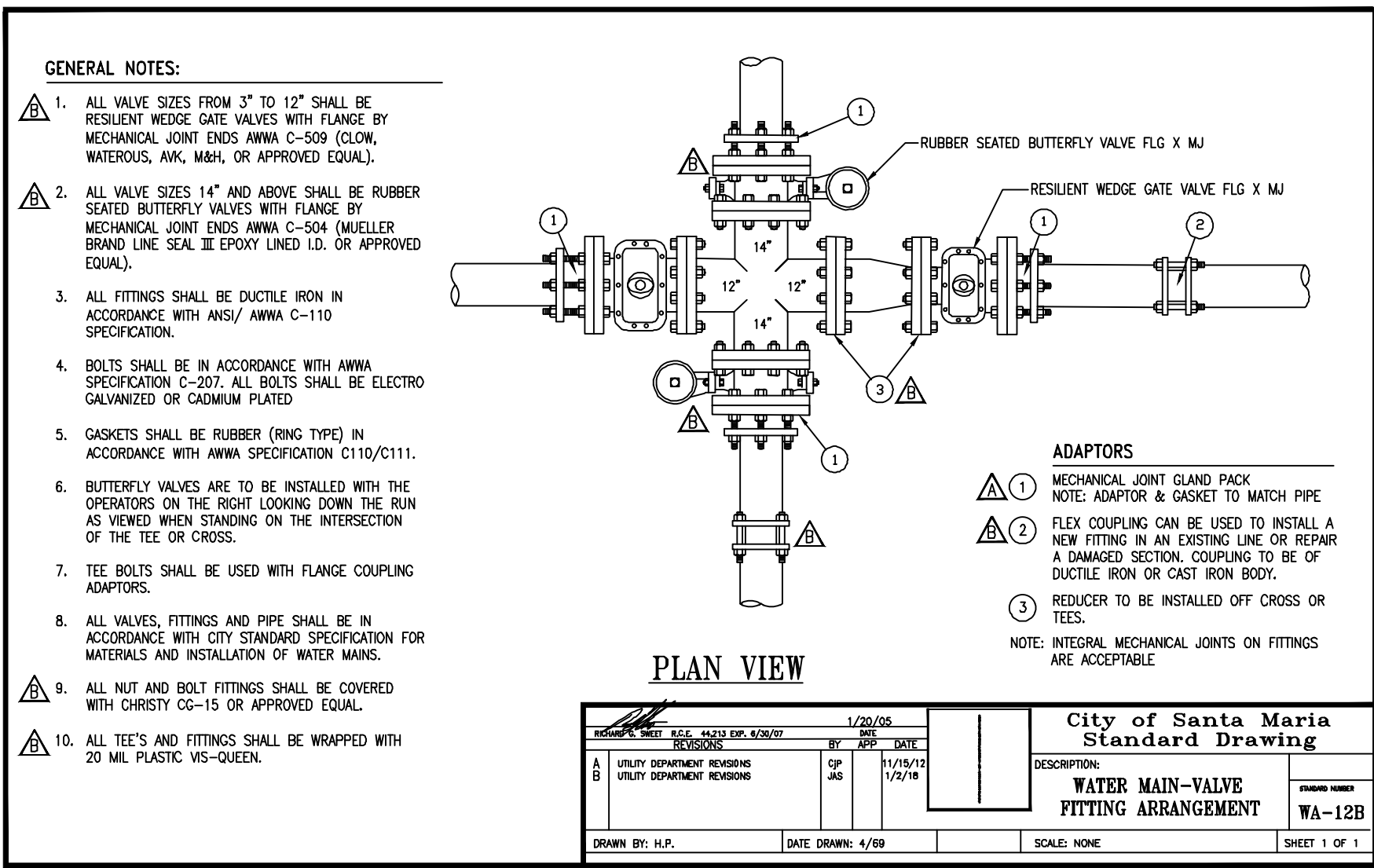
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CITY OF SANTA MARIA

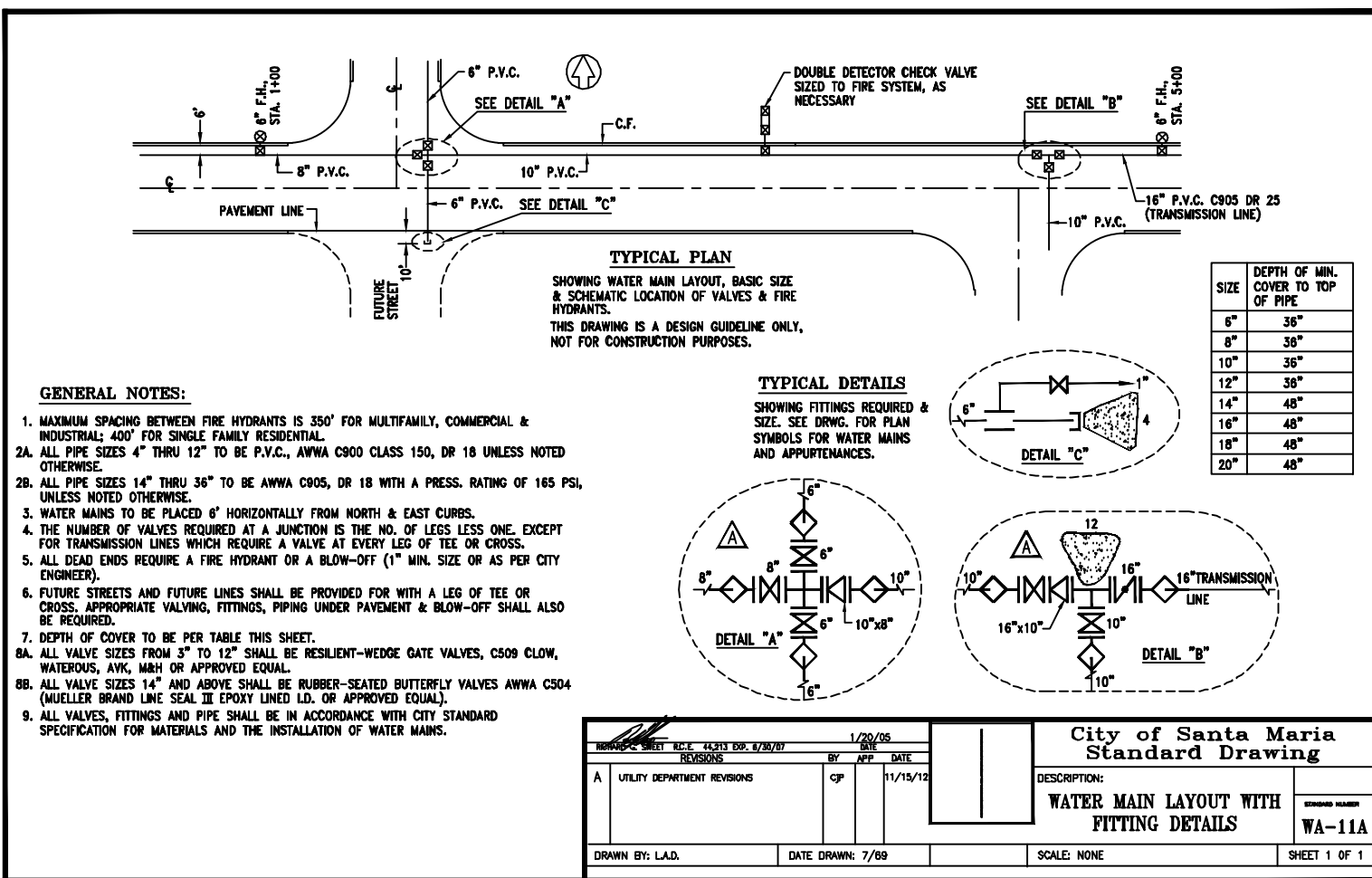
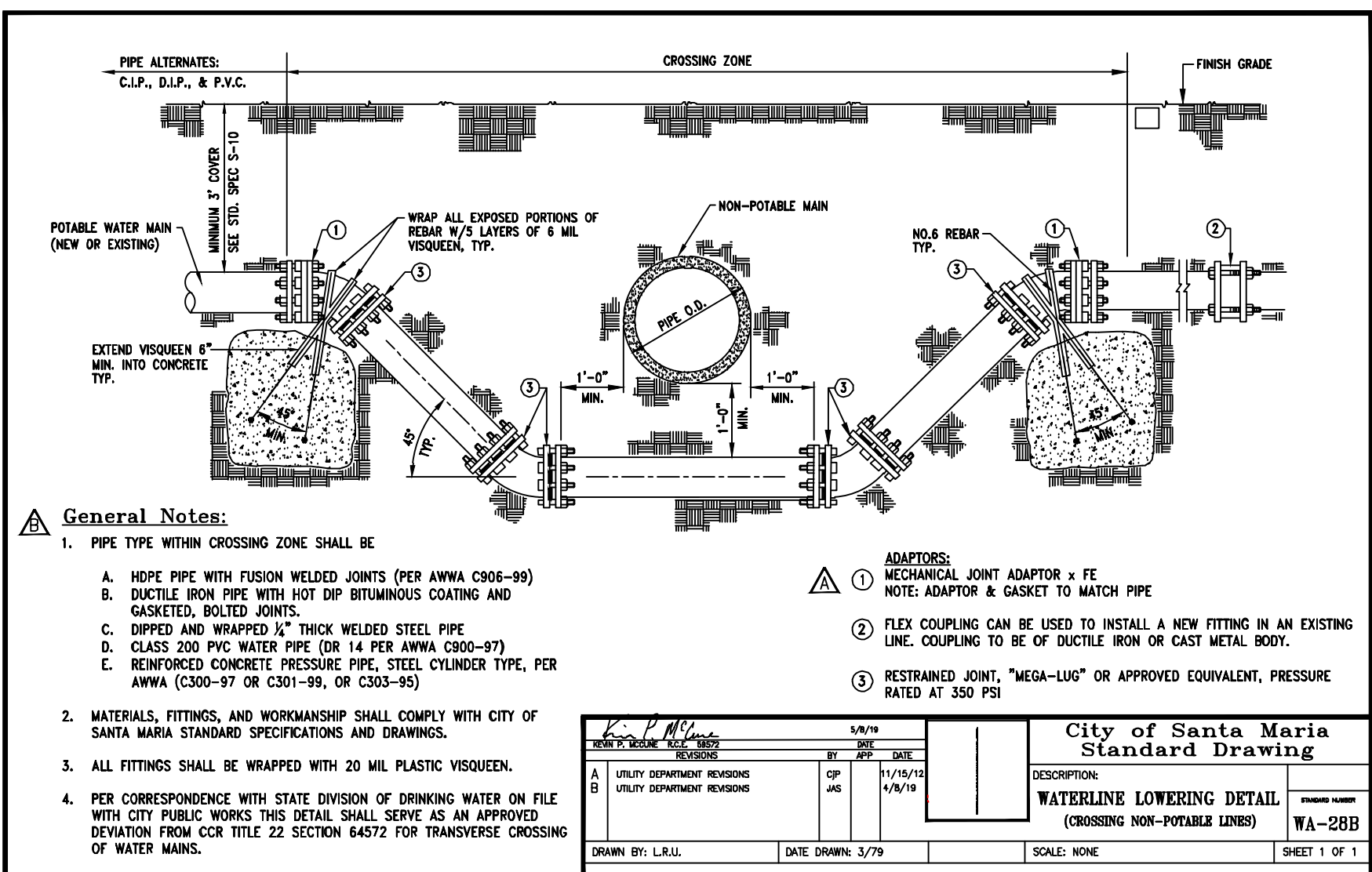
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| | | Kevin P. McCune, RCE 59672 | CHECKED BY: |
| | | | DATE: 6/22/2021 |
| | | | SHEET 7 OF 9 SHEETS |
| | | | REFERENCES: |
| | | | FILE NO. WA-4.0 |



VALVE BOX & RISER DETAIL

3



Ray Water Company Consolidation

Rayville Lane,
Santa Barbara County

Job #: 2T059



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120 Westgate Drive, Watsonville, CA 95076
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CITY OF SANTA MARIA

DEPARTMENT OF PUBLIC WORKS

Kevin P. McCune, RCE 59572

CONSTRUCTION DETAILS

DRAWN BY: RP

CHECKED BY:

DATE: 6/22/2021

SHEET 8 OF 9 SHEETS

REFERENCES:

FILE NO.

WA-5.0

APPENDIX C

Fire Prevention Flow Calculations

Fire Prevention Flow Calculations

We used Bernoulli's Equation for water flow in pipes to demonstrate that our water main and distribution pipe design meets California fire prevention flow (fire flow) requirements. Our fire flow calculation methodology is summarized in the sections below. Detailed fire flow calculations are attached at the end of this document.

Step 1: Determine the minimum fire flow requirement based on California Fire Code Table B105.1

- The largest structure associated with Ray Water Company is approximately 3,900-square-feet and is located at the south end of Rayville Lane, on the east side of the street. The largest structure square footage is used to determine the required fire flow (per Table B105.1 below).
- We assumed this structure to be the most conservative construction Type V-B^b (per Table B105.1 below). This construction type is associated with the highest required fire prevention flow.
- Table B105.1 specifies a required fire flow of 1,750 gallons per minute (gpm) for a 3,900-square-foot structure of construction type Type V-B^b. See table below.

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

| FIRE-FLOW CALCULATION AREA (square feet) | | | | | FIRE-FLOW (gallons per minute) ^c | FLOW DURATION (hours) |
|--|--------------------------------|------------------------------|--------------------------------|-----------------------|--|--------------------------|
| Type IA and IB ^b | Type IIA and IIIA ^b | Type IV and V-A ^b | Type IIB and IIIB ^b | Type V-B ^b | | |
| 0-22,700 | 0-12,700 | 0-8,200 | 0-5,900 | 0-3,600 | 1,500 | 2 |
| 22,701-30,200 | 12,701-17,000 | 8,201-10,900 | 5,901-7,900 | 3,601-4,800 | 1,750 | |
| 30,201-38,700 | 17,001-21,800 | 10,901-12,900 | 7,901-9,800 | 4,801-6,200 | 2,000 | |
| 38,701-48,300 | 21,801-24,200 | 12,901-17,400 | 9,801-12,600 | 6,201-7,700 | 2,250 | |
| 48,301-59,000 | 24,201-33,200 | 17,401-21,300 | 12,601-15,400 | 7,701-9,400 | 2,500 | |
| 59,001-70,900 | 33,201-39,700 | 21,301-25,500 | 15,401-18,400 | 9,401-11,300 | 2,750 | |

- The fire hydrant nearest this largest structure is at the south end of Rayville Lane. This fire hydrant must be able to provide 1,750-gpm fire flow at 20-pounds per square inch (PSI) for 2-hours. Table B105.1 is found in Appendix B of the California Fire Code, *Fire Flow Requirements for Buildings*.

- We anticipate the lowest pressure along our proposed new water main and distribution pipe to be at this fire hydrant location (south end of Rayville Lane).

Step 2: At the required 1,750-gpm fire flow – determine the corresponding pressure at the fire hydrant inlet located at the south end of Rayville Lane

Our proposed design consists of 12-inch diameter water main flowing west along Betteravia Road from A Street to Rayville Lane. At that intersection, the water pipe transitions to 8-inch diameter and flows south along Rayville Lane. At the south end of Rayville Lane, the 8-inch distribution pipe terminates and is directed into a 6-inch pipe that feeds the fire hydrant. See Figure 2 for the alignment in plan view.

We used Bernoulli's Equation for water flow in pipes to determine the pressure at this fire hydrant inlet (associated with the required 1,750-GPM fire flow). Bernoulli's Equation is presented below:

$$P_1 + \frac{1}{2} \cdot \rho \cdot V_1^2 + \rho \cdot g \cdot h_1 = P_2 + \frac{1}{2} \cdot \rho \cdot V_2^2 + \rho \cdot g \cdot h_2 + \mathcal{P}_p$$

$$\mathcal{P}_p = \mathcal{P}_h \cdot \rho \cdot g$$

$$\mathcal{P}_h = (\mathcal{P} \cdot L \cdot V^2) / 2 \cdot d \cdot g$$

P_1 & P_2 = pressures within water system

ρ = density of water

V_1 & V_2 = velocities of water

g = acceleration of gravity

h_1 & h_2 = heights (elevation) of the water pipes

\mathcal{P}_p = frictional pressure loss

\mathcal{P}_h = frictional pressure loss expressed as an equivalent height

d = inner diameter of water pipe

- The required fire flow (1,750-gpm) was used to determine a corresponding water velocity in the 6-inch inlet pipe at the fire hydrant location. The velocity in the 6-inch hydrant inlet pipe was used to calculate the corresponding velocities of the 8-inch distribution pipe and the 12-inch water main.
- These velocities were primarily used to determine the frictional losses associated with: (1) PVC pipe lengths, (2) isolation gate valves, (3) "T" connections at the various fire hydrant locations, (4) fire hydrant gate valve, and (5) bends in the pipes.
- The detailed calculations are presented in the three calculation tables below. Fire Flow Calculation 1 determines the pressure at the 12-inch water main / 8-inch distribution pipe connection. Fire Flow Calculation 2 determines the 8-inch distribution pipe pressure at the south end of Rayville Lane. Fire Flow Calculation 3 determines the 6-inch fire hydrant inlet pipe pressure.
- City of Santa Maria staff indicated that the average pressure for their entire water system is approximately 81 PSI, while the average pressure measured from sample stations closest to the point of connection is 87.5 with a range from 81 to 94 PSI. To be conservative, we assumed that pressure at the proposed 12-inch water main connection to the City of Santa Maria water system (intersection of Betteravia Road and A Street) is 80 PSI.
- Our calculations demonstrate that the fire hydrant inlet pressure is 71 PSI, at the required fire flow of 1,750-gpm.
- The City of Santa Maria specifies Clow Valve Company fire hydrant models #865 and #960.
- The Clow Valve Company provided frictional flow loss tests for hydrant models #860 (considered similar to #865) and #960. The flow loss tests indicate a maximum loss of 6.4 psig for #860 and 9.5 psig for #960. The flow associated with these values was 1,500-gpm. The flow loss tests did not provide values for higher flow rates, such as 1,750-gpm. We conservatively estimate that the maximum pressure loss associated with 1,750-gpm is 18 PSI. Therefore, the corresponding pressure at the fire hydrant outlet would be: 71 PSI – 18 PSI = **53 PSI**; which is well above the California Fire Code requirement of 20 PSI. Fire flow at 20 PSI would be considerably higher than 1,750-gpm.

- The Clow Valve Company frictional flow loss tests are presented after the calculation tables below

Attachments:

Calculation 1

Calculation 2

Calculation 3

Clow Valve Company – Frictional Flow Loss Test for hydrant model #860

Clow Valve Company – Frictional Flow Loss Test for hydrant model #960

Fire Flow Calculations 1 - Determine Pressure at Water Main / Distribution Line Connection

1 Determine velocity in distribution line associated with given minimum fire flow requirement

| | | | | | |
|---|-------|-----------------------|-----------------------------|-----------------|-----------------------|
| Required Flow Rate end of 8" distribution pipe | 1,750 | GPM | Flow Rate = Area * Velocity | | |
| Required Flow Rate at end of 8" distribution pipe | 3.9 | ft ³ / sec | $Q = A * V$ | $A = \pi * r^2$ | |
| Distribution Line (inner diameter) | 7.98 | inch | | A = | 0.347 ft ² |
| Distribution Line (inner diameter) | 0.665 | feet | $V = Q / A$ | | |
| | | | V = | 11.23 | ft / sec |

2 Determine velocity in water main associated with given velocity in distribution line (calculated above)

| | | | | | |
|---------------------------------|---|-----------------|--|--|----------------------|
| $A_1 \cdot V_1 = A_2 \cdot V_2$ | "Equation of Continuity": Flow rate remains constant through the different diameter pipes. Water velocity is slower in the larger diameter pipe → | | | | LINK |
| Water Main (inner diameter) | 11.64 | inch | | | |
| Water Main (inner diameter) | 0.97 | feet | | | |
| $V_2 =$ | 11.23 | ft / sec | | | |
| $A_2 =$ | 0.347 | ft ² | | | |
| $A_1 =$ | 0.739 | ft ² | | | |
| $V_1 = (A_2 \cdot V_2) / A_1$ | 5.28 | ft / sec | | | |

3 Determine pressure at water main / distribution line connection (using Bernoulli's Equation)

$$P_1 + \frac{1}{2} \cdot \rho \cdot V_1^2 + \rho \cdot g \cdot h_1 = P_2 + \frac{1}{2} \cdot \rho \cdot V_2^2 + \rho \cdot g \cdot h_2 + P_p$$

| | | | |
|--|---------|-----------------------------|---------------------------------------|
| Pressure at Betteravia & A Street (P ₁) | 80 | PSI → | Value provided by City of Santa Maria |
| Height (h ₁) | 217.5 | ft | |
| Height (h ₂) | 207.7 | ft | |
| Height (h ₁) - adjusted | 2.99 | m | |
| Height (h ₂) - adjusted | 0 | m | |
| Length | 3,400 | ft | |
| Length + friction loss in terms of equivalent length | 3,707 | ft | Calculation in section below |
| Total Length | 1,130 | m | |
| Velocity (V1 & V2) are the same, so they cancel out (i.e. "0"); h ₂ = 0, so that equation term equals 0 | | | |
| $P_1 + 0 + \rho \cdot g \cdot h_1 = P_2 + 0 + 0 + P_p$ | | | |
| $P_2 = P_1 + \rho \cdot g \cdot h_1 - P_p$ | | | |
| P ₁ = | 551,581 | Pascals (N/m ²) | |
| ρ = | 1,000 | kg/m ³ | |
| g = | 9.81 | m/sec ² | |
| h ₁ = | 2.99 | m | |
| P _p = | 41,956 | Pascals (N/m ²) | |
| P ₂ = | 538,927 | Pascals (N/m ²) | |
| P ₂ = | 78.2 | PSI | |
| P ₂ = Pressure at water main & distribution main connection (Betteravia Rd & Rayville Ln) | | | |

Calculate friction pressure loss element P_p

$$P_p = P_h \cdot \rho \cdot g$$

$$P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g$$

Determine Friction Factor (P) from equation above using items below (RPR, Re, Moody Diagram)

| | | | |
|---|-----------|---------------------------------------|---|
| Relative Pipe Roughness (RPR) = | € / D | | |
| € (plastic pipe) = | 0.000084 | in | LINK |
| D = | 11.64 | in | |
| RPR = € / D = | 0.0000072 | in / in | |
| RPR = | 7.2E-06 | in / in | |
| Reynold's Number (Re) | | | |
| $Re = (\rho \cdot V \cdot D_h) / \mu$ | | | |
| ρ = | 62.4 | lb / ft ³ | |
| V = | 5.28 | ft / sec | |
| Hydraulic Diameter (D _h) | 0.97 | ft | |
| (dynamic viscosity) μ = | 2.73E-05 | lb _m · s / ft ² | LINK at 10 ° C 50 ° F |
| $Re = (\rho \cdot V \cdot D_h) / \mu =$ | 1.17E+07 | | |

Use RPR, Reynold's Number input into Moody Diagram to determine the Friction Factor (P)

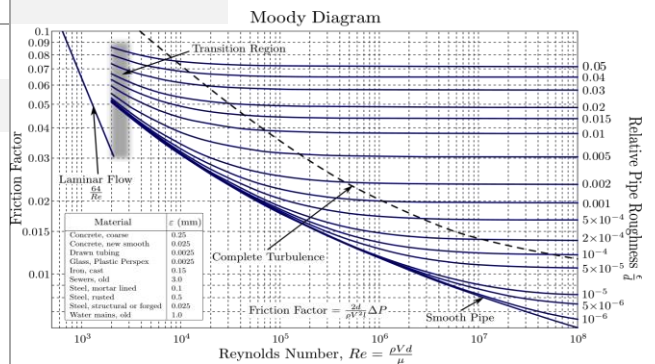
Friction loss in terms of equivalent length (L) of straight pipe

| Item | Feet* | Items | Total Feet * |
|--|-------|--|--------------|
| Gate Valve (full open) | 7.96 | 6 | 47.76 |
| 12-inch "T" connections at hydrant locations Standard Tee "T" with thru flow | 19.9 | 10 | 199 |
| 90° elbow into 8-inch distribution line (assume more conservative 12-inch "standard" 90° elbow). Less loss if "long radius" elbow is used. | 29.8 | 1 | 29.8 |
| Reducer bushing from 12-inch to 8-inch diamter at end of 12-inch water main | 30 | 1 | 30 |
| | | Total | 306.6 |
| | | Inserted into Bernoulli's Equation Above | |

* = Friction loss in terms of equivalent length (L) of straight pipe

Reference source is Handbook of PVC Pipe Design & Construction (Fifth Edition) →

[LINK](#)



Moody Diagram to determine P

Friction Factor (P) = 0.008488 [online calculator](#)

Fire Flow Calculations 1 - Determine Pressure at Water Main / Distribution Line Connection

| | | | | |
|--|----------|-----------------------------|--|-----|
| $P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g$ | | | | |
| $P =$ | 0.008488 | | | |
| $L =$ | 3,707 | ft | | |
| $V =$ | 5.28 | ft / sec | | |
| $d =$ | 0.97 | ft | | |
| $g =$ | 32.174 | ft / sec ² | | |
| $P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g =$ | 14.03 | ft | 6.07 | PSI |
| Convert to SI Units so that units work out considering the acceleration of gravity | | | | |
| $P_p = P_h \cdot \rho \cdot g$ | | | | |
| $P_h =$ | 4.28 | m | | |
| $\rho =$ | 1,000 | kg/m ³ | | |
| $g =$ | 9.81 | m/sec ² | | |
| $P_p = P_h \cdot \rho \cdot g =$ | 41,956 | kg / m · sec ² = | Pascals = N / m ² | |
| $P_p =$ | 6.09 | PSI | Value Inserted into Bernoulli's equation above | |

Definition [\[edit \]](#)

The pascal can be expressed using [SI derived units](#), or alternatively solely [SI base units](#), as:

$$1 \text{ Pa} = 1 \frac{\text{N}}{\text{m}^2} = 1 \frac{\text{kg}}{\text{m} \cdot \text{s}^2} = 1 \frac{\text{J}}{\text{m}^3}$$

where N is the [newton](#), m is the [metre](#), kg is the [kilogram](#), s is the [second](#), and J is the [joule](#).^[9]

One pascal is the pressure exerted by a force of magnitude one newton perpendicularly upon an area of one square metre.

Fire Flow Calculations 2 - Determine pressure at south end of 8-inch distribution pipe

1 Determine velocity in distribution line associated with given minimum fire flow requirement

| | | | | | |
|---|-------|-----------------------|-----------------------------|--|--|
| Required Flow Rate at end of 8" distribution pipe | 1,750 | GPM | Flow Rate = Area * Velocity | | |
| Required Flow Rate at end of 8" distribution pipe | 3.9 | ft ³ / sec | $Q = A \cdot V$ | | |
| Distribution Line (inner diameter) | 7.98 | inch | $A = \pi \cdot r^2$ | | |
| Distribution Line (inner diameter) | 0.665 | feet | $A = 0.347$ | | |
| | | | $V = Q / A$ | | |
| | | | V = 11.23 ft / sec | | |

2 Determine velocity in water main associated with given velocity in distribution line (calculated above)

| | | | | | |
|---------------------------------|--|-----------------|--|--|----------------------|
| $A_1 \cdot V_1 = A_2 \cdot V_2$ | "Equation of Continuity" : Flow rate remains constant through the different diameter pipes. Water velocity is slower in the larger diameter pipe → | | | | LINK |
| Water Main (inner diameter) | 11.64 | inch | | | |
| Water Main (inner diameter) | 0.97 | feet | | | |
| $V_2 =$ | 11.23 | ft / sec | | | |
| $A_2 =$ | 0.347 | ft ² | | | |
| $A_1 =$ | 0.739 | ft ² | | | |
| $V_1 = (A_2 \cdot V_2) / A_1$ | 5.28 | ft / sec | | | |

3 Determine pressure at south end of 8-inch distribution pipe (using Bernoulli's Equation)

| | | | |
|---|---------|-----------------------------|--|
| $P_1 + (\frac{1}{2} \cdot \rho \cdot V_1^2) + \rho \cdot g \cdot h_1 = P_2 + (\frac{1}{2} \cdot \rho \cdot V_2^2) + \rho \cdot g \cdot h_2 + P_p$ | | | |
| Pressure at 12" water main & 8" distribution pipe connection | 78.2 | PSI | |
| Height (h ₁) | 207.7 | ft | |
| Height (h ₂) | 208 | ft | |
| Height (h ₁) - adjusted | 0 | ft | |
| Height (h ₂) - adjusted | 0.091 | m | |
| Length (to south end of Rayville Lane) | 500 | ft | |
| Length + friction loss in terms of equivalent length | 533 | ft | |
| Total Length | 163 | m | |
| Velocity (V ₁ & V ₂) are the same, so they cancel out (i.e. "0"); h ₁ = 0, so that equation term equals 0 | | | |
| $P_1 + 0 + 0 = P_2 + 0 + \rho \cdot g \cdot h_2 + P_p$ | | | |
| $P_2 = P_1 - \rho \cdot g \cdot h_2 - P_p$ | | | |
| $P_1 =$ | 538,929 | Pascals (N/m ²) | |
| $\rho =$ | 1,000 | kg/m ³ | |
| $g =$ | 9.81 | m/sec ² | |
| $h_2 =$ | 0.09 | m | |
| $P_p =$ | 39,676 | Pascals (N/m ²) | |
| $P_2 =$ | 498,355 | Pascals (N/m ²) | |
| $P_2 =$ | 72.3 | PSI | |
| P₂ = Pressure at south end of 8-inch distribution pipe | | | |

Calculate friction pressure loss element P_p

$$P_p = P_h \cdot \rho \cdot g$$

$$P_h = (\rho \cdot L \cdot V^2) / 2 \cdot d \cdot g$$

Determine Friction Factor (P) from equation above using items below (RPR, Re, Moody Diagram)

| | | | |
|---------------------------------|----------------|---------|----------------------|
| Relative Pipe Roughness (RPR) = | ϵ / D | | |
| ϵ (plastic pipe) = | 0.000084 | in | LINK |
| D = | 7.98 | in | |
| RPR = ϵ / D = | 1.05263E-05 | in / in | |
| RPR = | 1.1E-05 | in / in | |

Reynold's Number (Re)

$$Re = (\rho \cdot V \cdot D_h) / \mu$$

$$\rho = 62.4 \text{ lb / ft}^3$$

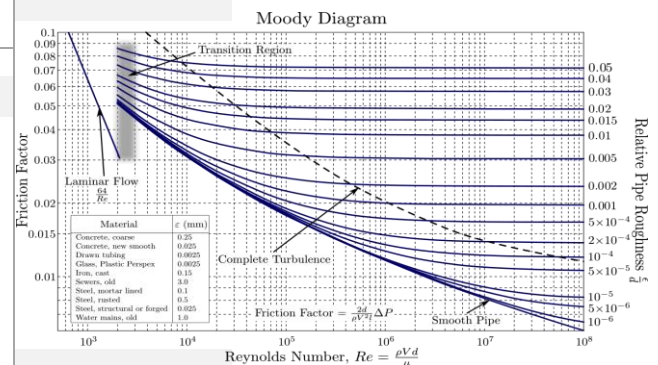
$$V = 11.23 \text{ ft / sec}$$

$$\text{Hydraulic Diameter (D}_h\text{)} = 0.665 \text{ ft}$$

$$(\text{dynamic viscosity } \mu) = 2.73E-05 \text{ lb}_m \cdot \text{s / ft}^2 \quad \text{LINK} \quad \text{at } 10^\circ \text{ C } | 50^\circ \text{ F}$$

$$Re = (\rho \cdot V \cdot D_h) / \mu = 1.71E+07$$

Use RPR, Reynold's Number input into Moody Diagram to determine the Friction Factor (P)



Friction loss in terms of equivalent length (L) of straight pipe

| Item | Feet* | Items | Total Feet * |
|--|-------|-------|--------------|
| 12-inch "T" connections at hydrant locations Standard Tee "T" with thru flow | 13.3 | 1 | 13.3 |
| Reducer bushing from 8-inch to 6-inch diamter at end of 8-inch distribution pipe (into the 6-inch fire hydrant line) | 20 | 1 | 20 |
| Total | | | 33.3 |
| Value inserted into Bernoulli's Equation above | | | |

* = Friction loss in terms of equivalent length (L) of straight pipe

Reference source is Handbook of PVC Pipe Design & Construction (Fifth Edition) →

[LINK](#)

Moody Diagram to determine P

Friction Factor (P) = 0.0084487

[online calculator](#)

Fire Flow Calculations 2 - Determine pressure at south end of 8-inch distribution pipe

$$P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g$$

| | | |
|---|-----------|-----------------------|
| $P =$ | 0.0084487 | |
| $L =$ | 533 | ft |
| $V =$ | 11.23 | ft / sec |
| $d =$ | 0.665 | ft |
| $g =$ | 32.174 | ft / sec ² |
| $P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g =$ | 13.27 | ft |

| | | |
|--|------|-----|
| | 5.74 | PSI |
|--|------|-----|

Convert to SI Units so that units work out considering the acceleration of gravity

$$P_p = P_h \cdot \rho \cdot g$$

| | | |
|----------------------------------|--------|-----------------------------|
| $P_h =$ | 4.04 | m |
| $\rho =$ | 1,000 | kg/m ³ |
| $g =$ | 9.81 | m/sec ² |
| $P_p = P_h \cdot \rho \cdot g =$ | 39,676 | kg / m · sec ² = |

| | | |
|---------|------|-----|
| $P_p =$ | 5.75 | PSI |
|---------|------|-----|

Value Inserted into Bernoulli's equation above

Definition [edit]

The pascal can be expressed using [SI derived units](#), or alternatively solely [SI base units](#), as:

$$1 \text{ Pa} = 1 \frac{\text{N}}{\text{m}^2} = 1 \frac{\text{kg}}{\text{m} \cdot \text{s}^2} = 1 \frac{\text{J}}{\text{m}^3}$$

where N is the [newton](#), m is the [metre](#), kg is the [kilogram](#), s is the [second](#), and J is the [joule](#).^[9]

One pascal is the pressure exerted by a force of magnitude one newton perpendicularly upon an area of one square metre.

