

California High-Speed Rail Authority

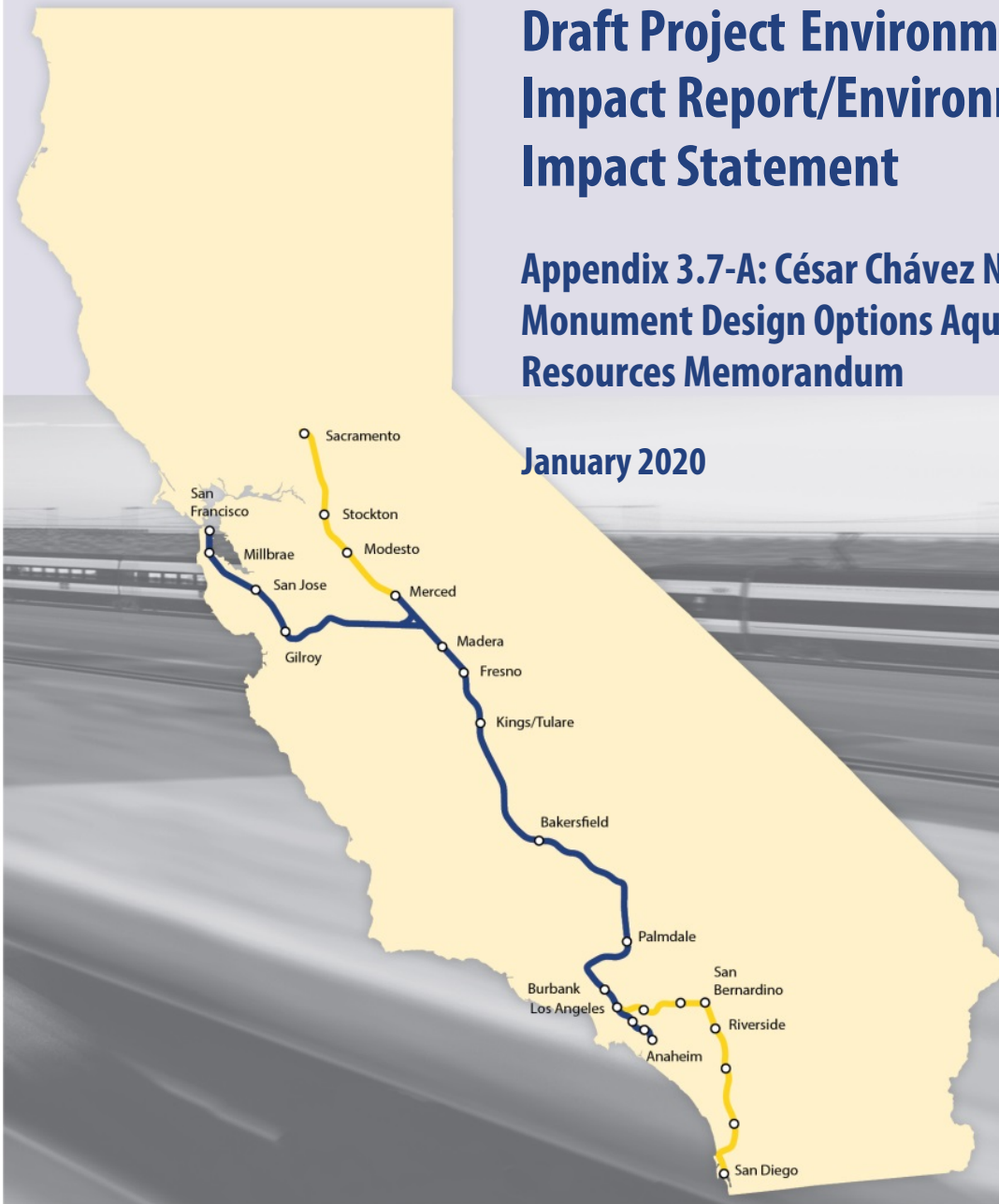
Bakersfield to Palmdale

Project Section

Draft Project Environmental Impact Report/Environmental Impact Statement

Appendix 3.7-A: César Chávez National Monument Design Options Aquatic Resources Memorandum

January 2020



The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, and executed by the Federal Railroad Administration and the State of California.

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ACRONYMS AND ABBREVIATIONS

AJD	Approved Jurisdictional Determination
ARDR	Aquatic Resources Delineation Report
Authority	California High-Speed Rail Authority
BARTR	Biological and Aquatic Resources Technical Report
CDFW	California Department of Fish and Wildlife
CCNM	César E. Chávez National Monument
HSR	High-Speed Rail
HUC	Hydrologic Unit
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	Ordinary high water mark
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
SCS	Soil Conservation Service
SR	State Route
SWRCB	State Water Resources Control Board
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geologic Survey

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1 INTRODUCTION

The planning, design, construction, and operation of the California High-Speed Rail (HSR) System are the responsibility of the California High-Speed Rail Authority (Authority)¹, a state governing board formed in 1996. The Authority's statutory mandate is to develop a HSR system that is coordinated with the state's existing transportation network, including intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports. The Authority's plans call for high-speed intercity train service on more than 800 miles of track throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. The HSR system would meet the requirements of Proposition 1A, including maximum, nonstop service travel time between San Francisco and Los Angeles of two hours and 40 minutes.

The Bakersfield to Palmdale Project Section would be a critical link in the HSR system, connecting San Francisco and the Bay Area to Los Angeles and Anaheim, and will fill a critical gap in California's current north-south passenger rail network. The Bakersfield to Palmdale Project Section is approximately 80 miles in length and ascends some 3,800 feet as it crosses the Tehachapi Mountains from northwest to southeast. It traverses valley, mountain, and high desert terrain, as well as urban, rural, agricultural, and wildlands. The HSR system would pass the César E. Chávez National Monument (CCNM), located at the Nuestra Señora Reina de La Paz (generally shortened to "La Paz") National Historic Landmark, while traversing the Tehachapi Mountains in Keene. In 2017 and 2018, the Authority conducted Section 106 consultation with the Consulting Parties for the National Chavez Center and alignment options were studied that would avoid and minimize adverse noise and visual effects to the National Historic Landmark. In 2018, the Authority issued the *Avoidance and Minimization Options Screening Memorandum for the César E. Chávez/Nuestra Señora Reina de la Paz National Historic Landmark* (Authority and FRA 2018), which evaluates the five options developed to avoid or minimize impacts to the National Chavez Center. This process resulted in the CCNM Design Option for the project section. In response to concerns expressed by Consulting Parties between June 2017 and February 2019, the Authority developed additional design options that either avoid or minimize adverse effects to the National Historic Landmark. In 2019, the Authority issued the *Design Options Screening Report for the César E. Chávez/Nuestra Señora Reina de la Paz National Historic Landmark* (Authority 2019a) and the *Addendum to the Design Options Screening Report for the César E. Chávez/Nuestra Señora Reina de la Paz National Historic Landmark* (Authority 2019b), which evaluate ten potential design options developed to avoid or minimize impacts on La Paz. This process resulted in the Refined CCNM Design Option for the project section. Alternative 2 with the Refined CCNM Design Option is the Authority's Preferred Alternative for the Bakersfield to Palmdale Project Section.

The Authority prepared an *Aquatic Resources Delineation Report* (ARDR) in 2016 and a *Biological and Aquatic Resources Technical Report* (BARTR) in 2018, both of which evaluated the location and extent of aquatic resources in the Aquatic Resources Study Area that included all project alternatives known at the time plus a 250-foot buffer. The CCNM Design Option and Refined CCNM Design Option were finalized after these technical reports were complete. While portions of the CCNM Design Option and Refined CCNM Design Option fall in areas studied and mapped, not all areas were evaluated previously. This technical memorandum presents the methodology used to evaluate the CCNM Design Option and Refined CCNM Design Option for aquatic resources in areas not studied previously, the environmental setting of the CCNM Design Options, the results of this study, and likely jurisdictional status of the aquatic resources present.

¹ Pursuant to 23 USC 327, under the National Environmental Policy Act Assignment Memorandum of Understanding between Federal Railroad Administration and the State of California, effective July 23, 2019, the Authority is the lead agency for the Bakersfield to Palmdale Project Section and this aquatic resources delineation under the National Environmental Policy Act and other federal environmental laws. Under the Memorandum of Understanding, the Authority is the lead agency responsible for environmental reviews and approvals for all Authority Phase 1 and Phase 2 projects.

This technical memorandum provides a summary of aquatic resources with an ordinary high water mark (OHWM) or wetland indicators potentially subject to U.S. Army Corps of Engineers (USACE) jurisdiction in the CCNM Design Option and Refined CCNM Design Option areas not previously studied. These features are not expected to be regulated by the USACE due to isolation but would be regulated by the State Water Resources Control Board (SWRCB) under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). Additionally, this memorandum provides a summary of aquatic resources such as streambeds and riparian areas that may be regulated by the California Department of Fish and Wildlife (CDFW) under California Fish and Game Code.

2 CÉSAR E. CHÁVEZ NATIONAL MONUMENT DESIGN OPTIONS

Figure 2-1 shows the CCNM Design Options in the context of the whole Bakersfield to Palmdale Project Section. The CCNM Design Options are near La Paz in the community of Keene and are illustrated on Figure 2-2.

2.1 César E. Chávez National Monument Design Option

The CCNM Design Option would diverge from the Bakersfield to Palmdale HSR Build Alternatives approximately 1.05 miles northwest of the intersection of East Bear Mountain Boulevard and State Route (SR) 58 and would rejoin all of the Bakersfield to Palmdale HSR Build Alternatives approximately 0.04-mile northeast of Burnett Road in Tehachapi. The CCNM Design Option would begin 4.26 miles northwest of the State Route (SR) 223/SR 58 intersection, and continue at-grade for about 500 feet, at which point it would span the Union Pacific Railroad alignment on a 0.22-mile-long viaduct, crossing over an access road. The CCNM Design Option would then transition back to at-grade for 0.35 mile, cross an existing dirt road that would be realigned to maintain connectivity on a 400-foot-long viaduct, and transition back to at-grade for 0.47 mile before reaching a tunnel. The CCNM Design Option would remain underground for 0.63 mile and return to at-grade for another 0.15 mile near the National Chavez Center. Passing the National Chavez Center and crossing over Woodford-Tehachapi Road, the CCNM Design Option would be on a 0.42-mile-long viaduct, approximately 0.31 mile farther east from the property line of La Paz than would the HSR Build Alternative alignments. From there, it would be at-grade for 0.52 mile and then underground in a tunnel for another 0.81 mile. The alignment would resurface to at grade track, crossing an access road on a viaduct just east of SR 58 for approximately 0.08 mile, and crossing Broome Road and SR 58 on a 0.57-mile viaduct. The alignment would continue at grade, crossing under SR 58 and terminating 0.66 mile southeast of the crossing. The CCNM Design Option would include an approximately 2,800-foot-long, and minimum 12-foot-high, sound wall along the guideways.

2.2 Refined César E. Chávez National Monument Design Option

The Refined CCNM Design Option, illustrated on Figure 2-2, would begin 180 feet east of Bealville Road in Keene and would begin at-grade for 1.15 miles and then continue underground for about 1.04 miles. The Refined Design Option would transition to at-grade for 0.81 mile and cross an access road and the Union Pacific Railroad on a 0.17-mile-long viaduct. The Refined CCNM Design Option would then continue east at-grade for 0.30 mile, cross over an existing access road on a 0.06-mile long viaduct, then back to at-grade for 0.59 mile where the Design Option transitions underground for 0.80 mile. The Refined CCNM Design Option would then emerge where it would pass La Paz. The Refined CCNM Design Option would be 0.53 mile (2,798 feet) north of La Paz at its closest proximity when it emerges from the tunnel.

While passing La Paz, the Refined CCNM Design Option would be at-grade for 0.57 mile at a distance ranging from 0.53 mile (2,693 feet) to 0.73 mile (3,860 feet) from the boundary of La Paz before crossing a 0.13-mile viaduct over Tweedy Creek and a local access road. The Refined CCNM Design Option would travel at-grade for approximately 0.25 mile before going underground in a 1.7-mile-long tunnel. The Refined Design Option would then transition to at-grade for 0.71 mile before crossing over an access road for 0.06 mile and back to at-grade for 1.71 miles. The Refined CCNM Design Option would then go over the SR 58 and Tehachapi

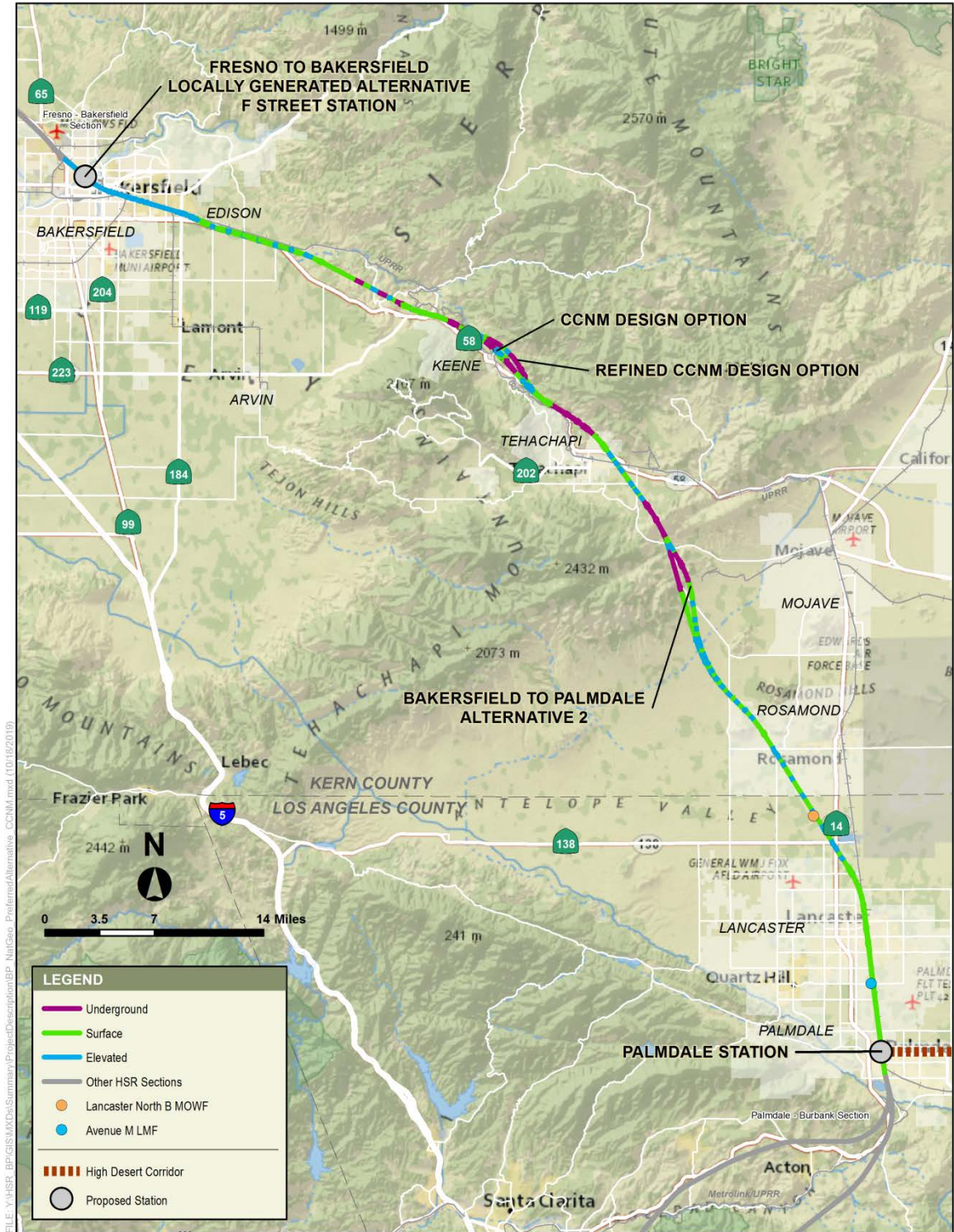


Figure 2-1 Bakersfield to Palmdale Project Section Alignment Alternatives with the CCNM Design Option and Refined CCNM Design Option

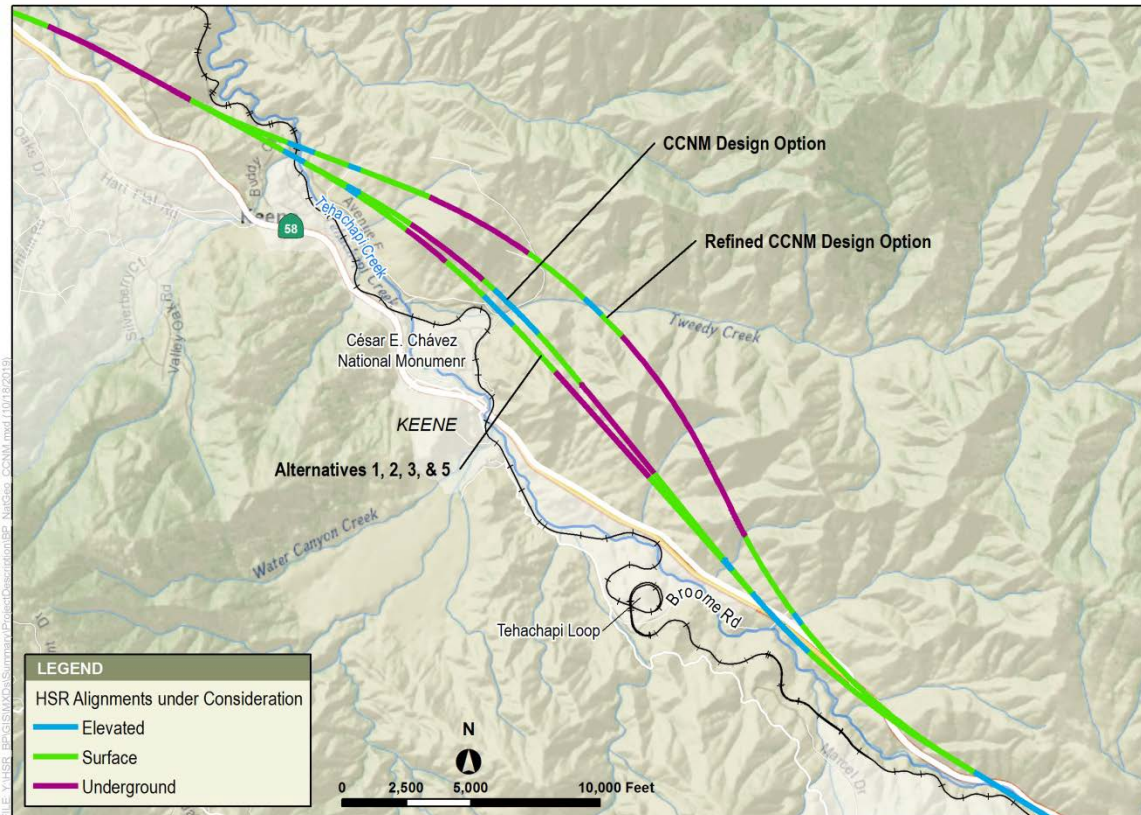


Figure 2-2 CCNM Design Option and Refined CCNM Design Option Focused Map

Creek on a 0.89-mile-long viaduct, back to at-grade for 0.87 mile before entering a tunnel for 1.68 miles. The Refined CCNM Design Option would emerge from the tunnel north of the City of Tehachapi at-grade for 1.48 miles before finally ending in a 0.13-mile-long viaduct where it would tie back into the Bakersfield to Palmdale HSR Build Alternatives at SR 58 in the City of Tehachapi. A paralleling station would be required for the Refined CCNM Design Option. In addition, a 100-foot communications pole would be co-located with HSR facilities. An approximately 1,700-foot berm would be constructed to the same height as the catenary for the track. The berm would be an average of 80 feet in height from the existing ground.

3 REGULATORY SUMMARY

The federal Clean Water Act serves as the primary federal law protecting the quality of the nation's surface waters, including wetlands. Under Clean Water Act Section 404, the USACE and the U.S. Environmental Protection Agency (USEPA) regulate the discharge of dredged and fill materials into the waters of the U.S. Project sponsors must obtain a permit from USACE for discharges of dredged or fill materials into jurisdictional waters over which USACE determines that it will exert jurisdiction. Based on the geographic location of the Bakersfield to Palmdale Project Section, in an area where waters were deemed previously to be isolated by the USACE and USEPA, the USACE recommended the Authority request an Approved Jurisdictional Determination (AJD) to evaluate status of jurisdiction in the section formally. The Authority requested an AJD for the Bakersfield to Palmdale Project Section on January 6, 2017. The USACE responded with an AJD confirming the isolation of all waters in this study area on December 11, 2017 based on geographic location. Because waters in the CCNM Design Option and Refined Design Option areas adjoin or flow into waters determined to be isolated in the USACE's AJD, these waters are also presumed isolated.

The Porter-Cologne Act requires the regulation of all pollutant discharges, including wastes in Project runoff that could affect the quality of the state's water. Any entity proposing to discharge a waste must file a Report of Waste Discharge with the SWRCB or appropriate Regional Water Quality Control Board. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Waters potentially subject to the Porter-Cologne Act are present in the CCNM Design Option and Refined Design Option areas.

Section 1602 of the California Fish and Game Code requires an entity to notify the CDFW before conducting any activity that would "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, 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." Once notified, CDFW may require a Streambed Alteration Agreement be executed before the activity may proceed. Streambeds and associated riparian areas potentially subject to CDFW jurisdiction are present in the CCNM Design Option and Refined Design Option areas.

More detailed discussions of laws, regulations and orders governing aquatic resources were provided in the ARDR and BARTR reports and are included here by reference (Authority 2016, Authority 2018).

4 CÉSAR E. CHÁVEZ NATIONAL MONUMENT STUDY AREA AND ENVIRONMENTAL SETTING

The Bakersfield to Palmdale Project Section of the HSR system spans several ecological subregions, extending from the southeastern edge of the San Joaquin Valley, through the Tehachapi-Piute Mountains subregion of the southern Sierra Nevada ecoregion, into the Antelope Valley in the western Mojave Desert (Cleland et al. 2007, Miles and Goudey 1998). Predominant plant communities in the area include woodlands, scrub and chaparral, and grassland communities. The CCNM Design Options are within the foothills of the Tehachapi-Piute Mountains, north of the Town of Tehachapi. Although the CCNM Design Options are north of Alternatives 1, 2, 3 and 5, similar to these alternatives the CCNM Design Options avoid the steepest, highest elevation portions of the Tehachapi-Piute Mountains. The CCNM Design Options crosses four USGS 7.5-minute topographic quadrangles: Bena, California; Oiler Peak, California; Keene, California, and Tehachapi North, California.

4.1 César E. Chávez National Monument Design Options Study Area

The CCNM Design Options partially overlap the Study Area for Alternatives 1, 2, 3 and 5 evaluated for the ARDR and BARTR, and this technical study evaluated only the areas not previously studied. Specifically, the CCNM Design Options Aquatic Study Area (hereinafter the CCNM Aquatic Study Area) was developed by first generating a polygon that encompassed all components of the CCNM Design Option and Refined CCNM Design Option, including tracks, power and station facilities, utility connections, and access routes for use during operations and maintenance, plus a 250-foot buffer around these features. This polygon was clipped to remove areas studied previously. The portions of the CCNM Design Options previously evaluated during preparation of the ARDR and BARTR are demarcated on figures to differentiate areas already studied from the CCNM Aquatic Study Area evaluated for this technical memorandum.

4.2 Vegetation Communities

Based on previous vegetation mapping nearby, and a review of aerial imagery for the area, vegetation communities in the vicinity of the CCNM Aquatic Study Area include a variety of woodlands and scrublands, including foothill pine woodland, interior live oak woodland, blue oak woodland, valley oak savanna, juniper woodland, wedge leaf Ceanothus chaparral, California buckwheat scrub, oak gooseberry thickets, and rubber rabbitbrush scrub. Annual grasslands are also present. Additionally, riparian vegetation communities including California sycamore woodland, Fremont cottonwood forest, red willow thickets, and mulefat thickets are also present in the vicinity. Many of these types extend into the CCNM Aquatic Study Area from the adjacent

previously studied and mapped areas, particularly blue and interior live oak woodlands, foothill pine woodlands, annual grasslands, and riparian communities.

4.3 Hydrology and Climate

Topography, landscape, and climate, as well as existing transportation corridors, rural uses, and associated past alterations influence hydrology in the CCNM Aquatic Study Area. The CCNM Aquatic Study Area falls within one major subbasin based on the United State Geological Survey (USGS) National Hydrography Dataset's (NHD) Watershed Boundary Dataset at the 8-digit Hydrologic Unit Code (HUC) level, the Middle Kern-Upper Tehachapi-Grapevine Subbasin, which drains toward the Kern Lake terminal dry lakebed (USGS 2019). The CCNM Aquatic Study Area is within the Caliente Creek and Tehachapi Creek Watersheds, and traverses five subwatersheds in this subbasin: Lower Caliente Creek (HUC 180300030407), Lower Tehachapi Creek (180300030205), Tweedy Creek (180300030203), Middle Tehachapi Creek (180300030204), and Upper Tehachapi Creek (180300030202).

The CCNM Aquatic Study Area has three named creeks, Tehachapi Creek, which drains to Caliente Creek to its northwest, and Tweedy Creek and Clear Creek, which drain to Tehachapi Creek to their west and north, respectively. Portions of Tehachapi Creek, Tweedy Creek, and Clear Creek were mapped in the ARDR and BARTR. Unnamed tributaries are also present and include new reaches of previously mapped features and first order tributaries upstream of waters mapped previously.

Tweedy Creek joins Tehachapi Creek near the community of Keene. Tehachapi Creek joins Caliente Creek in the community of Caliente in the foothills of the Tehachapi Mountains. Clear Creek joins Tehachapi Creek approximately 0.6 mile upstream from its confluence with Caliente Creek. From the confluence of Clear Creek and Tehachapi Creek, Caliente Creek flows down into the southern end of the San Joaquin Valley and passes under the Arvin Edison Canal to Malaga Road, approximately 1.8 miles east of the East Side Canal and 2.0 miles east of the community of Lamont. The USACE previously determined Caliente Creek and its tributaries to be isolated.

In the CCNM Aquatic Study Area, most precipitation falls during late fall and winter. The CCNM Aquatic Study Area is approximately 16.5 miles long, and elevation ranges from approximately 1,650 feet above mean sea level to approximately 4,250 feet. Snow falls in the surrounding mountains at higher elevations surrounding the CCNM Aquatic Study Area, influencing runoff and flow patterns in the Caliente Creek and Tehachapi Creek watersheds. In the foothills and Tehachapi Mountains, average annual precipitation between 1997 and 2015 was approximately 12.73 inches. Most of the annual precipitation (over 80 percent) occurs between November and March. Mean annual temperatures ranged from a low of 30.5 °F in December to a high of 87.6 °F in July, between 1997 and 2015 (Western Regional Climate Center 2019).

4.4 Soils

This section summarizes soil resources mapped by the Natural Resources Conservation Service (NRCS) that overlap the CCNM Aquatic Study Area at the landscape level. Summaries of soil descriptions are based on information in the soil surveys, official series descriptions, Web Soil Survey, and hydric soils lists. The NRCS has mapped and inventoried soils resources at both landscape (coarse) and detailed (fine) scales. These data are catalogued in previously published soil surveys, the Soil Survey Geographic Database, and the U.S. General Soil Map. These can be accessed through the Web Soil Survey Application and NRCS websites (NRCS 2019a, Soil Conservation Service 1981). The CCNM Aquatic Study Area overlaps a portion of the Kern County, California, Southeastern Part Soil Survey Area and the Kern County, Northeastern Part, and Southeastern Part of Tulare County, California Soil Survey Area. Two general soil associations are mapped, the Walong-Rock Outcrop-Edmundston-Anaverde association (s762) and the Tehachapi-Steuber-Havala (s765) (NRCS 2019b). Appendix A provides a list of all fine-scale soil map units in the CCNM Aquatic Study Area and includes information pertaining to map unit drainage class, runoff class, infiltration (formerly referred to as permeability), and hydric rating.

Walong-Rock Outcrop-Edmundston-Anaverde Association (s762)

This soil map unit is typically found on side slopes at the edge of the San Joaquin Valley and in mountains at the west edge of the Tehachapi Valley. Terrain is hilly to very steep. Soils in this map unit typically form in residuum, primarily granite and schist. Dominant soil series are moderately to very deep and well-drained. Typically, surface horizons are sandy loams and gravelly loams. Subsurface materials are sandy loams, including gravelly and stony sand loams, and sandy clay loams. Weathered granitic bedrock is present at moderate subsurface depths in some areas. Rock outcrops are also present. Slope steepness, hazard of erosion, and low to moderate water holding capacity are typical limitations of these soils.

Tehachapi-Steuber-Havala (s765)

This general soil map unit is found on alluvial fans, stream flood plains, and terraces of mountain valleys in the Tehachapi Valley. Terrain is nearly flat to moderately sloped. Soils in this map unit are commonly formed from alluvium derived from granitic rock. The dominant soil series are very deep and well drained. Frequently, surface horizons are sandy loam textures. Subsurface materials are sandy loam, sandy clay loam, and clay loam textures. Hazard of erosion on steeper slopes and low to moderate water holding capacity are typical limitations of these soils.

Hydric Soils

Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that in their undrained condition, are saturated, flooded, or ponded long enough during a growing season to develop anaerobic conditions that support the growth and regeneration of hydrophytic vegetation (59 Federal Register 16835). Soils sufficiently wet to support the growth and regeneration of hydrophytic vegetation due to artificial measures are included in the concept of hydric soils on “*Soil Data Access (SDA) Hydric Soils List*” (using Query by State Tool) (NRCS 2019c). Soils are identified for inclusion on the list based on specific criteria established by law (67 Federal Register 58756).

To determine whether a specific soil is a hydric soil or non-hydric soil, criteria that identify soil properties unique to hydric soils have been established. These criteria are used by NRCS to identify soil map unit components that typically have hydric features. The National List is “a compilation of all map units with either a major or minor component that is at least in part hydric. ...Because the list includes both major and minor (small) percentages for map units, in some cases most of the map unit may not be hydric... Some components may be phases of soil series that have a range of characteristics... therefore, only a portion of that component’s concept (or range in characteristics) may in fact be hydric. The list is useful in identifying map units that may contain hydric soils” (NRCS 2019c).

During preparation of soil surveys from which soil map units are drawn, not all soils are directly surveyed, and estimates of the extent and location of hydric soils are based on mapping that includes significant portions interpreted remotely from available aeriels, vegetation, topographic, and hydrology data. Note that soil conditions in the field often vary somewhat from mapped units due to the scale at which maps are made. Map units that predominantly make up hydric soils may have small areas, or inclusions, of non-hydric soils in the higher positions (elevations) on the landform and map units. Conversely, soil map units that are not classified as hydric may include hydric soils in low-lying areas.

Soil map units that were identified as containing hydric components were evaluated during desktop review. No soil map units with a major component listed as hydric are present in the CCNM Aquatic Study Area. Appendix A lists soil map units as mapped by the NRCS Soil Surveys and identifies map units for which at least one minor component has been identified as hydric. It also includes the percentage of the map unit that may be hydric and the landform on which it occurs.

4.5 National Wetlands Inventory, National Hydrography Dataset, and Other Previous Mapping

The National Wetlands Inventory (NWI) was reviewed for the CCNM Aquatic Study Area and vicinity (within approximately 0.25 mile) to ascertain the range of potential resources previously identified in the vicinity (USFWS 2019). These features were located on aerial imagery to assist with the identification of sites during desktop review and mapping. Note that NHD and NWI mapping has been conducted at a coarse scale in some areas of the state. Not all mapping in these datasets is based on field surveys or on the ground-truthing of map results. It thus provides a useful background dataset but does not offer a fine-grained evaluation as not all features mapped are wetlands or other waters, and the datasets do not map all wetlands and other waters. Appendix B provides the NWI-mapped wetlands and the NHD flowline and waterbody features.

Previously mapped aquatic resources identified during the ARDR and BARTR technical studies were also reviewed, as many of the riverine features extend into the CCNM Aquatic Study Area.

5 METHODS

This section outlines the methodology used to identify wetlands and non-wetland waters that are subject to SWRCB jurisdiction under the Porter-Cologne Act, and that would fall jurisdiction of the USACE if they were not isolated, as well as the methodology to delineate areas potentially subject to CDFW 1600 jurisdiction. The methods described generally follow those from the *Bakersfield-Palmdale High-Speed Rail: Biological Focused Survey Approach for 2015–2016 Memorandum* (LSA 2015a) and *Bakersfield-Palmdale High-Speed Rail: Focused Survey Approach for Jurisdictional Delineation in Non-PTE Areas* (Authority 2015).

Note that no portions of the CCNM Aquatic Study Area were accessible for direct onsite delineation in 2019 due to lack of permission to enter. The delineators previously conducted windshield surveys in the general vicinity and drew upon notes collected during the preparation of the ARDR to map additional reaches and new tributaries in the portion of the CCNM Aquatic Study Area not studied previously. A desktop methodology was used to aide delineation. Section 7, Preparer Qualifications, presents the names of the delineators and graphics analysts, their education, and their years of experience.

5.1 Literature and Dataset Review

The literature review generally consisted of reviewing the existing background information for wetlands and non-wetland waters, and completion of initial consultations with resource specialists. The delineators and graphic analysts reviewed existing resource information related to the project region, including the following:

- National Wetlands Inventory
- National Hydrography Dataset
- Applicable city and county general plans
- Soil surveys
- Maps produced as part of the ARDR and BARTR where they adjoin the CCNM Aquatic Study Area
- Topographic maps and datasets
- Recent aerial imagery

5.2 Delineation Methods

Given the lack of access to parcels in the CCNM Aquatic Study Area, a more conventional field approach to delineating aquatic resources is not feasible. The methodology for completing

delineation of aquatic resource features included a review of existing vegetation datasets and aquatic resource mapping completed for the ARDR and BARTR, desktop review of aerial photographs, topographic data, and existing general baseline data. For this study, delineation of aquatic features in areas without site access relied largely on remote identification of those areas that appeared to have features appropriate to be deemed jurisdictional, such as a visible channel, a topographic position and form consistent with presence of a stream, presence of vegetation typically associated with riparian corridors or wetlands, or NRCS soils maps depicting predominantly hydric soil map units. Previously mapped riparian and wetland vegetation in areas already evaluated in the ARDR and BARTR near the CCNM Aquatic Study Area were reviewed on recent aerial images to aide in recognizing similar patterns in areas not previously studied.

Where aquatic resources were delineated in the ARDR and BARTR, topographic datasets and aerial photos were reviewed to confirm that the features extend into previously unstudied portions of the CCNM Aquatic Study Area, and any new reaches were mapped. The OHWM and top of bank dimensions were estimated from what could be seen on aerials and topographic datasets, and where present, riparian woodland and scrub communities were mapped using recent aerial imagery. Data collected near the CCNM Aquatic Study Area during windshield surveys on public roads and rights-of-way during preparation of the ARDR and BARTR were incorporated into the analysis. Topographic surveys and LIDAR data, where available, allowed for the identification of the likely extent of OHWM and approximate top of bank location. By combining multiple baseline datasets, previous analysis, and high-resolution aerial imagery, potential features were evaluated to consider evidence of hydrology consistent with drainages or pond features, and to look for the probable presence of hydric soil conditions and visual indicators that wetland vegetation might be present.

Features that appeared to contain hydrophytic plant species and/or that exhibited obvious wetland hydrology (e.g., water or saturation visible on aerials or from roadways during previous windshield surveys) and mapped on NRCS surveys as having hydric soils were assumed to be wetlands since site access to confirm was not feasible.

6 RESULTS AND DISCUSSION

This chapter presents the results of the delineation of potentially aquatic waters in the CCNM Aquatic Study Area. Potentially aquatic features delineated in the CCNM Aquatic Study Area include perennial, ephemeral, and intermittent streams, in-stream impoundments, and ditches. No features indicative of wetland conditions were noted. In addition to the delineation of boundaries, the characteristics of these aquatic features are described briefly below. The range of characteristics observed for each feature type is summarized in the following sections, followed by summaries of potential jurisdiction separated by agency.

In some instances, waters extend beyond the area of investigation, such as with riverine features that continue up and downstream of the CCNM Aquatic Study Area. Mapped aquatic resources delineated to the estimated OHWM are presented in Appendix C. Mapped aquatic resources delineated to the estimated top of bank or edge of riparian dripline are presented in Appendix D. Tables identifying each feature, its Cowardin code, the map sheet(s) on which it appears, and dimensions are enclosed as Appendix E.

6.1 Aquatic Features

6.1.1 Perennial Streams

Perennial streams contain water continuously during a year of normal rainfall, often with the streambed located below the water table for most of the year. Groundwater supplies the base flow for these streams, but stormwater runoff may also supplement flow. Perennial streams in the CCNM Aquatic Study Area are limited to part of a perennial reach of Clear Creek. Clear Creek is a tributary to Tehachapi Creek. Perennial streams in the CCNM Aquatic Study Area had some mixed riparian canopy, but no seasonal or forested wetlands were identified. The majority of stream features within the CCNM Aquatic Study Area do not have perennial water.

6.1.2 Intermittent Streams

Intermittent streams are waters that convey flow for part of the year, typically during the winter and spring months when the streambed may be below the water table and/or when precipitation and runoff from surrounding uplands provides sustained flow. These streams are fed by smaller ephemeral drainages higher in the watershed, groundwater, and from direct precipitation, including rain and snowmelt. Intermittent streams exhibit an established bed, bank, and OHWM, and indications of these features were observable on aerial imagery. The Cowardin classification for intermittent streams is riverine unconsolidated bottom. Tehachapi Creek and Tweedy Creek are intermittent streams in the CCNM Aquatic Study Area. The creek segments within the CCNM Aquatic Study Area flow through areas vegetated with trees (riparian canopy) that partially shade the streams in some areas. These trees are rooted on hillsides and surrounding uplands and are present in the surrounding hills.

6.1.3 Ephemeral Streams

Several new reaches of previously mapped ephemeral streams are present in the CCNM Aquatic Study Area, and several new tributary drainages were also mapped. These features drain toward Tweedy Creek, Clear Creek, or Tehachapi Creek. These features only convey water flow during and immediately after precipitation events. They typically occur in the higher reaches of a watershed and are distinguished from erosional features by the presence of a bed and bank. Ephemeral drainages typically carry flow into downslope intermittent or perennial streams, but in some instances in the Arid West, they may dissipate when topography changes to gentler slopes without connecting to a larger channel. The Cowardin classification for ephemeral drainages is riverine unconsolidated bottom. In the CCNM Aquatic Study Area, the ephemeral drainage gradients are relatively steep and average estimated OHWM widths were typically narrow. In many areas, vegetation in ephemeral streams was differentiated from adjacent terrestrial areas only by sparser cover.

6.1.4 In-Stream Impoundments

Basins constructed within streams, such as stock ponds, are artificially created but capture natural surface waters and flow into natural surface waters. Two instream impoundments were mapped in the CCNM Aquatic Study Area. Both are east of the CCNM, one in Tweedy Creek and the other in an unnamed tributary to Tweedy Creek.

6.1.5 Ditches

Ditches are earthen features with ephemeral, intermittent, or perennial hydrology. They are usually unlined, not very deep or wide, cover shorter distances, and convey lower volumes of water. Ditches typically transmit roadside runoff, agricultural runoff, or stormwater. In the CCNM Aquatic Study Area, ditches that exhibited a bed and bank or other forms of visible hydrology were mapped as potential aquatic waters. The Cowardin classification for ditches is riverine unconsolidated bottom. A short section of a drainage ditch associated with an in-stream impoundment occurs in the CCNM Aquatic Study Area just north of Tehachapi.

6.2 Jurisdictional Summary

6.2.1 U.S. Army Corps of Engineers Jurisdiction

As previously noted, on December 11, 2017 the USACE issued an AJD confirming the isolation of all waters within the Bakersfield to Palmdale Project Section Aquatic Resources Study Area at that time, based on geographic location. Because waters in the CCNM Aquatic Study Area adjoin or flow into waters determined to be isolated in the USACE's AJD, they are also presumed isolated. In summary, none of the resources identified in the CCNM Aquatic Study Area are waters of the U.S., as they are not traditionally navigable, do not have the potential to directly or indirectly affect interstate or foreign commerce (33 Code of Federal Regulations 3.28.3(a)(3)), and lack a significant nexus to jurisdictional waters. Based on these findings, it is anticipated that resources within the CCNM Aquatic Study Area will not be subject to Clean Water Act regulation

or USEPA/USACE jurisdiction under the Clean Water Act Section 404. Conclusions stated herein are subject to USACE and USEPA evaluation for concurrence with these findings.

6.2.2 State Water Resources Control Board Jurisdiction

The SWRCB is expected to assert jurisdiction over waters not subject to USACE jurisdiction due to isolation. Based on coordination to date with the SWRCB on permitting this Project Section, the permitting process is anticipated to analyze aquatic resources to OHWM or edge of wetland. Table 6-1 presents the extent of this area in the CCNM Aquatic Study Area.

Table 6-1 Additional Potentially SWRCB Jurisdictional Waters in the CCNM Aquatic Study Area to OHWM

Feature Type	Cowardin Classification	Extent of Features to OHWM (Acres) ^a	Linear Feet
Perennial Streams	Riverine, lower perennial, unconsolidated bottom	0.75	2,719
	Palustrine scrub-shrub		
Ephemeral Streams	Riverine unconsolidated bottom	2.94	26,489
	Palustrine scrub-shrub		
Intermittent Streams	Riverine unconsolidated bottom	5.00	19,528
	Palustrine forested		
In-stream Impoundments	Palustrine unconsolidated bottom	0.19	-
	Palustrine emergent		
Artificial Watercourse – Ditches	(Riverine unconsolidated bottom)	0.06	1,016
Total Extent of Features		8.94	49,751

Source: 2019 Desktop Analysis as described in Sections 5.1 and 5.2

^a Acreage values are calculated in the CCNM Aquatic Study Area. Acreage totals derive from raw GIS data, and may not exactly equal the sum of the rounded values presented in the table.

6.2.3 California Department of Fish and Wildlife Jurisdiction

CDFW is expected to assert jurisdiction over streambed, including riparian areas, to top of bank or edge of riparian dripline, whichever is greater. Table 6-2 presents the extent of this area in the CCNM Aquatic Study Area.

Table 6-2 Additional Potentially CDFW Jurisdictional Waters in the CCNM Aquatic Study Area to Top of Bank/Edge of Riparian

Feature Type	Cowardin Classification	Extent of Features to Top of Bank or Edge of Riparian (Acres) ^a	Linear Feet
Perennial Streams	Riverine, lower perennial, unconsolidated bottom	0.76	975
	Palustrine scrub-shrub		

Feature Type	Cowardin Classification	Extent of Features to Top of Bank or Edge of Riparian (Acres) ^a	Linear Feet
Ephemeral Streams	Riverine unconsolidated bottom	6.78	25,993
	Palustrine scrub-shrub		
Intermittent Streams	Riverine unconsolidated bottom	7.95	14,981
	Palustrine forested		
Riparian	Palustrine forested	15.01	6,834
	Palustrine scrub-shrub		
In-stream Impoundments	Palustrine unconsolidated bottom	0.21	-
	Palustrine emergent		
Artificial Watercourse – Ditches	(Riverine unconsolidated bottom)	0.14	1,016
Total Extent of Features		30.85	49,800

Source: 2019 Desktop Analysis as described in Sections 5.1 and 5.2

^a Acreage values are calculated in the CCNM Aquatic Study Area. Acreage totals derive from raw GIS data, and may not exactly equal the sum of the rounded values presented in the table.

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8 PREPARER QUALIFICATIONS

This chapter lists the Regional Consultant team members responsible for preparation of this report. Table 8-1 provides a summary of their qualifications, roles, and responsibilities in the preparation of this report.

Table 8-1 Preparer Qualifications

Project Role	Name, Credential	Qualifications
Regional Consultant Environmental Team		
Project Manager	Shauna Callery, MCRP, MS, Senior Project Manager - Planning Rincon Consultants, Inc.	12 years of experience Master of City and Regional Planning (M.C.R.P.), California Polytechnic State University, San Luis Obispo; M.S., Transportation Engineering, California Polytechnic State University, San Luis Obispo; B.A., International Relations, University of Southern California B.A., Social Sciences, Psychology, University of Southern California
Principal Scientist; staff oversight; CRAM practitioner; technical review	Colby J. Boggs, Principal/Senior Ecologist Rincon Consultants, Inc.	21 years of experience M.S., Botany, California State University, Chico B.S., Ecology and Evolution, University of California, Santa Barbara.
Task lead; senior staff and delineator; co-author	Meg Perry, Senior Biologist Rincon Consultants	13 years of experience B.S., Soil Science, California Polytechnic State University, San Luis Obispo
Senior staff and delineator; document preparation and QA/QC	Jennifer M. Turner, MS Senior Biologist/Program Manager Rincon Consultants, Inc.	22 years of experience M.S., Natural Resources: Wildlife, Humboldt State University B.S., Biology, Baldwin-Wallace College
GIS analysis and cartography	Marcus Klatt, Senior GIS Analyst Rincon Consultants	13 years of experience B.A., Geography, University of California, Santa Barbara
Technical editor	April Durham, Ph.D., Senior Technical Editor Rincon Consultants, Inc.	18 years of experience Ph.D., Comparative Literature and Media Studies, University of California, Riverside M.F.A., Fine Art and Creative Writing, Art Center College of Design B.A., Art and English, California State University San Bernardino

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APPENDIX A: SOIL DATA FROM USDA NRCS SOIL SURVEYS

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Table A-1 Soil Map Units in the CCNM Aquatic Study Area and their National Hydric Soils List Designation

Map Unit Symbol	Map Unit Name	Drainage Class	Hydrologic Group ^a	Designated Hydric Component on National List?	Hydric Component Name	Typical Percent of Map Unit that is Hydric	Hydric Soil Landform	Hydric Soil Criteria ^b
Kern County, California, Southeastern Part								
107	Arujo-Friant-Tunis complex, 15 to 50 percent slopes	Well drained	B	no	--	--	--	--
108	Arujo-Friant-Tunis complex, 50 to 75 percent slopes	Well drained	B	no	--	--	--	--
140	Havala sandy loam, 0 to 2 percent slopes	Well drained	B	no	--	--	--	--
141	Havala sandy loam, 2 to 5 percent slopes	Well drained	B	no	--	--	--	--
142	Havala sandy loam, 5 to 9 percent slopes	Well drained	B	no	--	--	--	--
143	Havala sandy loam, 9 to 15 percent slopes	Well drained	B	no	--	--	--	--
146	Hesperia sandy loam, 5 to 9 percent slopes	Well drained	B	no	--	--	--	--
149	Los Osos variant clay loam, 30 to 50 percent slopes	Well drained	C	no	--	--	--	--
152	Nacimiento loam, 30 to 50 percent slopes, eroded	Well drained	C	no	--	--	--	--
165	Psammets-Xerolls complex, nearly level	Somewhat excessively drained	A	no	--	--	--	--
175	Steuber sandy loam, 2 to 5 percent slopes	Well drained	B	no	--	--	--	--
176	Steuber sandy loam, 5 to 9 percent slopes	Well drained	B	no	--	--	--	--
179	Tehachapi sandy loam, 2 to 15 percent slopes	Well drained	C	no	--	--	--	--

Map Unit Symbol	Map Unit Name	Drainage Class	Hydrologic Group ^a	Designated Hydric Component on National List?	Hydric Component Name	Typical Percent of Map Unit that is Hydric	Hydric Soil Landform	Hydric Soil Criteria ^b
183	Tehachapi variant sandy clay loam, 15 to 50 percent slopes	Well drained	C	no	--	--	--	--
193	Walong sandy loam, 15 to 30 percent slopes	Well drained	B	no	--	--	--	--
194	Walong sandy loam, 30 to 50 percent slopes	Well drained	B	no	--	--	--	--
195	Walong-Arujo sandy loams, 15 to 30 percent slopes	Well drained	B	no	--	--	--	--
196	Walong-Arujo sandy loams, 30 to 50 percent slopes	Well drained	B	no	--	--	--	--
198	Walong-Rock outcrop complex, 30 to 75 percent slopes	not provided	not provided	no	--	--	--	--
210	Xerorthents, loamy, very steep	Well drained	D	no	--	--	--	--
211	Xerorthents-Rock outcrop complex, very steep	Well drained	D	yes	Unnamed, wet	1	Drainageways	2
264ne	Arujo-Walong-Tunis association, 9 to 30 percent slopes	Well drained	B	yes	Unnamed, flooded; Riverwash	1	Floodplains; Drainageways	4; 4
271ne	Walong-Tunis-Rock outcrop association, 30 to 60 percent slopes	Well drained	D	yes	Riverwash; Unnamed, spring; Unnamed, flooded	2; 1; 1	Drainageways; Drainageways; Floodplains	4; 2; 4
277ne	Feethill-Vista-Walong association, 15 to 60 percent slopes	Well drained	B	yes	Riverwash; Unnamed	2; 2	Drainageways; Floodplains	4; 2
296ne	Arujo-Walong-Tunis association, 30 to 75 percent slopes	Well drained	B	yes	Riverwash	1	Drainageway	4

Map Unit Symbol	Map Unit Name	Drainage Class	Hydrologic Group ^a	Designated Hydric Component on National List?	Hydric Component Name	Typical Percent of Map Unit that is Hydric	Hydric Soil Landform	Hydric Soil Criteria ^b
Kern County, Northeastern Part, and Southeastern Part of Tulare County, California								
264	Arujo-Walong-Tunis association, 9 to 30 percent slopes	Well drained	B	yes	Unnamed, flooded; Riverwash	1; 1	Floodplains; Drainageways	4; 4
265	Arujo sandy loam, 9 to 15 percent slopes	Well drained	B	yes	Unnamed, spring; Riverwash; Unnamed, wet, flooded	1	Drainageways; Drainageways; Floodplains	2; 4; 2, 4
277	Feethill-Vista-Walong association, 15 to 60 percent slopes	Well drained	B	yes	Riverwash; Unnamed, flooded; Unnamed, Spring	2; 1; 1	Drainageways; Floodplains; Drainageways	4; 4; 2
296	Arujo-Walong-Tunis association, 30 to 75 percent slopes	Well drained	B	yes	Riverwash	1	Drainageways	4
303	Steuber sandy loam, 0 to 5 percent slopes	Well drained	B	yes	Riverwash; Kernfork; Unnamed, flooded	6; 4; 1	Channels, drainageways, mountain valleys; Floodplains, mountain valleys; Floodplains, mountain valleys	4; 3, 4; 4
312	Havala sandy loam, 2 to 5 percent slopes	Well drained	B	no	--	--	--	--

Source: NRCS 2019b

^a Hydrologic Class Codes:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

^b Hydric Soil Criteria Codes:

2. Map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that: based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or show evidence that the soil meets the definition of a hydric soil.
3. Map unit components that are frequently ponded for long duration or very long duration during the growing season that: based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or show evidence that the soil meets the definition of a hydric soil.
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that: based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or show evidence that the soils meet the definition of a hydric soil.

