Appendix A - Technical Studies

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- Wildlife Connectivity in the Twin Passes (Tejon and Tehachapi) Across Interstate 5 and State Route 58 Combined Technical Memorandum
- Wildlife Connectivity Across Willow Springs Road Technical Memorandum
- Kern County Economic Profile
- Kern County Vulnerability/Resiliency Assessment Report
- KARGO Community Prosperity/Protection Study – Technical Analyses and Project Prioritization
- KARGO Community Protection/Prosperity Study Project Priority List For Applying Conceptual Design Resources
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Wildlife Connectivity Across 7th Standard Road

Technical Memorandum

Fraser Shilling, Ph.D.

For Mark Thomas and Kern Council of Governments

7/18/2025

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Summary

Wildlife populations and species must move to survive in a region. This movement includes daily, seasonal, and inter-generational movements among habitat areas. The movement patterns and required habitats is different for different species. This means that accommodating wildlife movement across road alignments require consideration of which wildlife species are present in an area, which are listed, and what types of crossing structures they will prefer. 7th Standard Road extends through the agricultural San Joaquin Valley, between I-5 and State Route 99. Towards its western end, it bisects the Buttonwillow Ecological Reserve, which is suitable habitat to a wide range of small to medium mammals, reptiles and amphibians. The existing roadway is likely to be a barrier and source of mortality for species in the Reserve. This memo describes the existing wildlife connectivity situation across 7th Standard Road and proposes actions that could improve wildlife connectivity across the right-of-way to help mitigate for planned improvements on the roadway. The memo relies on material in the parallel memos for SR-58 and I-5 and includes a separate section for 7th Standard Road itself.

Wildlife Connectivity

As is the case for most rural roads, 7th Standard Road may act as a significant barrier to wildlife movement due to traffic and insufficient crossing infrastructure. These barriers impact wildlife connectivity by inhibiting dispersal, daily movement within home ranges, and genetic exchange among populations. Additionally, wildlife mortality caused by vehicle collisions further exacerbates these issues, creating genetic fragmentation that threatens population viability.

This report describes the ecological setting for 7th Standard Road in the immediate vicinity of the Buttonwillow Ecological Reserve. Recommendations are made at the end of the report suggesting ways wildlife connectivity could be protected and potentially restored through the use of a viaduct to allow for safe wildlife passage.

Ecological Setting

The road primarily passes through Buttonwillow Ecological Preserve (hereafter Reserve), agricultural fields with irrigated row crops, and adjacent to two undeveloped privately-owned parcels owned by a mixture of private owners. Although wildlife may occur within row crop fields, they are less likely to complete life-cycles there, meaning that the Reserve and the nearby undeveloped parcels are the most likely locations for wildlife to meet all of their needs.

There are four amphibian, twenty-four mammal and ten reptile species with low, medium, or high-quality suitable habitat within 500 m of either side of 7th Standard Road within the intersection with the Reserve, the proposed viaduct area (Table 1). All amphibian, fourteen of the mammal and five of the reptiles species have high-quality habitat within this area (Table 1, green highlight). This does not mean that these species are actually there at any given point in time, but for the species with high-quality habitat, if they are present, they would be able to meet all life-cycle needs.

Table 1. Suitable habitat (from CDFW models; CDFW, 2016) of amphibian, mammal, and reptile species within an area 500 m on either side of the proposed viaduct. The three columns indicate if there are areas with no suitable habitat (Areas of No Suitable Habitat), if there are areas with highly-suitable habitat (Areas of High-Quality) and what the majority habitat suitability is adjacent to the roadway (Majority Habitat). Green highlight indicates the species that have high-quality habitat within 500 m of the proposed viaduct area.

Category	Common name	At-Risk/Special Concern/Listed	Areas of No Habitat	Areas of High-Quality	Majority Habitat
Amphibian	Western Spadefoot[1]	Y	Y	Y	Low
Amphibian	Western Toad[2]		Y	Y	Low
Amphibian	Baja California Treefrog		Y	Y	None
Amphibian	Sierran Treefrog	Y	Y	Y	Low
Mammal	Ornate Shrew		Y	N	None
Mammal	Desert Cottontail		Y	Y	Medium
Mammal	Black-tailed Jackrabbit		Y	Y	High
Mammal	Nelson's Antelope Squirrel	Y	Y	Y	None
Mammal	California Ground Squirrel		Y	Y	High
Mammal	Botta's Pocket Gopher		Y	Y	High
Mammal	San Joaquin Pocket Mouse		Y	Y	None
Mammal	Heermann's Kangaroo Rat		Y	N	None
Mammal	Giant Kangaroo Rat	Y	Y	Y	None
Mammal	Fresno Kangaroo Rat	Y	Y	Y	None
Mammal	Western Harvest Mouse		Y	Y	Medium
Mammal	North American Deermouse		N	N	Medium
Mammal	Southern Grasshopper Mouse		Y	Y	None
Mammal	California Vole		Y	Y	Medium
Mammal	Common Muskrat		Y	Y	None
Mammal	Coyote		N	N	Medium
Mammal	Kit Fox	Y	Y	Y	None
Mammal	Gray Fox		Y	N	Low
Mammal	Raccoon		Y	N	Low
Mammal	Long-tailed Weasel		Y	N	Medium
Mammal	American Badger	Y	Y	Y	Medium
Mammal	Western Spotted Skunk		Y	N	Low
Mammal	Striped Skunk		Y	N	Medium
Mammal	Bobcat		Y	N	Low
Reptile	Western Pond Turtle[1]	Y	Y	Y	None
Reptile	Blunt-nosed Leopard Lizard[1]	Y	Y	N	None
Reptile	Common Side-blotched Lizard		Y	Y	Low
Reptile	Blainville's Horned Lizard[2]	Y	Y	N	Low
Reptile	Tiger Whiptail		Y	Y	None
Reptile	Gophersnake[2]		Y	Y	Medium
Reptile	Common Kingsnake[2]		Y	N	Low
Reptile	Long-nosed Snake[2]		Y	N	None
Reptile	Common Gartersnake[1]		Y	Y	None
Reptile	Western Rattlesnake[1]		Y	N	None

1 – Amphibian or reptile species at High, or Very High risk from roads (Brehme et al., 2018)
2 – Amphibian or reptile species at Medium risk from roads (Brehme et al., 2018)

The 1,400 acre Reserve is a mixture of shrub and grassland/herbaceous, though a majority of the shrub area is misclassified in the National Landcover Database as “Cultivated Crop” (Figure 1). The Reserve was established in 2000, which means that the Cultivated Crop area is likely to a remnant of that land-use history (i.e., >25 years ago).

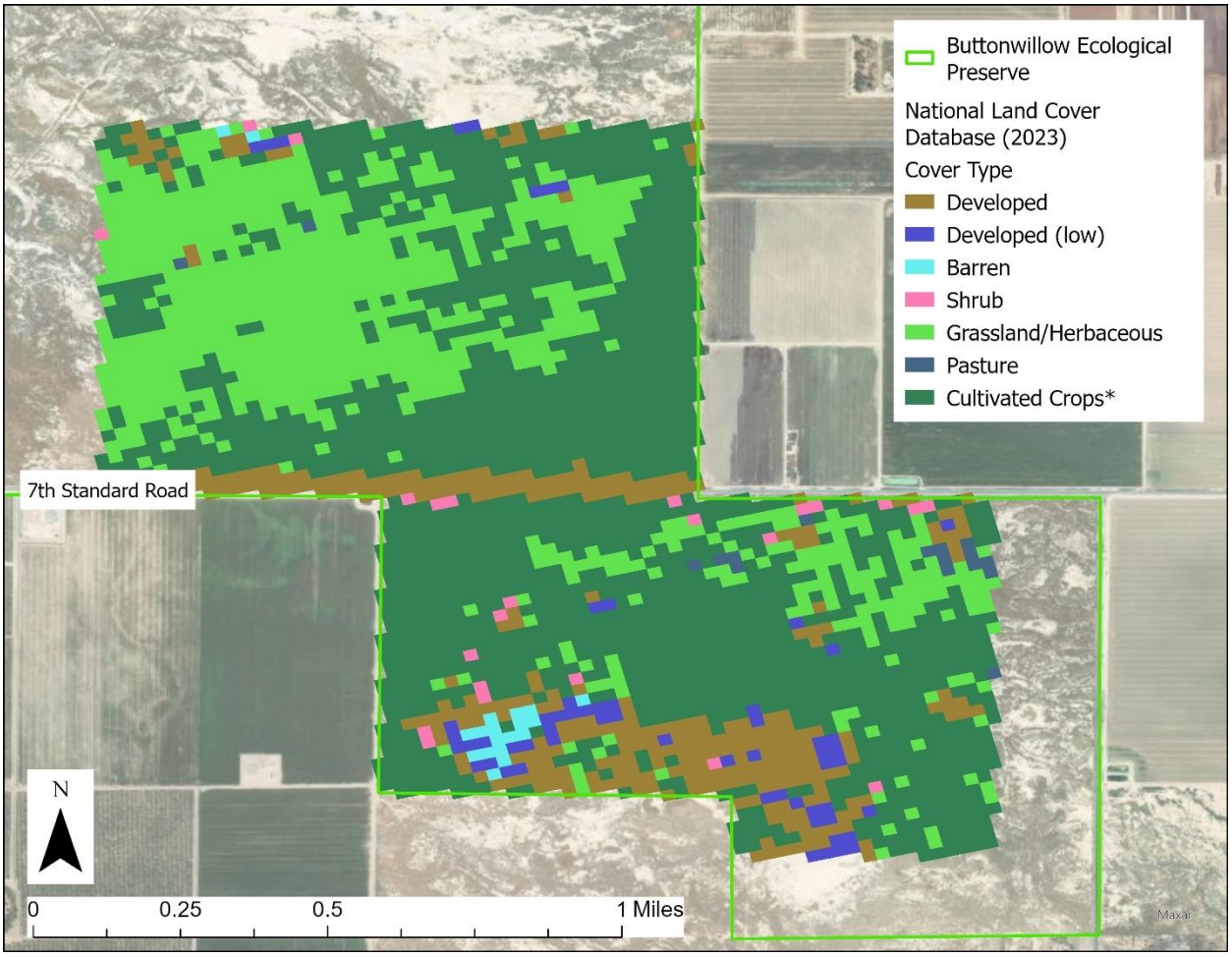

Figure 1. Land cover in the Preserve within 500 m of 7th Standard Road. The dark green color corresponds to “Cultivated Crops”, however, this is a misclassification of the mix of shrubs and ruderal grasslands that actually occur on the site.

The entire Preserve is considered appropriate habitat for the endangered Tipton kangaroo rat and as of 2024, was considered extant in the Preserve (CNDDB, 2024). The Tipton kangaroo rat has the majority of its habitat in western Kern County. Two amphibian, five mammal and three reptile species with suitable habitat adjacent to the proposed viaduct are considered “at-risk”, “species of special-concern”, or listed at the state or federal level as threatened or endangered.

Current Impacts on Wildlife Movement

Traffic volumes along 7th Standard Road are on the order of 5,200 vehicles/day (KernCOG TCDS, Location ID 2561, accessed, 7/1/2025). If traffic flow was the same all day and night, this is equivalent to 1 vehicle every

17 seconds. If daytime rates were several times greater than at night, then there could be one vehicle every few seconds during the day, when many of the species with suitable habitat could be active. Either an unevenly- or evenly-distributed rate could mean that there is a fairly constant, but periodic distribution of traffic noise (day and night) and light (night) through the habitat areas intersecting the roadway. This rate is likely to cause disruptions in behavior for sensitive species and may make them less likely to approach the at-grade road. Elevating the road would project the noise and light further out across the adjoining Reserve, however, areas very close to the roadway and near the proposed viaduct would be quieter and darker than they are now.

Barrier Effects and Mortality

Wildlife movement is impacted by two primary factors: (1) the barrier effect of highways on wildlife movement, potentially resulting in reduced dispersal of daily movement within home ranges and genetic dispersal activity and (2) mortality caused by vehicle collisions. The barrier effect is a result of several factors, including animals' hesitation at crossing a wide open space like the combined road, shoulder and clear zone. Traffic noise and light can also cause a barrier effect, which when combined with the open space of an open roadway could constitute a total barrier to movement of sensitive species. For example, Brehme et al. (2013) found that several species of reptile and small mammals would cross minor dirt and paved roads, but not 2-lane rural highways. Wildlife hit on the roadway fail to cross, and therefore fail to reproduce. The combination of the physical barrier effect and the mortalities on the highway prevent sub populations from genetically mixing and prevent juveniles from dispersing, effectively creating genetic fragmentation, which will eventually be harmful to a population or a species.

The traffic volume along 7th Standard Road (1 vehicle every 17 seconds) is high enough to create a significant mortality effect. The travel surface is <10 m wide. Among the species expected to live adjacent to the roadway, the amphibians and snakes are likely to move at the slowest speeds (~5 kmh = 1.4 m/s). Assuming no stopping and starting and traveling in a straight line, it would take ~7 seconds for them to cross the travel lanes. At the average traffic volume, this means a crossing animal has a 50% chance of being on the road surface at the same time as a vehicle traveling in either direction. If these animals ignored vehicles and just attempted to travel quickly across the travel lanes, on average, they would be hit up to 50% of the time. This rate would vary with traffic volume and their own behavior. Amphibian and reptile species sometimes freeze when faced by oncoming vehicles (Andrews and Gibbons, 2005; Mazerolle et al., 2005). The basic message is that it would only take a few attempted crossings before an animal was likely to be hit.

Population and Genetic Implications

All of the species with suitable habitat adjacent to the Reserve portion of 7th Standard Road vary considerably in their reproductive rate, range, size, dispersal, litter size, and therefore, potential to be impacted by genetic bottlenecks. Without genetic inputs from migrating individuals, small populations are very likely to experience to genetic drift, inbreeding, reduced genetic diversity, and an increased risk of local extirpation (Frankham, 2005). Species with short generation times, such as those with 1-2 year lifespans, need more frequent crossings to sustain genetic connectivity. This highlights how road infrastructure like 7th Standard Road can impact wildlife differently depending on reproductive cycles, emphasizing the need to maintain frequent and diverse wildlife passage in order to limit genetic and population impacts of the roadway.

7th Standard Road: Specific Mitigation

1. Tasks 3.1.17 and 3.2.17 Other roadways (7th Standard Road) 24-00050-103-305/311

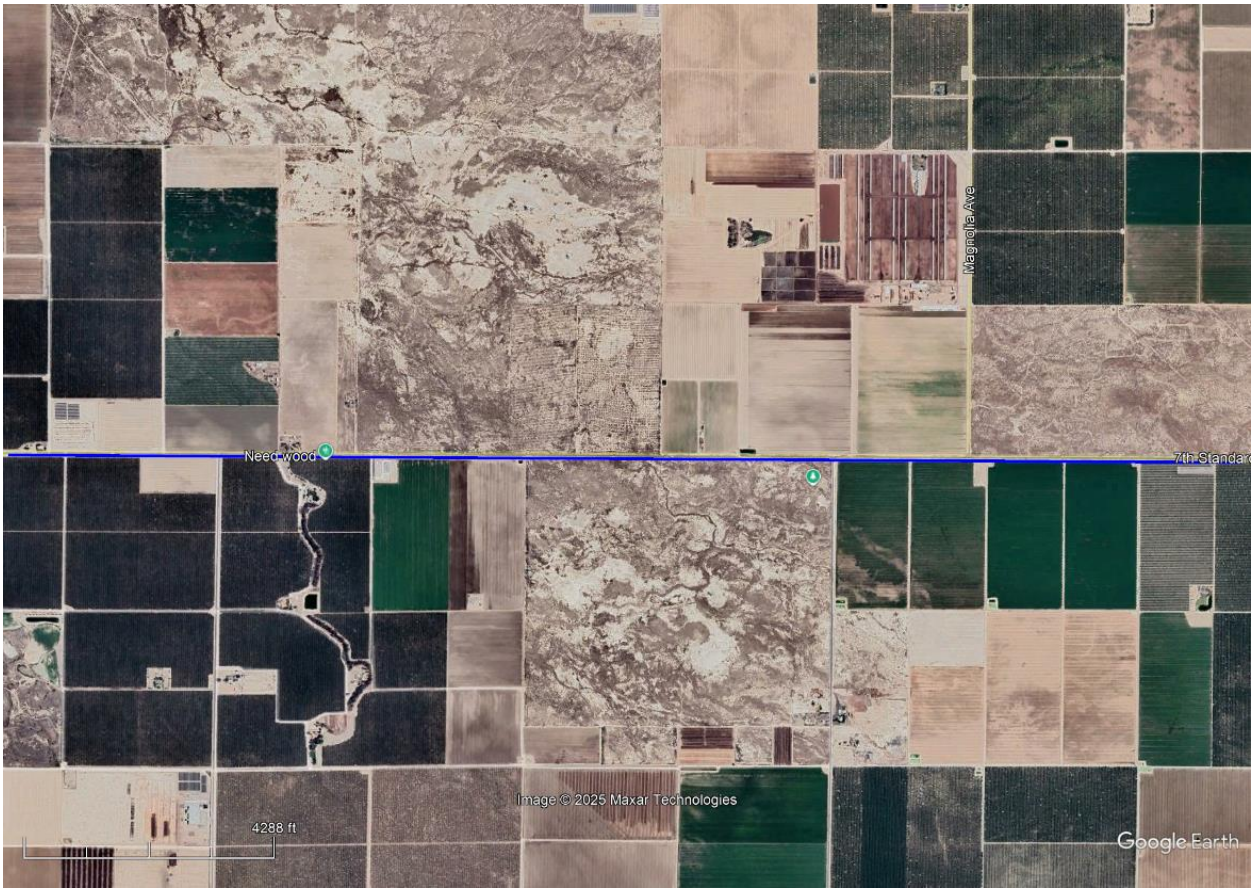

Figure 2. 7th Standard Road (blue line) as it passes through the Buttonwillow Ecological Reserve

Suggested Mitigation

The roadway is at or near grade through its intersection with the Reserve. Therefore it would be challenging to build wildlife undercrossings without changing the road's elevation. One proposal is to elevate the roadway along a viaduct extending for the >500 m intersection of the road with the Reserve. An up to 1 meter elevation between the ground surface and the underside of the viaduct would be sufficient for all wildlife known or suspected to occur on the site. The elevation could be slightly less, but as the elevation diminishes, so will the ecological benefit of the viaduct. In other words, a 2/3 meter elevation would allow all amphibians, reptiles, and small mammals to cross beneath, but possibly not badger, or coyote and would reduce the likelihood that bobcat, spotted skunk, and foxes would cross beneath. A 1/3 meter elevation would permit all amphibians and reptiles to cross and most small mammals, except for those sensitive to closed habitats (e.g., kangaroo rats).

Elevated roads (a viaduct is an elevated road) have been proposed and demonstrated in real-world settings to be effective structural solutions for small mammals, amphibians, and reptiles (Brehme et al., 2023). The Sierra National Forest was home to the first elevated road segment for wildlife. The segment was 30 m long and, over 3 years was used 8,815 times by amphibians (3 species), reptiles (4 species), and small mammals (15 species). A much longer section of elevated road (4,195 feet to 6,395 feet across four separate zones) is being proposed by Santa Clara County to reduce mortality of Pacific newts on Alma Bridge Road, where thousands of newts are killed annually attempting to cross to Lexington Reservoir to breed and then returning again as juveniles. Providing an elevated road section (e.g., viaduct) or frequent tunnels have been shown to be effective at connecting reptiles and amphibians across roadways (Jackson and Tyning 1989, Pagnucco et al. 2012).

In order for the viaduct to be the primary way that wildlife cross the right-of-way, there should be associated fencing (Rytwinski et al., 2016). The primary role of barrier fencing is to keep wildlife from entering travel lanes and being hit by vehicles. For reptiles and amphibians, a secondary role is to provide an opaque barrier to reduce the chance that they will persistently try to pass the fence. In other words, if reptiles and amphibians can see through the fencing, they may just stay in one place and try to push through, which will expose them to predation and over-heating (Brehme et al., 2021a,b). In addition, amphibians and reptiles will only move short distances (average <50 m) along fencelines before giving up if they do not find a passage. In order for most reptiles and amphibians to find passages, there would need to be one every 10-20 m, which is a very high frequency of crossing structures. In addition to opaque fencing, it is important that fence turnarounds are used at intervals along the fencing and especially at the ends to direct wildlife back to crossings (Figure 3). The principle is that small mammals, amphibians and reptiles that hit the barrier fence and go in the direction away from the crossing will reach the turnaround and be directed back towards the crossing. Although successfully finding the crossing is more likely with fence turnarounds, some animals will still reach the end of fencelines and get killed on roads (Helldin and Petrovan, 2019).

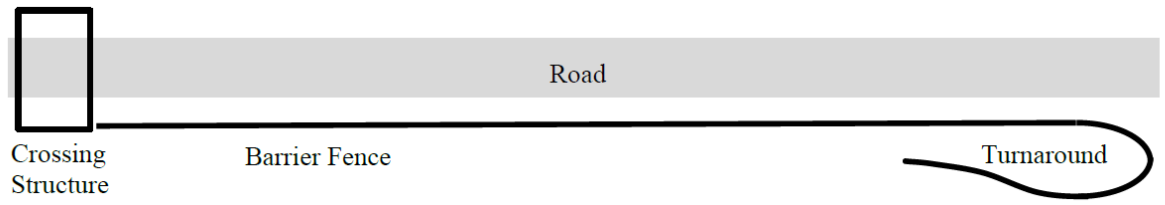

Figure 3. Fence turnaround design for amphibians, reptiles and small mammals

To improve undercrossing use by small and medium wildlife, there should be vegetative or other cover either maintained or restored leading from nearby habitat to the viaduct opening. This is because most prey species will not willingly cross open areas in order to avoid predation. In addition, because most wild animals are known to be sensitive to anthropogenic noise and light, appropriate screening of noise and light from traffic should be placed so as to protect approaching wildlife from noise levels greater than 55 dBA (A-weighted decibels) and light levels greater than 0.1 lux (full moon illumination). With a viaduct, it may be appropriate to plan for a thick opaque screen the length of the viaduct to reduce noise and eliminate illumination from traffic. This could be combined with wing walls at each end to reduce noise and light entering the approach zone from the ends (Figure 4). The wing walls could function as fencelines to stop animal entry into the roadway, but should still terminate in turnarounds.

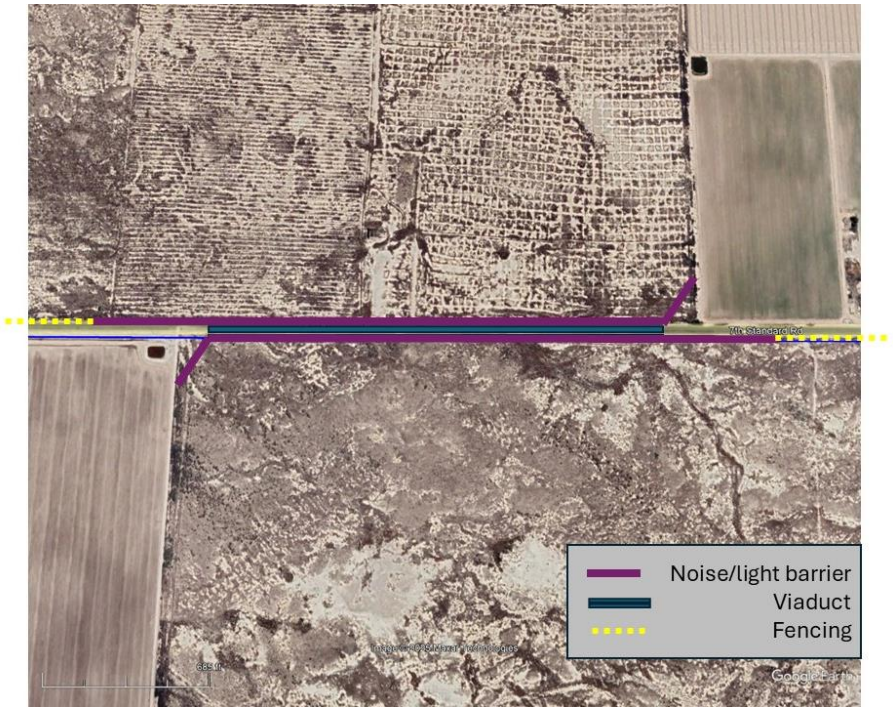

Figure 4. Diagram of the viaduct, sound and light barriers, and fencelines within the Reserve.

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Appendix 2: Species Expected to Occur at a Viaduct Under 7th Standard Road

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Notes

- The information was derived from using CROSPlan, a tool developed by the Road Ecology Center, UC Davis
- A pin was dropped at the approximate location of a proposed viaduct structure
- The viaduct was assumed to be 500 m, centered where the road intersects Buttonwillow Preserve and leave an opening 1 m between ground and the top of the interior of the viaduct

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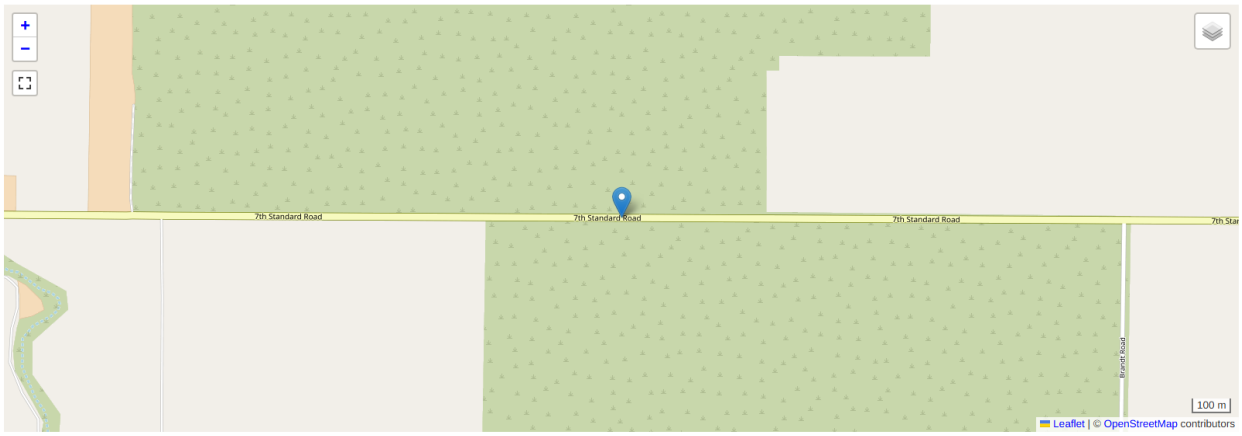
7th Standard Road

Proposed Viaduct

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 35.442142
Longitude :-119.38993

Structure Dimensions

Length (meters): 20.0 m
Width (meters): 500.0 m
Height (meters): 1.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Structure Use Predictive Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

Model	Likelihood
Black-Tailed Jackrabbit (Lepus californicus)	1.000
Desert Cottontail (Sylvilagus audubonii)	1.000
Bobcat (Lynx rufus)	1.000
Mustelids (Group)	0.000

Model	Likelihood
California Ground Squirrel (Otospermophilus beecheyi)	0.035
Rabbits (Group)	1.000
Raccoon (Procyon lotor)	0.976

Predicted Habitat (CDFW) for Species near Structure

This table shows the suitable habitat, from CDFW models of amphibian, mammal (terrestrial), and reptile species. The area defined is 200m from the structure point in all directions, and summarized as low (0-33), med (33-66), high (66-100), and none. The species is listed if habitat is present (i.e. values don't all equal % none).

Category	Common name	% high	% medium	% low	% none
Amphibian	Western Spadefoot	0.000	0.562	0.188	0.250
Amphibian	Western Toad	0.000	0.562	0.188	0.250
Amphibian	Sierran Treefrog	0.000	0.000	0.188	0.812
Mammal	Desert Cottontail	0.562	0.188	0.000	0.250
Mammal	Black-tailed Jackrabbit	0.188	0.562	0.000	0.250
Mammal	Nelson's Antelope Squirrel	0.000	0.562	0.250	0.188
Mammal	California Ground Squirrel	0.188	0.562	0.250	0.000
Mammal	Botta's Pocket Gopher	0.188	0.562	0.250	0.000
Mammal	San Joaquin Pocket Mouse	0.000	0.000	0.250	0.750
Mammal	Heermann's Kangaroo Rat	0.000	0.562	0.000	0.438
Mammal	Giant Kangaroo Rat	0.000	0.562	0.250	0.188
Mammal	Fresno Kangaroo Rat	0.000	0.562	0.250	0.188
Mammal	Western Harvest Mouse	0.188	0.562	0.000	0.250
Mammal	North American Deermouse	0.000	0.750	0.250	0.000
Mammal	Southern Grasshopper Mouse	0.562	0.000	0.000	0.438
Mammal	California Vole	0.000	0.750	0.000	0.250
Mammal	Coyote	0.000	0.750	0.250	0.000
Mammal	Kit Fox	0.562	0.250	0.000	0.188
Mammal	Gray Fox	0.000	0.562	0.188	0.250
Mammal	Raccoon	0.000	0.000	0.750	0.250
Mammal	Long-tailed Weasel	0.000	0.188	0.562	0.250
Mammal	American Badger	0.562	0.438	0.000	0.000

Mammal	Western Spotted Skunk	0.000	0.562	0.188	0.250
Mammal	Striped Skunk	0.000	0.750	0.000	0.250
Mammal	Bobcat	0.000	0.562	0.188	0.250
Reptile	Blunt-nosed Leopard Lizard	0.000	0.562	0.250	0.188
Reptile	Common Side-blotched Lizard	0.562	0.000	0.438	0.000
Reptile	Blainville's Horned Lizard	0.000	0.562	0.188	0.250
Reptile	Tiger Whiptail	0.562	0.000	0.000	0.438
Reptile	Gophersnake	0.000	0.562	0.188	0.250
Reptile	Common Kingsnake	0.000	0.000	0.750	0.250
Reptile	Long-nosed Snake	0.000	0.562	0.000	0.438
Reptile	Common Gartersnake	0.000	0.188	0.000	0.812
Reptile	Western Rattlesnake	0.000	0.000	0.250	0.750

Species List / Presence at Structure (USGS)

This is a list of terrestrial animals (amphibians, mammals, and reptiles) which may be present at this location, based on the USGS GAP data.

Mammals

2. Coyote (*Canis latrans*)
3. Virginia Opossum (*Didelphis virginiana*)
4. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
5. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
6. Tipton Kangaroo Rat (*Dipodomys nitratoides nitratoides*)
11. Black-tailed Jackrabbit (*Lepus californicus*)
12. Bobcat (*Lynx rufus*)
13. Striped Skunk (*Mephitis mephitis*)
14. California Vole (*Microtus californicus*)
15. House Mouse (*Mus musculus*)
16. Long-tailed Weasel (*Mustela frenata*)
22. Mule Deer (*Odocoileus hemionus*)
23. Common Muskrat (*Ondatra zibethicus*)
24. Southern Grasshopper Mouse (*Onychomys torridus*)
25. California Ground Squirrel (*Otospermophilus beecheyi*)
26. San Joaquin Pocket Mouse (*Perognathus inornatus*)
27. North American Deermouse (*Peromyscus maniculatus*)
29. Raccoon (*Procyon lotor*)

30. Brown Rat (*Rattus norvegicus*)
31. Roof Rat (*Rattus rattus*)
32. Western Harvest Mouse (*Reithrodontomys megalotis*)
33. Western Gray Squirrel (*Sciurus griseus*)
34. Ornate Shrew (*Sorex ornatus*)
35. American Water Shrew (*Sorex palustris*)
36. Western Spotted Skunk (*Spilogale gracilis*)
37. Wild Boar (*Sus scrofa*)
38. Desert Cottontail (*Sylvilagus audubonii*)
40. American Badger (*Taxidea taxus*)
41. Botta's Pocket Gopher (*Thomomys bottae*)
42. Gray Fox (*Urocyon cinereoargenteus*)
43. Kit Fox (*Vulpes macrotis*)
44. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Foothill Yellow-legged Frog (*Rana boylii*)
4. Northern Leopard Frog (*Lithobates pipiens*)
5. Western Spadefoot (*Spea hammondii*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Snapping Turtle (*Chelydra serpentina*)
5. North American Racer (*Coluber constrictor*)
6. Western Rattlesnake (*Crotalus oreganus*)
7. Southern Alligator Lizard (*Elgaria multicarinata*)
8. Blunt-nosed Leopard Lizard (*Gambelia sila*)
9. Common Kingsnake (*Lampropeltis getula*)
10. Gophersnake (*Pituophis catenifer*)
11. Gilbert's Skink (*Plestiodon gilberti*)
12. Long-nosed Snake (*Rhinocheilus lecontei*)
13. Common Gartersnake (*Thamnophis sirtalis*)
14. Pond Slider (*Trachemys scripta*)
15. Common Side-blotched Lizard (*Uta stansburiana*)

Wildlife Connectivity in the Twin Passes (Tejon and Tehachapi) Across Interstate 5 and State Route 58

Combined Technical Memorandum

Fraser Shilling, Ph.D.

For Mark Thomas and Kern Council of Governments

6/6/2025

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Summary

Wildlife populations and species must move to survive in a region. This movement includes daily, seasonal, and inter-generational movements among habitat areas. The movement patterns and required habitats is different for different species. This means that accommodating wildlife movement across road and rail alignments require consideration of which wildlife species are present in an area, which are listed, and what types of crossing structures they will prefer. Interstate 5 (hereafter I-5) and State Route 58 (hereafter SR 58) bisect the Tejon Pass and Tehachapi Pass, respectively. These major highways block free and safe north-south wildlife movement between the Sierra Nevada and Transverse Ranges (SR 58) and east and west movement through the Transverse Ranges (I-5). Each highway has the occasional culvert and bridge designed for water or livestock movement, but not explicitly for wildlife. There has been photo-documentation of wildlife movement through these structures under both highways, suggesting there is partial permeability. However, not all wildlife will find most, or even any of the structures acceptable or accessible for passage. In addition there is no wildlife fencing through the study areas (the Twin Passes), meaning that wildlife can freely enter the rights-of-way. This memo describes the existing wildlife connectivity situation across SR 58 and I-5 and proposes action that could improve wildlife connectivity across the rights-of-way to help mitigate for planned improvements on the highways. The memo includes a combined section on impacts of both highways on wildlife connectivity and separate sections for each highway.

Wildlife Connectivity

State Route 58 (SR 58) and Interstate-5 (I-5) bisect the Tehachapi and Transverse Ranges, severing critical movement areas between the Sierra Nevada and the Transverse and other Ranges in Southern California. The highways act as significant barriers to wildlife movement due to traffic, median barriers, and insufficient crossing infrastructure. These barriers impact wildlife connectivity by inhibiting dispersal, daily movement within home ranges, and genetic exchange among populations. Additionally, wildlife mortality caused by vehicle collisions further exacerbates these issues, creating genetic fragmentation that threatens population viability.

In order to plan for the protection of and potential restoration of wildlife connectivity across and near SR 58 and I-5, this report describes the ecological setting for: 1) SR 58 between General Beale Road to the west and Tehachapi to the east; 2) Willow Springs Road south of SR 58; and 3) I-5 between Grapevine and Gorman. Recommendations are made at the end of the report suggesting ways wildlife connectivity could be protected and potentially restored through the use of additional infrastructure beyond that already planned as mitigation for the truck climbing lane.

Ecological Setting

The region surrounding these stretches of the I-5 and SR 58 corridors supports a diverse range of species, including puma, American black bear, coyote, bobcat, elk, badger, mule deer, fox, and smaller species such as squirrels and amphibians. While some wildlife occasionally cross the highway surface or use existing culverts and bridges designed for stormwater drainage, small creeks or minor roads, it is unclear whether these structures adequately support genetic and dispersal connectivity between the two ranges. Traffic

volume and physical infrastructure create challenges for safe crossings, with smaller species often avoiding open spaces due to predation risks and larger species hesitating due to noise and disturbance.

Both the area of interest along Interstate 5 (I-5) and State Route 58 (SR 58) have been identified as barriers to wildlife movement by CDFW (2022). However, the stretch of highway along SR 58 has been deemed a higher priority than the stretch along I-5 due to vulnerability assessments of urbanization and traffic (CDFW 2022). Both areas are within the Tehachapi Connection: an area deemed important to wildlife connectivity as it is a convergence spot for a variety of ecosystems. The Sierra Made, Traverse, and Peninsular Ranges converge here along with the Mojave desert, grasslands, and the San Joaquin valley. A now out-of-date GIS model for SR 58, proposed modeled linkage pathways for nine focal species that varied the placement of crossing structures, which would determine which focal species the crossings might serve (Penrod et al.; 2003). Such models have been shown to not consistently predict wildlife movement or occurrence (Iverson et al., 2023).

Current Impacts on Wildlife Movement

Collared deer, black bears, and mountain lions have been observed on both sides of SR 58 and I-5, occasionally crossing the highway, though it remains unclear how frequently they use existing culverts and bridges versus crossing over the road surface. Caltrans has recently approved an environmental impact report for a new eastbound truck climbing lane on SR 58, which includes mitigation measures such as a proposed wildlife crossing structure west of Keene to enhance connectivity between mountain ranges. Ongoing and planned projects by Caltrans and KernCOG could further affect wildlife movement in this critical area, which links the Sierra Nevada with the Coast and Transverse Ranges. To address these concerns, Caltrans and partners are conducting studies adjoining SR 58 and I-5 using wildlife cameras and GPS collaring to assess animal movement and identify effective locations for new or improved crossing structures, aiming to ensure that road infrastructure does not impede wildlife connectivity.

Barrier Effects and Mortality

Wildlife movement is impacted by two primary factors: (1) the barrier effect of highways on wildlife movement, potentially resulting in reduced dispersal of daily movement within home ranges and genetic dispersal activity and (2) mortality caused by vehicle collisions. Wildlife hit on the roadway fail to cross, and therefore fail to reproduce. The combination of the physical barrier effect and the mortalities on the highway prevent sub populations from genetically mixing and prevent juveniles from dispersing, effectively creating genetic fragmentation, which will eventually be harmful to a population or a species. SR 58 and I-5 potentially have both of these types of effects of a physical barrier, as well as a traffic barrier effect, potentially resulting in reduced wildlife movement between the Sierra Nevada and Transverse and other Southern California Ranges.

Species at Risk

The suite of species that could be impacted in this project area include puma, Rocky Mountain elk, American black bear, coyote, bobcat, badger, western gray squirrel, California ground squirrel, and many more smaller mammal species. A grey wolf individual managed to traverse almost the full length of California, including through the Tehachapi and Transverse Ranges to the San Luis Obispo area, and was eventually killed by a car. The Tehachapi Mountains and Transverse Ranges function as key movement areas for mountain lions between the Sierra Nevadas, Central Coast, and Southwest habitats. While there is medium gene flow between the southern Western Sierra Nevada and the Peninsular Range circumventing the LA Basin, there is low gene flow between the southern Western Sierra Nevada and any range across the LA Basin. The area of

interest along the I-5 and SR 58 falls into the latter category of connectivity (Ernest et al. 2003). The mountain lion was chosen to be a focal species for connectivity in the areas of interest due to their requirement for a large expanse of land, roads being a known barrier to movement, and increased habitat fragmentation due to urbanization.

The San Joaquin kit fox is a federally endangered and listed as threatened by the state of California. The Eastern Bakersfield population is connected to the Carrizo - Elkhorn population through the areas of interest. The kit foxes' prime modeled connection has them crossing both I-5 and SR 58 along the southern edge of Tejon Ranch (privately owned) (White el al. 2006). Bremner-Harrison et al. (2007) attempted to determine kit fox preference for different crossing structures along I-5, SR 14, and SR 58, however despite kit fox presence at all studied structures, no verified crossings could be determined. It was theorized that kit foxes attempted to cross the road rather than use the structures. This corresponds with Cypher et al.'s 2005 and 2010 studies showing there was no effect of two-lane highways on kit fox movement or survivability. Both studies did concede that increased traffic conditions, median barriers, and other factors might lead to different results and effects on kit fox movement.

There is a population of Rocky Mountain Elk in the Tejon area bounded by I-5 on the west and SR 58 on the north. The goal of CDFW's Tejon Rocky Mountain Elk Management Unit is to maintain numbers and prevent cross breeding with tulle elk. Therefore, this is the one species CDFW is not encouraging creating crossings for (CDFW 2018). However, mule deer movement is necessary across I-5 and SR 58 and mule deer have been determined to be a focal species for connectivity in the area across many studies due to their ability to support larger carnivores (CDFW 2022; White et al. 2006; Miller 2024). American black bears (Ursus Americanus) that would be crossing the study segments along the I-5 and SR 58 are of the same genetic population (Gaines 2022). Therefore, crossings designed for black bear would support intrapopulation connectivity rather than interpopulation connectivity. While the gray wolf (Canis lupus) is not a focal species, one instance of a gray wolf crossing the I-5 on the Grapevine stretch was recorded in 2021. The wolf originated from Oregon and had been trekking down California until it became a road fatality. The area of interest is historical wolf territory and while there are no resident wolves, this one individual represents the increasing number of gray wolves coming into California from other states (The Business Journal 2021). Other focal species with less specific literature pertaining to their connectivity in the areas of interest include the American badger, western gray squirrel, Tipton kangaroo rat, Tehachapi pocket mouse, California spotted owl, and blunt-nosed leopard lizard. The American badger is dependent on grasslands and roadkill is the primary cause of mortality. The remaining species have all been highly impacted by habitat fragmentation in the area of interest.

Population and Genetic Implications

All of the species decribed above vary considerably in their reproductive rate, range, size, dispersal, litter size, and therefore, potential to be impacted by genetic bottlenecks. For example, to maintain genetic diversity, mountain lion populations require at least one individual to migrate between groups every generation (approximately five years). However, a mountain lion's genetic contribution to the population on the opposite side of State Route 58 only occurs if it successfully crosses and reproduces there. Species with shorter generation times, such as those with 1-2 year lifespans, need more frequent crossings to sustain similar genetic connectivity. This highlights how road infrastructure like SR 58 can impact wildlife differently depending on reproductive cycles, emphasizing the need for tailored mitigation strategies.

Highway Infrastructure and Its Effects

The physical infrastructure of highways will have variable barrier effects on species, depending on their size, mobility, and tolerance of open spaces. For example, small mammals may be hesitant to enter and cross the open space of a roadway, regardless of traffic levels because they typically will seek out cover in order to evade predation. Larger species may prefer cover and be hesitant to cross the large open area of a highway, regardless of traffic, in order to escape their predators. Certain prized species such as mule deer may prefer open spaces because they are able to see the approach of their predator, such as mountain lion, and avoid predation. Species such as mule deer and elk seem to be tolerant of traffic, noise, and other disturbances, possibly due to the human shield effect they provide to the species.

Median Barriers and Wildlife Behavior

Highway medians, such as those found on Route 58, can influence wildlife movement in complex ways. Concrete median barriers may act as visual and physical obstacles, especially for smaller species that cannot see the habitat on the other side and may never attempt to cross. In contrast, larger animals like deer and elk, who can see over these barriers, are more likely to risk crossing the highway regardless of traffic. Ongoing research at the UC Davis Road Ecology Center has shown that mule deer and coyotes are more frequently struck by vehicles across various median types, while smaller species are rarely hit when concrete barriers are present but are more vulnerable in areas with open medians (Shilling, personal communication). Interestingly, some small animals may be attracted to medians, mistaking them for safe zones, but this often leads to them being stranded or exposed to further danger as they attempt to cross the remaining lanes.

Use of Existing Structures

Wildlife movement across highways often relies on existing structures such as culverts and bridges, originally built for stormwater, minor roads, livestock, or recreational trails. These so-called existing structures may be the primary structures that most wildlife species rely upon in California. Use of these structures has been found to be dependent upon their dimensions, including height, width, and length; their position in the landscape relative to human disturbance; and predator-prey dynamics of the species involved. Prior research by the Road Ecology Center has shown that larger animals tend to prefer bigger passages, while smaller species seek out smaller, more sheltered structures to avoid predators (Shilling et al., 2024). This highlights the importance of designing wildlife crossings that consider the diverse needs of different species to improve connectivity and reduce road mortality.

There currently exist culverts and under-crossings along I-5 and SR 58 that were not intended for wildlife connectivity, but could facilitate it nonetheless. Miller (2024) looked at the connectivity value of four passages (three box culverts and one bridge undercrossing) along I-5 in the Lebec/Gorman region. Verified and probable crossings in the culverts included rabbits, squirrels, coyotes, racoons, and one mountain lion. Animals assessing the culverts included mice, rabbits, squirrels, raccoons, bobcats, and coyotes. Verified crossings in the bridge undercrossing included coyotes, bobcats, and mule deer. Animals investigating the bridge undercrossing included cities, bobcats, rabbits, squirrels, mice, and skunks. There was a positive correlation between bobcats and coyotes with the size of the structure (Miller 2024).

Traffic Volume and Collision Rates

Traffic on highways such as SR 58 can be at high enough volumes that most animals are not able to safely cross the highway without being hit by a vehicle. At a traffic volume of 20,000 vehicles per day, one vehicle will pass a given point an average of once per 4.5 seconds. For a roadway 100 feet across from side to side an animal moving at 1 m/s would have to time its travel fairly precisely in order to have a low probability of being hit by a vehicle. There's no evidence that any wildlife species is able to predict the motion of vehicles relative to its own travel in order to time its movement across the roadway successfully. This means that most of these attempts to cross these roads has a low probability of succeeding. Additionally, many species will respond unpredictably to the approach of vehicles, even running back in front of vehicles, as they try to escape. Unfortunately, the characteristic zigzag pattern rabbits and other prey animals use to evade predators is not effective when trying to evade a fast moving vehicle. Although there is regular collection of the carcasses of larger animals killed on SR 58, most smaller animals killed on the highway will never be collected, or reported.

Larger animals such as mule deer, black bear, mountain lion, and coyote have a reported collision rate of slightly under 0.2 large animals per mile per year on SR 58. Published studies from other states have shown reported collision rates of four or five or even tenfold lower than the actual collision rate. Since it is unknown to what extent under-reporting takes place on SR 58, the true rate of roadkill of larger mammals on the highway could be anywhere between the minimum reported at 0.2 animals per mile per year to 4 to 10 times (0.8 to 2 per mile per year). Also, the number of collisions may not reflect a number trying to cross the highway. As many wildlife species are afraid of traffic noise and illumination, as well as the openness of highways as mentioned previously, it is theoretically possible that almost every animal that attempts to cross is hit by traffic, meaning that there could be no successful wildlife crossing the road surface by many species.

Mitigation Strategies

Without a purpose-built wildlife crossing, species will have to attempt crossing the right-of-way through existing structures. Besides the highway barrier and vehicle mortality effects of traffic on wildlife, there are also the effects on human safety and well-being. Colliding with large mammals at high speed can result in at least damage to the vehicle, sometimes injury to the driver and occupants, and occasionally even fatality. For some highways, there are hotspots, collisions with large groups of animals and repeated collisions in areas. These have a high impact on human safety, which could be areas where barrier fencing should be prioritized.

Wildlife Crossings and Barrier Fencing

There are several well recognized and studied mitigation methods to reduce vehicle mortality, increase road protection and safety, and provide for wildlife connectivity across busy highways (Rytwinski et al., 2016). Wildlife crossings, when well designed and placed, could result in the maintenance of genetic activity, and even daily movement of many species. Wildlife crossing structures are usually combined with barrier fencing stretching out from either side. This reduces the chance the wildlife will cross the roadway in the hope that they will find their way across the structure and make it safely to the other side. Although the adjacent fencing is often called directional fencing, there is no evidence in the literature that the wildlife will choose the correct direction upon encountering it. On average about half will choose the correct direction towards the wildlife crossing structure, and half will go the opposite direction. Barrier fencing stretches running between wildlife crossings could result in wildlife being more successful in finding their safe route. Since it

reduces wildlife mortality, barrier fencing can actually be seen as a connectivity supporting action, assuming that there are either existing covered bridges or purpose-built crossings that facilitate wildlife movement across the highway.

Jump-Outs and Additional Infrastructure

Barrier fencing used in wildlife crossing structures is often punctuated by jump outs. Wildlife jump-outs are part of a broader strategy to reduce wildlife-vehicle collisions by creating barriers that prevent animals from entering road corridors but also provide escape routes (Rytwinski et al., 2016). These structures allow animals to escape from fenced road corridors by jumping down from a raised area (Jensen et al., 2022). This design helps animals avoid getting trapped within the fenced area and potentially being struck by vehicles. Jump-outs allow trapped animals to escape back into adjacent habitats.

Many highways have on ramps, off ramps, and other infrastructural intersections that are possible avenues for wildlife to enter the highway, even in the presence of barrier fencing. Cattle guards are often used to reduce the chance the wildlife will enter the highway through a gap in barrier fencing provided for a minor road crossing or other intersection (Allen et al., 2013). However, not all wildlife will be deterred, as some will be able to traverse it, although usually not hooved animals.

Effectiveness of Mitigation

Research of the effectiveness of combinations of fencing and different types of crossing structures have shown that wildlife crossing structures with fencing have on average about an 83% effectiveness in reducing wildlife mortality (Rytwinski et al., 2016). However, there have been very few studies of the connectivity benefit in terms of population impact or genetic connectivity when these structures are used (Soanes et al., 2024). The assumption is made that by facilitating safe passage of individuals of a species across the right of way, those individuals will genetically connect with the population on the other side, which is distinct from their population of origin, and therefore maintain genetic connection between populations divided by the highway. This assumption seems likely to be true in many cases, especially when multiple individuals per year are crossing through wildlife crossing structures, purpose-built or not, but it will depend upon the frequency of these structures, the species of concern, the size of their home ranges, and the amount of dispersal the species are capable of carrying out.

Recommendations

To protect and restore wildlife connectivity across SR 58 and I-5:

- Construct additional purpose-built wildlife crossing structures at strategic locations.
- Extend barrier fencing along critical sections of SR 58 and I-5 to reduce mortality rates.
- Enhance existing culverts and bridges for wildlife use by modifying dimensions and reducing human disturbances nearby.

- Implement noise and light barriers near crossing structures to minimize traffic-related stress for approaching animals.

- Monitor wildlife movement patterns using camera traps and tracking technologies to assess the effectiveness of mitigation measures.

Conclusion

SR 58 and I-5 present significant challenges to wildlife connectivity between the Sierra Nevada and Transverse Range. While planned mitigation efforts are a step forward, additional infrastructure investments are necessary to address long-term ecological impacts. By implementing these recommendations, we can ensure safe passage for diverse species while maintaining genetic connectivity essential for population health.

Data and Approach Used

Spatial and Wildlife Data

TABLE 1. DATASETS WITHIN THE STUDY AREA

Dataset Category	Dataset (type: raster,[1] vector[2])	Number of Observations	Source
Wildlife	Habitat suitability models for all terrestrial vertebrates in California (raster, 30 meters)	295 species models (Appendix B)	CDFW (2014)
	Wildlife occurrences: Caltrans camera trapping at existing bridges and culverts (SR 58)	14 sites; unknown number of nights; 14 species or species groups (e.g., “rabbit”)	Caltrans (1/2021–1/2022)
	WVCs[3] (vector-point)	307 WVC; 16 native amphibian, reptile and mammal species; 27 black bear; 8 mountain lion; 211 mule deer; 5 elk	CROS/CHIPS (2015–2024)
	Collared mountain lion, locations, tracks, and density	44,737 collar points; 4 females, 5 males (UCD, 2024)	UCD (11/2022–2/2025)
Topography	Slope direction adjacent to road (vector-point from raster DEM)	376 transects across highway	Road Ecology Center (2024a)

TABLE 1. DATASETS WITHIN THE STUDY AREA

Dataset Category	Dataset (type: raster,[1] vector[2])	Number of Observations	Source
Parcel/Site Control	TNC Ownership	73 parcels	Courtesy TNC (2025)
Traffic Noise	Traffic noise model (raster)	N/A	Road Ecology Center (2024b)
Traffic Illumination	Traffic headlight model (raster)	N/A	Road Ecology Center (2024c)

Notes: CDFW = California Department of Fish and Wildlife; WVC = wildlife–vehicle collision; CROS = California Roadkill Observation System; CHIPS = California Highway Incident Processing System; Caltrans = California Department of Transportation; DEM = digital elevation model; N/A = not applicable.

Approach

Two primary approaches were used: 1) evaluation of specific impacts and conditions along each corridor, including traffic disturbance, and wildlife-vehicle collisions (sections below); and 2) identification of native terrestrial species potentially present and able to use existing, modified existing, or new structures across the right-of-way (Appendix 2). The proposed new structures were primarily 3 m by 3 m concrete box culverts with a length equivalent to the right-of way width, plus adequate distance from the road surface (>2 m elevation).

Sufficient Information

There are several types of land cover and ownership information available for the Twin Pass study areas. These include land cover/vegetation types, topography/digital elevation models, stream types and locations, ownership, and roadway infrastructure location, type, and likely traffic volumes. There are also wildlife data available for both the I-5 and SR 58 project areas (Table 1): 1) CDFW habitat suitability models for several hundred amphibian, mammal, and reptile species; 2) WVC records, including reported crashes and carcasses; 3) camera trap data from Caltrans and UC Davis (Wildlife Health Center, WHC); 4) mountain lion collar data from WHC; and 5) in theory, black bear, mule deer and elk collar data from CDFW. This last data source is labelled as “in theory” because CDFW will not share these public data without a data sharing agreement, which includes very onerous and costly IT reporting requirements not suitable for most organizations and individual consultants.

The models were developed 9 years ago and are being currently updated. Testing of the mountain lion model by the Road Ecology Center reveals that for at least this model does a good job predicting both mountain lion WVC and collared animal locations. WVC recording relies on a combination of CHP crash and carcass reports, Caltrans Maintenance reporting of carcass pick-up, and other reports from volunteer observers. The reporting rates form non-CHP and Caltrans are fairly low and could include a low rate of volunteer observation. There is some processed camera trap data from Caltrans for several culverts along SR 58, but there are also >4 TB of un-processed data that have been shared with the author. The mountain lion collar data is complete and recent (up to 2/2025). The CDFW data are unknown and uncharacterized.

The data sufficiency is moderate for making decisions for locations and types of crossing structures. Moderate means that it is equivalent or better than many situations where WVC and connectivity mitigation is planned, but insufficient to make findings about ecological effectiveness of the mitigation. Because

ecological effectiveness is not (yet) a requirement for the vast expenditures on mitigation of ecological impacts, the data can be considered sufficient for planning in both areas. For the species with sufficient likely and known distribution information (all minus elk and pronghorn), culvert or short-span bridge under-crossings will be suitable crossing types. Where elk and pronghorn are known to occur, over-crossings should be considered.

SR58: Specific Impacts and Conditions

There are traffic and infrastructure impacts on wildlife connectivity through the Tehachapi mountains. These include WVC rate and cost, traffic disturbance (noise and light), and the presence of a concrete median barrier.

Wildlife-Vehicle Collisions

Reported WVC rates on SR58 are not particularly high, nor are costs of collisions (Figure 1). Animals of most types (except amphibians) and sizes have been reported on the highway. Most WVC are clustered between the SR 233 intersection and Keene, with other clusters east of Tehachapi. The darker orange stretches of highway have costs high enough to justify wildlife fencing to prevent WVC. In other words, the avoided WVC costs would be equivalent to the costs of building and maintaining the fencing.

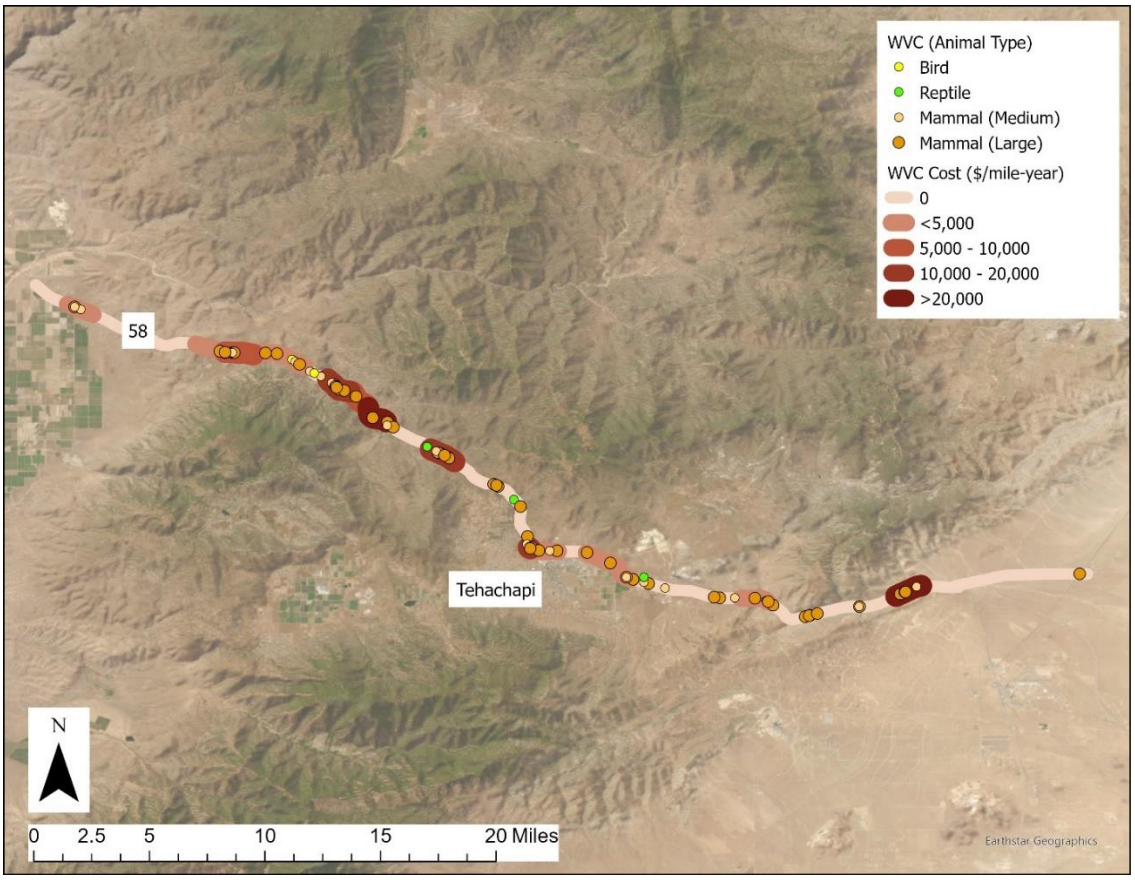

FIGURE 1 WVC INCIDENTS AND COSTS ON SR 58 BETWEEN GENERAL BEALE ROAD AND MOJAVE.

Traffic Noise and Light

Engine and tire noise and headlight illumination both permeate landscapes surrounding roadways. The distance and pattern of light propagation depends on the topography and land cover (Figure 2A). This disturbance could reduce wildlife approach to the highway and use of existing or purpose-built structures to cross the highway safely. For example, although mountain lions live and move adjacent to SR 58 and SR 233, only one (Male 329) has been shown to have crossed back and forth at one location north of Tehachapi in May and July, 2023 (Figure 2). It is not known if the collared animal used an existing structure, or crossed the road surface. Mountain lions, like other species, are sensitive to artificial light, like traffic illumination (Barrientos et al., 2024) and possibly to traffic noise as well (Figure 2B). This could be why they don't approach and cross SR 58 through existing structures.

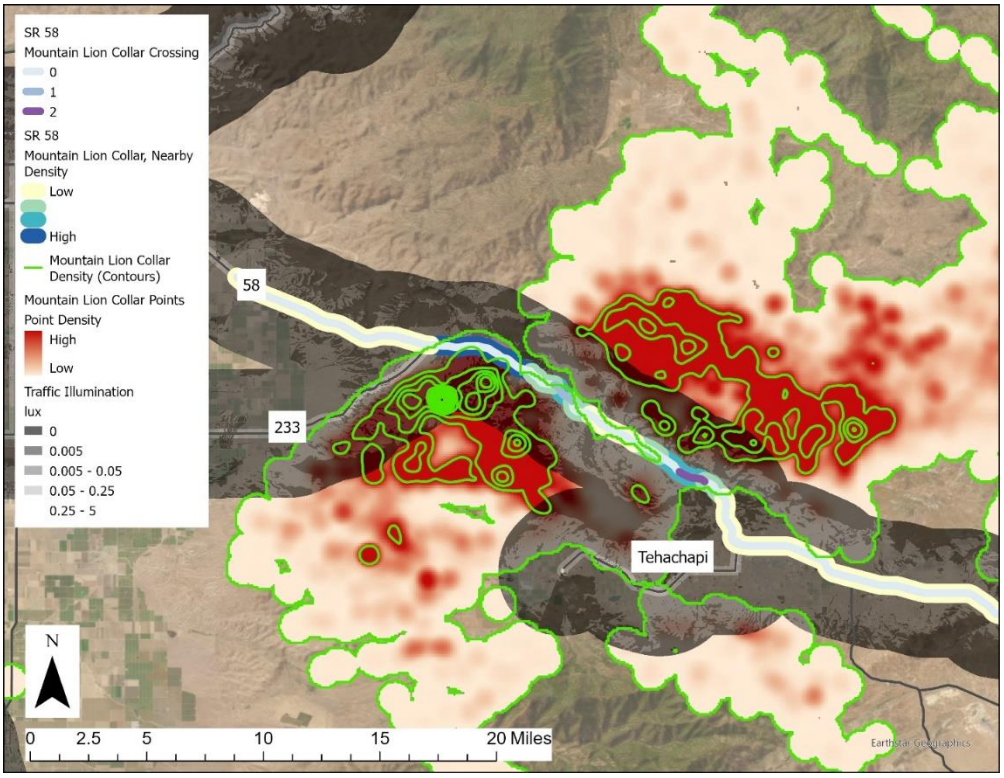

FIGURE 2A RELATIONSHIP BETWEEN COLLARED MOUNTAIN LION MOVEMENT AND TRAFFIC ILLUMINATION FROM SR 58.

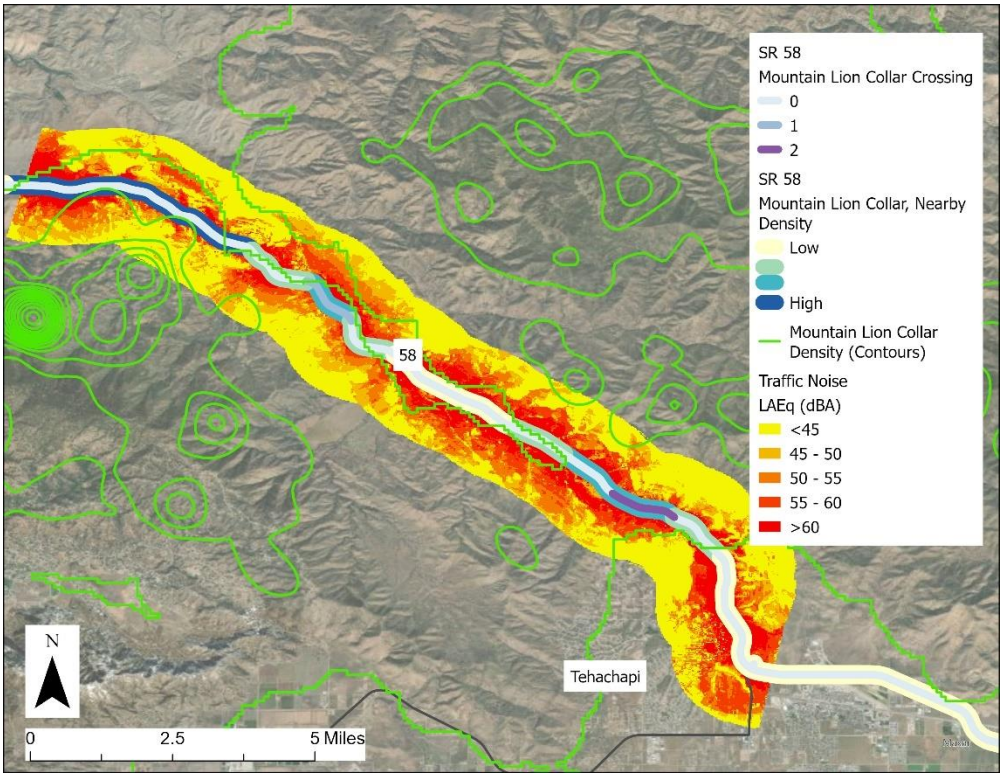

FIGURE 2B RELATIONSHIP BETWEEN COLLARED MOUNTAIN LION MOVEMENT AND TRAFFIC NOISE FROM SR 58.

Wildlife Use of Existing Crossings

Caltrans camera trapped several culverts under SR 58 between 2021 and 2023 (Figure 3). Staff placed cameras at one or both ends of culverts and checked the cameras about once per month. Several structures regularly passed wildlife, while the remainder had no reported wildlife movement (Figure 4). However, this may have been due to reporting issues rather than failure of wildlife to use the structures. No mountain lions have been recorded moving through the structures.

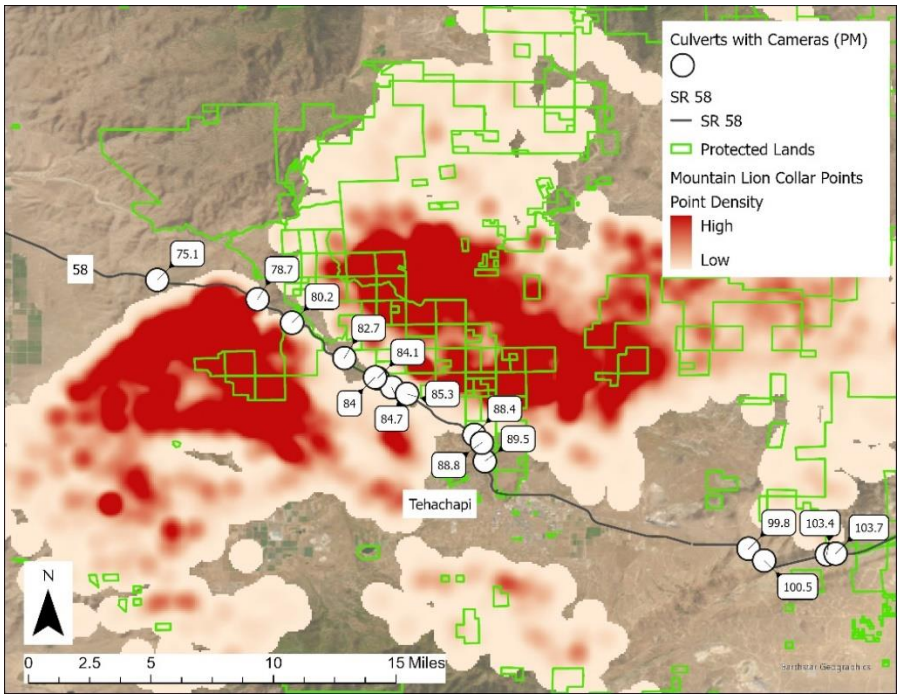

FIGURE 3. LOCATIONS OF CULVERTS WITH CAMERA TRAPS PLACED BY CALTRANS.

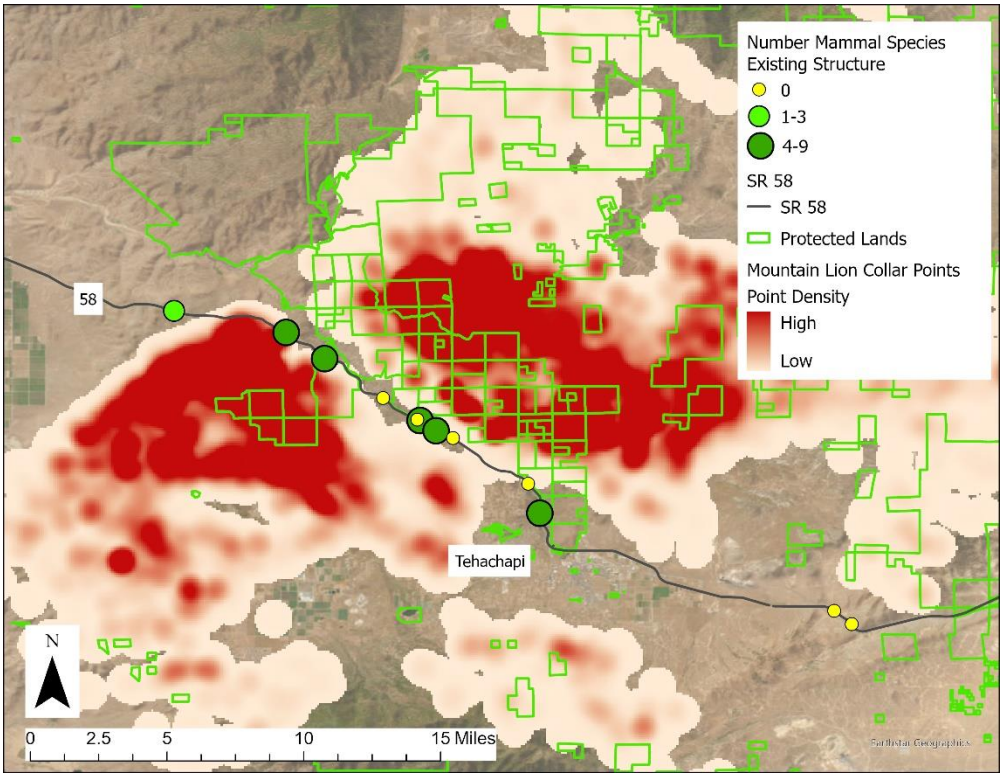

FIGURE 4. NUMBER OF MAMMAL SPECIES USING CULVERTS WITH CAMERA TRAPS PLACED BY CALTRANS.

Two large mammal species were reported using the structures, black bear and mule deer (Figure 5). All but one of the structures were used by both species, with one structure being only used by black bear (PM 75.1).

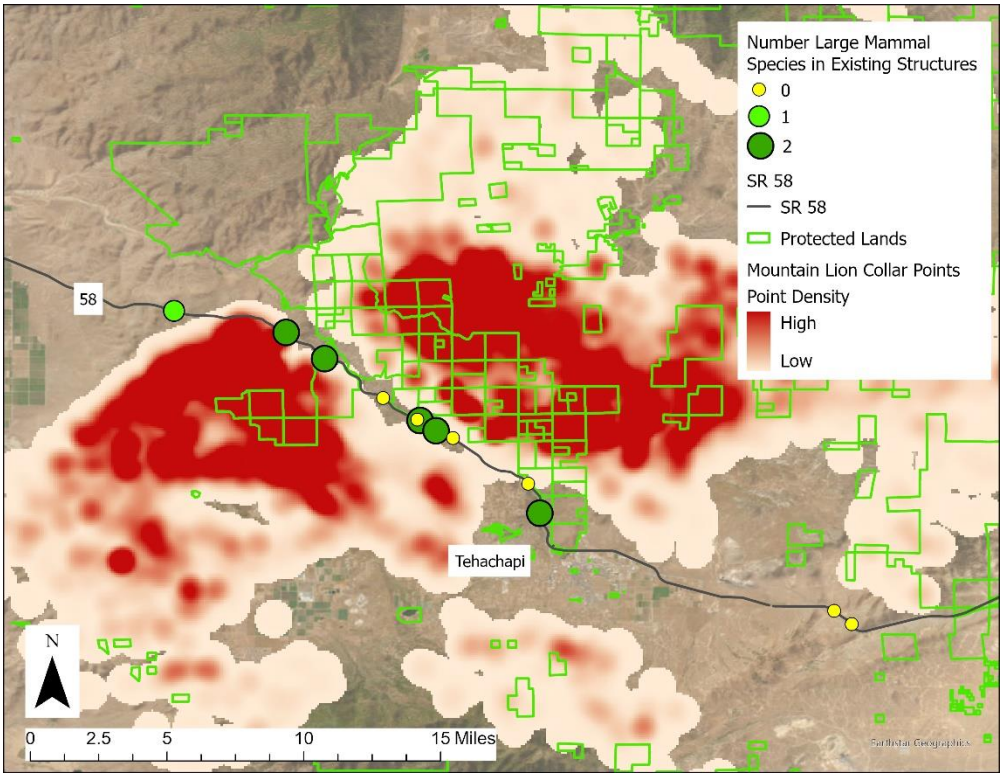

FIGURE 5. NUMBER OF LARGE MAMMAL SPECIES USING CULVERTS WITH CAMERA TRAPS PLACED BY CALTRANS.

For badger (Figure 6) and bobcat (Figure 7), there were was similar variation in use of each of the structures, no doubt related to proximity to nearby suitable habitat and structural attributes.

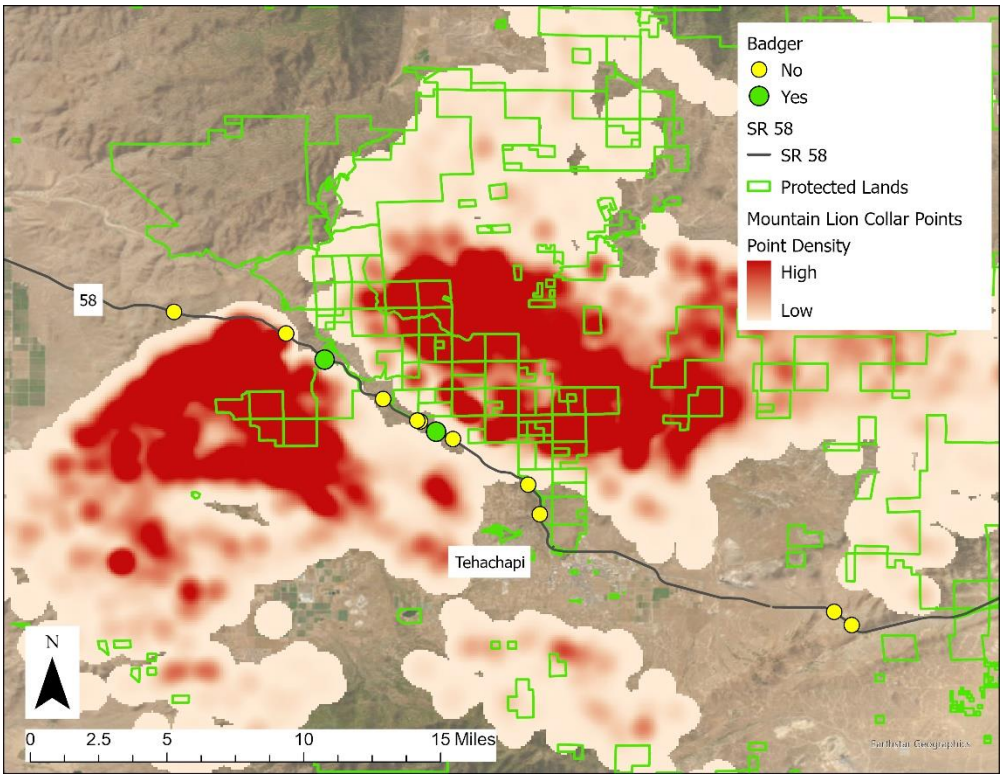

FIGURE 6. AMERICAN BADGER USE OF CULVERTS WITH CAMERA TRAPS PLACED BY CALTRANS.

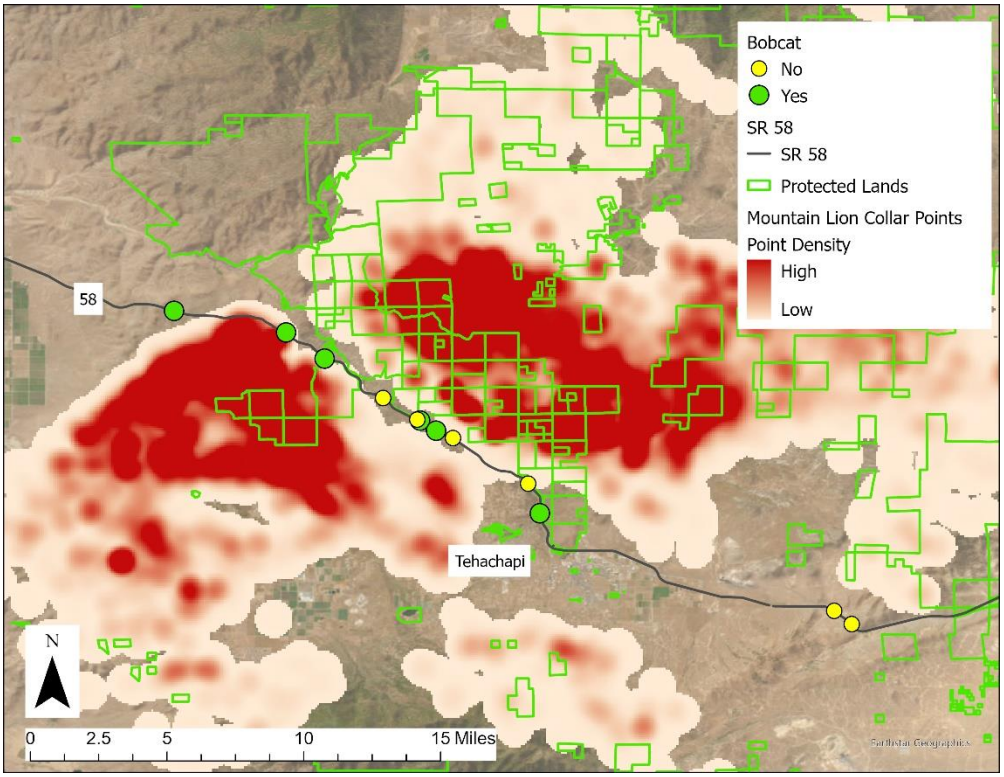

FIGURE 7. BOBCAT USE OF CULVERTS WITH CAMERA TRAPS PLACED BY CALTRANS

Protected/Conserved Lands and Potential Crossings

The Nature Conservancy (TNC) has been investing in conserving lands on both side of SR 58 through the Tehachapi Pass. These parcels converge around post-mile (PM) 81.2 where there are several appropriate locations for wildlife over-crossings and one appropriate for an under-crossing (Figure 8). Although not critical for building crossings, conserved lands on both side of a wildlife crossing increases the likelihood of external funding and long-term success of the project. There has been moderate mountain lion movement in this area, with more activity to the west toward SR 233. This area is also where the highest rate and cost of WVC has occurred on SR 58.

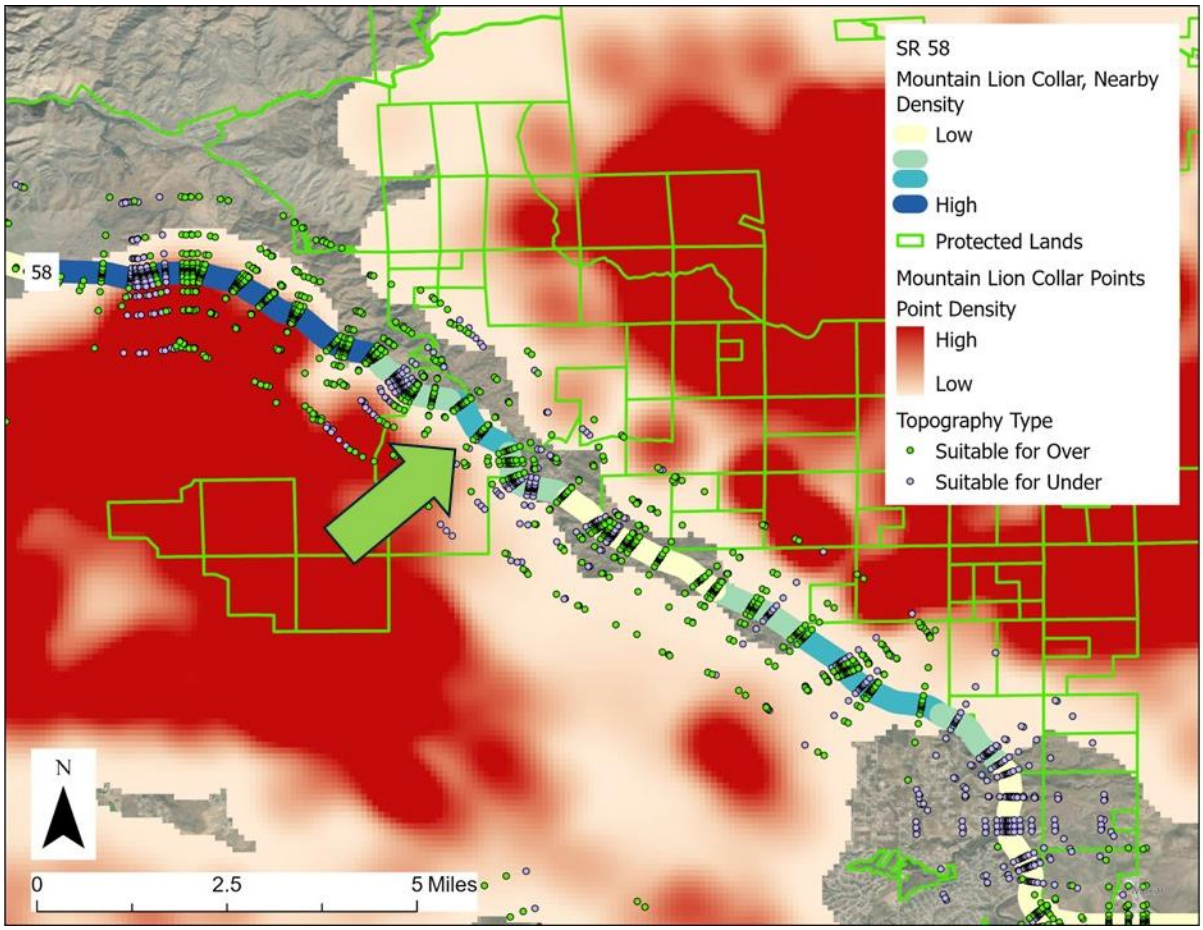

FIGURE 8. POSSIBLE LOCATION OF WILDLIFE CROSSINGS (GREEN ARROW) AND TNC AND OTHER CONSERVATION OWNERSHIP (GREEN OUTLINES), OVERLAID ON MOUNTAIN LION MOVEMENT (RED GRADIENT).

SR 58: Specific Highway Segments

1. Tasks 3.1.1 and 3.2.1: SR 58 Truck Climbing Lanes (Seg 1) 24-00050-103-300

The SR 58 truck climbing lanes are planned for a 3-mile stretch of highway (Figure 9), beginning 1.4 miles east of General Beale Road and finishing at the interchange with SR 233. The landscape is grazed annual and perennial grasslands with rolling topography.



FIGURE 9. SR 58 TRUCK CLIMBING LANES, SEGMENT 1 (BLUE LINE) AND SEGMENT 2 (RED LINE)

According to CDFW habitat models, the landscape surrounding the climbing lanes includes medium and high quality habitat for two amphibian, fourteen mammal, and five reptile species (Table 2). High quality habitat is suitable for all life-stages and processes of the species, whereas medium quality is suitable for all processes except reproduction. There appears to be no habitat suitability for large mammals, though its likely that mule deer, pronghorn, elk, mountain lions would all use this area periodically.

TABLE 2. GROUND-DWELLING AMPHIBIAN, MAMMAL, AND REPTILE SPECIES WITH MEDIUM AND HIGH QUALITY HABITAT ADJACENT TO THE SR 58 TRUCK CLIMBING LANES, SEGMENT 1.

Animal Type	Scientific Name	Common Name
Amphibian	Pseudacris hypochondriaca	Baja California Treefrog
Amphibian	Spea hammondii	Western Spadefoot
Amphibian	Anaxyrus boreas	Western Toad
Mammal (Small)	Thomomys bottae	Botta's Pocket Gopher
Mammal (Small)	Otospermophilus beecheyi	California Ground Squirrel
Mammal (Small)	Microtus californicus	California Vole
Mammal (Small)	Dipodomys heermanni	Heermann's Kangaroo Rat
Mammal (Small)	Mustela frenata	Long-tailed Weasel
Mammal (Small)	Peromyscus maniculatus	North American Deermouse
Mammal (Small)	Sorex ornatus	Ornate Shrew
Mammal (Small)	Perognathus inornatus	San Joaquin Pocket Mouse
Mammal (Small)	Onychomys torridus	Southern Grasshopper Mouse
Mammal (Small)	Reithrodontomys megalotis	Western Harvest Mouse
Mammal (Medum)	Taxidea taxus	American Badger
Mammal (Medum)	Lepus californicus	Black-tailed Jackrabbit
Mammal (Medum)	Lynx rufus	Bobcat
Mammal (Medum)	Canis latrans	Coyote
Mammal (Medum)	Sylvilagus audubonii	Desert Cottontail
Mammal (Medum)	Vulpes macrotis	Kit Fox

Mammal (Medum)	Procyon lotor	Raccoon
Mammal (Medum)	Mephitis mephitis	Striped Skunk
Mammal (Medum)	Spilogale gracilis	Western Spotted Skunk
Reptile	Gambelia sila	Blunt-nosed Leopard Lizard
Reptile	Thamnophis sirtalis	Common Gartersnake
Reptile	Lampropeltis getula	Common Kingsnake
Reptile	Uta stansburiana	Common Side-blotched Lizard
Reptile	Pituophis catenifer	Gophersnake
Reptile	Rhinocheilus lecontei	Long-nosed Snake
Reptile	Actinemys marmorata	Western Pond Turtle
Reptile	Crotalus oreganus	Western Rattlesnake

Suggested Mitigation

Proposed and existing structures 1 through 6 cross the right-of-way within the truck-climbing lane project area (Appendix 2). These are all proposed as box culverts (3 m X 3 m), with lengths varying with width of the alignment. The medium-sized mammals are most likely to benefit from these structures, with less benefit for large mammals (e.g., black bear, elk, mountain lion, mule deer) because of lack of nearby suitable habitat. When combined with barrier fencing, small mammals, amphibians and reptiles could benefit from these structures if cover was placed through the length of the structure, including logs, large rocks, and pipes (Brehme et al., 2021a; Brehme et al., 2022). If combined with barrier fencing, these provide these smaller animals with a way to feel safe from predators as they traverse the structure (Brehme et al., 2021b).

To improve use by small and medium wildlife, there should be vegetative or other cover either maintained or restored leading from nearby habitat to the culvert opening. In addition, because most wild animals are known to be sensitive to anthropogenic noise and light, appropriate screening of noise and light from traffic and streetlights should be placed so as to protect approaching wildlife from noise levels greater than 55 dBA (A-weighted decibels) and light levels greater than 0.1 lux (full moon illumination).

Although there are not high rates of reported WVC along this stretch of SR 58, barrier fencing will improve the identification of openings by wildlife approaching the highway (Rytwinski et al., 2016) and overall effectiveness of wildlife crossings. There is anecdotal evidence that once animals start using crossings, other animal species will investigate and may find the crossings. There is an obvious fence termination point at Bena Road on the east end, but no obvious termination to the west until the General Beale Road interchange. Fencing should be 8-foot high and either buried (for burrowing animals) or include an above-ground apron on the outside to reduce the need for trenching and to deter digging.

2. Tasks 3.1.3 and 3.2.3 SR 58/233 Interchange 24-00050-103-302

The SR 58/SR 233 interchange is shown in Figure 10. As with the truck-climbing lane project area, the landscape is grazed annual and perennial grasslands with rolling topography.

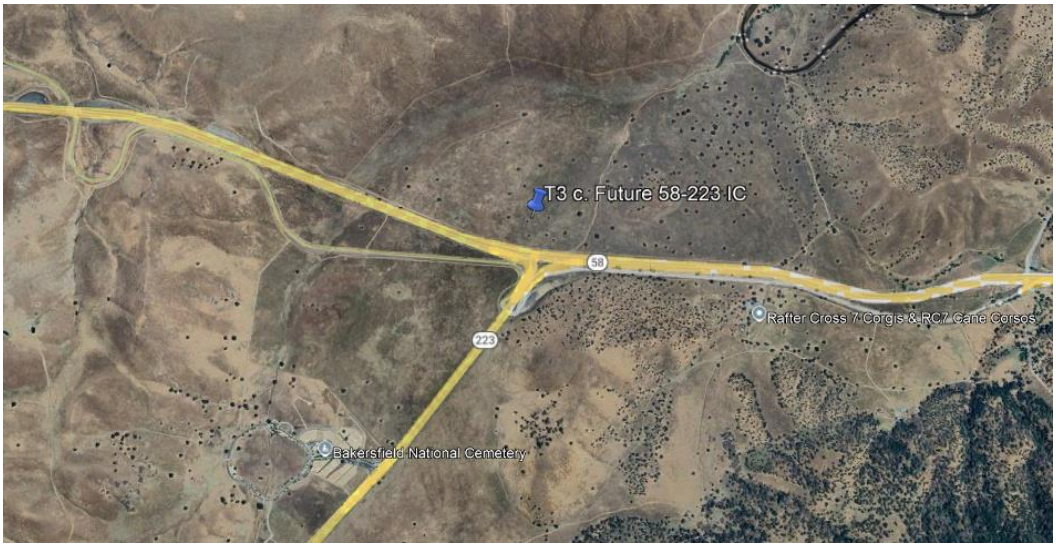

FIGURE 10. SR 58/SR233 INTERCHANGE PROJECT.

According to CDFW habitat models, the landscape surrounding the interchange includes medium and high quality habitat for two amphibian, eighteen mammal, and four reptile species (Table 3). High quality habitat is suitable for all life-stages and processes of the species, whereas medium quality is suitable for all processes except reproduction. Although there appears to be habitat suitability only for mule deer, it's likely that pronghorn, elk, mountain lions would all use this area periodically.

TABLE 3. GROUND-DWELLING AMPHIBIAN, MAMMAL, AND REPTILE SPECIES WITH MEDIUM AND HIGH QUALITY HABITAT ADJACENT TO THE SR 58/SR 233 INTERCHANGE.

Category	Scientific Name	Common Name
Amphibian	Anaxyrus boreas	Western Toad
Amphibian	Pseudacris hypochondriaca	Baja California Treefrog
Mammal (Small)	Sorex ornatus	Ornate Shrew
Mammal (Small)	Mustela frenata	Long-Tailed Weasel
Mammal (Small)	Tamias merriami	Merriam's Chipmunk
Mammal (Small)	Thomomys bottae	Botta's Pocket Gopher
Mammal (Small)	Dipodomys heermanni	Heermann's Kangaroo Rat
Mammal (Small)	Peromyscus maniculatus	North American Deer Mouse
Mammal (Small)	Peromyscus truei	Pinon Deer Mouse
Mammal (Small)	Onychomys torridus	Southern Grasshopper Mouse
Mammal (Small)	Microtus californicus	California Vole
Mammal (Medium)	Canis latrans	Coyote
Mammal (Medium)	Procyon lotor	Raccoon
Mammal (Medium)	Sylvilagus bachmani	Brush Rabbit
Mammal (Medium)	Sylvilagus audubonii	Desert Cottontail
Mammal (Medium)	Lepus californicus	Black-tailed Jackrabbit
Mammal (Medium)	Spilogale gracilis	Western Spotted Skunk
Mammal (Medium)	Mephitis mephitis	Striped Skunk

Mammal (Medium)	Lynx rufus	Bobcat
Mammal (Large)	Odocoileus hemionus	Mule Deer
Reptile	Actinemys marmorata	Western Pond Turtle
Reptile	Lampropeltis getula	Common Kingsnake
Reptile	Rhinocheilus lecontei	Long-Nosed Snake
Reptile	Crotalus oreganus	Western Rattlesnake

Suggested Mitigation

Proposed and existing structures 6 and 7 cross the right-of-way within the project area (Appendix 2). These are proposed as box culverts (3 m X 3 m), with lengths varying with width of the right-of-way. The medium-sized mammals are most likely to benefit from these structures, with less benefit for several large mammals (e.g., black bear, elk, mountain lion) because, with the exception of mule deer, there is a lack of nearby suitable habitat. When combined with barrier fencing, small mammals, amphibians and reptiles could benefit from these structures if cover was placed through the length of the structure, including logs, large rocks, and pipes (Brehme et al., 2021a; Brehme et al., 2022). If combined with barrier fencing, these provide these smaller animals with a way to feel safe from predators as they traverse the structure (Brehme et al., 2021b).

To improve use by small and medium wildlife, there should be vegetative or other cover either maintained or restored leading from nearby habitat to the culvert opening. In addition, because most wild animals are known to be sensitive to anthropogenic noise and light, appropriate screening of noise and light from traffic and streetlights should be placed so as to protect wildlife approaching existing and purpose-built crossings from noise levels greater than 55 dBA (A-weighted decibels) and light levels greater than 0.1 lux (full moon illumination).