Fire Flow Calculations 3 - Determine pressure at fire hydrant 6-inch inlet pipe, nearest the largest structure

1 Determine velocity in distribution pipe associated with given minimum fire flow requirement

| | | | | | |
|------------------------------------|-------|-----------------------|-----------------------------|--|--|
| Required Flow Rate at hydrant | 1,750 | GPM | Flow Rate = Area * Velocity | | |
| Required Flow Rate at hydrant | 3.9 | ft ³ / sec | $Q = A \cdot V$ | | |
| Distribution Line (inner diameter) | 7.98 | inch | $A = \pi \cdot r^2$ | | |
| Distribution Line (inner diameter) | 0.665 | feet | $A =$ 0.347 ft ² | | |
| | | | $V = Q / A$ | | |
| | | | V = 11.23 ft / sec | | |

2 Determine velocity in 6-inch fire hydrant pipe associated with given velocity in distribution pipe (calculated above)

| | | | | | |
|------------------------------------|---|-----------------|--|--|----------------------|
| $A_1 \cdot V_1 = A_2 \cdot V_2$ | "Equation of Continuity" : Flow rate remains constant through the different diameter pipes. Water velocity is faster in the smaller diameter pipe → | | | | LINK |
| Fire Hydrant pipe (inner diameter) | 6.08 | inch | | | |
| Fire Hydrant pipe (inner diameter) | 0.51 | feet | | | |
| $V_2 =$ | 11.23 | ft / sec | | | |
| $A_2 =$ | 0.347 | ft ² | | | |
| $A_1 =$ | 0.202 | ft ² | | | |
| $V_1 = (A_2 \cdot V_2) / A_1$ | 19.34 | ft / sec | | | |

3 Determine pressure at fire hydrant inlet (6-inch hydrant pipe) nearest the largest structure - hydrant at south end of Rayville Lane (using Bernoulli's Equation)

$$P_1 + (\frac{1}{2} \cdot \rho \cdot V_1^2) + \rho \cdot g \cdot h_1 = P_2 + (\frac{1}{2} \cdot \rho \cdot V_2^2) + \rho \cdot g \cdot h_2 + P_p$$

| | | |
|--|-------|-----|
| Pressure at end of 8" distribution pipe | 72.3 | PSI |
| Height (h ₁) | 208 | ft |
| Height (h ₂) | 207.7 | ft |
| Height (h ₁) - adjusted | 0.30 | ft |
| Height (h ₂) - adjusted | 0 | m |
| Length of 6" fire hydrant pipe | 10 | ft |
| Length + friction loss in terms of equivalent length | 44.4 | ft |
| Length (if hydrant at south end of Rayville Lane) | 14 | m |

Velocity (V₁ & V₂) are the same, so they cancel out (i.e. "0"); h₂ = 0, so that equation term equals "0"

$$P_1 + 0 + \rho \cdot g \cdot h_1 = P_2 + 0 + 0 + P_p$$

$$P_2 = P_1 + \rho \cdot g \cdot h_1 - P_p$$

| | | |
|------------------|---------|-----------------------------|
| P ₁ = | 498,356 | Pascals (N/m ²) |
| ρ = | 1,000 | kg/m ³ |
| g = | 9.81 | m/sec ² |
| h ₁ = | 0.30 | m |
| P _p = | 13,547 | Pascals (N/m ²) |

$$P_2 = 487,752 \text{ Pascals (N/m}^2\text{)}$$

$$P_2 = 70.7 \text{ PSI}$$

P₂ = Pressure at fire hydrant inlet at south end of Rayville Lane

Calculate friction pressure loss element P_p

$$P_p = P_h \cdot \rho \cdot g$$

$$P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g$$

Determine Friction Factor (P) from equation above using items below (RPR, Re, Moody Diagram)

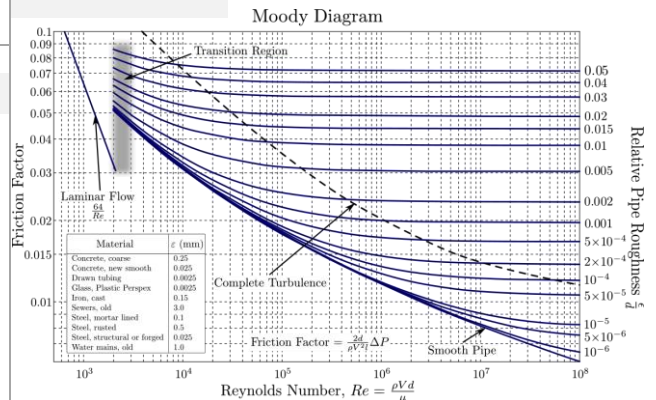
| | | | |
|---------------------------------|----------|---------|----------------------|
| Relative Pipe Roughness (RPR) = | ε / D | | |
| ε (plastic pipe) = | 0.000084 | in | LINK |
| D = | 6.08 | in | |
| RPR = ε / D = | 0.000014 | in / in | |
| RPR = | 1.4E-05 | in / in | |

Reynold's Number (Re)

$$Re = (\rho \cdot V \cdot D_h) / \mu$$

| | | |
|--------------------------------------|----------|---|
| ρ = | 62.4 | lb / ft ³ |
| V = | 19.34 | ft / sec |
| Hydraulic Diameter (D _h) | 0.507 | ft |
| (dynamic viscosity) μ = | 2.73E-05 | lb _m · s / ft ² LINK at 10° C 50° F |
| Re = (ρ · V · D _h) / μ = | 2.24E+07 | |

Use RPR, Reynold's Number input into Moody Diagram to determine the Friction Factor (P)



Moody Diagram to determine P

$$\text{Friction Factor (P)} = 0.008888$$

[online calculator](#)

Friction loss in terms of equivalent length (L) of straight pipe

| Item | Feet* | Items | Total Feet * |
|--|-------|-------|--------------|
| Gate Valve (full open) | 4.04 | 1 | 4.04 |
| 90° elbow from 8-inch distribution line into 6-inch hydrant line (assume more conservative 6-inch "standard" 90° elbow). Less loss if "long radius" elbow is used. | 15.2 | 1 | 15.2 |
| 90° elbow from 6-inch hydrant line vertically up toward hydrant (assume more conservative 6-inch "standard" 90° elbow). Less loss if "long radius" elbow is used. | 15.2 | 1 | 15.2 |
| Total | | | 34.4 |

Value inserted into Bernoulli's Equation above

* = Friction loss in terms of equivalent length (L) of straight pipe

Reference source is Handbook of PVC Pipe Design & Construction (Fifth Edition) →

[LINK](#)

Fire Flow Calculations 3 - Determine pressure at fire hydrant 6-inch inlet pipe, nearest the largest structure

$$P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g$$

| | | | | |
|---|----------|-----------------------|------|-----|
| $P =$ | 0.008888 | | | |
| $L =$ | 44.4 | ft | | |
| $V =$ | 19.34 | ft / sec | | |
| $d =$ | 0.507 | ft | | |
| $g =$ | 32.174 | ft / sec ² | | |
| $P_h = (P \cdot L \cdot V^2) / 2 \cdot d \cdot g =$ | 4.53 | ft | 1.96 | PSI |

Convert to SI Units so that units work out considering the acceleration of gravity

$$P_p = P_h \cdot \rho \cdot g$$

| | | | | |
|----------------------------------|--------|-----------------------------|--|--|
| $P_h =$ | 1.38 | m | | |
| $\rho =$ | 1,000 | kg/m ³ | | |
| $g =$ | 9.81 | m/sec ² | | |
| $P_p = P_h \cdot \rho \cdot g =$ | 13,547 | kg / m · sec ² = | Pascals = N / m ² | |
| $P_p =$ | 1.96 | PSI | Value Inserted into Bernoulli's equation above | |

Definition [\[edit \]](#)

The pascal can be expressed using [SI derived units](#), or alternatively solely [SI base units](#), as:

$$1 \text{ Pa} = 1 \frac{\text{N}}{\text{m}^2} = 1 \frac{\text{kg}}{\text{m} \cdot \text{s}^2} = 1 \frac{\text{J}}{\text{m}^3}$$

where N is the [newton](#), m is the [metre](#), kg is the [kilogram](#), s is the [second](#), and J is the [joule](#).^[9]

One pascal is the pressure exerted by a force of magnitude one newton perpendicularly upon an area of one square metre.

Clow Valve Company

A Division of McWane Corporation

902 South Second Street
Oskaloosa, Iowa 52577

City specifies model #865. Per Michael Moore at Clow email on 9/1/21, the #860 would have similar flow numbers to #860

MODEL #860

WET BARREL FIRE HYDRANT FRICTIONAL FLOW LOSS TEST

By

Chris Cook

Project Number 2545-14

Engineering

Approved , 10/23/03

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PURPOSE

The purpose of this test was to determine the frictional head loss through the 860 wet barrel fire hydrant at various flow rates. The maximum permissible frictional flow losses as specified in AWWA C503, Standard for Wet-Barrel Fire Hydrants are listed below.

| No. of Outlet Nozzles | Nominal Dia. of Outlet Nozzle | Total Fluid Flow | Max. Allowable Head Loss |
|-----------------------|-------------------------------|------------------|--------------------------|
| 1 | 2 ½" | 250 GPM | 1.0 PSI |
| 2 | 2 ½" | 500 GPM | 2.0 PSI |
| 1 | 4 ½" | 1000 GPM | 5.0 PSI |
| 1 | 4" | 1500 GPM | 11.0 PSI* |
| 1 | 4 ½" | 1500 GPM | 9.0 PSI† |

* At time of printing a revised draft of AWWA C503 increased this value to 14.0 PSI

† At time of printing a revised draft of AWWA C503 increased this value to 12.0 PSI

PROCEDURE

The test specimen was the 860 wet-barrel fire hydrant. This hydrant has one 4" pumper nozzle and two 2-1/2" hose nozzles. The hydrant has a trench depth of 56 inches. The hydrant was later refitted with a 4-1/2" pumper nozzle and tested again.

The fire hydrant was installed in a flow test circuit located at the Clow manufacturing facility at Oskaloosa, Iowa. Included in this report is a schematic illustration of the flow test circuit. See page five. Every effort was made to align the inlet and outlet piping of the test circuit with the hydrant inlet and nozzle outlets.

The following equipment was used in the flow test circuit:

- A. BIF 4" Venturi, Serial No. 216579
- B. BIF 6" Venturi, Serial No. 188761
- C. Venturi digital differential pressure transducer Serial No. 1205592
- D. Test digital differential pressure transducer Serial No. 1281287
- E. Piping and valves to control and regulate flow.

Water was introduced into the flow circuit and directed through the venturi and test hydrant as shown in the schematic illustration. Control valves installed in the pipelines exiting the hydrant nozzles were used to vary the rate of fluid flow and to adjust system pressure during the test.

A differential pressure transducer was connected to pressure taps at the throat and outlet of the venturi flow meter. The pressure differential across the venturi was used in conjunction with a calibration curve to determine actual flow rate through the circuit. The calibration curve was supplied by the venturi manufacturer.

A piezometer was installed in the inlet and outlet pipelines connected to the inlet and nozzle outlets of the hydrant. The differential pressure transducer connected to these piezometers was used to determine the static pressure differential between the two piezometers. At the start of the test, this transducer was zeroed to correct for the difference in elevation between the hydrant inlet and the nozzle outlets.

Pressure differential readings for the venturi and the hydrant were taken at various flow rates through the hydrant. Having determined the static pressure differential across the hydrant at various fluid flow rates, the frictional flow loss of the hydrant was calculated using Bernoulli's equation, the continuity equation, and Poiseuille's equation for friction resistance to fluid flow in horizontal pipes.

The total hydrant friction loss is determined by subtracting the frictional flow loss of the inlet and outlet pipelines connected to the hydrant.

The following tests were run to determine the frictional flow loss. In some cases it was necessary to extrapolate the data, due to the limitations of the test equipment and test facilities.

- A. 4" pumper nozzle test at 1000 gpm extrapolated to 1500 gpm
- B. 4-1/2" pumper nozzle test at 1000 gpm and extrapolated to 1500 gpm
- C. 2-1/2" middle hose nozzle test at 250 gpm
- D. 2-1/2" top hose nozzle test at 250 gpm

ACCURACY

The differential pressure transducers used to determine flow and friction loss display pressure differentials in pounds per square inch (psi). When the system is in operation, it is not unusual to have a rapid, uniform fluctuation on the LCD display due to vibration and pump surge. By mentally calculating an average reading under these conditions, errors can usually be held to within plus or minus .5 psi. However, the percentage error is inversely proportional to the magnitude of the display reading. At a reading of 25 psi, an error of .5 psi is practically negligible, while at a very low reading, this same error will result in a very large variance in calculated friction loss. Therefore, it is reasonable to conclude that higher flow rates produce more accurate data for any given test.

CONCLUSION

Upon completion of all the flow tests and subsequent engineering calculations, the frictional flow loss of the 860 hydrant was determined at various rates of fluid flow. The resulting flow loss calculations were plotted on graphs included in this report.

The following tests were found to meet the criteria for maximum permissible frictional flow losses as specified in AWWA C503, Standard for Wet-Barrel Fire Hydrants.

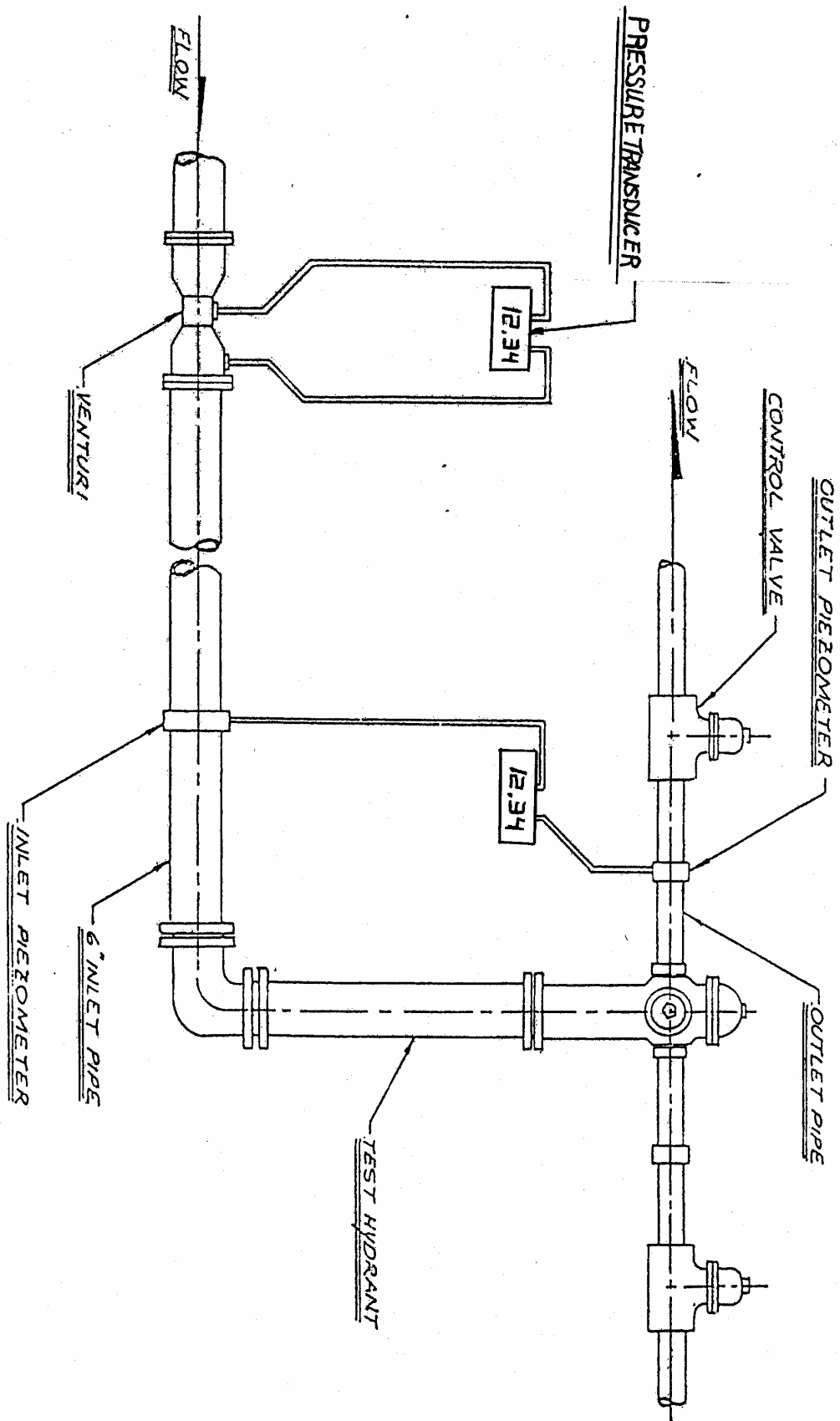
2-1/2" top hose nozzle test at 250 gpm, pressure loss is 0.90 psig where 1.0 psig is allowed

2-1/2" middle hose nozzle test at 250 gpm, pressure loss is 0.65 psig where 1.0 psig is allowed

4" pumper nozzle test at 1000 gpm extrapolated to 1500 gpm, pressure loss is 4.8 psig where 11.0 psig is allowed

4-1/2" pumper nozzle test at 1000 gpm, pressure loss is 3.2 psig where 5.0 psig is allowed. Extrapolated to 1500 gpm, pressure loss is 6.4 psig where 9.0 psig is allowed





Clow Valve Venturi Testing

Product Name: 860
 Test Conducted: 2 1/2" Middle Port
 Date of Test: 7/10/2003
 Test Personnel: ALL
 Venturi Size: 4"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 2.5

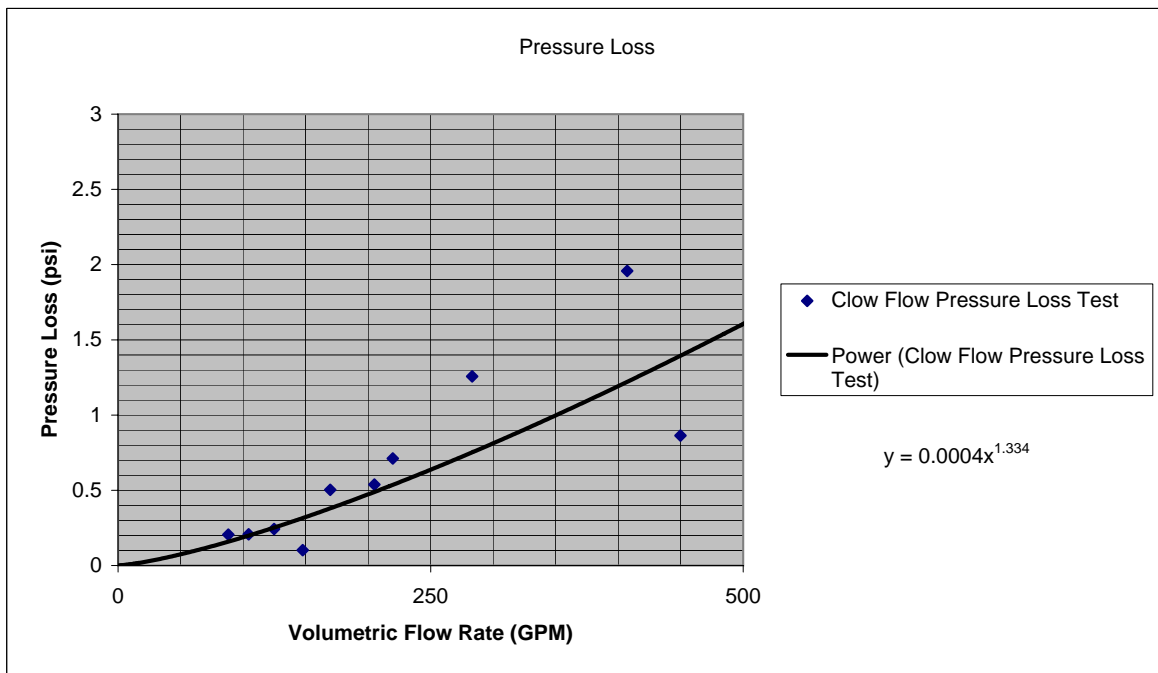
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 56
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 0

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 137.282 | 4.96 | 16.5 | 621.3741 | 75.93536 | 2.733673 |
| 2 | 28.50816 | 1.03 | 4.21 | 283.1593 | 34.90248 | 1.256489 |
| 3 | 17.16025 | 0.62 | 2.51 | 219.6889 | 19.75724 | 0.71126 |
| 4 | 14.94603 | 0.54 | 2.11 | 205.0261 | 14.95211 | 0.538276 |
| 5 | 10.2408 | 0.37 | 1.59 | 169.7122 | 13.96558 | 0.502761 |
| 6 | 7.749792 | 0.28 | 0.93 | 147.6357 | 2.825456 | 0.101716 |
| 7 | 5.535566 | 0.2 | 0.84 | 124.7749 | 6.743752 | 0.242775 |
| 8 | 3.874896 | 0.14 | 0.63 | 104.3942 | 5.769758 | 0.207711 |
| 9 | 2.767783 | 0.1 | 0.51 | 88.22919 | 5.703191 | 0.205315 |
| 10 | 58.95378 | 2.13 | 7.97 | 407.1947 | 54.38612 | 1.9579 |
| 11 | 71.96236 | 2.6 | 8.17 | 449.8824 | 23.98148 | 0.863333 |
| 12 | 91.61362 | 3.31 | 10.21 | 507.6055 | 26.46849 | 0.952866 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 860
 Test Conducted: 2 1/2" Top Port
 Date of Test: 7/10/2003
 Test Personnel: ALL
 Venturi Size: 4"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 2.5

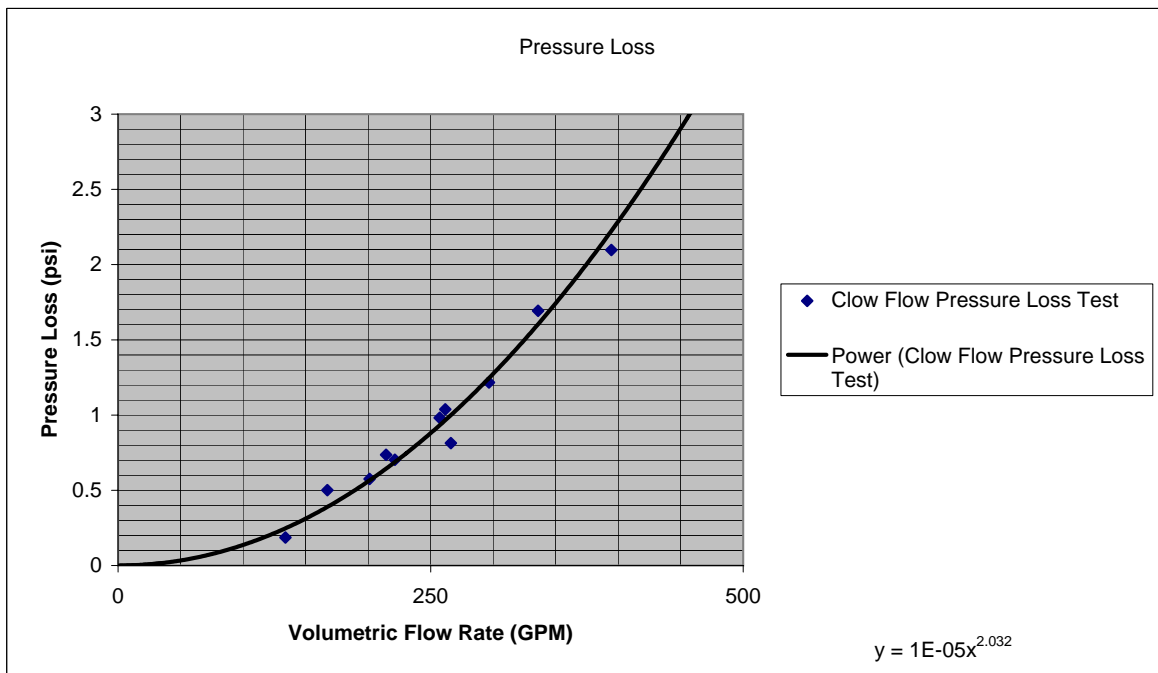
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 56
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 0

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 116.8004 | 4.22 | 16.35 | 573.1503 | 127.7294 | 4.598259 |
| 2 | 31.27595 | 1.13 | 4.45 | 296.5866 | 33.79634 | 1.216668 |
| 3 | 23.52616 | 0.85 | 3.43 | 257.2301 | 27.28003 | 0.982081 |
| 4 | 17.43703 | 0.63 | 2.53 | 221.4535 | 19.52702 | 0.702973 |
| 5 | 9.964019 | 0.36 | 1.56 | 167.4031 | 13.92759 | 0.501393 |
| 6 | 6.365901 | 0.23 | 0.87 | 133.8062 | 5.164403 | 0.185918 |
| 7 | 14.39247 | 0.52 | 2.09 | 201.1935 | 15.97275 | 0.575019 |
| 8 | 25.18683 | 0.91 | 3.43 | 266.154 | 22.60325 | 0.813717 |
| 9 | 40.13285 | 1.45 | 5.82 | 335.9667 | 47.03882 | 1.693397 |
| 10 | 24.35649 | 0.88 | 3.57 | 261.7301 | 28.82399 | 1.037664 |
| 11 | 16.32992 | 0.59 | 2.45 | 214.308 | 20.44949 | 0.736182 |
| 12 | 55.35566 | 2 | 7.75 | 394.5729 | 58.25245 | 2.097088 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 860 Hydrant
 Test Conducted: 4" Nozzle
 Date of Test: 7/9/2003
 Test Personnel: ALL
 Venturi Size: 6"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 4

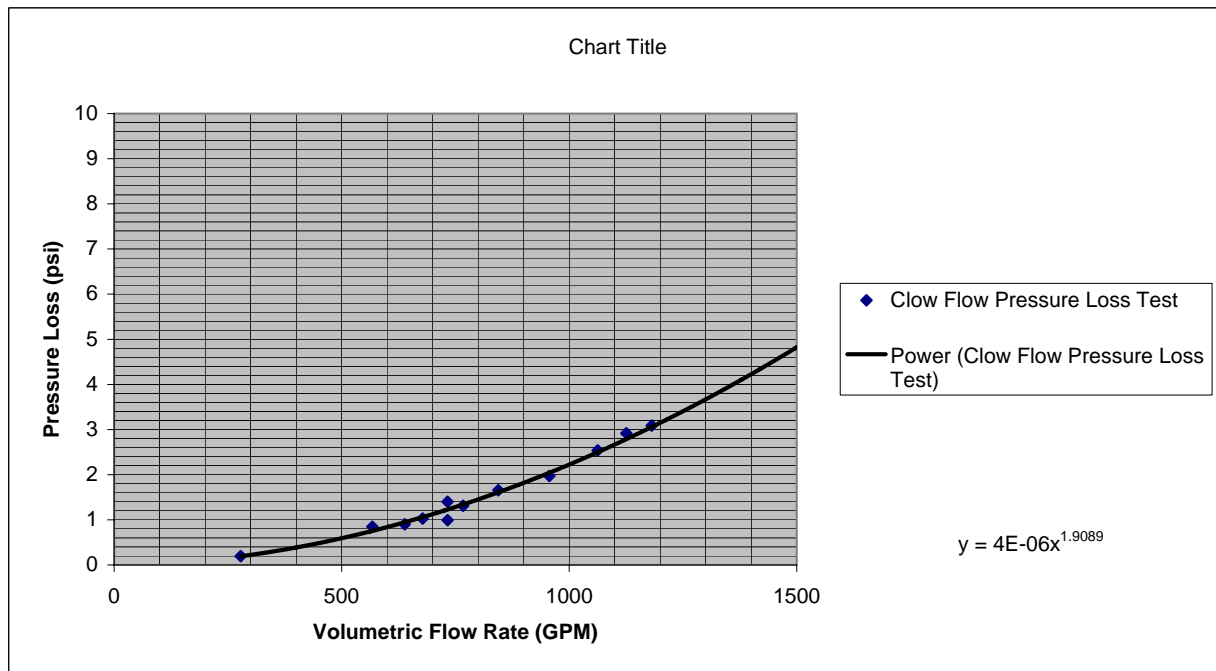
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 57
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 74

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 0 | 1.25 | 3.31 | 732.64767 | 27.52461 | 0.990886 |
| 2 | 0 | 2.13 | 5.89 | 956.37886 | 54.75294 | 1.971106 |
| 3 | 0 | 1.66 | 4.72 | 844.29499 | 45.93758 | 1.653753 |
| 4 | 0 | 1.37 | 3.85 | 767.00899 | 36.43633 | 1.311708 |
| 5 | 0 | 1.07 | 3.02 | 677.84759 | 28.59626 | 1.029465 |
| 6 | 0 | 0.75 | 2.25 | 567.50645 | 23.50329 | 0.846118 |
| 7 | 0 | 0.18 | 0.54 | 278.02024 | 5.384521 | 0.193843 |
| 8 | 0 | 0.95 | 2.67 | 638.70743 | 24.97759 | 0.899193 |
| 9 | 0 | 1.25 | 3.72 | 732.64767 | 38.89668 | 1.40028 |
| 10 | 0 | 2.63 | 7.36 | 1062.718 | 70.45885 | 2.536519 |
| 11 | 0 | 3.25 | 9.03 | 1181.3589 | 85.78324 | 3.088197 |
| 12 | 0 | 2.95 | 8.32 | 1125.5147 | 81.07747 | 2.918789 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 860 Hydrant
Test Conducted: 4 1/2" Nozzle
Date of Test: 6/4/2003
Test Personnel: ALL
Venturi Size: 6"

Inlet Pipe Diameter: 6
Outlet Pipe Diameter: 4

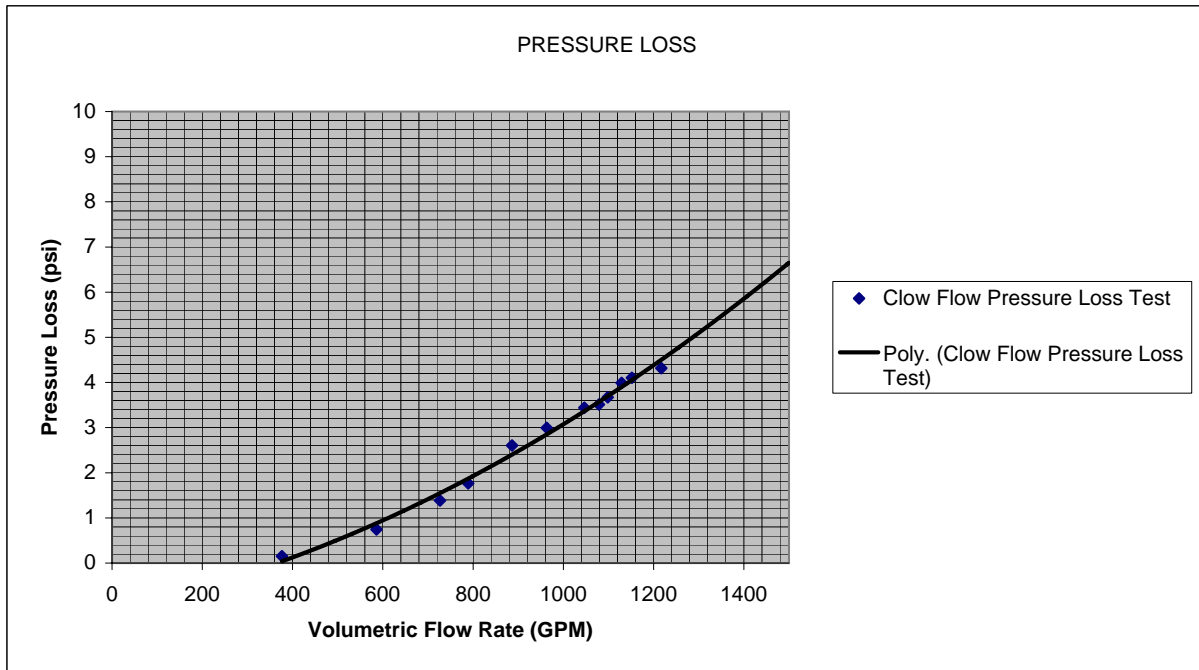
Pipe Length: 9.75
Pipe Length: 55.75

Pipe Material: PVC
Pipe Material: PVC

Trench Depth: 64"
System Pressure: 150
Centerline Height of Inlet Pump: 0
Centerline Height of Outlet Pump: 79 1/2"

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 0 | 2.81 | 8.82 | 1098.483 | 101.9467 | 3.67008 |
| 2 | 0 | 2.55 | 8.12 | 1046.4302 | 95.54488 | 3.439616 |
| 3 | 0 | 2.16 | 6.97 | 963.09038 | 83.20254 | 2.995291 |
| 4 | 0 | 1.83 | 5.98 | 886.47341 | 72.32698 | 2.603771 |
| 5 | 0 | 1.45 | 4.45 | 789.08569 | 49.03857 | 1.765389 |
| 6 | 0 | 1.23 | 3.67 | 726.76286 | 38.52166 | 1.38678 |
| 7 | 0 | 0.8 | 2.24 | 586.11814 | 20.67866 | 0.744432 |
| 8 | 0 | 0.33 | 0.78 | 376.44119 | 4.25801 | 0.153288 |
| 9 | 0 | 3.45 | 10.62 | 1217.1657 | 119.9033 | 4.316517 |
| 10 | 0 | 3.09 | 9.76 | 1151.9123 | 114.022 | 4.10479 |
| 11 | 0 | 2.97 | 9.43 | 1129.3236 | 110.8655 | 3.991158 |
| 12 | 0 | 2.71 | 8.48 | 1078.7599 | 97.51955 | 3.510704 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 860
 Test Conducted: 2 1/2" Top Port
 Date of Test: 7/10/2003
 Test Personnel: ALL
 Venturi Size: 4"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 2.5

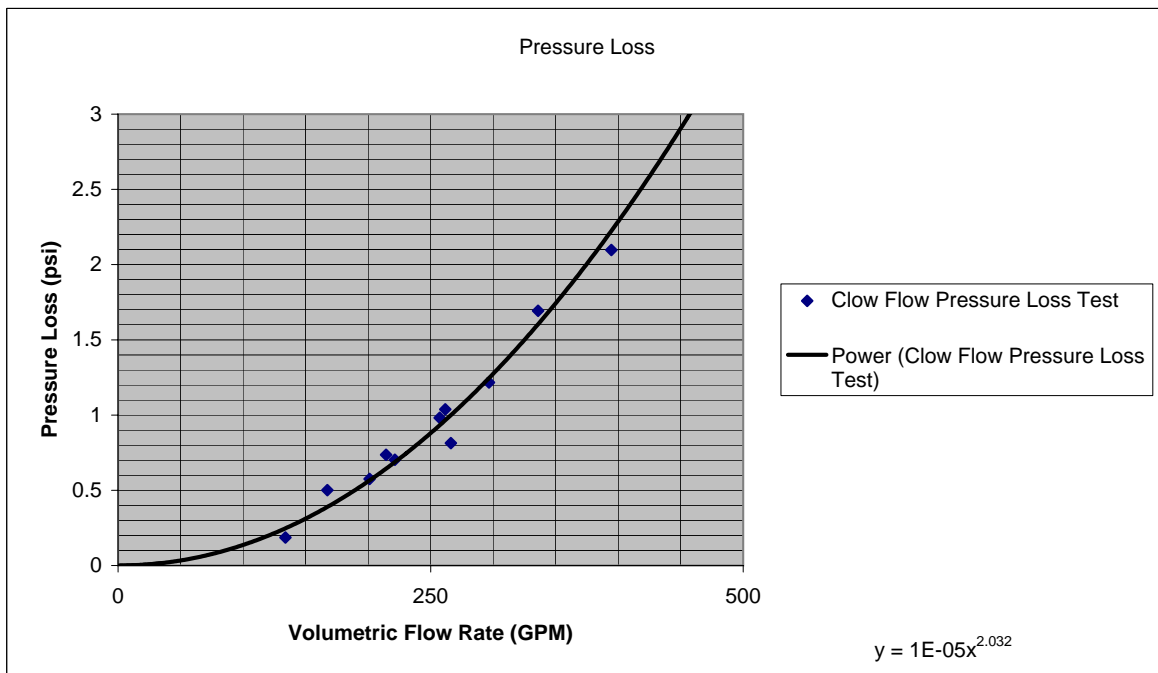
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 56
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 0

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 116.8004 | 4.22 | 16.35 | 573.1503 | 127.7294 | 4.598259 |
| 2 | 31.27595 | 1.13 | 4.45 | 296.5866 | 33.79634 | 1.216668 |
| 3 | 23.52616 | 0.85 | 3.43 | 257.2301 | 27.28003 | 0.982081 |
| 4 | 17.43703 | 0.63 | 2.53 | 221.4535 | 19.52702 | 0.702973 |
| 5 | 9.964019 | 0.36 | 1.56 | 167.4031 | 13.92759 | 0.501393 |
| 6 | 6.365901 | 0.23 | 0.87 | 133.8062 | 5.164403 | 0.185918 |
| 7 | 14.39247 | 0.52 | 2.09 | 201.1935 | 15.97275 | 0.575019 |
| 8 | 25.18683 | 0.91 | 3.43 | 266.154 | 22.60325 | 0.813717 |
| 9 | 40.13285 | 1.45 | 5.82 | 335.9667 | 47.03882 | 1.693397 |
| 10 | 24.35649 | 0.88 | 3.57 | 261.7301 | 28.82399 | 1.037664 |
| 11 | 16.32992 | 0.59 | 2.45 | 214.308 | 20.44949 | 0.736182 |
| 12 | 55.35566 | 2 | 7.75 | 394.5729 | 58.25245 | 2.097088 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 860 Hydrant
 Test Conducted: 4" Nozzle
 Date of Test: 7/9/2003
 Test Personnel: ALL
 Venturi Size: 6"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 4

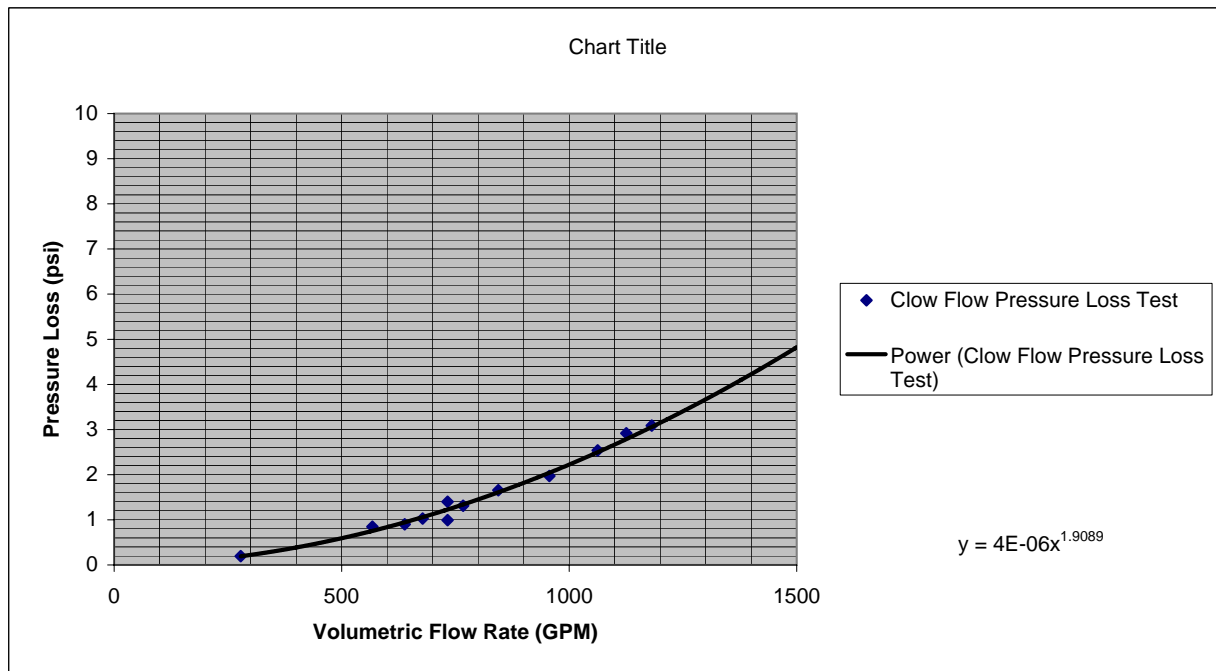
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 57
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 74