APPENDIX B: NATIONAL HYDROGRAPHY DATASET AND NATIONAL WETLANDS INVENTORY

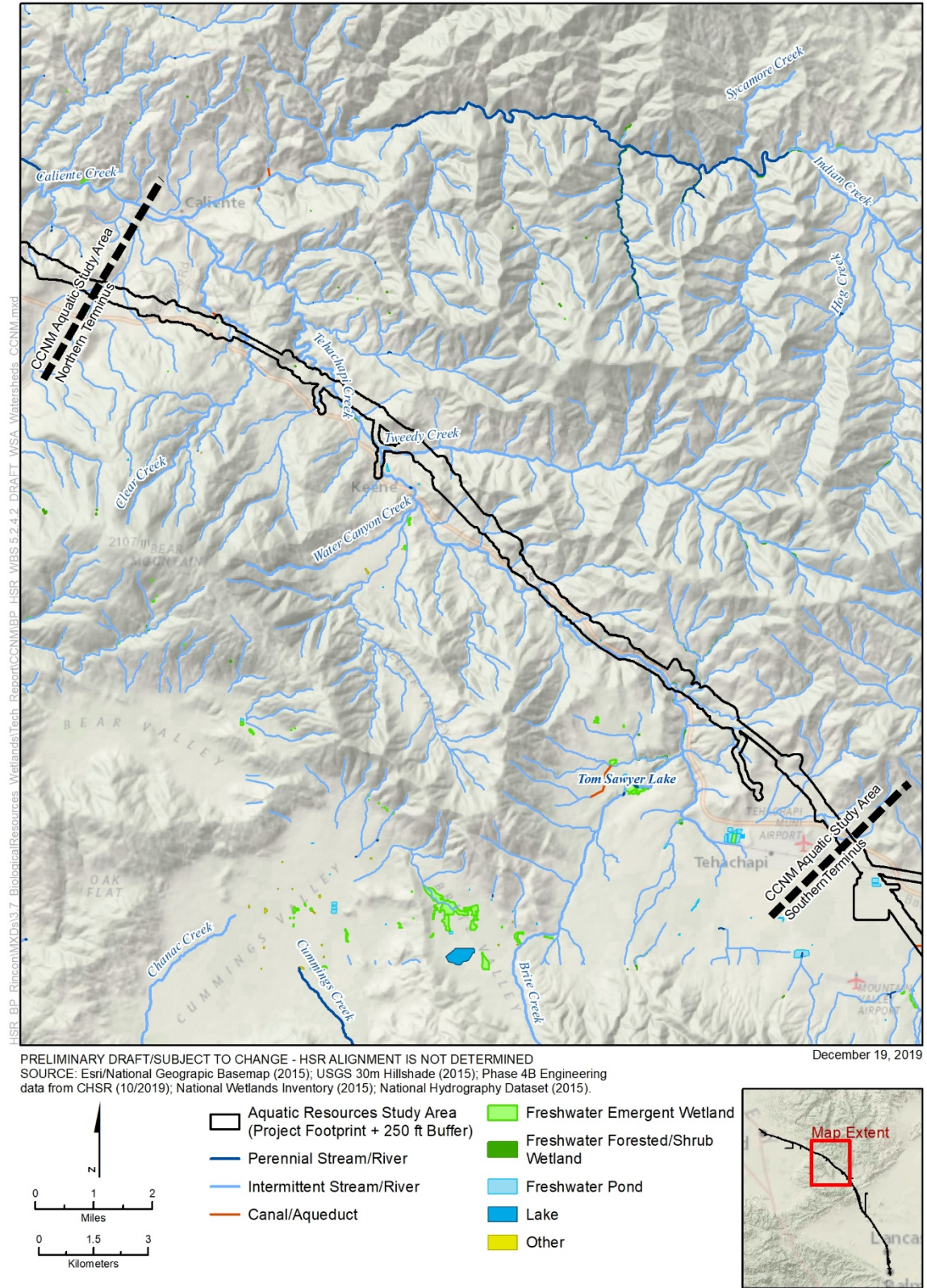
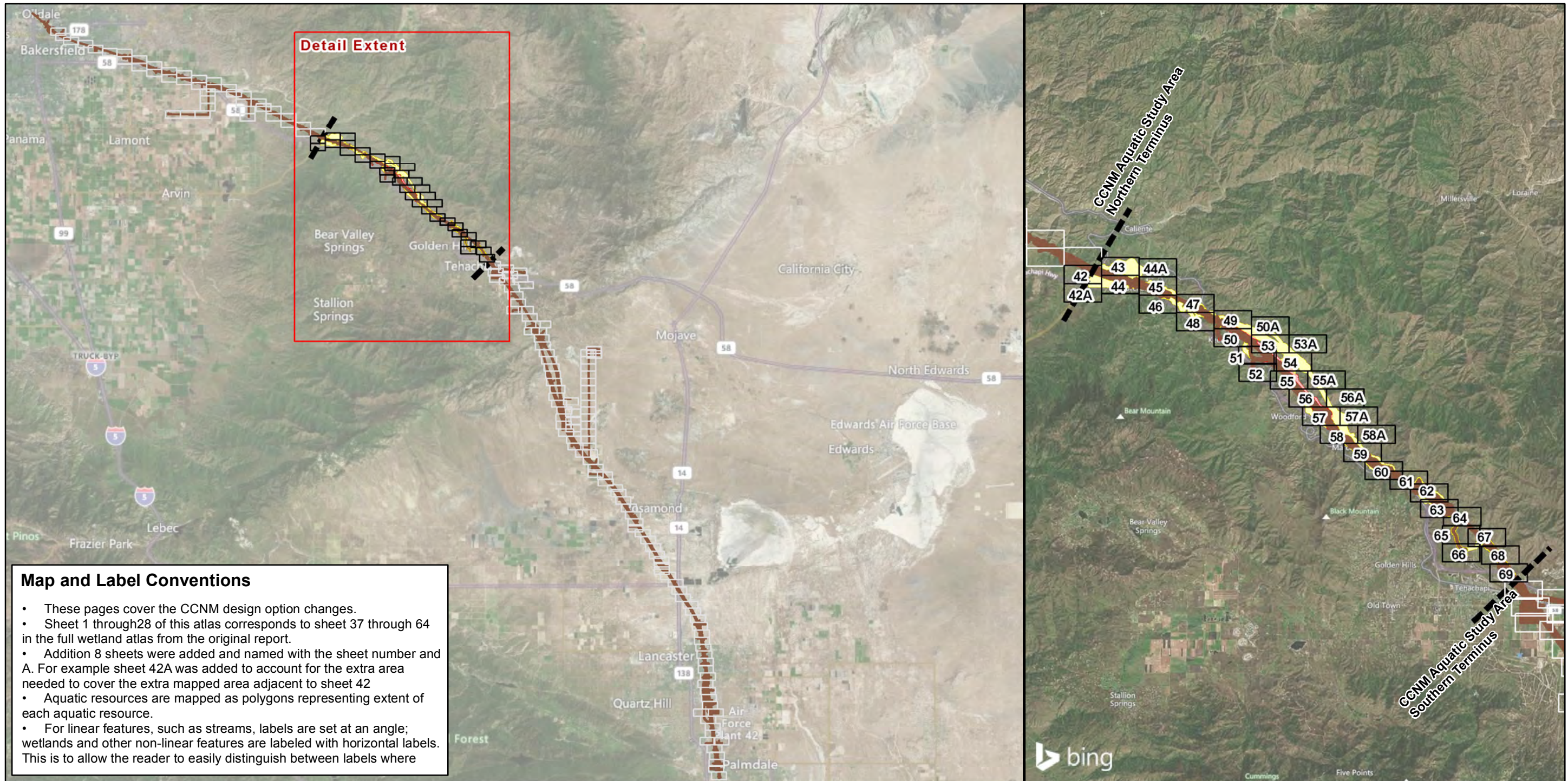


Figure B-1 NHD and NWI Data

APPENDIX C: JURISDICTIONAL DELINEATION MAPBOOK TO OHWM

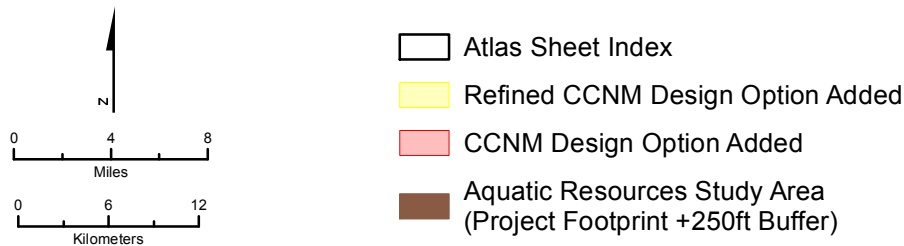
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Map and Label Conventions

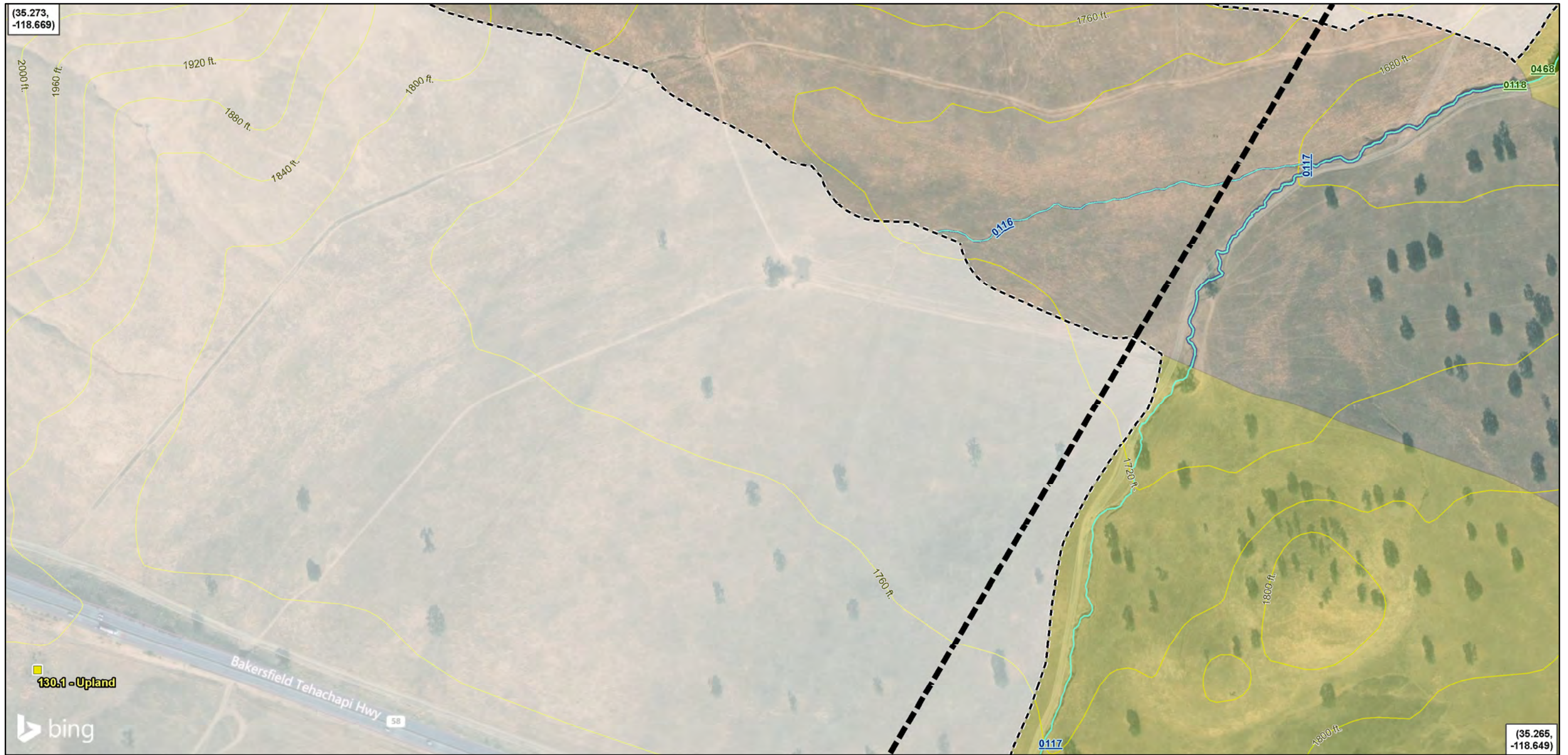
- These pages cover the CCNM design option changes.
- Sheet 1 through 28 of this atlas corresponds to sheet 37 through 64 in the full wetland atlas from the original report.
- Addition 8 sheets were added and named with the sheet number and A. For example sheet 42A was added to account for the extra area needed to cover the extra mapped area adjacent to sheet 42
- Aquatic resources are mapped as polygons representing extent of each aquatic resource.
- For linear features, such as streams, labels are set at an angle; wetlands and other non-linear features are labeled with horizontal labels. This is to allow the reader to easily distinguish between labels where

PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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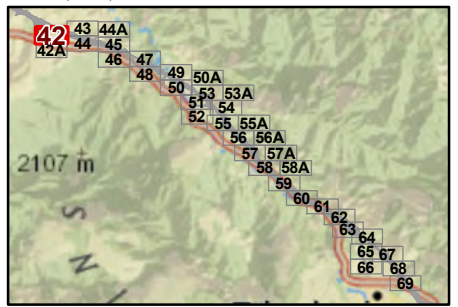
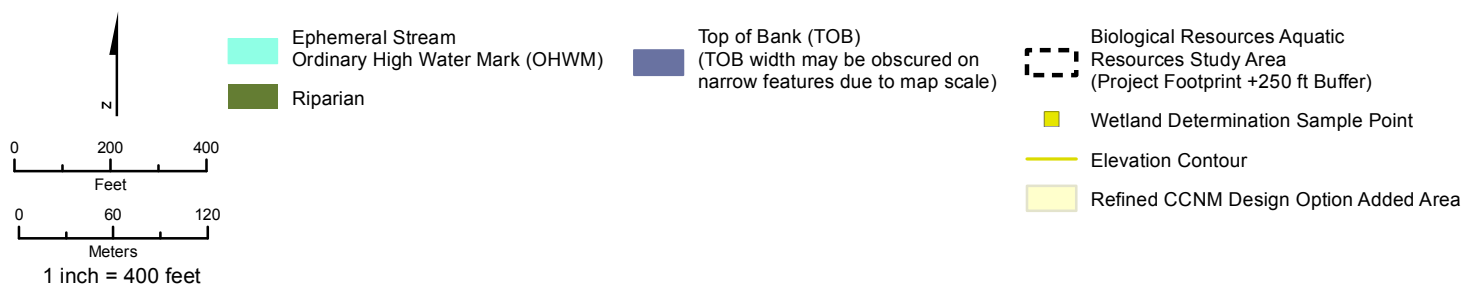
Jurisdictional Delineation to Ordinary High Water Mark

Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



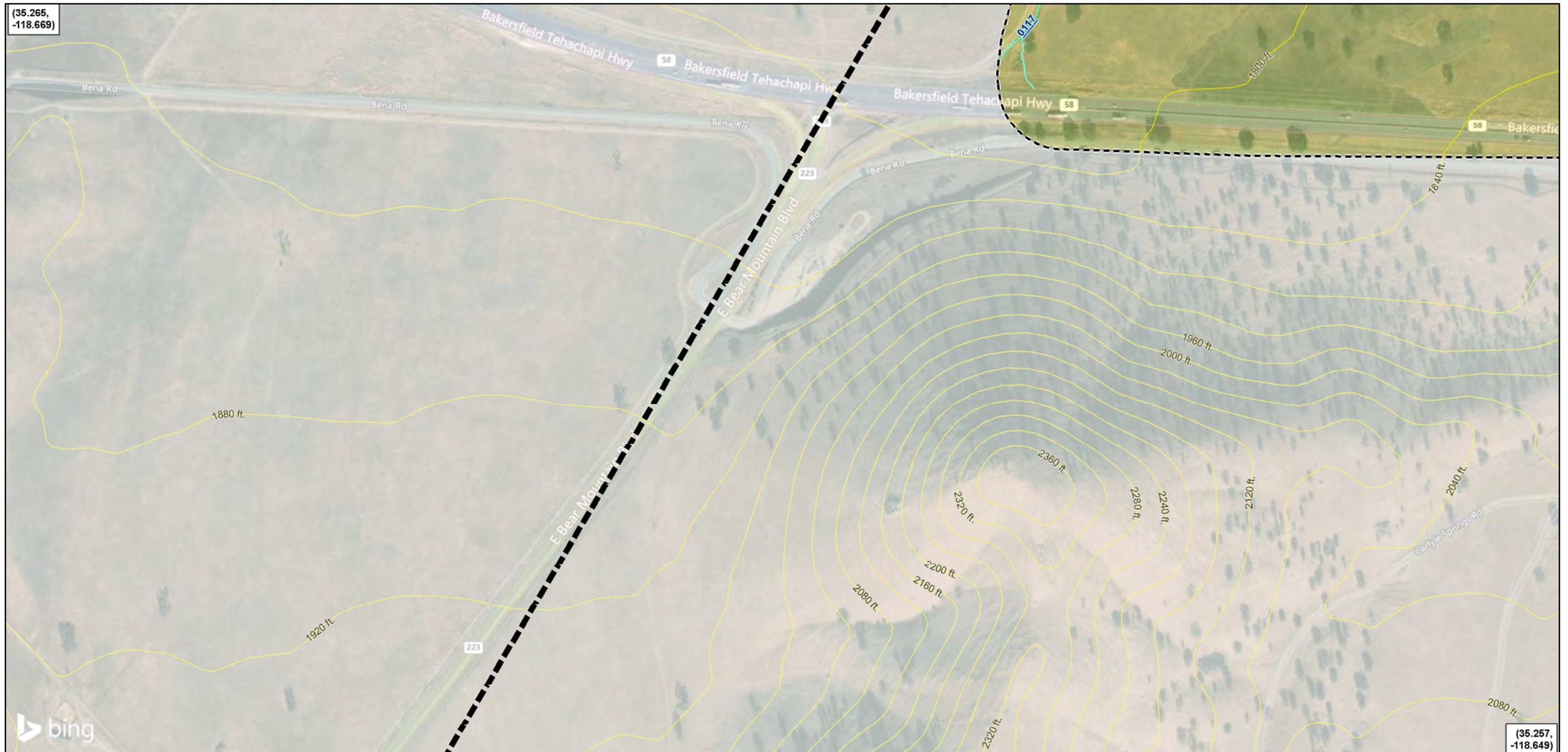
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Sheet Name 42



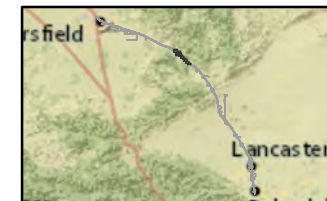
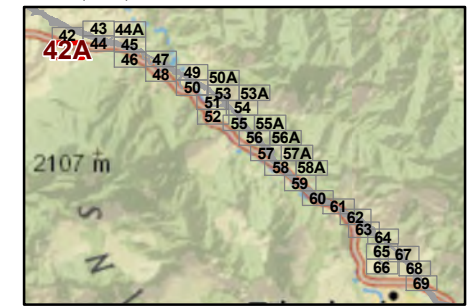
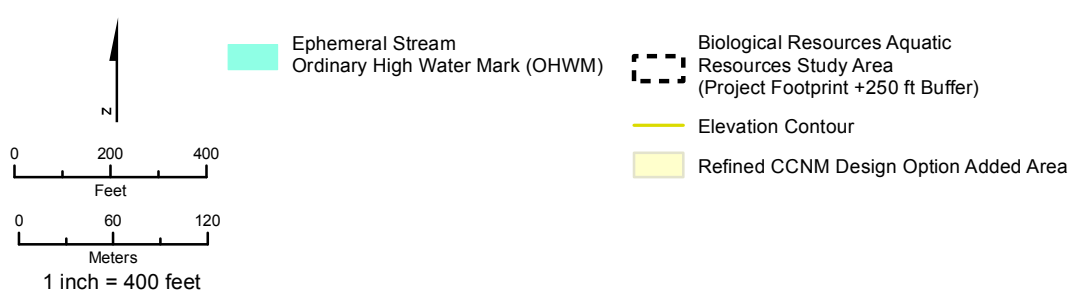
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Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 42A



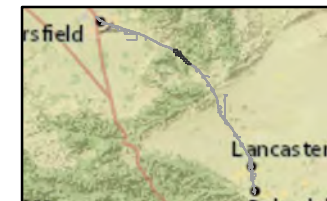
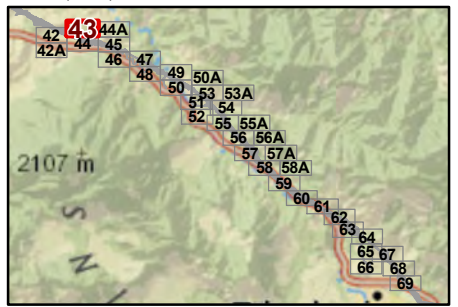
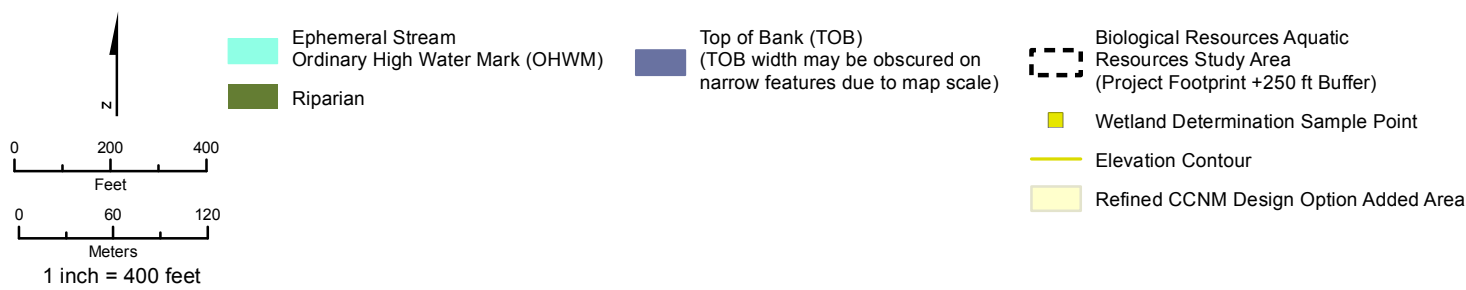
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 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 43



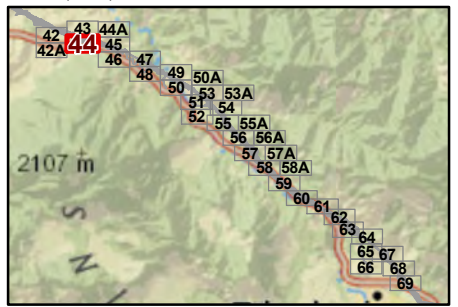
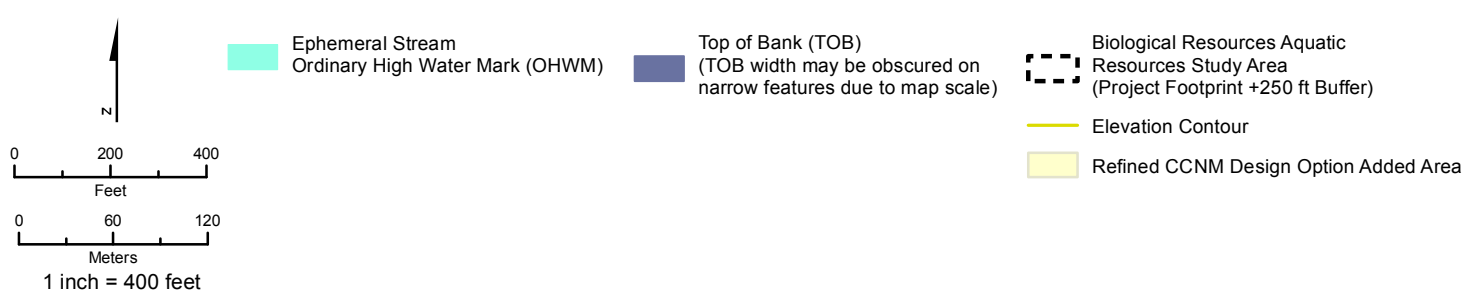
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 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 44



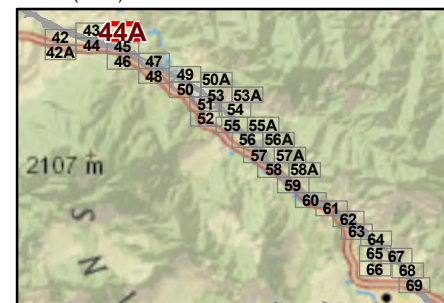
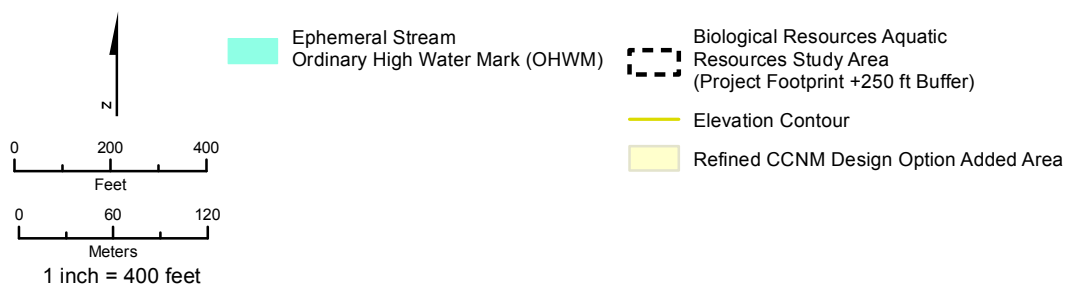
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



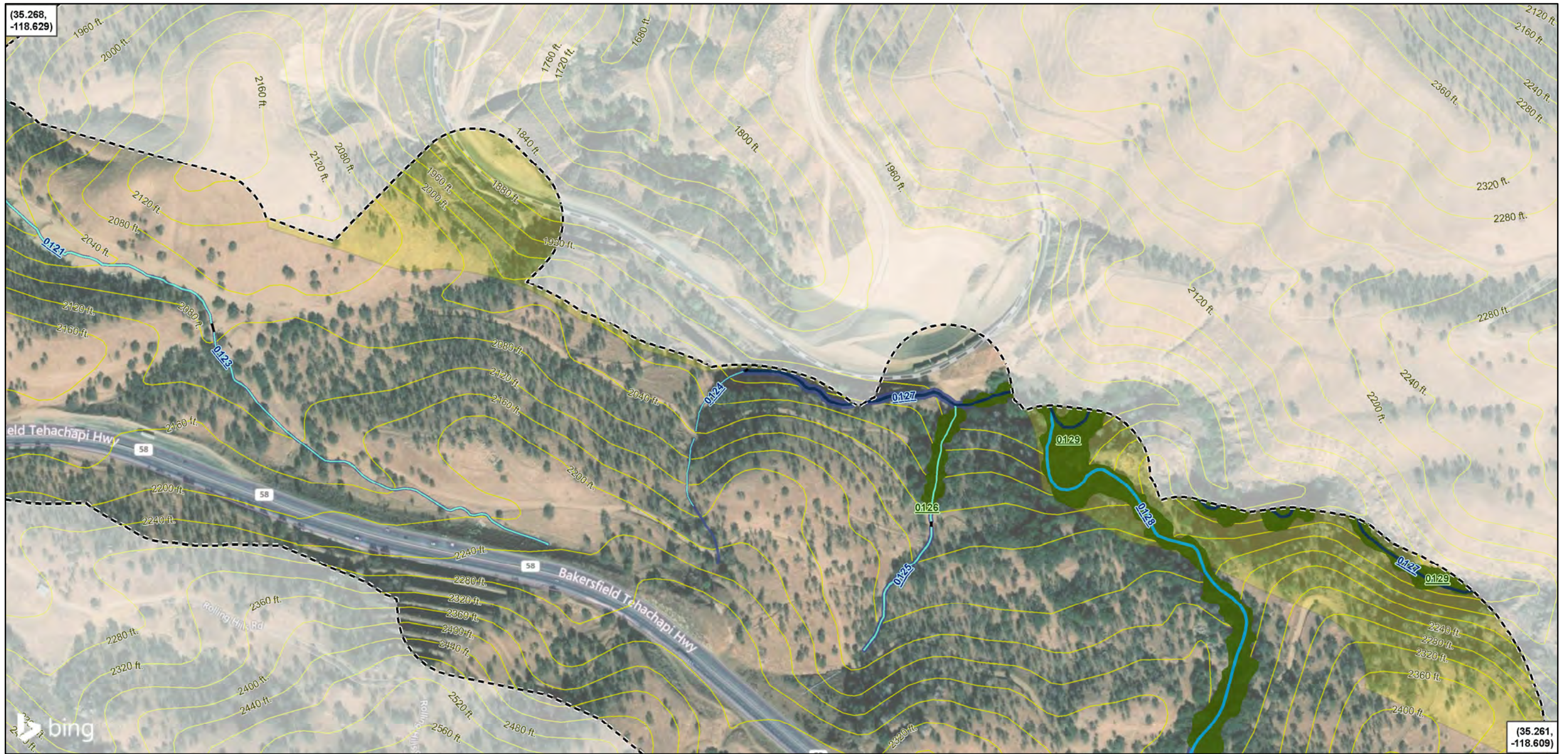
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Sheet Name 44A



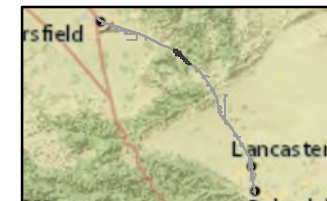
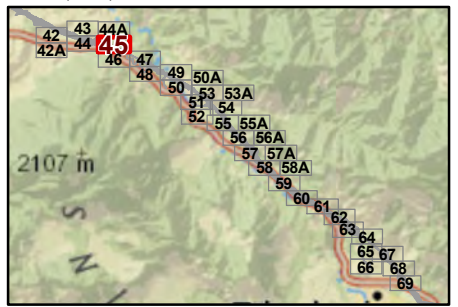
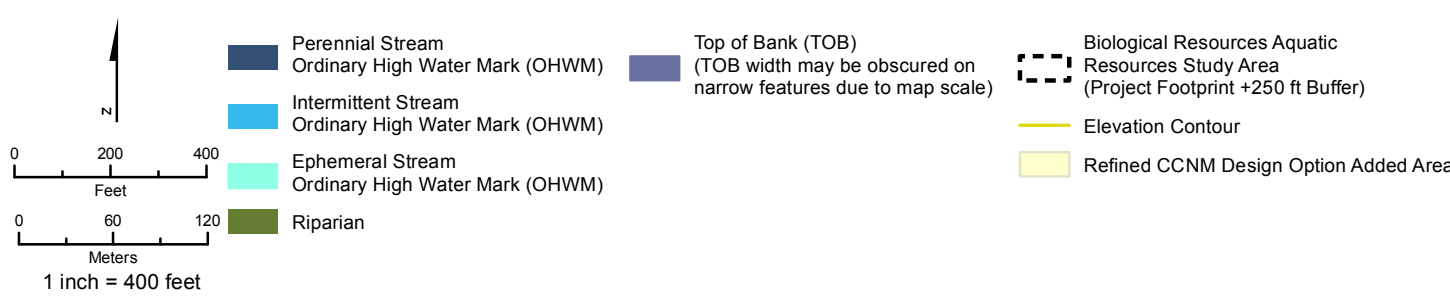
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 45



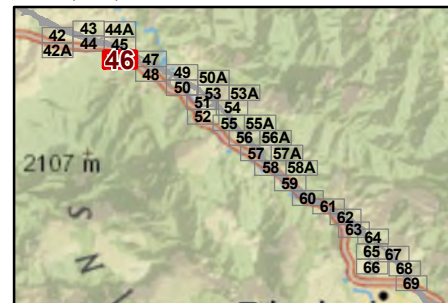
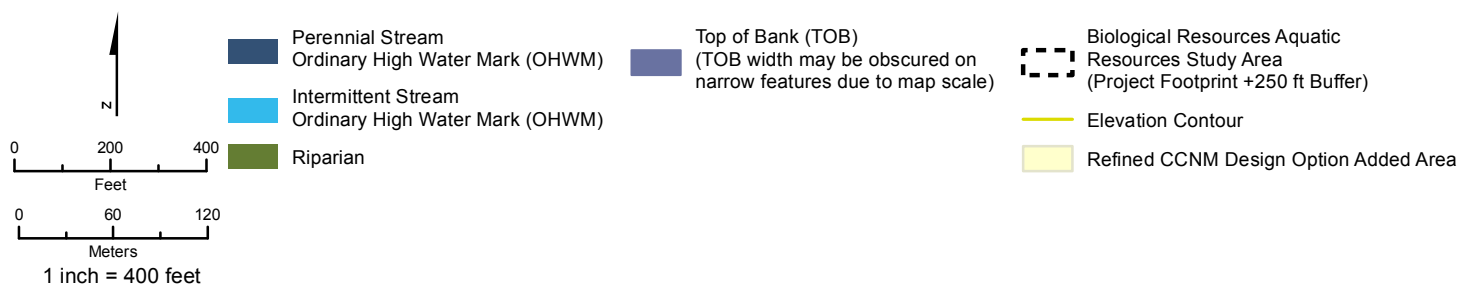
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 46



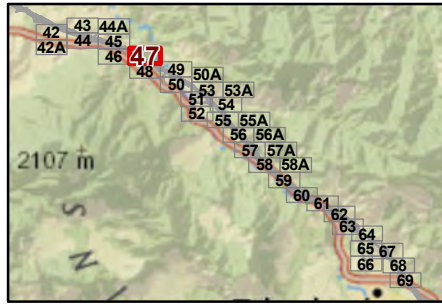
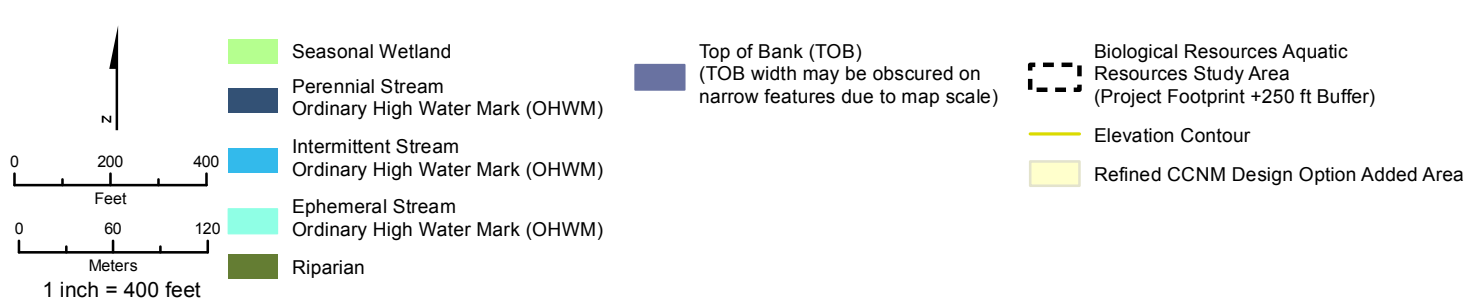
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 47



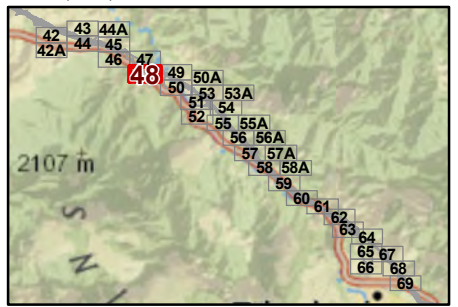
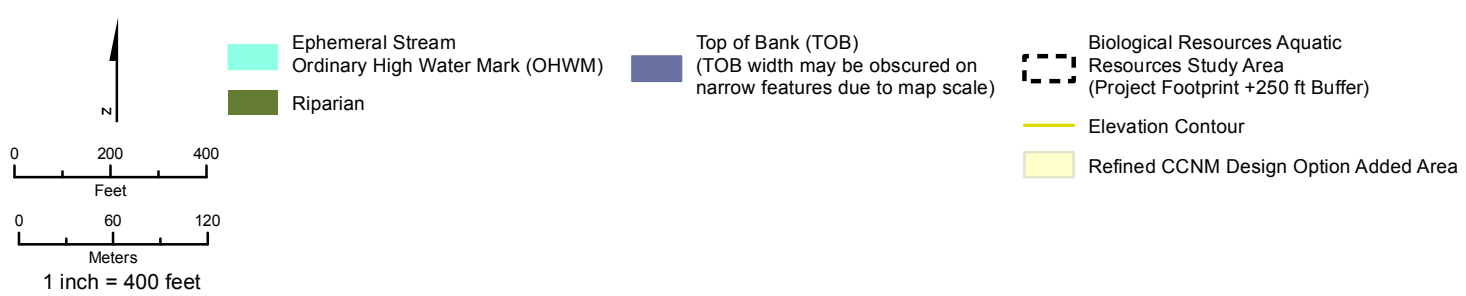
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

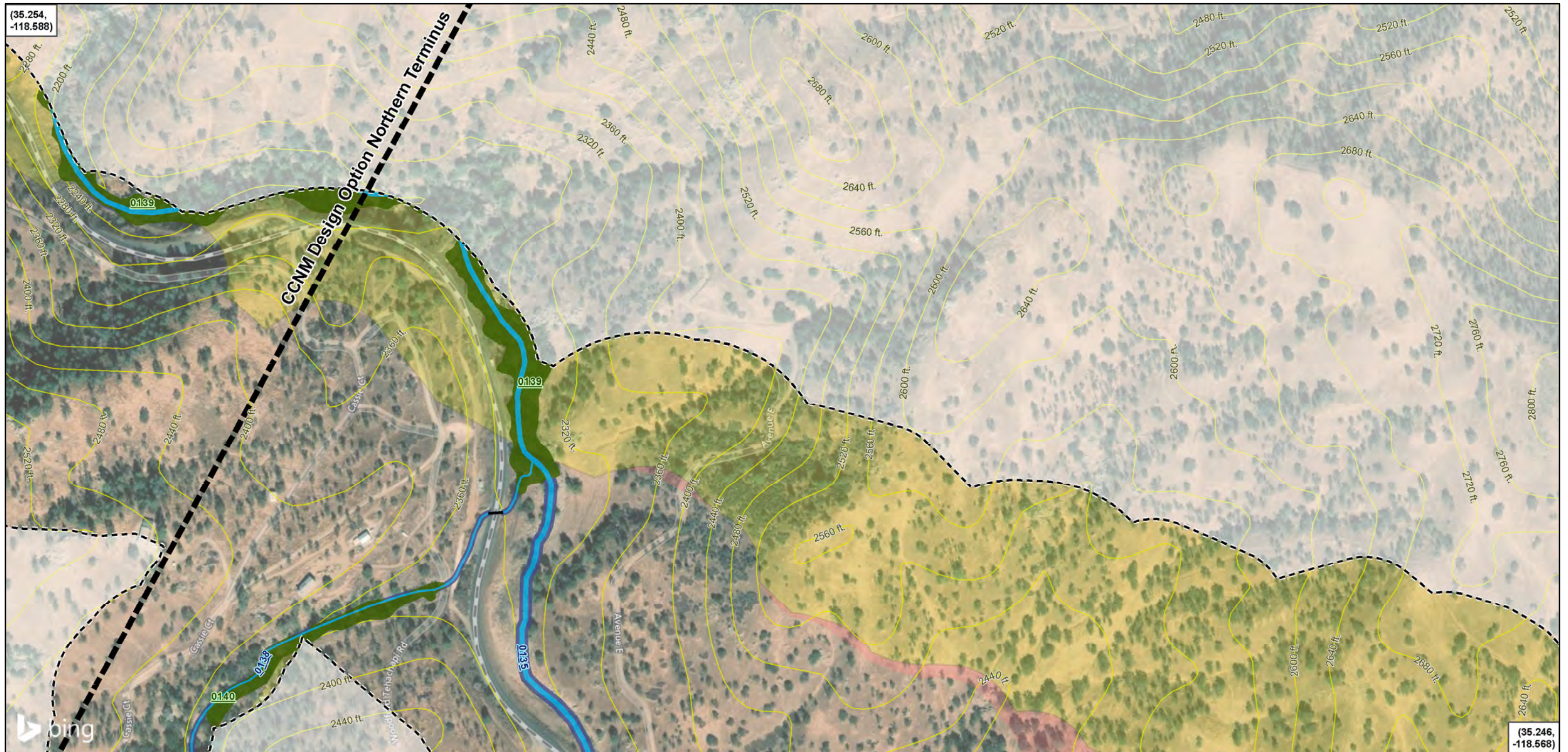
Sheet Name 48



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 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

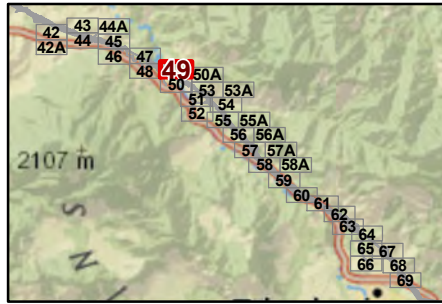
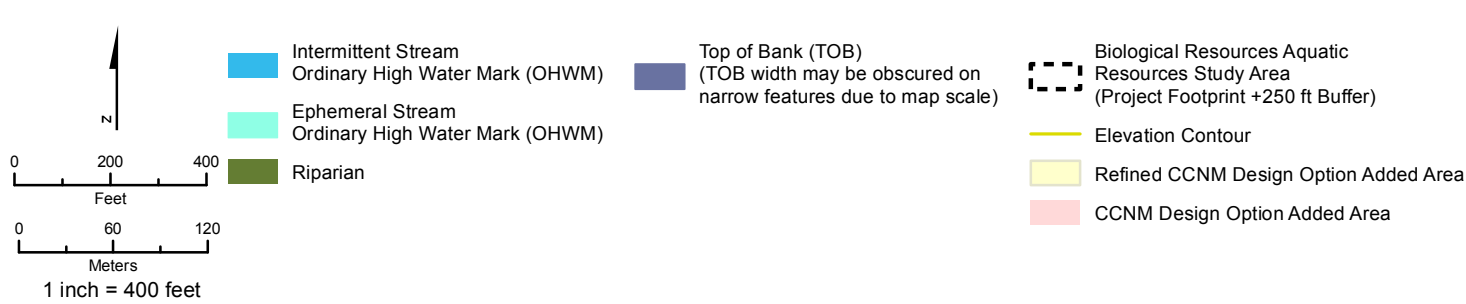
Jurisdictional Delineation to Ordinary High Water Mark

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



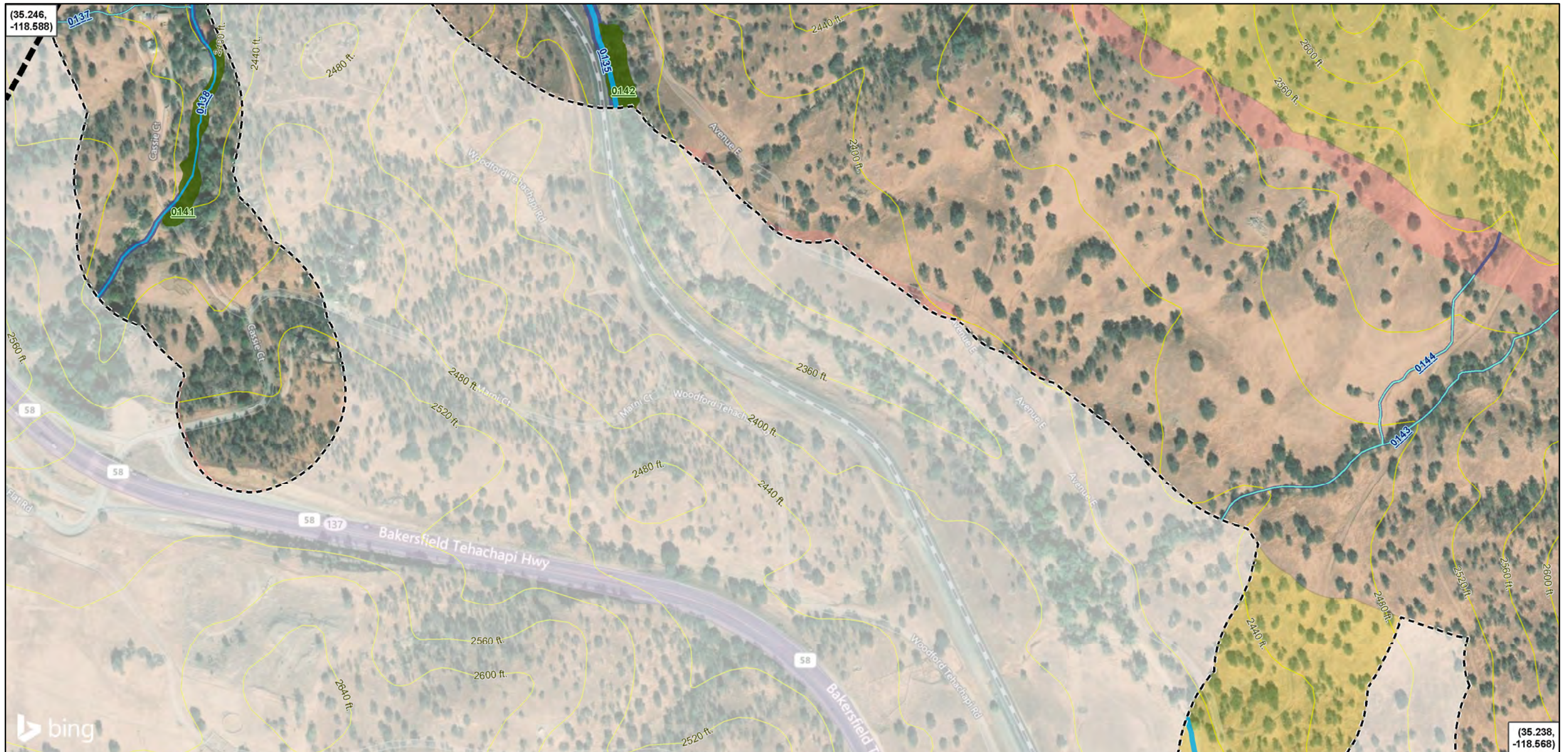
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 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 49



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

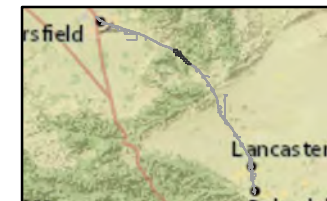
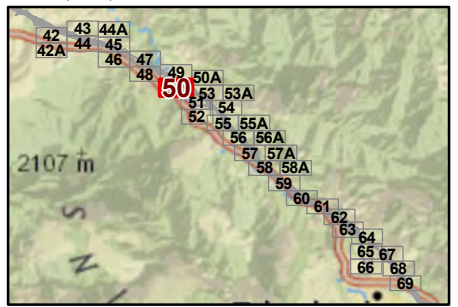
Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