Although there are not high rates of reported WVC along this portion of SR 58, barrier fencing will improve the identification of openings by wildlife approaching the highway (Rytwinski et al., 2016) and overall effectiveness of wildlife crossings. There is anecdotal evidence that once animals start using crossings, other animal species will investigate and may find the crossings. There is an obvious fence termination point at Bena Road on the west end, and the at-grade intersection with Bena Road/Bealville Road to the east. Fencing should be 8-foot high and either buried (for burrowing animals) or include an above-ground apron on the outside to reduce the need for trenching and to deter digging.

I-5: Specific Impacts and Conditions

There are traffic and infrastructure impacts on wildlife connectivity through the Tejon Pass. These include WVC rate and cost, traffic disturbance (noise and light), and the presence of a concrete median barrier.

Wildlife-Vehicle Collisions

Reported WVC rates on most of the I-5 project area are not particularly high, nor are costs of collisions (Figure 11). Animals of most types and sizes have been reported on the highway. Most WVC are clustered between PM 3.4 and PM 11, with other clusters south of Lebec. The darker orange stretches of highway have costs high enough to justify wildlife fencing to prevent WVC. In other words, the avoided WVC costs would be equivalent to the costs of building and maintaining the fencing.

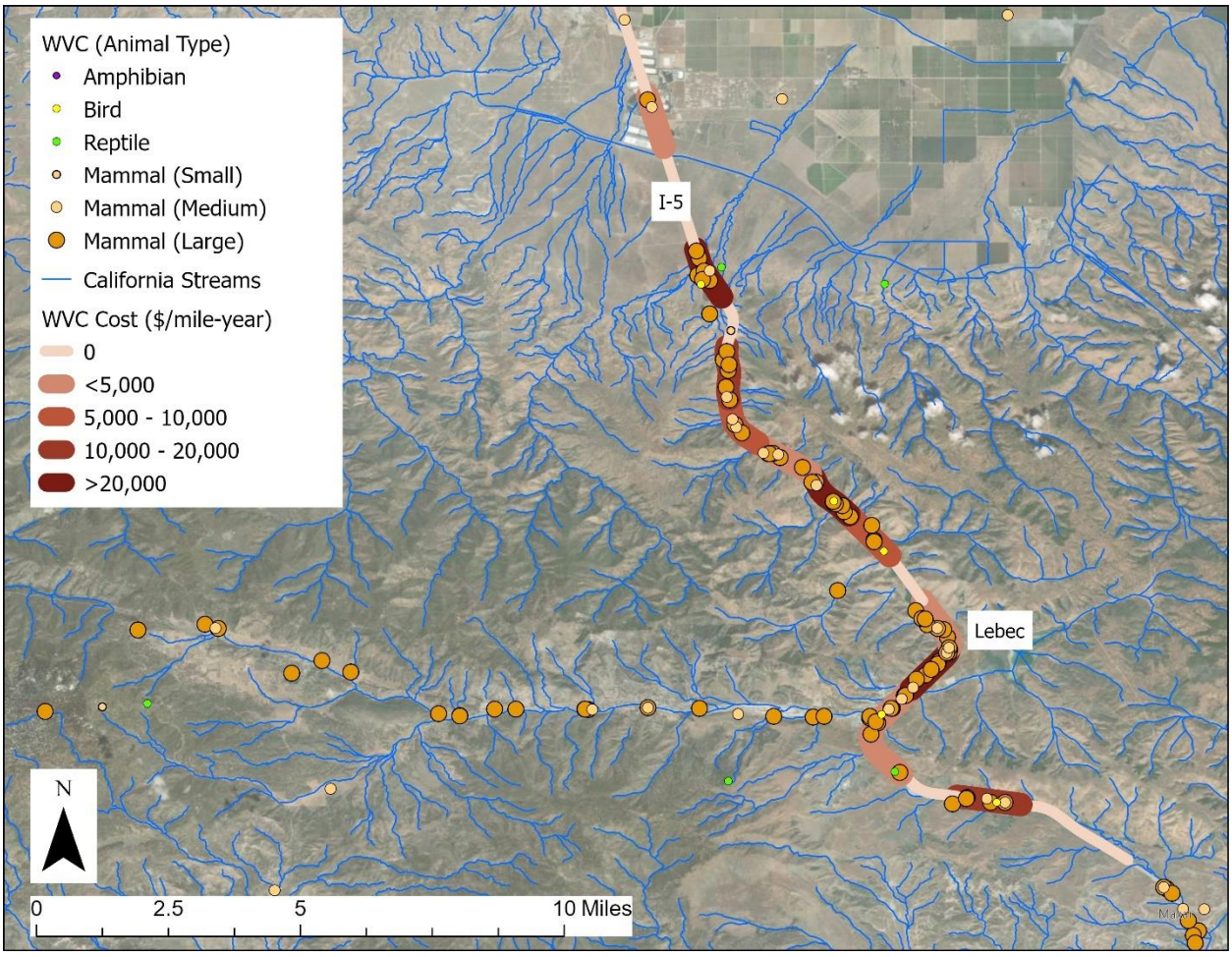

FIGURE 11. WVC INCIDENTS AND COSTS ON I-5 BETWEEN GRAPEVINE AND GORMAN

Traffic Noise and Light

Engine and tire noise and headlight illumination both permeate landscapes surrounding roadways. The distance and pattern of light propagation depends on the topography and land cover (Figure 12). This disturbance could reduce wildlife approach to the highway and use of existing or purpose-built structures to cross the highway safely. For example, although mountain lions live and move adjacent to I-5, only one (Female 386) has been shown to have crossed back and forth at one location near PM 6.7 in January, 2024 (Figure 12, purple line segment). It is not known if the collared animal used the Grapevine Creek culvert at that location, or crossed the road surface. Mountain lions, like other species, are sensitive to artificial light, like traffic illumination (Barrientos et al., 2024) and possibly to traffic noise as well. This could be why they don't approach and cross I-5 through existing structures. In addition, where they have concentrations of activity near the highway (contour lines close together), both artificial light and noise tend to be lower (Figures 12, 13).

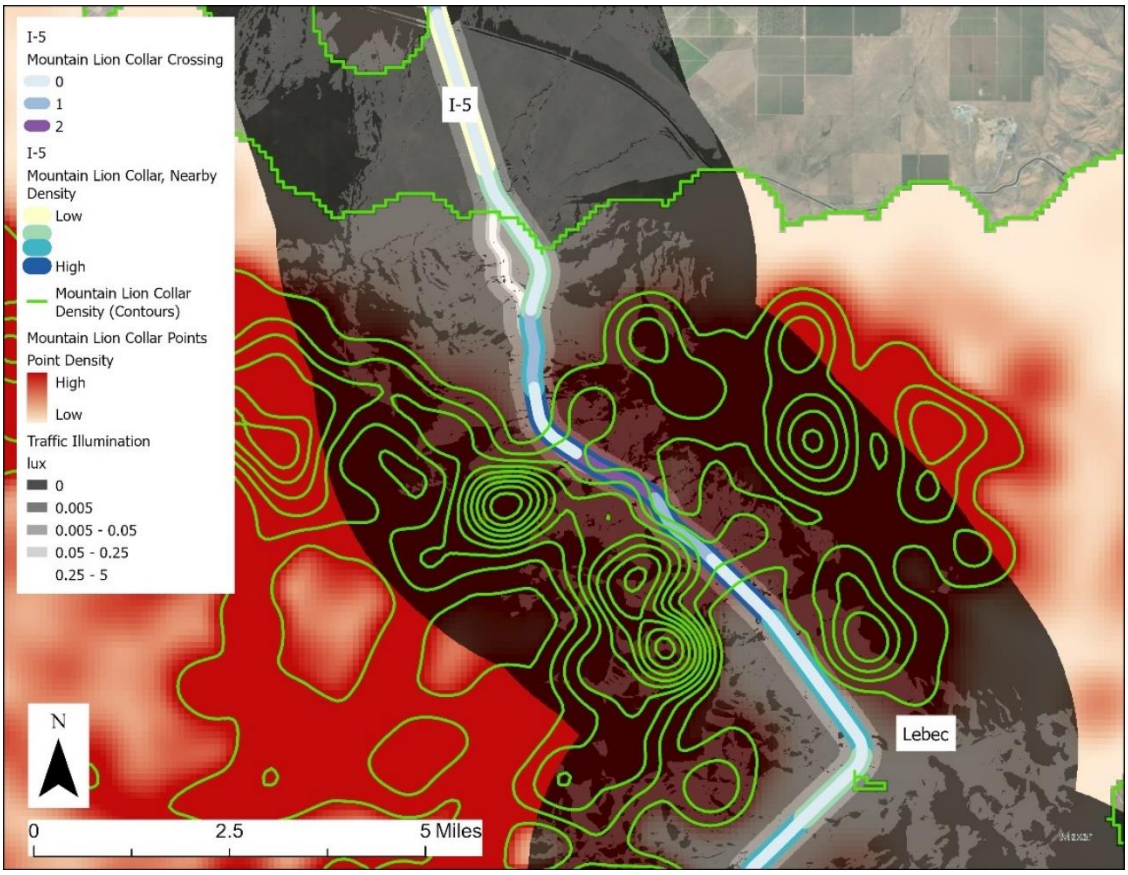

FIGURE 12. RELATIONSHIP BETWEEN COLLARED MOUNTAIN LION MOVEMENT AND TRAFFIC ILLUMINATION FROM I-5.

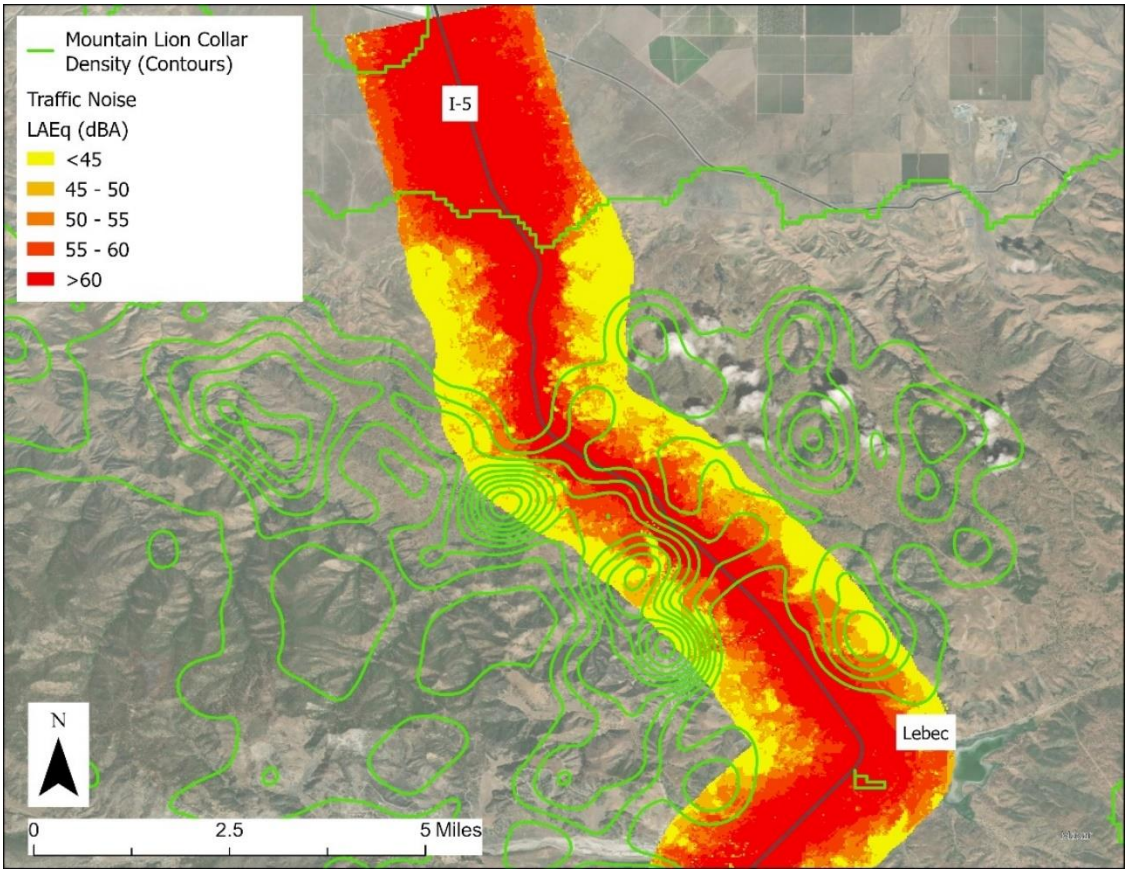

FIGURE 13. RELATIONSHIP BETWEEN COLLARED MOUNTAIN LION MOVEMENT AND TRAFFIC NOISE FROM I-5

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Protected/Conserved Lands and Potential Crossings

The Tejon Ranch Co. owns much of the land through the Tejon Pass and they have not expressed interest in supporting a wildlife crossing across I-5. Only one publicly-owned parcel abuts I-5 through the project area, owned by State Parks. This may not be an appropriate location for a wildlife over-crossing given the available land-base. However, Grapevine Creek crosses under I-5 both north and south of this parcel and could be an opportunity for enhancement of existing under-crossings (Figure 14). Although not critical for building crossings, conserved lands on both side of a wildlife crossing increases the likelihood of external funding and long-term success of the project. There has been moderate mountain lion movement in this area, with more activity to the north. This area is also near where the highest rate and cost of WVC has occurred on I-5 (Figure 11).

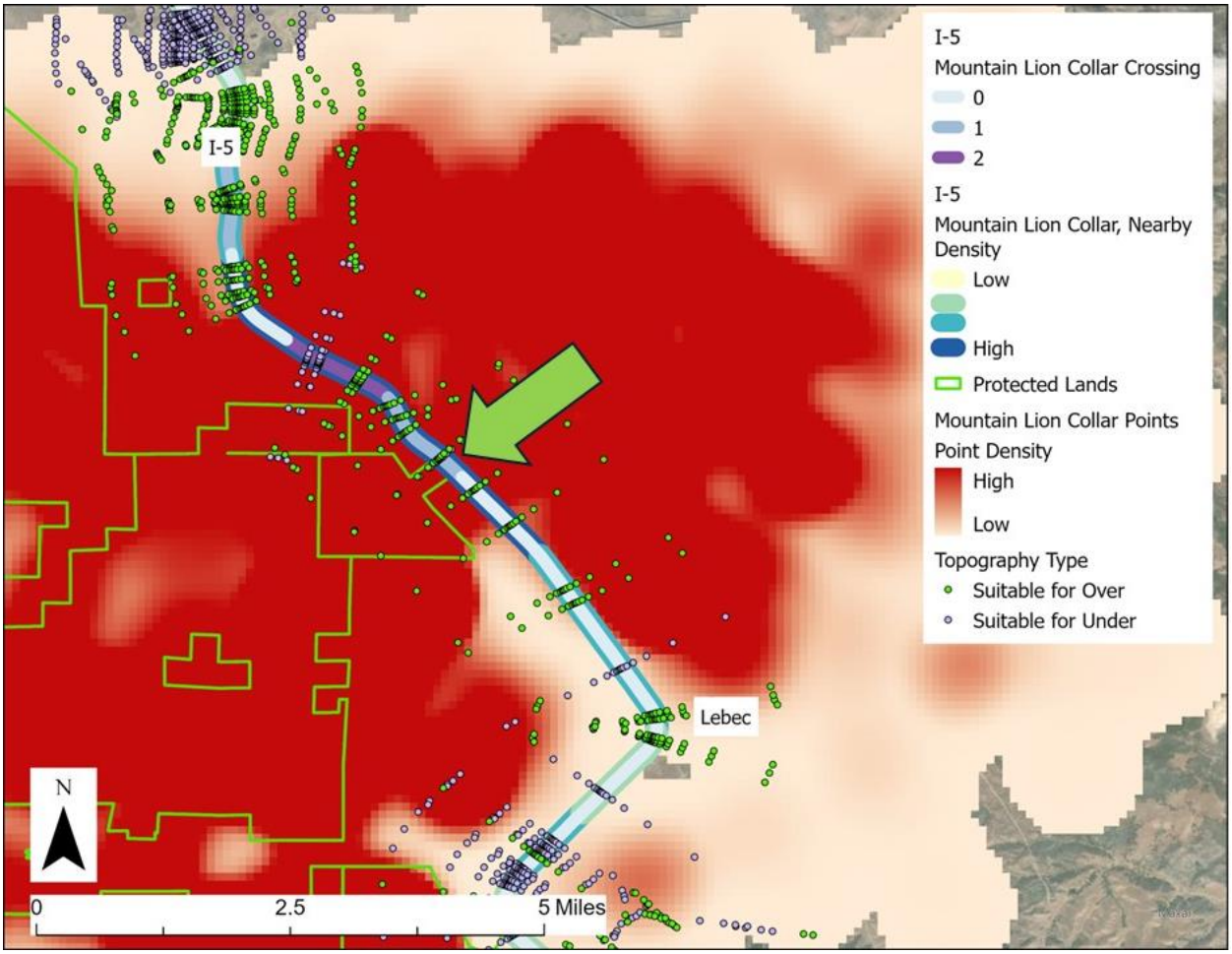

FIGURE 14. POSSIBLE LOCATION OF WILDLIFE CROSSINGS (GREEN ARROW) AND CONSERVATION OWNERSHIP (GREEN OUTLINES), OVERLAID ON MOUNTAIN LION MOVEMENT (RED GRADIENT).

3. Tasks 3.1.7 and 3.2.7 I-5 Truck Climbing/Passing Lanes 24-00050-103-304

The proposed truck climbing and passing lanes climb through the Tejon Pass, from Grapevine to Gorman (Figure 14). They pass from flat agricultural/grazing lands, through hilly grazed grasslands, to steep grassland topography with riparian swales.

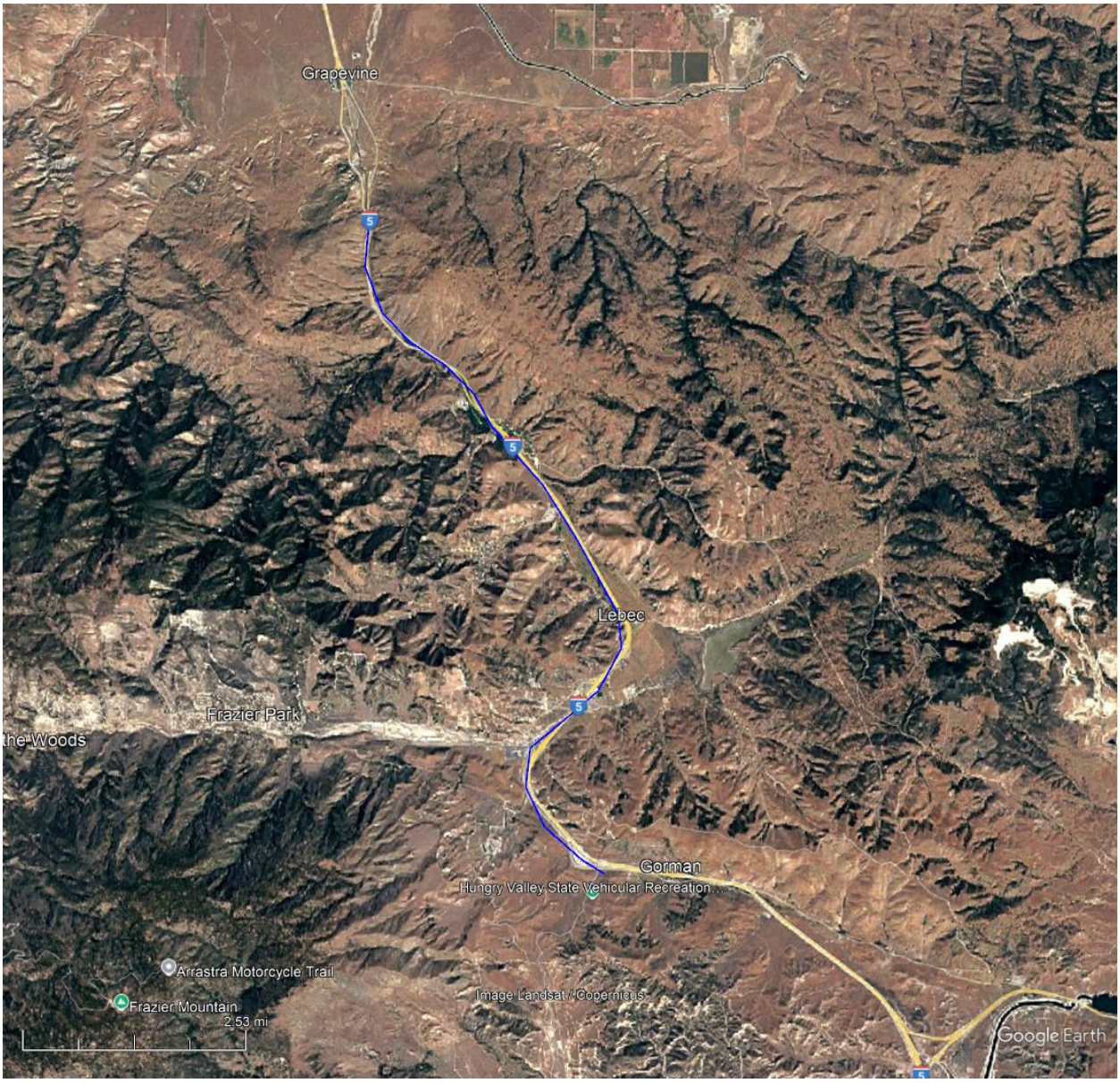

FIGURE 15. I-5 TRUCK CLIMBING LANE.

According to CDFW habitat models, the landscape surrounding the truck climbing lanes includes medium and high quality habitat for seven amphibian, forty-four mammal, and twenty-five reptile species (Table 4). High quality habitat is suitable for all life-stages and processes of the species, whereas medium quality is suitable for all processes except reproduction. Although elk are not listed, that is a product of delays in habitat mapping rather than likelihood that they will occur.

TABLE 4. GROUND-DWELLING AMPHIBIAN, MAMMAL, AND REPTILE SPECIES WITH MEDIUM AND HIGH QUALITY HABITAT ADJACENT TO THE I-5 TRUCK CLIMBING LANE PROJECT.

Animal Type	Scientific Name	Common Name
Amphibian	Anaxyrus californicus	Arroyo Toad
Amphibian	Batrachoseps nigriventris	Black-bellied Slender Salamander

Amphibian	Pseudacris hypochondriaca	Baja California Treefrog
Amphibian	Anaxyrus boreas	Western Toad
Amphibian	Rana draytonii	California Red-legged Frog
Amphibian	Ensatina eschscholtzii	Ensatina
Amphibian	Spea hammondii	Western Spadefoot
Mammal (Small)	Dipodomys agilis	Agile Kangaroo Rat
Mammal (Small)	Neotoma macrotis	Big-eared Woodrat
Mammal (Small)	Scapanus latimanus	Broad-footed Mole
Mammal (Small)	Thomomys bottae	Botta's Pocket Gopher
Mammal (Small)	Peromyscus boylii	Brush Deermouse
Mammal (Small)	Peromyscus californicus	California Deermouse
Mammal (Small)	Otospermophilus beecheyi	California Ground Squirrel
Mammal (Small)	Microtus californicus	California Vole
Mammal (Small)	Peromyscus eremicus	Cactus Deermouse
Mammal (Small)	Peromyscus crinitus	Canyon Deermouse
Mammal (Small)	Chaetodipus californicus	California Pocket Mouse
Mammal (Small)	Neotoma lepida	Desert Woodrat
Mammal (Small)	Dipodomys ingens	Giant Kangaroo Rat
Mammal (Small)	Dipodomys heermanni	Heermann's Kangaroo Rat
Mammal (Small)	Mustela frenata	Long-tailed Weasel
Mammal (Small)	Tamias merriami	Merriam's Chipmunk
Mammal (Small)	Peromyscus maniculatus	North American Deermouse
Mammal (Small)	Ammospermophilus nelsoni	Nelson's Antelope Squirrel
Mammal (Small)	Peromyscus fraterculus	Northern Baja Deermouse
Mammal (Small)	Sorex ornatus	Ornate Shrew
Mammal (Small)	Peromyscus truei	Pinon Deermouse
Mammal (Small)	Onychomys torridus	Southern Grasshopper Mouse
Mammal (Small)	Dipodomys nitratoides exilis	Fresno Kangaroo Rat
Mammal (Small)	Perognathus inornatus	San Joaquin Pocket Mouse
Mammal (Small)	Perognathus alticolus	White-eared Pocket Mouse
Mammal (Small)	Sciurus griseus	Western Gray Squirrel
Mammal (Small)	Reithrodontomys megalotis	Western Harvest Mouse
Mammal (Medium)	Taxidea taxus	American Badger
Mammal (Medium)	Lynx rufus	Bobcat
Mammal (Medium)	Sylvilagus bachmani	Brush Rabbit
Mammal (Medium)	Lepus californicus	Black-tailed Jackrabbit
Mammal (Medium)	Canis latrans	Coyote
Mammal (Medium)	Sylvilagus audubonii	Desert Cottontail
Mammal (Medium)	Urocyon cinereoargenteus	Gray Fox
Mammal (Medium)	Vulpes macrotis	Kit Fox
Mammal (Medium)	Erethizon dorsata	North American Porcupine
Mammal (Medium)	Procyon lotor	Raccoon
Mammal (Medium)	Bassariscus astutus	Ringtail

Mammal (Medium)	Mephitis mephitis	Striped Skunk
Mammal (Medium)	Spilogale gracilis	Western Spotted Skunk
Mammal (Large)	Ursus americanus	American Black Bear
Mammal (Large)	Puma concolor	Mountain Lion
Mammal (Large)	Odocoileus hemionus	Mule Deer
Mammal (Large)	Antilocapra americana	Pronghorn
Reptile	Phrynosoma blainvillii	Blainville's Horned Lizard
Reptile	Gambelia sila	Blunt-nosed Leopard Lizard
Reptile	Lampropeltis getula	Common Kingsnake
Reptile	Anniella pulchra	California Legless Lizard
Reptile	Thamnophis sirtalis	Common Gartersnake
Reptile	Sceloporus graciosus	Common Sagebrush Lizard
Reptile	Uta stansburiana	Common Side-blotched Lizard
Reptile	Plestiodon gilberti	Gilbert's Skink
Reptile	Pituophis catenifer	Gophersnake
Reptile	Gambelia wislizenii	Long-nosed Leopard Lizard
Reptile	Rhinocheilus lecontei	Long-nosed Snake
Reptile	Coluber constrictor	North American Racer
Reptile	Charina bottae	Northern Rubber Boa
Reptile	Diadophis punctatus	Ring-necked Snake
Reptile	Thamnophis couchii	Sierra Gartersnake
Reptile	Elgaria multicarinata	Southern Alligator Lizard
Reptile	Coluber lateralis	Striped Racer
Reptile	Aspidoscelis tigris	Tiger Whiptail
Reptile	Thamnophis hammondii	Two-striped Gartersnake
Reptile	Tantilla planiceps	Western Black-headed Snake
Reptile	Crotalus oreganus	Western Rattlesnake
Reptile	Sceloporus occidentalis	Western Fence Lizard
Reptile	Salvadora hexalepis	Western Patch-nosed Snake
Reptile	Actinemys marmorata	Western Pond Turtle
Reptile	Salvadora hexalepis virgultea	Coast Patch-Nosed Snake

Suggested Mitigation

Proposed and existing structures 1 to 6 cross the right-of-way within the project area (Appendix 2). These are proposed as box culverts (3 m X 3 m), with lengths varying with width of the right-of-way. Most of the medium-sized and large mammals are most likely to benefit from these structures, with less to no benefit for pronghorn because they don't tolerate under-crossings unless they are fairly large (>15 feet high and >20 feet wide). They will readily use over-crossings, even fairly narrow ones. There are elk (tule and Rocky Mountain) known to occur on both sides of the project area, but CDFW has not mapped suitable habitat for them. Elk will have similar wildlife crossing preferences as pronghorn. When combined with barrier fencing, small mammals, amphibians and reptiles could benefit from these structures if cover was placed through the length of the structure, including logs, large rocks, and pipes (Brehme et al., 2021a; Brehme et al., 2022). If combined with barrier fencing, these provide these smaller animals with a way to feel safe from predators as they traverse the structure (Brehme et al., 2021b).

To improve use by small and medium wildlife, there should be vegetative or other cover either maintained or restored leading from nearby habitat to the culvert opening. In addition, because most wild animals are known to be sensitive to anthropogenic noise and light, appropriate screening of noise and light from traffic and streetlights should be placed so as to protect wildlife approaching existing and purpose-built crossings from noise levels greater than 55 dBA (A-weighted decibels) and light levels greater than 0.1 lux (full moon illumination).

Although there are not high rates of reported WVC along this portion of SR 58, barrier fencing will improve the identification of openings by wildlife approaching the highway (Rytwinski et al., 2016) and overall effectiveness of wildlife crossings. There is anecdotal evidence that once animals start using crossings, other animal species will investigate and may find the crossings. There is an obvious fence termination point at Bena Road on the west end, and the at-grade intersection with Bena Road/Bealville Road to the east. Fencing should be 8-foot high and either buried (for burrowing animals) or include an above-ground apron on the outside to reduce the need for trenching and to deter digging.

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Appendix 1: Annotated Bibliography

Literature Search Notes:

- The literature below is ordered in most relevant information to least relevant information
- Each article has a link to a downloadable article
- All text in “quotation marks” were pulled directly from the literature they are under

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Bremner-Harrison et al. 2007

USE OF HIGHWAY CROSSING STRUCTURES BY KIT FOXES

- Goals was to see if kit foxes use existing structures and if they have preference among structure designs
- Goal to use information to mitigate impacts to kit foxes from four-lane divided highways
- Sites on I-5 (8), Rte-14 (17), and Hwy-58 (21 structures)
- Kit fox presence at all sites, but none inside the culverts
    - Hypothesis is increased predation risk
- Large underpasses under bridge hard to monitor and could have had kit fox movement
- Lack of usage of structures suggest kit foxes just attempt to cross
    - Less traffic at night which is great, but median barriers may inhibit movement
    - Fencing to direct towards crossing is recommended as well as large and highly visible under crossings
- References Cypher et al. 2005 in that study showed no effect of two lane highways
- But little is known about highways greater than 2 lanes
- Kit fox tracks seen around area, but never definitive proof of usage of the existing cultures and undercrossings
- Coyotes and bobcats used the crossing structures so perhaps the fear of predation stopped them from using the culverts
- Theorize that kit foxes are successful in crossing roads
- Optimal design of crossing structures for kit foxes remains unknown

The Business Journal

Oregon-born gray wolf dies on Grapevine after ‘epic’ California trek

- Came from OR and was last pinged in San Luis Obispo County
- Was in historic wolf territory and is a part of increasing number of wolves coming into CA from other states

[CDFW 2018]

Elk Conservation and Management Plan

- Populations of tule elk were diminished to only a few in San Joaquin Valley in the late 1800's
- Tejon Rocky Mountain Elk Management Unit
    - Tejon Ranch Company is in charge of this population
    - Goal is to maintain numbers and prevent cross breeding with tule elk
        - So the one species they do not want crossing the highways
- San Emigdio Mountain Tule Elk Management Unit

[CDFW 2022]

Restoring California's Wildlife Connectivity 2022

- Initial wildlife barrier assessment in 2020 was re-evaluated in 2022 and the two top priority barriers in each region were determined
- W033 is the barrier in Kern County of top interest
    - Along State route 58
    - Barrier name = SR-58 Tehachapi Grade
    - Focal species include mule deer, mountain lion, and black bear
- Also of interest in area, but not identified as the top priority: W036 (Highway 5 Grapevine), W037 (SR-178 Canebrake)
- "Target species for wildlife connectivity projects in Region 4 (ordered from most included to least included): mountain lion, deer, bear, badger, kit fox, elk, bobcat, fisher, mesocarnivores, blunt-nosed lizard, tipton kangaroo rat, san joaquin antelope squirrel"



Barrier ID	County	Infrastructure Type	Route	Barrier/Segment Name
W030[*†]	Santa Clara/Merced	Highway	152	Hwy 152 Pacheco Pass/San Luis Reservoir
W033	Kern	Highway	58	SR-58 Tehachapi Grade
W034	San Luis Obispo	Highway	101	Hwy 101 - Cuesta Grade
W035	Kern/Tulare	Other		High Speed Rail Alpaugh
W036	Kern	Highway	5	Hwy 5 Grapevine
W037	Kern	Highway	178	SR-178 Canebrake
W038	Tuolumne	Highway	108	SR-108 Strawberry - Donnell Vista
W039	Fresno	Highway	180	SR-180 Kings Canyon Foothills
W041	Monterey	Highway	101	Hwy 101 Prunedale
W099	Madera/Mariposa	Highway	41	Oakhurst - Wawona

[*]within SO3362 priority area, [†]identified as a top priority by more than one region
Note: Barriers are not numbered in order of priority.

[Collins et al. 2022]

Behavioral responses to anthropogenic noise at highways across temporal scales

- Study area does not align with area of interest, but behavior can be extrapolated to species
- Acute traffic caused flight response to coyotes and mule deer
- Coyotes showed fear response to chronic noise – increased vigilant behavior and increased speed through areas
- Mule deer relaxed at areas with chronic noise – less vigilant behavior and increased foraging

Constable et al. 2009

CONSERVATION OF SAN JOAQUIN KIT FOXES IN WESTERN MERCED COUNTY, CALIFORNIA

- "Currently, north of Kern County, San Joaquin kit foxes primarily occur in a narrow, north- south band of habitat bounded by Interstate 5 on the east and the Coast Ranges on the West."
- "Habitat losses from developments within this band threaten to block kit fox movements, fragment the population, and restrict gene flow."
- "Significant obstacles to movement though the Santa Nella area include two large reservoirs (San Luis Reservoir, O'Neil Forebay), a number of connecting canals (California Aqueduct, Delta-Mendota Canal, San Luis Wasteway), and two divided freeways (Interstate 5, State Route 152). Both the eastern and western routes relied on one or more narrow crossing points to bypass these obstacles."
- "Presence well understood but However, the actual population status of kit foxes in the region is less well understood."
- "Due to the consistent presence of kit foxes and the presence of large tracts of public land (most owned by the U.S. Bureau of Land Management), the Panoche region was identified as a "core area" for kit foxes in the recovery plan for San Joaquin Valley upland species (U.S. Fish and Wildlife Service 1998)."
    - Whether this would work is debatable but presence is there

Cypher et al. 2005

Effects of Two-Lane Roads on Endangered San Joaquin Kit Foxes

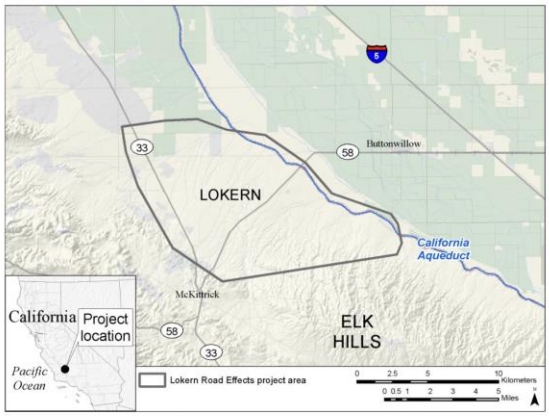


Figure 1. Lokern Natural Area, Kern County, California.

- No significant detrimental effects from 2-lane roads on kit fox demography and ecology
    - Did not look at facilitated human access and growth-inducing effects
        - Habitat loss, habitat modification, and disturbance
- "Roads potentially could influence kit fox survival through effects on competitor abundance or distribution. On the LNA, the effect of roads on the primary competitors, coyotes, was difficult to evaluate."
- Should not say that all roads do not have effect, but it is not detectable at this time – missing an element
- Kit foxes high tolerance to disturbance

Cypher et al. 2007

HABITAT SUITABILITY AND POTENTIAL CORRIDORS FOR SAN JOAQUIN KIT FOX IN THE SAN LUIS UNIT: FRESNO, KINGS AND MERCED COUNTIES, CALIFORNIA

- "The San Joaquin kit fox was listed as Federally Endangered in 1967 and California Threatened in 1973 (U.S. Fish and Wildlife Service 1998)."
- "Kit foxes currently persist in a metapopulation consisting of 3 larger "core" and a number of smaller "satellite" populations (U.S. Fish and Wildlife Service 1998)."
- Goals of study are to:
    - "Assess habitat suitability for kit foxes under (a) current conditions, (b) the preferred drainage alternative without associated habitat management, and (c) the preferred drainage alternative in association with habitat management to improve suitability for kit foxes."
    - "Identify optimal placement of movement corridors to encourage colonization of retired agricultural lands by kit foxes and to facilitate demographic and genetic exchange between fox populations in retired lands and existing natural lands."
- Retired lands have a history of alteration and cultivation
    - Non-native plant colonization, structure not suitable for kit foxes or prey species to support kit foxes
    - Restoration and management prescriptions needed on acquired land
        - Potentially expensive
    - Grazing can be effectively used, as in Carrizo Plain National Monument
    - Cover needed for dens

Cypher et al. 2010

Effects of Roads on Endangered San Joaquin Kit Foxes

- "The primary threat to kit foxes is profound habitat fragmentation, degradation, and loss, largely resulting from agricultural, industrial, and urban development"
- "Currently, San Joaquin kit foxes persist as a metapopulation consisting of 2–3 larger core populations and approximately 10–20 smaller satellite populations"
- Two-lane roads are the most common type of road in the remaining habitat for San Joaquin kit foxes
- Within the study area, road did not appear to impact kit fox survival
- Consistent with other studies of kit foxes in natural habitats
    - "In other kit fox investigations, number of mortalities from vehicles included 2 of 28 collared foxes in western Merced County (Briden et al. 1992), 2 of 94 collared foxes in Monterey and San Luis Obispo counties (Standley et al. 1992), 1 of 41 collared foxes in San Luis Obispo County (Ralls and White 1995), and 20 of 341 adult foxes and 11 of 184 juvenile (,1 yr) foxes in western Kern County (Cypher et al. 2000). Mortality rates from vehicles appear to be

equally low for closely related swift foxes (V. velox; Covell 1992, Sovada et al. 1998, Kitchen et al. 1999)"

- Rather, predators (coyotes) were primary mortality causes
- Effects of roads on coyote behavior seems to be unclear
    - Used as a foraging mechanism
    - Scared away due to people shooting them
    - Movements were mainly night as well as dawn and dusk
- Survival rates and reproduction same within all 3 risk categories of kit foxes and roads
- Roads could act as a potential source of carrion for kit foxes as they were seen foraging on carcasses
- Unable to detect any significant attributable to 2-lane roads on survival, reproduction, space use, den-site selection, prey availability, and diet
- Low to moderate traffic rates
- Kit foxes were seen crossing road many times

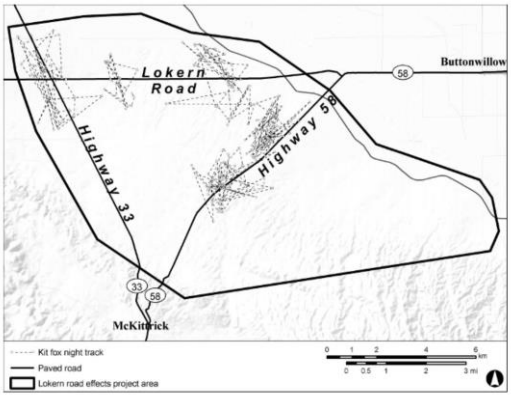


Figure 3. Inter-location movements for 5 kit foxes that routinely crossed roads on the Lokern Natural Area, California, USA, 2002–2004.

Cypher et al. 2011

Suitability of Potential Reintroduction Sites for San Joaquin Kit Foxes

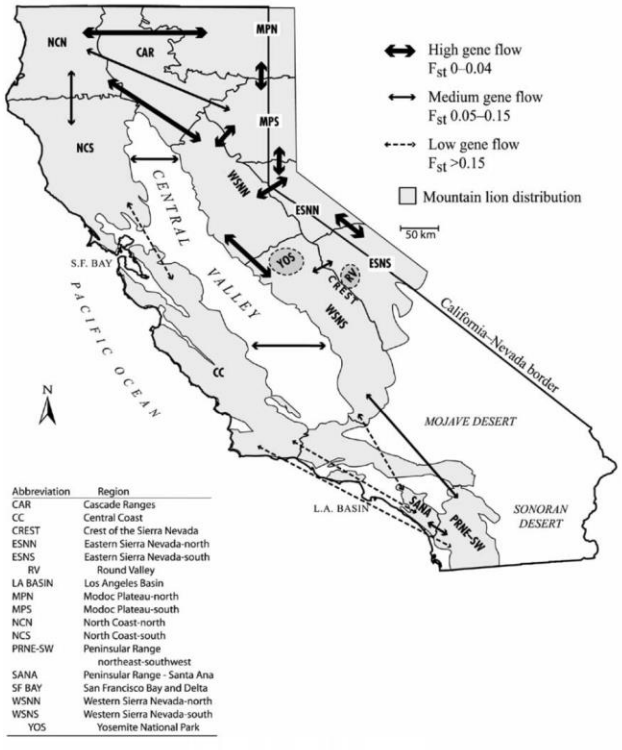
- Looked at 5 potential sites for reintroduction:
    - Allensworth Ecological Reserve (AER)
    - Pixley National Wildlife Refuge (PNWR)
    - Kern National Wildlife Refuge (KNWR)
    - Wind Wolves Preserve (WWP)
    - Retired agricultural lands in western Fresno County (retired lands)
- All five sites ultimately not deemed suitable for reintroduction at this time
- Much of the habitat within their former range was displaced by agricultural, industrial, and urban development, facilitated by the completion of the Central Valley Project and the California Water Project in the early 1970's
- Currently federally endangered and California threatened
- 3 core meta-populations and several satellite populations
- Talks about how reintroduction into smaller areas where extirpated could help population connectivity (shorten dispersal distances between viable populations)
- Allensworth Ecological Reserve (AER)
    - Could be a potential site as a stepping stone to kit foxes, but not enough suitable land to support 10 pairs (minimum population)
    - Not close enough to be a stepping stone without other land to qualify as that as well
- Pixley National Wildlife Refuge (PNWR)
    - Parcels with suitable habitat, mostly on private lands, are present between the AER and these other sites, and these parcels could function as "stepping stones" to facilitate kit fox movements between sites, but not contiguous with other kit fox connectivity ways

    - Same reasons to a no as AER
- Kern National Wildlife Refuge (KNWR)
    - Close enough to existing population to be considered a stepping stone but could not support persistent population
    - Not enough suitable habitat for persistence
- Wind Wolves Preserve (WWP)
    - Great location between Tejon Ranch and Carrizo Plains to act as a stepping stone
    - However, no current occupation despite connectivity potential leads to the question of why?
- Retired agricultural lands in western Fresno County (retired lands)
    - Interstate 5 and California aqueduct is a barrier to movement to retired lands

Ernest et al. 2003

Genetic structure of mountain lion (*Puma concolor*) populations in California

- "Analysis of genetic data without regard to geographic location (model-based clustering method) provided evidence that mountain lions in the north Coast Ranges and southwestern California are genetically distinct from those inhabiting other regions of the state"
- Tehachapi mountains did not have enough mountain lion samples to remain in the analysis, but identified LA Basin as a barrier to genetic movement
    - "The Tehachapi Mountains and Transverse Ranges (San Gabriel and San Bernardino Mountains) appear to function as a movement corridor for gene flow between regions to the north and south of the Los Angeles Basin"
    - "The Tehachapi Mountains are the only likely corridor for movement among the western Sierra Nevada, Central Coast and Southwest regions. The only likely movement corridor between the Tehachapi Mountains and the Southwest region are the Trans- verse Ranges (San Gabriel and San Bernardino Mountains), both of which support populations of mountain lions. Movement through this corridor, however, requires that lions cross the San Gorgonio Pass and I-10, a busy interstate highway."



Abbreviation	Region
CAR	Cascade Ranges
CC	Central Coast
CREST	Crest of the Sierra Nevada
ESNN	Eastern Sierra Nevada-north
ESNS	Eastern Sierra Nevada-south
RV	Round Valley
LA BASIN	Los Angeles Basin
MPN	Modoc Plateau-north
MPS	Modoc Plateau-south
NCN	North Coast-north
NCS	North Coast-south
PRNE-SW	Peninsular Range northeast-southwest
SANA	Peninsular Range - Santa Ana
SF BAY	San Francisco Bay and Delta
WSNN	Western Sierra Nevada-north
WSNS	Western Sierra Nevada-south
YOS	Yosemite National Park

Figure 2. Map of gene flow among mountain lion populations in California as determined from F_{ST} estimates calculated from microsatellite data from 410 California and western Nevada samples collected during 1988–1999 (Table 3). Mountain lion habitat distribution based on Torres et al. (1996, Figure 7). Cascade Range (n = 5), Tehachapi Mountains (n = 2), San Gabriel Mountains (n = 4), and San Bernardino Mountains (n = 0) had low sample sizes or lacked samples. Central Valley (n = 10) is not mountain lion habitat (Torres et al. 1996) and mountain lions sampled there could have traveled from one of several regions. Therefore, these units were excluded from F_{ST} analyses. Peninsular Ranges-NE was combined with Peninsular Ranges-SW (combined units noted as PRNE-SW) to simplify gene flow depictions because F_{ST} estimates were very similar for the two units.

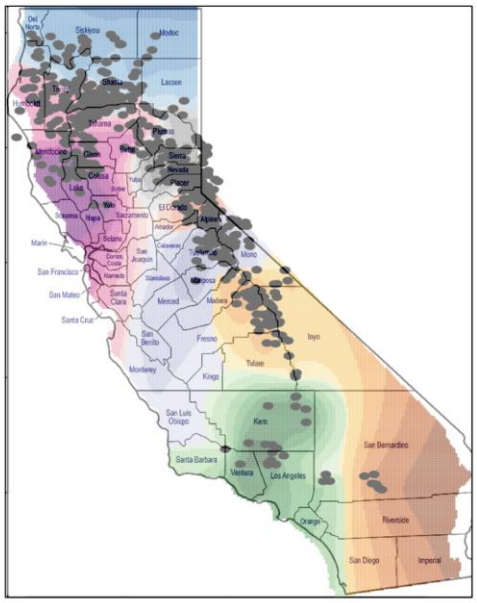
- mountain lion populations in southwestern California exist in a matrix of semi-isolated ‘patches’ surrounded by unsuitable habitat
- “California mountain lions (this study) displayed 73% fewer alleles than those in South America (Culver et al. 2000). These findings of genetic diversity, structure and function of mountain lion populations and metapopulations are valuable in a conservation context because accele- rating anthropogenic changes are likely to decrease gene flow among populations, increase the risk of extirpations, and decrease the chance of recoloni- zations”

Gaines 2022

GENOTYPING BY SEQUENCING IN WILDLIFE FORENSICS: USING HIGH-THROUGHPUT MICROSATELLITE SEQUENCING TO IDENTIFY ALLELE VARIANTS IN AMERICAN BLACK BEARS (*URSUS AMERICANUS*)

- Study done in 2009 showed four genetic clusters for black bears North Coast/Klamath, Cascade/northern Sierra Nevada, central Sierra Nevada/southern California, and southern Sierra Nevada/Central Coast
  - This study seeks to do the analysis again and better understand clusters
- Samples taken in area of interest around Theachepis and Grapevine
- The green population in the figure to the left shows that the black bears in our area of interest are of the same population genetically, therefore both the SR 58 area and Grapevine connections are important for that population’s connection

Map of ancestry coefficients for K = 7 clusters of black bears in California with approximate county lines shown. Map generated using genetic group membership probabilities and sample location data. Sample collection locations are depicted as black circles. Clusters are distinguished by color (fuchsia, blue, grey, red, purple, orange, and green). Each step in the color gradient represents a 10% change in relatedness with the highest relatedness value represented by the darkest gradient.



Kauffman et al. 2002

Ungulate Migrations of the Western United States Volume 3

- In particular, 6-8 foot high woven-wire fence can be impermeable to ungulates
- Migrating deer reduce stopover use, increase travel speed, and sometimes detour around energy development
- Mule deer in the Sequoia National Forest who’s movements do not appear to cross any roads: Kern River mule deer herd, Manache mule deer herd

Meredith et al. 2007

Microsatellite Analysis of Three Subspecies of Elk (Cervus elaphus) in California

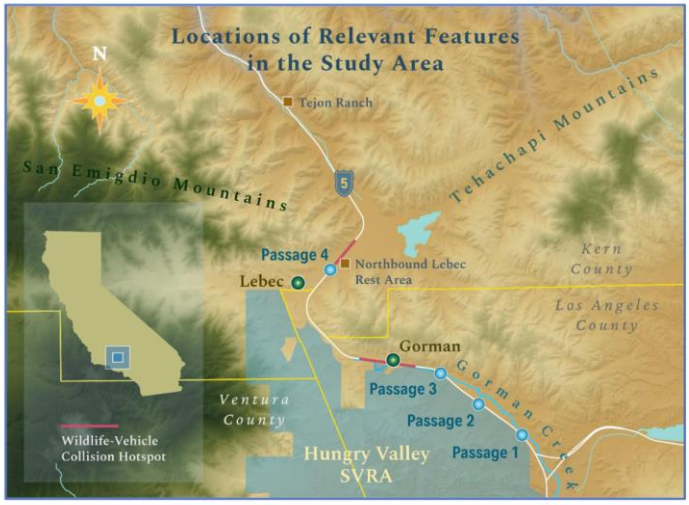
- Tule elk (common found in our area of interest) are at risk of inbreeding and founder's effect if populations are separated due to their "much reduced microsatellite variation compared to the Roosevelt and Rocky Mountain elk sub- species, as expected given the severe population bottleneck in the late 1800s"

Miller 2024

Effectiveness of Informal Passages in Facilitating Wildlife Movement Across Interstate 5 Freeway in Southern California

- Study looks at passages (culverts and one undercrossing) on I-5 near Lebec and Gorman on the western edge of the Tehachapi Connection that were not put in for the purpose of wildlife movement, but could facilitate movement
- "By characterizing passage effectiveness, my study seeks to reveal the relationship between specific corridor conditions and terrestrial wildlife movement."
- Nine species documented at the informal passages: Coyote (Canis latrans), bobcat (Lynx rufus), raccoon (Procyon lotor), striped skunk (Mephitis mephitis), desert cottontail rabbit (Sylvilagus audubonii), deer mouse (Peromyscus maniculatus), California ground squirrel (Otospermophilus beecheyi), California mule deer (Odocoileus hemionus californicus), and mountain lion (Puma Concolor)

Figure 3: Locations of Other Relevant Features in Study Area (Tejon Ranch, Northbound Lebec Rest Area, Gorman Creek)



- Passage assessments:
  - Passage 1
    - Box culvert
    - "The length of Passage 1 was 262.92 feet, which was shorter than passages 2 and 3, but longer than Passage 4. The width was 8.04 feet, which was the second lowest of all passages. The average height (8.32 feet) was more than Passages 2 and 3, but less than Passage 4"
    - "Passage 1 featured the highest number of assessments (413), although this pertained primarily to small and medium-sized prey species. Mice comprised a majority of these recordings, but did not account for any verified or probable crossings. Passage 1 displayed the highest number of probable crossings of any species, however (18 desert cottontail recordings). Verified crossings were comparatively low, with a total of only one coyote. In general, activity by medium-

sized carnivores and omnivores was limited at this passage. Activity by large-sized carnivores and large-sized prey species was non-existent. Human activity here was also low, with a total of one instance."

- Passage 2
  - Box culvert
  - "Passage 2 was unique in that it was the longest (348.75 feet) of all 4 passages, and the second widest (9.04 feet). The average height was comparable to the other passages at 7.84 feet. The cross-section area was 71.192 feet."
  - "Passage 2 had the second highest number of assessments by medium-sized carnivores of all passages (23), which pertained exclusively to coyotes. It also had the second highest number of assessments by prey-species (128), although this pertained primarily to desert cottontails (106). Assessments by omnivores were the second highest of all passages (12), although this pertained exclusively to raccoons. Verified crossings of this species were also noted at this passage (2). There was no activity by large-sized prey species or carnivores. Human activity was minimal at this passage, with a total of one appearance."
- Passage 3
  - Multiple box culverts
  - "The length of Passage 3 was the second longest at 291.92 feet. The average height (7.81 feet) was somewhat less than all other passages. Passage 3 was unique in that it was compartmentalized into two canals, with southern section being consistently flooded (Figure 28), while the northern section had a lesser presence of water, and instead primarily contained mud and small-scale debris, both naturally and human induced. Considering both sections, Passage 3 had a width of 14.33 feet. However, only the comparatively dry, northern section was monitored; the width of this canal was 6.89 feet"
  - "Assessments among omnivores (exclusively raccoons) were the highest at this passage (45). However, with the exception of mice (18), there were no assessments among prey species. Assessments by medium-sized carnivores were also limited, with a singular bobcat appearance, and no appearances by coyotes. However, Passage 3 featured a singular verified crossings by a mountain lion, as well as several probable crossings by raccoons (2). Human activity was comparable to Passages 1 and 2, with a total of one appearance."
- Passage 4
  - Bridge undercrossing
  - "Passage 4 displayed the highest number of verified crossings (54), with medium-sized carnivores (coyotes and bobcats) accounting for a majority of these. Verified and probable crossings by all other groups were non-existent, and assessments among both medium-sized omnivores (2) and small to medium-sized prey species (32) were lower than Passages 1 and 2. Passage 4 was the only informal passage to feature verified crossings by large-sized prey species (i.e., mule deer) (2), although this number was not sufficient to constitute statistical significance. No appearances were made by large-sized carnivores. Interestingly, Passage 4 had the highest number of human appearances (7) which included individuals on foot, as well as two motorists employing all-terrain vehicles."

- “The most notable finding from Passage 1 is that it exhibited the highest number of crossings and assessments by prey species. While this trend did not display a strong correlation with higher average soil moisture, it is possible that this factor may have been influential. Passage 2 demonstrates that the dynamics of a predator-prey relationship may be greatly affected by passage obstruction that favors prey (i.e., desert cottontails) and complicates hunting strategies by the predator (i.e., coyotes). Passage 3 illustrates that riparian environments may be preferred by raccoons in the study area, and may serve as a viable migration route for mountain lions. It is also evident that coyotes and desert cottontails avoid this environment, although the reasons for this are not well understood. Lastly, Passage 4 clearly demonstrates that larger passage dimensions are likely preferred by medium-sized carnivores (i.e., coyotes and bobcats) that dominate other mesopredators such as raccoons and skunks. The prevalence of these carnivores at Passage 4 is possibly associated with a reduction of activity by small and medium- sized prey species, in addition to the aforementioned mesopredators.”
- Not all the passages were used equally indicating difference in preferences
    - Bobcats and coyotes had a positive correlation with size between of crossings
    - Medium carnivores also saw a negative correlation with fencing
- Passage 2 had interesting predator and prey interactions
    - Cottontail liked the thistle accumulation and were seen crossing only when coyotes were not
    - Coyotes were attracted due to prey however did not like the thistle and would leave rather than cross
- “Firstly, Passage 4 was considered the most effective at facilitating wildlife movement, because its larger dimensions were conducive to a far greater quantity of successful crossings than the other passages.”

Penrod et al. 2003

South Coast Missing Linkages Project: A Linkage Design for the Tehachapi Connection

- Process for determining a connection corridor:
    - Performed a least cost permeability analysis for nine species, then combined all nine least cost permeability analyses into a Least Coast Union covering all 9 species
    - Then the study compared that to suitable habitat for 34 focal species to make sure Least Coast Union would run through all habitats
    - Site visited barriers after and propose mitigation
    - *No validation or verification of modeled corridors using wildlife data*
- Importance of the Tehachapi region:
    - "Perhaps most significantly, the Tehachapis provide the only remaining wildland connection between two major mountain systems"
    -
- Nine species used for landscape permeability analysis
    - mountain lion, badger, San Joaquin kit fox, mule deer, western gray squirrel, Tipton kangaroo rat, Tehachapi pocket mouse, California spotted owl, and blunt-nosed leopard lizard
    - Species determined using movement knowledge data, we know what affects



Figure 1. The South Coast Missing Linkages Project addresses habitat fragmentation at
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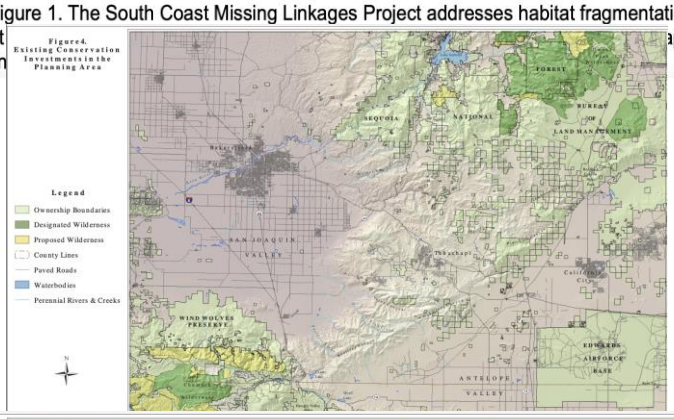
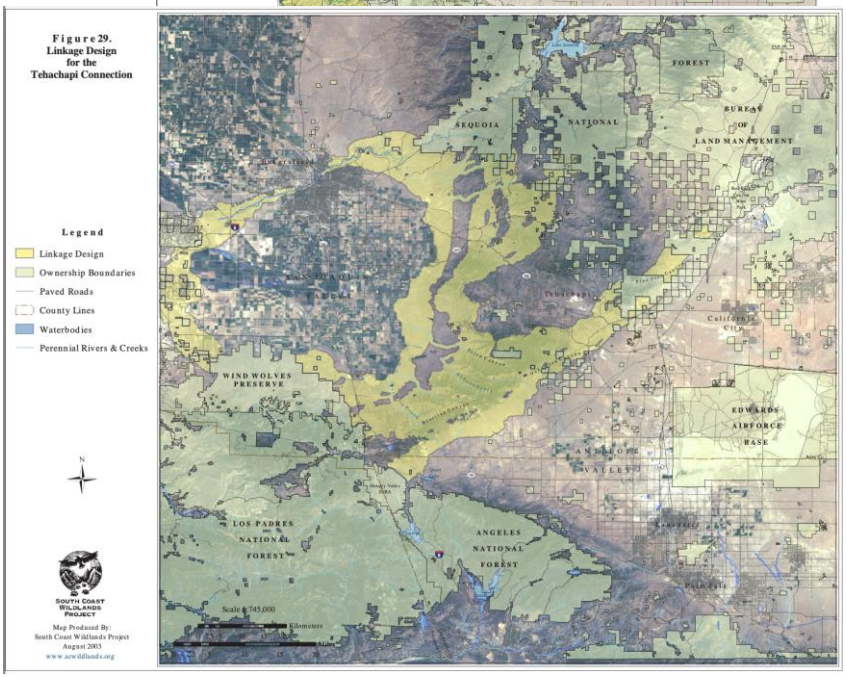
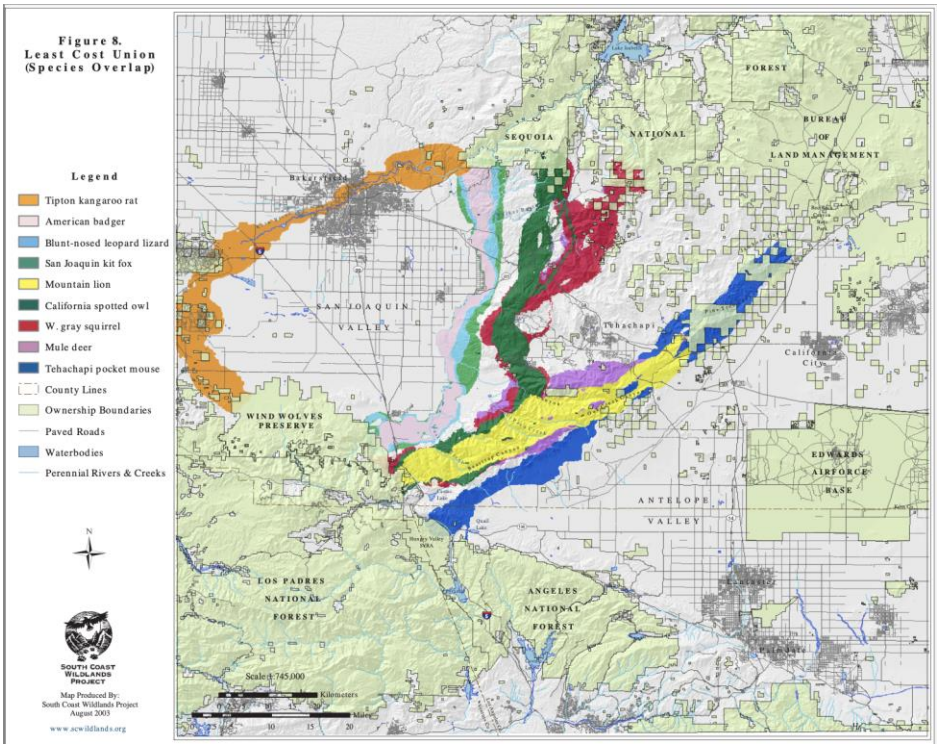


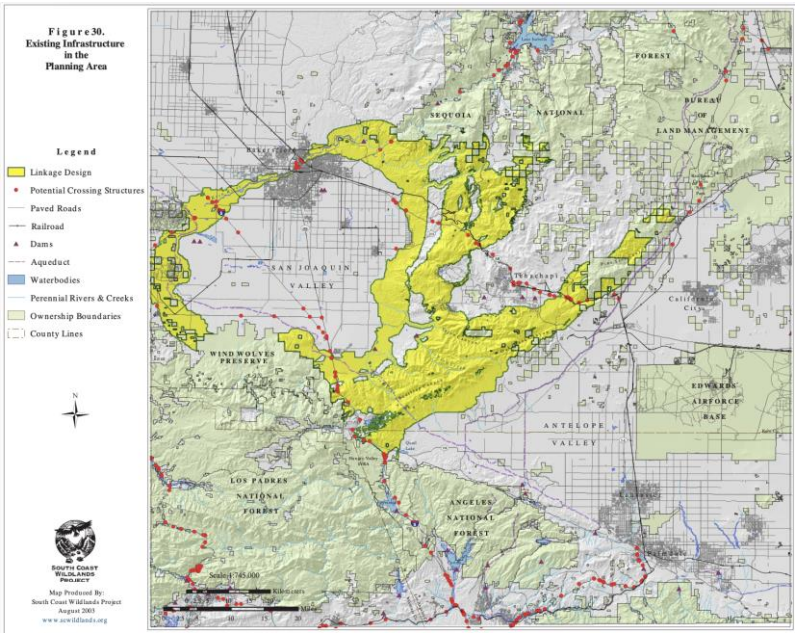




movement for data layers, species can occur in both cores, and gene flow shorter than changing vegetation

- Least Cost Union = combination of all 9 focal least cost corridors
- "The biological significance of this Union can best be described as the zone in which species would encounter the least energy expenditure (i.e., preferred travel route) and the most favorable habitat as they move between protected core areas"
    - Does not identity barriers, mortality risks, dispersal limits, or biologically significant factors
- Five types of features impede species movements through the Linkage to varying degrees: roads, the California Aqueduct, dams or other impediments to stream flow, urban development, and agriculture

- "Existing structures can be substantially improved with little investment by installing wildlife fencing, earthen berms, and vegetation to direct animals to passageways (Forman et al. 2003)"
    - State Route 58
        - 4-lane divided highway with concrete median barrier ranging 2.5-5 feet tall
        - "We recommend first-class highway crossing structures (canyon-spanning bridges, or vegetated overcrossings) in three areas along SR-58"

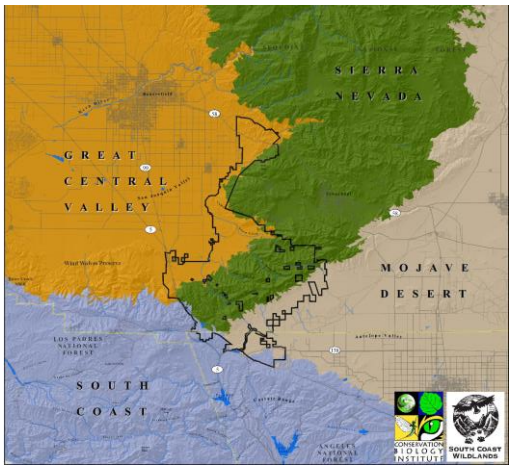


[White et al. 2006]

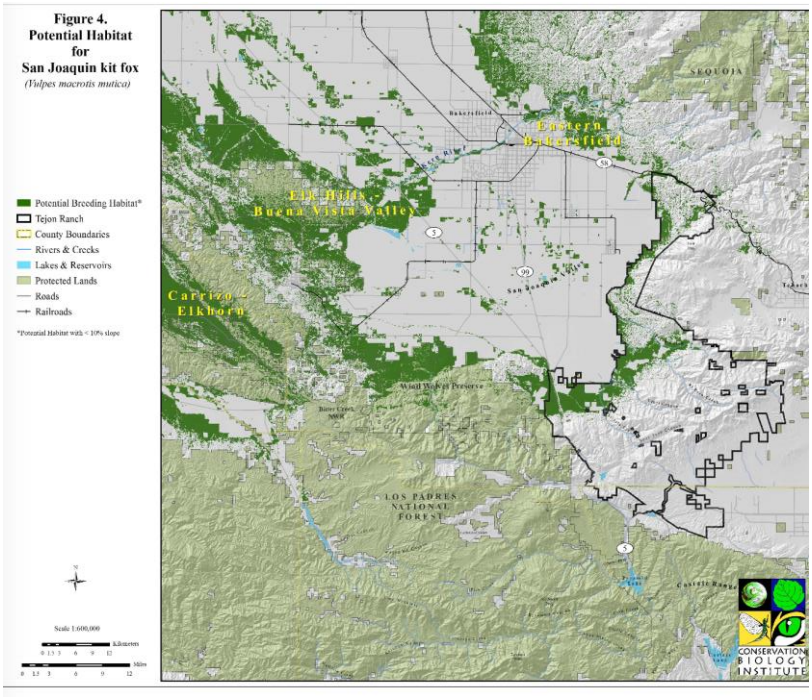
Proposed Reserve Design for Tejon Ranch: A Threatened California Legacy

- Conservation Biology Institute and South Coast Wildlands sponsored article
- Location: Tejon Ranch (privately owned)
    - Convergence of four floristic ecoregions: Great central Valley, Sierra Nevada, Mojave Desert, and South Coast
    - Supports 20+ state and federally listed species, 60+ other rare species
    - Grasslands important as they are the last connection between grasslands on the western and easter sides of San Joaquin Valley
- Urbanization plans (in 2006) threaten the area's ability to connect wildlife
    - Tejon Industrial Complex, Tejon Mountain Village Project, and Centennial project
    - Not only do they threaten rare/endangered species habitat but also compromise habitat connectivity

- Goal of the reserve proposal:
  - Maintain regionally significant landscape linkage between the Sierra Nevada and the Coast Ranges on Ranch
  - Linkage between grasslands on western and eastern end of San Joaquin Valley
  - Linkage between San Joaquin and Antelope Valley



- San Joaquin kit fox
  - Connected through two principle routes:
    - Trans-valley across Kern River corridor (across 5, 99, and 58)
      - This being rapidly diminished due to urbanization
    - Southern end of valley through Tejon Ranch (across same three routes)
      - Carrizo-Elkhorn and eastern Bakersfield populations best connection is through this area, which they would like to support a satellite population
  - Habitat recommended to conserve in Tejon ranch based on breeding habitat of kit fox
- Proposed units of reserve support California condor, California spotted owl, Tehachapi slender, mountain lion, badger, mule deer, western gray squirrel, Tehachapi pocket mouse, California thrasher, acorn woodpecker, coast horned lizard, yellow-blotched salamander, bright blue copper butterfly, San Emigdio blue butterfly, and bear sphinx moth, Tehachapi pocket mouse, burrowing owl, coast horned lizard, callippe fritillary, Tejon rabbitbrush long-horned borer



- Ecological connections:
  - Sierra Nevada and South Coast ecoregions
  - Transition zone between the southern Sierra Nevada, Coast Ranges, and Mojave Desert
  - “Regional landscape linkage that provides connectivity between Tejon Ranch and the Sierra Madre Mountains to the west, Castaic Mountains to the south, and southern Sierra Nevada to the northeast (Penrod et al. 2003, 2005)”
  - Interstate 5 and Highway 58 are significant barriers to movement of grassland species from Tejon Rand to off-site areas

- Tejon Ranch area is important for both wide-ranging species with large area needs and smaller, less mobile species that require generations to move across landscapes
    - Connectivity across highways to this area would be key
    - Important for landscape-scale connectivity

Appendix 2: Species at Specific Structures Under SR 58 and I-5

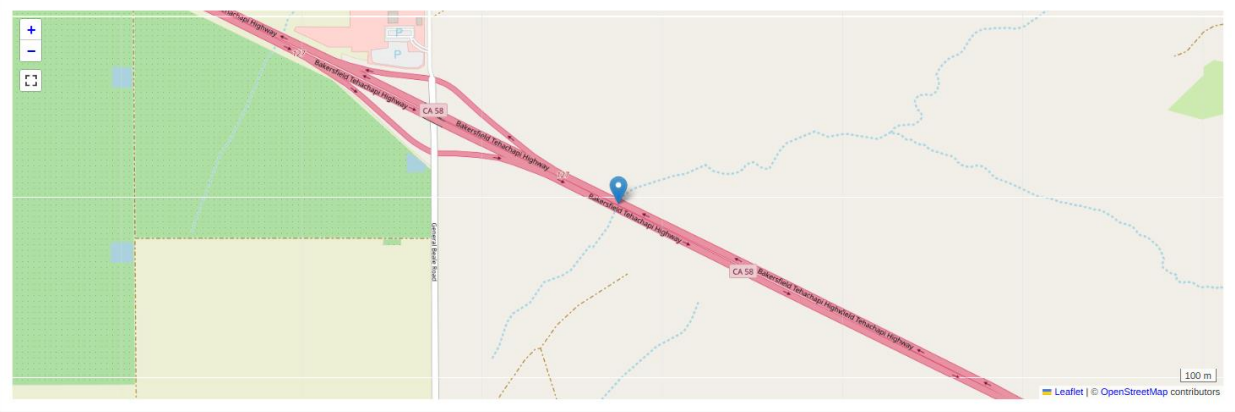
Notes

- The information was derived from using CROSPlan, a tool developed by the Road Ecology Center, UC Davis
- A pin was dropped at the approximate location of a proposed culvert structure
- Culverts were typically 3 m (10') by 3 m (10') and their length corresponding to the width of the right-of-way
- Each report includes information about location, structure attributes, calculated distances to landscape features, likelihood of species' use, and a list of species with suitable habitat within 200 m of the structure
- Reports for SR 58 are listed first, then reports for I-5

SR58: Structure 1

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.290227
Longitude: -118.747124

Structure Dimensions

Length (meters): 60.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 564.0
Distance to Building / Structure (meters): 799.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 3,089.0
Distance to Forest Landcover (meters): 8,361.0
Distance to Shrub/Scrub Landcover (meters): 760.0
Distance to Grassland Landcover (meters): 30.0
Distance to Cultivated Landcover (meters): 532.0
Distance to Wetland Landcover (meters): 4,578.0

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.255
Black-tailed Jackrabbit (Lepus californicus)	1.000
Coyote (Canis latrans)	0.253
Gray Fox (Urocyon cinereoargenteus)	0.479
Mule Deer (Odocoileus hemionus)	0.000
Virginia Opossum (Didelphis virginiana)	0.969

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. Virginia Opossum (*Didelphis virginiana*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
7. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
8. Big Brown Bat (*Eptesicus fuscus*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)
13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. House Mouse (*Mus musculus*)
18. Long-tailed Weasel (*Mustela frenata*)
19. Californian Myotis (*Myotis californicus*)
20. Western Small-footed Myotis (*Myotis ciliolabrum*)

21. Long-eared Myotis (*Myotis evotis*)
22. Fringed Myotis (*Myotis thysanodes*)
23. Long-legged Myotis (*Myotis volans*)
24. Yuma Myotis (*Myotis yumanensis*)
25. Desert Woodrat (*Neotoma lepida*)
26. Mule Deer (*Odocoileus hemionus*)
27. Southern Grasshopper Mouse (*Onychomys torridus*)
28. California Ground Squirrel (*Otospermophilus beecheyi*)
29. San Joaquin Pocket Mouse (*Perognathus inornatus*)
30. California Deermouse (*Peromyscus californicus*)
31. North American Deermouse (*Peromyscus maniculatus*)
32. Pinon Deermouse (*Peromyscus truei*)
33. Western Pipistrelle (*Pipistrellus hesperus*)
34. Raccoon (*Procyon lotor*)
35. Brown Rat (*Rattus norvegicus*)
36. Roof Rat (*Rattus rattus*)
37. Western Harvest Mouse (*Reithrodontomys megalotis*)
38. Western Gray Squirrel (*Sciurus griseus*)
39. Ornate Shrew (*Sorex ornatus*)
40. American Water Shrew (*Sorex palustris*)
41. Western Spotted Skunk (*Spilogale gracilis*)
42. Wild Boar (*Sus scrofa*)
43. Desert Cottontail (*Sylvilagus audubonii*)
44. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
45. Merriam's Chipmunk (*Tamias merriami*)
46. Lodgepole Chipmunk (*Tamias speciosus*)
47. American Badger (*Taxidea taxus*)
48. Botta's Pocket Gopher (*Thomomys bottae*)
49. Gray Fox (*Urocyon cinereoargenteus*)
50. American Black Bear (*Ursus americanus*)
51. Kit Fox (*Vulpes macrotis*)
52. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

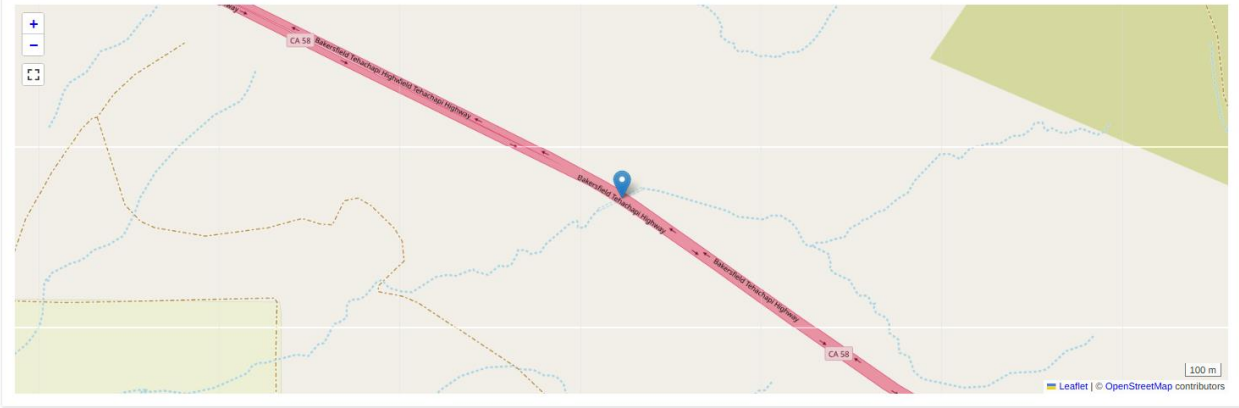
Reptiles

1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Spiny Softshell (*Apalone spinifera*)
4. Glossy Snake (*Arizona elegans*)
5. Tiger Whiptail (*Aspidoscelis tigris*)
6. Northern Rubber Boa (*Charina bottae*)
7. Snapping Turtle (*Chelydra serpentina*)
8. Western Shovel-nosed Snake (*Chionactis occipitalis*)
9. Western Banded Gecko (*Coleonyx variegatus*)
10. North American Racer (*Coluber constrictor*)
11. Coachwhip (*Coluber flagellum*)
12. Striped Racer (*Coluber lateralis*)
13. Speckled Rattlesnake (*Crotalus mitchellii*)
14. Western Rattlesnake (*Crotalus oreganus*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Blunt-nosed Leopard Lizard (*Gambelia sila*)
18. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
19. Common Kingsnake (*Lampropeltis getula*)
20. Rosy Boa (*Lichanura trivirgata*)
21. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
22. Gophersnake (*Pituophis catenifer*)
23. Gilbert's Skink (*Plestiodon gilberti*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Common Gartersnake (*Thamnophis sirtalis*)
32. Pond Slider (*Trachemys scripta*)
33. Western Lyresnake (*Trimorphodon biscutatus*)
34. Common Side-blotched Lizard (*Uta stansburiana*)
35. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 2

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.284703
Longitude: -118.733553

Structure Dimensions

Length (meters): 60.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 1,804.0
Distance to Building / Structure (meters): 1,889.0
Distance to Urban Landcover (meters): 30.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 3,887.0
Distance to Forest Landcover (meters): 7,070.0
Distance to Shrub/Scrub Landcover (meters): 272.0
Distance to Grassland Landcover (meters): 30.0
Distance to Cultivated Landcover (meters): 1,179.0
Distance to Wetland Landcover (meters): 3,978.0

Additional Features

Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.016
Black-tailed Jackrabbit (Lepus californicus)	1.000
Coyote (Canis latrans)	0.012
Gray Fox (Urocyon cinereoargenteus)	0.808
Mule Deer (Odocoileus hemionus)	0.000
Virginia Opossum (Didelphis virginiana)	0.144

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. Virginia Opossum (*Didelphis virginiana*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Heermann's Kangaroo Rat (*Dipodomys heermanni*)

7. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
8. Big Brown Bat (*Eptesicus fuscus*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)
13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. House Mouse (*Mus musculus*)
18. Long-tailed Weasel (*Mustela frenata*)
19. Californian Myotis (*Myotis californicus*)
20. Western Small-footed Myotis (*Myotis ciliolabrum*)
21. Long-eared Myotis (*Myotis evotis*)
22. Fringed Myotis (*Myotis thysanodes*)
23. Long-legged Myotis (*Myotis volans*)
24. Yuma Myotis (*Myotis yumanensis*)
25. Desert Woodrat (*Neotoma lepida*)
26. Mule Deer (*Odocoileus hemionus*)
27. Southern Grasshopper Mouse (*Onychomys torridus*)
28. California Ground Squirrel (*Otospermophilus beecheyi*)
29. San Joaquin Pocket Mouse (*Perognathus inornatus*)
30. California Deermouse (*Peromyscus californicus*)
31. North American Deermouse (*Peromyscus maniculatus*)
32. Pinon Deermouse (*Peromyscus truei*)
33. Western Pipistrelle (*Pipistrellus hesperus*)
34. Raccoon (*Procyon lotor*)
35. Brown Rat (*Rattus norvegicus*)
36. Roof Rat (*Rattus rattus*)
37. Western Harvest Mouse (*Reithrodontomys megalotis*)
38. Western Gray Squirrel (*Sciurus griseus*)
39. Ornate Shrew (*Sorex ornatus*)
40. American Water Shrew (*Sorex palustris*)
41. Western Spotted Skunk (*Spilogale gracilis*)
42. Wild Boar (*Sus scrofa*)
43. Desert Cottontail (*Sylvilagus audubonii*)
44. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
45. Merriam's Chipmunk (*Tamias merriami*)
46. Lodgepole Chipmunk (*Tamias speciosus*)
47. American Badger (*Taxidea taxus*)
48. Botta's Pocket Gopher (*Thomomys bottae*)
49. Gray Fox (*Urocyon cinereoargenteus*)
50. American Black Bear (*Ursus americanus*)
51. Kit Fox (*Vulpes macrotis*)
52. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

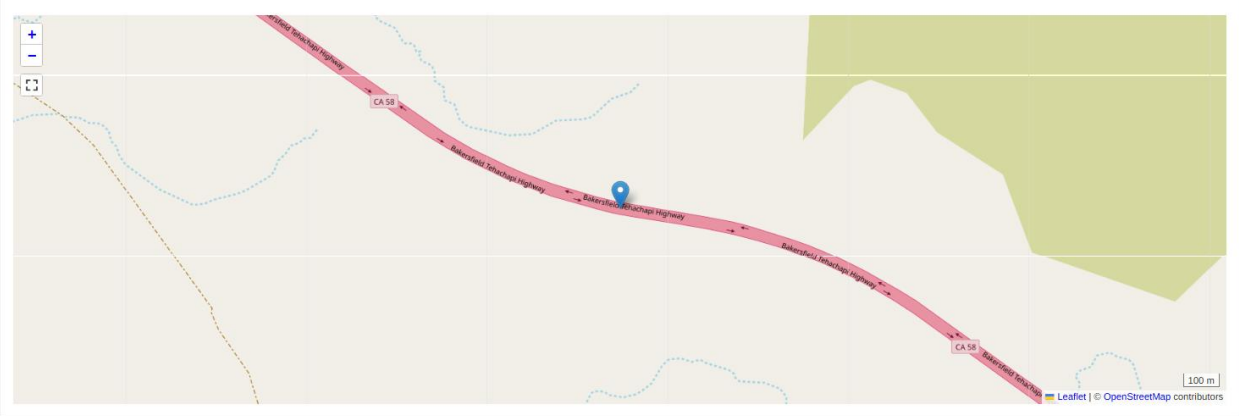
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Spiny Softshell (*Apalone spinifera*)
4. Glossy Snake (*Arizona elegans*)
5. Tiger Whiptail (*Aspidoscelis tigris*)
6. Northern Rubber Boa (*Charina bottae*)
7. Snapping Turtle (*Chelydra serpentina*)
8. Western Shovel-nosed Snake (*Chionactis occipitalis*)
9. Western Banded Gecko (*Coleonyx variegatus*)
10. North American Racer (*Coluber constrictor*)
11. Coachwhip (*Coluber flagellum*)
12. Striped Racer (*Coluber lateralis*)
13. Speckled Rattlesnake (*Crotalus mitchellii*)
14. Western Rattlesnake (*Crotalus oreganus*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Blunt-nosed Leopard Lizard (*Gambelia sila*)
18. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
19. Common Kingsnake (*Lampropeltis getula*)
20. Rosy Boa (*Lichanura trivirgata*)
21. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
22. Gophersnake (*Pituophis catenifer*)
23. Gilbert's Skink (*Plestiodon gilberti*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
30. Sierra Gartersnake (*Thamnophis couchii*)

31. Common Gartersnake (*Thamnophis sirtalis*)
32. Pond Slider (*Trachemys scripta*)
33. Western Lyresnake (*Trimorphodon biscutatus*)
34. Common Side-blotched Lizard (*Uta stansburiana*)
35. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 3

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.277363
Longitude: -118.714819

Structure Dimensions

Length (meters): 40.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 3,270.0
Distance to Building / Structure (meters): 3,525.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 4,045.0
Distance to Forest Landcover (meters): 5,407.0
Distance to Shrub/Scrub Landcover (meters): 1,812.0
Distance to Grassland Landcover (meters): 30.0
Distance to Cultivated Landcover (meters): 2,658.0
Distance to Wetland Landcover (meters): 3,692.0

Additional Features

Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.016
Black-tailed Jackrabbit (Lepus californicus)	0.000
Coyote (Canis latrans)	0.500
Gray Fox (Urocyon cinereoargenteus)	0.994
Mule Deer (Odocoileus hemionus)	0.035
Virginia Opossum (Didelphis virginiana)	0.039

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. Virginia Opossum (*Didelphis virginiana*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Heermann's Kangaroo Rat (*Dipodomys heermanni*)

7. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
8. Big Brown Bat (*Eptesicus fuscus*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)
13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. House Mouse (*Mus musculus*)
18. Long-tailed Weasel (*Mustela frenata*)
19. Californian Myotis (*Myotis californicus*)
20. Western Small-footed Myotis (*Myotis ciliolabrum*)
21. Long-eared Myotis (*Myotis evotis*)
22. Fringed Myotis (*Myotis thysanodes*)
23. Long-legged Myotis (*Myotis volans*)
24. Yuma Myotis (*Myotis yumanensis*)
25. Desert Woodrat (*Neotoma lepida*)
26. Mule Deer (*Odocoileus hemionus*)
27. Southern Grasshopper Mouse (*Onychomys torridus*)
28. California Ground Squirrel (*Otospermophilus beecheyi*)
29. San Joaquin Pocket Mouse (*Perognathus inornatus*)
30. California Deermouse (*Peromyscus californicus*)
31. North American Deermouse (*Peromyscus maniculatus*)
32. Pinon Deermouse (*Peromyscus truei*)
33. Western Pipistrelle (*Pipistrellus hesperus*)
34. Raccoon (*Procyon lotor*)
35. Brown Rat (*Rattus norvegicus*)
36. Roof Rat (*Rattus rattus*)
37. Western Harvest Mouse (*Reithrodontomys megalotis*)
38. Western Gray Squirrel (*Sciurus griseus*)
39. Ornate Shrew (*Sorex ornatus*)
40. American Water Shrew (*Sorex palustris*)
41. Western Spotted Skunk (*Spilogale gracilis*)
42. Wild Boar (*Sus scrofa*)
43. Desert Cottontail (*Sylvilagus audubonii*)
44. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
45. Merriam's Chipmunk (*Tamias merriami*)
46. Lodgepole Chipmunk (*Tamias speciosus*)
47. American Badger (*Taxidea taxus*)
48. Botta's Pocket Gopher (*Thomomys bottae*)
49. Gray Fox (*Urocyon cinereoargenteus*)
50. American Black Bear (*Ursus americanus*)

51. Kit Fox (*Vulpes macrotis*)
52. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

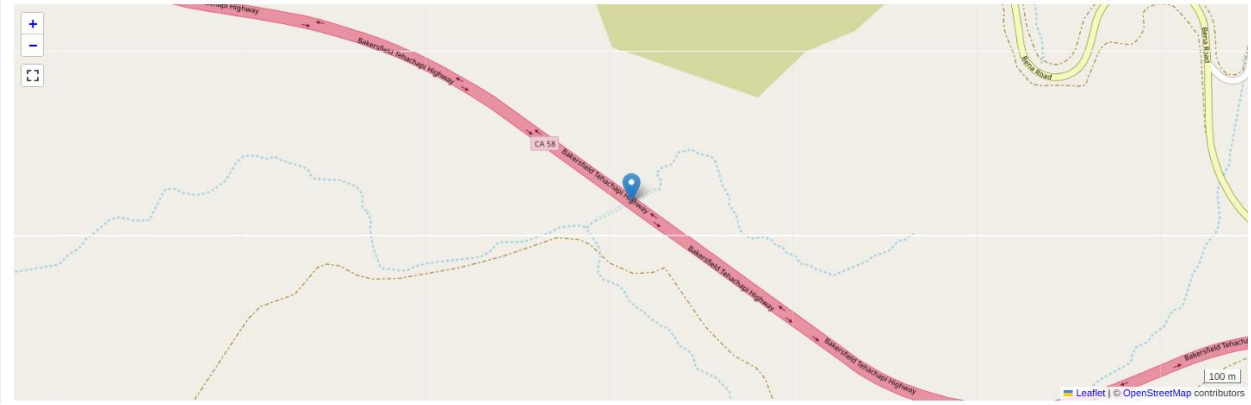
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Spiny Softshell (*Apalone spinifera*)
4. Glossy Snake (*Arizona elegans*)
5. Tiger Whiptail (*Aspidoscelis tigris*)
6. Northern Rubber Boa (*Charina bottae*)
7. Snapping Turtle (*Chelydra serpentina*)
8. Western Shovel-nosed Snake (*Chionactis occipitalis*)
9. Western Banded Gecko (*Coleonyx variegatus*)
10. North American Racer (*Coluber constrictor*)
11. Coachwhip (*Coluber flagellum*)
12. Striped Racer (*Coluber lateralis*)
13. Speckled Rattlesnake (*Crotalus mitchellii*)
14. Western Rattlesnake (*Crotalus oreganus*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Blunt-nosed Leopard Lizard (*Gambelia sila*)
18. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
19. Common Kingsnake (*Lampropeltis getula*)
20. Rosy Boa (*Lichanura trivirgata*)
21. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
22. Gophersnake (*Pituophis catenifer*)
23. Gilbert's Skink (*Plestiodon gilberti*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)

28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Common Gartersnake (*Thamnophis sirtalis*)
32. Pond Slider (*Trachemys scripta*)
33. Western Lyresnake (*Trimorphodon biscutatus*)
34. Common Side-blotched Lizard (*Uta stansburiana*)
35. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 4

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.273367
Longitude: -118.706613

Structure Dimensions

Length (meters): 80.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 2,529.0
Distance to Building / Structure (meters): 3,648.0
Distance to Urban Landcover (meters): 30.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 4,036.0
Distance to Forest Landcover (meters): 4,664.0
Distance to Shrub/Scrub Landcover (meters): 1,026.0
Distance to Grassland Landcover (meters): 30.0
Distance to Cultivated Landcover (meters): 3,378.0
Distance to Wetland Landcover (meters): 3,877.0

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.001
Black-tailed Jackrabbit (Lepus californicus)	0.000
Coyote (Canis latrans)	0.069
Gray Fox (Urocyon cinereoargenteus)	0.977
Mule Deer (Odocoileus hemionus)	0.030
Virginia Opossum (Didelphis virginiana)	0.021

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. Virginia Opossum (*Didelphis virginiana*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
7. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
8. Big Brown Bat (*Eptesicus fuscus*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)

13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. House Mouse (*Mus musculus*)
18. Long-tailed Weasel (*Mustela frenata*)
19. Californian Myotis (*Myotis californicus*)
20. Western Small-footed Myotis (*Myotis ciliolabrum*)
21. Long-eared Myotis (*Myotis evotis*)
22. Fringed Myotis (*Myotis thysanodes*)
23. Long-legged Myotis (*Myotis volans*)
24. Yuma Myotis (*Myotis yumanensis*)
25. Desert Woodrat (*Neotoma lepida*)
26. Mule Deer (*Odocoileus hemionus*)
27. Southern Grasshopper Mouse (*Onychomys torridus*)
28. California Ground Squirrel (*Otospermophilus beecheyi*)
29. San Joaquin Pocket Mouse (*Perognathus inornatus*)
30. California Deermouse (*Peromyscus californicus*)
31. North American Deermouse (*Peromyscus maniculatus*)
32. Pinon Deermouse (*Peromyscus truei*)
33. Western Pipistrelle (*Pipistrellus hesperus*)
34. Raccoon (*Procyon lotor*)
35. Brown Rat (*Rattus norvegicus*)
36. Roof Rat (*Rattus rattus*)
37. Western Harvest Mouse (*Reithrodontomys megalotis*)
38. Western Gray Squirrel (*Sciurus griseus*)
39. Ornate Shrew (*Sorex ornatus*)
40. American Water Shrew (*Sorex palustris*)
41. Western Spotted Skunk (*Spilogale gracilis*)
42. Wild Boar (*Sus scrofa*)
43. Desert Cottontail (*Sylvilagus audubonii*)
44. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
45. Merriam's Chipmunk (*Tamias merriami*)
46. Lodgepole Chipmunk (*Tamias speciosus*)
47. American Badger (*Taxidea taxus*)
48. Botta's Pocket Gopher (*Thomomys bottae*)
49. Gray Fox (*Urocyon cinereoargenteus*)
50. American Black Bear (*Ursus americanus*)
51. Kit Fox (*Vulpes macrotis*)
52. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)