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 0 | 1.25 | 3.31 | 732.64767 | 27.52461 | 0.990886 |
| 2 | 0 | 2.13 | 5.89 | 956.37886 | 54.75294 | 1.971106 |
| 3 | 0 | 1.66 | 4.72 | 844.29499 | 45.93758 | 1.653753 |
| 4 | 0 | 1.37 | 3.85 | 767.00899 | 36.43633 | 1.311708 |
| 5 | 0 | 1.07 | 3.02 | 677.84759 | 28.59626 | 1.029465 |
| 6 | 0 | 0.75 | 2.25 | 567.50645 | 23.50329 | 0.846118 |
| 7 | 0 | 0.18 | 0.54 | 278.02024 | 5.384521 | 0.193843 |
| 8 | 0 | 0.95 | 2.67 | 638.70743 | 24.97759 | 0.899193 |
| 9 | 0 | 1.25 | 3.72 | 732.64767 | 38.89668 | 1.40028 |
| 10 | 0 | 2.63 | 7.36 | 1062.718 | 70.45885 | 2.536519 |
| 11 | 0 | 3.25 | 9.03 | 1181.3589 | 85.78324 | 3.088197 |
| 12 | 0 | 2.95 | 8.32 | 1125.5147 | 81.07747 | 2.918789 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 860
 Test Conducted: 2 1/2" Middle Port
 Date of Test: 7/10/2003
 Test Personnel: ALL
 Venturi Size: 4"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 2.5

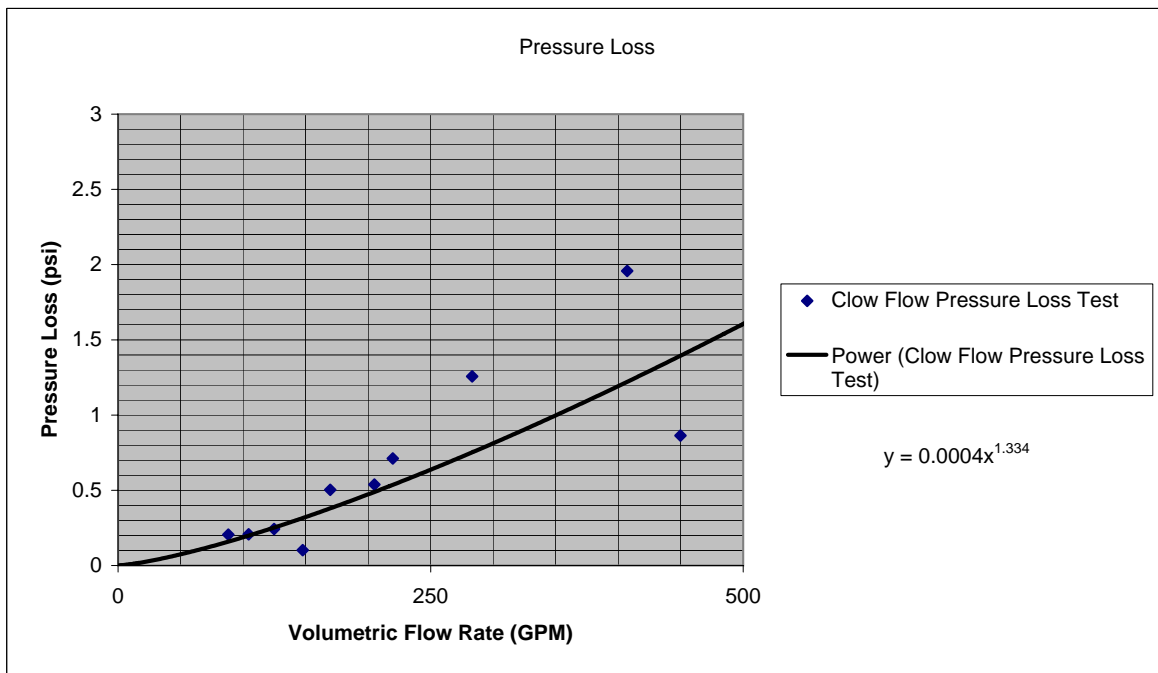
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 56
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 0

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 137.282 | 4.96 | 16.5 | 621.3741 | 75.93536 | 2.733673 |
| 2 | 28.50816 | 1.03 | 4.21 | 283.1593 | 34.90248 | 1.256489 |
| 3 | 17.16025 | 0.62 | 2.51 | 219.6889 | 19.75724 | 0.71126 |
| 4 | 14.94603 | 0.54 | 2.11 | 205.0261 | 14.95211 | 0.538276 |
| 5 | 10.2408 | 0.37 | 1.59 | 169.7122 | 13.96558 | 0.502761 |
| 6 | 7.749792 | 0.28 | 0.93 | 147.6357 | 2.825456 | 0.101716 |
| 7 | 5.535566 | 0.2 | 0.84 | 124.7749 | 6.743752 | 0.242775 |
| 8 | 3.874896 | 0.14 | 0.63 | 104.3942 | 5.769758 | 0.207711 |
| 9 | 2.767783 | 0.1 | 0.51 | 88.22919 | 5.703191 | 0.205315 |
| 10 | 58.95378 | 2.13 | 7.97 | 407.1947 | 54.38612 | 1.9579 |
| 11 | 71.96236 | 2.6 | 8.17 | 449.8824 | 23.98148 | 0.863333 |
| 12 | 91.61362 | 3.31 | 10.21 | 507.6055 | 26.46849 | 0.952866 |

Max = 1500




Clow Valve Company

A Division of McWane Corporation

902 South Second Street
Oskaloosa, Iowa 52577

Specified by the
City



MODEL #950 and #960 WET BARREL FIRE HYDRANT FRICTIONAL FLOW LOSS TEST

By

Chris Cook

Project Number 2545-14

Engineering

Approved _____, _____

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PURPOSE

The purpose of this test was to determine the frictional head loss through the 950 and 960 wet barrel fire hydrants at various flow rates. The maximum permissible frictional flow losses as specified in AWWA C503, Standard for Wet-Barrel Fire Hydrants are listed below.

| No. of Outlet Nozzles | Nominal Dia. of Outlet Nozzle | Total Fluid Flow | Max. Allowable Head Loss |
|--------------------------|----------------------------------|---------------------|-----------------------------|
| 1 | 2 ½" | 250 GPM | 1.0 PSI |
| 2 | 2 ½" | 500 GPM | 2.0 PSI |
| 1 | 4 ½" | 1000 GPM | 5.0 PSI |
| 1 | 4" | 1500 GPM | 11.0 PSI [*] |
| 1 | 4 ½" | 1500 GPM | 9.0 PSI [†] |

^{*} At time of printing a revised draft of AWWA C503 increased this value to 14.0 PSI

[†] At time of printing a revised draft of AWWA C503 increased this value to 12.0 PSI

PROCEDURE

The first test specimen is the 950 wet-barrel fire hydrant. This hydrant has one 4" pumper nozzle and one 2-1/2" hose nozzle. The hydrant has a trench depth of 65 inches. The hydrant was later refitted with a 4-1/2" pumper nozzle and tested again

The first test specimen was the 960 wet-barrel fire hydrant. This hydrant has one 4" pumper nozzle and two 2-1/2" hose nozzles. The hydrant has a trench depth of 65 inches. The hydrant was later refitted with a 4-1/2" pumper nozzle and tested again.

The fire hydrant was installed in a flow test circuit located at the Clow manufacturing facility at Oskaloosa, Iowa. Included in this report is a schematic illustration of the flow test circuit. See page five. Every effort was made to align the inlet and outlet piping of the test circuit with the hydrant inlet and nozzle outlets.

The following equipment was used in the flow test circuit:

- A. BIF 4" Venturi, Serial No. 216579
- B. BIF 6" Venturi, Serial No. 188761
- C. Venturi digital differential pressure transducer Serial No. 1205592
- D. Test digital differential pressure transducer Serial No. 1281287
- E. Piping and valves to control and regulate flow.

Water was introduced into the flow circuit and directed through the venturi and test hydrant as shown in the schematic illustration. Control valves installed in the pipelines exiting the hydrant nozzles were used to vary the rate of fluid flow and to adjust system pressure during the test.

A differential pressure transducer was connected to pressure taps at the throat and outlet of the venturi flow meter. The pressure differential across the venturi was used in conjunction with a calibration curve to determine actual flow rate through the circuit. The calibration curve was supplied by the venturi manufacturer.

A piezometer was installed in the inlet and outlet pipelines connected to the inlet and nozzle outlets of the hydrant. The differential pressure transducer connected to these piezometers was used to determine the static pressure differential between the two piezometers. At the start of the test, this transducer was zeroed to correct for the difference in elevation between the hydrant inlet and the nozzle outlets.

Pressure differential readings for the venturi and the hydrant were taken at various flow rates through the hydrant. Having determined the static pressure

differential across the hydrant at various fluid flow rates, the frictional flow loss of the hydrant was calculated using Bernoulli's equation, the continuity equation, and Poiseuille's equation for friction resistance to fluid flow in horizontal pipes. The total hydrant friction loss is determined by subtracting the frictional flow loss of the inlet and outlet pipelines connected to the hydrant.

The following tests were run to determine the frictional flow loss. In some cases it was necessary to extrapolate the data, due to the limitations of the test equipment and test facilities.

- A. 4" pumper nozzle test at 1000 gpm extrapolated to 1500 gpm
- B. 4-1/2" pumper nozzle test at 1000 gpm and extrapolated to 1500 gpm
- C. 2-1/2" middle hose nozzle test at 250 gpm (960 only)
- D. 2-1/2" top hose nozzle test at 250 gpm

ACCURACY

The differential pressure transducers used to determine flow and friction loss display pressure differentials in pounds per square inch (psi). When the system is in operation, it is not unusual to have a rapid, uniform fluctuation on the LCD display due to vibration and pump surge. By mentally calculating an average reading under these conditions, errors can usually be held to within plus or minus .5 psi. However, the percentage error is inversely proportional to the magnitude of the display reading. At a reading of 25 psi, an error of .5 psi is practically negligible, while at a very low reading, this same error will result in a very large variance in calculated friction loss. Therefore, it is reasonable to conclude that higher flow rates produce more accurate data for any given test.

CONCLUSION

Upon completion of all the flow tests and subsequent engineering calculations, the frictional flow loss of the 950 and 960 hydrant was determined at various rates of fluid flow. The resulting flow loss calculations were plotted on graphs included in this report.

The following tests were found to meet the criteria for maximum permissible frictional flow losses as specified in AWWA C503, Standard for Wet-Barrel Fire Hydrants.

950 2-1/2" top hose nozzle test at 250 gpm, pressure loss is 0.95 psig where 1.0 psig is allowed

950 4" pumper nozzle test at 1000 gpm extrapolated to 1500 gpm, pressure loss is 8.2 psig where 11.0 psig is allowed

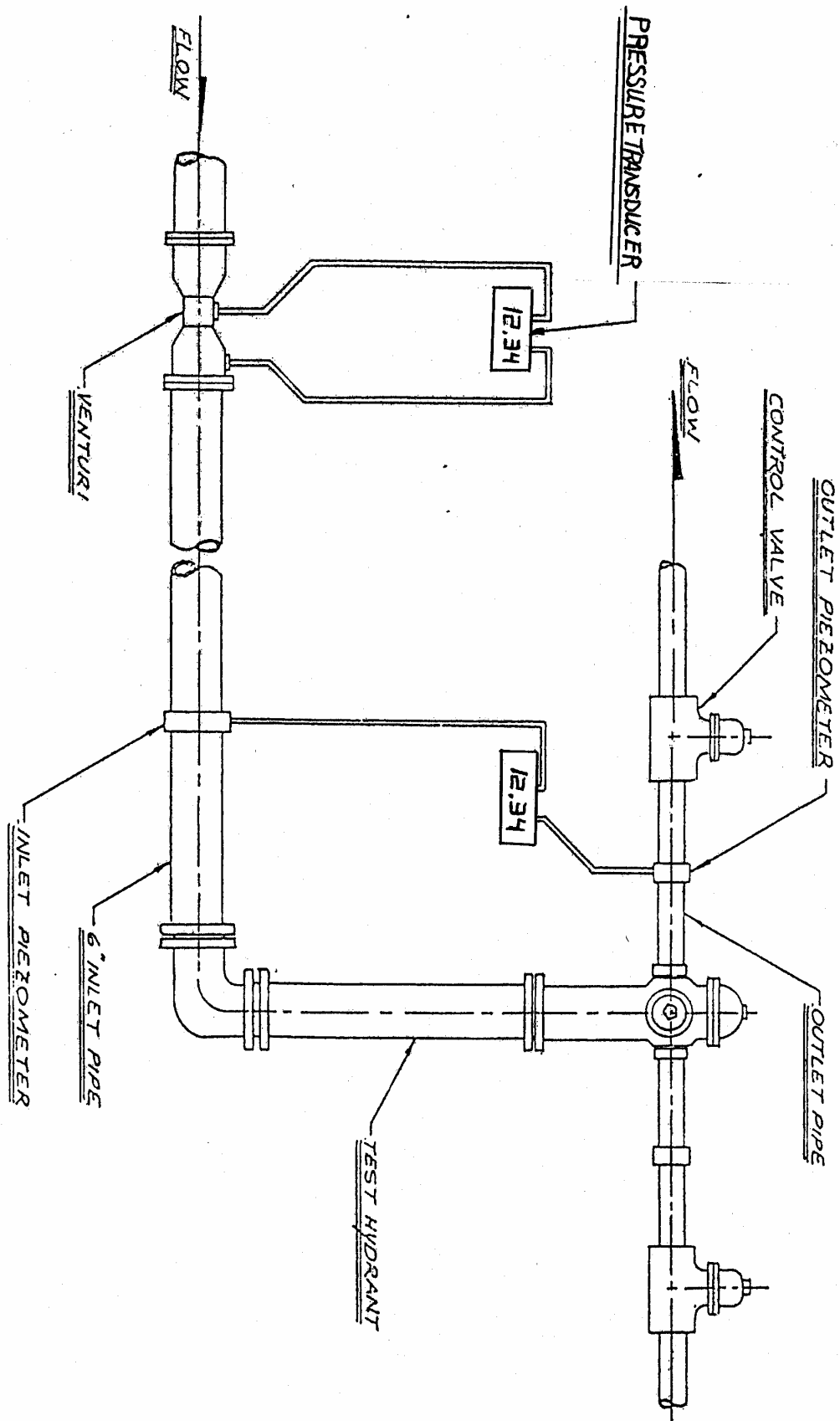
950 4-1/2" pumper nozzle test at 1000 gpm, pressure loss is 2.9 psig where 5.0 psig is allowed. Extrapolated to 1500 gpm, pressure loss is 5.9 psig where 9.0 psig is allowed

960 2-1/2" top hose nozzle test at 250 gpm, pressure loss is 0.80 psig where 1.0 psig is allowed

960 2-1/2" middle hose nozzle test at 250 gpm, pressure loss is 0.8 psig where 1.0 psig is allowed

960 4" pumper nozzle test at 1000 gpm extrapolated to 1500 gpm, pressure loss is 9.5 psig where 11.0 psig is allowed

960 4-1/2" pumper nozzle test at 1000 gpm, pressure loss is 3 psig where 5.0 psig is allowed. Extrapolated to 1500 gpm, pressure loss is 6.2 psig where 9.0 psig is allowed



Clow Valve Venturi Testing

Product Name: 960
 Test Conducted: 2 1/2" Top
 Date of Test: 10/14/2003
 Test Personnel: ALL
 Venturi Size: 4"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 2.5

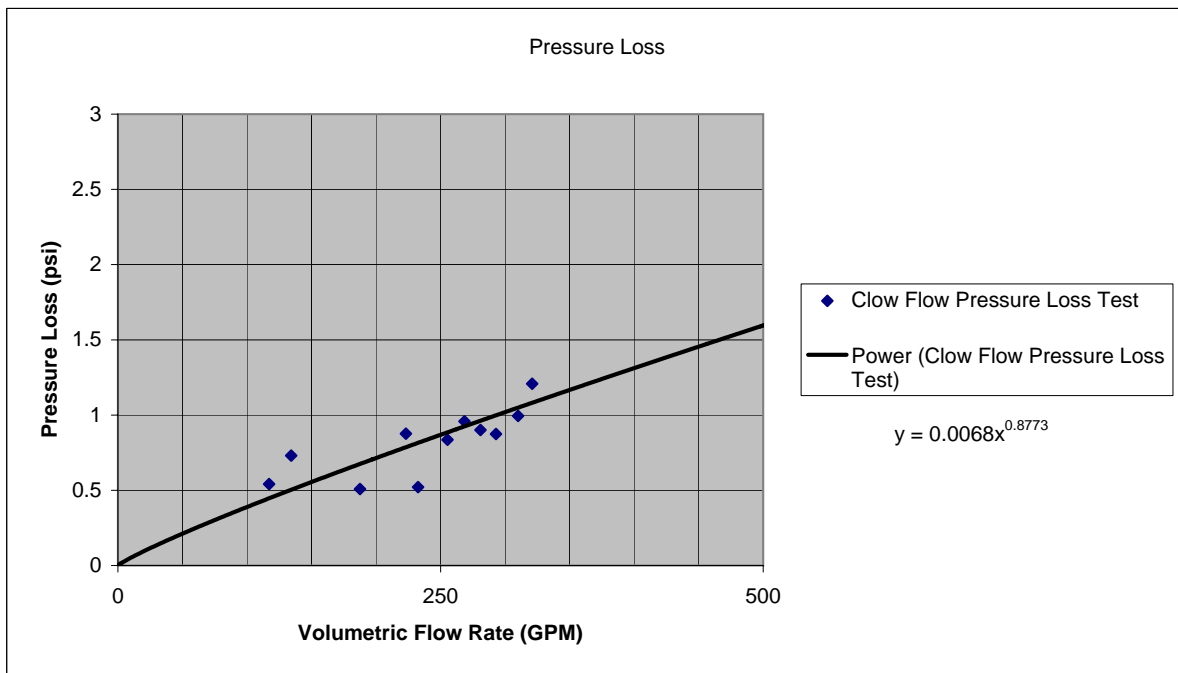
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 65
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 0

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 264.0465 | 9.54 | 32.15 | 904.8483 | 93.1786251 | 3.354431 |
| 2 | 4.428453 | 0.16 | 1.07 | 117.1822 | 15.0262344 | 0.540944 |
| 3 | 16.05314 | 0.58 | 2.73 | 223.1082 | 24.3328336 | 0.875982 |
| 4 | 11.34791 | 0.41 | 1.83 | 187.583 | 14.1255344 | 0.508519 |
| 5 | 17.43703 | 0.63 | 2.53 | 232.5262 | 14.464279 | 0.520714 |
| 6 | 21.03515 | 0.76 | 3.25 | 255.3926 | 23.2313574 | 0.836329 |
| 7 | 23.24938 | 0.84 | 3.62 | 268.4981 | 26.6193727 | 0.958297 |
| 8 | 25.4636 | 0.92 | 3.81 | 280.993 | 25.0278815 | 0.901004 |
| 9 | 27.67783 | 1 | 4.03 | 292.9555 | 24.2803171 | 0.874091 |
| 10 | 30.99917 | 1.12 | 4.52 | 310.0349 | 27.6167358 | 0.994202 |
| 11 | 33.2134 | 1.2 | 4.98 | 320.9166 | 33.5512454 | 1.207845 |
| 12 | 5.812344 | 0.21 | 1.42 | 134.2491 | 20.2972438 | 0.730701 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 960
Test Conducted: 2 1/2" Middle
Date of Test: 10/14/2003
Test Personnel: ALL
Venturi Size: 4"

Inlet Pipe Diameter: 6
Outlet Pipe Diameter: 2.5

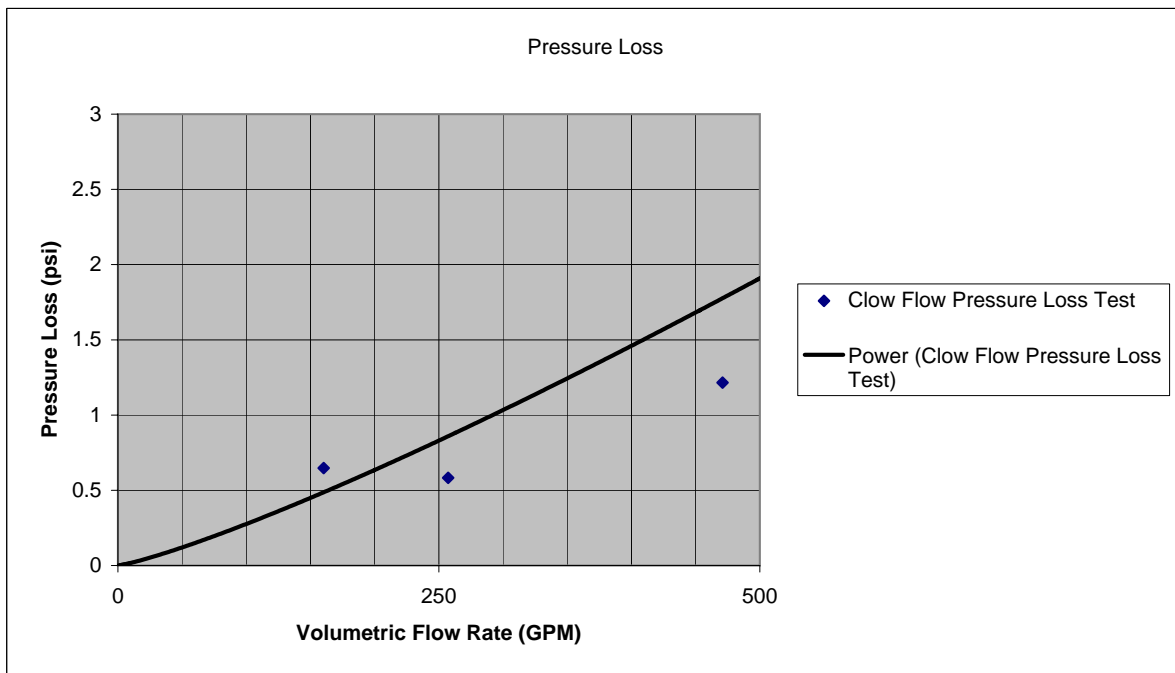
Pipe Length: 9.75
Pipe Length: 55.75

Pipe Material: PVC
Pipe Material: PVC

Trench Depth: 65
System Pressure: 150
Centerline Height of Inlet Pump: 0
Centerline Height of Outlet Pump: 0

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|
| 1 | 309.9917 | 11.2 | 32.45 | 933.73 | 50.6289567 | 1.822642 |
| 2 | 260.4484 | 9.41 | 31 | 855.8686 | 144.008407 | 5.184303 |
| 3 | 229.726 | 8.3 | 27.43 | 803.8062 | 128.028579 | 4.609029 |
| 4 | 171.8793 | 6.21 | 21.02 | 695.2774 | 107.09389 | 3.85538 |
| 5 | 124.5502 | 4.5 | 14.97 | 591.8594 | 68.2626991 | 2.457457 |
| 6 | 78.88182 | 2.85 | 9.21 | 471.015 | 33.7532811 | 1.215118 |
| 7 | 23.52616 | 0.85 | 3.03 | 257.2301 | 16.1853284 | 0.582672 |
| 8 | 9.133684 | 0.33 | 1.62 | 160.2763 | 17.9771243 | 0.647176 |
| 9 | 178.522 | 6.45 | 21.34 | 708.5853 | 97.9187004 | 3.525073 |
| 10 | 172.9864 | 6.25 | 20.42 | 697.513 | 87.4425675 | 3.147932 |
| 11 | 144.7551 | 5.23 | 17.04 | 638.0624 | 70.5333132 | 2.539199 |
| 12 | 136.1749 | 4.92 | 16.05 | 618.8635 | 66.4746087 | 2.393086 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 960
 Test Conducted: 4" Nozzle
 Date of Test: 10/17/2003
 Test Personnel: ALL
 Venturi Size: 6"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 4

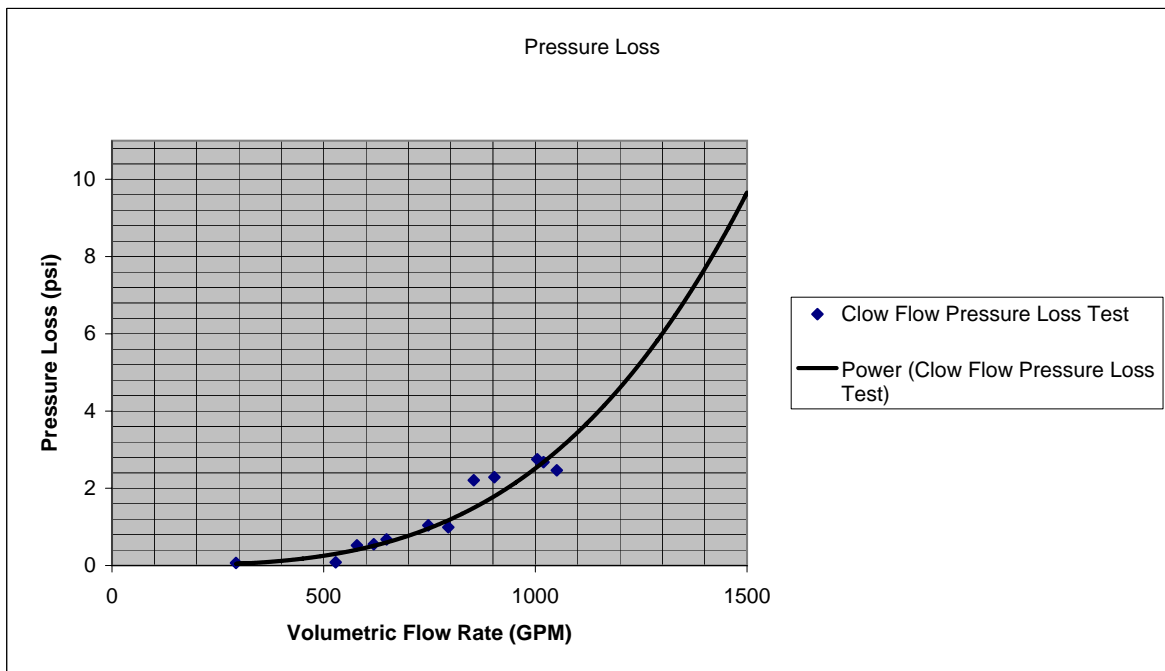
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 52
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 79 1/2"

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------------|---|---------------------------|-------------------------------------|-------------------------|--------------------------|
| 1 | 0 | 2.57 | 7.18 | 1050.526 | 68.470649 | 2.464943 |
| 2 | 0 | 2.42 | 7.12 | 1019.408 | 74.321629 | 2.675579 |
| 3 | 0 | 2.35 | 7.07 | 1004.556 | 76.443994 | 2.751984 |
| 4 | 0 | 1.9 | 5.79 | 903.2687 | 63.536011 | 2.287296 |
| 5 | 0 | 1.7 | 5.35 | 854.4067 | 61.396819 | 2.210285 |
| 6 | 0 | 1.47 | 3.71 | 794.509 | 27.503919 | 0.990141 |
| 7 | 0 | 1.3 | 3.45 | 747.157 | 28.879229 | 1.039652 |
| 8 | 0 | 0.98 | 2.5 | 648.7139 | 18.739026 | 0.674605 |
| 9 | 0 | 0.89 | 2.21 | 618.2088 | 15.267485 | 0.549629 |
| 10 | 0 | 0.78 | 1.98 | 578.7453 | 14.485708 | 0.521485 |
| 11 | 0 | 0.65 | 1.3 | 528.3198 | 2.2558928 | 0.081212 |
| 12 | 0 | 0.2 | 0.45 | 293.0591 | 1.8453333 | 0.066432 |

Max = 1500



Clow Valve Venturi Testing

Product Name: 960
 Test Conducted: 4 1/2" Nozzle
 Date of Test: 10/14/2003
 Test Personnel: ALL
 Venturi Size: 6"

Inlet Pipe Diameter: 6
 Outlet Pipe Diameter: 4

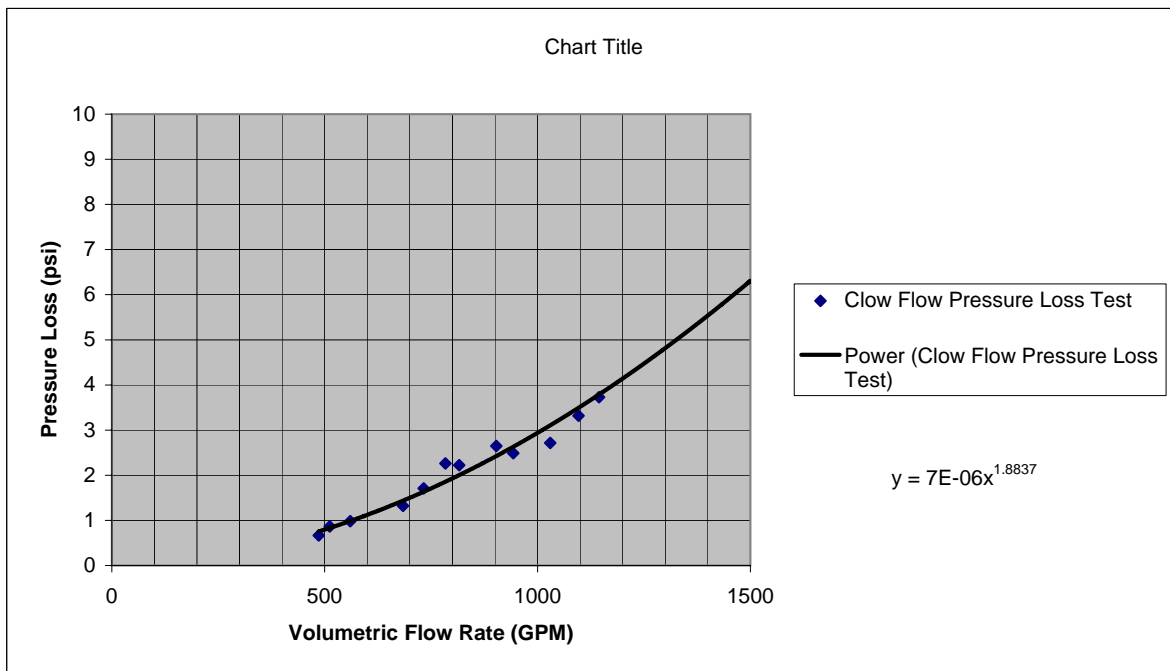
Pipe Length: 9.75
 Pipe Length: 55.75

Pipe Material: PVC
 Pipe Material: PVC

Trench Depth: 52
 System Pressure: 150
 Centerline Height of Inlet Pump 0
 Centerline Height of Outlet Pump: 79 1/2"

| Run # | Venturi Manometer (in H2O) | Venturi Digital Pressure (psi) | Test Pressure (psi) | Volumetric Flow Rate, Q (GPM) | Total Head Loss (in) | Total head Loss (psi) |
|-------|----------------------------------|---|---------------------------|-------------------------------------|-------------------------|--------------------------|
| 1 | 0 | 3.05 | 9.31 | 1144.432 | 103.53896 | 3.727403 |
| 2 | 0 | 2.8 | 8.45 | 1096.527 | 92.18429 | 3.318634 |
| 3 | 0 | 2.47 | 7.25 | 1029.885 | 75.421671 | 2.71518 |
| 4 | 0 | 2.07 | 6.3 | 942.8125 | 69.138091 | 2.488971 |
| 5 | 0 | 1.9 | 6.15 | 903.2687 | 73.521244 | 2.646765 |
| 6 | 0 | 1.55 | 5.09 | 815.8419 | 61.744758 | 2.222811 |
| 7 | 0 | 1.43 | 4.91 | 783.6248 | 62.807129 | 2.261057 |
| 8 | 0 | 1.25 | 4.03 | 732.6477 | 47.495075 | 1.709823 |
| 9 | 0 | 1.09 | 3.35 | 684.1533 | 36.735534 | 1.322479 |
| 10 | 0 | 0.73 | 2.35 | 559.8886 | 27.296581 | 0.982677 |
| 11 | 0 | 0.61 | 2.01 | 511.8057 | 23.993315 | 0.863759 |
| 12 | 0 | 0.55 | 1.7 | 485.9835 | 18.465399 | 0.664754 |

Max = 1500



Appendix B

CalEEMod Report

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Denise Duffy & Associates, Inc.

PLANNING AND ENVIRONMENTAL CONSULTING

SUMMARY OF AIR QUALITY MODELING FOR RAY WATER COMPANY

Date: September 20, 2021

The purpose of this memorandum is to document and summarize the results of the air quality modeling that has been completed on behalf of the Ray Water Company (Project) by Denise Duffy and Associates.

1. AIR QUALITY MODELING METHODOLOGY

This memorandum provides an estimate of the Project's criteria air pollutant and greenhouse gas emissions using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 software, a modeling platform recommended by the California Air Resources Board and accepted by the Santa Barbara County Air Pollution Control District (SBAPCD). Model outputs are included as **Attachment 1** to this memorandum.

The following sources were utilized to inform the model:

- The Initial Study Project Description prepared by DD&A;
- Email correspondence with Shawn Mixan of Weber, Hayes & Associates on August 4, 2021;
- Draft Engineering Report prepared by Weber, Hayes & Associates, dated July 2, 2021
- 30% Design Plans for Ray Water Company Water System Consolidation prepared by Weber, Hayes & Associates, dated June 22, 2021; and
- CalEEMod User's Guide Version 2020.4.0 prepared by BREEZE Software, dated May 2021.

Diana Staines, Deputy Project Manager at DD&A, ran the air quality model for the Project on August 11, 2021. When project-specific details were not available to input into the model, default values were used. An Annual Report was generated for the Project. For a detailed description of what information was entered into the model, see **Section 3. Model Inputs**, below.

2. PROJECT INFORMATION

The proposed project consists of consolidating RWC with the City of Santa Maria's water system. The proposed project consists of a water main, a distribution line, and 13 service connections. In total, these components include 4,860 linear feet (0.92 miles) of new pipelines.

3. MODEL INPUTS

The following information was input into the air quality model.

Construction

| Table 1. Project Characteristics | |
|---|---|
| Project Location | Santa Barbara County - North of Santa Ynez |
| Windspeed (meters per second) | 3.13 m/s |
| Precipitation Frequency (days per year) | 37 |
| CEC Forecasting Climate Zone | 4 |
| Land Use Setting | Rural |
| Start Date of Construction | February 17, 2023 |
| Operational Year | 2023 |
| Utility Company | Pacific Gas & Electric |
| Intensity Factors ¹ | CO ₂ – 203.983 pounds/megawatt hour CH ₄ – 0.033 pounds/megawatt hour N ₂ O – 0.004 pounds/megawatt hour |

Table 1. Project Characteristics, shows the basic project information that was input into CalEEMod. The *State Date of Construction* provided is an estimate and is dependent on a variety of factors. The Draft Engineering Report included a Preliminary Schedule for the proposed project. Given the approximate date that the Construction Application is November 17, 2021, the expected start date for Project Construction ranges from August 17, 2022 to February 17, 2023. Taking into account project delays, a construction start date of February 17, 2023 was selected for this model.

The model includes an option to apply an EMFAC Adjustment Factor to account for the SAFE Vehicle Rule. In order to ensure that the model provided a conservative estimate and accounted for the worst-case-scenario, this box remained unchecked in the model.

| Table 2. Land Use | | |
|-----------------------|------------------------|--------------------|
| Proposed Land Use | CalEEMod Land Use | Area (square feet) |
| Underground pipelines | General Light Industry | 13,100 |

Table 2. Land Use includes the Land Use category for the proposed project. The information was obtained from email correspondence with WHA on August 4, 2021 and from the 30% Design Plans for this project. The land use types and areas input into the model provide the basis for much of the calculations.

| Table 3. Construction Phasing | | | |
|-------------------------------|------------|-----------|-----------|
| Construction Phase | Start Date | End Date | Days/Week |
| Site Preparation (10 days) | 2-20-2023 | 3-3-2023 | 5 |
| Trenching (60 days) | 2-27-2023 | 5-19-2023 | 5 |
| Paving (60 days) | 3-6-2023 | 5-26-2023 | 5 |

Table 3. Construction Phasing shows the schedule provided by WHA via email correspondence on August 4, 2021 and reflected in the Preliminary Schedule included in the Draft Engineering Report for the proposed project, dated July 2, 2021.

| Table 4. Construction Equipment |
|---------------------------------|
|---------------------------------|

¹ Energy Intensity is measured by the quantity of energy required per unit output or activity, so that using less energy to produce a product reduces the intensity.

| Type of Equipment | Quantity | Hours/Day |
|---------------------------|----------|-----------|
| Site Preparation Phase | | |
| Graders | 1 | 8 |
| Tractors/Loaders/Backhoes | 1 | 8 |
| Trenching | | |
| Graders | 1 | 6 |
| Rubber Tired Dozers | 1 | 6 |
| Tractors/Loaders/Backhoe | 1 | 7 |
| Paving | | |
| Cement and Mortar Mixers | 4 | 6 |
| Pavers | 1 | 7 |
| Rollers | 1 | 7 |
| Tractors/Loaders/Backhoes | 1 | 7 |

Table 4. Construction Equipment is a list of equipment that DD&A assumes will be used during construction. The default list of equipment provided by CalEEMod was utilized for this model. In addition, the horsepower and load factor default values provided by CalEEMod (not shown in the table above) were used.

| Table 5. Grading | |
|--------------------|-----|
| Imported Material | 0 |
| Exported Material | 0 |
| Total Graded Acres | 0.3 |

Table 5. Grading shows the grading details that were input into the model. The values above were obtained from email correspondence with WHA on August 4, 2021. Default values provided by CalEEMod (not shown in the table above) were used for speed of vehicles onsite, material moisture content percentage, and material silt content percentage.