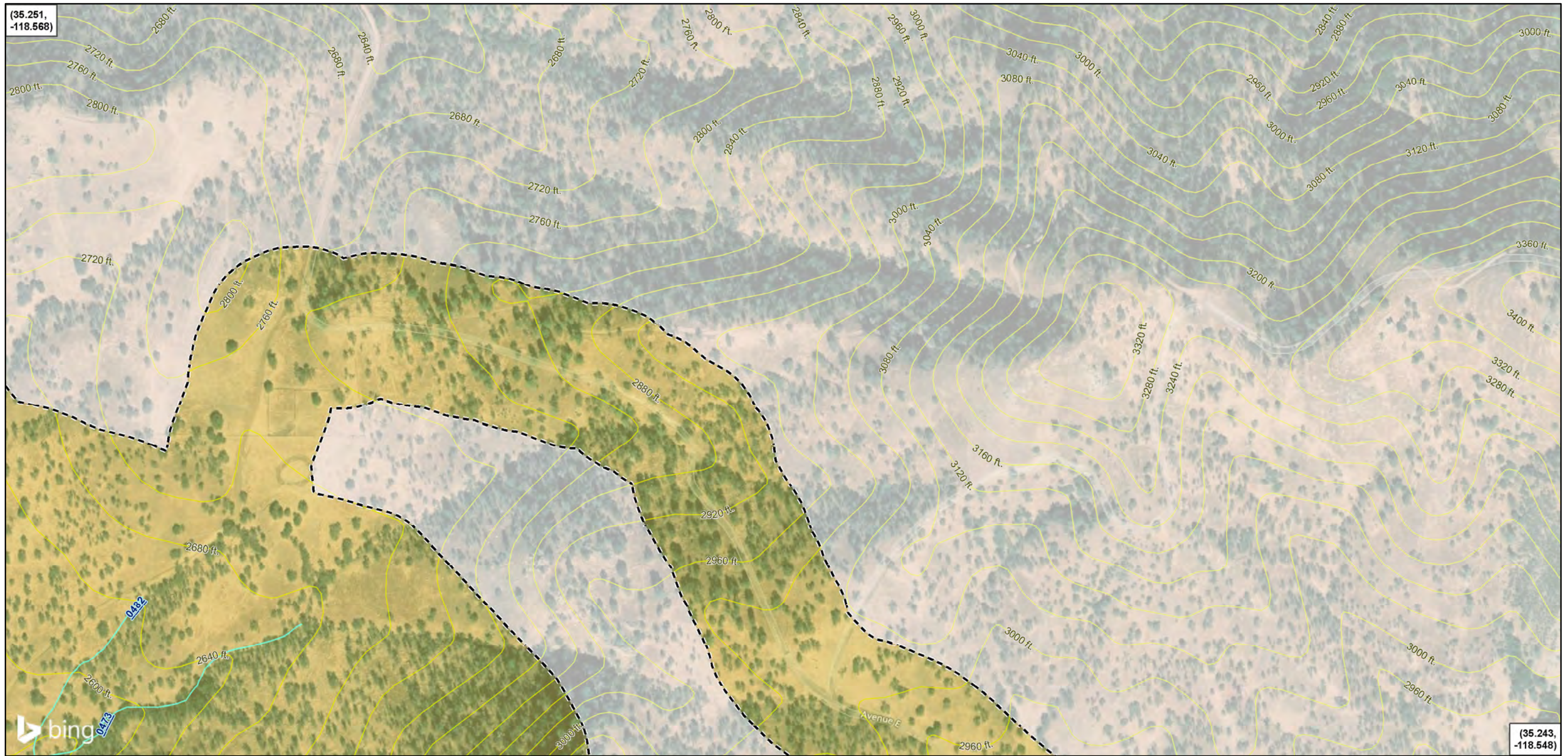
Sheet Name 50

 0 200 400 Feet 0 60 120 Meters 1 inch = 400 feet	Intermittent Stream Ordinary High Water Mark (OHWM)	Top of Bank (TOB) (TOB width may be obscured on narrow features due to map scale)	Biological Resources Aquatic Resources Study Area (Project Footprint +250 ft Buffer)
	Ephemeral Stream Ordinary High Water Mark (OHWM)	Elevation Contour	Refined CCNM Design Option Added Area
	Riparian		



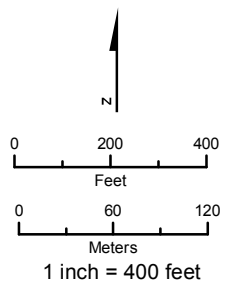
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

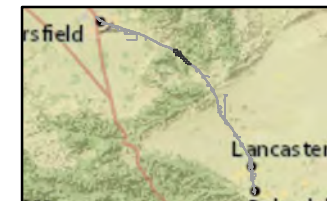
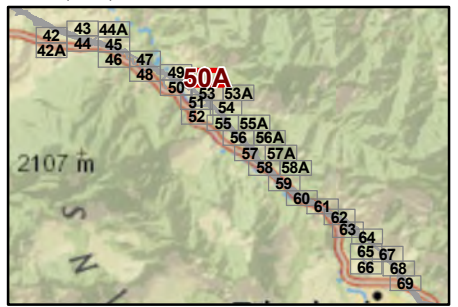


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Sheet Name 50A

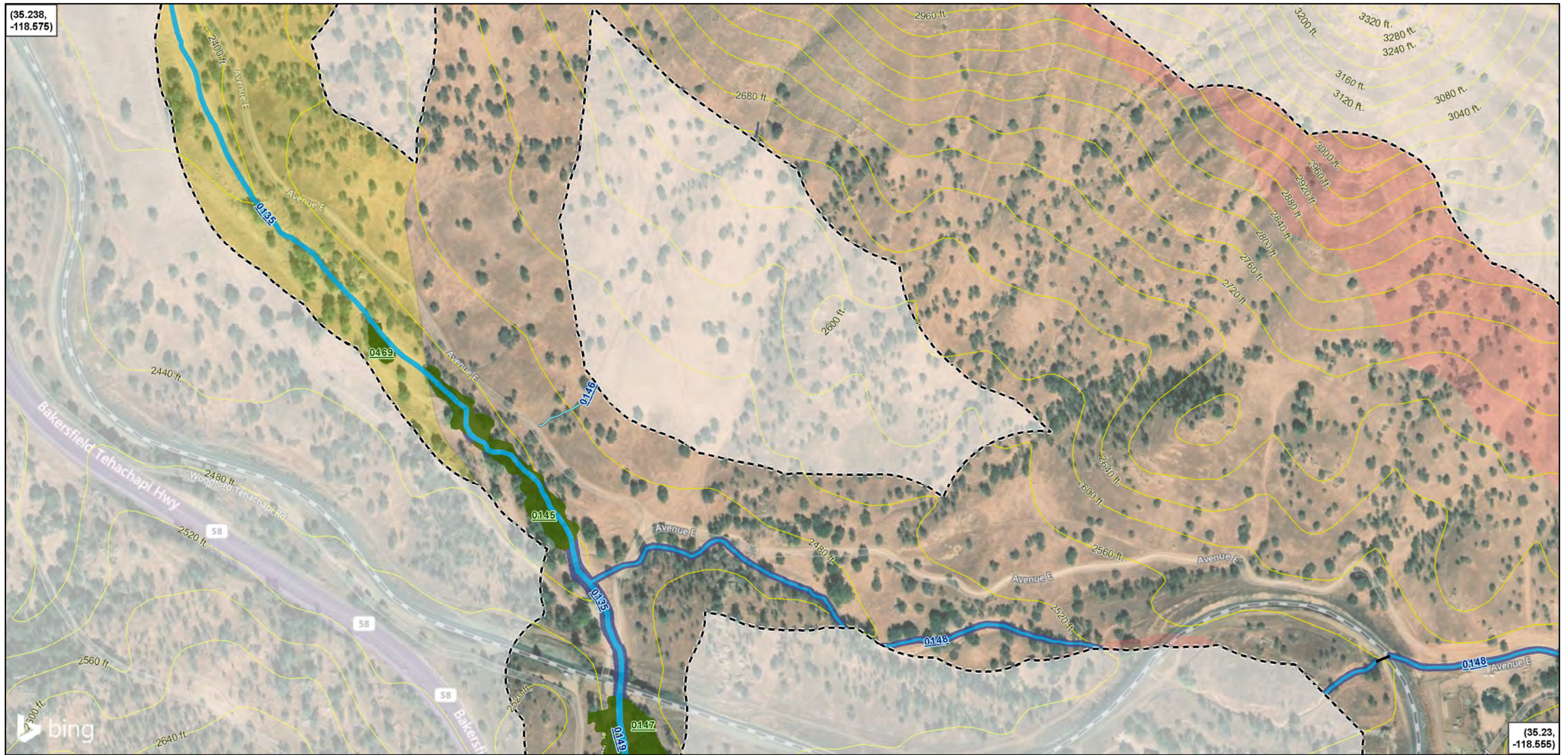


- Ephemeral Stream
- Ordinary High Water Mark (OHWM)
- Biological Resources Aquatic Resources Study Area (Project Footprint +250 ft Buffer)
- Elevation Contour
- Refined CCNM Design Option Added Area



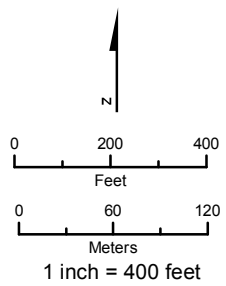
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

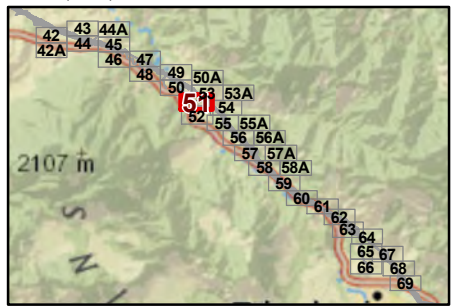


PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 51



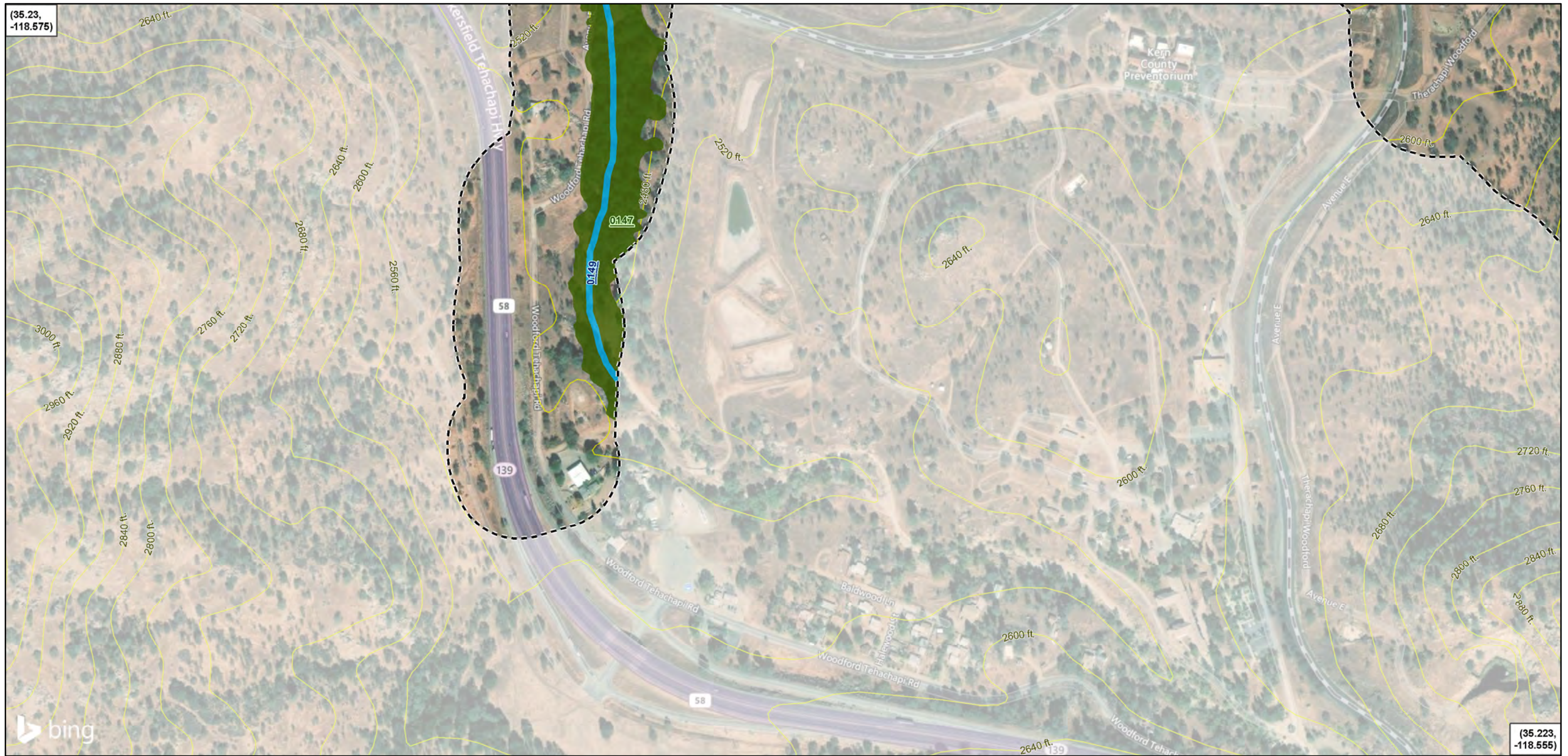
- Intermittent Stream Ordinary High Water Mark (OHWM)
- Ephemeral Stream Ordinary High Water Mark (OHWM)
- Riparian
- Top of Bank (TOB) (TOB width may be obscured on narrow features due to map scale)
- Biological Resources Aquatic Resources Study Area (Project Footprint +250 ft Buffer)
- Elevation Contour
- Refined CCNM Design Option Added Area
- CCNM Design Option Added Area



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

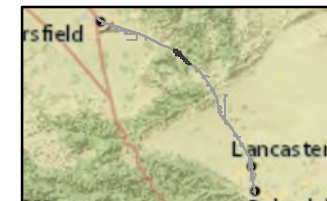
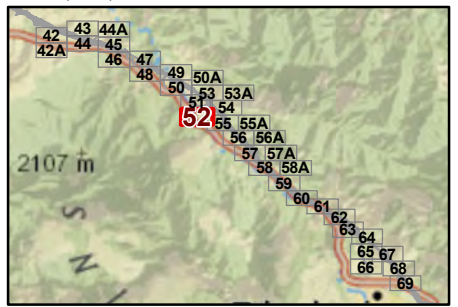
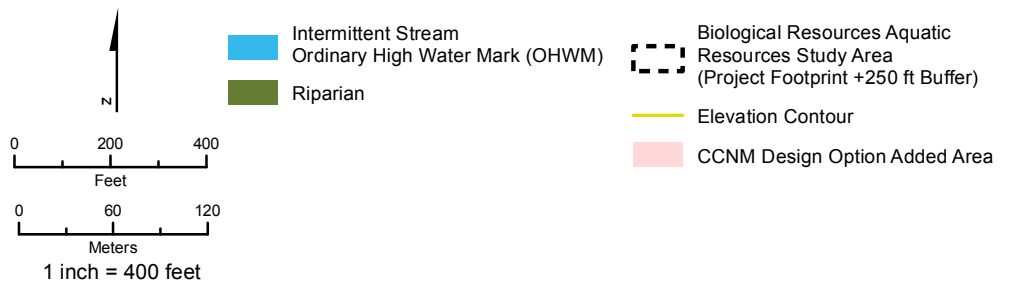
Jurisdictional Delineation to Ordinary High Water Mark

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

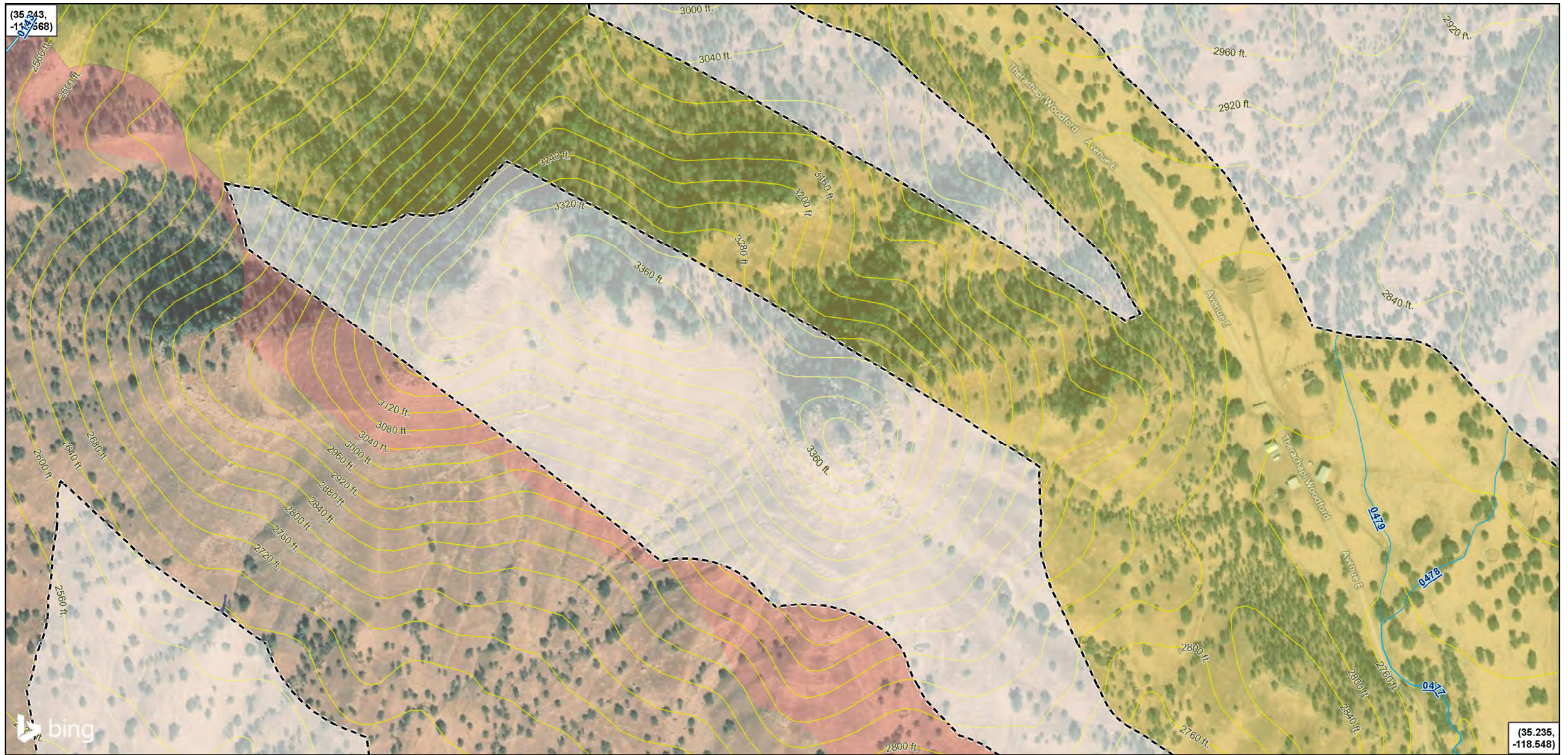
Sheet Name 52



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

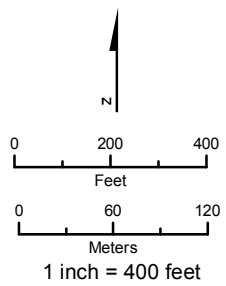
Jurisdictional Delineation to Ordinary High Water Mark

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

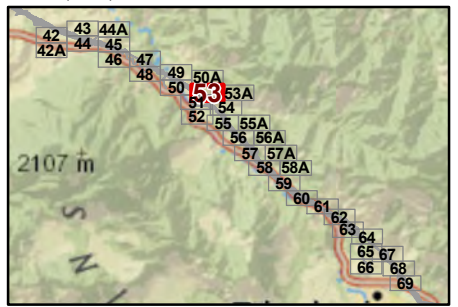


PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 53



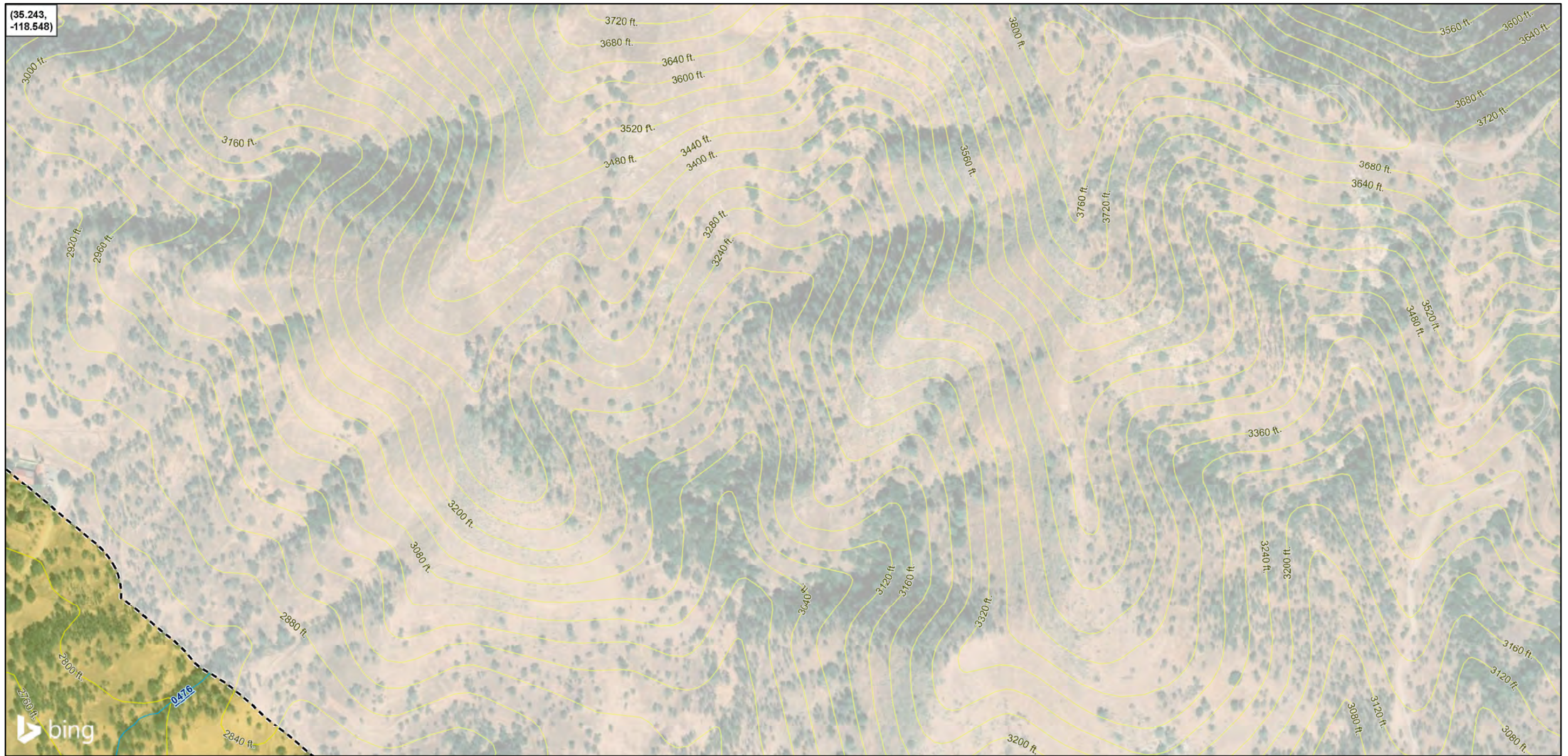
- Intermittent Stream Ordinary High Water Mark (OHWM)
- Ephemeral Stream Ordinary High Water Mark (OHWM)
- Top of Bank (TOB) (TOB width may be obscured on narrow features due to map scale)
- Biological Resources Aquatic Resources Study Area (Project Footprint +250 ft Buffer)
- Elevation Contour
- Refined CCNM Design Option Added Area
- CCNM Design Option Added Area



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

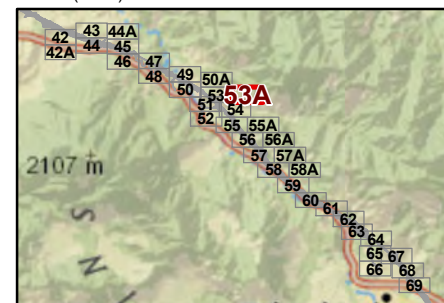
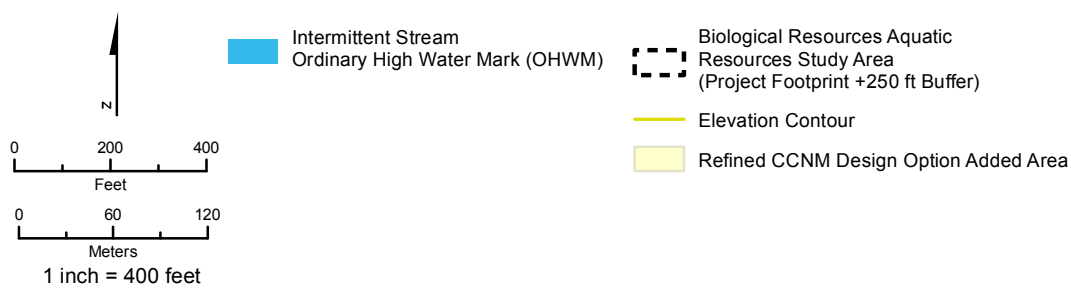
Jurisdictional Delineation to Ordinary High Water Mark

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

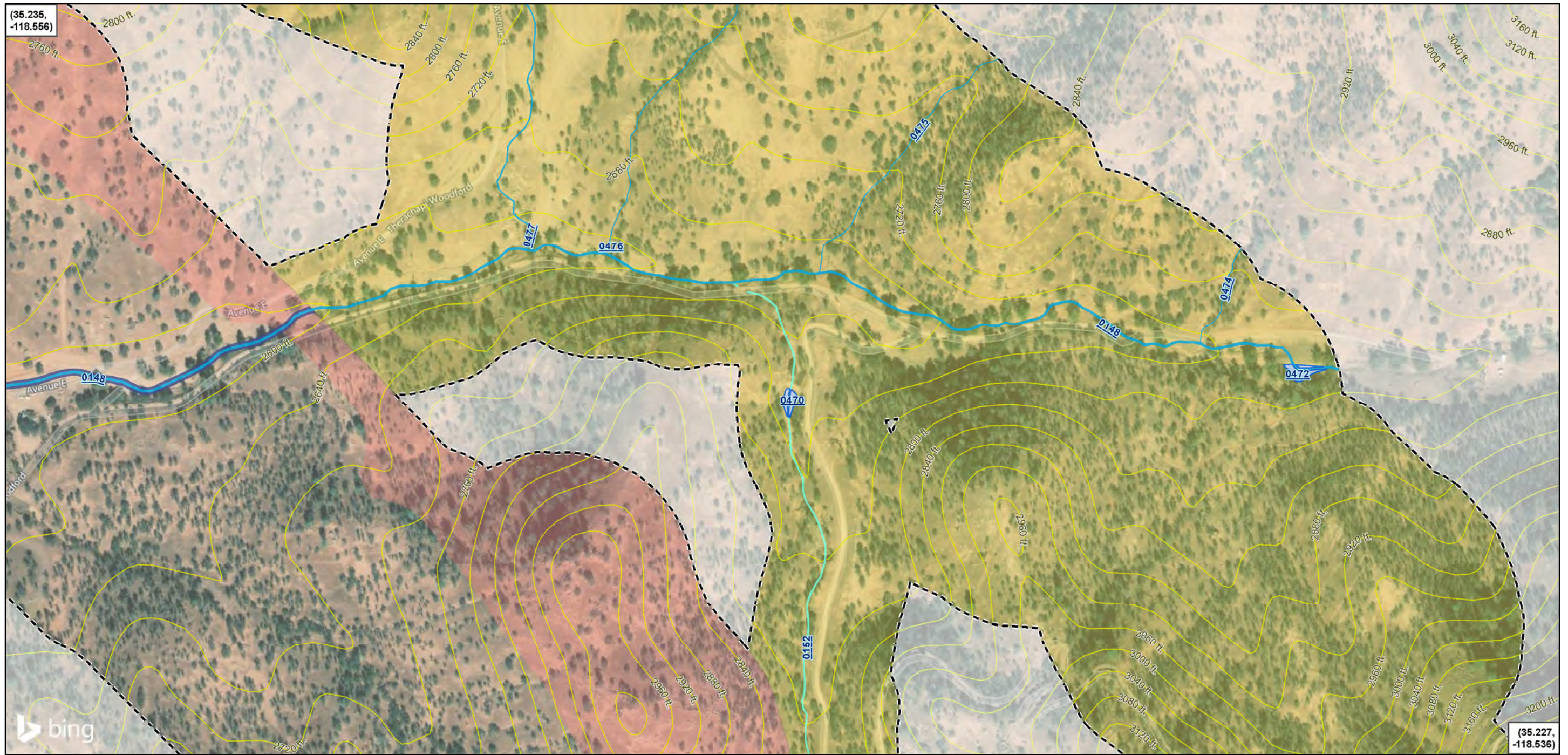
Sheet Name 53A



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

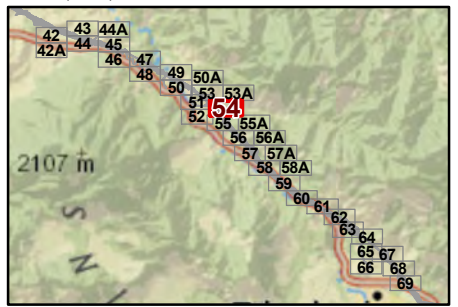
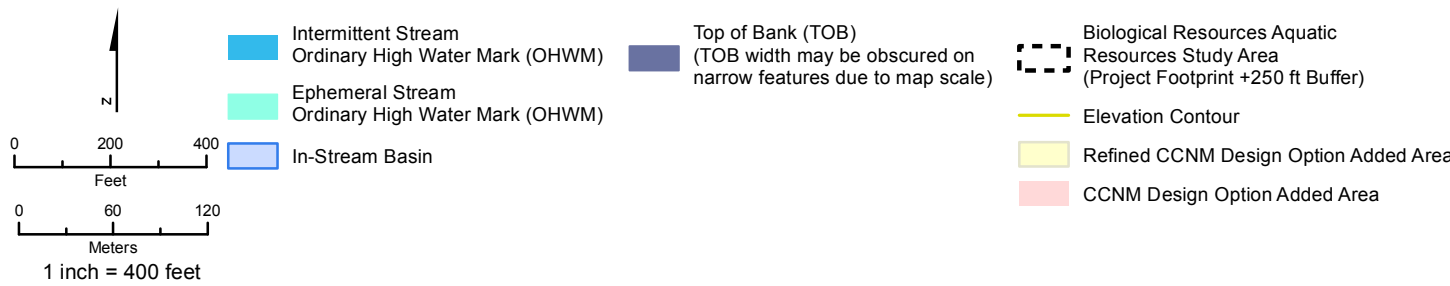
Jurisdictional Delineation to Ordinary High Water Mark

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



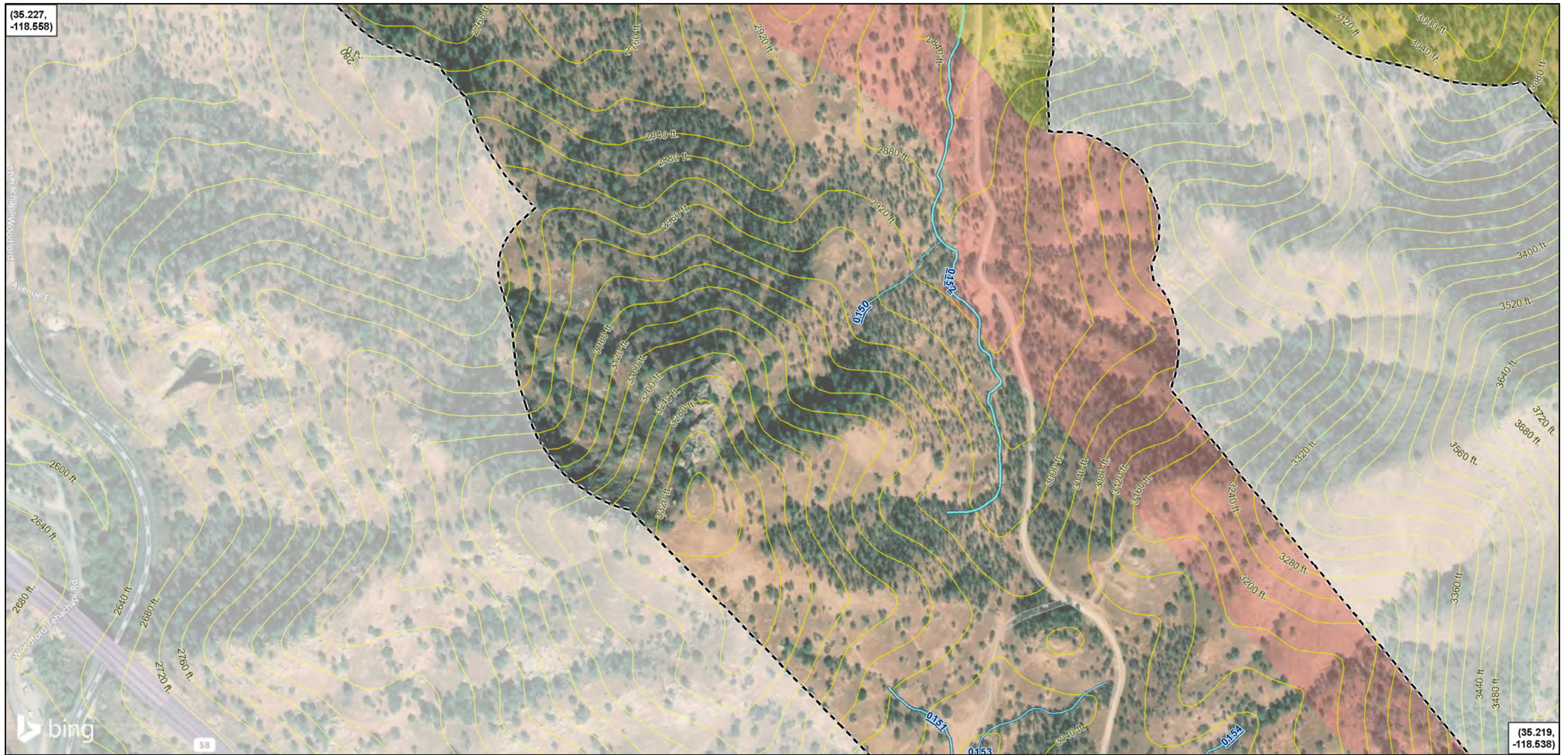
PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 54



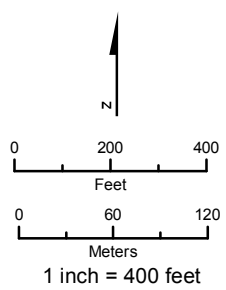
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

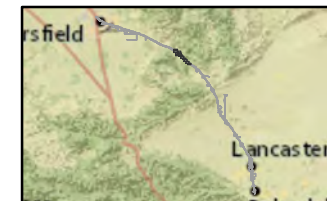
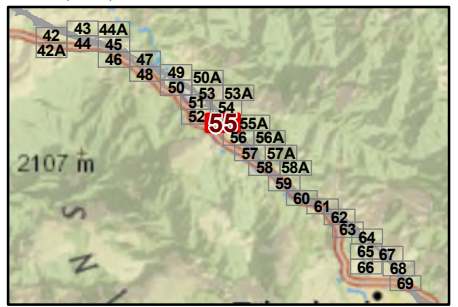


PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 55

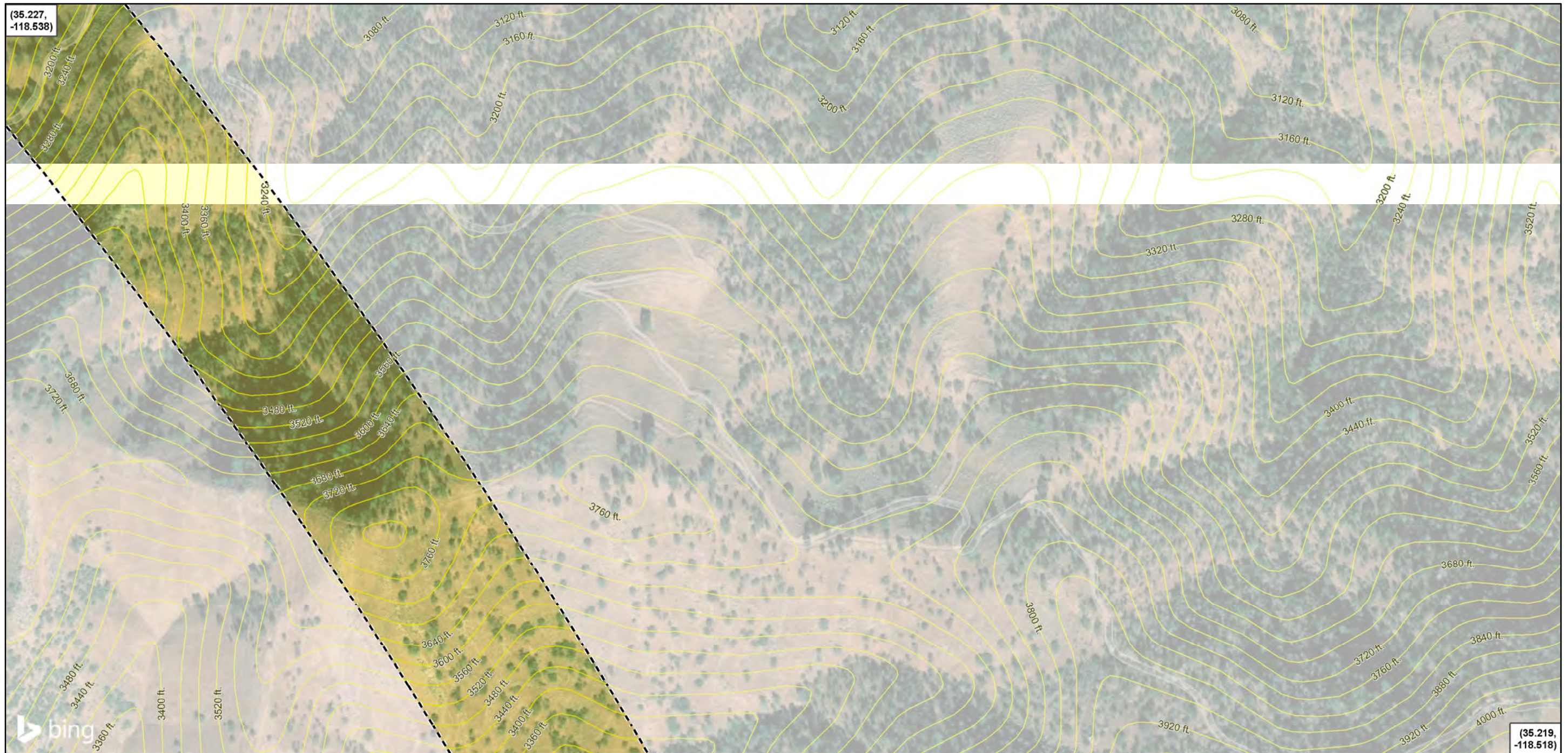


- Ephemeral Stream
- Ordinary High Water Mark (OHWM)
- Top of Bank (TOB)
(TOB width may be obscured on narrow features due to map scale)
- Biological Resources Aquatic Resources Study Area
(Project Footprint +250 ft Buffer)
- Elevation Contour
- Refined CCNM Design Option Added Area
- CCNM Design Option Added Area



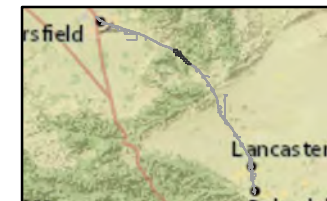
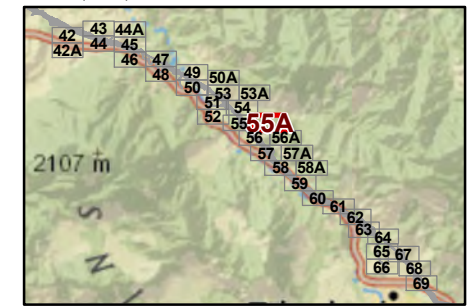
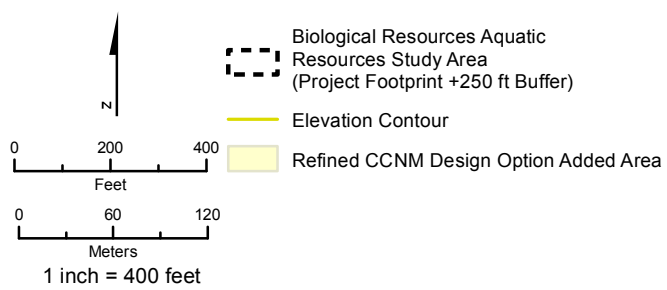
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



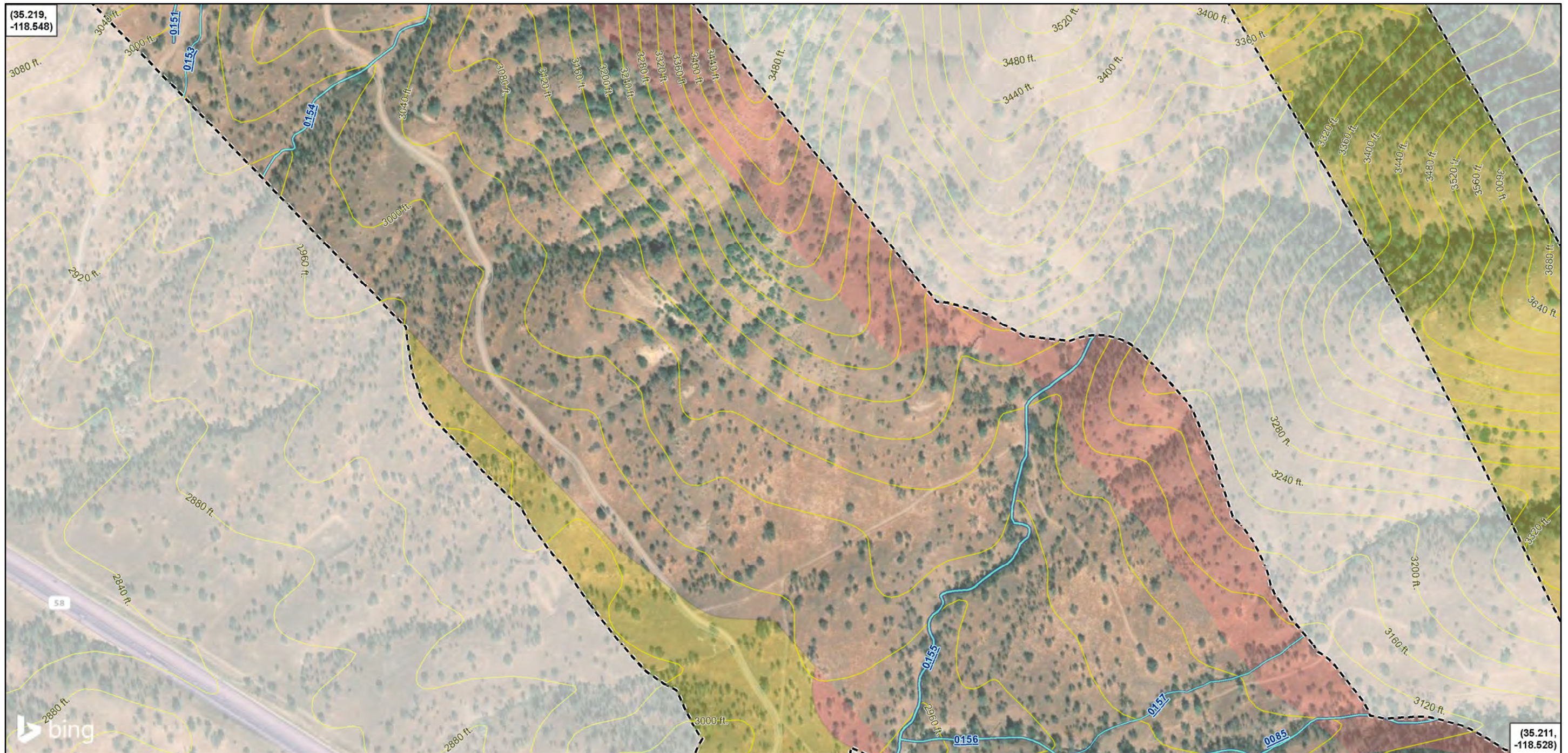
PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 55A



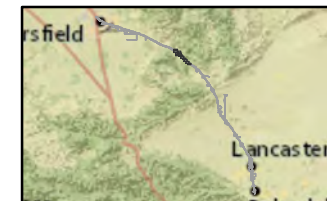
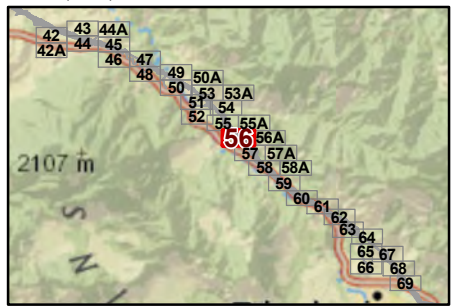
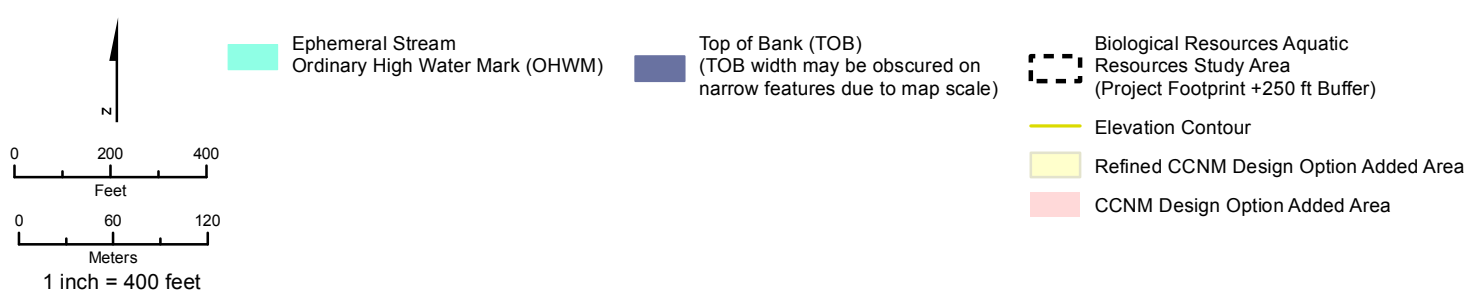
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



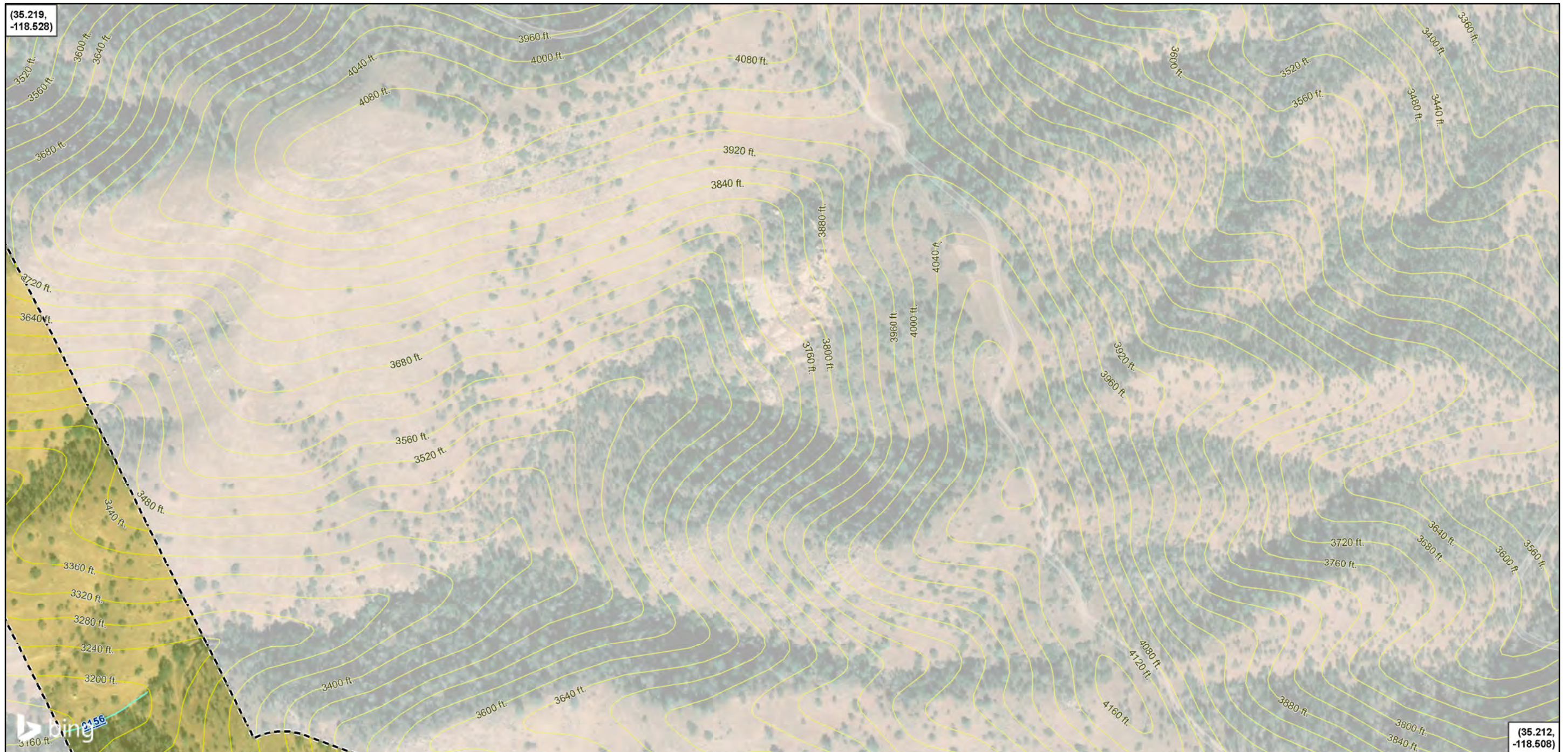
PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 56



