

Water Quality Assessment Report
Thermal/Oasis Active Transportation Project



Thermal/Oasis Active Transportation Project

Riverside County, California

[DISTRICT 8] –[RIV]

[*Federal Project Number: ATPL-5956(273)*]

June 2021



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Water Quality Assessment Report

Thermal/Oasis Active Transport Project
Riverside County, California
DISTRICT 8—RIV—County of Riverside
Federal Project Number: ATPL-5956(273)

June 2021

STATE OF CALIFORNIA
Department of Transportation

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The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

Executive Summary

The County of Riverside, in cooperation with the California Department of Transportation (Caltrans), proposes to construct approximately 14 miles of multi-function trail and sidewalk infrastructure in the communities of Thermal and Oasis in the eastern Coachella Valley, Riverside County. The proposed multi-function trail is a paved 10-foot-wide path which will result in an increase of approximately 17 acres of new impervious surface. This Water Quality Assessment Report (WQAR) discusses the potential short-term and long-term water quality impacts and proposed avoidance, minimization, and mitigation measures associated with construction and implementation of the proposed Thermal/Oasis Active Transportation Project (project). The purpose of the WQAR is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and provide information, to the extent possible, for the National Pollution Discharge Elimination System (NPDES) permitting.

A total of eight aquatic features were identified within the project area. There are three channels (73rd Avenue canal, 68th Avenue riverine channel, and the 66th Avenue canal) and five small man-made water basins that are within the project area. The proposed project may temporarily and permanently impact approximately 2.59 acres of the 66th Avenue Canal and 0.34 acre of the 68th Avenue Riverine Channel, both jurisdictional Waters of the U.S. and State. The 68th Avenue Riverine Channel is anticipated to have impacts to 0.34 acres of channel due to the construction of new water crossings or construction on existing water crossings. The 66th Avenue Canal is anticipated to have impacts to 0.14 acres of channel due to water crossings and potentially 2.45 acres of channel due to the placement of the trail along the top of the levee along a section of Pierce Street. While much of these impacts will be temporary, some permanent impacts are anticipated and will require the County to obtain regulatory permits prior to construction.

Regulatory permits under the Fish and Game code section 1602 and under the Clean Water Act would be obtained, including a Water Quality Certification (Section 401) and a Section 404 Nationwide Permit for the discharge of dredged or fill material into Waters of the U.S. The proposed project would also have permanent and temporary impacts on Waters of the State. As a result, a Section 1602 Streambed Alteration Agreement from California Department of Fish and Wildlife (CDFW) is anticipated prior to construction. Construction of the proposed project is also expected to disturb approximately 34 acres of land. As a result, a Storm Water Pollution Prevention Plan (SWPPP) under the multiple municipal separate storm sewer systems (MS4) permit for the Colorado River Basin Region would be required prior to start of construction. Adherence to the requirements set forth in these permits would also minimize impacts to water quality and aquatic resources. The project is expected to have minimum impact on the surrounding environment and the community during the development and construction.

The project would add a net impervious surface area of approximately 17 acres, which would contribute to an increase in the volume of storm water runoff from the multi-use trail surface that could enter the drainage system and eventually the waterways within the project area. Impacts to water quality may result from sediment-laden storm water discharged into these waterways. With the inclusion of permanent treatment control Best Management Practices (BMPs), project impacts to water quality would not be substantial.

The objectives of the WQAR are to describe existing water resources, determine if potential project impacts on water resources would be adverse based on preliminary project information, and identify feasible mitigation measures. This WQAR discusses how the project would increase the amount of impervious surface area and potentially increase runoff volumes. It also discusses how the project may generate additional vehicle pollutants, such as oil and grease, which could be carried by surface flows into local surface drainages and groundwater basins. The WQAR also discusses issues related to hydromodification such as changes to drainage patterns or discharge volume that may affect the Riverside County Flood Control and Water Conservation District's Levee system.

This WQAR includes a discussion of the proposed project, the physical setting of the project area, and the regulatory framework with respect to water quality. It also provides data on surface water and groundwater resources within the project area and their water quality health, describes water quality impairments and beneficial uses, identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potentially adverse impacts. The WQAR does not make conclusions regarding significance of the impacts; the determination of significance will be addressed in the NEPA/CEQA document based on information provided in the WQAR. Information from the WQAR will also be used to prepare the Storm Water Data Report.

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1.0 Introduction

1.1 Approach to Water Quality Assessment

The purpose of the Water Quality Assessment Report (WQAR) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and to provide information for National Pollutant Discharge Elimination System (NPDES) permitting. The document includes a discussion of the proposed project, the physical setting of the project area, and the regulatory framework with respect to water quality; it also provides data on surface water and groundwater resources within the project area and the water quality of these waters, describes water quality impairments and beneficial uses, and identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potentially adverse impacts.

1.2 Project Description

The County of Riverside, in cooperation with the California Department of Transportation (Caltrans), proposes to construct approximately 14 miles of multi-function trail and sidewalk infrastructure in the communities of Thermal and Oasis in the eastern Coachella Valley, Riverside County. The general route is a multi-function trail loop that runs along 66th Avenue, Pierce Street, 74th Avenue and Harrison Street, with an additional segment extending north along Harrison Street to Echols Road. and a sidewalk along Middleton Street between Harrison Street and 66th Avenue. An additional sidewalk would supplement the multi-function trail on the portion of 66th Avenue between Harrison Street and Tyler Street. Along a portion of 66th Avenue the trail alignment is anticipated to occupy a raised access path along an existing US Bureau of Reclamation (USBR) irrigation channel, operated by the Coachella Valley Water District (CVWD) outside of the road right of way (See Figures 1 through 3). The trail may also be placed along a CVWD canal on top of the adjacent levee at the intersection of Fillmore Street and 66th Avenue to its connection on Pierce Street, pending approval from CVWD to utilize this access road for the trail alignment.

The proposed multi-function trail is a paved 10-foot-wide path situated primarily within road right of way with a minimum 5 foot buffer from the adjacent travel lanes. The proposed concrete sidewalk will be 5-foot-wide with adjacent street-side curb constructed at the edge of the existing travel lane. This will result in an increase of approximately 17 acres of new impervious surface and is expected to disturb approximately 34 acres of land.

Several crossings will be required at intersecting streets and driveways along the multi-function trail route. All crossings will be at-grade and controlled in accordance with existing traffic control measures, unless specific safety concerns dictate otherwise. Although the preferred multi-

function trail route is planned along the inside of the overall street loop to minimize arterial street crossings, it is anticipated that the alignment may shift outside the loop in places. Any street crossings will be at-grade and appropriate traffic control will be installed.

Multiple channel or stream crossings will be required for the multi-function trail to traverse existing irrigation channels and drainage paths. Whether by bridge, culvert extensions or low water crossings, hydraulic impact to the existing facilities will be minimized. Bridges and other elevated crossings will be light-duty and will avoid the use of piers within waterways.

Drainage improvements will be designed to maintain current drainage schemes. The current drainage is typically comprised of half-street cross fall runoff which will be collected between the roadway and the trail and conveyed past the trail via culverts or at-grade crossings. No regional drainage facilities are anticipated to be impacted and no significant new drainage facilities are expected to be constructed.

Most of the multi-function trail alignment along Harrison Street, Pierce Street, and 74th Avenue will require earth fill to raise the trails to elevations appropriate for public use. The alignment along 66th Avenue likely will require less fill material but is not anticipated to require significant soil removal. It is expected that the project will require a net import of soil material.

Relocation and/or modification of existing utilities may be required at various locations throughout the project, including Imperial Irrigation District (IID) electric facilities, Coachella Valley Water District (CVWD) water and sanitary sewer facilities, CVWD/United States Bureau of Reclamation (USBR) irrigation facilities, CVWD/Caltrans drainage facilities, Frontier Communications telephone facilities and Charter Communications cable facilities. In areas where existing pole line alignments are in close proximity to street rights of way, minor street alignment shifts may be necessary to avoid major pole line relocations.

Purpose and Need

The purpose of the project is to accommodate and promote multi-modal mobility by creating an Americans with Disabilities Act (ADA)- compliant pedestrian/bicycle facility in the communities of Thermal and Oasis. Additionally, it is to enhance pedestrian and bicycle safety in the project area by providing a separate multi-modal tr from vehicular traffic.

Pedestrians and bicyclists use the paved shoulder or unpaved area directly adjacent to roadways within the project area as their path of travel in proximity to vehicular traffic. The project is needed because the transportation network in the predominantly rural, agricultural area, lacks consistent pedestrian or bicycle facilities.

Existing Drainage Information

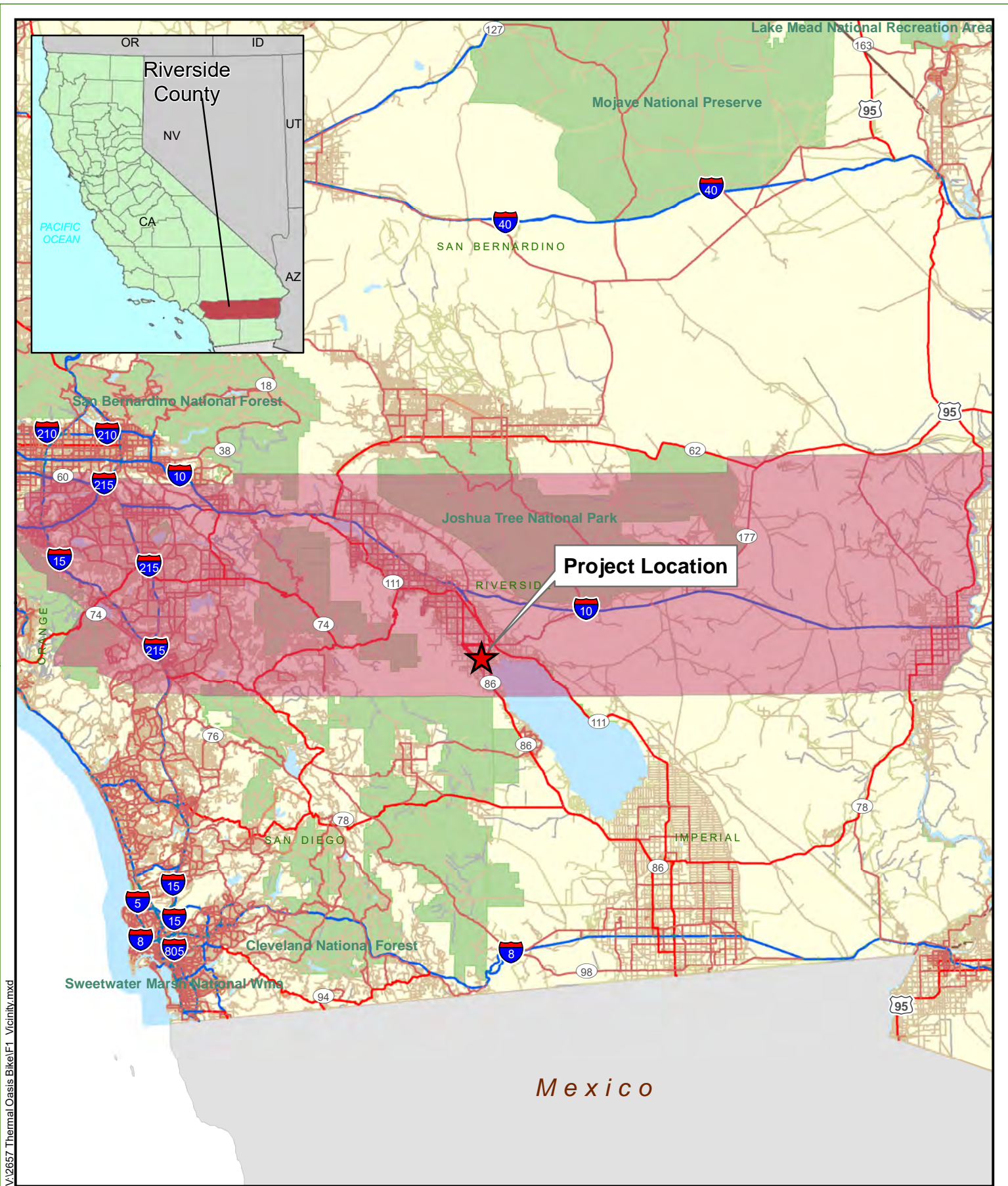
The project area contains the 73rd Avenue canal, 68th Avenue riverine channel, 66th Avenue canal and five small man-made water basins. The project area lies within the Salton Sea Watershed, which is bordered by the Southern Mojave and Santa Ana Watersheds. The Salton Sea is located approximately 2 miles east of the southernmost part of the project area. The Whitewater River is the largest nearby waterway. The constructed downstream extension of the Whitewater River, the Coachella Valley Storm Water Channel, is located approximately 0.20 miles of the project area. The Coachella Valley Storm Water Channel and the Salton Sea are 303 (d) listed as an impaired water body (SWRCB, 2019). The 68th Avenue riverine channel and 66th Avenue canal irrigation canal both converge with the Whitewater River just outside of the project area before connecting downstream to the Salton Sea. The project area is also located in the Region 7 Municipal Boundary Phase I MS4 area. The project will require the construction of crossings over the irrigation canals that go through the project area, but direct impacts to these water features will be avoided to the greatest extent possible by constructing bridges, culvert extensions, and low water crossings that are light-duty and minimize in-water construction. With any construction project, indirect effects to receiving water may occur due to construction site soil disturbance and stormwater runoff. The project's compliance with County and State water quality and stormwater best management practices will ensure that the project avoids and/or minimizes potential water quality impacts to the greatest extent practicable.

Risk Level Assessment

The Construction General Permit (CGP) contains a risk-based permitting approach by establishing three levels of risk possible for a construction site. Risk levels are determined during the planning, design, and construction phases, and are based on project risk of generating sediments and receiving water risk of becoming impaired. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and pre- and post-construction aquatic biological assessments during specified seasonal windows. The risk level for this project has been estimated as a Level 1 with low sediment risk and a low receiving water risk.

1.2.1 No Project Alternative

Under the No-Build Alternative, 14 miles of multi-function trail and sidewalk infrastructure would not be constructed in the communities of Thermal and Oasis. The transportation network in the predominantly rural, agricultural area would continue to lack consistent pedestrian or bicycle facilities and would remain inaccessible in terms of ADA compliance.



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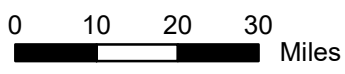
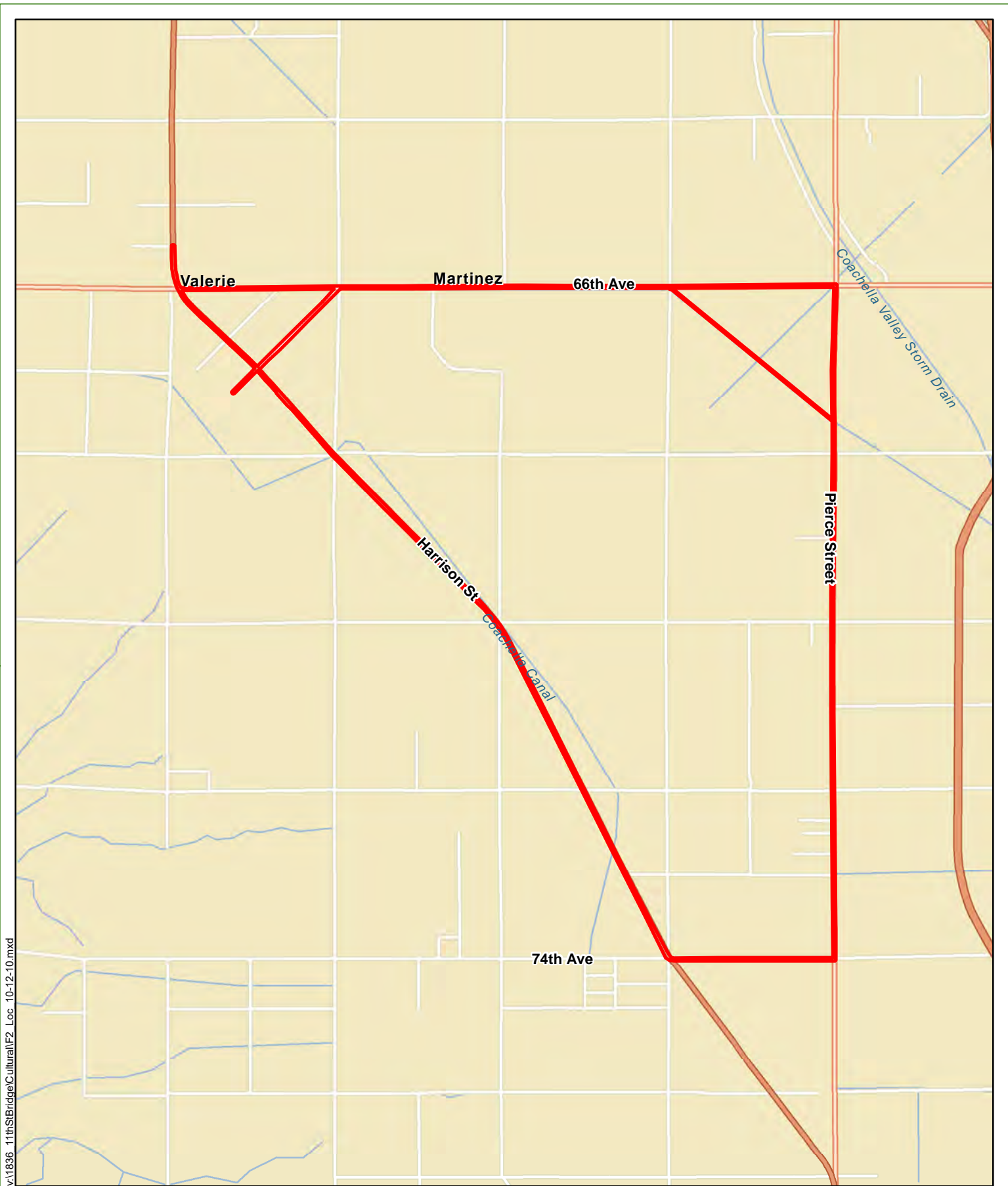


FIGURE 1
Project Vicinity

Thermal/Oasis Active Transportation Project
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Riverside County, California



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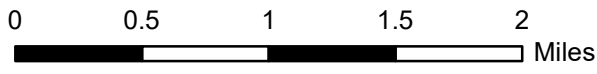
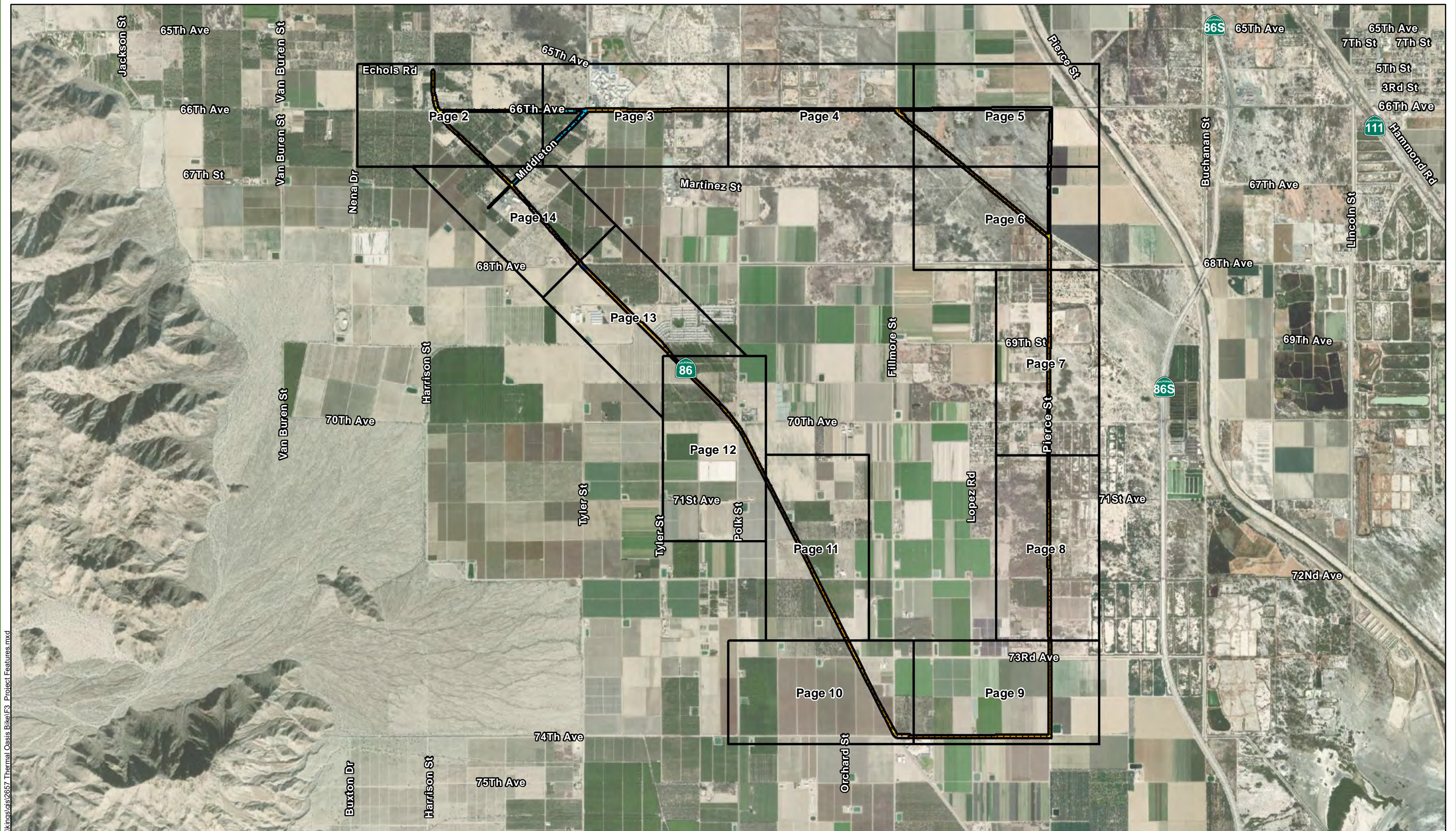


FIGURE 2
Project Location

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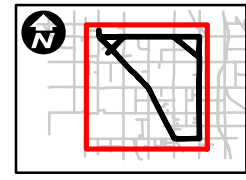
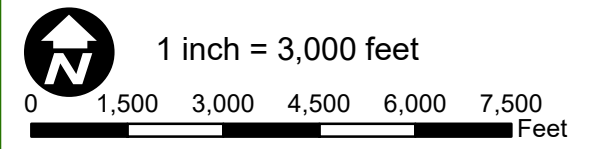
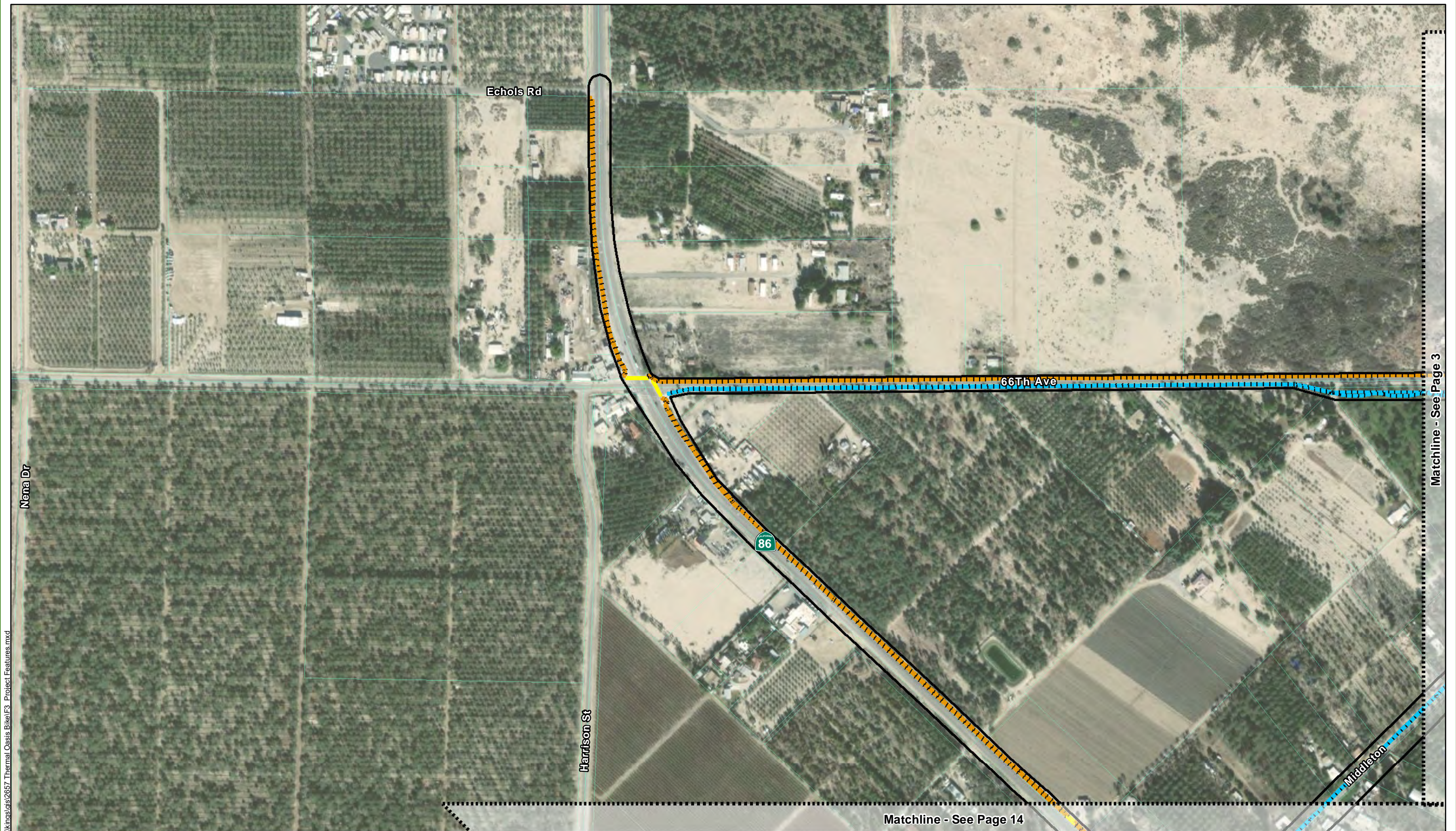


Figure 3
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Project Features
 Thermal/Oasis Active Transportation Project
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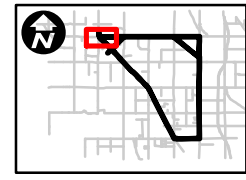
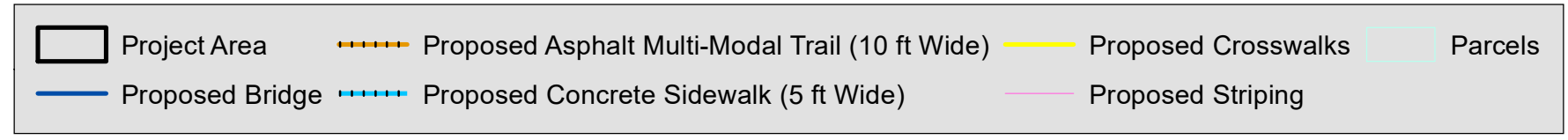
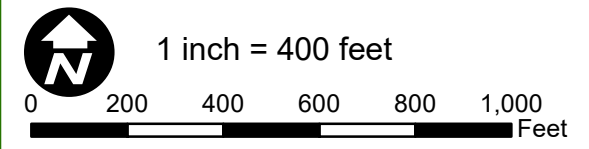