Operation

| Table 6. Vehicle Trips | | | |
|------------------------|----------------------------|----------------------------|-----------------------------|
| Phase Name | Number of Worker Trips/Day | Number of Vendor Trips/Day | Number of Hauling Trips/Day |
| Site Preparation | 5 | 0 | 0 |
| Trenching | 8 | 0 | 0 |
| Paving | 18 | 0 | 0 |

Table 6. Vehicle Trips shows the estimated vehicle trips that were generated by CalEEMod based on the land use and duration of construction.

Mitigation

This model was run without mitigation incorporated. DD&A assumes that standard Best Management Practices (BMPs), will be incorporated into the Project.

4. MODEL OUTPUTS

| Table 7. Criteria Pollutant and Greenhouse Gas Emissions Model Results | | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|
| Criteria Pollutant Emissions (tons/year) | | | | | | |
| | ROG | NOX | CO | SO2 | Total PM10 | Total PM2.5 |
| Construction | 1.9200e-003 | 0.0169 | 0.0204 | 4.0000e-005 | 1.2300e-003 | 8.2000e-004 |
| Operation | 0.0530 | 0.0168 | 0.0142 | 1.0000e-004 | 1.2800e-003 | 1.2800e-003 |
| Greenhouse Gas Emissions (metric tons/year) | | | | | | |
| | Total CO2 | CH4 | N2O | CO2e | | |
| Construction | 3.0007 | 8.3000e-004 | 1.0000e-005 | 3.0238 | | |
| Operation | 28.1195 | 1.9400e-003 | 5.3000e-004 | 28.3253 | | |

Table 7. Criteria Pollutant and Greenhouse Gas Emissions Model Results shows the model results that are to be used to determine if the Project as a significant impact on Air Quality and Greenhouse Gas Emissions.

5. CONCLUSIONS

Air Quality

The Environmental Review Guidelines (Guidelines) for the Santa Barbara County Air Pollution Control District (APCD) contain definitions of common terms, procedures for environmental review, adopted thresholds of significance, time limits, fees, forms, and APCD-approved exemptions to CEQA review. The Guidelines state that a proposed project will not have a significant air quality effect on the environment, if operation of the project will:

- emit (from all project sources, mobile and stationary) less than the daily trigger for offsets set in the APCD New Source Review Rule for any pollutant and
- emit less than 25 pounds per day of oxides of nitrogen (NOx) or reactive organic compounds (ROC) from motor vehicle trips only; and
- not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); and
- not exceed the APCD health risk public notification thresholds adopted by the APCD Board; and
- be consistent with the adopted federal and state Air Quality Plans.

For the purposes of comparison to the APCD Standards, the values in **Table 7** above have been converted from tons/year to pounds/day in the table below. These values have been rounded to the nearest tenth of a pound per day.

| Table 8. Comparison to APCD Thresholds | | | |
|--|---------------------------|------------------------|------------------------|
| Criteria Pollutant | Construction (pounds/day) | Operation (pounds/day) | Exceed APCD Threshold? |
| NOX | 0 | 0 | No |
| ROG | 0 | 0 | No |
| PM10 | 0 | 0 | No |
| PM2.5 | 0 | 0 | No |
| CO | 0 | 0 | No |

Table 8. Comparison to MBARD Thresholds shows that emissions of NOX, ROG, PM10, PM2.5, and CO during construction and operation of the Project would not exceed MBARD thresholds. All of the values in this table round down to zero. *Based on the above results, the Project would have a less than significant impact resulting from a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.* This conclusion is intended to inform the discussion of CEQA Air Quality threshold (b) in the Project Initial Study.

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Ray Water Company
Santa Barbara-North of Santa Ynez County, Annual

1.0 Project Characteristics**1.1 Land Usage**

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|-------|----------|-------------|--------------------|------------|
| General Light Industry | 13.10 | 1000sqft | 0.30 | 13,100.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|----------------------------------|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Rural | Wind Speed (m/s) | 3.1 | Precipitation Freq (Days) | 37 |
| Climate Zone | 4 | | | Operational Year | 2023 |
| Utility Company | Pacific Gas and Electric Company | | | | |
| CO2 Intensity (lb/MWhr) | 203.98 | CH4 Intensity (lb/MWhr) | 0.033 | N2O Intensity (lb/MWhr) | 0.004 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction phasing/schedule provided by WHA via email correspondence on 8-4-2021.

Off-road Equipment -

Off-road Equipment - General equipment list provided by WHA via email correspondence on 8-4-21.

Off-road Equipment - General equipment list provided by WHA via email correspondence on 8-4-21.

Grading - Total area of ground disturbance is 0.3 acres, email correspondence from WHA on 8-4-21.

Vehicle Trips - The project will not vehical require trips once operational.

Consumer Products -

Area Coating - The project will not require architrtctural coatings.

Water And Wastewater - The project will supply potable water to residents on Betteravia and Rayville, it will not require addition water to operate.

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Solid Waste - The project will not generate soil waste during operation.

Area Mitigation - The project will not use architectural coatings.

| Table Name | Column Name | Default Value | New Value |
|---------------------------|---------------------------------|---------------|-----------|
| tblAreaCoating | Area_EF_Nonresidential_Exterior | 250 | 0 |
| tblAreaCoating | Area_EF_Nonresidential_Interior | 250 | 0 |
| tblAreaCoating | Area_EF_Parking | 250 | 0 |
| tblAreaCoating | Area_EF_Residential_Exterior | 100 | 0 |
| tblAreaCoating | Area_EF_Residential_Interior | 50 | 0 |
| tblAreaCoating | Area_Nonresidential_Exterior | 6550 | 0 |
| tblAreaCoating | Area_Nonresidential_Interior | 19650 | 0 |
| tblAreaCoating | ReapplicationRatePercent | 10 | 0 |
| tblGrading | AcresOfGrading | 0.50 | 0.30 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblSolidWaste | SolidWasteGenerationRate | 16.24 | 0.00 |
| tblVehicleTrips | ST_TR | 1.99 | 0.00 |
| tblVehicleTrips | SU_TR | 5.00 | 0.00 |
| tblVehicleTrips | WD_TR | 4.96 | 0.00 |
| tblWater | IndoorWaterUseRate | 3,029,375.00 | 0.00 |

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|--------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2023 | 1.9200e-003 | 0.0169 | 0.0204 | 4.0000e-005 | 4.5000e-004 | 7.8000e-004 | 1.2300e-003 | 1.0000e-004 | 7.2000e-004 | 8.2000e-004 | 0.0000 | 3.0007 | 3.0007 | 8.3000e-004 | 1.0000e-005 | 3.0238 |
| Maximum | 1.9200e-003 | 0.0169 | 0.0204 | 4.0000e-005 | 4.5000e-004 | 7.8000e-004 | 1.2300e-003 | 1.0000e-004 | 7.2000e-004 | 8.2000e-004 | 0.0000 | 3.0007 | 3.0007 | 8.3000e-004 | 1.0000e-005 | 3.0238 |

Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|--------|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2023 | 1.9200e-003 | 0.0169 | 0.0204 | 4.0000e-005 | 4.5000e-004 | 7.8000e-004 | 1.2300e-003 | 1.0000e-004 | 7.2000e-004 | 8.2000e-004 | 0.0000 | 3.0007 | 3.0007 | 8.3000e-004 | 1.0000e-005 | 3.0238 |
| Maximum | 1.9200e-003 | 0.0169 | 0.0204 | 4.0000e-005 | 4.5000e-004 | 7.8000e-004 | 1.2300e-003 | 1.0000e-004 | 7.2000e-004 | 8.2000e-004 | 0.0000 | 3.0007 | 3.0007 | 8.3000e-004 | 1.0000e-005 | 3.0238 |

[illegible]

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|-----------|--|--|
| 1 | 2-17-2023 | 5-16-2023 | 0.0179 | 0.0179 |
| | | Highest | 0.0179 | 0.0179 |

2.2 Overall Operational**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0512 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |
| Energy | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 28.1192 | 28.1192 | 1.9400e-003 | 5.3000e-004 | 28.3251 |
| 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 | 0.0530 | 0.0168 | 0.0142 | 1.0000e-004 | 0.0000 | 1.2800e-003 | 1.2800e-003 | 0.0000 | 1.2800e-003 | 1.2800e-003 | 0.0000 | 28.1195 | 28.1195 | 1.9400e-003 | 5.3000e-004 | 28.3253 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**2.2 Overall Operational****Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0512 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |
| Energy | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 28.1192 | 28.1192 | 1.9400e-003 | 5.3000e-004 | 28.3251 |
| 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 | 0.0530 | 0.0168 | 0.0142 | 1.0000e-004 | 0.0000 | 1.2800e-003 | 1.2800e-003 | 0.0000 | 1.2800e-003 | 1.2800e-003 | 0.0000 | 28.1195 | 28.1195 | 1.9400e-003 | 5.3000e-004 | 28.3253 |

| | 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 Preparation | Site Preparation | 2/17/2023 | 2/17/2023 | 5 | 1 | |
| 3 | Paving | Paving | 2/18/2023 | 2/24/2023 | 5 | 5 | |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**Acres of Grading (Site Preparation Phase): 0.3****Acres of Grading (Grading Phase): 0****Acres of Paving: 0****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 Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Paving | Cement and Mortar Mixers | 4 | 6.00 | 9 | 0.56 |
| Paving | Pavers | 1 | 7.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |

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 Preparation | 2 | 5.00 | 0.00 | 0.00 | 8.30 | 6.40 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 7 | 18.00 | 0.00 | 0.00 | 8.30 | 6.40 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.2 Site Preparation - 2023****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 | | | | | 1.6000e-004 | 0.0000 | 1.6000e-004 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.7000e-004 | 3.0900e-003 | 1.9600e-003 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.0000e-004 | 1.0000e-004 | 0.0000 | 0.4275 | 0.4275 | 1.4000e-004 | 0.0000 | 0.4309 |
| Total | 2.7000e-004 | 3.0900e-003 | 1.9600e-003 | 0.0000 | 1.6000e-004 | 1.1000e-004 | 2.7000e-004 | 2.0000e-005 | 1.0000e-004 | 1.2000e-004 | 0.0000 | 0.4275 | 0.4275 | 1.4000e-004 | 0.0000 | 0.4309 |

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 | 1.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0118 | 0.0118 | 0.0000 | 0.0000 | 0.0119 |
| Total | 1.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0118 | 0.0118 | 0.0000 | 0.0000 | 0.0119 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.2 Site Preparation - 2023****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 | | | | | 1.6000e-004 | 0.0000 | 1.6000e-004 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.7000e-004 | 3.0900e-003 | 1.9600e-003 | 0.0000 | | 1.1000e-004 | 1.1000e-004 | | 1.0000e-004 | 1.0000e-004 | 0.0000 | 0.4275 | 0.4275 | 1.4000e-004 | 0.0000 | 0.4309 |
| Total | 2.7000e-004 | 3.0900e-003 | 1.9600e-003 | 0.0000 | 1.6000e-004 | 1.1000e-004 | 2.7000e-004 | 2.0000e-005 | 1.0000e-004 | 1.2000e-004 | 0.0000 | 0.4275 | 0.4275 | 1.4000e-004 | 0.0000 | 0.4309 |

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 | 1.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0118 | 0.0118 | 0.0000 | 0.0000 | 0.0119 |
| Total | 1.0000e-005 | 0.0000 | 5.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0118 | 0.0118 | 0.0000 | 0.0000 | 0.0119 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Paving - 2023****Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.5300e-003 | 0.0138 | 0.0176 | 3.0000e-005 | | 6.6000e-004 | 6.6000e-004 | | 6.2000e-004 | 6.2000e-004 | 0.0000 | 2.3498 | 2.3498 | 6.8000e-004 | 0.0000 | 2.3669 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.5300e-003 | 0.0138 | 0.0176 | 3.0000e-005 | | 6.6000e-004 | 6.6000e-004 | | 6.2000e-004 | 6.2000e-004 | 0.0000 | 2.3498 | 2.3498 | 6.8000e-004 | 0.0000 | 2.3669 |

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 | 1.2000e-004 | 8.0000e-005 | 8.8000e-004 | 0.0000 | 2.8000e-004 | 0.0000 | 2.8000e-004 | 7.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2116 | 0.2116 | 1.0000e-005 | 1.0000e-005 | 0.2140 |
| Total | 1.2000e-004 | 8.0000e-005 | 8.8000e-004 | 0.0000 | 2.8000e-004 | 0.0000 | 2.8000e-004 | 7.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2116 | 0.2116 | 1.0000e-005 | 1.0000e-005 | 0.2140 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**3.4 Paving - 2023****Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.5300e-003 | 0.0138 | 0.0176 | 3.0000e-005 | | 6.6000e-004 | 6.6000e-004 | | 6.2000e-004 | 6.2000e-004 | 0.0000 | 2.3498 | 2.3498 | 6.8000e-004 | 0.0000 | 2.3669 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 1.5300e-003 | 0.0138 | 0.0176 | 3.0000e-005 | | 6.6000e-004 | 6.6000e-004 | | 6.2000e-004 | 6.2000e-004 | 0.0000 | 2.3498 | 2.3498 | 6.8000e-004 | 0.0000 | 2.3669 |

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 | 1.2000e-004 | 8.0000e-005 | 8.8000e-004 | 0.0000 | 2.8000e-004 | 0.0000 | 2.8000e-004 | 7.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2116 | 0.2116 | 1.0000e-005 | 1.0000e-005 | 0.2140 |
| Total | 1.2000e-004 | 8.0000e-005 | 8.8000e-004 | 0.0000 | 2.8000e-004 | 0.0000 | 2.8000e-004 | 7.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2116 | 0.2116 | 1.0000e-005 | 1.0000e-005 | 0.2140 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0000 | 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

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Light Industry | 6.60 | 5.50 | 6.40 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |

4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Light Industry | 0.492113 | 0.052876 | 0.208088 | 0.152800 | 0.029700 | 0.007146 | 0.010959 | 0.006131 | 0.000966 | 0.000597 | 0.030829 | 0.003523 | 0.004272 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**5.0 Energy Detail**

Historical Energy Use: N

5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|---------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 9.8177 | 9.8177 | 1.5900e-003 | 1.9000e-004 | 9.9148 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 9.8177 | 9.8177 | 1.5900e-003 | 1.9000e-004 | 9.9148 |
| NaturalGas Mitigated | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3015 | 18.3015 | 3.5000e-004 | 3.4000e-004 | 18.4103 |
| NaturalGas Unmitigated | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3015 | 18.3015 | 3.5000e-004 | 3.4000e-004 | 18.4103 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 342958 | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3015 | 18.3015 | 3.5000e-004 | 3.4000e-004 | 18.4103 |
| Total | | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3015 | 18.3015 | 3.5000e-004 | 3.4000e-004 | 18.4103 |

Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 342958 | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3015 | 18.3015 | 3.5000e-004 | 3.4000e-004 | 18.4103 |
| Total | | 1.8500e-003 | 0.0168 | 0.0141 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3015 | 18.3015 | 3.5000e-004 | 3.4000e-004 | 18.4103 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|---------------|--------------------|--------------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 106110 | 9.8177 | 1.5900e-003 | 1.9000e-004 | 9.9148 |
| Total | | 9.8177 | 1.5900e-003 | 1.9000e-004 | 9.9148 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|---------------|--------------------|--------------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 106110 | 9.8177 | 1.5900e-003 | 1.9000e-004 | 9.9148 |
| Total | | 9.8177 | 1.5900e-003 | 1.9000e-004 | 9.9148 |

6.0 Area Detail**6.1 Mitigation Measures Area**

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

| | 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 | 0.0512 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |
| Unmitigated | 0.0512 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |

6.2 Area by SubCategory**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0512 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.0000e-005 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |
| Total | 0.0512 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**6.2 Area by SubCategory****Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0512 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.0000e-005 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |
| Total | 0.0512 | 0.0000 | 1.2000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 2.3000e-004 | 2.3000e-004 | 0.0000 | 0.0000 | 2.5000e-004 |

7.0 Water Detail**7.1 Mitigation Measures Water**

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

| | 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 | | | |
| General Light Industry | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**7.2 Water by Land Use****Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 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 |

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**8.2 Waste by Land Use****Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---------------------------|-------------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 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 | | | |
| General Light Industry | 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 |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

Ray Water Company - Santa Barbara-North of Santa Ynez County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

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

11.0 Vegetation

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Appendix C

Biological Resources Report

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Ray Water Company Consolidation with City of Santa Maria Water System Project Santa Maria, CA Biological Resource Report

September 2021

Prepared by



Denise Duffy & Associates, Inc.
Contact: Jami Davis
947 Cass St. Suite 5
Monterey, California 93940

Prepared for

Ray Water Company
1261 Oak Knoll Rd.
Santa Maria, CA 93455

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TABLE OF CONTENTS

| | |
|---|----|
| 1.0 INTRODUCTION | 1 |
| 1.1 Project Description | 1 |
| 2.0 METHODS | 5 |
| 2.1 Personnel and Survey Dates | 5 |
| 2.2 Special-Status Species | 5 |
| 2.3 Sensitive Habitats | 6 |
| 2.4 Data Sources | 6 |
| 2.5 Regulatory Setting | 7 |
| 3.0 RESULTS | 13 |
| 3.1 Vegetation Types | 13 |
| 3.2 Sensitive Habitats | 15 |
| 3.3 Special-Status Species | 17 |
| 4.0 IMPACTS AND MITIGATION MEASURES | 19 |
| 4.1 Impacts and Mitigation Measures | 19 |
| 5.0 REFERENCES | 21 |

APPENDICES

| |
|--|
| APPENDIX A. Project Plans |
| APPENDIX B. Special-Status Species Table |
| APPENDIX C. California Natural Diversity Database Report |
| APPENDIX D. IPaC Resource List |

FIGURES

| | |
|---|----|
| Figure 1. Project Vicinity | 2 |
| Figure 2. Project Site | 3 |
| Figure 3. Habitat Map | 14 |
| Figure 4. Site Photos – Potential Waters of the State | 16 |

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1.0 INTRODUCTION

1.1 Project Description

DENISE DUFFY & ASSOCIATES, Inc. (DD&A) was contracted by the Ray Water Company to assess the biological resources within the Ray Water Company Consolidation with City of Santa Maria Water System Project (project). The project is located on the western edge of the City of Santa Maria; however, a portion of the project site is also located within unincorporated Santa Barbara County (**Figure 1**). The proposed project components are primarily within the West Betteravia Road right-of-way, with some components located to south of West Betteravia Road, on Rayville Lane. The project consists of consolidating Ray Water Company with the City of Santa Maria's (City's) water system. The proposed project consists of an approximately 3,400-foot water main, an approximately 500-foot distribution line, and 13 service connections¹ (approximately 60-feet each). The water main will extend from Rayville Lane east along West Betteravia Road to connect with the City's water system near the intersection of West Betteravia Road and A Street. The distribution line will run south of the water main within Rayville Lane. The proposed project includes 13 service connections, including 10 on Rayville Lane and three on West Betteravia Road (**Figure 2**). In addition to the proposed project area, the Ray Water Company requested a biological analysis of their entire service area (**Figure 2**). As such, the biological resource report includes a survey area that is larger than project's impact area.


This report presents the findings of a biological resource assessment conducted by DD&A for the project. The emphasis of this study is to describe existing biological resources within the survey area and project site, identify any special-status species and sensitive habitats, and assess potential impacts that may occur to biological resources as a result of the project, and recommend appropriate avoidance, minimization, and mitigation measures necessary to reduce those impacts to a less-than-significant level in accordance with local and state ordinances including the California Environmental Quality Act (CEQA).


1.2 Summary of Results

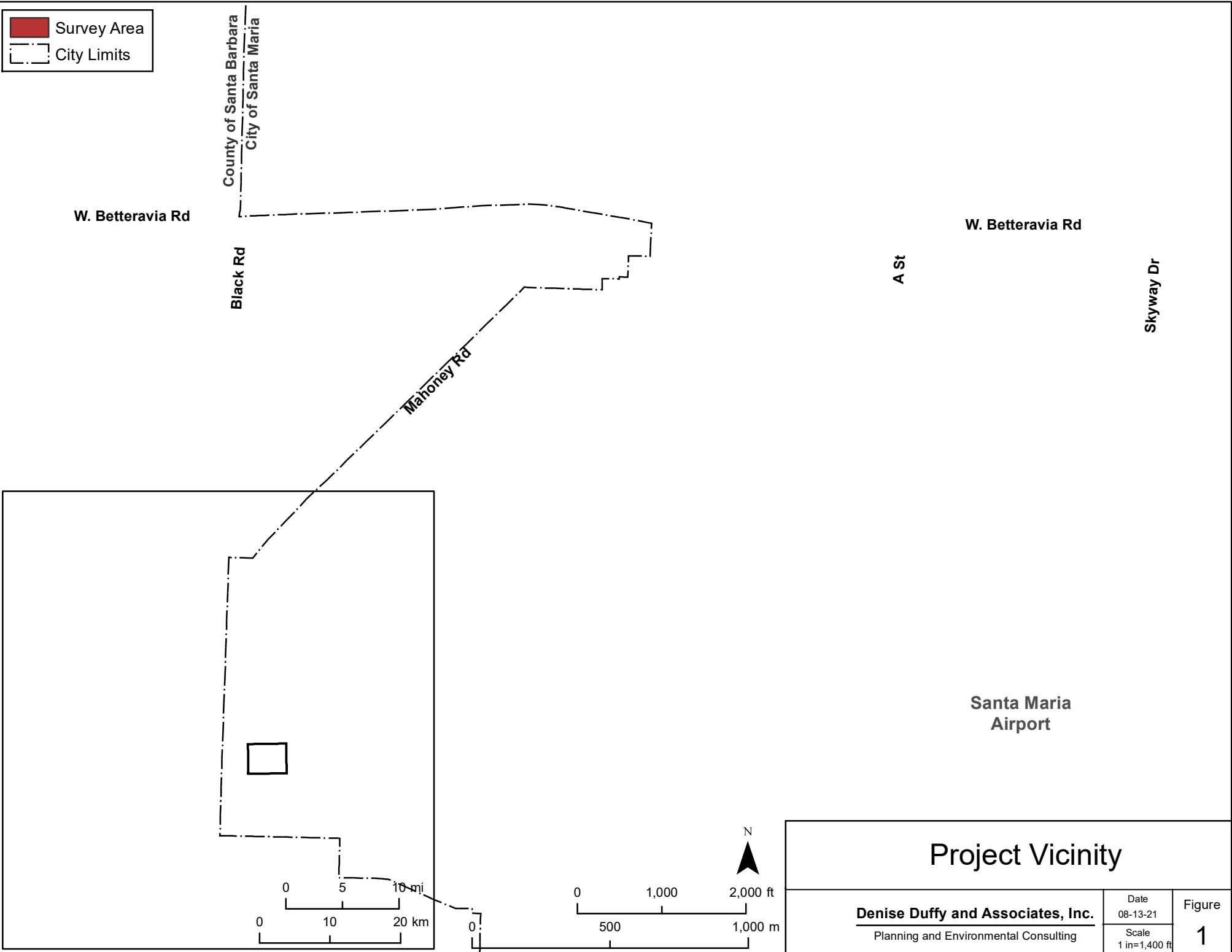
Two vegetation types were observed within the survey area, riparian and ruderal; however, only ruderal habitat is present within the areas proposed to be impacted by the project. In addition, portions of the survey area and project site are developed. The floristic alliance occurring within the riparian habitat is listed as sensitive on the California Department of Fish and Wildlife's (CDFW's) *List Vegetation Alliances and Associations* (CDFW, 2020). Portions of the riparian area may be federal wetlands and a drainage is present within the survey area, which may be jurisdictional other waters of the U.S. or state, regulated by the U.S. Army Corps of Engineers (ACOE) and/or California Regional Water Quality Control Board (RWQCB).

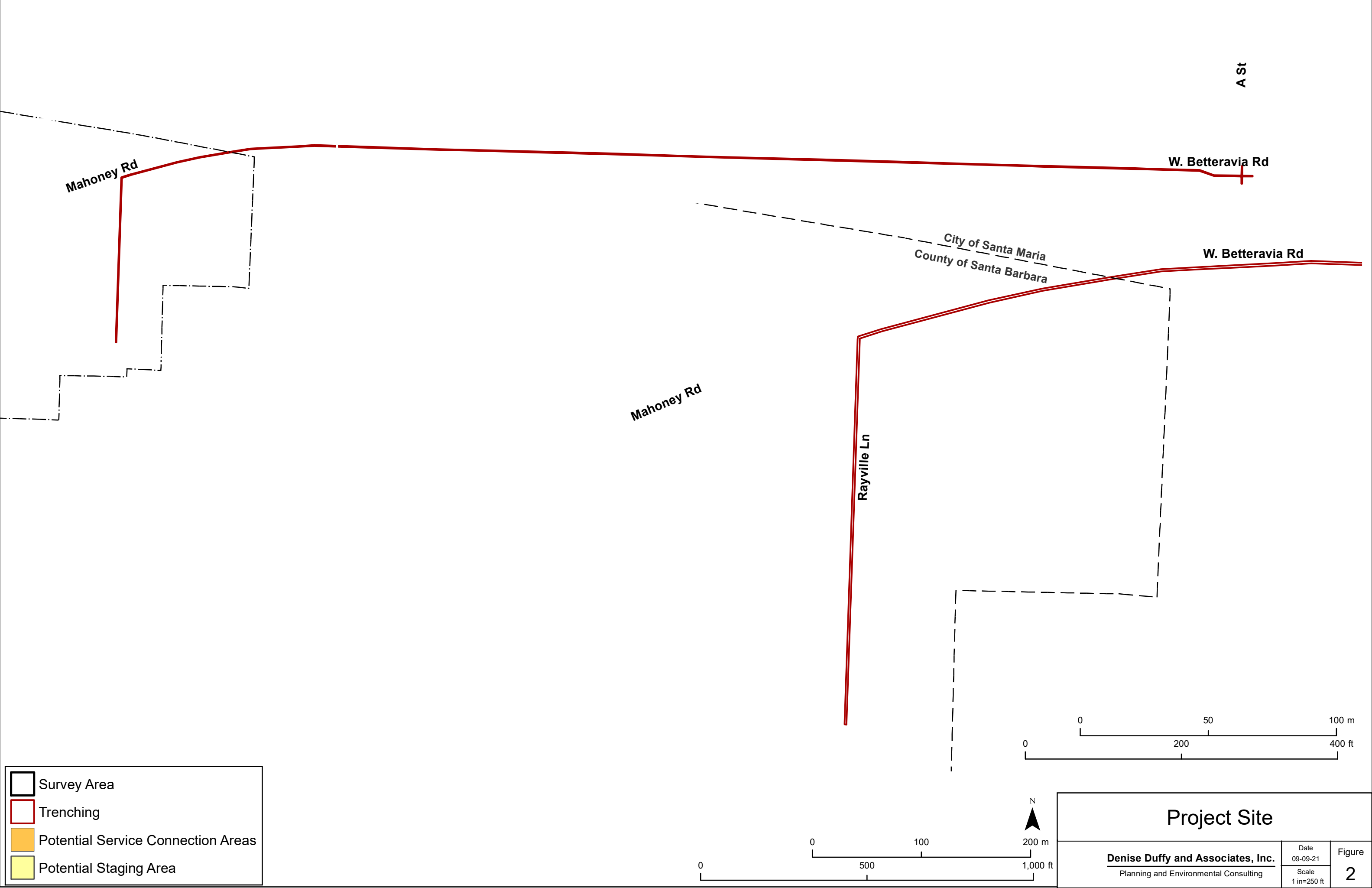
No special-status species have the potential to occur within the survey area based on lack of appropriate habitat, and no known occurrences within the vicinity of the project. Raptors and other avian species protected under California Fish and Game Code have the potential to nest within trees present within and adjacent to the survey area and project site. All other species evaluated have a low potential to occur, are assumed unlikely to occur, or were determined not present within the survey area for the species-specific reasons presented in **Appendix B**.

¹ Please note that Figure 2 shows the general location of the service connections. The exact locations have not been determined at this time.


Survey Area


City Limits



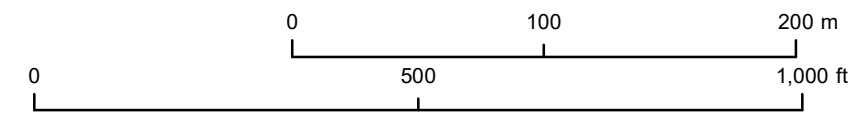


Survey Area

Trenching

Potential Service Connection Areas

Potential Staging Area



Project Site

Denise Duffy and Associates, Inc.
Planning and Environmental Consulting

Date
09-09-21

Scale
1 in=250 ft

Figure
2

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2.0 METHODS

2.1 Personnel and Survey Dates

DD&A biologists evaluated the survey area on June 14, 2021. The survey area was defined by Ray Water Company service area as well as the portion of the project alignment that connects from the service area to Santa Maria Water System (**Figure 2, Appendix A**). The survey area also includes all staging and access areas. Survey methods included walking the survey area and using aerial maps to identify general and sensitive vegetation types, conducting a focused survey for perennial and summer-blooming annual special-status plant species, and identifying potential habitat for special-status wildlife species and spring-blooming special-status plant species. Data collected during the survey were used to assess the environmental conditions of the survey area and its surroundings, evaluate environmental constraints at the site and within the local vicinity, and provide a basis for recommendations to minimize and avoid impacts.

The survey area was evaluated for botanical resources following the applicable guidelines outlined in: *Guidelines for Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants* (U.S. Fish and Wildlife Service [USFWS], 2000), *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2019), and *CNPS Botanical Survey Guidelines* (California Native Plant Society [CNPS], 2001).

2.2 Special-Status Species

Special-status species are those plants and animals that have been formally listed or proposed for listing as endangered or threatened or are candidates for such listing under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA). Listed species are afforded legal protection under the ESA and CESA. Species that meet the definition of rare or endangered under the CEQA Section 15380 are also considered special-status species. Animals on the CDFW's list of "species of special concern" (most of which are species whose breeding populations in California may face extirpation if current population trends continue) and avian species on USFWS's "Birds of Conservation Concern" list (birds that, without additional conservation actions, are likely to become candidates for listing under the ESA) meet this definition and are typically provided management consideration through the CEQA process, although they are not legally protected under the ESA or CESA. Additionally, the CDFW also includes some animal species that are not assigned any of the other status designations on their "Special Animals" list; however, these species have no legal or protection status.

Plants listed as rare under the California Native Plant Protection Act (CNPPA) or included in CNPS California Rare Plant Ranks (CRPR; formerly known as CNPS Lists) 1A, 1B, 2A, and 2B are also treated as special-status species as they meet the definitions of Sections 2062 and 2067 of the CESA and in accordance with CEQA Guidelines Section 15380.² In general, the CDFW requires that plant species on CRPR 1A (Plants presumed extirpated in California and Either Rare or Extinct Elsewhere), CRPR 1B (Plants rare, threatened, or endangered in California and elsewhere), CRPR 2A (Plants presumed extirpated in California, but more common elsewhere); and CRPR 2B (Plants rare, threatened, or endangered in California, but more common elsewhere) of the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2021) be fully considered during the preparation of environmental documents relating

² CNPS initially created five CRPR to categorize degrees of concern; however, to better define and categorize rarity in California's flora, the CNPS Rare Plant Program and Rare Plant Program Committee have developed the new CRPR 2A and CRPR 2B.

to CEQA.³ In addition, species of vascular plants, bryophytes, and lichens listed as having special-status by the CDFW are considered special-status plant species (CDFW, 2021a). CNPS CRPR 4 species (plants of limited distribution) may, but generally do not, meet the definitions of Sections 2062 and 2067 of the CESA, and are not typically considered in environmental documents relating to CEQA. While other species (i.e., CRPR 3 or 4 species) are sometimes found in database searches or within the literature, these were not included within the analysis as they did not meet the definitions of Section 2062 and 2067 of the CESA.

Raptors (e.g., eagles, hawks, and owls) and their nests are protected in California under Fish and Game Code Section 3503.5. Section 3503.5 states that it is “unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted pursuant thereto.”

In addition, fully protected species under the Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians) are also considered special-status animal species. Species with no formal special-status designation but thought by experts to be rare or in serious decline may also be considered special-status animal species in some cases, depending on project-specific analysis and relevant, localized conservation needs or precedence.

2.3 Sensitive Habitats

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species, areas of high biological diversity, areas supporting rare or special-status wildlife habitat, and unusual or regionally restricted vegetation types. Vegetation types considered sensitive include those listed on the CDFW’s *California Natural Communities List* (i.e., those habitats that are rare or endangered within the borders of California) (CDFW, 2020), those that are occupied by species listed under the ESA or are critical habitat in accordance with the ESA, and those that are defined as ESHA under the CCA. Specific habitats may also be identified as sensitive in city or county general plans or ordinances. Sensitive habitats are regulated under federal regulations (such as the Clean Water Act [CWA] and Executive Order [EO] 11990 – Protection of Wetlands), state regulations (such as CEQA and the CDFW Streambed Alteration Program), or local ordinances or policies (such as city or county tree ordinances and general plan policies).

2.4 Data Sources

The primary literature and data sources reviewed in order to determine the occurrence or potential for occurrence of special-status species within the survey area are as follows:

- Current agency status information from USFWS and CDFW for species listed, proposed for listing, or candidates for listing as threatened or endangered under the ESA or CESA, and those considered CDFW “species of special concern”, including:
 - California Natural Diversity Database (CNDDB) occurrences reports from the Santa Maria quadrangle and the eight surrounding quadrangles, including Casmalia, Orcutt, Sisquoc, Oceano, Nipomo, Huasna Peak, Guadalupe, and Twitchell Dam (CDFW, 2021b; **Appendix C**); and
 - USFWS IPaC Resource List (USFWS, 2021a; **Appendix D**).
- CDFW’s Special Animals List (CDFW, 2021a); and
- The CNPS *Inventory of Rare and Endangered Plants of California* (CNPS, 2021).

³ CRPR 3 species (Plants about which we need more information - a review list) and CRPR 4 species (Plants of limited distribution - a watch list) may, but generally do not, meet the definitions of Sections 2062 and 2067 of the CESA, and are not typically considered in environmental documents relating to CEQA.

From these resources, a list of special-status plant and wildlife species known or with the potential to occur in the vicinity of the survey area was created (**Appendix B**). This list presents these species along with their legal status, habitat requirements, and a brief statement of the likelihood to occur.

2.4.1 Botany

Vegetation types identified in *A Manual of California Vegetation* (Sawyer et.al., 2009) were utilized to determine if vegetation types identified as sensitive on CDFW's *California Natural Communities List* (CDFW, 2020) are present within the survey area. Information regarding the distribution and habitats of local and state vascular plants was also reviewed (Howitt and Howell, 1964 and 1973; Munz and Keck, 1973; Baldwin et al., 2012; Matthews and Mitchell, 2015; Jepson Flora Project, 2021). All plants observed within the survey area during the evaluation were identified to species or intraspecific taxon necessary to eliminate them as being special-status species using keys and descriptions in *The Jepson Manual: Vascular Plants of California, Edition 2* (Baldwin et al., 2012). Scientific nomenclature for plant species identified within this document follows Baldwin, et. al, (2012). A botanical inventory was recorded for the survey area and the dominant species within each habitat were noted. Dominant plant species are those which are more numerous than its competitors in an ecological community or makes up more of the biomass; generally, the species that are most abundant. Most ecological communities are defined by their dominant species.

The California Invasive Plant Council (Cal-IPC) Inventory (Cal-IPC, 2019) was reviewed to determine if any invasive plant species are present within the survey area.

2.4.2 Wildlife

The following literature and data sources were reviewed: CDFW reports on special-status wildlife (Remsen, 1978; Williams, 1986; Jennings and Hayes, 1994; Thelander, 1994; Thomson et. al, 2016); California Wildlife Habitat Relationships Program species-habitat models (Zeiner et al., 1988 and 1990); and general wildlife references (Stebbins, 1972, 1985, and 2003).

2.5 Regulatory Setting

The following regulatory discussion describes the major laws that may be applicable to the project.

2.5.1 Federal Regulations

Federal Endangered Species Act

Provisions of the ESA of 1973 (16 USC 1532 et seq., as amended) protect federally listed threatened or endangered species and their habitats from unlawful take. Listed species include those for which proposed and final rules have been published in the Federal Register. The ESA is administered by USFWS or National Oceanic and Atmospheric Administration Marine Fisheries Service (NMFS). In general, the NMFS is responsible for the protection of ESA-listed marine species and anadromous fish, whereas other listed species are under USFWS jurisdiction.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered or threatened. Take, as defined by ESA, is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” Harm is defined as “any act that kills or injures the fish or wildlife...including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” In addition, Section 9 prohibits removing, digging up, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does

not prohibit take of federally listed plants on sites not under federal jurisdiction. If there is the potential for incidental take of a federally listed fish or wildlife species, take of listed species can be authorized through either the Section 7 consultation process for federal actions or a Section 10 incidental take permit process for non-federal actions. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits).