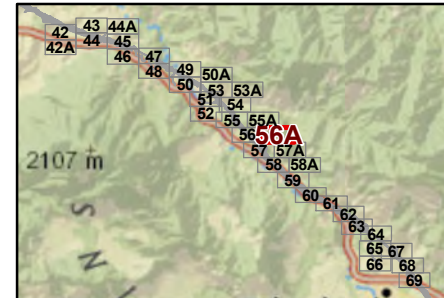
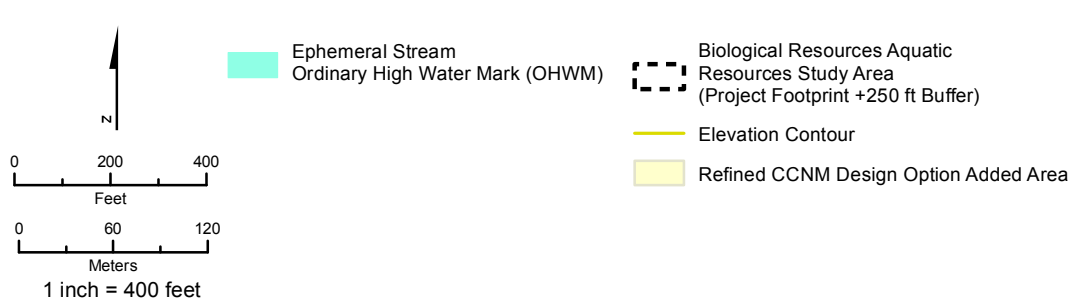
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



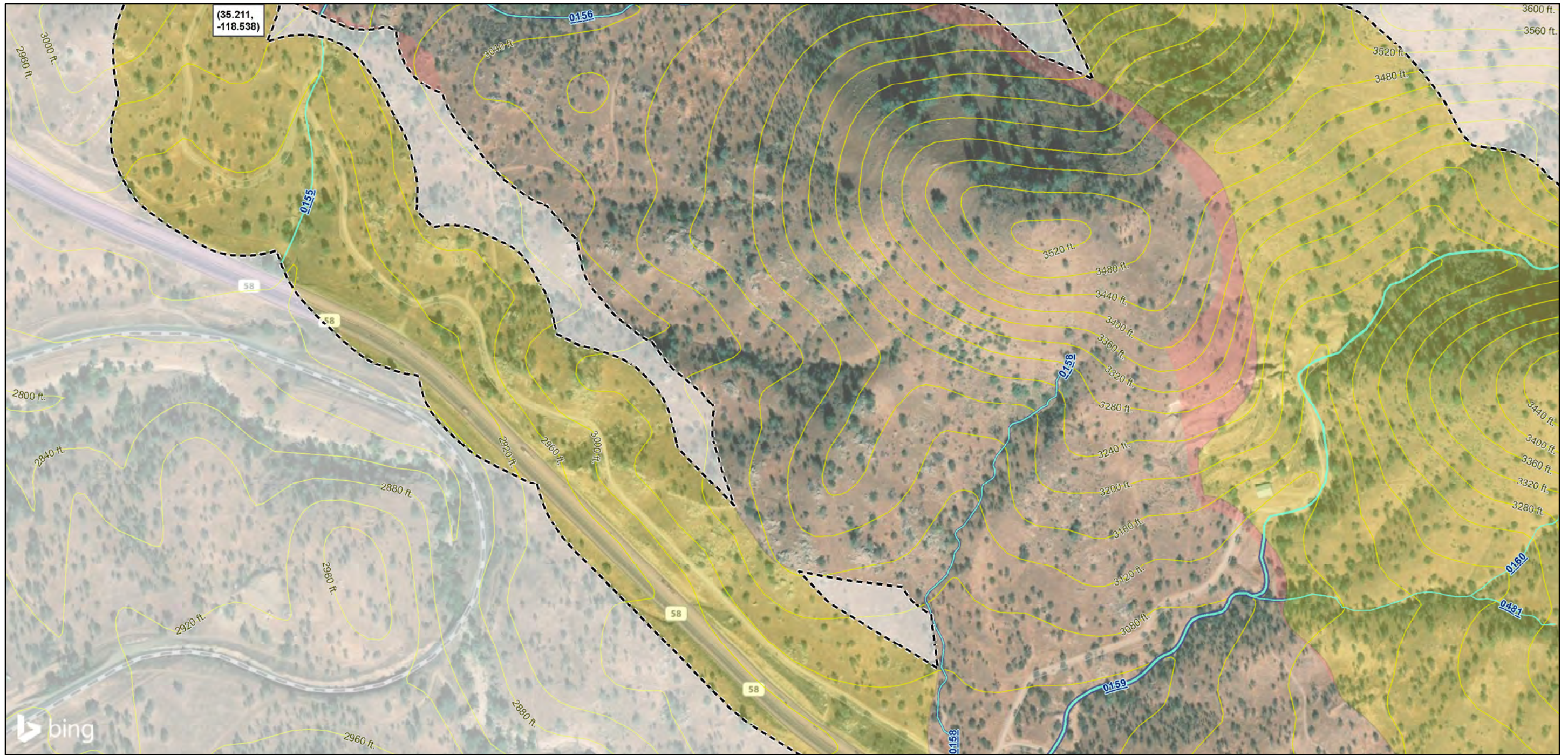
PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 56A



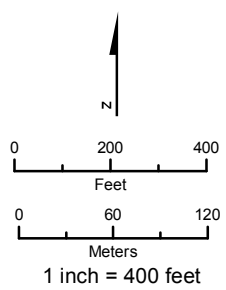
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 Projection: Lambert Conic Conformal
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Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

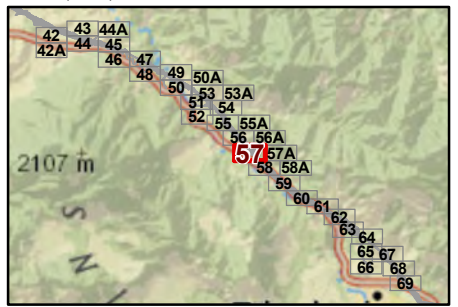


PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 57



- Ephemeral Stream
- Ordinary High Water Mark (OHWM)
- Top of Bank (TOB)
(TOB width may be obscured on narrow features due to map scale)
- Biological Resources Aquatic Resources Study Area
(Project Footprint +250 ft Buffer)
- Elevation Contour
- Refined CCNM Design Option Added Area
- CCNM Design Option Added Area



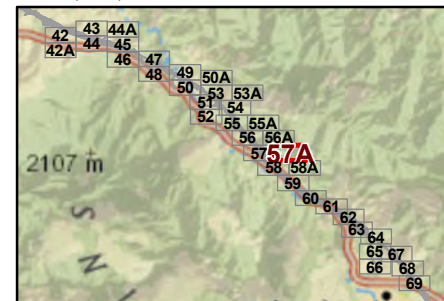
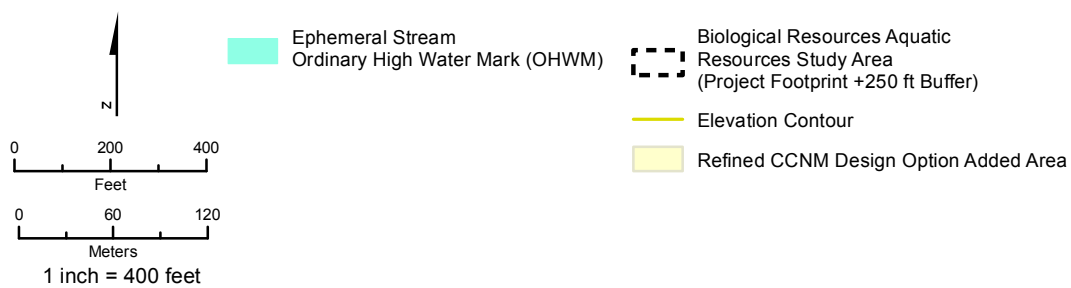
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Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



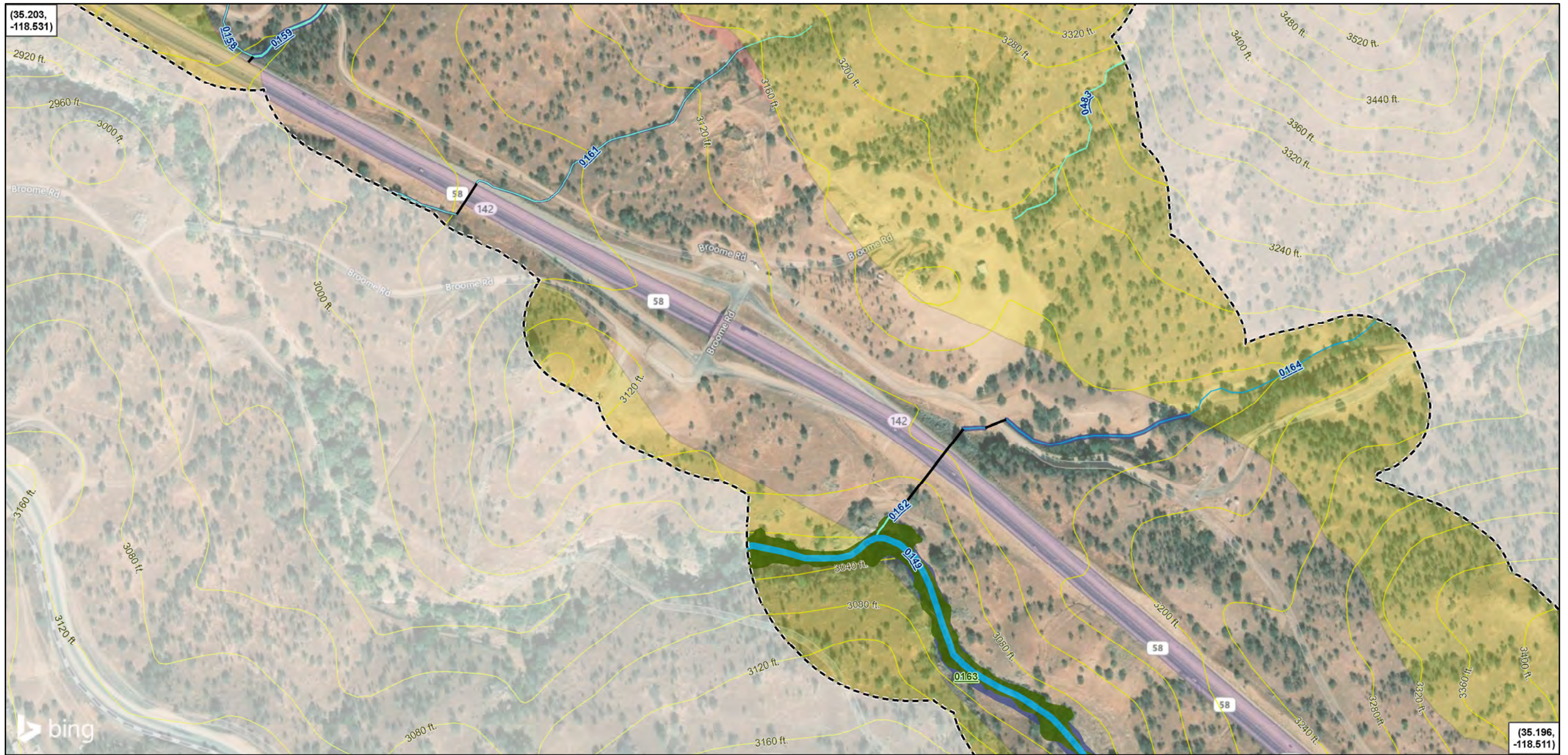
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Sheet Name 57A



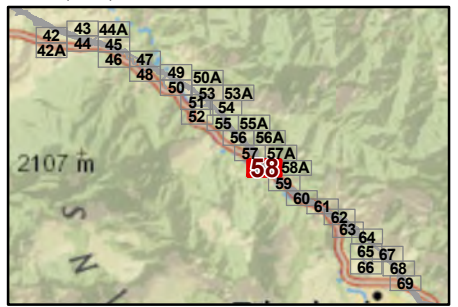
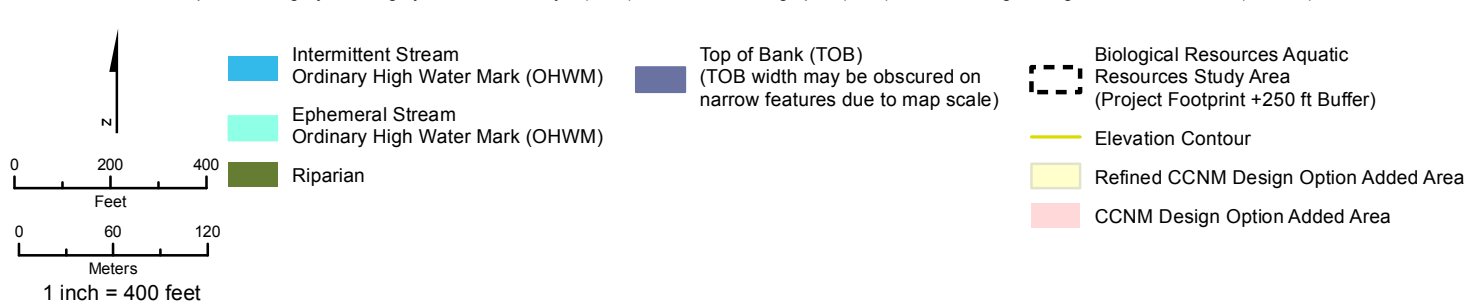
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 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



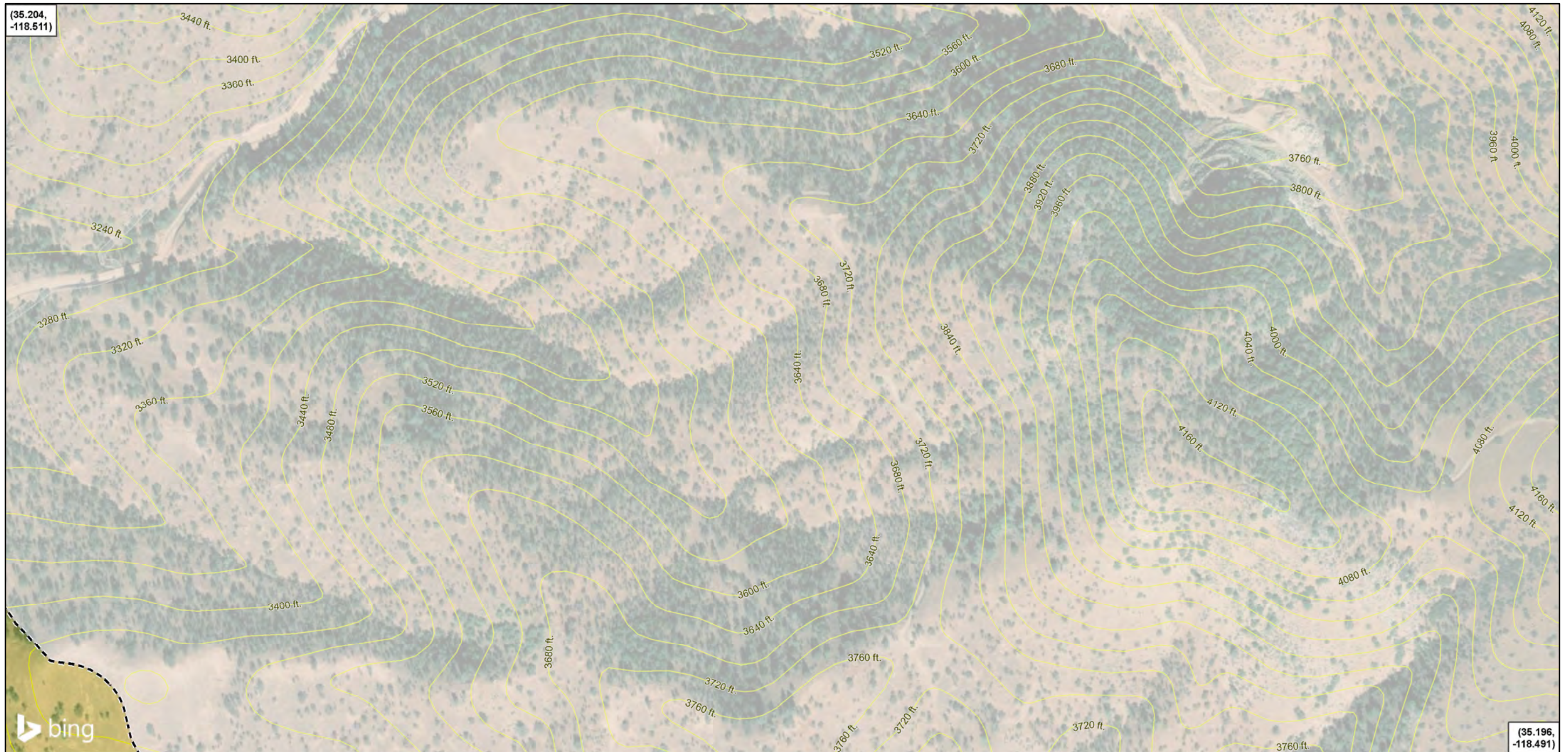
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Sheet Name 58



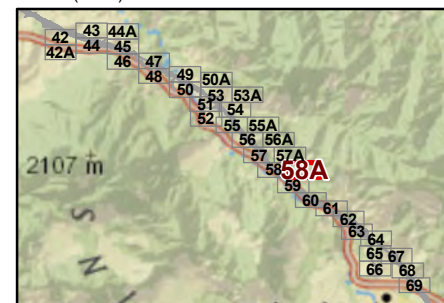
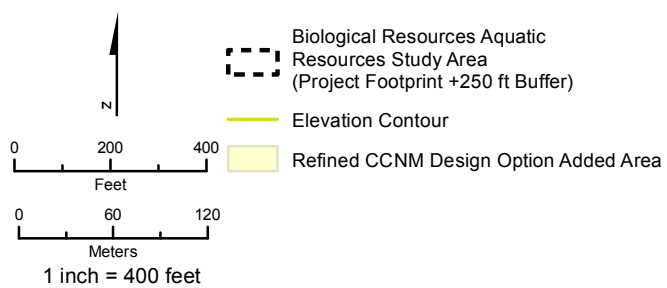
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 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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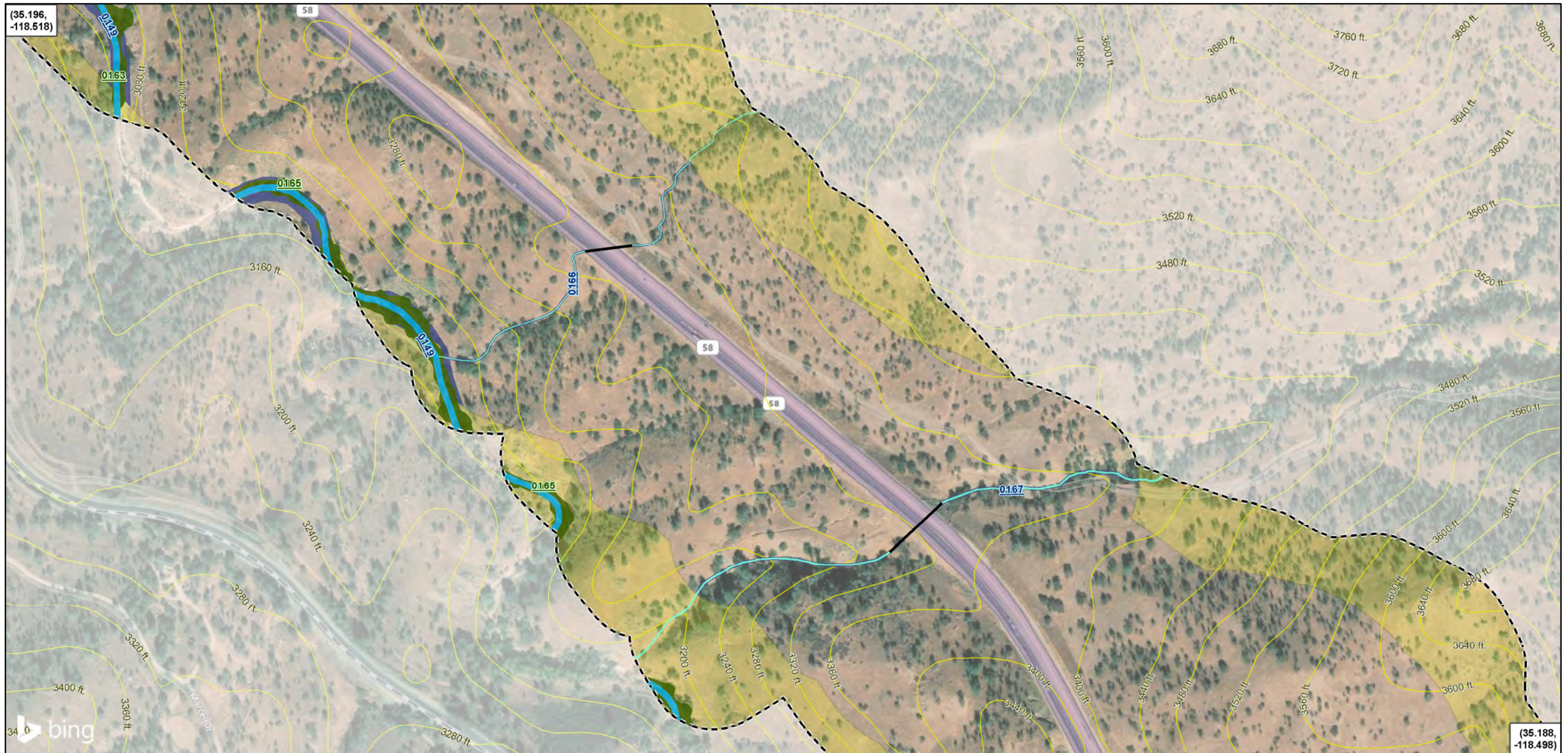
Sheet Name 58A



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark

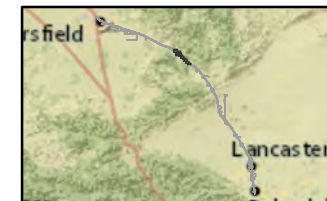
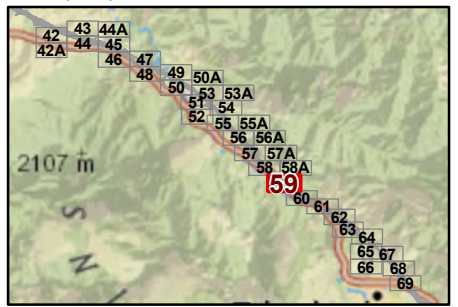
Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



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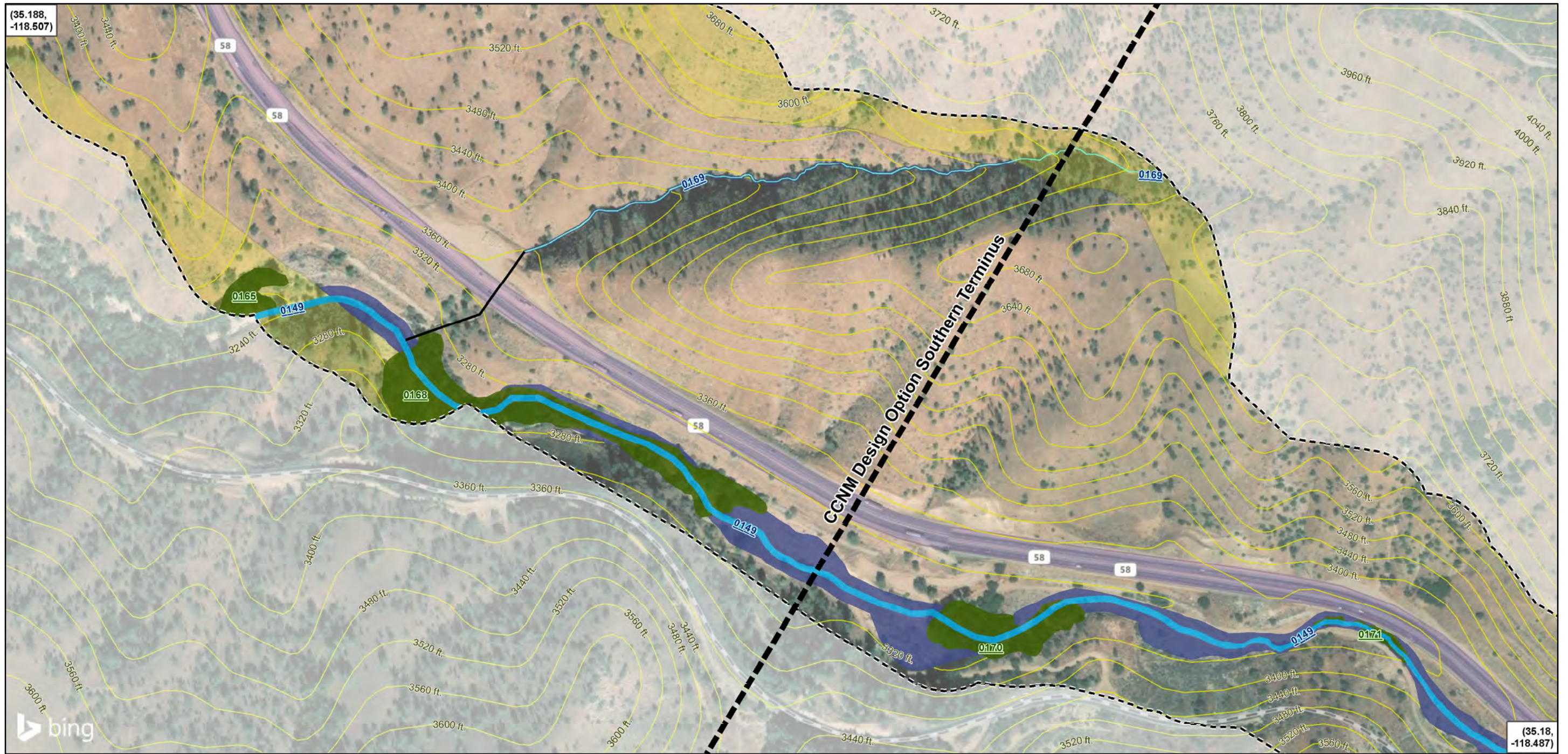
Sheet Name 59

 0 200 400 Feet 0 60 120 Meters 1 inch = 400 feet	Intermittent Stream Ordinary High Water Mark (OHWM)	Top of Bank (TOB) (TOB width may be obscured on narrow features due to map scale)	Biological Resources Aquatic Resources Study Area (Project Footprint +250 ft Buffer)
	Ephemeral Stream Ordinary High Water Mark (OHWM)	Riparian	Elevation Contour
			CCNM Design Option Added Area



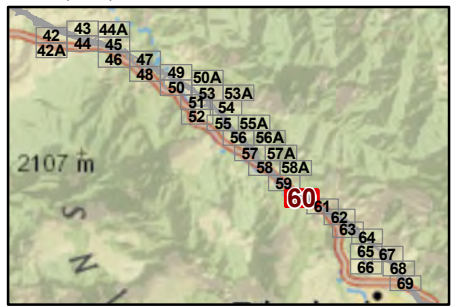
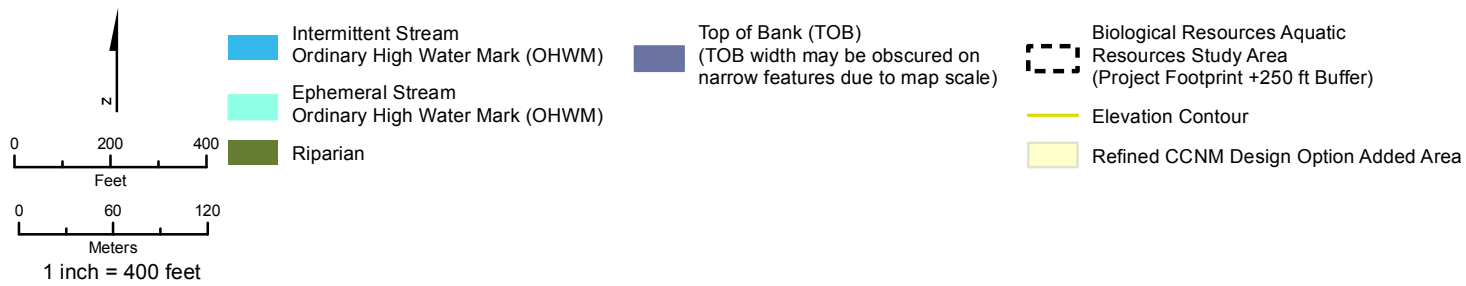
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 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



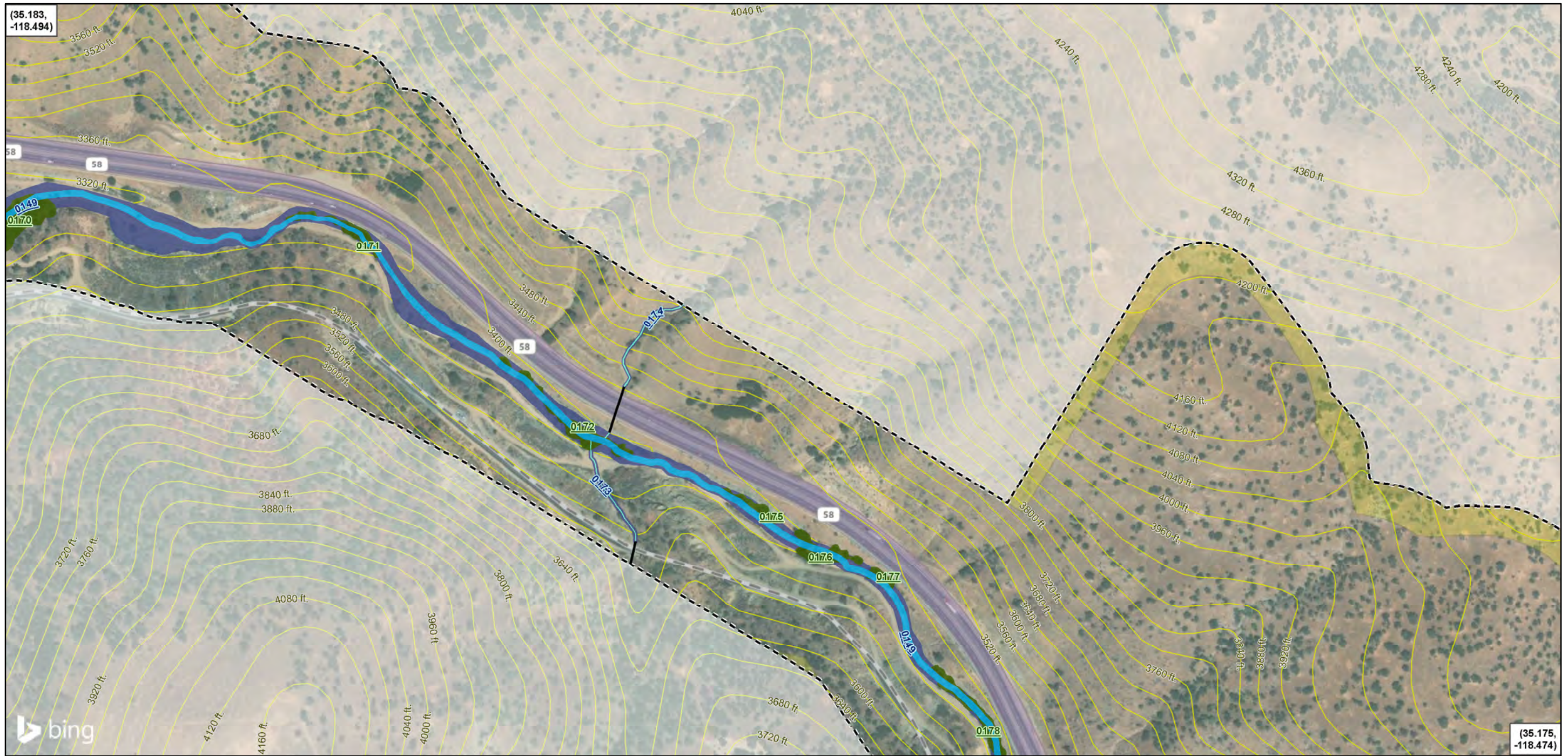
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Sheet Name 60



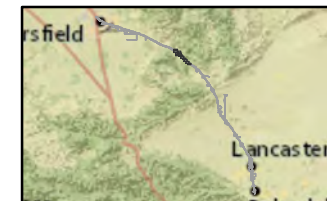
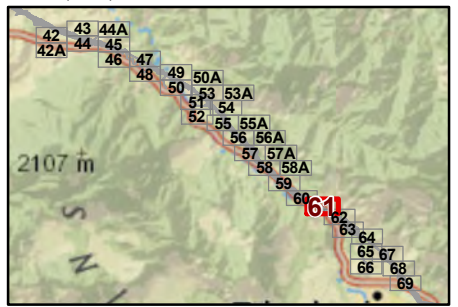
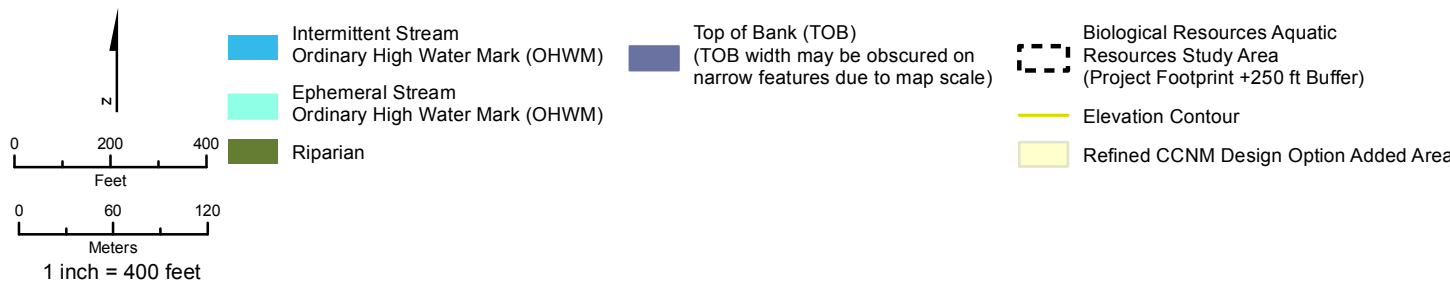
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 61



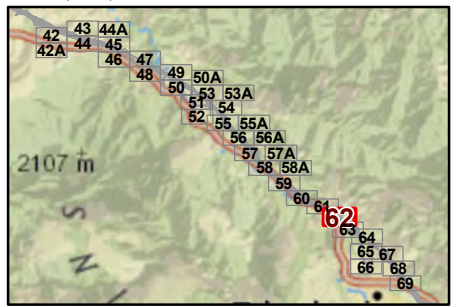
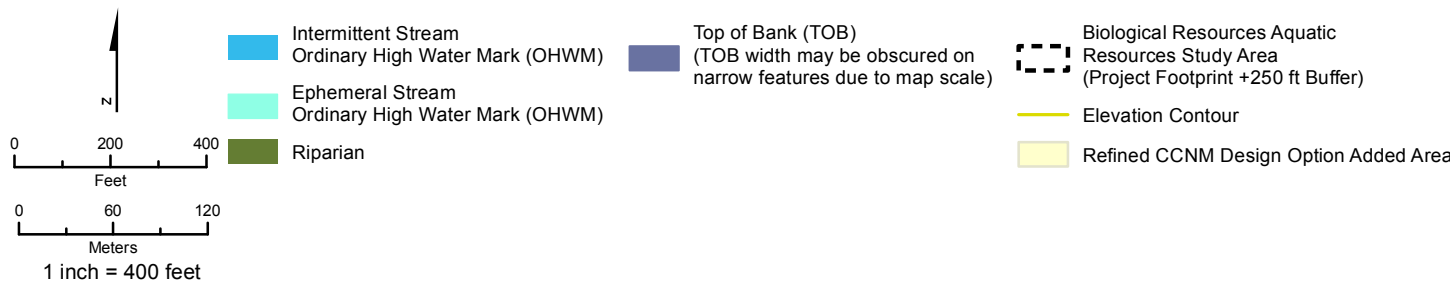
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 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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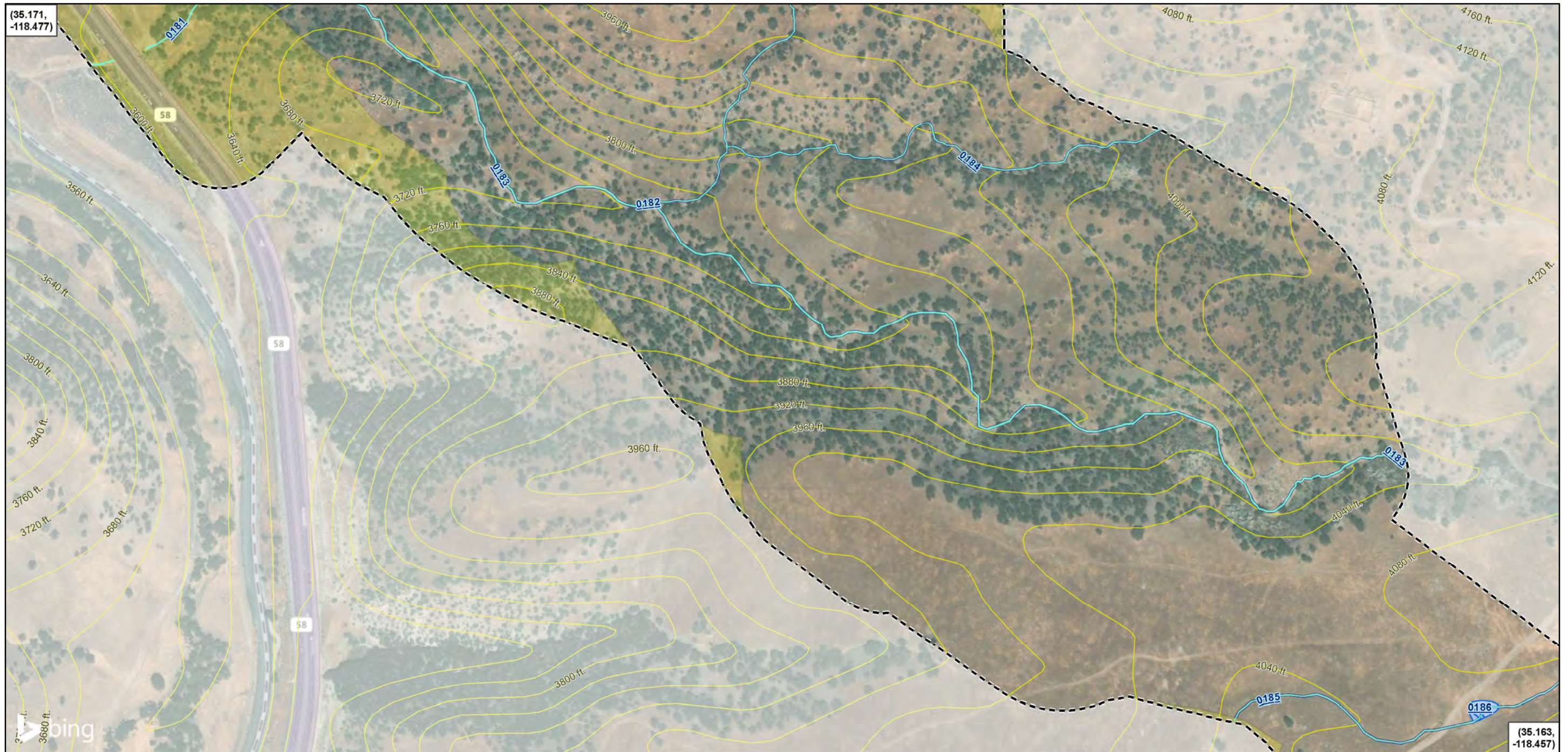
Sheet Name 62



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

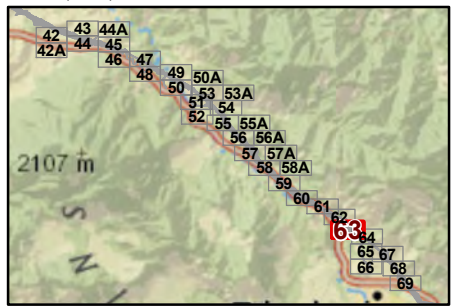


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Sheet Name 63

1 inch = 400 feet

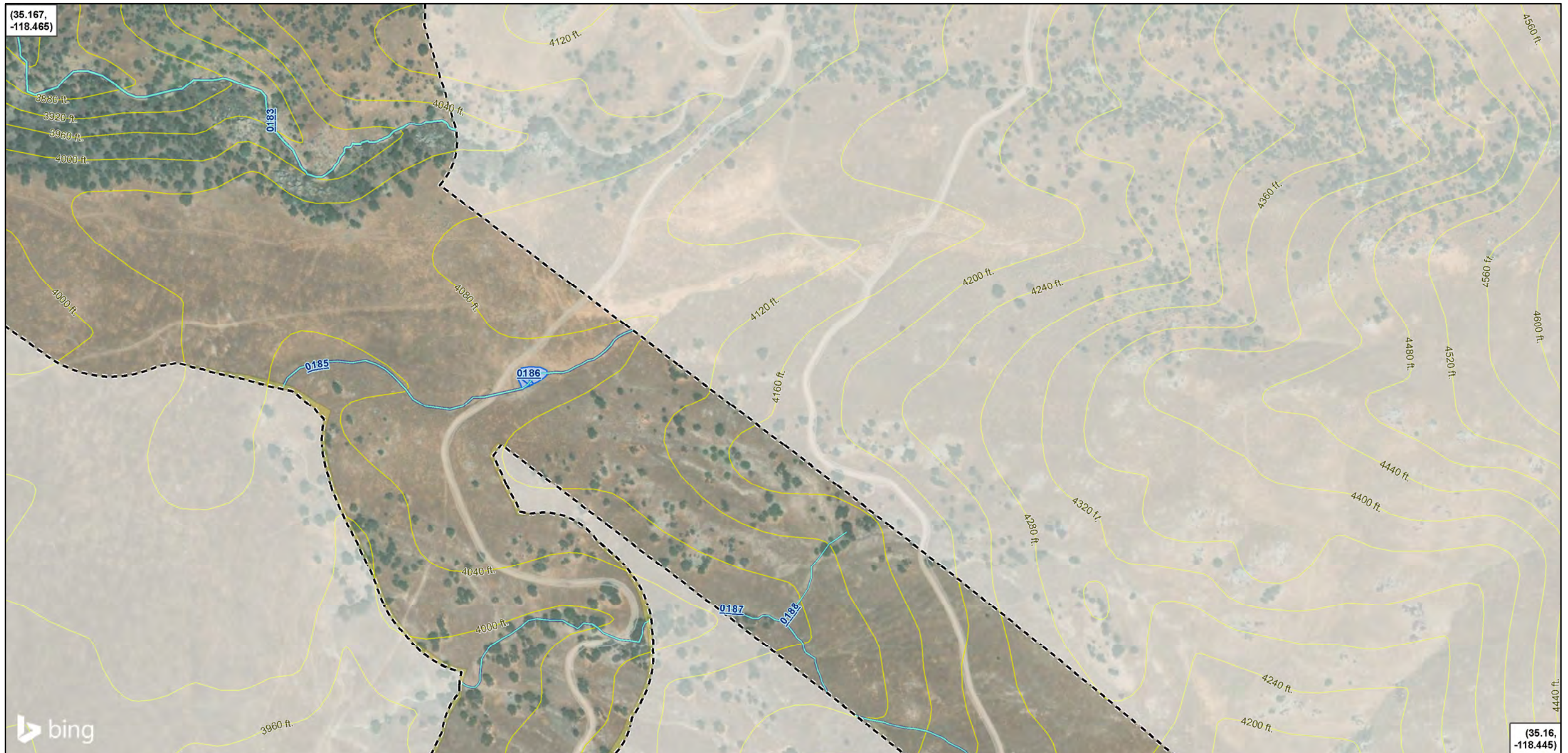
- Ephemeral Stream
- Ordinary High Water Mark (OHWM)
- In-Stream Basin
- Top of Bank (TOB)
(TOB width may be obscured on narrow features due to map scale)
- Biological Resources Aquatic Resources Study Area
(Project Footprint +250 ft Buffer)
- Elevation Contour
- Refined CCNM Design Option Added Area



Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

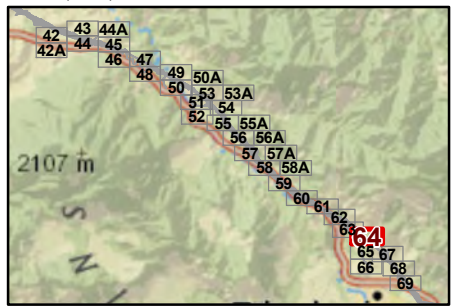
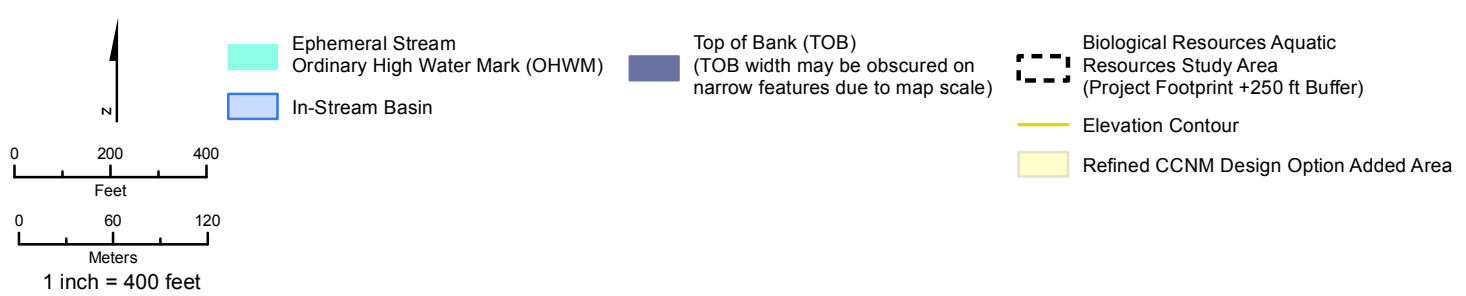
**Jurisdictional Delineation
 to Ordinary High Water Mark**

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



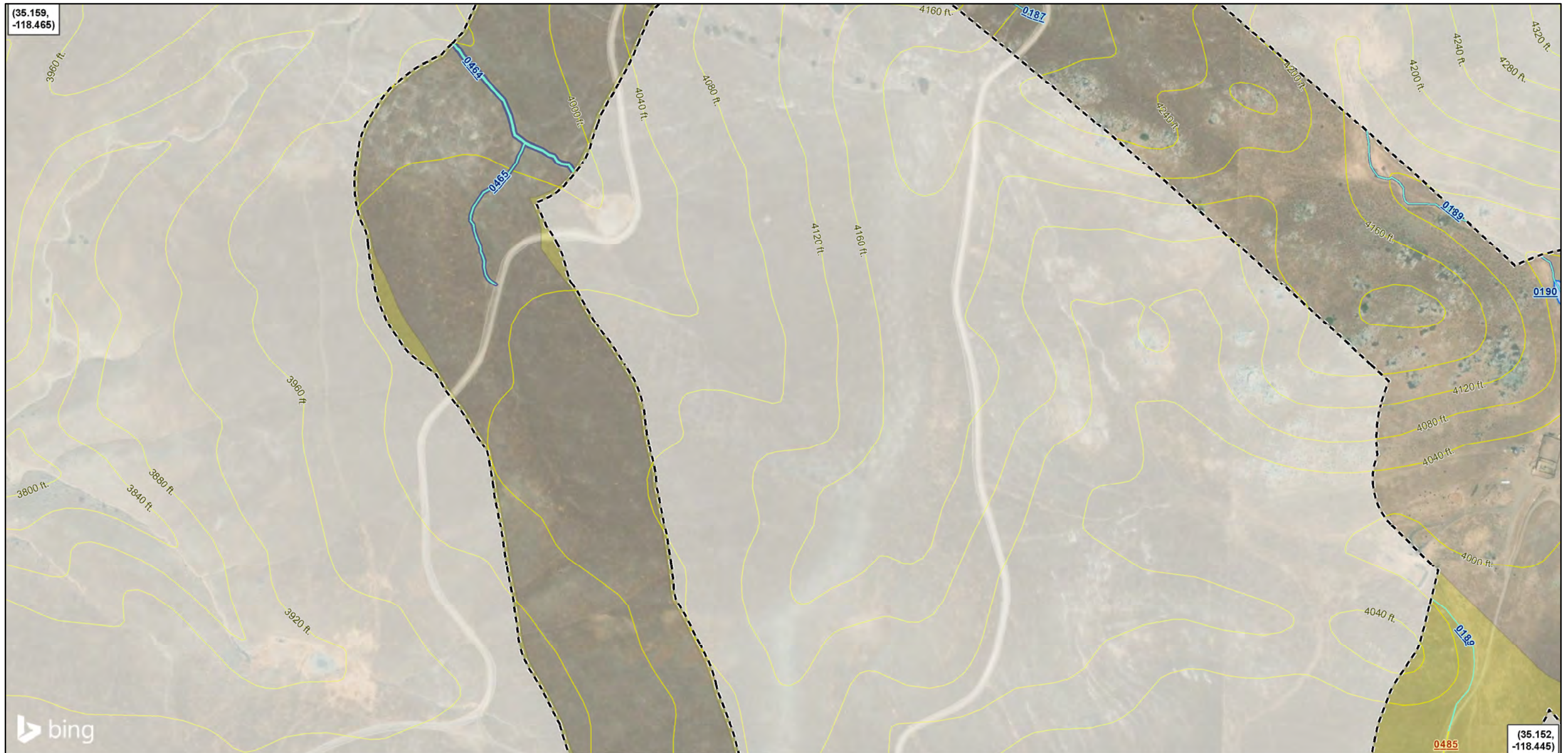
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Sheet Name 64