3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

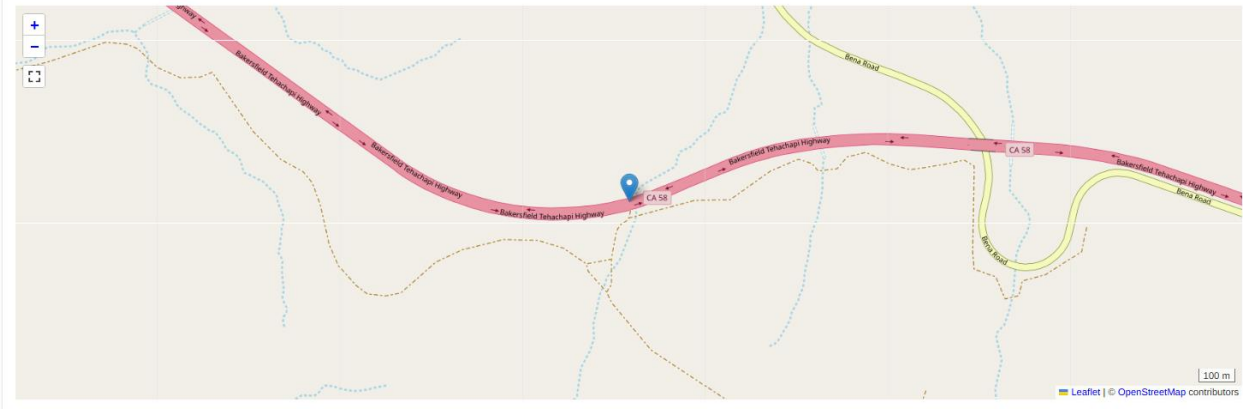
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Spiny Softshell (*Apalone spinifera*)
4. Glossy Snake (*Arizona elegans*)
5. Tiger Whiptail (*Aspidoscelis tigris*)
6. Northern Rubber Boa (*Charina bottae*)
7. Snapping Turtle (*Chelydra serpentina*)
8. Western Shovel-nosed Snake (*Chionactis occipitalis*)
9. Western Banded Gecko (*Coleonyx variegatus*)
10. North American Racer (*Coluber constrictor*)
11. Coachwhip (*Coluber flagellum*)
12. Striped Racer (*Coluber lateralis*)
13. Speckled Rattlesnake (*Crotalus mitchellii*)
14. Western Rattlesnake (*Crotalus oreganus*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Blunt-nosed Leopard Lizard (*Gambelia sila*)
18. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
19. Common Kingsnake (*Lampropeltis getula*)
20. Rosy Boa (*Lichanura trivirgata*)
21. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
22. Gophersnake (*Pituophis catenifer*)
23. Gilbert's Skink (*Plestiodon gilberti*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Common Gartersnake (*Thamnophis sirtalis*)
32. Pond Slider (*Trachemys scripta*)
33. Western Lyresnake (*Trimorphodon biscutatus*)

34. Common Side-blotched Lizard (*Uta stansburiana*)
35. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 5

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.268585
Longitude: -118.69284

Structure Dimensions

Length (meters): 35.0 m
Width (meters): 4.0 m
Height (meters): 4.0 m

Structure Material and Ground Cover

Material of Structure: Concrete

Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 1,235.0
Distance to Building / Structure (meters): 2,737.0
Distance to Urban Landcover (meters): 30.0
Distance to Urban + Open Landcover (meters): 30.0
Distance to Barren Landcover (meters): 2,791.0
Distance to Forest Landcover (meters): 3,680.0
Distance to Shrub/Scrub Landcover (meters): 518.0
Distance to Grassland Landcover (meters): 0.0
Distance to Cultivated Landcover (meters): 4,480.0
Distance to Wetland Landcover (meters): 3,669.0

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.002
Black-tailed Jackrabbit (Lepus californicus)	0.000
Coyote (Canis latrans)	0.764
Gray Fox (Urocyon cinereoargenteus)	0.796
Mule Deer (Odocoileus hemionus)	0.978
Virginia Opossum (Didelphis virginiana)	0.722

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. American Beaver (*Castor canadensis*)
5. Virginia Opossum (*Didelphis virginiana*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
8. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
9. Big Brown Bat (*Eptesicus fuscus*)
10. Spotted Bat (*Euderma maculatum*)
11. Greater Bonneted Bat (*Eumops perotis*)

12. Western Red Bat (*Lasiurus blossevillii*)
13. Hoary Bat (*Lasiurus cinereus*)
14. Black-tailed Jackrabbit (*Lepus californicus*)
15. Bobcat (*Lynx rufus*)
16. Yellow-bellied Marmot (*Marmota flaviventris*)
17. Striped Skunk (*Mephitis mephitis*)
18. California Vole (*Microtus californicus*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Long-legged Myotis (*Myotis volans*)
26. Yuma Myotis (*Myotis yumanensis*)
27. Desert Woodrat (*Neotoma lepida*)
28. Mule Deer (*Odocoileus hemionus*)
29. Southern Grasshopper Mouse (*Onychomys torridus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. San Joaquin Pocket Mouse (*Perognathus inornatus*)
32. California Deermouse (*Peromyscus californicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)
35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Brown Rat (*Rattus norvegicus*)
38. Roof Rat (*Rattus rattus*)
39. Western Harvest Mouse (*Reithrodontomys megalotis*)
40. Western Gray Squirrel (*Sciurus griseus*)
41. Ornate Shrew (*Sorex ornatus*)
42. American Water Shrew (*Sorex palustris*)
43. Western Spotted Skunk (*Spilogale gracilis*)
44. Wild Boar (*Sus scrofa*)
45. Desert Cottontail (*Sylvilagus audubonii*)
46. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
47. Merriam's Chipmunk (*Tamias merriami*)
48. American Badger (*Taxidea taxus*)
49. Botta's Pocket Gopher (*Thomomys bottae*)
50. Gray Fox (*Urocyon cinereoargenteus*)
51. American Black Bear (*Ursus americanus*)
52. Kit Fox (*Vulpes macrotis*)
53. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

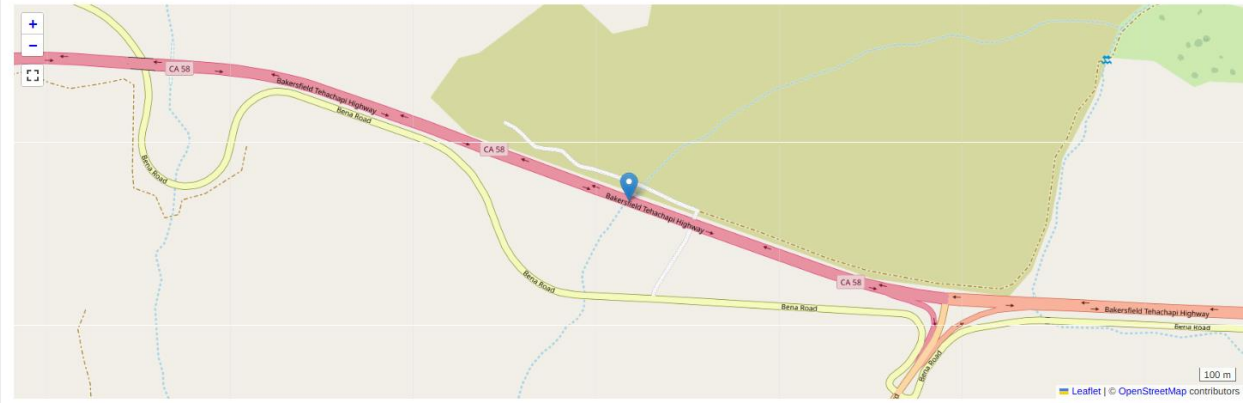
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Ring-necked Snake (*Diadophis punctatus*)
15. Southern Alligator Lizard (*Elgaria multicarinata*)
16. Blunt-nosed Leopard Lizard (*Gambelia sila*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Rosy Boa (*Lichanura trivirgata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Gophersnake (*Pituophis catenifer*)
22. Gilbert's Skink (*Plestiodon gilberti*)
23. Long-nosed Snake (*Rhinocheilus lecontei*)
24. Western Patch-nosed Snake (*Salvadora hexalepis*)
25. Common Sagebrush Lizard (*Sceloporus graciosus*)
26. Western Fence Lizard (*Sceloporus occidentalis*)
27. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
28. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
29. Sierra Gartersnake (*Thamnophis couchii*)
30. Common Gartersnake (*Thamnophis sirtalis*)

31. Pond Slider (*Trachemys scripta*)
32. Western Lyresnake (*Trimorphodon biscutatus*)
33. Common Side-blotched Lizard (*Uta stansburiana*)
34. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 6

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.266611
Longitude: -118.667908

Structure Dimensions

Length (meters): 60.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 1,595.0
Distance to Building / Structure (meters): 1,189.0
Distance to Urban Landcover (meters): 30.0
Distance to Urban + Open Landcover (meters): 30.0
Distance to Barren Landcover (meters): 1,999.0
Distance to Forest Landcover (meters): 1,922.0
Distance to Shrub/Scrub Landcover (meters): 726.0
Distance to Grassland Landcover (meters): 0.0
Distance to Cultivated Landcover (meters): 3,115.0
Distance to Wetland Landcover (meters): 3,072.0

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.008
Black-tailed Jackrabbit (Lepus californicus)	0.000
Coyote (Canis latrans)	0.513
Gray Fox (Urocyon cinereoargenteus)	0.276
Mule Deer (Odocoileus hemionus)	0.038
Virginia Opossum (Didelphis virginiana)	0.137

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. American Beaver (*Castor canadensis*)
5. Virginia Opossum (*Didelphis virginiana*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
8. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
9. Big Brown Bat (*Eptesicus fuscus*)
10. Spotted Bat (*Euderma maculatum*)
11. Greater Bonneted Bat (*Eumops perotis*)

12. Western Red Bat (*Lasiurus blossevillii*)
13. Hoary Bat (*Lasiurus cinereus*)
14. Black-tailed Jackrabbit (*Lepus californicus*)
15. Bobcat (*Lynx rufus*)
16. Yellow-bellied Marmot (*Marmota flaviventris*)
17. Striped Skunk (*Mephitis mephitis*)
18. California Vole (*Microtus californicus*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Long-legged Myotis (*Myotis volans*)
26. Yuma Myotis (*Myotis yumanensis*)
27. Desert Woodrat (*Neotoma lepida*)
28. Mule Deer (*Odocoileus hemionus*)
29. Southern Grasshopper Mouse (*Onychomys torridus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. San Joaquin Pocket Mouse (*Perognathus inornatus*)
32. California Deermouse (*Peromyscus californicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)
35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Brown Rat (*Rattus norvegicus*)
38. Roof Rat (*Rattus rattus*)
39. Western Harvest Mouse (*Reithrodontomys megalotis*)
40. Western Gray Squirrel (*Sciurus griseus*)
41. Ornate Shrew (*Sorex ornatus*)
42. American Water Shrew (*Sorex palustris*)
43. Western Spotted Skunk (*Spilogale gracilis*)
44. Wild Boar (*Sus scrofa*)
45. Desert Cottontail (*Sylvilagus audubonii*)
46. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
47. Merriam's Chipmunk (*Tamias merriami*)
48. American Badger (*Taxidea taxus*)
49. Botta's Pocket Gopher (*Thomomys bottae*)
50. Gray Fox (*Urocyon cinereoargenteus*)
51. American Black Bear (*Ursus americanus*)
52. Kit Fox (*Vulpes macrotis*)
53. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

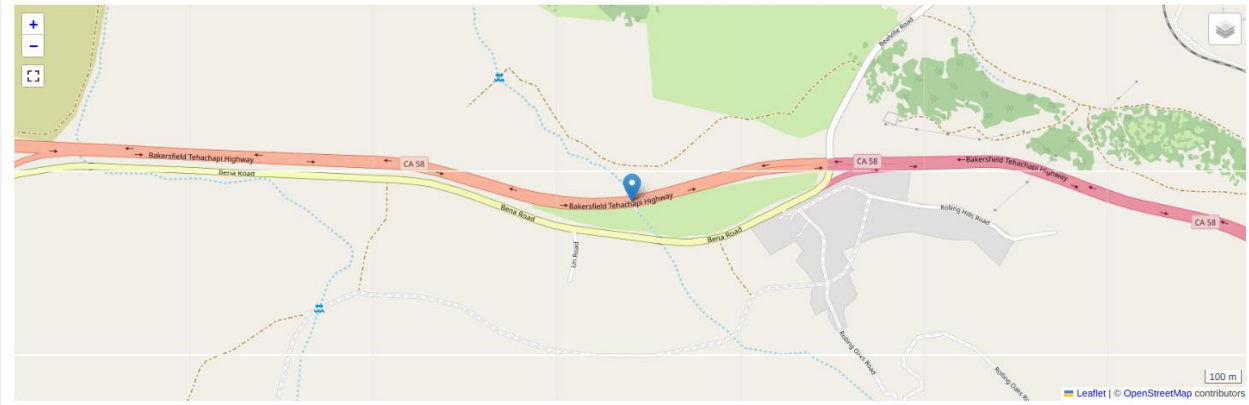
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Ring-necked Snake (*Diadophis punctatus*)
15. Southern Alligator Lizard (*Elgaria multicarinata*)
16. Blunt-nosed Leopard Lizard (*Gambelia sila*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Rosy Boa (*Lichanura trivirgata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Gophersnake (*Pituophis catenifer*)
22. Gilbert's Skink (*Plestiodon gilberti*)
23. Long-nosed Snake (*Rhinocheilus lecontei*)
24. Western Patch-nosed Snake (*Salvadora hexalepis*)
25. Common Sagebrush Lizard (*Sceloporus graciosus*)
26. Western Fence Lizard (*Sceloporus occidentalis*)
27. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
28. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
29. Sierra Gartersnake (*Thamnophis couchii*)

30. Common Gartersnake (*Thamnophis sirtalis*)
31. Pond Slider (*Trachemys scripta*)
32. Western Lyresnake (*Trimorphodon biscutatus*)
33. Common Side-blotched Lizard (*Uta stansburiana*)
34. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 7

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.262793
Longitude: -118.639117

Structure Dimensions

Length (meters): 80.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 1,684.0
Distance to Building / Structure (meters): 499.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 3,407.0
Distance to Forest Landcover (meters): 451.0
Distance to Shrub/Scrub Landcover (meters): 454.0
Distance to Grassland Landcover (meters): 30.0
Distance to Cultivated Landcover (meters): 2,571.0
Distance to Wetland Landcover (meters): 2,651.0

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.062
Black-tailed Jackrabbit (Lepus californicus)	0.000
Coyote (Canis latrans)	0.323
Gray Fox (Urocyon cinereoargenteus)	0.149
Mule Deer (Odocoileus hemionus)	0.128
Virginia Opossum (Didelphis virginiana)	0.026

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. American Beaver (*Castor canadensis*)
5. Virginia Opossum (*Didelphis virginiana*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
8. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
9. Big Brown Bat (*Eptesicus fuscus*)
10. Spotted Bat (*Euderma maculatum*)
11. Greater Bonneted Bat (*Eumops perotis*)
12. Western Red Bat (*Lasiurus blossevillii*)
13. Hoary Bat (*Lasiurus cinereus*)
14. Black-tailed Jackrabbit (*Lepus californicus*)
15. Bobcat (*Lynx rufus*)
16. Yellow-bellied Marmot (*Marmota flaviventris*)
17. Striped Skunk (*Mephitis mephitis*)

18. California Vole (*Microtus californicus*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Long-legged Myotis (*Myotis volans*)
26. Yuma Myotis (*Myotis yumanensis*)
27. Desert Woodrat (*Neotoma lepida*)
28. Mule Deer (*Odocoileus hemionus*)
29. Southern Grasshopper Mouse (*Onychomys torridus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. San Joaquin Pocket Mouse (*Perognathus inornatus*)
32. California Deermouse (*Peromyscus californicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)
35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Brown Rat (*Rattus norvegicus*)
38. Roof Rat (*Rattus rattus*)
39. Western Harvest Mouse (*Reithrodontomys megalotis*)
40. Western Gray Squirrel (*Sciurus griseus*)
41. Ornate Shrew (*Sorex ornatus*)
42. American Water Shrew (*Sorex palustris*)
43. Western Spotted Skunk (*Spilogale gracilis*)
44. Wild Boar (*Sus scrofa*)
45. Desert Cottontail (*Sylvilagus audubonii*)
46. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
47. Merriam's Chipmunk (*Tamias merriami*)
48. American Badger (*Taxidea taxus*)
49. Botta's Pocket Gopher (*Thomomys bottae*)
50. Gray Fox (*Urocyon cinereoargenteus*)
51. American Black Bear (*Ursus americanus*)
52. Kit Fox (*Vulpes macrotis*)
53. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)

6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

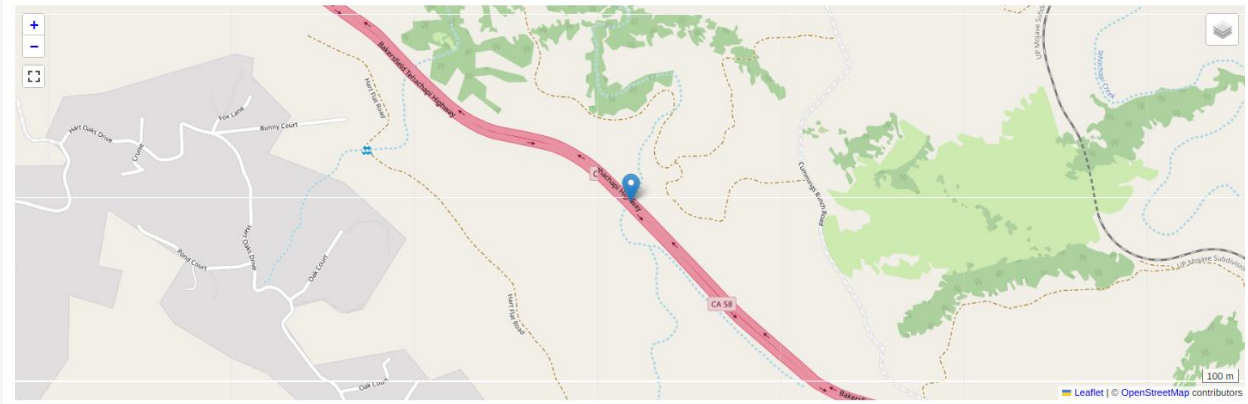
Reptiles

1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Ring-necked Snake (*Diadophis punctatus*)
15. Southern Alligator Lizard (*Elgaria multicarinata*)
16. Blunt-nosed Leopard Lizard (*Gambelia sila*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Rosy Boa (*Lichanura trivirgata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Gophersnake (*Pituophis catenifer*)
22. Gilbert's Skink (*Plestiodon gilberti*)
23. Long-nosed Snake (*Rhinocheilus lecontei*)
24. Western Patch-nosed Snake (*Salvadora hexalepis*)
25. Common Sagebrush Lizard (*Sceloporus graciosus*)
26. Western Fence Lizard (*Sceloporus occidentalis*)
27. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
28. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
29. Sierra Gartersnake (*Thamnophis couchii*)
30. Common Gartersnake (*Thamnophis sirtalis*)
31. Pond Slider (*Trachemys scripta*)
32. Western Lyresnake (*Trimorphodon biscutatus*)
33. Common Side-blotched Lizard (*Uta stansburiana*)
34. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 8

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.254465
Longitude: -118.607421

Structure Dimensions

Length (meters): 60.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 0.0
Distance to Building / Structure (meters): 684.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 5,940.0
Distance to Forest Landcover (meters): 60.0
Distance to Shrub/Scrub Landcover (meters): 42.0
Distance to Grassland Landcover (meters): 120.0
Distance to Cultivated Landcover (meters): 4,671.0
Distance to Wetland Landcover (meters): 2,805.0

Additional Features

Waterway: Seasonal
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.225
Black-tailed Jackrabbit (Lepus californicus)	0.000
Coyote (Canis latrans)	0.046
Desert Cottontail (Sylvilagus audubonii)	0.620
Gray Fox (Urocyon cinereoargenteus)	0.000
Kit Fox (Vulpes macrotis)	0.285
Mule Deer (Odocoileus hemionus)	0.000
Virginia Opossum (Didelphis virginiana)	0.841

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
7. Big Brown Bat (*Eptesicus fuscus*)

8. North American Porcupine (*Erethizon dorsata*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)
13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. House Mouse (*Mus musculus*)
18. Long-tailed Weasel (*Mustela frenata*)
19. Californian Myotis (*Myotis californicus*)
20. Western Small-footed Myotis (*Myotis ciliolabrum*)
21. Long-eared Myotis (*Myotis evotis*)
22. Fringed Myotis (*Myotis thysanodes*)
23. Long-legged Myotis (*Myotis volans*)
24. Yuma Myotis (*Myotis yumanensis*)
25. Desert Woodrat (*Neotoma lepida*)
26. Big-eared Woodrat (*Neotoma macrotis*)
27. Mule Deer (*Odocoileus hemionus*)
28. Southern Grasshopper Mouse (*Onychomys torridus*)
29. California Ground Squirrel (*Otospermophilus beecheyi*)
30. San Joaquin Pocket Mouse (*Perognathus inornatus*)
31. Brush Deermouse (*Peromyscus boylii*)
32. California Deermouse (*Peromyscus californicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)
35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Cougar (*Puma concolor*)
38. Brown Rat (*Rattus norvegicus*)
39. Roof Rat (*Rattus rattus*)
40. Western Harvest Mouse (*Reithrodontomys megalotis*)
41. Broad-footed Mole (*Scapanus latimanus*)
42. Western Gray Squirrel (*Sciurus griseus*)
43. Ornate Shrew (*Sorex ornatus*)
44. American Water Shrew (*Sorex palustris*)
45. Western Spotted Skunk (*Spilogale gracilis*)
46. Wild Boar (*Sus scrofa*)
47. Desert Cottontail (*Sylvilagus audubonii*)
48. Brush Rabbit (*Sylvilagus bachmani*)
49. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
50. Merriam's Chipmunk (*Tamias merriami*)
51. Lodgepole Chipmunk (*Tamias speciosus*)

52. American Badger (*Taxidea taxus*)
53. Botta's Pocket Gopher (*Thomomys bottae*)
54. Gray Fox (*Urocyon cinereoargenteus*)
55. American Black Bear (*Ursus americanus*)
56. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Toad (*Anaxyrus boreas*)

Reptiles

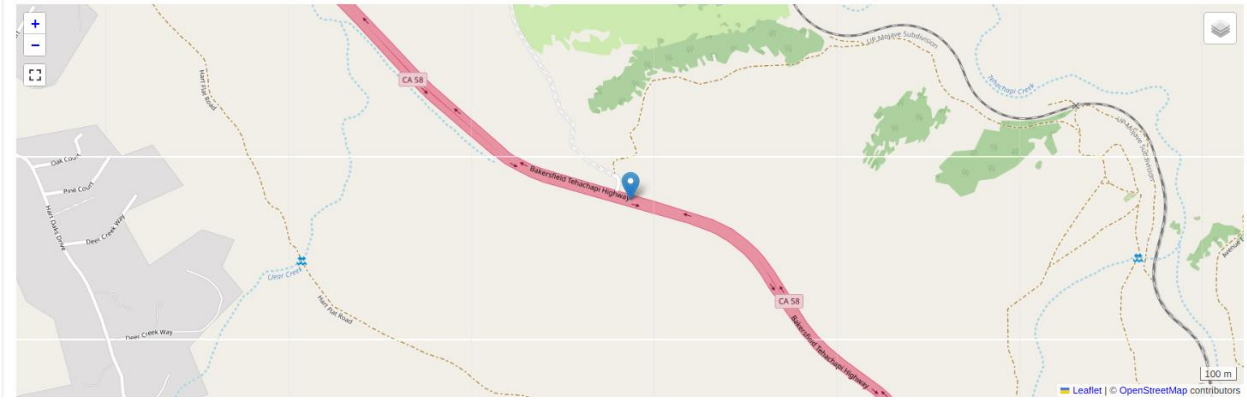
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Blunt-nosed Leopard Lizard (*Gambelia sila*)
18. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
19. Common Kingsnake (*Lampropeltis getula*)
20. Rosy Boa (*Lichanura trivirgata*)
21. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
22. Gophersnake (*Pituophis catenifer*)
23. Gilbert's Skink (*Plestiodon gilberti*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)

25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Common Gartersnake (*Thamnophis sirtalis*)
32. Pond Slider (*Trachemys scripta*)
33. Western Lyresnake (*Trimorphodon biscutatus*)
34. Common Side-blotched Lizard (*Uta stansburiana*)
35. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 8

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.249015
Longitude: -118.598147

Structure Dimensions

Length (meters): 60.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 757.0
Distance to Building / Structure (meters): 351.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 6,774.0
Distance to Forest Landcover (meters): 108.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 95.0
Distance to Cultivated Landcover (meters): 5,716.0
Distance to Wetland Landcover (meters): 1,758.0

Additional Features

Waterway: Seasonal
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.355
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.007
Coyote (Canis latrans)	0.587
Gray Fox (Urocyon cinereoargenteus)	0.199
Mule Deer (Odocoileus hemionus)	0.753

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
7. Big Brown Bat (*Eptesicus fuscus*)
8. North American Porcupine (*Erethizon dorsata*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)
13. Black-tailed Jackrabbit (*Lepus californicus*)

14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. House Mouse (*Mus musculus*)
18. Long-tailed Weasel (*Mustela frenata*)
19. Californian Myotis (*Myotis californicus*)
20. Western Small-footed Myotis (*Myotis ciliolabrum*)
21. Long-eared Myotis (*Myotis evotis*)
22. Fringed Myotis (*Myotis thysanodes*)
23. Long-legged Myotis (*Myotis volans*)
24. Yuma Myotis (*Myotis yumanensis*)
25. Desert Woodrat (*Neotoma lepida*)
26. Big-eared Woodrat (*Neotoma macrotis*)
27. Mule Deer (*Odocoileus hemionus*)
28. Southern Grasshopper Mouse (*Onychomys torridus*)
29. California Ground Squirrel (*Otospermophilus beecheyi*)
30. San Joaquin Pocket Mouse (*Perognathus inornatus*)
31. Brush Deermouse (*Peromyscus boylii*)
32. California Deermouse (*Peromyscus californicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)
35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Cougar (*Puma concolor*)
38. Brown Rat (*Rattus norvegicus*)
39. Roof Rat (*Rattus rattus*)
40. Western Harvest Mouse (*Reithrodontomys megalotis*)
41. Broad-footed Mole (*Scapanus latimanus*)
42. Western Gray Squirrel (*Sciurus griseus*)
43. Ornate Shrew (*Sorex ornatus*)
44. American Water Shrew (*Sorex palustris*)
45. Western Spotted Skunk (*Spilogale gracilis*)
46. Wild Boar (*Sus scrofa*)
47. Desert Cottontail (*Sylvilagus audubonii*)
48. Brush Rabbit (*Sylvilagus bachmani*)
49. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
50. Merriam's Chipmunk (*Tamias merriami*)
51. Lodgepole Chipmunk (*Tamias speciosus*)
52. American Badger (*Taxidea taxus*)
53. Botta's Pocket Gopher (*Thomomys bottae*)
54. Gray Fox (*Urocyon cinereoargenteus*)
55. American Black Bear (*Ursus americanus*)
56. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Toad (*Anaxyrus boreas*)

Reptiles

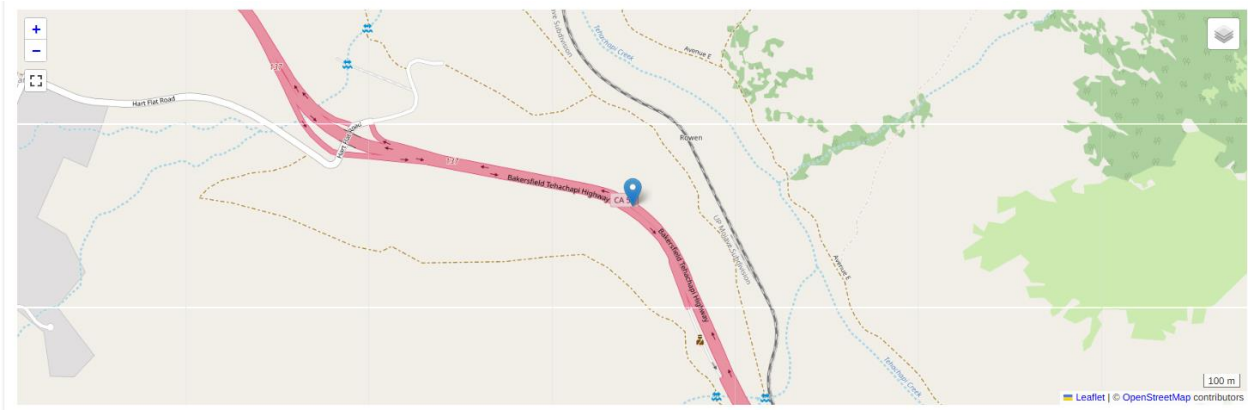
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Blunt-nosed Leopard Lizard (*Gambelia sila*)
18. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
19. Common Kingsnake (*Lampropeltis getula*)
20. Rosy Boa (*Lichanura trivirgata*)
21. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
22. Gophersnake (*Pituophis catenifer*)
23. Gilbert's Skink (*Plestiodon gilberti*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Common Gartersnake (*Thamnophis sirtalis*)

32. Pond Slider (*Trachemys scripta*)
33. Western Lyresnake (*Trimorphodon biscutatus*)
34. Common Side-blotched Lizard (*Uta stansburiana*)
35. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 10

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.239093
Longitude: -118.578529

Structure Dimensions

Length (meters): 60.0 m
Width (meters)3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 335.0
Distance to Building / Structure (meters): 618.0
Distance to Urban Landcover (meters): 30.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 8,596.0
Distance to Forest Landcover (meters): 67.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 60.0
Distance to Cultivated Landcover (meters): 7,730.0
Distance to Wetland Landcover (meters): 297.0

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.628
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.204
Coyote (Canis latrans)	0.256
Gray Fox (Urocyon cinereoargenteus)	0.322
Mule Deer (Odocoileus hemionus)	0.995

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
7. Big Brown Bat (*Eptesicus fuscus*)
8. North American Porcupine (*Erethizon dorsata*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)
13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. House Mouse (*Mus musculus*)
18. Long-tailed Weasel (*Mustela frenata*)
19. Californian Myotis (*Myotis californicus*)

20. Western Small-footed Myotis (*Myotis ciliolabrum*)
21. Long-eared Myotis (*Myotis evotis*)
22. Fringed Myotis (*Myotis thysanodes*)
23. Long-legged Myotis (*Myotis volans*)
24. Yuma Myotis (*Myotis yumanensis*)
25. Desert Woodrat (*Neotoma lepida*)
26. Big-eared Woodrat (*Neotoma macrotis*)
27. Mule Deer (*Odocoileus hemionus*)
28. Southern Grasshopper Mouse (*Onychomys torridus*)
29. California Ground Squirrel (*Otospermophilus beecheyi*)
30. San Joaquin Pocket Mouse (*Perognathus inornatus*)
31. Brush Deermouse (*Peromyscus boylii*)
32. California Deermouse (*Peromyscus californicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)
35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Cougar (*Puma concolor*)
38. Brown Rat (*Rattus norvegicus*)
39. Roof Rat (*Rattus rattus*)
40. Western Harvest Mouse (*Reithrodontomys megalotis*)
41. Broad-footed Mole (*Scapanus latimanus*)
42. Western Gray Squirrel (*Sciurus griseus*)
43. Ornate Shrew (*Sorex ornatus*)
44. American Water Shrew (*Sorex palustris*)
45. Western Spotted Skunk (*Spilogale gracilis*)
46. Wild Boar (*Sus scrofa*)
47. Desert Cottontail (*Sylvilagus audubonii*)
48. Brush Rabbit (*Sylvilagus bachmani*)
49. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
50. Merriam's Chipmunk (*Tamias merriami*)
51. Lodgepole Chipmunk (*Tamias speciosus*)
52. American Badger (*Taxidea taxus*)
53. Botta's Pocket Gopher (*Thomomys bottae*)
54. Gray Fox (*Urocyon cinereoargenteus*)
55. American Black Bear (*Ursus americanus*)
56. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)

4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Gregarious Salamander (*Batrachoseps gregarius*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Toad (*Anaxyrus boreas*)

Reptiles

1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Blunt-nosed Leopard Lizard (*Gambelia sila*)
18. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
19. Common Kingsnake (*Lampropeltis getula*)
20. Rosy Boa (*Lichanura trivirgata*)
21. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
22. Gophersnake (*Pituophis catenifer*)
23. Gilbert's Skink (*Plestiodon gilberti*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Common Gartersnake (*Thamnophis sirtalis*)
32. Pond Slider (*Trachemys scripta*)
33. Western Lyresnake (*Trimorphodon biscutatus*)
34. Common Side-blotched Lizard (*Uta stansburiana*)
35. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 11

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.21371
Longitude: -118.548745

Structure Dimensions

Length (meters): 54.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 270.0
Distance to Building / Structure (meters): 579.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 11,891.0
Distance to Forest Landcover (meters): 150.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 90.0
Distance to Cultivated Landcover (meters): 9,642.0
Distance to Wetland Landcover (meters): 2,040.0

Additional Features

Waterway: Seasonal
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Model	Expected Likelihood of Use
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.409
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.030
Coyote (Canis latrans)	0.833
Gray Fox (Urocyon cinereoargenteus)	0.364
Mule Deer (Odocoileus hemionus)	0.999

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
7. Big Brown Bat (*Eptesicus fuscus*)
8. North American Porcupine (*Erethizon dorsata*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)

13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. Long-tailed Vole (*Microtus longicaudus*)
18. House Mouse (*Mus musculus*)
19. Long-tailed Weasel (*Mustela frenata*)
20. Californian Myotis (*Myotis californicus*)
21. Western Small-footed Myotis (*Myotis ciliolabrum*)
22. Long-eared Myotis (*Myotis evotis*)
23. Fringed Myotis (*Myotis thysanodes*)
24. Long-legged Myotis (*Myotis volans*)
25. Yuma Myotis (*Myotis yumanensis*)
26. Desert Woodrat (*Neotoma lepida*)
27. Big-eared Woodrat (*Neotoma macrotis*)
28. Mule Deer (*Odocoileus hemionus*)
29. Southern Grasshopper Mouse (*Onychomys torridus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. San Joaquin Pocket Mouse (*Perognathus inornatus*)
32. Brush Deermouse (*Peromyscus boylii*)
33. California Deermouse (*Peromyscus californicus*)
34. North American Deermouse (*Peromyscus maniculatus*)
35. Pinon Deermouse (*Peromyscus truei*)
36. Western Pipistrelle (*Pipistrellus hesperus*)
37. Raccoon (*Procyon lotor*)
38. Cougar (*Puma concolor*)
39. Brown Rat (*Rattus norvegicus*)
40. Roof Rat (*Rattus rattus*)
41. Western Harvest Mouse (*Reithrodontomys megalotis*)
42. Broad-footed Mole (*Scapanus latimanus*)
43. Western Gray Squirrel (*Sciurus griseus*)
44. Ornate Shrew (*Sorex ornatus*)
45. Western Spotted Skunk (*Spilogale gracilis*)
46. Wild Boar (*Sus scrofa*)
47. Desert Cottontail (*Sylvilagus audubonii*)
48. Brush Rabbit (*Sylvilagus bachmani*)
49. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
50. Merriam's Chipmunk (*Tamias merriami*)
51. Lodgepole Chipmunk (*Tamias speciosus*)
52. American Badger (*Taxidea taxus*)
53. Botta's Pocket Gopher (*Thomomys bottae*)
54. Gray Fox (*Urocyon cinereoargenteus*)
55. American Black Bear (*Ursus americanus*)
56. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
7. Western Toad (*Anaxyrus boreas*)

Reptiles

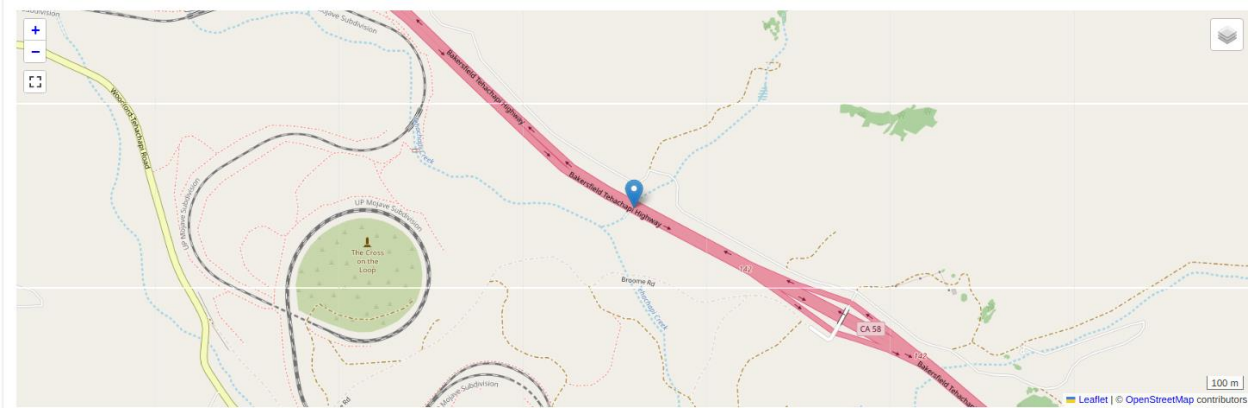
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Rosy Boa (*Lichanura trivirgata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Desert Horned Lizard (*Phrynosoma platyrhinos*)
22. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
23. Gophersnake (*Pituophis catenifer*)
24. Gilbert's Skink (*Plestiodon gilberti*)
25. Long-nosed Snake (*Rhinocheilus lecontei*)
26. Western Patch-nosed Snake (*Salvadora hexalepis*)
27. Common Sagebrush Lizard (*Sceloporus graciosus*)
28. Western Fence Lizard (*Sceloporus occidentalis*)
29. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
30. Smith's Black-headed Snake (*Tantilla hobartsmithi*)

31. Sierra Gartersnake (*Thamnophis couchii*)
32. Common Gartersnake (*Thamnophis sirtalis*)
33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 12

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.202674
Longitude: -118.528187

Structure Dimensions

Length (meters): 65.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 108.0
Distance to Building / Structure (meters): 424.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 9,960.0
Distance to Forest Landcover (meters): 693.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 306.0
Distance to Cultivated Landcover (meters): 8,652.0
Distance to Wetland Landcover (meters): 4,283.0

Additional Features

Waterway: Seasonal
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.173
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.122

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
7. Big Brown Bat (*Eptesicus fuscus*)
8. North American Porcupine (*Erethizon dorsata*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)
13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)

15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. Long-tailed Vole (*Microtus longicaudus*)
18. House Mouse (*Mus musculus*)
19. Long-tailed Weasel (*Mustela frenata*)
20. Californian Myotis (*Myotis californicus*)
21. Western Small-footed Myotis (*Myotis ciliolabrum*)
22. Long-eared Myotis (*Myotis evotis*)
23. Fringed Myotis (*Myotis thysanodes*)
24. Long-legged Myotis (*Myotis volans*)
25. Yuma Myotis (*Myotis yumanensis*)
26. Desert Woodrat (*Neotoma lepida*)
27. Big-eared Woodrat (*Neotoma macrotis*)
28. Mule Deer (*Odocoileus hemionus*)
29. Southern Grasshopper Mouse (*Onychomys torridus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. San Joaquin Pocket Mouse (*Perognathus inornatus*)
32. Brush Deermouse (*Peromyscus boylii*)
33. California Deermouse (*Peromyscus californicus*)
34. North American Deermouse (*Peromyscus maniculatus*)
35. Pinon Deermouse (*Peromyscus truei*)
36. Western Pipistrelle (*Pipistrellus hesperus*)
37. Raccoon (*Procyon lotor*)
38. Cougar (*Puma concolor*)
39. Brown Rat (*Rattus norvegicus*)
40. Roof Rat (*Rattus rattus*)
41. Western Harvest Mouse (*Reithrodontomys megalotis*)
42. Broad-footed Mole (*Scapanus latimanus*)
43. Western Gray Squirrel (*Sciurus griseus*)
44. Ornate Shrew (*Sorex ornatus*)
45. Western Spotted Skunk (*Spilogale gracilis*)
46. Wild Boar (*Sus scrofa*)
47. Desert Cottontail (*Sylvilagus audubonii*)
48. Brush Rabbit (*Sylvilagus bachmani*)
49. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
50. Merriam's Chipmunk (*Tamias merriami*)
51. Lodgepole Chipmunk (*Tamias speciosus*)
52. American Badger (*Taxidea taxus*)
53. Botta's Pocket Gopher (*Thomomys bottae*)
54. Gray Fox (*Urocyon cinereoargenteus*)
55. American Black Bear (*Ursus americanus*)
56. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
7. Western Toad (*Anaxyrus boreas*)

Reptiles

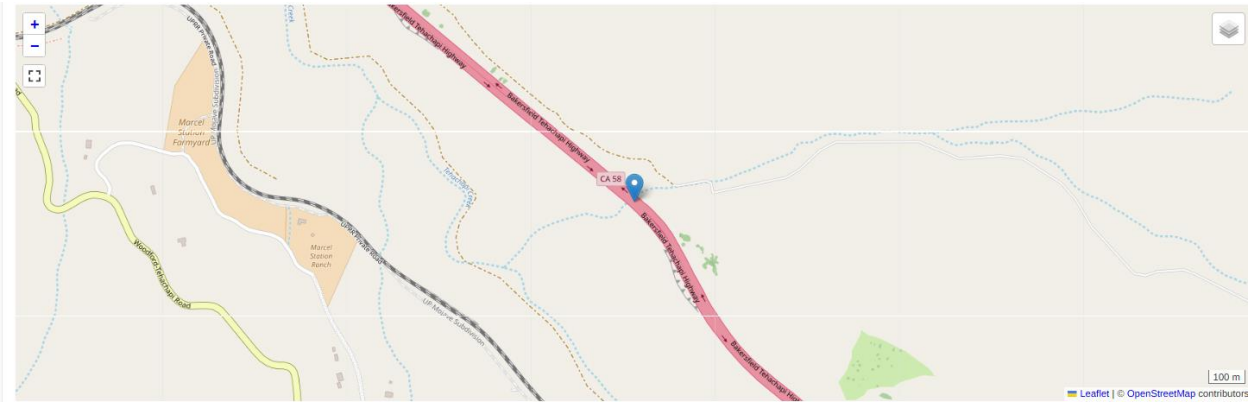
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Rosy Boa (*Lichanura trivirgata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Desert Horned Lizard (*Phrynosoma platyrhinos*)
22. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
23. Gophersnake (*Pituophis catenifer*)
24. Gilbert's Skink (*Plestiodon gilberti*)
25. Long-nosed Snake (*Rhinocheilus lecontei*)
26. Western Patch-nosed Snake (*Salvadora hexalepis*)
27. Common Sagebrush Lizard (*Sceloporus graciosus*)
28. Western Fence Lizard (*Sceloporus occidentalis*)
29. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
30. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
31. Sierra Gartersnake (*Thamnophis couchii*)

32. Common Gartersnake (*Thamnophis sirtalis*)
33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 13

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.190031
Longitude: -118.506451

Structure Dimensions

Length (meters): 60.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 351.0
Distance to Building / Structure (meters): 764.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 7,625.0
Distance to Forest Landcover (meters): 108.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 124.0
Distance to Cultivated Landcover (meters): 6,491.0
Distance to Wetland Landcover (meters): 4,020.0

Additional Features

Waterway: Perennial
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.140
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.718
Coyote (Canis latrans)	0.674
Gray Fox (Urocyon cinereoargenteus)	0.075
Mule Deer (Odocoileus hemionus)	0.997

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
7. Big Brown Bat (*Eptesicus fuscus*)
8. North American Porcupine (*Erethizon dorsata*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)

13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. Long-tailed Vole (*Microtus longicaudus*)
18. House Mouse (*Mus musculus*)
19. Long-tailed Weasel (*Mustela frenata*)
20. Californian Myotis (*Myotis californicus*)
21. Western Small-footed Myotis (*Myotis ciliolabrum*)
22. Long-eared Myotis (*Myotis evotis*)
23. Fringed Myotis (*Myotis thysanodes*)
24. Long-legged Myotis (*Myotis volans*)
25. Yuma Myotis (*Myotis yumanensis*)
26. Desert Woodrat (*Neotoma lepida*)
27. Big-eared Woodrat (*Neotoma macrotis*)
28. Mule Deer (*Odocoileus hemionus*)
29. Southern Grasshopper Mouse (*Onychomys torridus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. San Joaquin Pocket Mouse (*Perognathus inornatus*)
32. Brush Deermouse (*Peromyscus boylii*)
33. California Deermouse (*Peromyscus californicus*)
34. North American Deermouse (*Peromyscus maniculatus*)
35. Pinon Deermouse (*Peromyscus truei*)
36. Western Pipistrelle (*Pipistrellus hesperus*)
37. Raccoon (*Procyon lotor*)
38. Cougar (*Puma concolor*)
39. Brown Rat (*Rattus norvegicus*)
40. Roof Rat (*Rattus rattus*)
41. Western Harvest Mouse (*Reithrodontomys megalotis*)
42. Broad-footed Mole (*Scapanus latimanus*)
43. Western Gray Squirrel (*Sciurus griseus*)
44. Ornate Shrew (*Sorex ornatus*)
45. Western Spotted Skunk (*Spilogale gracilis*)
46. Wild Boar (*Sus scrofa*)
47. Desert Cottontail (*Sylvilagus audubonii*)
48. Brush Rabbit (*Sylvilagus bachmani*)
49. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
50. Merriam's Chipmunk (*Tamias merriami*)
51. Lodgepole Chipmunk (*Tamias speciosus*)
52. American Badger (*Taxidea taxus*)
53. Botta's Pocket Gopher (*Thomomys bottae*)
54. Gray Fox (*Urocyon cinereoargenteus*)
55. American Black Bear (*Ursus americanus*)
56. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
7. Western Toad (*Anaxyrus boreas*)

Reptiles

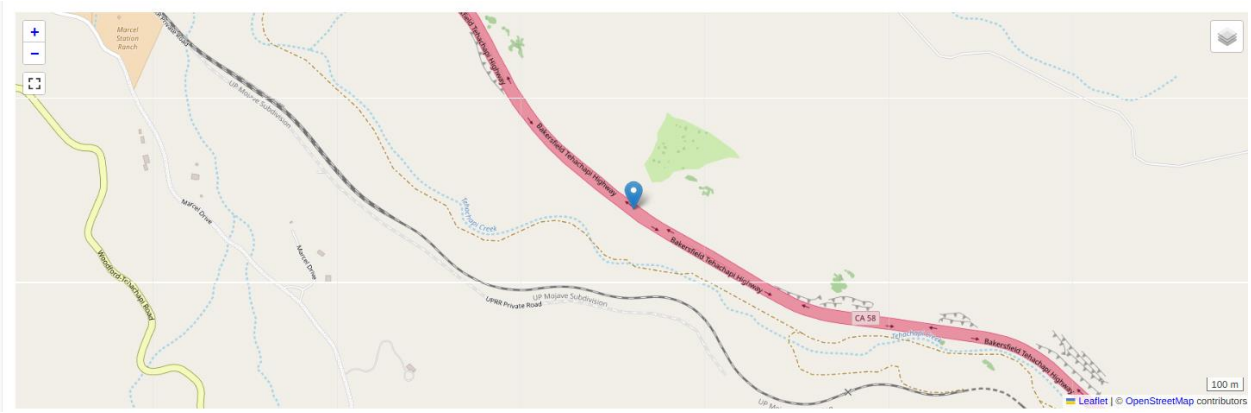
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Rosy Boa (*Lichanura trivirgata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Desert Horned Lizard (*Phrynosoma platyrhinos*)
22. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
23. Gophersnake (*Pituophis catenifer*)
24. Gilbert's Skink (*Plestiodon gilberti*)
25. Long-nosed Snake (*Rhinocheilus lecontei*)
26. Western Patch-nosed Snake (*Salvadora hexalepis*)
27. Common Sagebrush Lizard (*Sceloporus graciosus*)
28. Western Fence Lizard (*Sceloporus occidentalis*)
29. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
30. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
31. Sierra Gartersnake (*Thamnophis couchii*)

32. Common Gartersnake (*Thamnophis sirtalis*)
33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 14

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.184538
Longitude: -118.500683

Structure Dimensions

Length (meters): 60.0 m
Width (meters): 3.0 m
Height (meters):3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 124.0
Distance to Building / Structure (meters): 741.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 6,820.0
Distance to Forest Landcover (meters): 170.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 90.0
Distance to Cultivated Landcover (meters): 5,723.0
Distance to Wetland Landcover (meters): 3,320.0

Additional Features

Waterway: Seasonal
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Model	Expected Likelihood of Use
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.255
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.122
Coyote (Canis latrans)	0.767
Gray Fox (Urocyon cinereoargenteus)	0.162
Mule Deer (Odocoileus hemionus)	0.961

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Agile Kangaroo Rat (*Dipodomys agilis*)
6. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
7. Big Brown Bat (*Eptesicus fuscus*)
8. North American Porcupine (*Erethizon dorsata*)
9. Spotted Bat (*Euderma maculatum*)
10. Greater Bonneted Bat (*Eumops perotis*)
11. Western Red Bat (*Lasiurus blossevillii*)
12. Hoary Bat (*Lasiurus cinereus*)

13. Black-tailed Jackrabbit (*Lepus californicus*)
14. Bobcat (*Lynx rufus*)
15. Striped Skunk (*Mephitis mephitis*)
16. California Vole (*Microtus californicus*)
17. Long-tailed Vole (*Microtus longicaudus*)
18. House Mouse (*Mus musculus*)
19. Long-tailed Weasel (*Mustela frenata*)
20. Californian Myotis (*Myotis californicus*)
21. Western Small-footed Myotis (*Myotis ciliolabrum*)
22. Long-eared Myotis (*Myotis evotis*)
23. Fringed Myotis (*Myotis thysanodes*)
24. Long-legged Myotis (*Myotis volans*)
25. Yuma Myotis (*Myotis yumanensis*)
26. Desert Woodrat (*Neotoma lepida*)
27. Big-eared Woodrat (*Neotoma macrotis*)
28. Mule Deer (*Odocoileus hemionus*)
29. Southern Grasshopper Mouse (*Onychomys torridus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. San Joaquin Pocket Mouse (*Perognathus inornatus*)
32. Brush Deermouse (*Peromyscus boylii*)
33. California Deermouse (*Peromyscus californicus*)
34. North American Deermouse (*Peromyscus maniculatus*)
35. Pinon Deermouse (*Peromyscus truei*)
36. Western Pipistrelle (*Pipistrellus hesperus*)
37. Raccoon (*Procyon lotor*)
38. Cougar (*Puma concolor*)
39. Brown Rat (*Rattus norvegicus*)
40. Roof Rat (*Rattus rattus*)
41. Western Harvest Mouse (*Reithrodontomys megalotis*)
42. Broad-footed Mole (*Scapanus latimanus*)
43. Western Gray Squirrel (*Sciurus griseus*)
44. Ornate Shrew (*Sorex ornatus*)
45. Western Spotted Skunk (*Spilogale gracilis*)
46. Wild Boar (*Sus scrofa*)
47. Desert Cottontail (*Sylvilagus audubonii*)
48. Brush Rabbit (*Sylvilagus bachmani*)
49. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
50. Merriam's Chipmunk (*Tamias merriami*)
51. Lodgepole Chipmunk (*Tamias speciosus*)
52. American Badger (*Taxidea taxus*)
53. Botta's Pocket Gopher (*Thomomys bottae*)
54. Gray Fox (*Urocyon cinereoargenteus*)
55. American Black Bear (*Ursus americanus*)
56. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
7. Western Toad (*Anaxyrus boreas*)

Reptiles

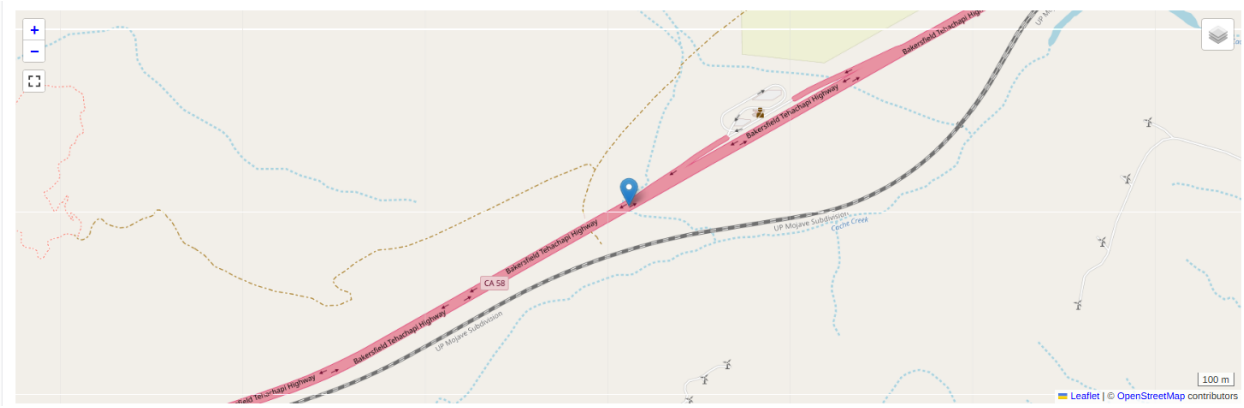
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. North American Racer (*Coluber constrictor*)
10. Coachwhip (*Coluber flagellum*)
11. Striped Racer (*Coluber lateralis*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Rosy Boa (*Lichanura trivirgata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Desert Horned Lizard (*Phrynosoma platyrhinos*)
22. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
23. Gophersnake (*Pituophis catenifer*)
24. Gilbert's Skink (*Plestiodon gilberti*)
25. Long-nosed Snake (*Rhinocheilus lecontei*)
26. Western Patch-nosed Snake (*Salvadora hexalepis*)
27. Common Sagebrush Lizard (*Sceloporus graciosus*)
28. Western Fence Lizard (*Sceloporus occidentalis*)
29. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
30. Smith's Black-headed Snake (*Tantilla hobartsmithi*)
31. Sierra Gartersnake (*Thamnophis couchii*)
32. Common Gartersnake (*Thamnophis sirtalis*)

33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 15

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.111049
Longitude: -118.239737

Structure Dimensions

Length (meters): 80.0 m
Width (meters): 3.0 m
Height (meters): 2.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 180.0
Distance to Building / Structure (meters): 457.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 1,765.0
Distance to Forest Landcover (meters): 270.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 437.0
Distance to Cultivated Landcover (meters): 12,832.0
Distance to Wetland Landcover (meters): 7,218.0

Additional Features

Railroad Presence: False

Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.044
Black-tailed Jackrabbit (Lepus californicus)	1.000
Cougar (Puma concolor)	0.926
Coyote (Canis latrans)	0.763
Desert Cottontail (Sylvilagus audubonii)	1.000
Gray Fox (Urocyon cinereoargenteus)	0.001
Mule Deer (Odocoileus hemionus)	1.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)
9. Merriam's Kangaroo Rat (*Dipodomys merriami*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)

15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)
18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)
27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Cougar (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)
47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)
53. Wild Boar (*Sus scrofa*)
54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)
56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)

59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)
62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)
64. Mohave Ground Squirrel (*Xerospermophilus mohavensis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Western Toad (*Anaxyrus boreas*)

Reptiles

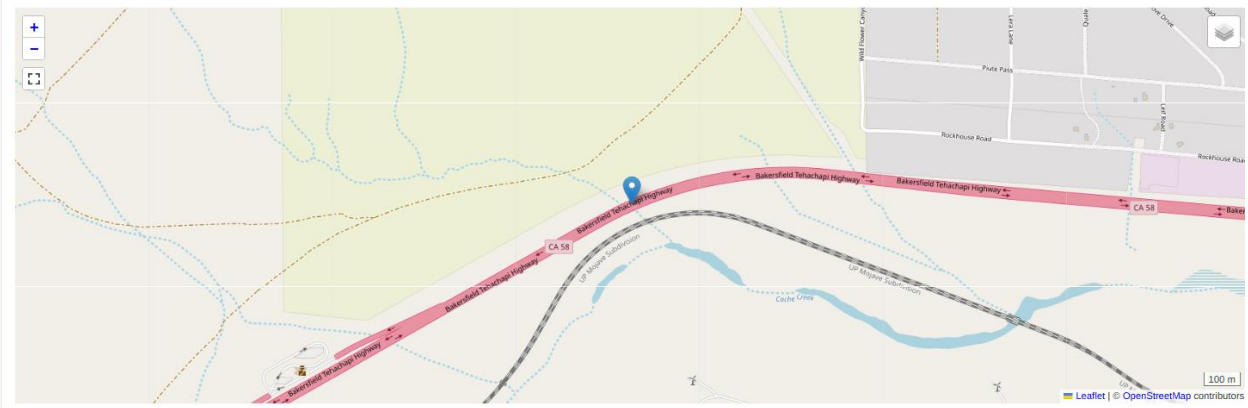
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Sidewinder (*Crotalus cerastes*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)
12. Western Rattlesnake (*Crotalus oreganus*)
13. Mohave Rattlesnake (*Crotalus scutulatus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Desert Iguana (*Dipsosaurus dorsalis*)
17. Southern Alligator Lizard (*Elgaria multicarinata*)
18. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
19. Desert Tortoise (*Gopherus agassizii*)
20. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
21. Common Kingsnake (*Lampropeltis getula*)
22. Western Threadsnake (*Leptotyphlops humilis*)
23. Rosy Boa (*Lichanura trivirgata*)
24. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
25. Desert Horned Lizard (*Phrynosoma platyrhinos*)
26. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)

27. Gophersnake (*Pituophis catenifer*)
28. Long-nosed Snake (*Rhinocheilus lecontei*)
29. Western Patch-nosed Snake (*Salvadora hexalepis*)
30. Common Chuckwalla (*Sauromalus ater*)
31. Common Sagebrush Lizard (*Sceloporus graciosus*)
32. Desert Spiny Lizard (*Sceloporus magister*)
33. Western Fence Lizard (*Sceloporus occidentalis*)
34. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
35. Western Groundsnake (*Sonora semiannulata*)
36. Sierra Gartersnake (*Thamnophis couchii*)
37. Common Gartersnake (*Thamnophis sirtalis*)
38. Western Lyresnake (*Trimorphodon biscutatus*)
39. Common Side-blotched Lizard (*Uta stansburiana*)
40. Desert Night Lizard (*Xantusia vigilis*)

SR58: Structure 16

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 35.117402
Longitude: -118.225907

Structure Dimensions

Length (meters): 32.0 m
Width (meters): 5.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 120.0
Distance to Building / Structure (meters): 691.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 1,230.0
Distance to Forest Landcover (meters): 1,423.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 408.0
Distance to Cultivated Landcover (meters): 14,077.0
Distance to Wetland Landcover (meters): 6,830.0

Additional Features

Railroad Presence: False
Road Presence: False
Trail Presence: True

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.062
Black-tailed Jackrabbit (Lepus californicus)	1.000
Cougar (Puma concolor)	0.998
Coyote (Canis latrans)	0.979
Desert Cottontail (Sylvilagus audubonii)	1.000
Gray Fox (Urocyon cinereoargenteus)	0.010
Mule Deer (Odocoileus hemionus)	1.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)
9. Merriam's Kangaroo Rat (*Dipodomys merriami*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)

12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)
15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)
18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)
27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Cougar (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)
47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)
53. Wild Boar (*Sus scrofa*)
54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)

56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)
59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)
62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)
64. Mohave Ground Squirrel (*Xerospermophilus mohavensis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Western Toad (*Anaxyrus boreas*)

Reptiles

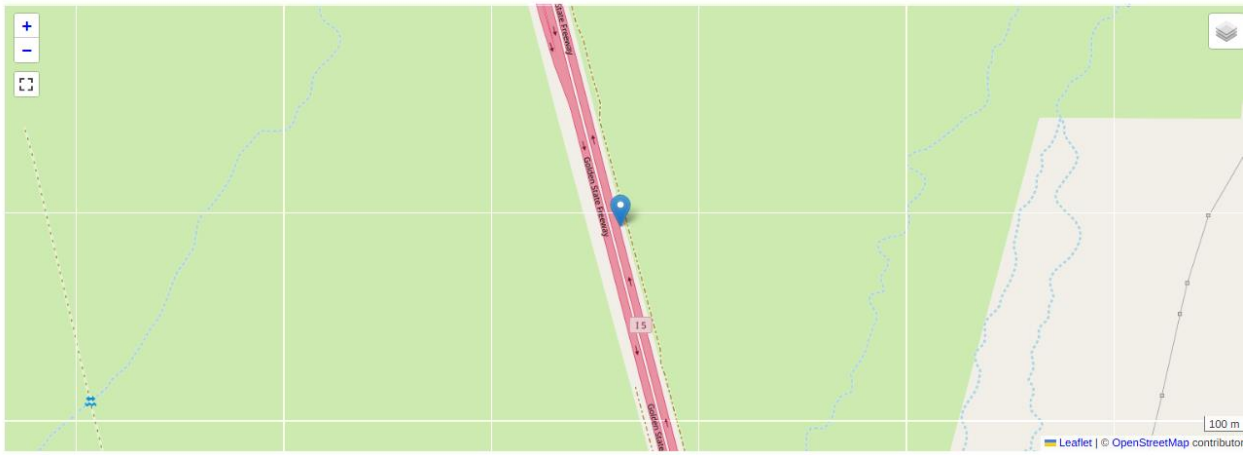
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Sidewinder (*Crotalus cerastes*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)
12. Western Rattlesnake (*Crotalus oreganus*)
13. Mohave Rattlesnake (*Crotalus scutulatus*)
14. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
15. Ring-necked Snake (*Diadophis punctatus*)
16. Desert Iguana (*Dipsosaurus dorsalis*)
17. Southern Alligator Lizard (*Elgaria multicarinata*)
18. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
19. Desert Tortoise (*Gopherus agassizii*)
20. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
21. Common Kingsnake (*Lampropeltis getula*)
22. Western Threadsnake (*Leptotyphlops humilis*)
23. Rosy Boa (*Lichanura trivirgata*)
24. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
25. Desert Horned Lizard (*Phrynosoma platyrhinos*)

26. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
27. Gophersnake (*Pituophis catenifer*)
28. Long-nosed Snake (*Rhinocheilus lecontei*)
29. Western Patch-nosed Snake (*Salvadora hexalepis*)
30. Common Chuckwalla (*Sauromalus ater*)
31. Common Sagebrush Lizard (*Sceloporus graciosus*)
32. Desert Spiny Lizard (*Sceloporus magister*)
33. Western Fence Lizard (*Sceloporus occidentalis*)
34. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
35. Western Groundsnake (*Sonora semiannulata*)
36. Sierra Gartersnake (*Thamnophis couchii*)
37. Common Gartersnake (*Thamnophis sirtalis*)
38. Western Lyresnake (*Trimorphodon biscutatus*)
39. Common Side-blotched Lizard (*Uta stansburiana*)
40. Desert Night Lizard (*Xantusia vigilis*)

I-5: Structure 1

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 34.953169
Longitude: -118.934581

Structure Dimensions

Length (meters): 100.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 832.0
Distance to Building / Structure (meters): 603.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 306.0
Distance to Forest Landcover (meters): 2,252.0
Distance to Shrub/Scrub Landcover (meters): 108.0
Distance to Grassland Landcover (meters): 30.0
Distance to Cultivated Landcover (meters): 1,917.0
Distance to Wetland Landcover (meters): 1,707.0

Additional Features

Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
Bobcat (Lynx rufus)	0.126
Black-tailed Jackrabbit (Lepus californicus)	0.000
Coyote (Canis latrans)	0.664
Desert Cottontail (Sylvilagus audubonii)	1.000
Gray Fox (Urocyon cinereoargenteus)	0.251
Kit Fox (Vulpes macrotis)	0.000
Mule Deer (Odocoileus hemionus)	0.203
Virginia Opossum (Didelphis virginiana)	0.052

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) which are present at this location, based on the USGS GAP data.

Mammals

1. Pronghorn (*Antilocapra americana*)
2. Pallid Bat (*Antrozous pallidus*)
3. Coyote (*Canis latrans*)
4. Virginia Opossum (*Didelphis virginiana*)
5. Heermann's Kangaroo Rat (*Dipodomys heermanni*)

6. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
7. Big Brown Bat (*Eptesicus fuscus*)
8. Spotted Bat (*Euderma maculatum*)
9. Greater Bonneted Bat (*Eumops perotis*)
10. Western Red Bat (*Lasiurus blossevillii*)
11. Hoary Bat (*Lasiurus cinereus*)
12. Black-tailed Jackrabbit (*Lepus californicus*)
13. Bobcat (*Lynx rufus*)
14. Striped Skunk (*Mephitis mephitis*)
15. California Vole (*Microtus californicus*)
16. House Mouse (*Mus musculus*)
17. Long-tailed Weasel (*Mustela frenata*)
18. Californian Myotis (*Myotis californicus*)
19. Western Small-footed Myotis (*Myotis ciliolabrum*)
20. Long-eared Myotis (*Myotis evotis*)
21. Fringed Myotis (*Myotis thysanodes*)
22. Long-legged Myotis (*Myotis volans*)
23. Yuma Myotis (*Myotis yumanensis*)
24. Mule Deer (*Odocoileus hemionus*)
25. Southern Grasshopper Mouse (*Onychomys torridus*)
26. California Ground Squirrel (*Otospermophilus beecheyi*)
27. San Joaquin Pocket Mouse (*Perognathus inornatus*)
28. North American Deermouse (*Peromyscus maniculatus*)
29. Western Pipistrelle (*Pipistrellus hesperus*)
30. Raccoon (*Procyon lotor*)
31. Brown Rat (*Rattus norvegicus*)
32. Roof Rat (*Rattus rattus*)
33. Western Harvest Mouse (*Reithrodontomys megalotis*)
34. Western Gray Squirrel (*Sciurus griseus*)
35. Ornate Shrew (*Sorex ornatus*)
36. American Water Shrew (*Sorex palustris*)
37. Western Spotted Skunk (*Spilogale gracilis*)
38. Wild Boar (*Sus scrofa*)
39. Desert Cottontail (*Sylvilagus audubonii*)
40. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
41. American Badger (*Taxidea taxus*)
42. Botta's Pocket Gopher (*Thomomys bottae*)
43. Gray Fox (*Urocyon cinereoargenteus*)
44. Kit Fox (*Vulpes macrotis*)
45. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)

2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. Ensatina (*Ensatina eschscholtzii*)
5. Foothill Yellow-legged Frog (*Rana boylii*)
6. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
7. Western Spadefoot (*Spea hammondii*)
8. Western Toad (*Anaxyrus boreas*)

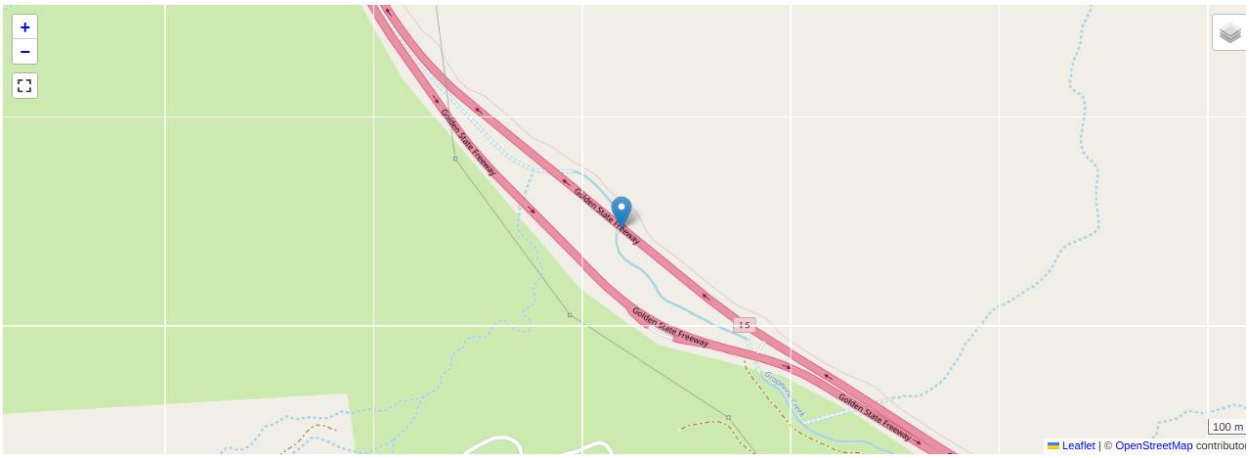
Reptiles

1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. North American Racer (*Coluber constrictor*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)
12. Western Rattlesnake (*Crotalus oreganus*)
13. Ring-necked Snake (*Diadophis punctatus*)
14. Southern Alligator Lizard (*Elgaria multicarinata*)
15. Blunt-nosed Leopard Lizard (*Gambelia sila*)
16. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
20. Gophersnake (*Pituophis catenifer*)
21. Gilbert's Skink (*Plestiodon gilberti*)
22. Long-nosed Snake (*Rhinocheilus lecontei*)
23. Western Patch-nosed Snake (*Salvadora hexalepis*)
24. Common Sagebrush Lizard (*Sceloporus graciosus*)
25. Western Fence Lizard (*Sceloporus occidentalis*)
26. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
27. Sierra Gartersnake (*Thamnophis couchii*)
28. Common Gartersnake (*Thamnophis sirtalis*)
29. Pond Slider (*Trachemys scripta*)
30. Western Lyresnake (*Trimorphodon biscutatus*)
31. Common Side-blotched Lizard (*Uta stansburiana*)
32. Desert Night Lizard (*Xantusia vigilis*)

I-5: Structure 2

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 34.898223
Longitude: -118.921978

Structure Dimensions

Length (meters):60.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 30.0
Distance to Building / Structure (meters): 234.0
Distance to Urban Landcover (meters): 30.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 1,812.0
Distance to Forest Landcover (meters): 510.0
Distance to Shrub/Scrub Landcover (meters): 42.0
Distance to Grassland Landcover (meters): 30.0
Distance to Cultivated Landcover (meters): 3,420.0
Distance to Wetland Landcover (meters): 2,067.0

Additional Features

Waterway: Perennial
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.148
Black-tailed Jackrabbit (Lepus californicus)	1.000
Cougar (Puma concolor)	0.062
Coyote (Canis latrans)	0.407
Desert Cottontail (Sylvilagus audubonii)	0.000
Gray Fox (Urocyon cinereoargenteus)	0.242
Kit Fox (Vulpes macrotis)	0.000
Mule Deer (Odocoileus hemionus)	0.854
Virginia Opossum (Didelphis virginiana)	0.252

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pronghorn (*Antilocapra americana*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Virginia Opossum (*Didelphis virginiana*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
9. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
10. Big Brown Bat (*Eptesicus fuscus*)
11. North American Porcupine (*Erethizon dorsata*)
12. Spotted Bat (*Euderma maculatum*)
13. Greater Bonneted Bat (*Eumops perotis*)
14. Western Red Bat (*Lasiurus blossevillii*)
15. Hoary Bat (*Lasiurus cinereus*)
16. Black-tailed Jackrabbit (*Lepus californicus*)
17. Bobcat (*Lynx rufus*)
18. Striped Skunk (*Mephitis mephitis*)
19. California Vole (*Microtus californicus*)
20. House Mouse (*Mus musculus*)
21. Long-tailed Weasel (*Mustela frenata*)
22. Californian Myotis (*Myotis californicus*)
23. Western Small-footed Myotis (*Myotis ciliolabrum*)
24. Long-eared Myotis (*Myotis evotis*)
25. Fringed Myotis (*Myotis thysanodes*)
26. Long-legged Myotis (*Myotis volans*)
27. Yuma Myotis (*Myotis yumanensis*)
28. Desert Woodrat (*Neotoma lepida*)
29. Big-eared Woodrat (*Neotoma macrotis*)
30. Mule Deer (*Odocoileus hemionus*)
31. California Ground Squirrel (*Otospermophilus beecheyi*)
32. White-eared Pocket Mouse (*Perognathus alticolus*)
33. San Joaquin Pocket Mouse (*Perognathus inornatus*)
34. Brush Deermouse (*Peromyscus boylii*)
35. California Deermouse (*Peromyscus californicus*)
36. Canyon Deermouse (*Peromyscus crinitus*)
37. North American Deermouse (*Peromyscus maniculatus*)

38. Pinon Deermouse (*Peromyscus truei*)
39. Western Pipistrelle (*Pipistrellus hesperus*)
40. Raccoon (*Procyon lotor*)
41. Cougar (*Puma concolor*)
42. Brown Rat (*Rattus norvegicus*)
43. Roof Rat (*Rattus rattus*)
44. Western Harvest Mouse (*Reithrodontomys megalotis*)
45. Broad-footed Mole (*Scapanus latimanus*)
46. Western Gray Squirrel (*Sciurus griseus*)
47. Ornate Shrew (*Sorex ornatus*)
48. Western Spotted Skunk (*Spilogale gracilis*)
49. Wild Boar (*Sus scrofa*)
50. Desert Cottontail (*Sylvilagus audubonii*)
51. Brush Rabbit (*Sylvilagus bachmani*)
52. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
53. Merriam's Chipmunk (*Tamias merriami*)
54. American Badger (*Taxidea taxus*)
55. Botta's Pocket Gopher (*Thomomys bottae*)
56. Gray Fox (*Urocyon cinereoargenteus*)
57. American Black Bear (*Ursus americanus*)
58. Kit Fox (*Vulpes macrotis*)
59. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. California Red-legged Frog (*Rana draytonii*)
5. Ensatina (*Ensatina eschscholtzii*)
6. Foothill Yellow-legged Frog (*Rana boylii*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

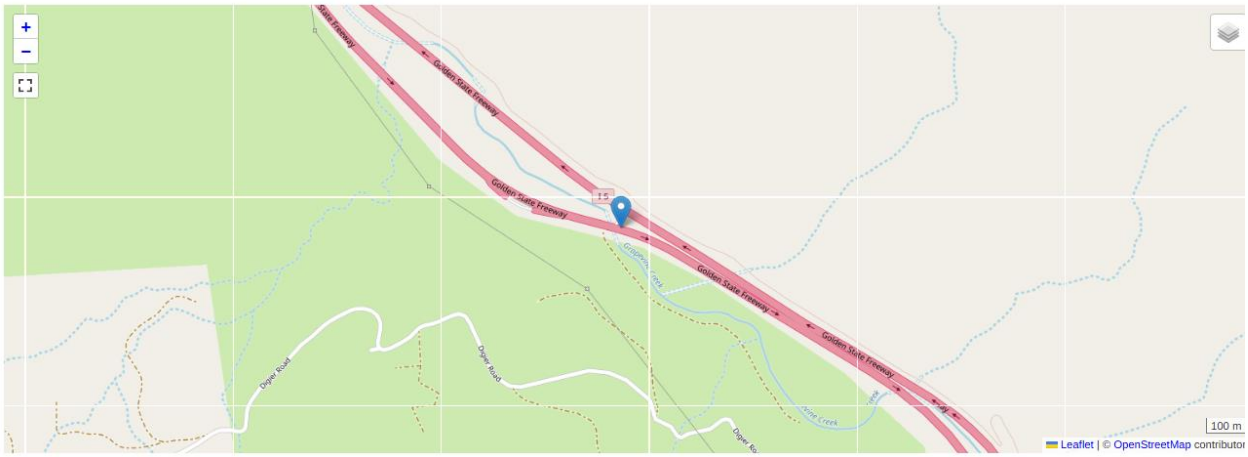
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)

4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Banded Gecko (*Coleonyx variegatus*)
8. North American Racer (*Coluber constrictor*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)
12. Western Rattlesnake (*Crotalus oreganus*)
13. Ring-necked Snake (*Diadophis punctatus*)
14. Southern Alligator Lizard (*Elgaria multicarinata*)
15. Blunt-nosed Leopard Lizard (*Gambelia sila*)
16. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. California Mountain Kingsnake (*Lampropeltis zonata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Gophersnake (*Pituophis catenifer*)
22. Gilbert's Skink (*Plestiodon gilberti*)
23. Western Skink (*Plestiodon skiltonianus*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Western Black-headed Snake (*Tantilla planiceps*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Two-striped Gartersnake (*Thamnophis hammondii*)
32. Common Gartersnake (*Thamnophis sirtalis*)
33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

I-5: Structure 3

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 34.889743
Longitude: -118.911281

Structure Dimensions

Length (meters): 70.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 0.0
Distance to Building / Structure (meters): 150.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 1,387.0
Distance to Forest Landcover (meters): 180.0
Distance to Shrub/Scrub Landcover (meters): 42.0
Distance to Grassland Landcover (meters): 60.0
Distance to Cultivated Landcover (meters): 2,987.0
Distance to Wetland Landcover (meters): 1,637.0

Structure Overview

Replace existing box culvert

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.233
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.000
Coyote (Canis latrans)	0.706
Desert Cottontail (Sylvilagus audubonii)	0.000
Gray Fox (Urocyon cinereoargenteus)	0.271
Kit Fox (Vulpes macrotis)	0.000
Mule Deer (Odocoileus hemionus)	0.832
Virginia Opossum (Didelphis virginiana)	0.062

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pronghorn (*Antilocapra americana*)
2. Pallid Bat (*Antrozous pallidus*)

3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Virginia Opossum (*Didelphis virginiana*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
9. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
10. Big Brown Bat (*Eptesicus fuscus*)
11. North American Porcupine (*Erethizon dorsata*)
12. Spotted Bat (*Euderma maculatum*)
13. Greater Bonneted Bat (*Eumops perotis*)
14. Western Red Bat (*Lasiurus blossevillii*)
15. Hoary Bat (*Lasiurus cinereus*)
16. Black-tailed Jackrabbit (*Lepus californicus*)
17. Bobcat (*Lynx rufus*)
18. Striped Skunk (*Mephitis mephitis*)
19. California Vole (*Microtus californicus*)
20. House Mouse (*Mus musculus*)
21. Long-tailed Weasel (*Mustela frenata*)
22. Californian Myotis (*Myotis californicus*)
23. Western Small-footed Myotis (*Myotis ciliolabrum*)
24. Long-eared Myotis (*Myotis evotis*)
25. Fringed Myotis (*Myotis thysanodes*)
26. Long-legged Myotis (*Myotis volans*)
27. Yuma Myotis (*Myotis yumanensis*)
28. Desert Woodrat (*Neotoma lepida*)
29. Big-eared Woodrat (*Neotoma macrotis*)
30. Mule Deer (*Odocoileus hemionus*)
31. California Ground Squirrel (*Otospermophilus beecheyi*)
32. White-eared Pocket Mouse (*Perognathus alticolus*)
33. San Joaquin Pocket Mouse (*Perognathus inornatus*)
34. Brush Deermouse (*Peromyscus boylii*)
35. California Deermouse (*Peromyscus californicus*)
36. Canyon Deermouse (*Peromyscus crinitus*)
37. North American Deermouse (*Peromyscus maniculatus*)
38. Pinon Deermouse (*Peromyscus truei*)
39. Western Pipistrelle (*Pipistrellus hesperus*)
40. Raccoon (*Procyon lotor*)
41. Cougar (*Puma concolor*)
42. Brown Rat (*Rattus norvegicus*)
43. Roof Rat (*Rattus rattus*)
44. Western Harvest Mouse (*Reithrodontomys megalotis*)
45. Broad-footed Mole (*Scapanus latimanus*)
46. Western Gray Squirrel (*Sciurus griseus*)

47. Ornate Shrew (*Sorex ornatus*)
48. Western Spotted Skunk (*Spilogale gracilis*)
49. Wild Boar (*Sus scrofa*)
50. Desert Cottontail (*Sylvilagus audubonii*)
51. Brush Rabbit (*Sylvilagus bachmani*)
52. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
53. Merriam's Chipmunk (*Tamias merriami*)
54. American Badger (*Taxidea taxus*)
55. Botta's Pocket Gopher (*Thomomys bottae*)
56. Gray Fox (*Urocyon cinereoargenteus*)
57. American Black Bear (*Ursus americanus*)
58. Kit Fox (*Vulpes macrotis*)
59. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. California Red-legged Frog (*Rana draytonii*)
5. Ensatina (*Ensatina eschscholtzii*)
6. Foothill Yellow-legged Frog (*Rana boylii*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

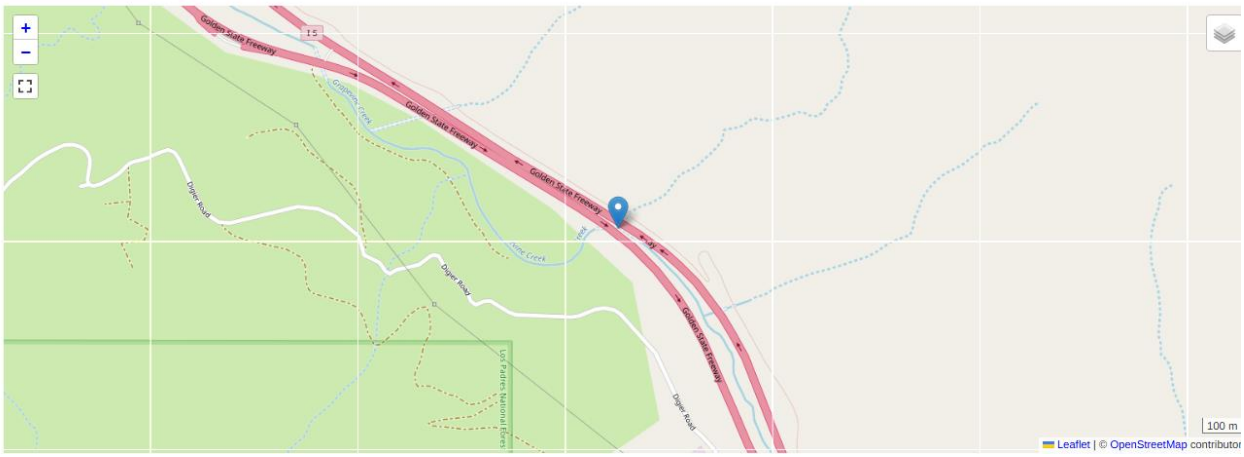
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Banded Gecko (*Coleonyx variegatus*)
8. North American Racer (*Coluber constrictor*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)
12. Western Rattlesnake (*Crotalus oreganus*)
13. Ring-necked Snake (*Diadophis punctatus*)
14. Southern Alligator Lizard (*Elgaria multicarinata*)
15. Blunt-nosed Leopard Lizard (*Gambelia sila*)
16. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)

18. Common Kingsnake (*Lampropeltis getula*)
19. California Mountain Kingsnake (*Lampropeltis zonata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Gophersnake (*Pituophis catenifer*)
22. Gilbert's Skink (*Plestiodon gilberti*)
23. Western Skink (*Plestiodon skiltonianus*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Western Black-headed Snake (*Tantilla planiceps*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Two-striped Gartersnake (*Thamnophis hammondii*)
32. Common Gartersnake (*Thamnophis sirtalis*)
33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

I-5: Structure 4

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 34.886199
Longitude: -118.90363

Structure Dimensions

Length (meters): 95.0 m
Width (meters); 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 0.0
Distance to Building / Structure (meters): 454.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters); 721.0
Distance to Forest Landcover (meters): 283.0
Distance to Shrub/Scrub Landcover (meters): 60.0
Distance to Grassland Landcover (meters): 42.0
Distance to Cultivated Landcover (meters): 2,203.0

Distance to Wetland Landcover (meters): 902.0

Structure Overview

Replace existing culvert

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.337
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.004
Coyote (Canis latrans)	0.736
Desert Cottontail (Sylvilagus audubonii)	0.000
Gray Fox (Urocyon cinereoargenteus)	0.360
Kit Fox (Vulpes macrotis)	0.000
Mule Deer (Odocoileus hemionus)	0.860
Virginia Opossum (Didelphis virginiana)	0.045

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pronghorn (*Antilocapra americana*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Virginia Opossum (*Didelphis virginiana*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
9. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
10. Big Brown Bat (*Eptesicus fuscus*)
11. North American Porcupine (*Erethizon dorsata*)
12. Spotted Bat (*Euderma maculatum*)
13. Greater Bonneted Bat (*Eumops perotis*)
14. Western Red Bat (*Lasiurus blossevillii*)
15. Hoary Bat (*Lasiurus cinereus*)
16. Black-tailed Jackrabbit (*Lepus californicus*)
17. Bobcat (*Lynx rufus*)
18. Striped Skunk (*Mephitis mephitis*)
19. California Vole (*Microtus californicus*)
20. House Mouse (*Mus musculus*)
21. Long-tailed Weasel (*Mustela frenata*)
22. Californian Myotis (*Myotis californicus*)
23. Western Small-footed Myotis (*Myotis ciliolabrum*)
24. Long-eared Myotis (*Myotis evotis*)
25. Fringed Myotis (*Myotis thysanodes*)
26. Long-legged Myotis (*Myotis volans*)
27. Yuma Myotis (*Myotis yumanensis*)
28. Desert Woodrat (*Neotoma lepida*)
29. Big-eared Woodrat (*Neotoma macrotis*)
30. Mule Deer (*Odocoileus hemionus*)
31. California Ground Squirrel (*Otospermophilus beecheyi*)
32. White-eared Pocket Mouse (*Perognathus alticolus*)
33. San Joaquin Pocket Mouse (*Perognathus inornatus*)
34. Brush Deermouse (*Peromyscus boylii*)
35. California Deermouse (*Peromyscus californicus*)
36. Canyon Deermouse (*Peromyscus crinitus*)
37. North American Deermouse (*Peromyscus maniculatus*)
38. Pinon Deermouse (*Peromyscus truei*)
39. Western Pipistrelle (*Pipistrellus hesperus*)
40. Raccoon (*Procyon lotor*)
41. Cougar (*Puma concolor*)
42. Brown Rat (*Rattus norvegicus*)

43. Roof Rat (*Rattus rattus*)
44. Western Harvest Mouse (*Reithrodontomys megalotis*)
45. Broad-footed Mole (*Scapanus latimanus*)
46. Western Gray Squirrel (*Sciurus griseus*)
47. Ornate Shrew (*Sorex ornatus*)
48. Western Spotted Skunk (*Spilogale gracilis*)
49. Wild Boar (*Sus scrofa*)
50. Desert Cottontail (*Sylvilagus audubonii*)
51. Brush Rabbit (*Sylvilagus bachmani*)
52. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
53. Merriam's Chipmunk (*Tamias merriami*)
54. American Badger (*Taxidea taxus*)
55. Botta's Pocket Gopher (*Thomomys bottae*)
56. Gray Fox (*Urocyon cinereoargenteus*)
57. American Black Bear (*Ursus americanus*)
58. Kit Fox (*Vulpes macrotis*)
59. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. California Red-legged Frog (*Rana draytonii*)
5. Ensatina (*Ensatina eschscholtzii*)
6. Foothill Yellow-legged Frog (*Rana boylii*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

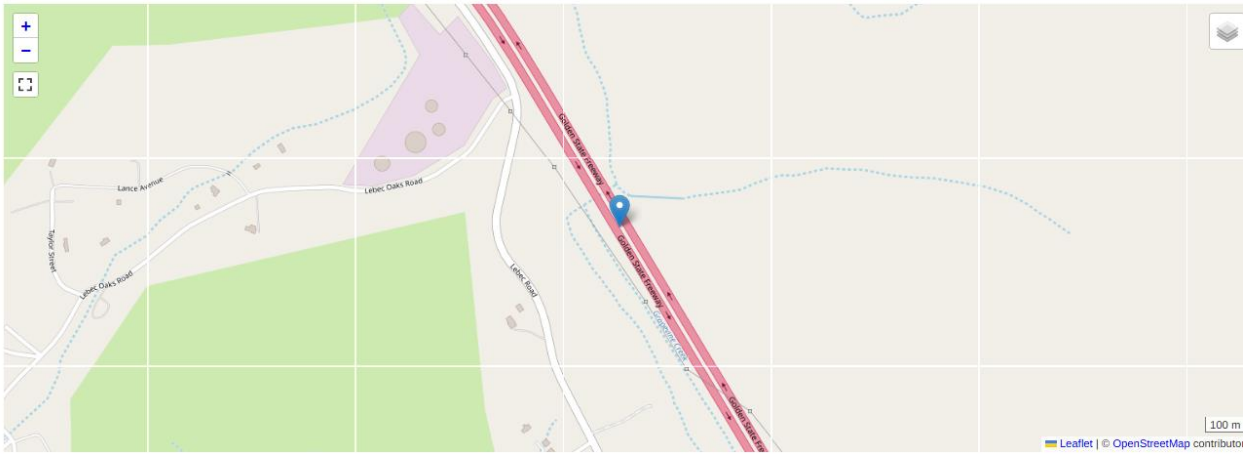
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Banded Gecko (*Coleonyx variegatus*)
8. North American Racer (*Coluber constrictor*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)

12. Western Rattlesnake (*Crotalus oreganus*)
13. Ring-necked Snake (*Diadophis punctatus*)
14. Southern Alligator Lizard (*Elgaria multicarinata*)
15. Blunt-nosed Leopard Lizard (*Gambelia sila*)
16. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. California Mountain Kingsnake (*Lampropeltis zonata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Gophersnake (*Pituophis catenifer*)
22. Gilbert's Skink (*Plestiodon gilberti*)
23. Western Skink (*Plestiodon skiltonianus*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Western Black-headed Snake (*Tantilla planiceps*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Two-striped Gartersnake (*Thamnophis hammondii*)
32. Common Gartersnake (*Thamnophis sirtalis*)
33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

I-5: Structure 5

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 34.857376
Longitude: -118.87608

Structure Dimensions

Length (meters): 72.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover; Dirt

Distance to Landscape Features

Distance to Water (meters): 1,024.0
Distance to Building / Structure (meters): 295.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 2,288.0
Distance to Forest Landcover (meters): 480.0
Distance to Shrub/Scrub Landcover (meters): 30.0
Distance to Grassland Landcover (meters): 60.0
Distance to Cultivated Landcover (meters): 579.0
Distance to Wetland Landcover (meters): 60.0

Additional Features

Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Overview

Replace existing structure

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.687
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.026
Coyote (Canis latrans)	0.817
Desert Cottontail (Sylvilagus audubonii)	0.000
Gray Fox (Urocyon cinereoargenteus)	0.110
Kit Fox (Vulpes macrotis)	0.000
Mule Deer (Odocoileus hemionus)	0.455
Virginia Opossum (Didelphis virginiana)	0.139

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pronghorn (*Antilocapra americana*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Virginia Opossum (*Didelphis virginiana*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Heermann's Kangaroo Rat (*Dipodomys heermanni*)
9. San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
10. Big Brown Bat (*Eptesicus fuscus*)
11. North American Porcupine (*Erethizon dorsata*)
12. Spotted Bat (*Euderma maculatum*)
13. Greater Bonneted Bat (*Eumops perotis*)
14. Western Red Bat (*Lasiurus blossevillii*)
15. Hoary Bat (*Lasiurus cinereus*)
16. Black-tailed Jackrabbit (*Lepus californicus*)
17. Bobcat (*Lynx rufus*)
18. Striped Skunk (*Mephitis mephitis*)
19. California Vole (*Microtus californicus*)
20. House Mouse (*Mus musculus*)
21. Long-tailed Weasel (*Mustela frenata*)
22. Californian Myotis (*Myotis californicus*)
23. Western Small-footed Myotis (*Myotis ciliolabrum*)
24. Long-eared Myotis (*Myotis evotis*)
25. Fringed Myotis (*Myotis thysanodes*)
26. Long-legged Myotis (*Myotis volans*)
27. Yuma Myotis (*Myotis yumanensis*)
28. Desert Woodrat (*Neotoma lepida*)
29. Big-eared Woodrat (*Neotoma macrotis*)
30. Mule Deer (*Odocoileus hemionus*)
31. California Ground Squirrel (*Otospermophilus beecheyi*)
32. White-eared Pocket Mouse (*Perognathus alticolus*)
33. San Joaquin Pocket Mouse (*Perognathus inornatus*)
34. Brush Deermouse (*Peromyscus boylii*)
35. California Deermouse (*Peromyscus californicus*)
36. Canyon Deermouse (*Peromyscus crinitus*)
37. North American Deermouse (*Peromyscus maniculatus*)
38. Pinon Deermouse (*Peromyscus truei*)
39. Western Pipistrelle (*Pipistrellus hesperus*)
40. Raccoon (*Procyon lotor*)
41. Cougar (*Puma concolor*)
42. Brown Rat (*Rattus norvegicus*)

43. Roof Rat (*Rattus rattus*)
44. Western Harvest Mouse (*Reithrodontomys megalotis*)
45. Broad-footed Mole (*Scapanus latimanus*)
46. Western Gray Squirrel (*Sciurus griseus*)
47. Ornate Shrew (*Sorex ornatus*)
48. Western Spotted Skunk (*Spilogale gracilis*)
49. Wild Boar (*Sus scrofa*)
50. Desert Cottontail (*Sylvilagus audubonii*)
51. Brush Rabbit (*Sylvilagus bachmani*)
52. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
53. Merriam's Chipmunk (*Tamias merriami*)
54. American Badger (*Taxidea taxus*)
55. Botta's Pocket Gopher (*Thomomys bottae*)
56. Gray Fox (*Urocyon cinereoargenteus*)
57. American Black Bear (*Ursus americanus*)
58. Kit Fox (*Vulpes macrotis*)
59. Kit Fox - San Joaquin Valley Population (*Vulpes macrotis mutica*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
4. California Red-legged Frog (*Rana draytonii*)
5. Ensatina (*Ensatina eschscholtzii*)
6. Foothill Yellow-legged Frog (*Rana boylii*)
7. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
8. Western Spadefoot (*Spea hammondii*)
9. Western Toad (*Anaxyrus boreas*)

Reptiles

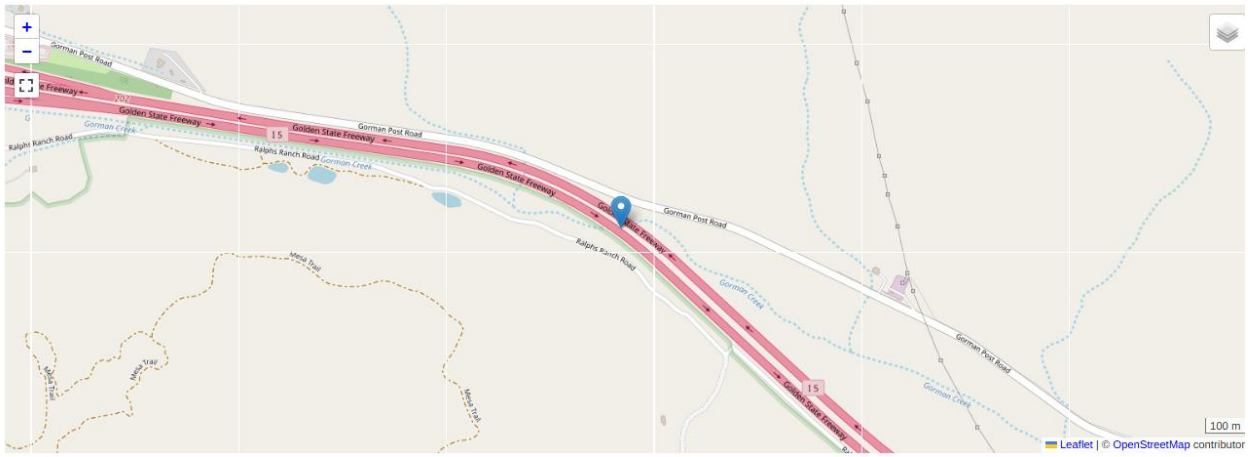
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Banded Gecko (*Coleonyx variegatus*)
8. North American Racer (*Coluber constrictor*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)

12. Western Rattlesnake (*Crotalus oreganus*)
13. Ring-necked Snake (*Diadophis punctatus*)
14. Southern Alligator Lizard (*Elgaria multicarinata*)
15. Blunt-nosed Leopard Lizard (*Gambelia sila*)
16. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
17. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
18. Common Kingsnake (*Lampropeltis getula*)
19. California Mountain Kingsnake (*Lampropeltis zonata*)
20. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
21. Gophersnake (*Pituophis catenifer*)
22. Gilbert's Skink (*Plestiodon gilberti*)
23. Western Skink (*Plestiodon skiltonianus*)
24. Long-nosed Snake (*Rhinocheilus lecontei*)
25. Western Patch-nosed Snake (*Salvadora hexalepis*)
26. Common Sagebrush Lizard (*Sceloporus graciosus*)
27. Western Fence Lizard (*Sceloporus occidentalis*)
28. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
29. Western Black-headed Snake (*Tantilla planiceps*)
30. Sierra Gartersnake (*Thamnophis couchii*)
31. Two-striped Gartersnake (*Thamnophis hammondii*)
32. Common Gartersnake (*Thamnophis sirtalis*)
33. Pond Slider (*Trachemys scripta*)
34. Western Lyresnake (*Trimorphodon biscutatus*)
35. Common Side-blotched Lizard (*Uta stansburiana*)
36. Desert Night Lizard (*Xantusia vigilis*)

I-5: Structure 6

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude: 34.791755
Longitude: -118.834508

Structure Dimensions

Length (meters): 89.0 m
Width (meters): 4.0 m
Height (meters): 4.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Distance to Landscape Features

Distance to Water (meters): 30.0
Distance to Building / Structure (meters): 450.0
Distance to Urban Landcover (meters): 0.0
Distance to Urban + Open Landcover (meters): 0.0
Distance to Barren Landcover (meters): 2,642.0
Distance to Forest Landcover (meters): 977.0
Distance to Shrub/Scrub Landcover (meters): 60.0
Distance to Grassland Landcover (meters): 108.0

Distance to Cultivated Landcover (meters): 4,797.0
Distance to Wetland Landcover (meters): 134.0

Additional Features

Waterway: Perennial
Railroad Presence: False
Road Presence: False
Trail Presence: False

Structure Overview

Existing structure

Structure Use Predictive Model Results

Table 1: Likelihood of structure use, based on structure attributes and location.