The Clean Water Act

The ACOE and Environmental Protection Agency (EPA) regulate discharge of dredged and fill material into “Waters of the United States” (waters of the U.S.) under Section 404 of the CWA. Waters of the U.S. are defined broadly as waters susceptible to use in commerce (including waters subject to tides, interstate waters, and interstate wetlands) and other waters (such as interstate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds) (33 CFR 328.3). Potential wetland areas are identified as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions.”

Under Section 401 of the CWA, any applicant receiving a Section 404 permit from the ACOE must also obtain a Section 401 Water Quality Certification from the RWQCB. A Section 401 Water Quality Certification is issued when a project is demonstrated to comply with state water quality standards and other aquatic resource protection requirements.

2.5.2 State Regulations

California Endangered Species Act

The CESA was enacted in 1984. The California Code of Regulations (Title 14, §670.5) lists animal species considered endangered or threatened by the state. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. Section 2080 of the Fish and Game Code prohibits “take” of any species that the commission determines to be an endangered species or a threatened species. “Take” is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” A Section 2081 Incidental Take Permit from the CDFW may be obtained to authorize “take” of any state listed species.

California Native Plant Protection Act

The CNPPA of 1977 directed CDFW to carry out the legislature’s intent to “preserve, protect and enhance rare and Endangered plants in the State.” The CNPPA prohibits importing rare and Endangered plants into California, taking rare and Endangered plants, and selling rare and Endangered plants. The CESA and CNPPA authorized the Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the CNPPA are not protected under CESA; however, these plants may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research.

California Fish and Game Code

Birds. Section 3503 of the Fish and Game Code states that it is “unlawful to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant

thereto.” Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal MBTA. Section 3800 prohibits take of nongame birds.

Fully Protected Species. The classification of fully protected was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (§5515), mammals (§4700), amphibians and reptiles (§5050), and birds (§3511). Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Species of Special Concern. As noted above, the CDFW also maintains a list of animals “species of special concern.” Although these species have no legal status, the CDFW recommends considering these species during analysis of project impacts to protect declining populations and avoid the need to list them as endangered in the future.

Native Plant Protection Act

The CNPPA of 1977 directed the CDFW to carry out the legislature’s intent to “preserve, protect and enhance rare and endangered plants in the state.” The CNPPA prohibits importing rare and endangered plants into California, taking rare and endangered plants, and selling rare and endangered plants. The CESA and CNPPA authorized the Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the CNPPA are not protected under CESA.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne) is California’s statutory authority for the protection of water quality and applies to surface waters, wetlands, and groundwater, and to both point and nonpoint sources. Under the Porter-Cologne, the State Water Resources Control Board (State Board) has the ultimate authority over State water rights and water quality policy. However, Porter-Cologne also establishes nine RWQCBs to oversee water quality on a day-to-day basis at the local/regional level. The Project Study Area is located within Region 3 – Central Coast RWQCB. Porter-Cologne incorporates many provisions of the federal CWA, such as delegation to the State Board and RWQCBs of the National Pollutant Discharge Elimination System (NPDES) permitting program.

Under Porter-Cologne, the state must adopt water quality policies, plans, and objectives that protect the state’s waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegate to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne sets forth the obligations of the State Board and RWQCBs to adopt and periodically update water quality control plans (basin plans). The act also requires waste dischargers to notify the RWQCBs of such activities through filing of Reports of Waste Discharge (RWD) and authorizes the State Board and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to

RWD requirements and WDRs for broad categories of “low threat” discharge activities that have minimal potential for adverse water quality effects, when implemented according to prescribed terms and conditions.

The term “Waters of the State” is defined by Porter-Cologne as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The RWQCB protects all waters in its regulatory scope but has special responsibility for wetlands, riparian areas, and headwaters, including isolated wetlands, and waters that many not be regulated by the USACE under Section 404 of the CWA. Waters of the State are regulated by RWQCB under the State Water Quality Certification Program, which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne.

2.5.3 Local Regulations

City of Santa Maria General Plan

The entire project is subject to the City of Santa Marina General Plan (SM General Plan). The majority of the proposed water main is located within the City of Santa Maria. The water main is within the right-of-way of Betteravia Road and for this reason it does not have a land use designation or a zoning designation. Additionally, a small portion of the water main, the distribution line and the service connections are not located within the City limits, however, they are within the City sphere of influence. A sphere of influence is a planning boundary outside of an agency’s legal boundary that designates the agency’s probable future boundary and service area. This area is included in the Mahoney Ranch Specific Plan and is designated as Low-Medium Residential and Heavy Commercial/Manufacturing.

The Resources Management Element of the SM General Plan was adopted in 1996 and amended in 2001 (City of Santa Maria, 2001). The Resources Management Element provides an overview of the biological resources within the SM General Plan area. Sensitive habitats identified in the SM General Plan include central coast riparian scrub and coastal and valley freshwater marsh. In addition, the SM General Plan identifies that the “only significant wildlife habitat areas within the Planning Area are the fields surrounding the airport, riparian vegetation with the Santa Maria River and Orcutt Creek, and the Vernal Pool complex located southwest of the airport” and that the Santa Maria River, Cuyama River, and Sisquoc River are potential wildlife corridors use by wildlife to access habitat in the Sierra Madre and San Rafael Mountains.

The Mahoney Ranch Specific Plan does not identify any biological resources within the plan area.

Santa Barbara County Comprehensive Plan

A small portion of the water main, the distribution line and the service connections are located outside of the City of Santa Maria limits within unincorporated Santa Barbara County and are subject to the Santa Barbara County Comprehensive Plan (SBC Comprehensive Plan). The distribution line and service connections are located on Rayville Lane (a private road) and is zoned as General Industry (M-2) by the Land Use Element of the SBC Comprehensive Plan. The portion of the water main located within unincorporated Santa Barbara County is within the right-of-way of Betteravia Road, and therefore does not have a land use designation.

The Environmental Resource Management Element (ERME) of the SBC Comprehensive Plan was adopted in 1980 and republished in 2009 (County of Santa Barbara, 2009). The ERME identifies 57 scientific preserves, including 14 ecological communities of greatest interest that have been judged as rare and/or

endangered. The ERME also identifies significant habitats, which includes 11 communities representing 12 sites and nine freshwater streams that are prime examples of common ecological communities, as well as six additional areas of introduced grasslands and roosting sites for birds that provide significant habitat. The ERME also includes additional areas noted by biologists as having significant biological value. None of these areas occur within or adjacent to the survey area.

Habitat Conservation Plans or NCCP

There are no adopted Habitat Conservation Plans (HCP) or Natural Community Conservation Plans (NCCP) associated with the evaluation area.

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3.0 RESULTS

3.1 Vegetation Types

Two vegetation types were mapped within the survey area: riparian and ruderal; however, only ruderal vegetation is present within the project site (**Figure 3**). In addition, portions of the survey area and project site are developed. A brief description of each vegetation type can be found below along with identification of the vegetation classification from *A Manual of California Vegetation* (Sawyer et al., 2009) and whether the vegetation type is identified as sensitive on CDFW's *California Natural Communities List* (CDFW, 2020).

| Vegetation Type | Area | |
|-------------------|-------------|-----------------------|
| | Survey Area | Project Site |
| Ruderal/Disturbed | 6.3 acres | 1.5 acres |
| Riparian | 0.7 acres | 0 |
| Developed | 11.1 acres | 0.8 acre ⁴ |

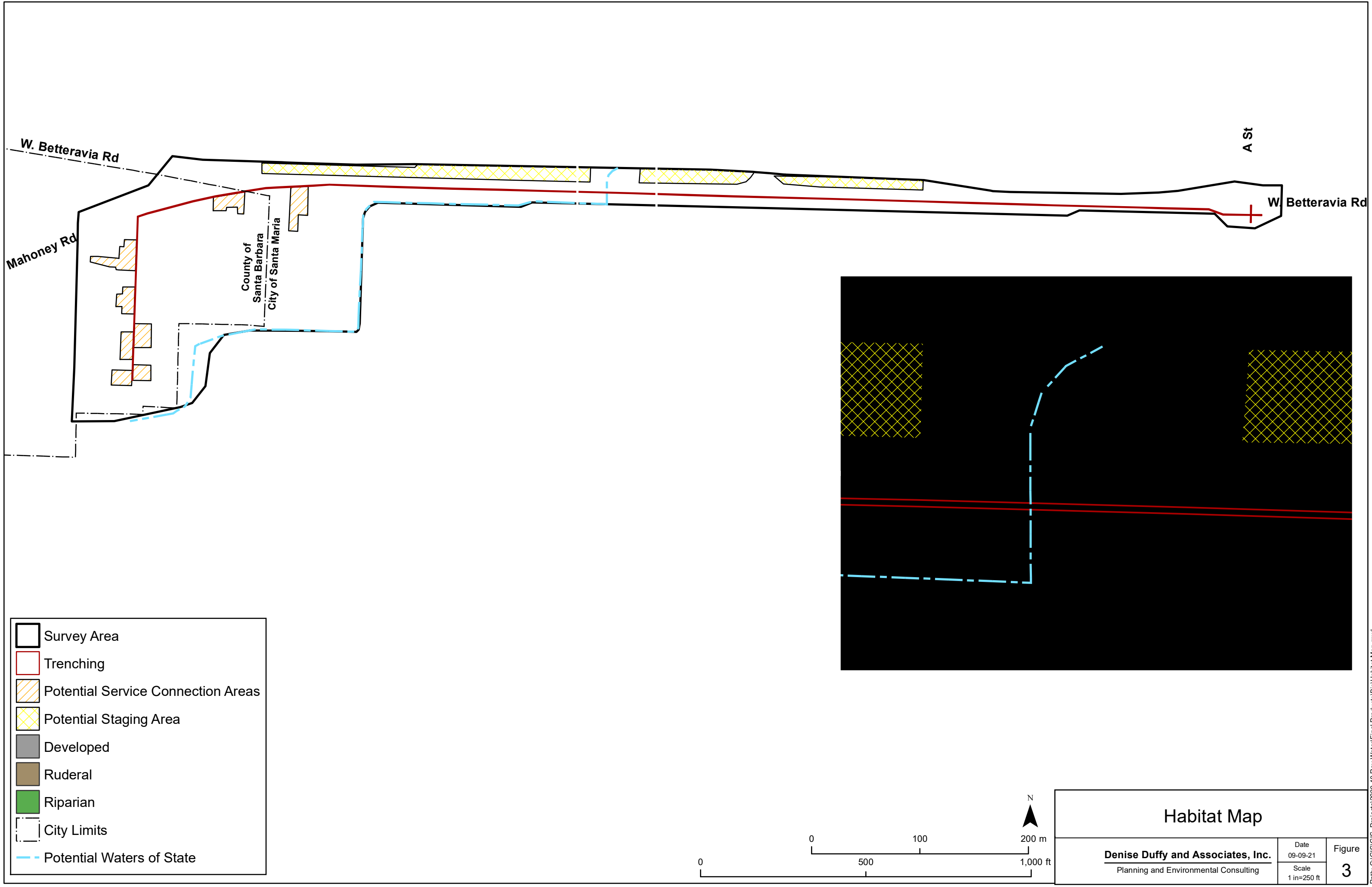
3.1.1 Ruderal/Disturbed

- *A Manual of California Vegetation* classification(s): Ice Plant Mats (*Mesembryanthemum* spp. - *Carpobrotus* spp. Herbaceous Semi-Natural Alliance) and Wild Oats and Annual Brome Grasslands (*Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance)
- *California Natural Communities List*: Not Sensitive

Ruderal areas are those areas which have been disturbed by human activities and are dominated by non-native annual grasses and other “weedy” species. Most of the undeveloped portions of the survey area (**Figure 3**) consist of ruderal habitat dominated by non-native weedy plant species, such as hottentot fig (*Carpobrotus* sp.), cheeseweed (*Malva parviflora*), wild radish (*Raphanus sativus*), mustard (*Brassica* sp.), ripgut brome (*Bromus diandrus*), filaree (*Erodium* sp.), and telegraph weed (*Heterotheca grandiflora*). Approximately 6.3 acres of ruderal/disturbed areas are present within the survey area; however, only 1.5 acres would be impacted by the project, associated mostly with staging on the north side of West Betteravia Road.

Ruderal areas have low biological value because they are generally dominated by non-native plant species and consist of relatively low-quality habitat from a wildlife perspective. Common wildlife species which do well in urbanized and disturbed areas that may occur within the ruderal habitat include American crow (*Corvus brachyrhynchos*), Steller's jay (*Cyanocitta stelleri*), striped skunk (*Mephitis mephitis*), scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), western fence lizard (*Sceloporus occidentalis*), and rock dove (*Columba livia*).

⁴ Please note that the exact locations of the service connections have not yet been determined. As such, this number includes the general areas shown for service connections on Figure 3. The actual work area will likely be less.



3.1.2 Riparian

- *A Manual of California Vegetation classification*: Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)
- *CDFW List of Alliances and Associations*: Sensitive

Riparian habitats are those plant communities supporting woody vegetation found along rivers, creeks, streams, canyon bottom drainages, and seeps. They can range from a dense thicket of shrubs to a closed canopy of large mature trees. Within the survey area, this habitat type is dominated by Arroyo willow (*Salix lasiolepis*). Approximately 0.7 acre of riparian habitat is present within the survey area; however, no riparian habitat will be impacted by the project (**Figure 3**).

Riparian areas provide habitat for many wildlife species, particularly birds and herpetofauna. Common species that may be found within the riparian habitat in the site includes Sierran treefrog (*Pseudacris sierra*), red-winged blackbird (*Agelaius phoeniceus*), and song sparrow (*Melospiza melodia*).

3.1.3 Developed

- *A Manual of California Vegetation classification(s)*: None
- *California Natural Communities List*: Not Listed

Developed areas within the survey area include roadways, residences, businesses, and associated yards. Vegetation within these areas consist only of ornamental plants, lawns, and sparse weeds. As such, developed areas are considered to have no biological value. Approximately 11.1 acres of developed areas is present within the survey area; however, only approximately 0.8 acre will be impacted by the project⁵ (**Figure 3**).

3.2 Sensitive Habitats

3.2.1 Riparian Habitat

Riparian habitat is identified as sensitive on the CDFW's *California Natural Communities List* (CDFW, 2020) and in the Resources Management Element of the SM General Plan (City of Santa Maria, 2009). No riparian habitat is present within the areas that will be impacted by the project.

3.2.2 Wetlands and Other Waters

A drainage ditch is present within the survey area. The ditch begins on the north side of West Betteravia Road, enters a culvert under the road, daylights on the south side of West Betteravia Road, then runs east along the southern boundary of the survey area (**Figures 3 and 4**). The culvert on both the north and south side of West Betteravia Road is significantly blocked with sediment. The ditch ranges from approximately one to three feet wide and one to two feet deep. It is unvegetated (except where it enters the riparian area) with a silty bottom. No water was observed within the ditch during the survey, except a very small puddle at the culvert on the south side of West Betteravia Road.

⁵ Please note that the exact locations of the service connections have not yet been determined. As such, this number includes the general areas shown for service connections on Figure 3. The actual work area will likely be less.



KEY

1. Ditch on south side of W. Betteravia Rd. adjacent to project site
2. Ditch on south side of W. Betteravia Rd. adjacent to project site, near culvert
3. Culvert with water on south side of W. Betteravia Rd.
4. Ditch and culvert on north side of W. Betteravia Rd.

Site Photos Potential Waters of the State



Denise Duffy and Associates, Inc.
Planning and Environmental Consulting

Date
09-10-21
Scale
N/A

Figure
4

The ditch is not shown as an aquatic feature on The National Map (USGS, 2021). The source is unknown, as a culvert was not observed north of the project site and no surface features were observed outside of the survey area or on aerial imagery. The ditch continues south of the survey area and (based on aerial imagery) appears to connect to an unnamed stream that flows to Guadalupe Lake.

Based on this information, the ditch is unlikely waters of the U.S. under ACOE jurisdiction; however, the ditch may be considered waters of the state within RWQCB and CDFW jurisdiction. Where the ditch flows through the riparian habitat, wetlands may be present; however, the density of the riparian vegetation made this area inaccessible during the survey and a delineation of wetlands was not conducted. Due to the lack of vegetation within the other areas of the ditch, no other potential wetland areas are present.

The ditch is located adjacent to, but outside of the project site, except where the culvert crosses West Betteravia Road and the project site (**Figure 3**).

3.3 Special-Status Species

Raptors and other avian species protected under California Fish and Game Code have the potential to nest within trees present within and adjacent to the project site. All other special-status wildlife species are assumed unlikely to occur or have a low potential to occur based on the species-specific reasons presented in **Appendix B**, are therefore unlikely to be impacted by the project, and are not discussed further. No special-status plant species were observed during the field survey, and none are expected to occur based on the lack of suitable habitat within the project site, as identified in **Appendix B**. Therefore special-status plant species are unlikely to be impacted by the project and are not discussed further.

3.3.1 Special-Status Wildlife Species

Nesting Raptors and Other Protected Avian Species

Raptors, their nests, and other nesting birds are protected under California Fish and Game Code. While the life histories of these species vary, overlapping nesting (approximately February through August) and foraging similarities allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest habitats, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through August, with peak activity May through July. Prey for these species includes small birds, small mammals, and some reptiles and amphibians. Many raptor species hunt in open woodland and habitat edges.

Various species of raptors, such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), American kestrel (*Falco sparverius*), and turkey vulture (*Cathartes aura*), have a potential to nest within any of the large trees present within the survey area.

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4.0 IMPACTS AND MITIGATION MEASURES

4.1 Impacts and Mitigation Measures

Potential Impact 1: *Nesting raptors and other protected avian species have the potential to occur within the project site. Construction activities may result in direct mortality of individuals or disturbance of nests. This is a potentially significant impact that can be reduced to a less-than-significant level with implementation of the mitigation measures recommended below.*

Mitigation 1a: To avoid and reduce impacts to nesting raptors and other nesting avian species, construction activities can be timed to avoid the nesting season period. Specifically, construction activities can be scheduled after September 1 and before January 31 to avoid impacts to these species. Alternatively, if avoidance of the nesting period is not feasible, a qualified biologist shall be retained to conduct pre-construction surveys for nesting raptors and other protected avian species within 250 feet of proposed construction activities if construction occurs between February 1 and August 31. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). Because some bird species nest early in spring and others nest later in summer, some breed multiple times in a season, surveys for nesting birds may be required to continue during construction to address new arrivals. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans.

If raptors or other protected avian species nests are identified during the pre-construction surveys, the qualified biologist will notify the project applicant and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place as determined by the qualified biologist to ensure avoidance of impacts to the individuals. The buffer will remain in place until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

Potential Impact 2: *The floristic alliance occurring within the riparian habitat is listed as sensitive on the CDFW's California's Natural Communities List (CDFW, 2020) and in the Resources Management Element of the SM General Plan (City of Santa Maria, 2009). Riparian habitat is under CDFW jurisdiction per Fish and Game code Section 1602. The project will not result in direct impacts to riparian habitat (**Figure 3**); however, if an accident during construction were to result in the release of hazardous materials (e.g., fuel for construction equipment, oil, solvents, or paints) into the environment, there is a potential to degrade the adjacent riparian habitat. This would be considered a significant impact. The project is subject to existing regulatory requirements pertaining to the use and disposal of hazardous materials; however, implementation of the mitigation measure below will reduce potential impacts related to accidental release of hazardous materials to a less-than-significant level.*

Mitigation 2: Cleaning and refueling of equipment and vehicles will occur only within designated staging areas on paved or graded parking areas. No maintenance, cleaning or fueling of equipment will occur within riparian areas, or within 100 feet of such areas if possible. At a minimum, all equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills. During construction, all project-related spills of hazardous materials within or adjacent to proposed project area will be cleaned up immediately. Spill prevention and clean-up materials will be onsite at all times during construction. Construction materials/debris will also be stored within the designated staging areas. No debris, soil, silt, sand, oil, petroleum products, cement, concrete, or washings thereof will be allowed to enter into, or be placed where they may be washed by rainfall or runoff, into riparian habitat.

Potential Impact 3: *A ditch is present within the survey area that conveys waters of the state likely under the jurisdiction of the RWQCB and CDFW. In addition, wetlands under RWQCB jurisdiction may be present where the ditch flows through the riparian habitat. The project will not result in direct impacts to the potential wetlands (Figure 3); however, if an accident during construction were to result in the release of hazardous materials (e.g., fuel for construction equipment, oil, solvents, or paints) into the environment, there is a potential to degrade the adjacent habitat and impact water quality. The project has the potential to directly impact waters of the state where the project intersects the culvert that runs under West Betteravia Road or if work were to occur outside of the project limits. These are potentially significant impacts that can be reduced to less-than-significant with implementation of the Mitigation 2 and the measures below.*

Mitigation 3a: The project shall avoid work within the potential waters of the state to the extent feasible. No Staging shall occur within potential waters of the state. Protective fencing shall be placed so as to keep construction vehicles and personnel from impacting potential waters of the state adjacent to the proposed project area outside of work limits. Typically, protective fencing, also referred to as Environmentally Sensitive Area (ESA) fencing, is four feet in height and is made of a highly visible color of polypropylene plastic.

Mitigation 3b: If avoidance of waters of the state is not feasible, the project applicant shall comply with the Clean Water Act and Fish and Game Code and coordinate with the RWQCB to obtain a Water Quality Certification and CDFW to obtain a Section 1602 Lake and Streambed Alteration Agreement prior to construction. All measures included in the permits to avoid, reduce, or mitigate impacts to waters of the state shall be implemented. These measures may include, but not be limited to, construction timing restrictions, monitoring, and reporting.

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APPENDIX A

Project Plans

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Water System Consolidation

Consolidation of Ray Water Company into the City of Santa Maria Water System
Rayville Lane and Betteravia Road
Santa Barbara County, CA
30% Plans

Project Team

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Environmental Consultants
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Denise Duffy and Associates
(831) 373-3580

Survey
Kenny Fargen
Fargen Surveys, Inc.
(805) 934-5727

SUMMARY OF WORK

INSTALL

ABANDON

HYDRANT

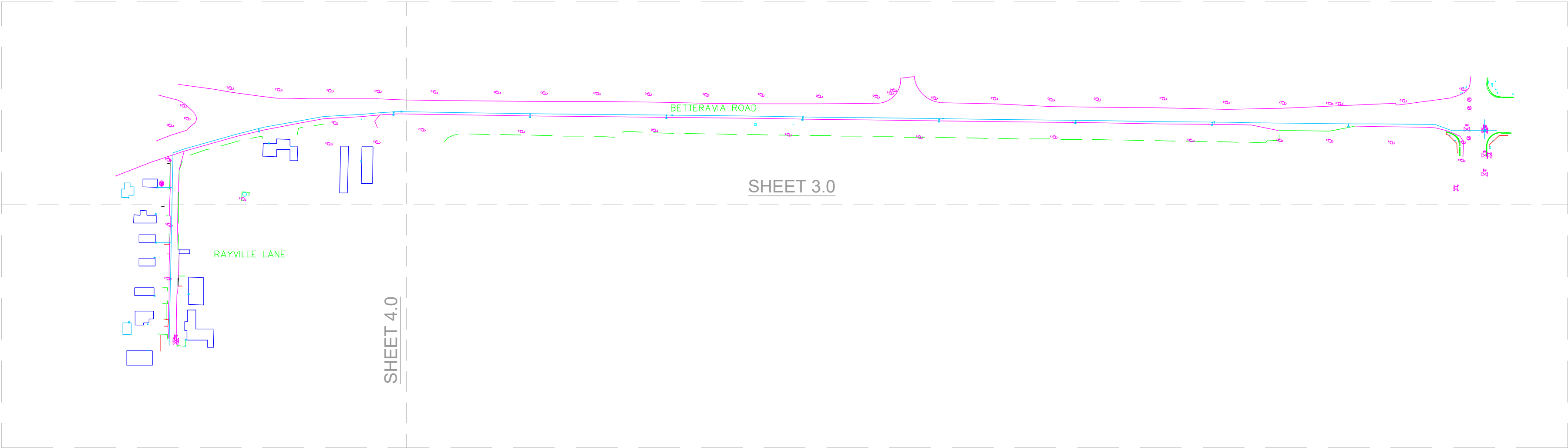
SERVICE

TIE-IN



Location Map


SHEET 2.0



Sheet WA-1.0:
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Sheet WA-4.0:
Sheet WA-5.0:
Sheet WA-6.0:

Civil - Cover Sheet
Civil - General Notes
Civil - Demolition Plan
Civil - Site Layout Plan
Civil - Water Main Alignment
Civil - Water Distribution Plan
Civil - Details
Fargen - Topographic Survey


LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE ONLY APPROXIMATE. THE EXISTING UTILITIES SHOWN WERE PLOTTED USING INCOMPLETE AND IMPRECISE RECORDS. IT SHOULD BE EXPRESSLY UNDERSTOOD THIS INFORMATION DOES NOT NECESSARILY REPRESENT ACTUAL OR COMPLETE SITE CONDITIONS OR SHOW DETAILS OF EXACT LOCATION, DEPTH OR OTHER CONSTRUCTION FEATURES OF THESE UTILITIES. NO WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO THE COMPLETENESS OR ACCURACY OF THIS INFORMATION IS SET FORTH HEREIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THIS INFORMATION WITH THE AFFECTED UTILITIES PRIOR TO EXCAVATION. THE CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" AT 1-800-642-2444 OR 8-1-1 FOR THE MARKING OF UNDERGROUND FACILITIES AT LEAST 2 DAYS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL HAND DIG AND LOCATE ALL UTILITIES THAT MAY BE AFFECTED BY THE NEW FACILITIES IN THIS CONTRACT TO VERIFY ACTUAL DEPTH AND LOCATION OF UTILITIES AND REPORT POTENTIAL CONFLICTS TO THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES WHETHER SHOWN OR NOT AND IS RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES.

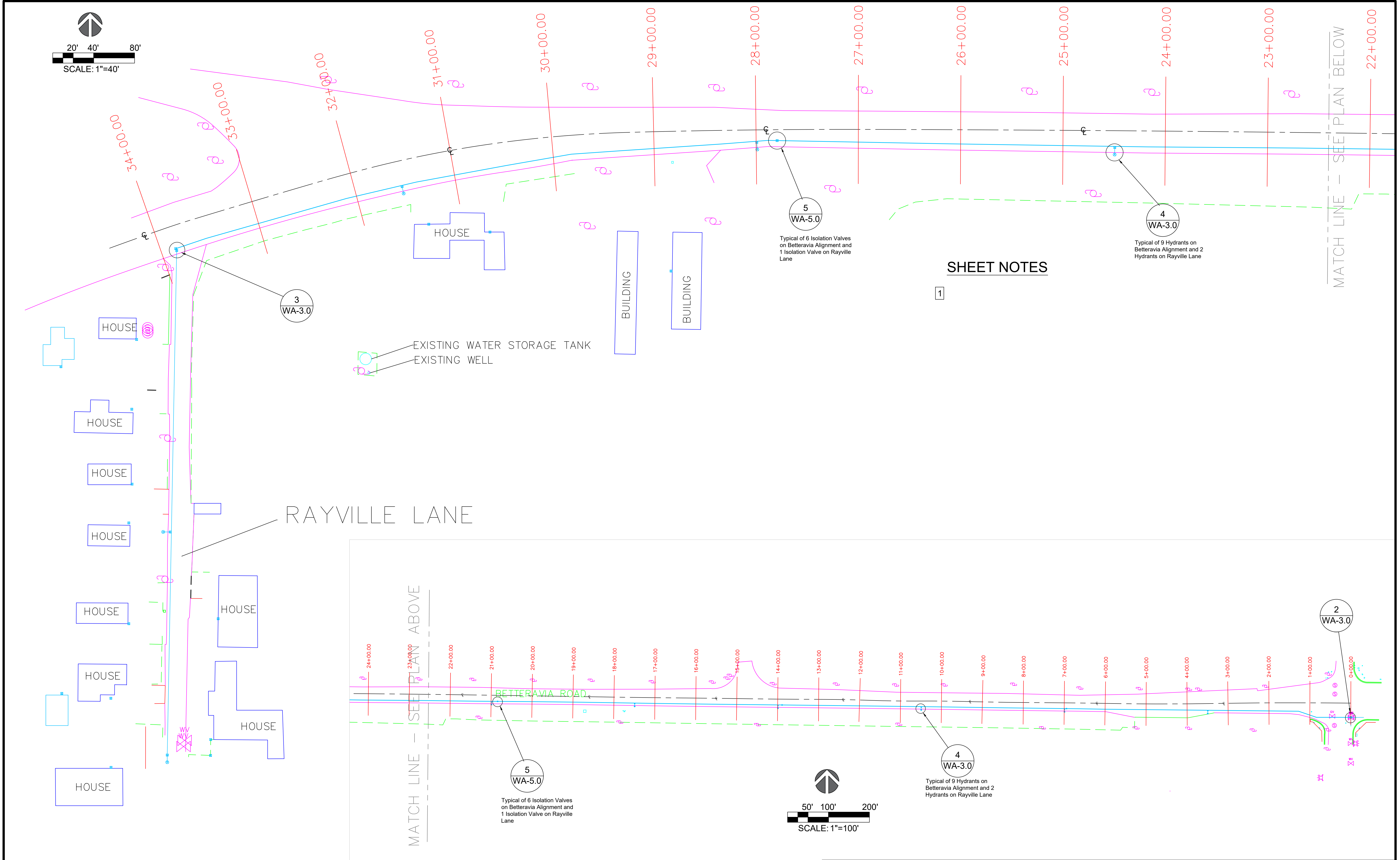
| Ray Water Company Consolidation | |  Weber, Hayes & Associates <i>Hydrogeology and Environmental Engineering</i> 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com | <table><tr><th colspan="4">REVISIONS</th><th colspan="2">APPROVED</th><th colspan="2">DATE</th></tr><tr><th>REV</th><th>BY</th><th>ITEM</th><th></th><th></th><th></th><th></th><th></th></tr><tr><td>1</td><td>RP</td><td>30% DESIGN DEVELOPMENT</td><td></td><td>CD</td><td></td><td>06/21</td><td></td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table> | | REVISIONS | | | | APPROVED | | DATE | | REV | BY | ITEM | | | | | | 1 | RP | 30% DESIGN DEVELOPMENT | | CD | | 06/21 | | | | | | | | | | | | | | | | | | | | | | | | | | <table><tr><td colspan="3">CITY OF SANTA MARIA</td><td colspan="3">DRAWN BY: RP</td></tr><tr><td colspan="3">DEPARTMENT OF PUBLIC WORKS</td><td colspan="3">CHECKED BY:</td></tr><tr><td colspan="3"> </td><td colspan="3">DATE: 06/22/2021</td></tr><tr><td colspan="3"> </td><td colspan="3">SHEET 1 OF 6 SHEETS</td></tr><tr><td colspan="3"> </td><td colspan="3">REFERENCES:</td></tr><tr><td colspan="3"> </td><td colspan="3">FILE NO. WA-1.0</td></tr></table> | | | CITY OF SANTA MARIA | | | DRAWN BY: RP | | | DEPARTMENT OF PUBLIC WORKS | | | CHECKED BY: | | | | | | DATE: 06/22/2021 | | | | | | SHEET 1 OF 6 SHEETS | | | | | | REFERENCES: | | | | | | FILE NO. WA-1.0 | | |
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| | | | SHEET 1 OF 6 SHEETS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Rayville Lane, Santa Barbara County | Job #: 2T059 | COVER SHEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Water System Consolidation

Consolidation of Ray Water Company into the City of Santa Maria Water System Rayville Lane and Betteravia Road Santa Barbara County, CA


| GENERAL NOTES | | SPECIFICATIONS | CULTURAL | BIOLOGICAL | SYMBOLS |
|--|--|--|----------|------------|---------|
| <div>1. QUALIFICATIONS</div> <div>The Contractor shall possess a Class "A" General Engineering Contractor license under the provisions of the Business and Professions Code of the State of California to do the type of work contemplated and shall be skilled and regularly engaged in the general class or type of work called for under this contract.</div> <div>2. CODES</div> <div>Construction and materials shall be in accordance with the California Waterworks Standards, Title 17 and 22 of the California Code of Regulations, Title 24 California Code of Regulations, California Building Code (CBC), the California Plumbing Code (CPC), the Caltrans Standard Plans and Specifications, Division of the State Architect requirements, State Fire Marshall Regulations, National Electrical Code, Americans with Disabilities Act, all other State and Federal laws, all locally enforced codes and authorities, and the County of Santa Barbara Design Criteria. Should the Contractor discover work within the Plans not in conformance with these requirements, Contractor shall immediately submit a written Request for Information (RFI) to the Owner's Representative.</div> <div>3. STANDARD SPECIFICATIONS</div> <div>All wetted components must be NSF 61 certified. Construction must comply with the California Waterworks Standars, Title 17 and 22 of the California Code of Regulation, Including but not limited to:<ul style="list-style-type: none">Section 64570 - Materials and Installation of Water MainsSection 64572 - Water Main DeparationSection 64578 - Water Main Valve ConstructionSections 64580 and 64582 - Disinfection of New Mains and Disinfection of ReservoirsSection 64585 - Design and Construction for Distribution ReservoirsSection 64591 - Indirect Additives (NSF 61)Construction and materials shall be as specified and as required by the latest editions of the Caltrans Standard Plans and Caltrans Standard Specifications. Should the Contractor discover work within the Plans not in conformance with these requirements, Contractor shall immediately submit a written Request for Information (RFI) to the Owner's Representative.</div> <div>4. PERMITS</div> <div>Contractor shall inform themselves of, and fully adhere to the rules regulations and requirements of all governmental agencies having jurisdiction over the work, and all federal, state, and local laws, codes, and regulations regarding construction activity. Contractor shall investigate and procure any and all permits that may be required on the project.</div> <div>5. SITE SAFETY</div> <div>The Contractor agrees that in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for job site conditions, construction means, methods and techniques, and for safety measures, precautions, and programs at the project site during the course of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal work hours. It shall be the Contractor's sole responsibility to design and provide adequate trench and excavation shoring, bracing, formwork, scaffolding, temporary structures, etc., as required for the protection of life and property during construction. Contractor to take necessary precautions against sewage, gases, solvents, compounds, acids, preservatives, fuels, and other hazardous materials. All construction shall be performed in conformance with CalOSHA requirements. The Contractor agrees to defend, indemnify, and hold the Design Engineer of Record harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability rising from the sole negligence of the Design Engineer of Record.</div> <div>6. PUBLIC SAFETY</div> <div>The Contractor shall provide for the safety of traffic and the public in accordance with the provisions of Section 7-1.09 of the Standard Specifications whenever the Contractor's operations create a hazardous condition including, but not limited to, fencing, railing, barricades, lights, signs, and other devices to prevent accidents, damage, or injury to the public.</div> <div>7. SCOPE</div> <div>The Contractor shall examine carefully the site of work contemplated and thoroughly review the Plans and Specifications. The submission of a bid shall be conclusive evidence that the contractor has investigated the site and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of work to be performed, the quantities of materials to be furnished, and as to the requirements of the Plans and Specifications. The Contractor shall make a detailed and thorough study of these Plans and Specifications in their entirety prior to any work on the jobsite. The Contractor is to coordinate these drawings with all other trade disciplines for the completed work.</div> <div>8. INTENT</div> <div>It is the intent of these Plans and General Notes/Specifications that</div> | <div>the work shall result in complete, finished, operating, satisfactory, and functional systems and no extra compensation will be allowed for anything omitted but fairly implied for systems' function. Where detail references in the Plans have been omitted, the Contractor is deemed to have estimated the best quality detail. In the event certain features of the construction are not fully shown or detailed on the plans, their construction shall be as shown on the plans or details for similar best quality features. All typical details shall apply unless noted otherwise. The Owner's Representative best quality interpretation is deemed to control.</div> <div>9. PRECEDENCE</div> <div>All figured dimensions shall take precedence over scaled measurements. Should a conflict or inconsistency occur in or between the Plans and the Specifications, **the Specifications shall control over the Plans.**</div> <div>10. ADDENDA</div> <div>If discrepancies, apparent errors, or omissions are found in the Plans or Specifications, or any differences are found between the Plans and conditions in the field, the Contractor shall submit a written Request For Information (RFI). If the Contractor proceeds with the work affected without instructions from the Owner's Representative, the Contractor shall make good any resulting damage or defect to the satisfaction of the Owner's Representative. Any request for alterations or substitutions must be presented directly to the Owner's Representative in writing, accompanied by a detailed sketch and/or photograph as required, for review, before any approval will be given and before proceeding with the work.</div> <div>11. VERIFICATION</div> <div>The Contractor shall be responsible for field-verifying all existing conditions, dimensions, levels, and materials for all layout and construction work and shall submit a Request for Information (RFI) to the Owner's Representative to resolve any discrepancies before proceeding with the work. The Contractor shall adjust, correct, and coordinate the work so that no discrepancies result.</div> <div>12. NOTICE TO PROCEED</div> <div>No work shall commence without an official notice to proceed from the Owner.</div> <div>13. EXISTING FACILITIES</div> <div>Contractor shall protect all existing facilities and shall repair all damaged areas to original or better condition. Contractor shall do all cutting, fitting, or patching of his work that may be required to make its several parts fit together properly and shall not endanger any other work by cutting, or otherwise altering the total work or any part of it. Contractor shall exercise care to protect any existing construction so that integrity and finish are not impaired. All patching, repairing, and replacing of materials and surfaces cut or damaged in execution of work shall be done with appropriate materials so the surfaces replaced will, upon completion, match surrounding similar surfaces.</div> <div>14. HOUSEKEEPING</div> <div>The job site shall be maintained daily in a neat, clean, orderly condition free of debris and litter, shall not be unreasonably encumbered with any materials or equipment. Materials stored on the site shall be properly stacked and protected to prevent damage and deterioration until use. Failure to protect materials may be cause for rejection of work. Dust shall be controlled and mud and debris shall be cleaned off public right of ways.</div> <div>15. WORKING HOURS</div> <div>Normal working hours shall be limited to times as directed by Loma Prieta Elementary School and no work shall be done on Sundays or legal holidays unless written permission is given.</div> <div>16. SUBMITTALS</div> <div>No work shall commence with unapproved materials. Submittals and shop drawings shall be supplied to the Owner's Representative for review for the following:<div><div>a. All material and equipment items</div><div>b. Traffic Control Plan</div><div>c. Water Pollution Control Plan</div><div>d. Utility Interruption Plan</div></div></div> <div>17. The Contractor shall supply submittals sufficiently detailed to demonstrate compliance with the Plans and Specifications. Each submittal shall be sequentially numbered, dated, titled, and checked by the Contractor. The Owner's Representative will require 10 days for review. The Contractor's responsibility for errors, omissions, and deviations is not relieved by the submittal review.</div> <div>18. OBSERVATION</div> <div>Contractor shall notify the Owner's Representative 48 hours in advance for the following observations:<div><div>a. Utility pipes prior to backfill</div><div>b. Reinforcing steel prior to concrete placement</div><div>c. Utility pipe pressure and leakage testing</div></div></div> <div>19. UNDERGROUND UTILITIES</div> <div>Contractor to contact "Underground Service Alert" 48 hours prior to any excavation. It shall be the responsibility of the contractor to verify exact location and depth fo all existing utilities. Trench to be shored in accordance with Calfronia OSHA regulations. Contractor shall coordinate new underground piping, connections to existing piping and electrical/internet conduits with civil earthwork.</div> | <div>WATER VALVE</div> <div>FIRE HYDRANT</div> <div>GAS VALVE OR METER</div> <div>SEWER MANHOLE OR CLEANOUT</div> <div>STORM DRAIN MANHOLE</div> <div>TRAFFIC FLOW</div> <div>DRAINAGE FLOW</div> <div>HANDICAP SPACE</div> <div>AREA LIGHT</div> <div>SIGN POST</div> <div>UTILITY POLE</div> <div>WELL</div> <div>MONUMENT</div> <div>STREET LIGHT</div> <div>WATER METER</div> <div>CATCH BASIN OR OTHER STRUCTURE AS NOTED</div> | | | |