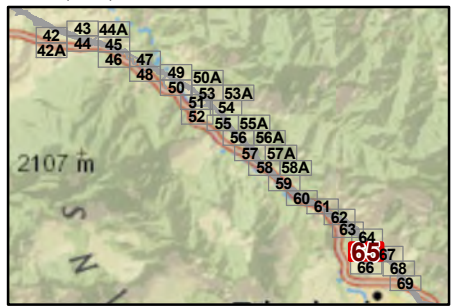
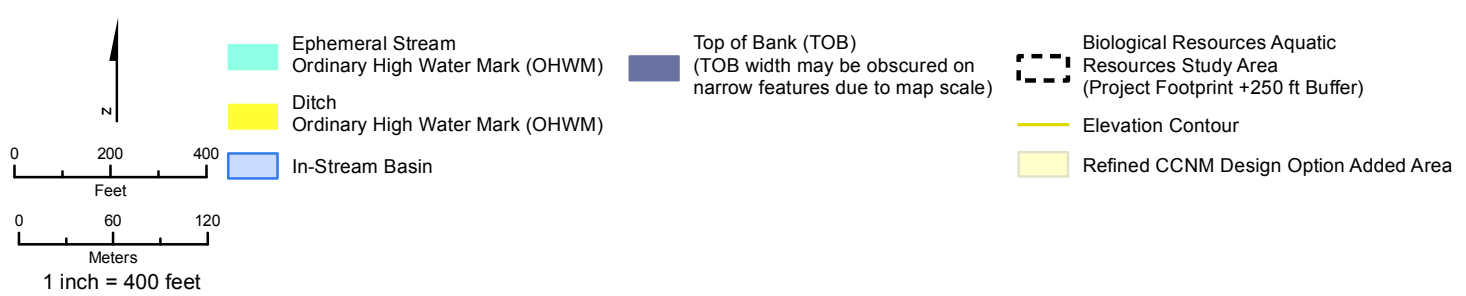
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
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 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



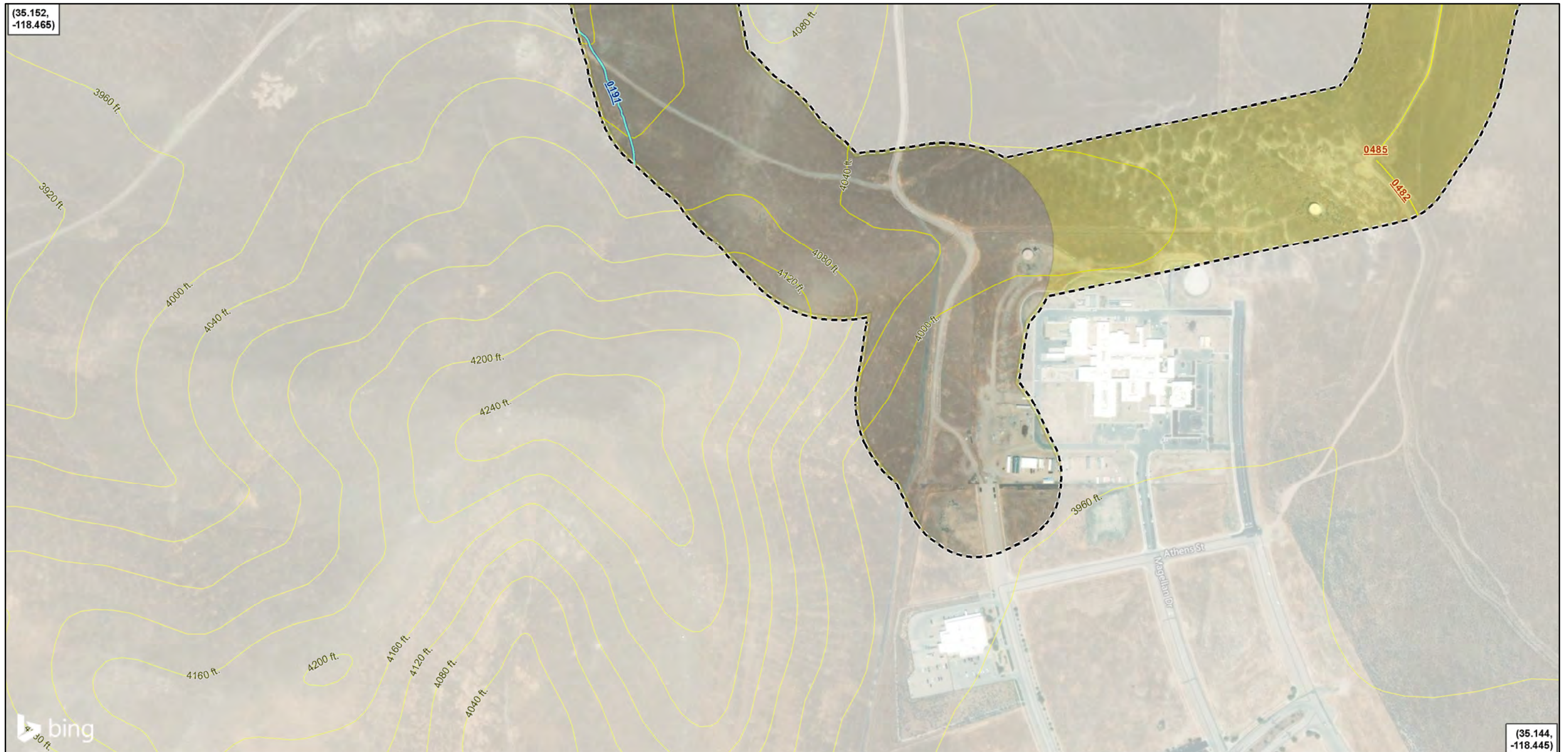
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Sheet Name 65



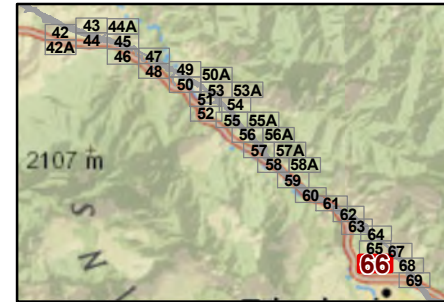
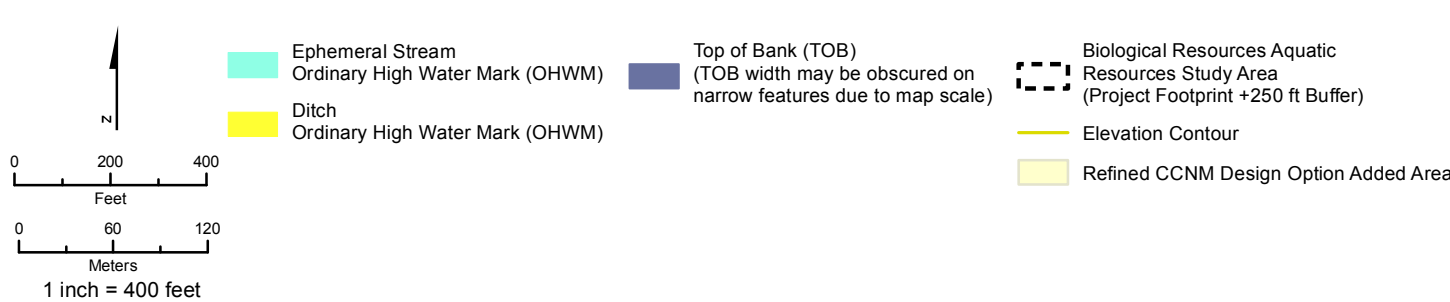
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



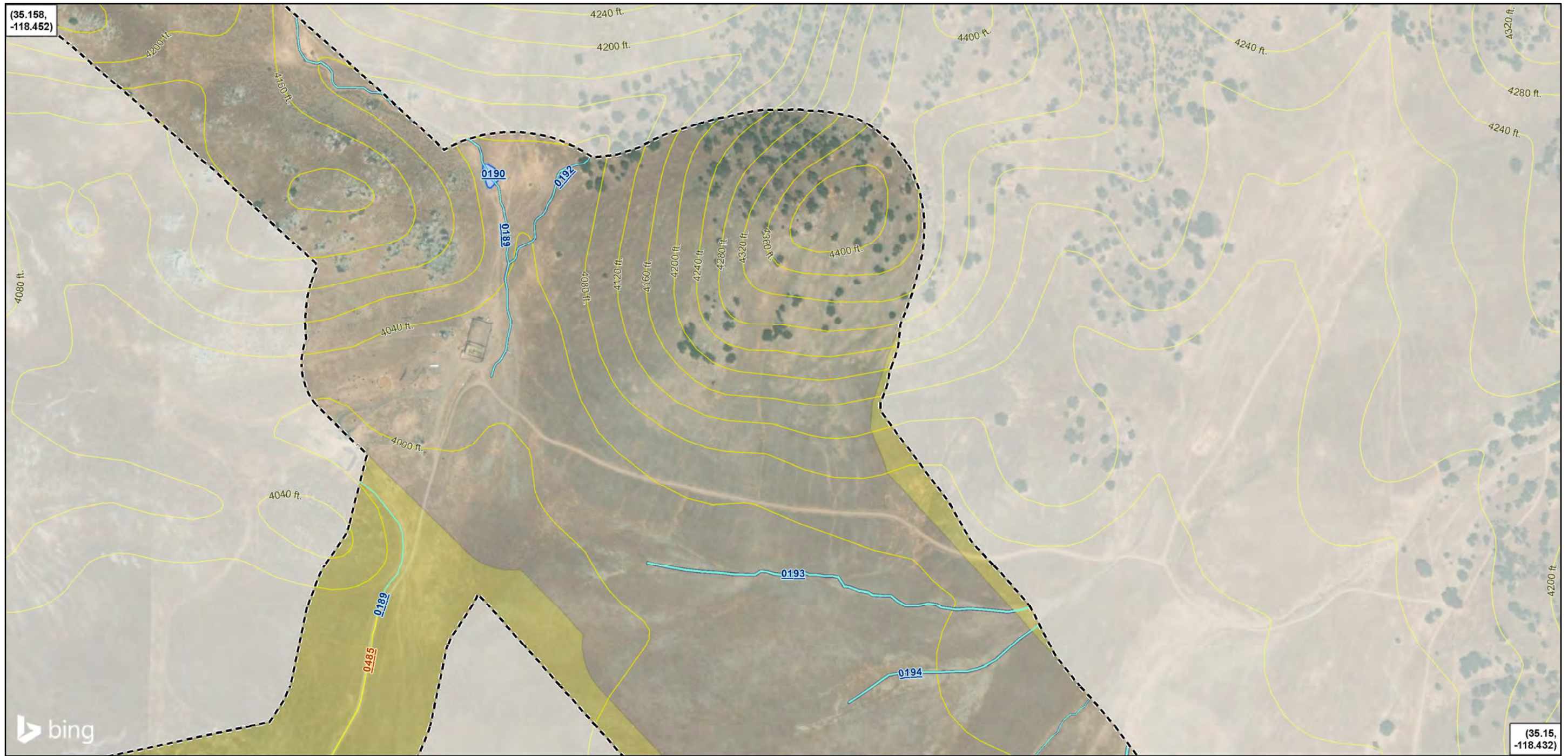
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Sheet Name 66



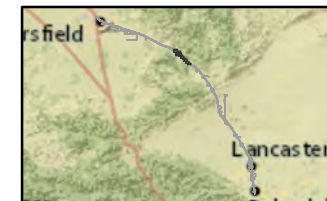
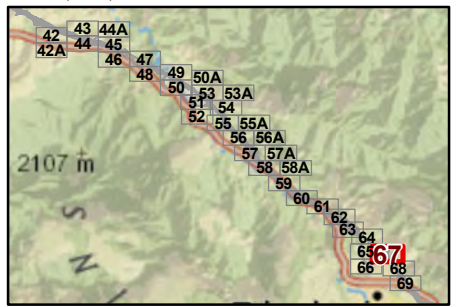
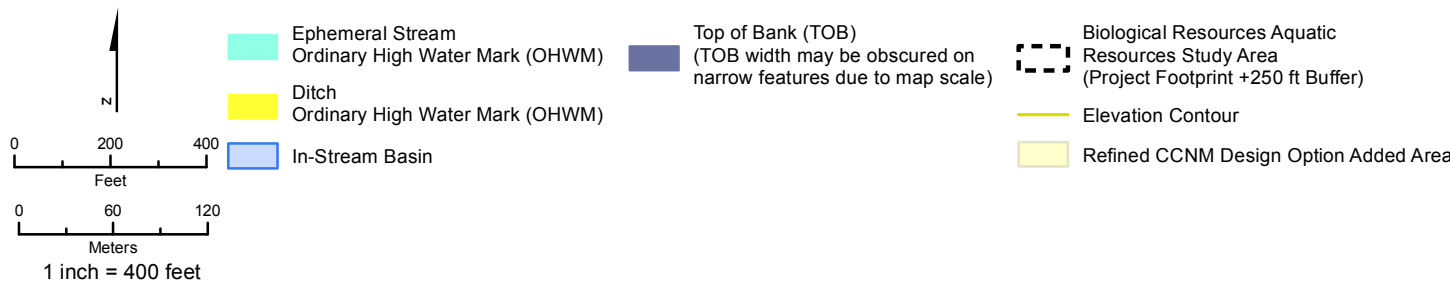
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Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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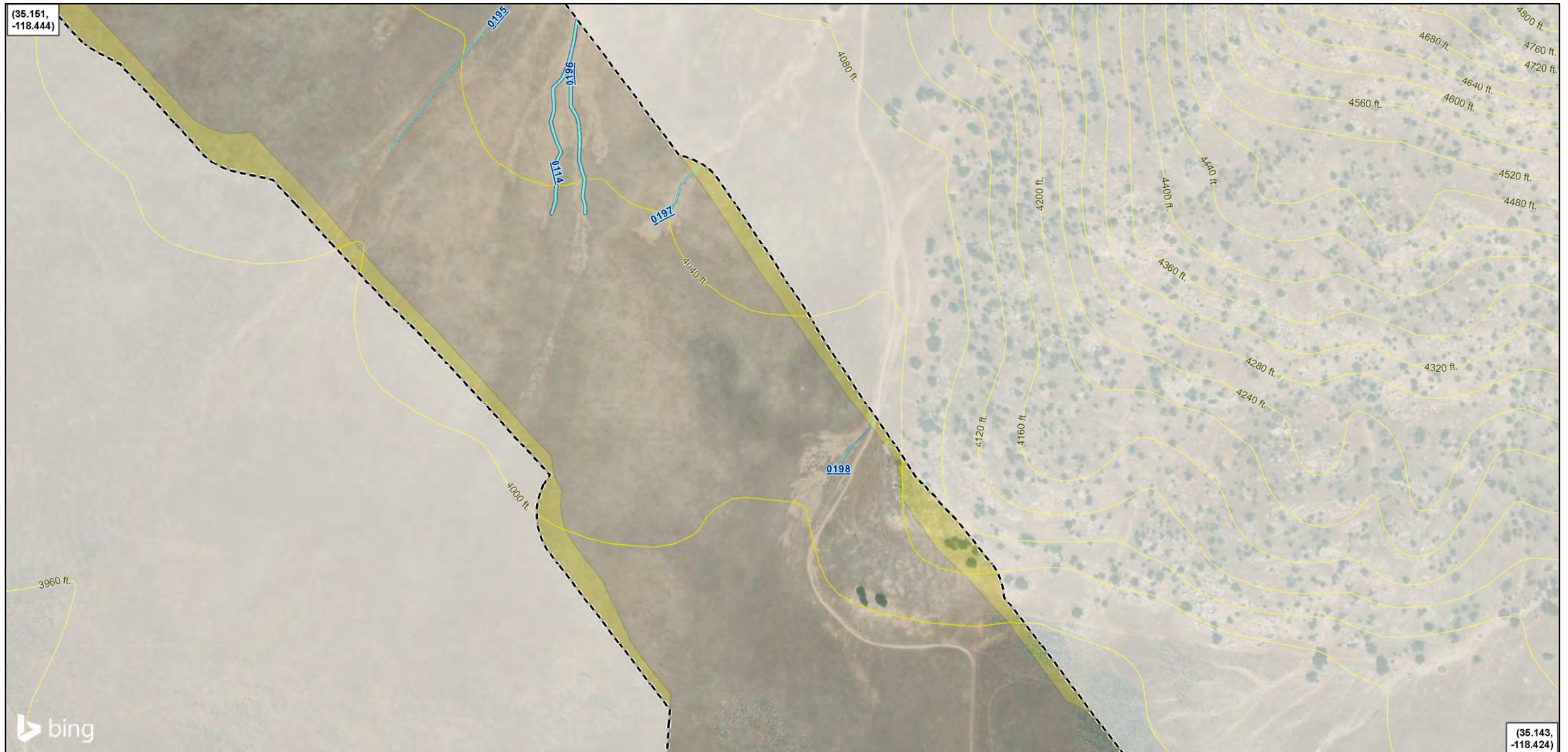
Sheet Name 67



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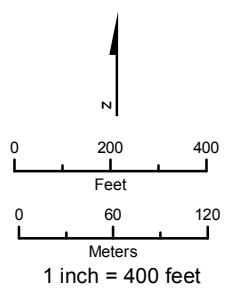
Jurisdictional Delineation to Ordinary High Water Mark

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

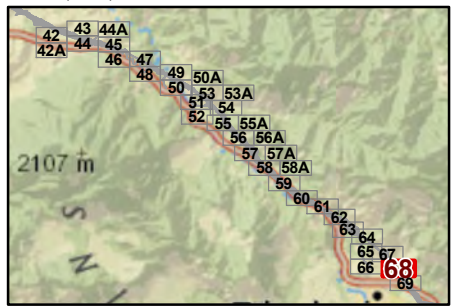


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Sheet Name 68

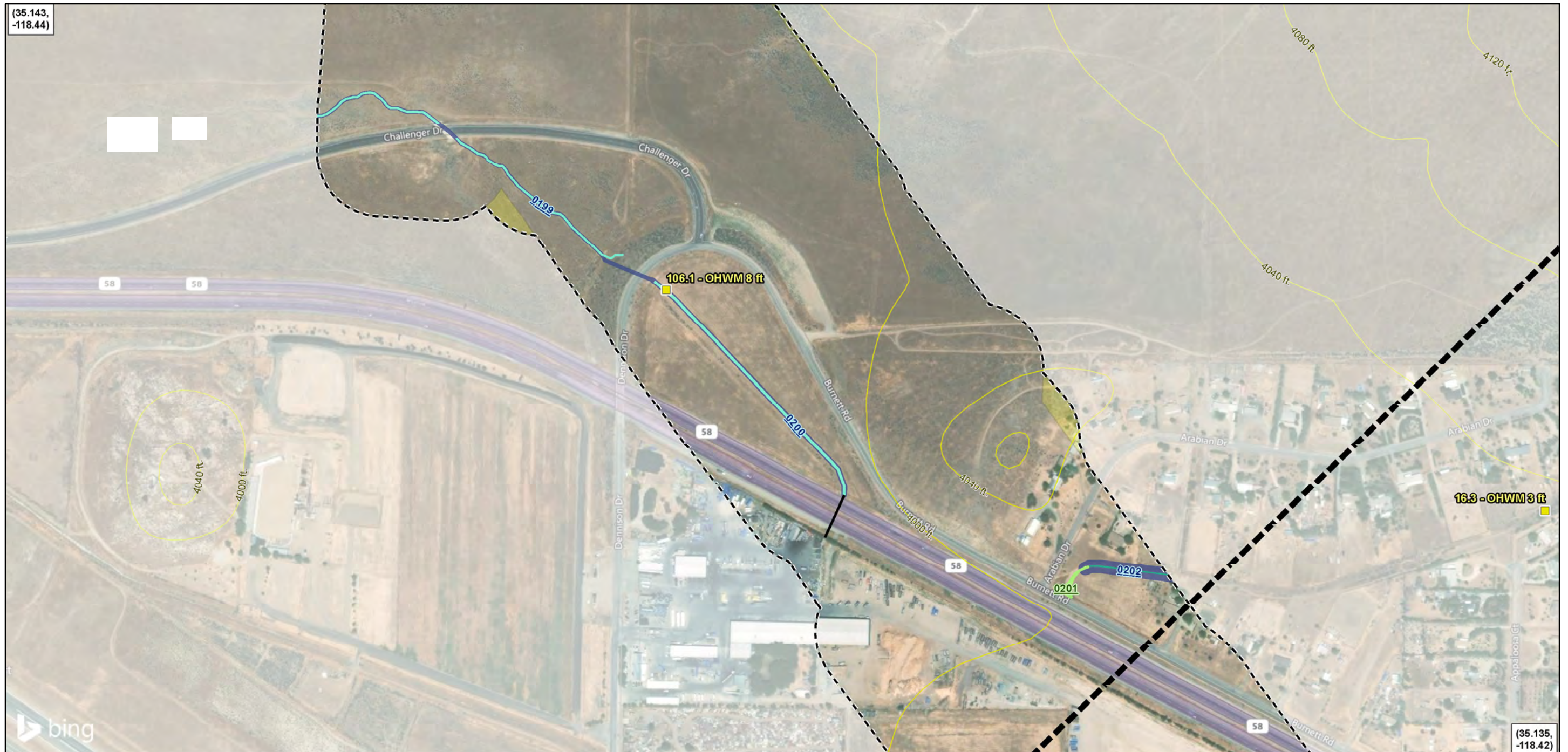


- Ephemeral Stream
- Ordinary High Water Mark (OHWM)
- Top of Bank (TOB)
(TOB width may be obscured on narrow features due to map scale)
- Biological Resources Aquatic Resources Study Area (Project Footprint +250 ft Buffer)
- Elevation Contour
- Refined CCNM Design Option Added Area



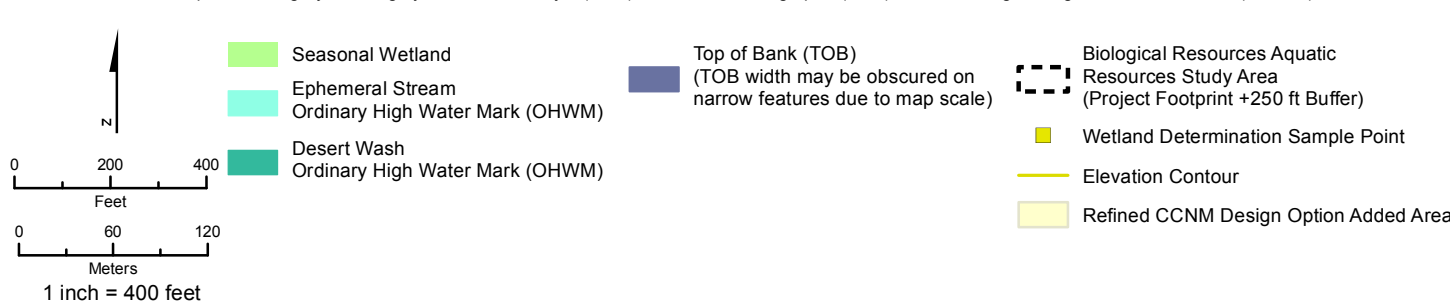
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Jurisdictional Delineation to Ordinary High Water Mark
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 69



Jurisdictional Delineation to Ordinary High Water Mark

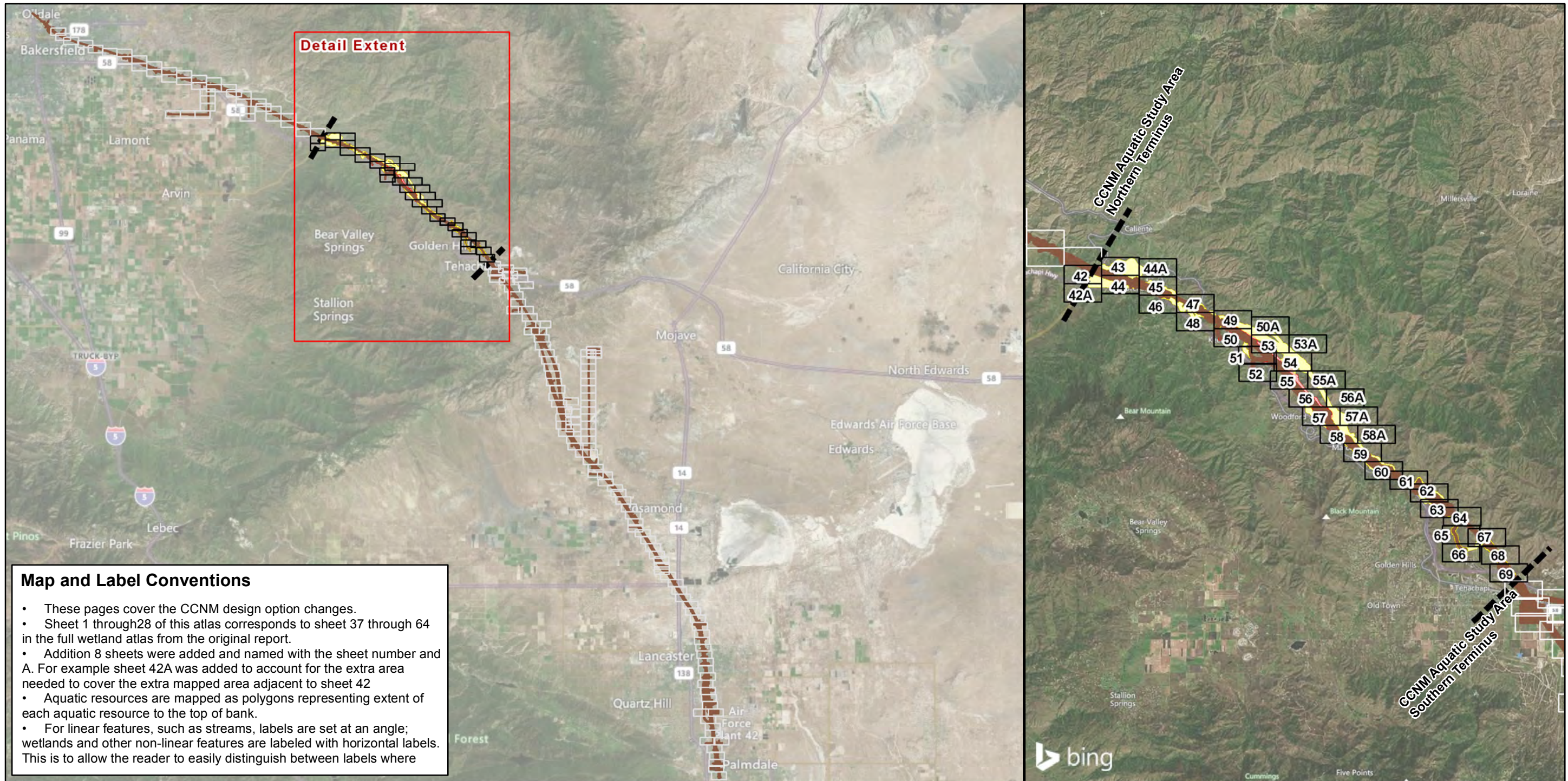
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

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APPENDIX D: AQUATIC RESOURCES MAPBOOK TO TOP OF BANK OR EDGE OF RIPARIAN

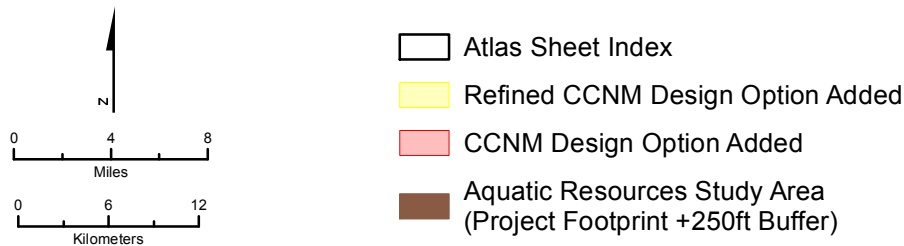
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Map and Label Conventions

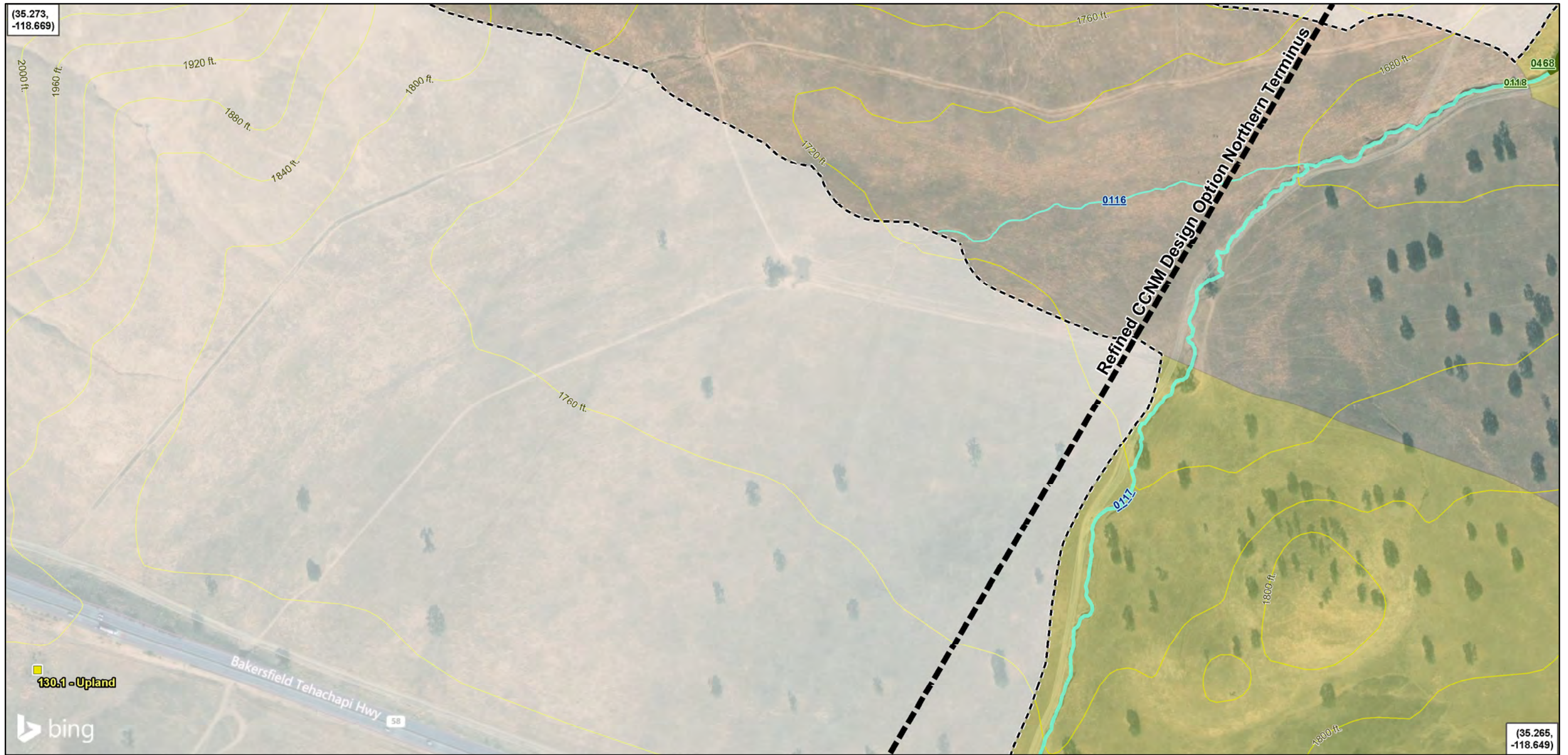
- These pages cover the CCNM design option changes.
- Sheet 1 through 28 of this atlas corresponds to sheet 37 through 64 in the full wetland atlas from the original report.
- Addition 8 sheets were added and named with the sheet number and A. For example sheet 42A was added to account for the extra area needed to cover the extra mapped area adjacent to sheet 42
- Aquatic resources are mapped as polygons representing extent of each aquatic resource to the top of bank.
- For linear features, such as streams, labels are set at an angle; wetlands and other non-linear features are labeled with horizontal labels. This is to allow the reader to easily distinguish between labels where

PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2016); Phase 4B Engineering data from CHSR (4/2016); BLM (3/2016).



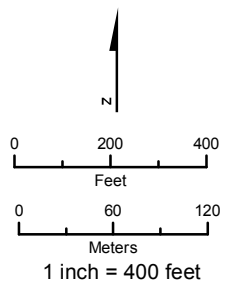
Jurisdictional Delineation to Top of Bank

Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass

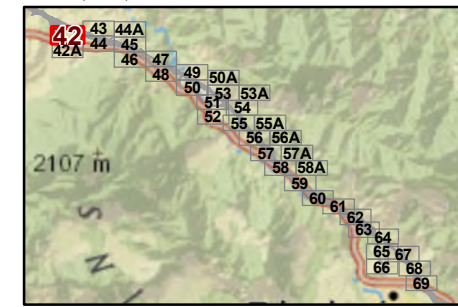


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 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 42

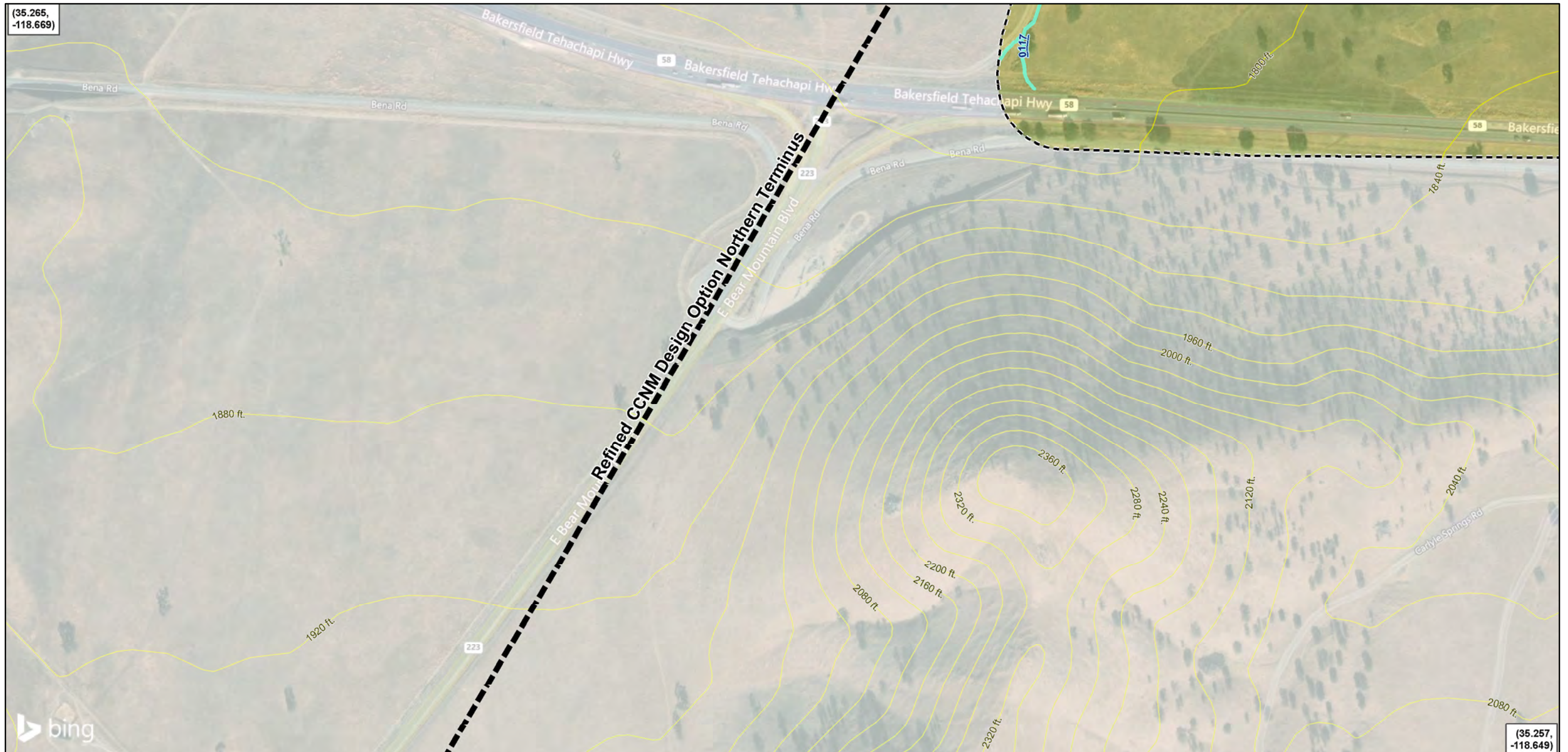


- Riparian
- Ephemeral Stream
- Biological Resources Aquatic Resources Study Area (Project Footprint +250 ft Buffer)
- Wetland Determination Sample Point
- Elevation Contour
- Refined CCNM Design Option Added Area



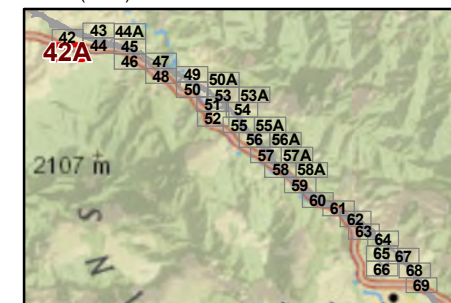
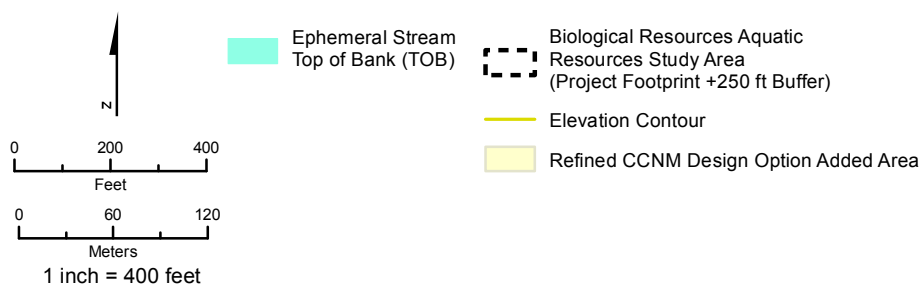
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 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Aquatic Resources to Top of Bank
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 42A



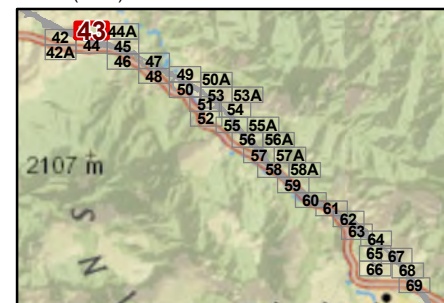
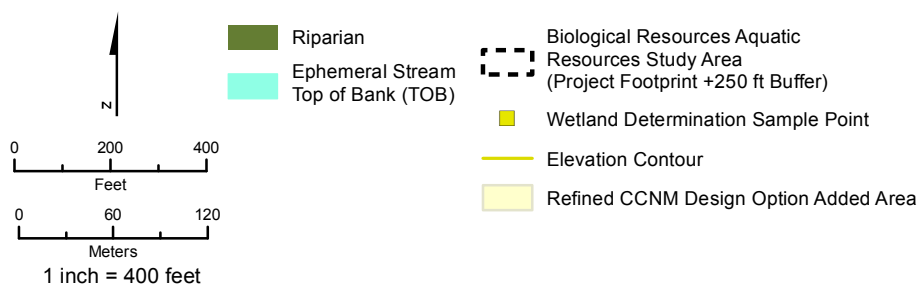
Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Aquatic Resources to Top of Bank
 Study Area for Bakersfield to Palmdale
 Cesar Chavez National Monument Bypass



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 43



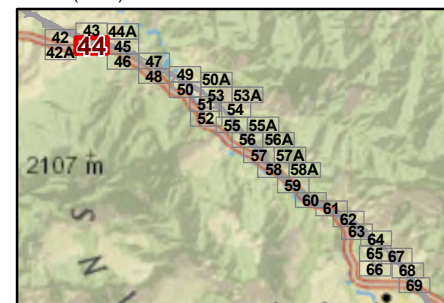
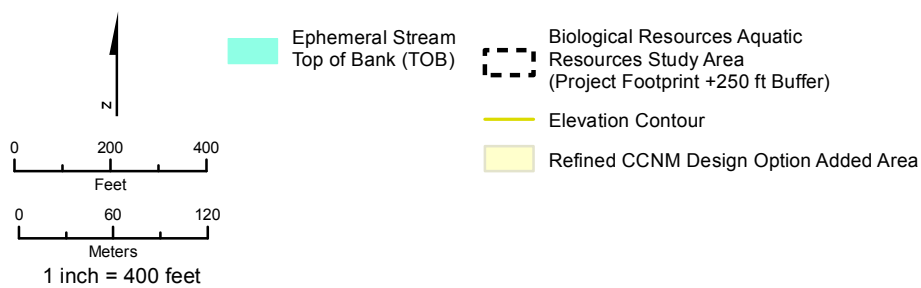
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 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

Aquatic Resources to Top of Bank
 Study Area for Bakersfield to Palmdale
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 44



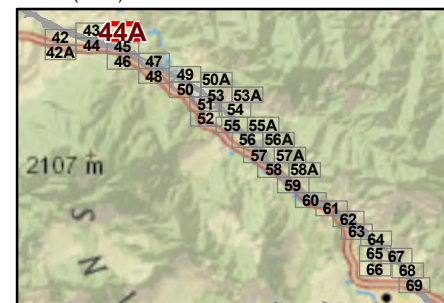
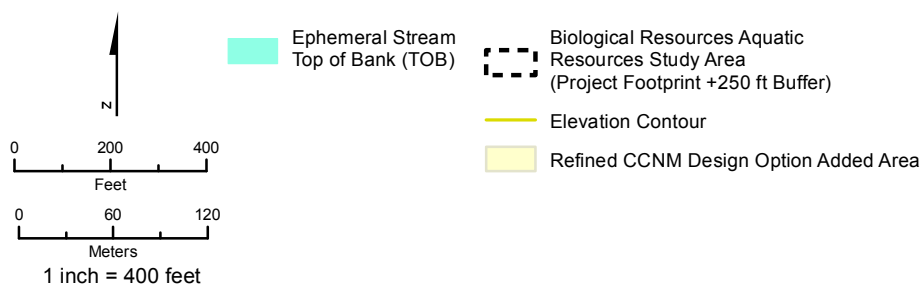
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Aquatic Resources to Top of Bank
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 44A



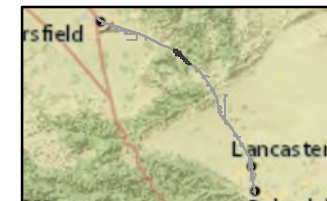
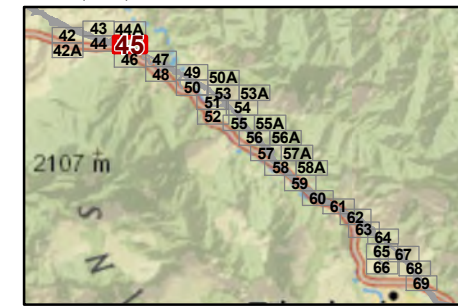
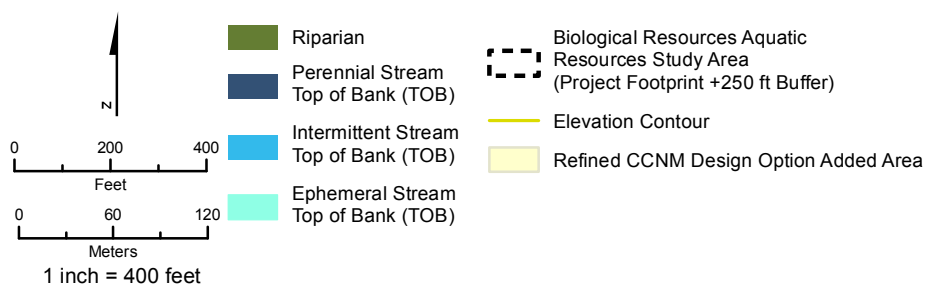
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Aquatic Resources to Top of Bank
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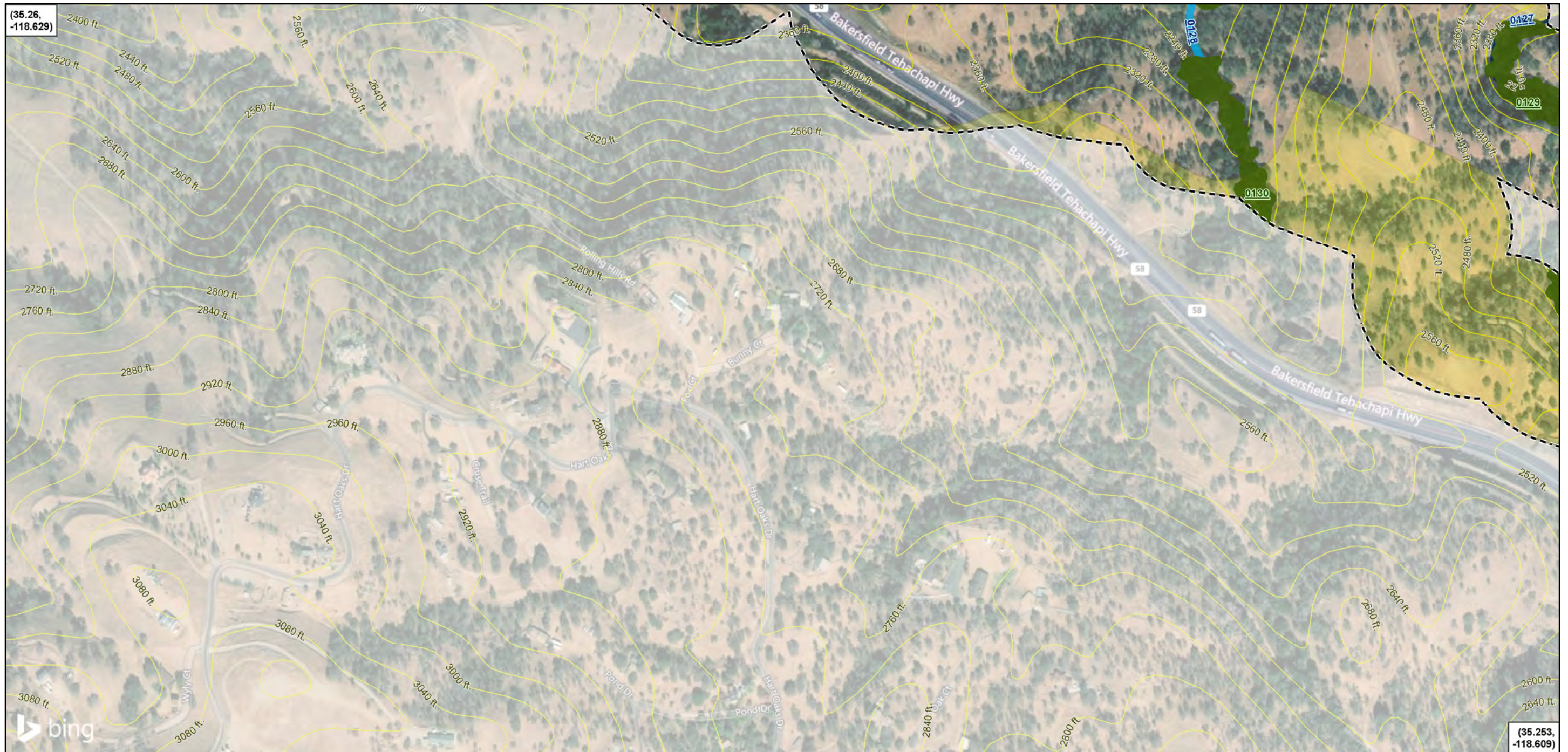
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Sheet Name 45



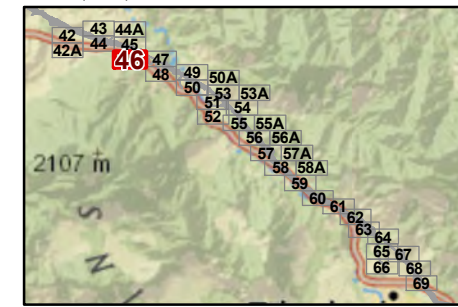
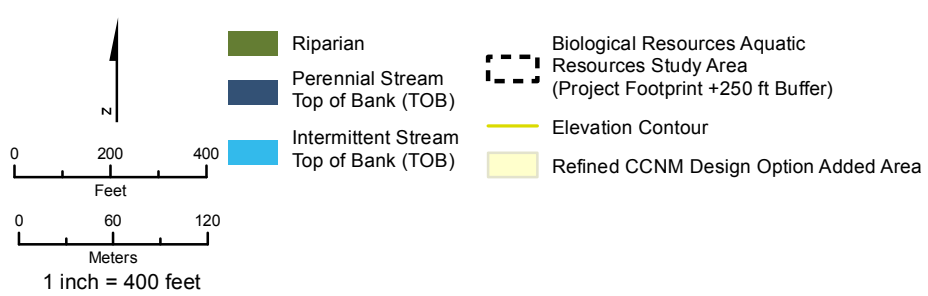
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Aquatic Resources to Top of Bank
 Study Area for Bakersfield to Palmdale
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 46