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Project Features
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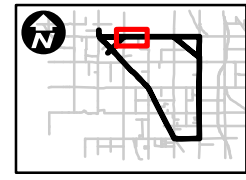
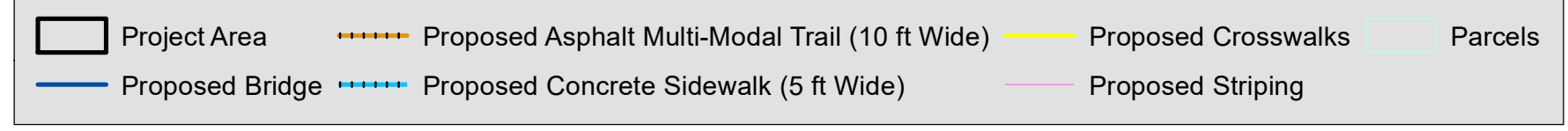
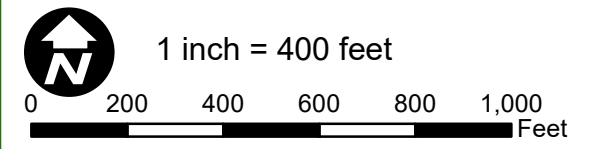


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Project Features
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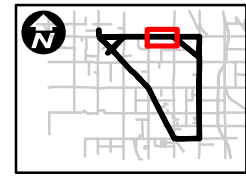
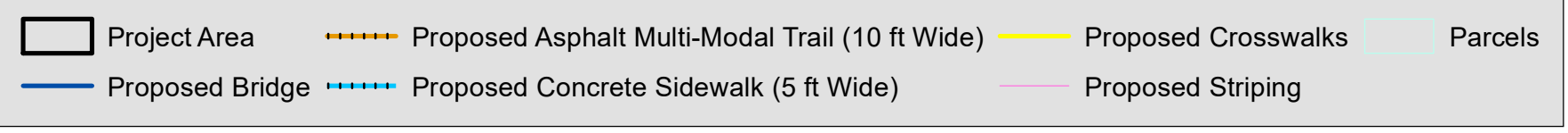
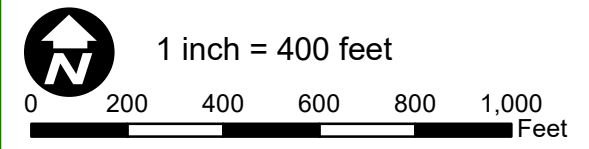


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Project Features
 Thermal/Oasis Active Transportation Project
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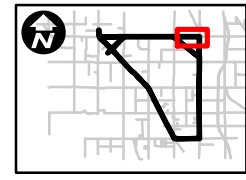
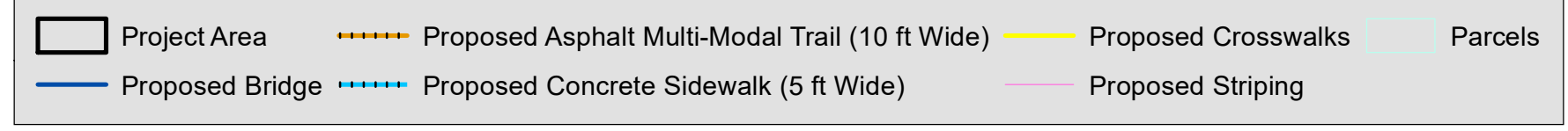
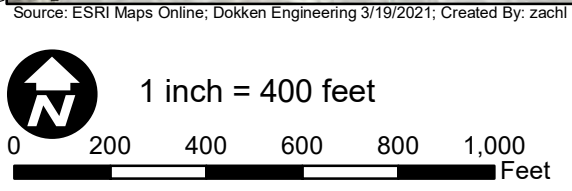
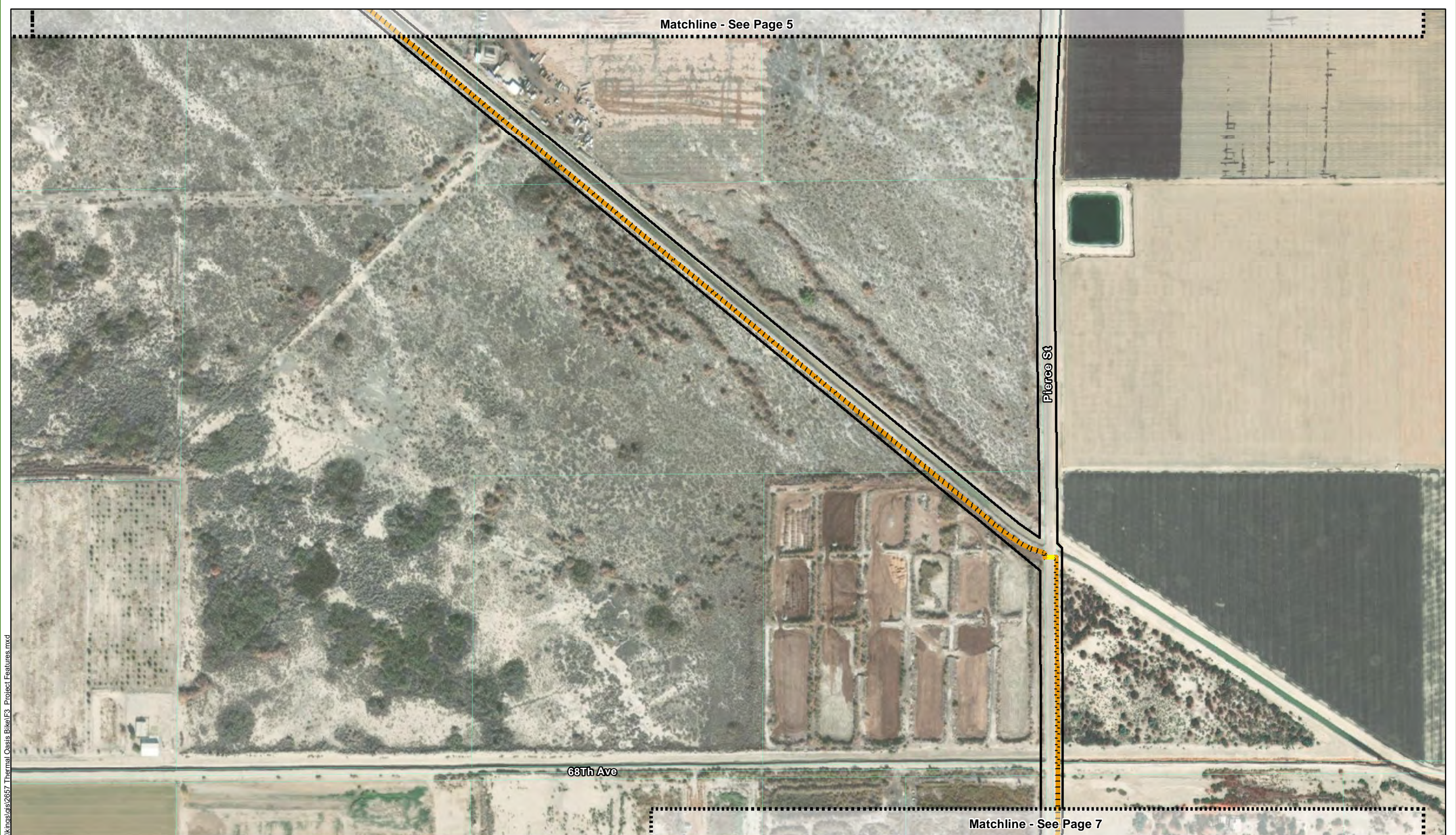


Figure 3
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Project Features
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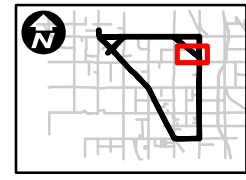
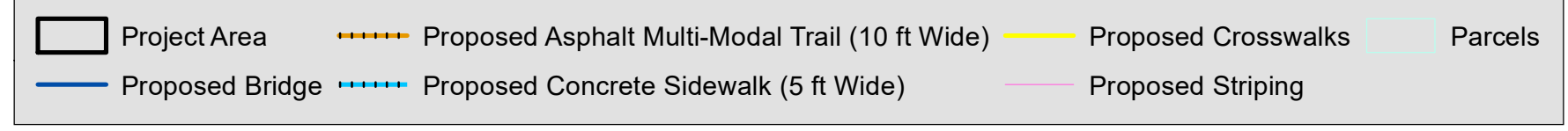
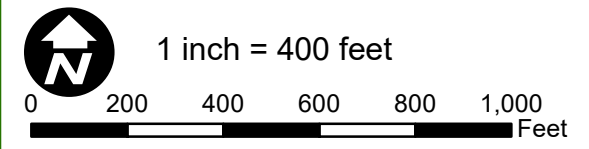
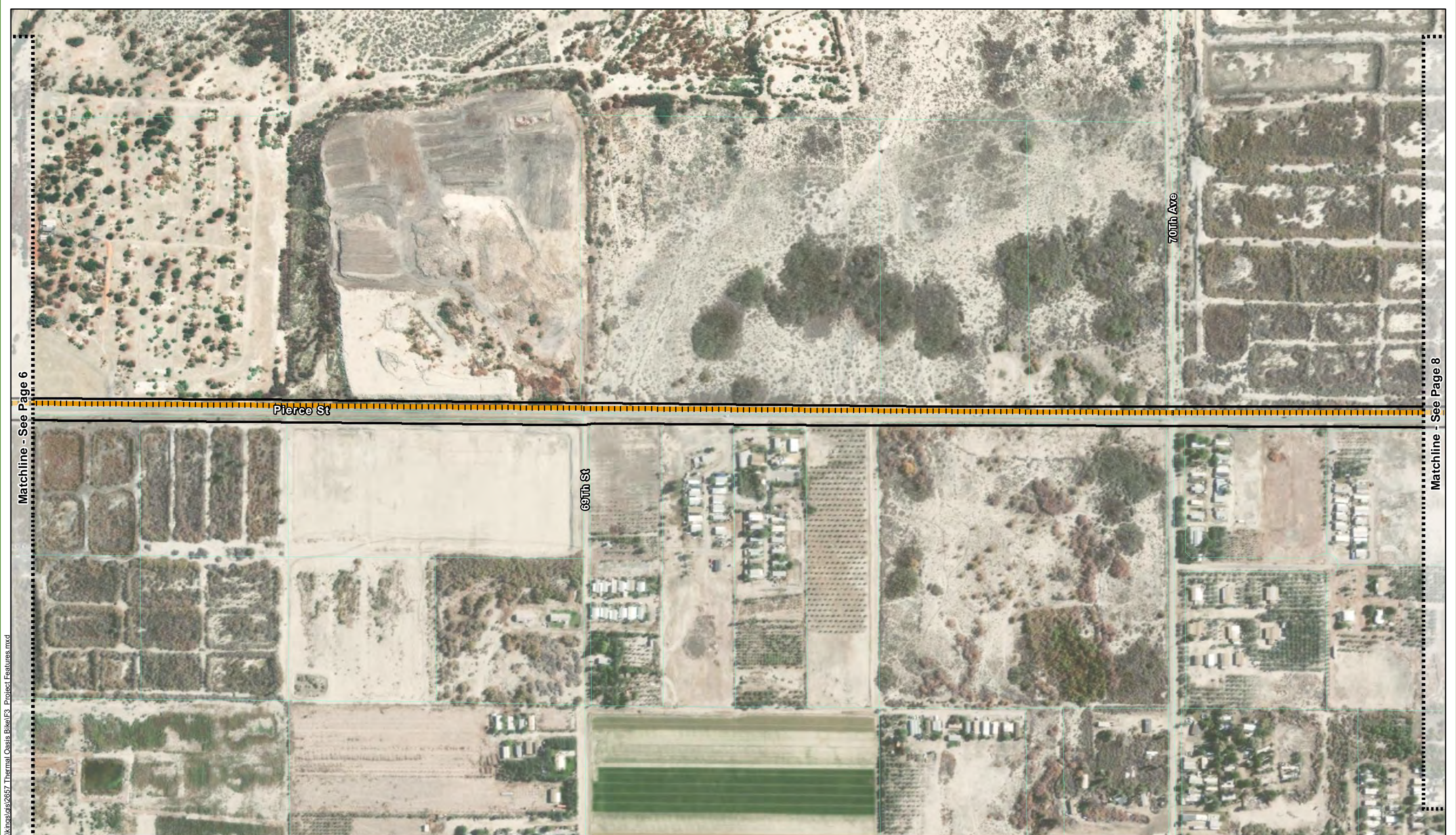


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Project Features
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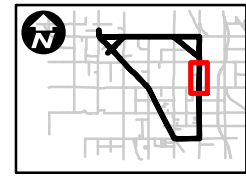
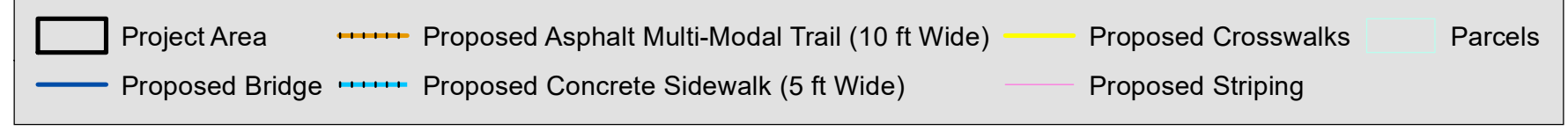
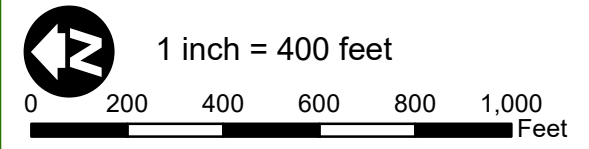
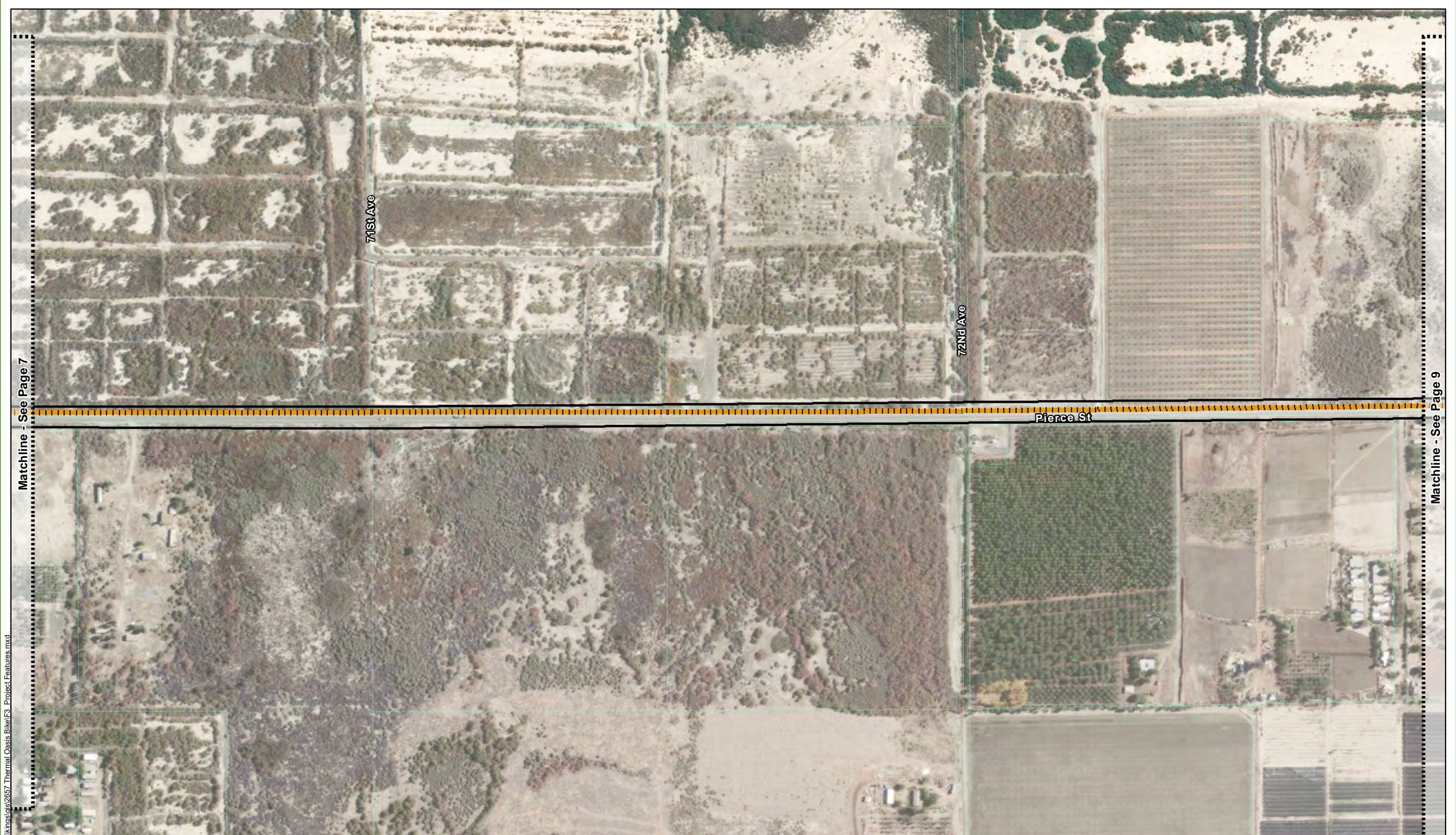


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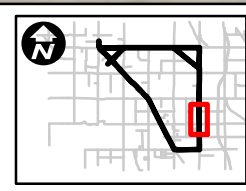
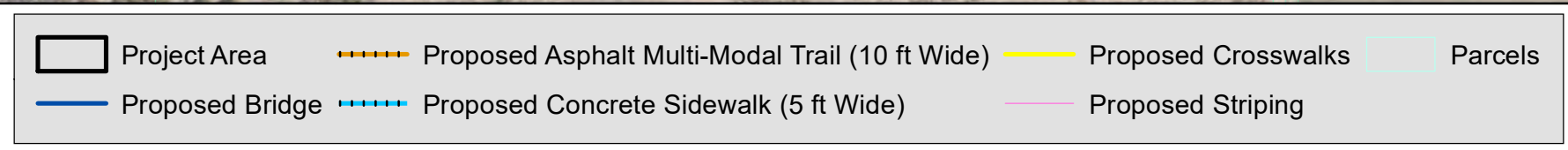
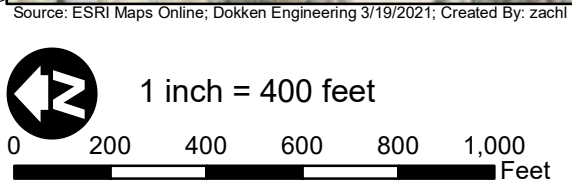
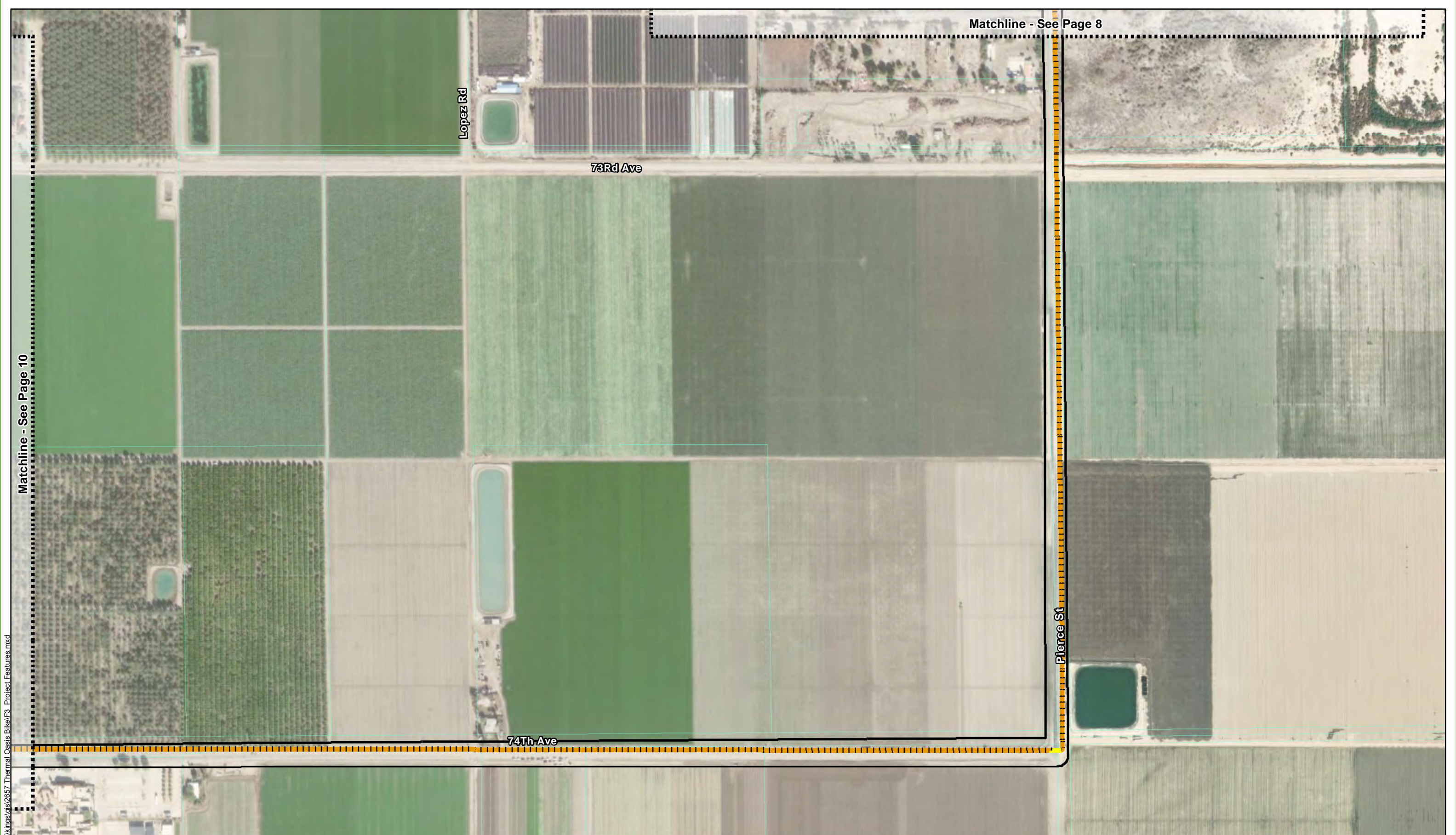


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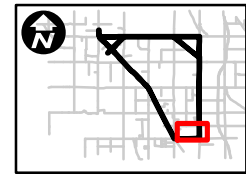
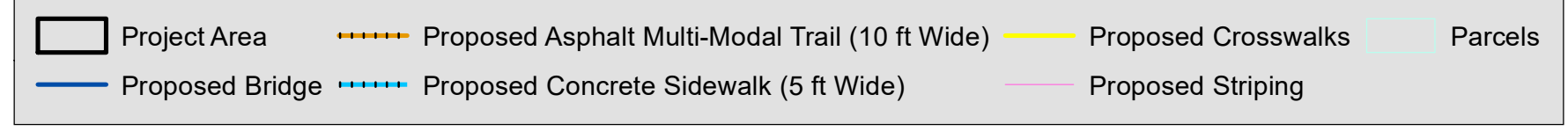
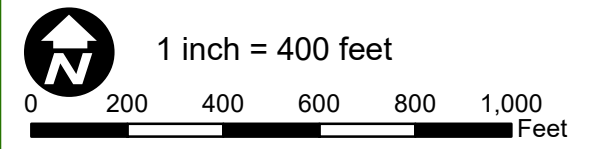


Figure 3
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Project Features
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Matchline - See Page 11

Polk St

73rd Ave

74th Ave

Orchard St

Fillmore St

86

Matchline - See Page 9

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Source: ESRI Maps Online; Dokken Engineering 3/19/2021; Created By: zachl

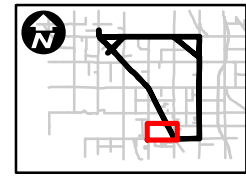
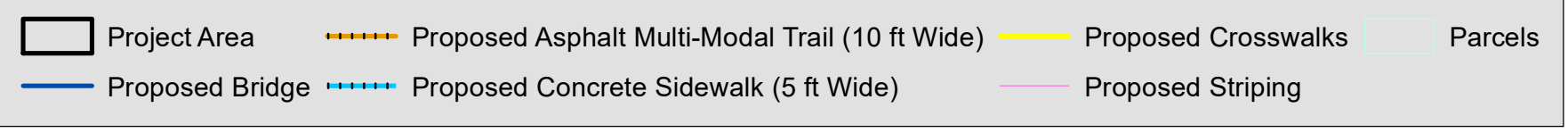
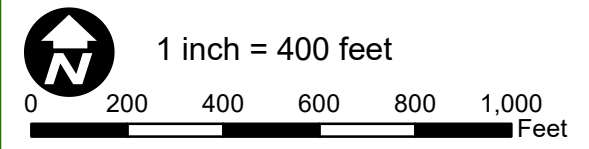
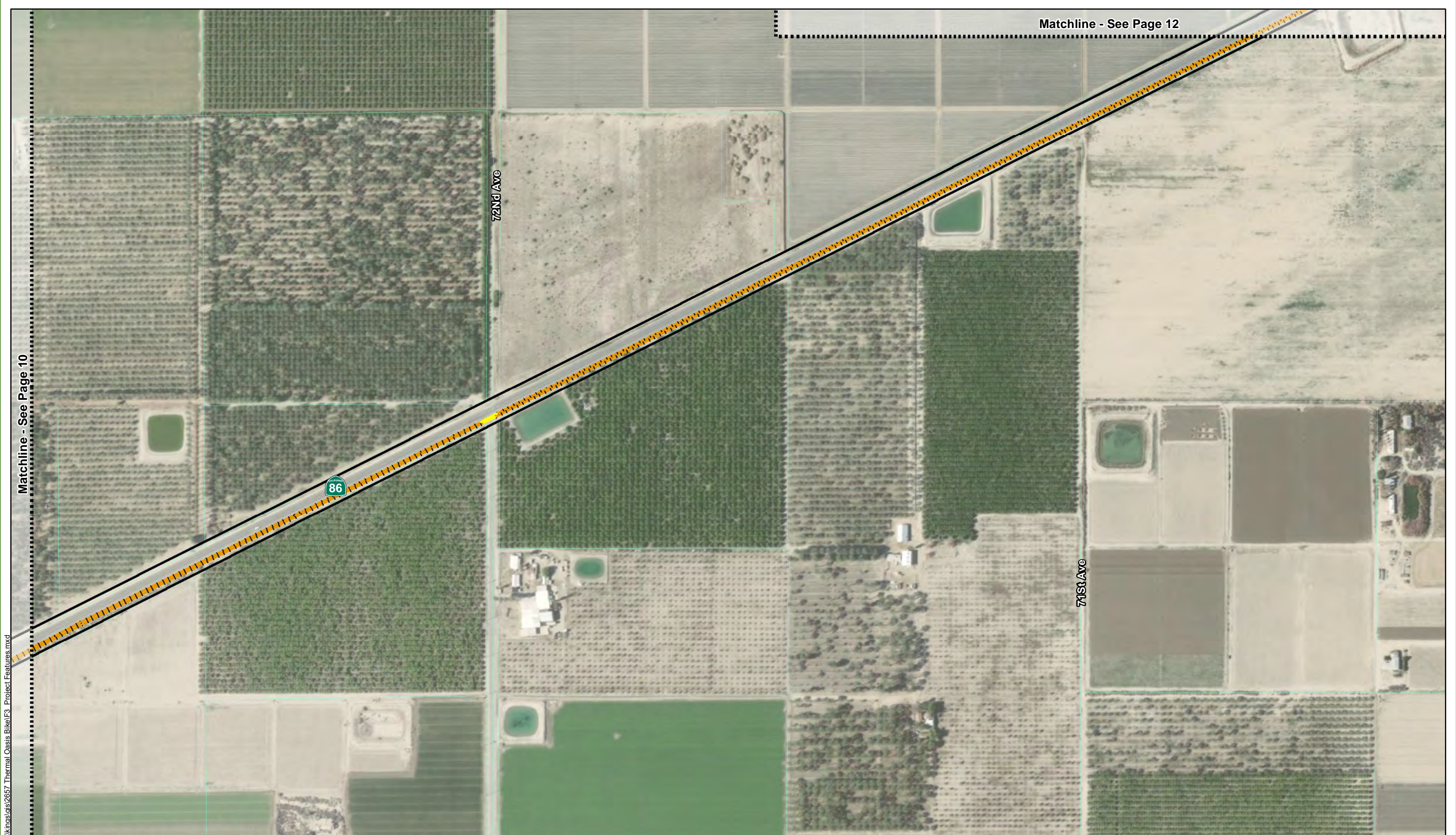