| Ray Water Company Consolidation | | <div> Weber, Hayes & Associates <i>Hydrogeology and Environmental Engineering</i> 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com</div> | <table><tr><th colspan="4">REVISIONS</th></tr><tr><th>REV</th><th>BY</th><th>ITEM</th><th>APPROVED DATE</th></tr><tr><td>1</td><td>RP</td><td>30% DESIGN DEVELOPMENT</td><td>CD 06/21</td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table> | | REVISIONS | | | | REV | BY | ITEM | APPROVED DATE | 1 | RP | 30% DESIGN DEVELOPMENT | CD 06/21 | | | | | | | | | | | | | <table><tr><th colspan="3">CITY OF SANTA MARIA</th></tr><tr><th colspan="3">DEPARTMENT OF PUBLIC WORKS</th></tr><tr><th>SCALE</th><th>DATE</th><th>APPROVED:</th></tr><tr><td> </td><td> </td><td> </td></tr></table> | CITY OF SANTA MARIA | | | DEPARTMENT OF PUBLIC WORKS | | | SCALE | DATE | APPROVED: | | | | <table><tr><td>DRAWN BY: RP</td></tr><tr><td>CHECKED BY:</td></tr><tr><td>DATE: 6/23/2021</td></tr><tr><td>SHEET 2 OF 5 SHEETS</td></tr><tr><td>REFERENCES:</td></tr><tr><td>FILE NO. WA-1.1</td></tr></table> | DRAWN BY: RP | CHECKED BY: | DATE: 6/23/2021 | SHEET 2 OF 5 SHEETS | REFERENCES: | FILE NO. WA-1.1 |
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| Rayville Lane, Santa Barbara County | Job #: 2T059 | <table><tr><th colspan="3">GENERAL NOTES</th></tr><tr><td colspan="3"> </td></tr><tr><td colspan="3"> </td></tr></table> | | | | | GENERAL NOTES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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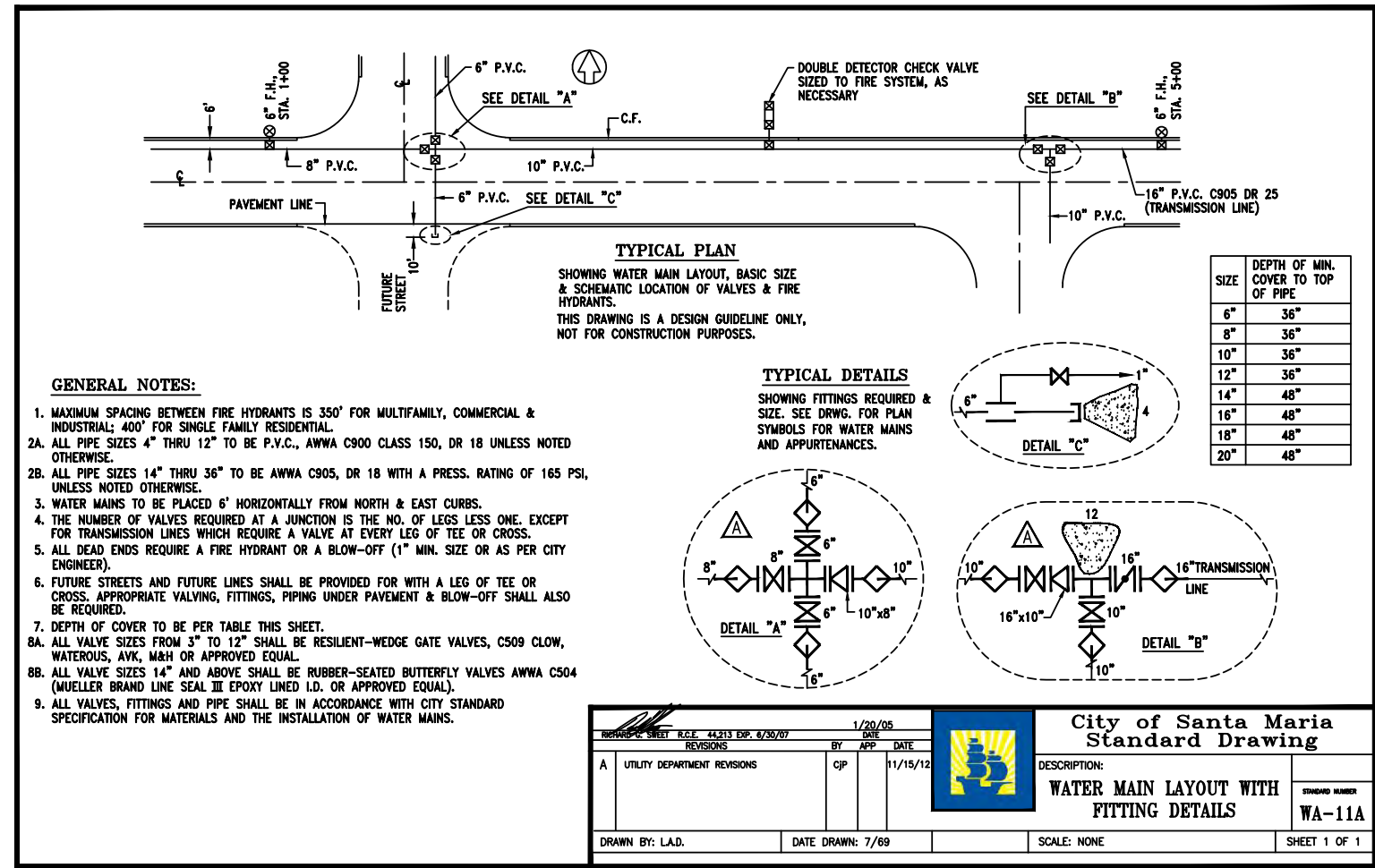
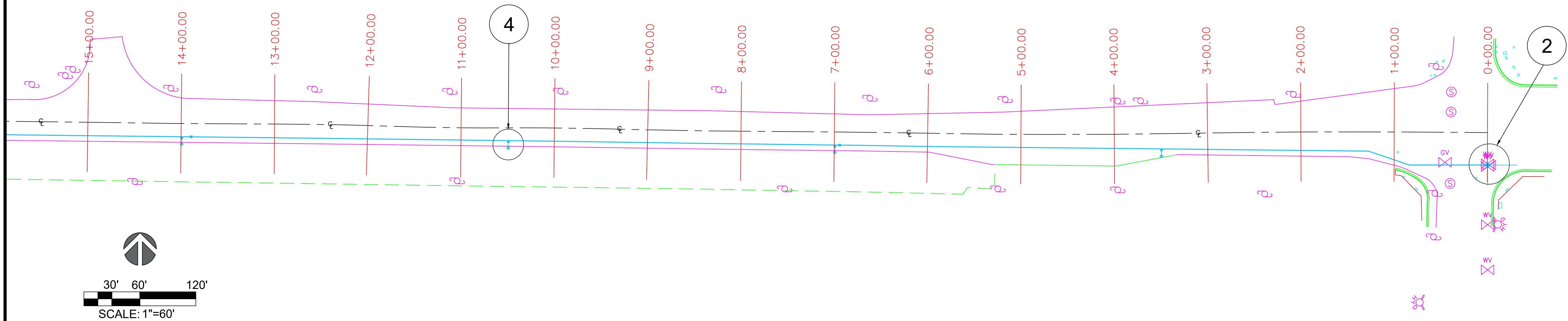
SHEET NOTES

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| Ray Water Company Consolidation | |  Weber, Hayes & Associates <i>Hydrogeology and Environmental Engineering</i> 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com | <div>REVISIONS</div> <table><thead><tr><th>REV.</th><th>BY</th><th>ITEM</th><th>APPROVED</th><th>DATE</th></tr></thead><tbody><tr><td>A</td><td>RP</td><td>30% DESIGN DEVELOPMENT</td><td>CD</td><td>06/21</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></tbody></table> | | | | REV. | BY | ITEM | APPROVED | DATE | A | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 | | | | | | | | | | | | | | | | | | | | | <div>CITY OF SANTA MARIA</div> <div>DEPARTMENT OF PUBLIC WORKS</div> <table><thead><tr><th>SCALE</th><th>DATE</th><th>APPROVED:</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr></tbody></table> | | | SCALE | DATE | APPROVED: | | | | <div>DRAWN BY: RP</div> <div>CHECKED BY: </div> <div>DATE: 6/22/2021</div> <div>SHEET 3 OF 6 SHEETS</div> <div>REFERENCES: </div> <div>FILE NO. WA-2.0</div> |
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| Rayville Lane, Santa Barbara County | Job #: 2T059 | Site Layout Plan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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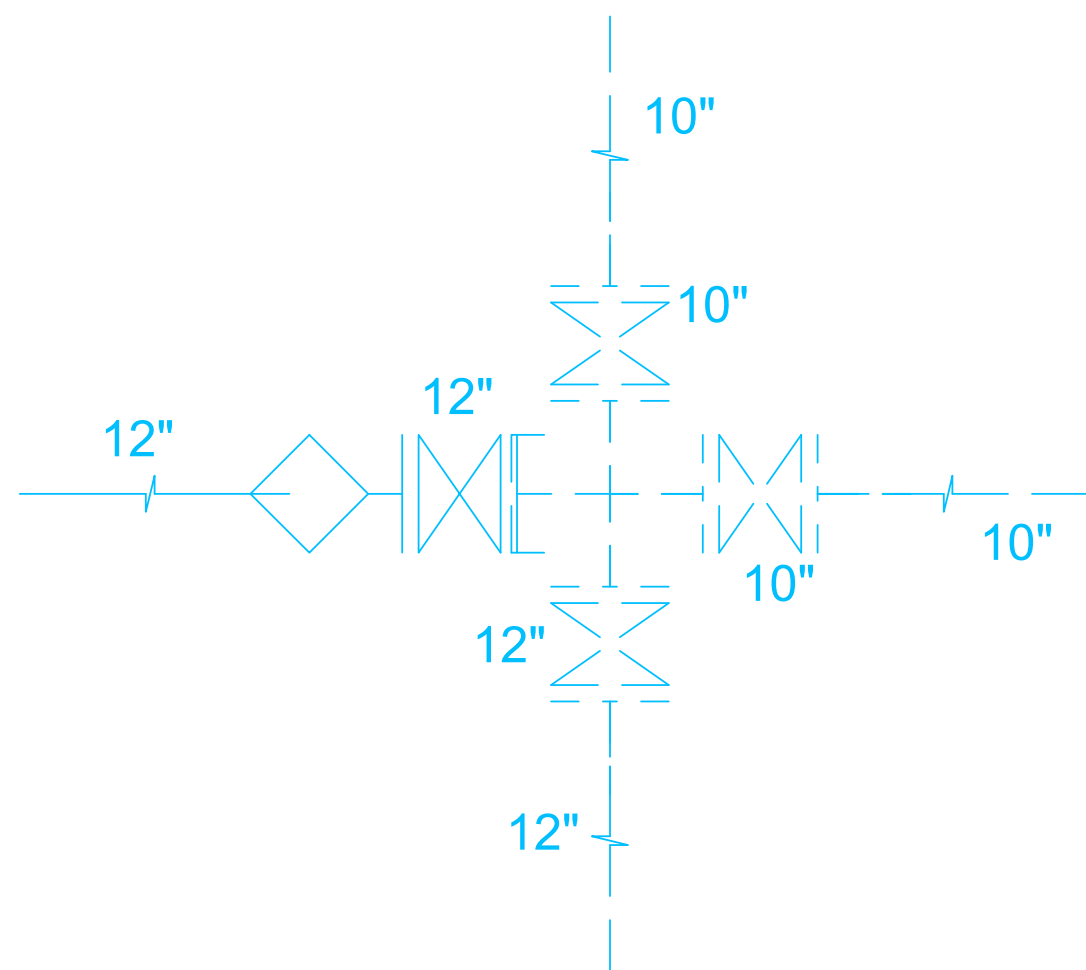
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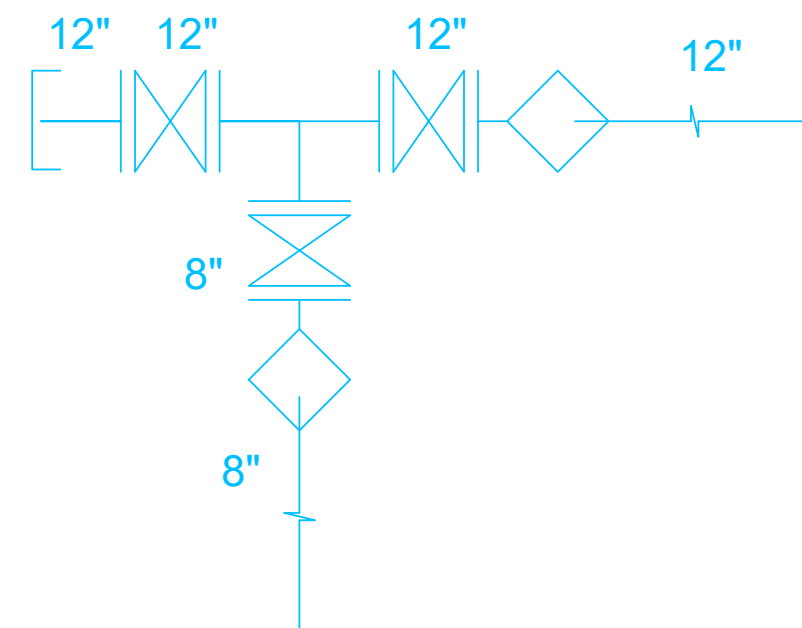
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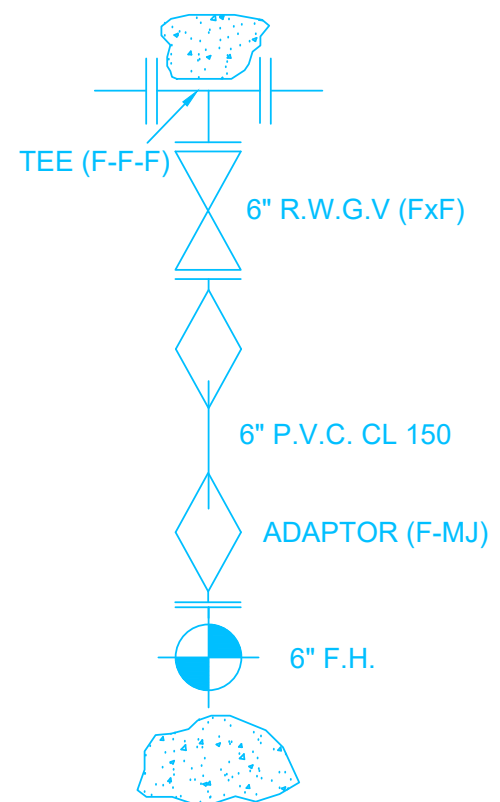
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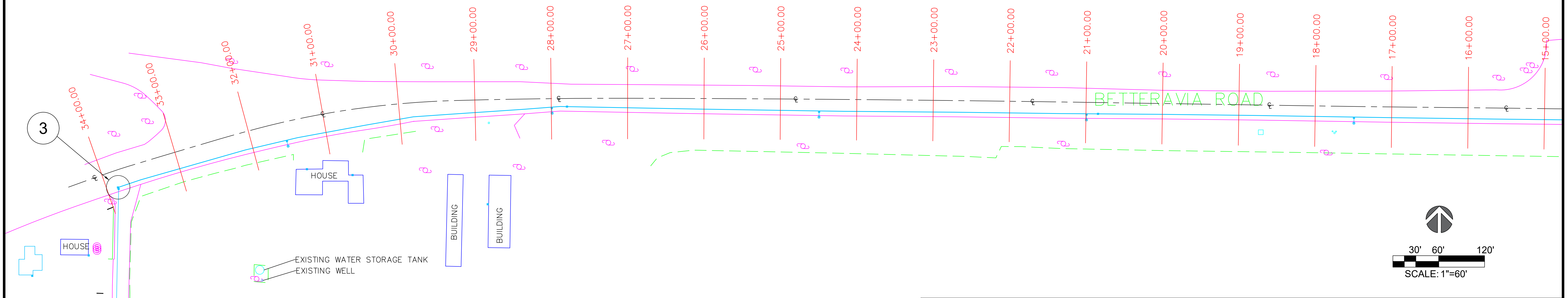
NEW DISTRIBUTION CONNECTION