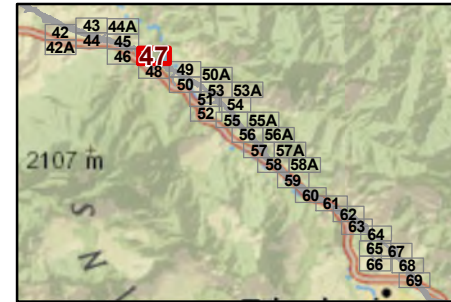
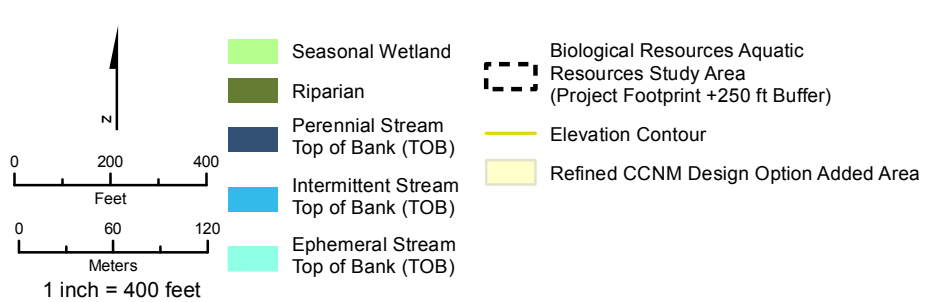
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Aquatic Resources to Top of Bank
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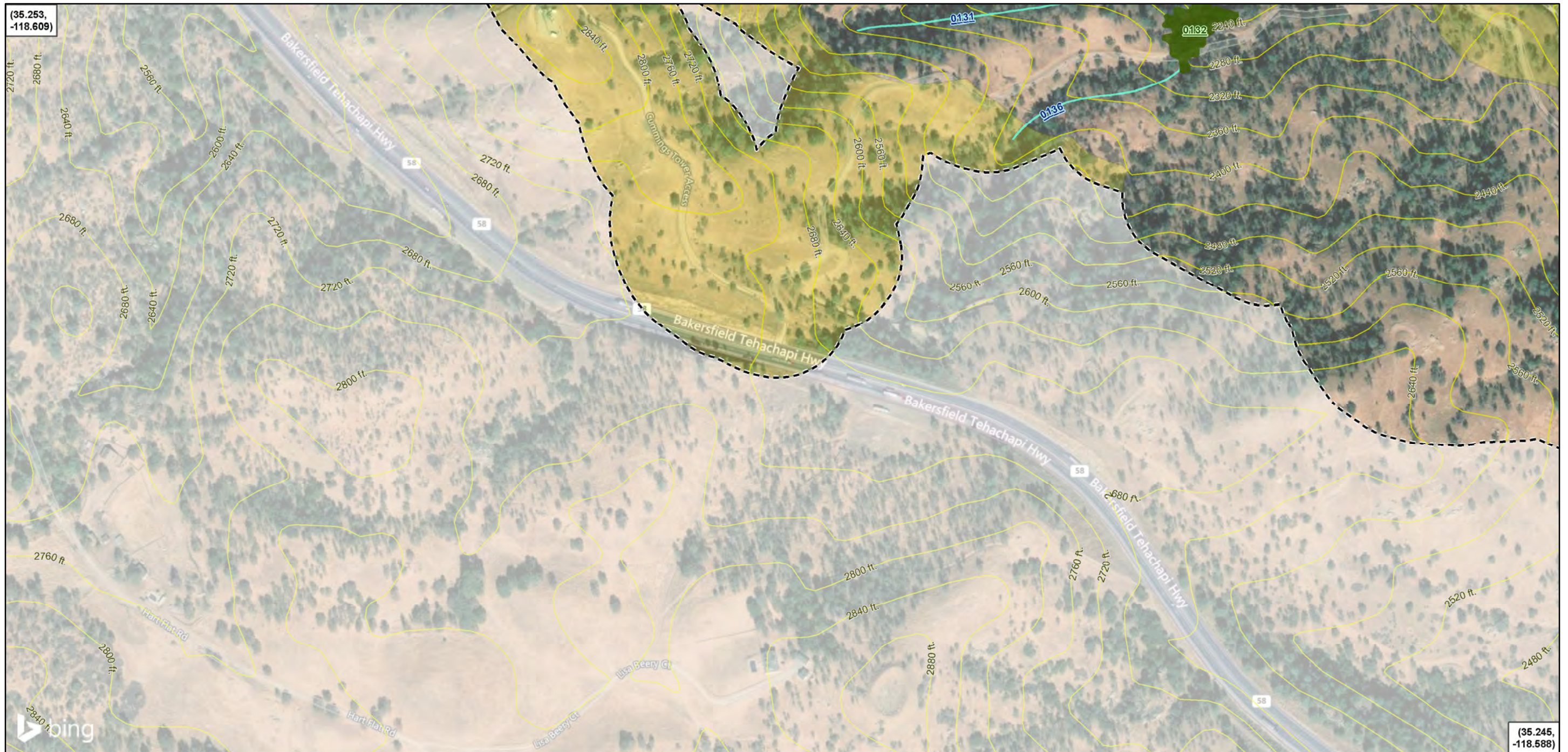
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Sheet Name 47



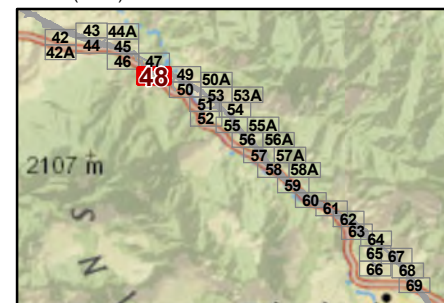
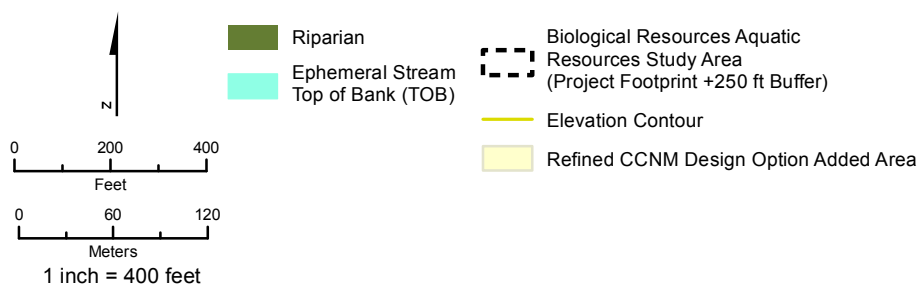
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 Projection: Lambert Conic Conformal
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Aquatic Resources to Top of Bank
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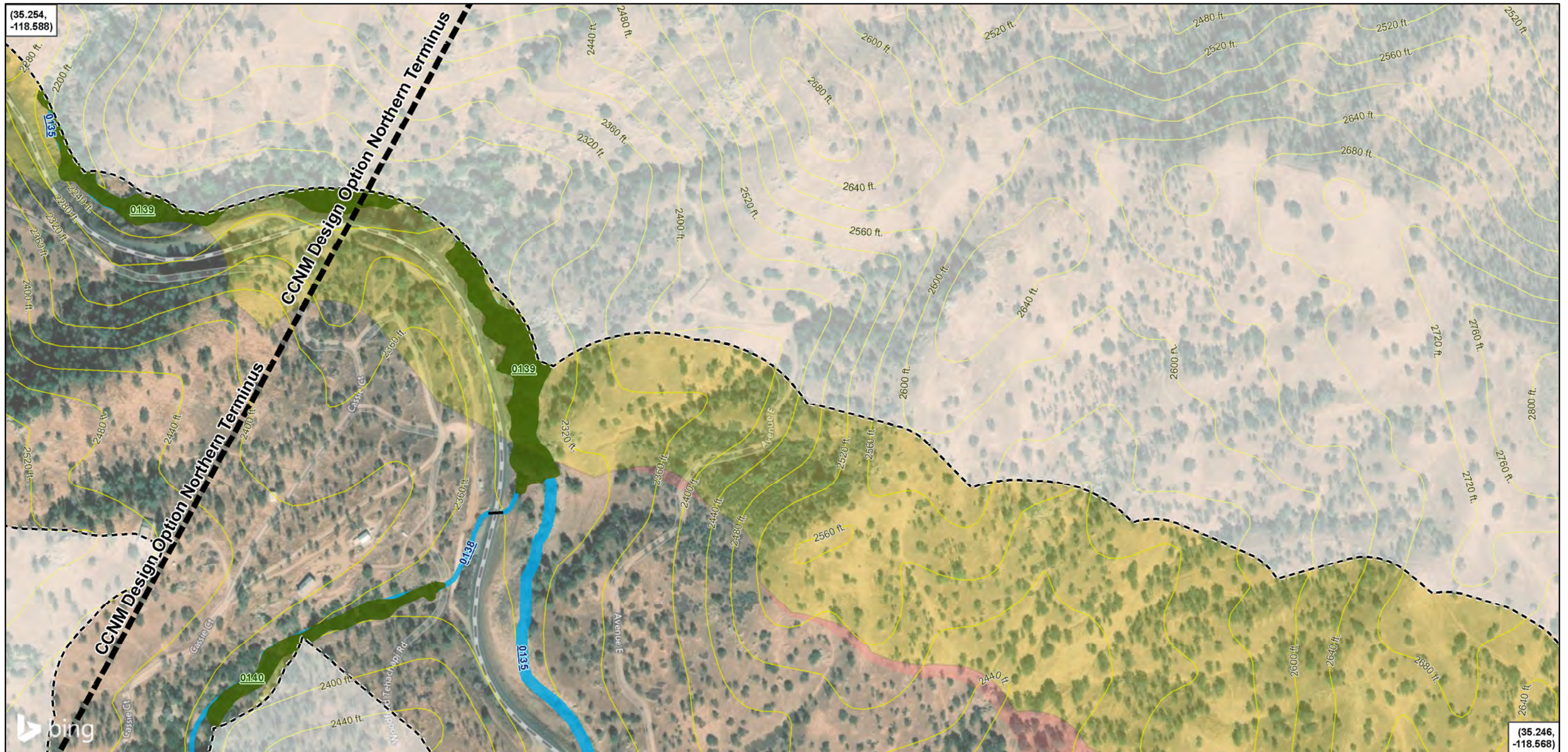
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Sheet Name 48



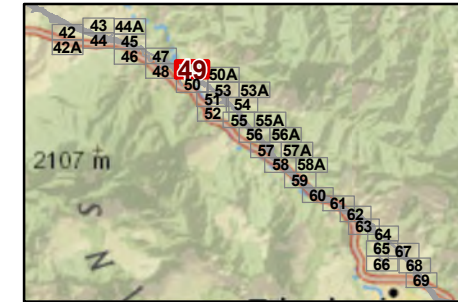
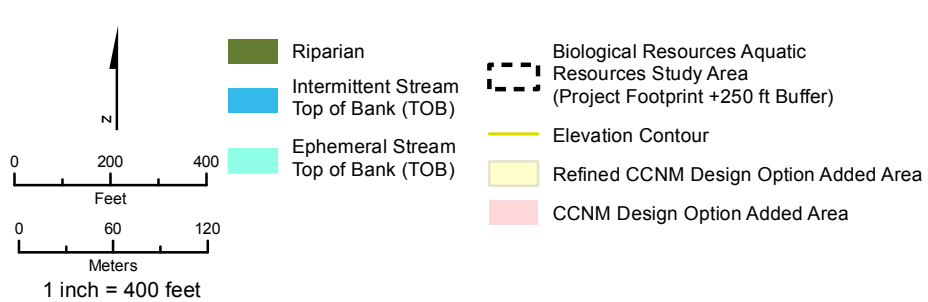
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Aquatic Resources to Top of Bank
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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Sheet Name 49



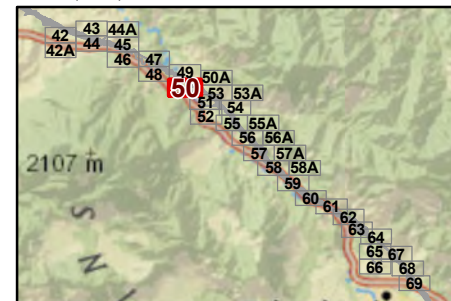
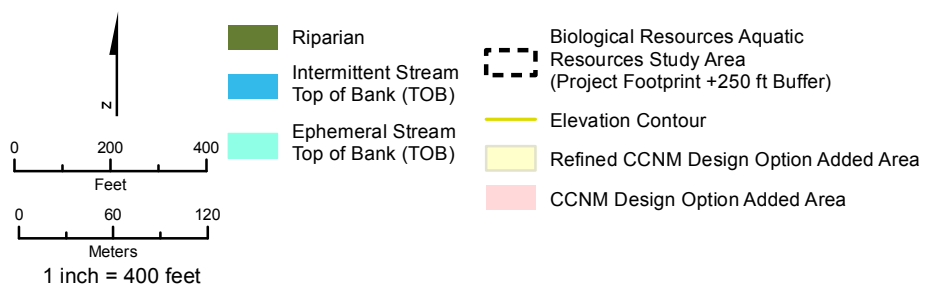
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Aquatic Resources to Top of Bank
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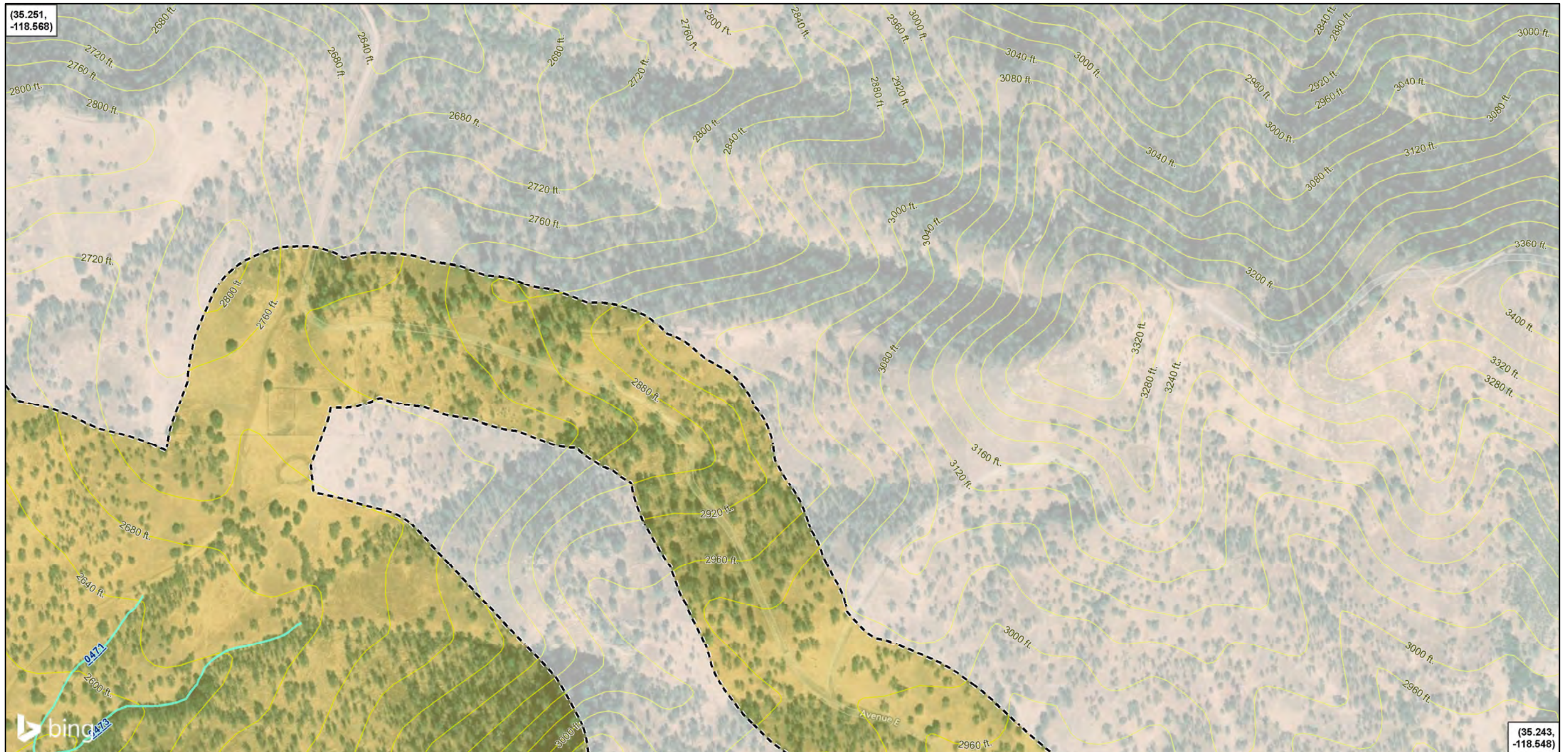
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Sheet Name 50



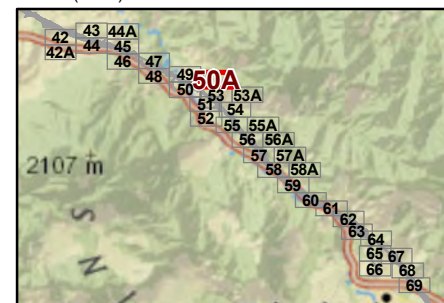
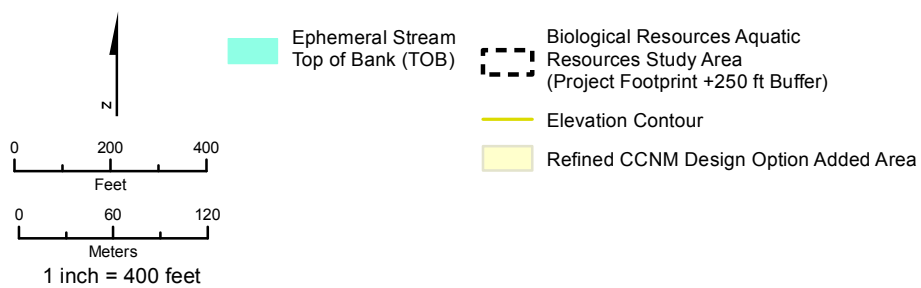
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 Study Area for Bakersfield to Palmdale
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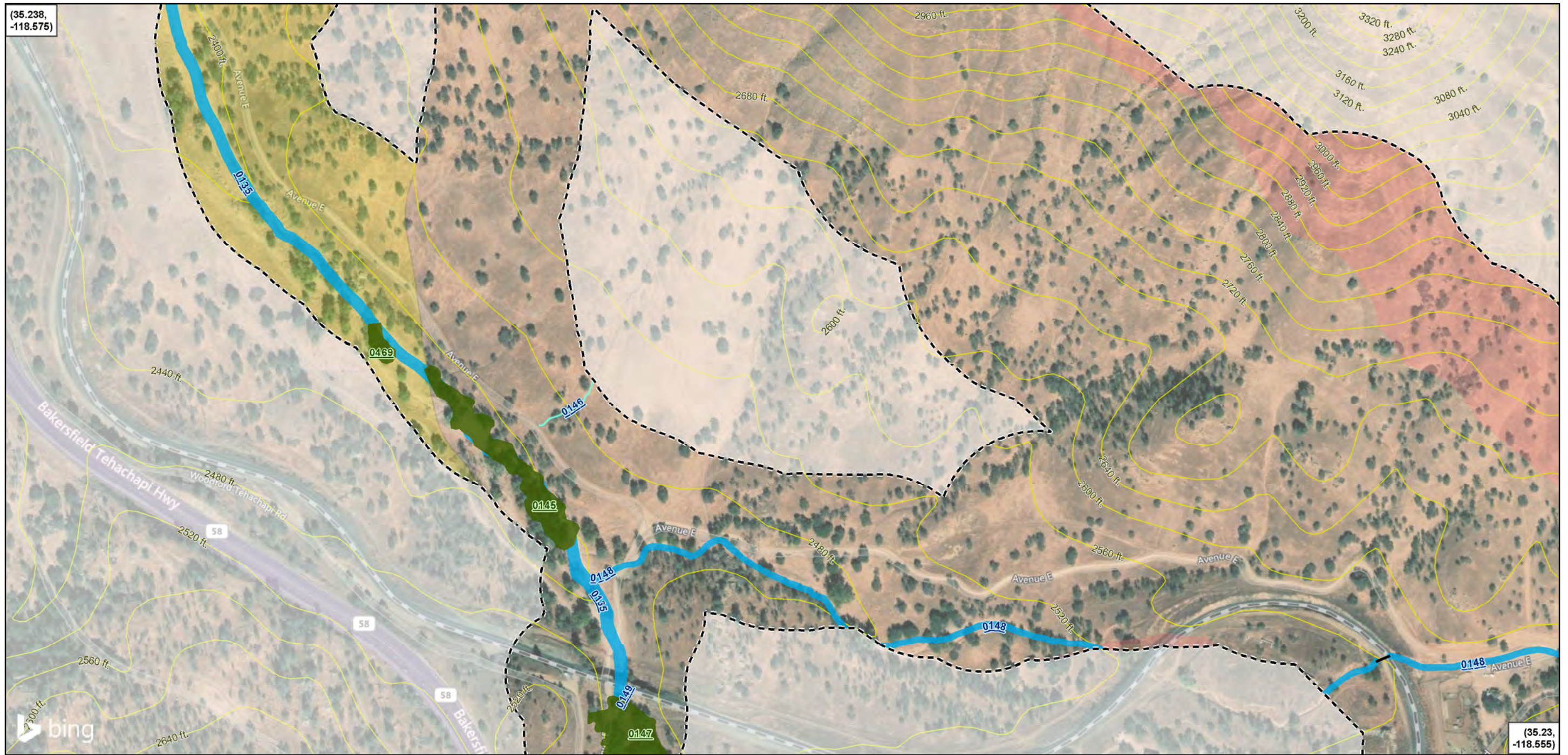
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Sheet Name 50A



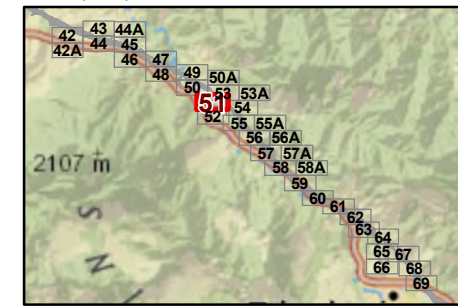
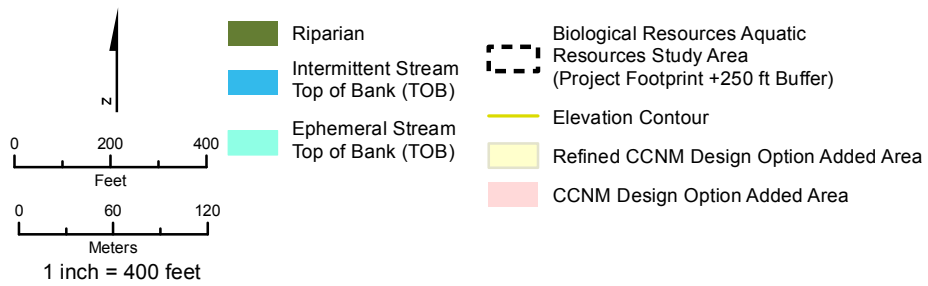
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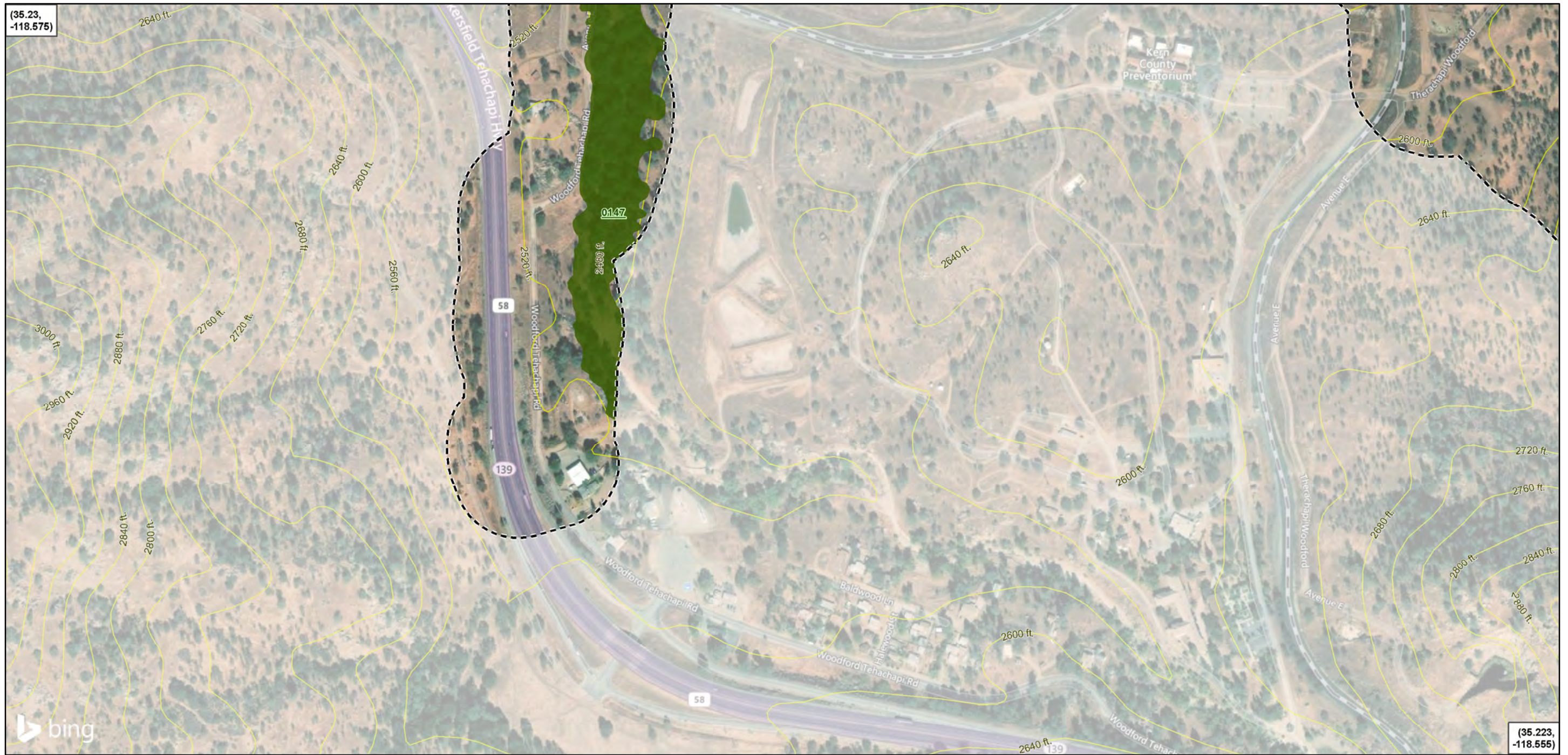
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Sheet Name 51



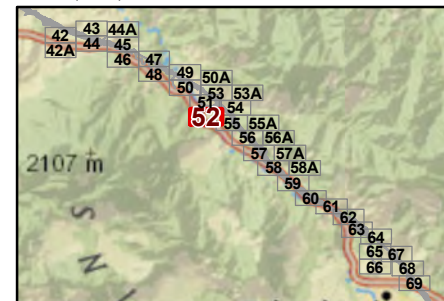
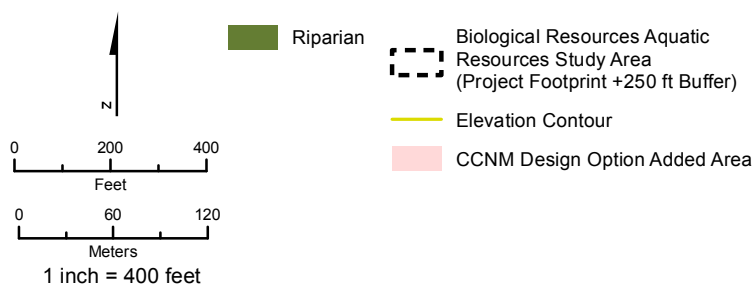
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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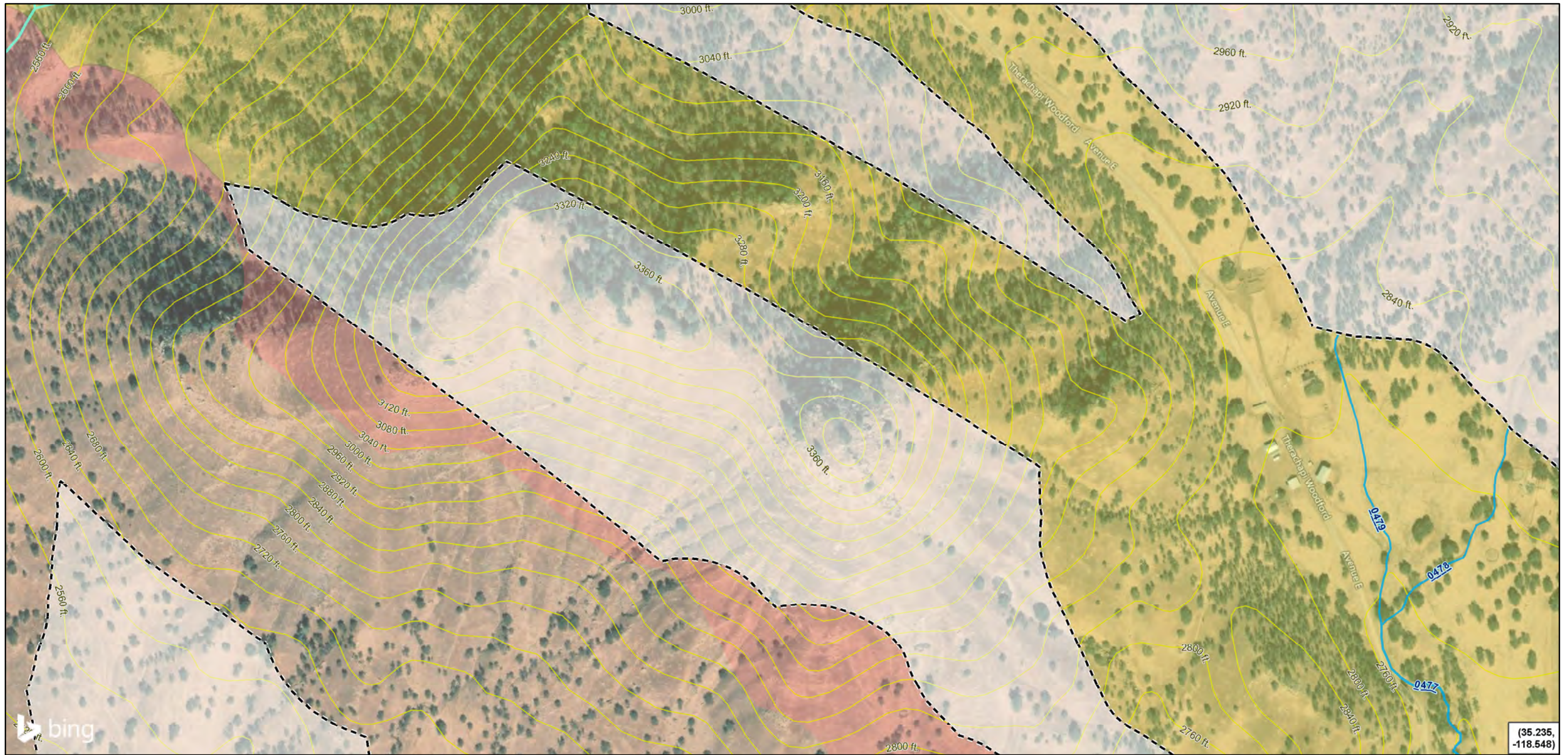
Sheet Name 52



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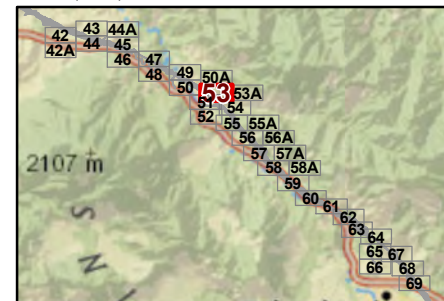
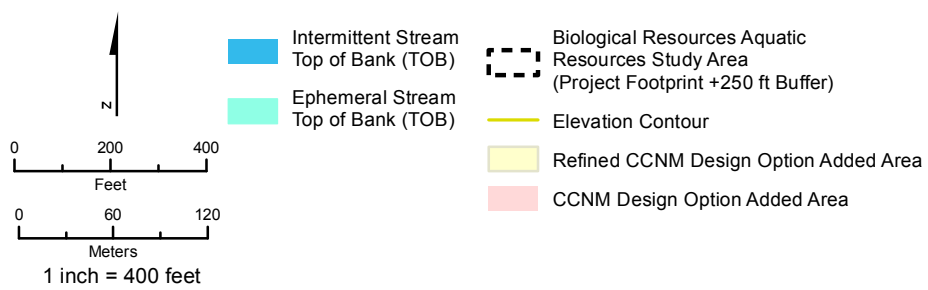
Aquatic Resources to Top of Bank

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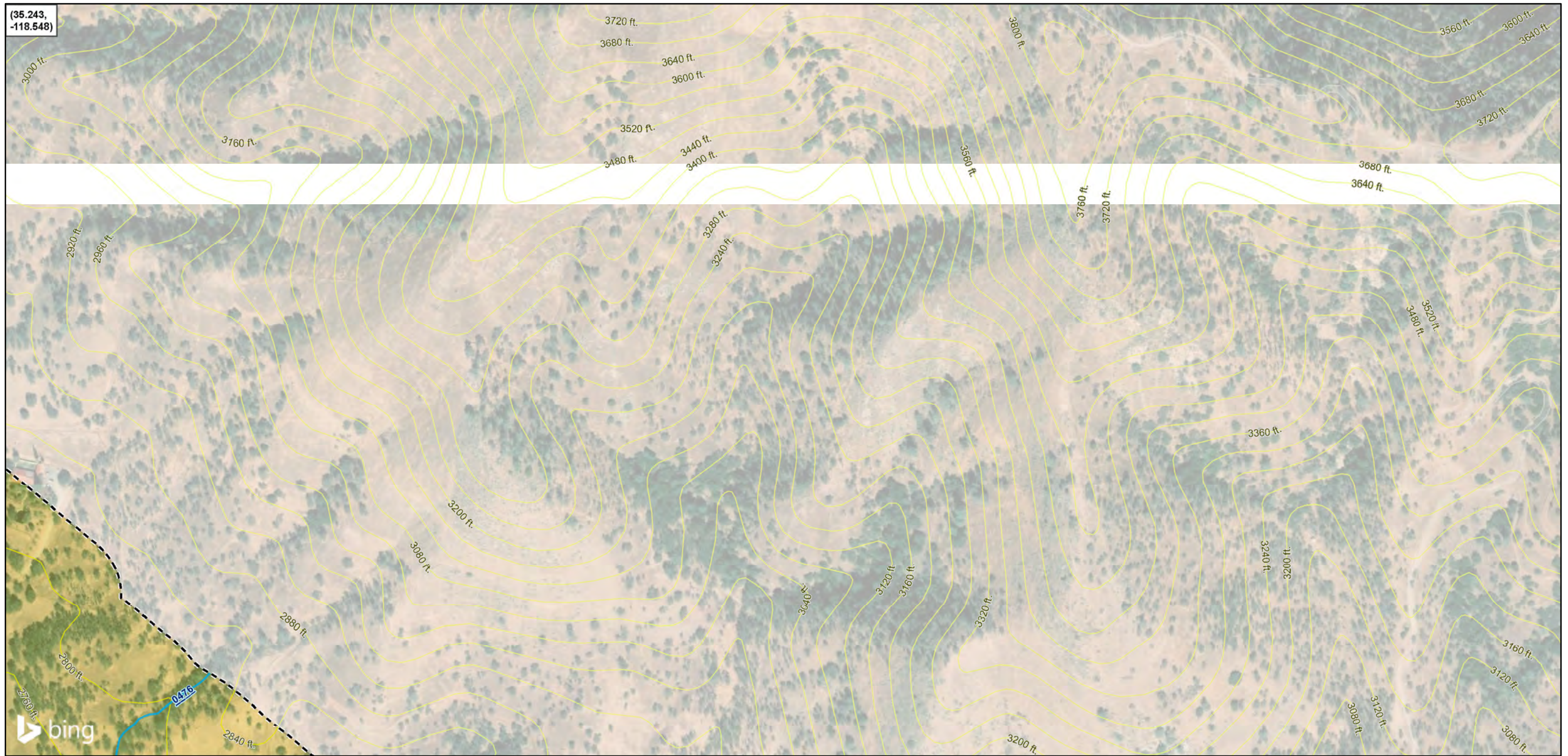
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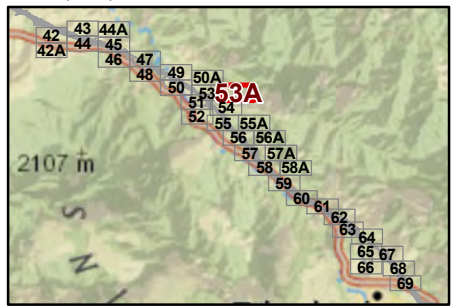
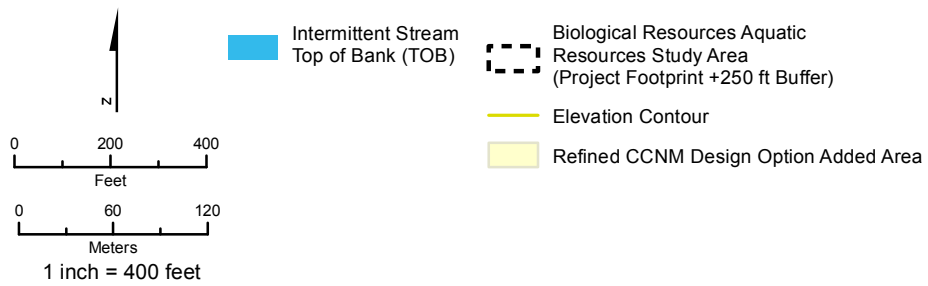
Aquatic Resources to Top of Bank

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Sheet Name 53A



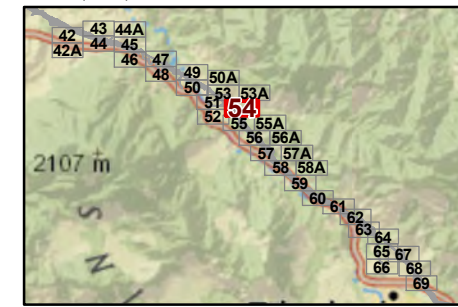
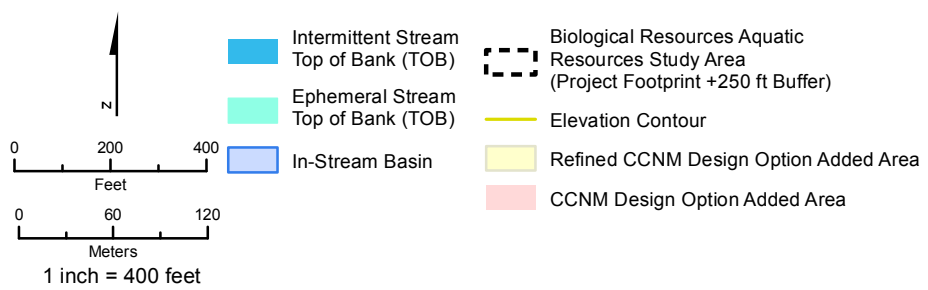
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Aquatic Resources to Top of Bank
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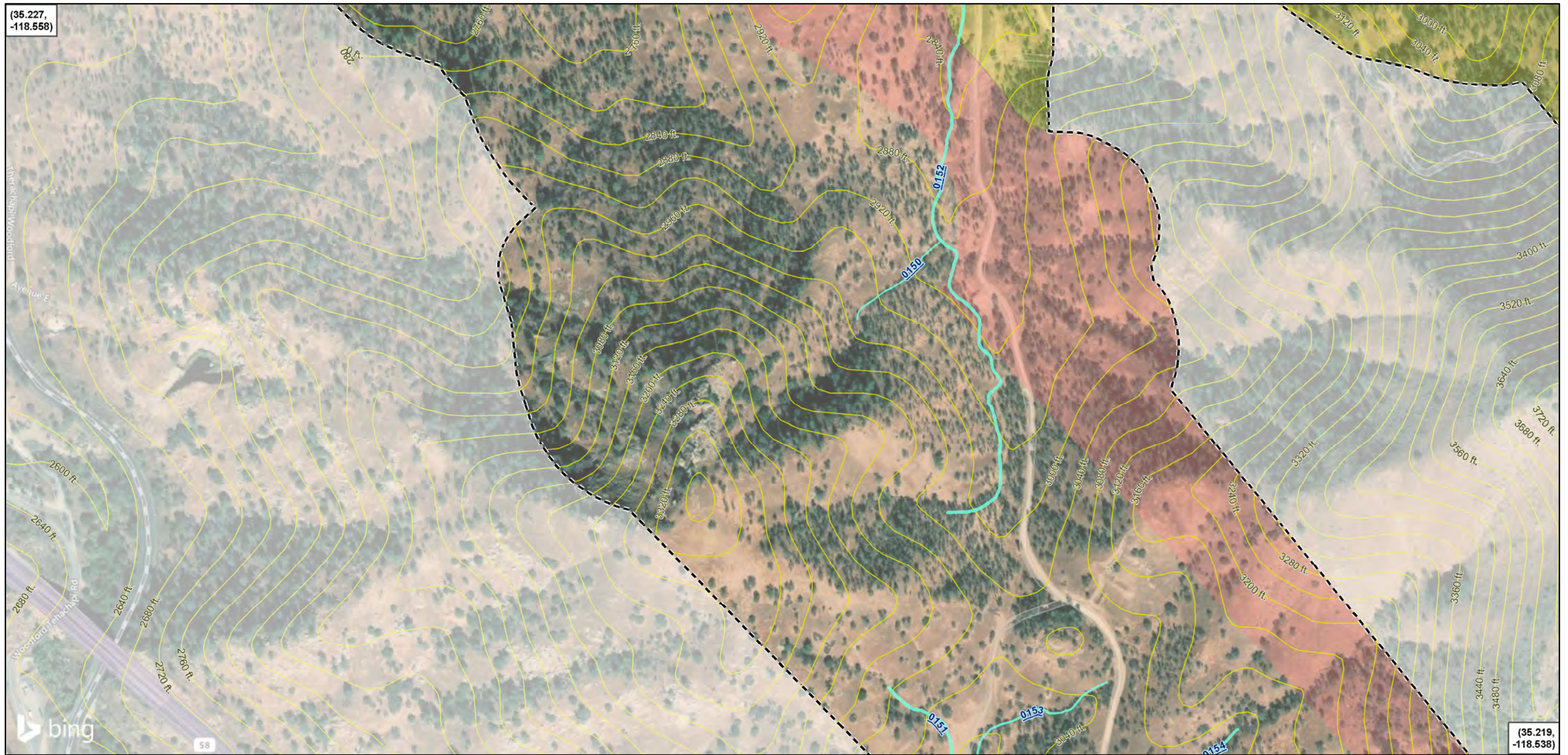
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Sheet Name 54



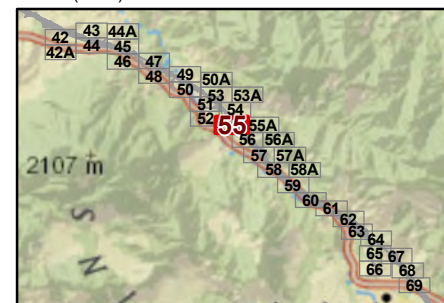
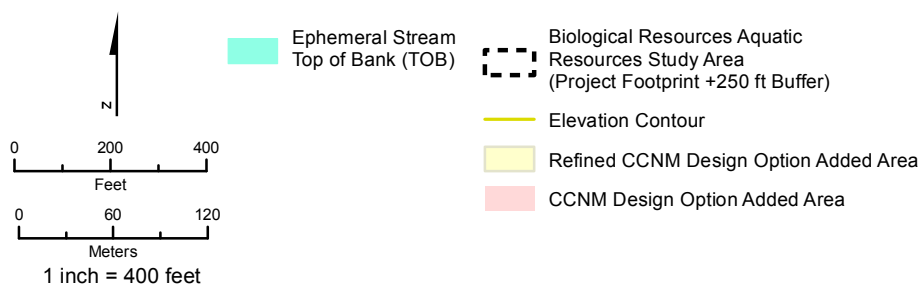
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Aquatic Resources to Top of Bank
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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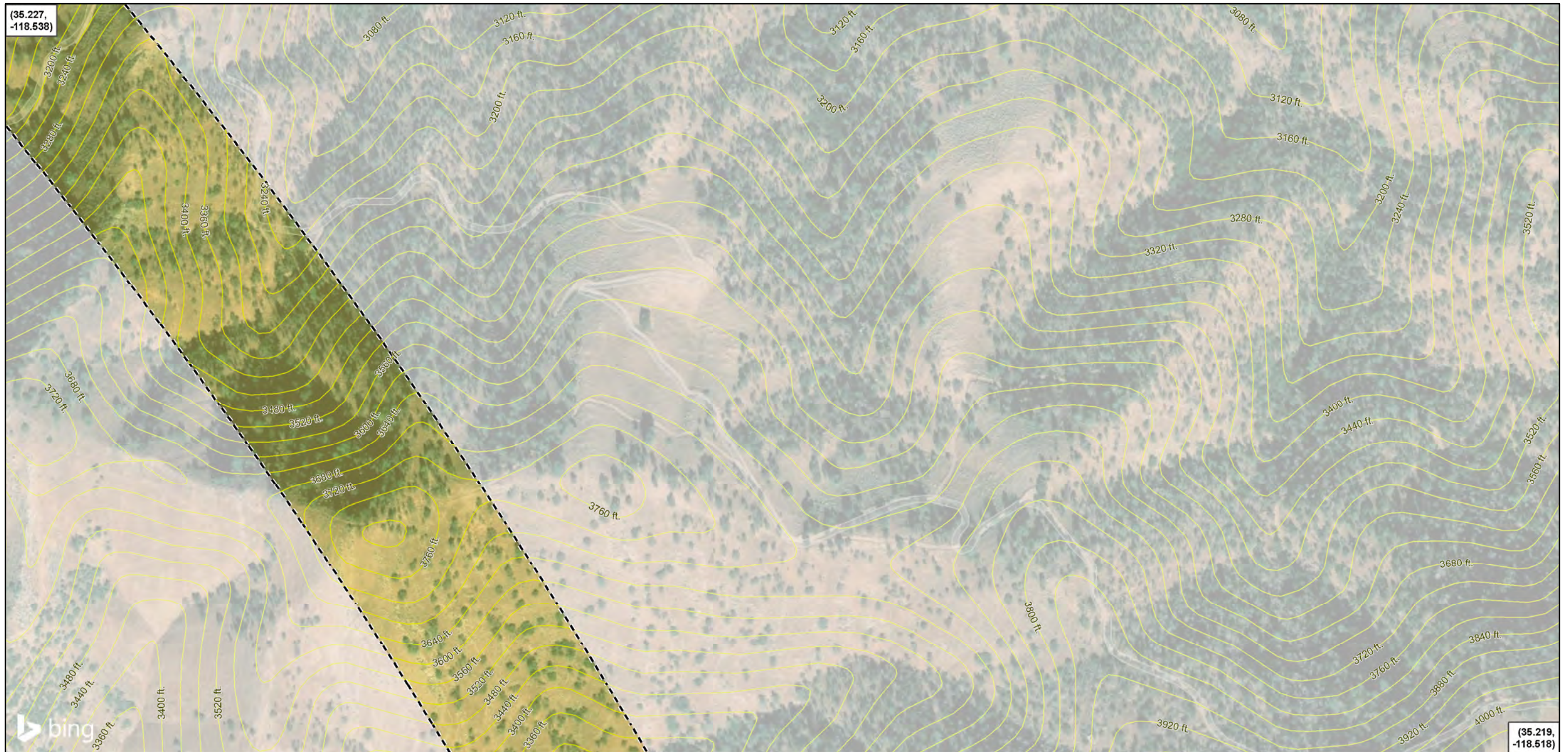
Sheet Name 55



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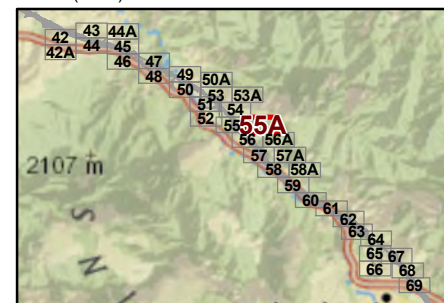
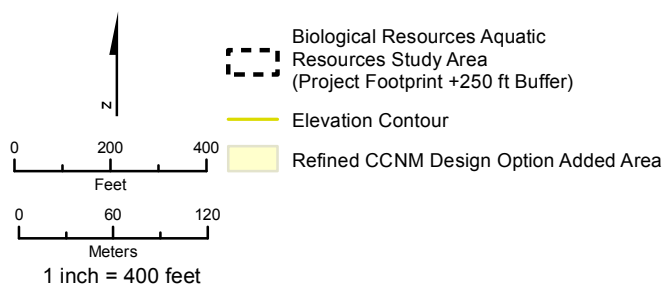
Aquatic Resources to Top of Bank