Animal	Likelihood
American Black Bear (Ursus americanus)	0.000
Bobcat (Lynx rufus)	0.867
Black-tailed Jackrabbit (Lepus californicus)	0.000
Cougar (Puma concolor)	0.135
Coyote (Canis latrans)	0.808
Desert Cottontail (Sylvilagus audubonii)	1.000
Gray Fox (Urocyon cinereoargenteus)	0.167
Kit Fox (Vulpes macrotis)	0.000
Mule Deer (Odocoileus hemionus)	0.662

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) present at this location, based on the USGS GAP data.

Mammals

1. Pallid Bat (*Antrozous pallidus*)
2. Ringtail (*Bassariscus astutus*)
3. Coyote (*Canis latrans*)
4. California Pocket Mouse (*Chaetodipus californicus*)
5. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Desert Kangaroo Rat (*Dipodomys deserti*)
8. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
9. Big Brown Bat (*Eptesicus fuscus*)
10. North American Porcupine (*Erethizon dorsata*)
11. Spotted Bat (*Euderma maculatum*)
12. Greater Bonneted Bat (*Eumops perotis*)
13. Western Red Bat (*Lasiurus blossevillii*)
14. Hoary Bat (*Lasiurus cinereus*)
15. Black-tailed Jackrabbit (*Lepus californicus*)
16. Bobcat (*Lynx rufus*)
17. Striped Skunk (*Mephitis mephitis*)
18. California Vole (*Microtus californicus*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Long-legged Myotis (*Myotis volans*)
26. Yuma Myotis (*Myotis yumanensis*)
27. Desert Woodrat (*Neotoma lepida*)
28. Big-eared Woodrat (*Neotoma macrotis*)
29. Mule Deer (*Odocoileus hemionus*)
30. California Ground Squirrel (*Otospermophilus beecheyi*)
31. White-eared Pocket Mouse (*Perognathus alticolus*)
32. San Joaquin Pocket Mouse (*Perognathus inornatus*)
33. Brush Deermouse (*Peromyscus boylii*)
34. California Deermouse (*Peromyscus californicus*)
35. Canyon Deermouse (*Peromyscus crinitus*)
36. Cactus Deermouse (*Peromyscus eremicus*)
37. Northern Baja Deermouse (*Peromyscus fraterculus*)

38. North American Deermouse (*Peromyscus maniculatus*)
39. Pinon Deermouse (*Peromyscus truei*)
40. Western Pipistrelle (*Pipistrellus hesperus*)
41. Raccoon (*Procyon lotor*)
42. Cougar (*Puma concolor*)
43. Brown Rat (*Rattus norvegicus*)
44. Roof Rat (*Rattus rattus*)
45. Western Harvest Mouse (*Reithrodontomys megalotis*)
46. Broad-footed Mole (*Scapanus latimanus*)
47. Western Gray Squirrel (*Sciurus griseus*)
48. Ornate Shrew (*Sorex ornatus*)
49. Western Spotted Skunk (*Spilogale gracilis*)
50. Wild Boar (*Sus scrofa*)
51. Desert Cottontail (*Sylvilagus audubonii*)
52. Brush Rabbit (*Sylvilagus bachmani*)
53. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
54. Merriam's Chipmunk (*Tamias merriami*)
55. Mt. Pinos Lodgepole Chipmunk (*Tamias speciosus callipeplus*)
56. American Badger (*Taxidea taxus*)
57. Botta's Pocket Gopher (*Thomomys bottae*)
58. Gray Fox (*Urocyon cinereoargenteus*)
59. American Black Bear (*Ursus americanus*)
60. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Arboreal Salamander (*Aneides lugubris*)
3. Arroyo Toad (*Anaxyrus californicus*)
4. Baja California Treefrog (*Pseudacris hypochondriaca*)
5. Black-bellied Slender Salamander (*Batrachoseps nigriventris*)
6. California Red-legged Frog (*Rana draytonii*)
7. California Treefrog (*Pseudacris cadaverina*)
8. Ensatina (*Ensatina eschscholtzii*)
9. Foothill Yellow-legged Frog (*Rana boylii*)
10. Red-spotted Toad (*Anaxyrus punctatus*)
11. Western Spadefoot (*Spea hammondii*)
12. Western Toad (*Anaxyrus boreas*)

Reptiles

1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)

3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Zebra-tailed Lizard (*Callisaurus draconoides*)
6. Northern Rubber Boa (*Charina bottae*)
7. Western Banded Gecko (*Coleonyx variegatus*)
8. North American Racer (*Coluber constrictor*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Speckled Rattlesnake (*Crotalus mitchellii*)
12. Western Rattlesnake (*Crotalus oreganus*)
13. Mohave Rattlesnake (*Crotalus scutulatus*)
14. Ring-necked Snake (*Diadophis punctatus*)
15. Desert Iguana (*Dipsosaurus dorsalis*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
18. Desert Tortoise (*Gopherus agassizii*)
19. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
20. Common Kingsnake (*Lampropeltis getula*)
21. California Mountain Kingsnake (*Lampropeltis zonata*)
22. Western Threadsnake (*Leptotyphlops humilis*)
23. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
24. Desert Horned Lizard (*Phrynosoma platyrhinos*)
25. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
26. Gophersnake (*Pituophis catenifer*)
27. Gilbert's Skink (*Plestiodon gilberti*)
28. Western Skink (*Plestiodon skiltonianus*)
29. Long-nosed Snake (*Rhinocheilus lecontei*)
30. Western Patch-nosed Snake (*Salvadora hexalepis*)
31. Common Sagebrush Lizard (*Sceloporus graciosus*)
32. Western Fence Lizard (*Sceloporus occidentalis*)
33. Western Groundsnake (*Sonora semiannulata*)
34. Western Black-headed Snake (*Tantilla planiceps*)
35. Sierra Gartersnake (*Thamnophis couchii*)
36. Two-striped Gartersnake (*Thamnophis hammondii*)
37. Common Gartersnake (*Thamnophis sirtalis*)
38. Western Lyresnake (*Trimorphodon biscutatus*)
39. Common Side-blotched Lizard (*Uta stansburiana*)
40. Desert Night Lizard (*Xantusia vigilis*)

Wildlife Connectivity Across Willow Springs Road

Technical Memorandum

Fraser Shilling, Ph.D.

For Mark Thomas and Kern Council of Governments

6/9/2025

Tasks 3.1.4 and 3.2.4 SR 58/E. Tehachapi Bl/Tehachapi Willow Springs Rd 24-00050-103-303

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Summary

Wildlife populations and species must move to survive in a region. This movement includes daily, seasonal, and inter-generational movements among habitat areas. The movement patterns and required habitats are different for different species. This means that accommodating wildlife movement across road and rail alignments require consideration of which wildlife species are present in an area, which are listed, and what types of crossing structures they will prefer. Willow Springs Road has the occasional culvert and bridge designed for water movement, but not explicitly for wildlife. There is likely to be occasional wildlife movement through these structures, suggesting there is partial permeability. However, not all wildlife will find most, or even any of the structures acceptable or accessible for passage. In addition, there is no wildlife fencing along the road, meaning that wildlife can freely enter the right-of-way. This memo describes the existing wildlife connectivity situation across Willow Springs Road, between SR 58 in Tehachapi and the town of Willow Springs, and proposes action that could improve wildlife connectivity across the right-of-way to help mitigate existing impacts or for planned improvements on the roadway.

Wildlife Connectivity

Willow Springs Road bisects the eastern Tehachapi Range, severing a critical movement area between the Sierra Nevada and the Transverse and other Ranges in Southern California. The roadway may act as a significant barrier to wildlife movement due to traffic and insufficient crossing infrastructure. These barriers impact small to medium wildlife connectivity by inhibiting dispersal, daily movement within home ranges, and genetic exchange among populations. Additionally, wildlife mortality caused by vehicle collisions further exacerbates these issues, creating genetic fragmentation that threatens population viability.

In order to plan for the protection of and potential restoration of wildlife connectivity across the road, this report describes the ecological setting for Willow Springs Road south of SR 58. Recommendations are made at the end of the report suggesting ways wildlife connectivity could be protected and potentially restored through the use of additional infrastructure, including expansion of existing infrastructure.

Ecological Setting

The region surrounding Willow Springs Rd supports a diverse range of species, including puma, American black bear, coyote, bobcat, badger, mule deer, fox, and smaller species such as ground squirrels and various reptiles. While some wildlife occasionally cross the highway surface or use existing culverts and bridges designed for stormwater drainage, small creeks or minor roads, it is unclear whether these structures adequately support genetic and dispersal connectivity between the two ranges. Traffic volume and physical infrastructure create challenges for safe crossings, with smaller species often avoiding open spaces due to predation risks and larger species hesitating due to noise and disturbance. The area is within the general area of the Tehachapi Connection: an area deemed important to wildlife connectivity as it is a convergence spot for a variety of ecosystems. The Sierra Made, Traverse, and Peninsular Ranges converge here along with the Mojave desert, grasslands, and the San Joaquin valley. Because Willow Springs Rd partially bisects this area, it may be partially responsible for lost connectivity between the various ecosystems.

There are six amphibian, forty-nine mammal and thirty-seven reptile species with low, medium, or high-quality suitable habitat within 5 km of either side of Willow Springs Road (Table 1). Three amphibian, thirty-nine of the mammal and twenty-six of the reptiles species have high-quality habitat within this area (Table 1, green highlight). This does not mean that these species are actually there at any given point in time, but for

the species with high-quality habitat, if they are present, they would be able to meet all life-cycle needs. In addition, of these species three amphibian and twenty-five reptile species are at medium, high, or very high risk from roads (Brehme et al., 2018).

Table 1. Suitable habitat (from CDFW models; CDFW, 2016) of amphibian, mammal, and reptile species within an area 500 m on either side of the proposed viaduct. The three columns indicate if there are areas with no suitable habitat (Areas of No Suitable Habitat), if there are areas with highly-suitable habitat (Areas of High-Quality) and what the majority habitat suitability is adjacent to the roadway (Majority Habitat). Green highlight indicates the species that have high-quality habitat within 5 km of Willow Springs Road.

Category	Common Name	At-Risk/Special Concern/Listed	Areas of No Habitat	Areas of High-Quality Habitat	Majority Habitat
Amphibian	Baja California Treefrog		Y	Y	High
Amphibian	Ensatina		Y	Y	Low
Amphibian	Foothill Yellow-legged Frog[2]	Y	Y	N	Low
Amphibian	Red-spotted Toad[2]		Y	N	Low
Amphibian	Tehachapi Slender Salamander	Y	Y	N	Low
Amphibian	Western Toad[2]	Y	Y	Y	Low
Mammal	Agile Kangaroo Rat		Y	Y	High
Mammal	American Badger	Y	Y	Y	High
Mammal	American Black Bear		Y	Y	Low
Mammal	Big-eared Woodrat		Y	Y	Low
Mammal	Bighorn Sheep	Y	Y	N	Low
Mammal	Black-tailed Jackrabbit		Y	Y	Medium
Mammal	Bobcat		Y	Y	Medium
Mammal	Botta's Pocket Gopher		Y	Y	Medium
Mammal	Broad-footed Mole		Y	Y	High
Mammal	Brush Deermouse		Y	Y	Low
Mammal	Brush Rabbit		Y	Y	Medium
Mammal	Cactus Deermouse		Y	Y	High
Mammal	California Deermouse		Y	Y	Low
Mammal	California Ground Squirrel		Y	Y	Low
Mammal	California Pocket Mouse		Y	Y	Low
Mammal	California Vole		Y	Y	Low
Mammal	Canyon Deermouse		Y	Y	High
Mammal	Chisel-toothed Kangaroo Rat		Y	Y	Medium
Mammal	Coyote		Y	Y	Medium
Mammal	Crawford's Gray Shrew		Y	N	Medium
Mammal	Desert Cottontail		Y	Y	Medium
Mammal	Desert Kangaroo Rat		Y	Y	High
Mammal	Desert Pocket Mouse		Y	N	Low
Mammal	Desert Woodrat		Y	Y	Medium
Mammal	Gray Fox		Y	Y	Low
Mammal	Kit Fox	Y	Y	Y	High
Mammal	Lodgepole Chipmunk		Y	N	Low
Mammal	Long-tailed Pocket Mouse		Y	Y	High

Mammal	Long-tailed Vole		Y	Y	High
Mammal	Long-tailed Weasel		Y	N	Low
Mammal	Merriam's Chipmunk		Y	Y	Medium
Mammal	Merriam's Kangaroo Rat		Y	Y	High
Mammal	Mountain Lion	Y	Y	Y	Low
Mammal	Mule Deer		Y	N	Low
Mammal	North American Deermouse		Y	Y	Medium
Mammal	North American Porcupine		Y	N	Low
Mammal	Ornate Shrew		Y	Y	Low
Mammal	Panamint Kangaroo Rat		Y	Y	High
Mammal	Pinon Deermouse		Y	Y	Medium
Mammal	Raccoon		Y	N	Low
Mammal	Ringtail	Y	Y	N	Low
Mammal	San Joaquin Pocket Mouse		Y	Y	High
Mammal	Southern Grasshopper Mouse		Y	Y	High
Mammal	Striped Skunk		Y	Y	Low
Mammal	Western Gray Squirrel		Y	Y	Low
Mammal	Western Harvest Mouse		Y	Y	Medium
Mammal	Western Spotted Skunk		Y	Y	Low
Mammal	White-eared Pocket Mouse	Y	Y	N	Low
Mammal	White-tailed Antelope Squirrel		Y	Y	Medium
Reptile	Blainville's Horned Lizard[2]	Y	Y	Y	Low
Reptile	California Legless Lizard	Y	Y	N	Low
Reptile	Coachwhip[1]		Y	N	Low
Reptile	Common Chuckwalla[2]		Y	Y	Low
Reptile	Common Gartersnake[1]		Y	Y	High
Reptile	Common Kingsnake		Y	Y	Medium
Reptile	Common Sagebrush Lizard		Y	Y	Low
Reptile	Common Side-blotched Lizard		Y	Y	High
Reptile	Desert Horned Lizard[1]		Y	Y	Medium
Reptile	Desert Iguana[2]	Y	Y	N	Low
Reptile	Desert Night Lizard		Y	Y	Low
Reptile	Desert Nightsnake[1]		Y	N	Medium
Reptile	Desert Tortoise[1]	Y	Y	Y	Low
Reptile	Gilbert's Skink		Y	Y	Low
Reptile	Glossy Snake[2]		Y	Y	Low
Reptile	Gophersnake[2]		Y	Y	High
Reptile	Great Basin Collared Lizard		Y	Y	High
Reptile	Long-nosed Leopard Lizard[1]		Y	Y	High
Reptile	Long-nosed Snake[2]		Y	Y	Low
Reptile	Mohave Rattlesnake[1]		Y	N	Medium
Reptile	Northern Rubber Boa[2]		Y	Y	Low
Reptile	Sidewinder[1]		Y	Y	Medium
Reptile	Sierra Gartersnake[1]		Y	Y	Low
Reptile	Smith's Black-headed Snake[2]		Y	N	Low

Reptile	Southern Alligator Lizard		Y	Y	Low
Reptile	Spotted Leaf-nosed Snake[1]		Y	N	Medium
Reptile	Striped Racer[1]		Y	Y	Low
Reptile	Tiger Whiptail		Y	Y	High
Reptile	Western Banded Gecko[2]		Y	Y	High
Reptile	Western Fence Lizard		Y	Y	Low
Reptile	Western Groundsnake[1]		Y	N	Low
Reptile	Western Patch-nosed Snake[1]		Y	N	Low
Reptile	Western Pond Turtle[1]	Y	Y	Y	Medium
Reptile	Western Rattlesnake[1]		Y	Y	Low
Reptile	Western Shovel-nosed Snake[1]		Y	N	Low
Reptile	Western Threadsnake		Y	N	Low
Reptile	Zebra-tailed Lizard		Y	Y	Medium

1 – Amphibian or reptile species at High, or Very High risk from roads (Brehme et al., 2018)
2 – Amphibian or reptile species at Medium risk from roads (Brehme et al., 2018)

Current Impacts on Wildlife Movement

Traffic volumes along Willow Springs Road are on the order of 3,600 vehicles/day (KernCOG TCDS, Location ID 4086, accessed, 7/1/2025). If traffic flow was the same all day and night, this is equivalent to 1 vehicle every 24 seconds. If daytime rates were several times greater than at night, then there could be one vehicle every few seconds during the day, when many of the species with suitable habitat could be active. Either an unevenly- or evenly-distributed rate could mean that there is a fairly constant, but periodic distribution of traffic noise (day and night) and light (night) through the habitat areas intersecting the roadway. This rate is likely to cause disruptions in behavior for sensitive species and may make them less likely to approach the at-grade road, increasing the fragmentation effect.

Barrier Effects and Mortality

Wildlife movement is impacted by two primary factors: (1) the barrier effect of highways on wildlife movement, potentially resulting in reduced dispersal of daily movement within home ranges and genetic dispersal activity and (2) mortality caused by vehicle collisions. The barrier effect is a result of several factors, including animals' hesitation at crossing a wide open space like the combined road, shoulder and clear zone. Traffic noise and light can also cause a barrier effect, which when combined with the open space of an open roadway could constitute a total barrier to movement of sensitive species. For example, Brehme et al. (2013) found that several species of reptile and small mammals would cross minor (narrow) dirt and paved roads, but not 2-lane rural highways. Wildlife hit on the roadway fail to cross, and therefore fail to reproduce. The combination of the physical barrier effect and the mortalities on the highway prevent populations from genetically mixing and prevent juveniles from dispersing, effectively creating genetic fragmentation, which will eventually be harmful to a population or a species.

The traffic volume along Willow Springs Road (1 vehicle every 24 seconds) is high enough to create a significant mortality effect. The travel surface is <9 m wide. Among the species expected to live adjacent to the roadway, the amphibians and snakes are likely to move at the slowest speeds (~5 kmh = 1.4 m/s). Assuming no stopping and starting and traveling in a straight line, it would take 6-7 seconds for them to cross

the travel lanes. At the average traffic volume, this means a crossing animal has a 25% chance of being on the road surface at the same time as a vehicle traveling in either direction. If these animals ignored vehicles and just attempted to travel quickly across the travel lanes, on average, they would be hit up to 25% of the time. This rate would vary with traffic volume and their own behavior. Amphibian and reptile species sometimes freeze when faced by oncoming vehicles (Andrews and Gibbons, 2005; Mazerolle et al., 2005). The basic message is that it would only take a few attempted crossings before an animal was likely to be hit. Recently, the Road Ecology Center carried out statewide statistical modeling of deer-vehicle collisions (Michel et al., unpublished). Based on this modeling, Willow Springs Road has an estimated rate of 0.95 deer-vehicle collisions (DVC) per mi, per year. This is similar to the reported 0.3 DVC/mi-year and considering that DVC is notoriously under-reported by 4 to 10-fold, a rate of approximately 1 DVC/mi-year seems likely. This is a high enough rate that if the roadway was fenced, the avoided cost from reduced collisions would be greater than the cost of installing and maintaining the fencing.

Population and Genetic Implications

All of the species with suitable habitat adjacent to Willow Springs Road vary considerably in their reproductive rate, range, size, dispersal, litter size, and therefore, potential to be impacted by genetic bottlenecks. Without genetic inputs from migrating individuals, small populations are very likely to experience genetic drift, inbreeding, reduced genetic diversity, and an increased risk of local extirpation (Frankham, 2005). Species with short generation times, such as those with 1-2 year lifespans, need more frequent crossings to sustain genetic connectivity. This highlights how road infrastructure like Willow Springs Road can impact wildlife differently depending on reproductive cycles, emphasizing the need to maintain frequent and diverse wildlife passage, in order to limit genetic and population impacts of the roadway.

Species at Risk

The suite of species that could be impacted in the Willow Springs Road area include mountain lion, Rocky Mountain elk, American black bear, coyote, bobcat, badger, western gray squirrel, California ground squirrel, and many other smaller mammal, amphibian and reptile species. The Tehachapi Mountains and Transverse Ranges function as key movement areas for mountain lions between the Sierra Nevada, Central Coast, and Southwest habitats. While there is medium gene flow between the southern Western Sierra Nevada and the Peninsular Range surrounding the LA Basin, there is low gene flow between the southern Sierra Nevada and any range across the LA Basin. The area around Willow Springs Road falls into the latter category of connectivity (Ernest et al. 2003).

There is a population of Rocky Mountain Elk in the Tejon area bounded by I-5 on the west and SR 58 on the north. The goal of CDFW's Tejon Rocky Mountain Elk Management Unit is to maintain numbers and prevent cross breeding with tule elk to the west. Mule deer movement is necessary throughout the ranges connecting Southern California and the Sierra Nevada and mule deer have been determined to be a focal species for connectivity in the area across many studies due to their ability to support larger carnivores (CDFW 2022; White et al. 2006; Miller 2024). Mule deer collisions have been reported on Willow Springs Rd. American black bears (Ursus Americanus) that would be crossing Willow Springs Road are of the same genetic population (Gaines 2023). Therefore, crossings designed for black bear would support intrapopulation connectivity rather than interpopulation connectivity. Collisions with black bear have also been reported on Willow Springs Road. Other species with less specific literature pertaining to their connectivity in the areas of interest include the American badger, desert bighorn sheep, ringtail and Mojave desert tortoise, as well as others listed in Table 1. These species have all been highly impacted by habitat fragmentation in this and adjoining areas.

Highway Infrastructure and Its Effects

The physical infrastructure of roads and highways will have variable barrier effects on species, depending on their size, mobility, and tolerance of open spaces. For example, small mammals may be hesitant to enter and cross the open space of a roadway, regardless of traffic levels because they typically will seek out cover in order to evade predation. Larger species may prefer cover and be hesitant to cross the large open area of a highway, regardless of traffic, in order to escape their predators. Certain prized species such as mule deer may prefer open spaces because they are able to see the approach of their predators, such as mountain lion, and avoid predation. Species such as mule deer and elk seem to be tolerant of traffic, noise, and other disturbances, possibly due to the human shield effect they provide to the species. However, this tolerance brings them into proximity to traffic and increases the chance of collision.

Use of Existing Structures

Wildlife movement across highways often relies on existing structures such as culverts and bridges, originally built for stormwater, minor roads, livestock, or recreational trails. These so-called existing structures may be the primary structures that most wildlife species rely upon in California. Use of these structures has been found to be dependent upon their dimensions, including height, width, and length; their position in the landscape relative to human disturbance; and predator-prey dynamics of the species involved. Prior research by the Road Ecology Center has shown that larger animals tend to prefer bigger passages, while smaller species seek out smaller, more sheltered structures to avoid predators (Shilling et al., 2024). This highlights the importance of designing wildlife crossings that consider the diverse needs of different species to improve connectivity and reduce road mortality.

There currently exist occasional culverts and short bridge under-crossings along Willow Springs Road that were not intended for wildlife connectivity, but could facilitate it nonetheless. Although there have not been camera trap studies at these existing structures under Willow Springs Road, similar investigations at the Grapevine portion of I-5 (Miller, 2024), SR 58 (Caltrans, unpublished observations), and SR 62 (Ortega et al., 2021) looked at the wildlife use of 28 culvert and bridge passages. Verified and probable crossings in the culverts included rabbits, squirrels, coyotes, foxes, bobcats, mountain lion, mule deer, and bighorn sheep. There was a positive correlation between bobcats and coyotes with the size of the structure (Miller 2024). Most of the existing structures are relatively small and possibly even under-sized for flash flooding (evident in channel incision up and downstream). Appendix 1 includes predictions of possible wildlife use of existing and enhanced (made larger) existing structures under Willow Springs Road. Because most of the road is at grade, enhanced existing structures were proposed at locations where seasonal waterways pass under the road.

Mitigation Strategies

Without a purpose-built wildlife crossing, species will have to attempt crossing the right-of-way through existing structures. Besides the roadway barrier and vehicle mortality effects of traffic on wildlife, there are also the effects on human safety and well-being. Colliding with large mammals at high speed can result in at least damage to the vehicle, sometimes injury to the driver and occupants, and occasionally even fatality. A combination of enlarging existing culvert and short bridge under-crossings would be a cost-effective way to improve wildlife connectivity across Willow Springs Road.

Wildlife Crossings and Barrier Fencing

There are several well recognized and studied mitigation methods to reduce vehicle mortality, increase road protection and safety, and provide for wildlife connectivity across busy highways (Rytwinski et al., 2016). Wildlife crossings, when well designed and placed, could result in the maintenance of genetic connectivity, and even daily movement of many species. Wildlife crossing structures are usually combined with barrier fencing stretching out from either side. This reduces the chance the wildlife will cross the roadway in the hope that they will find their way across the structure and make it safely to the other side. Although the adjacent fencing is often called directional fencing, there is no evidence in the literature that the wildlife will choose the correct direction upon encountering it. On average about half will choose the correct direction towards the wildlife crossing structure, and half will go the opposite direction. Barrier fencing stretches running between wildlife crossings could result in wildlife being more successful in finding their safe route. Since it reduces wildlife mortality, barrier fencing can actually be seen as a connectivity supporting action, assuming that there are either existing covered bridges or purpose-built crossings that facilitate wildlife movement across the highway.

Jump-Outs and Additional Infrastructure

Barrier fencing used in wildlife crossing structures is often punctuated by jump outs. Wildlife jump-outs are part of a broader strategy to reduce wildlife-vehicle collisions by creating barriers that prevent animals from entering road corridors but also provide escape routes (Rytwinski et al., 2016). These structures allow animals to escape from fenced road corridors by jumping down from a raised area (Jensen et al., 2022). This design helps animals avoid getting trapped within the fenced area and potentially being struck by vehicles. Jump-outs allow trapped animals to escape back into adjacent habitats.

Many highways have on ramps, off ramps, and other infrastructural intersections that are possible avenues for wildlife to enter the highway, even in the presence of barrier fencing. Cattle guards are often used to reduce the chance the wildlife will enter the highway through a gap in barrier fencing provided for a minor road crossing or other intersection (Allen et al., 2013). However, not all wildlife will be deterred, as some will be able to traverse it, although usually not hooved animals.

Effectiveness of Mitigation

Research into the effectiveness of combinations of fencing and different types of crossing structures have shown that wildlife crossing structures with fencing have on average about an 83% effectiveness in reducing wildlife mortality (Rytwinski et al., 2016). However, there have been very few studies of the connectivity benefit in terms of population impact or genetic connectivity when these structures are used (Soanes et al., 2024). The assumption is made that by facilitating safe passage of individuals of a species across the right of way, those individuals will genetically connect with the population on the other side, which is distinct from their population of origin, and therefore maintain genetic connection between populations divided by the highway. This assumption seems likely to be true in many cases, especially when multiple individuals per year are crossing through wildlife crossing structures, purpose-built or not, but it will depend upon the frequency of these structures, the species of concern, the size of their home ranges, and the amount of dispersal the species are capable of carrying out.

Recommendations

To protect and restore wildlife connectivity across Willow Springs Road:

- Construct additional purpose-built wildlife crossing structures at strategic locations, or enhance (make larger) existing structures to have the same effect.
- Extend barrier fencing along critical sections of Willow Springs Road (through the hilly section to the northern end) to reduce mortality rates.
- Enhance existing culverts and bridges for wildlife use by modifying dimensions and reducing human disturbances nearby.
- Implement noise and light barriers near crossing structures to minimize traffic-related stress for approaching animals.
- Monitor wildlife movement patterns using camera traps and tracking technologies to assess the effectiveness of mitigation measures.

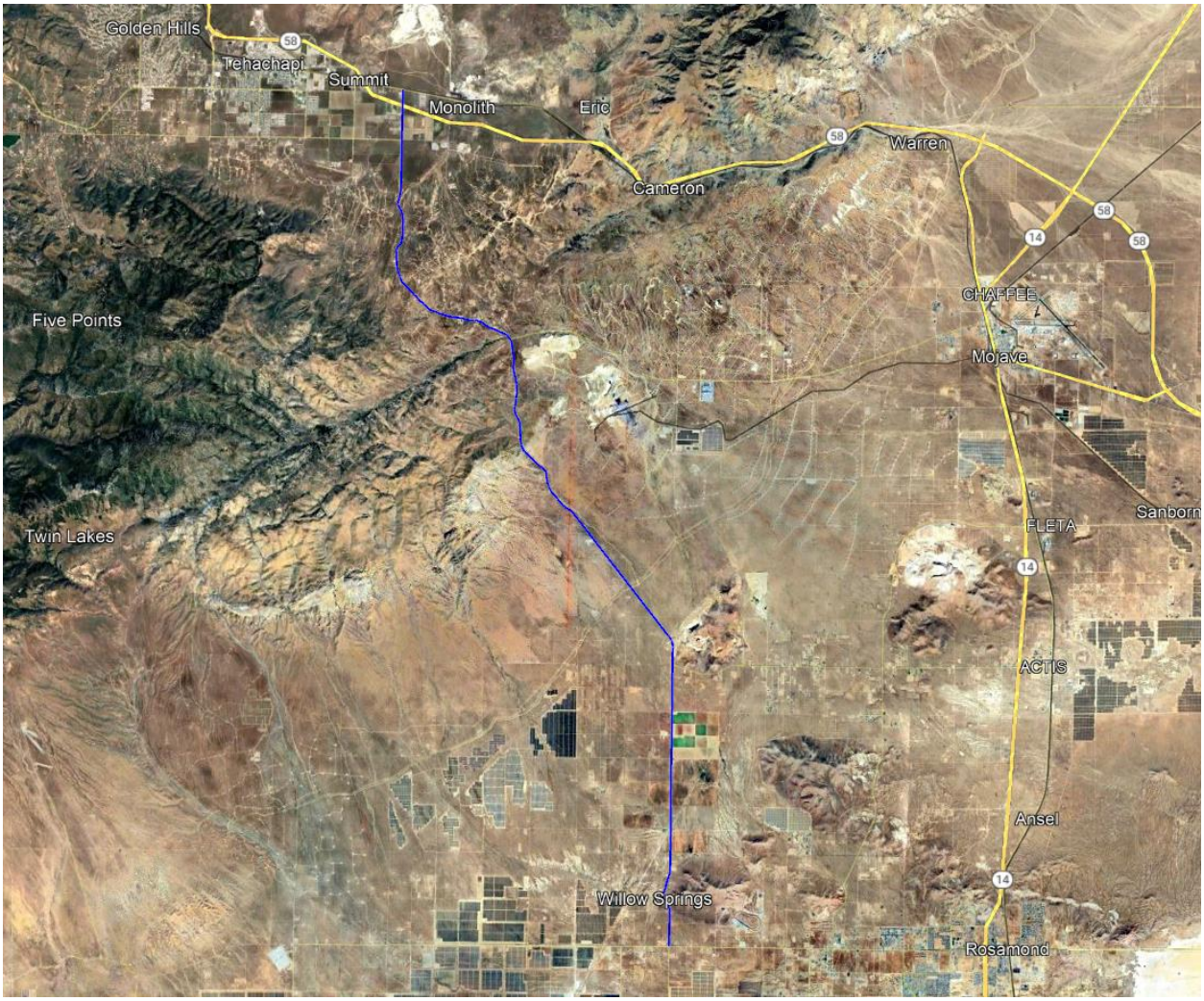

FIGURE 1. AREA IMAGE FOR WILLOW SPRINGS ROAD

Suggested Mitigation

Proposed enhancements of existing structures 1 through 7 cross the right-of-way between Tehachapi and Willow Springs (Appendix 1). These are proposed as box culverts (height: 1-3 m X 3 m), with lengths varying with width of the alignment. The medium-sized mammals are most likely to benefit from these structures, with less benefit for large mammals, depending on the dimensions of the individual structures (e.g., black bear, mountain lion, mule deer). When combined with barrier fencing, small mammals, amphibians and reptiles could benefit from these structures if cover was placed through the length of the structure, including logs, large rocks, and pipes (Brehme et al., 2021a; Brehme et al., 2022). If combined with barrier fencing, cover provides these smaller animals with a way to feel safe from predators as they traverse the structure (Brehme et al., 2021b).

To improve use by small and medium wildlife, there should be vegetative or other cover either maintained or restored leading from nearby habitat to the culvert opening. In addition, because most wild animals are known to be sensitive to anthropogenic noise and light, appropriate screening of noise and light from traffic and streetlights should be placed so as to protect approaching wildlife from noise levels greater than 55 dBA (A-weighted decibels) and light levels greater than 0.1 lux (full moon illumination).

Although there are not exceptionally high rates of reported WVC along this stretch of Willow Springs Road, barrier fencing will improve the identification of openings by wildlife approaching the highway (Rytwinski et al., 2016) and overall effectiveness of wildlife crossings. There is anecdotal evidence that once animals start using crossings, other animal species will investigate and may find the crossings. Fencing should be 8-foot high and either buried (for burrowing animals) or include an above-ground apron on the outside to reduce the need for trenching and to deter digging.

The primary role of barrier fencing is to keep wildlife from entering travel lanes and being hit by vehicles. For reptiles and amphibians, a secondary role is to provide an opaque barrier to reduce the chance that they will persistently try to pass the fence. In other words, if reptiles and amphibians can see through the fencing, they may just stay in one place and try to push through, which will expose them to predation and over-heating (Brehme et al., 2021a,b). In addition, amphibians and reptiles will only move short distances (average <50 m) along fencelines before giving up if they do not find a passage. In order for most reptiles and amphibians to find passages, there would need to be one every 10-20 m, which is a very high frequency of crossing structures. In addition to opaque fencing, it is important that fence turnarounds are used at intervals along the fencing and especially at the ends to direct wildlife back to crossings (Figure 2). The principle is that small mammals, amphibians and reptiles that hit the barrier fence and go in the direction away from the crossing will reach the turnaround and be directed back towards the crossing. Although successfully finding the crossing is more likely with fence turnarounds, some animals will still reach the end of fencelines and get killed on roads (Helldin and Petrovan, 2019).

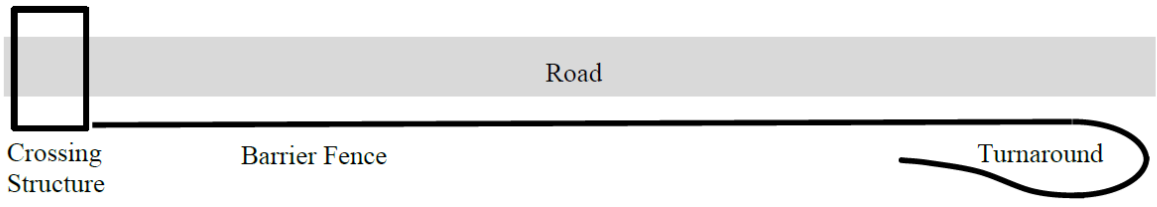

Figure 2. Fence turnaround design for amphibians, reptiles and small mammals

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Appendix 1: Species at Specific Existing and Proposed Enhanced Structures Under Willow Springs Road

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Notes

- The information was derived from using CROSPlan, a tool developed by the Road Ecology Center, UC Davis
- A pin was dropped at the approximate location of a proposed culvert structure
- Culverts were typically 1 to 3 m (10') in height by 3 m (10') in width and their length corresponding to the width of the right-of-way
- Each report includes information about location, structure attributes, calculated distances to landscape features, likelihood of species' use, and a list of species with suitable habitat within 200 m of the structure

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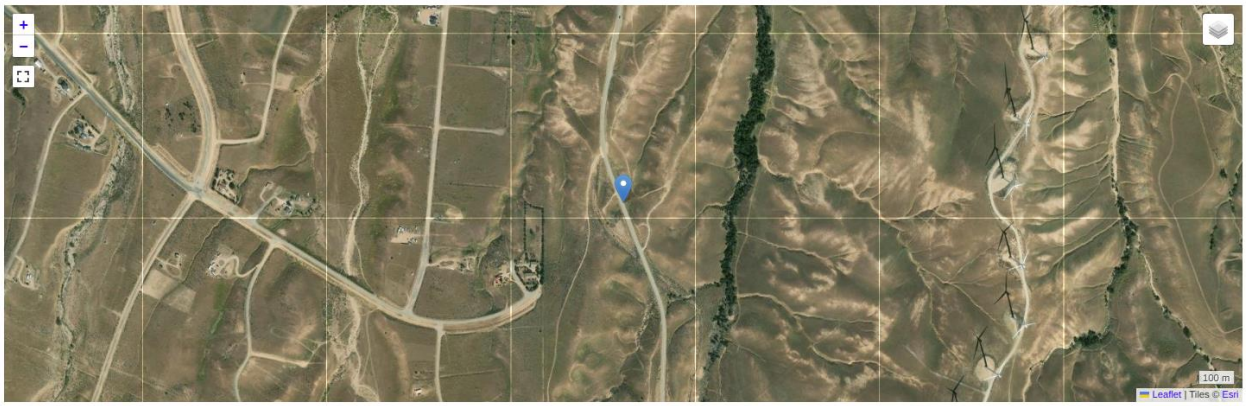
Willow Springs Road: Structure 1

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 35.088798
Longitude : -118.396317

Structure Dimensions

Length (meters): 25.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

Model	Likelihood
SUM Coyote (Canis latrans)	0.991
Black-Tailed Jackrabbit (Lepus californicus)	0.008
SUM Desert Cottontail (Sylvilagus audubonii)	1.000
SUM Bobcat (Lynx rufus)	1.000

Model	Likelihood
SUM Gray Fox (Urocyon cinereoargenteus)	0.041
SUM Mountain Lion (Puma concolor)	1.000
SUM Mule Deer (Odocoileus hemionus)	0.929
SUM Mustelids (Group)	0.000
SUM Brush Rabbit (Sylvilagus bachmani)	0.017
SUM California Ground Squirrel (Otospermophilus beecheyi)	0.997
SUM Deer (Group)	0.999
SUM Foxes (Group)	0.048
SUM Ground Squirrels (Group)	0.989
SUM Rabbits (Group)	0.108
SUM Raccoon (Procyon lotor)	0.002
SUM Skunks (Group)	0.056

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species. The area defined is 200m from the structure point in all directions, and summarized as low (0-33), medium (33-66), high (66-100), and none. The species is listed if habitat is present (i.e. values don't all equal 100% no habitat).

Category	Common name	% high	% medium	% low	% none
Amphibian	Western Toad	0.000	1.000	0.000	0.000
Amphibian	Baja California Treefrog	1.000	0.000	0.000	0.000
Mammal	Ornate Shrew	0.000	1.000	0.000	0.000
Mammal	Broad-footed Mole	1.000	0.000	0.000	0.000
Mammal	Yuma Myotis	0.000	0.000	1.000	0.000
Mammal	Fringed Myotis	0.000	0.000	1.000	0.000
Mammal	Long-legged Myotis	0.000	0.000	1.000	0.000
Mammal	Californian Myotis	0.000	0.000	1.000	0.000
Mammal	Western Small-footed Myotis	0.000	0.000	1.000	0.000
Mammal	Western Pipistrelle	0.000	0.000	1.000	0.000
Mammal	Big Brown Bat	0.000	0.000	1.000	0.000
Mammal	Hoary Bat	0.000	0.000	1.000	0.000

Mammal	Spotted Bat	0.000	0.000	1.000	0.000
Mammal	Townsend's Big-eared Bat	0.000	0.000	1.000	0.000
Mammal	Pallid Bat	0.000	0.000	1.000	0.000
Mammal	Mexican Free-tailed Bat	0.000	0.000	1.000	0.000
Mammal	Greater Bonneted Bat	0.000	0.000	1.000	0.000
Mammal	Brush Rabbit	0.000	1.000	0.000	0.000
Mammal	Desert Cottontail	0.000	1.000	0.000	0.000
Mammal	Black-tailed Jackrabbit	0.000	1.000	0.000	0.000
Mammal	Merriam's Chipmunk	0.000	1.000	0.000	0.000
Mammal	California Ground Squirrel	1.000	0.000	0.000	0.000
Mammal	Botta's Pocket Gopher	1.000	0.000	0.000	0.000
Mammal	San Joaquin Pocket Mouse	1.000	0.000	0.000	0.000
Mammal	California Pocket Mouse	1.000	0.000	0.000	0.000
Mammal	Agile Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Western Harvest Mouse	1.000	0.000	0.000	0.000
Mammal	North American Deermouse	0.000	1.000	0.000	0.000
Mammal	Brush Deermouse	0.000	0.000	1.000	0.000
Mammal	Pinon Deermouse	0.000	1.000	0.000	0.000
Mammal	Southern Grasshopper Mouse	0.000	1.000	0.000	0.000
Mammal	California Vole	1.000	0.000	0.000	0.000
Mammal	Long-tailed Vole	1.000	0.000	0.000	0.000
Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Gray Fox	0.000	0.000	1.000	0.000
Mammal	American Black Bear	0.000	0.000	1.000	0.000
Mammal	Ringtail	0.000	0.000	1.000	0.000
Mammal	Raccoon	0.000	0.000	1.000	0.000
Mammal	Long-tailed Weasel	0.000	1.000	0.000	0.000
Mammal	American Badger	1.000	0.000	0.000	0.000
Mammal	Western Spotted Skunk	0.000	1.000	0.000	0.000
Mammal	Striped Skunk	0.000	1.000	0.000	0.000
Mammal	Mountain Lion	0.000	0.000	1.000	0.000
Mammal	Bobcat	0.000	1.000	0.000	0.000
Mammal	Mule Deer	0.000	0.000	1.000	0.000

Reptile	Western Pond Turtle	0.000	1.000	0.000	0.000
Reptile	Western Fence Lizard	0.000	0.000	1.000	0.000
Reptile	Common Side-blotched	1.000	0.000	0.000	0.000
Reptile	Blainville's Horned Lizard	0.000	0.000	1.000	0.000
Reptile	Desert Night Lizard	0.000	0.000	1.000	0.000
Reptile	Gilbert's Skink	0.000	0.000	1.000	0.000
Reptile	Tiger Whiptail	0.000	0.000	1.000	0.000
Reptile	Southern Alligator Lizard	0.000	0.000	1.000	0.000
Reptile	Coachwhip	0.000	0.000	1.000	0.000
Reptile	Western Patch-nosed Snake	0.000	0.000	1.000	0.000
Reptile	Glossy Snake	0.000	0.000	1.000	0.000
Reptile	Gophersnake	1.000	0.000	0.000	0.000
Reptile	Common Kingsnake	0.000	1.000	0.000	0.000
Reptile	Long-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Common Gartersnake	1.000	0.000	0.000	0.000
Reptile	Sierra Gartersnake	0.000	0.000	1.000	0.000
Reptile	Desert Nightsnake	0.000	1.000	0.000	0.000
Reptile	Western Rattlesnake	0.000	1.000	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
8. Big Brown Bat (*Eptesicus fuscus*)
9. North American Porcupine (*Erethizon dorsata*)
10. Spotted Bat (*Euderma maculatum*)

11. Greater Bonneted Bat (*Eumops perotis*)
12. Western Red Bat (*Lasiurus blossevillii*)
13. Hoary Bat (*Lasiurus cinereus*)
14. Black-tailed Jackrabbit (*Lepus californicus*)
15. Bobcat (*Lynx rufus*)
16. Striped Skunk (*Mephitis mephitis*)
17. California Vole (*Microtus californicus*)
18. Long-tailed Vole (*Microtus longicaudus*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Long-legged Myotis (*Myotis volans*)
26. Yuma Myotis (*Myotis yumanensis*)
27. Desert Woodrat (*Neotoma lepida*)
28. Big-eared Woodrat (*Neotoma macrotis*)
29. Mule Deer (*Odocoileus hemionus*)
30. Southern Grasshopper Mouse (*Onychomys torridus*)
31. California Ground Squirrel (*Otospermophilus beecheyi*)
32. White-eared Pocket Mouse (*Perognathus alticolus*)
33. San Joaquin Pocket Mouse (*Perognathus inornatus*)
34. Brush Deermouse (*Peromyscus boylii*)
35. California Deermouse (*Peromyscus californicus*)
36. North American Deermouse (*Peromyscus maniculatus*)
37. Pinon Deermouse (*Peromyscus truei*)
38. Western Pipistrelle (*Pipistrellus hesperus*)
39. Raccoon (*Procyon lotor*)
40. Mountain Lion (*Puma concolor*)
41. Brown Rat (*Rattus norvegicus*)
42. Roof Rat (*Rattus rattus*)
43. Western Harvest Mouse (*Reithrodontomys megalotis*)
44. Broad-footed Mole (*Scapanus latimanus*)
45. Western Gray Squirrel (*Sciurus griseus*)
46. Ornate Shrew (*Sorex ornatus*)
47. Western Spotted Skunk (*Spilogale gracilis*)
48. Wild Boar (*Sus scrofa*)
49. Desert Cottontail (*Sylvilagus audubonii*)
50. Brush Rabbit (*Sylvilagus bachmani*)
51. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
52. Merriam's Chipmunk (*Tamias merriami*)
53. Lodgepole Chipmunk (*Tamias speciosus*)
54. American Badger (*Taxidea taxus*)

55. Botta's Pocket Gopher (*Thomomys bottae*)
56. Gray Fox (*Urocyon cinereoargenteus*)
57. American Black Bear (*Ursus americanus*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

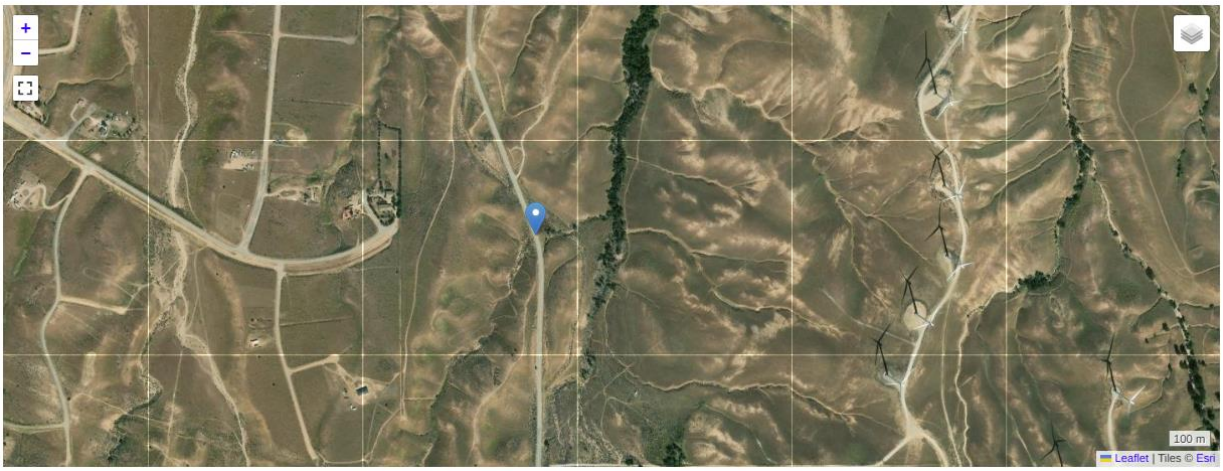
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Zebra-tailed Lizard (*Callisaurus draconoides*)
6. Northern Rubber Boa (*Charina bottae*)
7. Snapping Turtle (*Chelydra serpentina*)
8. Western Shovel-nosed Snake (*Chionactis occipitalis*)
9. Western Banded Gecko (*Coleonyx variegatus*)
10. North American Racer (*Coluber constrictor*)
11. Coachwhip (*Coluber flagellum*)
12. Striped Racer (*Coluber lateralis*)
13. Sidewinder (*Crotalus cerastes*)
14. Speckled Rattlesnake (*Crotalus mitchellii*)
15. Western Rattlesnake (*Crotalus oreganus*)
16. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
17. Ring-necked Snake (*Diadophis punctatus*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
21. Common Kingsnake (*Lampropeltis getula*)
22. Western Threadsnake (*Leptotyphlops humilis*)
23. Rosy Boa (*Lichanura trivirgata*)
24. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
25. Desert Horned Lizard (*Phrynosoma platyrhinos*)
26. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
27. Gophersnake (*Pituophis catenifer*)
28. Gilbert's Skink (*Plestiodon gilberti*)

29. Long-nosed Snake (*Rhinocheilus lecontei*)
30. Western Patch-nosed Snake (*Salvadora hexalepis*)
31. Common Sagebrush Lizard (*Sceloporus graciosus*)
32. Western Fence Lizard (*Sceloporus occidentalis*)
33. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
34. Western Groundsnake (*Sonora semiannulata*)
35. Sierra Gartersnake (*Thamnophis couchii*)
36. Common Gartersnake (*Thamnophis sirtalis*)
37. Western Lyresnake (*Trimorphodon biscutatus*)
38. Common Side-blotched Lizard (*Uta stansburiana*)

Willow Spring Rd: Structure 2

Location Map

The blue pointer indicates the approximate location of the proposed structure.



Latitude : 35.086449
Longitude: -118.395241

Structure Dimensions

Length (meters): 40.0 m
Width (meters): 3.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

Model	Likelihood
Coyote (Canis latrans)	0.268
Black-Tailed Jackrabbit (Lepus californicus)	1.000
Bobcat (Lynx rufus)	0.027

Model	Likelihood
Gray Fox (Urocyon cinereoargenteus)	0.030
Mountain Lion (Puma concolor)	0.464
Mule Deer (Odocoileus hemionus)	0.946
Mustelids (Group)	0.000
Brush Rabbit (Sylvilagus bachmani)	0.005
California Ground Squirrel (Otospermophilus beecheyi)	0.917
Deer (Group)	0.870
Fox (Species)	0.978
Ground Squirrels (Group)	0.563
Rabbits (Group)	0.150
Raccoon (Procyon lotor)	0.324
Skunks (Group)	0.034
Tree Squirrels (Group)	0.006
Woodrats (Group)	1.000

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species near structure points, using models developed by the California Department of Fish and Wildlife. Suitable habitat was assessed within a radius of 200 m from the structure point in all directions, and summarized as the percent of each of low (0-33), medium (33-66), high (66-100), and none within the 200 m radius circle. The species is listed only if habitat is present (i.e. pct_none does not equal 1.000).

Category	Common name	% high	% medium	% low	% none
Amphibian	Western Toad	0.000	1.000	0.000	0.000
Amphibian	Baja California Treefrog	0.812	0.000	0.188	0.000
Mammal	Ornate Shrew	0.000	0.812	0.000	0.188
Mammal	Brush Rabbit	0.000	0.812	0.000	0.188
Mammal	Desert Cottontail	0.188	0.812	0.000	0.000
Mammal	Black-tailed Jackrabbit	0.188	0.812	0.000	0.000
Mammal	Merriam's Chipmunk	0.000	0.812	0.000	0.188
Mammal	California Ground Squirrel	0.812	0.188	0.000	0.000
Mammal	Botta's Pocket Gopher	0.812	0.188	0.000	0.000
Mammal	San Joaquin Pocket Mouse	0.812	0.000	0.000	0.188
Mammal	White-eared Pocket Mouse	0.000	0.188	0.000	0.812

Mammal	California Pocket Mouse	0.812	0.188	0.000	0.000
Mammal	Agile Kangaroo Rat	0.812	0.000	0.000	0.188
Mammal	Western Harvest Mouse	0.812	0.188	0.000	0.000
Mammal	North American	0.188	0.812	0.000	0.000
Mammal	Brush Deermouse	0.000	0.188	0.812	0.000
Mammal	Pinon Deermouse	0.000	1.000	0.000	0.000
Mammal	Southern Grasshopper	0.000	1.000	0.000	0.000
Mammal	Desert Woodrat	0.188	0.000	0.000	0.812
Mammal	California Vole	0.812	0.188	0.000	0.000
Mammal	Long-tailed Vole	0.812	0.000	0.188	0.000
Mammal	North American Porcupine	0.000	0.000	0.188	0.812
Mammal	Coyote	0.188	0.812	0.000	0.000
Mammal	Gray Fox	0.000	0.188	0.812	0.000
Mammal	American Black Bear	0.000	0.000	0.812	0.188
Mammal	Ringtail	0.000	0.188	0.812	0.000
Mammal	Raccoon	0.000	0.000	1.000	0.000
Mammal	Long-tailed Weasel	0.000	1.000	0.000	0.000
Mammal	American Badger	0.812	0.188	0.000	0.000
Mammal	Western Spotted Skunk	0.000	1.000	0.000	0.000
Mammal	Striped Skunk	0.000	1.000	0.000	0.000
Mammal	Mountain Lion	0.000	0.000	1.000	0.000
Mammal	Bobcat	0.188	0.812	0.000	0.000
Mammal	Mule Deer	0.000	0.188	0.812	0.000
Mammal	Big-eared Woodrat	0.000	0.000	0.188	0.812
Reptile	Western Pond Turtle	0.000	0.812	0.000	0.188
Reptile	Long-nosed Leopard Lizard	0.000	0.188	0.000	0.812
Reptile	Western Fence Lizard	0.000	0.188	0.812	0.000
Reptile	Common Sagebrush Lizard	0.000	0.188	0.000	0.812
Reptile	Common Side-blotched	0.812	0.188	0.000	0.000
Reptile	Blainville's Horned Lizard	0.000	0.000	0.812	0.188
Reptile	Desert Night Lizard	0.000	0.000	1.000	0.000
Reptile	Gilbert's Skink	0.000	0.000	0.812	0.188
Reptile	Tiger Whiptail	0.000	0.188	0.812	0.000
Reptile	Southern Alligator Lizard	0.000	0.000	0.812	0.188

Reptile	Coachwhip	0.000	0.000	1.000	0.000
Reptile	Western Patch-nosed	0.000	0.000	1.000	0.000
Reptile	Glossy Snake	0.000	0.000	1.000	0.000
Reptile	Gophersnake	1.000	0.000	0.000	0.000
Reptile	Common Kingsnake	0.000	1.000	0.000	0.000
Reptile	Long-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Common Gartersnake	0.812	0.000	0.188	0.000
Reptile	Sierra Gartersnake	0.000	0.000	0.812	0.188
Reptile	Desert Nightsnake	0.000	1.000	0.000	0.000
Reptile	Western Rattlesnake	0.188	0.812	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) which are present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
8. Big Brown Bat (*Eptesicus fuscus*)
9. North American Porcupine (*Erethizon dorsata*)
10. Spotted Bat (*Euderma maculatum*)
11. Greater Bonneted Bat (*Eumops perotis*)
12. Western Red Bat (*Lasiurus blossevillii*)
13. Hoary Bat (*Lasiurus cinereus*)
14. Black-tailed Jackrabbit (*Lepus californicus*)
15. Bobcat (*Lynx rufus*)
16. Striped Skunk (*Mephitis mephitis*)
17. California Vole (*Microtus californicus*)
18. Long-tailed Vole (*Microtus longicaudus*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)

22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Long-legged Myotis (*Myotis volans*)
26. Yuma Myotis (*Myotis yumanensis*)
27. Desert Woodrat (*Neotoma lepida*)
28. Big-eared Woodrat (*Neotoma macrotis*)
29. Mule Deer (*Odocoileus hemionus*)
30. Southern Grasshopper Mouse (*Onychomys torridus*)
31. California Ground Squirrel (*Otospermophilus beecheyi*)
32. White-eared Pocket Mouse (*Perognathus alticolus*)
33. San Joaquin Pocket Mouse (*Perognathus inornatus*)
34. Brush Deermouse (*Peromyscus boylii*)
35. California Deermouse (*Peromyscus californicus*)
36. North American Deermouse (*Peromyscus maniculatus*)
37. Pinon Deermouse (*Peromyscus truei*)
38. Western Pipistrelle (*Pipistrellus hesperus*)
39. Raccoon (*Procyon lotor*)
40. Mountain Lion (*Puma concolor*)
41. Brown Rat (*Rattus norvegicus*)
42. Roof Rat (*Rattus rattus*)
43. Western Harvest Mouse (*Reithrodontomys megalotis*)
44. Broad-footed Mole (*Scapanus latimanus*)
45. Western Gray Squirrel (*Sciurus griseus*)
46. Ornate Shrew (*Sorex ornatus*)
47. Western Spotted Skunk (*Spilogale gracilis*)
48. Wild Boar (*Sus scrofa*)
49. Desert Cottontail (*Sylvilagus audubonii*)
50. Brush Rabbit (*Sylvilagus bachmani*)
51. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
52. Merriam's Chipmunk (*Tamias merriami*)
53. Lodgepole Chipmunk (*Tamias speciosus*)
54. American Badger (*Taxidea taxus*)
55. Botta's Pocket Gopher (*Thomomys bottae*)
56. Gray Fox (*Urocyon cinereoargenteus*)
57. American Black Bear (*Ursus americanus*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)

6. Western Toad (*Anaxyrus boreas*)

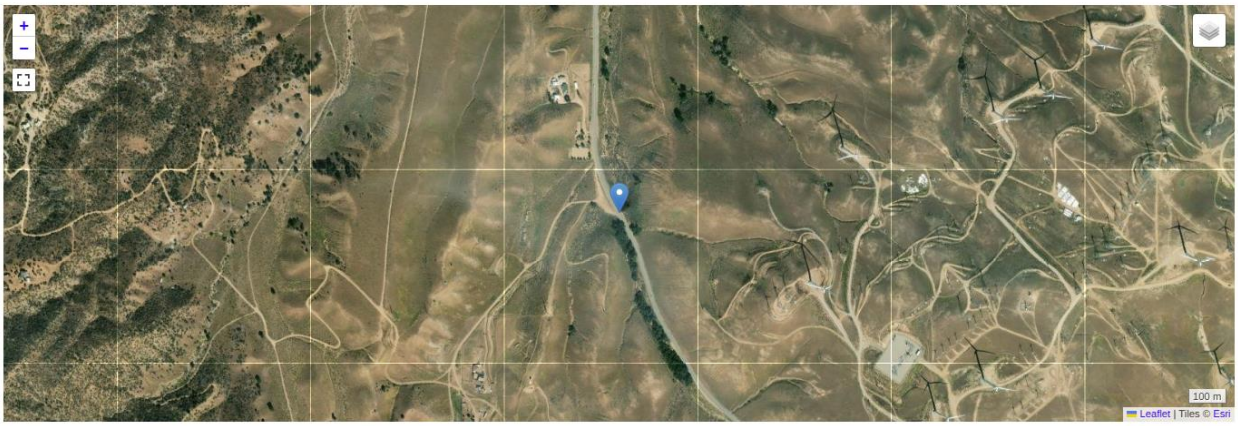
Reptiles

1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Zebra-tailed Lizard (*Callisaurus draconoides*)
6. Northern Rubber Boa (*Charina bottae*)
7. Snapping Turtle (*Chelydra serpentina*)
8. Western Shovel-nosed Snake (*Chionactis occipitalis*)
9. Western Banded Gecko (*Coleonyx variegatus*)
10. North American Racer (*Coluber constrictor*)
11. Coachwhip (*Coluber flagellum*)
12. Striped Racer (*Coluber lateralis*)
13. Sidewinder (*Crotalus cerastes*)
14. Speckled Rattlesnake (*Crotalus mitchellii*)
15. Western Rattlesnake (*Crotalus oreganus*)
16. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
17. Ring-necked Snake (*Diadophis punctatus*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
21. Common Kingsnake (*Lampropeltis getula*)
22. Western Threadsnake (*Leptotyphlops humilis*)
23. Rosy Boa (*Lichanura trivirgata*)
24. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
25. Desert Horned Lizard (*Phrynosoma platyrhinos*)
26. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
27. Gophersnake (*Pituophis catenifer*)
28. Gilbert's Skink (*Plestiodon gilberti*)
29. Long-nosed Snake (*Rhinocheilus lecontei*)
30. Western Patch-nosed Snake (*Salvadora hexalepis*)
31. Common Sagebrush Lizard (*Sceloporus graciosus*)
32. Western Fence Lizard (*Sceloporus occidentalis*)
33. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
34. Western Groundsnake (*Sonora semiannulata*)
35. Sierra Gartersnake (*Thamnophis couchii*)
36. Common Gartersnake (*Thamnophis sirtalis*)
37. Western Lyresnake (*Trimorphodon biscutatus*)
38. Common Side-blotched Lizard (*Uta stansburiana*)
39. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road 3 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 35.069442
Longitude : -118.396392

Structure Dimensions

Length (meters): 42.0 m
Width (meters): 6.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Additional Features

Seasonal Waterway
Seasonal

Structure Use Model Results

This model shows the probability of an animal appearing at this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Coyote (Canis latrans)	0.426
3	SUM Black-Tailed Jackrabbit (Lepus californicus)	0.983
6	SUM Red Fox (Vulpes vulpes)	1.000
8	SUM Bobcat (Lynx rufus)	0.038
9	SUM Gray Fox (Urocyon cinereoargenteus)	0.040
10	SUM Mountain Lion (Puma concolor)	0.053
11	SUM Mule Deer (Odocoileus hemionus)	0.870
12	SUM Opossum (Didelphis virginiana)	0.035
13	SUM Mustelids (Group)	0.006
14	SUM Brush Rabbit (Sylvilagus bachmani)	0.001
15	SUM California Ground Squirrel (Otospermophilus	0.567
16	SUM Deer (Group)	0.631
17	SUM Fox (Species)	1.000
18	SUM Foxes (Group)	0.045
19	SUM Ground Squirrels (Group)	0.506
20	SUM Rabbits (Group)	0.234
21	SUM Raccoon (Procyon lotor)	0.653
23	SUM Skunks (Group)	0.151
24	SUM Tree Squirrels (Group)	0.065
26	SUM Western Gray Squirrel (Sciurus griseus)	1.000
27	SUM White-tailed Deer (Odocoileus virginianus)	0.001

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species. The area defined is 200m from the structure point in all directioons, and summarized as low (0-33), med (33-66), high (66-100), and none. The species is listed if habitat is present (i.e. values don't all equal 100% no habitat).

Category	Common name	% high	% medium	% low	% none
Amphibian	Ensatina	0.078	0.000	0.000	0.922
Amphibian	Western Toad	0.000	1.000	0.000	0.000
Amphibian	Baja California Treefrog	0.812	0.000	0.188	0.000
Mammal	Ornate Shrew	0.078	0.734	0.000	0.188
Mammal	Broad-footed Mole	0.812	0.000	0.000	0.188

Mammal	Brush Rabbit	0.000	0.812	0.000	0.188
Mammal	Desert Cottontail	0.188	0.734	0.000	0.078
Mammal	Black-tailed Jackrabbit	0.188	0.812	0.000	0.000
Mammal	Merriam's Chipmunk	0.000	0.812	0.000	0.188
Mammal	California Ground Squirrel	0.734	0.266	0.000	0.000
Mammal	Western Gray Squirrel	0.000	0.000	0.078	0.922
Mammal	Botta's Pocket Gopher	0.734	0.266	0.000	0.000
Mammal	San Joaquin Pocket Mouse	0.734	0.000	0.000	0.266
Mammal	White-eared Pocket Mouse	0.000	0.188	0.000	0.812
Mammal	California Pocket Mouse	0.734	0.188	0.000	0.078
Mammal	Agile Kangaroo Rat	0.734	0.000	0.000	0.266
Mammal	Western Harvest Mouse	0.812	0.188	0.000	0.000
Mammal	California Deermouse	0.000	0.078	0.000	0.922
Mammal	North American Deermouse	0.266	0.734	0.000	0.000
Mammal	Brush Deermouse	0.000	0.266	0.734	0.000
Mammal	Pinon Deermouse	0.000	1.000	0.000	0.000
Mammal	Southern Grasshopper	0.000	0.922	0.078	0.000
Mammal	Desert Woodrat	0.188	0.000	0.000	0.812
Mammal	California Vole	0.734	0.266	0.000	0.000
Mammal	Long-tailed Vole	0.812	0.000	0.188	0.000
Mammal	North American Porcupine	0.000	0.078	0.188	0.734
Mammal	Coyote	0.188	0.812	0.000	0.000
Mammal	Gray Fox	0.000	0.188	0.812	0.000
Mammal	American Black Bear	0.000	0.078	0.734	0.188
Mammal	Ringtail	0.078	0.188	0.734	0.000
Mammal	Raccoon	0.000	0.078	0.922	0.000
Mammal	Long-tailed Weasel	0.000	1.000	0.000	0.000
Mammal	American Badger	0.734	0.188	0.078	0.000
Mammal	Western Spotted Skunk	0.000	1.000	0.000	0.000
Mammal	Striped Skunk	0.078	0.922	0.000	0.000
Mammal	Mountain Lion	0.078	0.000	0.922	0.000
Mammal	Bobcat	0.266	0.734	0.000	0.000
Mammal	Mule Deer	0.000	0.266	0.734	0.000
Mammal	Big-eared Woodrat	0.000	0.078	0.188	0.734

Reptile	Western Pond Turtle	0.000	0.812	0.000	0.188
Reptile	Long-nosed Leopard Lizard	0.000	0.188	0.000	0.812
Reptile	Western Fence Lizard	0.000	0.266	0.734	0.000
Reptile	Common Sagebrush Lizard	0.000	0.188	0.000	0.812
Reptile	Common Side-blotched	0.734	0.188	0.000	0.078
Reptile	Blainville's Horned Lizard	0.000	0.000	0.734	0.266
Reptile	Desert Night Lizard	0.000	0.000	0.922	0.078
Reptile	Gilbert's Skink	0.078	0.000	0.734	0.188
Reptile	Tiger Whiptail	0.000	0.188	0.812	0.000
Reptile	Southern Alligator Lizard	0.078	0.000	0.734	0.188
Reptile	Northern Rubber Boa	0.078	0.000	0.000	0.922
Reptile	Coachwhip	0.000	0.000	0.922	0.078
Reptile	Striped Racer	0.000	0.000	0.078	0.922
Reptile	Western Patch-nosed Snake	0.000	0.000	0.922	0.078
Reptile	Glossy Snake	0.000	0.000	0.922	0.078
Reptile	Gophersnake	0.922	0.078	0.000	0.000
Reptile	Common Kingsnake	0.000	0.922	0.078	0.000
Reptile	Long-nosed Snake	0.000	0.922	0.000	0.078
Reptile	Common Gartersnake	0.734	0.078	0.188	0.000
Reptile	Sierra Gartersnake	0.078	0.000	0.734	0.188
Reptile	Desert Nightsnake	0.000	0.922	0.078	0.000
Reptile	Western Rattlesnake	0.188	0.812	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Panamint Kangaroo Rat (*Dipodomys panamintinus*)

8. Big Brown Bat (*Eptesicus fuscus*)
9. North American Porcupine (*Erethizon dorsata*)
10. Spotted Bat (*Euderma maculatum*)
11. Greater Bonneted Bat (*Eumops perotis*)
12. Western Red Bat (*Lasiurus blossevillii*)
13. Hoary Bat (*Lasiurus cinereus*)
14. Black-tailed Jackrabbit (*Lepus californicus*)
15. Bobcat (*Lynx rufus*)
16. Striped Skunk (*Mephitis mephitis*)
17. California Vole (*Microtus californicus*)
18. Long-tailed Vole (*Microtus longicaudus*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Long-legged Myotis (*Myotis volans*)
26. Yuma Myotis (*Myotis yumanensis*)
27. Desert Woodrat (*Neotoma lepida*)
28. Big-eared Woodrat (*Neotoma macrotis*)
29. Mule Deer (*Odocoileus hemionus*)
30. Southern Grasshopper Mouse (*Onychomys torridus*)
31. California Ground Squirrel (*Otospermophilus beecheyi*)
32. White-eared Pocket Mouse (*Perognathus alticolus*)
33. San Joaquin Pocket Mouse (*Perognathus inornatus*)
34. Brush Deermouse (*Peromyscus boylii*)
35. California Deermouse (*Peromyscus californicus*)
36. North American Deermouse (*Peromyscus maniculatus*)
37. Pinon Deermouse (*Peromyscus truei*)
38. Western Pipistrelle (*Pipistrellus hesperus*)
39. Raccoon (*Procyon lotor*)
40. Mountain Lion (*Puma concolor*)
41. Brown Rat (*Rattus norvegicus*)
42. Roof Rat (*Rattus rattus*)
43. Western Harvest Mouse (*Reithrodontomys megalotis*)
44. Broad-footed Mole (*Scapanus latimanus*)
45. Western Gray Squirrel (*Sciurus griseus*)
46. Ornate Shrew (*Sorex ornatus*)
47. Western Spotted Skunk (*Spilogale gracilis*)
48. Wild Boar (*Sus scrofa*)
49. Desert Cottontail (*Sylvilagus audubonii*)
50. Brush Rabbit (*Sylvilagus bachmani*)
51. Mexican Free-tailed Bat (*Tadarida brasiliensis*)

52. Merriam's Chipmunk (*Tamias merriami*)
53. Lodgepole Chipmunk (*Tamias speciosus*)
54. American Badger (*Taxidea taxus*)
55. Botta's Pocket Gopher (*Thomomys bottae*)
56. Gray Fox (*Urocyon cinereoargenteus*)
57. American Black Bear (*Ursus americanus*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

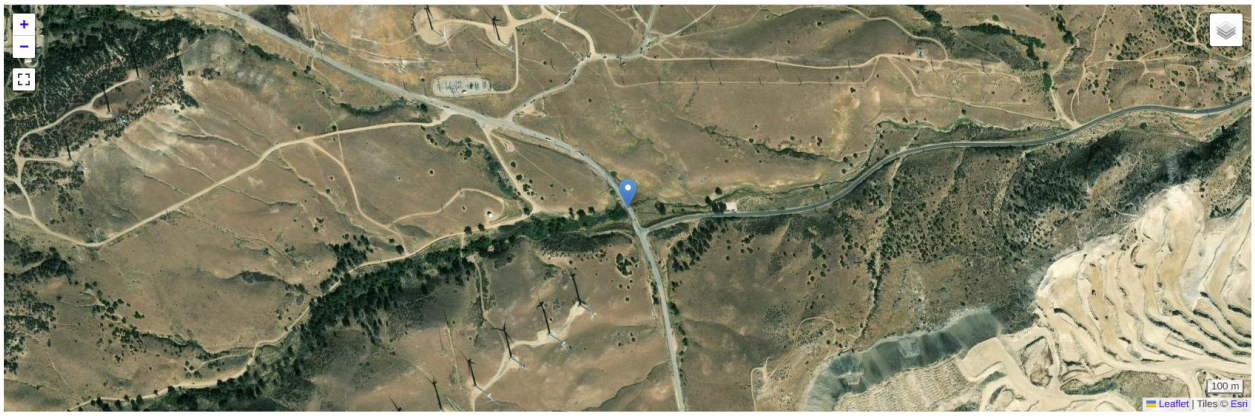
1. Western Pond Turtle (*Actinemys marmorata*)
2. California Legless Lizard (*Anniella pulchra*)
3. Glossy Snake (*Arizona elegans*)
4. Tiger Whiptail (*Aspidoscelis tigris*)
5. Zebra-tailed Lizard (*Callisaurus draconoides*)
6. Northern Rubber Boa (*Charina bottae*)
7. Snapping Turtle (*Chelydra serpentina*)
8. Western Shovel-nosed Snake (*Chionactis occipitalis*)
9. Western Banded Gecko (*Coleonyx variegatus*)
10. North American Racer (*Coluber constrictor*)
11. Coachwhip (*Coluber flagellum*)
12. Striped Racer (*Coluber lateralis*)
13. Sidewinder (*Crotalus cerastes*)
14. Speckled Rattlesnake (*Crotalus mitchellii*)
15. Western Rattlesnake (*Crotalus oreganus*)
16. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
17. Ring-necked Snake (*Diadophis punctatus*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
21. Common Kingsnake (*Lampropeltis getula*)
22. Western Threadsnake (*Leptotyphlops humilis*)
23. Rosy Boa (*Lichanura trivirgata*)
24. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
25. Desert Horned Lizard (*Phrynosoma platyrhinos*)
26. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
27. Gophersnake (*Pituophis catenifer*)

28. Gilbert's Skink (*Plestiodon gilberti*)
29. Long-nosed Snake (*Rhinocheilus lecontei*)
30. Western Patch-nosed Snake (*Salvadora hexalepis*)
31. Common Sagebrush Lizard (*Sceloporus graciosus*)
32. Western Fence Lizard (*Sceloporus occidentalis*)
33. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
34. Western Groundsnake (*Sonora semiannulata*)
35. Sierra Gartersnake (*Thamnophis couchii*)
36. Common Gartersnake (*Thamnophis sirtalis*)
37. Western Lyresnake (*Trimorphodon biscutatus*)
38. Common Side-blotched Lizard (*Uta stansburiana*)
39. Desert Night Lizard (*Xantusia vigilis*)

Willow Springs Road 4 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 35.050223
Longitude : -118.355164

Structure Dimensions

Length (meters): 35.0 m
Width (meters): 6.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Additional Features

Seasonal Waterway

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Coyote (Canis latrans)	0.871

	Model	Likelihood
3	SUM Black-Tailed Jackrabbit (Lepus californicus)	1.000
8	SUM Bobcat (Lynx rufus)	0.241
9	SUM Gray Fox (Urocyon cinereoargenteus)	0.212
10	SUM Mountain Lion (Puma concolor)	0.047
11	SUM Mule Deer (Odocoileus hemionus)	0.968
12	SUM Opossum (Didelphis virginiana)	0.152
13	SUM Mustelids (Group)	0.010
14	SUM Brush Rabbit (Sylvilagus bachmani)	0.144
15	SUM California Ground Squirrel (Otospermophilus beecheyi)	0.948
16	SUM Deer (Group)	0.704
18	SUM Foxes (Group)	0.066
19	SUM Ground Squirrels (Group)	0.884
20	SUM Rabbits (Group)	0.383
21	SUM Raccoon (Procyon lotor)	0.861
23	SUM Skunks (Group)	0.574
24	SUM Tree Squirrels (Group)	0.780
27	SUM White-tailed Deer (Odocoileus virginianus)	0.000

Predicted Habitat for Species near Structure

This table shows the suitable habitat for amphibian, mammal, and reptile species. The area defined is 200m from the structure point in all directions, and summarized as low (0-33), med (33-66), high (66-100), and none. The species is listed if habitat is present (i.e. values don't all equal 100% no habitat).

Category	Common name	% high	% medium	% low	% none

Amphibian	Western Toad	0.000	0.750	0.000	0.250
Amphibian	Baja California Treefrog	0.594	0.016	0.141	0.250
Mammal	Ornate Shrew	0.000	0.594	0.016	0.391
Mammal	Broad-footed Mole	0.594	0.000	0.000	0.406
Mammal	Brush Rabbit	0.016	0.594	0.000	0.391
Mammal	Desert Cottontail	0.219	0.594	0.000	0.188
Mammal	Black-tailed Jackrabbit	0.203	0.609	0.000	0.188
Mammal	Merriam's Chipmunk	0.016	0.594	0.000	0.391
Mammal	White-tailed Antelope Squirrel	0.000	0.203	0.609	0.188
Mammal	California Ground Squirrel	0.594	0.156	0.188	0.062
Mammal	Botta's Pocket Gopher	0.594	0.219	0.188	0.000
Mammal	San Joaquin Pocket Mouse	0.594	0.016	0.188	0.203
Mammal	White-eared Pocket Mouse	0.000	0.156	0.000	0.844
Mammal	California Pocket Mouse	0.609	0.141	0.000	0.250
Mammal	Agile Kangaroo Rat	0.609	0.062	0.188	0.141
Mammal	Panamint Kangaroo Rat	0.203	0.609	0.000	0.188
Mammal	Merriam's Kangaroo Rat	0.062	0.156	0.594	0.188
Mammal	Western Harvest Mouse	0.594	0.219	0.000	0.188
Mammal	North American Deermouse	0.156	0.656	0.188	0.000
Mammal	Canyon Deermouse	0.203	0.016	0.594	0.188
Mammal	Brush Deermouse	0.016	0.141	0.594	0.250
Mammal	Pinon Deermouse	0.016	0.734	0.000	0.250
Mammal	Southern Grasshopper Mouse	0.062	0.750	0.000	0.188
Mammal	Desert Woodrat	0.156	0.062	0.000	0.781
Mammal	Long-tailed Vole	0.594	0.000	0.156	0.250
Mammal	North American Porcupine	0.000	0.000	0.156	0.844
Mammal	Coyote	0.156	0.656	0.188	0.000
Mammal	Gray Fox	0.016	0.203	0.594	0.188
Mammal	American Black Bear	0.000	0.016	0.594	0.391
Mammal	Ringtail	0.016	0.141	0.844	0.000
Mammal	Raccoon	0.000	0.016	0.734	0.250
Mammal	Long-tailed Weasel	0.000	0.750	0.062	0.188
Mammal	American Badger	0.656	0.344	0.000	0.000
Mammal	Western Spotted Skunk	0.016	0.734	0.000	0.250
Mammal	Striped Skunk	0.016	0.734	0.000	0.250
Mammal	Mountain Lion	0.016	0.000	0.797	0.188
Mammal	Bobcat	0.156	0.656	0.000	0.188
Mammal	Mule Deer	0.000	0.156	0.656	0.188
Mammal	Big-eared Woodrat	0.016	0.000	0.141	0.844
Reptile	Western Pond Turtle	0.000	0.594	0.016	0.391

Reptile	Desert Tortoise	0.062	0.000	0.922	0.016
Reptile	Common Chuckwalla	0.062	0.000	0.000	0.938
Reptile	Zebra-tailed Lizard	0.000	0.062	0.328	0.609
Reptile	Long-nosed Leopard Lizard	0.062	0.141	0.188	0.609
Reptile	Western Fence Lizard	0.016	0.141	0.594	0.250
Reptile	Common Sagebrush Lizard	0.000	0.141	0.016	0.844
Reptile	Common Side-blotched Lizard	0.656	0.156	0.188	0.000
Reptile	Blainville's Horned Lizard	0.016	0.000	0.594	0.391
Reptile	Desert Horned Lizard	0.328	0.062	0.000	0.609
Reptile	Desert Night Lizard	0.000	0.062	0.734	0.203
Reptile	Gilbert's Skink	0.016	0.000	0.594	0.391
Reptile	Tiger Whiptail	0.062	0.156	0.594	0.188
Reptile	Southern Alligator Lizard	0.016	0.000	0.594	0.391
Reptile	California Legless Lizard	0.000	0.016	0.062	0.922
Reptile	Spotted Leaf-nosed Snake	0.000	0.062	0.188	0.750
Reptile	Coachwhip	0.000	0.062	0.750	0.188
Reptile	Western Patch-nosed Snake	0.000	0.078	0.922	0.000
Reptile	Glossy Snake	0.062	0.000	0.750	0.188
Reptile	Gophersnake	0.812	0.000	0.000	0.188
Reptile	Common Kingsnake	0.016	0.797	0.000	0.188
Reptile	Long-nosed Snake	0.062	0.734	0.016	0.188
Reptile	Sierra Gartersnake	0.000	0.016	0.594	0.391
Reptile	Desert Nightsnake	0.000	0.812	0.000	0.188
Reptile	Western Rattlesnake	0.156	0.594	0.188	0.062

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)
9. Merriam's Kangaroo Rat (*Dipodomys merriami*)

10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)
15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)
18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)
27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Mountain Lion (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)
47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)
53. Wild Boar (*Sus scrofa*)

54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)
56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)
59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)
62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

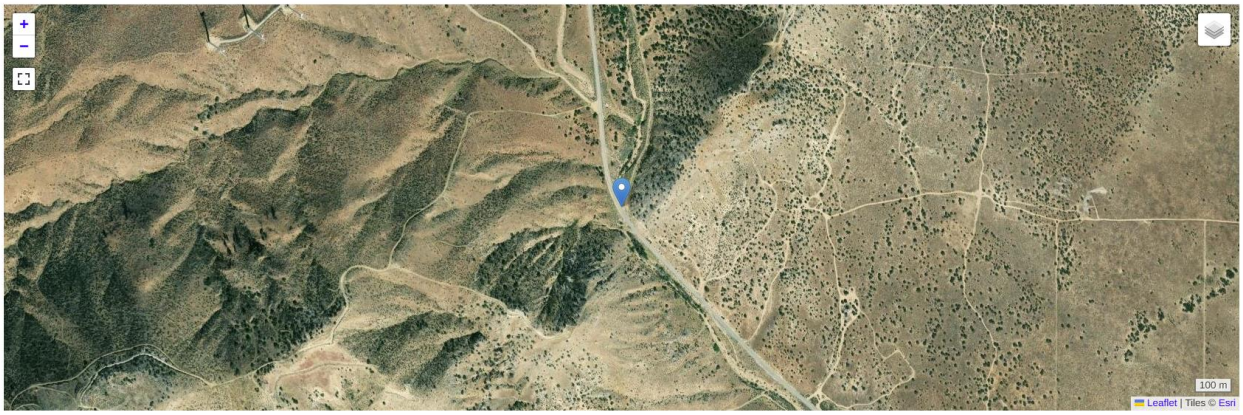
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Sidewinder (*Crotalus cerastes*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Mohave Rattlesnake (*Crotalus scutulatus*)
15. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
16. Ring-necked Snake (*Diadophis punctatus*)
17. Desert Iguana (*Dipsosaurus dorsalis*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Desert Tortoise (*Gopherus agassizii*)
21. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
22. Common Kingsnake (*Lampropeltis getula*)
23. Western Threadsnake (*Leptotyphlops humilis*)

24. Rosy Boa (*Lichanura trivirgata*)
25. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
26. Desert Horned Lizard (*Phrynosoma platyrhinos*)
27. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
28. Gophersnake (*Pituophis catenifer*)
29. Gilbert's Skink (*Plestiodon gilberti*)
30. Long-nosed Snake (*Rhinocheilus lecontei*)
31. Western Patch-nosed Snake (*Salvadora hexalepis*)
32. Common Chuckwalla (*Sauromalus ater*)
33. Common Sagebrush Lizard (*Sceloporus graciosus*)
34. Desert Spiny Lizard (*Sceloporus magister*)
35. Western Fence Lizard (*Sceloporus occidentalis*)
36. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
37. Western Groundsnake (*Sonora semiannulata*)
38. Sierra Gartersnake (*Thamnophis couchii*)
39. Common Gartersnake (*Thamnophis sirtalis*)
40. Pond Slider (*Trachemys scripta*)
41. Western Lyresnake (*Trimorphodon biscutatus*)
42. Common Side-blotched Lizard (*Uta stansburiana*)
43. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road 5 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 35.01671
Longitude: -118.349419

Structure Dimensions

Length (meters): 85.0 m
Width (meters): 6.0 m
Height (meters): 3.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Additional Features

Seasonal Waterway

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Coyote (Canis latrans)	0.071
4	SUM Desert Cottontail (Sylvilagus audubonii)	1.000

	Model	Likelihood
6	SUM Red Fox (Vulpes vulpes)	1.000
8	SUM Bobcat (Lynx rufus)	0.016
9	SUM Gray Fox (Urocyon cinereoargenteus)	0.090
10	SUM Mountain Lion (Puma concolor)	0.618
11	SUM Mule Deer (Odocoileus hemionus)	0.988
12	SUM Opossum (Didelphis virginiana)	0.006
13	SUM Mustelids (Group)	0.001
14	SUM Brush Rabbit (Sylvilagus bachmani)	0.003
15	SUM California Ground Squirrel (Otospermophilus beecheyi)	0.922
16	SUM Deer (Group)	0.888
17	SUM Fox (Species)	1.000
18	SUM Foxes (Group)	0.044
19	SUM Ground Squirrels (Group)	0.970
20	SUM Rabbits (Group)	0.027
21	SUM Raccoon (Procyon lotor)	0.210
23	SUM Skunks (Group)	0.003
24	SUM Tree Squirrels (Group)	0.011
27	SUM White-tailed Deer (Odocoileus virginianus)	0.001

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species (birds only present in the CSV download below). The area defined is 200m from the structure point in all directioons, and summarized as low (0-33), med (33-66), high (66-100), and none. The species is listed if habitat is present (i.e. values don't all equal pct_none).