Figure 3
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Project Features
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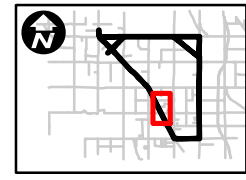
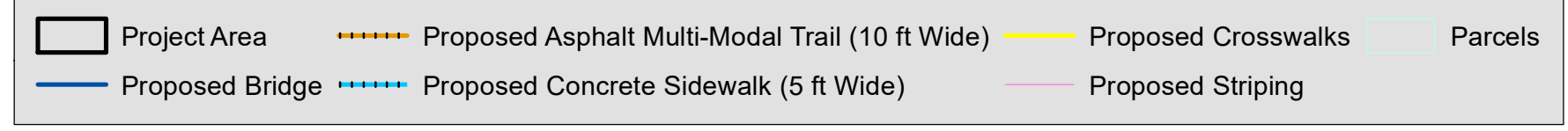
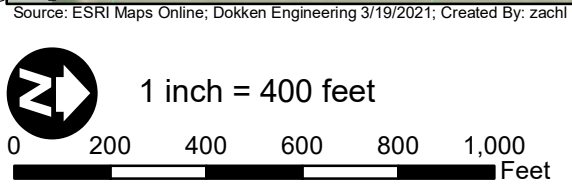


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Project Features
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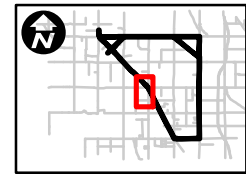
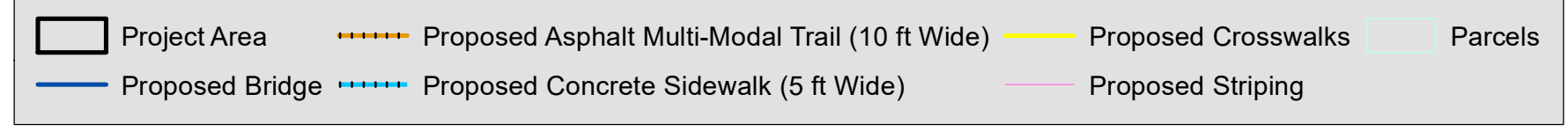
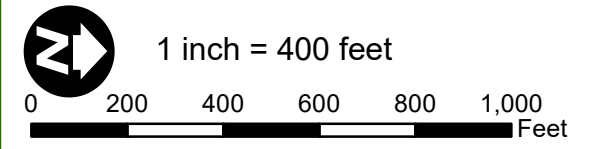
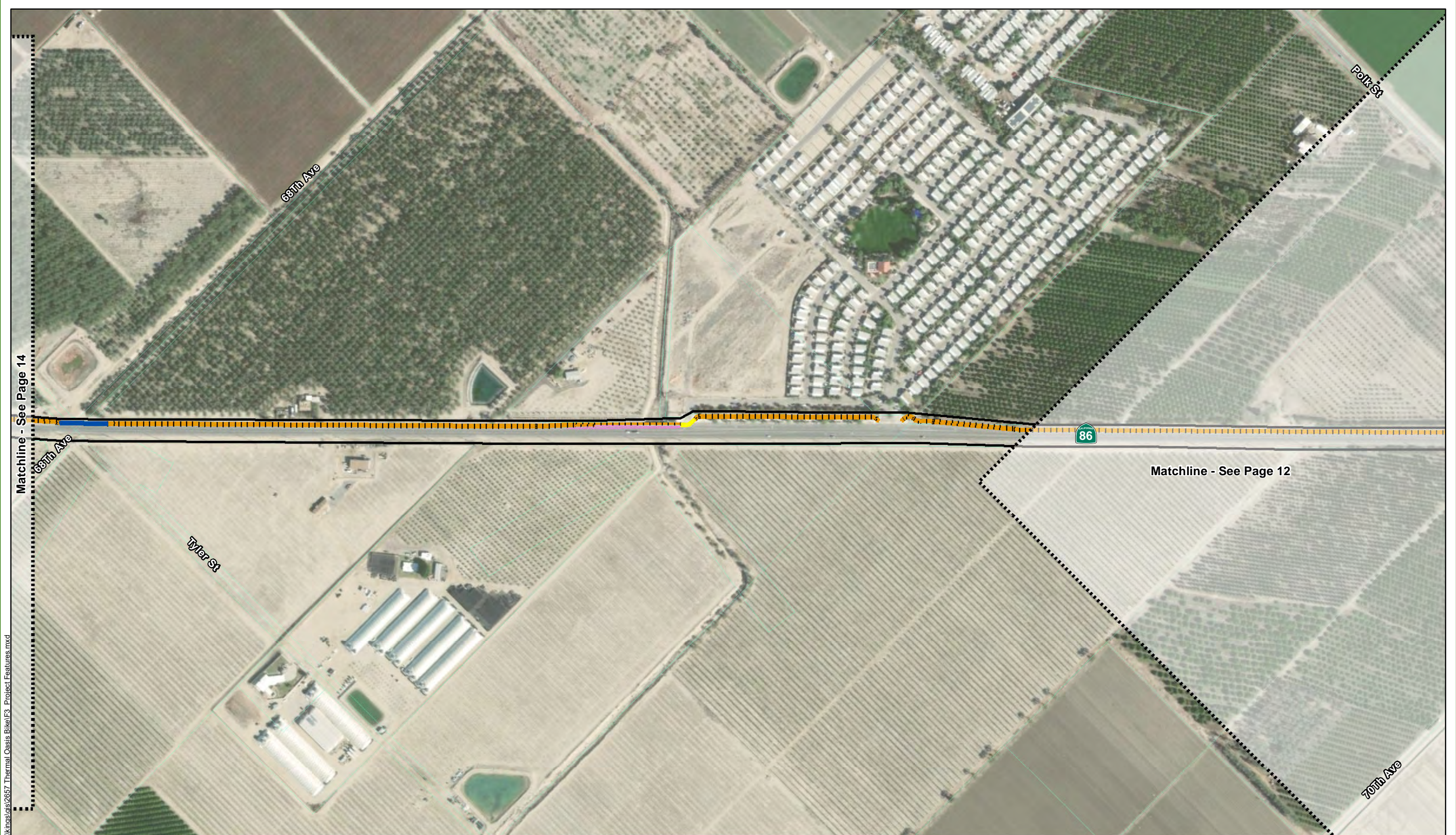


Figure 3
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Project Features
 Thermal/Oasis Active Transportation Project
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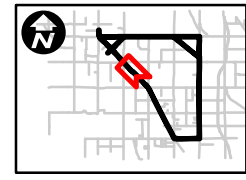
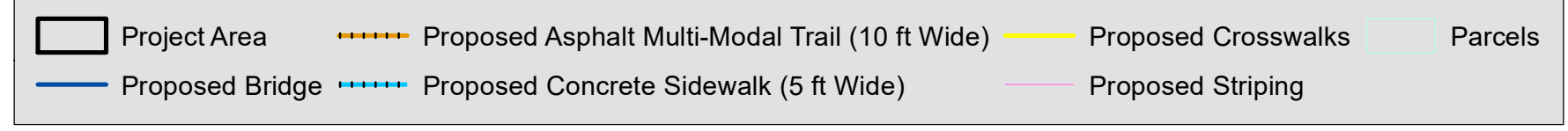
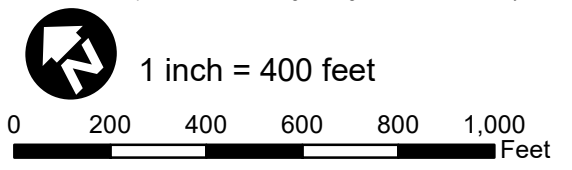


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Project Features
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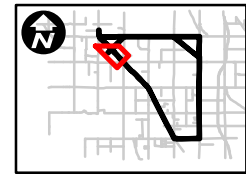
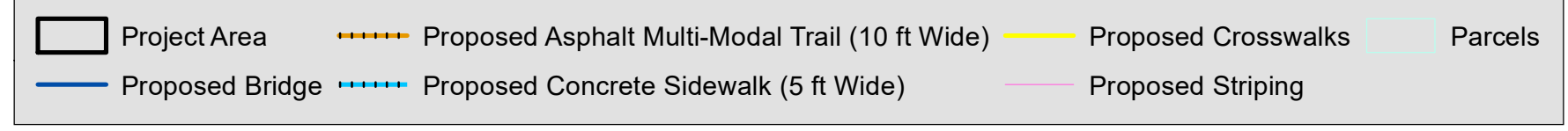
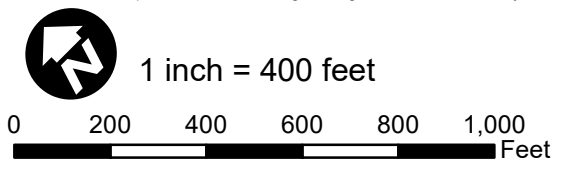


Figure 3
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Project Features
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2.0 Regulatory Setting

2.1 Federal Laws and Requirements

Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a NPDES permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. The Federal Environmental Protection Agency delegated to the California State Water Resources Control Board (SWRCB) the implementation and administration of the NPDES program in California. The SWRCB established nine Regional Water Quality Control Boards (RWQCBs). The SWRCB enacts and enforces the Federal NPDES program and all water quality programs and regulations that cross Regional boundaries. The nine RWQCBs enact, administer and enforce all programs, including NPDES permitting, within their jurisdictional boundaries. Section 402(p) requires permits for discharges of stormwater from industrial, construction, and Municipal Separate Storm Sewer Systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).
- Section 408 establishes a permit program for all requests to modify, alter, or occupy any existing USACE-constructed public works project, including dams, basins, levees, channels, navigational channels, and any other local flood protection works constructed by the USACE.

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are also two types of Individual permits: Standard Individual permit and Letter of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Individual permits. For Standard Individual permit, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (EPA) Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have less effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures have been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

2.2 State Laws and Requirements

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin

Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

California Fish and Game (CFG) Code Section 1602: Streambed Alteration Agreement

Under CFG Code 1602, public agencies are required to notify the CDFW before undertaking any project that would “divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank or, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.” Preliminary notification and project review generally occurs following the environmental review phase. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including MS4s. The U.S. EPA defines an MS4 as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water.” The SWRCB has identified the Department as an owner/operator of an MS4 pursuant to federal regulations. The Department’s MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the

RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

For local agency transportation projects off the state Highway System, the local agency (as owner of the land where the construction activity is occurring) is responsible for obtaining the NPDES permit if required and for signing statements (when necessary). Local agency should contact the appropriate RWQCB to determine what permits are required for their construction activity. The local agency is also responsible for ensuring that all permit conditions are included in the construction contract and fully implemented in the field.

Construction General Permit

Construction General Permit (NPDES No. CAS000002, SWRCB Order No. 2009-0009-DWQ, adopted on November 16, 2010) became effective on February 14, 2011 and was amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ. The permit regulates stormwater discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development.

For all projects subject to the CGP, the applicant is required to hire a Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) to develop and implement an effective SWPPP. All Project Registration Documents, including the SWPPP, are required to be uploaded into the SWRCB's on-line Stormwater Multiple Application and Report Tracking System (SMARTS), at least 30 days prior to construction.

Waivers from CGP coverage.

Projects that disturb over 1.0 acre but less than 5 acres of soil, may qualify for waiver of CGP coverage. This occurs whenever the R factor of the **Watershed Erosion Estimate (=R_xK_xLS)** in tons/acre is less than 5. Within this CGP formula, there is a factor related to when and where the construction will take place. This factor, the 'R' factor, may be low, medium or high. When the R factor is below the numeric value of 5, projects can be waived from coverage under the CGP, and are instead covered by the Caltrans Statewide MS4.

In accordance with SWMP, a Water Pollution Control Plan (WPCP) is necessary for construction of a Caltrans project not covered by the CGP.

Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop a SWPPP, to implement soil erosion and pollution prevention control measures, and to obtain coverage under the CGP.

The CGP contains a risk-based permitting approach by establishing three levels of risk

possible for a construction site. Risk levels are determined during the planning, design, and construction phases, and are based on project risk of generating sediments and receiving water risk of becoming impaired. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and pre- and post-construction aquatic biological assessments during specified seasonal windows.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

2.3 Regional and Local Requirements

The anti-degradation directives of Section 13000 of the Water Code and State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality Waters in California") require that high quality waters of the State shall be maintained "consistent with the maximum benefit to the people of the State." The Regional Water Board applies these directives when issuing a permit, or in an equivalent process, regarding any discharge of waste which may affect the quality of surface or groundwaters in the region.

Implementation of this policy to prevent or minimize surface and groundwater degradation is a high priority for the Board. In nearly all cases, preventing pollution before it happens is much more cost-effective than cleaning up pollution after it has occurred. Once degraded, surface water is often difficult to clean up when it has passed downstream. Likewise, cleanup of groundwater is costly and lengthy due, in part, to its relatively low assimilative capacity and inaccessibility. The prevention of degradation is, therefore, an important strategy to meet the policy's objectives.

The Regional Water Board will apply Resolution No. 68-16 in considering whether to allow a certain degree of degradation to occur or remain. In conducting this type of analysis, the Regional Water Board will evaluate the nature of any proposed discharge, existing discharge, or material change therein, that could affect the quality of waters within the region. Any discharge of waste

to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

Pursuant to this policy, a Report of Waste Discharge, or any other similar technical report required by the Board pursuant to Water Code Section 13267, must include information regarding the nature and extent of the discharge and the potential for the discharge to affect surface or groundwater quality in the region. This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives. The extent of information necessary will depend on the specific conditions of the discharge. For example, use of best professional judgment and limited available information may be sufficient to determine that ground or surface water will not be degraded. In addition, the discharger must identify treatment or control measures to be taken to minimize or prevent water quality degradation.

Colorado River Basin Water Quality Control Plan

The Water Quality Control Plan for the Colorado River Basin (Region 7) consists of the water quality goals and policies, descriptions of conditions, and discussions of solutions. It is also the basis for the Regional Board's regulatory programs. The Basin Plan establishes water quality standards for the ground and surface waters of the region. The term "water quality standards," as used in the federal Clean Water Act, includes both the beneficial uses of specific waterbodies and the levels of quality which must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the Regional Board and others that are necessary to achieve and maintain the water quality standards.

The Regional Board regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means.

Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For waterbodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included.

In some cases, it has been necessary for the Regional Board to completely prohibit the discharge of certain materials. Some types of discharges are prohibited in specific areas. Details on these prohibitions also appear in the Basin Plan.

Coachella Valley Multiple Species Habitat Conservation Plan

The County of Riverside is a participant of the CVMSHCP. The project is located within the regulatory boundary of the CVMSHCP but is completely outside the limits of any designated conservation areas, including the Conservation Area of the CVMSHCP. The CVMSHCP was created to enhance and maintain biological diversity and ecosystem processes while allowing future economic growth. The CVMSHCP provides comprehensive compliance with Federal and State endangered species laws and standardizes 27 Covered Species mitigation/compensation measures for a streamlined regulatory process (CVAG 2007). To mitigate take of Covered Species, the CVMSHCP protects and manages desired habitats within designated Conservation Areas.

Riverside County

The Colorado River Regional Water Quality Control Board (CRRWQCB) adopted the Municipal Storm Water Permit Order No. R7-2013-0011, NPDES No. CAS617002 (Permit), on June 20, 2013, to control waste discharges in urban runoff from the MS4s, also known as storm drain system, draining the watersheds in the County of Riverside (specifically the Whitewater River Watershed), including the incorporated cities of Banning, Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage, collectively known as Co-Permittees.

The Permit's intent is to regulate urban runoff within the Whitewater River Watershed, regulate the discharge of potential pollutants in urban runoff that discharged to surface waters within the Watershed, implement regulatory requirements of the Water Quality Control Plan for the Colorado River Basin Region (Basin Plan), and require preventative measures to assure maintenance of existing water quality within the region. Under the Permit, new construction is required to retain and infiltrate runoff on-site to mitigate for increased runoff and downstream impacts post-construction. In addition, the Whitewater River Region Storm Water Management Plan (SWMP) is incorporated into the Permit. The SWMP requires the implementation of appropriate Best Management Practices (BMPs) designed to prohibit Illicit Connection/Illegal Discharges (IC/IDs) and to meet Water Quality Standards (WQSs).

The Permit requires the Co-Permittees to develop a Water Quality Management Plan (WQMP), which requires identification of Hydrologic Conditions of Concern (HCOC) – sites where the hydrologic regime has been altered and construction activities have impacted downstream channels and aquatic habitats. The goal of the WQMP is to limit impacts of urban runoff in the Whitewater River Region.

The Eastern Coachella Valley Area Plan (ECVAP) outlines policies to protect water resources in the Eastern Coachella Valley area of Riverside County. Policy ECVAP 9.1 requires adherence to water resource policies outlined in the Riverside County General Plan, such as OS 3.3 and OS

3.5. Policy OS 3.3 calls for the minimization of pollutant discharges into drainages and aquifers and policy OS 3.5 requires the integration of water runoff management within proposed projects where feasible.

3.0 Affected Environment

3.1 General Setting

3.1.1 Population and Land Use

The project is located within the County of Riverside approximately 2 miles west of Mecca, an unincorporated community, and approximately 2.6 miles north of the Salton Sea (Figure 2. project Location). Oasis has a population of approximately 6,890 residents and Thermal has a population of approximately 2,865 (2010 Census of Population and Housing). Land use within and adjacent the project area contains a mix of land use types including, tribal lands, agriculture, low density residential, medium high density residential, very high density residential, commercial residential, and public facilities. The project area predominantly consists of developed hardscape land within a 10-foot right of way of sections of Harrison Street, 66th Avenue, Pierce Street, 74th Avenue, and Middleton Street. Vegetation consists of ruderal roadside forbs, agricultural crops, and small patches of natural vegetative communities that have been fragmented by agricultural, residential, and commercial uses and have in some areas been invaded by introduced exotic species. Human-impacted communities within the project area include roadway, irrigation canal, urban, and agricultural. Natural communities within the project area include ruderal vegetation, barren, and desert scrub.

3.1.2 Topography

The project is within the Valerie and Mecca USGS 7 ½ minute quadrangles and topography in the project vicinity consists of the Coachella Valley bordered by the San Jacinto and Santa Rosa Mountains to the west, Indio Hills and the San Bernardino Mountains to the north, and Mecca Hills to the northeast. (Figure 4. Topographic Map).

3.1.3 Hydrology

3.1.3.1 Regional Hydrology

The Colorado River Basin Region covers approximately 13 million acres in the southeastern portion of California. Regional drainage waters resulting from Colorado River diversions and use, and which do not return to the Colorado River, drain into the Salton Sea. That portion of the Region that does not drain into the Colorado River is referred to as the Colorado River Basin (West) or West Basin.

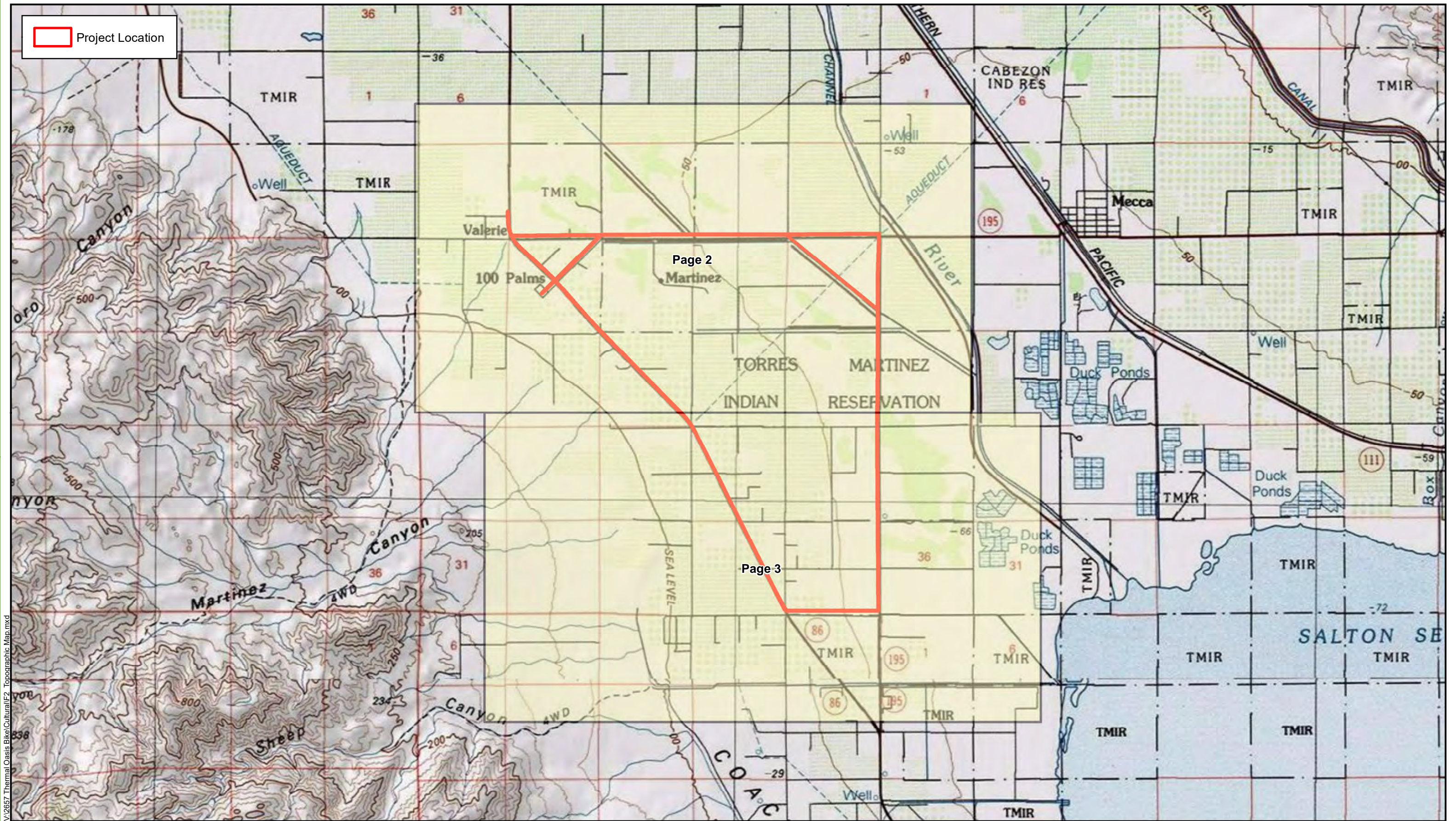
Much of the northern portion of the West Basin drains to several individual internal sinks or playas, while the southern portion generally drains to the Salton Sea. The Imperial and Coachella Valleys contain numerous drains that transport irrigation return flows and stormwater, as well as canals for importation and distribution of Colorado River water.

The Salton Sea, which is replenished principally by irrigation drainage and stormwater, is the largest body of water in the West Basin. The Sea serves as a reservoir to receive and store agricultural drainage and seepage waters, but also provides important wildlife habitat and is used for recreational purposes which include boating and fishing. Several smaller constructed recreational lakes are located in the Imperial Valley. In addition, Lake Cahuilla in Coachella Valley is used to store Colorado River water for irrigation and recreational purposes.

3.1.3.2 Local Hydrology

The project site falls within Region 7 (Colorado River Region) of the California Regional Water Quality Control Board. The project vicinity consists of the Coachella Valley bordered by the San Jacinto and Santa Rosa Mountains to the west, Indio Hills and the San Bernardino Mountains to the north, and Mecca Hills to the northeast. (Figure 4. Topographic Map). The Salton Sea is located approximately 2.12 miles southeast of the southernmost portion of the project area. Within the project area, there are a number of irrigation canals and catchments, and one small tributary which has direct downstream connectivity with the Salton Sea.