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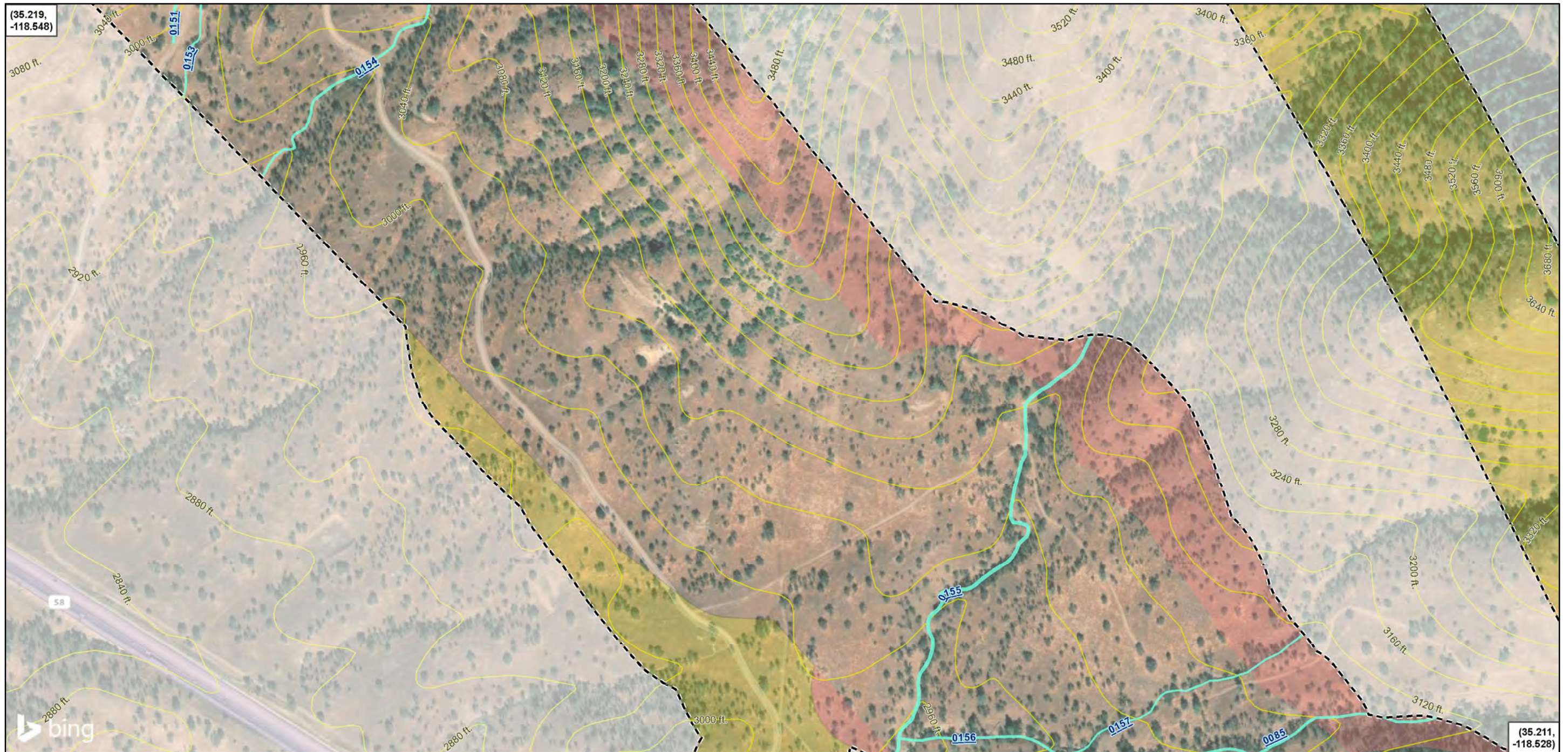
Sheet Name 55A



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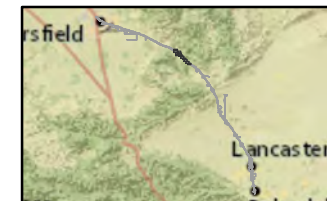
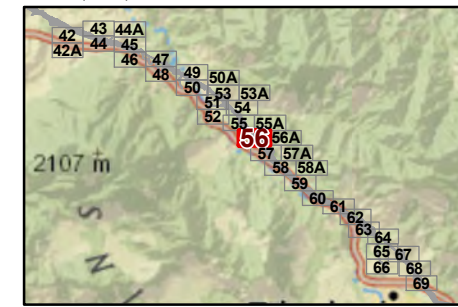
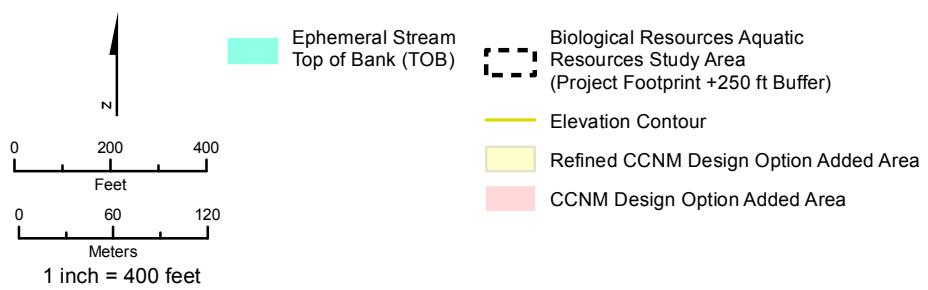
Aquatic Resources to Top of Bank

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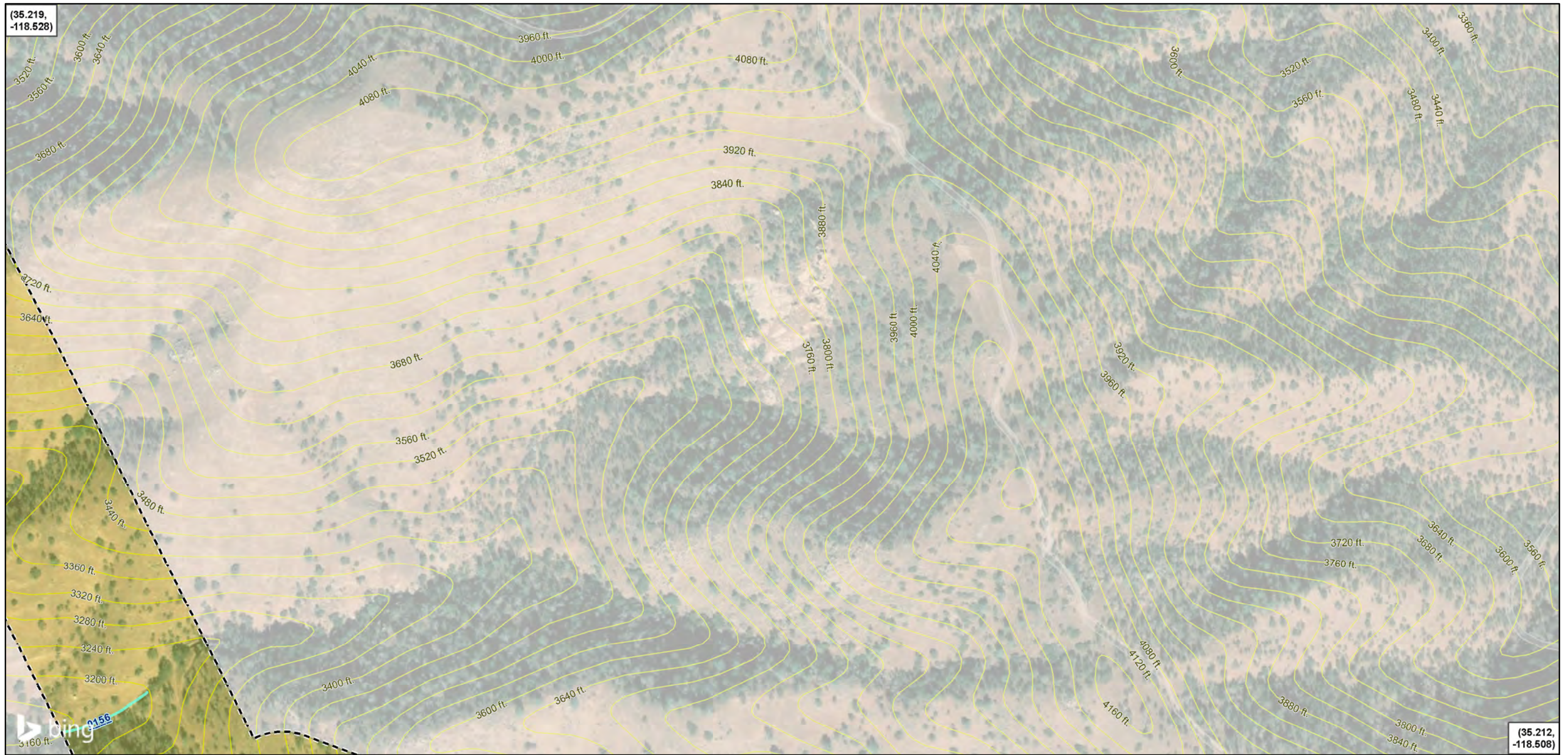
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Sheet Name 56



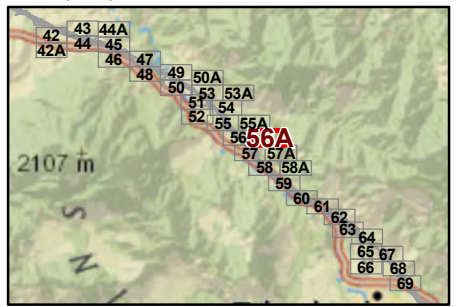
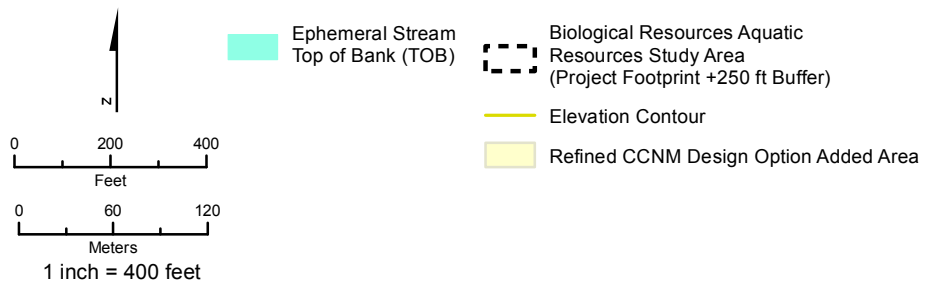
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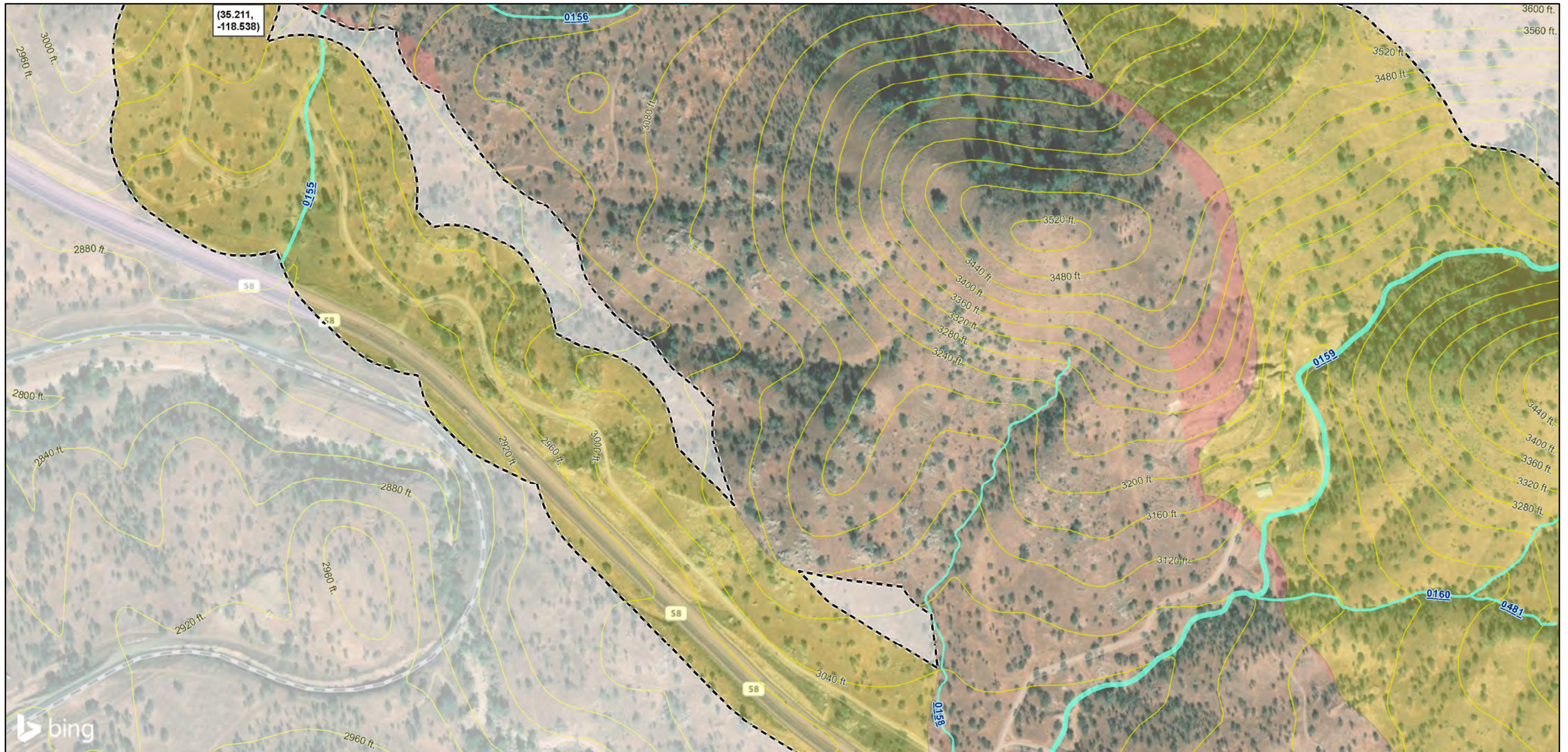
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Sheet Name 56A



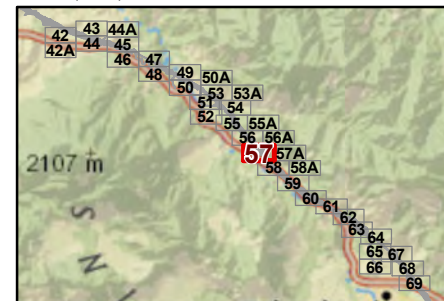
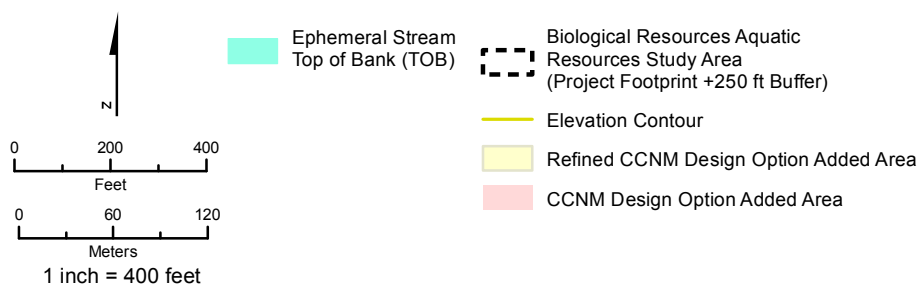
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 Datum: North American 1983
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

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Coordinate System: NAD 1983 California State Plane V
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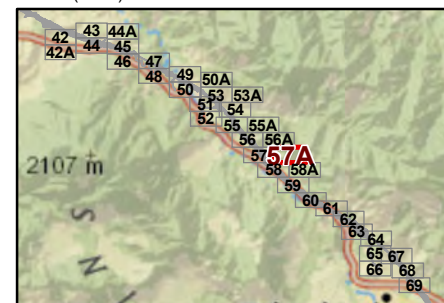
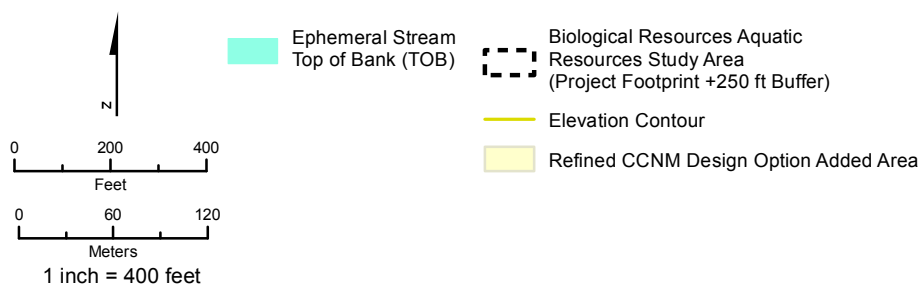
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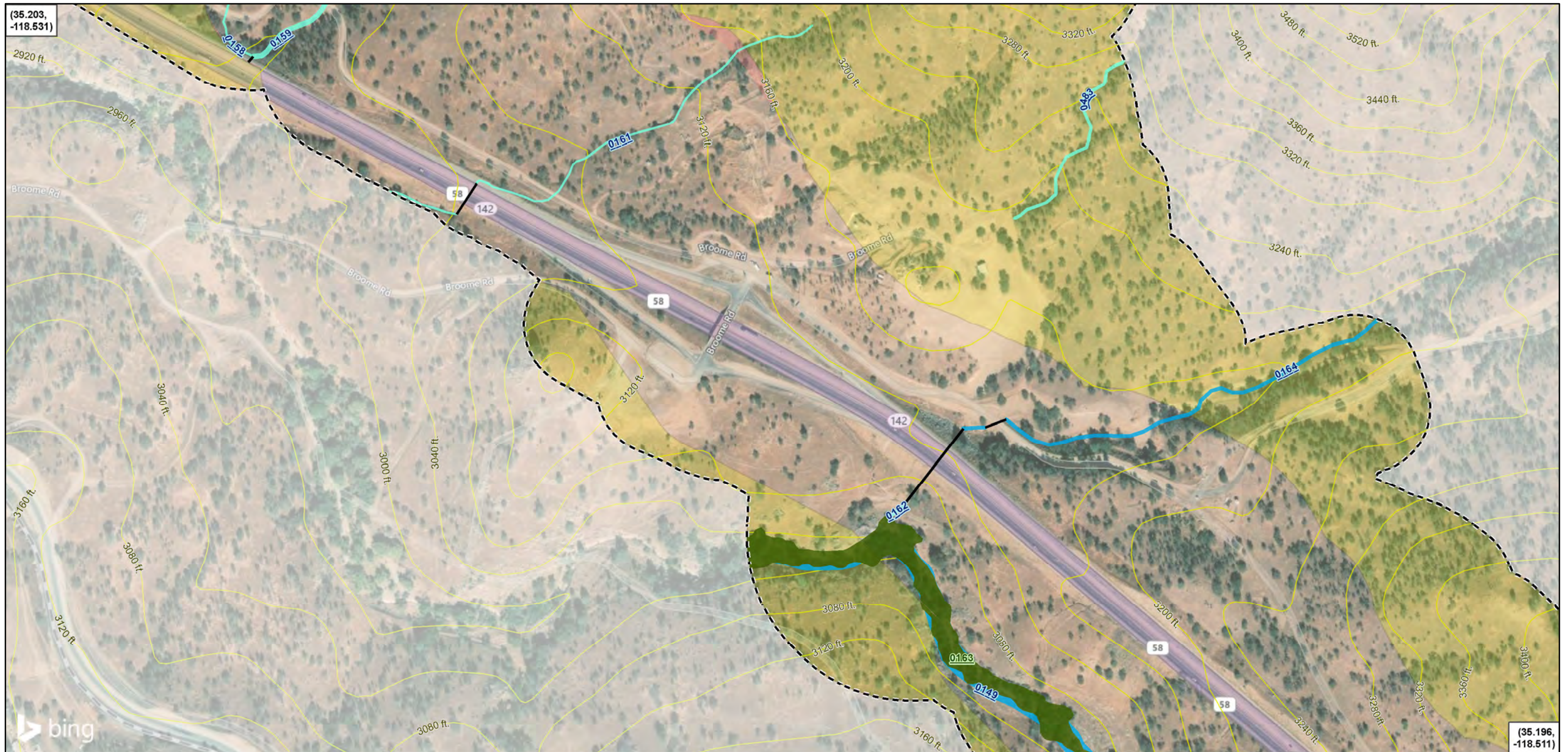
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Sheet Name 57A



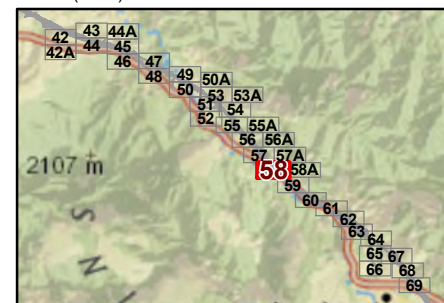
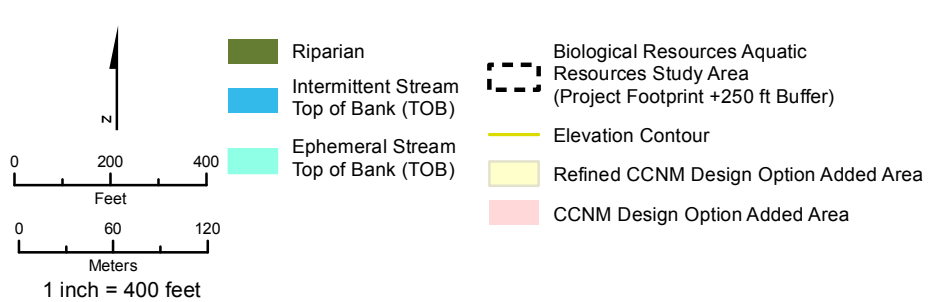
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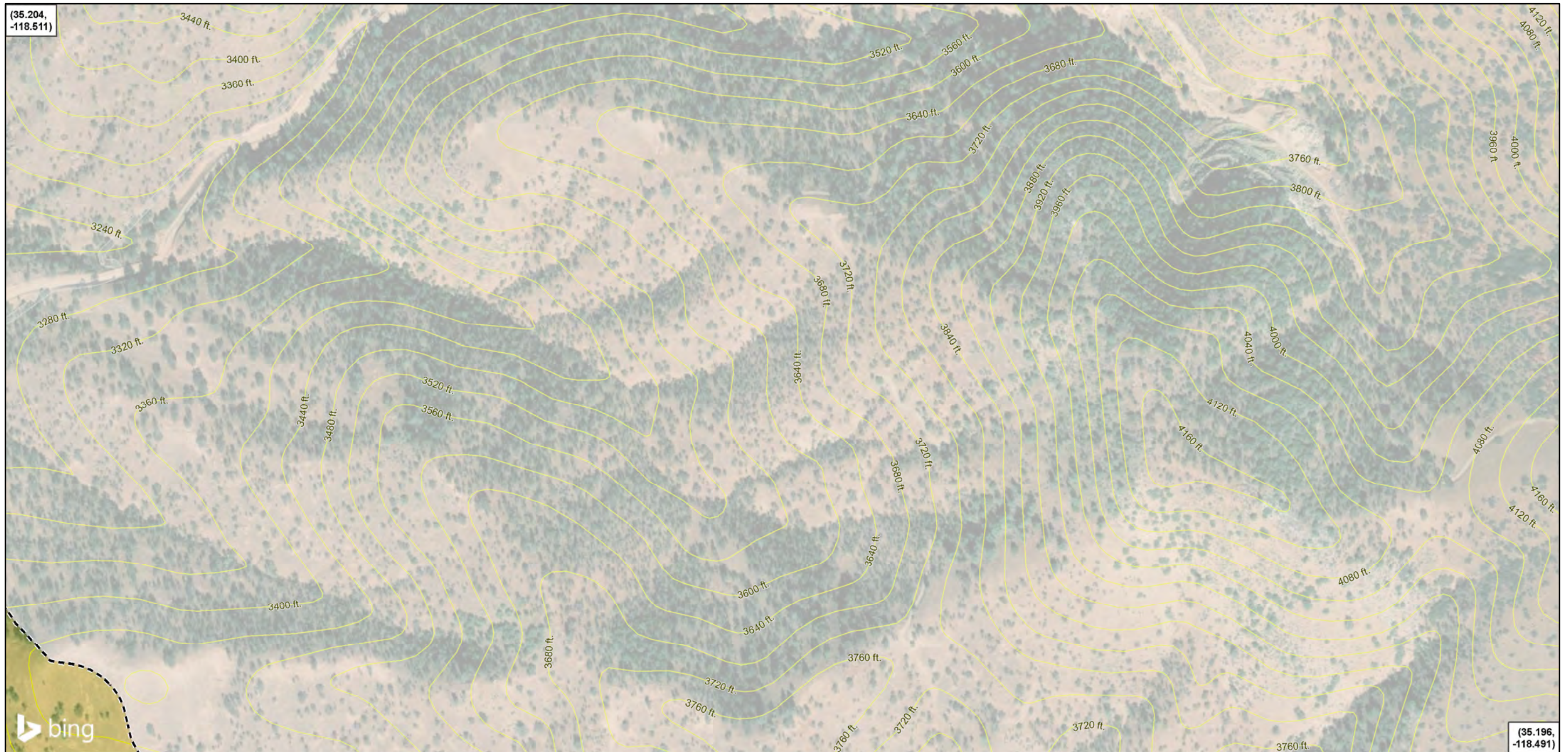
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Sheet Name 58



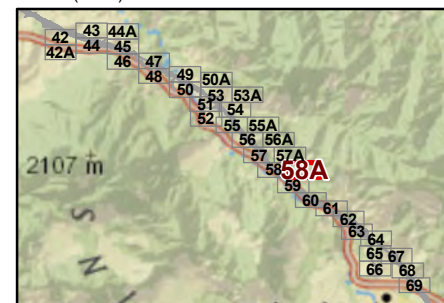
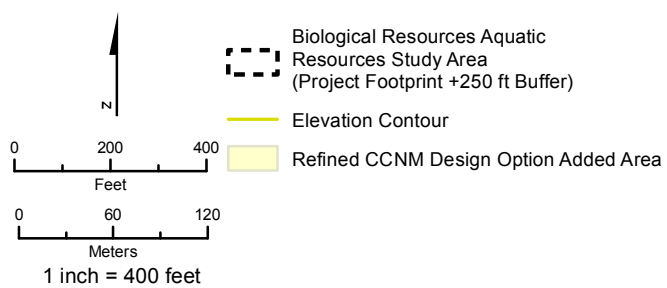
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 58A



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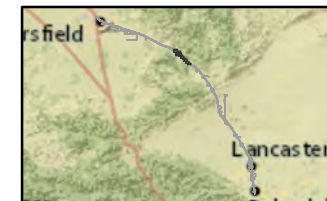
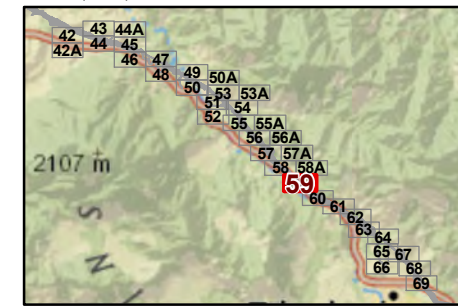
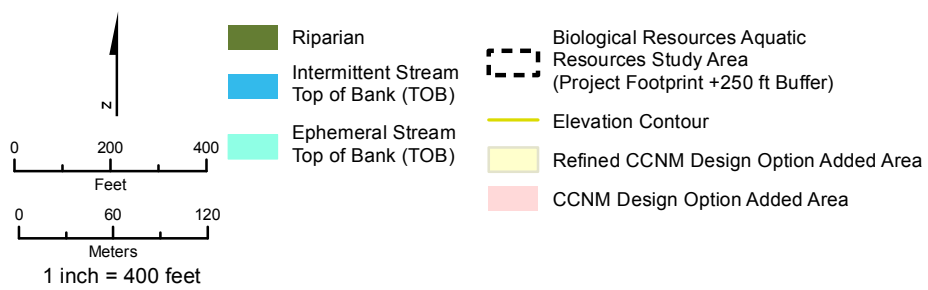
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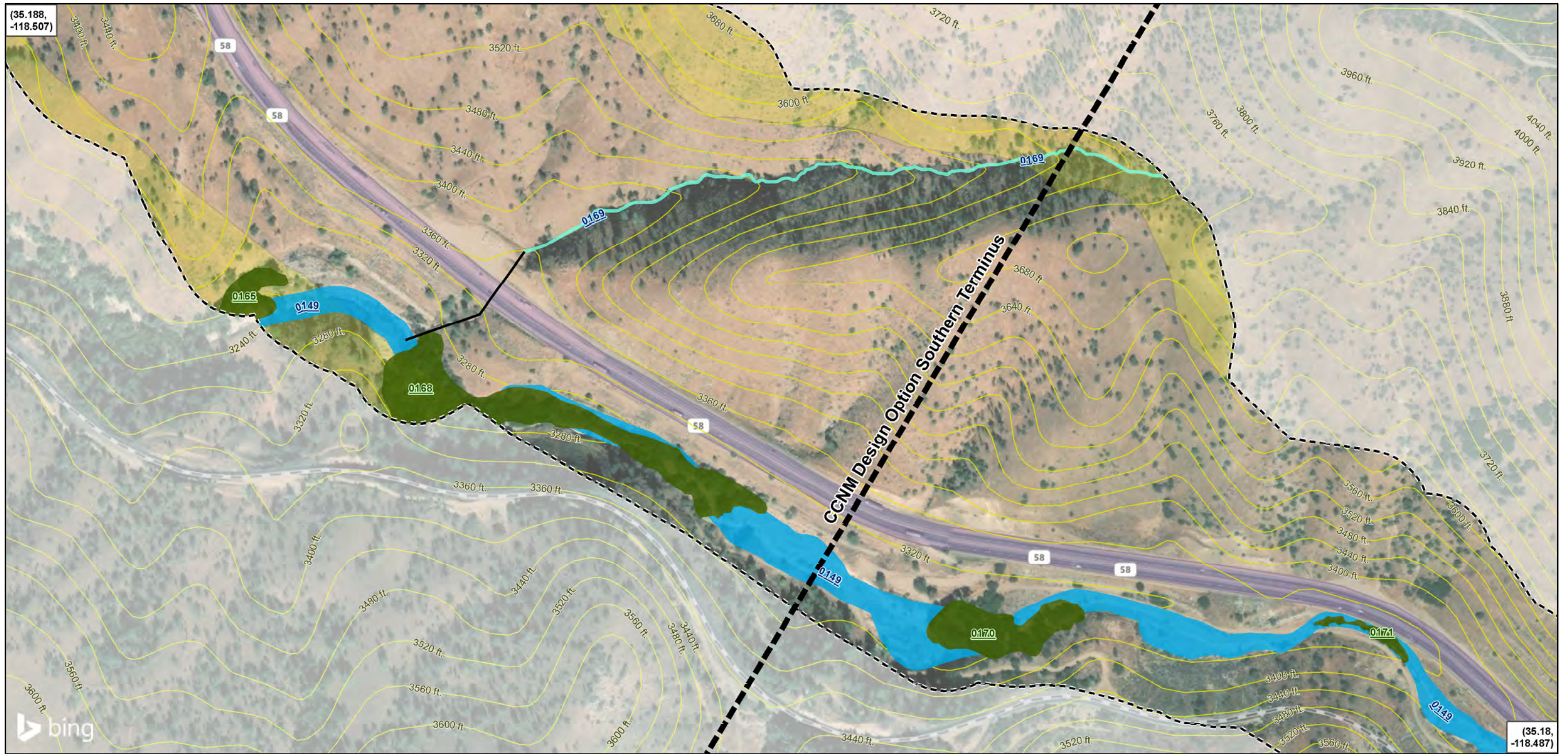
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Sheet Name 59



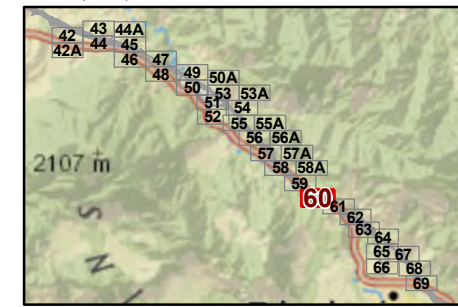
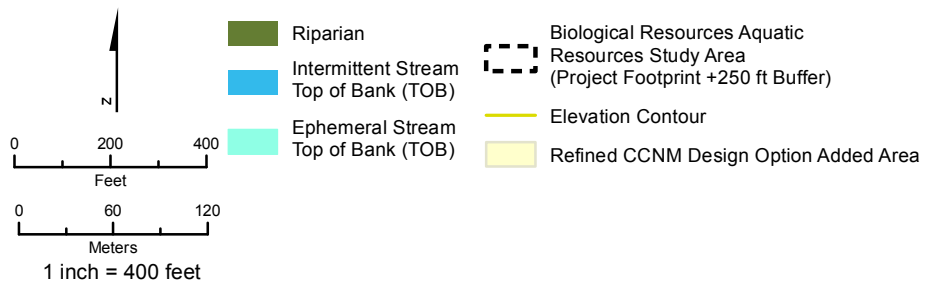
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 Datum: North American 1983
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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
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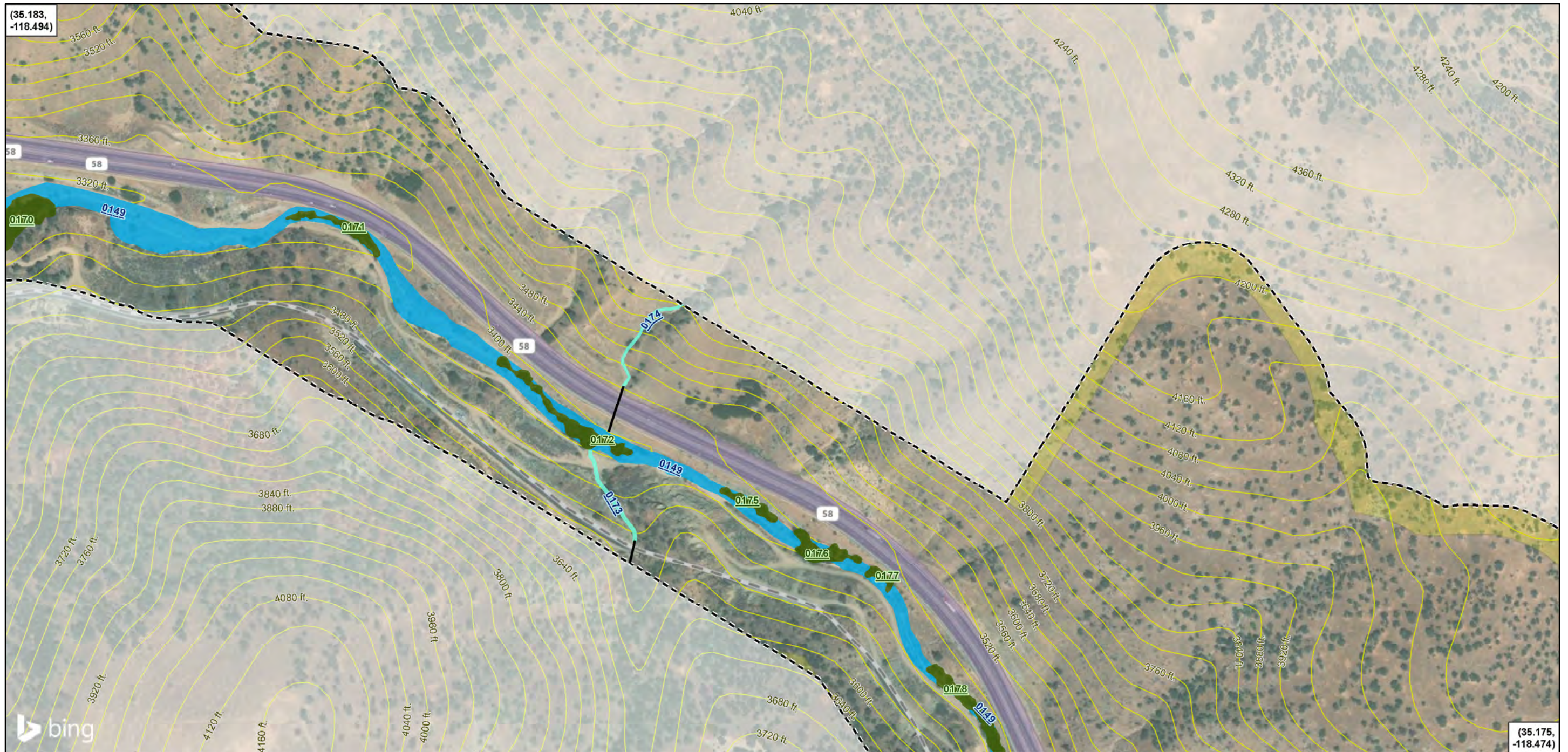
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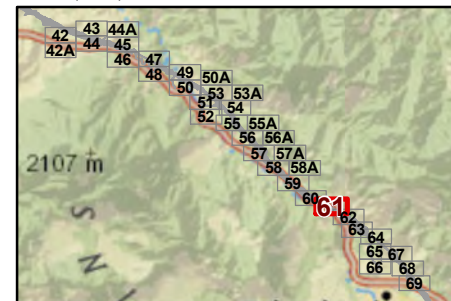
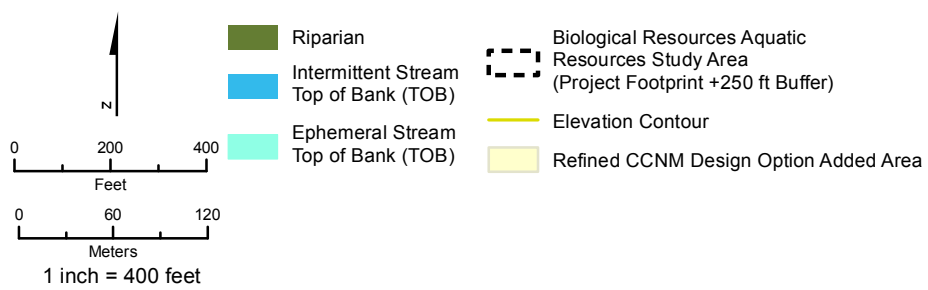
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 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

Sheet Name 61



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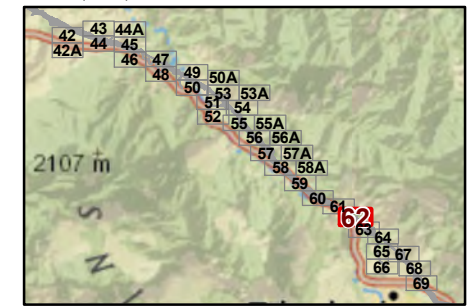
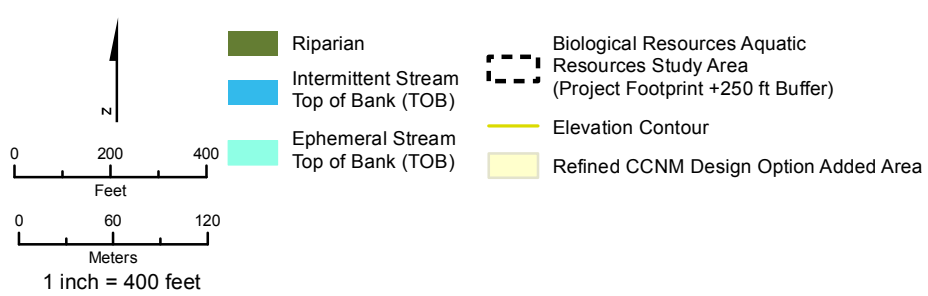
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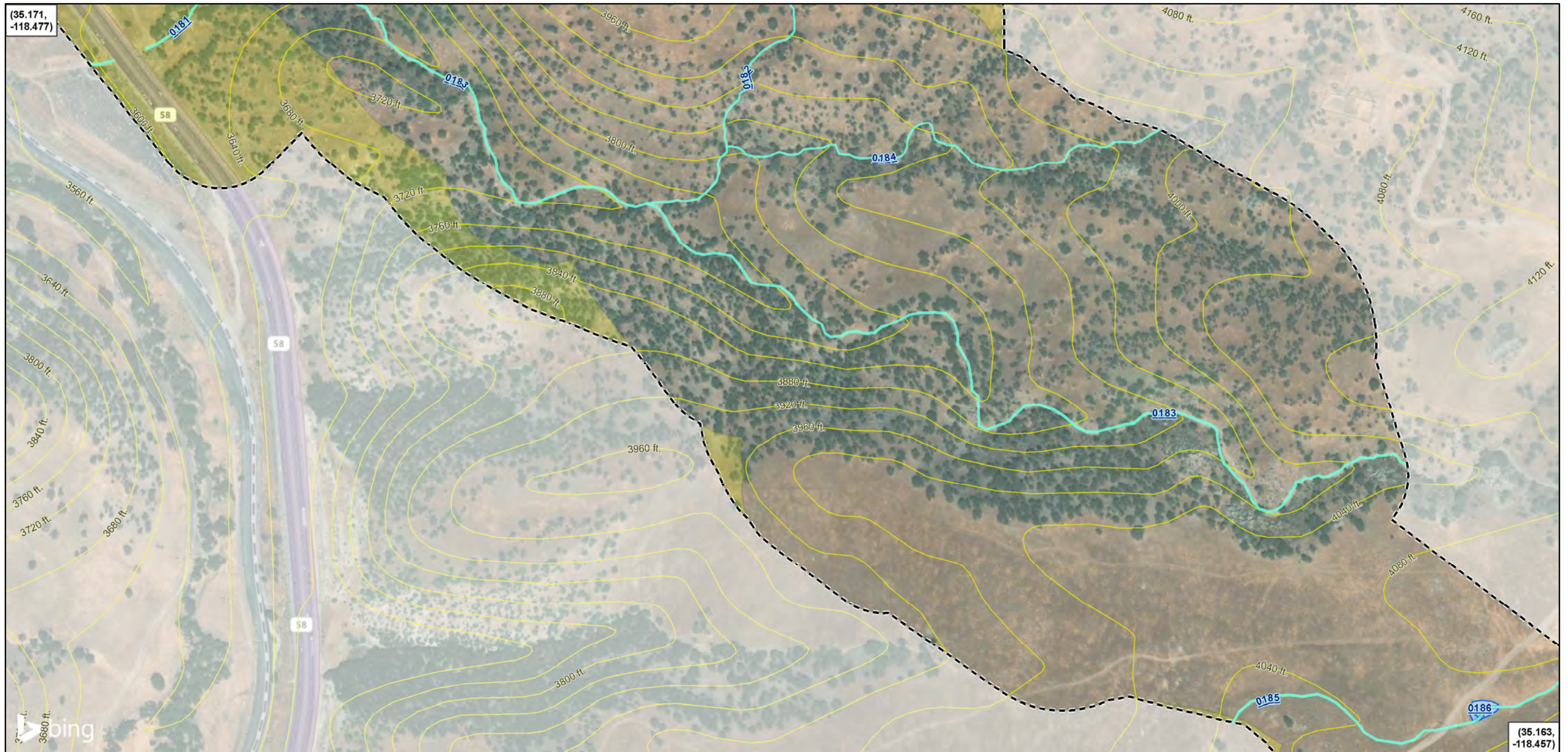
Sheet Name 62



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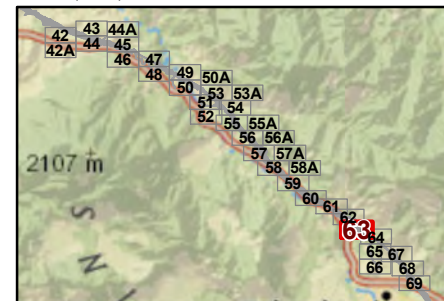
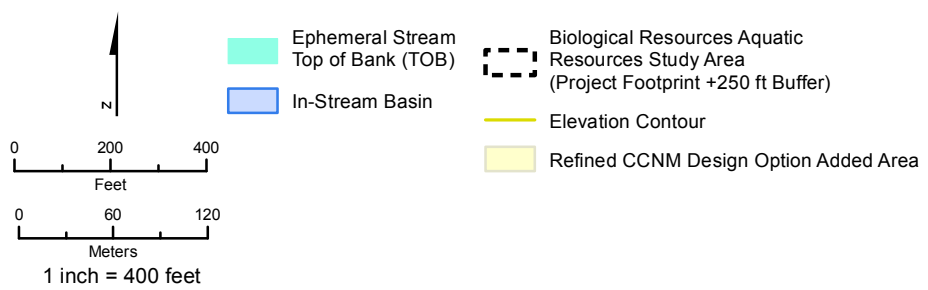
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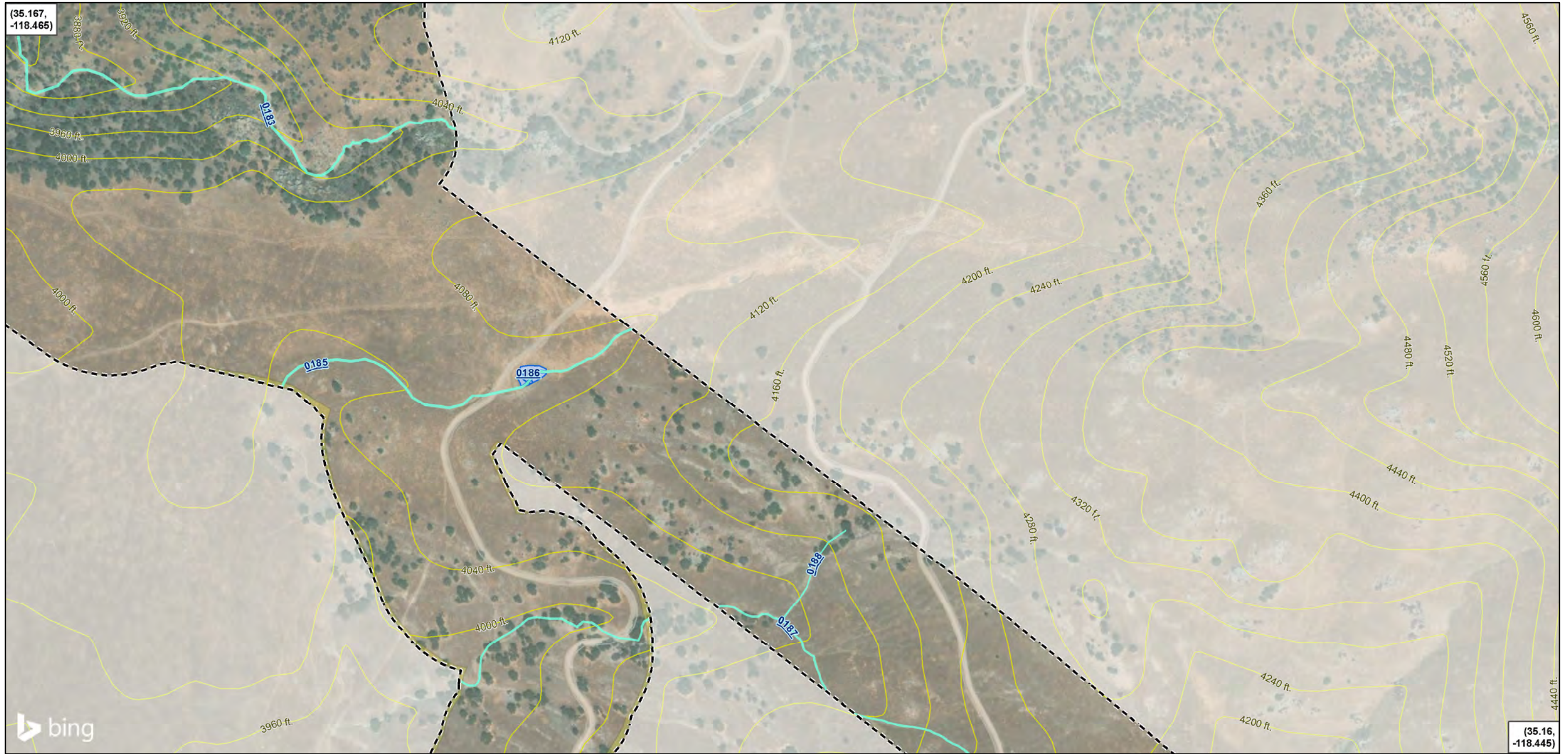
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Sheet Name 63