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6" FIRE HYDRANT SCHEMATIC

4



Ray Water Company Consolidation

Rayville Lane,
Santa Barbara County

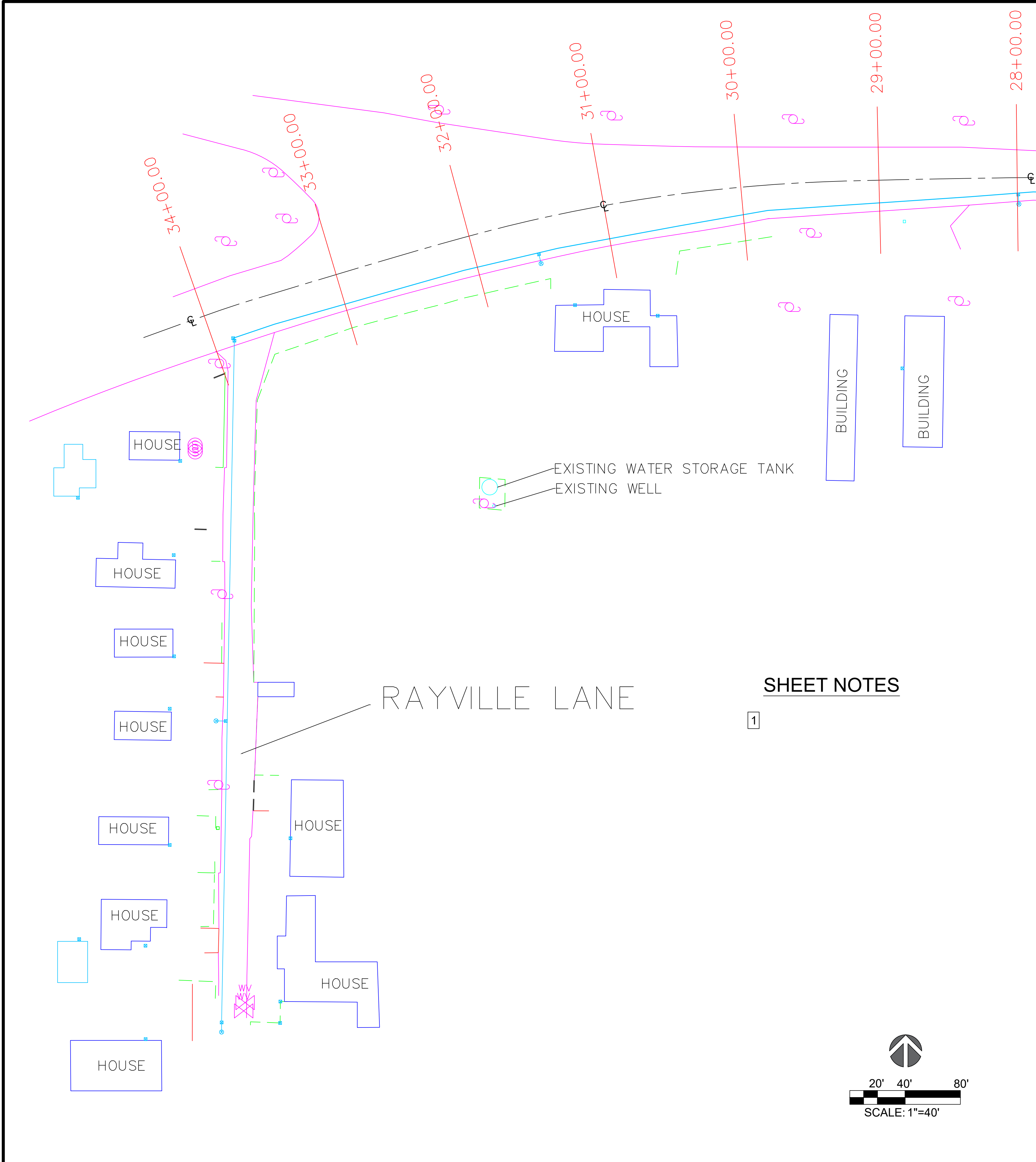
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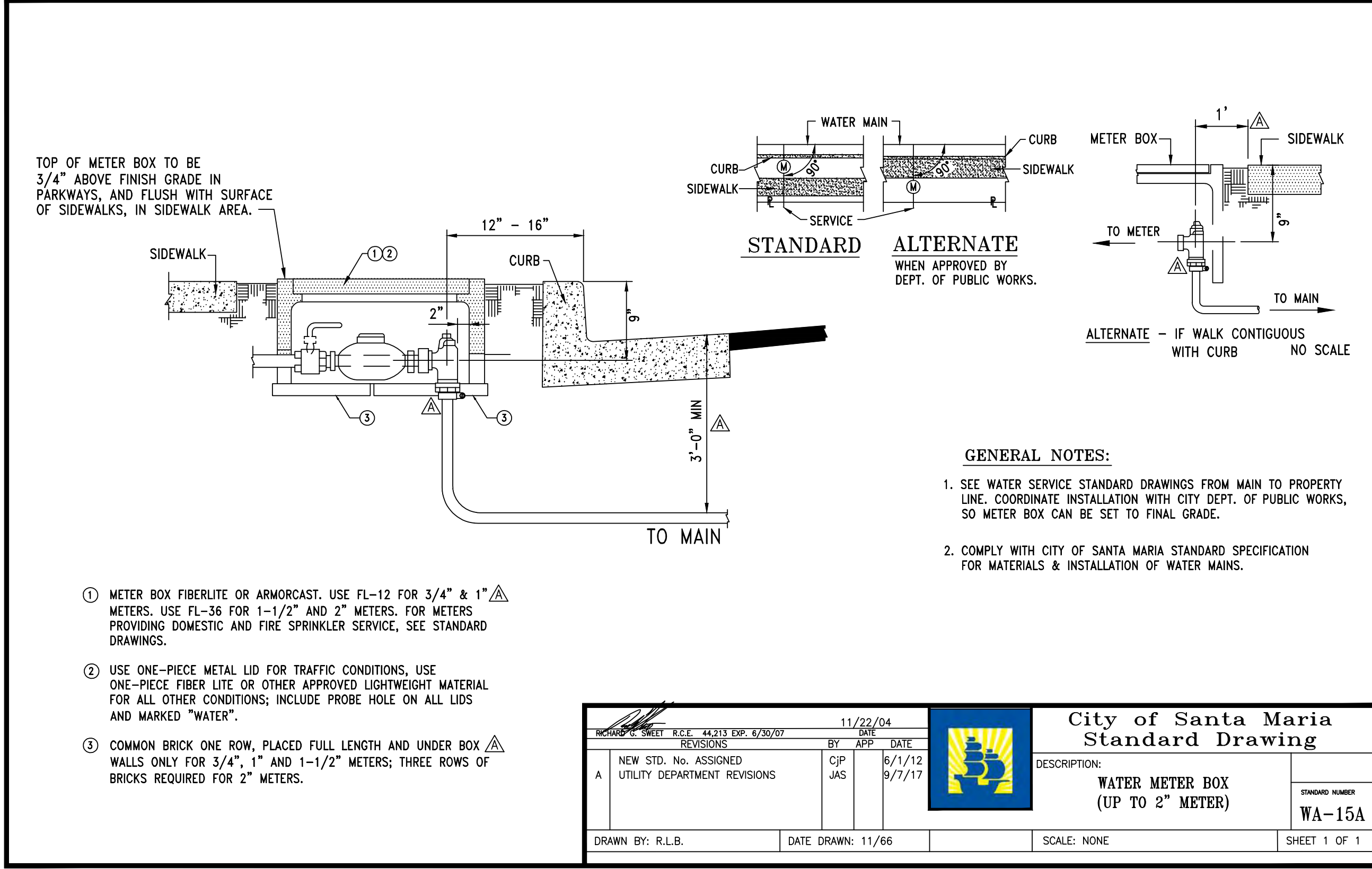
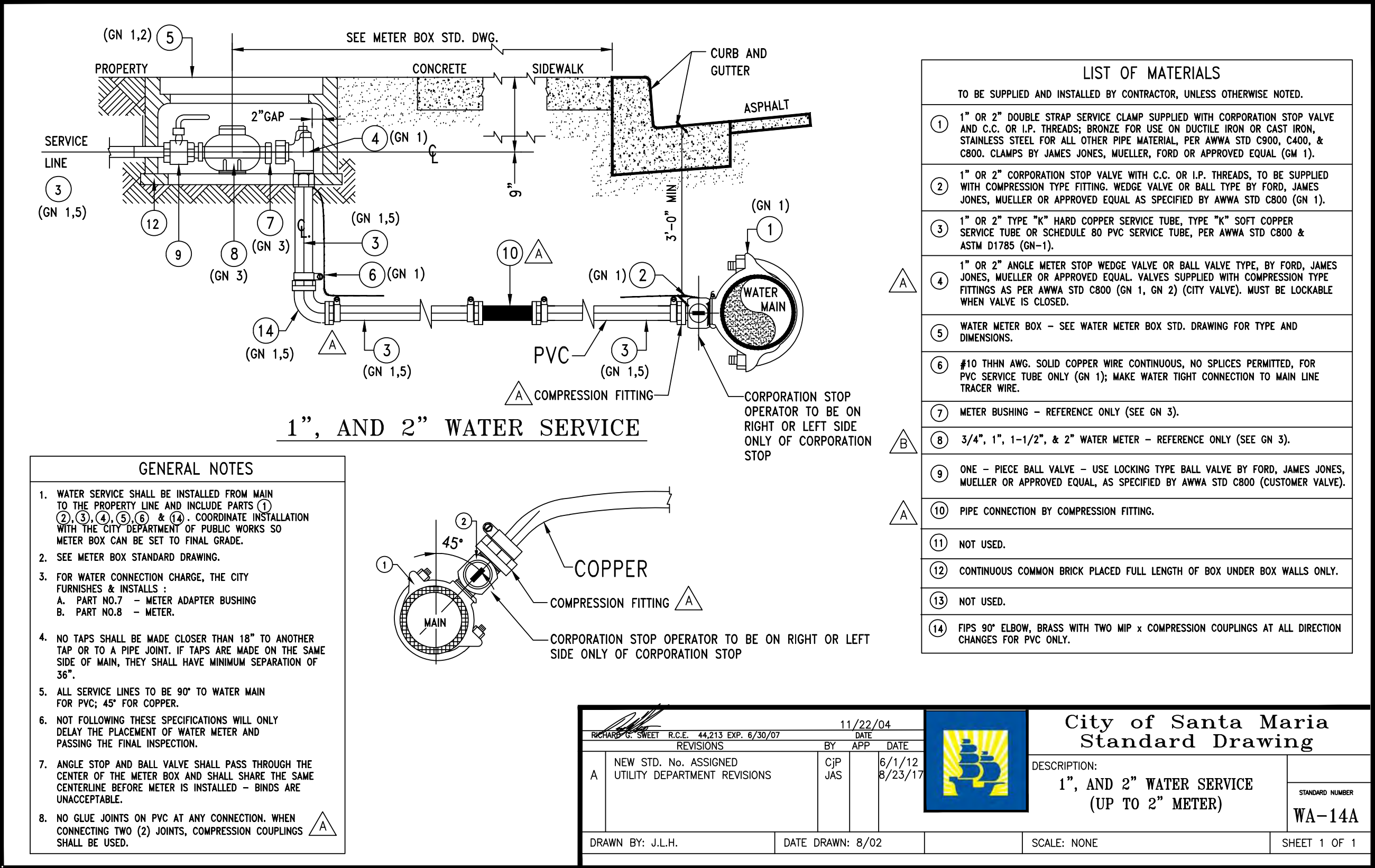
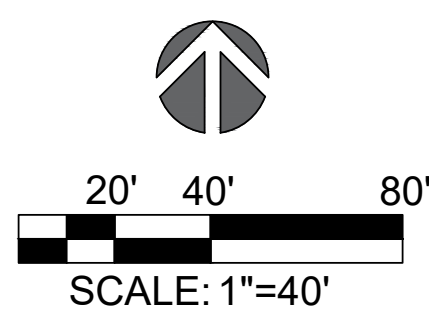
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| | | | <div>SHEET</div> <div>4 OF 6 SHEETS</div> | |
| <div>Betteravia Road Alignment</div> | | | <div>REFERENCES:</div> | |
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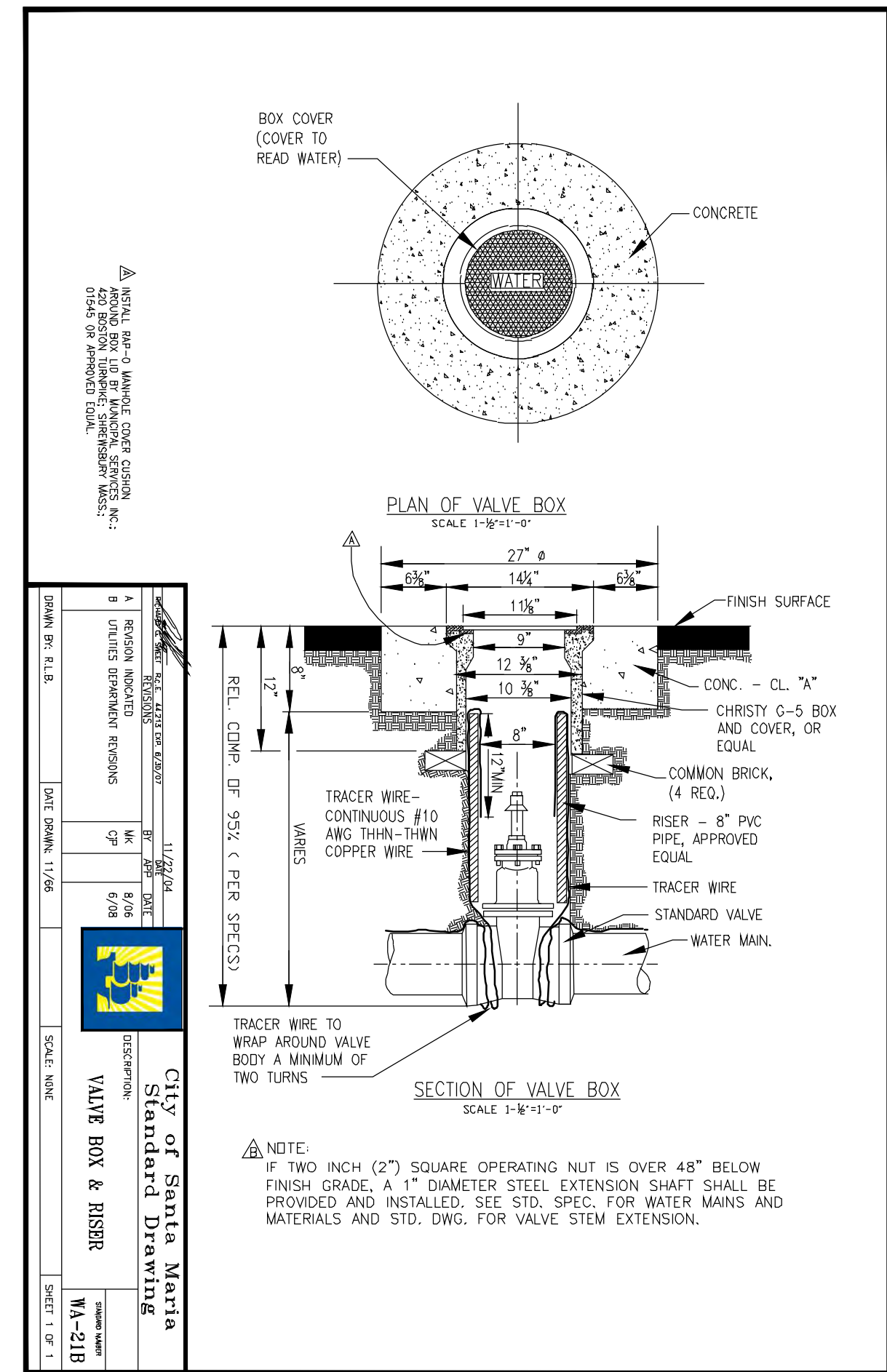
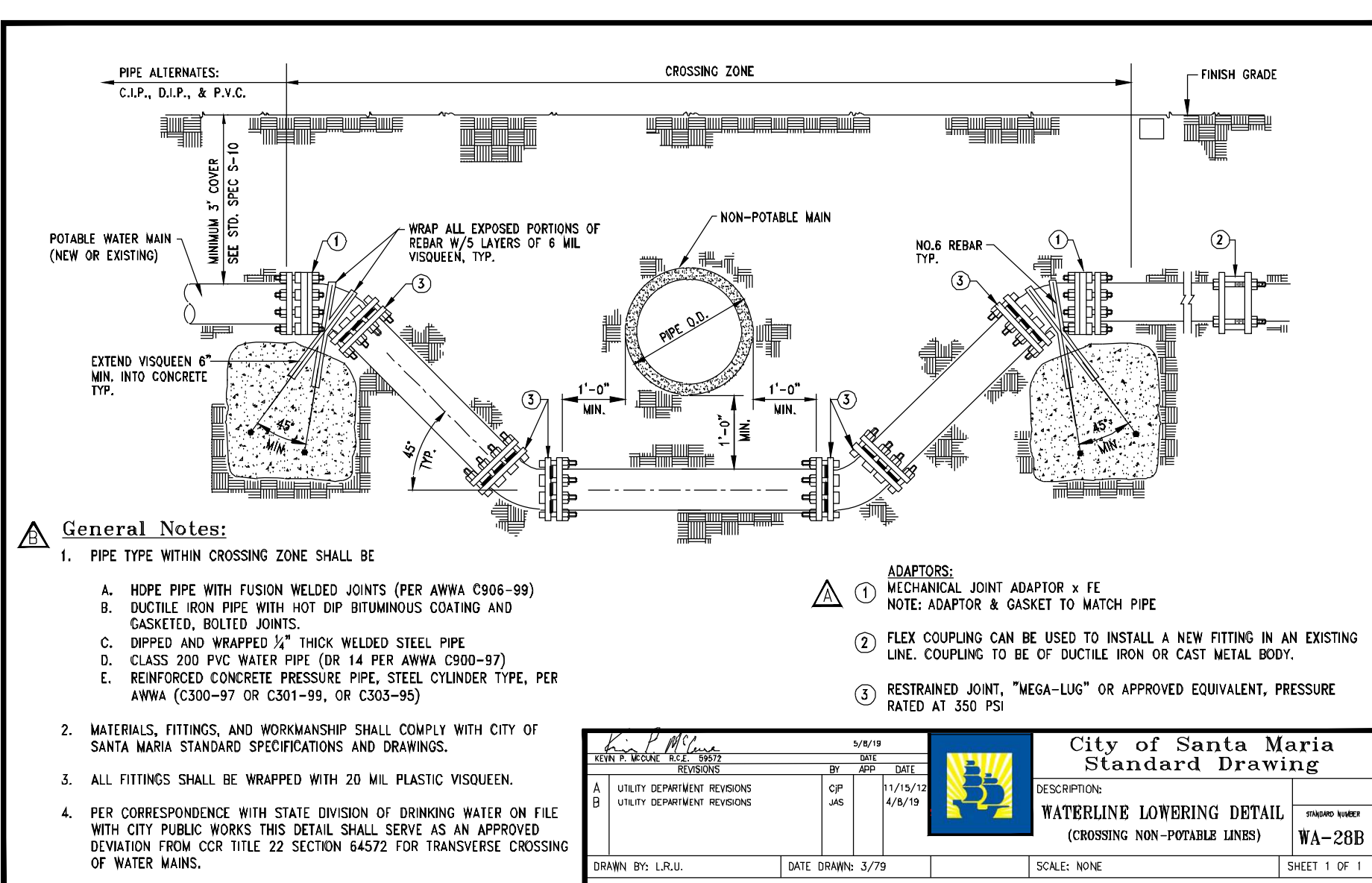
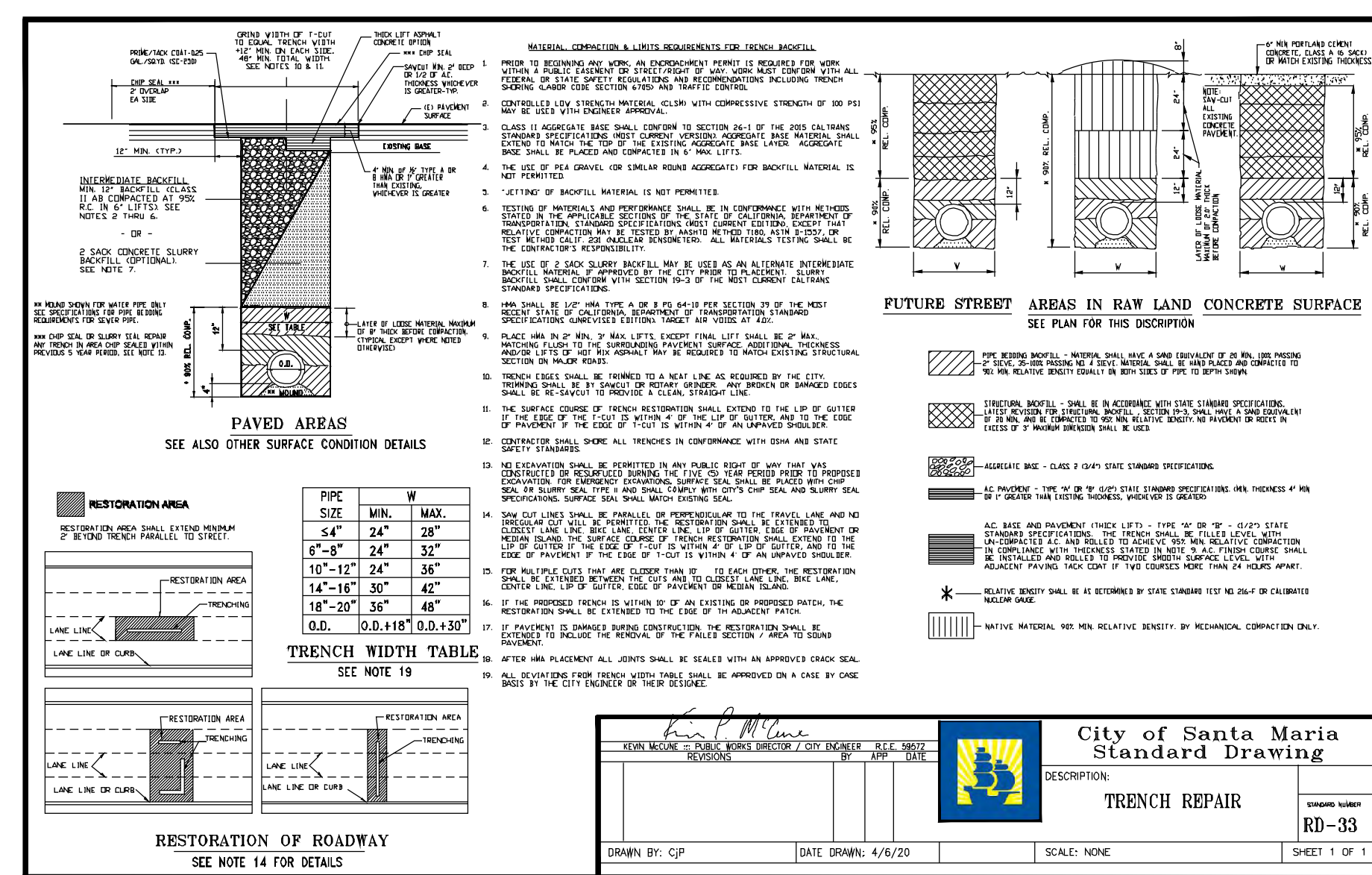
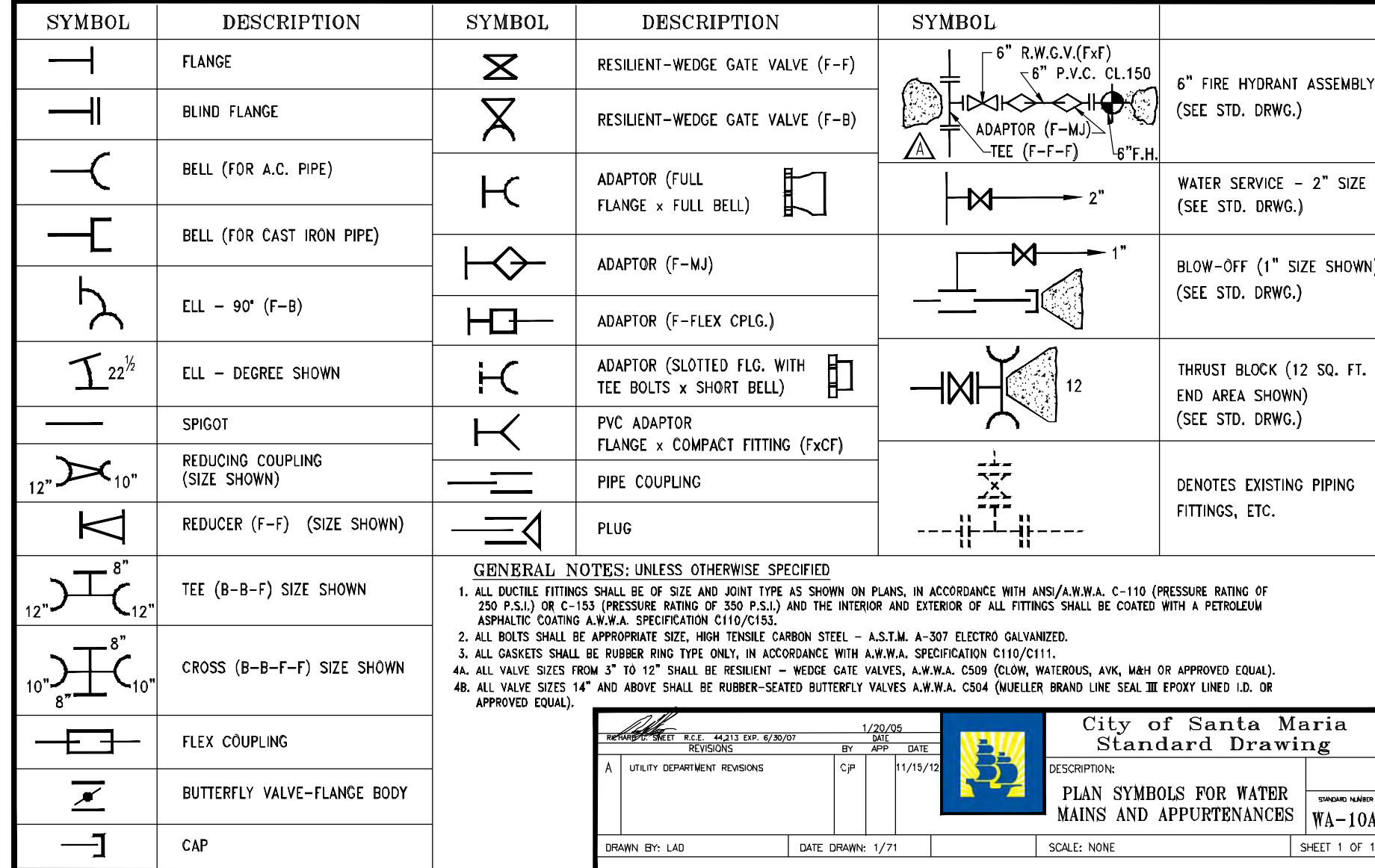
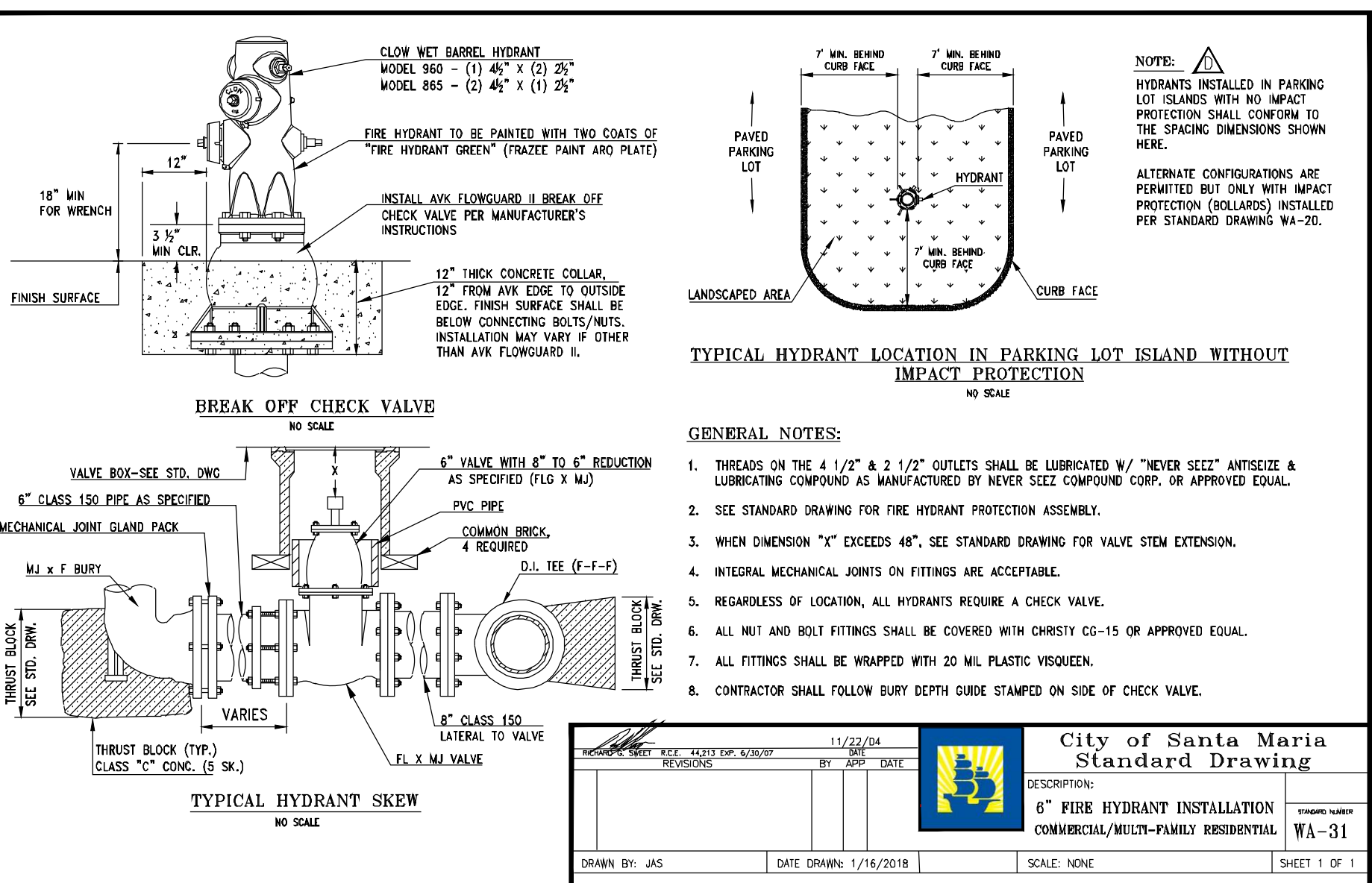
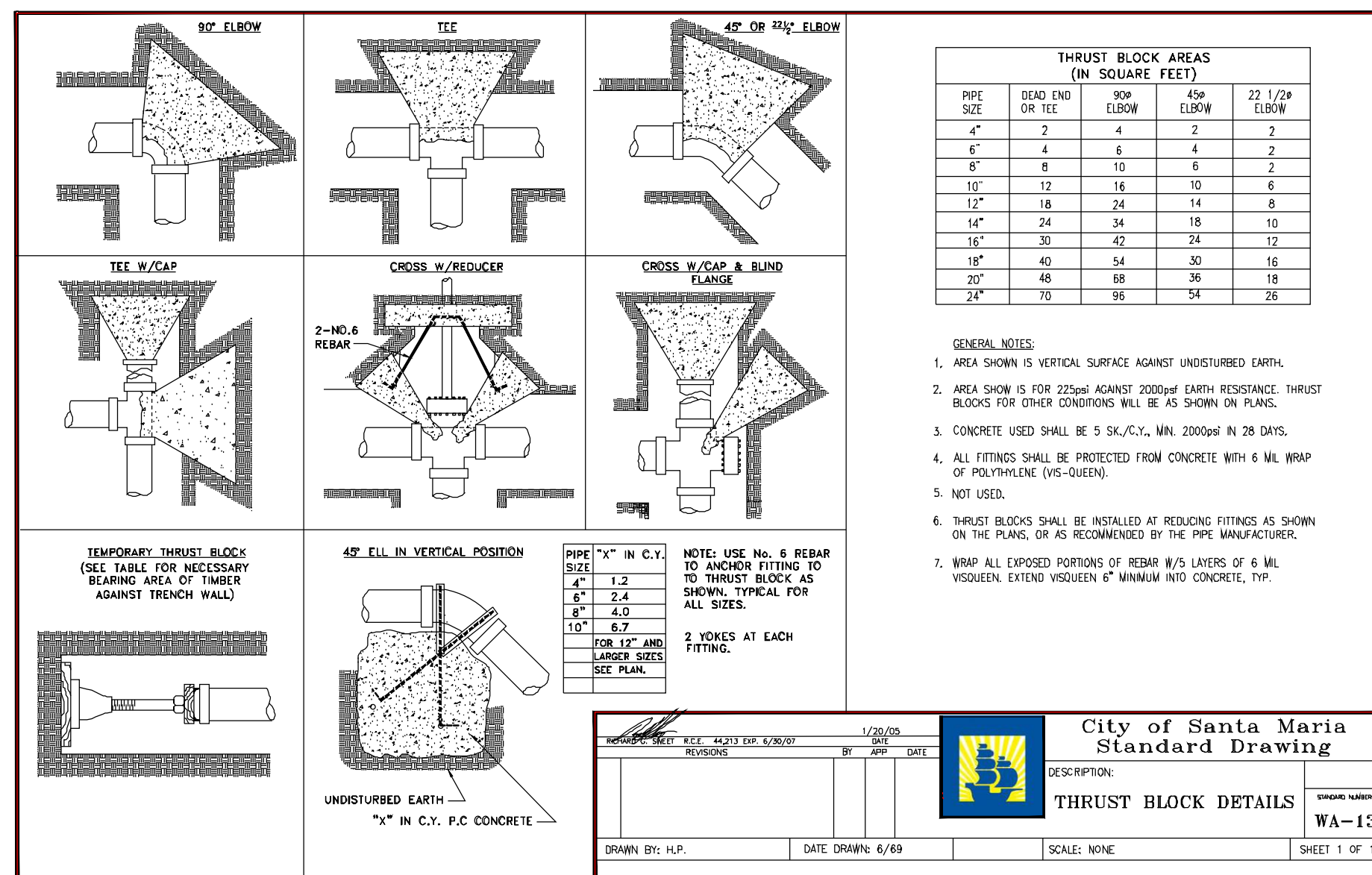
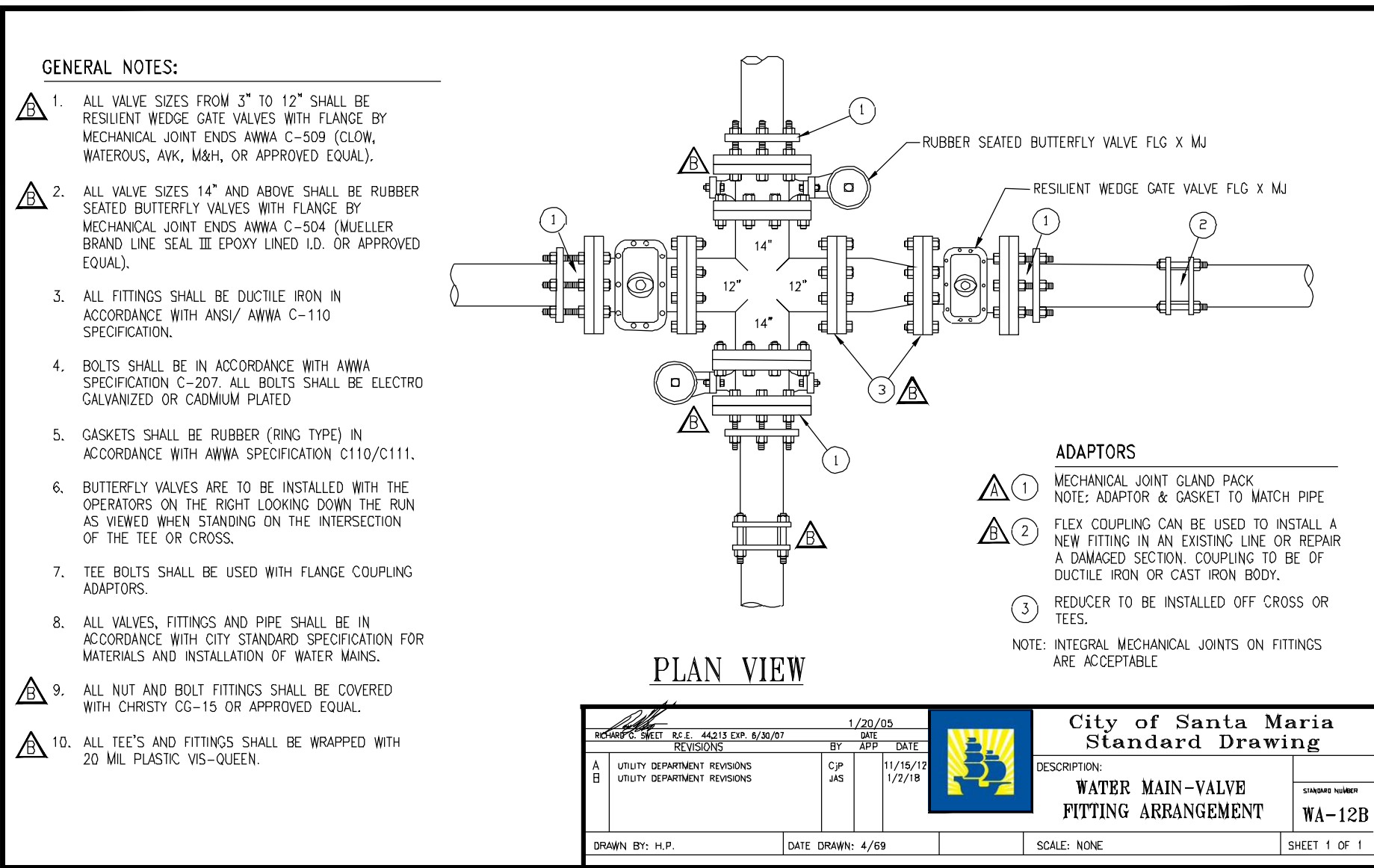


SHEET NOTES

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| Ray Water Company Consolidation | |  Weber, Hayes & Associates <i>Hydrogeology and Environmental Engineering</i> 120 Westgate Drive, Watsonville, CA 95076 (831) 722-3580 // www.weber-hayes.com | <table><tr><th colspan="4">REVISIONS</th></tr><tr><th>REV.</th><th>BY</th><th>ITEM</th><th>APPROVED</th><th>DATE</th></tr><tr><td>1</td><td>RP</td><td>30% DESIGN DEVELOPMENT</td><td>CD</td><td>06/21</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table> | | | REVISIONS | | | | REV. | BY | ITEM | APPROVED | DATE | 1 | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 | | | | | | | | | | | | | | | | | | | | | | | | | | <table><tr><th colspan="4">CITY OF SANTA MARIA</th></tr><tr><td colspan="4">DEPARTMENT OF PUBLIC WORKS</td></tr><tr><td>SCALE</td><td>DATE</td><td colspan="2">APPROVED: _____</td></tr><tr><td colspan="4">Rayville Lane Distribution System</td></tr></table> | | | CITY OF SANTA MARIA | | | | DEPARTMENT OF PUBLIC WORKS | | | | SCALE | DATE | APPROVED: _____ | | Rayville Lane Distribution System | | | | <table><tr><td>DRAWN BY: RP</td></tr><tr><td>CHECKED BY: _____</td></tr><tr><td>DATE: 6/22/2021</td></tr><tr><td>SHEET 5 OF 6 SHEETS</td></tr><tr><td>REFERENCES: _____</td></tr><tr><td>FILE NO. WA-4.0</td></tr></table> | DRAWN BY: RP | CHECKED BY: _____ | DATE: 6/22/2021 | SHEET 5 OF 6 SHEETS | REFERENCES: _____ | FILE NO. WA-4.0 |
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| Rayville Lane Distribution System | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| DATE: 6/22/2021 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHEET 5 OF 6 SHEETS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Rayville Lane, Santa Barbara County | Job #: 2T059 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



VALVE BOX & RISER DETAIL

5

Ray Water Company Consolidation

Rayville Lane,
Santa Barbara County

Job #: 2T059



Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA 95076
(831) 722-3580 // www.weber-hayes.com

REVISIONS

| REV. | BY | ITEM | APPROVED | DATE |
|------|----|------------------------|----------|-------|
| 1 | RP | 30% DESIGN DEVELOPMENT | CD | 06/21 |
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CITY OF SANTA MARIA

DEPARTMENT OF PUBLIC WORKS

SCALE: DATE: APPROVED:

Construction Details

DRAWN BY: RP

CHECKED BY:

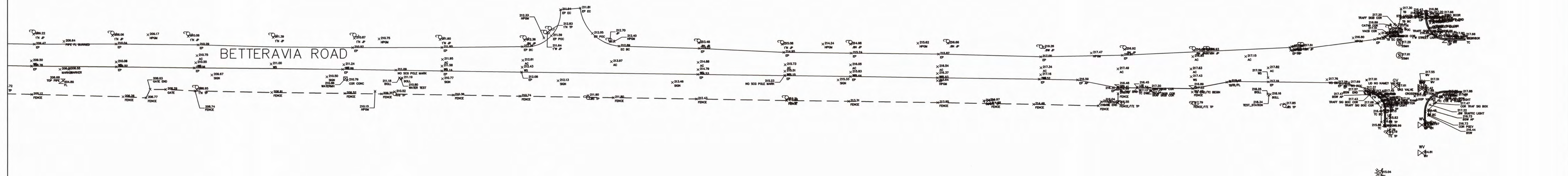
DATE: 6/22/2021

SHEET 6 OF 6 SHEETS

REFERENCES:

FILE NO.

WA-5.0



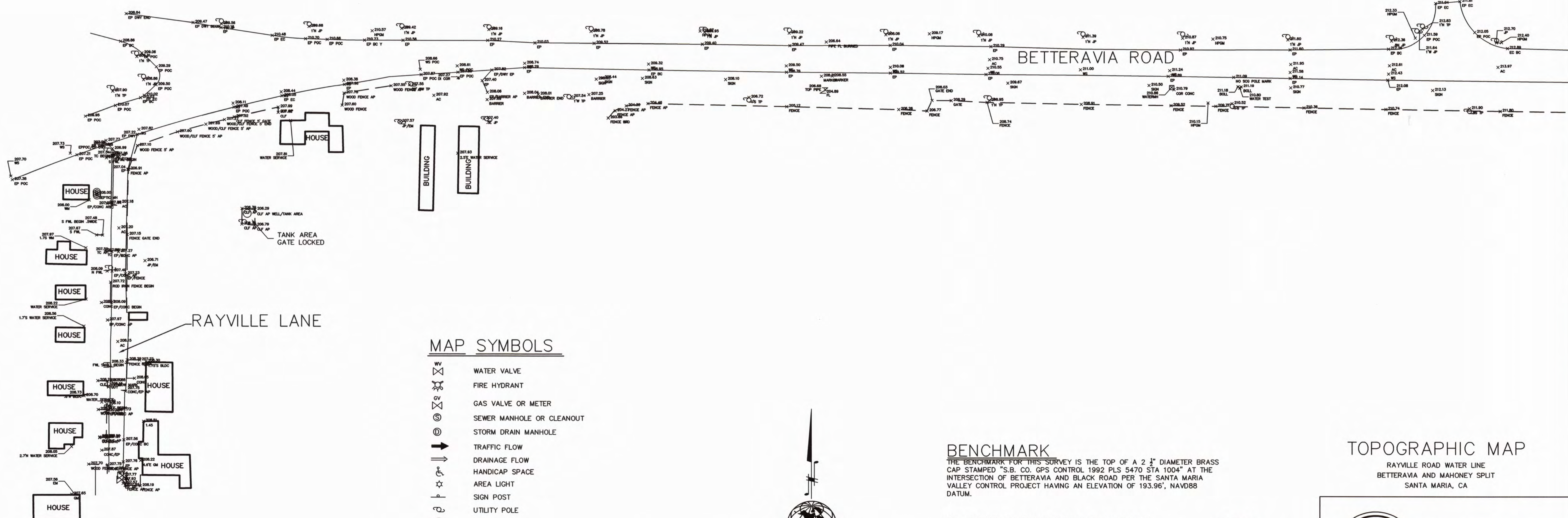
ABBREVIATIONS

| | | | |
|-------|-----------------------|--------|--------------------------|
| AC | ASPHALT | HPGM | HIGH PRESSURE GAS MARKER |
| AP | ANGLE POINT | ICV | IRRIGATION VALVE |
| BC | BEGIN CURVE | INV | INVERT ELEVATION |
| BOL | BOLLARD | JP | JOINT POLE |
| BSW | BACK OF SIDE WALK | MKR | MARKER |
| CB | CATCH BASIN | MON | MONUMENT |
| CF | CURB FACE | OHV | OVERHEAD WRES |
| CL | CHAIN LINK FENCE | PB | PULL BOX |
| CMP | CORRUGATED METAL PIPE | PP | POWER POLE |
| PVC | CLEAN OUT(SEWER) | PST | POST |
| CONC | CONCRETE | RCP | REINFORCED CONCRETE PIPE |
| DI | DROP INLET | RR | RAILROAD |
| DIA | DIAMETER | RW | RIGHT OF WAY |
| DWY | DRIVEWAY | SD | STORM DRAIN |
| END | END OF CURVE | SL | ELECTRIC |
| ELEC | ELECTRIC | SS | SANITARY SEWER |
| EP | EDGE OF PAVEMENT | SW | SIDEWALK |
| ESMT | EASEMENT | SDMH | STORM DRAIN MANHOLE |
| EUC | EUCALYPTUS | SSMH | SANITARY SEWER MANHOLE |
| EXIST | EXISTING | TC | TOP OF CURB |
| FNC | FENCE | TEL | TELEPHONE |
| FF | FINISH FLOOR | THRESH | THRESHOLD |
| FG | FINISH GRADE | TW | TOP OF WALL |
| FL | FIRE HYDRANT | TYP | TYPICAL |
| FS | FINISH SURFACE | WTRS | WATER SERVICE |
| GB | GRADE BREAK | WS | WHITE STRIPE |
| GM | GAS METER | WV | WATER VALVE |
| GRD | GROUND | | |

NOTE: ABBREVIATIONS SHOWN ABOVE MAY OR MAY NOT BE EVIDENT ON MAP.

SURVEYOR'S NOTES

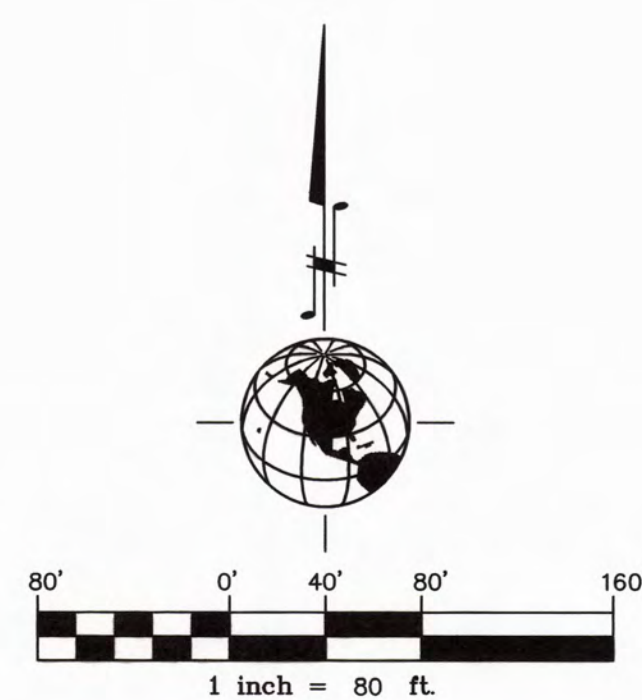
- ONLY THE SURFACE EVIDENCE OF UNDERGROUND UTILITIES HAVE BEEN MEASURED IN THE FIELD ON THIS SURVEY. IF APPROXIMATE UNDERGROUND ALIGNMENTS ARE SHOWN, I MAKE NO WARRANTY AS TO THE ACTUAL LOCATION, TYPE, OR DEPTH OF THOSE UNDERGROUND UTILITIES. CALL UNDERGROUND SERVICE ALERT (USA) AT 1-800-642-2444 TO VERIFY THE ACTUAL LOCATION OF UTILITIES PRIOR TO ANY EXCAVATION. THE SURVEYOR ALSO HAS MADE NO INVESTIGATION AS TO SURFACE ENVIRONMENTAL CONDITIONS THAT WOULD AFFECT THE USE OR DEVELOPMENT OF THIS PROPERTY.
- IT WILL BE THE ARCHITECT'S RESPONSIBILITY TO VERIFY SETBACK AND HEIGHT RESTRICTIONS WITH THE LOCAL GOVERNING AGENCY.
- THE SIGNED AND SEALED ORIGINAL DRAWING OF THIS MAP CONSTITUTES THE FINAL WORK PRODUCT. FARGEN SURVEYS INC. WILL NOT BE LIABLE FOR ELECTRONIC VERSIONS OF THIS MAP PROVIDED TO OTHER PARTIES.
- THE PROPERTY LINES SHOWN HEREON REPRESENT RECORD DATA SHOWN ON FILED IN THE OFFICE OF THE COUNTY RECORDER, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, AND ARE FOR REFERENCE ONLY.
- SOME POINTS HAVE BEEN PLACED ON A FROZEN LAYER FOR CLARITY.



MAP SYMBOLS

| | |
|------|---|
| WV | WATER VALVE |
| FD | FIRE HYDRANT |
| GV | GAS VALVE OR METER |
| SM | SEWER MANHOLE OR CLEANOUT |
| SDMH | STORM DRAIN MANHOLE |
| TRF | TRAFFIC FLOW |
| DRF | DRAINAGE FLOW |
| HS | HANDICAP SPACE |
| AL | AREA LIGHT |
| SP | SIGN POST |
| UP | UTILITY POLE |
| W | WELL |
| M | MONUMENT |
| SL | STREET LIGHT |
| WM | WATER METER |
| CB | CATCH BASIN OR OTHER STRUCTURE AS NOTED |

NOTE: ALL SYMBOLS SHOWN ABOVE MAY OR MAY NOT BE EVIDENT ON MAP.



BENCHMARK

THE BENCHMARK FOR THIS SURVEY IS THE TOP OF A 2 1/2" DIAMETER BRASS CAP STAMPED "S.B. CO. GPS CONTROL 1992 PLS 5470 STA 1004" AT THE INTERSECTION OF BETTERAVIA AND BLACK ROAD PER THE SANTA MARIA VALLEY CONTROL PROJECT HAVING AN ELEVATION OF 193.96', NAVD88 DATUM.

SURVEYORS STATEMENT

I HEREBY STATE THAT THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION UNDER THE PROVISIONS OF SECTION 8726 OF THE PROFESSIONAL LAND SURVEYORS ACT AND THAT SAID SURVEY CORRECTLY SHOWS THE TOPOGRAPHIC FEATURES. THE CONTOURS ARE COMPUTER GENERATED.