Project Location



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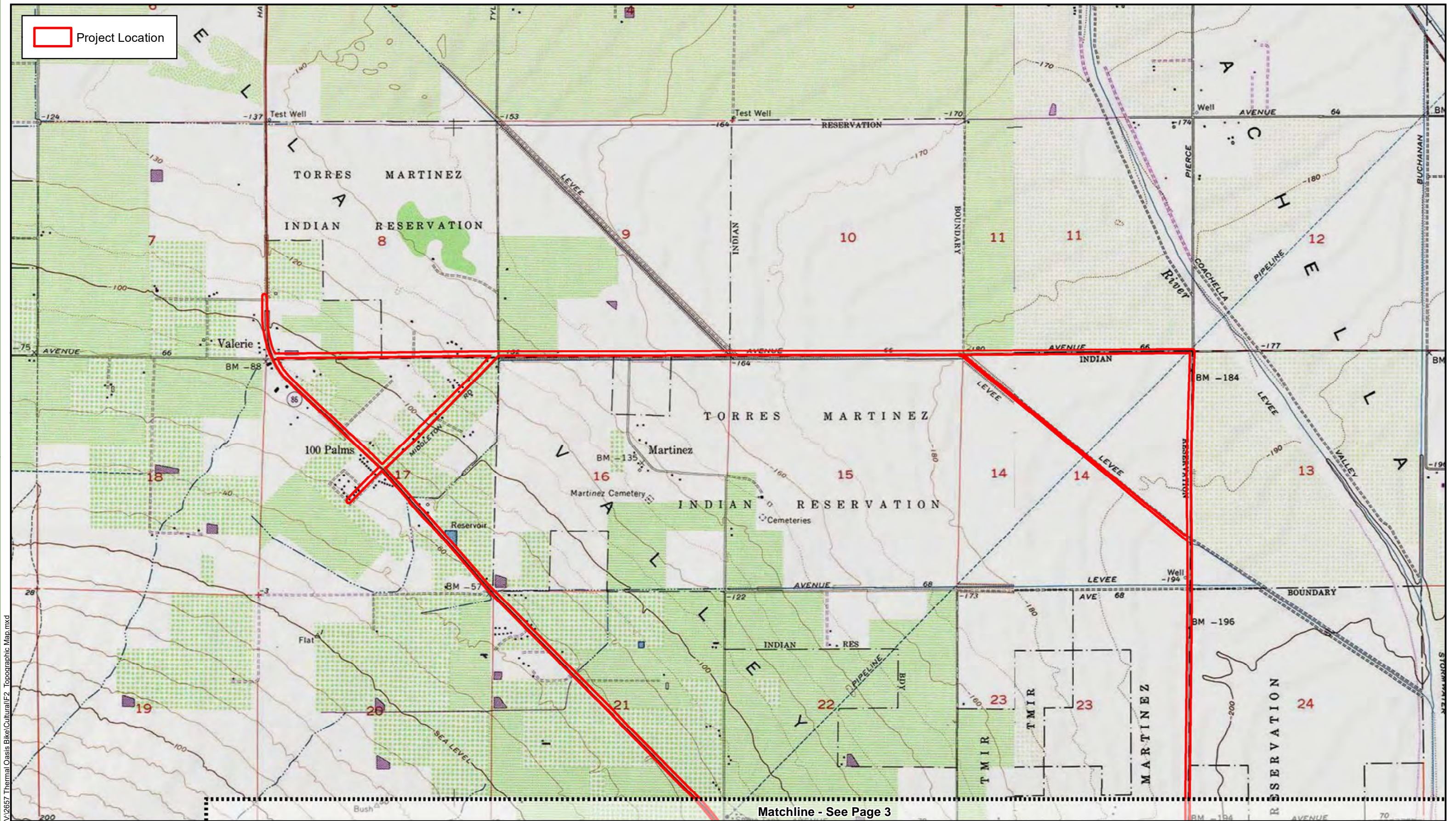
Source: USA Topo Maps Online; Dokken Engineering 12/15/2020; Created By: ahale



FIGURE 4
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Topographic Map

USGS 7.5-minute Quads: Valerie (1956 PR 1972), Mecca (1955 PR 1972), Rabbit Peak (1959), Oasis (1956 PR 1974)
Thermal/Oasis Active Transportation Project
Riverside County, California

Project Location



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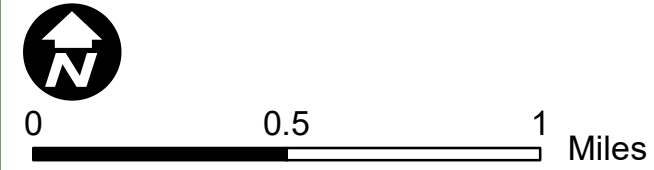
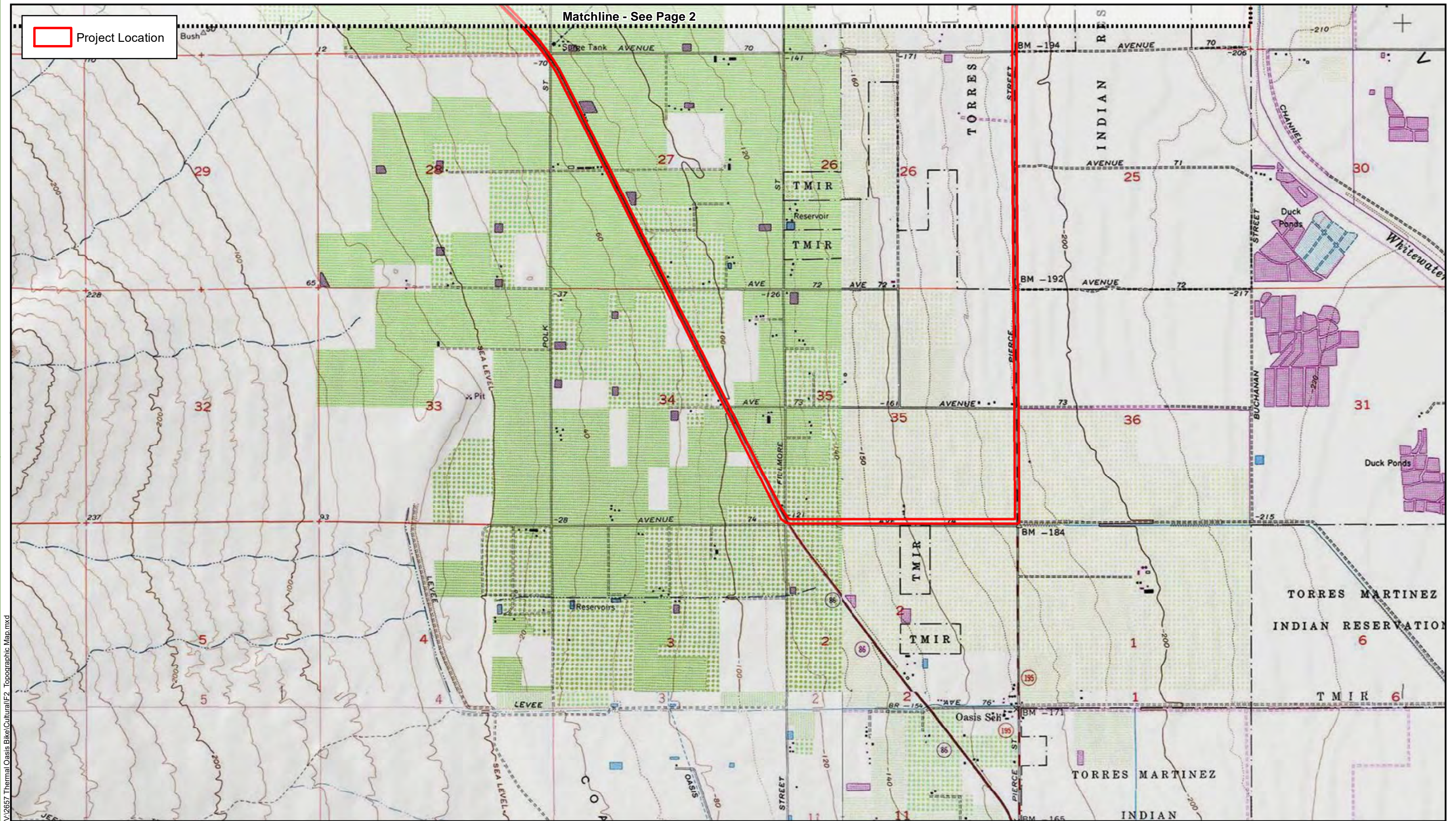


FIGURE 4
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Topographic Map
 USGS 7.5-minute Quads: Valerie (1956 PR 1972), Mecca (1955 PR 1972), Rabbit Peak (1959), Oasis (1956 PR 1974)
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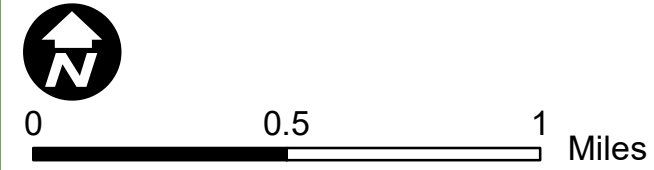
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Project Location



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Source: USA Topo Maps Online; Dokken Engineering 12/15/2020; Created By: ahale



TORRES MARTINEZ
INDIAN RESERVATION
6
T M I R 6

FIGURE 4
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Topographic Map
USGS 7.5-minute Quads: Valerie (1956 PR 1972), Mecca (1955 PR 1972), Rabbit Peak (1959), Oasis (1956 PR 1974)
Thermal/Oasis Active Transportation Project
Riverside County, California

3.1.3.2.1 Precipitation and Climate

The local climate of the Sonoran Desert subregion of the southwestern California Region is characterized by warm, dry summers, cold winters, and infrequent rainfall. The average annual high temperature is 90 degrees Fahrenheit (°F) and the average annual low temperature is 57 °F (U.S. Climate Data 2020). The region receives an average of 3.15 inches of precipitation annually in the form of rain. Elevations within the project area range from approximately 200 to 50 feet below mean sea level.

3.1.3.2.2 Surface Waters

The project area contains three unnamed channels, for the purposes of this WQAR referred to as the 73rd Avenue canal, 68th Avenue riverine channel, and the 66th Avenue canal. The 73rd Avenue canal is an ephemeral canal, collecting drainage coming off an alluvial fan located to the east of the Project area and follows no natural drainage patterns and historical aeriels reveal that it was constructed independent of existing channels for irrigation purposes.

The 68th Avenue Riverine Channel crosses the project area in two places: at the intersection of Harrison Street and 68th Avenue and under an unnamed bridge approximately 0.50 miles southeast of the same intersection. It crosses the Project area again at the intersection of Pierce Street and 68th Avenue and eventually converges with the 66th Avenue canal before connecting to Whitewater River.

The 66th Avenue Canal runs southeast along 66th Avenue and through the northeast corner of the Project area. It also runs south along Tyler Street, then takes a diagonal course southwest to intersect Harrison Street. This canal crosses the Project area in three places: on Harrison Street, on 66th Avenue, and on Pierce Street. The canal eventually converges with the 68th Avenue riverine channel; however, this convergence occurs outside of the Project area, and eventually flows into the Whitewater River and then the Salton Sea.

In addition to these features, there are five small man-made water basins that intersect the Project area. Two of these are located on Pierce Street and the other three are located on Harrison Street. The five surface water basins are man-made, concrete lined basins, constructed in otherwise dry land and completely outside of natural surface water features.

3.1.3.2.3 Flood Plains

The majority of the project area is within FEMA Zone X 0.2% Annual Chance Flood Hazard, designated as an area of moderate flood hazard. There are small areas of the project area that are within FEMA Zone AO and Zone AE, designated as subject to inundation by the 1-percent-annual-chace event. A FIRMette map displays FEMA Flood Zone classifications and flood extents for the proposed project area (see Appendix A).

3.1.3.2.4 Municipal Supply

Drinking water in the Coachella Valley is pumped from the underlying aquifer approximately 1,200 feet below the ground surface. Surface runoff and subsurface inflow are significant sources of recharge to the subbasin. In addition, the Whitewater River spreading grounds northwest of Palm Springs receives Colorado River Aqueduct water and has a maximum capacity of 300,000 acre-foot per year (CVWD 2000a). Colorado River water is conveyed into the subbasin via the Coachella Canal, which also supplies a pilot recharge project facility located in the southeastern part of the subbasin (CVWD 2000b).

3.1.3.3 Groundwater

Native groundwater in the Indio Subbasin is predominantly calcium bicarbonate character with TDS content of 300 mg/l. Colorado River water is recharged into the subbasin at the Whitewater River spreading grounds and this water fluctuates between sodium sulfate and calcium sulfate in character.

3.1.4. Geology/Soils

3.1.4.1 Soil Erosion Potential

According to the Natural Resource Conservation Service (NRCS), soils within the project area are classified as Coachella fine sand, 0 to 2 percent slopes, Coachella fine sand, wet, 0 to 2 percent slopes, Coachella fine sandy loam, 0 to 2 percent slopes, Gilman fine sandy loam, 0 to 2 percent slopes, Gilman fine sandy loam wet, 0 to 2 percent, Gilman fine sandy loam, moderately fine substratum, 0 to 2 percent slopes, Indio very fine sandy loam, wet and Salton silty clay loam (NRCS 2020). Erosion potential is generalized information based NRCS soil survey data. The erodibility factor for the east side of this soil is $K=0.37$, indicating that it is moderately susceptible to detachment and may produce moderate runoff and to the west, $K=0.1$, indicating that it is easily detached (NRCS 2017). Erosion due to surface runoff is not expected in paved and/or proper slope areas with controlled surface drainage facilities.

3.1.5 Biological Communities

3.1.5.1 Aquatic Habitat

The Whitewater River is located to the east of the project area. This river runs north to south, draining into the Salton Sea. The Salton Sea receives inflow from the Whitewater River and a number of smaller channels, some of which may intersect the project area. There are a total of eight water features within the project area, three unnamed channels and five small man-made water basins. For the purposes of this WQAR, the channels are referred to as the 73rd Avenue canal, 68th Avenue riverine channel, and the 66th Avenue canal. Biological surveys determined that the 68th Avenue riverine channel and the 66th Avenue canal are considered jurisdictional Waters of the U.S. and State. The 73rd Avenue canal and all five surface water basins were

determined to be non-jurisdictional. These features are man-made, concrete lined basins, constructed in otherwise dry land and completely outside of natural surface water features. The project would have temporary and permanent impacts to both jurisdictional channels due to the construction of channel crossings, drainage improvements, fill, and staging (Figure 5. Jurisdictional Waters). The 68th Avenue Riverine Channel is anticipated to have impacts to 0.34 acres of channel due to the construction of new water crossings or construction on existing water crossings. The 66th Avenue Canal is anticipated to have impacts to 0.14 acres of channel due to water crossings and potentially 2.45 acres of channel due to the placement of the trail along the top of the levee along a section of Pierce Street. While much of this impact will be temporary, some permanent impacts are anticipated and will be reduced with avoidance, minimization, and mitigation measures. The project would require regulatory permits for impacts to waters, including a §401 Clean Water Certification from the RWQCB, a §404 permit from the USACE, and a §1602 Streambed Alteration Agreement from CDFW.

3.1.5.1.1 Special Status Species

Literature research, habitat assessments, and biological surveys determined that three species of special concern through the CDFW have the potential of occurring within the BSA: the burrowing owl (*Athene cunicularia*), the Couch's spadefoot (*Scaphiopus couchii*), and the western yellow bat (*Lasiurus xanthinus*). No special status species were observed during the biological survey; however, these species are considered to have a low to moderate potential to occur within the BSA based on nearby known occurrences and presence of suitable habitat within and directly adjacent to the BSA. The project is not anticipated to cause take of these species, and avoidance and minimization measures will be incorporated into the project design to ensure this.

3.1.5.1.2 Stream/Riparian Habitats

Land cover types within the BSA were identified as roadway, irrigation canal, urban, agricultural, ruderal vegetation, barren, and desert scrub during biological surveys. There is no riparian habitat within the project area; however, there are two jurisdictional water features that pass through the BSA. The project would require regulatory permits for impacts to waters, including a §401 Clean Water Certification from the RWQCB, a §404 permit from the USACE, and a §1602 Streambed Alteration Agreement from CDFW. The Whitewater River is located to the east of the project area. This channel runs north to south, draining into the Salton Sea. Vegetation consists of ruderal roadside forbs, agricultural crops, and small patches of natural vegetative communities that have been fragmented by agricultural, residential, and commercial uses and have in some areas been invaded by introduced exotic species.

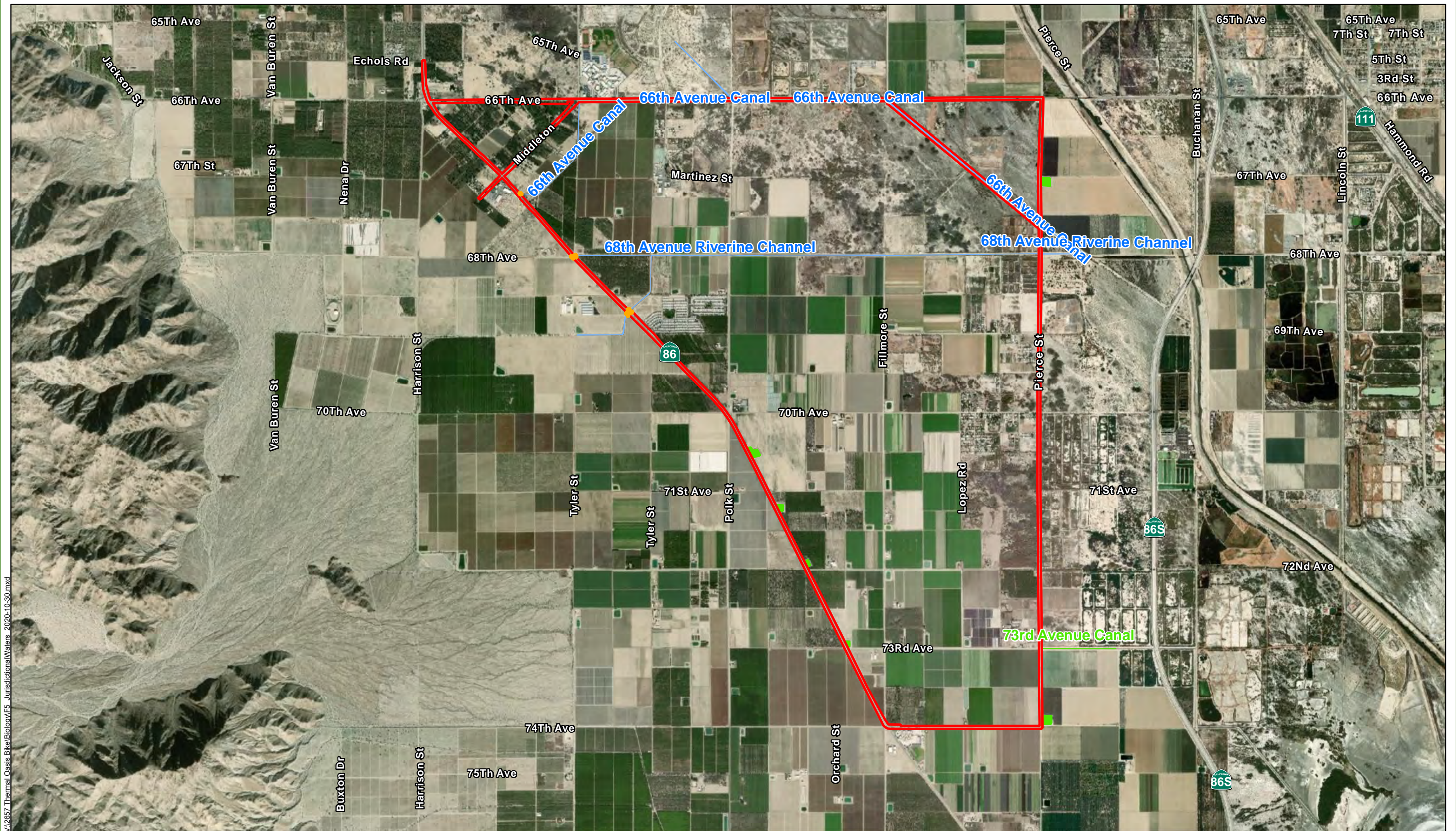
3.1.5.1.3 Wetlands

According to National Wetlands Mappers, there is one 1.62-acre area of freshwater emergent wetland that intersects the BSA, located approximately ¼ mile south of the intersection of 70th

Avenue and Harrison Street, directly off the eastern shoulder of Harrison Street (NWI 2020). Biological surveys conducted on June 3, 2020 determined that the 1.62-acre area of freshwater emergent wetland identified in the National Wetlands Mappers is not considered a jurisdictional wetland, according to the standards set by the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 2008). The feature was constructed independent of existing surface water features and lacks connectivity to a stream channel; therefore, it is considered non-jurisdictional by USACE standards. Due to the results of the biological field surveys, no impacts to wetlands are anticipated within the BSA.

3.1.5.1.4 Fish Passage

There are eight aquatic features located within the proposed project area, two of which are jurisdictional waters of the U.S. and State; however, they are concrete lined with little to no vegetation and lack suitable spawning habitat for fish. No fish are anticipated to be present within any of the affected water features.



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Source: ESRI Maps Online; Dokken Engineering 1/28/2021; Created By: cfavro

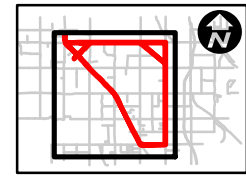
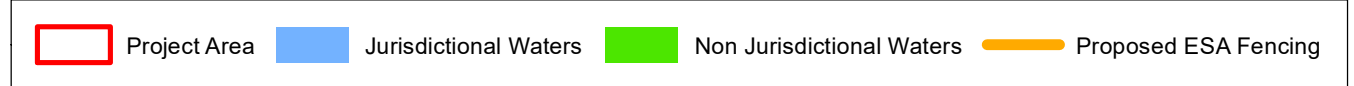
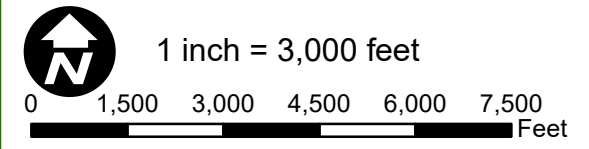
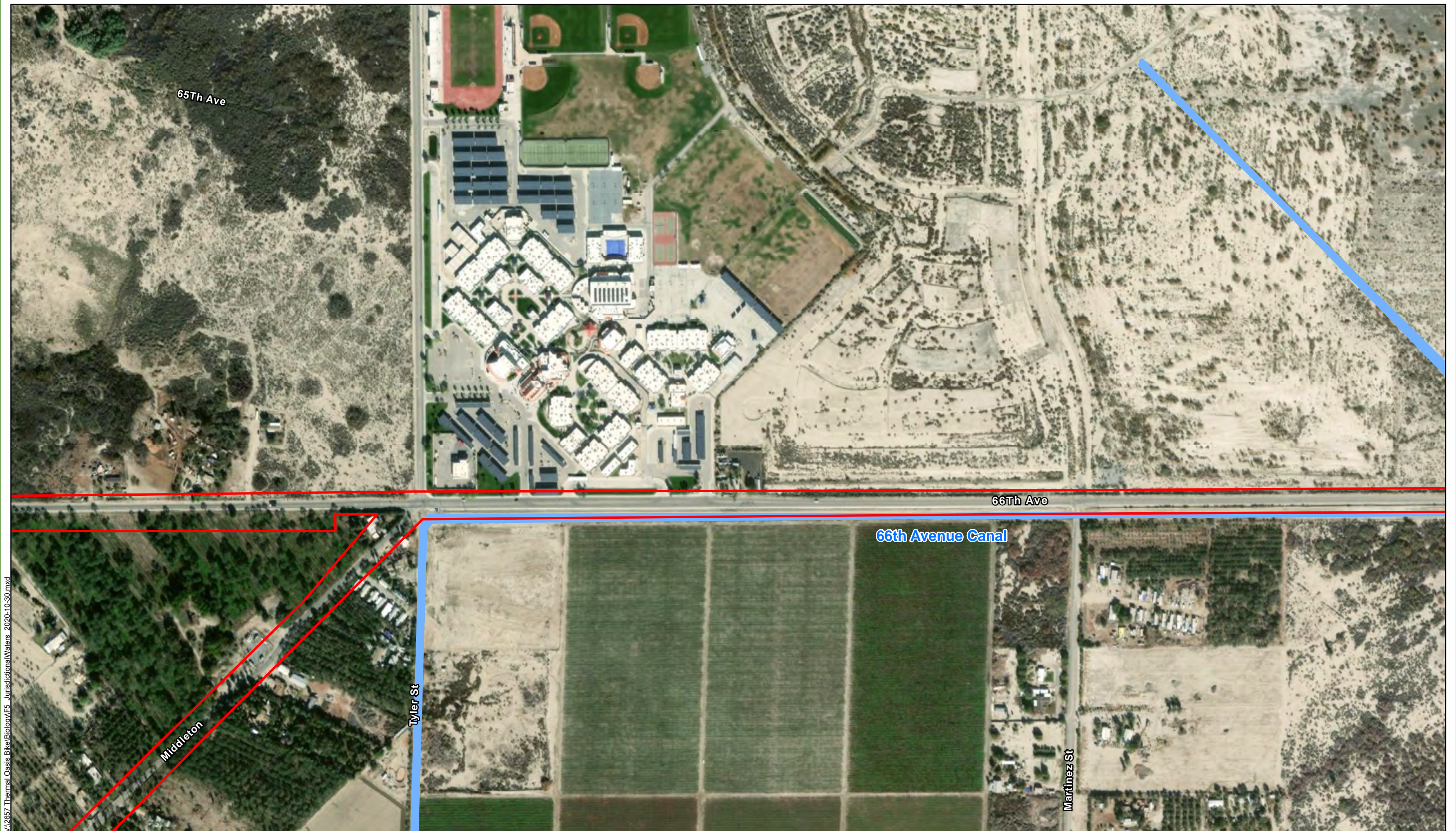


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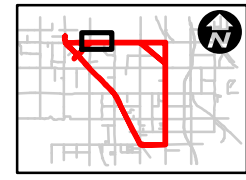
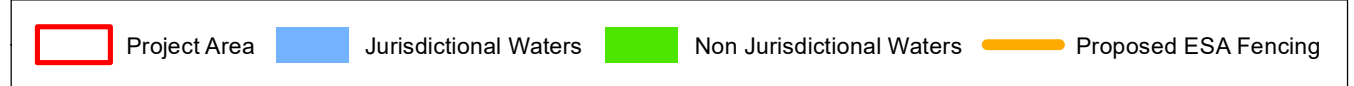
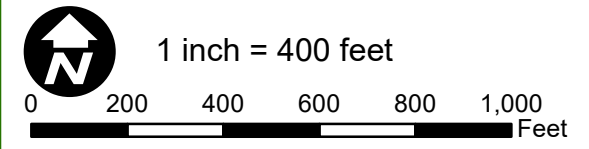


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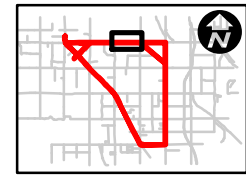
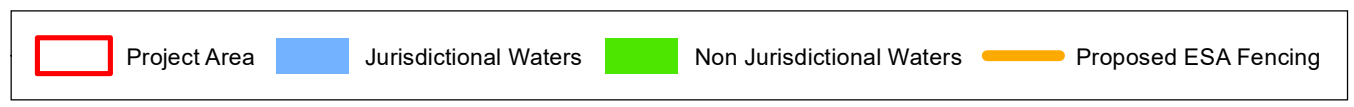
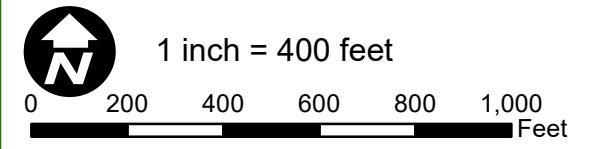
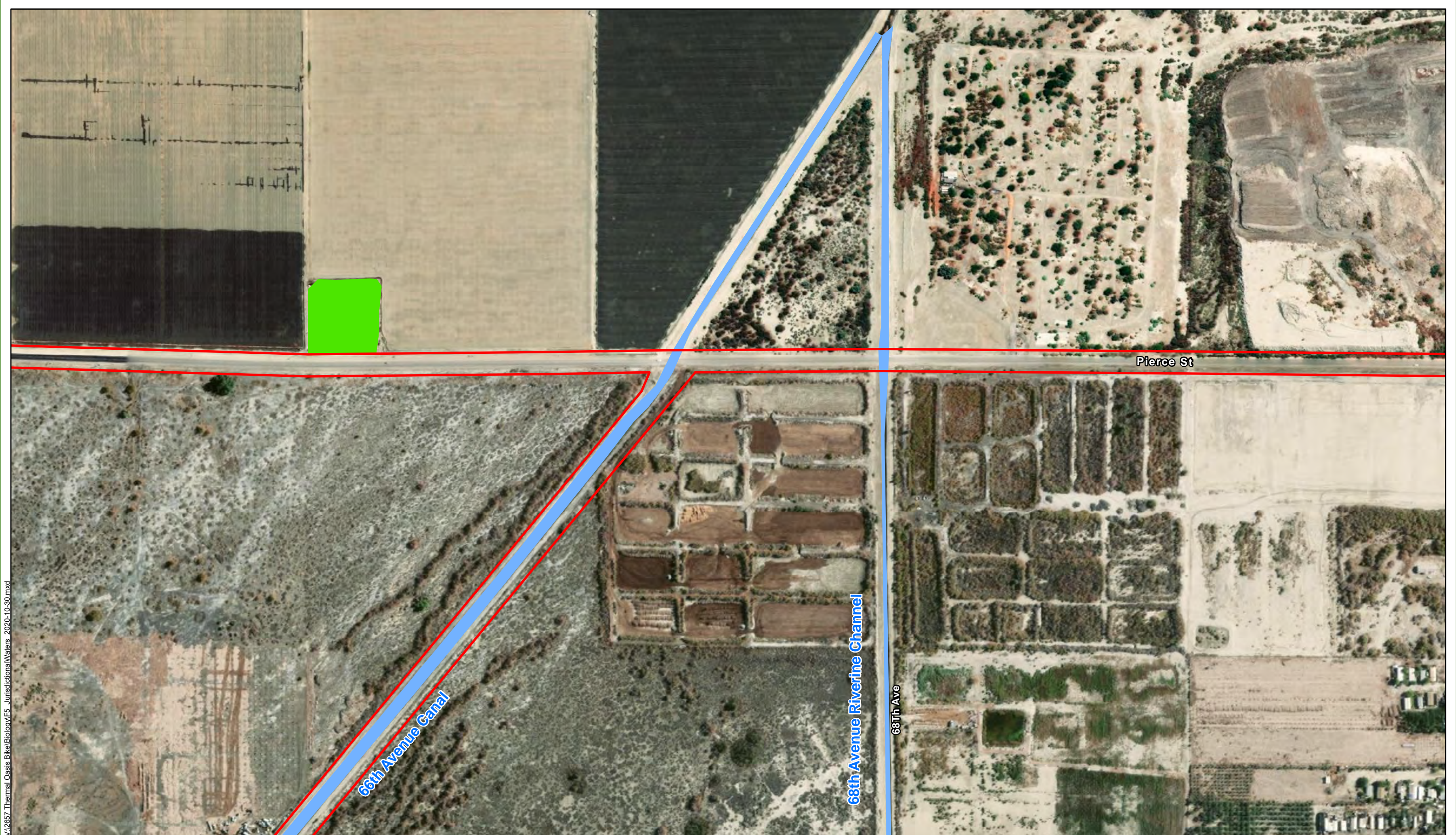