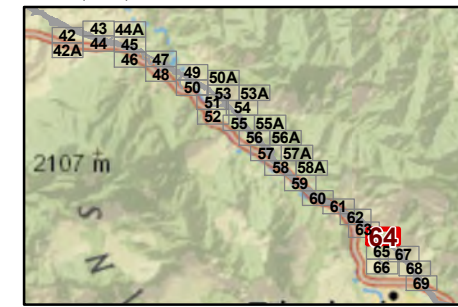
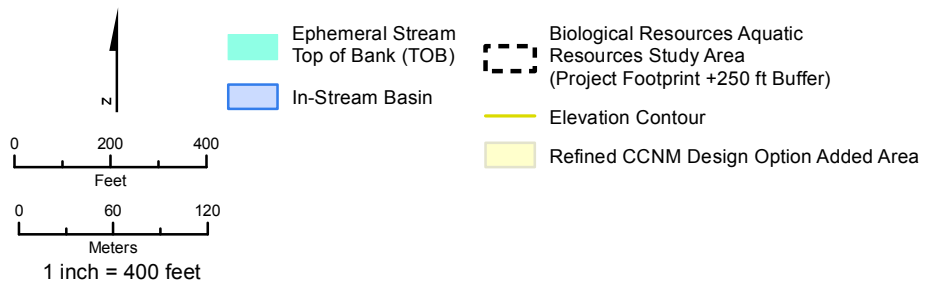
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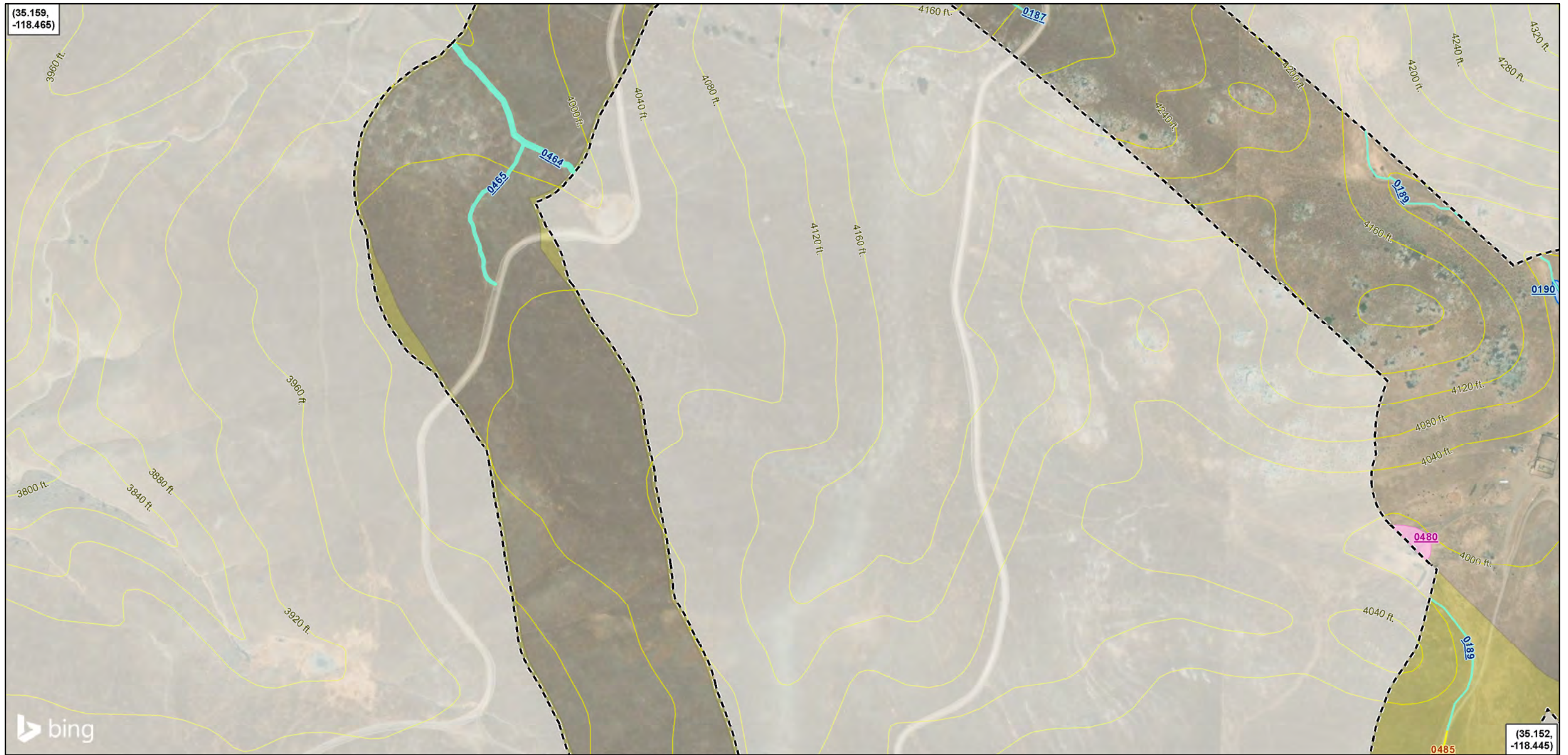
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Sheet Name 64



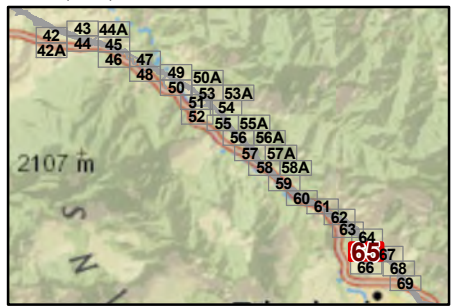
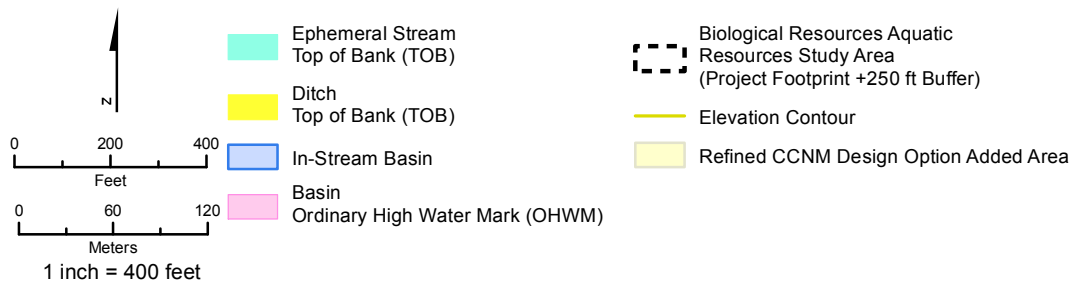
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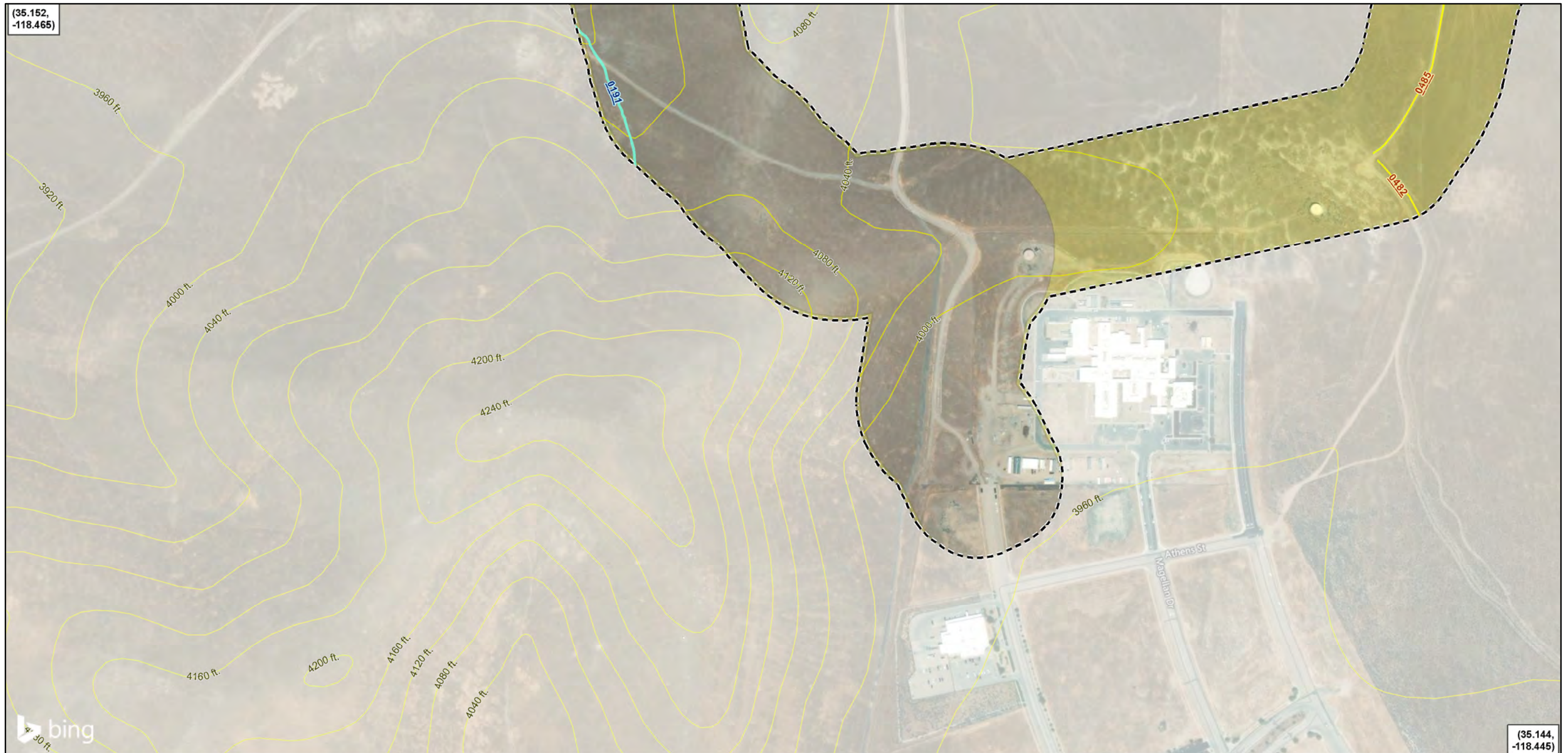
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Sheet Name 65



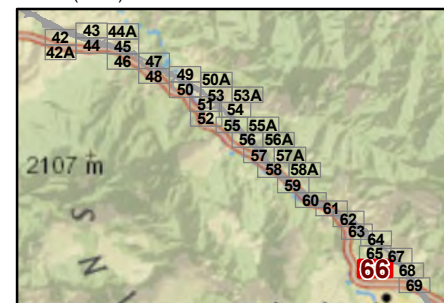
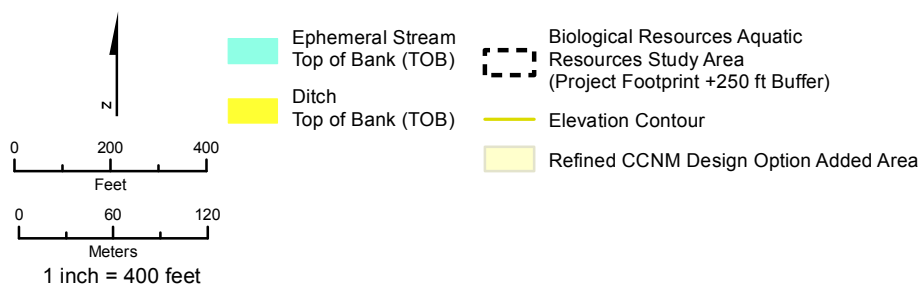
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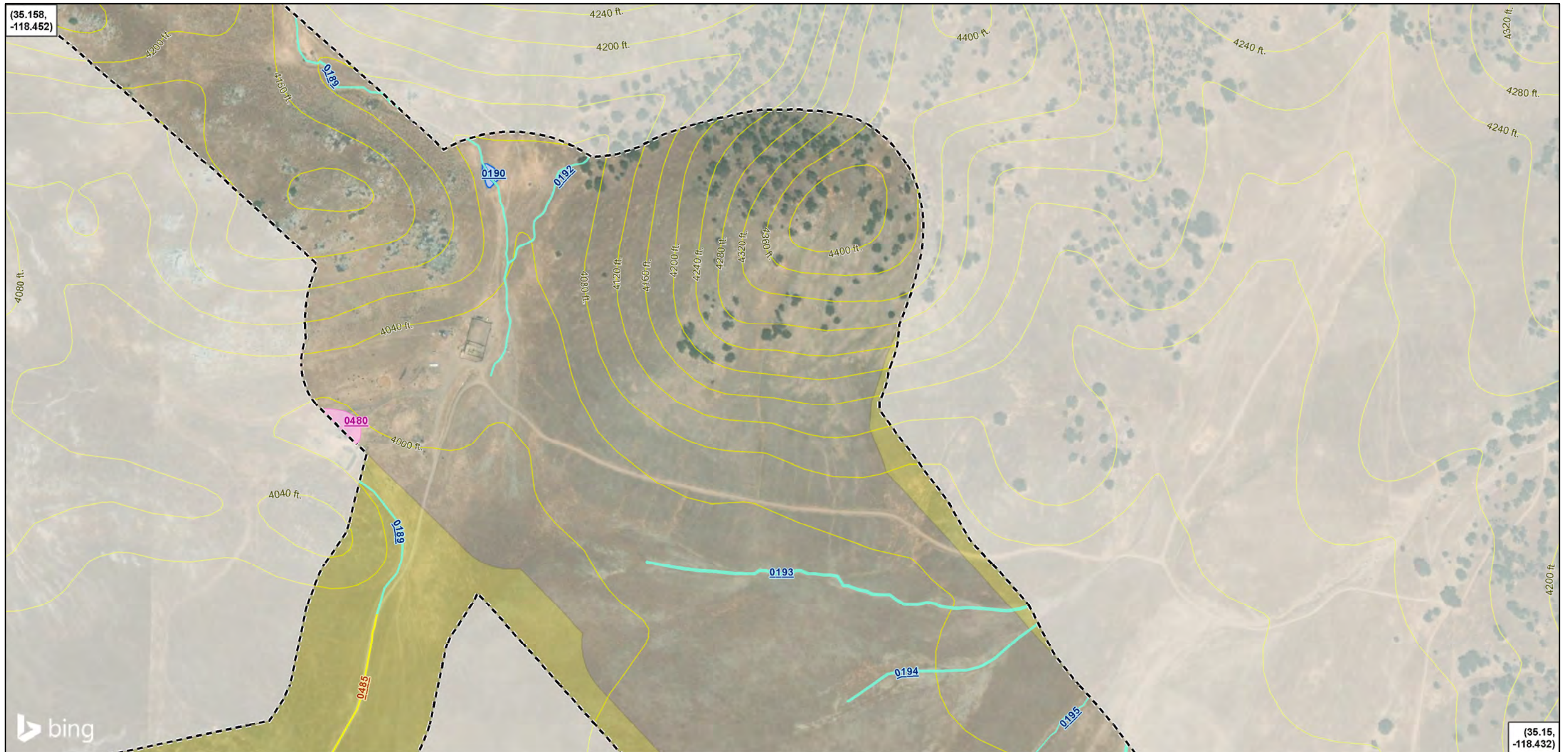
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Sheet Name 66



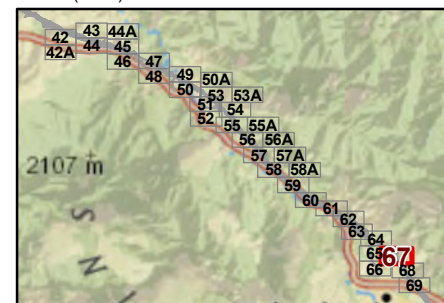
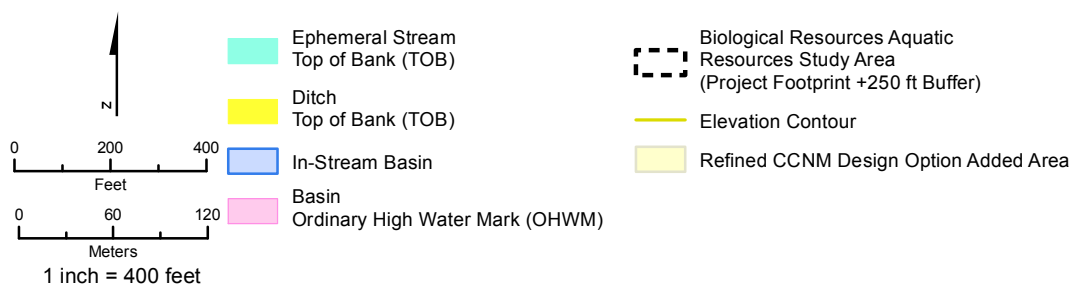
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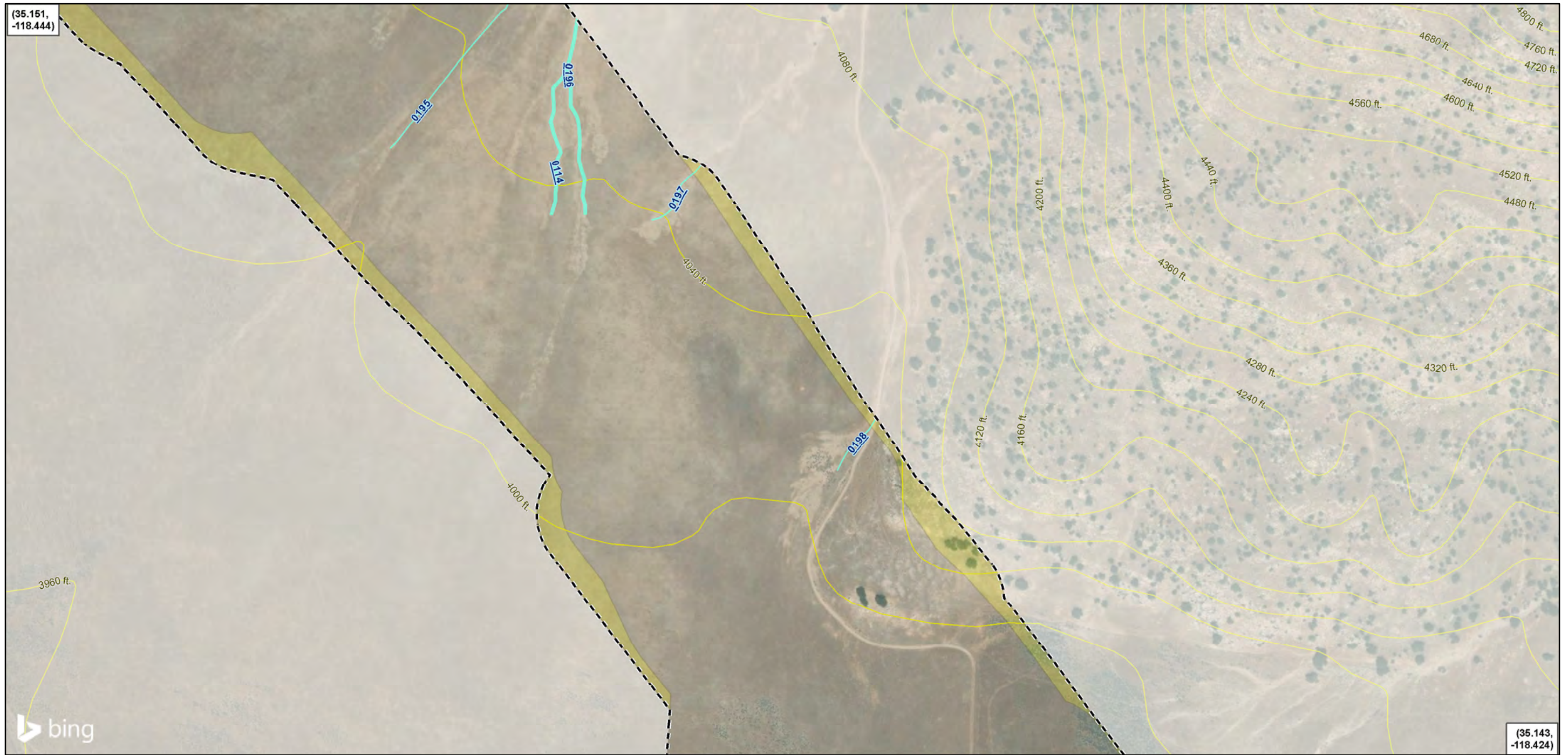
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Sheet Name 67



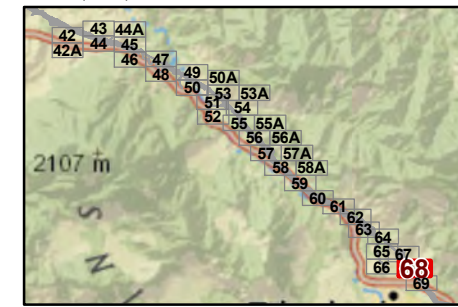
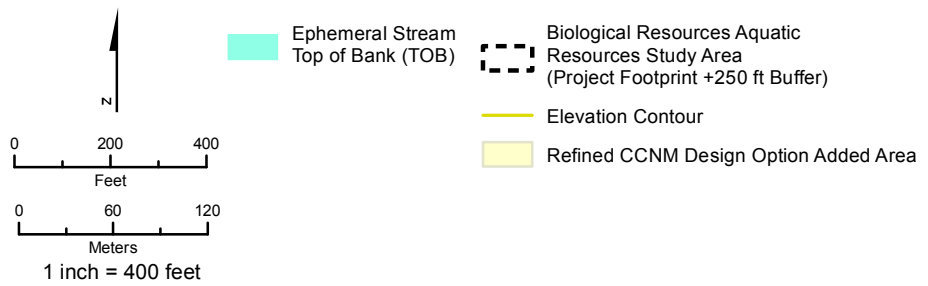
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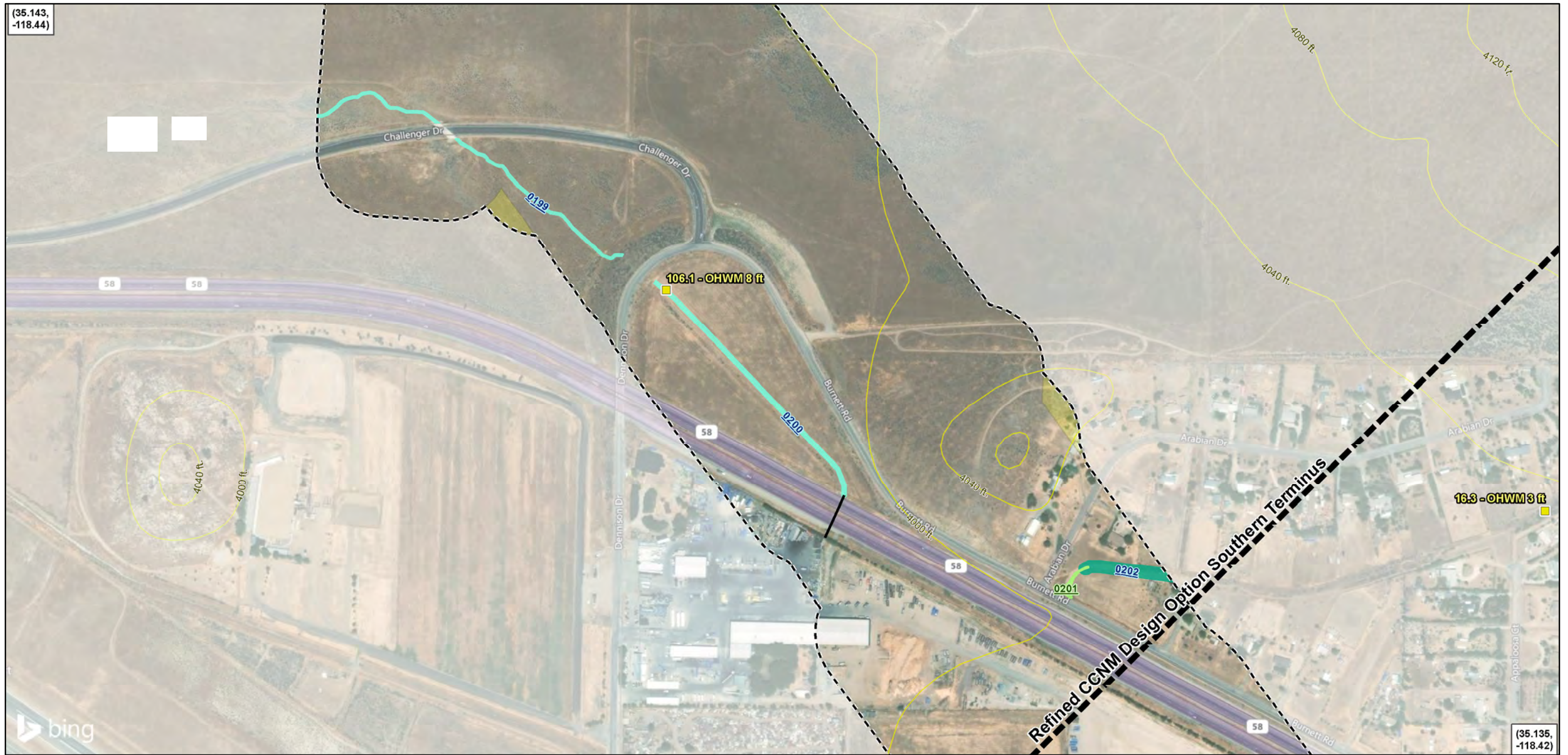
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Sheet Name 68



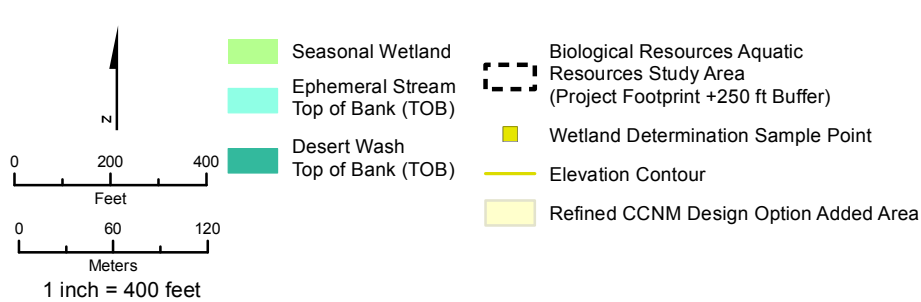
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 Vertical Datum: NAVD88, U.S. Feet

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PRELIMINARY DRAFT/SUBJECT TO CHANGE - HSR ALIGNMENT IS NOT DETERMINED
 SOURCE: Microsoft Corporation Bing Hybrid Imagery ESRI Service Layer (2019); Esri/National Geographic (2019); Phase 4B Engineering data from the CHSR (10/2019); USGS Elevation Contours (2014).

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Coordinate System: NAD 1983 California State Plane V
 Projection: Lambert Conic Conformal
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet

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APPENDIX E: JURISDICTIONAL DELINEATION DIMENSIONS

This Appendix presents summary information for each delineated feature in the CCNM Aquatic Study Area by label and map sheet number. Data contained herein complies with USACE Final Map and Drawing Standards for the South Pacific Division Regulatory Program. Note the Segment Identification number shown is a unique identifier that corresponds with the ORM Tables, continuing from previously submitted documentation provided to the USACE for the AJD.

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Table E-1 Aquatic Resource Jurisdictional Delineation Dimensions in the CCNM Aquatic Study Area

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0198	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1	Str_0198	0.01	68	Upper Tehachapi Creek
0146	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0146-001	0.01	51	Lower Tehachapi Creek
0182	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0182	0.06	62, 63	Middle Tehachapi Creek
0123	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	Str_0123	0.11	45	Lower Caliente Creek
0473	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	Str_0473	0.08	50A, 53	Lower Tehachapi Creek
0162	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	5	Str_0162	0.02	58	Middle Tehachapi Creek
0133	Seasonal Wetland	intermittent	Palustrine emergent	PEM	Riverine	-	SW_0133	0.51	47	Lower Tehachapi Creek
0484	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	str_0484	0.03	57A	Middle Tehachapi Creek
0477	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	6	str_0477	0.24	53, 54	Tweedy Creek
0481	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	str_0481	0.02	57	Middle Tehachapi Creek
0485	Ditch	ephemeral	n/a	n/a	n/a	2.5	str_0485	0.04	65, 66, 67	Upper Tehachapi Creek
0186	Basin - In Stream	intermittent	Palustrine unconsolidated bottom	PUB	n/a	-	Imp_0186-002	0.03	63, 64	Middle Tehachapi Creek
							Imp_0186-004	0.02		Middle Tehachapi Creek
							Imp_0186-005	0.07		Middle Tehachapi Creek
							Imp_0186-006	0.02		Middle Tehachapi Creek
0190	Basin - In Stream	intermittent	Palustrine unconsolidated bottom	PUB	n/a	0	IMP_0190-001	0.04	65, 67	Upper Tehachapi Creek
							IMP_0190-002	0.05		Upper Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0195	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1	Str_0195-001	0.01	67, 68	Upper Tehachapi Creek
							Str_0195-002	0.01		Upper Tehachapi Creek
0197	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1	Str_0197	0.01	68	Upper Tehachapi Creek
0150	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1	Str_0150	0.01	55	Tweedy Creek
0173	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1	Str_0173-001	0.01	61	Middle Tehachapi Creek
0131	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1.5	Str_0131-002	0.03	47, 48	Lower Tehachapi Creek
							Str_0131-003	0.01		Lower Tehachapi Creek
0136	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1.5	Str_0136-001	0.01	47, 48	Lower Tehachapi Creek
							Str_0136-002	0.02		Lower Tehachapi Creek
0157	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1.5	Str_0157-001	0.01	56, 57	Middle Tehachapi Creek
							Str_0157-002	0.03		Middle Tehachapi Creek
0137	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1.5	Str_0137-002	0.01	50	Lower Tehachapi Creek
							Str_0137-003	0.01		Lower Tehachapi Creek
0124	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1.5	Str_0124-001	0.01	45	Lower Tehachapi Creek
							Str_0124-003	0.01		Lower Tehachapi Creek
0166	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1.5	Str_0166-001	0.01	59	Middle Tehachapi Creek
							Str_0166-002	0.02		Middle Tehachapi Creek
							Str_0166-004	0.01		Middle Tehachapi Creek
							Str_0166-005	0.02		Middle Tehachapi Creek
0161	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	1.5	Str_0161-001	0.01	58	Middle Tehachapi Creek
							Str_0161-002	0.01		Middle Tehachapi Creek
							Str_0161-003	0.02		Middle Tehachapi Creek
							Str_0161-004	0.01		Middle Tehachapi Creek
							Str_0161-006	0.01		Middle Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0116	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0116-001	0.02	42	Lower Caliente Creek
							Str_0116-002	0.04		Lower Caliente Creek
							Str_0116-003	0.01		Lower Caliente Creek
0120	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0120-001	0.10	43, 44	Lower Caliente Creek
							Str_0120-002	0.01		Lower Caliente Creek
0119	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0119-001	0.01	43, 44	Lower Caliente Creek
							Str_0119-002	0.11		Lower Caliente Creek
0153	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0153-001	0.01	55, 56	Middle Tehachapi Creek
							Str_0153-002	0.03		Middle Tehachapi Creek
0187	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0187-001	0.03	64, 65	Middle Tehachapi Creek
							Str_0187-002	0.01		Middle Tehachapi Creek
							Str_0187-003	0.03		Middle Tehachapi Creek
							Str_0187-004	0.02		Middle Tehachapi Creek
							Str_0187-005	0.02		Middle Tehachapi Creek
0192	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0192-001	0.01	67	Upper Tehachapi Creek
							Str_0192-002	0.01		Upper Tehachapi Creek
0184	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0184-001	0.02	63	Middle Tehachapi Creek
							Str_0184-002	0.06		Middle Tehachapi Creek
							Str_0184-003	0.01		Middle Tehachapi Creek
0158	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0158-001	0.04	57, 58	Middle Tehachapi Creek
							Str_0158-002	0.01		Middle Tehachapi Creek
							Str_0158-003	0.04		Middle Tehachapi Creek
							Str_0158-005	0.01		Middle Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0185	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0185-001	0.02	63, 64	Middle Tehachapi Creek
							Str_0185-003	0.02		Middle Tehachapi Creek
							Str_0185-004	0.01		Middle Tehachapi Creek
							Str_0185-005	0.01		Middle Tehachapi Creek
							Str_0185-006	0.01		Middle Tehachapi Creek
							Str_0185-007	0.01		Middle Tehachapi Creek
0160	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0160-001	0.06	57, 57A	Middle Tehachapi Creek
							Str_0160-002	0.01		Middle Tehachapi Creek
0169	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0169-001	0.05	60	Middle Tehachapi Creek
							Str_0169-002	0.06		Middle Tehachapi Creek
							Str_0169-003	0.01		Middle Tehachapi Creek
0174	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2	Str_0174-002	0.01	61	Middle Tehachapi Creek
							Str_0174-003	0.01		Middle Tehachapi Creek
0189	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	2.5	Str_0189-001	0.02	65, 67	Upper Tehachapi Creek
							Str_0189-002	0.04		Upper Tehachapi Creek
							Str_0189-004	0.04		Upper Tehachapi Creek
							str_0189-005	0.03		Upper Tehachapi Creek
0154	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	Str_0154-001	0.02	55, 56	Middle Tehachapi Creek
							Str_0154-002	0.01		Middle Tehachapi Creek
							Str_0154-003	0.06		Middle Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0156	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	Str_0156-001	0.03	56, 56A, 57	Middle Tehachapi Creek
							Str_0156-002	0.01		Middle Tehachapi Creek
							Str_0156-003	0.02		Middle Tehachapi Creek
							Str_0156-004	0.02		Middle Tehachapi Creek
							Str_0156-007	0.06		Middle Tehachapi Creek
							Str_0156-008	0.01		Middle Tehachapi Creek
							Str_0156-009	0.01		Middle Tehachapi Creek
0151	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	Str_0151-001	0.02	55, 56	Middle Tehachapi Creek
							Str_0151-002	0.01		Middle Tehachapi Creek
							Str_0151-003	0.01		Middle Tehachapi Creek
0181	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0181-001	0.20	62, 63	Middle Tehachapi Creek
							Str_0181-002	0.02		Middle Tehachapi Creek
							Str_0181-003	0.01		Middle Tehachapi Creek
							Str_0181-005	0.05		Middle Tehachapi Creek
0183	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0183-001	0.01	62, 63, 64	Middle Tehachapi Creek
							Str_0183-002	0.03		Middle Tehachapi Creek
							Str_0183-003	0.03		Middle Tehachapi Creek
							Str_0183-004	0.01		Middle Tehachapi Creek
							Str_0183-006	0.33		Middle Tehachapi Creek
							Str_0183-007	0.10		Middle Tehachapi Creek
							Str_0183-008	0.04		Middle Tehachapi Creek
							Str_0183-012	0.01		Middle Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0121	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0121-001	0.01	43, 44, 44A, 45	Lower Caliente Creek
							Str_0121-002	0.02		Lower Caliente Creek
							Str_0121-003	0.03		Lower Caliente Creek
							Str_0121-005	0.04		Lower Caliente Creek
							Str_0121-006	0.01		Lower Caliente Creek
							Str_0121-007	0.03		Lower Caliente Creek
							Str_0121-008	0.02		Lower Caliente Creek
							Str_0121-009	0.08		Lower Caliente Creek
							Str_0121-011	0.31		Lower Caliente Creek
0194	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0194-001	0.02	67	Upper Tehachapi Creek
							Str_0194-002	0.05		Upper Tehachapi Creek
0191	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0191	0.05	66	Middle Tehachapi Creek
0117	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0117-001	0.12	42, 42A, 43	Lower Caliente Creek
							Str_0117-002	0.23		Lower Caliente Creek
							Str_0117-003	0.08		Lower Caliente Creek
							Str_0117-005	0.01		Lower Caliente Creek
							Str_0117-006	0.01		Lower Caliente Creek
0125	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0125-001	0.05	45	Lower Tehachapi Creek
							Str_0125-003	0.01		Lower Tehachapi Creek
							Str_0125-004	0.03		Lower Tehachapi Creek
							Str_0125-005	0.01		Lower Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0152	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	5	Str_0152-001	0.27	54, 55	Tweedy Creek
							Str_0152-002	0.01		Tweedy Creek
							Str_0152-003	0.09		Tweedy Creek
							Str_0152-004	0.03		Tweedy Creek
							Str_0152-005	0.01		Tweedy Creek
							Str_0152-006	0.05		Tweedy Creek
							Str_0152-007	0.01		Tweedy Creek
							Str_0152-009	0.01		Tweedy Creek
0167	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	5	Str_0167-001	0.05	59	Middle Tehachapi Creek
							Str_0167-002	0.08		Middle Tehachapi Creek
							Str_0167-004	0.04		Middle Tehachapi Creek
							Str_0167-005	0.06		Middle Tehachapi Creek
0193	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	5	Str_0193-001	0.04	67	Upper Tehachapi Creek
							Str_0193-002	0.13		Upper Tehachapi Creek
							Str_0193-003	0.01		Upper Tehachapi Creek
0196	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	6	Str_0196-001	0.08	67, 68	Upper Tehachapi Creek
							Str_0196-002	0.05		Upper Tehachapi Creek
							Str_0196-003	0.03		Upper Tehachapi Creek
							Str_0196-004	0.01		Upper Tehachapi Creek
							Str_0196-005	0.01		Upper Tehachapi Creek
0199	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	6	Str_0199-001	0.02	69	Upper Tehachapi Creek
							Str_0199-002	0.11		Upper Tehachapi Creek
							Str_0199-003	0.04		Upper Tehachapi Creek
							Str_0199-004	0.02		Upper Tehachapi Creek

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0159	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	6	Str_0159-001	0.04	57, 57A, 58	Middle Tehachapi Creek
							Str_0159-002	0.01		Middle Tehachapi Creek
							Str_0159-003	0.03		Middle Tehachapi Creek
							Str_0159-004	0.13		Middle Tehachapi Creek
							Str_0159-005	0.29		Middle Tehachapi Creek
							Str_0159-007	0.02		Middle Tehachapi Creek
							Str_0159-008	0.02		Middle Tehachapi Creek
							Str_0159-009	0.01		Middle Tehachapi Creek
							0200	Ephemeral Stream		ephemeral
Str_0200-002	0.09	Upper Tehachapi Creek								
Str_0200-003	0.01	Upper Tehachapi Creek								
0122	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	10	Str_0122-001	0.02	44	Lower Caliente Creek
							Str_0122-002	0.81		Lower Caliente Creek
0164	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	5	Str_0164-001	0.01	58	Middle Tehachapi Creek
							Str_0164-002	0.10		Middle Tehachapi Creek
							Str_0164-003	0.08		Middle Tehachapi Creek
							Str_0164-004	0.01		Middle Tehachapi Creek
0180	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	8	Str_0180-001	0.17	62	Middle Tehachapi Creek
							Str_0180-002	0.04		Middle Tehachapi Creek
							Str_0180-003	0.51		Middle Tehachapi Creek
							Str_0180-005	0.01		Middle Tehachapi Creek
							Str_0180-007	0.01		Middle Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0138	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	8	Str_0138-001	0.01	49, 50	Lower Tehachapi Creek
							Str_0138-002	0.03		Lower Tehachapi Creek
							Str_0138-003	0.05		Lower Tehachapi Creek
							Str_0138-004	0.33		Lower Tehachapi Creek
							Str_0138-005	0.03		Lower Tehachapi Creek
							Str_0138-006	0.09		Lower Tehachapi Creek
							Str_0138-009	0.02		Lower Tehachapi Creek
							Str_0138-012	0.01		Lower Tehachapi Creek
0148	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	10	Tweedy Creek_0148-001	0.02	51, 54	Middle Tehachapi Creek
							Tweedy Creek_0148-004	0.06		Tweedy Creek
							Tweedy Creek_0148-005	0.20		Tweedy Creek
							Tweedy Creek_0148-006	0.09		Tweedy Creek
							Tweedy Creek_0148-007	0.07		Tweedy Creek
							Tweedy Creek_0148-009	0.01		Tweedy Creek
							Tweedy Creek_0148-010	0.32		Tweedy Creek
							Tweedy Creek_0148-012	0.02		Tweedy Creek
							Tweedy Creek_0148-013	0.73		Tweedy Creek
							Tweedy Creek_0148-014	0.03		Tweedy Creek
							Tweedy Creek_0148-016	0.01		Tweedy Creek
							Tweedy Creek_0148-017	0.07		Tweedy Creek

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							Tweedy Creek_0148-018	0.12		Tweedy Creek
							Tweedy Creek_0148-019	0.06		Tweedy Creek
							Tweedy Creek_0148-020	0.02		Tweedy Creek
							Tweedy Creek_0148-021	0.02		Tweedy Creek
							Tweedy Creek_0148-023	0.01		Tweedy Creek
							Tweedy Creek_0148-024	0.02		Tweedy Creek
0128	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	12	Str_0128-001	0.09	45, 46	Lower Tehachapi Creek
							Str_0128-002	0.18		Lower Tehachapi Creek
							Str_0128-003	0.06		Lower Tehachapi Creek
							Str_0128-004	0.33		Lower Tehachapi Creek
							Str_0128-005	0.04		Lower Tehachapi Creek
							Str_0128-006	0.03		Lower Tehachapi Creek
							Str_0128-007	0.02		Lower Tehachapi Creek
							Str_0128-008	0.01		Lower Tehachapi Creek
							Str_0128-009	0.01		Lower Tehachapi Creek

Map Label	Feature Type	Hydroperiod	Cowardin Class	Cowardin Code	HGM Code	Typical OHWM Width (Ft.)	ORM_ID	Potential USACE Jurisdictional Area, Acres	Map Sheet Name(s)	HUC Watershed
0135	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	20	TehachapiCreek_0135-001	0.17	47, 49, 50, 51	Lower Tehachapi Creek
							TehachapiCreek_0135-002	0.45		Lower Tehachapi Creek
							TehachapiCreek_0135-004	0.86		Lower Tehachapi Creek
							TehachapiCreek_0135-005	0.12		Lower Tehachapi Creek
							TehachapiCreek_0135-006	0.02		Lower Tehachapi Creek
							TehachapiCreek_0135-007	0.35		Lower Tehachapi Creek
							TehachapiCreek_0135-008	0.04		Lower Tehachapi Creek
							TehachapiCreek_0135-009	0.32		Lower Tehachapi Creek
							TehachapiCreek_0135-010	0.45		Lower Tehachapi Creek
							TehachapiCreek_0135-011	0.14		Lower Tehachapi Creek
							TehachapiCreek_0135-012	0.05		Lower Tehachapi Creek
							TehachapiCreek_0135-013	0.02		Lower Tehachapi Creek
							TehachapiCreek_0135-014	0.02		Lower Tehachapi Creek
							TehachapiCreek_0135-015	0.03		Lower Tehachapi Creek
							TehachapiCreek_0135-003	0.04		Middle Tehachapi Creek
							TehachapiCreek_0135-016	0.14		Middle Tehachapi Creek
							TehachapiCreek_0135-017	0.03		Middle Tehachapi Creek
							TehachapiCreek_0135-018	0.05		Middle Tehachapi Creek

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							TehachapiCreek_0135-019	0.01		Middle Tehachapi Creek
0149	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	25	TehachapiCreek_0149-001	2.83	51, 52, 58, 59, 60, 61, 62	Middle Tehachapi Creek
							TehachapiCreek_0149-002	0.06		Middle Tehachapi Creek
							TehachapiCreek_0149-003	0.02		Middle Tehachapi Creek
							TehachapiCreek_0149-004	0.31		Middle Tehachapi Creek
							TehachapiCreek_0149-005	0.20		Middle Tehachapi Creek
							TehachapiCreek_0149-006	0.09		Middle Tehachapi Creek
							TehachapiCreek_0149-007	0.21		Middle Tehachapi Creek
							TehachapiCreek_0149-008	1.15		Middle Tehachapi Creek
							TehachapiCreek_0149-009	0.01		Middle Tehachapi Creek
							TehachapiCreek_0149-010	0.04		Middle Tehachapi Creek
							TehachapiCreek_0149-011	0.06		Middle Tehachapi Creek
							TehachapiCreek_0149-012	0.05		Middle Tehachapi Creek
							TehachapiCreek_0149-013	0.01		Middle Tehachapi Creek
							TehachapiCreek_0149-014	0.14		Middle Tehachapi Creek
							TehachapiCreek_0149-015	0.06		Middle Tehachapi Creek
							TehachapiCreek_0149-016	0.15		Middle Tehachapi Creek
							TehachapiCreek_0149-017	0.18		Middle Tehachapi Creek

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							TehachapiCreek_0149-018	0.11		Middle Tehachapi Creek
							TehachapiCreek_0149-019	0.20		Middle Tehachapi Creek
							TehachapiCreek_0149-020	0.41		Middle Tehachapi Creek
							TehachapiCreek_0149-021	0.01		Middle Tehachapi Creek
							TehachapiCreek_0149-022	0.18		Middle Tehachapi Creek
							TehachapiCreek_0149-023	0.21		Middle Tehachapi Creek
							TehachapiCreek_0149-024	0.15		Middle Tehachapi Creek
							TehachapiCreek_0149-025	0.86		Middle Tehachapi Creek
							TehachapiCreek_0149-026	0.06		Middle Tehachapi Creek
							TehachapiCreek_0149-027	0.26		Middle Tehachapi Creek
							TehachapiCreek_0149-028	0.02		Middle Tehachapi Creek
							TehachapiCreek_0149-030	0.28		Middle Tehachapi Creek
							TehachapiCreek_0149-031	0.06		Middle Tehachapi Creek
							TehachapiCreek_0149-032	0.06		Middle Tehachapi Creek
							TehachapiCreek_0149-033	0.04		Middle Tehachapi Creek
0127	Perennial Stream	perennial	Riverine, lower perennial, unconsolidated bottom	R2UB	n/a	12	ClearCreek_0127-001	0.08	45, 46, 47	Lower Tehachapi Creek
							ClearCreek_0127-002	0.01		Lower Tehachapi Creek
							ClearCreek_0127-003	0.03		Lower Tehachapi Creek

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							ClearCreek_0127-004	0.12		Lower Tehachapi Creek
							ClearCreek_0127-005	0.07		Lower Tehachapi Creek
							ClearCreek_0127-006	0.02		Lower Tehachapi Creek
							ClearCreek_0127-007	0.10		Lower Tehachapi Creek
							ClearCreek_0127-008	0.04		Lower Tehachapi Creek
							ClearCreek_0127-009	0.03		Lower Tehachapi Creek
							ClearCreek_0127-010	0.01		Lower Tehachapi Creek
							ClearCreek_0127-011	0.05		Lower Tehachapi Creek
							ClearCreek_0127-012	0.01		Lower Tehachapi Creek
							ClearCreek_0127-013	0.01		Lower Tehachapi Creek
							ClearCreek_0127-014	0.09		Lower Tehachapi Creek
							ClearCreek_0127-015	0.07		Lower Tehachapi Creek
							ClearCreek_0127-016	0.24		Lower Tehachapi Creek
							ClearCreek_0127-017	0.02		Lower Tehachapi Creek
							ClearCreek_0127-018	0.18		Lower Tehachapi Creek
							ClearCreek_0127-019	0.15		Lower Tehachapi Creek
							ClearCreek_0127-020	0.03		Lower Tehachapi Creek
							ClearCreek_0127-021	0.03		Lower Tehachapi Creek

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							ClearCreek_0127-022	0.07		Lower Tehachapi Creek
							ClearCreek_0127-023	0.13		Lower Tehachapi Creek
0464	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	7	Str_0464-001	0.03	65	Amargosa Creek
							Str_0464-002	0.04		Amargosa Creek
							Str_0464-003	0.04		Amargosa Creek
0465	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0465-001	0.03	65	Middle Tehachapi Creek
							Str_0465-002	0.02		Middle Tehachapi Creek
							Str_0465-003	0.01		Middle Tehachapi Creek
0482	Ditch	ephemeral	n/a	n/a	n/a	2.5	str_0482-001	0.02	50A, 53, 66	Upper Tehachapi Creek
	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	str_0482-003	0.01	50A, 53, 66	Lower Tehachapi Creek
							str_0482-004	0.04		Lower Tehachapi Creek
							str_0482-005	0.01		Lower Tehachapi Creek
0483	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	str_0483-001	0.03	58	Middle Tehachapi Creek
							str_0483-002	0.01		Middle Tehachapi Creek
							str_0483-003	0.01		Middle Tehachapi Creek
0143	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	Str_0143-001	0.02	50, 53	Lower Tehachapi Creek
							Str_0143-002	0.01		Lower Tehachapi Creek
							Str_0143-003	0.07		Lower Tehachapi Creek
							Str_0143-004	0.01		Lower Tehachapi Creek
0474	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	4	str_0474-001	0.03	54	Tweedy Creek
							str_0474-002	0.01		Tweedy Creek
0475	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	4	str_0475-001	0.03	54	Tweedy Creek
							str_0475-002	0.07		Tweedy Creek
0476	Intermittent Stream	intermittent		R4SB	n/a	4	str_0476-001	0.02	53A, 54	Tweedy Creek
							str_0476-002	0.12		Tweedy Creek

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			Riverine, intermittent, streambed				str_0476-003	0.01		Tweedy Creek
0478	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	4	str_0478-001	0.03	53	Tweedy Creek
							str_0478-002	0.06		Tweedy Creek
							str_0478-003	0.01		Tweedy Creek
0479	Intermittent Stream	intermittent	Riverine, intermittent, streambed	R4SB	n/a	4	str_0479-001	0.03	53	Tweedy Creek
							str_0479-002	0.08		Tweedy Creek
0144	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	3	Str_0144-002	0.05	50	Lower Tehachapi Creek
0155	Ephemeral Stream	ephemeral	Riverine, ephemeral	R6	n/a	4	Str_0155-001	0.12	56, 57	Middle Tehachapi Creek
							Str_0155-002	0.05		Middle Tehachapi Creek
							Str_0155-003	0.02		Middle Tehachapi Creek
							Str_0155-004	0.02		Middle Tehachapi Creek
							Str_0155-005	0.03		Middle Tehachapi Creek
							Str_0155-006	0.01		Middle Tehachapi Creek
							Str_0155-007	0.01		Middle Tehachapi Creek
0470	Basin - In Stream	perennial	Palustrine unconsolidated bottom	PUB	n/a	-	Basin_0470-001	0.04	54	Tweedy Creek
							Basin_0470-002	0.04		Tweedy Creek
0472	Basin - In Stream	perennial	Palustrine unconsolidated bottom	PUB	n/a	-	Basin_0472-001	0.09	54	Tweedy Creek
							Basin_0472-002	0.02		Tweedy Creek