Kenny L. Fargen 6-17-21
KENNY L. FARGEN LS 4597 DATE



TOPOGRAPHIC MAP

RAYVILLE ROAD WATER LINE
BETTERAVIA AND MAHONEY SPLIT
SANTA MARIA, CA



2624 AIRPARK DRIVE
SANTA MARIA, CA 93455
PHONE: 805-934-5727
FAX: 805-934-3448
DATE: JUNE 2021

RAYVILLE WATERLINE TOPO.DWG

JOB: 21081

SHEET 1 OF 1

APPENDIX B

Special-Status Species Table

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Special-Status Species Database

(Santa Maria, Casmalia, Orcutt, Sisquoc, Oceano, Nipomo, Huasna Peak, Guadalupe, Twitchell Dam)

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|--|---------------------------------|---|---|
| MAMMALS | | | |
| <i>Antrozous pallidus</i> Pallid bat | -- / CSC / -- | Occurs in a wide variety of habitats including grasslands, shrublands, arid desert areas, oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California. Most common in open, dry habitats with rocky areas for roosting. Day roosts include caves, crevices, mines, and occasionally hollow trees and buildings. Seems to prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Similar structures are used for night roosting and will also use more open sites such as eaves, awnings, and open areas under bridges for feeding roosts. | Unlikely: No suitable roosting habitat within or adjacent to the survey area or project site. |
| <i>Corynorhinus townsendii</i> Townsend's big-eared bat | -- / CSC / -- | Found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Typically roost during the day in limestone caves, lava tubes, and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees. | Unlikely: No suitable roosting habitat within or adjacent to the survey area or project site. |
| <i>Lasiurus blossevillii</i> Western red bat | -- / CSC / -- | Roosting habitat includes trees and sometimes shrubs in forests and woodlands from sea level up through mixed conifer forests. Roost sites are often in edge habitats adjacent to streams, fields, or urban areas. Feeds over a wide variety of habitats, including grasslands, shrublands, open woodlands and forests, and croplands. | Unlikely: No suitable roosting habitat within or adjacent to the survey area or project site. |
| <i>Taxidea taxus</i> American badger | -- / CSC / -- | Dry, open grasslands, fields, pastures savannas, and mountain meadows near timberline are preferred. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. No burrows of sufficient site to support this species were observed within the survey area. |
| BIRDS | | | |
| <i>Agelaius tricolor</i> Tricolored blackbird (nesting colony) | -- / ST / -- | Nest in colonies in dense riparian vegetation, along rivers, lagoons, lakes, and ponds. Forages over grassland or aquatic habitats. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|---|---------------------------------|--|---|
| <i>Athene cunicularia</i> Burrowing owl (burrow sites & some wintering sites) | -- / CSC / -- | Year round resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Frequent open grasslands and shrublands with perches and burrows. Use rodent burrows (often California ground squirrel) for roosting and nesting cover. Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available. | Unlikely: No suitable habitat within or adjacent to the survey area or project site and no burrows of sufficient size or depth to support this species were observed during the site visit. The CNDDDB reports a 2003 occurrence of this species, just north of Rayville Lane and West Betteravia Road; however, the area has been continually disturbed since 2005 (based on evaluation of Google Earth images) and habitat for this species is significantly degraded. |
| <i>Buteo swainsoni</i> Swainson's hawk (nesting) | -- / ST / -- | Generally found associated with plains, range, open hills, and sparse trees. Suitable nesting habitat includes trees within mature riparian forest or corridors, lone oak trees and oak groves, and mature roadside trees. Nest sites are generally adjacent to, or within easy flying distance to suitable foraging habitat that provides available prey resources. Within California, the majority of breeding for this species occurs within the Central Valley. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Charadrius alexandrinus nivosus</i> Western snowy plover (nesting) | FT / CSC / -- | Sandy beaches on marine and estuarine shores, also salt pond levees and the shores of large alkali lakes. Requires sandy, gravelly or friable soil substrate for nesting. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Empidonax traillii eximius</i> Southwestern willow flycatcher (nesting) | FE / SE / -- | Breeds in riparian habitat in areas ranging in elevation from sea level to over 2,600 meters. Builds nest in trees in densely vegetated areas. This species establishes nesting territories and builds, and forages in mosaics of relatively dense and expansive areas of trees and shrubs, near or adjacent to surface water or underlain by saturated soils. Not typically found nesting in areas without willows (<i>Salix</i> sp.), tamarisk (<i>Tamarix ramosissima</i>), or both. | Low: Potential nesting habitat is present within the riparian areas of the survey area; however, this area likely provides only low-quality habitat. The CNDDDB does not report any occurrences of this species within the quads evaluated. The nearest CNDDDB occurrence is over 20 miles south of the survey area within the Santa Ynez River. No nesting habitat is present within the areas that will be impacted by the project. |
| <i>Falco peregrinus anatum</i> American peregrine falcon (nesting) | -- / CFP / -- | Forages for other birds over a variety of habitats. Breeds primarily on rocky cliffs. | Unlikely: No suitable nesting habitat within or adjacent to the survey area or project site. |
| <i>Gymnogyps californianus</i> California condor | FE / SE / -- | Roosting sites in isolated rocky cliffs, rugged chaparral, and pine covered mountains 2000-6000 feet above sea level. Foraging area removed from nesting/roosting site (includes rangeland and coastal area - up to 19 mile commute one way). Nest sites in cliffs, crevices, potholes. | Unlikely: No suitable nesting habitat within or adjacent to the survey area or project site. |
| <i>Laterallus jamaicensis coturniculus</i> California black rail | -- / ST&CFP / -- | Inhabits freshwater marshes, wet meadows & shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that does not fluctuate during the year & dense vegetation for nesting habitat. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|---|---------------------------------|--|--|
| <i>Setophaga petechia</i> Yellow warbler | -- / CSC / -- | Usually found in riparian deciduous habitats in summer: cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland. Visits woodland, forest, and shrub habitats. | Low: Potential nesting habitat is present within the riparian areas of the survey area; however, this area likely provides only low-quality habitat. The CNDDDB includes one occurrence within the Quads evaluated, located more than 12 miles from the survey area within the Santa Maria River. No nesting habitat is present within the areas that will be impacted by the project. |
| <i>Sternula antillarum browni</i> California least tern | FE / SE&CFP / -- | Prefers undisturbed nest sites on open, sandy/gravelly shores near shallow-water feeding areas in estuaries. Sea beaches, bays, large rivers, bars. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Vireo bellii pusillus</i> Least Bell's vireo (nesting) | FE / SE / -- | Riparian areas and drainages. Breed in willow riparian forest supporting a dense, shrubby understory. Oak woodland with a willow riparian understory is also used in some areas, and individuals sometimes enter adjacent chaparral, coastal sage scrub, or desert scrub habitats to forage. | Unlikely: The survey area is located within the historic range for this species, but not within the currently known range. The CNDDDB includes one occurrence within the Quads evaluated, located more than 12 miles from the survey area within the Santa Maria River. Riparian habitat within the survey consists of only low-quality potential nesting habitat for this species. No nesting habitat is present within the areas that will be impacted by the project. |
| REPTILES AND AMPHIBIANS | | | |
| <i>Ambystoma californiense</i> California tiger salamander | FT / ST&WL / -- | Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges and vernal pools or other seasonal water sources. | Low: No suitable upland or breeding habitat within or adjacent to survey area or project site. No occurrences within 2.2 km of the survey area. Six aquatic resources are present within 930 meters of the survey area. These ponds are surrounded by development and agriculture and are man-made detention basins that likely provide only low-quality habitat. No hydrology or occurrence data is known for these resources. Based on this information, the potential for this species to occur within the survey area or project site is low and take of this species as a result of the project is unlikely. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|---|---------------------------------|---|---|
| <i>Anaxyrus californicus</i> Arroyo toad | FE / CSC / -- | Washes, streams, and arroyos, and adjacent uplands (desert, shrubland). On sandy banks in riparian woodlands (willow, cottonwood, sycamore, and/or coast live oak) in California. Along rivers that have shallow gravelly pools adjacent to sandy terraces. Adults obtain shelter by burrowing into sandy soil. Lays eggs among gravel, leaves, or sticks, or on mud or clean sand, at bottom of shallow quiet waters of streams or shallow ponds, in areas with little or no emergent vegetation. Newly metamorphosed individuals remain near pools for up to several weeks (until pools dry). | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Anniella pulchra</i> Northern California legless lizard | -- / CSC / -- | Requires moist, warm habitats with loose soil for burrowing and prostrate plant cover, often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas. | Unlikely: No suitable habitat within or adjacent to survey area or project site. The CNDDDB reports a historic occurrence from 1985 within a portion of the survey area and project site; however, heavily disturbed sites dominated by ice plant and other non-shrub invasive plant species are unlikely to support this species. |
| <i>Emys marmorata</i> Western pond turtle | -- / CSC / -- | Associated with permanent or nearly permanent water in a wide variety of habitats including streams, lakes, ponds, irrigation ditches, etc. Require basking sites such as partially submerged logs, rocks, mats of vegetation, or open banks. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Phrynosoma blainvillii</i> Coast horned lizard | -- / CSC / -- | Associated with open patches of sandy soils in washes, chaparral, scrub, and grasslands. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Rana boylei</i> Foothill yellow-legged frog | -- / SC&CSC / -- | Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including hardwood, pine, and riparian forests, scrub, chaparral, and wet meadows. Rarely encountered far from permanent water. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|--|---------------------------------|--|--|
| <i>Rana draytonii</i> California red-legged frog | FT / CSC / -- | Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent riparian vegetation. During late summer or fall adults are known to utilize a variety of upland habitats with leaf litter or mammal burrows. | Low: The CNDDDB reports five occurrences of CRLF (1995-2003) within one mile of the survey area; however, the nearest occurrence is no longer an aquatic feature (converted to agriculture). Several other aquatic features are present within one mile of the survey area, consisting mostly of man-made detention basins and an unnamed drainage. No suitable breeding or upland (within 300 feet of a suitable breeding resource) habitat is present within the survey area or project site; however, due to the distance of known occurrences, the survey area and project site may provide dispersal habitat. Specific protections for migrating CRLF are probably unwarranted because dispersal habitat is ubiquitous and migrating CRLF are widely distributed across the landscape in space and time (Bulger et. al, 2003). As such, the potential for this species to occur within the survey area or project site is low and take of this species as a result of the project is unlikely. |
| <i>Spea hammondi</i> Western spadefoot | -- / CSC / -- | Grasslands with shallow temporary pools are optimal habitats for the western spadefoot. Occur primarily in grassland habitats, but can be found in valley and foothill woodlands. Vernal pools are essential for breeding and egg laying. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Thamnophis hammondi</i> Two-striped garter snake | -- / CSC / -- | Associated with permanent or semi-permanent bodies of water bordered by dense vegetation in a variety of habitats from sea level to 2400m elevation. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| FISH | | | |
| <i>Eucyclogobius newberryi</i> Tidewater goby | FE / CSC / -- | Brackish water habitats, found in shallow lagoons and lower stream reaches. Tidewater gobies appear to be naturally absent (now and historically) from three large stretches of coastline where lagoons or estuaries are absent and steep topography or swift currents may prevent tidewater gobies from dispersing between adjacent localities. The southernmost large, natural gap occurs between the Salinas River in Monterey County and Arroyo del Oso in San Luis Obispo County. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Hypomesus transpacificus</i> Delta smelt | FT / ST / -- | Sacramento-San Joaquin Delta, seasonally present in Suisun Bay, Carquinez Strait, and San Pablo Bay. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|--|---------------------------------|---|---|
| <i>Gasterosteus aculeatus williamsoni</i> Unarmored threespine stickleback | FE / SE / -- | Currently restricted to three areas: the upper Santa Clara River and its tributaries in Los Angeles County, San Antonio Creek on Vandenberg Air Force Base in Santa Barbara County, and the Shay Creek vicinity in San Bernardino County. Typically found at the shallow edges of freshwater streams in areas with dense vegetation. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Gila orcuttii</i> Arroyo chub | -- / CSC / -- | Native to the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers and Malibu and San Juan Creeks in Southern California. Introductions have expanded their distribution to the Santa Ynez, Ventura, Santa Maria, Cuyama, Santa Clara, and Mojave River systems and other smaller streams. Found in habitats characterized by slow-moving water, mud or sand substrate, and depths greater than 40cm. Most common in streams with gradients less than 2.5% slope with temperatures from 10-28°F. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Oncorhynchus mykiss irideus</i> Steelhead (Southern California DPS) | FE / -- / -- | Cold headwaters, creeks, and small to large rivers and lakes; anadromous in coastal streams. Found in rivers from the Santa Maria River in San Luis Obispo County to Malibu Creek in Los Angeles County. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Oncorhynchus mykiss irideus</i> Steelhead (south/central California coast DPS) | FT / -- / -- | Cold headwaters, creeks, and small to large rivers and lakes; anadromous in coastal streams. Found in streams and rivers from the Pajaro River in Santa Cruz County to (but not including) the Santa Maria River in San Luis Obispo County. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| INVERTEBRATES | | | |
| <i>Branchinecta lynchi</i> Vernal pool fairy shrimp | FT / -- / -- | Require ephemeral pools with no flow. Associated with vernal pool/grasslands from near Red Bluff (Shasta County), through the central valley, and into the South Coast Mountains Region. Require ephemeral pools with no flow. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| <i>Danaus plexippus</i> Monarch butterfly | -- / CNDDDB / -- | Overwinters in coastal California using colonial roosts generally found in Eucalyptus, pine and acacia trees. Overwintering habitat for this species within the Coastal Zone represents ESHA. Local ordinances often protect this species as well. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |
| PLANTS | | | |
| <i>Agrostis hooveri</i> Hoover's bent grass | -- / -- / 1B | Closed-cone coniferous forest, chaparral, cismontane woodland, and valley and foothill grassland at elevations of 6-610 meters. Perennial herb in the Poaceae family; blooms April-July | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|--|---------------------------------|---|--|
| <i>Aphanisma blitoides</i> Aphanisma | -- / -- / 1B | Coastal bluff scrub, coastal dunes, and coastal scrub on sandy or gravelly soils at elevations of 1-305 meters. Annual herb in the Chenopodiaceae family; blooms February-June. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Arctostaphylos pilosula</i> Santa Margarita manzanita | -- / -- / 1B | Closed-cone coniferous forest, chaparral, and cismontane woodland at elevations if 170-1100 meters. Evergreen shrub in the Ericaceae family; blooms December-March. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Survey area is below the known elevation range for this species. Not identified during the survey conducted in June 2021. |
| <i>Arctostaphylos purissima</i> La Purisima manzanita | -- / -- / 1B | Chaparral and coastal scrub on sandy soils at elevations of 60-555 meters. Perennial evergreen shrub in the Ericaceae family; blooms November-May. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Arctostaphylos refugioensis</i> Refugio manzanita | -- / -- / 1B | Chaparral on sandstone at elevations of 274-820 meters. Perennial evergreen shrub in the Ericaceae family; blooms December-May. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Arctostaphylos rudis</i> Sand mesa manzanita | -- / -- / 1B | Maritime chaparral and coastal scrub on sandy soils at elevations of 25-322 meters. Evergreen shrub in the Ericaceae family; blooms November-February. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Arenaria paludicola</i> Marsh sandwort | FE / SE / 1B | Known from only two natural occurrences in Black Lake Canyon and at Oso Flaco Lake. Sandy openings of freshwater of brackish marshes and swamps at elevations of 3-170 meters. Stoloniferous perennial herb in the Caryophyllaceae family; blooms May-August. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Survey area is outside of the currently know range for this species. Not identified during the survey conducted in June 2021. |
| <i>Astragalus didymocarpus</i> var. <i>milesianus</i> Miles' milk-vetch | -- / -- / 1B | Coastal scrub on clay soils at elevations of 20-90 meters. Annual herb in the Fabaceae family; blooms March-June. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Atriplex serenana</i> var. <i>davidsonii</i> Davidson's saltscale | -- / -- / 1B | Coastal scrub and coastal bluff scrub on alkaline soils at elevations of 10-200 meters. Annual herb in the Chenopodiaceae family; blooms April-October. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Ceanothus impressus</i> var. <i>impressus</i> Santa Barbara ceanothus | -- / -- / 1B | Chaparral on sandy soils at elevations of 40-470 meters. Perennial shrub in the Rhamnaceae family; blooms February-April. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Ceanothus impressus</i> var. <i>nipomensis</i> Nipomo Mesa ceanothus | -- / -- / 1B | Chaparral on sandy soils at elevations of 30-245 meters. Perennial shrub in the Rhamnaceae family; blooms February-April. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|---|---------------------------------|---|---|
| <i>Chenopodium littoreum</i> Coastal goosefoot | -- / -- / 1B | Coastal dunes at elevations of 10-30 meters. Annual herb in the Chenopodiaceae family; blooms April-August. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Chorizanthe rectispina</i> Straight-awned spineflower | -- / -- / 1B | Chaparral, cismontane woodland, and coastal scrub at elevations of 85-1305 meters. Annual herb in the Polygonaceae family; blooms April-July. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Cicuta maculate</i> var <i>bolanderi</i> Bolander's water-hemlock | -- / -- / 2B | Fresh or brackish coastal swamps and marshes at elevations of 0-200 meters. Perennial herb in the Apiaceae family; blooms July-September. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Cirsium loncholepis</i> La Graciosa thistle | FE / ST / 1B | Brackish marshes and swamps, and cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland on mesic, sandy soils, at elevations of 4-220 meters. Perennial herb in the Asteraceae family; blooms May-August. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Cirsium rhotophilum</i> Surf thistle | -- / ST / 1B | Coastal bluff scrub and coastal dunes at elevations of 3-60 meters. Perennial herb in the Asteraceae family; blooms April-June. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Cirsium scariosum</i> var. <i>loncholepis</i> La Graciosa thistle | FE / ST / 1B | Mesic areas of coastal dunes, brackish marshes and swamps, cismontane woodland, and valley and foothill grassland at elevations of 4-220 meters. Annual herb in the Asteraceae family; blooms May-August. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Cladium californicum</i> California saw-grass | -- / -- / 2B | Alkaline or freshwater marshes and swamps, meadows, and seeps at elevations of 60-1600 meters. Perennial rhizomatous herb in the Cyperaceae family; blooms June-September. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Clarkia speciosa</i> ssp. <i>immaculata</i> Pismo clarkia | FE / SR / 1B | Margins and openings of chaparral, cismontane woodland, and valley and foothill grassland on sandy soils at elevations of 25-185 meters. Annual herb in the Onagraceae family; blooms May-July. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Cordylanthus rigidus</i> ssp. <i>littoralis</i> Seaside bird's-beak | -- / SE / 1B | Closed-cone coniferous forests, maritime chaparral, cismontane woodlands, coastal dunes, and coastal scrub on sandy soils, often on disturbed sites, at elevations of 0-425 meters. Annual hemi-parasitic herb in the Orobanchaceae family; blooms April-October. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Deinandra increscens</i> ssp. <i>villosa</i> Gaviota tarplant | FE / SE / 1B | Coastal bluff scrub, coastal scrub, and valley and foothill grassland at elevations of 20-430 meters. Annual herb in the Asteraceae family; blooms May-October. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|---|---------------------------------|--|--|
| <i>Delphinium parryi</i> ssp. <i>blochmaniae</i> Dune larkspur | -- / -- / 1B | Maritime chaparral and coastal dunes at elevations of 0-200 meters. Perennial herb in the Ranunculaceae family; blooms April-May. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Dithyrea maritima</i> Beach spectaclepod | -- / ST / 1B | Coastal dunes and coastal scrub on sandy soils at elevations of 3-50 meters. Rhizomatous perennial herb in the Brassicaceae family; blooms March-May. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i> Blochman's dudleya | -- / -- / 1B | Coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland on rocky, often clay or serpentinite soils at elevations of 5-450 meters. Perennial herb in the Crassulaceae family; blooms April-June. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Erigeron blochmaniae</i> Blochman's leafy daisy | -- / -- / 1B | Coastal dunes and coastal scrub at elevations of 3-45 meters. Rhizomatous perennial herb in the Asteraceae family; blooms June-August. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Eriodictyon capitatum</i> Lompoc yerba santa | FE / SR / 1B | Coastal bluff scrub, closed-cone coniferous forest, and maritime chaparral on sandy soils at elevations of 40-900 meters. Perennial evergreen shrub in the Namaceae family; blooms May-September. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Horkelia cuneata</i> var. <i>puberla</i> Mesa horkelia | -- / -- / 1B | Cismontane woodland, maritime chaparral, and coastal scrub on sandy or gravelly soils at elevations of 70-810 meters. Perennial herb in the Rosaceae family; blooms February-July. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia | -- / -- / 1B | Openings of closed-cone coniferous forests, maritime chaparral, coastal dunes, and coastal scrub on sandy or gravelly soils at elevations of 10-200 meters. Perennial herb in the Rosaceae family; blooms April-September. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Layia carnosa</i> Beach layia | FE / SE / 1B | Coastal dunes and coastal scrub on sandy soils at elevations of 0-60 meters. Annual herb in the Asteraceae family; blooms March-July. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Layia heterotricha</i> Pale-yellow layia | -- / -- / 1B | Cismontane woodlands, coastal scrub, pinyon and juniper woodlands, and valley and foothill grasslands on alkaline or clay soils at elevations of 300-1705 meters. Annual herb in the Asteraceae family blooms March-June. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Survey area is below the known elevation range for this species. Not identified during the survey conducted in June 2021. |
| <i>Lupinus ludovicianus</i> San Luis Obispo County lupine | -- / -- / 1B | Chaparral and cismontane woodland on sandstone or sandy soils at elevations of 50-525 meters. Perennial herb in the Fabaceae family blooms April-July. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Lupinus nipomensis</i> Nipomo Mesa lupine | FE / SE / 1B | Coastal dunes at elevations of 10-50 meters. Annual herb in the Fabaceae family; blooms December-May. | Unlikely: No suitable habitat within or adjacent to the survey area or project site. |

| Species | Status (USFWS/ CDFW/CNPS) | General Habitat | Potential Occurrence within Project Vicinity |
|---|---------------------------------|--|---|
| <i>Malacothamnus gracilis</i> Slender bush-mallow | -- / -- / 1B | Chaparral, usually on rocky soils, at elevations of 190-575 meters. Perennial deciduous shrub in the Malvaceae family; blooms May-October. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Survey area is below the known elevation range for this species. Not identified during the survey conducted in June 2021. |
| <i>Monardella sinuata</i> ssp. <i>sinuata</i> Southern curly-leaved monardella | -- / -- / 1B | Chaparral, coastal dunes, openings in coastal scrub, and cismontane woodland on sandy soils at elevations of 0-300 meters. Annual herb in the Lamiaceae family; blooms April-September. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Monardella undulata</i> ssp. <i>crispa</i> Crisp monardella | -- / -- / 1B | Coastal dunes and coastal scrub at elevations of 10-120 meters. Annual herb in the Lamiaceae family; blooms April-August. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Monardella undulata</i> ssp. <i>undulata</i> San Luis Obispo monardella | -- / -- / 1B | Coastal dunes and coastal scrub on sandy soils at elevations of 10-120 meters. Annual herb in the Lamiaceae family; blooms May-September. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Muhlenbergia utilis</i> Aparejo grass | -- / -- / 2B | Wet sites along streams and ponds at elevations of 250-1000 meters. Perennial herb in the Poaceae family; blooms October-March. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Survey area is below the known elevation range for this species. Not identified during the survey conducted in June 2021. |
| <i>Nasturtium gambelii</i> (formerly <i>Rorippa gambelii</i>) Gambel's water cress | FE / ST / 1B | Freshwater or brackish marshes and swamps at elevations of 5-330 meters. Perennial rhizomatous herb in the Brassicaceae family; blooms April-October. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Nemaclaulis denudata</i> var. <i>denudata</i> Coast wooly-heads | -- / -- / 1B | Coastal dunes at elevations of 0-100 meters. Annual herb in the Polygonaceae family; blooms April-September. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |
| <i>Scrophularia atrata</i> Black-flowered figwort | -- / -- / 1B | Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, and riparian scrub at elevations of 10-500 meters. Perennial herb in the Scrophulariaceae family; blooms March-July. | Not Present: Marginal habitat is present within the riparian habitat in the survey area; however, no suitable habitat is present within the project site. Not identified during the survey conducted in June 2021. |
| <i>Symphotrichum defoliatum</i> San Bernadino aster | -- / -- / 1B | Meadows, seeps, marshes, swamps, vernal mesic valley and foothill grassland, and near ditches, streams, and springs in coastal scrub, cismontane woodland, and lower montane coniferous forest, at elevations of 2-2040 meters. Perennial rhizomatous herb in the Asteraceae family; blooms July-December. | Not Present: No suitable habitat within or adjacent to the survey area or project site. Not identified during the survey conducted in June 2021. |

STATUS DEFINITIONS

Federal

FE = listed as Endangered under the federal Endangered Species Act
FT = listed as Threatened under the federal Endangered Species Act
-- = no listing

State

SE = listed as Endangered under the California Endangered Species Act
ST = listed as Threatened under the California Endangered Species Act
SR = listed as Rare under the California Endangered Species Act
SC = Candidate for listing under the California Endangered Species Act
CSC = California Department of Fish and Wildlife Species of Concern
CFP = California Fully Protected Animal
-- = no listing

California Native Plant Society

1B = California Rare Plant Rank 1B species; rare, threatened, or endangered in California and elsewhere
2B = California Rare Plant Rank 2B species; rare, threatened, or endangered in California, but more common elsewhere
-- = no listing

POTENTIAL TO OCCUR

Present = known occurrence of species within the site; presence of suitable habitat conditions; or observed during field surveys
High = known occurrence of species in the vicinity from the CNDDDB or other documentation; presence of suitable habitat conditions
Moderate = known occurrence of species in the vicinity from the CNDDDB or other documentation; presence of marginal habitat conditions within the site
Low = species known to occur in the vicinity from the CNDDDB or other documentation; lack of suitable habitat or poor quality
Unlikely = species not known to occur in the vicinity from the CNDDDB or other documentation, no suitable habitat is present within the site
Not Present = species was not observed during surveys

APPENDIX C

California Natural Diversity Database Report

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad> IS > (Santa Maria (3412084)> OR > Casmalia (3412075)> OR > Orcutt (3412074)> OR > Sisquoc (3412073)> OR > Oceano (3512015)> OR > Nipomo (3512014)> OR > Huasna Peak (3512013)> OR > Guadalupe (3412085)> OR > Twitchell Dam (3412083))
> AND > Taxonomic Group> IS > (Fish> OR > Amphibians> OR > Reptiles> OR > Birds> OR > Mammals> OR > Mollusks> OR > Arachnids> OR > Crustaceans> OR > Insects> OR > Ferns> OR > Gymnosperms> OR > Monocots> OR > Dicots> OR > Lichens> OR > Bryophytes> OR > Fungi)

| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Ablautus schlingeri</i> Oso Flaco robber fly | IIDIP42010 | None | None | G1 | S1 | |
| <i>Accipiter striatus</i> sharp-shinned hawk | ABNKC12020 | None | None | G5 | S4 | WL |
| <i>Agelaius tricolor</i> tricolored blackbird | ABPBXB0020 | None | Threatened | G2G3 | S1S2 | SSC |
| <i>Agrostis hooveri</i> Hoover's bent grass | PMPOA040M0 | None | None | G2 | S2 | 1B.2 |
| <i>Aimophila ruficeps canescens</i> southern California rufous-crowned sparrow | ABPBX91091 | None | None | G5T3 | S3 | WL |
| <i>Ambystoma californiense</i> California tiger salamander | AAAAA01180 | Threatened | Threatened | G2G3 | S2S3 | WL |
| <i>Anaxyrus californicus</i> arroyo toad | AAABB01230 | Endangered | None | G2G3 | S2S3 | SSC |
| <i>Anniella pulchra</i> Northern California legless lizard | ARACC01020 | None | None | G3 | S3 | SSC |
| <i>Antrozous pallidus</i> pallid bat | AMACC10010 | None | None | G5 | S3 | SSC |
| <i>Aphanisma blitoides</i> aphanisma | PDCHE02010 | None | None | G3G4 | S2 | 1B.2 |
| <i>Arctostaphylos pilosula</i> Santa Margarita manzanita | PDERI042Z0 | None | None | G2? | S2? | 1B.2 |
| <i>Arctostaphylos purissima</i> La Purisima manzanita | PDERI041A0 | None | None | G2 | S2 | 1B.1 |
| <i>Arctostaphylos refugioensis</i> Refugio manzanita | PDERI041B0 | None | None | G3 | S3 | 1B.2 |
| <i>Arctostaphylos rudis</i> sand mesa manzanita | PDERI041E0 | None | None | G2 | S2 | 1B.2 |
| <i>Arenaria paludicola</i> marsh sandwort | PDCAR040L0 | Endangered | Endangered | G1 | S1 | 1B.1 |
| <i>Areniscythis brachypteris</i> Oso Flaco flightless moth | IILEG49010 | None | None | G1 | S1 | |
| <i>Astragalus didymocarpus var. milesianus</i> Miles' milk-vetch | PDFAB0F2X3 | None | None | G5T2 | S2 | 1B.2 |



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Athene cunicularia</i> burrowing owl | ABNSB10010 | None | None | G4 | S3 | SSC |
| <i>Atriplex serenana</i> var. <i>davidsonii</i> Davidson's saltscale | PDCHE041T1 | None | None | G5T1 | S1 | 1B.2 |
| <i>Bombus caliginosus</i> obscure bumble bee | IIHYM24380 | None | None | G4? | S1S2 | |
| <i>Branchinecta lynchi</i> vernal pool fairy shrimp | ICBRA03030 | Threatened | None | G3 | S3 | |
| <i>Buteo swainsoni</i> Swainson's hawk | ABNKC19070 | None | Threatened | G5 | S3 | |
| <i>Castilleja densiflora</i> var. <i>obispoensis</i> San Luis Obispo owl's-clover | PDSCR0D453 | None | None | G5T2 | S2 | 1B.2 |
| <i>Ceanothus impressus</i> var. <i>impressus</i> Santa Barbara ceanothus | PDRHA040L1 | None | None | G3T3 | S3 | 1B.2 |
| <i>Ceanothus impressus</i> var. <i>nipomensis</i> Nipomo Mesa ceanothus | PDRHA040L2 | None | None | G3T2 | S2 | 1B.2 |
| <i>Charadrius alexandrinus nivosus</i> western snowy plover | ABNNB03031 | Threatened | None | G3T3 | S2S3 | SSC |
| <i>Chenopodium littoreum</i> coastal goosefoot | PDCHE091Z0 | None | None | G1 | S1 | 1B.2 |
| <i>Chlosyne leanira elegans</i> Oso Flaco patch butterfly | IILEPJA051 | None | None | G4G5T1T2 | S1S2 | |
| <i>Chorizanthe rectispina</i> straight-awned spineflower | PDPGN040N0 | None | None | G2 | S2 | 1B.3 |
| <i>Cicindela hirticollis gravaida</i> sandy beach tiger beetle | IICOL02101 | None | None | G5T2 | S2 | |
| <i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock | PDAP10M051 | None | None | G5T4T5 | S2? | 2B.1 |
| <i>Cirsium rhotophilum</i> surf thistle | PDAST2E2J0 | None | Threatened | G1 | S1 | 1B.2 |
| <i>Cirsium scariosum</i> var. <i>loncholepis</i> La Graciosa thistle | PDAST2E1N0 | Endangered | Threatened | G5T1 | S1 | 1B.1 |
| <i>Cladium californicum</i> California saw-grass | PMCYP04010 | None | None | G4 | S2 | 2B.2 |
| <i>Clarkia speciosa</i> ssp. <i>immaculata</i> Pismo clarkia | PDONA05111 | Endangered | Rare | G4T1 | S1 | 1B.1 |
| <i>Coelus globosus</i> globose dune beetle | IICOL4A010 | None | None | G1G2 | S1S2 | |
| <i>Cordylanthus rigidus</i> ssp. <i>littoralis</i> seaside bird's-beak | PDSCR0J0P2 | None | Endangered | G5T2 | S2 | 1B.1 |
| <i>Corynorhinus townsendii</i> Townsend's big-eared bat | AMACC08010 | None | None | G3G4 | S2 | SSC |



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Danaus plexippus pop. 1</i> monarch - California overwintering population | IILEPP2012 | None | None | G4T2T3 | S2S3 | |
| <i>Deinandra increscens ssp. villosa</i> Gaviota tarplant | PDAST4R0U3 | Endangered | Endangered | G4G5T2 | S2 | 1B.1 |
| <i>Delphinium parryi ssp. blochmaniae</i> dune larkspur | PDRAN0B1B1 | None | None | G4T2 | S2 | 1B.2 |
| <i>Dithyrea maritima</i> beach spectaclepod | PDBRA10020 | None | Threatened | G1 | S1 | 1B.1 |
| <i>Dudleya blochmaniae ssp. blochmaniae</i> Blochman's dudleya | PDCRA04051 | None | None | G3T2 | S2 | 1B.1 |
| <i>Emys marmorata</i> western pond turtle | ARAAD02030 | None | None | G3G4 | S3 | SSC |
| <i>Eremophila alpestris actia</i> California horned lark | ABPAT02011 | None | None | G5T4Q | S4 | WL |
| <i>Erigeron blochmaniae</i> Blochman's leafy daisy | PDAST3M5J0 | None | None | G2 | S2 | 1B.2 |
| <i>Eriodictyon capitatum</i> Lompoc yerba santa | PDHYD04040 | Endangered | Rare | G2 | S2 | 1B.2 |
| <i>Eucyclogobius newberryi</i> tidewater goby | AFCQN04010 | Endangered | None | G3 | S3 | |
| <i>Falco peregrinus anatum</i> American peregrine falcon | ABNKD06071 | Delisted | Delisted | G4T4 | S3S4 | FP |
| <i>Gasterosteus aculeatus williamsoni</i> unarmored threespine stickleback | AFCPA03011 | Endangered | Endangered | G5T1 | S1 | FP |
| <i>Gila orcuttii</i> arroyo chub | AFCJB13120 | None | None | G2 | S2 | SSC |
| <i>Horkelia cuneata var. puberula</i> mesa horkelia | PDROS0W045 | None | None | G4T1 | S1 | 1B.1 |
| <i>Horkelia cuneata var. sericea</i> Kellogg's horkelia | PDROS0W043 | None | None | G4T1? | S1? | 1B.1 |
| <i>Lasionycteris noctivagans</i> silver-haired bat | AMACC02010 | None | None | G5 | S3S4 | |
| <i>Lasiurus blossevillii</i> western red bat | AMACC05060 | None | None | G5 | S3 | SSC |
| <i>Lasiurus cinereus</i> hoary bat | AMACC05030 | None | None | G5 | S4 | |
| <i>Laterallus jamaicensis coturniculus</i> California black rail | ABNME03041 | None | Threatened | G3G4T1 | S1 | FP |
| <i>Layia carnosa</i> beach layia | PDAST5N010 | Endangered | Endangered | G2 | S2 | 1B.1 |
| <i>Layia heterotricha</i> pale-yellow layia | PDAST5N070 | None | None | G2 | S2 | 1B.1 |



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Lichnanthe albipilosa</i> white sand bear scarab beetle | IICOL67010 | None | None | G1 | S1 | |
| <i>Lupinus ludovicianus</i> San Luis Obispo County lupine | PDFAB2B2G0 | None | None | G1 | S1 | 1B.2 |
| <i>Lupinus nipomensis</i> Nipomo Mesa lupine | PDFAB2B550 | Endangered | Endangered | G1 | S1 | 1B.1 |
| <i>Malacothamnus gracilis</i> slender bush-mallow | PDMAL0Q0J0 | None | None | G1Q | S1 | 1B.1 |
| <i>Monardella sinuata</i> ssp. <i>sinuata</i> southern curly-leaved monardella | PDLAM18161 | None | None | G3T2 | S2 | 1B.2 |
| <i>Monardella undulata</i> ssp. <i>crispa</i> crisp monardella | PDLAM18070 | None | None | G3T2 | S2 | 1B.2 |
| <i>Monardella undulata</i> ssp. <i>undulata</i> San Luis Obispo monardella | PDLAM180X0 | None | None | G2 | S2 | 1B.2 |
| <i>Muhlenbergia utilis</i> aparejo grass | PMPOA481X0 | None | None | G4 | S2S3 | 2B.2 |
| <i>Myotis yumanensis</i> Yuma myotis | AMACC01020 | None | None | G5 | S4 | |
| <i>Nasturtium gambelii</i> Gambel's water cress | PDBRA270V0 | Endangered | Threatened | G1 | S1 | 1B.1 |
| <i>Nemacaulis denudata</i> var. <i>denudata</i> coast woolly-heads | PDPGN0G011 | None | None | G3G4T2 | S2 | 1B.2 |
| <i>Oncorhynchus mykiss irideus</i> pop. 10 steelhead - southern California DPS | AFCHA0209J | Endangered | None | G5T1Q | S1 | |
| <i>Oncorhynchus mykiss irideus</i> pop. 9 steelhead - south-central California coast DPS | AFCHA0209H | Threatened | None | G5T2Q | S2 | |
| <i>Orobanche parishii</i> ssp. <i>brachyloba</i> short-lobed broomrape | PDORO040A2 | None | None | G4?T4 | S3 | 4.2 |
| <i>Phrynosoma blainvillii</i> coast horned lizard | ARACF12100 | None | None | G3G4 | S3S4 | SSC |
| <i>Plebejus icarioides moroensis</i> Morro Bay blue butterfly | IILEPG801B | None | None | G5T2 | S2 | |
| <i>Rana boylei</i> foothill yellow-legged frog | AAABH01050 | None | Endangered | G3 | S3 | SSC |
| <i>Rana draytonii</i> California red-legged frog | AAABH01022 | Threatened | None | G2G3 | S2S3 | SSC |
| <i>Scrophularia atrata</i> black-flowered figwort | PDSCR1S010 | None | None | G2? | S2? | 1B.2 |
| <i>Setophaga petechia</i> yellow warbler | ABPBX03010 | None | None | G5 | S3S4 | SSC |
| <i>Spea hammondi</i> western spadefoot | AAABF02020 | None | None | G3 | S3 | SSC |



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



| Species | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Sternula antillarum browni</i> California least tern | ABNNM08103 | Endangered | Endangered | G4T2T3Q | S2 | FP |
| <i>Symphytotrichum defoliatum</i> San Bernardino aster | PDASTE80C0 | None | None | G2 | S2 | 1B.2 |
| <i>Taxidea taxus</i> American badger | AMAJF04010 | None | None | G5 | S3 | SSC |
| <i>Thamnophis hammondi</i> two-striped gartersnake | ARADB36160 | None | None | G4 | S3S4 | SSC |
| <i>Trimerotropis occulens</i> Lompoc grasshopper | IIORT36310 | None | None | G1G2 | S1S2 | |
| <i>Tryonia imitator</i> mimic tryonia (=California brackishwater snail) | IMGASJ7040 | None | None | G2 | S2 | |
| <i>Vireo bellii pusillus</i> least Bell's vireo | ABPBW01114 | Endangered | Endangered | G5T2 | S2 | |

Record Count: 87

APPENDIX D

IPaC Resource List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958



In Reply Refer To:

January 11, 2021

Consultation Code: 08EVEN00-2021-SLI-0131

Event Code: 08EVEN00-2021-E-00340

Project Name: Ray Water

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a

written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.]

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ventura Fish And Wildlife Office

2493 Portola Road, Suite B

Ventura, CA 93003-7726

(805) 644-1766

Project Summary

Consultation Code: 08EVEN00-2021-SLI-0131

Event Code: 08EVEN00-2021-E-00340

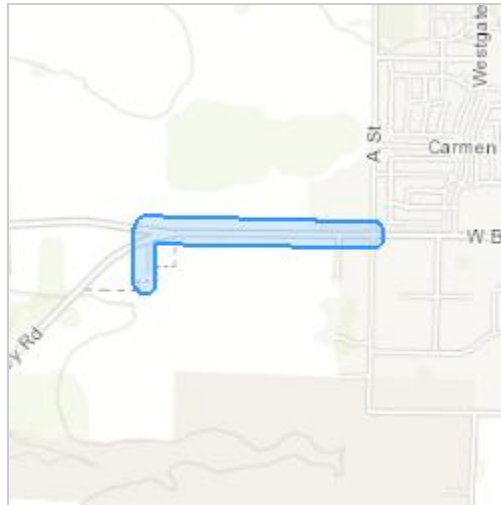
Project Name: Ray Water

Project Type: WATER SUPPLY / DELIVERY

Project Description: Pipeline

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@34.91992575,-120.47538509319233,14z>



Counties: Santa Barbara County, California

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

| NAME | STATUS |
|---|------------|
| California Condor <i>Gymnogyps californianus</i> Population: U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8193 | Endangered |
| Least Bell's Vireo <i>Vireo bellii pusillus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5945 | Endangered |
| Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6749 | Endangered |

Amphibians

| NAME | STATUS |
|---|------------|
| California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891 | Threatened |
| California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (CA - Santa Barbara County) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076 | Endangered |

Crustaceans

| NAME | STATUS |
|--|------------|
| Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498 | Threatened |

Flowering Plants

| NAME | STATUS |
|---|------------|
| Gambel's Watercress <i>Rorippa gambellii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4201 | Endangered |
| La Graciosa Thistle <i>Cirsium loncholepis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6547 | Endangered |
| Marsh Sandwort <i>Arenaria paludicola</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229 | Endangered |

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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Appendix D

Phase 1 Cultural Report

Albion Environmental, Inc. conducted a Phase 1 Cultural Resource Inventory for the Proposed Project including a California Historical Resources Information System (CHRIS) records search, Native American consultation, and an archaeological survey of the Proposed Project area. The results of this study are summarized in the Initial Study / Mitigated Negative Declaration and detailed in a confidential report (on file at the City of Santa Maria, Planning Division office).