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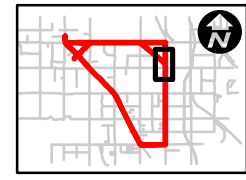
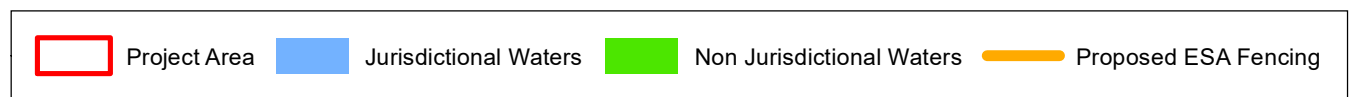
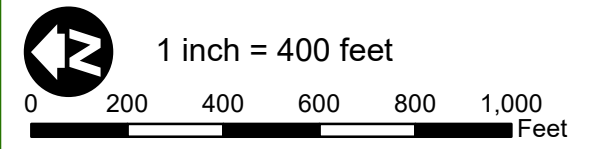
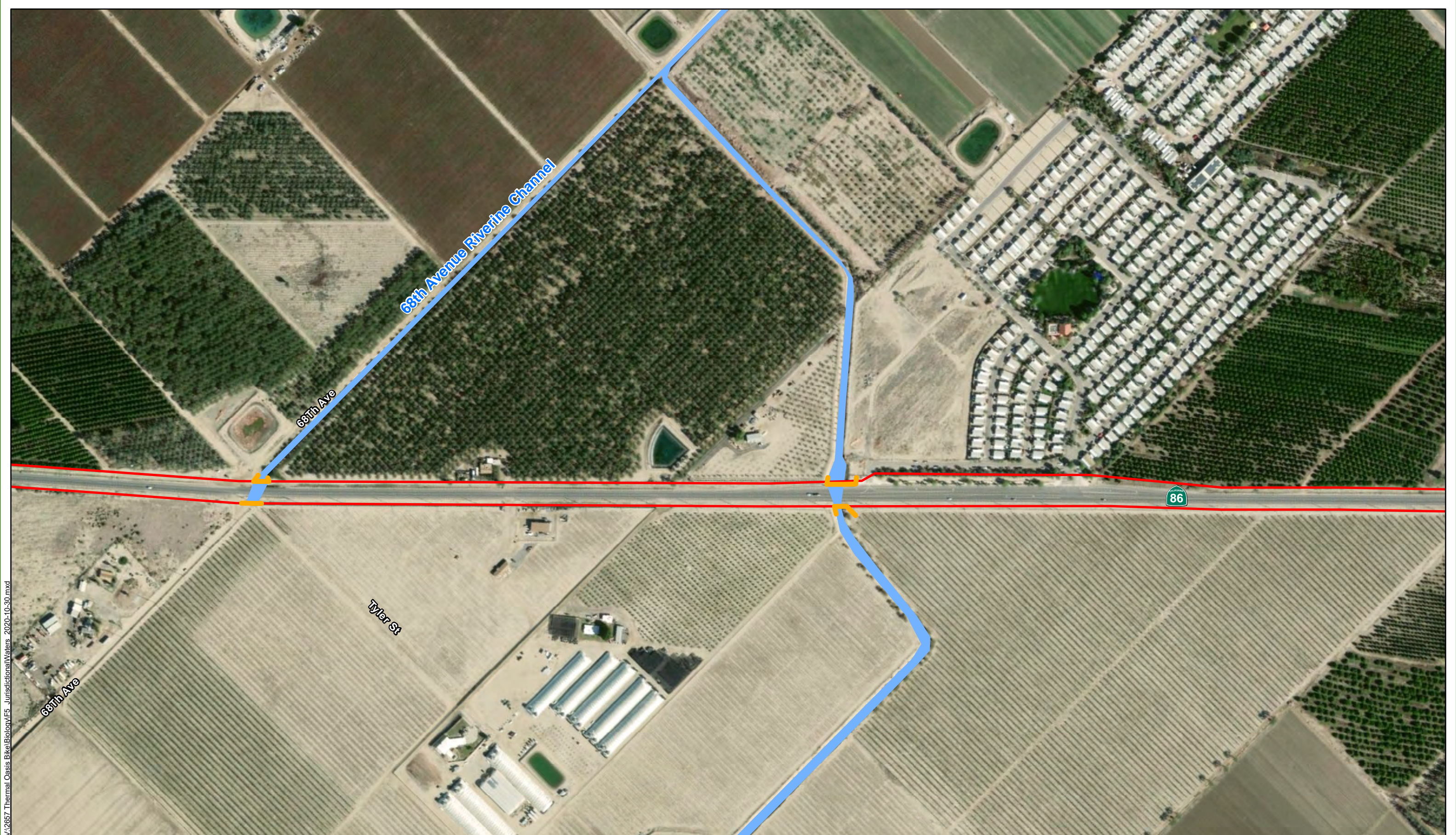


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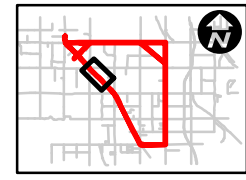
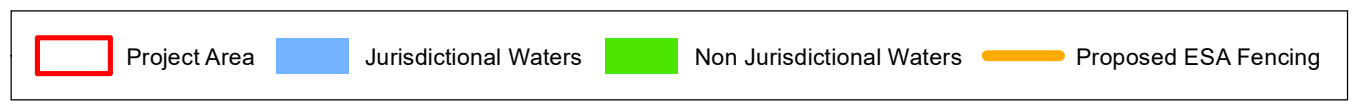
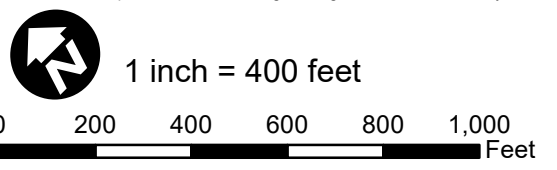
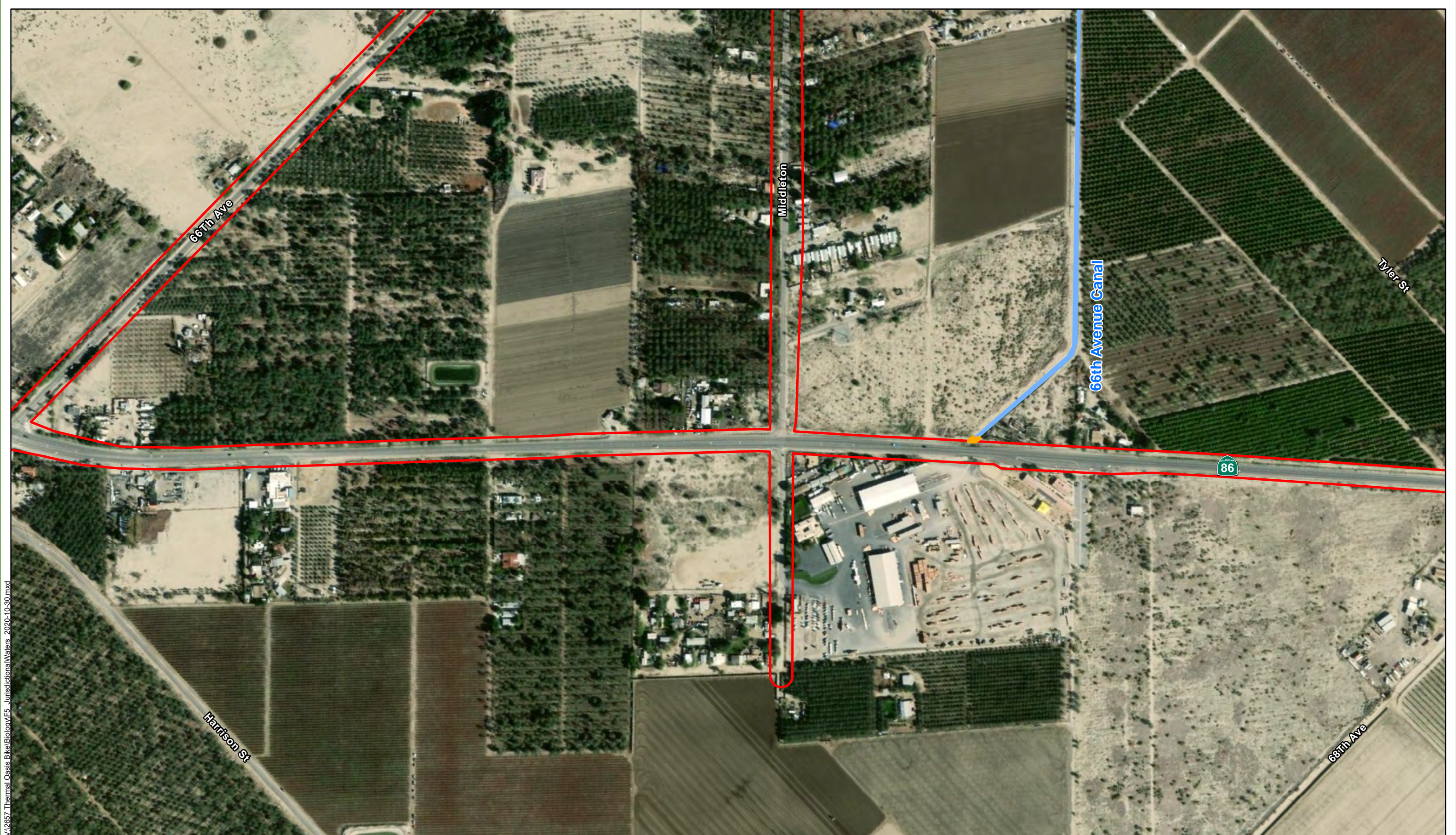


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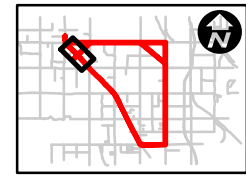
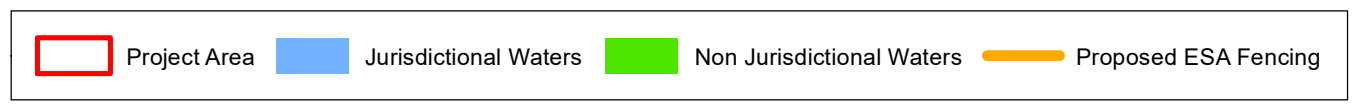
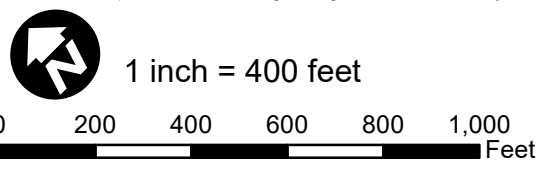


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3.2 Water Quality Objectives/standards and Beneficial Uses

3.2.1 Surface Water Quality Objectives/standards and Beneficial Uses

Per the Water Quality Control Plan, Colorado River Basin (7) (2019), surface waters of the region shall not contain, as a result of controllable water quality factors, taste- or odor-producing substances at concentrations which cause a nuisance or adversely affect beneficial uses. The natural taste and odor of fish, shellfish or other regional inland surface water resources used for human consumption shall not be impaired.

The Colorado River Basin Regional Water Quality Control Board assigns beneficial uses for tributary streams based on the uses assigned to the named waterbody that the tributary connects with. Table 1, below, defines these beneficial uses for surface waters. Water quality objectives are presented in Table 2, below.

Table 1: Beneficial Uses of Water

MUN (Municipal and Domestic Supply) = Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGR (agricultural supply) = uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
AQUA (aquaculture) = Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
IND (industrial service supply) = Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.
GWR (ground water recharge) = Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting salt water intrusion into fresh water aquifers.
RARE (preservation of rare and endangered species) = Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.
REC-1 (water contact recreation) = Uses of water for recreational activities involving body contact with water, where ingestion is reasonably possible. These uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
REC-2 (non-contact water recreation) = Uses of water for recreational activities involving proximity to water but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beach combing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

WARM (warm freshwater habitat) = Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.
COLD (cold freshwater habitats) = Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
WILD (wildlife habitat) = Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife, or wildlife water and food sources.
POW (hydropower generation) = uses of water for hydropower generation.
FRSH (freshwater replenishment) = Uses of water for natural or artificial maintenance of surface water quantity or quality.
Source: Colorado River Basin Region Water Quality Control Board 2019

Table 2: Water Quality Objectives for Surface Waters

Constituent	Water Quality Objectives
Aesthetics Qualities	All waters shall be free from substances attributable to wastewater of domestic or industrial origin or other discharges which adversely affect beneficial uses not limited to: Settling to form objectionable deposits; floating as debris, scum, grease, oil, wax, or other matter that may cause nuisances; and producing objectionable color, odor, taste, or turbidity.
Biostimulatory Substances	Water shall not contain biosimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. Nitrate and phosphate limitations will be placed on industrial discharges to New and Alamo Rivers and irrigation basins on a case-by- case basis, taking into consideration the beneficial uses of these streams.
Pesticide Wastes	The discharge of pesticidal wastes from pesticide manufacturing processing or cleaning operations to any surface water is prohibited.
pH	pH shall range from 6.0-9.0. Discharges shall not cause any changes in pH detrimental to beneficial water uses.
Radioactivity	Radiounclides shall not be present in waters in concentrations which are deleterious to human, plant, animal or aquatic life or that result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal or aquatic life.

Table 2: Water Quality Objectives for Surface Waters

Constituent	Water Quality Objectives
Sediment	The suspended sediment load and suspended sediment discharge rate to surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Suspended Solids	Discharges of wastes or wastewater shall not contain suspended or settleable solids in concentrations which increase the turbidity of receiving waters, unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in turbidity does not adversely affect beneficial uses.
Tainting Substances	Water shall be free of unnatural materials which individually or in combination produce undesirable flavors in the edible portions of aquatic organisms.
TDS	Discharges of wastes or wastewater shall not increase the total dissolved solids content of receiving waters, unless it can be demonstrated to the satisfaction of the Regional Board that such an increase in total dissolved solids does not adversely affect beneficial uses of receiving waters.
Temperatures	The natural receiving water temperature of surface waters shall not be altered by discharges of wastewater unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.
Toxicity	All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or indigenous aquatic life.
Dissolved Oxygen	The dissolved oxygen concentration shall not be reduced below the following minimum levels at any time: Waters designated: WARM 5.0 mg/l COLD..... 8.0 mg/l WARM and COLD..... 8.0 mg/l
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.
Chemical Constituents	No individual chemical or combination of chemicals shall be present in concentrations that adversely affect beneficial uses.

Source: Water Quality Control Plan for the Colorado River Basin Region (2019)

3.2.2 Groundwater Quality Objectives/standards and Beneficial Uses

Per the Water Quality Control Plan, Colorado River Basin Region (7) (2019), quality objectives for the region are; to maintain the existing water quality of all nongraded ground water basins,

minimize the quantities of contaminants reaching any ground water basin, and maintain the existing water quality where feasible. Beneficial uses include for Municipal and Domestic Supply, Industrial Service Supply, and Agricultural Supply.

3.3 Existing Water Quality

In general, the water quality in the Salton Sea Watershed has been identified as a Category I (impaired) Watershed under the 1997 California Unified Watershed Assessment (UWA) (CRRWQCB 2020). Water quality is altered by a number of factors including consumptive use, importation of water high in dissolved solids, run-off from urban and agricultural areas, and the recycling of water within the basin.

3.3.1 List of Impaired Waters

303(d) listed waters are a State's list of impaired and threatened waters (e.g. stream/river segments, lakes). States are required to submit their list for Environmental Protection Agency (EPA) approval every two years. For each water on the list, the State identifies the pollutant causing the impairment, when known. In addition, the state assigns a priority for development of Total Maximum Daily Loads (TMDL) based on the severity of the pollution and the sensitivity of the uses to be made of the waters.

There are no 303(d) listed water bodies within the immediate project study area. However, 303(d) listed waterways near the project area have been identified. The 2014-2016 303(d) impaired water list includes the Coachella Valley Storm Water Channel, located approximately 0.20 mile from the project area, and the Salton Sea as the impaired water bodies in proximity to the project area. Table 1 provides the list of impairments.

Table 1: List of Impaired Waters

Name of Waterbody	Pollutant	Size	Status
Coachella Valley Storm Water Channel	DDT (Dichlorodiphenyltrichloroethane)	24.75 miles	TMDL required
	Dieldrin		TMDL required
	Indicator Bacteria		Being addressed with the USEPA approved TMDL
	Nitrogen, ammonia (total Ammonia)		TMDL required
	PCB's (polychlorinated biphenyls)		TMDL required
	Toxaphene		TMDL required
	Toxicity		TMDL required
Salton Sea	Arsenic	365 miles	TMDL required
	Chloride		TMDL required
	Chlorpyrifos		TMDL required

Name of Waterbody	Pollutant	Size	Status
	DDT (Dichlorodiphenyltrichloroethane)		TMDL required
	Enterococcus		TMDL required
	Low Dissolved Oxygen		TMDL required
	Nitrogen, ammonia (Total Ammonia)		TMDL required
	Nutrients		TMDL required
	Salinity		TMDL required
	Toxicity		TMDL required

Source: Caltrans Water Quality Planning Tool, 2020. <http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx>

4.0 Environmental Consequences

4.1 Introduction

On June 20, 2013, the Colorado River Basin Regional Water Quality Control Board issued a third-term area wide NPDES MS4 Permit (Order No. R7-2013-0011) to the Riverside County Flood Control and Water Conservation District (the Principal Permittees), in cooperation with the CVWD and incorporated Cities of Banning, Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs and Rancho Mirage (Co-Permittees). The Principal Permittees and the Co-Permittees comprise the Permittees. The Permittees' stormwater programs are designed to ensure compliance with this permit.

The proposed project involves construction of approximately 14 miles of multi-function trail and sidewalk infrastructure in the communities of Thermal and Oasis in the eastern Coachella Valley, Riverside County. The project will result in an approximate 17 acre increase of new impervious surface, which will increase the volume of storm water runoff from the roadways surface. The proposed project will adhere to water quality standards maintained by the SWRCB for the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. A CGP would be obtained and a SWPPP would be prepared prior to construction. Potential impacts would be mitigated for through sediment, erosion, and non-storm water control methods identified in the SWPPP pursuant to the requirements of the NPDES General Construction Permit.

The SWPPP is to be designed with BMPs that the RWQCB has deemed as effective at reducing erosion, controlling sediment, and managing runoff. These can include: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, and permanent seeding. Sediment control BMPs include installing silt fences or placing straw wattles below slopes, installing berms and other temporary run-on and runoff diversions.

The project will implement standard Best Management Practices to avoid and minimize water quality impacts; however, they are not to preclude new or innovative approaches currently available or being developed. The SWPPP, including the monitoring log, must be kept on-site during construction activities and will be made available upon request to representatives of the RWQCB.

4.2 Potential Impacts to Water Quality

Project activities such as construction of the multi-use trail would create new impervious surfaces. This would result in an incremental reduction in the amount of natural soil surfaces available for infiltration of rainfall and runoff, potentially generating additional sediment runoff during storm events which could degrade the quality of receiving waters. During storm events, sediment is

transported via runoff to stormwater drainage systems. Absent controls, contaminated runoff waters could flow into the stormwater drainage systems that discharge into rivers, agricultural ditches, sloughs, and channels and ultimately could degrade the water quality of any of these water bodies.

The project would result in an increase of approximately 17 acres of paved surface area, which would contribute to an increase in the volume of storm water runoff from the multi-use trail surface that could enter the drainage system and eventually the waterways within the project area. The project will require the construction of crossings over the irrigation canals that go through the project area, but direct impacts to these water features will be avoided to the greatest extent possible by constructing bridges, culvert extensions, and low water crossings that are light-duty and minimize in-water construction. The project's compliance with County and State water quality and stormwater best management practices will ensure the project avoids and/or minimizes potential water quality impacts to the greatest extent practicable, such as measures BIO-1 through BIO-4 (Section 5: Avoidance and Minimization Measures).

Although none of the waterways within the project study area are included in the RWQCB's list of impaired waters, there is the potential for a negligible increase in drainage discharge into the Coachella Valley Storm Water Channel, which is 303(d) listed for pesticides and heavy metals, due to increased impervious surfaces from the multi-use trail. Measures BIO-1 through BIO-4 would be implemented to minimize potential impacts to a 303(d) listed waterway.

4.2.1 Anticipated changes to the Physical/Chemical Characteristics of the Aquatic Environment

Project features adjacent to the wetland and drainage features are not anticipated to change the physical or chemical characteristics of the aquatic environment. There are 2.59 acres of the 66th Avenue Canal and 0.34 acres of the 68th Avenue Riverine Channel within the BSA to which the Project may have impacts. The majority of these impacts would likely be temporary due to construction activities such as staging, access, grading, and some drainage improvements. The Project has been designed to minimize permanent hydraulic impacts to the aquatic resources within the BSA. Channel crossings would be required for construction of the Project; however, they would be light duty, avoid major impacts to the hydraulic function of the existing channels, and avoid placement of new piers within waterways. The 68th Avenue Riverine Channel is anticipated to have impacts to 0.34 acres of channel due to the construction of new water crossings or construction on existing water crossings. The 66th Avenue Canal is anticipated to have impacts to 0.14 acres of channel due to water crossings and potentially 2.45 acres of channel due to the placement of the trail along the top of the levee along a section of Pierce Street. While much of this impact will be temporary, some permanent impacts are anticipated. Avoidance and Minimization Measures BIO-2 and BIO-4 are anticipated to minimize change to the biological characteristics of the aquatic environment.

4.2.1.1 Substrate

Substrate refers to the structure and composition of a river bed. The two jurisdictional surface water features within the project area are concrete lined channels that converge with the Whitewater River outside the project area before connecting to the Salton Sea. Although permanent and temporary impacts to these features are anticipated, no in-water work is anticipated; therefore, no substantial degradation of water quality beyond the study area is anticipated.

4.2.1.2 Surface Drainage Patterns

Drainage improvements will be designed to maintain current drainage schemes. The current drainage is typically comprised of half-street cross fall runoff which will be collected between the roadway and the trail and conveyed past the trail via culverts or at-grade crossings. No regional drainage facilities are anticipated to be impacted and no significant new drainage facilities are expected to be constructed. Impacts would be less than significant.

4.2.1.3 Suspended Particulates (Turbidity)

Turbidity refers to cloudiness of water quantified by the degree to which light traveling through a water column is scattered by the suspended organic and inorganic particles it contains. Turbidity in water bodies blocks light transmission and light penetration, increasing bacteria levels and reducing oxygen levels in the water. Sedimentation can result in increased turbidity. Measure BIO-2 provides the requirements for NPDES compliance. Implementation of a SWPPP would ensure the project does not result in significant impacts to water quality due to construction-related activities. As a result, the project is not anticipated to produce long-term impacts on turbidity.

4.2.1.4 Oil, Grease and Chemical Pollutants

The proposed project is a multi-use trail for pedestrians and bicyclists. Runoff generated from increased impervious surfaces due to construction of the bike trail would primarily consist of sediment from erosion and is not anticipated to contain oil, grease, or chemical pollutants. Further, with the inclusion of Avoidance and Minimization Measures BIO-1 through BIO-3, project impacts to water quality would not be substantial.

4.2.1.5 Temperature, Oxygen Depletion and Other Parameters

The proposed project is a multi-use trail for pedestrians and bicyclists. While there is a potential for an increase in litter due to human use on the trail, litter use would not be exacerbated because of this project. Runoff generated from increased impervious surfaces due to construction of the bike trail would primarily consist of sediment from erosion and is not anticipated to have any long-term impacts to the parameters of water quality. Further, with the inclusion of permanent treatment

control BMPs, as specified by Avoidance and Minimization Measure BIO-1, project impacts to water quality would not be substantial.

4.2.1.6 Flood Control Functions

As previously described in Section 3.1.3.2.2, Flood Plains, Zone X covers a majority of the project area, while Zone AE and AO cover a minor portion of the project area (Appendix A). The proposed project does not involve any bridgework; therefore, no impacts to flood control functions are anticipated.

4.2.1.7 Storm, Wave, and Erosion Buffers

Wetlands serve as buffer zones that shield upland areas from wave actions, storm damage, and erosion. There is low potential for the proposed project to change existing storm, wave, and erosion buffers in the project area as the proposed project would have minimal effects to wetlands; therefore, there would be no adverse impacts to storm, wave, and erosion buffers.

4.2.1.8 Erosion and Accretion Patterns

Operation of the project area under the proposed project description would not affect sediment loading to the receiving water bodies. The proposed project would not change the existing drainage patterns. Implementation of a SWPPP would ensure the project does not result in significant impacts to water quality due to construction-related activities. As a result, the project is not anticipated to produce long-term impacts on erosion or accretion patterns.

4.2.1.9 Aquifer Recharge/Groundwater

Permanent impacts to the water quality of groundwater in the vicinity of the project area would not occur upon completion of the construction. There would not be any increase in the transport of pollutants into the groundwater through infiltration during the operational life of the multi-use trail because the sediment surface of the affected channels is concrete lined. Operation of the multi-function trail loop would not change the nature or extent of these surfaces; therefore, no net gain or loss in infiltration is anticipated.

4.2.1.10 Baseflow

Baseflow is the streamflow resulting from precipitation that infiltrates the soil and eventually moves through the soil to the stream channel. The project would result in increases in impervious surface area; however, the added impervious areas as a result of the new trail and sidewalk would be slight when considering the entire watershed area. The proposed project would not substantially decrease infiltration and would not affect baseflow as the project would result in a minimal increase in impervious are and the soils in the area have a high capacity for infiltration.

4.2.2 Anticipated Changes to the Biological Characteristics of the Aquatic Environment

The proposed project does not anticipate altering habitat for fish or other aquatic organisms, fish passage, wildlife habitat, wildlife passage, endangered species, or invasive species. Furthermore, the proposed project would follow all applicable guidelines and mitigation measures presented in Coachella Valley Multiple Species Habitat Conservation Plan.