Category	Common name	% high	% medium	% low	% none
Amphibian	Western Toad	0.000	0.222	0.000	0.778
Amphibian	Baja California Treefrog	0.222	0.000	0.042	0.736
Mammal	Broad-footed Mole	0.222	0.000	0.000	0.778
Mammal	Fringed Myotis	0.000	0.000	0.264	0.736
Mammal	Californian Myotis	0.736	0.042	0.222	0.000
Mammal	Western Pipistrelle	0.000	0.000	1.000	0.000
Mammal	Big Brown Bat	0.000	0.042	0.958	0.000
Mammal	Spotted Bat	0.000	0.000	1.000	0.000
Mammal	Townsend's Big-eared Bat	0.000	0.000	1.000	0.000
Mammal	Pallid Bat	0.000	0.000	1.000	0.000
Mammal	Mexican Free-tailed Bat	0.000	0.000	1.000	0.000
Mammal	Greater Bonneted Bat	0.000	0.000	1.000	0.000
Mammal	Brush Rabbit	0.000	0.222	0.000	0.778

Mammal	Desert Cottontail	0.736	0.264	0.000	0.000
Mammal	Black-tailed Jackrabbit	0.778	0.222	0.000	0.000
Mammal	Merriam's Chipmunk	0.000	0.264	0.000	0.736
Mammal	White-tailed Antelope Squirrel	0.000	0.736	0.222	0.042
Mammal	California Ground Squirrel	0.222	0.042	0.000	0.736
Mammal	Botta's Pocket Gopher	0.222	0.778	0.000	0.000
Mammal	San Joaquin Pocket Mouse	0.222	0.000	0.000	0.778
Mammal	California Pocket Mouse	0.222	0.000	0.000	0.778
Mammal	Agile Kangaroo Rat	0.222	0.778	0.000	0.000
Mammal	Panamint Kangaroo Rat	0.736	0.222	0.000	0.042
Mammal	Merriam's Kangaroo Rat	0.736	0.000	0.222	0.042
Mammal	Western Harvest Mouse	0.222	0.778	0.000	0.000
Mammal	North American Deermouse	0.042	0.958	0.000	0.000
Mammal	Canyon Deermouse	0.736	0.042	0.222	0.000
Mammal	Brush Deermouse	0.000	0.042	0.222	0.736
Mammal	Pinon Deermouse	0.042	0.222	0.000	0.736
Mammal	Southern Grasshopper Mouse	0.736	0.222	0.000	0.042
Mammal	Desert Woodrat	0.000	0.736	0.000	0.264
Mammal	Long-tailed Vole	0.222	0.042	0.000	0.736
Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Gray Fox	0.000	0.778	0.222	0.000
Mammal	American Black Bear	0.000	0.000	0.222	0.778
Mammal	Ringtail	0.000	0.042	0.958	0.000
Mammal	Raccoon	0.000	0.042	0.222	0.736
Mammal	Long-tailed Weasel	0.000	0.264	0.736	0.000
Mammal	American Badger	1.000	0.000	0.000	0.000
Mammal	Western Spotted Skunk	0.000	0.264	0.000	0.736
Mammal	Striped Skunk	0.000	0.264	0.000	0.736
Mammal	Mountain Lion	0.000	0.042	0.958	0.000
Mammal	Bobcat	0.042	0.958	0.000	0.000
Mammal	Mule Deer	0.000	0.042	0.958	0.000
Reptile	Western Pond Turtle	0.000	0.222	0.000	0.778
Reptile	Desert Tortoise	0.736	0.000	0.222	0.042
Reptile	Zebra-tailed Lizard	0.000	0.736	0.000	0.264
Reptile	Long-nosed Leopard Lizard	0.736	0.042	0.000	0.222
Reptile	Western Fence Lizard	0.000	0.042	0.222	0.736
Reptile	Common Sagebrush Lizard	0.042	0.000	0.000	0.958
Reptile	Common Side-blotched Lizard	0.958	0.042	0.000	0.000

Reptile	Blainville's Horned Lizard	0.000	0.000	0.264	0.736
Reptile	Desert Horned Lizard	0.000	0.736	0.042	0.222
Reptile	Desert Night Lizard	0.000	0.736	0.222	0.042
Reptile	Gilbert's Skink	0.000	0.000	0.222	0.778
Reptile	Tiger Whiptail	0.736	0.042	0.222	0.000
Reptile	Southern Alligator Lizard	0.000	0.000	0.222	0.778
Reptile	California Legless Lizard	0.000	0.000	0.736	0.264
Reptile	Spotted Leaf-nosed Snake	0.000	0.736	0.000	0.264
Reptile	Coachwhip	0.000	0.736	0.264	0.000
Reptile	Western Patch-nosed Snake	0.000	0.736	0.222	0.042
Reptile	Glossy Snake	0.736	0.000	0.222	0.042
Reptile	Gophersnake	0.958	0.000	0.042	0.000
Reptile	Common Kingsnake	0.000	0.958	0.042	0.000
Reptile	Long-nosed Snake	0.736	0.222	0.000	0.042
Reptile	Sierra Gartersnake	0.000	0.000	0.222	0.778
Reptile	Desert Nightsnake	0.000	0.958	0.042	0.000
Reptile	Western Rattlesnake	0.042	0.222	0.000	0.736

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)
9. Merriam's Kangaroo Rat (*Dipodomys merriami*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)
15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)

18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)
27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Mountain Lion (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)
47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)
53. Wild Boar (*Sus scrofa*)
54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)
56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)
59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)

62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

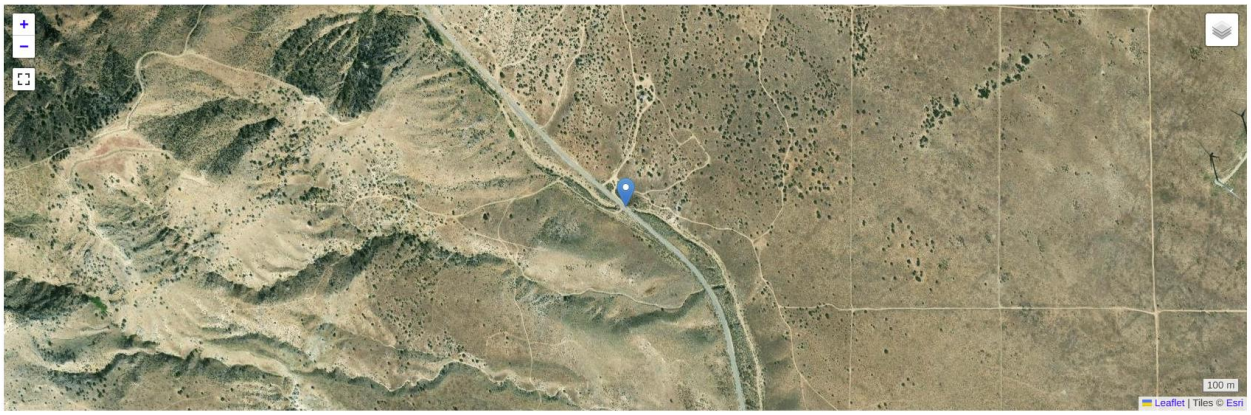
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Sidewinder (*Crotalus cerastes*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Mohave Rattlesnake (*Crotalus scutulatus*)
15. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
16. Ring-necked Snake (*Diadophis punctatus*)
17. Desert Iguana (*Dipsosaurus dorsalis*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Desert Tortoise (*Gopherus agassizii*)
21. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
22. Common Kingsnake (*Lampropeltis getula*)
23. Western Threadsnake (*Leptotyphlops humilis*)
24. Rosy Boa (*Lichanura trivirgata*)
25. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
26. Desert Horned Lizard (*Phrynosoma platyrhinos*)
27. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
28. Gophersnake (*Pituophis catenifer*)
29. Gilbert's Skink (*Plestiodon gilberti*)
30. Long-nosed Snake (*Rhinocheilus lecontei*)
31. Western Patch-nosed Snake (*Salvadora hexalepis*)

32. Common Chuckwalla (*Sauromalus ater*)
33. Common Sagebrush Lizard (*Sceloporus graciosus*)
34. Desert Spiny Lizard (*Sceloporus magister*)
35. Western Fence Lizard (*Sceloporus occidentalis*)
36. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
37. Western Groundsnake (*Sonora semiannulata*)
38. Sierra Gartersnake (*Thamnophis couchii*)
39. Common Gartersnake (*Thamnophis sirtalis*)
40. Pond Slider (*Trachemys scripta*)
41. Western Lyresnake (*Trimorphodon biscutatus*)
42. Common Side-blotched Lizard (*Uta stansburiana*)
43. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road 6 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 35.01161
Longitude: -118.34336

Structure Dimensions

Length (meters): 50.0 m
Width (meters): 5.0 m
Height (meters): 5.0 m

Structure Material and Ground Cover

Material of Structure: Corrugated Metal
Ground Cover: Dirt

Additional Features

Seasonal Waterway

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
4	SUM Desert Cottontail (Sylvilagus audubonii)	1.000

	Model	Likelihood
6	SUM Red Fox (Vulpes vulpes)	1.000
9	SUM Gray Fox (Urocyon cinereoargenteus)	0.036
10	SUM Mountain Lion (Puma concolor)	0.724
11	SUM Mule Deer (Odocoileus hemionus)	0.042
12	SUM Opossum (Didelphis virginiana)	0.007
14	SUM Brush Rabbit (Sylvilagus bachmani)	0.053
16	SUM Deer (Group)	0.974
17	SUM Fox (Species)	1.000
18	SUM Foxes (Group)	0.039
20	SUM Rabbits (Group)	0.138
21	SUM Raccoon (Procyon lotor)	0.394
23	SUM Skunks (Group)	0.089
24	SUM Tree Squirrels (Group)	0.698

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species. The area defined is 200m from the structure point in all directioons, and summarized as low (0-33), med (33-66), high (66-100), and none. The species is listed if habitat is present (i.e. values don't all equal 100% no habitat).

Category	Common name	% high	% medium	% low	% none
Mammal	Desert Cottontail	1.000	0.000	0.000	0.000
Mammal	Black-tailed Jackrabbit	0.625	0.375	0.000	0.000
Mammal	White-tailed Antelope	0.000	1.000	0.000	0.000
Mammal	Botta's Pocket Gopher	0.000	1.000	0.000	0.000
Mammal	Agile Kangaroo Rat	0.000	0.625	0.375	0.000
Mammal	Panamint Kangaroo Rat	0.625	0.375	0.000	0.000
Mammal	Merriam's Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Western Harvest Mouse	0.000	1.000	0.000	0.000
Mammal	North American Deermouse	0.000	1.000	0.000	0.000
Mammal	Canyon Deermouse	0.625	0.375	0.000	0.000
Mammal	Pinon Deermouse	0.000	0.375	0.000	0.625

Mammal	Southern Grasshopper	0.625	0.375	0.000	0.000
Mammal	Desert Woodrat	0.375	0.625	0.000	0.000
Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Gray Fox	0.000	0.625	0.375	0.000
Mammal	Ringtail	0.000	0.000	1.000	0.000
Mammal	Long-tailed Weasel	0.000	0.000	1.000	0.000
Mammal	American Badger	0.625	0.375	0.000	0.000
Mammal	Mountain Lion	0.000	0.375	0.625	0.000
Mammal	Bobcat	0.000	1.000	0.000	0.000
Mammal	Mule Deer	0.000	0.000	1.000	0.000
Reptile	Desert Tortoise	1.000	0.000	0.000	0.000
Reptile	Zebra-tailed Lizard	0.375	0.625	0.000	0.000
Reptile	Long-nosed Leopard Lizard	1.000	0.000	0.000	0.000
Reptile	Common Side-blotched	1.000	0.000	0.000	0.000
Reptile	Desert Horned Lizard	0.375	0.625	0.000	0.000
Reptile	Desert Night Lizard	0.000	0.625	0.375	0.000
Reptile	Tiger Whiptail	1.000	0.000	0.000	0.000
Reptile	California Legless Lizard	0.000	0.000	1.000	0.000
Reptile	Spotted Leaf-nosed Snake	0.000	0.625	0.375	0.000
Reptile	Coachwhip	0.000	1.000	0.000	0.000
Reptile	Western Patch-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Glossy Snake	0.625	0.375	0.000	0.000
Reptile	Gophersnake	0.625	0.375	0.000	0.000
Reptile	Common Kingsnake	0.000	0.625	0.375	0.000
Reptile	Long-nosed Snake	0.625	0.000	0.375	0.000
Reptile	Desert Nightsnake	0.000	1.000	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)

9. Merriam's Kangaroo Rat (*Dipodomys merriami*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)
15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)
18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)
27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Mountain Lion (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)
47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)

53. Wild Boar (*Sus scrofa*)
54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)
56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)
59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)
62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

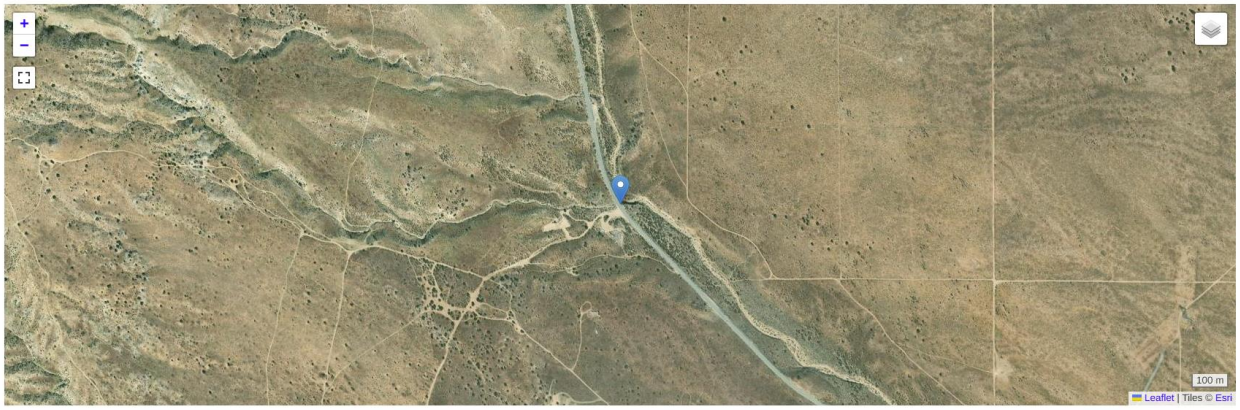
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Sidewinder (*Crotalus cerastes*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Mohave Rattlesnake (*Crotalus scutulatus*)
15. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
16. Ring-necked Snake (*Diadophis punctatus*)
17. Desert Iguana (*Dipsosaurus dorsalis*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Desert Tortoise (*Gopherus agassizii*)
21. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
22. Common Kingsnake (*Lampropeltis getula*)

23. Western Threadsnake (*Leptotyphlops humilis*)
24. Rosy Boa (*Lichanura trivirgata*)
25. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
26. Desert Horned Lizard (*Phrynosoma platyrhinos*)
27. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
28. Gophersnake (*Pituophis catenifer*)
29. Gilbert's Skink (*Plestiodon gilberti*)
30. Long-nosed Snake (*Rhinocheilus lecontei*)
31. Western Patch-nosed Snake (*Salvadora hexalepis*)
32. Common Chuckwalla (*Sauromalus ater*)
33. Common Sagebrush Lizard (*Sceloporus graciosus*)
34. Desert Spiny Lizard (*Sceloporus magister*)
35. Western Fence Lizard (*Sceloporus occidentalis*)
36. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
37. Western Groundsnake (*Sonora semiannulata*)
38. Sierra Gartersnake (*Thamnophis couchii*)
39. Common Gartersnake (*Thamnophis sirtalis*)
40. Pond Slider (*Trachemys scripta*)
41. Western Lyresnake (*Trimorphodon biscutatus*)
42. Common Side-blotched Lizard (*Uta stansburiana*)
43. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road 7 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 35.00373
Longitude: -118.33883

Structure Dimensions

Length (meters): 17.0 m
Width (meters): 2.5 m
Height (meters): 2.5 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Additional Features

Seasonal Waterway

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Covote (Canis latrans)	0.930

	Model	Likelihood
3	SUM Black-Tailed Jackrabbit (Lepus californicus)	1.000
4	SUM Desert Cottontail (Sylvilagus audubonii)	1.000
8	SUM Bobcat (Lynx rufus)	0.275
9	SUM Gray Fox (Urocyon cinereoargenteus)	0.038
10	SUM Mountain Lion (Puma concolor)	0.719
11	SUM Mule Deer (Odocoileus hemionus)	0.977
12	SUM Opossum (Didelphis virginiana)	0.758
13	SUM Mustelids (Group)	0.001
14	SUM Brush Rabbit (Sylvilagus bachmani)	0.036
15	SUM California Ground Squirrel (Otospermophilus beecheyi)	0.998
16	SUM Deer (Group)	0.932
18	SUM Foxes (Group)	0.037
19	SUM Ground Squirrels (Group)	0.968
20	SUM Rabbits (Group)	0.437
21	SUM Raccoon (Procyon lotor)	0.823
23	SUM Skunks (Group)	0.240
24	SUM Tree Squirrels (Group)	0.811

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species. The area defined is 200m from the structure point in all directions, and summarized as low (0-33), med (33-66), high (66-100), and none. The species is listed if habitat is present (i.e. values don't all equal 100% no habitat).

Category	Common name	% high	% medium	% low	% none
Amphibian	Red-spotted Toad	0.000	0.000	0.484	0.516
Amphibian	Baja California Treefrog	0.000	0.000	0.047	0.953

Mammal	Crawford's Gray Shrew	0.000	0.312	0.000	0.688
Mammal	Desert Cottontail	0.781	0.219	0.000	0.000
Mammal	Black-tailed Jackrabbit	0.828	0.172	0.000	0.000
Mammal	Merriam's Chipmunk	0.000	0.047	0.000	0.953
Mammal	White-tailed Antelope Squirrel	0.000	0.953	0.000	0.047
Mammal	California Ground Squirrel	0.000	0.047	0.000	0.953
Mammal	Botta's Pocket Gopher	0.000	0.828	0.000	0.172
Mammal	Long-tailed Pocket Mouse	0.312	0.000	0.000	0.688
Mammal	Chisel-toothed Kangaroo Rat	0.000	0.484	0.000	0.516
Mammal	Agile Kangaroo Rat	0.000	0.344	0.172	0.484
Mammal	Panamint Kangaroo Rat	0.781	0.172	0.000	0.047
Mammal	Desert Kangaroo Rat	0.312	0.000	0.000	0.688
Mammal	Merriam's Kangaroo Rat	0.781	0.172	0.000	0.047
Mammal	Western Harvest Mouse	0.000	1.000	0.000	0.000
Mammal	Cactus Deermouse	0.484	0.000	0.000	0.516
Mammal	North American Deermouse	0.047	0.953	0.000	0.000
Mammal	Canyon Deermouse	0.609	0.391	0.000	0.000
Mammal	Brush Deermouse	0.000	0.047	0.000	0.953
Mammal	Pinon Deermouse	0.047	0.172	0.000	0.781
Mammal	Southern Grasshopper Mouse	0.609	0.172	0.000	0.219
Mammal	Desert Woodrat	0.344	0.609	0.000	0.047
Mammal	Long-tailed Vole	0.000	0.047	0.000	0.953

Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Kit Fox	0.312	0.000	0.172	0.516
Mammal	Gray Fox	0.000	0.656	0.344	0.000
Mammal	Ringtail	0.000	0.219	0.781	0.000
Mammal	Raccoon	0.000	0.047	0.000	0.953
Mammal	Long-tailed Weasel	0.000	0.047	0.469	0.484
Mammal	American Badger	0.656	0.344	0.000	0.000
Mammal	Western Spotted Skunk	0.000	0.047	0.000	0.953
Mammal	Striped Skunk	0.000	0.047	0.000	0.953
Mammal	Mountain Lion	0.000	0.219	0.297	0.484
Mammal	Bobcat	0.047	0.781	0.172	0.000
Mammal	Mule Deer	0.000	0.047	0.469	0.484
Reptile	Desert Tortoise	0.781	0.172	0.000	0.047
Reptile	Desert Iguana	0.312	0.172	0.000	0.516
Reptile	Zebra-tailed Lizard	0.172	0.781	0.000	0.047
Reptile	Great Basin Collared Lizard	0.312	0.172	0.000	0.516
Reptile	Long-nosed Leopard Lizard	0.781	0.219	0.000	0.000
Reptile	Western Fence Lizard	0.000	0.047	0.000	0.953
Reptile	Common Sagebrush Lizard	0.047	0.000	0.000	0.953
Reptile	Common Side-blotched Lizard	0.953	0.047	0.000	0.000
Reptile	Blainville's Horned Lizard	0.000	0.000	0.047	0.953
Reptile	Desert Horned Lizard	0.344	0.609	0.047	0.000

Reptile	Desert Night Lizard	0.172	0.609	0.172	0.047
Reptile	Tiger Whiptail	0.953	0.047	0.000	0.000
Reptile	California Legless Lizard	0.000	0.000	0.469	0.531
Reptile	Western Threadsnake	0.000	0.312	0.172	0.516
Reptile	Spotted Leaf-nosed Snake	0.000	0.781	0.172	0.047
Reptile	Coachwhip	0.000	0.953	0.047	0.000
Reptile	Western Patch-nosed Snake	0.000	0.953	0.000	0.047
Reptile	Glossy Snake	0.609	0.344	0.000	0.047
Reptile	Gophersnake	0.781	0.172	0.047	0.000
Reptile	Common Kingsnake	0.000	0.609	0.391	0.000
Reptile	Long-nosed Snake	0.609	0.172	0.172	0.047
Reptile	Western Groundsnake	0.000	0.312	0.172	0.516
Reptile	Western Shovel-nosed Snake	0.000	0.312	0.172	0.516
Reptile	Desert Nightsnake	0.000	0.953	0.047	0.000
Reptile	Sidewinder	0.000	0.484	0.000	0.516
Reptile	Western Rattlesnake	0.047	0.000	0.000	0.953
Reptile	Mohave Rattlesnake	0.000	0.484	0.000	0.516

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)

3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)
9. Merriam's Kangaroo Rat (*Dipodomys merriami*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)
15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)
18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)
27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Mountain Lion (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)

47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)
53. Wild Boar (*Sus scrofa*)
54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)
56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)
59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)
62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

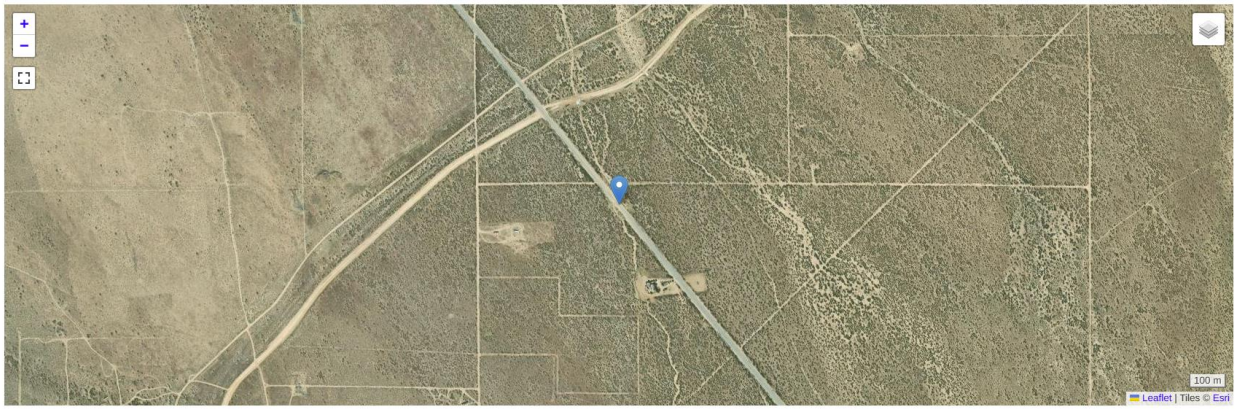
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Sidewinder (*Crotalus cerastes*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Mohave Rattlesnake (*Crotalus scutulatus*)
15. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
16. Ring-necked Snake (*Diadophis punctatus*)

17. Desert Iguana (*Dipsosaurus dorsalis*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Desert Tortoise (*Gopherus agassizii*)
21. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
22. Common Kingsnake (*Lampropeltis getula*)
23. Western Threadsnake (*Leptotyphlops humilis*)
24. Rosy Boa (*Lichanura trivirgata*)
25. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
26. Desert Horned Lizard (*Phrynosoma platyrhinos*)
27. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
28. Gophersnake (*Pituophis catenifer*)
29. Gilbert's Skink (*Plestiodon gilberti*)
30. Long-nosed Snake (*Rhinocheilus lecontei*)
31. Western Patch-nosed Snake (*Salvadora hexalepis*)
32. Common Chuckwalla (*Sauromalus ater*)
33. Common Sagebrush Lizard (*Sceloporus graciosus*)
34. Desert Spiny Lizard (*Sceloporus magister*)
35. Western Fence Lizard (*Sceloporus occidentalis*)
36. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
37. Western Groundsnake (*Sonora semiannulata*)
38. Sierra Gartersnake (*Thamnophis couchii*)
39. Common Gartersnake (*Thamnophis sirtalis*)
40. Pond Slider (*Trachemys scripta*)
41. Western Lyresnake (*Trimorphodon biscutatus*)
42. Common Side-blotched Lizard (*Uta stansburiana*)
43. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road 8 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 34.972261
Longitude: -118.305738

Structure Dimensions

Length (meters): 19.0 m
Width (meters): 3.0 m
Height (meters): 1.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Additional Features

Seasonal Waterway
Seasonal

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Coyote (Canis latrans)	1.000
3	SUM Black-Tailed Jackrabbit (Lepus californicus)	1.000
4	SUM Desert Cottontail (Sylvilagus audubonii)	1.000
8	SUM Bobcat (Lynx rufus)	1.000
12	SUM Opossum (Didelphis virginiana)	0.995
13	SUM Mustelids (Group)	0.746
15	SUM California Ground Squirrel (Otospermophilus	1.000
19	SUM Ground Squirrels (Group)	1.000
20	SUM Rabbits (Group)	0.494
23	SUM Skunks (Group)	0.666

Predicted Habitat for Species near Structure
This table shows the suitable habitat of amphibian, mammal, and reptile species near structure points, using models developed by the California Department of Fish and Wildlife. Suitable habitat was assessed within a radius of 200 m from the structure point in all directions, and summarized as the percent of each of low (0-33), medium (33-66), high (66-100), and none within the 200 m radius.

Category	Common name	% high	% medium	% low	% none
Amphibian	Red-spotted Toad	0.000	0.000	1.000	0.000
Mammal	Crawford's Gray Shrew	0.000	1.000	0.000	0.000
Mammal	Desert Cottontail	1.000	0.000	0.000	0.000
Mammal	Black-tailed Jackrabbit	1.000	0.000	0.000	0.000
Mammal	White-tailed Antelope Squirrel	0.000	1.000	0.000	0.000
Mammal	Botta's Pocket Gopher	0.000	1.000	0.000	0.000
Mammal	Long-tailed Pocket Mouse	1.000	0.000	0.000	0.000
Mammal	Chisel-toothed Kangaroo Rat	0.000	1.000	0.000	0.000
Mammal	Panamint Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Desert Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Merriam's Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Western Harvest Mouse	0.000	1.000	0.000	0.000

Mammal	Cactus Deermouse	1.000	0.000	0.000	0.000
Mammal	North American Deermouse	0.000	1.000	0.000	0.000
Mammal	Canyon Deermouse	1.000	0.000	0.000	0.000
Mammal	Southern Grasshopper Mouse	1.000	0.000	0.000	0.000
Mammal	Desert Woodrat	0.000	1.000	0.000	0.000
Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Kit Fox	1.000	0.000	0.000	0.000
Mammal	Gray Fox	0.000	1.000	0.000	0.000
Mammal	Ringtail	0.000	0.000	0.458	0.542
Mammal	American Badger	1.000	0.000	0.000	0.000
Mammal	Bobcat	0.000	1.000	0.000	0.000
Reptile	Desert Tortoise	1.000	0.000	0.000	0.000
Reptile	Western Banded Gecko	1.000	0.000	0.000	0.000
Reptile	Desert Iguana	1.000	0.000	0.000	0.000
Reptile	Zebra-tailed Lizard	0.000	1.000	0.000	0.000
Reptile	Great Basin Collared Lizard	1.000	0.000	0.000	0.000
Reptile	Long-nosed Leopard Lizard	1.000	0.000	0.000	0.000
Reptile	Common Side-blotched Lizard	1.000	0.000	0.000	0.000
Reptile	Desert Horned Lizard	0.000	1.000	0.000	0.000
Reptile	Desert Night Lizard	0.000	1.000	0.000	0.000
Reptile	Tiger Whiptail	1.000	0.000	0.000	0.000
Reptile	Western Threadsnake	0.000	1.000	0.000	0.000
Reptile	Spotted Leaf-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Coachwhip	0.000	1.000	0.000	0.000
Reptile	Western Patch-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Glossy Snake	1.000	0.000	0.000	0.000
Reptile	Gophersnake	1.000	0.000	0.000	0.000
Reptile	Common Kingsnake	0.000	1.000	0.000	0.000
Reptile	Long-nosed Snake	1.000	0.000	0.000	0.000
Reptile	Western Groundsnake	0.000	1.000	0.000	0.000
Reptile	Western Shovel-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Desert Nightsnake	0.000	1.000	0.000	0.000
Reptile	Sidewinder	0.000	1.000	0.000	0.000

Reptile	Mohave Rattlesnake	0.000	1.000	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Coyote (*Canis latrans*)
4. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
5. Desert Pocket Mouse (*Chaetodipus penicillatus*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Desert Kangaroo Rat (*Dipodomys deserti*)
8. Merriam's Kangaroo Rat (*Dipodomys merriami*)
9. Chisel-toothed Kangaroo Rat (*Dipodomys microps*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. Spotted Bat (*Euderma maculatum*)
13. Greater Bonneted Bat (*Eumops perotis*)
14. Western Red Bat (*Lasiurus blossevillii*)
15. Hoary Bat (*Lasiurus cinereus*)
16. Black-tailed Jackrabbit (*Lepus californicus*)
17. Bobcat (*Lynx rufus*)
18. Striped Skunk (*Mephitis mephitis*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Desert Woodrat (*Neotoma lepida*)
26. Crawford's Gray Shrew (*Notiosorex crawfordi*)
27. Mule Deer (*Odocoileus hemionus*)
28. Southern Grasshopper Mouse (*Onychomys torridus*)
29. California Ground Squirrel (*Otospermophilus beecheyi*)
30. San Joaquin Pocket Mouse (*Perognathus inornatus*)
31. Canyon Deermouse (*Peromyscus crinitus*)
32. Cactus Deermouse (*Peromyscus eremicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)

35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Brown Rat (*Rattus norvegicus*)
38. Roof Rat (*Rattus rattus*)
39. Western Harvest Mouse (*Reithrodontomys megalotis*)
40. Western Gray Squirrel (*Sciurus griseus*)
41. Western Spotted Skunk (*Spilogale gracilis*)
42. Wild Boar (*Sus scrofa*)
43. Desert Cottontail (*Sylvilagus audubonii*)
44. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
45. Lodgepole Chipmunk (*Tamias speciosus*)
46. American Badger (*Taxidea taxus*)
47. Botta's Pocket Gopher (*Thomomys bottae*)
48. Gray Fox (*Urocyon cinereoargenteus*)
49. American Black Bear (*Ursus americanus*)
50. Kit Fox (*Vulpes macrotis*)
51. Mohave Ground Squirrel (*Xerospermophilus mohavensis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

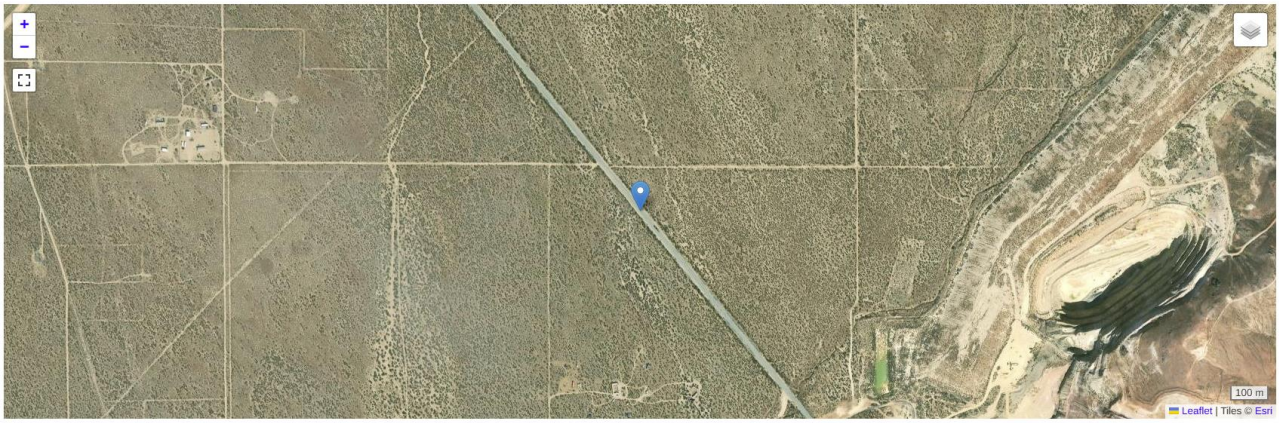
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Snapping Turtle (*Chelydra serpentina*)
6. Western Shovel-nosed Snake (*Chionactis occipitalis*)
7. Western Banded Gecko (*Coleonyx variegatus*)
8. Coachwhip (*Coluber flagellum*)
9. Sidewinder (*Crotalus cerastes*)
10. Speckled Rattlesnake (*Crotalus mitchellii*)
11. Western Rattlesnake (*Crotalus oreganus*)
12. Mohave Rattlesnake (*Crotalus scutulatus*)
13. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
14. Ring-necked Snake (*Diadophis punctatus*)
15. Desert Iguana (*Dipsosaurus dorsalis*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)

17. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
18. Desert Tortoise (*Gopherus agassizii*)
19. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
20. Common Kingsnake (*Lampropeltis getula*)
21. Western Threadsnake (*Leptotyphlops humilis*)
22. Rosy Boa (*Lichanura trivirgata*)
23. Desert Horned Lizard (*Phrynosoma platyrhinos*)
24. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
25. Gophersnake (*Pituophis catenifer*)
26. Gilbert's Skink (*Plestiodon gilberti*)
27. Long-nosed Snake (*Rhinocheilus lecontei*)
28. Western Patch-nosed Snake (*Salvadora hexalepis*)
29. Common Chuckwalla (*Sauromalus ater*)
30. Common Sagebrush Lizard (*Sceloporus graciosus*)
31. Desert Spiny Lizard (*Sceloporus magister*)
32. Western Fence Lizard (*Sceloporus occidentalis*)
33. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
34. Western Groundsnake (*Sonora semiannulata*)
35. Sierra Gartersnake (*Thamnophis couchii*)
36. Western Lyresnake (*Trimorphodon biscutatus*)
37. Common Side-blotched Lizard (*Uta stansburiana*)
38. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road 9

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 34.96439
Longitude: -118.298

Structure Dimensions

Length (meters): 20.0 m
Width (meters): 3.0 m
Height (meters): 1.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Coyote (Canis latrans)	1.000
3	SUM Black-Tailed Jackrabbit (Lepus californicus)	1.000

	Model	Likelihood
4	SUM Desert Cottontail (Sylvilagus audubonii)	1.000
8	SUM Bobcat (Lynx rufus)	1.000
12	SUM Opossum (Didelphis virginiana)	0.999
13	SUM Mustelids (Group)	0.075
15	SUM California Ground Squirrel (Otospermophilus beecheyi)	1.000
19	SUM Ground Squirrels (Group)	1.000
20	SUM Rabbits (Group)	0.584
23	SUM Skunks (Group)	0.203

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species near structure points, using models developed by the California Department of Fish and Wildlife. Suitable habitat was assessed within a radius of 200 m from the structure point in all directions, and summarized as the percent of each of low (0-33), medium (33-66), high (66-100), and none within the 200 m radius. The species is listed only if habitat is present (i.e. % none does not equal 1.000).

Category	Common name	% high	% medium	% low	% none
Amphibian	Red-spotted Toad	0.000	0.000	1.000	0.000
Mammal	Crawford's Gray Shrew	0.000	1.000	0.000	0.000
Mammal	Californian Myotis	1.000	0.000	0.000	0.000
Mammal	Western Pipistrelle	0.000	0.000	1.000	0.000
Mammal	Big Brown Bat	0.000	0.000	1.000	0.000
Mammal	Spotted Bat	0.000	0.000	1.000	0.000
Mammal	Townsend's Big-eared Bat	0.000	0.000	1.000	0.000
Mammal	Pallid Bat	0.000	0.000	1.000	0.000
Mammal	Mexican Free-tailed Bat	0.000	0.000	1.000	0.000
Mammal	Greater Bonneted Bat	0.000	0.000	1.000	0.000
Mammal	Desert Cottontail	1.000	0.000	0.000	0.000
Mammal	Black-tailed Jackrabbit	1.000	0.000	0.000	0.000

Mammal	White-tailed Antelope Squirrel	0.000	1.000	0.000	0.000
Mammal	Botta's Pocket Gopher	0.000	1.000	0.000	0.000
Mammal	Long-tailed Pocket Mouse	1.000	0.000	0.000	0.000
Mammal	Chisel-toothed Kangaroo Rat	0.000	1.000	0.000	0.000
Mammal	Panamint Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Desert Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Merriam's Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Western Harvest Mouse	0.000	1.000	0.000	0.000
Mammal	Cactus Deermouse	1.000	0.000	0.000	0.000
Mammal	North American Deermouse	0.000	1.000	0.000	0.000
Mammal	Canyon Deermouse	1.000	0.000	0.000	0.000
Mammal	Southern Grasshopper Mouse	1.000	0.000	0.000	0.000
Mammal	Desert Woodrat	0.000	1.000	0.000	0.000
Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Kit Fox	1.000	0.000	0.000	0.000
Mammal	Gray Fox	0.000	1.000	0.000	0.000
Mammal	American Badger	1.000	0.000	0.000	0.000
Mammal	Bobcat	0.000	1.000	0.000	0.000
Reptile	Desert Tortoise	1.000	0.000	0.000	0.000
Reptile	Western Banded Gecko	1.000	0.000	0.000	0.000
Reptile	Desert Iguana	1.000	0.000	0.000	0.000
Reptile	Zebra-tailed Lizard	0.000	1.000	0.000	0.000
Reptile	Great Basin Collared Lizard	1.000	0.000	0.000	0.000
Reptile	Long-nosed Leopard Lizard	1.000	0.000	0.000	0.000
Reptile	Common Side-blotched Lizard	1.000	0.000	0.000	0.000
Reptile	Desert Horned Lizard	0.000	1.000	0.000	0.000
Reptile	Desert Night Lizard	0.000	1.000	0.000	0.000
Reptile	Tiger Whiptail	1.000	0.000	0.000	0.000
Reptile	Western Threadsnake	0.000	1.000	0.000	0.000
Reptile	Spotted Leaf-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Coachwhip	0.000	1.000	0.000	0.000
Reptile	Western Patch-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Glossy Snake	1.000	0.000	0.000	0.000

Reptile	Gophersnake	1.000	0.000	0.000	0.000
Reptile	Common Kingsnake	0.000	1.000	0.000	0.000
Reptile	Long-nosed Snake	1.000	0.000	0.000	0.000
Reptile	Western Groundsnake	0.000	1.000	0.000	0.000
Reptile	Western Shovel-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Desert Nightsnake	0.000	1.000	0.000	0.000
Reptile	Sidewinder	0.000	1.000	0.000	0.000
Reptile	Mohave Rattlesnake	0.000	1.000	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)
9. Merriam's Kangaroo Rat (*Dipodomys merriami*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)
15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)
18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)

27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Mountain Lion (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)
47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)
53. Wild Boar (*Sus scrofa*)
54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)
56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)
59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)
62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)

6. Western Toad (*Anaxyrus boreas*)

Reptiles

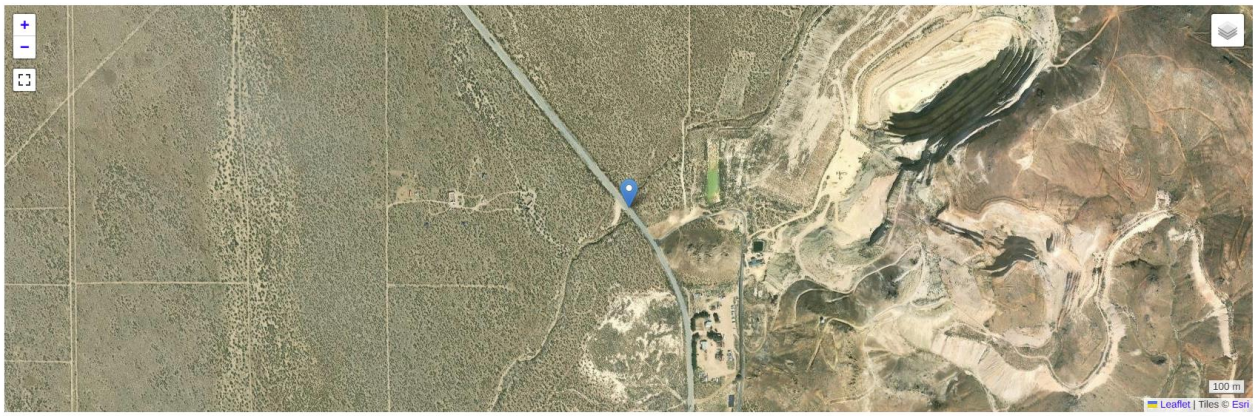
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Sidewinder (*Crotalus cerastes*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Mohave Rattlesnake (*Crotalus scutulatus*)
15. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
16. Ring-necked Snake (*Diadophis punctatus*)
17. Desert Iguana (*Dipsosaurus dorsalis*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Desert Tortoise (*Gopherus agassizii*)
21. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
22. Common Kingsnake (*Lampropeltis getula*)
23. Western Threadsnake (*Leptotyphlops humilis*)
24. Rosy Boa (*Lichanura trivirgata*)
25. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
26. Desert Horned Lizard (*Phrynosoma platyrhinos*)
27. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
28. Gophersnake (*Pituophis catenifer*)
29. Gilbert's Skink (*Plestiodon gilberti*)
30. Long-nosed Snake (*Rhinocheilus lecontei*)
31. Western Patch-nosed Snake (*Salvadora hexalepis*)
32. Common Chuckwalla (*Sauromalus ater*)
33. Common Sagebrush Lizard (*Sceloporus graciosus*)
34. Desert Spiny Lizard (*Sceloporus magister*)
35. Western Fence Lizard (*Sceloporus occidentalis*)
36. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
37. Western Groundsnake (*Sonora semiannulata*)
38. Sierra Gartersnake (*Thamnophis couchii*)
39. Common Gartersnake (*Thamnophis sirtalis*)
40. Pond Slider (*Trachemys scripta*)
41. Western Lyresnake (*Trimorphodon biscutatus*)

42. Common Side-blotched Lizard (*Uta stansburiana*)
43. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road 10 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 34.96
Longitude: -118.29357

Structure Dimensions

Length (meters): 20.0 m
Width (meters): 3.0 m
Height (meters): 1.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Additional Features

Seasonal Waterway

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Coyote (Canis latrans)	0.987
3	SUM Black-Tailed Jackrabbit (Lepus californicus)	1.000
8	SUM Bobcat (Lynx rufus)	0.977
12	SUM Opossum (Didelphis virginiana)	1.000
15	SUM California Ground Squirrel (Otospermophilus	1.000
19	SUM Ground Squirrels (Group)	0.999
20	SUM Rabbits (Group)	0.926
21	SUM Raccoon (Procyon lotor)	0.005

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species near structure points, using models developed by the California Department of Fish and Wildlife. Suitable habitat was assessed within a radius of 200 m from the structure point in all directions, and summarized as the percent of each of low (0-33), medium (33-66), high (66-100), and none within the 200 m radius. The species is listed only if habitat is present (i.e. % none does not equal 1.000).

Category	Common name	% high	% medium	% low	% none
Amphibian	Red-spotted Toad	0.000	0.000	1.000	0.000
Mammal	Crawford's Gray Shrew	0.000	1.000	0.000	0.000
Mammal	Desert Cottontail	1.000	0.000	0.000	0.000
Mammal	Black-tailed Jackrabbit	1.000	0.000	0.000	0.000
Mammal	White-tailed Antelope Squirrel	0.000	1.000	0.000	0.000
Mammal	Botta's Pocket Gopher	0.000	1.000	0.000	0.000
Mammal	Long-tailed Pocket Mouse	1.000	0.000	0.000	0.000
Mammal	Chisel-toothed Kangaroo Rat	0.000	1.000	0.000	0.000
Mammal	Panamint Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Desert Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Merriam's Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Western Harvest Mouse	0.000	1.000	0.000	0.000
Mammal	Cactus Deermouse	1.000	0.000	0.000	0.000
Mammal	North American Deermouse	0.000	1.000	0.000	0.000

Mammal	Canyon Deermouse	1.000	0.000	0.000	0.000
Mammal	Southern Grasshopper Mouse	1.000	0.000	0.000	0.000
Mammal	Desert Woodrat	0.000	1.000	0.000	0.000
Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Kit Fox	1.000	0.000	0.000	0.000
Mammal	Gray Fox	0.000	1.000	0.000	0.000
Mammal	American Badger	1.000	0.000	0.000	0.000
Mammal	Bobcat	0.000	1.000	0.000	0.000
Reptile	Desert Tortoise	1.000	0.000	0.000	0.000
Reptile	Western Banded Gecko	1.000	0.000	0.000	0.000
Reptile	Desert Iguana	1.000	0.000	0.000	0.000
Reptile	Zebra-tailed Lizard	0.000	1.000	0.000	0.000
Reptile	Great Basin Collared Lizard	1.000	0.000	0.000	0.000
Reptile	Long-nosed Leopard Lizard	1.000	0.000	0.000	0.000
Reptile	Common Side-blotched Lizard	1.000	0.000	0.000	0.000
Reptile	Desert Horned Lizard	0.000	1.000	0.000	0.000
Reptile	Desert Night Lizard	0.000	1.000	0.000	0.000
Reptile	Tiger Whiptail	1.000	0.000	0.000	0.000
Reptile	Western Threadsnake	0.000	1.000	0.000	0.000
Reptile	Spotted Leaf-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Coachwhip	0.000	1.000	0.000	0.000
Reptile	Western Patch-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Glossy Snake	1.000	0.000	0.000	0.000
Reptile	Gophersnake	1.000	0.000	0.000	0.000
Reptile	Common Kingsnake	0.000	1.000	0.000	0.000
Reptile	Long-nosed Snake	1.000	0.000	0.000	0.000
Reptile	Western Groundsnake	0.000	1.000	0.000	0.000
Reptile	Western Shovel-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Desert Nightsnake	0.000	1.000	0.000	0.000
Reptile	Sidewinder	0.000	1.000	0.000	0.000
Reptile	Mohave Rattlesnake	0.000	1.000	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)

3. Ringtail (*Bassariscus astutus*)
4. Coyote (*Canis latrans*)
5. California Pocket Mouse (*Chaetodipus californicus*)
6. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
7. Agile Kangaroo Rat (*Dipodomys agilis*)
8. Desert Kangaroo Rat (*Dipodomys deserti*)
9. Merriam's Kangaroo Rat (*Dipodomys merriami*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. North American Porcupine (*Erethizon dorsata*)
13. Spotted Bat (*Euderma maculatum*)
14. Greater Bonneted Bat (*Eumops perotis*)
15. Western Red Bat (*Lasiurus blossevillii*)
16. Hoary Bat (*Lasiurus cinereus*)
17. Black-tailed Jackrabbit (*Lepus californicus*)
18. Bobcat (*Lynx rufus*)
19. Striped Skunk (*Mephitis mephitis*)
20. Long-tailed Vole (*Microtus longicaudus*)
21. House Mouse (*Mus musculus*)
22. Long-tailed Weasel (*Mustela frenata*)
23. Californian Myotis (*Myotis californicus*)
24. Western Small-footed Myotis (*Myotis ciliolabrum*)
25. Long-eared Myotis (*Myotis evotis*)
26. Fringed Myotis (*Myotis thysanodes*)
27. Long-legged Myotis (*Myotis volans*)
28. Yuma Myotis (*Myotis yumanensis*)
29. Desert Woodrat (*Neotoma lepida*)
30. Big-eared Woodrat (*Neotoma macrotis*)
31. Crawford's Gray Shrew (*Notiosorex crawfordi*)
32. Mule Deer (*Odocoileus hemionus*)
33. Southern Grasshopper Mouse (*Onychomys torridus*)
34. California Ground Squirrel (*Otospermophilus beecheyi*)
35. White-eared Pocket Mouse (*Perognathus alticolus*)
36. San Joaquin Pocket Mouse (*Perognathus inornatus*)
37. Brush Deermouse (*Peromyscus boylii*)
38. California Deermouse (*Peromyscus californicus*)
39. Canyon Deermouse (*Peromyscus crinitus*)
40. Cactus Deermouse (*Peromyscus eremicus*)
41. North American Deermouse (*Peromyscus maniculatus*)
42. Pinon Deermouse (*Peromyscus truei*)
43. Western Pipistrelle (*Pipistrellus hesperus*)
44. Raccoon (*Procyon lotor*)
45. Mountain Lion (*Puma concolor*)
46. Brown Rat (*Rattus norvegicus*)

47. Roof Rat (*Rattus rattus*)
48. Western Harvest Mouse (*Reithrodontomys megalotis*)
49. Broad-footed Mole (*Scapanus latimanus*)
50. Western Gray Squirrel (*Sciurus griseus*)
51. Ornate Shrew (*Sorex ornatus*)
52. Western Spotted Skunk (*Spilogale gracilis*)
53. Wild Boar (*Sus scrofa*)
54. Desert Cottontail (*Sylvilagus audubonii*)
55. Brush Rabbit (*Sylvilagus bachmani*)
56. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
57. Merriam's Chipmunk (*Tamias merriami*)
58. Lodgepole Chipmunk (*Tamias speciosus*)
59. American Badger (*Taxidea taxus*)
60. Botta's Pocket Gopher (*Thomomys bottae*)
61. Gray Fox (*Urocyon cinereoargenteus*)
62. American Black Bear (*Ursus americanus*)
63. Kit Fox (*Vulpes macrotis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

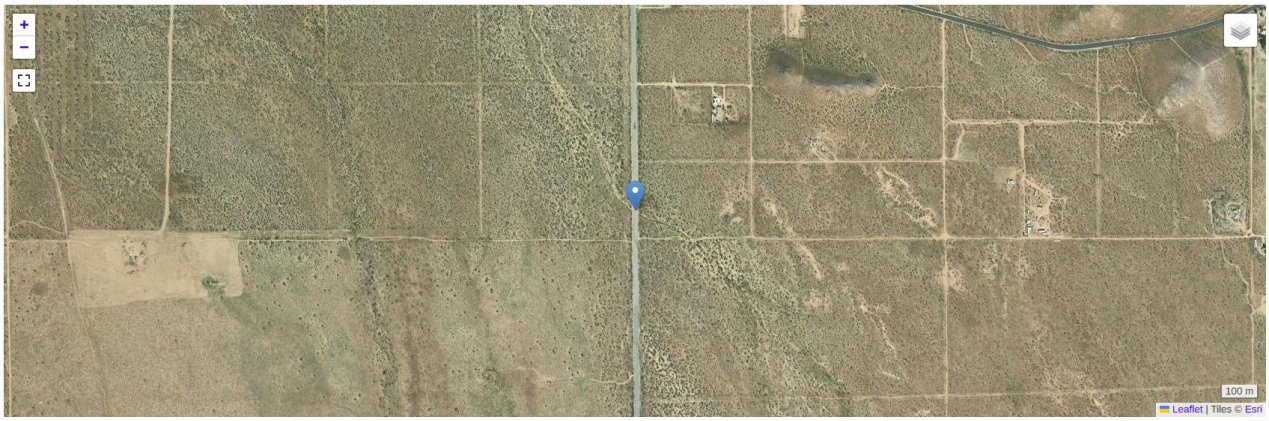
1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Northern Rubber Boa (*Charina bottae*)
6. Snapping Turtle (*Chelydra serpentina*)
7. Western Shovel-nosed Snake (*Chionactis occipitalis*)
8. Western Banded Gecko (*Coleonyx variegatus*)
9. Coachwhip (*Coluber flagellum*)
10. Striped Racer (*Coluber lateralis*)
11. Sidewinder (*Crotalus cerastes*)
12. Speckled Rattlesnake (*Crotalus mitchellii*)
13. Western Rattlesnake (*Crotalus oreganus*)
14. Mohave Rattlesnake (*Crotalus scutulatus*)
15. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
16. Ring-necked Snake (*Diadophis punctatus*)

17. Desert Iguana (*Dipsosaurus dorsalis*)
18. Southern Alligator Lizard (*Elgaria multicarinata*)
19. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
20. Desert Tortoise (*Gopherus agassizii*)
21. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
22. Common Kingsnake (*Lampropeltis getula*)
23. Western Threadsnake (*Leptotyphlops humilis*)
24. Rosy Boa (*Lichanura trivirgata*)
25. Blainville's Horned Lizard (*Phrynosoma blainvillii*)
26. Desert Horned Lizard (*Phrynosoma platyrhinos*)
27. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)
28. Gophersnake (*Pituophis catenifer*)
29. Gilbert's Skink (*Plestiodon gilberti*)
30. Long-nosed Snake (*Rhinocheilus lecontei*)
31. Western Patch-nosed Snake (*Salvadora hexalepis*)
32. Common Chuckwalla (*Sauromalus ater*)
33. Common Sagebrush Lizard (*Sceloporus graciosus*)
34. Desert Spiny Lizard (*Sceloporus magister*)
35. Western Fence Lizard (*Sceloporus occidentalis*)
36. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
37. Western Groundsnake (*Sonora semiannulata*)
38. Sierra Gartersnake (*Thamnophis couchii*)
39. Common Gartersnake (*Thamnophis sirtalis*)
40. Pond Slider (*Trachemys scripta*)
41. Western Lyresnake (*Trimorphodon biscutatus*)
42. Common Side-blotched Lizard (*Uta stansburiana*)
43. Desert Night Lizard (*Xantusia vigilis*)

Willow Spring Road11 (Existing Structure Enhancement)

Location Map

The blue pointer indicates the approximate center point of the proposed structure.



Latitude: 34.9443
Longitude: -118.29168

Structure Dimensions

Length (meters): 20.0 m
Width (meters): 5.0 m
Height (meters): 2.0 m

Structure Material and Ground Cover

Material of Structure: Concrete
Ground Cover: Dirt

Additional Features

Seasonal Waterway

Structure Use Model Results

This model shows the probability of an animal using this structure on an annual basis (if the animal is indeed present at this location).

	Model	Likelihood
1	SUM Covote (Canis latrans)	1.000

	Model	Likelihood
3	SUM Black-Tailed Jackrabbit (Lepus californicus)	1.000
4	SUM Desert Cottontail (Sylvilagus audubonii)	1.000
8	SUM Bobcat (Lynx rufus)	1.000
10	SUM Mountain Lion (Puma concolor)	1.000
11	SUM Mule Deer (Odocoileus hemionus)	0.000
12	SUM Opossum (Didelphis virginiana)	1.000
13	SUM Mustelids (Group)	0.000
15	SUM California Ground Squirrel (Otospermophilus	1.000
16	SUM Deer (Group)	1.000
18	SUM Foxes (Group)	0.002
19	SUM Ground Squirrels (Group)	1.000
20	SUM Rabbits (Group)	0.711
23	SUM Skunks (Group)	0.001

Predicted Habitat for Species near Structure

This table shows the suitable habitat of amphibian, mammal, and reptile species near structure points, using models developed by the California Department of Fish and Wildlife. Suitable habitat was assessed within a radius of 200 m from the structure point in all directions, and summarized as the percent of each of low (0-33), medium (33-66), high (66-100), and none within the 200 m radius. The species is listed only if habitat is present (i.e. % none does not equal 1.000).

Category	Common name	% high	% medium	% low	% none
Amphibian	Red-spotted Toad	0.000	0.000	1.000	0.000
Mammal	Crawford's Gray Shrew	0.000	1.000	0.000	0.000
Mammal	Desert Cottontail	1.000	0.000	0.000	0.000
Mammal	Black-tailed Jackrabbit	1.000	0.000	0.000	0.000

Mammal	White-tailed Antelope Squirrel	0.000	1.000	0.000	0.000
Mammal	Botta's Pocket Gopher	0.000	1.000	0.000	0.000
Mammal	Long-tailed Pocket Mouse	1.000	0.000	0.000	0.000
Mammal	Chisel-toothed Kangaroo Rat	0.000	1.000	0.000	0.000
Mammal	Panamint Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Desert Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Merriam's Kangaroo Rat	1.000	0.000	0.000	0.000
Mammal	Western Harvest Mouse	0.000	1.000	0.000	0.000
Mammal	Cactus Deermouse	1.000	0.000	0.000	0.000
Mammal	North American Deermouse	0.000	1.000	0.000	0.000
Mammal	Canyon Deermouse	1.000	0.000	0.000	0.000
Mammal	Southern Grasshopper Mouse	1.000	0.000	0.000	0.000
Mammal	Desert Woodrat	0.000	1.000	0.000	0.000
Mammal	Coyote	0.000	1.000	0.000	0.000
Mammal	Kit Fox	1.000	0.000	0.000	0.000
Mammal	Gray Fox	0.000	1.000	0.000	0.000
Mammal	American Badger	1.000	0.000	0.000	0.000
Mammal	Bobcat	0.000	1.000	0.000	0.000
Reptile	Desert Tortoise	1.000	0.000	0.000	0.000
Reptile	Western Banded Gecko	1.000	0.000	0.000	0.000
Reptile	Desert Iguana	1.000	0.000	0.000	0.000
Reptile	Zebra-tailed Lizard	0.000	1.000	0.000	0.000

Reptile	Great Basin Collared Lizard	1.000	0.000	0.000	0.000
Reptile	Long-nosed Leopard Lizard	1.000	0.000	0.000	0.000
Reptile	Common Side-blotched Lizard	1.000	0.000	0.000	0.000
Reptile	Desert Horned Lizard	0.000	1.000	0.000	0.000
Reptile	Desert Night Lizard	0.000	1.000	0.000	0.000
Reptile	Tiger Whiptail	1.000	0.000	0.000	0.000
Reptile	Western Threadsnake	0.000	1.000	0.000	0.000
Reptile	Spotted Leaf-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Coachwhip	0.000	1.000	0.000	0.000
Reptile	Western Patch-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Glossy Snake	1.000	0.000	0.000	0.000
Reptile	Gophersnake	1.000	0.000	0.000	0.000
Reptile	Common Kingsnake	0.000	1.000	0.000	0.000
Reptile	Long-nosed Snake	1.000	0.000	0.000	0.000
Reptile	Western Groundsnake	0.000	1.000	0.000	0.000
Reptile	Western Shovel-nosed Snake	0.000	1.000	0.000	0.000
Reptile	Desert Nightsnake	0.000	1.000	0.000	0.000
Reptile	Sidewinder	0.000	1.000	0.000	0.000
Reptile	Mohave Rattlesnake	0.000	1.000	0.000	0.000

Species List / Presence at Structure

This is a list of animals (amphibians, birds, mammals, and reptiles) potentially present at this location, based on the USGS GAP data.

Mammals

1. White-tailed Antelope Squirrel (*Ammospermophilus leucurus*)
2. Pallid Bat (*Antrozous pallidus*)
3. Coyote (*Canis latrans*)
4. Long-tailed Pocket Mouse (*Chaetodipus formosus*)
5. Desert Pocket Mouse (*Chaetodipus penicillatus*)
6. Agile Kangaroo Rat (*Dipodomys agilis*)
7. Desert Kangaroo Rat (*Dipodomys deserti*)
8. Merriam's Kangaroo Rat (*Dipodomys merriami*)
9. Chisel-toothed Kangaroo Rat (*Dipodomys microps*)
10. Panamint Kangaroo Rat (*Dipodomys panamintinus*)
11. Big Brown Bat (*Eptesicus fuscus*)
12. Spotted Bat (*Euderma maculatum*)
13. Greater Bonneted Bat (*Eumops perotis*)
14. Western Red Bat (*Lasiurus blossevillii*)
15. Hoary Bat (*Lasiurus cinereus*)
16. Black-tailed Jackrabbit (*Lepus californicus*)
17. Bobcat (*Lynx rufus*)
18. Striped Skunk (*Mephitis mephitis*)
19. House Mouse (*Mus musculus*)
20. Long-tailed Weasel (*Mustela frenata*)
21. Californian Myotis (*Myotis californicus*)
22. Western Small-footed Myotis (*Myotis ciliolabrum*)
23. Long-eared Myotis (*Myotis evotis*)
24. Fringed Myotis (*Myotis thysanodes*)
25. Desert Woodrat (*Neotoma lepida*)
26. Crawford's Gray Shrew (*Notiosorex crawfordi*)
27. Mule Deer (*Odocoileus hemionus*)
28. Southern Grasshopper Mouse (*Onychomys torridus*)
29. California Ground Squirrel (*Otospermophilus beecheyi*)
30. San Joaquin Pocket Mouse (*Perognathus inornatus*)
31. Canyon Deermouse (*Peromyscus crinitus*)
32. Cactus Deermouse (*Peromyscus eremicus*)
33. North American Deermouse (*Peromyscus maniculatus*)
34. Pinon Deermouse (*Peromyscus truei*)
35. Western Pipistrelle (*Pipistrellus hesperus*)
36. Raccoon (*Procyon lotor*)
37. Brown Rat (*Rattus norvegicus*)
38. Roof Rat (*Rattus rattus*)
39. Western Harvest Mouse (*Reithrodontomys megalotis*)
40. Western Gray Squirrel (*Sciurus griseus*)
41. Western Spotted Skunk (*Spilogale gracilis*)
42. Wild Boar (*Sus scrofa*)

43. Desert Cottontail (*Sylvilagus audubonii*)
44. Mexican Free-tailed Bat (*Tadarida brasiliensis*)
45. Lodgepole Chipmunk (*Tamias speciosus*)
46. American Badger (*Taxidea taxus*)
47. Botta's Pocket Gopher (*Thomomys bottae*)
48. Gray Fox (*Urocyon cinereoargenteus*)
49. American Black Bear (*Ursus americanus*)
50. Kit Fox (*Vulpes macrotis*)
51. Mohave Ground Squirrel (*Xerospermophilus mohavensis*)

Amphibians

1. American Bullfrog (*Lithobates catesbeianus*)
2. Baja California Treefrog (*Pseudacris hypochondriaca*)
3. Ensatina (*Ensatina eschscholtzii*)
4. Foothill Yellow-legged Frog (*Rana boylii*)
5. Red-spotted Toad (*Anaxyrus punctatus*)
6. Western Toad (*Anaxyrus boreas*)

Reptiles

1. California Legless Lizard (*Anniella pulchra*)
2. Glossy Snake (*Arizona elegans*)
3. Tiger Whiptail (*Aspidoscelis tigris*)
4. Zebra-tailed Lizard (*Callisaurus draconoides*)
5. Snapping Turtle (*Chelydra serpentina*)
6. Western Shovel-nosed Snake (*Chionactis occipitalis*)
7. Western Banded Gecko (*Coleonyx variegatus*)
8. Coachwhip (*Coluber flagellum*)
9. Sidewinder (*Crotalus cerastes*)
10. Speckled Rattlesnake (*Crotalus mitchellii*)
11. Western Rattlesnake (*Crotalus oreganus*)
12. Mohave Rattlesnake (*Crotalus scutulatus*)
13. Great Basin Collared Lizard (*Crotaphytus bicinctores*)
14. Ring-necked Snake (*Diadophis punctatus*)
15. Desert Iguana (*Dipsosaurus dorsalis*)
16. Southern Alligator Lizard (*Elgaria multicarinata*)
17. Long-nosed Leopard Lizard (*Gambelia wislizenii*)
18. Desert Tortoise (*Gopherus agassizii*)
19. Coast Nightsnake (*Hypsiglena ochrorhyncha*)
20. Common Kingsnake (*Lampropeltis getula*)
21. Western Threadsnake (*Leptotyphlops humilis*)
22. Rosy Boa (*Lichanura trivirgata*)
23. Desert Horned Lizard (*Phrynosoma platyrhinos*)
24. Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)

25. Gophersnake (*Pituophis catenifer*)
26. Gilbert's Skink (*Plestiodon gilberti*)
27. Long-nosed Snake (*Rhinocheilus lecontei*)
28. Western Patch-nosed Snake (*Salvadora hexalepis*)
29. Common Chuckwalla (*Sauromalus ater*)
30. Common Sagebrush Lizard (*Sceloporus graciosus*)
31. Desert Spiny Lizard (*Sceloporus magister*)
32. Western Fence Lizard (*Sceloporus occidentalis*)
33. Yellow-backed Spiny Lizard (*Sceloporus uniformis*)
34. Western Groundsnake (*Sonora semiannulata*)
35. Sierra Gartersnake (*Thamnophis couchii*)
36. Western Lyresnake (*Trimorphodon biscutatus*)
37. Common Side-blotched Lizard (*Uta stansburiana*)
38. Desert Night Lizard (*Xantusia vigilis*)

Kern County

Economic Profile

JANUARY 2025



EBP

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Background

Scope of Economic Profile

This economic profile report provides insight on Kern county's current economy, major transportation assets, growth factors, and freight dependent industry sectors. The economic profile serves as both a historical and forward-looking analysis of Kern County's major industries, as measured contributions to the county's gross domestic product (GDP) and employment. While historical data provides background on Kern County's established economy, forecasts provide an indication of the future qualities and needs of the region. An economic forecast is vital to anticipating and meeting future industries' freight needs across the region.

In addition to economic data, interviews were conducted with Kern County's economic development officials and staff to gauge the on-the-ground reality of the economy, and to look beyond the available published economic data. Through these interviews, qualitative data on expected growth sectors, state regulations' effects on local productivity and the role of Kern County in the California and national economy were gathered. Local experts on the economy were a critical check of the forecasts developed from national economic databases and helped to highlight trends that are not fully detailed by the data. Finally, a tool to assess the competitiveness of the county at attracting investment in its key sectors was applied. Known as a "reverse site selection model," this tool provided information on the factors influencing corporate investment in Kern County when compared to its competitor regions.

Population trends

Kern County is the third largest county in California and had a total population of 916,000 in 2022. Building on consistent population growth since the mid-1970s, Kern County's population has grown 32% since 2002. The growth largely reflects migration between Kern County and other California counties (e.g., Los Angeles County), according to Kern COG.[1] According to a KERNCOG forecast, the County is expected to have a population of around 1,024,000 people by 2050.

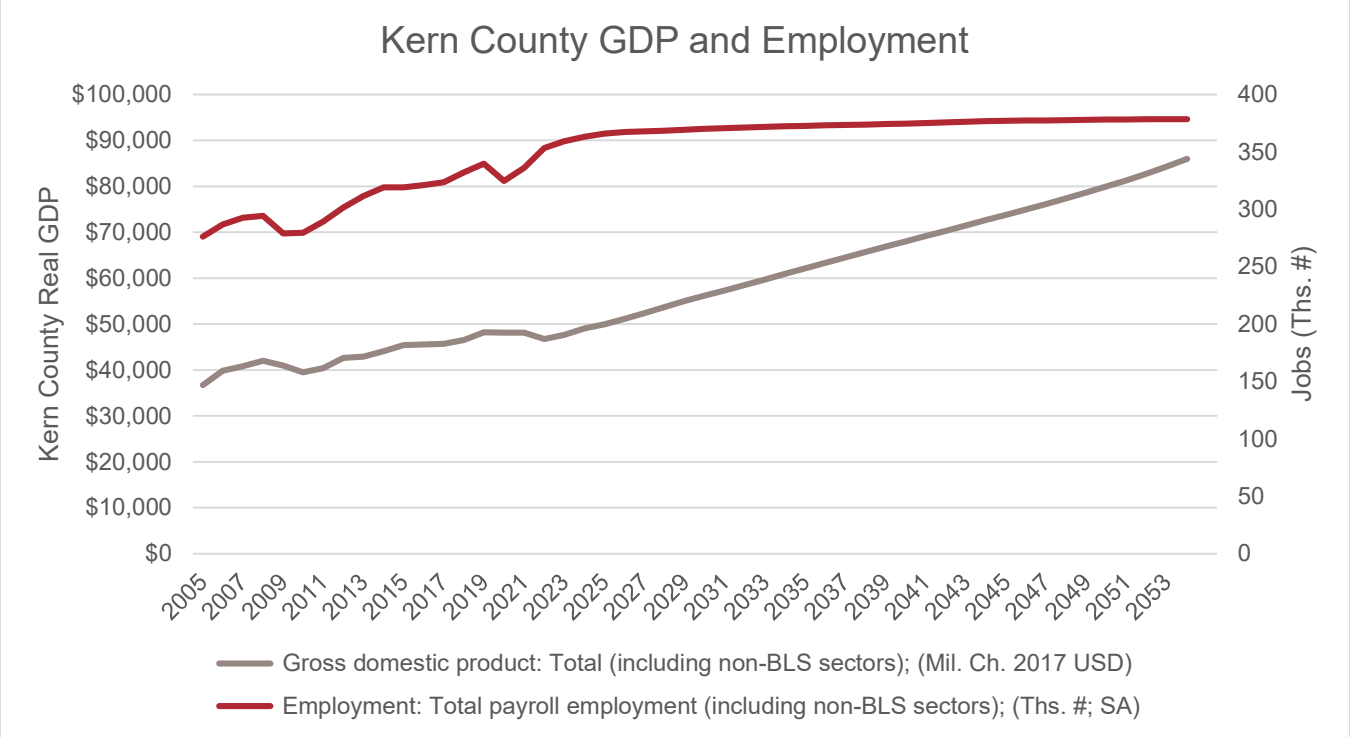
GDP and employment trends

Kern County's real GDP stagnated from 2017 to 2022 but is projected to increase over the next 25 years. From 2017 to 2022, the County's real gross domestic product (GDP) increased by only 0.023% to a current-dollar value of $57.5 billion. By contrast, California experienced a 15.58%

[1] https://www.kerncog.org/wp-content/uploads/2009/10/GrowthForecastPresentation_KernCOG_20240321.pdf

increase in its real GDP in the same period.[2] Despite notable GDP growth (accounting for inflation) from 2018 to 2019, the county's real GDP has contracted two years in a row – falling 0.2% from 2020 to 2021 and then dropping 3.3% from 2021 to 2022 (Figure 1).[3] By contrast, California saw growth in those same years – increasing 7.6% from 2020 to 2021 and then 0.7% from 2021 to 2022.[4] In other words, the County's largest real GDP contraction occurred after the height of Covid-related shutdowns and contrasts with statewide overall growth. According to the same forecasts, this is largely due to a decrease in the oil and gas extraction industry by over $1.45 billion USD in one year. It is unclear whether this economic contraction is due to delayed pandemic affects or regulatory reasons.

Figure 1 Kern County GDP and Employment



Despite recent stagnation, forecasts for the next three decades indicate that the county's GDP will steadily increase while aggregate employment growth tapers. It is key to note that employment trends will vary by industry. This forecast signals that Kern County will see an increase in economic output per employee. This is expected given the increased production capacity provided by technological advancements.

[2] U.S. Bureau of Economic Analysis, "CAGDP1 County and MSA gross domestic product (GDP) summary" (accessed Thursday, July 18, 2024).

[3] Ibid.

[4] Ibid.

Target sectors

Building on the region's economic strengths, Kern County's economic development strategy centers on six target industry clusters[5]:

- Value-Added Agriculture
- Transportation and Logistics
- Energy and Natural Resources
- Aerospace and Defense
- Tourism, Recreation and Entertainment
- Healthcare Services

This economic profile will pay particular attention to the most freight-dependent sectors and subsectors within these six target clusters. These are value-added agriculture, transportation and logistics, and energy and natural resources since these sectors are heavily reliant on freight. While the aerospace and defense sector have a notable presence in the region, this sector represents a small portion of economic output and employment. Additionally, much of these jobs revolve around government jobs and are conflated within the data sources as government output and employment.

[5] https://www.kerncounty.com/government/county-administrative-office/cao/economic-development

GDP, Employment, and Wages

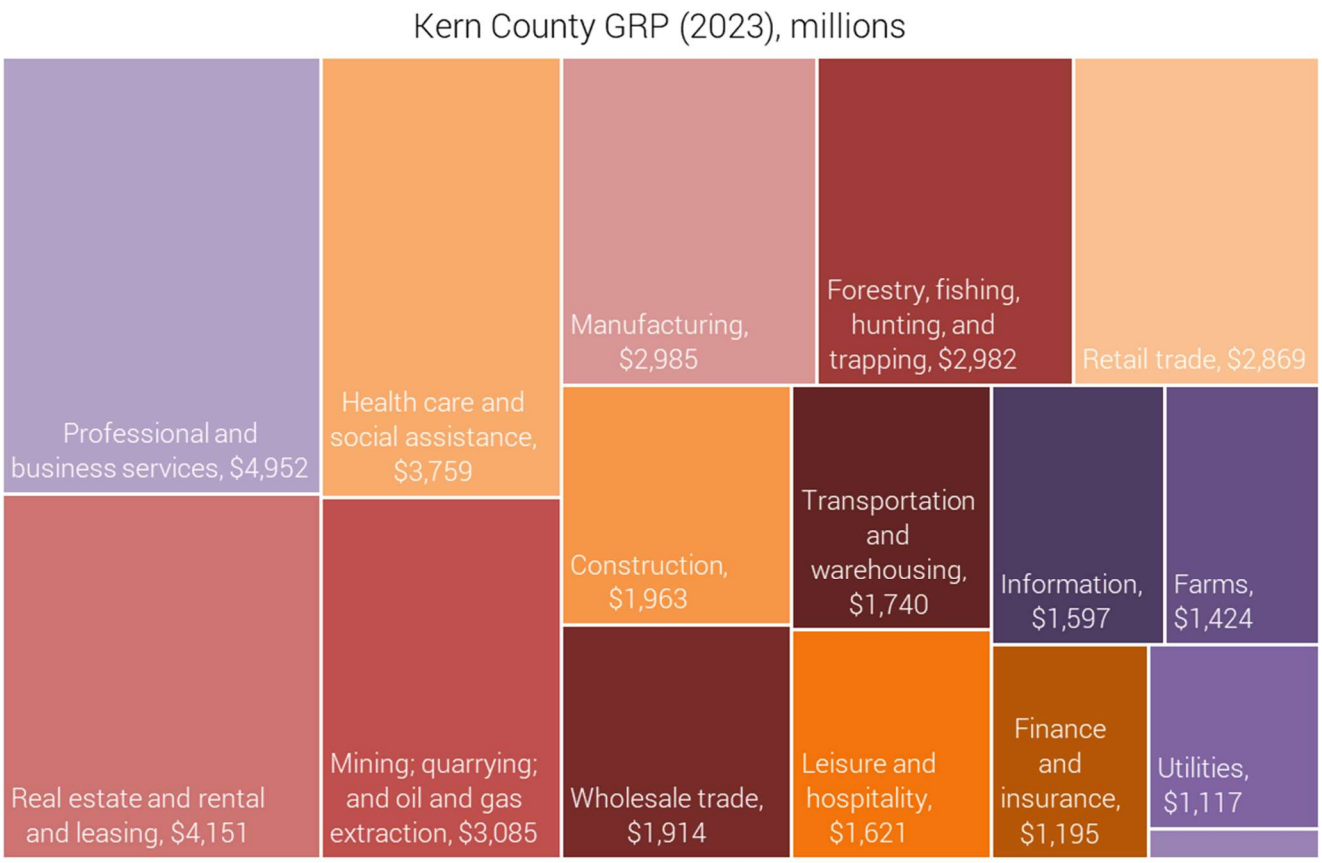


Figure 2 Kern County economic output by sector. Source: EBP analysis of Moody's employment and GDP data.

Figure 3 shows the varying levels of GDP of major sectors of the Kern County economy in 2023. The values are represented in 2017 dollars to be consistent with the data sources used throughout the analysis. By far, the largest sectors in the county are population-serving industries such as professional and business services, real estate, retail trade, and wholesale trade, among others. These industries are largely dependent on the population size of the region. They are mostly irrelevant to any future economic development recommendations, especially within the context of Kern County's transportation investment plans. However, they do provide the base necessities for any industry by supporting land purchases, workforce needs and a healthy population. Industries expected to both consume and produce large amounts of freight commodities are of more importance to the proposed transportation improvements. These include mining, oil/gas, forestry, farms, transportation, warehousing, and manufacturing, among others. These traditionally freight-intensive industries will be the largest users of any transportation improvements established by the county.

Figure 4 GDP and Employment Snapshot (2023)

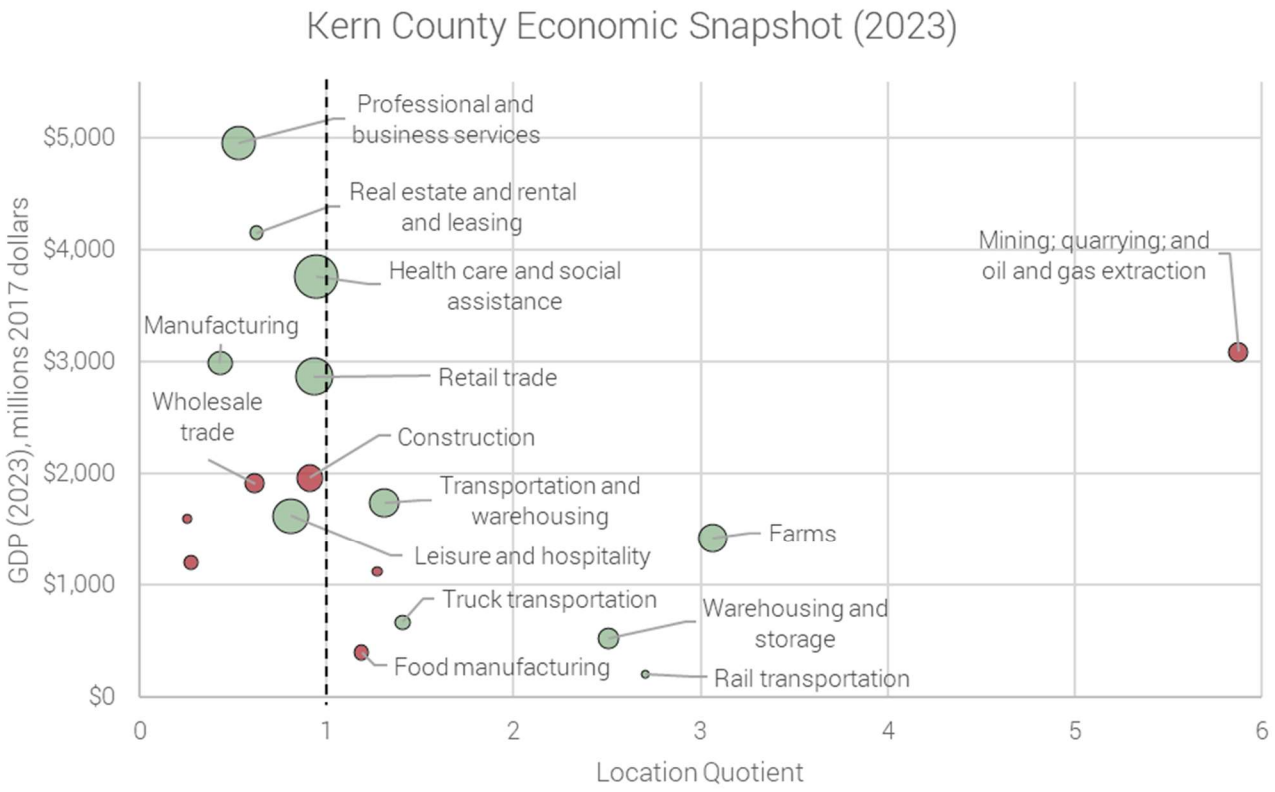


Figure 3 Kern County Major Sectors: GDP & Employment (2023). Source: EBP analysis of Moody's employment and GDP data. Graph omits forestry, hunting, trapping, and fishing, whose LQ in 2023 was over 53. Bubble size corresponds with employment in 2023. Green bubbles indicate employment growth from 2013 to 2023. Red bubbles indicate employment loss in the same period.

While Figure 3 provides detail on the relative size of each sector's GDP, this is not the only factor relevant to Kern County's economic performance. Workforce availability plays a large role in the economic development of a region, especially when trying to gain a competitive advantage above other regions. Companies are better positioned to make a return on their investment if a skilled and experienced workforce for their industry already exists in the region.

Figure 4 adds the extra dimensions of number of jobs and employment location quotient to the analysis. Employment location quotient (LQ), represented along the x-axis, quantifies how concentrated an industry's jobs are in a region when compared to the nation. Any LQ above 1 indicates a higher concentration of industry-specific employment within the region that the nation. A higher score means an even more concentration of jobs.

From Figure 3, we can again see how large the services, health care and retail trade are to Kern's economy. Still, these are not the focus of our analysis since our focus is on traditionally freight-intensive industries such as manufacturing. The largest industry by employment LQ is forestry,

hunting, trapping, and fishing (LQ = 44) by far. The LQ was so large that it could not be properly visualized while maintaining visual detail on the other industries in Kern County. Along with farms, forestry remains an important part of Kern County's economic identity. The presence of agricultural laborers is represented in the extremely high employment LQ. Employment on farms has an LQ that is three times higher the national average making it a unique industry of Kern County. Farms also has a growing employment trend over the past decade as evidenced by its growth from 17,050 to 17,730 employees.

Other industries with a high employment concentration in Kern County are warehousing/storage and truck transportation. These industries have both experienced positive employment growth in the past ten years. If this trend increases, there will be many opportunities for increased freight activity within the county. The increased activity will be supported by any transportation improvements made by KERNCOG. This is especially true of road improvements considering the recent growth of truck transportation.

While mining, oil and gas extraction is highly concentrated within Kern County, the industry has seen a decline in recent years. Regardless, decreasing employment does not nullify the importance of the over $3 billion industry in 2023 alone. Better understanding the methods of transportation, as well as the commodities used and produced by this industry, will provide more detail on its freight impacts and needs. Interviews with the economic development corporation have identified recent environmental regulations as the impetus for the decline. Yet, investment in other energy sectors is expected to partially fill the gap left by Kern's partial exit from the oil and gas industries.

Figure 5 Kern County Employment by Sector ranked by GDP (2050)

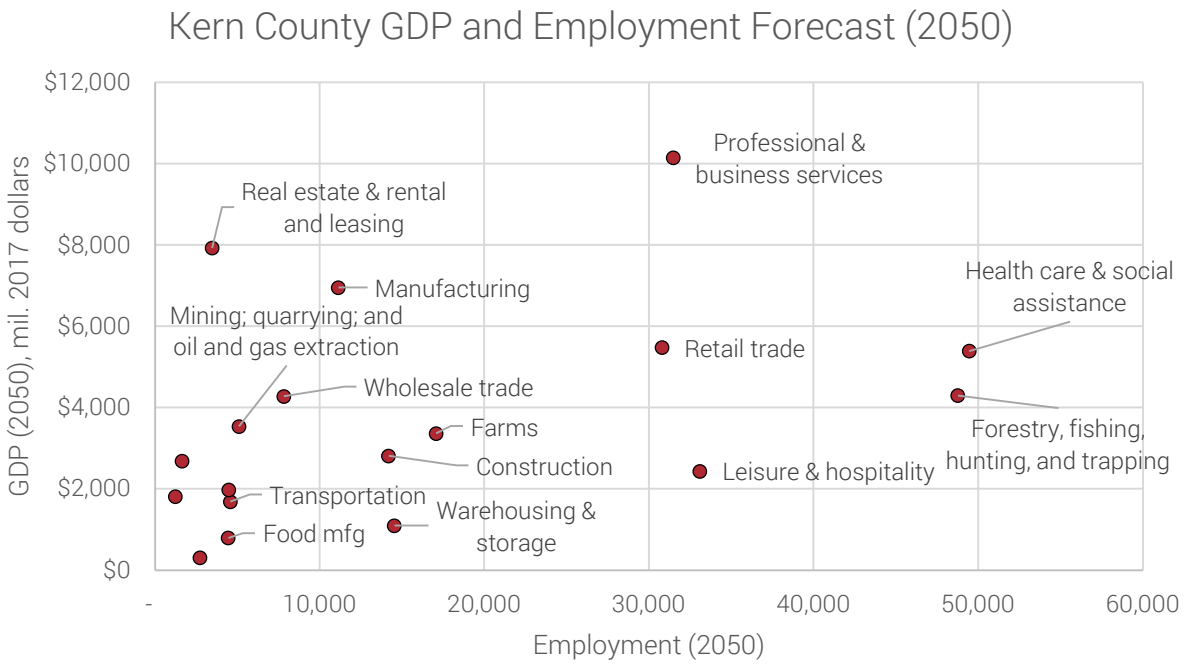
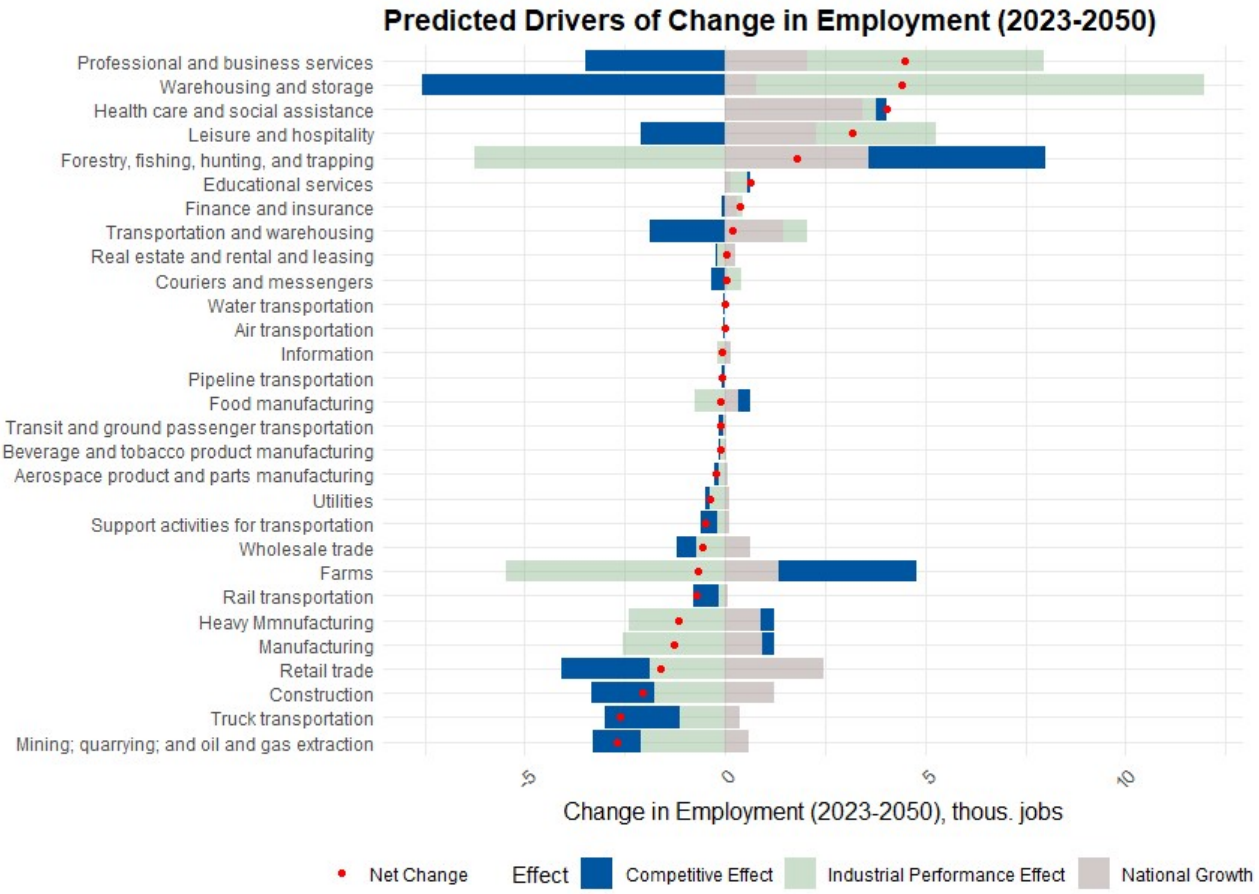


Figure 5 provides a look at the forecast economy of Kern County in the year 2050. The predicted level of employment for over 25 industries is displayed by order of their county GDP. These are forecasted to be the largest contributors to the county's economy in 25 years. As expected, there are many service industries included on the list, such as real estate and health care. Many already established industries in Kern County also rank high on the forecasted list. These include forestry, mining/oil/gas, and farms. Forestry and farms are forecasted to employ over 48,000 and 17,000 people in 2050, respectively. The only industry in Figure 5 which compares to forestry's level of employment is health care. Notable for its value-add potential, food manufacturing (a key driver of Kern County's economy) is expected to employ over 4,400 employees in 2050.

Shift share analysis is a method which aims to break down the reasons for increased economic performance. The analysis isolates the role of local competitiveness, national trends, and regional industrial composition in driving a sector's employment. Using the forecasts provided by Moody's, the change in employment and main drivers of change can be detailed by industry. Figure 6 provides more context on the employment levels shown in Figure 5 by explaining not only the predicted change from 2023 to 2050 (as represented by the placement of the red dot), but also an estimate of the leading causes (as shown in by the blue, gray, and green bars).

Figure 6 Shift Share Analysis Major Sectors (2023 - 2050)



The warehousing and storage sector is forecasted to experience one of the largest growths in employment with nearly 5,000 additional jobs by 2050. According to the Kern Economic Development Corporation, companies such as Amazon, Ross Dress for Less, and Ikea are some of the major players in the county. Kern County's positioning as California's center of population of the state of California and connectivity to major national highways enables the warehousing industries. Major companies such as Amazon have identified Bakersfield in Kern County as key to its network development goals.[6]

Forestry, fishing, hunting, and trapping is another industry of notable growth with an additional 2,000 jobs by 2050. This is despite the national industry being projected to decrease in overall employment. This projection is indicative of Kern County's competitive advantage in this sector and the sector's historical importance to regional economic development. Farm employment, however, is expected to shrink slightly, along with food manufacturing.

[6] https://www.kget.com/news/local-news/amazon-hiring-for-new-bakersfield-facility-opening-in-fall-2024/

Regional workforce

Most of Kern County's 361,000 jobs are performed by its resident workforce.[7] With a population of 916,000 as of 2022, Kern County has a resident workforce of 391,000.[8] In 2021, 74% of Kern County's jobs were performed residents of the County while the remainder were performed by commuters into the County.[9]

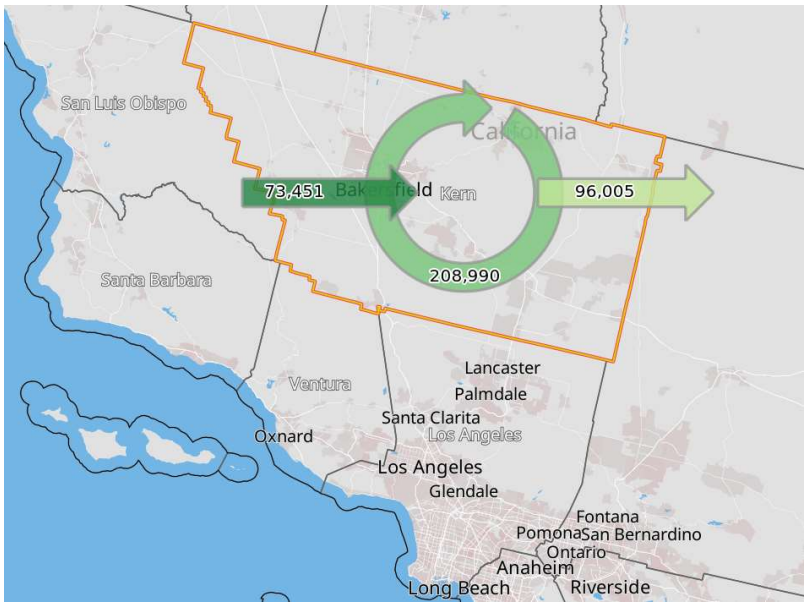


Figure 7 Job Inflows and Outflows in 2021. U.S. Census Bureau. (2024). LEHD Origin-Destination Employment Statistics (2002-2021). Washington, DC: U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program, accessed on July 15, 2024 at https://onthemap.

Unemployment in Kern County has remained persistently above US and California averages, even before the pandemic. From April 2023 to April 2024, the County's unemployment rate increased from 8.1% to 9.3%. By contrast, California's unemployment rate was 4.8% while the US's unemployment rate was 3.5% in April 2024.[10] This is partially due to dependency on seasonal and unstable jobs such as fast food, construction and landscaping as expressed by one kern County resident.[11]

Despite elevated unemployment and stagnant real GDP, the County's wage growth has outpaced those of California and the US. From 2022 Q4 to 2023 Q4, Kern County's average wage increased

[7] US Bureau of Labor Statistics, Quarterly Census of Employment and Wages. Four-quarter moving average as of 2023 Q4.
[8] Ibid. Reflects four-quarter moving average as of 2023 Q4.
[9] US Census Bureau, Longitudinal-Employer Household Dynamics
[10] US Bureau of Labor Statistics, Quarterly Census of Employment and Wages
[11] https://www.kget.com/news/local-news/labor-report-shows-unemployment-rate-remains-high-in-kern-county-losses-in-food-industry-jobs/

4.3% while California's increased 2.2% and the US's increased 2.6%. At the same time, Kern County's average worker still has less purchasing power ($51,700) than the average Californian ($59,400) and American ($69,800), even though Kern County's cost of living is only 10.9% greater than the US average while California's cost of living is 41.5% greater than the US average.[12]

Kern County's workers have less formal education than California and the US. 18.2% of Kern County residents have a bachelor's degree or more, in comparison to 36.7% of California residents and 35.8% of US residents.[13]

Sector-Level Analysis

Value-Added Agriculture and Food Manufacturing

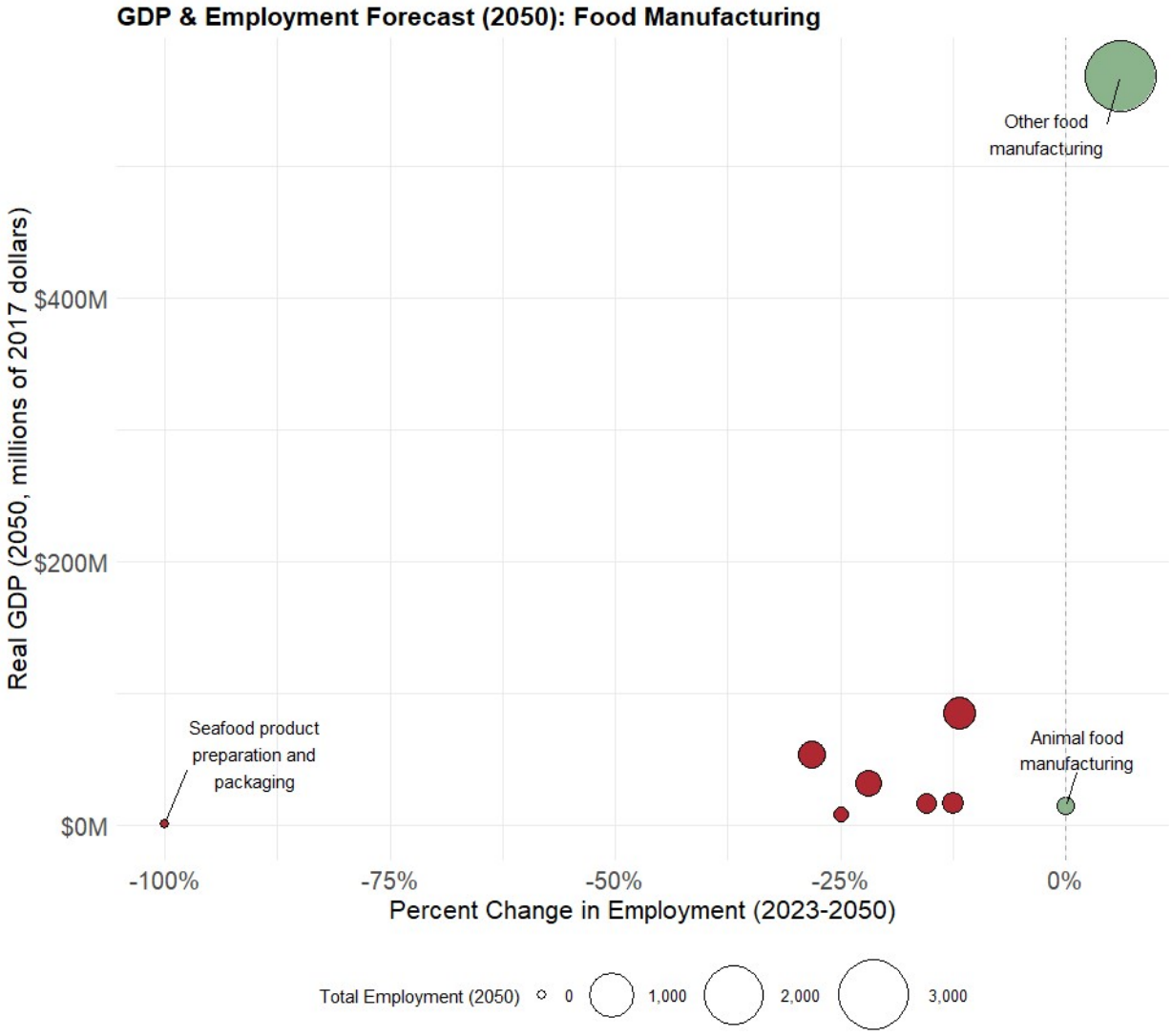
Kern County has a high concentration of employment in agriculture, forestry, fishing, and hunting. Among all the County's major sectors, forestry, fishing, hunting, and trapping has the greatest concentration of employees (LQ = 53). Farm employment also has a significant presence (LQ = 3.1). These sectors reflect the county's strong tree nut farming, grape vineyards, vegetable production and melon farming, and postharvest crop activities, which include crop cleaning, sorting, grading, and packing.