4.2.3 Anticipated Changes to the Human Use Characteristics of the Aquatic Environment

Human uses, such as recreation navigation or conservation are not primary functions of the aquatic features within the study area. No changes to human uses would occur and the waterways would continue to convey water through the region.

Given the characteristics of this project, and the existing conditions of the waterways present, existing and potential water supplies, water conservation, recreation, navigation, energy consumption or generation, and aesthetics are not likely to be negatively impacted as a result of the project. Additionally, the project is expected to have a positive impact on traffic and transportation patterns and safety in the project area.

4.2.4 Short-Term Impacts During Construction

4.2.4.1 Physical/Chemical Characteristics of the Aquatic Environment

Construction activities associated with the project would include disturbances to the ground surface from earthwork, grading, and some vegetation removal would be required, which would increase the potential for slope erosion. These activities could potentially increase the amount of sediments entering the canals and eventually the Whitewater River. Runoff during the winter season is of greater concern due to the potential erosion of unprotected or graded surfaces during rain events. Sediments could potentially harm aquatic resources and water quality. Potential short-term impacts would be avoided and minimized through measures BIO-1 through BIO-4. Exposed soils would be stabilized, and construction areas would be protected to prevent items from entering the waterway.

4.2.4.2 Biological Characteristics of the Aquatic Environment

Potential short-term impacts during construction could potentially impact the biological characteristics within the project area. By removing vegetation within the habitat, wildlife habitats have the potential of being impacted. Potential short-term impacts during construction would be addressed through avoidance and minimization measures BIO-1 through BIO-4. It is not anticipated construction of the project would negatively impact the biological characteristics of the existing conditions of the project area.

4.2.4.3 Human Use Characteristics of the Aquatic Environment

Through the development and implementation of BMPs and avoidance and minimization measures, the proposed project is not anticipated to result in short-term affects to the human use characteristics of the aquatic environment.

4.2.5 Long-Term Impacts During Operation and Maintenance

4.2.5.1 Physical/Chemical Characteristics of the Aquatic Environment

Through the development and implementation of BMPs and avoidance and minimization measures, the proposed project is not anticipated to result in long-term effects to the physical/chemical characteristics of the aquatic environment.

4.2.5.2 Biological Characteristics of the Aquatic Environment

Through the development and implementation of BMPs and avoidance and minimization measures, the proposed project is not anticipated to result in long-term affects to the biological characteristics of the aquatic environment.

4.2.5.3 Human Use Characteristics of the Aquatic Environment

Through the development and implementation of BMPs and avoidance and minimization measures, the proposed project is not anticipated to result in long-term affects to the human use characteristics of the aquatic environment.

4.3 Impact Assessment Methodology

The purpose of this Water Quality Assessment Report is to analyze the difference between the existing condition and the project build condition with respect to water quality impacts. The assessment takes the following into consideration:

- Pollutant sources (change in land use)
- Impervious area and relation to amount of runoff (increase or decrease)
- Application of BMPs (number of BMPs, new technologies, effectiveness)
- Discharges into impaired waters (listed pursuant to Section 303[d] of the CWA)

4.4 Alternative-Specific Analysis

The proposed project is the only design alternative proposed for analysis. Under the No-Build Alternative, 14 miles of multi-function trail and sidewalk infrastructure would not be constructed in the communities of Thermal and Oasis. The transportation network in the predominantly rural, agricultural area would continue to lack consistent pedestrian or bicycle facilities and would remain inaccessible in terms of ADA compliance.

4.5 Cumulative Impacts

The project would add a net impervious surface area of approximately 17 acres but would include site design BMPs to minimize potentially increased pollutant runoff caused by the increase in impervious surfaces to help prevent water quality impacts. The impervious surface generated by the project is the minimum area practicable, incorporating the natural drainage courses in the MS4, preserving the maximum numbers of existing native trees and shrubs possible. Implementation of measure BIO-1 would minimize potentially increased pollutant runoff caused by the increase in impervious surfaces to help prevent water quality impacts.

The multi-function trail and sidewalk infrastructure will accommodate and promote multi-modal mobility by creating an ADA-compliant pedestrian/ bicycle facility. Additionally, it will enhance safety in the project area by providing a separate multi-modal trail from vehicular traffic. The proposed project is expected to have long-term, positive impacts on traffic, and safety within the project area. Other potential cumulative impacts, such as an increase in litter, are not anticipated from the proposed project.

5.0 Avoidance and Minimization Measures

The following measures will be implemented to avoid and/ or minimize impacts to water quality:

The project would incorporate **BIO-1** through **BIO-4**, as included in the 2020 Natural Environment Study, in order to ensure that temporary impacts to jurisdictional waters are minimized.

BIO-1: Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction:

- Implementation of the project shall require approval of a site-specific SWPPP or WPCP that would implement effective measures to protect regional water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation will be protected in place where feasible to provide an effective form of erosion and sediment control;
- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor must conduct periodic maintenance of erosion and sediment-control measures.

BIO-2: Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must remain outside of sensitive habitat marked with high-visibility fencing. Any necessary equipment washing must occur where the water cannot flow into sensitive habitat communities.

BIO-3: Equipment will be checked daily for leaks and will be well maintained to prevent lubricants and any other deleterious materials from entering waterways within the BSA.

BIO-4: The 68th Avenue riverine channel and 66th Avenue canal shall be established as an Environmentally Sensitive Area (ESA). Prior to ground disturbance, the project limits adjacent to the jurisdictional feature shall be marked off with high visibility orange fencing (ESA Fencing) to prevent further encroachment into the ESA. Construction equipment, materials, and personnel shall not be permitted beyond the ESA fencing. Fencing will follow BIO-1 to ensure erosion and sediment control.

6.0 References

6.1 References Cited

California Department of Transportation. N.p.: n.p., n.d. *Caltrans Water Quality Planning Tool*. Web. <<http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx>>.

"California: 2010 Population and Housing Unit Counts, 2010 Census of Population and Housing." *U.S. Department of Commerce*. US Census Bureau. Web. 10 Nov. 2020.<<https://www.census.gov/prod/cen2010/cph-2-6.pdf> >

"General Plan for the County of Riverside". *Riverside County*. N.p., 2019. Web. <<https://planning.rctlma.org/General-Plan-Zoning/General-Plan>>

Natural Resources Conservation Service. *Web Soil Survey - Home*. N.p., n.d. Web. 24 Apr. 2017. <<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>>.

"NCCP Plan Summary- Coachella Valley Multiple Species Habitat Conservation Plan" *California Department of Fish and Wildlife*. N.p, Web. 10 Nov. 2020. <<https://wildlife.ca.gov/Conservation/Planning/NCCP/Plans/Coachella-Valley>>

"Salton Sea". *Regional Water Quality Control Board*.N.p., 2020.Web. <https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/salton_sea/>

"Water Quality Control Plan for the Colorado River Basin Region" *Regional Water Quality Control Board*.N.p.,2019.Web.<https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/basin_planning/docs/2020/rb7bp_e2019.pdf>

Water Quality Management Plan. Riverside, CA: Board, 2012.*Regional Water Quality Control Board*. Web. 24 Apr. 2017. <https://www.waterboards.ca.gov/santaana/water_issues/programs/stormwater/riverside_permit_wqmp.html>.

6.2 Preparer(s) Qualifications

Preparers

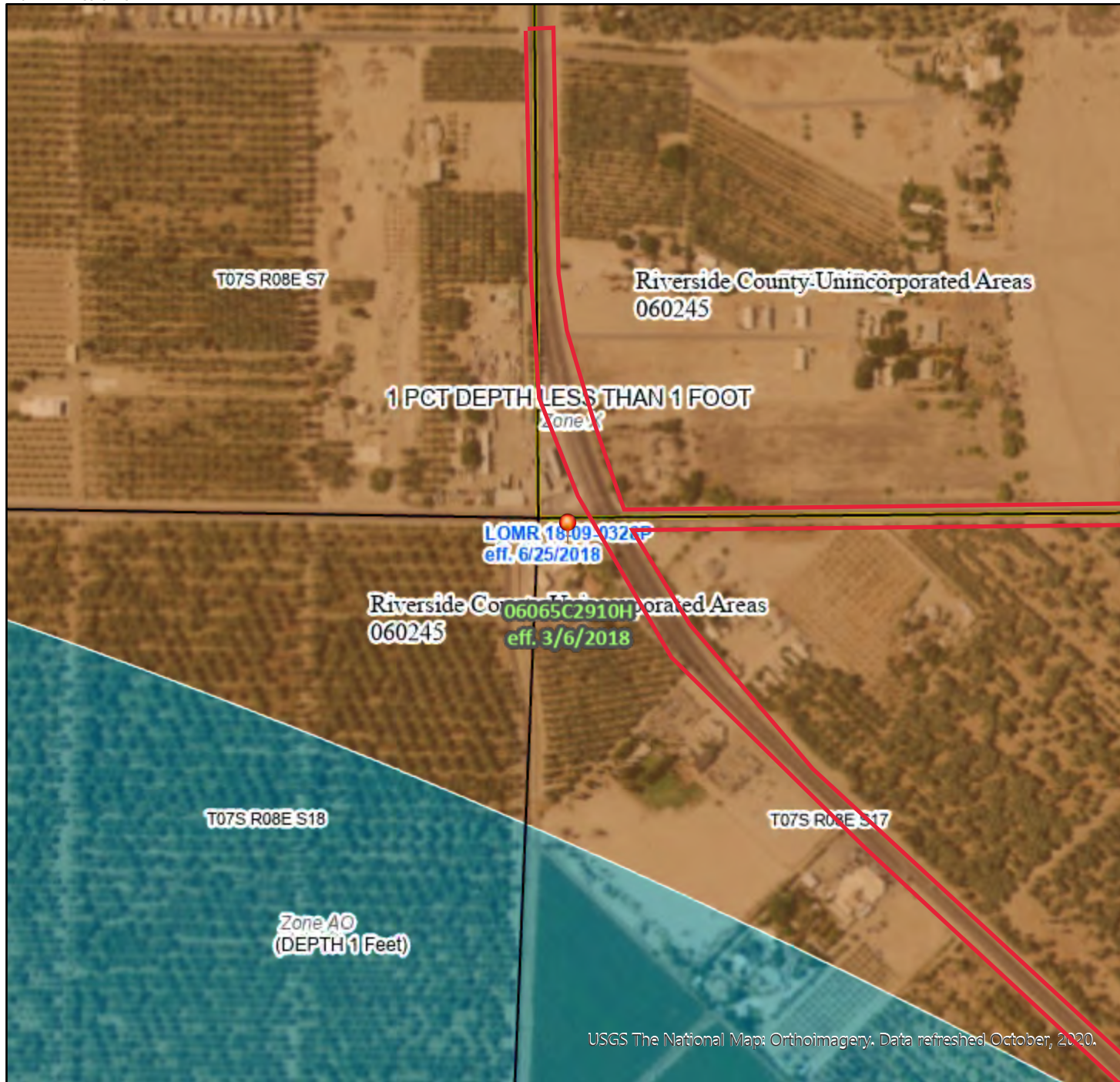
Zach Liptak, B.S. in Environmental Studies, nine years of experience in environmental analysis.

Appendix A FEMA Firmette Map

National Flood Hazard Layer FIRMMette



116°11'11"W 33°34'23"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | |
|------------------------------------|--|
| SPECIAL FLOOD HAZARD AREAS | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | Effective LOMRs |
| | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | Channel, Culvert, or Storm Sewer |
| | Levee, Dike, or Floodwall |
| OTHER FEATURES | Cross Sections with 1% Annual Chance Water Surface Elevation |
| | Coastal Transect |
| | Base Flood Elevation Line (BFE) |
| | Limit of Study |
| | Jurisdiction Boundary |
| | Coastal Transect Baseline |
| | Profile Baseline |
| | Hydrographic Feature |
| MAP PANELS | Digital Data Available |
| | No Digital Data Available |
| | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 7:14 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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0 250 500 1,000 1,500 2,000 Feet 1:6,000

116°10'34"W 33°33'53"N

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

National Flood Hazard Layer FIRMette



116°10'30"W 33°34'7"N



116°9'52"W 33°33'37"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| MAP PANELS | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |



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This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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USGS The National Map: Orthoimagery. Data refreshed October, 2020.

National Flood Hazard Layer FIRMette



116°10'12"W 33°34'20"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway	

OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X	Future Conditions 1% Annual Chance Flood Hazard Zone X	Area with Reduced Flood Risk due to Levee. See Notes. Zone X	Area with Flood Risk due to Levee Zone D

OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard Zone X	Effective LOMRs	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall		

OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation	Coastal Transect	Base Flood Elevation Line (BFE)	Limit of Study	Jurisdiction Boundary	Coastal Transect Baseline	Profile Baseline	Hydrographic Feature

MAP PANELS	Digital Data Available	No Digital Data Available	Unmapped
	The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.		



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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USGS The National Map: Orthoimagery. Data refreshed October, 2020.

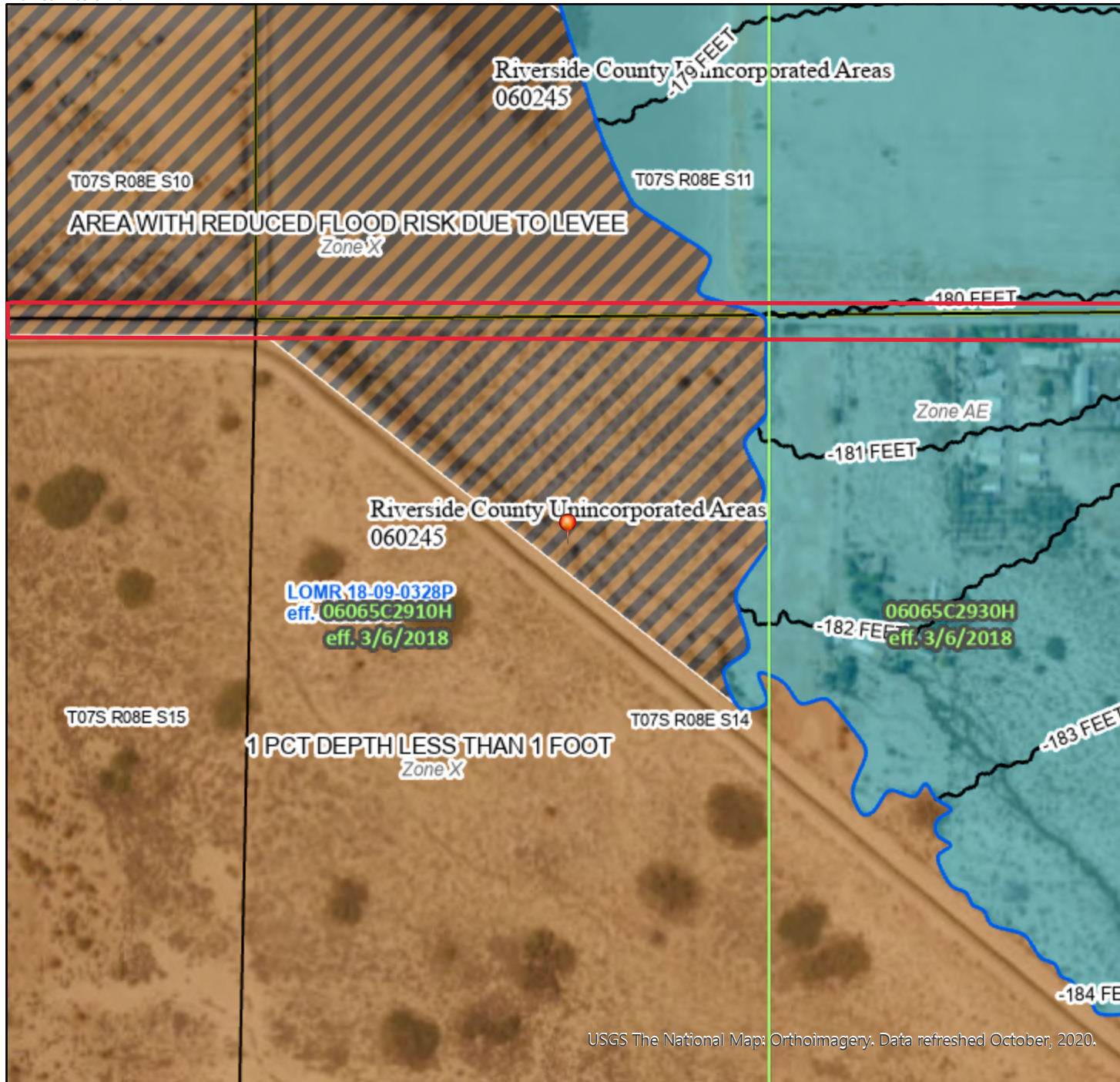


116°9'35"W 33°33'50"N

National Flood Hazard Layer FIRMette



116°7'55"W 33°34'18"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99	With BFE or Depth Zone AE, AO, AH, VE, AR	Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X	Future Conditions 1% Annual Chance Flood Hazard Zone X	Area with Reduced Flood Risk due to Levee. See Notes. Zone X	Area with Flood Risk due to Levee Zone D

OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard Zone X	Effective LOMRs	Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer	Levee, Dike, or Floodwall

OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation	Coastal Transect	Base Flood Elevation Line (BFE)	Limit of Study	Jurisdiction Boundary	Coastal Transect Baseline	Profile Baseline	Hydrographic Feature

MAP PANELS	Digital Data Available	No Digital Data Available	Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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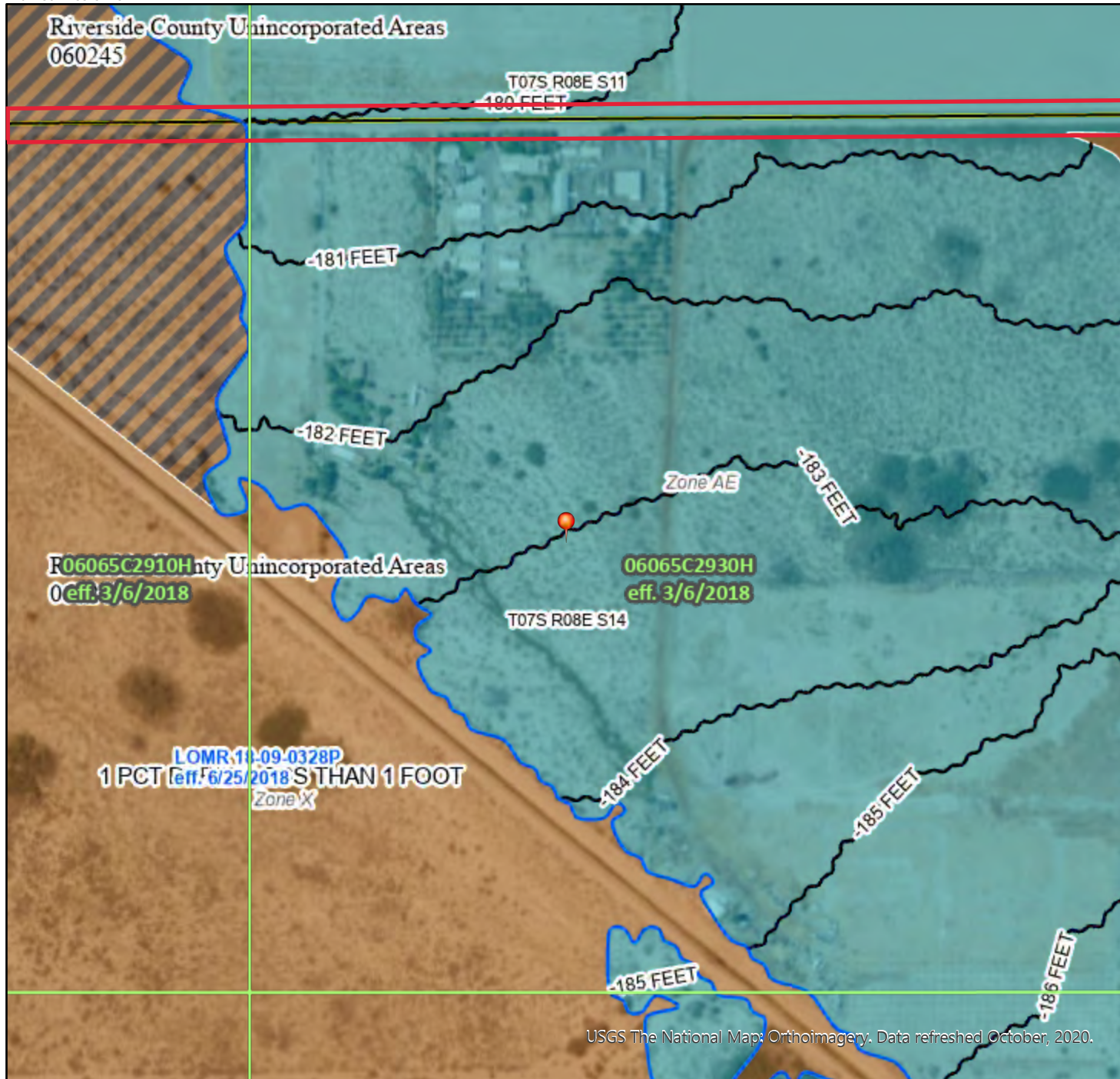
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National Flood Hazard Layer FIRMette



116°7'38"W 33°34'13"N



116°7'1"W 33°33'43"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

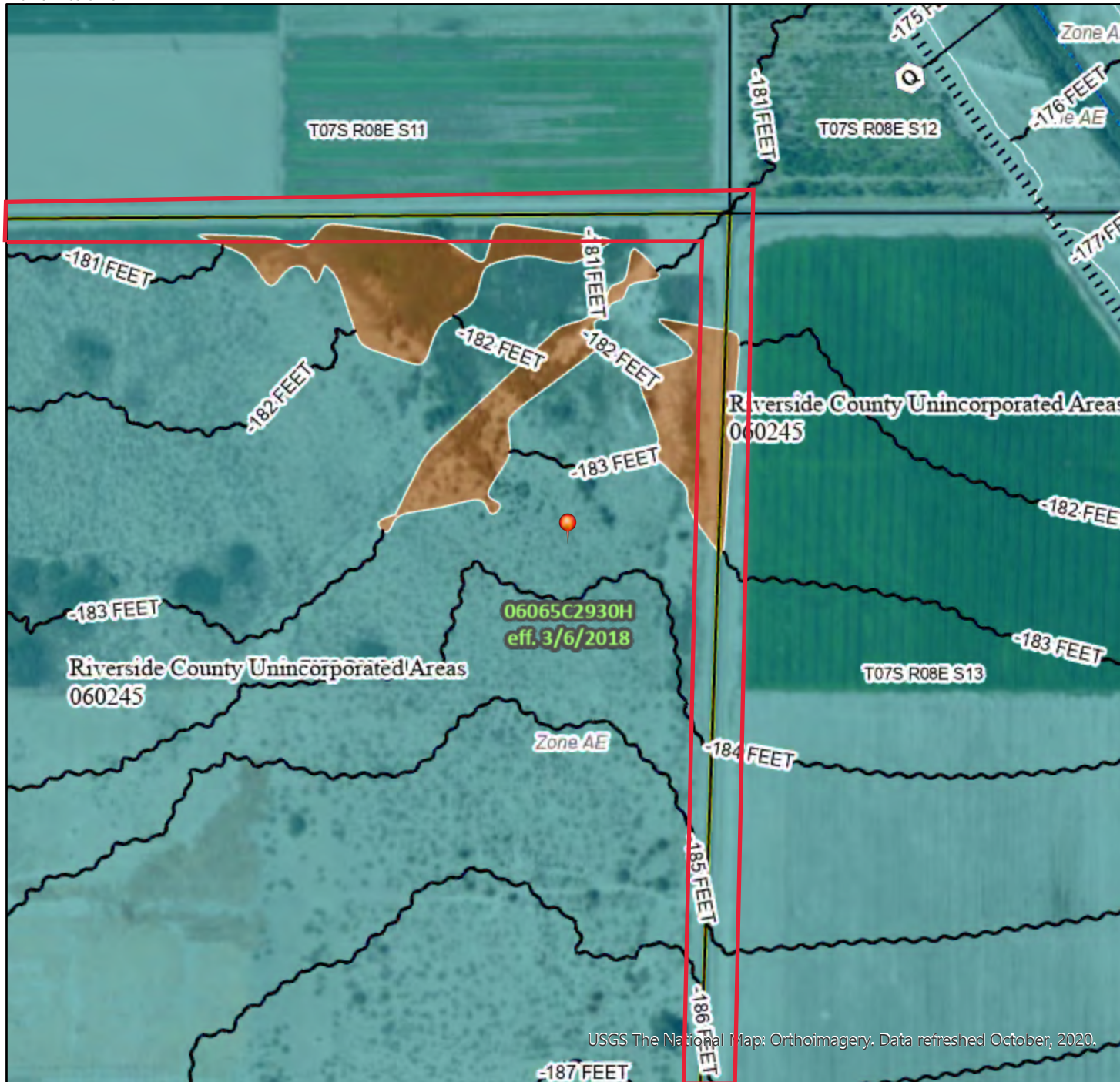
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/9/2020 at 6:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMMette



116°79'W 33°34'15"N



116°6'32"W 33°33'45"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i> With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> Effective LOMRs Area of Undetermined Flood Hazard <i>Zone D</i>
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall
OTHER FEATURES	20.2 Cross Sections with 1% Annual Chance Water Surface Elevation 17.5 Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature
MAP PANELS	Digital Data Available No Digital Data Available Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:22 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



116°10'43"W 33°33'59"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:26 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

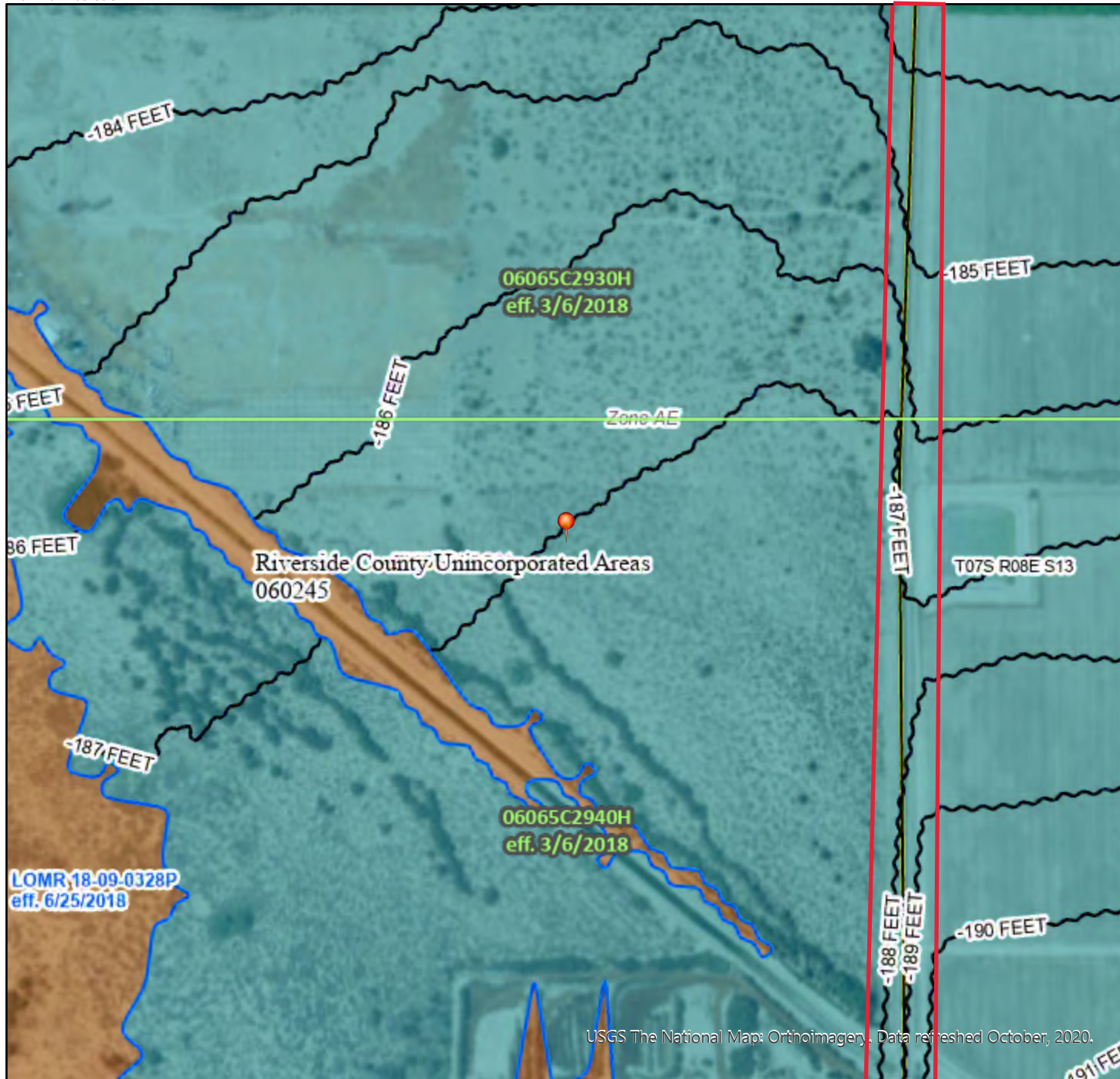
0 250 500 1,000 1,500 2,000 Feet 1:6,000

116°10'6"W 33°33'29"N

National Flood Hazard Layer FIRMMette



116°7'16"W 33°33'57"N



USGS The National Map: Orthoimagery. Data refreshed October, 2020.

116°6'38"W 33°33'27"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

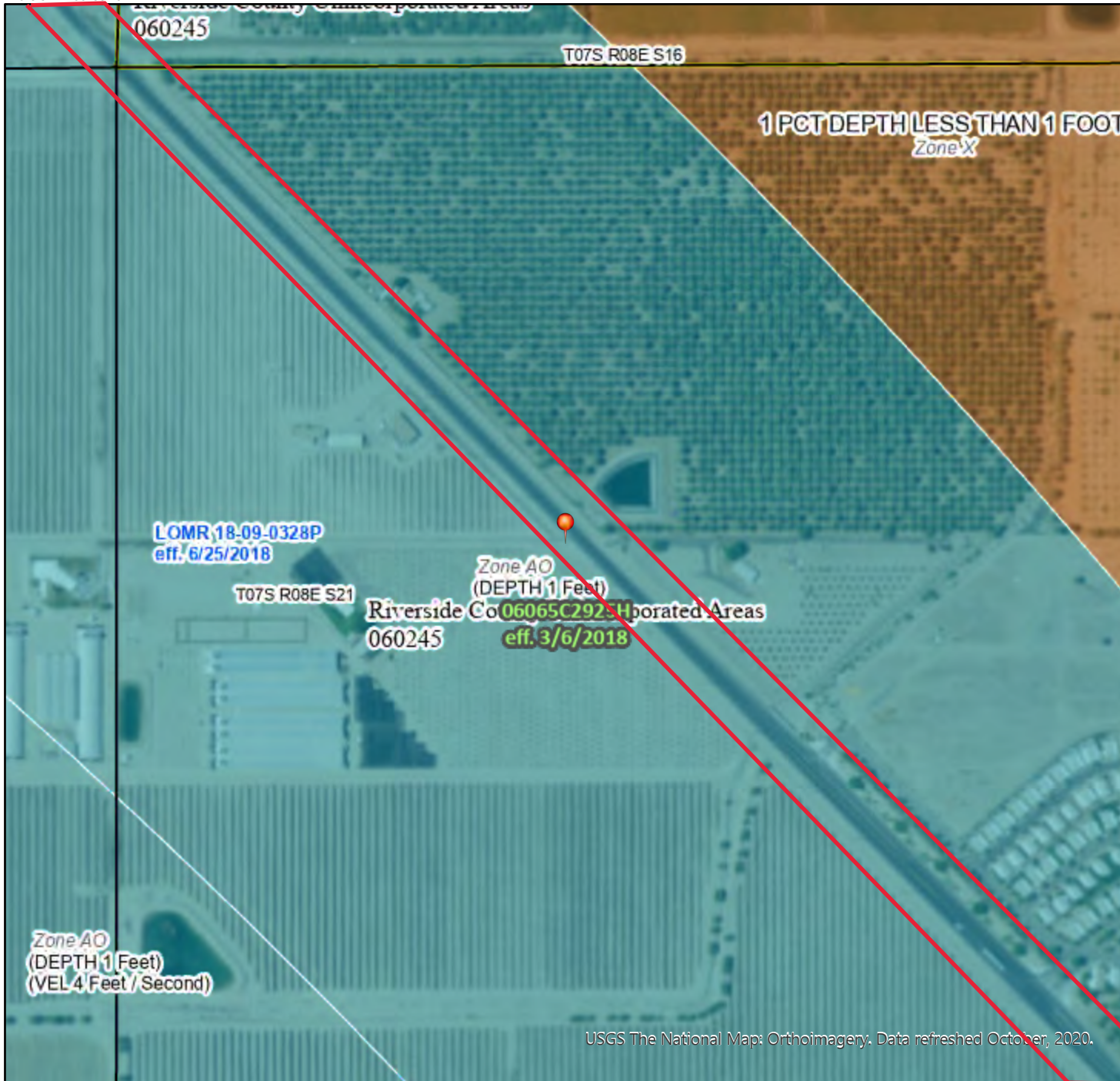
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/9/2020 at 6:28 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



116°9'57"W 33°33'18"N



116°9'19"W 33°32'48"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

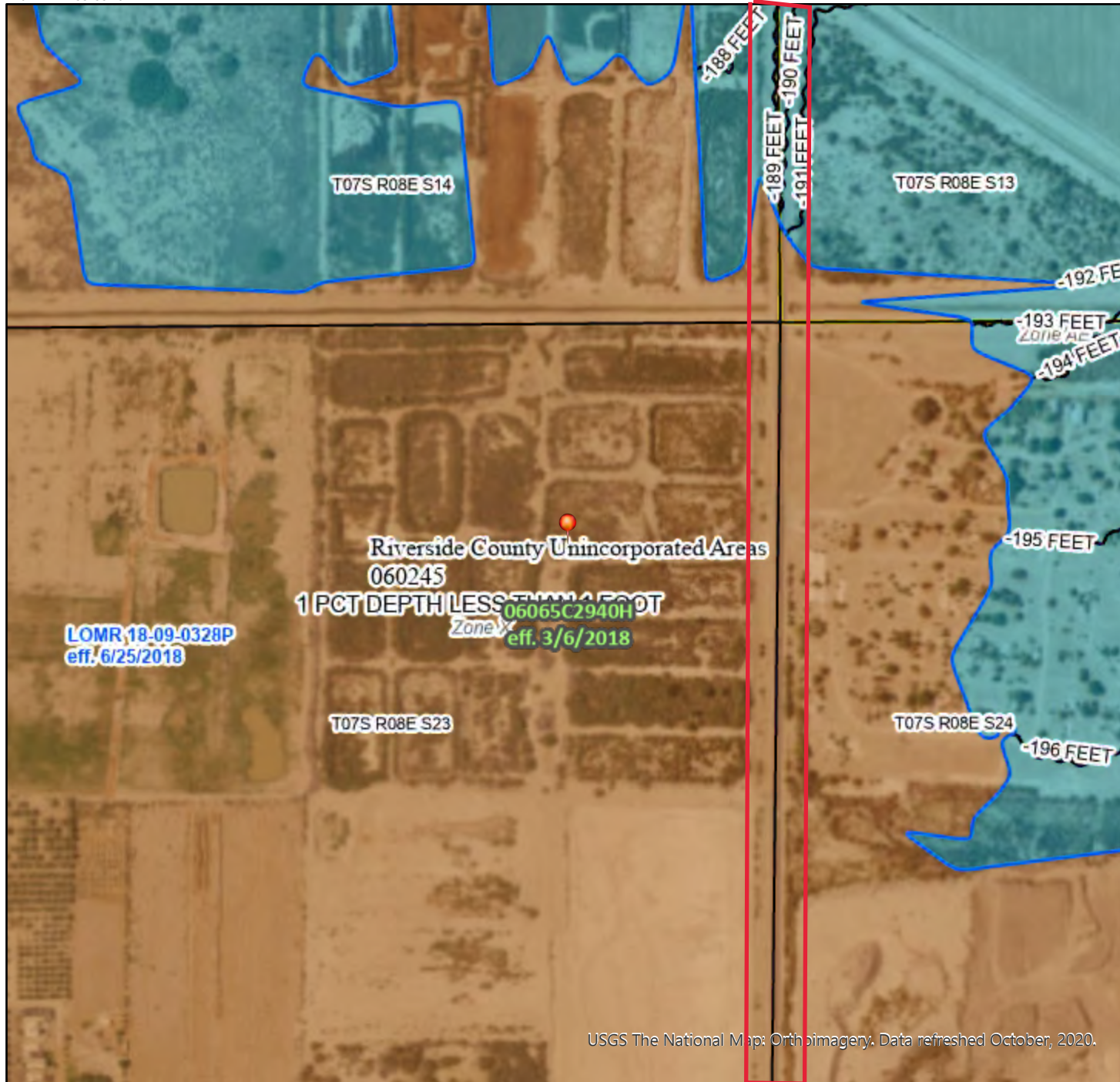
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:29 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette



116°7'12"W 33°33'26"N



116°6'34"W 33°32'56"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | |
|---|---|
| <p>SPECIAL FLOOD HAZARD AREAS</p> | <ul style="list-style-type: none"> Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> Regulatory Floodway |
| <p>OTHER AREAS OF FLOOD HAZARD</p> | <ul style="list-style-type: none"> 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> Area with Flood Risk due to Levee <i>Zone D</i> |
| <p>OTHER AREAS</p> | <ul style="list-style-type: none"> NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> Effective LOMRs Area of Undetermined Flood Hazard <i>Zone D</i> |
| <p>GENERAL STRUCTURES</p> | <ul style="list-style-type: none"> Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall |
| <p>OTHER FEATURES</p> | <ul style="list-style-type: none"> B 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation 17.5 Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature |
| <p>MAP PANELS</p> | <ul style="list-style-type: none"> + Digital Data Available + No Digital Data Available X Unmapped |



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:31 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

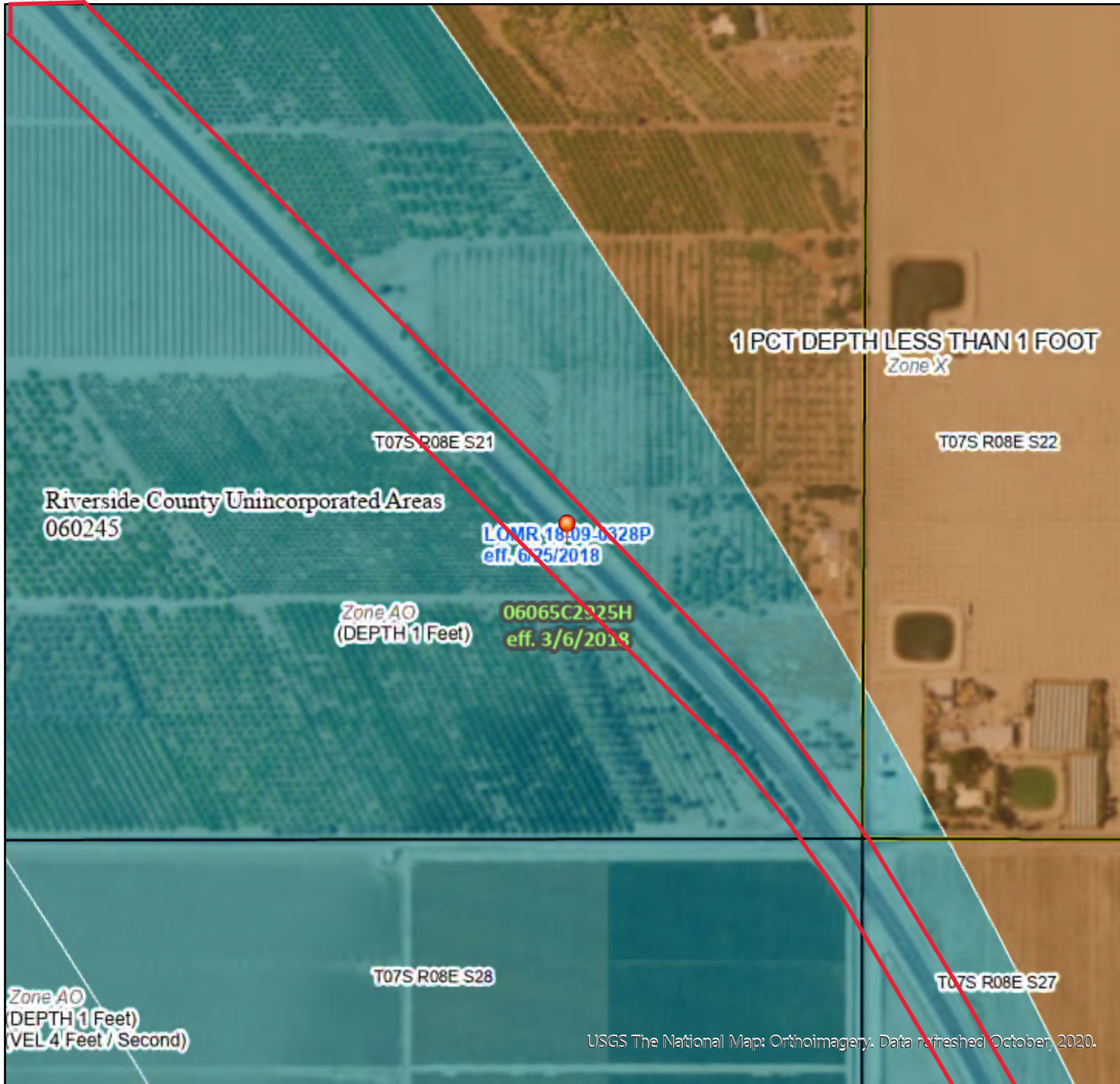
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

National Flood Hazard Layer FIRMMette



116°9'20"W 33°32'47"N



116°8'42"W 33°32'17"N

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE)
Zone A, V, A99
 - With BFE or Depth *Zone AE, AO, AH, VE, AR*
 - Regulatory Floodway

- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
 - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
 - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
 - Area with Flood Risk due to Levee *Zone D*

- OTHER AREAS**
 - NO SCREEN Area of Minimal Flood Hazard *Zone X*
 - Effective LOMRs
 - Area of Undetermined Flood Hazard *Zone D*

- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall

- OTHER FEATURES**
 - B 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
 - 17.5 Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature

- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

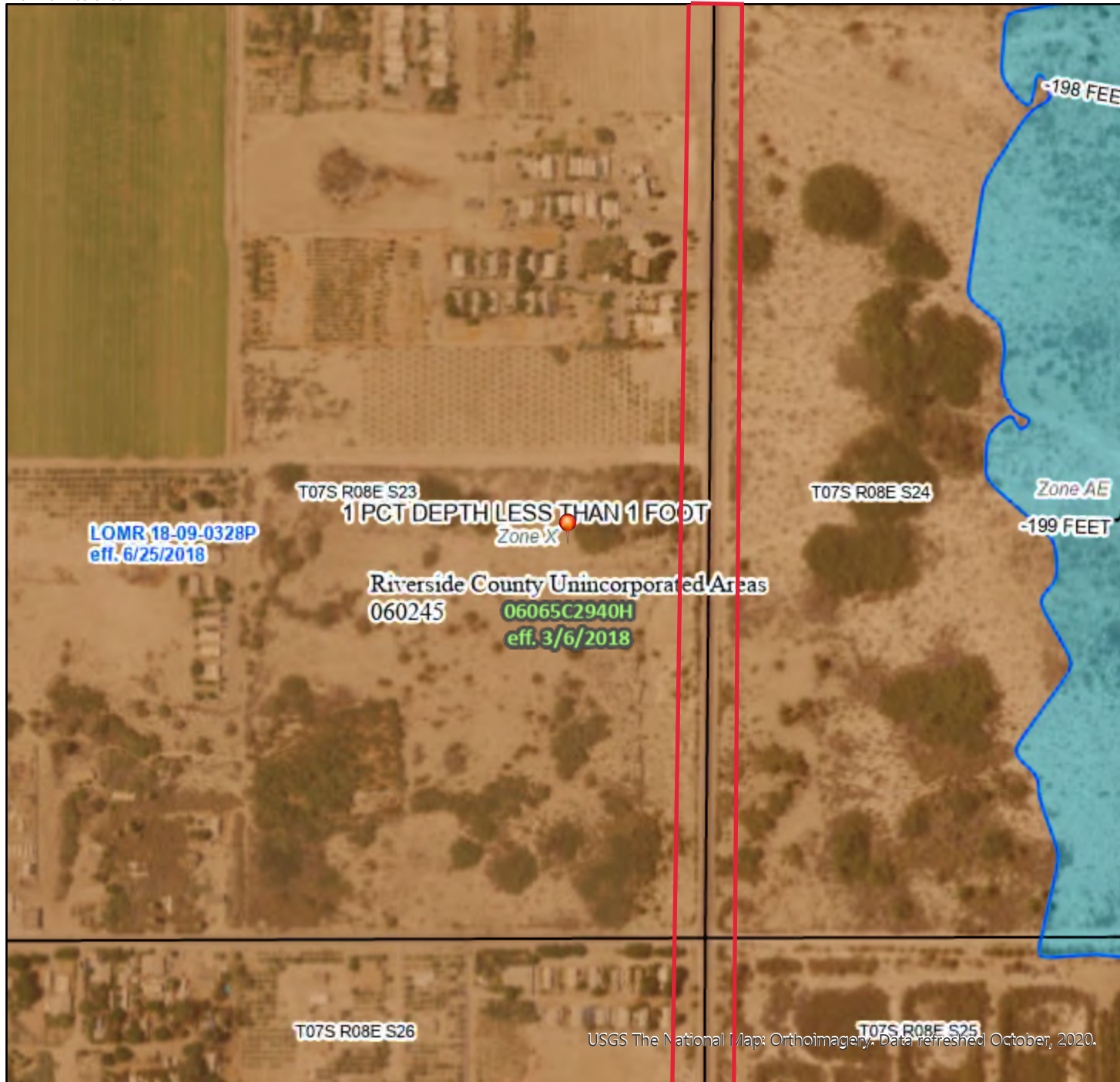
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:33 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



116°7'10"W 33°32'50"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| MAP PANELS | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:35 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

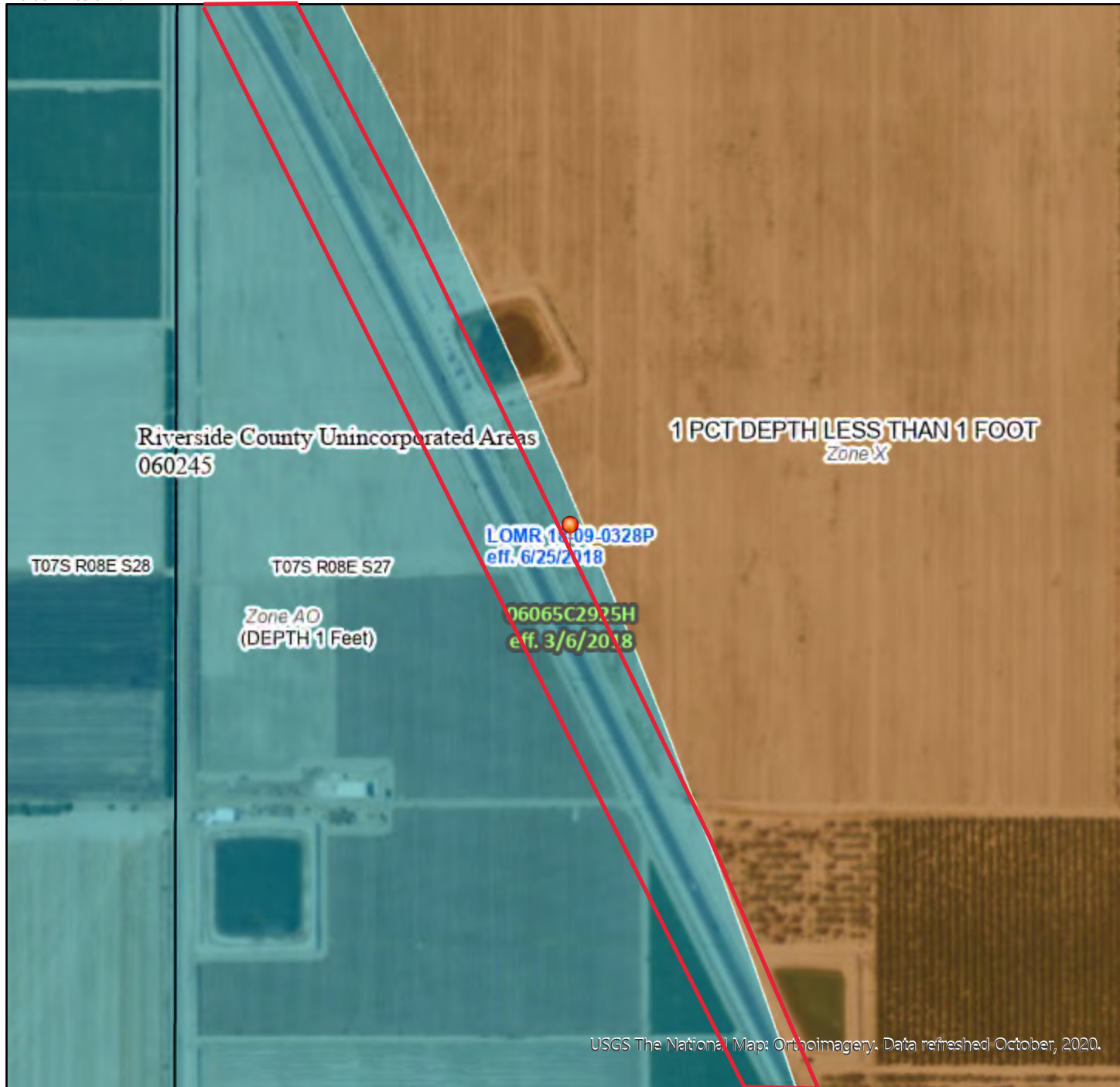
116°6'32"W 33°32'20"N

0 250 500 1,000 1,500 2,000 Feet 1:6,000

National Flood Hazard Layer FIRMMette



116°8'57"W 33°32'20"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:35 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

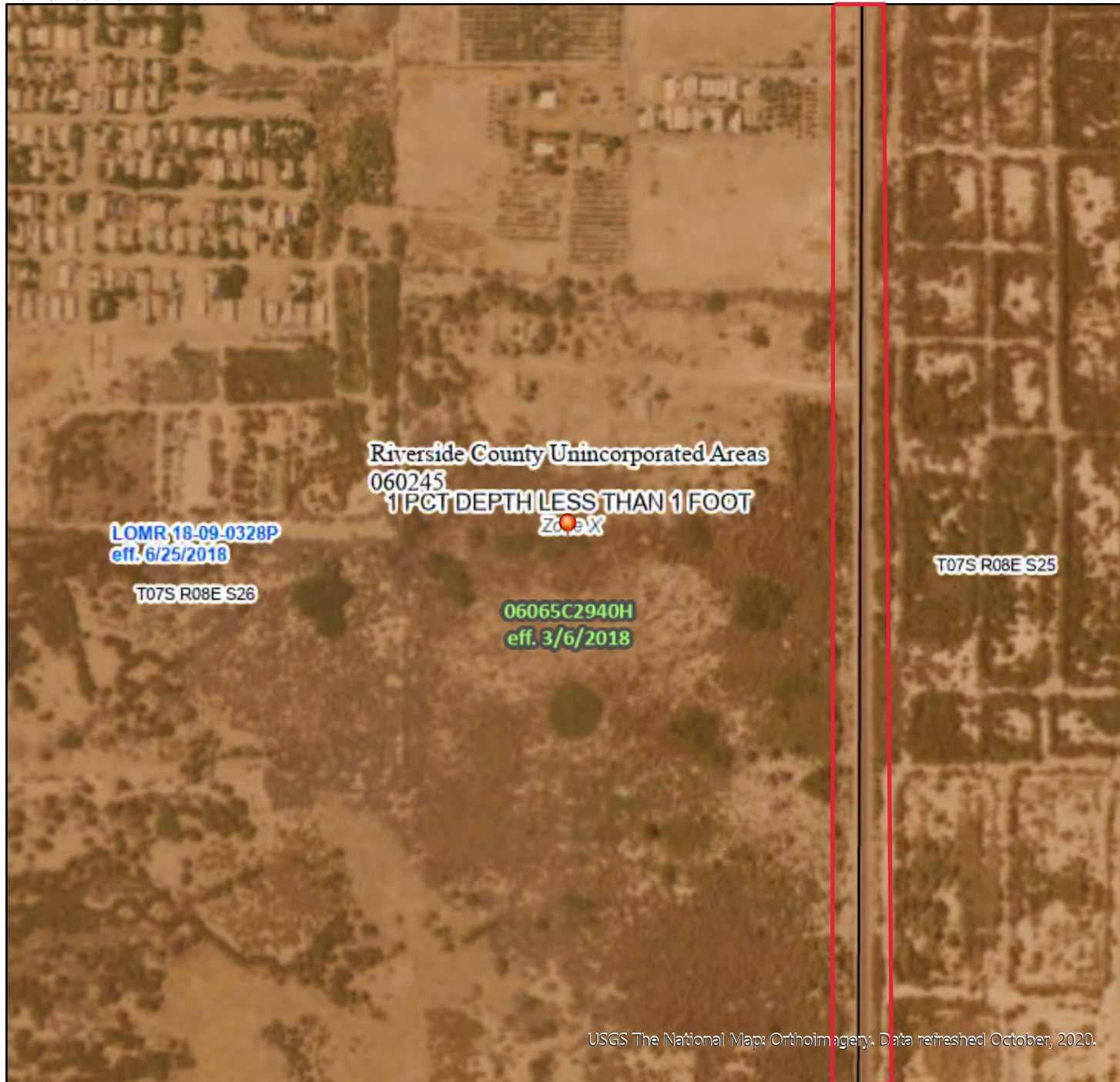
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



National Flood Hazard Layer FIRMette



116°7'15"W 33°32'19"N



USGS The National Map: Orthoimagery. Data refreshed October, 2020.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

116°6'38"W 33°31'49"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
MAP PANELS		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
OTHER FEATURES		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
OTHER FEATURES		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped
	The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.	