Farming and forestry have both experienced growth in the last decades in terms of employment and GDP. Forestry, fishing, hunting, and trapping employment grew substantially (+17%) in the last decade, while farm employment only modestly increased (+4%). Together they employ 47,000 workers as of 2023.

Despite growth in agricultural employment, the food manufacturing sector has shrunk in terms of both employment (-25%) and GDP (-19%) from 2013 to 2023. All but two subsectors (grain and oilseed milling and animal food manufacturing) experienced employment contraction in the last ten years. Yet, the food manufacturing subsector still maintains an above-average employment concentration (LQ = 1.2) with 4,600 workers as of 2023.

[12] The Council for Community and Economic Research, Cost of Living Index as of 2024 Q1
[13] U.S. Census Bureau, American Community Survey 2018-2022.

Figure 8 Food Manufacturing GDP and Employment (2023 vs 2050)



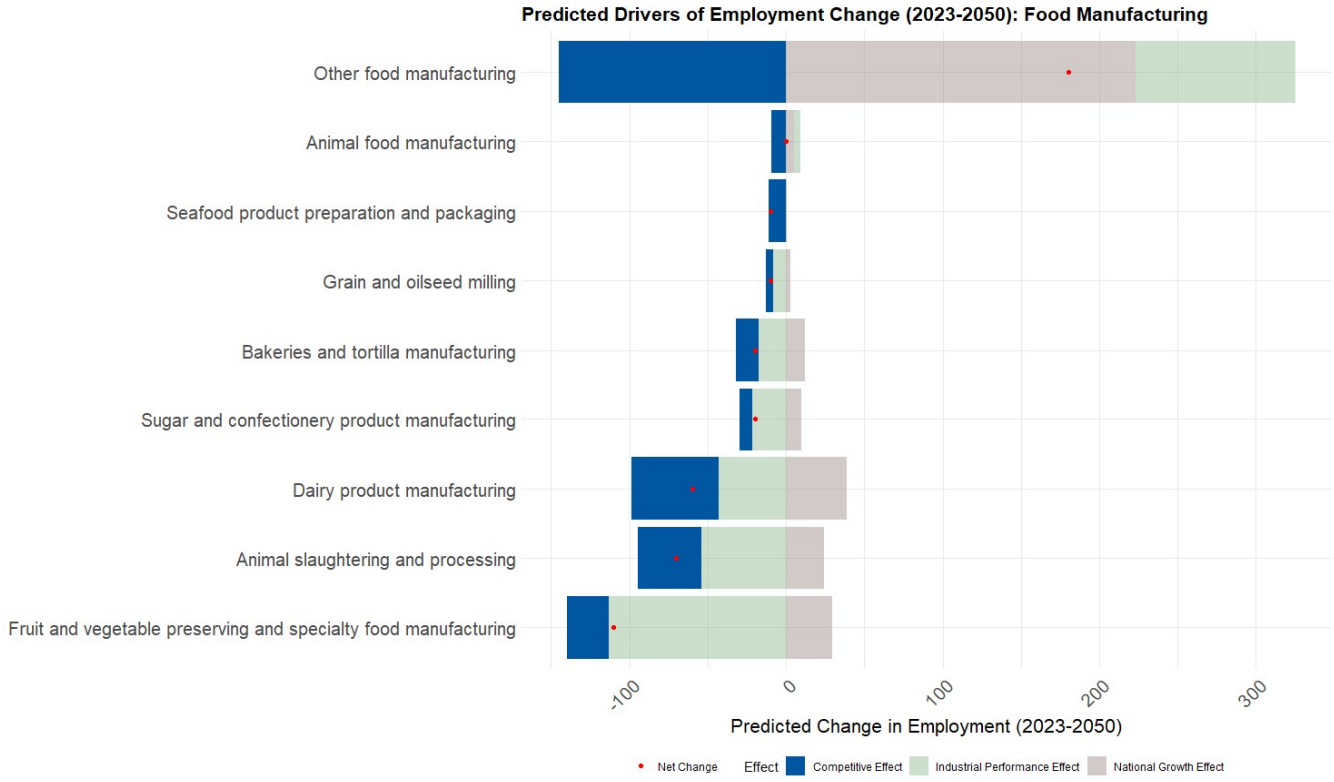
Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via *Moody's and Moody's* economic forecast for Kern County.

Most food manufacturing industries are expected to grow in economic output despite stagnant employment LQ. Figure 9 shows this trend by representing 2023 GDP and employment levels with a clear bubble and their 2050 counterpart with a colored bubble (connected by a line). It is important to note that while employment LQ is not moving much, employment growth varies across the board. More detail on which industries are expected to gain employment and why are displayed in Figure 9.

Figure 8 shows that employment in other food manufacturing is the largest and expected to increase by nearly 200 jobs by 2050. According to the shift share analysis, this growth is due to the growth of the U.S. economy and food manufacturing industry rather than any Kern County

specific qualities or competitiveness. On the other hand, fruit and vegetable preservation, along with animal slaughtering and dairy product manufacturing, are forecasted to decrease by around 100 jobs each.

Figure 9 Food Manufacturing Sub-Industry Shift Share Analysis (2023 - 2050)



Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via Moody's and Moody's economic forecast for Kern County.

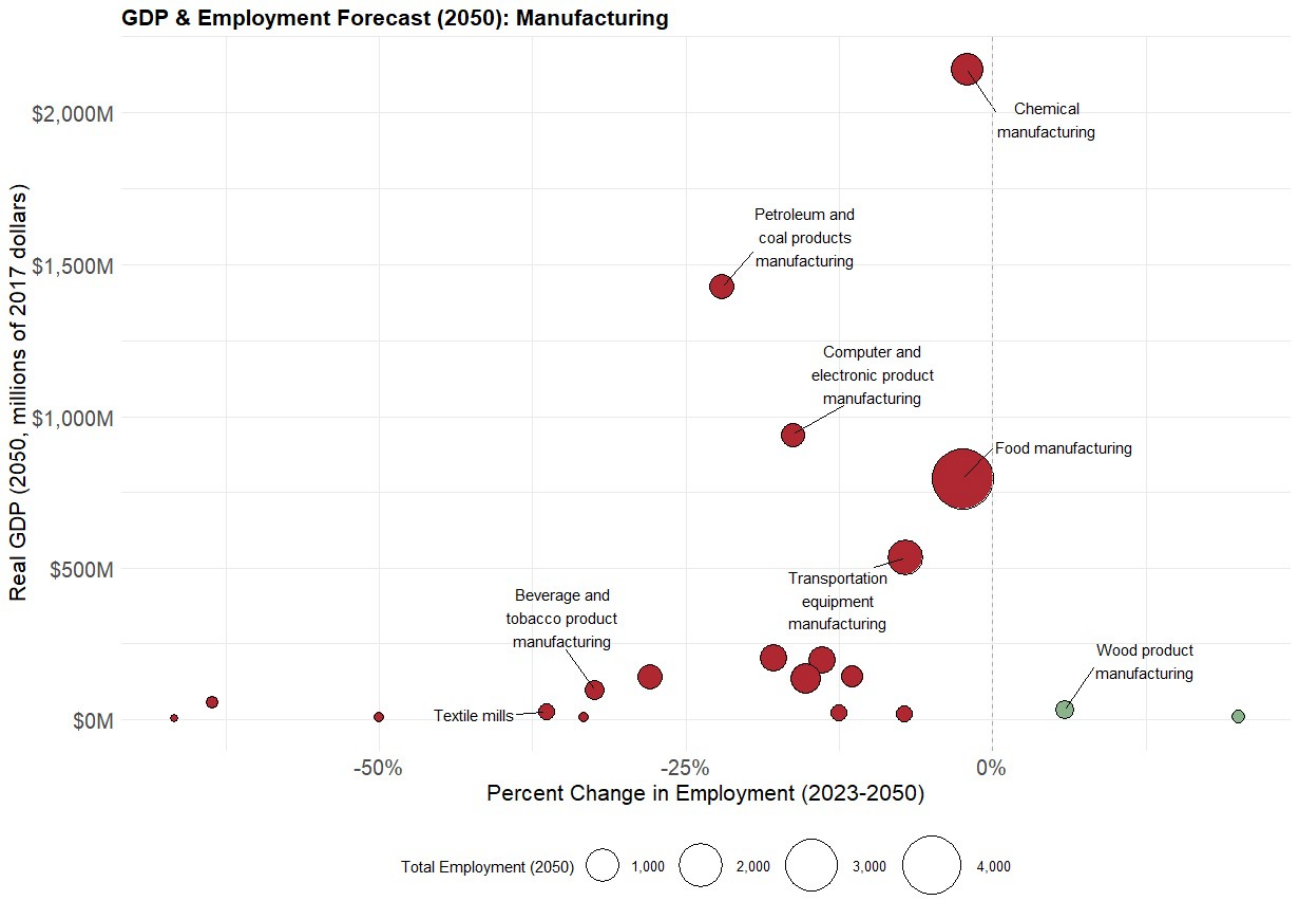
Although food manufacturing will remain a key part of the local economy, it is expected to play less of a primary role in upcoming years. The bottling of water and packaging of fruits and vegetables are some examples of these industries. In particular, Gensis Holdings, WM Bolthouse Farms, Crystal Geyser Water Company, and JSS Almonds stand out as large players in the market. Given its long and continuing history in Kern County, food manufacturing will be a major user of any transportation corridor improvements implemented by the county in coming years.

Manufacturing

Food manufacturing (in addition to petroleum and coal manufacturing) has been and is expected to remain one of the largest industries within Kern County's manufacturing industry. However, other forms of manufacturing exist in the county and contribute greatly to the local economy. Among the largest manufacturing industries are chemical ($777.8 million) and transportation equipment ($345.78 million), in 2017 USD. When looking further into the chemical industry, only a

few sub-industries compose the majority of the GDP. Specifically, basic chemical ($274.57 million), paint ($221.46 million), and pesticide/fertilizer ($102.71 million) are the biggest contributors. The presence of the transportation equipment industry seems to mostly due to motor vehicle manufacturing which represents $237.31 million. The presence of the motor vehicle parts industry is relatively new following a $112 million increase from 2019 to 2021.

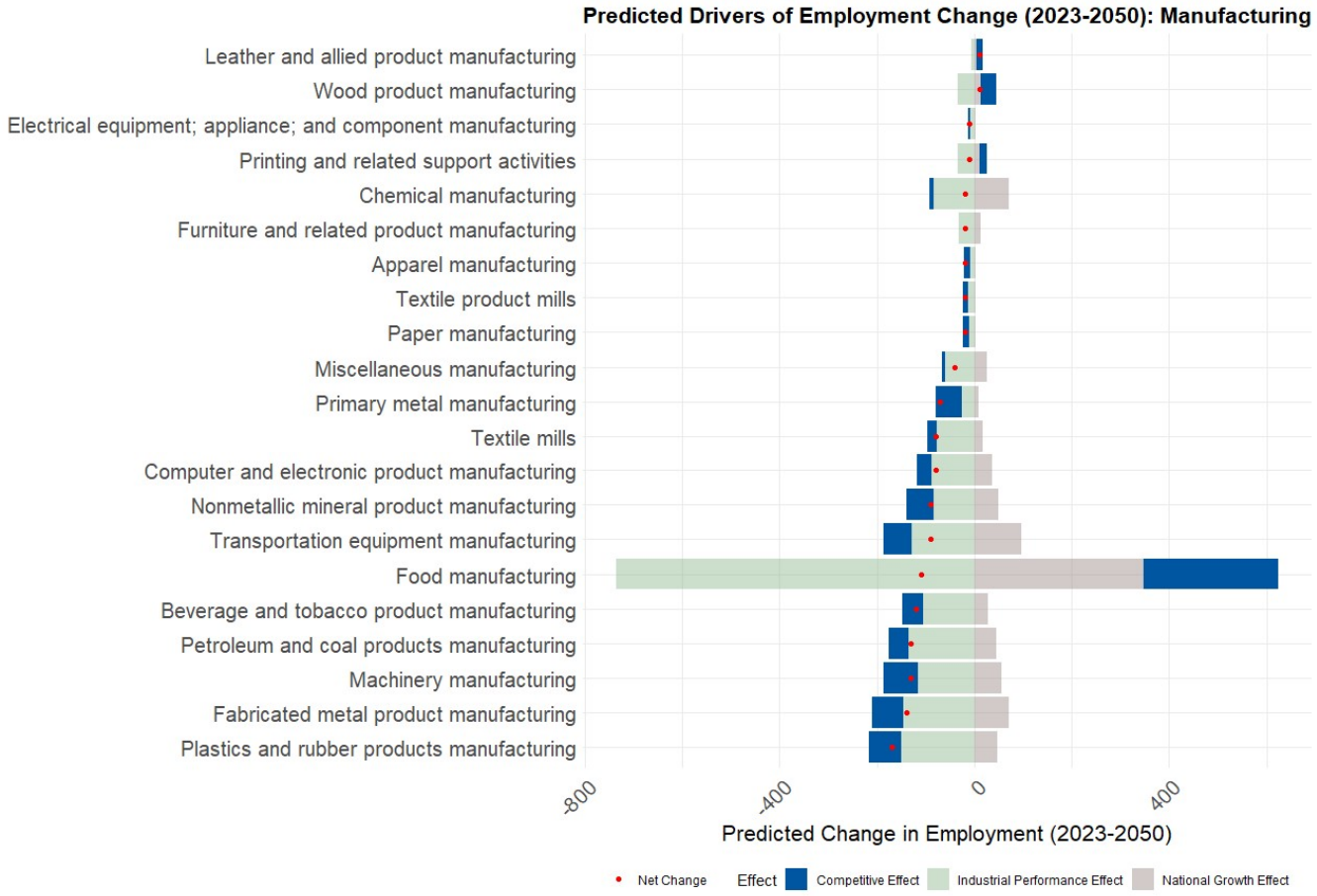
Figure 10 Manufacturing GDP and Employment (2050)



Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via Moody's and Moody's economic forecast for Kern County.

According to the figure above, food manufacturing is expected to remain the largest manufacturing employer in Kern County over the next three decades by GDP. Despite this growth, it is expected to slightly decrease in the number of employees by the year 2050. In fact, most manufacturing industries are expected to decrease in employment levels but increase in GDP when compared to 2023. Figure 11 below provides some insight into why.

Figure 11 Manufacturing Shift Share Analysis (2023 - 2050)



Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via Moody's and Moody's economic forecast for Kern County.

It appears that almost all types of manufacturing are expected to decrease slightly in employment by the year 2050. In food manufacturing (the most relevant for Kern County), this seems to be due to the industrial mix effect. This means that the industry is likely decreasing on the national stage despite Kern County's competitive advantage. The movement of food manufacturing is likely to remain a key part of Kern County's freight economy, yet national food manufacturing trends must be accounted for when predicting future freight needs.

Recent projects such as the Pacific Steel mill indicate a strong manufacturing future for Kern County. As the first Californian mill in 50 years, the announcement will add jobs and productivity to the county beyond forecasted expectations.[14] The project has a value of $1.2 billion and will be surrounded mostly by industrial land. The zoning situation allows for overall larger industrial

[14] https://www.bakersfield.com/news/kern-supervisors-approve-permits-for-first-california-steel-mill-in-decades/article_c5fe7874-e64f-11ee-a88a-cfb2c60a69dc.html

activity using steel milled from the factory or future expanded operations. Enabled with on-site carbon capture technology, the project represents a major economic and environmental win for Kern County's manufacturing future.

Shift share analysis is a regional economic analysis technique that identifies sources of growth or decline of a given industry. It breaks down recent employment changes:

- National Growth: overall national employment trends across industries
- "Industry Mix" / Industrial performance: change in the nationwide industry.
- Local Competitiveness: the portion of change unaccounted for by

Energy

Mining, Quarrying, and Oil and Gas Extraction (LQ = 5.9) employment has been historically concentrated in the county. Employing 9,000 workers in 2023, this sector's largest employment subsectors are support activities for mining (which can relate to either oil and gas or mineral/metal mining), oil & gas extraction itself, and nonmetallic mineral mining and quarrying. The single largest GDP contributor, however, is oil & gas extraction, which accounted for more than half of the GDP of Mining, Quarrying, Oil and Gas Extraction in 2023.

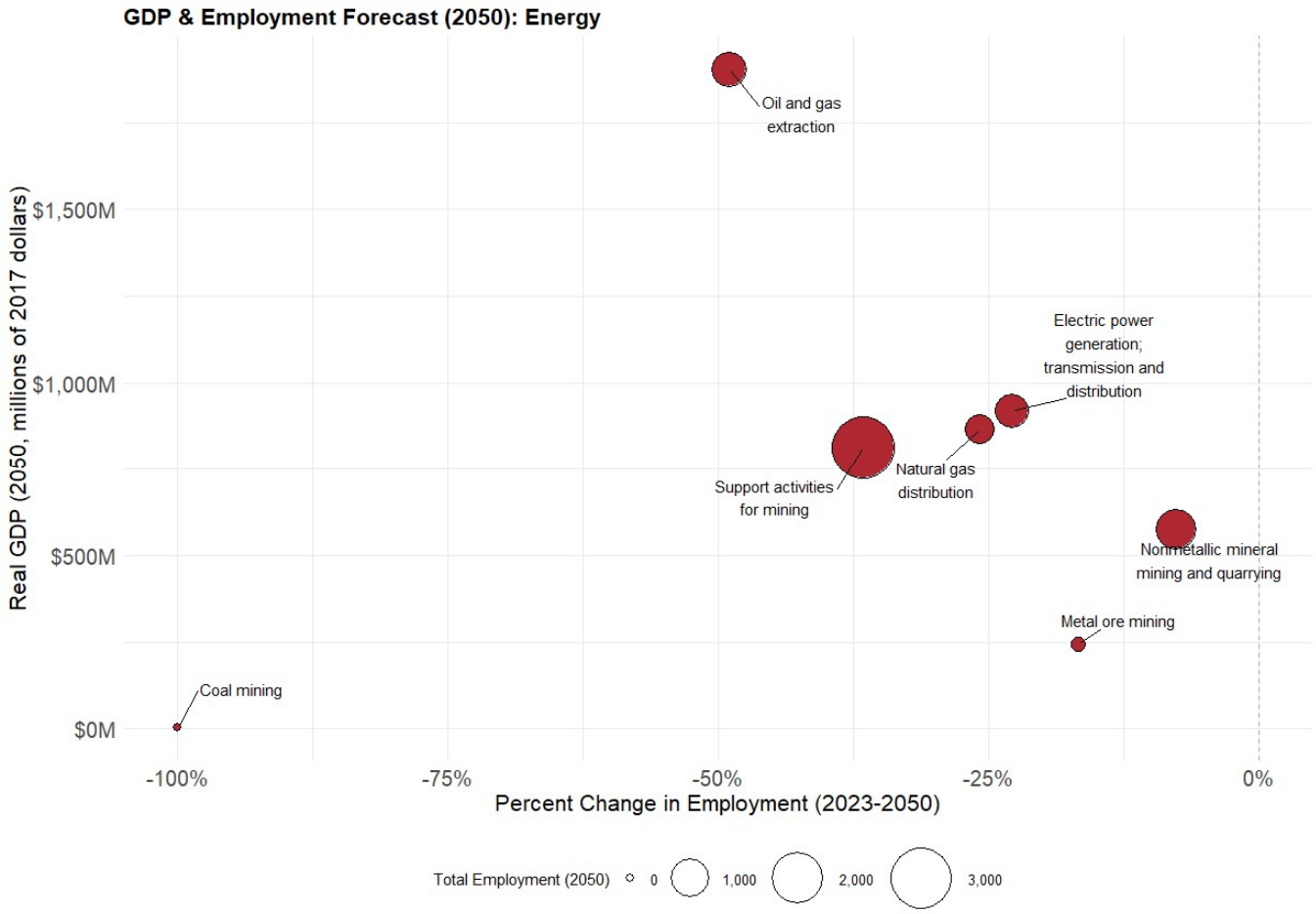
Kern County's energy sector is vulnerable to policy change and market volatility. The County's Comprehensive Economic Development Strategy (CEDS) emphasizes the "need for greater resiliency and adaptation" for the energy sector "as a result of the current policies affecting environmental, water management, and the general business climate."[15] The EDC wrote in 2021 that "changing market conditions and State regulations…to meet ambitious climate change targets have severely impact the industry." The county used to be number one in oil production but is 13th nationally as of 2022.[16] This is due to California Geologic Energy Management Division (CalGEM) permits to seal and close wells permanently.

Energy and natural resource jobs have declined and stagnated in the County in the last decade. After a collapse in oil prices in 2025, the oil industry in Kern County lost half its jobs from 2015 to 2017 and has since "remained stagnant."[17] In the last decade ending in 2023, Mining, Quarrying, and Oil and Gas Extraction has lost 5.2% of its jobs, outpacing the US's overall losses of 3.2%. Pipeline transportation employment has similarly declined (-24%). Most subsectors have experienced decline in the last five years; the only exceptions are related to metal and mineral

[15] Kern County, "Comprehensive Economic Development Strategy" (2021), 4.
[16] https://www.turnto23.com/news/in-your-neighborhood/bakersfield/kern-moved-down-in-oil-production-nationwide-why
[17] Kern County, "Comprehensive Economic Development Strategy" (2021), 103.

mining. Local competitiveness accounts for 13% of this sector's change in employment 2013 to 2023.

Figure 12 Energy GDP and Employment 2050



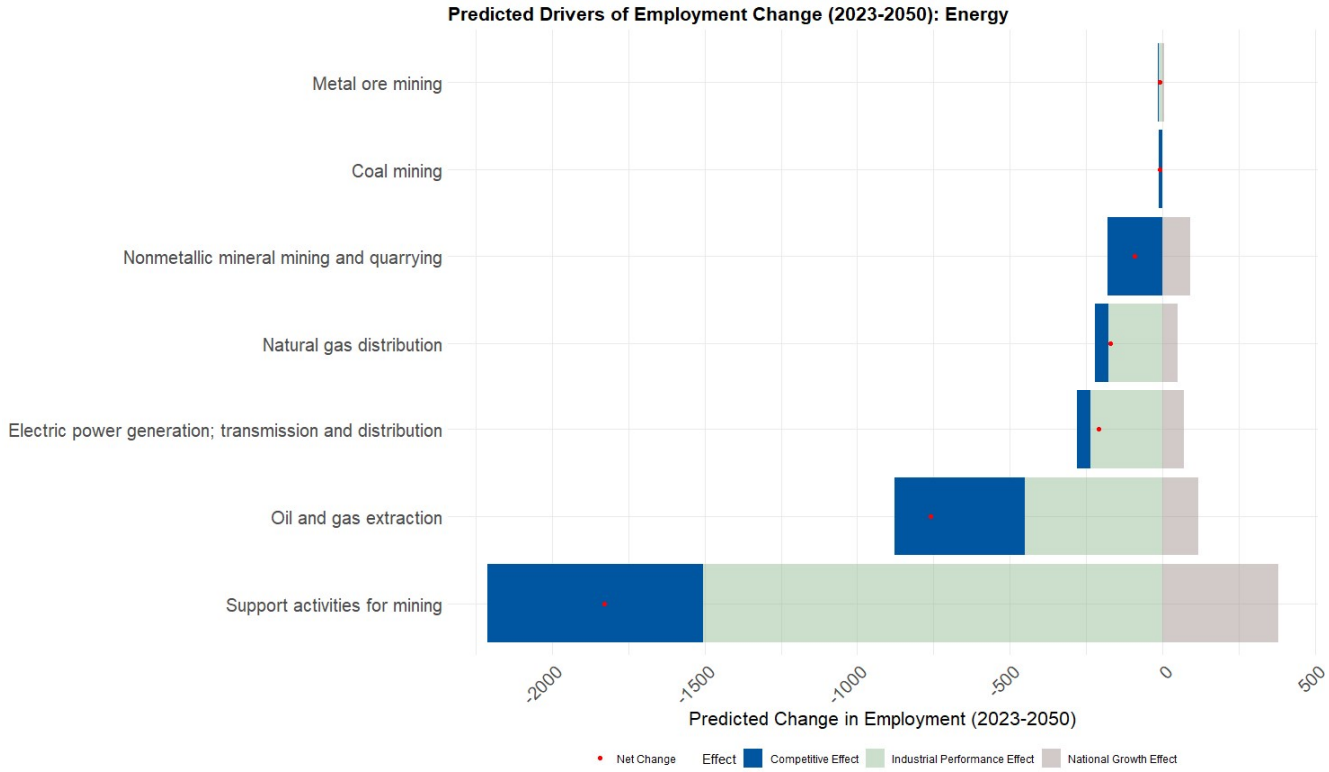
Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via Moody's and Moody's economic forecast for Kern County.

According to Figure 12, oil and gas is expected to decline greatly in employment by the year 2050. This is true of the entire energy industry of Kern County. Despite this decline in employment, the economic contribution of these industries will still be large. Therefore, understanding how this industry moves its oil, gas, and mined goods is key to Kern County's freight economy. [insert mode results from below here]

Figure 13 shows how the vast majority of the decline in Kern County's energy sector will be due to support activities for mining. These include activities such as prospecting, geological surveys and other services necessary for safe and efficient mining practices. According to the shift share analysis, the decline is likely due to both industry-wide changes and Kern County specific

qualities such as environmental regulations or a lack of local competitiveness. The CalGEM permitting regulations explain this trend.

Figure 13 Energy Shift Share Analysis (2023 - 2050)



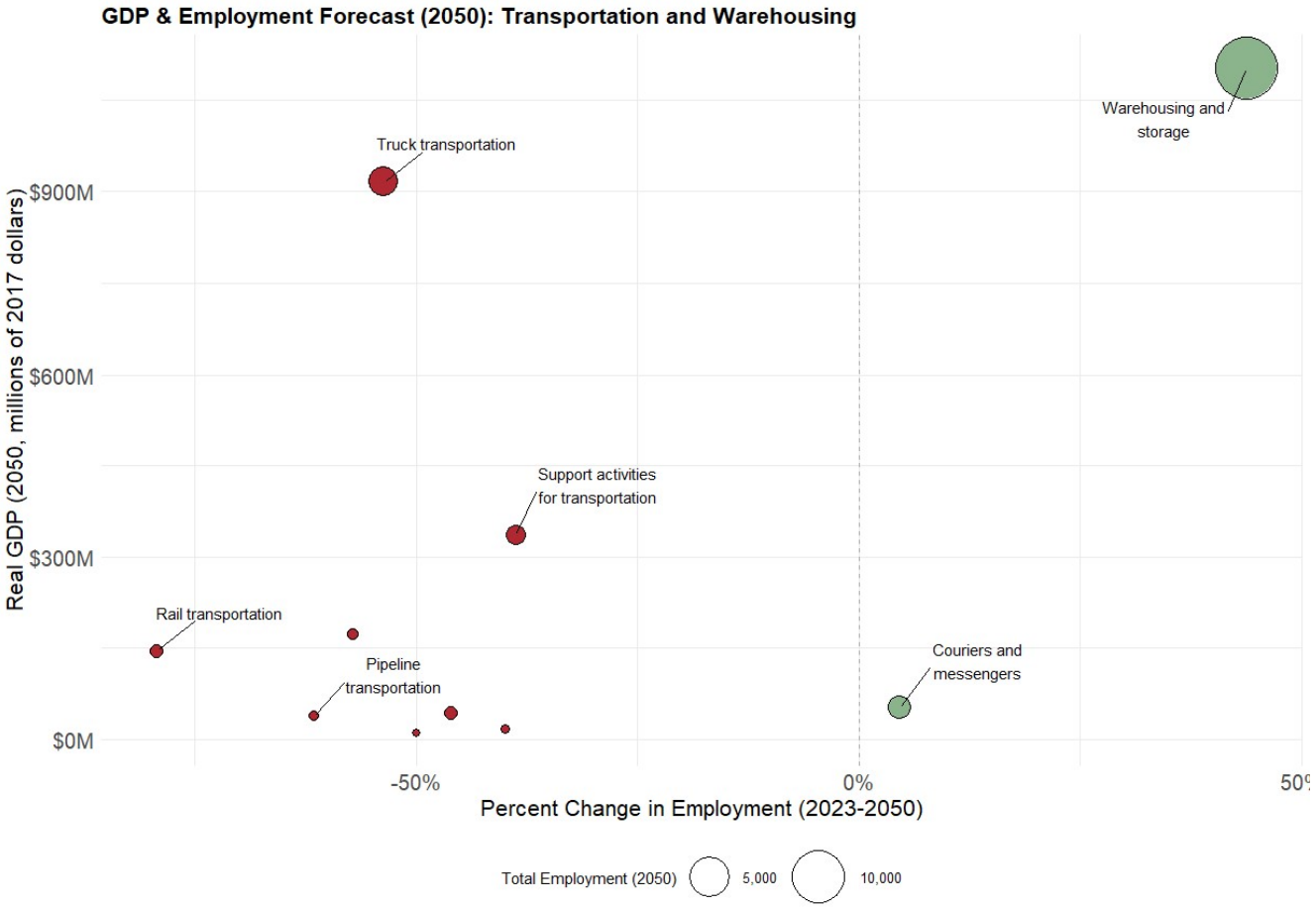
Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via Moody's and Moody's economic forecast for Kern County.

Transportation and Warehousing

Transportation and warehousing employment more than doubled (+133%) in the last decade to over 19,000 workers in 2023. This growth was largely driven by the warehousing and storage subsector, which grew 353% to 10,000 workers, making it the largest single subsector with 10 times above the US average concentration (LQ = 10.11).

Rail transportation employment has also grown precipitously. The growth of warehousing and storage employment was accompanied by growth across transportation modes including rail (+234%), air (+25%), water (+100%), and truck transportation (+27%). One key exception to this employment growth was pipeline transportation (-23%), reflecting decreasing activity in the oil & gas sector. Only rail (LQ = 2.7), truck (LQ = 2.3), and pipeline transportation (LQ = 1.1), however, have above-US-average concentration.

Figure 14 Transportation and Warehousing GDP and Employment (2050)

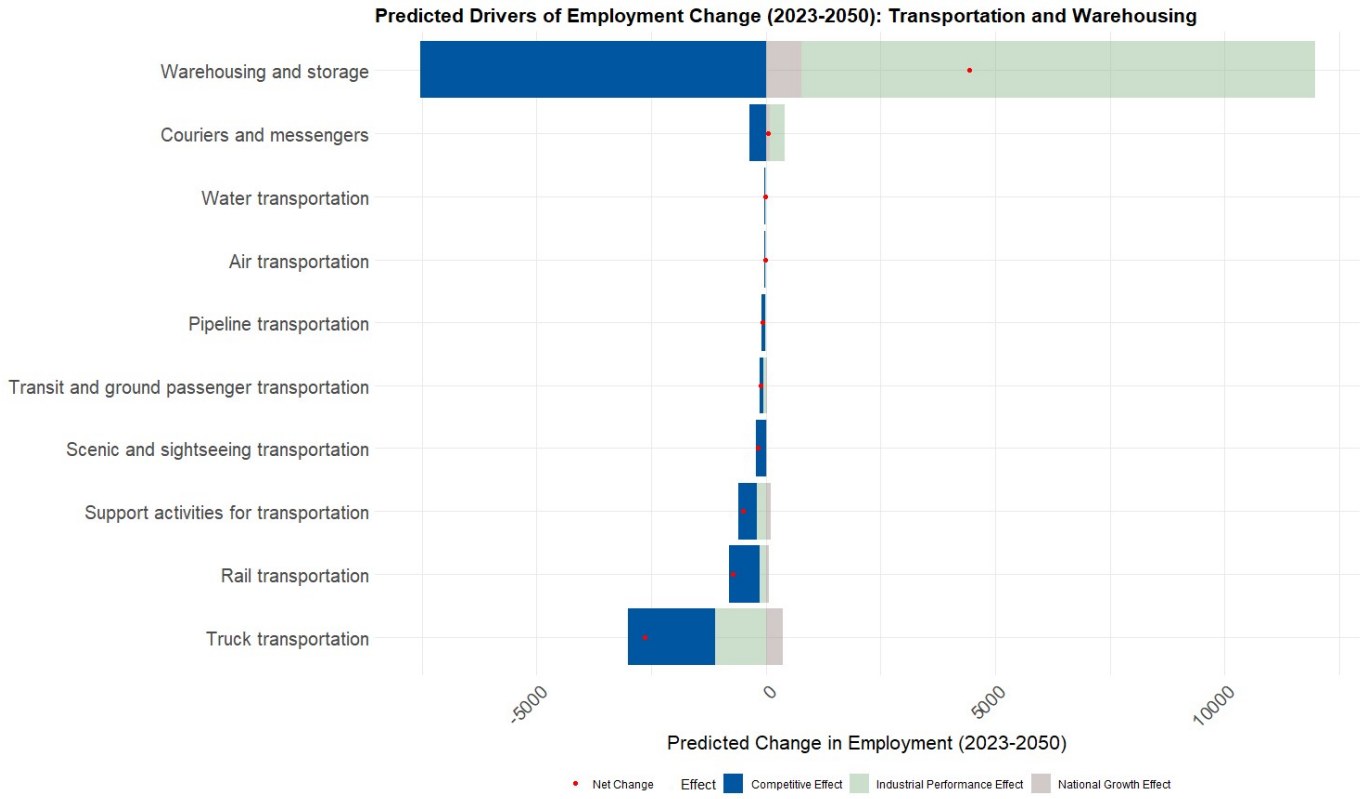


Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via Moody's and Moody's economic forecast for Kern County.

Despite rapid historical growth, *Moody's* predicts a significant slow-down in transportation employment. This forecast is largely driven by negative outlooks for most modes of transportation, including truck (-54%), pipeline (-62%). By 2050, *Moody's* forecasts that rail and truck transportation will see shrinking employment concentrations but still above US averages.

By stark contrast, warehousing and storage employment is forecasted to grow by +44%. This growth, however, is predicted to be largely driven Kern County's particular industrial composition – not by local competitive factors. In fact, *Moody's* forecasts suggests that local factors will have a substantial negative impact on warehousing and storage employment through 2050.

Figure 15 Transportation and Warehousing Shift Share Analysis (2023 - 2050)



Source: EBP analysis of Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics, via Moody's and Moody's economic forecast for Kern County.

Kern County's Freight Economy

Data & Methods

The freight economy analysis relies on Freight Analysis Framework (FAF) data via the Bureau of Transportation Statistics. The data provide estimates of US freight flows by commodity type, tonnage, value, transportation mode, origin, and destination. Because this data is reported for a larger FAF region of which Kern County is a subregion, we estimate Kern County's share of the larger region's freight activity based on Kern County's industrial composition and standard industry-level freight needs for the production or consumption of goods. The regional level of detail in FAF data can mask significant variations within the region and therefore may not fully capture the nuances of Kern County's freight landscape. Moreover, due to this limitation, this analysis does not account for movement where both origin and destination are within the "Remainder of California" region. Finally, FAF data does not link activity to routes, although distance and direction between origins and destinations provide broad insights. Despite these

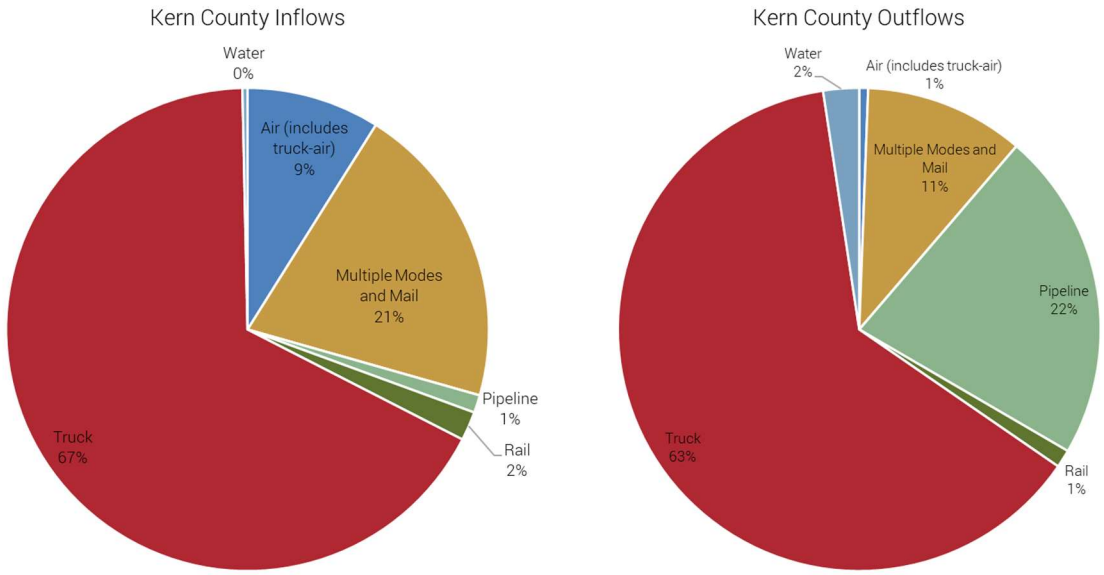
limitations, the data provide a useful overview of Kern County's (and its trading partners') economic activity.

Overview: Major Modes and Corridors

Kern County has several significant advantages with respect to freight transport, including strategic market access to Los Angeles, being the state center of population and supportive logistics infrastructure. With notable economic activity in oil and gas, agribusiness, and manufacturing, the region boasts a strong transportation and warehousing sector. Major distribution facilities are owned and/or operated by companies like Amazon, Caterpillar, Famous Footwear, Ikea, L'Oréal, Nestlé, Ross, Target, and Walmart.

Kern County relies primarily on trucks for about two-thirds of both inflows and outflows. The next largest methods are multi-modal for inflows. Due to the large oil production, the pipeline is the second largest method for outflows (22%) followed by multimodal transportation (11%). The estimated breakdown is shown in Figure 16.

Figure 16 Kern County In and Outflows by Mode[18]



[18] Although Kern County has no notable water-based transportation, estimates from this analysis includes water-based transportation due modes used in the remainder of the FAF region of which Kern County is a part. The inclusion of water-based modes has negligible impacts on this analysis's findings.

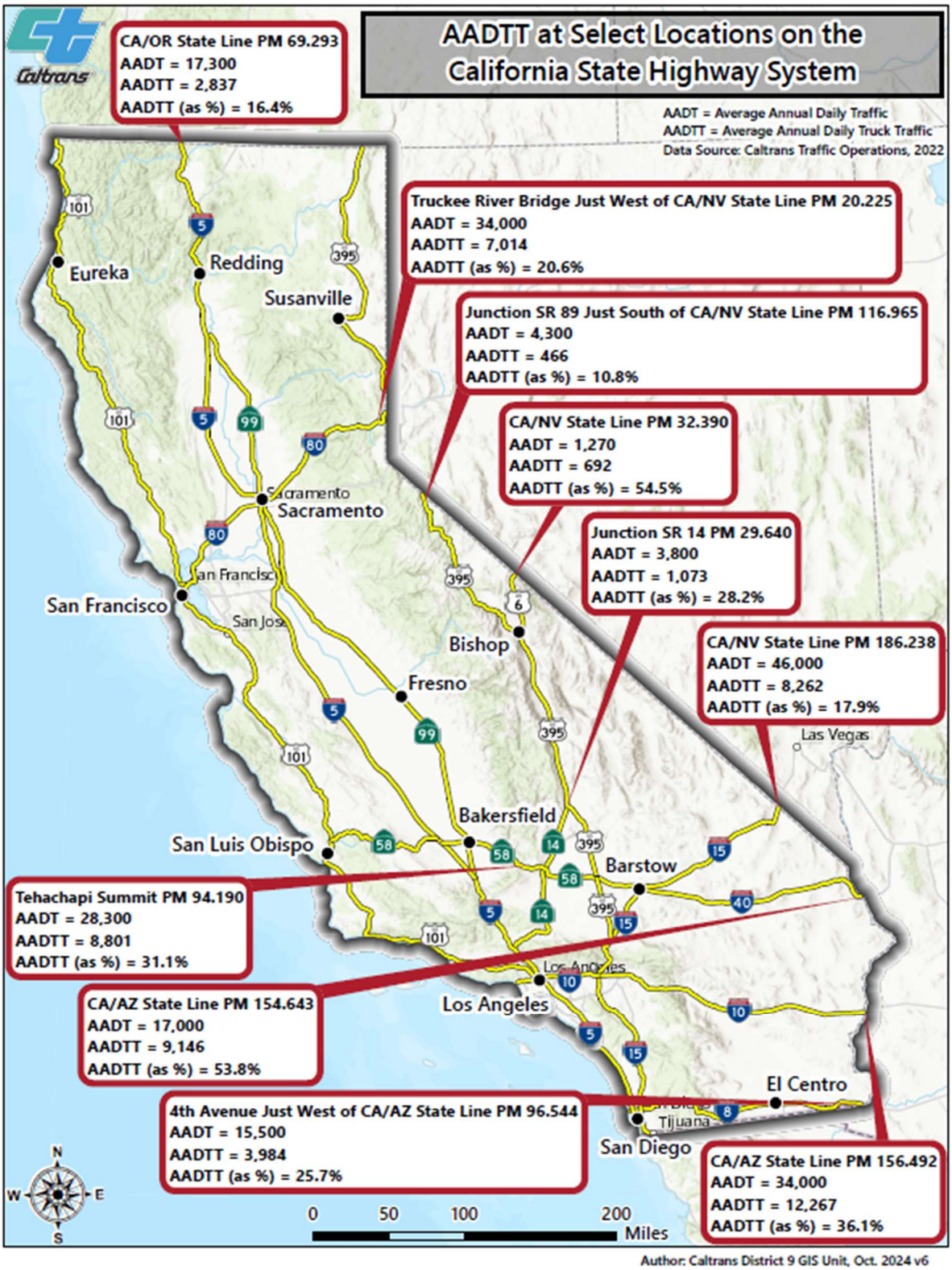
Highway infrastructure

Kern County's road network is its most critical freight infrastructure, as trucking accounts for 67% of the County's inflows and 63% of its outflows. Freight analysis highlights the critical role of north-south routes (e.g., I-5 and SR-99) in providing Kern County with market access to the Los Angeles and the San Jose–San Francisco regions.

Bakersfield, the seat of Kern County, lies at the intersection of State Route (SR) 99 (north-south) and SR-58 (east-west). SR-99 merges into US Interstate 5 just south of Bakersfield and links Kern County with the port of Los Angeles and San Diego. North of Bakersfield, SR-99 connects Kern County with the San Joaquin Valley, passing through Fresno and Sacramento.

SR-58 and SR-46 also provide key east-west links between Kern County to major hubs and other major parallel north-south routes, such as US Route 101, which connects Los Angeles and San Francisco — the two primary origins and destinations for Kern County's goods. SR-58 also connects to I-40 and I-15, which provide Kern County market access northeast (Nevada, Utah) and southeast (Arizona, New Mexico, Texas).

Figure 17 California State Highway System with AADTT



Rail infrastructure

Kern County's rail freight patterns indicate its eastern-bound Class 1 rail line is of particular importance in moving oil and agricultural commodities, although pipelines and trucks respectively still carry most of these commodities.

Rail transportation plays a relatively small role in Kern County's freight economy, with rail accounting for 1.9% of inflows and 1.2% of outflows. Agricultural and oil/gas commodities are the most common commodities to travel by rail as both inflows and outflows. That said, rail may play a larger role in multi-modal transportation in combination with truck and other modes, as "multiple modes and mail" account for 20.5% of inflows and 10.7% of outflows. FAF data does not provide detail on what portion each mode contributes.

Rail-based inflows come from across the US, particularly from hubs in New Mexico (16%), Minnesota (12%) and other key rail hubs like Kansas City (7%), Los Angles (6%), and St. Louis (6%). Most rail-based inflows are prepared foodstuffs (80%), while coal and petroleum products (8%) and animal products (7%) represent other key rail-based commodities.

Rail-based outflows are typically destined for further, including the Knoxville region (19%), Indiana (17%), Wisconsin (16%), and Atlanta (8%). About 43% of rail outflows are agricultural or forestry commodities (notably cereal grains and other agricultural products). Another 20% of the rail-based outflows are oil & gas commodities, primarily crude petroleum.

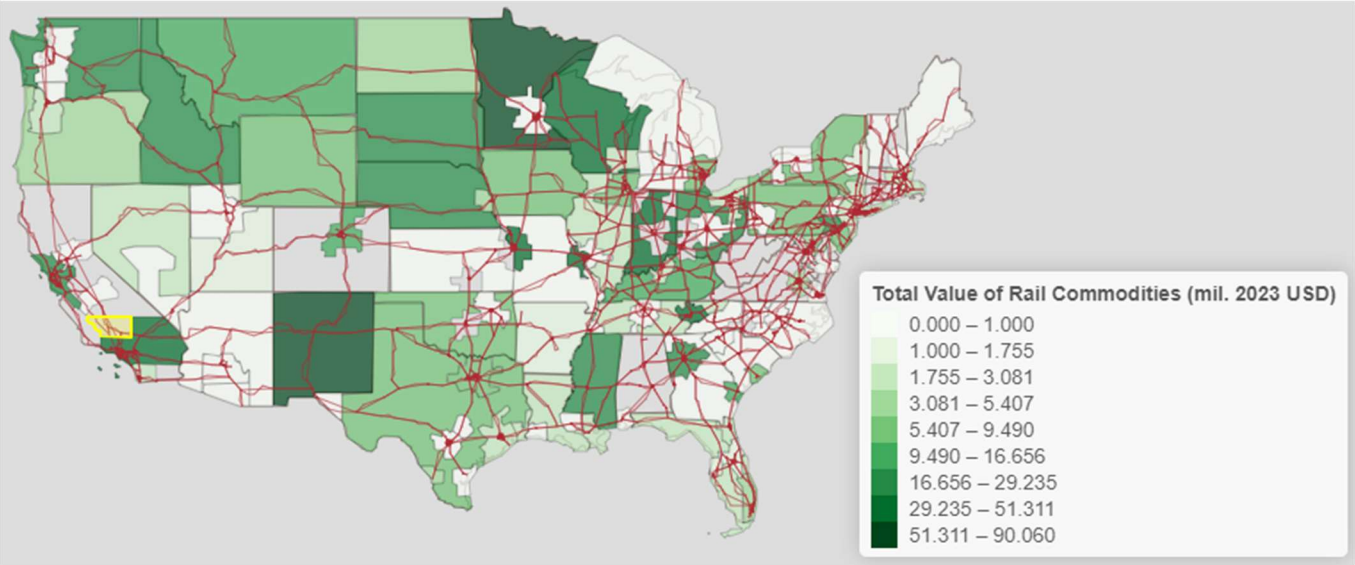


Figure 18 Value of Rail Commodities to or from Kern County. Source: EBP Analysis of FAF data.

Major rail companies, Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), serve Kern County.[19] According to its Regional Transportation Plan, Kern County has "one of the primary bottlenecks in the state," as the UP/BNSF east-west route over the Tehachapi Mountains is largely single-track.[20]

Figure 5-3: Kern Existing and Planned Rail Backbone Freight Network

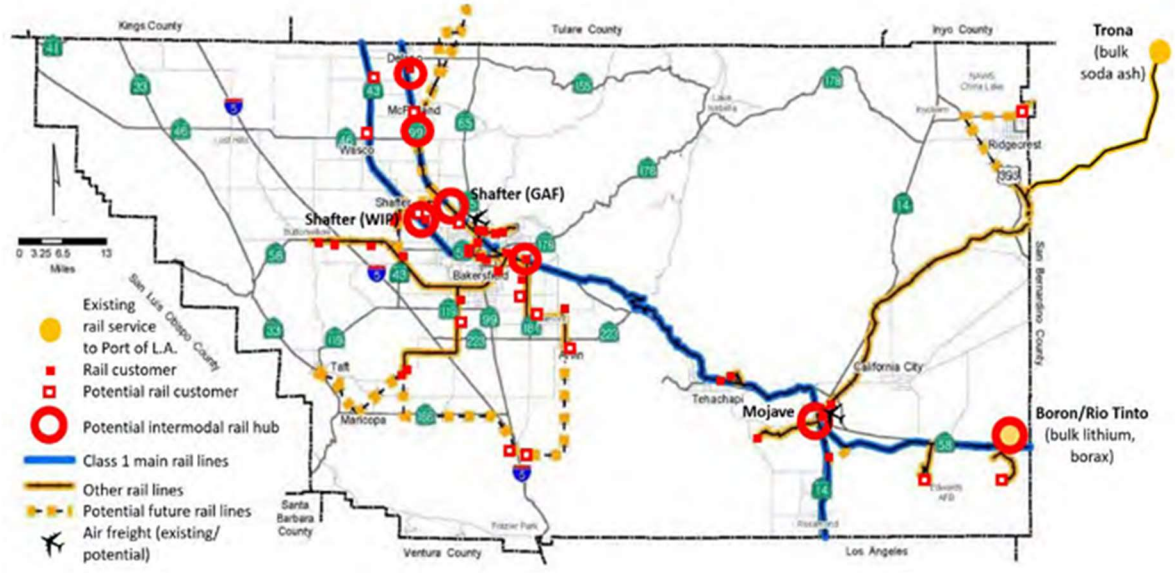


Figure 19 Source: Kern County Regional Transportation Plan (RTP), 2022.

Pipeline infrastructure

Pipeline transportation plays a particularly important role in Kern County's freight economy, almost exclusively for outflowing oil and gas commodities. Reflecting the County's status as a top oil-and-gas-producing county in the US, pipelines carry 1.2% of inflows but nearly a quarter (22%) of outflows. Although the pipelines extend throughout the west coast, virtually all these outflowing commodities go to either Los Angeles (47%) or San Francisco (48%). These commodities are a critical portion of Kern County's trade with these urban hubs, representing for 38% of all commodities values to the Los Angeles region and 48% to the San Francisco region.

[19] RTP 2022
[20] RTP 2022

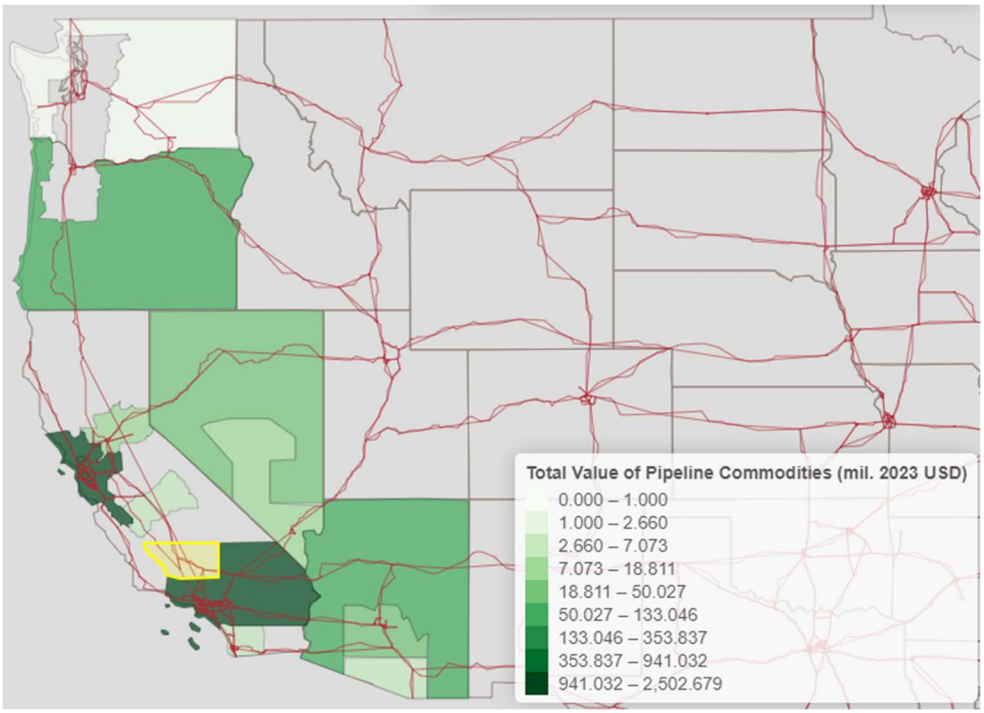


Figure 20 Value of Pipeline Commodities to or from Kern County. Source: EBP Analysis of FAF data.

Other modes of transportation

Aviation plays a minor role for Kern County's inflows but a negligible role for its outflows. Air (including truck-air) accounts for 9% of inflow values but only 0.6% of outflows. A vast majority (85%) of air-based inflows—virtually all transportation equipment commodities—originate in the Dallas-Fort Worth region. In terms of Kern County's few air-based outflows, about half of these commodities are flown to Honolulu, HI (29%) and Memphis, TN (21%) combined while the remainder moves across entire geographic US.

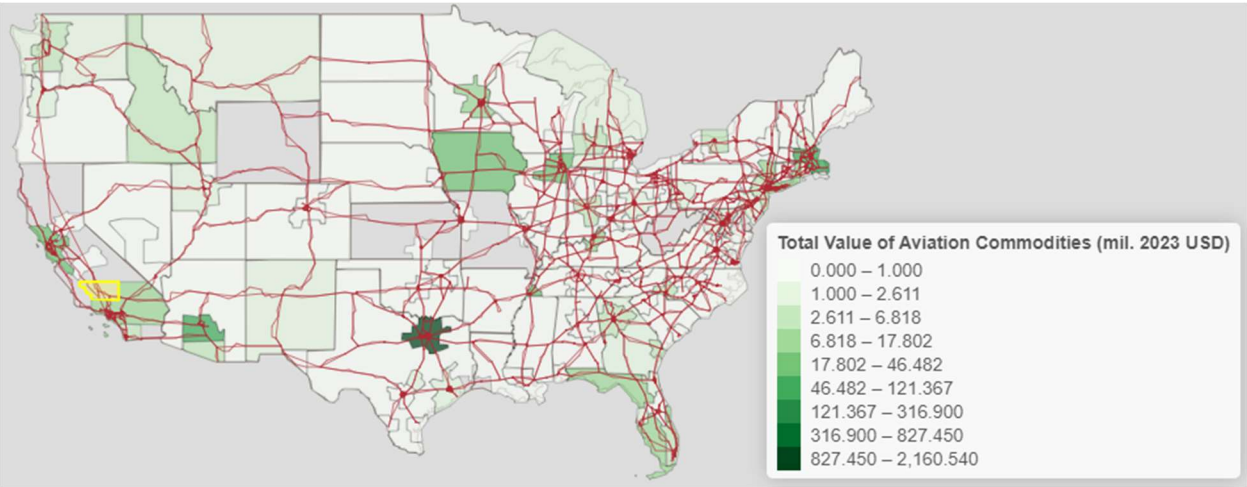


Figure 21 Value of Aviation Commodities to or from Kern County. Source: EBP Analysis of FAF data. Does not show Hawaii ($37M) or Alaska ($1.3M).

Freight Analysis

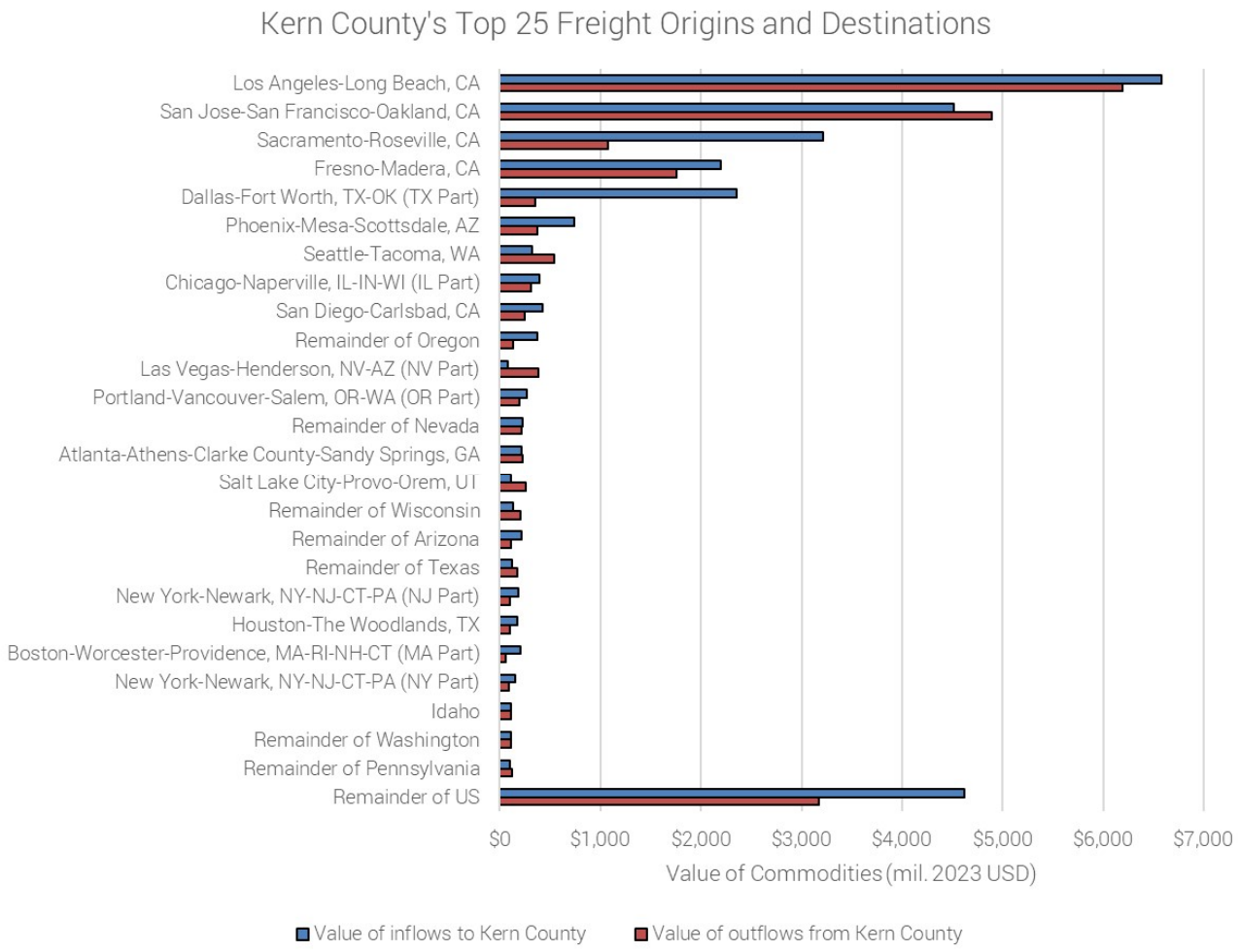
Kern County Freight Economics

Most of Kern County's goods inflows originate out-of-state, but most of its produced outflows are destined for an in-state economic hub.

Of Kern County's estimated $21.5 billion domestic outflows in 2023, two-thirds (66%) of this value are destined for an economic hub in California – in particular, the Los Angeles and San Francisco regions, which together account for a majority (51%) of the County's outflow values. The Fresno, Sacramento, and San Diego regions account for 14% of Kern County's outflows, while the remaining third of the County's domestic outflows move to hubs across the US with notable presence in the US's western states (e.g., Washington, Oregon, Nevada, Utah, Arizona, Texas).

Kern County's inflows follow a similar geographic pattern as its outflows, with a few key distinctions. Of the County's estimated $28.2 billion in inflows, 60% originates from elsewhere in California. The Los Angeles and San Francisco regions account for a smaller share of freight commodities (39%), indicative of the fact that Kern County draws inflows from a wider geography while its outflows largely move to a smaller number of hubs. Moreover, some hubs are more often destinations than origins or vice versa. For example, the Sacramento and Dallas-Fort Worth regions are more often origins of inflows than they are destinations for outflows. On the other hand, hubs like Las Vegas, Seattle, and Salt Lake City are more destinations for outflows than they are origins of inflows.

Figure 22 Kern County's Top 25 Freight Origins and Destinations



Kern County's major trading partner is Los Angeles/Long Beach. By both inflows and outflows, they are Kern's largest partner. In both directions, this trade lane represents over $12 billion in trade. The top four trade lanes by value are also within California highlighting the importance of intra-state trade. The intra-state trade is mostly truck bound or oil moving through the pipeline.

Following California origins and destinations, the Dallas-Fort Worth area is a major exporter to Kern County. Inflows greatly outweigh outflows to the region by about $2 billion USD. After this, there are no other Kern County trading partners of similar magnitude. Unsurprisingly, many of the next largest trading partners are in geographically close regions such as Washington state, Arizona, Texas, and Nevada.

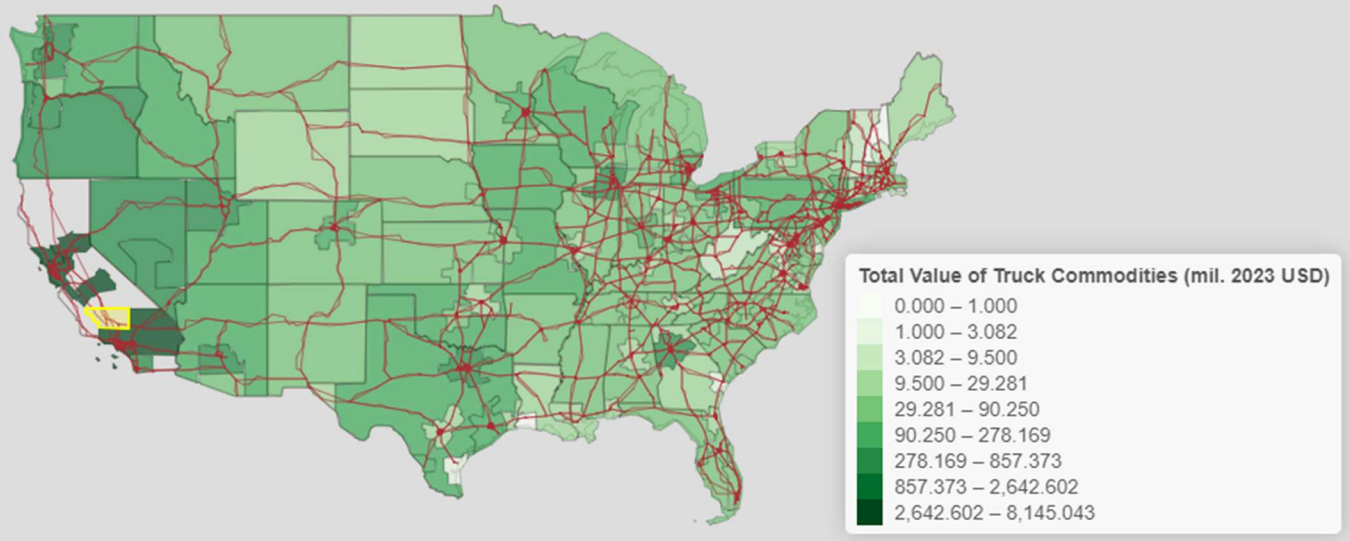
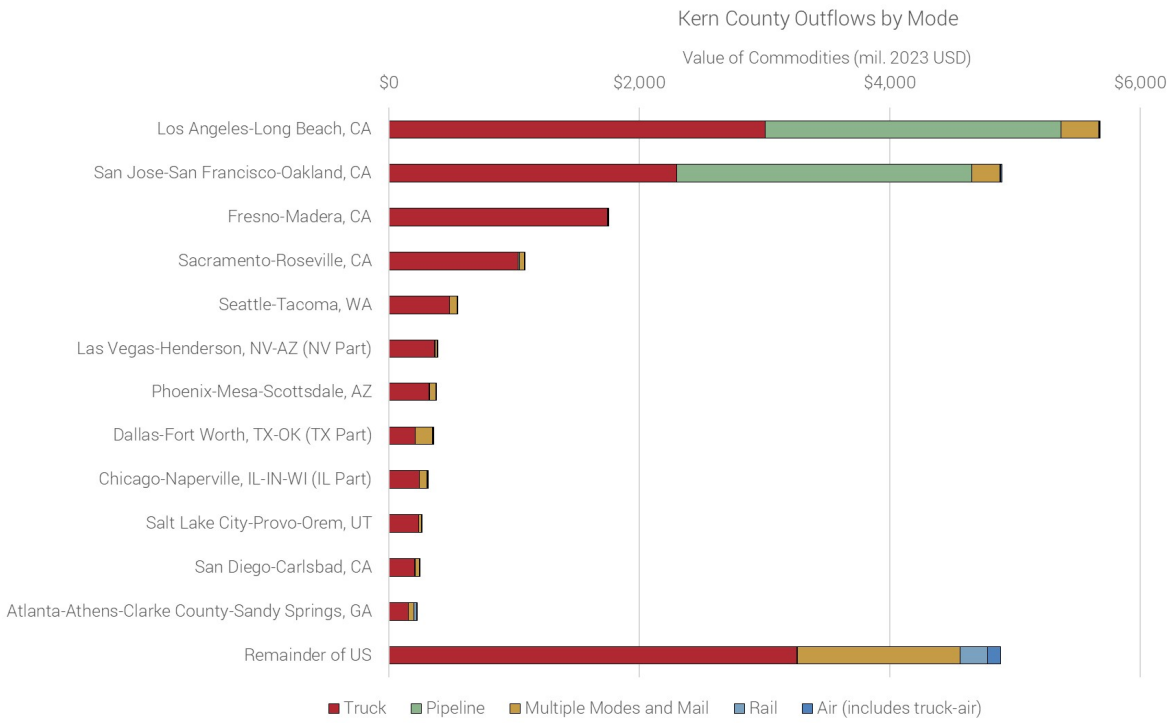


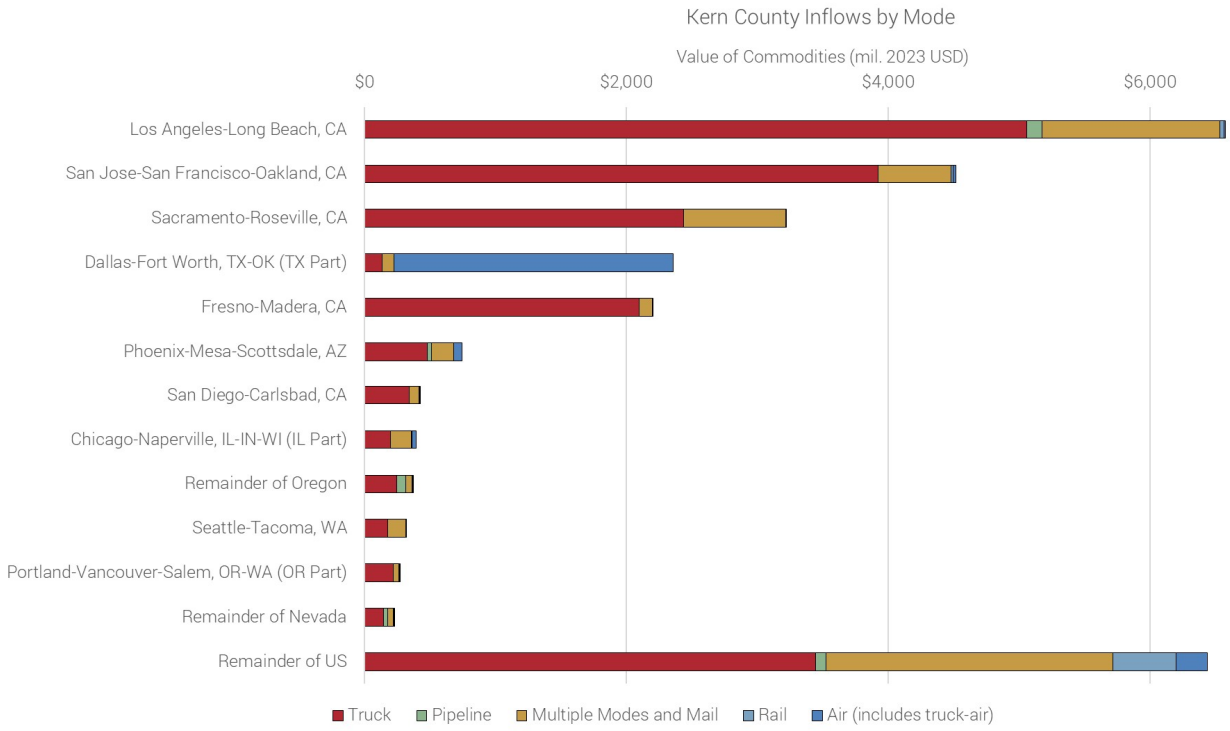
Figure 23 Value of Truck Commodities to or from Kern County. Source: EBP Analysis of FAF data.

Figure 24 Kern County Outflows by Mode



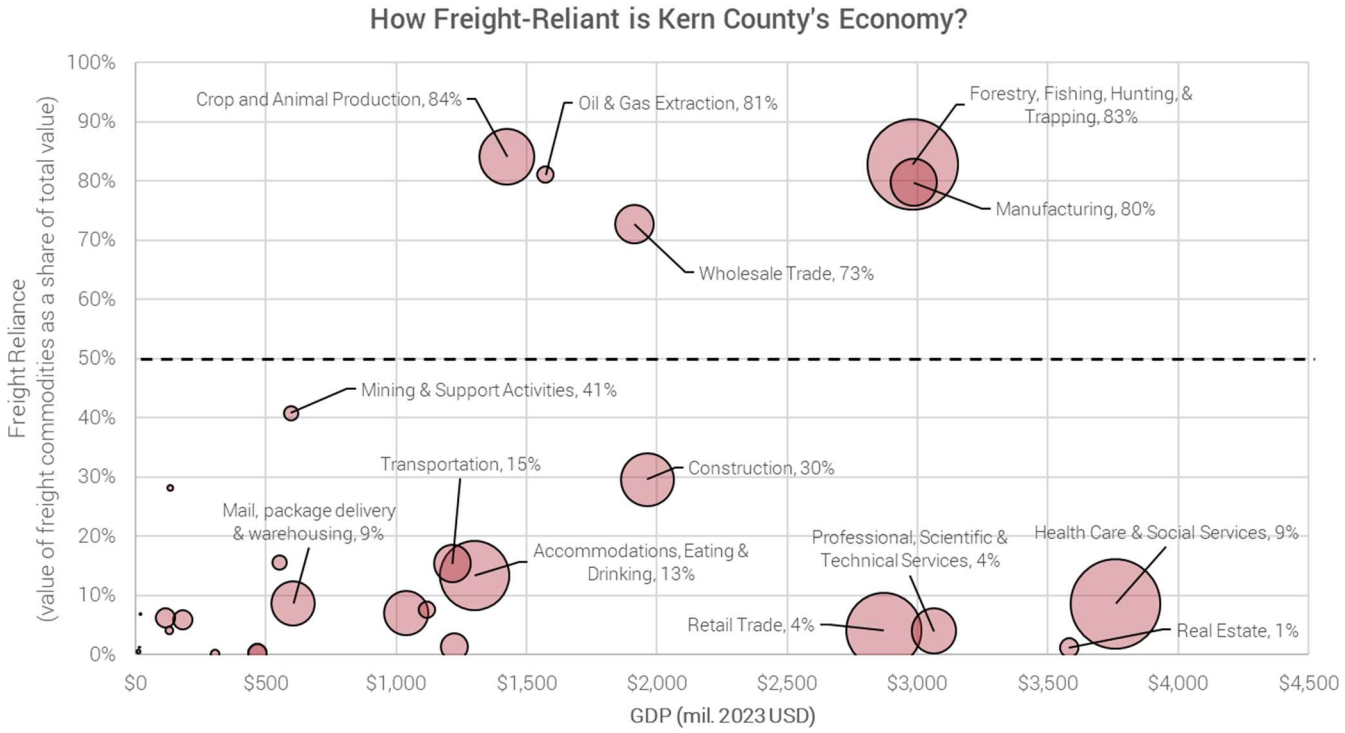
Not all trading partners exchange freight with Kern County using the same methods. These differences are largely based on geographic limitations. Most trading partners within California almost exclusively use truck or multimodal transport to trade with Kern County. Trade with Dallas-Fort Worth Texas is one of the only origins or destination using air for substantial portions

of its trade. The commodities moving along these trade lanes are transportation equipment, vehicles (including parts), precision instruments and other goods likely related to the aerospace sector. As expected, there are large pipeline outflows of gas to the Los Angeles and San Francisco regions. The final destination of these flows might be overseas, especially considering the United States's role as a net exporter of oil and gas.



Freight-Dependent Industries

Figure 25 How Freight-Reliant is Kern County's Economy?



Kern County's key economic drivers in terms of both GDP significantly depend on freight for both inflows and outflows. The County's agricultural and manufacturing sectors rely heavily on freight inflows and outflows. Freight data suggest that 84% of crop and animal production and 83% of forestry, fishing, hunting, and trapping rely on freight. Forestry is of particular importance because the sector is expected to be among Kern County's fastest growing sectors of employment in the next two decades. Manufacturing (80%), oil & gas extraction (81%), and wholesale trade (73%) similarly depend on freight movement. Some manufacturing subsectors (e.g., transportation equipment, electric equipment, and beverages) are slightly more freight-reliant than others.

Table 1 Industry-Level Freight Dependence

NAICS	Industry	Freight Intensity	Employment (2023)	LQ (2023)
111-112	Crop and Animal Production	84%	17,730	3.1
113-115	Forestry, Fishing, Hunting, & Trapping	83%	46,980[21]	53.2
211	Oil & Gas Extraction	81%	1,550	5.9
31-33	Manufacturing	80%	12,470	0.4
42	Wholesale Trade	73%	8,400	0.6
212	Mining & Support Activities	41%	1,250	3.0
23	Construction	30%	16,270	0.9
511	Publishing Industries (except Internet)	28%	160	0.1
532	Rental & Leasing Services	16%	1,320	1.0
62	Health Care & Social Services	9%	45,420	0.9
22	Utilities	8%	1,630	1.3
56	Administrative & Support Services	7%	11,260	0.6
518	Internet & Data Processing Services	7%	20	0.0
713	Amusement & Recreation	6%	2,020	0.5
61	Educational Services	6%	2,080	0.2
512	Motion Picture & Sound Recording	4%	340	0.4
44-45	Retail Trade	4%	32,420	0.9
54	Professional, Scientific & Technical Services	4%	11,480	0.5
533	Lessors of Nonfinancial Intangible Assets	1%	10	0.2
531	Real Estate	1%	2,090	0.5
525	Funds, Trusts, & Other Financial Vehicles	1%	70	1.2
524	Insurance Carriers & Related Activities	0%	1,850	0.3
515	Broadcasting	0%	410	0.8

These high freight intensive industries are most likely to benefit from transportation connectivity improvements. The projects considered by KERNCOG will either improve or create new pathways for freight to travel. When considering potential results from improved transportation, these industries are the likely contenders to drive growth. As a specific example, the steel produced by Pacific Steel's new plant will require transportation along the roads considered in the analysis.

[21] Nearly all the jobs in this category are attributable to agricultural support activities. Kern County does not have a notable forestry sector. But due to data limitations with Moody's estimates for employment levels, EBP cannot provide a more granular estimate.

While the specific paths depend on the supplier and consumer markets, the key takeaway is that not all industries rely on freight to the same degree.

Oil & Gas

As of 2019, Kern County alone produced 71% of California's oil.[22] Most of its oil and gas areas lie along the County's western boundary, west of I-5. By value, the oil and gas to/from Kern County mostly moves by pipeline (72%), followed by truck (25%). From Figure 24, much of the pipeline trade stems from outbound flows to Los Angeles and San Jose/San Francisco. With a total value of $5 billion, the oil and gas pipeline trade are key to Kern County's economy and status as a major oil producer. Yet, from a freight value perspective, truck is arguably more essential to the oil and gas trade with Kern County. Due to the data limitations and the estimation methodology, water was originally included as a mode for the transportation of oil and gas. Water was removed as a mode to be consistent with kern County's transportation options.

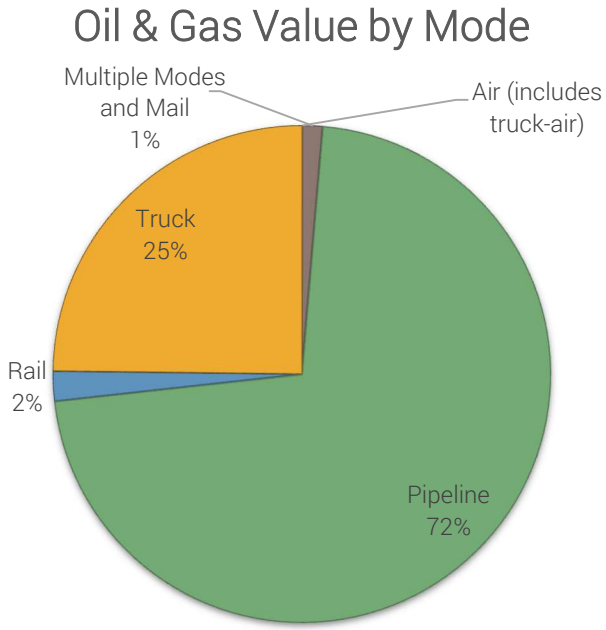


Figure 26 Oil and Gas 2023 Value by Mode (%)

By truck, San Jose/San Franciso ($335 million), Los Angeles ($328 million) and Fresno ($114.8 million) are the largest destinations. Kern County's largest origin locations for oil and gas by truck are the same. Specifically, Los Angeles ($336 million), San Jose/San Franciso ($295 million), and

[22] https://kernedc.com/wp-content/uploads/2021/04/KEDF-Economic-Contribution-of-the-Oil-and-Gas-Industry-in-Kern-County_-2021.pdf

Fresno ($60 million). The highway investments being considered by KERNCOG will enable faster trade especially along routes in both directions. The simultaneous in and outflow of oil is likely due to necessary refinery processes before the oil is consumable by households.

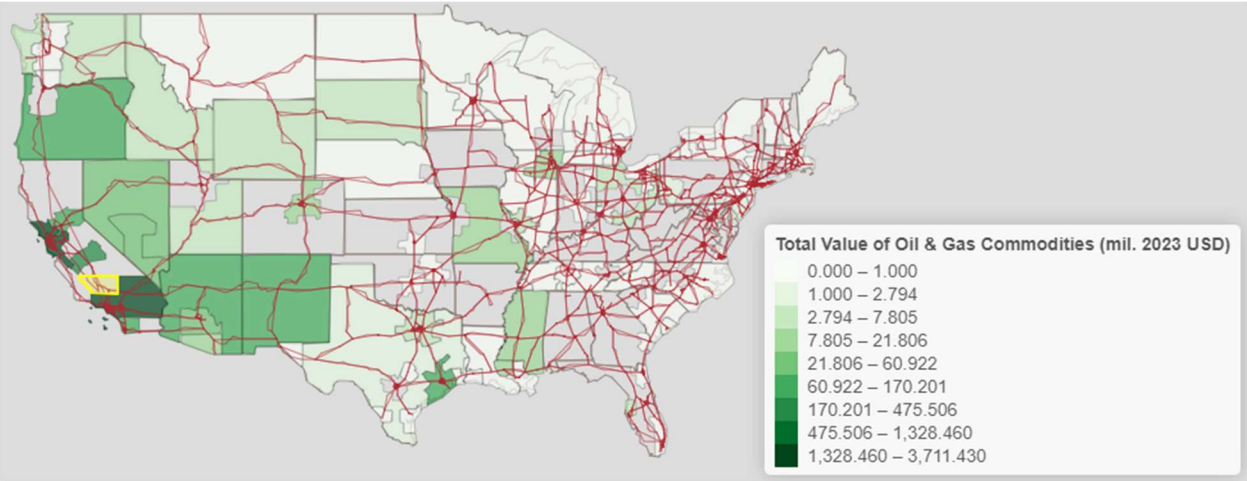


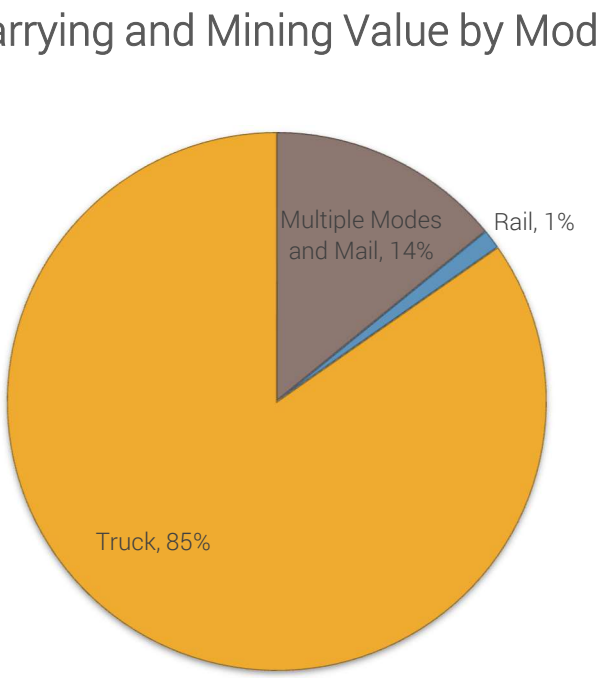
Figure 27 Value of Oil & Gas Commodities to or from Kern County. Source: EBP Analysis of FAF data. Alaska is not pictured but represents $91M of commodities to or from Kern County.[23]

Looking at Figure 27, California and other nearby states are the largest traders of oil and gas with the county. While states further away tend to trade with Kern County less, there is a substantial trade lane with the Houston metropolitan area. For Houston, Kern is a major oil consumer and producer. Of the nearly $70 million Kern to/from Houston oil and gas trade, 31% (21.5 million) is destined for Houston while 69% (48.8 million) is destined for Kern County. Considering the Houston metropolitan's population of over seven million, this trade is vital to the Kern economy. As of the 2020 Census, Houston is the fifth largest metropolitan area. Kern's oil trade with Houston also provides value for the nation since Houston is a major Gulf Coast port city. The oil production originating in Kern contributes to the U.S. export of oil across the world. Simultaneously, Houston brings in refined oil for use within Kern County.

[23] Oil & Gas Commodities include: Crude Petroleum; Gasoline, Aviation Turbine Fuel, and Ethanol (includes Kerosene, and Fuel Alcohols); Fuel Oils (includes Diesel, Bunker C, and Biodiesel); Other Coal and Petroleum Products, not elsewhere classified

Mining & Quarrying

Figure 28 Quarrying and Mining 2023 Value by Mode (%)



The quarrying and mining industry is responsible for the extraction of raw mineral and metal resources. In our data, this includes sands, gravel, crushed stone, ores, coal, and stones. The value of trade either originating or destined for Kern County was $363.6 million in 2023. The majority if quarried or mined goods moved by truck likely from its source of extraction. Another 14% moved by multiple modes. This is likely due to the transfer of raw goods from truck to rail, especially when the origin and destination are separated by considerable distances.

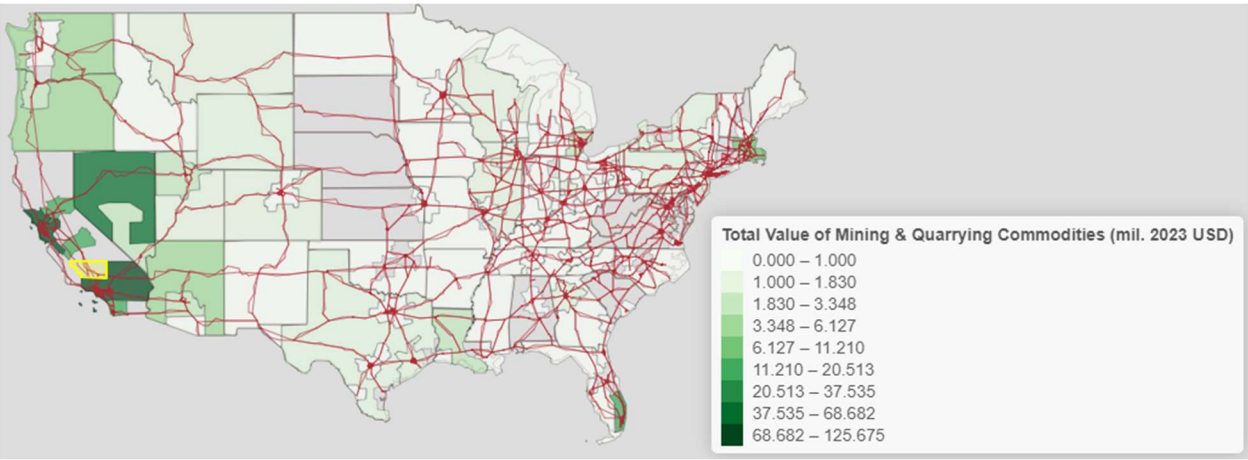


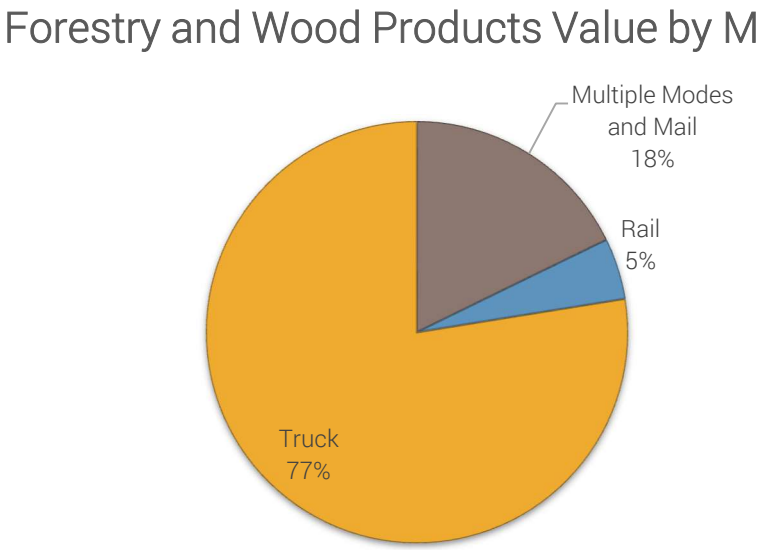
Figure 29 Value of Mining & Quarrying Commodities to or from Kern County. Source: EBP Analysis of FAF data.[24]

Figure 29 shows that most mined and quarried commodities are traded with states bordering California: Nevada, Arizona, and Oregon. These goods would likely travel along the I-15 to move east from the Kern county area to population centers in Nevada. Starting with estimated truck flows from Kern County, the major 2023 destinations were Los Angeles/Long Beach ($25.9 million), Nevada ($22.6 million), San Jose/San Francisco/Oakland ($19.18 million), and San Diego/Carlsbad ($10 million). These numbers are dwarfed by the truck flows destined for Kern County's industries and households. In this case, Los Angeles/Long Beach ($75.2 million), San Jose/San Francisco/Oakland ($56.5 million), Sacramento/Roseville ($17.8 million) and Miami/Fort Lauderdale/Port St. Lucie ($12.8 million) are the largest origins. The vast majority of trade is happening within the state or neighboring states with the exception of a substantial truck flow trade with the Miami metropolitan region.

While Kern is a large exporter of mined goods, the county also imports a large amount of the same goods. Likely used for construction of homes and government military bases, the county depends on freight routes from California as far as Florida. Understanding the complex supply chains of the industry are key to addressing the needs of mining companies and their users such as construction companies and contractors. Focusing on truck flows, the coastal areas of California and Nevada are by far the largest traders highlighting the economic importance of the I-5 and I-15 to the regional economy.

[24] Mining & Quarrying commodities include: Monumental or Building Stone; Natural Sands; Gravel and Crushed Stone (excludes Dolomite and Slate); Other Non-Metallic Minerals not elsewhere classified; Metallic Ores and Concentrates; Coal

Forestry and Wood Products



Forestry and wood products make up a small portion of Kern County's agricultural economy. Forestry (logging) makes up the majority of the larger forestry, fishing, hunting, and trapping industry identified in Figure 25. Forestry and wood products were calculated to have a freight intensity of approximately 88% and 87%, respectively. Over 77% of forestry and wood products in/out of Kern County are estimated to move by truck. Therefore, the proposed investments along the highway would likely impact the forestry industry and its users.

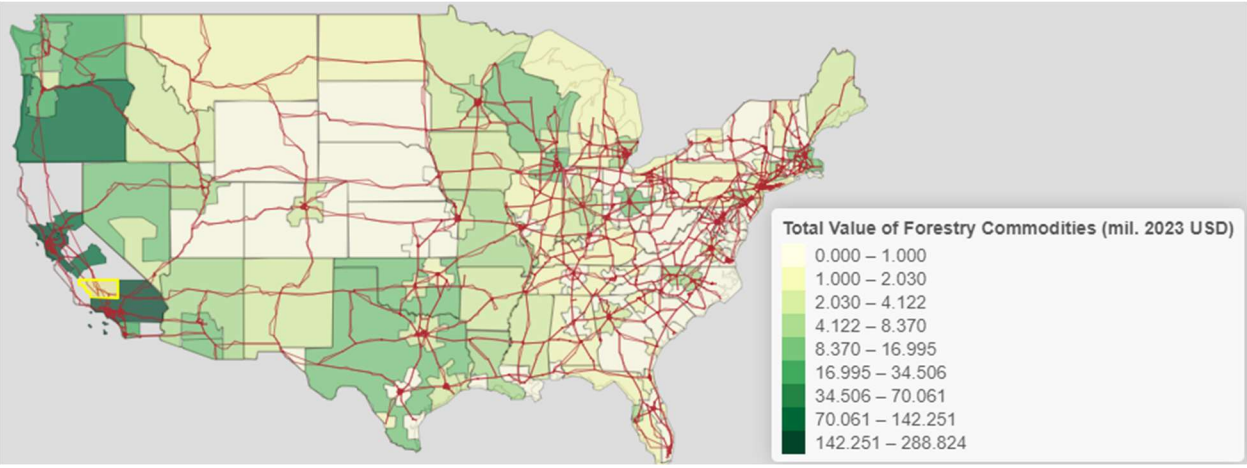


Figure 30 Value of Forestry Commodities to or from Kern County. Source: EBP Analysis of FAF data.[25]

The major origins for Kern County forestry and wood products are all within California. In order, they are San Jose/San Francisco/Oakland ($160 million), Sacramento/Roseville ($75.7 million), Los Angeles/Long Beach ($56 million), and Fresno/Madera ($32 million). Outside of California, the largest destinations are Portland, Oregon ($16 million), non-Seattle metro Washington state ($15.2 million), and Boston/Worcester, MA ($9.5 million). Notably, an estimated about 20% of the trade from the non-Seattle Washington area moves by rail from Kern County. This aligns with the pathway of the BNSF railway moving goods north-south through California. The major destinations are San Jose/San Francisco/Oakland ($26.2 million), the non-Portland part of Oregon state ($20.7 million), and Sacramento/Roseville ($20 million).