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

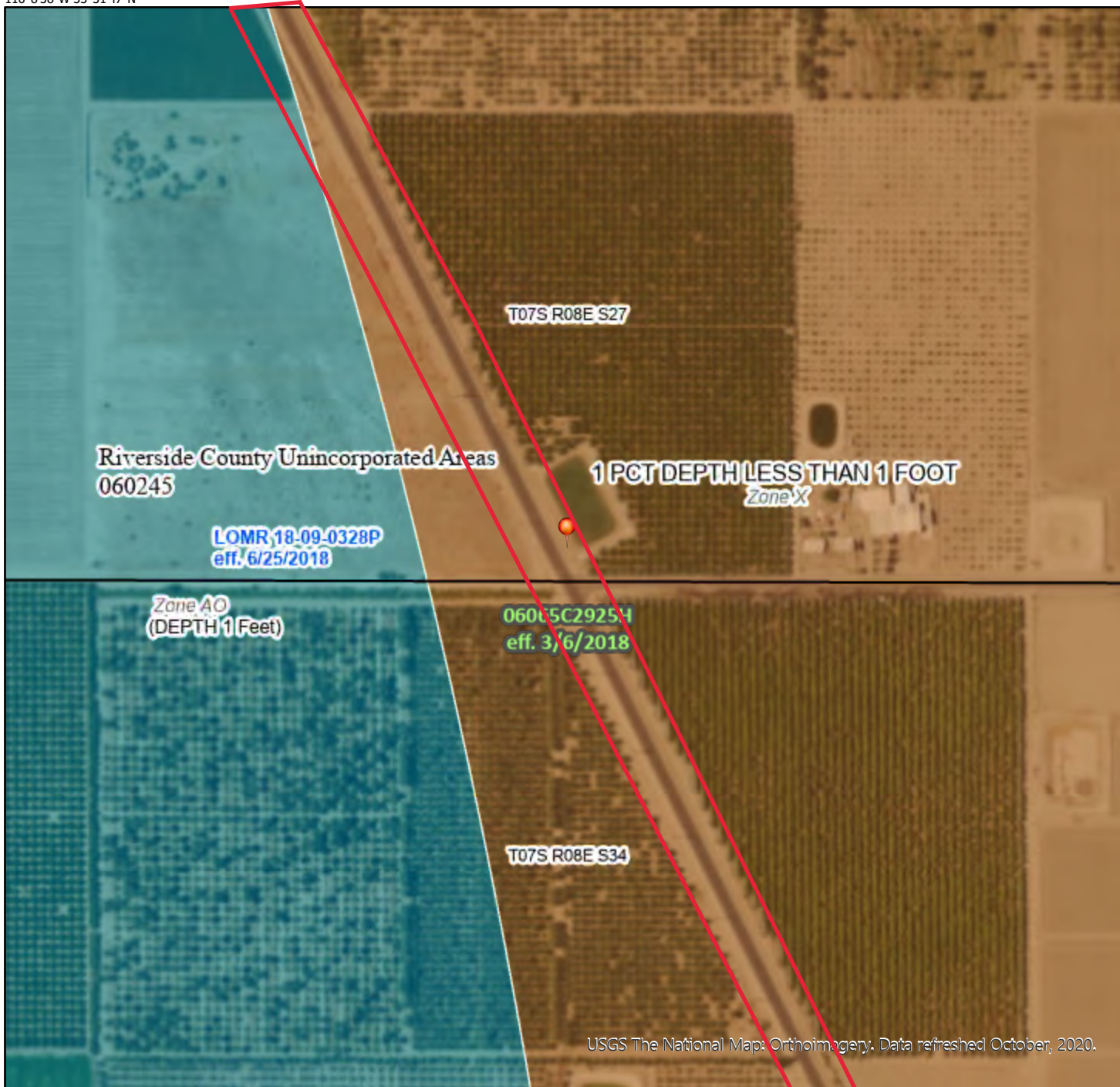
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:37 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



116°8'38"W 33°31'47"N



USGS The National Map: Orthoimagery. Data refreshed October, 2020.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

116°8'1"W 33°31'17"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

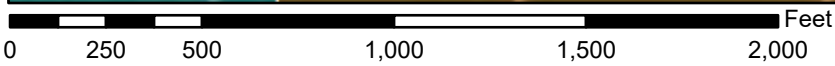
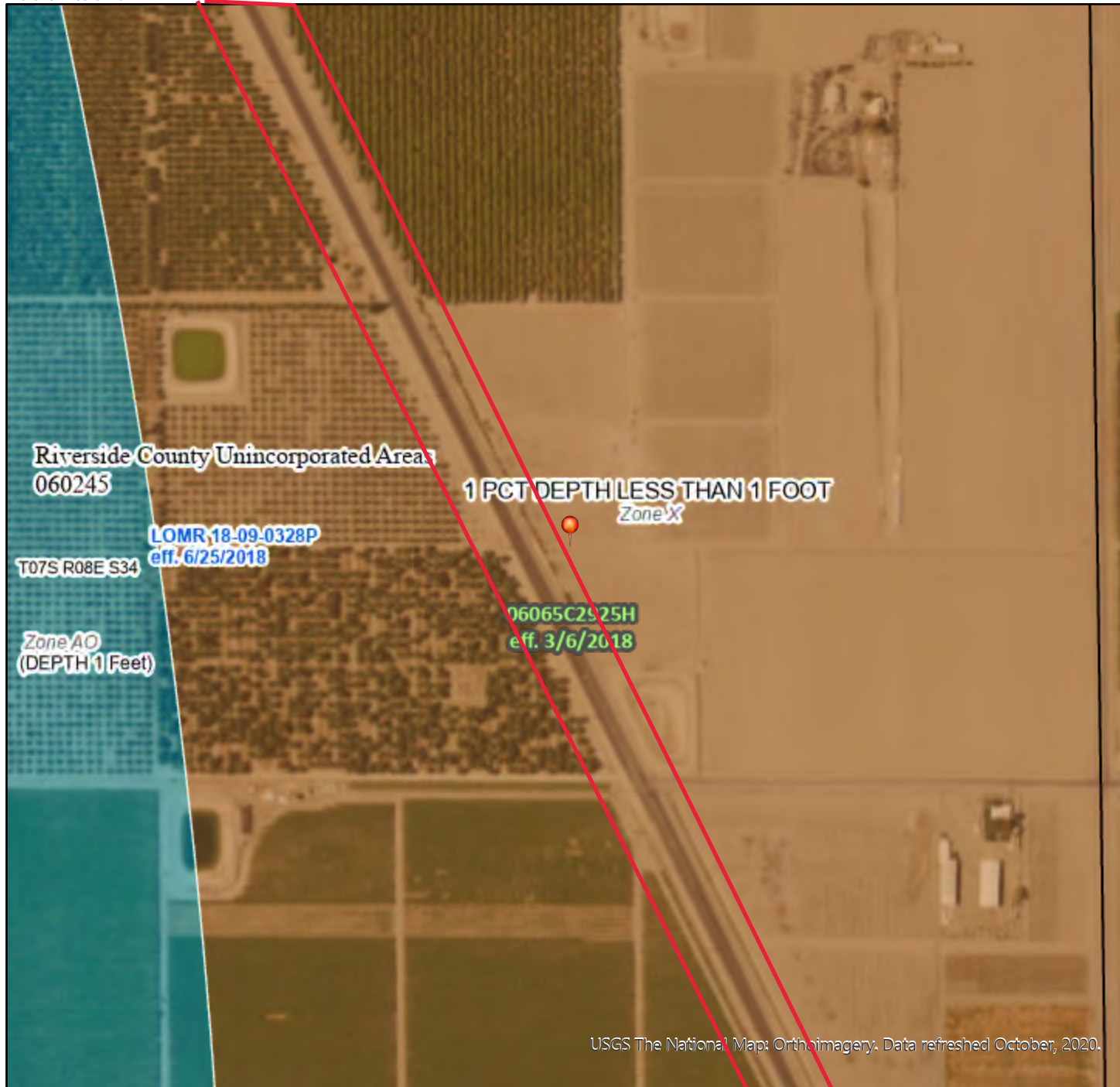
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:38 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



116°8'25"W 33°31'26"N



116°7'47"W 33°30'56"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

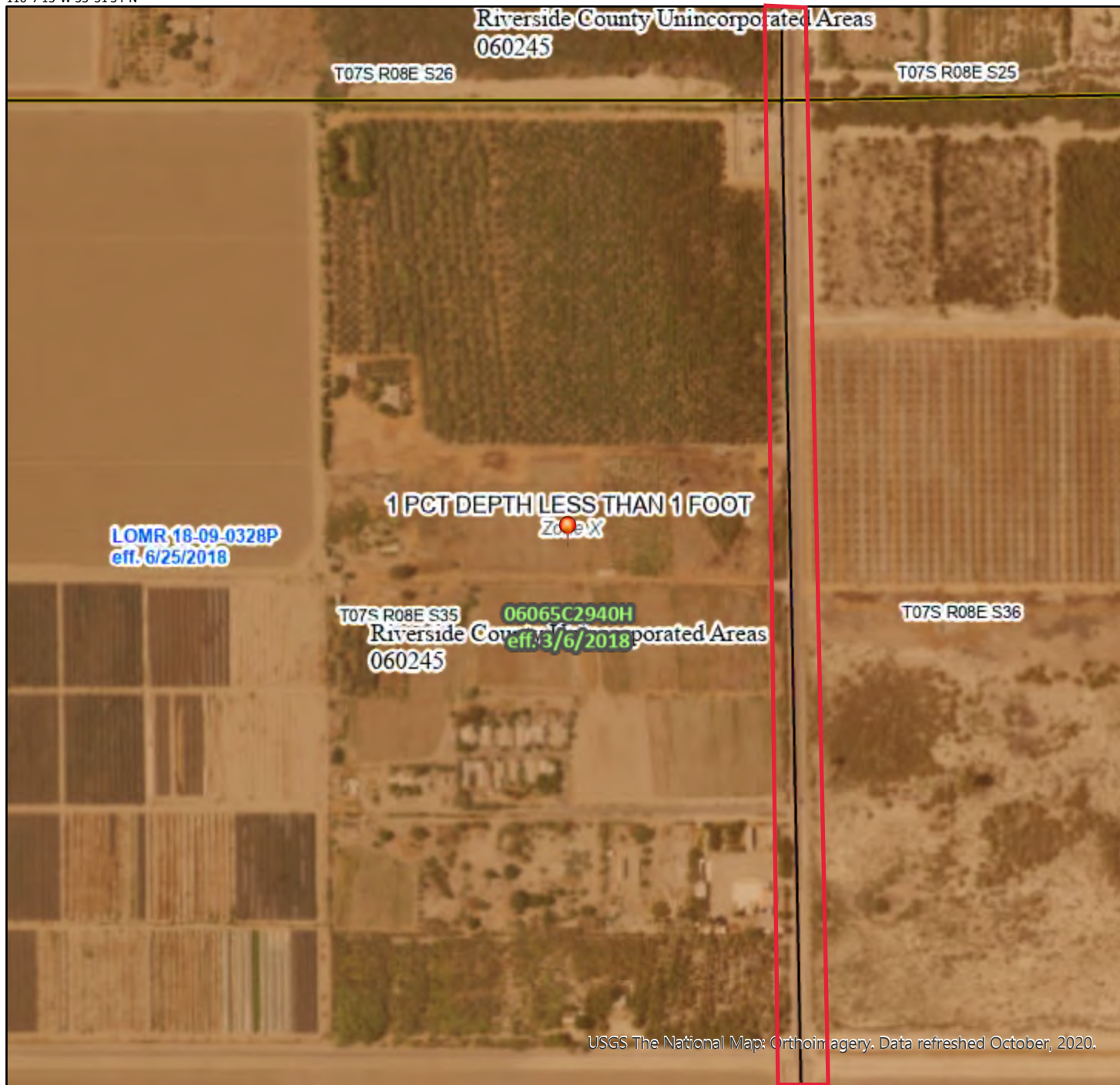
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:41 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



116°7'13"W 33°31'34"N



USGS The National Map: Orthoimagery. Data refreshed October, 2020.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

116°6'35"W 33°31'4"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

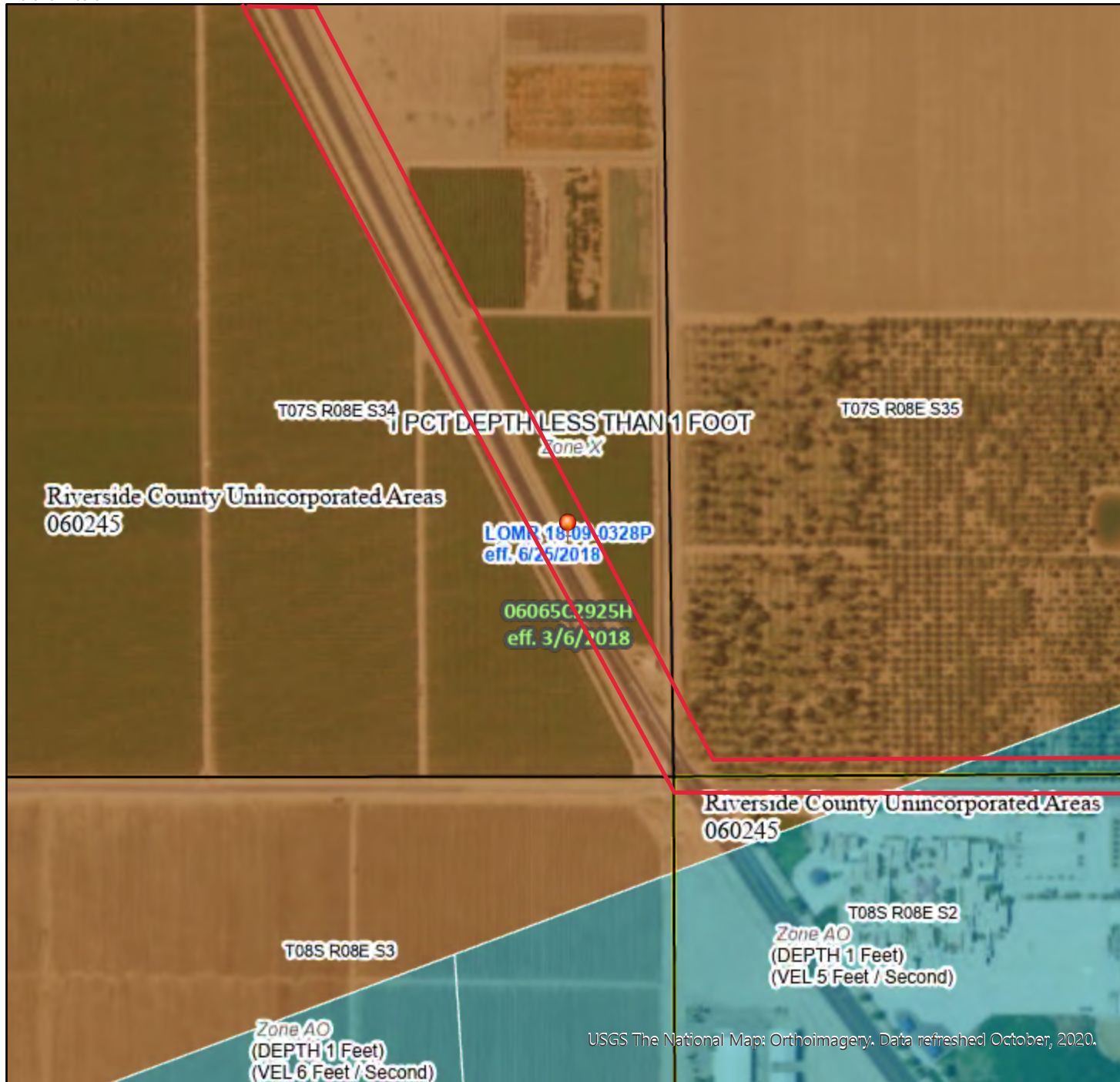
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:42 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette



116°8'10"W 33°31'N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/9/2020 at 6:43 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

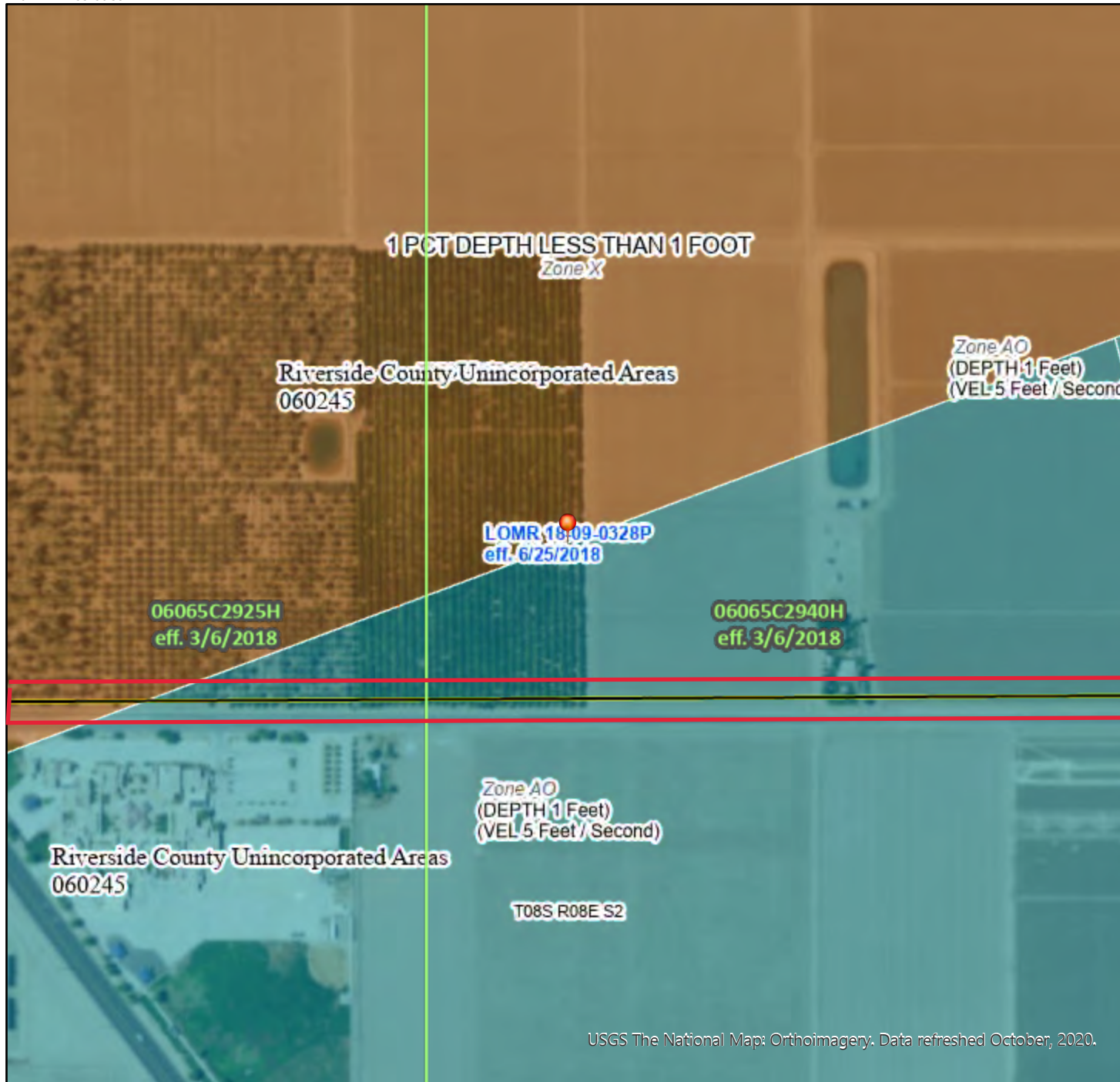
116°7'33"W 33°30'30"N

0 250 500 1,000 1,500 2,000 Feet 1:6,000

National Flood Hazard Layer FIRMette



116°7'44"W 33°30'58"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>	With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>	Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>	Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>	Area with Flood Risk due to Levee <i>Zone D</i>

OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>	Effective LOMRs	Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer	Levee, Dike, or Floodwall

OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation	Coastal Transect	Base Flood Elevation Line (BFE)	Limit of Study	Jurisdiction Boundary	Coastal Transect Baseline	Profile Baseline	Hydrographic Feature

MAP PANELS	Digital Data Available	No Digital Data Available	Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

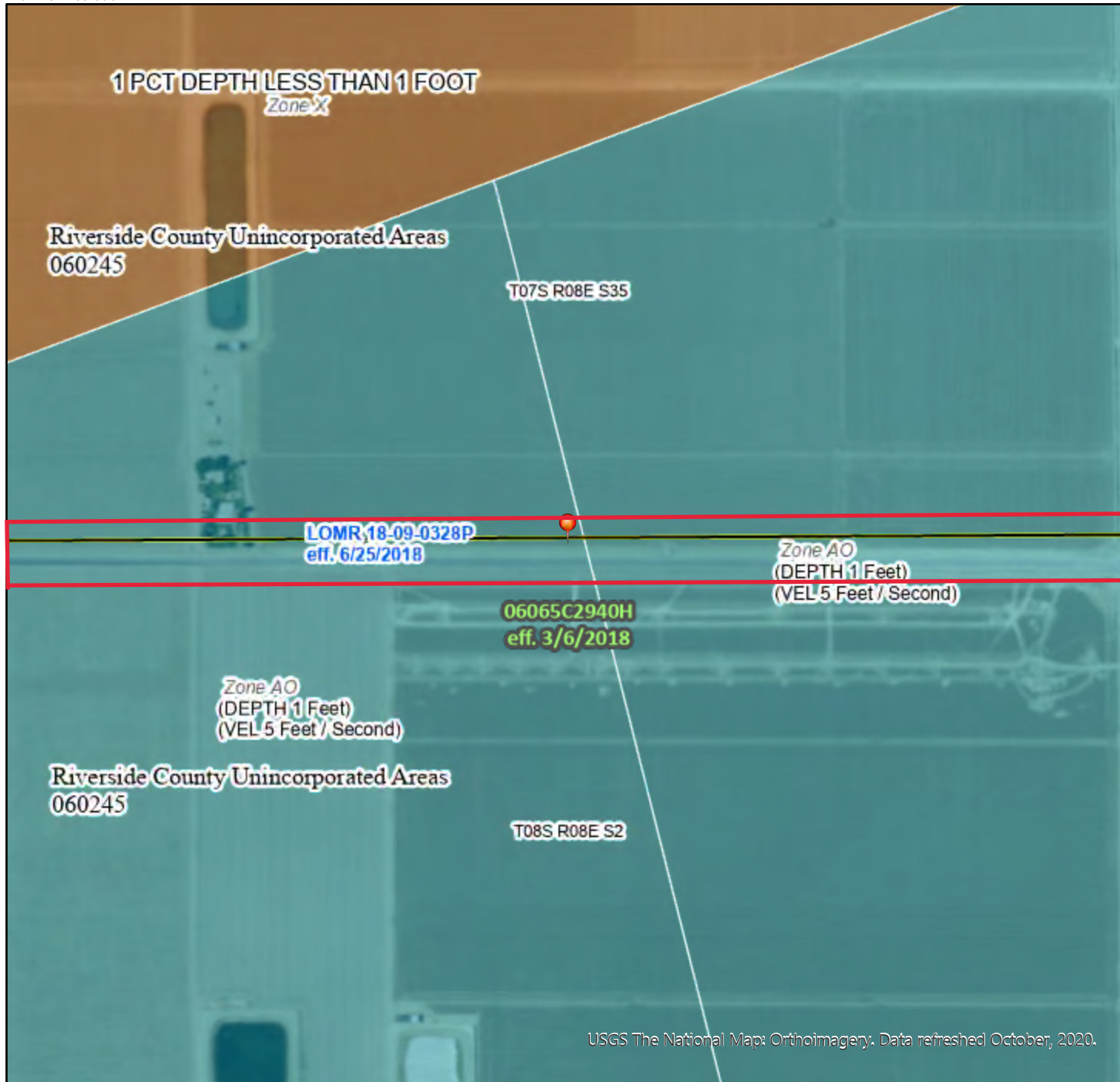
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:44 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette



116°7'23"W 33°30'54"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/9/2020 at 6:46 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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USGS The National Map: Orthoimagery. Data refreshed October, 2020.

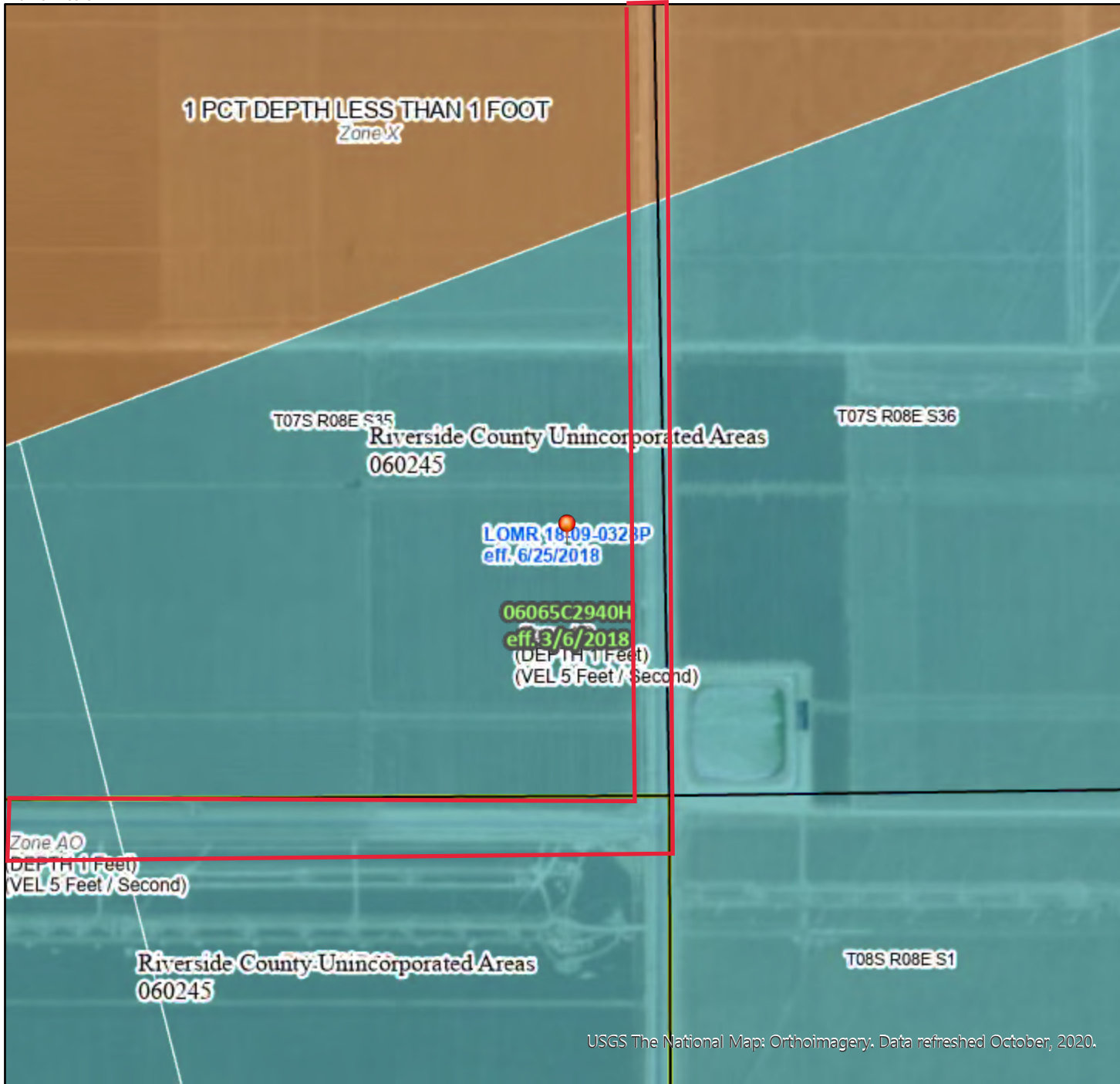


116°6'46"W 33°30'24"N

National Flood Hazard Layer FIRMette



116°7'8"W 33°31'1"N



116°6'30"W 33°30'31"N

USGS The National Map: Orthoimagery. Data refreshed October, 2020.

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
| | | The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location. |



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/9/2020 at 6:48 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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