[25] Forestry commodities include: Logs and Other Wood in the Rough; Wood Products; Pulp, Newsprint, Paper, and Paperboard;

Agriculture & Food Manufacturing

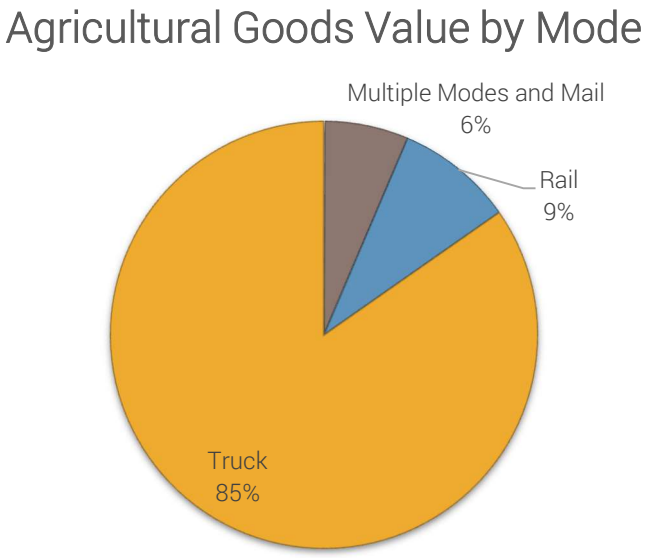


Figure 31 Agriculutural Goods Value by Mode (%)

Kern County's primary farmland is located in the western portion of the County, north and south of Bakersfield. These farmlands fall along I-5 and SR99, also connected east-west via SRs 46, 58, and 166. As shown in Figure 31, most flows in and out of Kern County move by truck valued at over $1.2 billion USD as of 2023. Rail and multimodal are the next largest modes by value for goods.

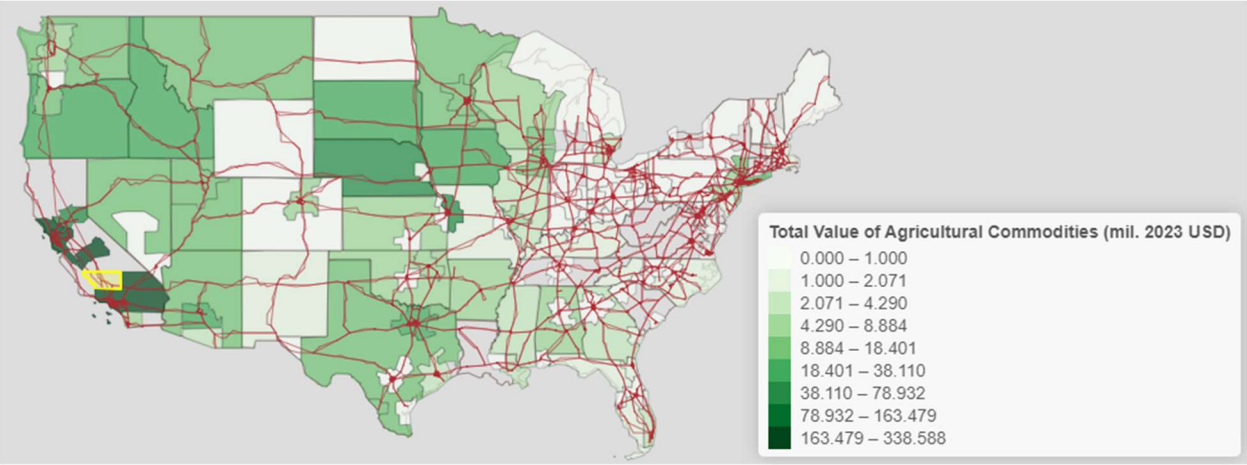


Figure 32 Kern County inflows of agricultural products (excludes manufactured food products).[26]

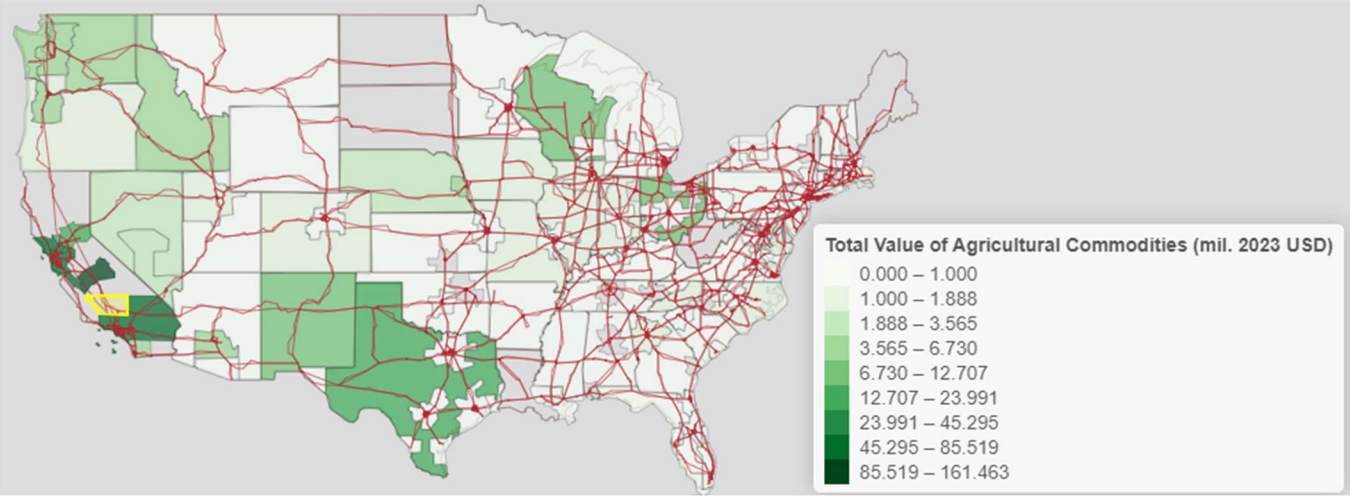


Figure 33 Kern County outflows of agricultural products (excludes manufactured food products).

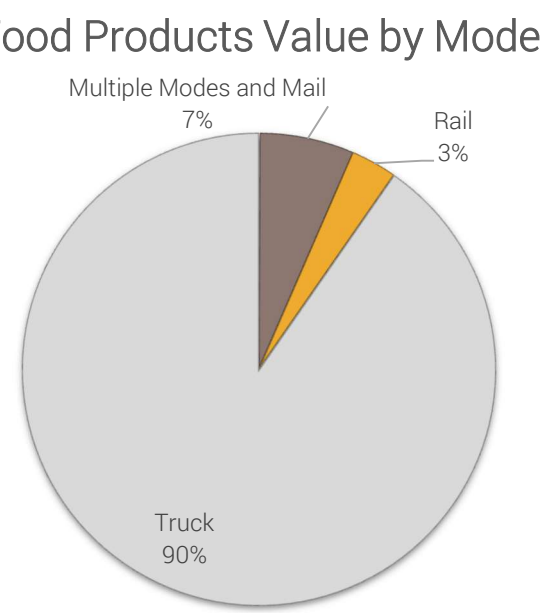
Agricultural products destined for Kern County originate from across the western and southwestern regions of the US, with notable origins including the Midwest (e.g., Nebraska) and Oregon and Idaho. At the same time, however, agricultural products originating in Kern County largely stay in California and have a more limited geographical reach.

[26] Agricultural products include: Animals and Fish (live); Cereal Grains (includes seed); Animal Feed, Eggs, Honey, and Other Products of Animal Origin; and Meat, Poultry, Fish, Seafood, and Their Preparations

The opposite is true for Kern County's flows of manufactured food products. Kern County sees more food product outflows than inflows, and outflows generally travel farther geographically than inflows.

The spread of Kern's influence is nationwide, although it is concentrated in the Southwest and West regions of the country. The major destinations for Kern agricultural goods are Fresno ($114.7 million), Los Angeles/Long Beach ($52.8 million) and San Jose/San Francisco/Oakland ($49.9 million), as estimated using 2023 data. Outside of Californian destinations, the largest destinations are Texas ($12.16 million), New Mexico ($8.3 million), and Ohio ($7.7 million). While truck is still the primary method of delivery to New Mexico, Texas and Ohio are much more reliant on multimodal or rail infrastructure (both use these modes for over 50% of value).

These trends together reflect that Kern County serves as a value-adding hub in the agricultural supply chain, where raw agricultural inputs from various regions are transformed into processed food products that are then distributed across a wider geographic area. This pattern indicates that Kern County's food manufacturing sector plays a significant role in converting raw agricultural commodities into higher-value processed goods, effectively functioning as a processing and distribution center that extends the geographic reach of agricultural products through manufacturing. The asymmetry between raw agricultural flows and processed food flows highlights Kern County's strategic position in the food supply chain, where it acts less as a final destination for processed foods and more as a transformation point that increases both the value and geographic distribution of agricultural products. This geographic analysis of Kern County's food and agricultural outflows suggest that SR 99 and I-5 are the most essential routes for bringing the County's value-added products to market. SR 58 is secondarily critical for market access via I-10, I-15, and I-40.



The estimated value of food product related freight to/from Kern County is over $10 billion as of 2023. While truck flows facilitate most food products trade with Kern, rail and multimodal use is more useful for further destinations. The food product trade with Kern County mostly uses truck (90% of the time). However, multimodal and rail are still highly valuable trade modes valued at approximately $646 million and $317 million, respectively. When looking at non-California non-truck flows, regions such as Wisconsin ($53.5 million), Illinois ($39.7 million) Georgia ($37 million), Kentucky ($30.8 million), Alabama ($29.4 million), and Texas ($27.8 million) emerge as the top destinations for Kern food products. This top list differs greatly from the overall flows (including truck) which is dominated overwhelmingly by California destinations. Therefore, the importance of rail and multimodal options for the Kern economy should not be underestimated. Yet, when it comes to highway improvements, there are a multitude of dependent consumer markets both in and out of state.

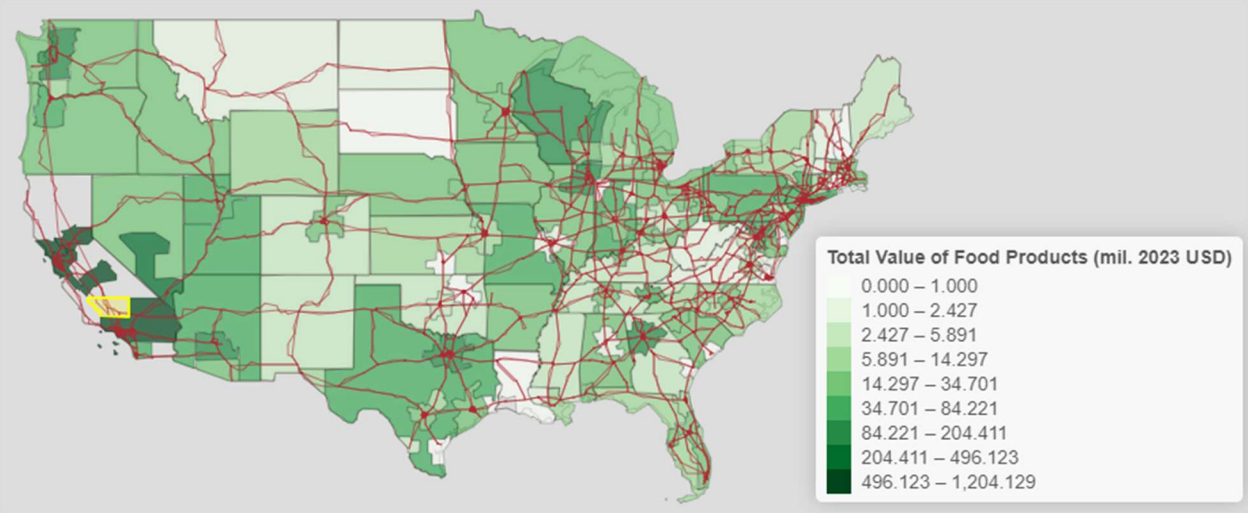


Figure 34 Value of Food Product Outflows Originating in Kern County. Source: EBP Analysis of FAF data [27]

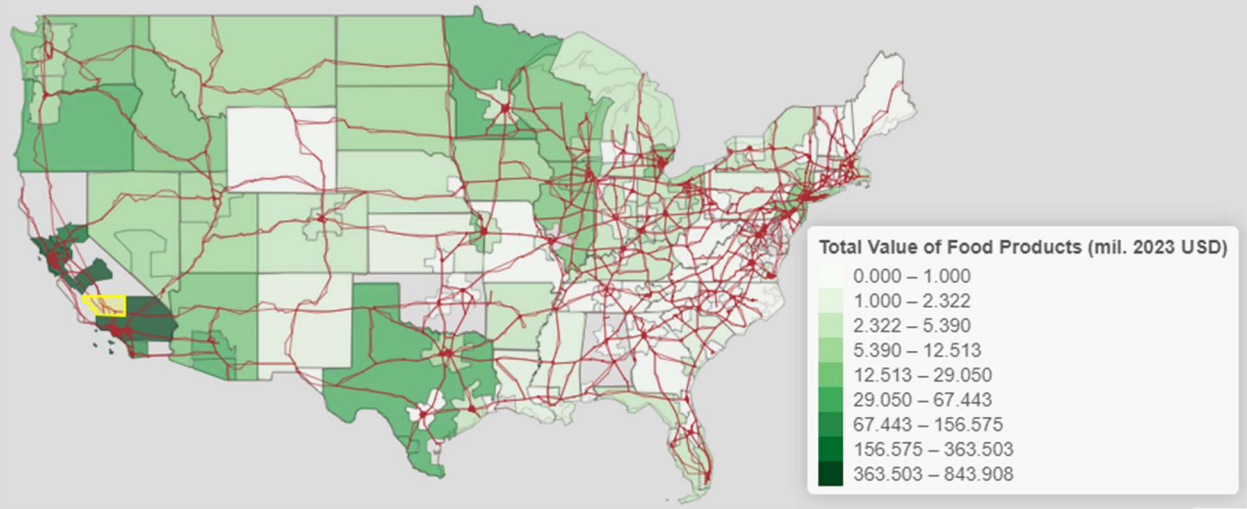


Figure 35 Value of Food Product Inflows to Kern County. Source: EBP Analysis of FAF data

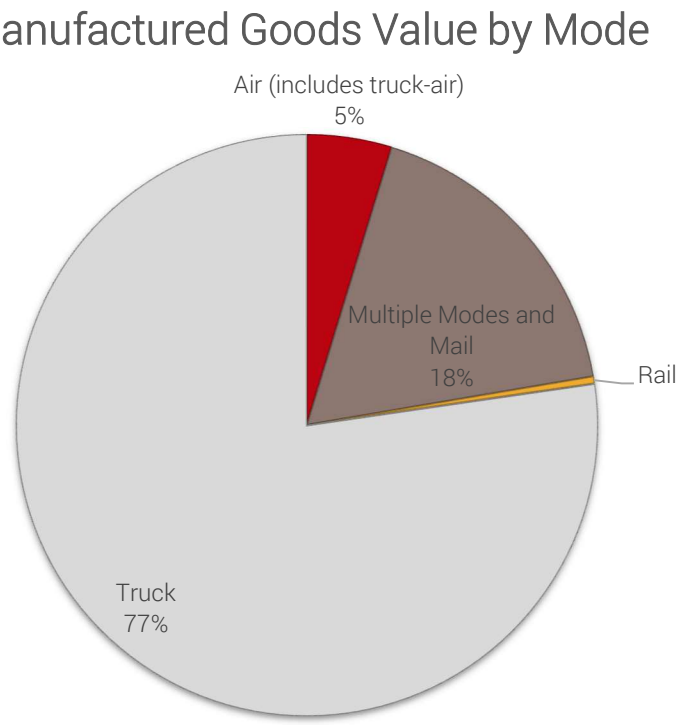
Kern County's food product inflows primarily originate in the western geography of the US. The County's food product outflows have national reach with notable presence in the Midwest and Northeast. The major destinations of Kern food products are Los Angeles ($1.19 billion), Fresno ($984 million), and San Jose/San Francisco/Oakland ($701 million). Unlike many other Kern products, these trade flows have values in the hundreds of millions to billions of dollars all over the nation. As a result, there are a multitude of non-California destinations such as Texas ($276 million), Arizona ($219 million), Illinois ($203 million), and Georgia ($94.7 million).

[27] Food products include: Agricultural Products (excludes Animal Feed, Cereal Grains, and Forage Products); Milled Grain Products and Preparations, and Bakery Products; Other Prepared Foodstuffs, Fats and Oils

Similar to agricultural products, the food manufacturing supply chain is complicated. Kern County acts a focal point for a nationwide network of flows. As you get further from California, there is less demand for inputs. Yet, the consumer market (both household and industrial) for Kern's products is wide-reaching.

Manufacturing

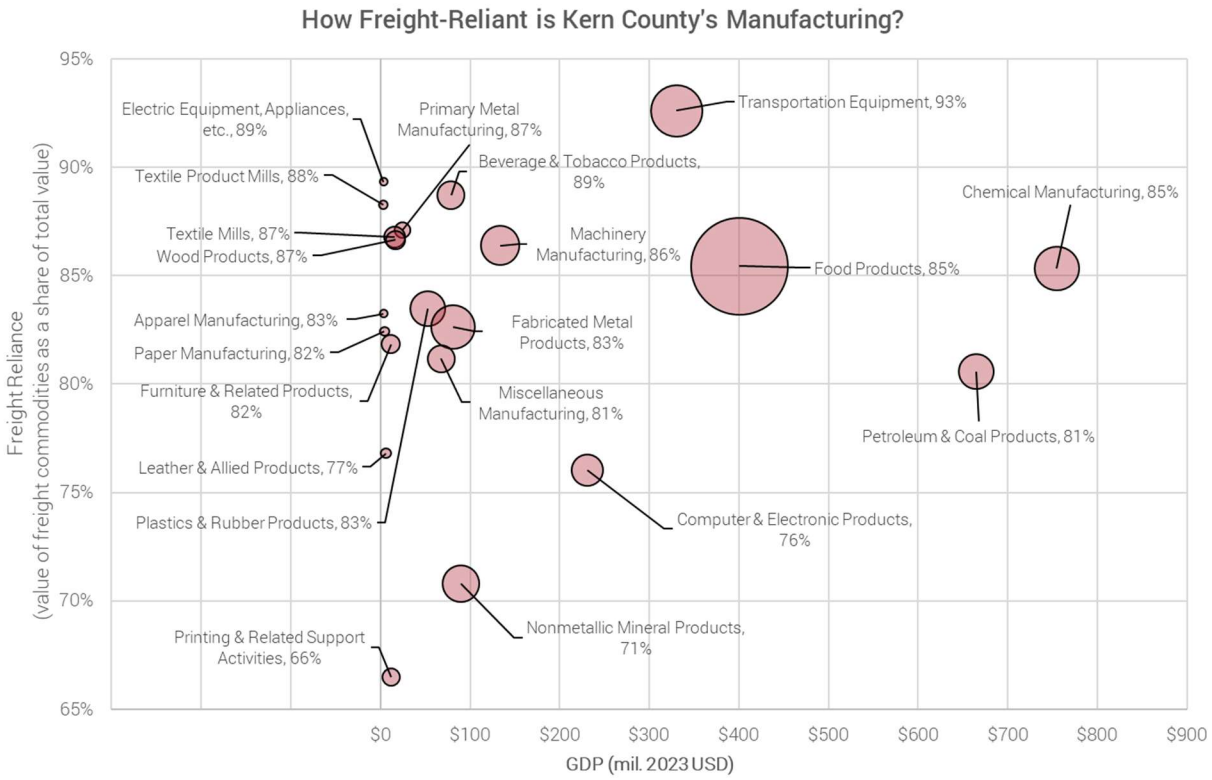
Figure 36 Manufactured Goods From/To Kern County Value by Mode (%)



According to Kern County forecasts, manufacturing is expected to see a shift in productivity per employee over the next three decades. Figure 10 shows that employment is expected to decrease for many manufacturing industries. Yet, according to forecasts, the manufacturing economic output is expected to increase primarily from petroleum and coal. It is unknown how future regulations or efforts for renewable energy will affect this growth. The other forecasted high-growth manufacturing industry is fabricated metal. The recent Pacific Steel manufacturing deal is a notable example of the industry's potential in the county. The increased output will require freight flows using the same key routes and modes as today. As projects such as the Pacific Steel plant commence operation, dependence on freight networks will only increase. According to the modeled FAF data in Figure 36, over 75% of manufactured goods' value move in and out of Kern County by truck. The remaining value is a mix of multimodal and air

transportation. The air transportation and multimodal modes are likely focused on long distance trade routes to out of state/region destinations.

Figure 37 How Reliant is Kern County's Manufacturing?



Given the diverse nature of the manufacturing sector, it is important to call out a few primary industries. In Figure 37, the size of the bubble represents the relative size of the industry by employment. The x axis is the size of the GDP as of 2023. The y-axis is the value of freight reliant goods as a portion of the industry's overall value. Looking at Figure 37, chemical manufacturing stands out as a potential source of major freight flows due to its high GDP and freight reliance. Other industries such as transportation equipment, food products, fabricated metal, and machinery manufacturing also stand out for the same reasons. Due to the y-axis beginning at 65%, all these industries are relevant as industry users of the proposed transportation improvements. Some industries will depend on truck more or less depending on their target markets. For the purposes of this study, truck flows are the most critical, especially given that they enable rail and air transportation flows.

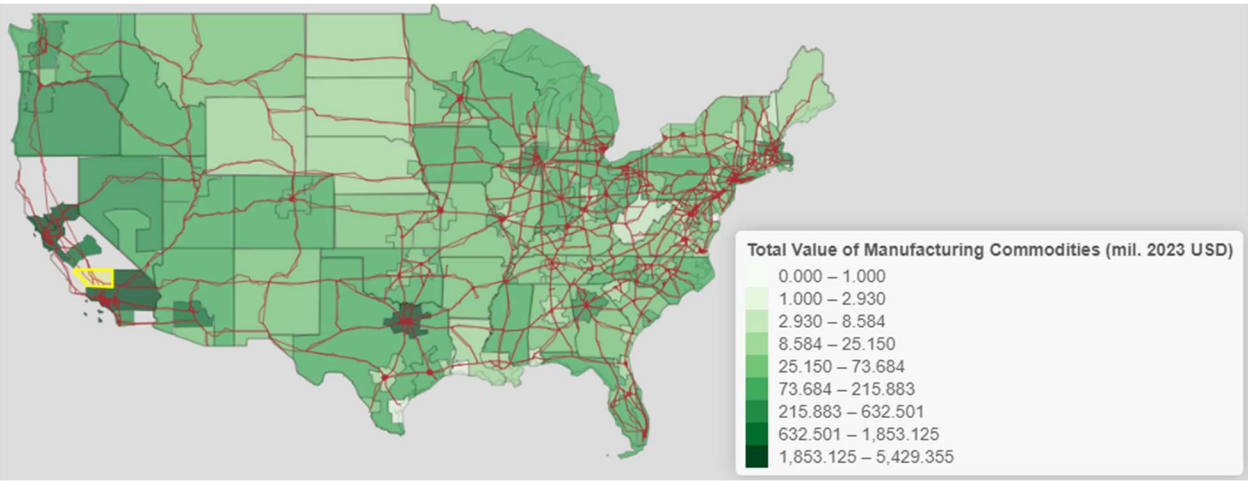


Figure 38 Value of Manufacturing Commodities to or from Kern County. Source: EBP Analysis of FAF data.[28]

Using the 2023 data, some regions appear as larger consumer markets for Kern manufactured products. This is reflected in the map in Figure 38 which includes large trade flows from all states across the United States. These include the expected California markets such as Los Angeles/Long Beach ($759.8 million) and San Jose/San Francisco/Oakland ($744 million). Yet, other out of state markets such as Texas, Washington Arizona, Nevada, and Oregon have substantial markets for Kern manufactured products.[29]

Table 2 Manufacturing Subsector Freight Dependence

NAICS	Manufacturing Subsector	Freight Intensity	Employment (2023)	LQ (2023)
336	Transportation Equipment	93%	1,270	0.3
335	Electric Equipment, Appliances, etc.	89%	30	0.0
312	Beverage & Tobacco Products	89%	370	0.5
314	Textile Product Mills	88%	40	0.2
331	Primary Metal Manufacturing	87%	110	0.1
313	Textile Mills	87%	220	1.1

[28] Manufacturing commodities include: Basic Chemicals; Pharmaceutical Products; Fertilizers; Other Chemical Products and Preparations; Plastics and Rubber; Wood Products; Pulp, Newsprint, Paper, and Paperboard; Paper or Paperboard Articles; Printed Products; Textiles, Leather, and Articles of Textiles or Leather; Non-Metallic Mineral Products; Base Metal in Primary or Semi-Finished Forms and in Finished Basic Shapes; Articles of Base Metal; Machinery; Electronic and Other Electrical Equipment and Components, and Office Equipment; Motorized and Other Vehicles; Transportation Equipment, not elsewhere classified; Precision Instruments and Apparatus; Furniture, Mattresses and Mattress Supports, Lamps, Lighting Fittings, and Illuminated Signs; Miscellaneous Manufactured Products.

[29] Kern outflows of manufactured goods to non-California stats in 2023 are estimated to be: Texas ($390 million), Washington ($319 million), Arizona ($243 million), Nevada ($178 million), Oregon ($160 million), Georgia ($130.9 million), Florida ($127 million), New York ($96.7 million), Illinois ($83.6 million), South Carolina ($86.2 million), Ohio ($82.3 million), Hawaii ($77.4 million), Oklahoma ($45 million), and Iowa ($45 million).

321	Wood Products	87%	170	0.2
333	Machinery Manufacturing	86%	730	0.3
311	Food Products	85%	4,560	1.2
325	Chemical Manufacturing	85%	940	0.5
326	Plastics & Rubber Products	83%	610	0.4
315	Apparel Manufacturing	83%	30	0.1
332	Fabricated Metal Products	83%	920	0.3
322	Paper Manufacturing	82%	40	0.1
337	Furniture & Related Products	82%	160	0.2
339	Miscellaneous Manufacturing	81%	350	0.3
324	Petroleum & Coal Products	81%	590	2.4
316	Leather & Allied Products	77%	50	0.8
334	Computer & Electronic Products	76%	490	0.2
327	Nonmetallic Mineral Products	71%	650	0.7
323	Printing & Related Support Activities	66%	140	0.2

Aerospace and Defense

The local aerospace industry of Kern County is closely tied to the defense industry. According to interviews, the industry is mostly occupied by research and development and closely connected to NASA and other government-focused institutions. Developments such as the Edwards Air Force base (the largest airfield in the world) and the China Lake Naval Air Weapons Station promote the industry locally.[30]In total, Kern County is home to more than 20,000 aerospace jobs (RTP 2022). These military assets also have industry linkages with heavy rail industrial manufacturing (RTP 2022).

Edwards Air Force Base is located in the southeast corner of Kern County and is connected with Bakersfield via SR58. Edwards Air Base has had a reported 25% increase in employment in recent years. Naval Air Weapons Station and China Lake is located in the northeast corner of Kern County. In the case of China Lake, billions of dollars have recently been invested to correct damages due to 6.4 and 7.1 magnitude earthquakes in 2019.[31] Outside of interviews, capturing data on the aerospace industry's growth has been limited. Many of the major institutions are classified as government jobs and GDP in the available data. Aerospace and defense commodities are included in the transportation equipment section of the freight data. However,

[30] https://www.edwards.af.mil/; Commander, Navy Region Southwest > Installations > NAWS China Lake

[31] Cutting-edge energetics facility emerges from earthquake rubble | NAVAIR

given the commodity classification method there is no way to distinguish between aerospace/defense and general transportation equipment.

The aerospace remains a growing part of the Kern county economy, especially for research. Yet, the flows related to this industry are often conflated with other goods in the data. Additionally, the dependence on the government for these jobs makes it hard to track the economic output using current data sources. Kern County has a long history of aerospace and defense innovation that is not expected to end soon. Like the other target sectors, the public highways (both state and national) will play a key role in facilitating the goal of the aerospace, research and development, and defense industries.

Conclusion

Kern County is a strategic logistics center with a long history of industry. Ranging from oil to agriculture to manufacturing, the county boasts a strong workforce. As supply chains evolve, the county is increasingly important as California's geographic center of population. The county's roads, rails and pipelines also enable industries to trade commodities vital to their business. Several key industries such as forestry, crop production and manufacturing stand out as heavily reliant on transportation for their operations and production capacity.

In most cases, truck is the primary method of transportation for industrial inputs and final goods. Connectivity improvements to destinations such as Los Angeles, San Jose and Fresno positively impact Kern's potential for trade. Even out of state, cities such as Dallas, Chicago and as far away as Miami are linked with Kern County's economy. However, these trade routes tend to depend more on rail and air freight.

Recent corporate investments exemplify the region's growth in its target sectors, especially in transportation/logistics. While the region continues to be a center for oil production and food manufacturing, the steel and warehousing industries have received significant interest from major companies such as Pacific Steel and Amazon. As the geographic center of population for the state, Kern County is well positioned to diversify its energy sector, increase manufacturing, and further its reputation as a logistics hub for the state and larger region. Understanding the regional freight flows and their connected industries is key to gauging the economic benefits of transportation improvements.



LSA

Kern Council of Governments

DRAFT VULNERABILITY / RESILIENCY ASSESSMENT REPORT

DECEMBER 2024

EXECUTIVE SUMMARY

The Kern Council of Governments (Kern COG) is conducting a Community Protection/Prosperity Study as part of the Kern Area Regional Goods-Movement Operations (KARGO) effort. The broad goal of the KARGO effort is to assess and plan for the growth of the goods movement industries in and through Kern County, planning for the transportation system to respond to these needs and reducing impacts of increased freight movements on local communities. The KARGO Community Protection/Prosperity Study specifically provides research and ranks strategies to address climate vulnerabilities on goods-movement corridors and resiliency routes. This Vulnerability and Resiliency Assessment Report provides foundational research for the KARGO Community Protection/Prosperity Study by documenting climate projections for Kern County and demonstrating climate-related vulnerabilities to county-wide transportation network assets, including roads, railways, bridges, large culverts, and small culverts.

Establishing regional climate projections was the first step in understanding the specific climate vulnerabilities of the region and its transportation assets. The web-based California State climate modeling resource, Cal-Adapt, provided maximum temperature, minimum temperature, precipitation, wildfire, and wind for multiple climate intensity scenarios, known as Representative Concentration Pathways (RCPs). Region-specific data were used by pulling Localized Constructed Analogs (LOCA) from Cal-Adapt to improve temperature and precipitation projections based on historical observations. Additional data were pulled from Federal Emergency Management Agency (FEMA), California Department of Transportation (Caltrans), and California Department of Forestry and Fire Protection (CAL FIRE). Climate modeling indicates that Kern County will likely experience increased incidences of extreme heat events, prolonged drought, and associated increases in the risk of wildfires. While the amount of precipitation projected to fall annually is projected to remain fairly similar to recent levels into the future, the amount of precipitation that could fall in 1 day is projected to increase. With longer dry spells combined with increased precipitation from singular storm events, the risk of flooding to the region also increases.

To identify the transportation network vulnerabilities, climate data were combined with spatial transportation network data to understand climate exposure. Transportation network attributes, such as average traffic volumes or asset condition ratings, were used to identify consequences. Each asset was ranked relative to other assets of the same type (grouped by roads, railways, bridges, large culverts, and small culverts) based on its unique climate exposures and consequences. Both hazard-specific and cross-hazard scores and priority rankings were generated by asset class. This was done in a spreadsheet-based tool described and illustrated in the assessment methodology. The metric and weighting system used by Caltrans for the District 6 Adaptation Priority Report was used as a foundation, with weights refined to reflect the specific Kern County geography, climate risks, asset types, and stakeholder input.

The climate hazards in the vulnerability assessment included extreme heat, wildfire, flooding, and landslide. Additional hazards for consideration were identified through the public process and included in the vulnerability assessment, including wind, snowfall, and earthquake. Earthquake risk was included in the assessment and wind and snowfall were analyzed but not included as a standard metric due to less than significant findings for change throughout the century.

The results tables in this report identify the transportation assets most vulnerable to future climate change impacts, based on the cross-hazard prioritization scores, and also identify the most highly impacted transportation assets for each specific climate hazard type. These results can be combined with broader KARGO analyses to identify key high-risk corridors and facilities. The identification of high-risk projects can help expedite mitigation and adaptation planning to increase resiliency. The most impacted transportation assets for asset category are identified in the Vulnerability and Resiliency Assessment section of the report, with climate vulnerabilities related to flooding and extreme heat driving the majority of the major risks to existing transportation infrastructure in Kern County.

Future work includes identifying, analyzing, and prioritizing adaptation options to make decisions on future Kern County infrastructure projects based on the link between the findings of this assessment with additional considerations for project prioritization.

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APPENDIX

A: TOP 500 ASSETS SORTED BY CROSS-HAZARD SCORES

LIST OF ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
AADT	average annual daily traffic
AADTT	average annual daily truck traffic
AB	Assembly Bill
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CMIP5	Coupled Model Intercomparison Project Phase 5
EV	electric vehicle
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GIS	geographic information system
I-5	Interstate 5
KARGO	Kern Area Regional Goods-Movement Operations
Kern COG	Kern Council of Governments
LOCA	Localized Constructed Analogs
mm/day	millimeters per day
NOAA	National Oceanic and Atmospheric Administration
NRI	National Risk Index
OEHHA	Office of Environmental Health Hazard Assessment
RCP	Representative Concentration Pathways
SHS	State Highway System
SR-155	State Route 155
SR-178	State Route 178
SR-99	State Route 99
USGCRP	U.S. Global Change Research Program
USGS	United States Geological Survey

DRAFT VULNERABILITY/RESILIENCY ASSESSMENT REPORT

INTRODUCTION

The purpose of this report is to document climate projections for Kern County and demonstrate climate-related vulnerabilities to county-wide transportation network assets. The assets assessed include roadways, bridges, railroads, and large and small culverts in conjunction with climate hazards (i.e., temperature, precipitation, snow, wildfire, flooding, landslides and earthquakes). A vulnerability assessment is conducted to consider an asset's exposure to a climatic hazard and/or the consequences of a climate event based on transportation network factors (e.g., network demand) measured in annual average daily traffic or existing asset conditions (e.g., culvert condition rating). This report also documents the inputs used to assess vulnerabilities, including climate projection data, historical events, transportation network attributes, and input gathered from stakeholders and the public. This report identifies key high-risk corridors and facilities based on the vulnerability assessment. The identification of high-risk projects can help expedite mitigation and adaptation planning to increase resiliency.

PROJECT HISTORY AND PURPOSE

This Vulnerability and Resiliency Report is part of the Kern Area Regional Goods-Movement Operations (KARGO) Community Protection/Prosperity Study. The KARGO Community Protection/ Prosperity Study aims to implement climate adaption strategies to reduce the impact of extreme weather events, build resiliency in the transportation network, and realize co-benefits for the region.

The KARGO Community Protection/Prosperity Study expands on recent work to assess the movement of people and goods in the Kern Council of Governments (Kern COG) region and build resiliency in the transportation network. KARGO Phase I focused on the integrated circulation of Kern County and used literature reviews, transportation programs, general plans, and studies to evaluate existing conditions. The future conditions and needs identified the location of expected industrial and residential growth in conjunction with supporting transportation networks and truck corridors. Additionally, Phase I assessed alternative scenarios and performance measures as well as sustainable strategy recommendations. Key recommendations of the Phase I study included: (1) a targeted logistics transportation fee, (2) a freight modal shift program to move cargo from truck to rail, (3) identification of next generation industrial trade port district(s), and (4) clean technology on highways, such as the SAFETEC autonomous, zero-emission truck testing zone on rural routes.[1]

KARGO Phase II focused on goods movement and considered the regional economy alongside potential impacts of future land use and development. Phase II assessed the impacts and opportunities presented with the increase in vehicular activity and roadway damage from warehouse and e-commerce industries. The need to maintain and improve the transportation network allows for concurrent implementation and capacity building for sustainable transportation strategies, such as electric vehicle (EV) truck fleets. The final report prioritized several

[1] Kern Council of Governments. 2023. KARGO Phase I Final Report. Kern COG. Website: www.kerncog.org/kargo/ (accessed July 3, 2024).

implementation strategies which include a list of infrastructure needs for maintaining regional economic benefits and adding network capacity.

PROJECT CONTEXT

Location and Climate

Kern County spans 8,163 square miles in southern end of California's Central Valley. It is geographically positioned near the Seirra Nevada Mountain range and the Kern River, which runs through Kern Canyon to the east and the Mojave Desert to the south as illustrated on Figure 1. This geographical topography contributes to variably high- and low-pressure systems with strong seasonal climate changes.



Kern River shown in the fall. (Photo credit: Kern River Conservancy 2024).

Kern County is in a Mediterranean Climate Zone characterized by sparse rainfall that occurs mainly in winter. Summers are hot and dry, with maximum temperatures often exceeding 100 degrees Fahrenheit (°F) in the region. Local climatological effects related to the region's location and topography, including wind speed and direction, temperature, inversion layers, precipitation, and fog, often leads to build-up of air pollution concentrations.

Kern County National Risk Index Scores

The National Risk Index (NRI) is a tool created by Federal Emergency Management Agency (FEMA) and demonstrates community risk from 18 natural hazards at the census tract level.

The score is based on social vulnerability, community resilience, and expected annual loss. The expected annual loss is calculated using a multiplicative equation that includes exposure, annualized frequency, and historic loss ration risk factors.[2] The social vulnerability (consequence enhancing) and community resilience (consequence reduction) datasets have been standardized using a minimum-maximum normalization calculation approach.[3]

More than half of Kern County has been assessed at a very high or relatively high risk of negative impacts caused by climate change. Eastern Kern County and Bakersfield are considered less vulnerable by comparison. Figure 2 shows NRI scores for Kern County.

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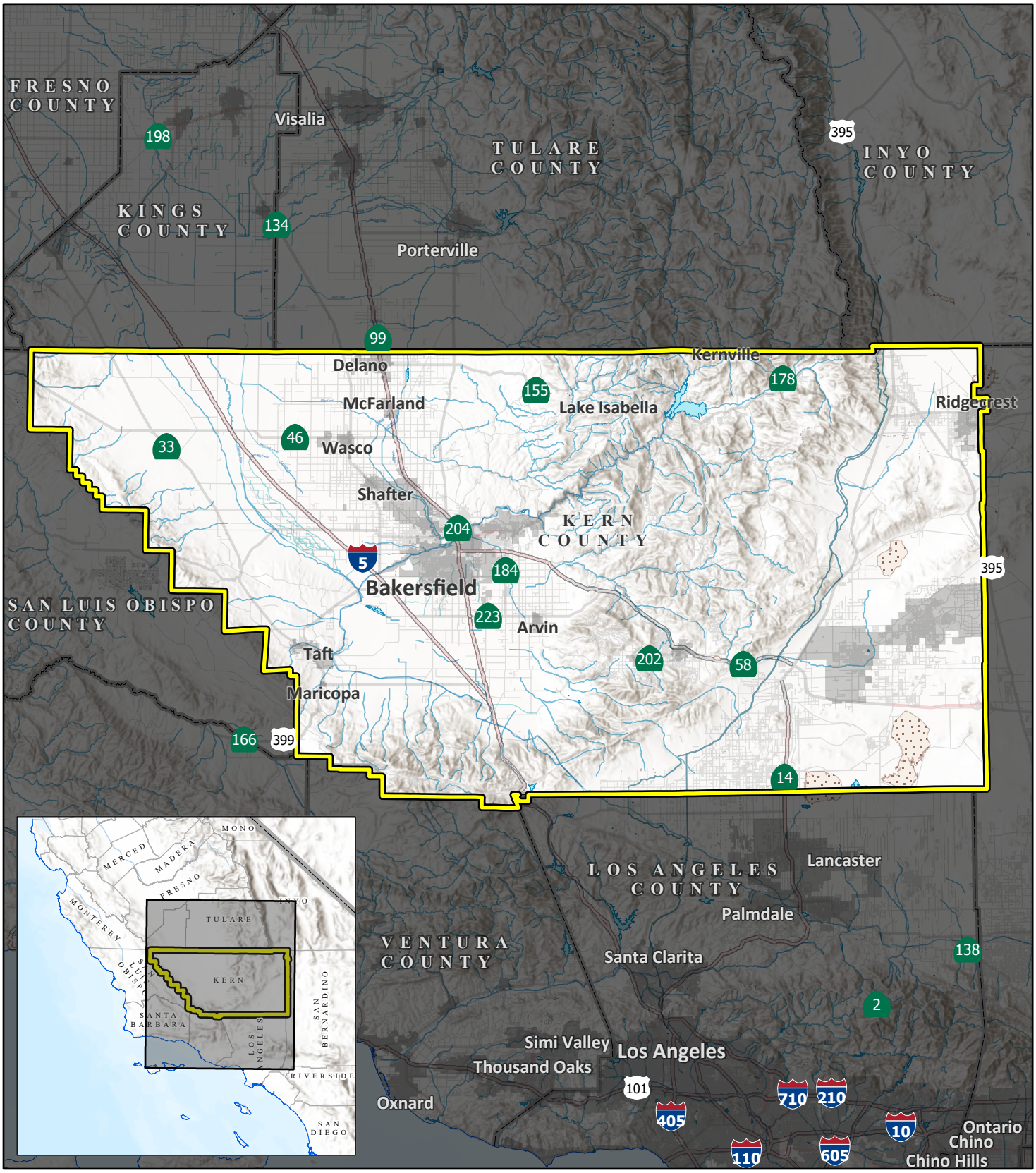
2 Federal Emergency Management Agency (FEMA). n.d.-a. National Risk Index, Expected Annual Loss. Website: hazards.fema.gov/nri/expected-annual-loss (accessed July 2024).

3 Federal Emergency Management Agency (FEMA). n.d.-b. National Risk Index, Understanding Scores and Ratings. FEMA. Website: hazards.fema.gov/nri/understanding-scores-ratings (accessed July 2024).



LSA

Project Location - Kern County

FIGURE 1

N

0 10 20

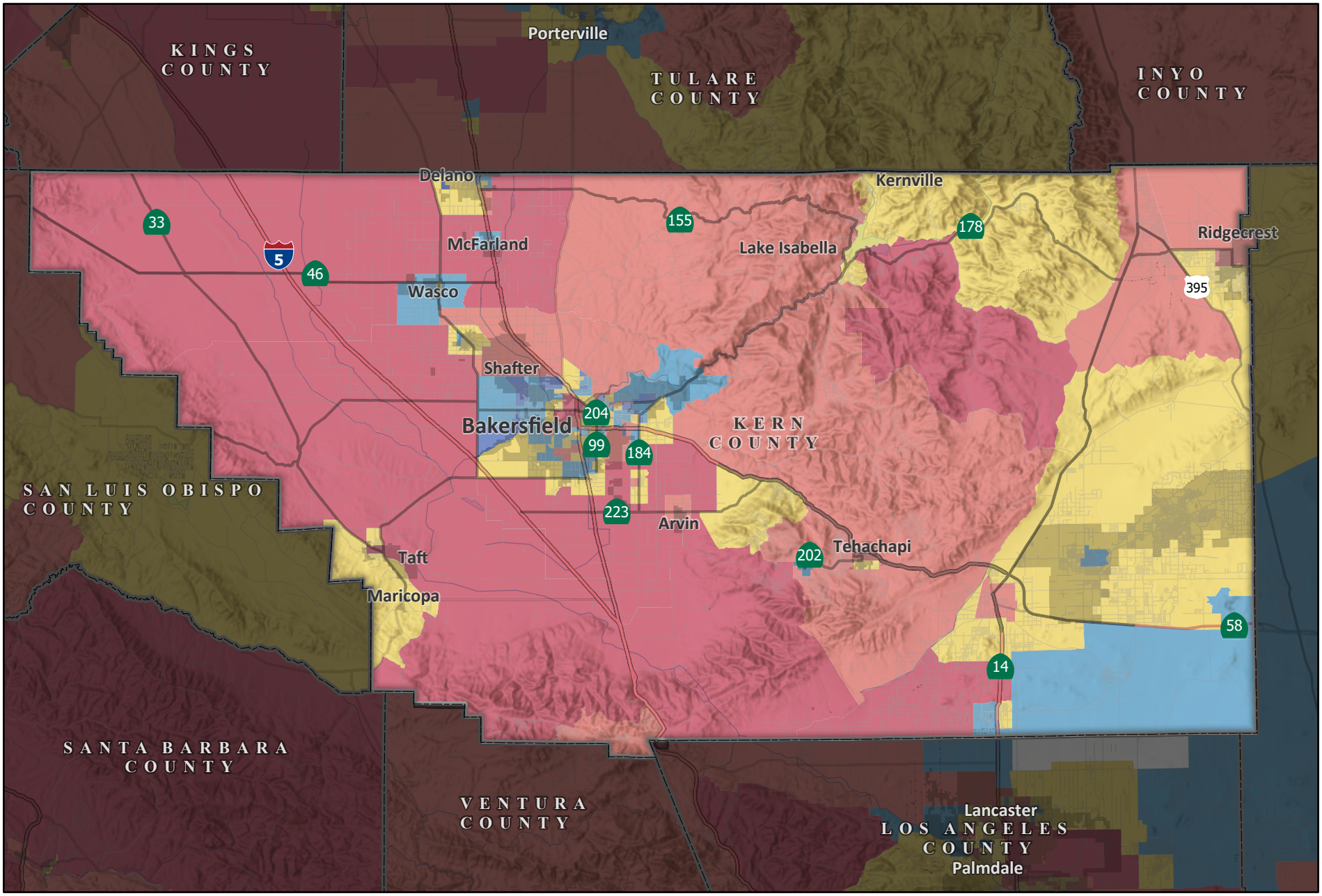
Miles

SOURCE: USGS (2024), DWR (2016), CDFW (2024)

I:\20241618\GIS\Pro\Kern County Risk and Vulnerability Analysis.aprx (6/13/2024)

KARGO Community Protection/Prosperity Study

Project Location and Vicinity



LSA

National Risk Index
- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low

FEMA's National Risk Index is a dataset that models community risk at the census tract level based on social vulnerability, community resilience, and expected annual loss from 18 natural hazards

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap, FEMA National Risk Index (March 2023)

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FIGURE 2

KARGO Community Protection/Prosperity Study

National Risk Index

Local Climate Change Impacts

The world's climate has shifted towards warmer conditions with average annual air temperatures in California being about 2.5°F higher than in 1985.[4] Climate change is a global phenomenon that has the potential for severe impacts to Kern County, most directly felt through extreme climate events. These impacts in turn affect agriculture, infrastructure, transportation networks, emergency response, human health, tourism, and many other facets of society. Research has shown that the impacts of climate change in the San Joaquin Valley include:[5]

- Hotter, drier, and longer summers
- More severe storm events
- Significant decline in snowpack
- Increase in the number and intensity of wildfires
- Increase in erosion, sediment, and landslides
- Declines in water quality and flow in streams and rivers
- Lower groundwater recharge rates
- Increase in extreme heat events
- Further declines in air quality
- Increase in natural disasters (e.g., floods, droughts, fires)

Kern County and the surrounding areas have already experienced devastating weather events related to climate change, including heavy precipitation, snow, ice, flooding, landslides, increased temperatures, and wildfires. The public is familiar with the impacts of climate change as recent years have brought flooding, landslides, and atmospheric river events that closed roadways in 2022, 2023, and 2024. Wildfires (e.g., the Borel wildfire in the summer of 2024) have had profound impacts on the region. Heat waves throughout 2023 and 2024 set temperature records and presented significant health risks and challenges to the region's workforce and operations. Increasing incidences of climate events and hazards (e.g., extreme heat days and flooding) particularly impact transportation networks such as those used for logistics and goods movement.

Public Comments on Local Climate Events

A deeper understanding of historic local climate events and concerns was gained through stakeholder engagement, public outreach, and research. The Kern COG KARGO Community Protection/Prosperity Study Public Engagement Summary Phase 1 documents the series of public engagement activities that occurred during the Summer of 2024. A total of four in-person workshops were held countywide, and two workshops were held virtually via Zoom. A digital survey was available on the project website to collect community input during the virtual workshops and for participants unable to attend a workshop.

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4 Office of Environmental Health Hazard Assessment (OEHHA). 2022. Indicators of Climate Change in California, Fourth Edition. California Environmental Protection Agency, OEHHA.

5 University of California, Merced. 2021. California's Climate Change Assessment for the San Joaquin Valley Region. Water Systems Management Lab. Website: https://wsm.ucmerced.edu/project/4th-climate-change-assesment/ (accessed June 11, 2024).

Comments received included the importance of understanding the region's historical vulnerabilities in relation to climate hazards. Participants called for a comprehensive analysis of past events, such as flooding and landslides, to guide community actions and enhance resilience against future environmental challenges. Aligned with public comments, the methodology used in this assessment accounts for the existence of past hazards where data are available (e.g., wildfires) and looks at existing conditions for risks (e.g., riverine flooding).



Kern County flooding following atmospheric river event. (Photo credit: Kern County Fire 2023).

Additionally, public comment indicated a desire for improved overall environmental management, which was expressed through concerns raised about drought and subsidence. Regional planning and water management systems will be essential to a comprehensive approach to climate mitigation, and adaptation and subsidence will impact the transportation network along with the overarching built environment and infrastructure.

Public and stakeholder group comments were also raised on earthquake risk, snowfall hazards, and hazardous wind that would impact regional goods movement. As a result of combined stakeholder and public comments, earthquakes, snowfall, and wind were added to the analysis and described in the climate conditions and projections.

Transportation and Industry Demands

Because of its central location and easy access to Northern and Southern California, Arizona, Nevada, and Utah, Kern County has become one of the largest distribution centers for companies worldwide. Kern County is a leader in e-commerce, and key transportation corridors, including State Route 99 (SR-99) and Interstate 5 (I-5), enhance regional connectivity and facilitate the movement of goods. Additionally, existing rail lines (including Union Pacific, Burlington Northern Santa Fe, and San Joaquin Valley Railroad) offer potential for future expansion of goods movement. Additionally, the region has a long agricultural history and is connected nationwide through the agricultural sector and broader food distribution industry.

Relevant Statewide Efforts

The State of California is working to address climate change and climate change hazards. There are two recent Statewide efforts relevant to the focus area of this project.

California Climate Adaptation Strategy

The California Climate Adaptation Strategy is mandated by Assembly Bill (AB) 1482. The strategy "links together the state's existing and planned climate adaptation efforts, showing how they fit together to achieve California's six climate resilience priorities.[6]" The six priorities are: (1) Strengthen Protections for Climate Vulnerable Communities, (2) Bolster Public Health and Safety to Protect Against Increasing Climate Risks, (3) Build a Climate Resilient Economy, (4) Accelerate Nature-Based Climate Solutions and Strengthen Climate Resilience of Natural Systems, (5) Make Decisions Based on the Best Available Climate Science, and (6) Partner and Collaborate to Leverage Resources. The strategy document is intended to enable a coordinated, integrated approach to building climate resilience. It is organized around outcome-based priorities and is updated every 3 years.

California State Hazard Mitigation Plan

The State Hazard Mitigation Plan is California's primary hazard mitigation guidance document[7]. It provides an analysis of the State's historical and current hazards, describes the State's hazard mitigation goals and objectives, and details the State's hazard mitigation strategies and actions. This plan is inclusive of climate hazards as well as other risks and threats that require preparedness and emergency management. The Statewide Plan encourages planning and action at the local and regional level to build resilience across the State and across systems, infrastructure, and communities.

Relevant Projects

The California Department of Transportation (Caltrans) has conducted region-specific assessments and developed reports to define adaptation strategies for climate change hazards. These efforts complement the work of Kern COG and are described in this section.

Caltrans Climate Change and Vulnerability Assessment (July 2018)

A climate change vulnerability assessment was conducted for a portion of the State Highway System (SHS) in Caltrans District 6, which includes Madera, Fresno, Tulare, Kings, and Kern counties.[7] The objective was to understand long-term effects of climate change, how these changes will impact the highway system, and create action plans where possible. Environmental factors considered for the report included temperature, precipitation, wildfire, and flooding using the Representative

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6 California Climate Adaptation Strategy. 2024. Website: https://climateresilience.ca.gov/ (accessed November 25, 2024).

7 California State Hazard Mitigation Plan. 2023. Website: https://www.caloes.ca.gov/wp-content/uploads/Hazard-Mitigation/Documents/2023-California-SHMP_Volume-1_11.10.2023.pdf/ (accessed November 25, 2024).

7 California Department of Transportation (Caltrans). 2024. About Caltrans District 6. State of California. Website: dot.ca.gov/caltrans-near-me/district-6/d6-about (accessed July 3, 2024).

Concentration Pathways (RCP) scenarios to gauge the range of uncertainty over three time periods: beginning (2025), middle (2055), and end (2085) of century. Using a geographic information system (GIS), climate hazards and SHS maps were overlayed to determine possible vulnerabilities.[8]

Caltrans Adaptation Priority Report (June 2020)

The Caltrans Adaptation Priority Report for District 6 identifies various transportation network assets' exposure and resulting adaptation assessment and adaptation framework to support resource allocation and mitigation. The report provides a system level vulnerability assessment for District 6 and analysis for future system operations and capital improvements, followed by implementation and resiliency measures inclusive of monitoring and management of system performance.

The technical analysis for this report assessed hazards such as change in precipitation and temperature as well as wildfires and flooding. Evaluated assets include culverts, bridges, and roadway pavement binding. Hazards and assets were combined to identify vulnerability and consequences, including system failure. A weighted metric system allowed assets to be ranked and prioritized based on key vulnerabilities and consequences.[9]

FHWA VULNERABILITY ASSESSMENT AND ADAPTATION FRAMEWORK

The methodology used for this vulnerability and resiliency assessment is consistent with the Federal Highway Administration's (FHWA) Vulnerability Assessment and Adaptation Framework, a tool to help transportation agencies assess the vulnerability of transportation networks to extreme climate-related events.[10]

The framework provides a step-by-step guide to conducting a vulnerability assessment. The steps of the framework are listed in Table A. The table also includes details on how each step was conducted for this assessment.

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8 California Department of Transportation (Caltrans). 2018. Caltrans Climate Change Vulnerability Assessments: District 6 Technical Report. Website: acrobat.adobe.com/id/urn:aaid:sc:VA6C2:a0782f83-d660-44c7-941d-6424b663ddef (accessed July 3, 2024).

9 California Department of Transportation (Caltrans). 2020. Adaptation Priority Report. Website: acrobat.adobe.com/id/urn:aaid:sc:VA6C2:95f52b82-cdaf-48f5-9403-c78ff84adddb (accessed July 3, 2024).

10 Federal Highway Administration (FHWA). 2018. Vulnerability Assessment and Adaptation Framework, 3rd Edition. United States Department of Transportation (USDOT). Website: https://www.fhwa.dot.gov/environment/sustainability/resilience/adaptation_framework/chap00.cfm#toc498351467 (accessed August 2024).

Table A: FHWA Framework Execution

FHWA Framework Step	Status	Kern COG Process
1. Articulate objectives and define study scope	Complete	The purpose of this process is to identify critical, high-risk assets for expedited adaptation implementation for the Kern COG region.
2. Obtain asset data	Complete	The project team worked with Caltrans and Kern COG to obtain road, railway, and large and small culvert asset data. Bridge asset data were pulled from the National Bridge Inventory. Each spatial asset dataset also had attributes used to identify consequences as described in the assessment methodology.
3. Obtain climate data	Complete	Cal-Adapt provided maximum temperature, minimum temperature, precipitation, wildfire, and wind for multiple RCP scenarios. Cal-Adapt allows for LOCA to improve temperature and precipitation projections based on historical observations. Additional data was pulled from FEMA, Caltrans, and CAL FIRE.
4. Assess vulnerability	Complete	The unique exposures of each asset to different climate hazards were calculated based on spatial overlays. Consequences of climate hazards were also considered based on available attribute data. This was done in a spreadsheet-based tool described and illustrated in the assessment methodology. The metric and weighting system used by Caltrans for the District 6 Adaptation Priority Report was used as a foundation with weights refined based on Kern COG geography and stakeholder input.
5. Identify, analyze, and prioritize adaptation options	Next Step	This report identifies key critical, high-risk assets. This assessment is linked with other considerations for project prioritization.
6. Incorporate assessment results in decision making	Next Step	This report and the KARGO Community Protection/Prosperity Study in its entirety will inform decision-making for Kern COG, influencing short-term and long-range planning, project design, and ongoing maintenance and operations.
7. Monitor and revisit	Future Process	Monitoring and revisiting of this assessment will occur consistent with Kern COG planning procedures. Kern COG will have all data products from this assessment to reference as projects, priorities, and stakeholder and public input evolve.

Source: Vulnerability Assessment and Adaptation Framework (FHWA 2018) and compiled by LSA (December 2024).
CAL FIRE = California Department of Forestry and Fire Protection
Caltrans = California Department of Transportation
FEMA = Federal Emergency Management Agency
FHWA = Federal Highway Administration
Kern COG = Kern Council of Governments
LOCA = Localized Constructed Analogs
RCP = Representative Concentration Pathway

CLIMATE HAZARD FREQUENCY AND PROJECTIONS METHODOLOGY

Climate Data Sources

To analyze potential future climate change impacts specific to Kern County, LSA used available plans, historic records, data, and GIS layers available from sources described in Table B as follows:

- United States Geological Survey (USGS)
- FEMA
- National Oceanic and Atmospheric Administration (NOAA)
- State of California
  - Caltrans
  - California Department of Forestry and Fire (CAL FIRE)

- California Department of Fish and Wildlife (CDFW)
- Governor's Office of Emergency Services
- Cal-Adapt

Table B: Climate Data Source and Access Dates

Data	Data Source	Access Date
Annual Maximum/Minimum Temperature	Cal-Adapt	7/9/2024
Average Precipitation	Cal-Adapt	6/18/2024
Annual 1-Day Max Precipitation	Cal-Adapt	7/12/2024
Extreme Heat Days	Cal-Adapt	7/9/2024
Heat Wave Frequency	FEMA	10/1/2024
Decadal Wildfire	Cal-Adapt	8/9/2024
Historic Wildfire	CAL FIRE	10/1/2024
Wildfire Frequency	FEMA	10/1/2024
Landslide Frequency	FEMA	10/1/2024
National Risk Index	FEMA	10/1/2024
Riverine Flooding Frequency	FEMA	10/1/2024
Snowfall	Cal-Adapt	8/28/2024
Wind Speed	ClimRR	11/5/2024
Peak Horizontal Acceleration	USGS	10/25/2024

Source: Compiled by LSA (December 2024).
FEMA = Federal Emergency Management Agency
CAL FIRE = California Department of Forestry and Fire Protection
ClimRR = Climate Risk and Resilience Portal

Cal-Adapt Data Resource

Localized climate projections were generated using Cal-Adapt. Cal-Adapt is a climate adaptation planning tool developed by the State of California's scientific and research community and funded by the California Energy Commission. The Web-based tool was a key recommendation of the California Natural Resources Agency's 2009 California Climate Adaptation Strategy and is intended to provide information on how climate change might affect California at the local level.[11] Climate data available from Cal-Adapt includes maximum temperature, minimum temperature, precipitation, sea-level rise, wildfire, and wind speeds. Figure 3 demonstrates Cal-Adapt and illustrates sample temperature projections.

11 Cal-Adapt. 2024. Website: https://cal-adapt.org/ (accessed November 25, 2024).
12 California's Fourth Climate Change Assessment. Website: https://www.climateassessment.ca.gov/tools/ (accessed November 25, 2024).

Figure 3: Cal-Adapt Data Resource



Source: Cal-Adapt (2024).

Climate Models and Greenhouse Gas Concentrations

The maximum temperature, minimum temperature, and average precipitation projections were modeled using 30-year ensemble models based on best practices from California's Fourth Climate Change Assessment and available on Cal-Adapt.[12] Cal-Adapt provides projections for various climate scenarios that represent differing concentrations of greenhouse gas emissions in the upper atmosphere over time, known as RCPs. The RCP 4.5 scenario represents a lower-emissions scenario where emissions peak around the year 2040 and then stabilize into the future. The RCP 8.5 scenario represents a higher-emissions scenario where emissions continue to rise throughout the 21st century. In line with State and federal guidelines, RCP 4.5 and RCP 8.5 were used and compared to historic climate patterns used to set baseline values for temperature and precipitation projections.

CLIMATE CONDITIONS AND PROJECTIONS

Climate projections give insight into temperature, precipitation, snowfall, wildfire, and wind patterns. Projections for riverine flooding and landslide events are also described and illustrated in this section. While not a climate-related event, earthquake risk projections are also included based on stakeholder and public concern.

Temperature Projections

30-Year Annual Average Number of Extreme Heat Days

The number of extreme heat days is projected to increase significantly throughout Kern County under both RCP 4.5 and RCP 8.5 scenarios. The baseline number of extreme heat events based on the historical average from 1961-1990 for Kern County is 5.1 days. Under RCP 4.5, the projections for mid-century are 43.8 rising to 59.9 days by late century. The latter is more than ten-fold the baseline.

Under RCP 8.5, projections increase to 48.1 days for mid-century, which is similar to RCP 4.5. However, the increase in extreme heat days for late century nearly doubles to 94.7 days and is approximately one and a half times greater than RCP 4.5.

In addition to the modeled extreme heat data available on Cal-Adapt, the United States Climate Mapping for Resilience and Adaptation toolkit developed by an interagency partnership acting as the U.S. Global Change Research Program (USGCRP) developed readily downloadable data for extreme heat with a baseline inclusive of more recent years. Figure 4 illustrates projected annual days with maximum temperatures above 100°F for the modeled history of 1976-2005, as well as the lower greenhouse gas emissions (RCP 4.5) and higher greenhouse gas emissions (RCP 8.5) scenarios. It shows this for early century (2015-2044), mid-century (2035-2064), and late century (2070-2099).

Figure 4: Graph of Annual Days with Maximum Temperatures Above 100°F



Source: United States Climate Mapping for Resilience and Adaptation (2024).

Figure 5 (RCP 4.5) and Figure 6 (RCP 8.5) illustrate the 30-year annual average number of extreme heat days and the baseline period as well as mid- and late-century timeframes. An extreme heat day is defined as one in which the temperature exceeds the 98th percentile maximum temperature for 1961-1990, identified as 100.8°F for the region. The dataset is modeled using Localized Constructed Analogs (LOCA) downscaled CMIP5 climate projections by the Geospatial Innovation Facility at the University of California, Berkeley.

30-Year Annual Average Maximum Temperature Modeling was conducted to understand how the annual maximum temperature in Kern County would vary into the future. Figure 7 (RCP 4.5) and Figure 8 (RCP 8.5) illustrate the 30-year annual average maximum temperature for the for the baseline, mid-century, and late century timeframes. The illustrations reflect the average year-round daily high temperature over a 30-year period. The datasets show 30-year annually averaged temperature projections downscaled from an ensemble of 32 global climate models available on Cal-Adapt.

Baseline

Mean - 5.1 Event-Days per Year

Mid-Century

Mean - 43.8 Event-Days per Year

Late Century

Mean - 59.9 Event-Days per Year

KINGS COUNTY
TULARE COUNTY
KERN COUNTY
SAN LUIS OBISPO COUNTY
SANTA BARBARA COUNTY
VENTURA COUNTY
LOS ANGELES COUNTY
Delano
McFarland
Wasco
Shafter
Bakersfield
Kernville
Lake Isabella
Ridgecrest
Arvin
Taft
Maricopa
Lancaster
5
46
33
99
155
178
204
184
223
202
395
58
14
166
399
101
138

Extreme Heat Days per Year

- 0.001 - 14.9
- 14.91 - 27.9
- 27.91 - 40.9
- 40.91 - 53.9
- 53.91 - 66.9
- 66.91 - 79.9
- 79.91 - 92.9
- 92.91 - 105.9
- 105.91 - 118.9 | Event-Days per Year

Resources

- Small Culvert
- Large Culvert
- Bridge
- Railroad

0 9 18
Miles

SOURCE: ESRI (2018); Cal-Adapt, UC Berkeley Geospatial Innovation Facility (2024)

I:\20241618\GIS\Pro\Kern County Risk and Vulnerability Analysis.aprx (12/3/2024)

FIGURE 5

KARGO Community Protection/Prosperity Study

30-Year Annual Average Number of Extreme Heat Days

CMIP5 Climate Change Projections

RCP 4.5 Scenario

Downscaled to ~5 km Resolution

Baseline

Mean - 5.1 Event-Days per Year

Mid-Century

Mean - 48.1 Event-Days per Year

Late Century

Mean - 94.7 Event-Days per Year

KINGS COUNTY
TULARE COUNTY
INYO COUNTY
SAN LUIS OBISPO COUNTY
KERN COUNTY
SAN BERNARDINO COUNTY
SANTA BARBARA COUNTY
VENTURA COUNTY
LOS ANGELES COUNTY

Delano
McFarland
Wasco
Shafter
Bakersfield
Taft
Maricopa
Arvin
Kernville
Lake Isabella
Ridgecrest
Lancaster

5
46
33
99
155
178
204
184
223
202
58
14
138
166
399
101
395
66

LSA

Extreme Heat Days per Year

0.001 - 14.9	53.91 - 66.9
14.91 - 27.9	66.91 - 79.9
27.91 - 40.9	79.91 - 92.9
40.91 - 53.9	92.91 - 105.9
	105.91 - 118.9 | Event-Days per Year

Resources

- Small Culvert
- Large Culvert
- Bridge
- Railroad

0 9 18
Miles

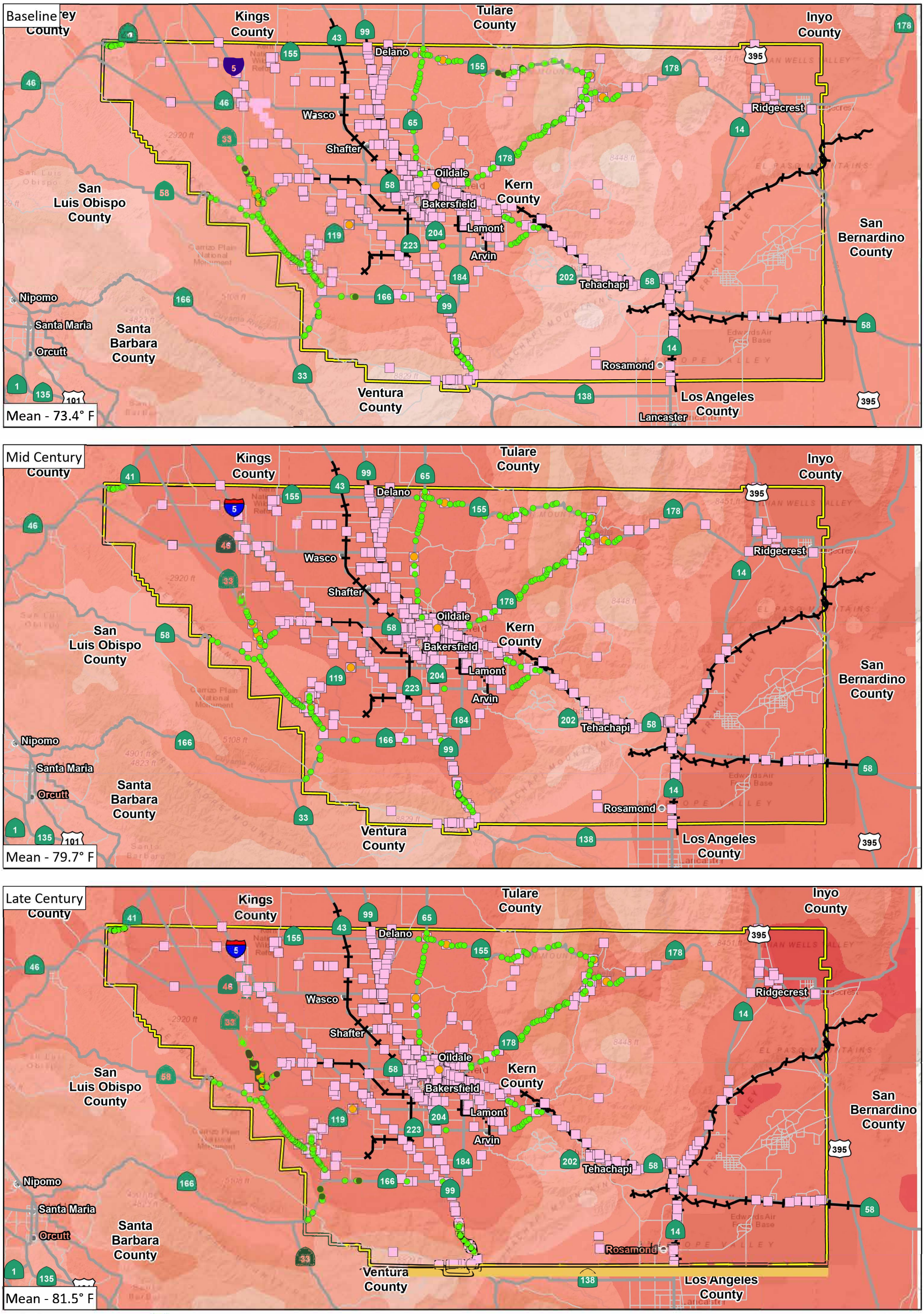
SOURCE: ESRI (2018); Cal-Adapt, UC Berkeley Geospatial Innovation Facility (2024)

I:\20241618\GIS\Pro\Kern County Risk and Vulnerability Analysis.aprx (12/3/2024)

FIGURE 6

KARGO Community Protection/Prosperity Study
30-Year Annual Average Number of Extreme Heat Days

CMIP5 Climate Change Projections
RCP 8.5 Scenario
Downscaled to ~5 km Resolution



LSA

FIGURE 7

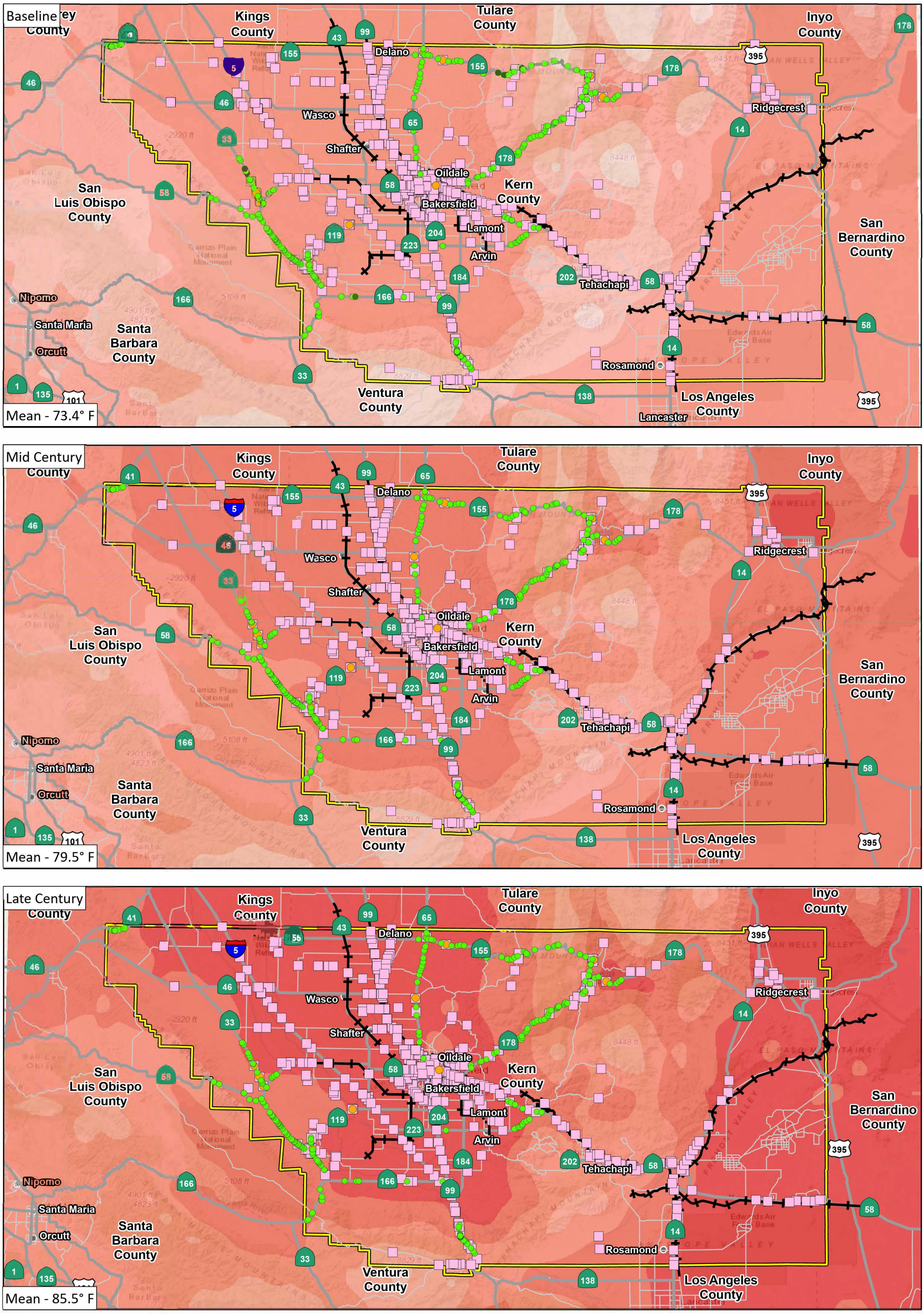
KARGO Community Protection/Prosperity Study

30-Year Annual Average Maximum Temperature

CMIP5 Climate Projections

RCP 4.5 Scenario

Downscaled to ~5 km Resolution



LSA

FIGURE 8

KARGO Community Protection/Prosperity Study

30-Year Annual Average Maximum Temperature

CMIP5 Climate Projections

RCP 8.5 Scenario

Downscaled to ~5 km Resolution

Under the RCP 4.5 emissions scenario, the 30-year annual average maximum temperature increases moderately within Kern County until the middle of the century, only increasing slightly in the late century. Kern County's baseline maximum temperature mean is 73.4°F based on the historical average from 1961-1990. Under RCP 4.5 scenarios the maximum temperature is expected to increase to 79.7°F in the mid-century and 81.5°F in the late century.

Under the RCP 8.5 scenario, the 30-year annual average maximum temperature follows a similar trend mid-century; however, it continues to increase in the late-century. The RCP 8.5 projection is 79.5°F yet experiences a sharper increase in the late century to 85.5°F.

30-Year Annual Average Minimum Temperature

Figure 9 (RCP 4.5) and Figure 10 (RCP 8.5) illustrates the 30-year annual average minimum temperature for the baseline, mid-century, and late century timeframes. The figures reflect the average year-round daily low temperature over a 30-year period. The datasets show 30-year annually averaged temperatures projections downscaled from an ensemble of 32 CMIP5 global climate models.

Under the RCP 4.5 emissions scenario, the 30-year annual average minimum temperature increases moderately within Kern County until the middle of the century, only increasing slightly in the late century. Kern County's baseline mean minimum temperature is 46.6°F based on the historical average from 1961-1990 and is expected to increase to 50.2°F in the mid-century and 51.4°F in the late century.

Under the RCP 8.5 scenario, the 30-year annual average minimum temperature follows a similar trend mid-century; however, it continues to increase in the late-century. By mid-century, projections are expected to increase to 51.3°F and 54.9°F by late-century. This trend is similar to the increase in average maximum temperature and suggests increasing temperatures across all seasons.

Heat Wave Frequency

Heat wave conditions are defined as abnormally and uncomfortably hot and unusually humid weather typically lasting two or more days with temperatures outside the historical averages. Figure 11 illustrates FEMA's NRI current risk of annualized heat wave frequency data. This data displays the expected number of event-days per year that a census tract will experience heat wave conditions. Many areas within the County are expected to experience two or more heat wave event-days per year.

Baseline

Mean - 46.6° F

Mid Century

Mean - 50.2° F

Late Century

Mean - 51.4° F

Kings County
Tulare County
Inyo County
San Luis Obispo County
Kern County
San Bernardino County
Santa Barbara County
Ventura County
Los Angeles County
Delano
Wasco
Shafter
Oildale
Bakersfield
Lamont
Arvin
Tehachapi
Ridgecrest
Rosamond
Lancaster
Nipomo
Santa Maria
Orcutt

LSA

Kern County

Resources
- Small Culvert
- Large Culvert
- Bridge
- Railroad

Average Minimum Temperature
- 25.3 - 31.5
- 31.51 - 37.7
- 37.71 - 43.9
- 43.91 - 50.1
- 50.11 - 56.3
- 56.31 - 62.5 | °F

0 9 18
Miles

SOURCE: ESRI (2023); CalAdapt (2024)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/3/2024)

FIGURE 9

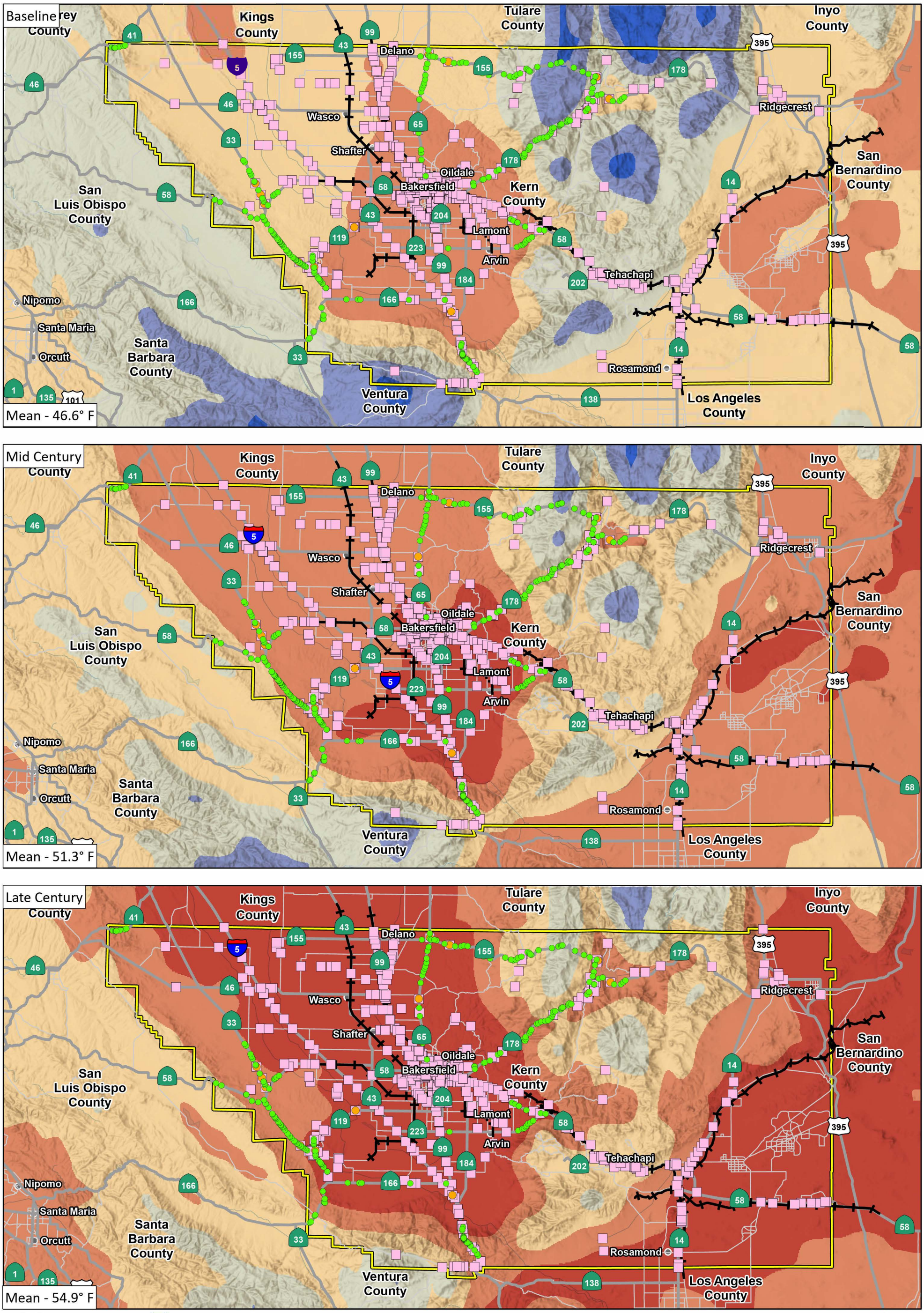
KARGO Community Protection/Prosperity Study

30-Year Annual Average Minimum Temperature

CMIP5 Climate Projections

RCP 4.5 Scenario

Downscaled to ~5 km Resolution



LSA

Kern County

Resources
- Small Culvert
- Large Culvert
- Bridge
- Railroad

Average Minimum Temperature
- 25.3 - 31.5
- 31.51 - 37.7
- 37.71 - 43.9
- 43.91 - 50.1
- 50.11 - 56.3
- 56.31 - 62.5 | °F

0 9 18
Miles

SOURCE: ESRI (2023); CalAdapt (2024)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/3/2024)

FIGURE 10

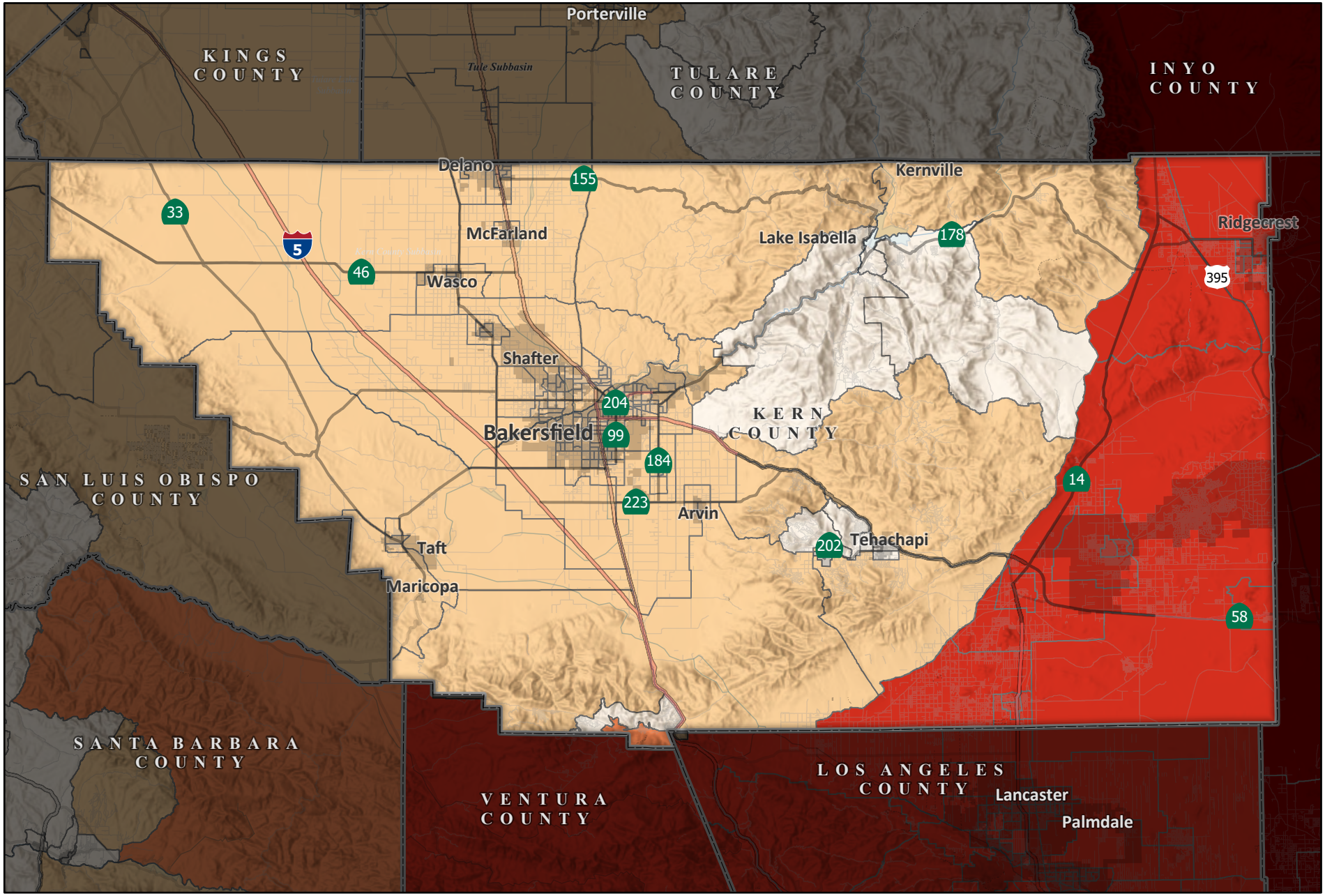
KARGO Community Protection/Prosperity Study

30-Year Annual Average Minimum Temperature

CMIP5 Climate Projections

RCP 8.5 Scenario

Downscaled to ~5 km Resolution



LSA

Heat Wave - Annualized Frequency

- 0.0 - 2.4
- 2.5 - 4.0
- 4.1 - 4.7
- 4.8 - 6.1
- 6.2 - 11 | Event-Days per Year

FEMA's National Risk Index Annualized Frequency Heat Wave dataset displays the expected number of days per year that a census tract will experience heat wave conditions, defined as abnormally and uncomfortably hot and unusually humid weather typically lasting two or more days with temperatures outside the historical averages.

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap, FEMA National Risk Index (March 2023)

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FIGURE 11

KARGO Community Protection/Prosperity Study

Heat Wave Frequency

Precipitation Projections

Annual Average Precipitation

Figure 12 (RCP 4.5) and Figure 13 (RCP 8.5) illustrate the 30-year annual average precipitation projections for the baseline, mid-century, and late century timeframes and depict average annual rainfall per day measured in millimeters per day (mm/day). These 30-year averaged precipitation projections were downscaled from 10 global climate models with historical climate simulations of California in order to capture all probable conditions. The models were archived by CMIP5 using the LOCA statistical technique developed by the Scripps Institution of Oceanography. LOCA downscaling uses local historical climate measurements to increase the resolution of global climate models.



Flooded roadway north of Wasco due to debris blocking bridge. (Photo credit: SJV Water 2023).

Although the average daily precipitation is not projected to change drastically within Kern County, the patterns of precipitation are expected to increasingly vary, which can indicate annual anomalies in both RCP 4.5 and RCP 8.5 scenarios. The Kern County precipitation mean is 0.65 mm/day based on the historical average from 1961-1990. Under RCP 4.5 scenarios, it is expected to decrease to 0.63 mm/day in the mid-century to 0.62 mm/day in the late century. Similar projections are expected for RCP 8.5 scenarios. Effects of decreased precipitation include compromised ecosystems, with environmental impacts such as damage to natural habitats, loss of biodiversity, compromised drinking water quality and availability, and soil erosion increasing the risk of wildfires.[12]

Monthly Maximum 1-Day Precipitation

Figure 14 (RCP 4.5) and Figure 15 (RCP 8.5) illustrate the 30-year annual average monthly maximum 1-day precipitation projections for the for the baseline, mid-century, and late century timeframes. These values are calculated by averaging the highest single day rainfall from each year for 30 years. The unit of measurement is mm/day. This index provides a means of assessing change in extreme rain events, predicting the highest single-day rainfall at a given location and averaged over 30 years. These datasets are based on LOCA downscaled CMIP5 climate projections prepared by the Geospatial Innovation Facility at the University of California, Berkeley.

[12] National Geographic. 2024. Understanding Droughts. Website: https://education.nationalgeographic.org/resource/understanding-droughts/ (accessed August 2024).

Baseline

Mean - 0.65 mm/day

Mid-Century

Mean - 0.63 mm/day

Late Century

Mean - 0.62 mm/day

Kings County
Tulare County
Inyo County
San Bernardino County
Kern County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles County
Delano
Wasco
Shafter
Oildale
Bakersfield
Lamont
Arvin
Tehachapi
Ridgecrest
Rosamond
Lancaster
Nipomo
Santa Maria
Orcutt

Kern County
Resources
Small Culvert
Large Culvert
Bridge
Railroad

30-year Average Precipitation
0.22 - 0.48
0.479 - 0.73
0.74 - 1.04
1.05 - 1.40
1.41 - 1.81
1.82 - 2.29
2.30- 3.13 | mm per Day

FIGURE 12

KARGO Community Protection/Prosperity Study

Average Precipitation

CMIP5 Climate Projections

RCP 4.5 Scenario

Downscaled to ~5 km Resolution

9 0 9
Miles

SOURCE: ESRI (2018); CalAdapt (2024)

I:\20241618\GIS\MXD\Climate Vulnerability Analysis_AvgPrecip_RCP45.mxd (12/3/2024)

Baseline

Mean - 0.65 mm/day

Mid-Century

Mean - 0.61 mm/day

Late Century

Mean - 0.62 mm/day

Kings County
Tulare County
Inyo County
San Bernardino County
Kern County
San Luis Obispo County
Santa Barbara County
Ventura County
Los Angeles County
Delano
Wasco
Shafter
Oildale
Bakersfield
Lamont
Arvin
Tehachapi
Ridgecrest
Rosamond
Lancaster
Nipomo
Santa Maria
Orcutt

LSA

Kern County
Resources
Small Culvert
Large Culvert
Bridge
Railroad

30-year Average Precipitation
0.22 - 0.48
0.479 - 0.73
0.74 - 1.04
1.05 - 1.40
1.41 - 1.81
1.82 - 2.29
2.30- 3.13 | mm per Day

9 0 9
Miles

SOURCE: ESRI (2018); CalAdapt (2024)

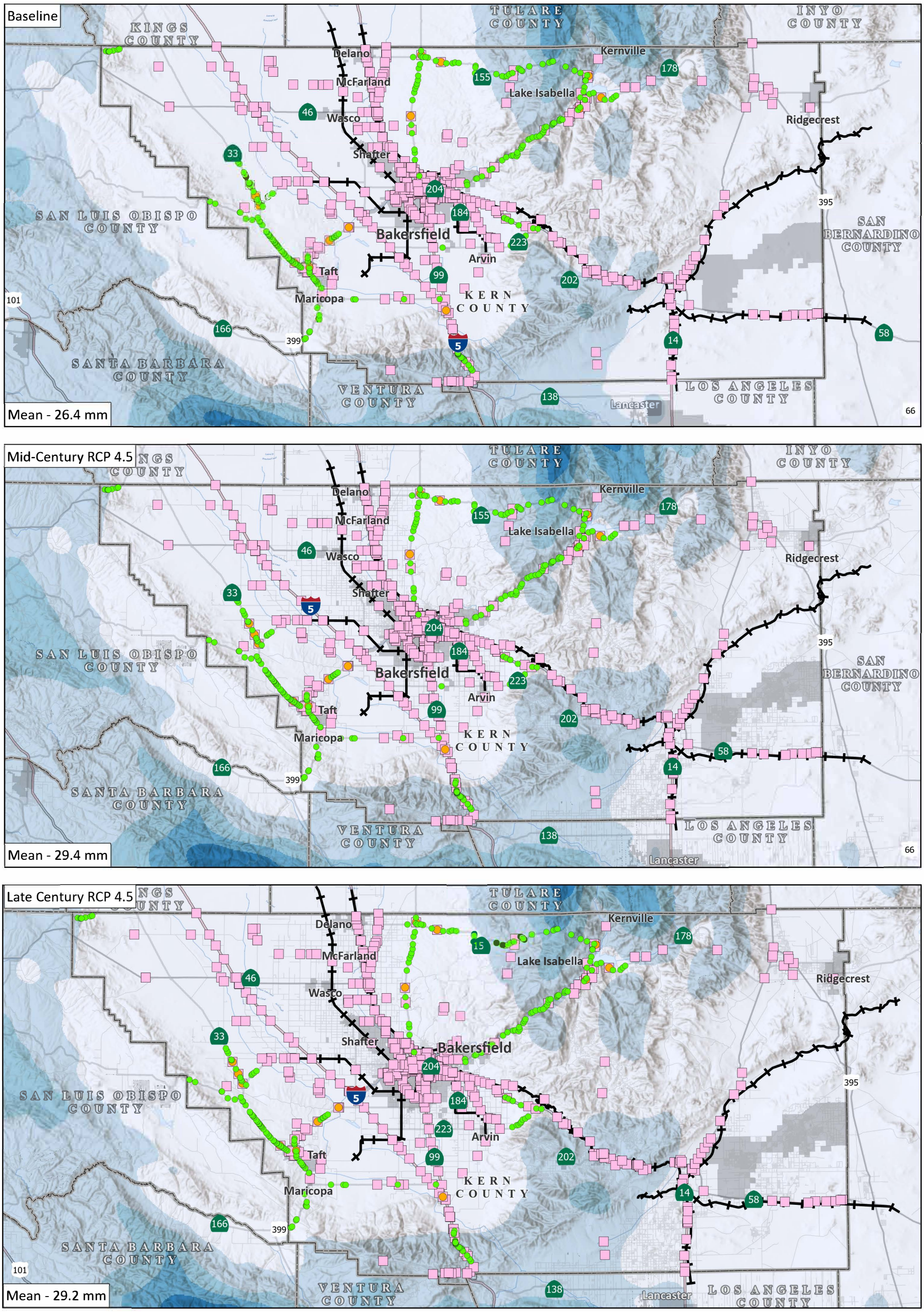
I:\20241618\GIS\MXD\Climate Vulnerability Analysis_AvgPrecip_RCP85.mxd (12/3/2024)

FIGURE 13

KARGO Community Protection/Prosperity Study

Average Precipitation

CMIP5 Climate Projections
RCP 8.5 Scenario
Downscaled to ~5 km Resolution



LSA

Monthly Maximum 1-Day Precipitation (mm)

- 10.9 - 37.1
- 37.11 - 63.4
- 63.41 - 89.6
- 89.61 - 116.0
- 116.01 - 142.2
- 142.21 - 168.4 mm

Resources

- Small Culvert
- Large Culvert
- Bridge
- Railroad

0 9 18
Miles

FIGURE 14

KARGO Community Protection/Prosperity Study

30-Year Annual Average Monthly Maximum 1-Day Precipitation (mm)

CMIP5 Climate Change Projections
RCP 4.5 Scenario
Downscaled to ~5 km Resolution

SOURCE: ESRI (2018); Cal-Adapt, UC Berkeley Geospatial Innovation Facility (2024)

I:\20241618\GIS\Pro\Kern County Risk and Vulnerability Analysis.aprx (12/3/2024)

Baseline

Mean - 26.4 mm

Mid-Century RCP 8.5

Mean - 29.6 mm

Late Century RCP 8.5

Mean - 32.1 mm

LSA

Monthly Maximum 1-Day Precipitation (mm)

- 10.9 - 37.1
- 37.11 - 63.4
- 63.41 - 89.6
- 89.61 - 116.0
- 116.01 - 142.2
- 142.21 - 168.4 mm

Resources

- Small Culvert
- Large Culvert
- Bridge
- Railroad

0 9 18
Miles

SOURCE: ESRI (2018); Cal-Adapt, UC Berkeley Geospatial Innovation Facility (2024)

I:\20241618\GIS\Pro\Kern County Risk and Vulnerability Analysis.aprx (12/3/2024)

FIGURE 15

KARGO Community Protection/Prosperity Study

30-Year Annual Average Monthly Maximum 1-Day Precipitation (mm)

CMIP5 Climate Change Projections

RCP 8.5 Scenario

Downscaled to ~5 km Resolution

Average 1-day maximum precipitation is projected to increase across Kern County under both emission scenarios. Under the RCP 4.5 scenario, extreme rain events are projected to peak around the middle of the century. These events are projected to continue, increasing throughout the century under the RCP 8.5 scenario.

The baseline mean maximum 1-day precipitation baseline for Kern County is 26.4 mm/day based on the historical average from 1950-2005. The RCP 4.5 scenario projections for mid-century is 29.4 mm/day and 29.2 mm/day for late century. Comparatively, RCP 8.5 scenarios are projected to increase to 29.6 mm/day in the mid-century and 32.1 mm/day in the late century. These scenarios suggest that increased daily precipitation may lead to vulnerability or increased risk of crop damage and soil erosion, with the likelihood of heavier rainy days and floods.[13]

Snowfall Projections

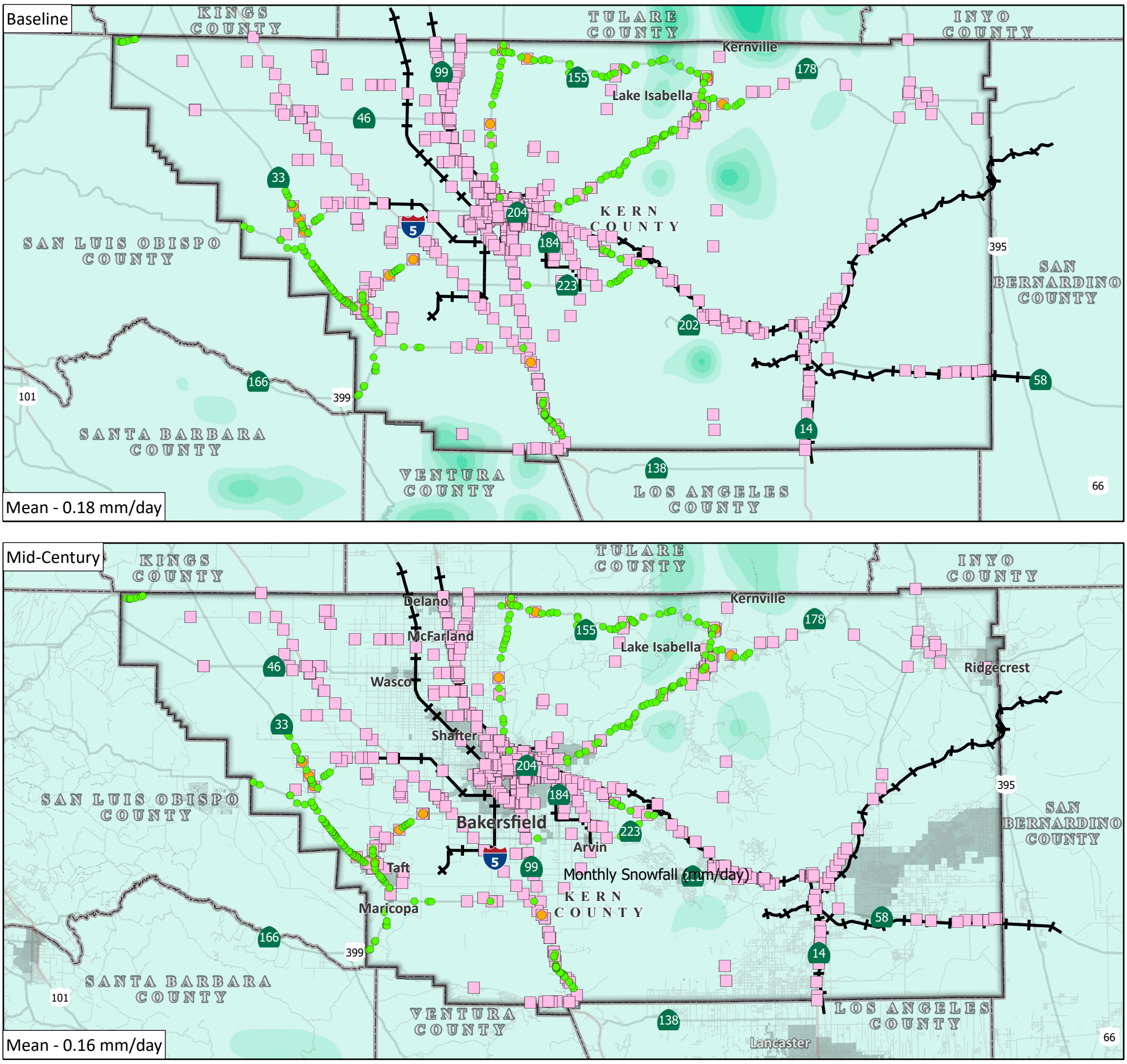
Figure 16 (RCP 4.5) and Figure 17 (RCP 8.5) illustrate the 30-year annual average snowfall projections for the baseline (1961-1990), mid-century, and late century timeframes and depict average annual snowfall measured in mm/day. Snowfall is rare for most of the region with the exception of some high-elevation areas. The climate models project an anticipated decrease in total snowfall with the exception of a few minor areas that are projected to have a minor increase in snowfall. Snowfall as a hazard can be considered in specific infrastructure project development for the few key corridors that have existing snowfall challenges as the storm potential for requiring active and robust management will continue to exist into the future.

Wildfire Frequency

Wildfire events are defined as unplanned fire burning in natural or wildland areas.[14] Figure 18 shows the wildfire annual frequency for Kern County, depicting FEMA's NRI wildfire dataset displaying the current expected number of wildfire events per year for the selected census tracts. The expected frequency value shows the probability or likelihood of a wildfire occurring in a census tract within a single year. The probability values range from 0 to 0.029 with the higher values showing where wildfires are more likely to occur in any given year. This reflects that the most at-risk areas have an almost 3 percent chance of experiencing a wildfire in any given year. Wildfires can cause road closures and distribute debris, impacting roadways or blocking culverts. They could cause property damages and threaten human life. Increased temperatures and changes to precipitation patterns would impact the likelihood of wildfires, their severity, and the duration of wildfire season.

13 United States Environmental Protection Agency (USEPA). 2024. Climate Change Indicators: Heavy Precipitation. Website: https://www.epa.gov/climate-indicators/climate-change-indicators-heavy-precipitation (accessed August 2024).

14 Federal Emergency Management Agency (FEMA). n.d.-c. National Risk Index, Wildfires. Website: hazards.fema.gov/nri/wildfire (accessed July 2024).



LSA

Monthly Snowfall (mm/day)
- 0.001 - 0.78
- 0.781 - 1.56
- 1.561 - 2.34
- 2.341 - 3.12
- 3.121 - 3.9
- 3.901 - 4.65 (mm/day)

Resources
- Small Culvert
- Large Culvert
- Bridge
- Railroad

9 0 9
Miles

SOURCE: ESRI (2018); CalAdapt (2024)

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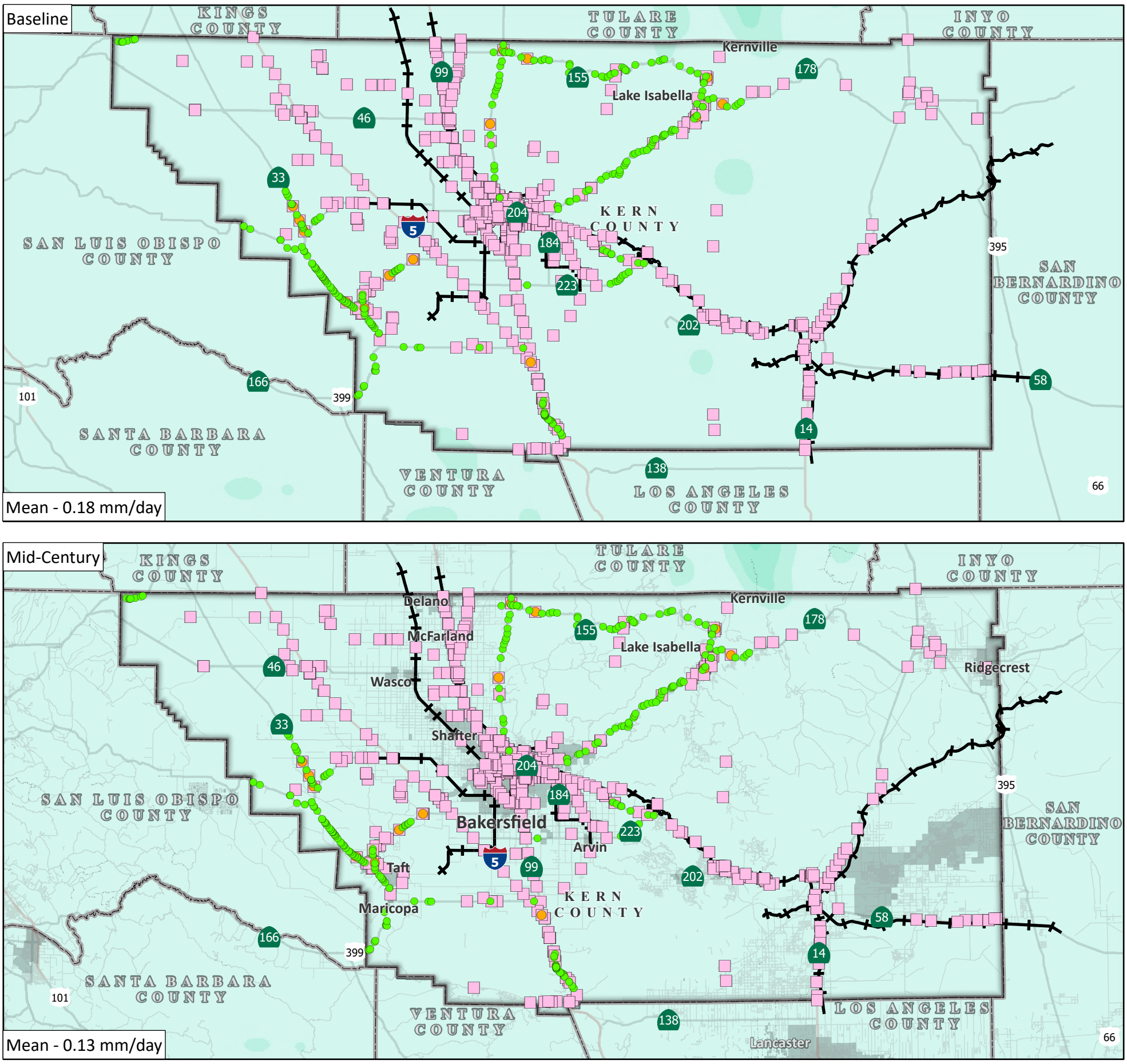
FIGURE 16

KARGO Community Protection/Prosperity Study

Monthly Snowfall

CanESM2 Climate Projections
RCP 4.5 Scenario
Downscaled to ~5 km Resolution



LSA

Monthly Snowfall (mm/day)

- 0.001 - 2.1
- 2.101 - 4.2
- 4.201 - 6.3
- 6.301 - 8.4
- 8.401 - 10.5
- 10.501 - 12.6
- 12.601 - 14.732 (mm/day)

Resources

- Small Culvert
- Large Culvert
- Bridge
- Railroad

N

9 0 9

Miles

SOURCE: ESRI (2018); CalAdapt (2024)

FIGURE 17

KARGO Community Protection/Prosperity Study

Monthly Snowfall

CanESM2 Climate Projections
RCP 8.5 Scenario
Downscaled to ~5 km Resolution

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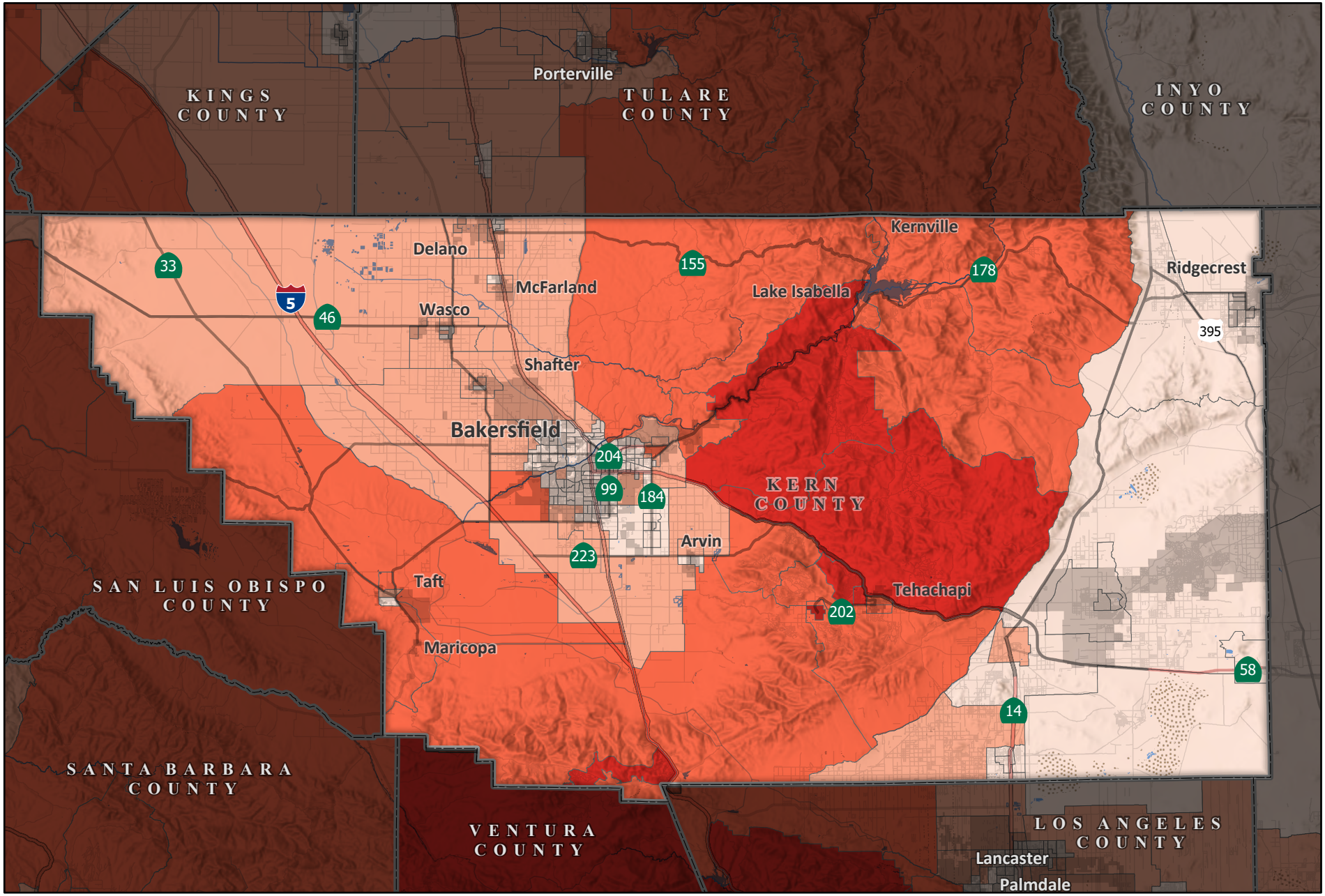

LSA

Wildfire - Annualized Frequency

- 0.000 – 0.002
- 0.003 – 0.006
- 0.007 – 0.014
- 0.015 – 0.029

FEMA's National Risk Index Annualized Frequency Wildfire dataset displays the expected number of wildfire events per year within a census tract. Wildfire events are defined as unplanned fire burning in natural or wildland areas.

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap, FEMA National Risk Index

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FIGURE 18

KARGO Community Protection/Prosperity Study

Wildfire Frequency

Historic Wildfire Data

Understanding historical fire activity provides the opportunity to understand the cause as well as preventative measure to prepare for future exposures. Figure 19 shows the historic wildfire perimeter data created and maintained by CAL FIRE, the United States Department of Agriculture Forest Service Region 5, the United States Department of the Interior Bureau of Land Management, and the National Park Service among other agencies. The fire perimeters by decade depict callouts that represent historic fires by year and acreage. Notable fires surrounding Kern County are included to display border vulnerabilities. As shown in Figure 19, many of the larger, more recent fires are outside or near Kern County boundaries. This may provide direct and indirect vulnerabilities because long term impacts of wildfires include the loss of vegetation, species, and native habitat.[15]

Wildfire Projections

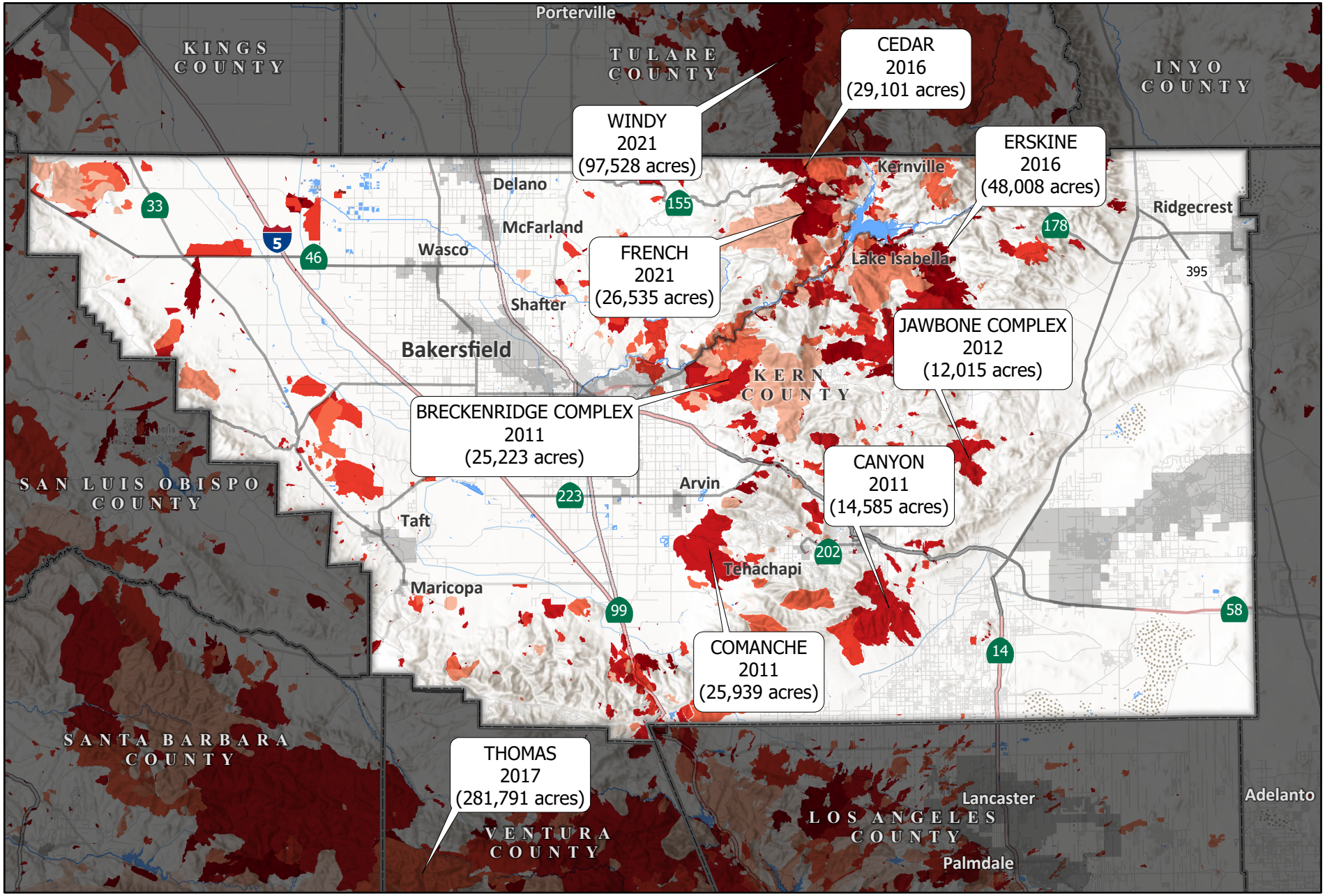
Wildfire simulators from California's Fourth Climate Change Assessment were used to simulate this data. Wildfire projections were derived from the University of California, Merced model, which combines LOCA downscaled global climate models with historical climate, vegetation, population density, and greater than 400 hectares fire perimeter data to estimate projected hectares burned under different emissions scenarios and population growth scenarios within combined federal and State protection responsibility areas. Wildfire projections are available for the four models selected by State agencies as priority models for research contributing to California's Fourth Climate Change Assessment, which are the HadGEM2-ES, CNRM-CM5, CanESM2, and MICROC5 models. For this wildfire risk assessment, projections were modeled using CanESM2 under the RCP 8.5 emission scenario.

Figure 20 (RCP 4.5) and Figure 21 (RCP 8.5) illustrate decadal wildfire probability, which is probability of one or more fire occurrences for a given location during a decade for Kern County. The wildfire probability accounts for temperature and precipitation changes and changes in wind patterns in relation to projected sensitivity and severity of impacts, estimating the risk of wildfires within Kern County.

Wind Projections

Change in wind speeds throughout the century was statistically insignificant based on available climate models. Importantly, however, wind will persist in areas where it is an existing challenge and can be considered in project development for the few key corridors that experience existing hazardous wind conditions. Figure 22 (RCP 4.5) and Figure 23 (RCP 8.5) illustrate annualized wind speeds in miles per hour.

[15] California Department of Fish and Wildlife (CDFW). n.d. Science: Wildfire Impacts. Website: wildlife.ca.gov/Science-Institute/Wildfire-Impacts (accessed July 2024).



LSA

Fire Perimeters by Decade

1950	1990
1960	2000
1970	2010
1980	2020

Fire perimeter data are created and maintained by CAL FIRE (including contract counties), USDA Forest Service Region 5, USDI Bureau of Land Management & National Park Service, and other agencies.

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap, CAL FIRE Wildfire Perimeters (April 2023)

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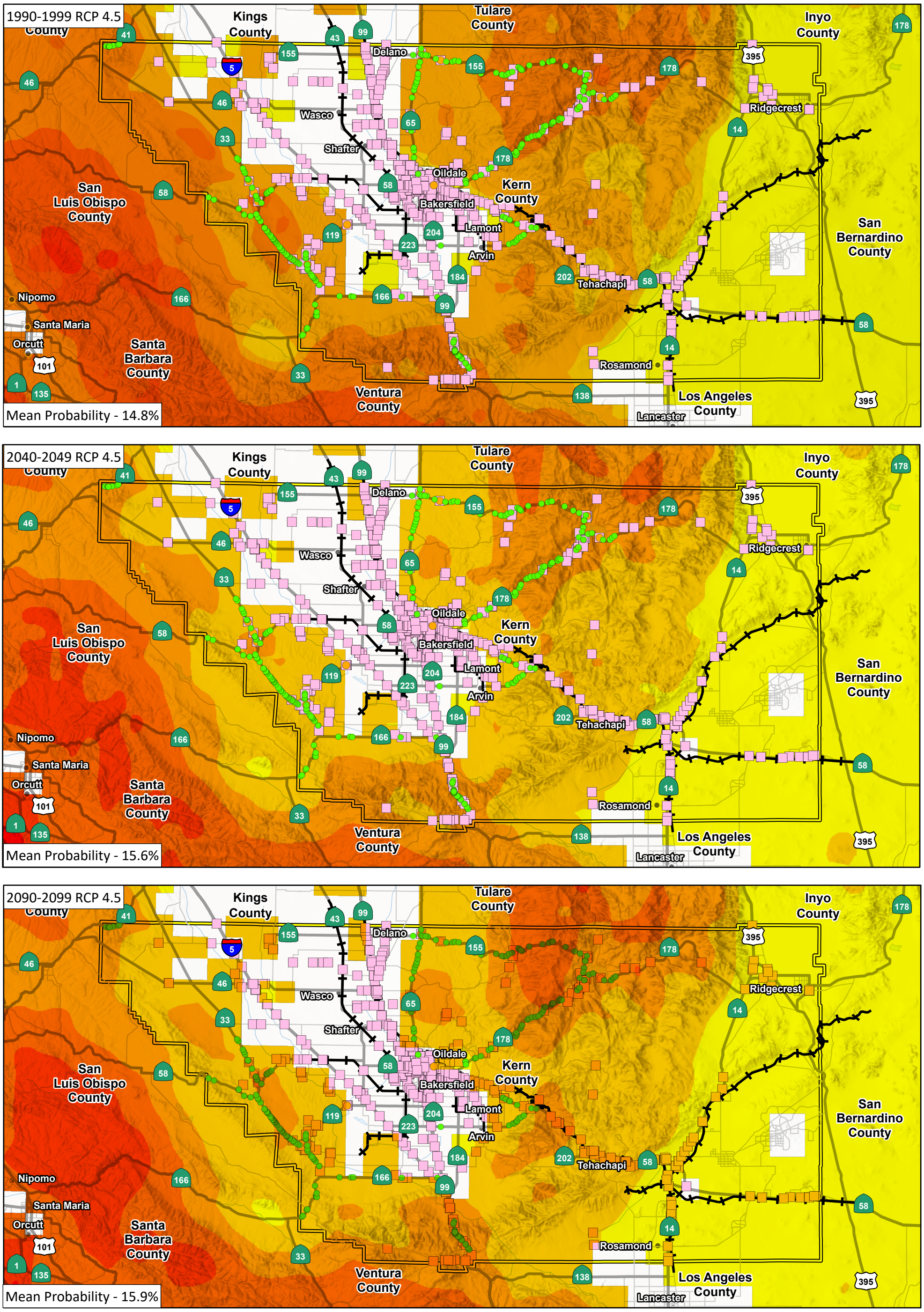
FIGURE 19

KARGO Community Protection/Prosperity Study

Historical Fire Activity



LSA

Resources
- Small Culvert
- Large Culvert
- Bridge
- Railroad

Probability of 1 or More Wildfires
- 0-9%
- 9-18%
- 18.1-27%
- 27.1-36%
- 36.1-45%
- 45.1-51%

0 9 18
Miles

SOURCE: ESRI (2023); CalAdapt (2024)

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FIGURE 20

KARGO Community Protection/Prosperity Study

Wildfires

CanESM2 (Average)

RCP 4.5 Scenario

Decadal Probability

1990-1999 RCP 8.5

Mean Probability - 11.7%

2040-2049 RCP 8.5

Mean Probability - 16.8%

2090-2099 RCP 8.5

Mean Probability - 18.7%

Kings County
Tulare County
Inyo County
San Luis Obispo County
Kern County
San Bernardino County
Santa Barbara County
Ventura County
Los Angeles County
Delano
Wasco
Shafter
Oildale
Bakersfield
Lamont
Arvin
Tehachapi
Ridgecrest
Rosamond
Lancaster
Nipomo
Santa Maria
Orcutt

LSA

Kern County

Resources
- Small Culvert
- Large Culvert
- Bridge
- Railroad

Probability of 1 or More Wildfires
- 0-11%
- 11.1-21%
- 21.1-31%
- 31.1-41%
- 41.1-51%
- 51.1-61%
- 61.1-71%

0 9 18
Miles

SOURCE: ESRI (2023); CalAdapt (2024)

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FIGURE 21

KARGO Community Protection/Prosperity Study

Wildfires

CanESM2 (Average)
RCP 8.5 Scenario
Decadal Probability

Baseline

Mean - 8.28 mph

Mid-Century

Mean - 8.22 mph

Late Century

Mean - 8.54 mph

Small Culvert	Wind Speed (miles per hour)	8.51 - 10.00
Large Culvert	<= 6.50 (mph)	10.01 - 12.00
Bridge	6.51 - 7.50	12.01 - 15.00
Railroad	7.51 - 8.50	15.01+

LSA

9 0 9
Miles

SOURCE: ESRI (2024); Argonne National Laboratory, FEMA (2024)

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FIGURE 22

KARGO Community Protection/Prosperity Study

Annualized Wind Speeds

CMIP5 Climate Projections
RCP 4.5 Scenario
Downscaled to 12 km Resolution

Baseline

Mean - 8.28 mph

Mid-Century

Mean - 8.26 mph

Late Century

Mean - 8.18 mph

LSA

Small Culvert	Wind Speed (miles per hour)	8.51 - 10.00
Large Culvert	<= 6.50 (mph)	10.01 - 12.00
Bridge	6.51 - 7.50	12.01 - 15.00
Railroad	7.51 - 8.50	15.01+

9 0 9
Miles

SOURCE: ESRI (2024); Argonne National Laboratory, FEMA (2024)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/6/2024)

FIGURE 23

KARGO Community Protection/Prosperity Study

Annualized Wind Speeds

CMIP5 Climate Projections
RCP 8.5 Scenario
Downscaled to 12 km Resolution

Riverine Flooding Frequency

A riverine flood event is when water volume exceeds the capacity of a stream or river, overflowing banks and spilling into adjacent low-lying dry land. FEMA's NRI provides current annualized riverine flooding frequency data as illustrated in Figure 24. This data displays the expected number of event-days per year that a census tract will experience riverine flooding events. Many areas within Kern County are expected to experience five or more flooding event-days per year.



Flooding in Ridgecrest resulting in additional culvert construction. (Photo credit: Ridgecrest Daily Independent 2024).

Landslide Frequency

A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. FEMA's NRI provides current annualized landslide frequency data as illustrated in Figure 25. This data displays the expected number of landslide events per year in a given census tract.



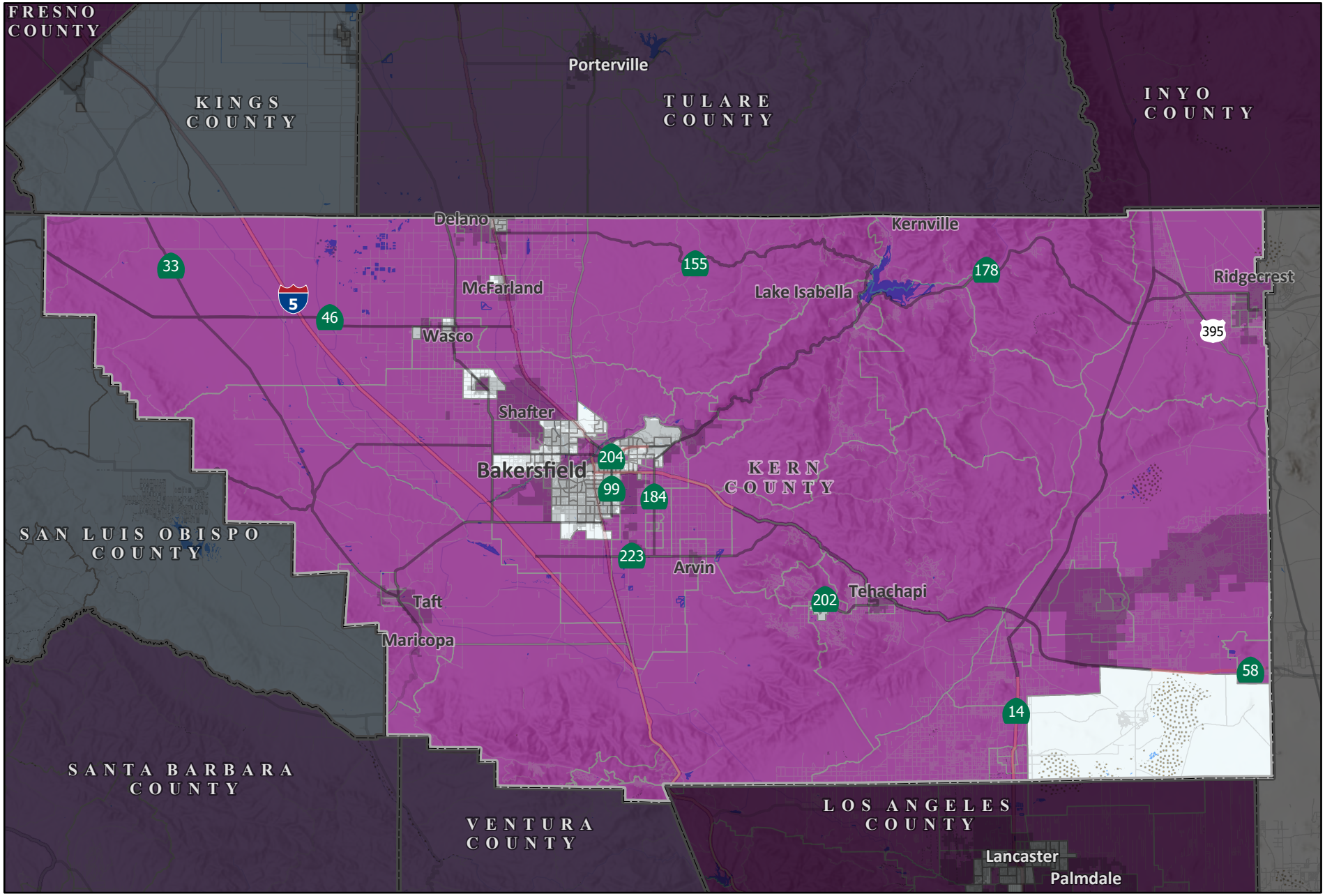
Storm causes rock and mud debris on SH 178. (Photo credit: Bakersfield Now 2017).

Additional Considerations: Earthquake Risk

While earthquakes are not a climate event, increased resiliency to climate events can also make communities more resilient to earthquakes. Conversely, climate stressors can stress the transportation network in a way that makes assets more vulnerable to damage and other consequences of earthquakes.

According to FEMA, an earthquake is defined as the shaking of the earth's surface by energy waves emitted by slowly moving tectonic plates overcoming friction with one another underneath the earth's surface. The NRI represents a community's relative risk for earthquakes compared to the rest of the United States.[16]

[16] Federal Emergency Management Agency (FEMA). n.d.-d. National Risk Index, Earthquake. Website: hazards.fema.gov/nri/earthquake (accessed August 2024).



LSA

Riverine Flooding - Annualized Frequency

- 0
- 0 - 0.96
- 0.96 - 2.71
- 2.71 - 5.50 | Event-Days per Year

FEMA's National Risk Index Annualized Frequency Riverine Flooding dataset displays the expected number of days per year that a census tract will experience riverine flooding events, which occur when water volume exceeds the capacity of a stream or river, overflowing its banks and spilling into adjacent low-lying dry land.

0 7.5 15
Miles

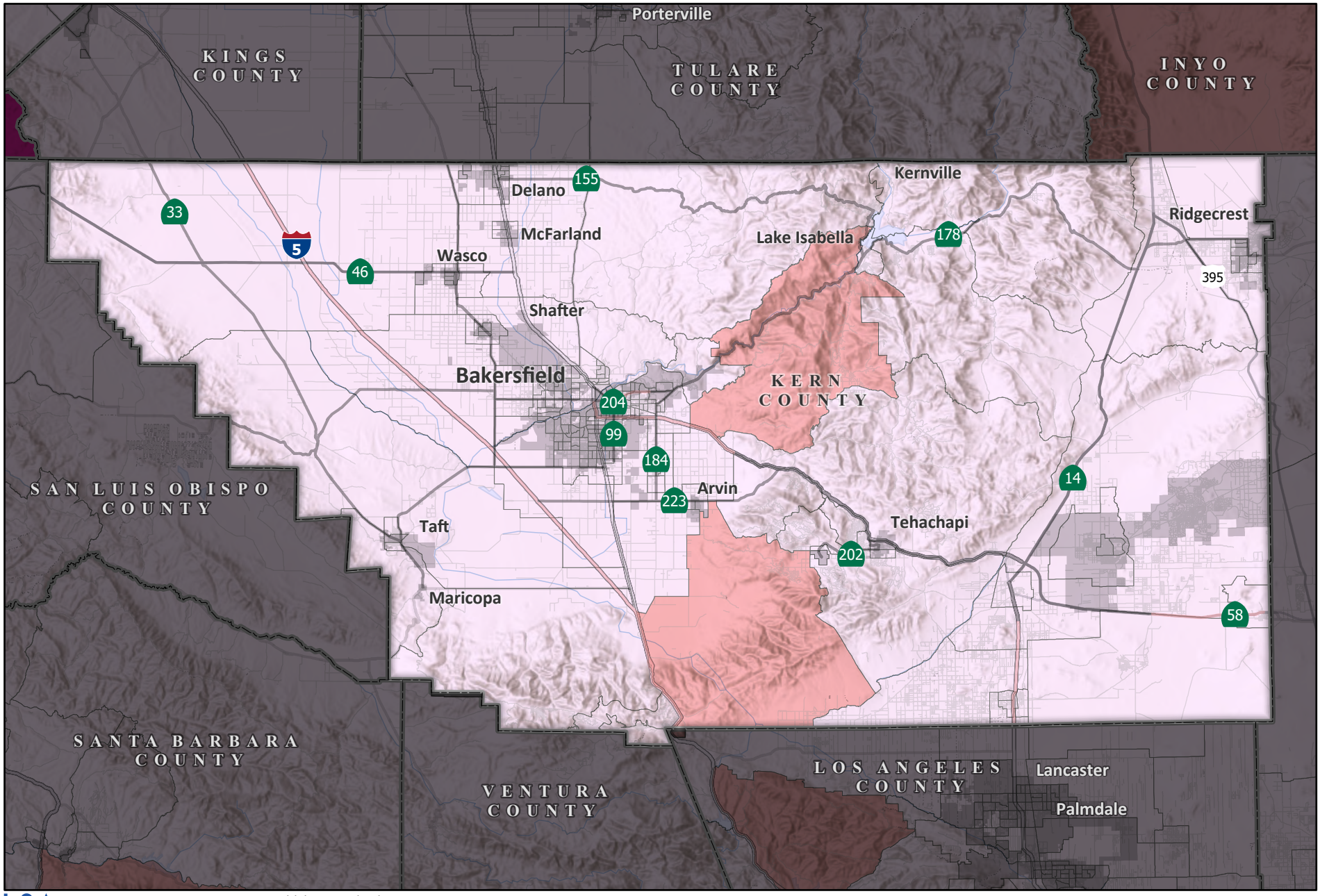
SOURCE: Esri Terrain Basemap, FEMA National Risk Index (March 2023)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/13/2024)

FIGURE 24

KARGO Community Protection/Prosperity Study

Riverine Flooding Frequency



LSA

Landslide - Annualized Frequency

- 0.01 - 0.21
- 0.22 - 0.41
- 0.61 - 0.80 | Event-Days per Year

FEMA's National Risk Index Annualized Frequency Landslide dataset displays the expected number of landslide events per year, defined as the movement of a mass of rock, debris, or earth down a slope.

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap, FEMA National Risk Index (March 2023)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/13/2024)

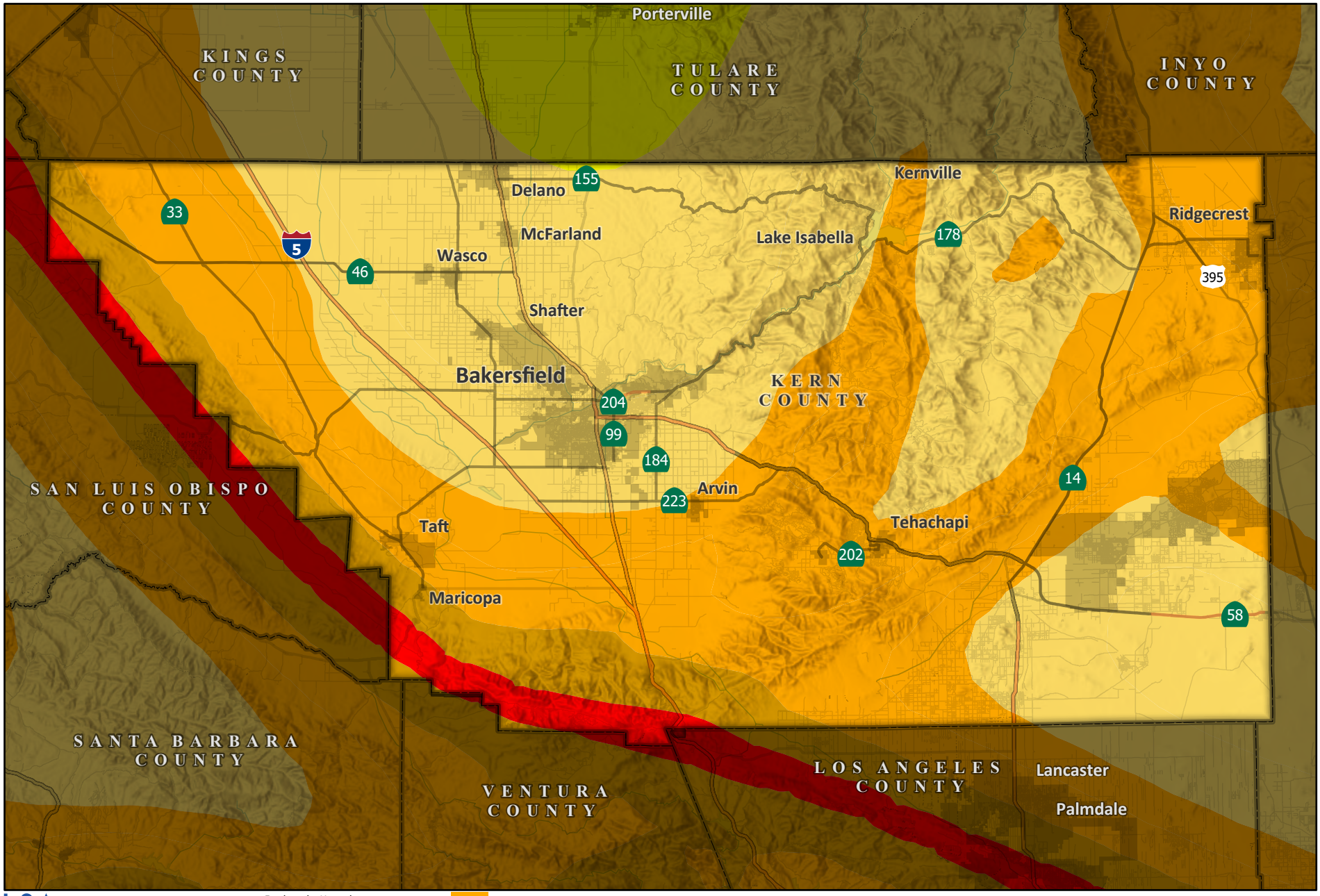
FIGURE 25

KARGO Community Protection/Prosperity Study

Landslide Frequency

Earthquake, or seismic-hazard, data analysis was developed using the 2014 update of the United States National Seismic Hazard Maps. Probabilistic seismic-hazard maps were developed that portray peak horizontal acceleration and horizontal spectral response acceleration for 0.2- and 1.0-second periods with probabilities of exceedance of 10 percent in 50 years and 2 percent in 50 years, respectively. The particular dataset shown in Figure 26 is for peak horizontal acceleration with a 2 percent probability of exceedance in 50 years. All United States National Seismic Hazard maps were prepared by combining the hazard derived from spatially smoothed historic seismicity with the hazard from fault-specific sources. The acceleration values contoured are the random horizontal component.

The reference site condition is firm rock, defined as having an average shear-wave velocity of 760 meters per second in the top 30 meters, corresponding to the boundary between National Earthquake Hazards Reduction program site classes B and C. This dataset represents the results of calculations of hazard curves for a grid of points with a spacing of 0.05 degrees in latitude and longitude in Kern County. The grid of points was contoured to produce the final representation of the seismic hazard.



LSA

Earthquake Hazard

Peak Horizontal Acceleration (%g)

- 15 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 120

USGS's Earthquake Hazard dataset displays the peak horizontal acceleration with 2% probablility of exceedance in 50 years for conterminus U.S. This data is intended to summarize the available quantitative information about seismic ground motion hazard for the conterminous United States from geologic and geophysical sources.

0 7.5 15

Miles

SOURCE: Esri Terrain Basemap, USGS (2024)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/13/2024)

FIGURE 26

KARGO Community Protection/Prosperity Study

Peak Horizontal Acceleration

VULNERABILITY AND RESILIENCY ASSESSMENT

This section of the report provides the methodology of the vulnerability and resiliency assessment for the transportation assets, and then includes results and discussion by asset type for each of the five asset types, including local roads and highways, railways, bridges, and large and small culverts.

METHODOLOGY

The vulnerability assessment considers an asset's exposure to climatic hazards and the consequences of a climate event based on transportation network factors (e.g., network demand), measured in annual average daily traffic or existing asset conditions (e.g., culvert condition rating). Table C shows the assets included in the assessment, along with the data source and access date.

Table C: Transportation Asset Data Sources

Asset Type	Data Source	Access Date
Roads	Kern COG Travel Demand Model	October 24, 2024
Railways	Caltrans Railroads	May 14, 2024
Bridges	National Bridge Inventory, Bridges USDOT	September 5, 2024
Large Culverts	Caltrans, District 6 data included the entirety of the Kern COG boundary	June 7, 2024
Small Culverts	Caltrans, District 6 data included the entirety of the Kern COG boundary	June 7, 2024

Source: Compiled by LSA (December 2024).
Caltrans = California Department of Transportation
Kern COG = Kern Council of Governments
USDOT = United States Department of Transportation

Table D shows the comprehensive list of exposures and consequences considered in the assessment and how each was weighted for each hazard-asset combination. The exposure indicators vary based on the specific climate hazard being assessed and include climate projection data, past hazard occurrence data, and annualized frequency data. The consequences also vary based on the climate hazard and asset type, determined both by relevance and data availability.

The results tables in this report shows the top priority transportation assets by asset type, based on the cross-hazard scores. The methodology to develop the cross-hazard prioritization score was modeled after the Caltrans District 6 Adaptation Priority Report.[17] The first step in the process was converting both the exposure and consequence raw metrics to a scaling system so they could be combined. Due to the variety in units of measurement and values assigned to each metric, there is a need to put each metric on a common scale to integrate them into one scoring system. A scale ranging from 0 to 100 was used with 0 indicating a value for a metric that would result in the lowest possible priority level and 100 indicating a value for a metric that would result in the highest possible priority level. The county-wide minimum and maximum values for each metric were used to set that metric's 0 and 100 values, and all the other values were scaled accordingly based on where the score fell relative to the minimum and maximum, creating a percentile-style common scale.

[17] California Department of Transportation (Caltrans). 2020. Adaptation Priority Report. Website: acrobat.adobe.com/id/urn:aaid:sc:VA6C2:95f52b82-cdaf-48f5-9403-c78ff84adddb (accessed July 3, 2024).

Table D: Hazard-Asset Exposure and Consequence Weighting Matrix

Metrics	Percentage Weights by Asset Type																													
	Earthquake					Landslide					Wildfire					Temperature			Riverine Flooding					Snowfall [1]		Wind [1]	
	Roads	Railroads	Bridges	Large Culverts	Small Culverts	Roads	Railroads	Bridges	Large Culverts	Small Culverts	Roads	Railroads	Bridges	Large Culverts	Small Culverts	Roads	Bridges	Railroads	Roads	Railroads	Bridges	Large Culverts	Small Culverts	Roads	Railroads	Roads	Railroads
Exposure																														
Past natural hazard impacts	-	-	-	-	-	-	-	-	-	-	25	30	25	20	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum Earthquake risk (ACC VAL)	70	85	60	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Landslide - Annualized Frequency	-	-	-	-	-	70	85	70	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wildfire probability	-	-	-	-	-	-	-	-	-	-	45	55	45	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initial timeframe for elevated level of concern for wildfire	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Highest projected wildfire level of concern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Extreme Heat Days - Increase from Baseline (1961-1990) to Late Century (2070-2099)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	65	70	-	-	-	-	-	-	-	-	-	-	-	-
Riverine Flooding - Annualized Frequency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	85	65	65	65	-	-	-	-	-	-	-
Change in snowfall [1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	85	-	-	-	-	-
Wind - Increase in Annual Average mph [2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	90	-	-	-
Consequences																														
Bridge substructure condition rating	-	-	15	-	-	-	-	5	-	-	-	-	5	-	-	-	10	-	-	-	1	-	-	-	-	-	-	-	-	-
Channel and channel protection condition rating	-	-	-	2.5	-	-	-	-	2.5	-	-	-	-	2.5	-	-	-	-	-	-	2.5	2.5	-	-	-	-	-	-	-	-
Culvert condition rating	-	-	-	2.5	5	-	-	-	2.5	5	-	-	-	2.5	-	-	-	-	-	-	-	2.5	5	-	-	-	-	-	-	-
Culvert material	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scour rating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	-	-	-	-	-	-	-
Average annual daily traffic (AADT)	30	-	8	10	10	30	-	8	10	10	30	-	8	10	7	40	8	-	30	-	8	10	10	30	-	40	-	-	-	-
Average annual daily truck traffic (AADTT) [3]	-	-	-	5	5	-	-	-	5	5	-	-	-	5	3	-	-	-	-	-	-	5	5	-	-		-	-	-	-
Incremental travel distance to detour around the asset	-	-	17	15	15	-	-	17	15	15	-	-	17	15	15	-	17	-	-	-	17	15	15	-	-	-	-	-	-	-
Railroad Class	-	10	-	-	-	-	10	-	-	-	-	10	-	-	-	-	-	15	-	10	-	-	-	-	10	-	10	-	-	-
Maximum Passenger or Freight Train Speed	-	5	-	-	-	-	5	-	-	-	-	5	-	-	-	-	-	15	-	5	-	-	-	-	5	-	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Compiled by LSA (December 2024).

[1] Change in snowfall – a decrease in snowfall is generally projected everywhere and thus snowfall changes from climate change in this region were deemed to be insignificant. Snowfall as a hazard can be considered in project development for the few key corridors that have existing snowfall challenges.

[2] Change in wind from climate change as an isolated hazard was deemed to be insignificant. Wind can amplify other climate hazards and will persist in areas where it is an existing challenge. Wind as a hazard can be considered in project development for the few key corridors that experience existing hazardous wind conditions.

[3] AADTT was only available for culverts.

After the metrics were scaled, weights were applied as the significance of exposures and consequences vary when determining priorities. For consistency with the existing work in the region, the weights were determined based on the foundation set in the Caltrans District 6 Adaptation Priority Report. The weights are percentage based and add to 100 percent for all the metrics within a given asset-hazard combination. In some instances, metrics were removed or added due to data availability or geographic relevance (i.e., sea level rise was not considered for Kern County). In those instances, weights needed to be adjusted in comparison to the Caltrans weighting and the methodology maintained best practice by giving higher weight to future exposure metrics compared to the consequence indicators. For the consequence metrics, more weight was given to the average annual daily traffic (AADT) and detour distance than to the condition rating related variables (bridge substructure condition rating, channel and channel protection condition rating, culvert condition rating, and scour rating). This is because the relationship between asset condition and asset failure is not always clear, particularly for culverts. Additionally, there are programs in place to address assets based on condition, so overemphasizing those factors would be duplicative and would not provide the climate adaptation lens intended in this assessment. Finally, the AADT and detour distance consequences are most directly related to mobility and goods movement.

After the weights were applied, prioritization scores were calculated for each individual hazard. This was done by first summing the products of the weights and scaled values for all the metrics for each specific asset hazard combination. These values were then re-scaled to be combined appropriately to generate a cross-hazard score. Climate hazards included in the vulnerability assessment include extreme heat, wildfire, flooding, and landslide. Additional hazards for consideration identified through the public process include wind, snowfall, and earthquake. Earthquake risk was included in the assessment. Wind and snowfall, however, were evaluated but were not included as a standard metric in the analysis due to less than significant findings for change throughout the century. Areas already experiencing impacts from snow and wind should continue to account for those hazards into the future.

Finally, to create the cross-hazard score each applicable hazard specific score was weighed equally and then rescaled. The final step was to assign a prioritization index number, or ranking, to each asset based on score to show a high level picture. While this process was highly technical, it is important for decision-makers not to get too consumed by small differences in scoring. Cross-hazard scores provide insight to overall vulnerability and can be used to indicate where design adaptations are needed or to identify locations where network redundancy is needed to build resiliency in the event of failures if the exposure cannot be appropriately mitigated.

In addition to the tables of top assets provided in this report, the cross-hazard scores for all assets evaluated are provided in an Excel workbook that allows sorting and assessment of assets based on specific hazard scores. The workbook includes the full data set used for generating the figures and shows assets symbolized by cross-hazard climate risk. The Excel workbook is available by contacting Kern COG. Appendix A includes the top 500 road segments and all railway, bridge, large culverts, and small culvert assets sorted by cross-hazard scores.

ASSESSMENT

The following vulnerability and resiliency assessment discussion is organized by asset type. For each asset type, there is a discussion of climate considerations and impacts, a table showing the weights for various hazard exposures and consequences, and a results table and figure.

Roads

Roads assessed in this process included local roads, collectors, minor arterials, major arterials, and highways. In total there were over 9,600 miles of roadway broken into approximately 36,500 segments. Key risks to the roadway system include earthquakes, landslides, wildfire, extreme temperatures, and flooding. Each of these hazards threaten damage to the roadway infrastructure resulting in significant delays, closures, and repair and maintenance costs. The AADT shows network demand and is used to assess the scale of impact. Table E shows the weights for exposures and consequences used to generate each hazard score for roads.



Centennial Corridor in Bakersfield. (Photo credit: Bakersfield Now 2023).

Table E: Roads Exposures and Consequences Hazard Weighting

Metrics	Road Hazards and Weights				
	Earthquake	Landslide	Wildfire	Temperature	Riverine Flooding
Exposure					
Historic Wildfire	–	–	25%	–	–
Earthquake Risk (Horizontal Acceleration)	70%	–	–	–	–
Annualized Landslide Frequency	–	70%	–	–	–
Decadal Wildfire Probability	–	–	45%	–	–
Change in Extreme Heat Days	–	–	–	60%	–
Annualized Riverine Flooding Frequency	–	–	–	–	70%
Consequences					
Average Annual Daily Traffic (AADT)	30%	30%	30%	40%	30%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Compiled by LSA (December 2024).

Extreme temperatures, such as higher extreme temperatures or freezing temperatures, may result in degradation of asphalt binder, hardening of binder, thermal expansion or shrinkage, concrete blowups, buckling, and rutting. Other temperature related affects might include construction schedule delays and during time of drought asphalt may experience subgrade shrinkage.[18]

Extreme rainfall or flooding can decrease roadway surface friction, increase surface damage, reduce visibility, cause subdrainage overflow, reduce embankment stability, and compromise structural integrity. Moreover, higher average annual precipitation can cause moisture warping, increased levels of saturation, and would likely impact construction schedules.[19]

Other climate hazards, such as wildfire, earthquakes, or landslides, could exacerbate temperature and precipitation consequences on roadways. These hazards may also cause roadway blockages, inaccessibility, or prolonged closure, which would have health and equity, quality of life, and economic impacts.

Table F shows the top priority roadway assets with highest climate risks based on the cross-hazard climate risk scores. Roadway segments along Interstate 5 and CA-155 are the top priority based on this methodology because of the high levels of vehicle traffic on these roadways. Short, adjacent roadway segments have been consolidated to condense the table. The appendix and workbook contain the shorter segments and also include beginning and ending latitude and longitude coordinates for all segments.

When evaluating roadway assets based on specific-hazard scores, the top priority assets change. This nuance can inform the specific adaptation strategies and design considerations for projects containing at-risk assets. Tables G through K show the top roadway assets based on the hazard-specific scores for each of the five hazards evaluated: earthquakes, landslides, wildfire, extreme temperatures, and flooding. Short, adjacent roadway segments have been consolidated to condense these tables. Corridors of the I-5 over Tejon Pass are highlighted as being a top priority due to earthquake probability in the future, while sections of Comanche Drive and State Route 155 (SR-155) are shown to be priorities in regard to landslide risk. A local roadway, Evans Road, and portions of State Route 178 (SR-178) are prioritized when temperature risk is isolated as the evaluating criteria, and sections of SR-99 are shown to have the highest priority related to flooding risk. These tables include the hazard-specific risk scores for each asset. The appendix and workbook contain the scores for each asset for all hazards, and the cross-hazard scores for all assets. This provides the broader picture for the risk exposure for each asset.

18 Dylla, Heather, and Rob Hyman. 2018. “Boosting Pavement Resilience.” *Public Roads*. Vol. 82 No. 3. USDOT FHWA. Website: https://highways.dot.gov/public-roads/autumn-2018/boosting-pavement-resilience (accessed September 2024).

19 Ibid.

Table F: Top Priority Roads by Cross-Hazard Risk

Route	Nearest Postmile	Nearest Intersection/ Exit	Earthquake Relative Risk (%)	Landslide Relative Risk (%)	Wildfire Relative Risk (%)	Temperature Relative Risk (%)	Riverine Flooding Relative Risk (%)	Cross-Hazard Prioritization Score (%)	Cross-Hazard Climate Risk Index
I-5	1.4	Meadow Rd	83.0	64.9	50.5	45.3	83.0	**100.0**	**1**
I-5	1.2	Meadow Rd	83.0	64.9	50.3	45.2	83.0	**99.9**	**1**
I-5	1.0	Meadow Rd	83.0	64.9	50.2	45.1	83.0	**99.8**	**1**
I-5	0.7	Tejon Pass Rest Area	83.0	64.9	50.0	45.0	83.0	**99.7**	**1**
I-5	0.6	Tejon Pass Rest Area	83.0	64.9	49.9	45.0	83.0	**99.6**	**1**
I-5	R0.4	Tejon Pass Rest Area	83.0	64.9	49.8	44.9	83.0	**99.6**	**1**
I-5	R0.3	Frazier Mountain Park Rd	83.0	64.9	49.6	44.8	83.0	**99.5**	**1**
I-5	R88.3	Frazier Mountain Park Rd	82.1	64.0	48.4	43.5	82.1	**97.5**	**1**
I-5	R0.1	Frazier Mountain Park Rd	81.4	63.4	48.0	42.7	81.4	**96.3**	**1**
I-5	R88.3	Frazier Mountain Park Rd	81.4	63.4	47.8	42.6	81.4	**96.2**	**1**
I-5	10.1R	Grapevine Rd	59.9	65.2	64.1	41.2	83.2	**95.1**	**1**
I-5	9.2R	Grapevine Rd	59.9	65.2	60.8	41.4	83.2	**94.0**	**1**
I-5	7.5R	Grapevine Rd	59.9	65.2	56.9	41.8	83.2	**92.7**	**1**
I-5	6.7L	Lebec Rd	60.0	65.3	53.9	42.8	83.3	**91.9**	**1**
I-5	14.6	S Wheeler Ridge Rd	47.4	64.4	72.2	38.6	82.4	**91.9**	**1**
I-5	6.7R	Lebec Rd	59.9	65.2	53.8	42.7	83.2	**91.8**	**1**
I-5	7.1R	Grapevine Rd	59.9	65.2	53.8	42.7	83.2	**91.8**	**1**
I-5	6.8R	Lebec Rd	59.9	65.2	53.8	42.7	83.2	**91.8**	**1**
I-5	11.2	Grapevine Rd	47.6	64.5	67.3	40.1	82.6	**90.8**	**1**
I-5	2.0	Beartrap Rd	83.0	64.9	25.6	45.3	83.0	**90.7**	**1**
I-5	2.3	Beartrap Rd	83.0	64.9	25.6	45.1	83.0	**90.6**	**1**
I-5	1.4	Lebec Rd	83.3	29.2	50.8	45.7	83.3	**87.2**	**1**
I-5	1.3	Tejon Pass Safety Rest Area	83.3	29.2	50.7	45.7	83.3	**87.1**	**1**
I-5	1.2	Tejon Pass Safety Rest Area	83.3	29.2	50.6	45.6	83.3	**87.0**	**1**
I-5	0.9	Tejon Pass Safety Rest Area	83.3	29.2	50.4	45.5	83.3	**86.9**	**1**
I-5	0.8	Tejon Pass Safety Rest Area	83.3	29.2	50.3	45.4	83.3	**86.8**	**1**
I-5	R0.3	Frazier Mountain Park Rd	83.3	29.2	49.9	45.2	83.3	**86.7**	**1**
I-5	1.5	Meadow Rd	83.0	28.9	50.5	45.3	83.0	**86.5**	**1**
I-5	10.3R	Grapevine Rd	59.9	65.2	40.7	41.1	83.2	**86.4**	**1**
I-5	9.8L	Grapevine Rd	60.0	65.3	39.1	41.3	83.3	**85.9**	**1**
I-5	9.8R	Grapevine Rd	59.9	65.2	39.1	41.2	83.2	**85.8**	**1**
I-5	10.6	Grapevine Rd	59.2	64.5	41.1	40.2	82.6	**85.4**	**1**
I-5	10.5	Grapevine Rd	59.2	64.5	40.6	40.2	82.6	**85.2**	**1**
I-5	9.5R	Grapevine Rd	59.9	65.2	35.8	41.4	83.2	**84.6**	**1**
I-5	R0.2	Frazier Mountain Park Rd	82.1	28.0	48.7	43.6	82.1	**84.2**	**1**
I-5	8.0R	Grapevine Rd	59.9	65.2	31.9	41.8%	83.2	**83.3**	**1**

Table F: Top Priority Roads by Cross-Hazard Risk

Route	Nearest Postmile	Nearest Intersection/ Exit	Earthquake Relative Risk (%)	Landslide Relative Risk (%)	Wildfire Relative Risk (%)	Temperature Relative Risk (%)	Riverine Flooding Relative Risk (%)	Cross-Hazard Prioritization Score (%)	Cross-Hazard Climate Risk Index
I-5	13.1	S Wheeler Ridge Rd	47.6	64.5	47.2	39.4	82.6	**83.0**	**1**
I-5	12.9	S Wheeler Ridge Rd	47.6	64.6	46.0	39.8	82.6	**82.9**	**1**
I-5	13.8	S Wheeler Ridge Rd	47.5	64.4	47.1	38.9	82.5	**82.7**	**1**
I-5	11.9	Grapevine Rd	47.6	64.5	46.0	39.7	82.6	**82.7**	**1**
I-5	12.6	S Wheeler Ridge Rd	47.6	64.5	46.0	39.7	82.6	**82.7**	**1**
I-5	14.3	S Wheeler Ridge Rd	47.5	64.4	47.3	38.6	82.5	**82.7**	**1**
I-5	6.5L	Lebec Rd	60.0	65.3	28.9	42.8	83.3	**82.6**	**1**
I-5	14.2	S Wheeler Ridge Rd	47.4	64.4	47.2	38.6	82.4	**82.6**	**1**
I-5	14.8	S Wheeler Ridge Rd	47.4	64.4	47.3	38.3	82.4	**82.5**	**1**
I-5	5.1	Lebec Rd	59.9	65.2	28.8	42.7	83.2	**82.5**	**1**
I-5	11.5	Grapevine Rd	47.6	64.5	44.4	40.0	82.6	**82.2**	**1**
SR-155	66.7	E Sawmill Rd	25.2	71.9	49.8	60.1	71.9	**82.2**	**1**
SR-155	66.8	E Sawmill Rd	25.2	71.9	49.9	60.0	71.9	**82.1**	**1**

Source: Compiled by LSA (December 2024).
E = East
I-5 = Interstate 5
Rd = Road
S = South
SR-155 = State Route 155

Table G: Top Priority Roads by Earthquake Risk

Route	Nearest Postmile	Nearest Intersection/Exit	Earthquake Relative Risk (%)
I-5	1.4	Lebec Rd	83.3
I-5	0.9	Tejon Pass Safety Rest Area	83.3
I-5	0.6	Tejon Pass Safety Rest Area	83.3
I-5	0.6	Tejon Pass Safety Rest Area	83.3
I-5	R0.3	Frazier Mountain Park Rd	83.3
I-5	1.9	Beartrap Rd	83.3
I-5	1.7	Meadow Rd	83.3
I-5	2.2	Beartrap Rd	83.3
I-5	R0.4	Frazier Mountain Park Rd	83.3
I-5	1.0	Meadow Rd	83.0
I-5	0.6	Tejon Pass Rest Area	83.0
I-5	R0.3	Frazier Mountain Park Rd	83.0
I-5	2.0	Beartrap Rd	83.0
I-5	1.7	Meadow Rd	83.0

Source: Compiled by LSA (December 2024).
Rd = Road

Table H: Top Priority Roads by Landslide Risk

Route	Nearest Postmile	Nearest Intersection/Exit	Landslide Relative Risk (%)
SR-58	66.5	Tower Line Rd	74.5
SR-58	R65.2	Tower Line Rd	74.4
SR-58	R64.2	Comanche Dr	74.4
SR-58	R63.7	Comanche Dr	74.2
S Comanche Dr	N/A	SR-58	72.2
SR-155	70.0	Keyesville Rd	72.0
Lake Isabella B	N/A	Bodfish Canyon Rd	71.9

Source: Compiled by LSA (December 2024).
Dr = Drive Rd = Road SR-155 = State Route 155
N/A = Not Applicable S = South SR-58 = State Route 58

Table I: Top Priority Roads by Wildfire Risk

Route	Nearest Postmile	Nearest Intersection/Exit	Wildfire Relative Risk (%)
I-5	14.8	S Wheeler Ridge Rd	72.3
SR-155	45.6	Forest Route 25S04	69.6
SR-155	45.8	Forest Route 25S04	68.2
I-5	11.2	Grapevine Rd	67.3
SR-155	47.1	Forest Route 25S04	67.0
SR-155	47.1	Forest Route 25S04	66.6
SR-155	48.7	Forest Route 25S04	65.1
SR-155	47.3	Forest Route 25S04	65.1
I-5	9.5L	Grapevine Rd	64.1
I-5	10.1R	Grapevine Rd	64.1
SR-155	49.2	Forest Route 25S04	63.4
SR-58	71.1	General Beale Rd	63.2
SR-155	49.6	Forest Route 25S04	62.9

Source: Compiled by LSA (December 2024).
I-5 = Interstate 5 SR-155 = State Route 155
Rd = Road SR-58 = State Route 58

Table J: Top Priority Roads by Temperature Risk

Route	Nearest Postmile	Nearest Intersection/Exit	Temperature Relative Risk (%)
Evans Rd	R60.6	Wofford Blvd	61.4
SR-178	56.9	Kelso Valley Rd	61.3
SR-178	R56.8	Paul's Place Rd	61.3
SR-178	55.7	Paul's Place Dr	61.2
SR-178	50.3	McCray Rd	61.0
SR-155	64.9	Old State Rd	61.0
SR-178	55.5	Sierra Ave	61.0
SR-178	50.5	Poplar St	61.0
SR-178	55.4	Vista Grande Dr	61.0
SR-178	50.1	Lynch Canyon Dr	61.0
SR-178	55.1	Fly Catcher Dr	61.0

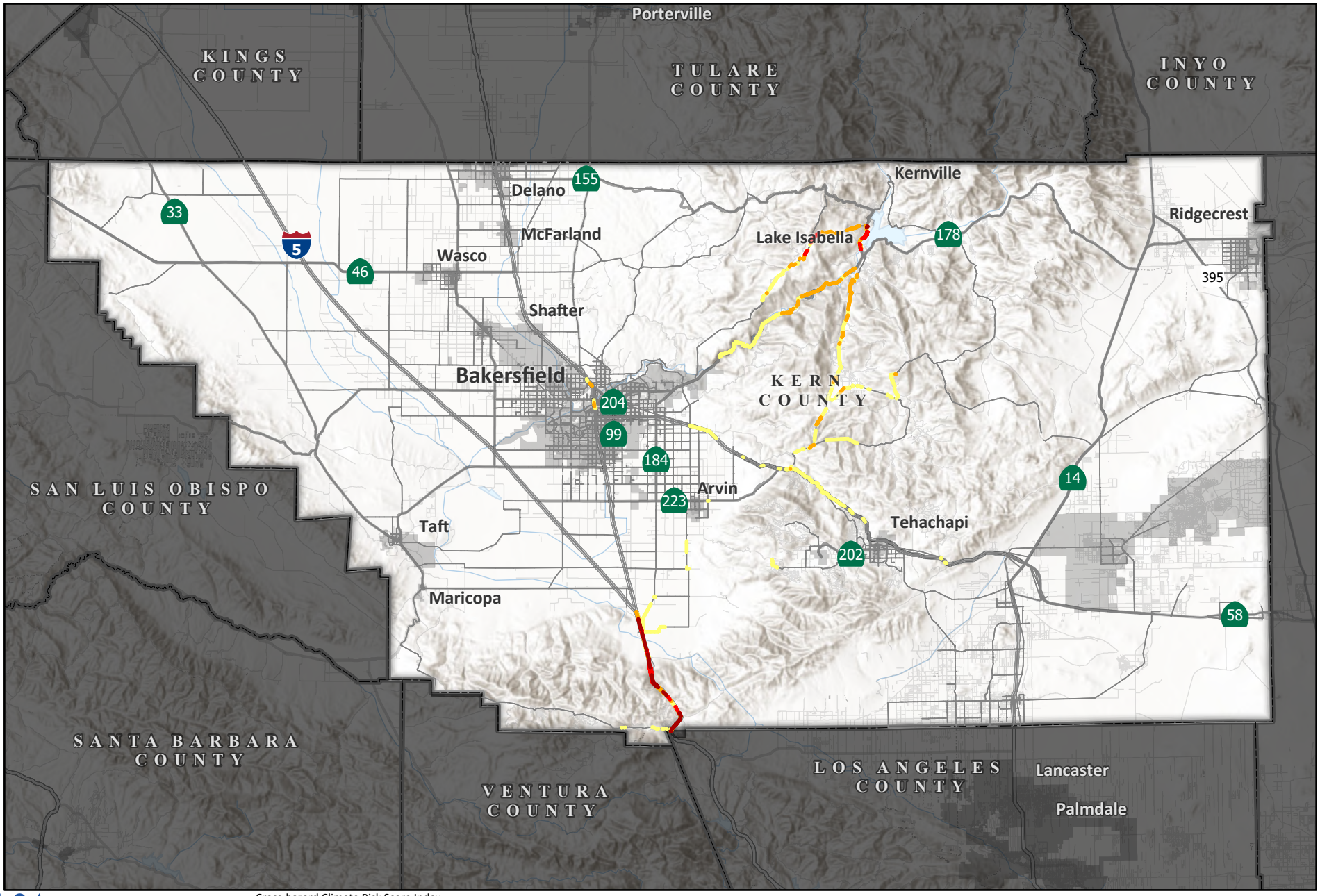
Source: Compiled by LSA (December 2024).
Ave = Avenue
Blvd = Boulevard
Dr = Drive
Rd = Road
SR-155 = State Route 155
SR-178 = State Route 178
St = Street

Table K: Top Priority Roads by Riverine Flooding Risk

Route	Nearest Postmile	Nearest Intersection/Exit	Riverine Flooding Relative Risk (%)
SR-99	25.0	Truxtun Ave	98.7
SR-99	25.4	SR-178	98.7
SR-99	25.1	Truxtun Ave	98.0
SR-99	25.3	SR-178	98.0
SR-99	27.7	Olive Dr	96.7
SR-99	27.5	SR-204	96.7
SR-99	24.8	California Ave	96.1
SR-99	24.7	California Ave	94.6
SR-99	24.7	California Ave	94.1
SR-99	25.4	SR-178	93.2
SR-99	26.3	Gilmore Ave	92.3
SR-99	25.4	SR-178	92.0
SR-99	26.3	Gilmore Ave	91.6
Truxtun Ave	N/A	Empire Dr	90.7
SR-99	25.7	SR-178	90.7

Source: Compiled by LSA (December 2024).
Ave = Avenue
Dr = Drive
SR-178 = State Route 178
SR-204 = State Route 204
SR-99 = State Route 99

These results highlight the variability of hazard risks based on geography across Kern County, with different portions of roadways presenting as most high risk depending on the hazard. Figure 27 displays Kern County roads based on their cross-hazard climate risk prioritization scores.



LSA

Cross-hazard Climate Risk Score Index

- 1
- 2
- 3
- 4
- 5

Assets were assigned an index number based on their cross hazard climate risk score with 1's representing highest risk assets and 5's representing lowest risk assets

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap (2023). Kern COG (2024)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/11/2024)

FIGURE 27

KARGO Community Protection/Prosperity Study

Roads Symbolized by Cross-hazard Climate Risk

Railways

According to the United States Department of Transportation Federal Railroad Administration's 2024 edition of *Rail Resiliency*, the rail industry is vulnerable to extreme weather events and must address the issue of infrastructure resiliency.[20] Climate vulnerabilities such as excessive heat, flooding, and wildfires threaten the railway system. Natural disasters and infrastructure failures challenge the reliability, safety, and continuity of the rail network. There are approximately 374 miles of railways in Kern County, approximately 45 miles of which are passenger routes and approximately 328 miles of which are freight routes. For this assessment, railways were broken into 341 segments. Key risks and threats for Kern County railways include earthquakes, landslides, wildfires, flooding, and extreme temperatures. Table L shows the weights for exposures and consequences used to generate each hazard score for railways.

Table L: Railway Exposures and Consequences Weighting

Metrics	Railway Hazards and Weights				
	Earthquake	Landslide	Wildfire	Temperature	Riverine Flooding
Exposure					
Historic Wildfire	–	–	30%	–	–
Earthquake Risk (Horizontal Acceleration)	85%	–	–	–	–
Annualized Landslide Frequency	–	85%	–	–	–
Decadal Wildfire Probability	–	–	55%	–	–
Change in Extreme Heat Days	–	–	–	70%	–
Annualized Riverine Flooding Frequency	–	–	–	–	85%
Consequences					
Railroad Class	10%	10%	10%	15%	10%
Maximum Passenger or Freight Train Speed	5%	5%	5%	15%	5%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Compiled by LSA (December 2024).

Impacts of extreme heat or temperature on railroad infrastructure affect aspects such as track expansion, which results in unwarranted misalignment of rail lines and material degradation of components like rail ties, fastening systems, and wooden ties. These materials can lose durability over long periods of heat exposure. Additionally, excessive heat can affect electronic signal systems, which are crucial for safe rail operations, causing signals, switches, and monitoring systems to malfunction.[21]

[20] United States Department of Transportation (USDOT). 2024. *Rail Resiliency*. Resiliency Planning. July 2024 Edition. Federal Railroad Administration. Website: https://railroads.dot.gov/sites/fra.dot.gov/files/2024-07/FRA%20Resiliency%20Bulletin%20July%202024_%20PDFa.pdf (accessed September 2024).

[21] Ibid.



Freight train on Tehachapi Loop. (Photo Credit: Go Rail 2024).

Extreme weather events such as flooding can impact the track and ballast in that rain can wash away ballast, causing tracks to sink or shift, which can derail trains. Moreover, debris carried by flood water can obstruct railways and/or damage infrastructure and water can damage signal systems, leading to signal failure. Similarly, snow and ice can obstruct switches and signals and increase the risk of derailment.[22]

Wildfires pose a threat to railways in that they generate extreme heat, which can cause tracks to warp, ties to deteriorate, and/or weaken ballast. Wildfires can also disrupt rail schedules, which affects goods movement and logistics. Additionally, vegetation loss may contribute to the risk of soil erosion, flooding, and landslides.[23]

Other climate hazards, such as earthquakes and landslides, may cause roadway blockages, inaccessibility, or prolonged closure, which have economic and social impacts. The impact of earthquakes and landslides may be exacerbated by already weakened infrastructure due to hazardous temperature or precipitation exposures.

The railroad classification indicates regional and broader significance, and maximum speed indicates sensitivity to extreme temperatures or other adverse travel conditions. These metrics were considered to assess the scale of impact of climate hazards.

Table M shows the top railways in order of cross-hazard climate risk scores. Each of these railways is in the Mojave subdivision, which is owned by Union Pacific Railroad, and freight operations are by Union Pacific Railroad and BNSF Railway. The risk scores for each hazard are included and show how specific hazards influence the railway rankings. For example, the sections of railways that rise to the top for cross-hazard scores have significant landslide risk scores relative to other sections of railways. The complete data workbook accompanying this report offers hazard-specific scores and cross-hazard scores for each section of railways in the region. Figure 28 displays all railways based on their cross-hazard climate risk scores.

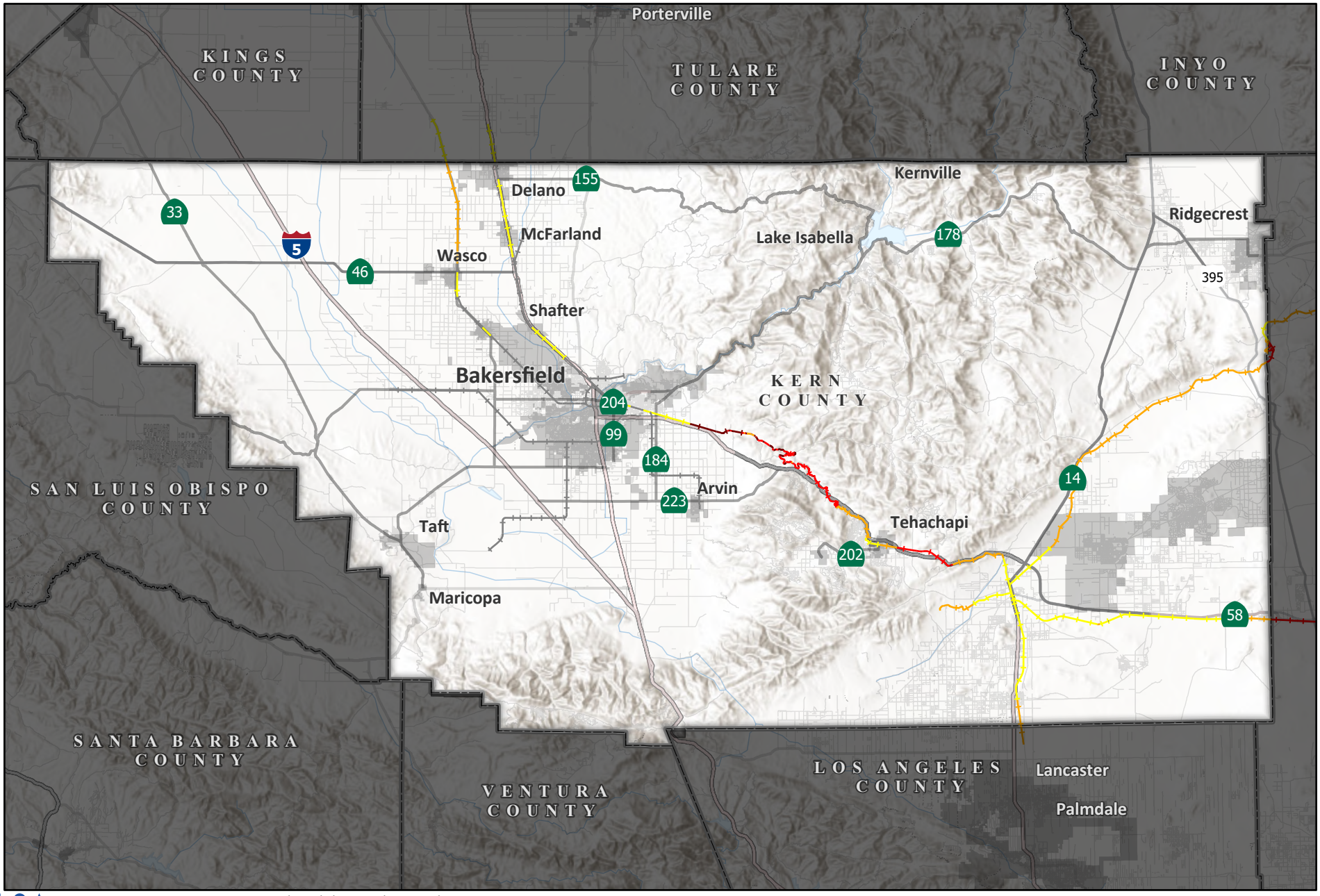
22 United States Department of Transportation (USDOT). 2024. Rail Resiliency. Resiliency Planning. July 2024 Edition. Federal Railroad Administration. Website: https://railroads.dot.gov/sites/fra.dot.gov/files/2024-07/FRA%20Resiliency%20Bulletin%20July%202024_%20PDFa.pdf (accessed September 2024).

23 Ibid.

Table M: Top Priority Railways by Cross-Hazard Risk

Owner	Freight Operator	Begin Mile Post	End Mile Post	Begin Latitude	Begin Longitude	End Latitude	End Longitude	Earthquake Relative Risk (%)	Landslide Relative Risk (%)	Wildfire Relative Risk (%)	Temperature Relative Risk (%)	Riverine Flooding Relative Risk (%)	Cross-Hazard Prioritization Score (%)	Cross-Hazard Climate Risk Index
UP	UP, BNSF	330.6	335.4	35.29547	-118.6476	35.295415	-118.6475	84	98	77	62	50	**100**	**1**
UP	UP, BNSF	328.1	330.6	35.31691	-118.70355	35.316909	-118.7036	84	98	81	52	50	**98**	**1**
UP	UP, BNSF	328.1	330.6	35.32113	-118.70871	35.320096	-118.7068	70	98	81	50	50	**93**	**1**
UP	UP, BNSF	330.6	335.4	35.29623	-118.66889	35.295908	-118.6681	84	98	47	61	50	**90**	**1**
UP	UP, BNSF	330.6	335.4	35.29542	-118.64752	35.294851	-118.647	84	98	47	61	50	**90**	**1**
UP	UP, BNSF	328.1	330.6	35.31908	-118.7053	35.313302	-118.7004	84	98	51	52	50	**88**	**1**
UP	UP, BNSF	340.6	341.8	35.26695	-118.61563	35.26953	-118.6173	96	52	71	63	48	**87**	**1**
UP	UP, BNSF	325	328.1	35.32574	-118.73386	35.325739	-118.7339	70	99	61	48	51	**87**	**1**
UP	UP, BNSF	325	328.1	35.32574	-118.73386	35.325739	-118.7339	70	99	61	48	51	**87**	**1**
UP	UP, BNSF	330.6	335.4	35.28911	-118.64014	35.289049	-118.6425	84	54	77	64	50	**86**	**1**
UP	UP, BNSF	343.3	345.1	35.25117	-118.58698	35.251313	-118.5849	96	52	68	65	48	**86**	**1**
UP	UP, BNSF	328.1	330.6	35.30403	-118.67682	35.29921	-118.6697	84	54	81	58	50	**86**	**1**
UP	UP, BNSF	330.6	335.4	35.29921	-118.66975	35.297033	-118.6632	84	54	77	61	50	**85**	**1**
UP	UP, BNSF	330.6	335.4	35.29678	-118.6589	35.295468	-118.6476	84	54	77	61	50	**85**	**1**
UP	UP, BNSF	325	328.1	35.32963	-118.76218	35.325665	-118.7334	70	99	61	44	51	**85**	**1**
UP	UP, BNSF	328.1	330.6	35.3112	-118.69049	35.309822	-118.6877	84	54	81	55	50	**85**	**1**
UP	UP, BNSF	335.4	338	35.27335	-118.64346	35.274266	-118.6424	82	53	77	61	49	**84**	**1**
UP	UP, BNSF	335.4	338	35.27335	-118.64346	35.274266	-118.6424	82	53	77	61	49	**84**	**1**
UP	UP, BNSF	335.4	338	35.27427	-118.64236	35.273351	-118.6435	82	53	77	61	49	**84**	**1**
UP	UP, BNSF	335.4	338	35.28839	-118.64309	35.278801	-118.6456	82	53	77	60	49	**84**	**1**
UP	UP, BNSF	335.4	338	35.28905	-118.64245	35.286203	-118.6561	82	53	77	59	49	**83**	**1**
UP	UP, BNSF	335.4	338	35.28651	-118.65588	35.286429	-118.6559	82	53	77	58	49	**83**	**1**
UP	UP, BNSF	335.4	338	35.28651	-118.65588	35.286429	-118.6559	82	53	77	58	49	**83**	**1**
UP	UP, BNSF	320.1	325	35.328	-118.78723	35.331788	-118.8029	70	99	60	38	51	**83**	**1**
UP	UP, BNSF	320.1	325	35.33179	-118.80295	35.341484	-118.8432	70	99	60	38	51	**83**	**1**
UP	UP, BNSF	365	370.3	35.09642	-118.29968	35.096253	-118.3003	99	34	53	80	52	**83**	**1**
UP	UP, BNSF	328.1	330.6	35.32508	-118.72807	35.319084	-118.7053	70	98	51	48	50	**82**	**1**
UP	UP, BNSF	330.6	335.4	35.29121	-118.62559	35.287543	-118.6264	98	54	47	66	50	**82**	**1**
UP	UP, BNSF	330.6	335.4	35.29121	-118.62559	35.287543	-118.6264	98	54	47	66	50	**82**	**1**

Source: Compiled by LSA (December 2024).
BNSF = BNSF Railway
UP = Union Pacific Railroad



LSA

Cross-hazard Climate Risk Score Index

- 1
- 2
- 3
- 4
- 5

Assets were assigned an index number based on their cross hazard climate risk score with 1's representing highest risk assets and 5's representing lowest risk assets

0 7.5 15

Miles

SOURCE: Esri Terrain Basemap (2023). Kern County (20224)

I:\2024\20241618\GIS\Pro\KARGO Community Prosperity and Protection Study.aprx (12/11/2024)

FIGURE 28

KARGO Community Protection/Prosperity Study

Railways Symbolized by Cross-hazard Climate Risk

Bridges

There are 662 bridge structures in the National Bridge Inventory dataset for Kern County. Bridge structures are exposed to a mix of climate hazards, including earthquakes, landslides, wildfire, and riverine flooding. Impacts from extreme heat may cause thermal expansion, premature deterioration, compromised foundational integrity, and bridge joint damage. Likewise, extreme precipitation can result in increased scour rate and sediment buildup or debris deposits, thereby causing secondary flooding, land erosion, and structural damage from moisture retention, powerful floods, and strong wind. Moreover, wildfire may destroy or distort infrastructure depending on asset material.



24th Street bridge over Kern River. (Photo credit: SJV Water 2023).

A bridge's vulnerability or resiliency to a climate hazard is highly dependent on its condition. The bridge substructure condition was considered for all hazards. For flooding, channel and channel protection condition rating and scour rating were considered. The scale of impact was also determined based on network demand, considering AADT and how long it would take to detour the asset, measured by the incremental detour travel distance. Table N shows the weights for exposures and consequences used to generate each hazard score for bridges.

Table N: Bridges Exposures and Consequences Hazard Weighting

Metrics	Bridge Hazards and Weights				
	Earthquake	Landslide	Wildfire	Temperature	Riverine Flooding
Exposure					
Historic Wildfire	–	–	25%	–	–
Earthquake Risk (Horizontal Acceleration)	60%	–	–	–	–
Annualized Landslide Frequency	–	70%	–	–	–
Decadal Wildfire Probability	–	–	45%	–	–
Change in Extreme Heat Days	–	–	–	65%	–
Annualized Riverine Flooding Frequency	–	–	–	–	65%
Consequences					
Bridge Substructure Condition Rating	15%	5%	5%	10%	1%
Channel and Channel Protection Condition Rating	–	–	–	–	2.5%
Scour Rating	–	–	–	–	6.5%
Average Annual Daily Traffic (AADT)	8%	8%	8%	8%	8%
Incremental Detour Travel Distance	17%	17%	17%	17%	17%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Compiled by LSA (December 2024).

Table O shows the top bridges in order of cross-hazard climate risk scores and includes the risk scores for each specific hazard. This table demonstrates that not every at-risk bridge is exposed to the same risks. For example, some bridges, like the ones over Kern River, rise to the top because of flooding and landslide risk, while some, like the bridges over the South Fork of the Kern River, are the most threatened by extreme heat. This is significant for the adaptation and resiliency strategy planning and design work this assessment is intended to inform.

Figure 29 displays the bridges based on their cross-hazard climate risk scores.

Large Culverts

There are 15 large culverts in Kern County as designated by Caltrans. Large culverts protect roadways from flood and erosion by channeling streams and stormwater under roadways. Large culverts are vulnerable to earthquakes, landslides, wildfires, and riverine flooding. Climate-related events could cause culvert failure or compromised performance, which may cause damage to the surrounding environment and present hazards to the transportation system. Extreme weather events may result in culvert clogs from debris and sediment movement, road washouts, rusted culvert bottoms, cracked concrete, exposed reinforcing steel, joint separation, and backfill infiltration.[24]

A culvert's vulnerability or resiliency to a climate hazard is highly dependent on its condition. The culvert condition rating was considered for all hazards, along with channel and channel protection condition rating. The scale of impact was also determined based on network demand, considering AADT, average annual daily truck traffic (AADTT), and how long it would take to detour the asset, measured by the incremental detour travel distance. Table P shows the weights for exposures and consequences used to generate each hazard score for large culverts.

Table Q shows the 15 culverts in order of cross-hazard climate risk scores. The risk scores for each hazard are also included. Table Q shows what specific hazards influence the large culvert rankings. The Tecuya Creek culvert on I-5 has relatively high risk for all considered hazards, placing it at the top of the list for vulnerable assets. Some assets with low overall priority do have hazard-specific vulnerabilities that can be identified in Table I. For example, the culverts on Rag Gulch did not rise to the top for cross-hazard scores, but the analysis does indicate their risk for riverine flooding is higher than other culverts.

Figure 30 displays the large culverts based on their cross-hazard climate risk scores.

[24] California Department of Transportation (Caltrans). 2020. Shining a Light on Culvert Conditions. Website: https://dot.ca.gov/programs/public-affairs/mile-marker/winter-2019-2020/shining-a-light-on-culvert-conditions (accessed September 2024).

Table O: Top Priority Bridges by Cross-Hazard Risk

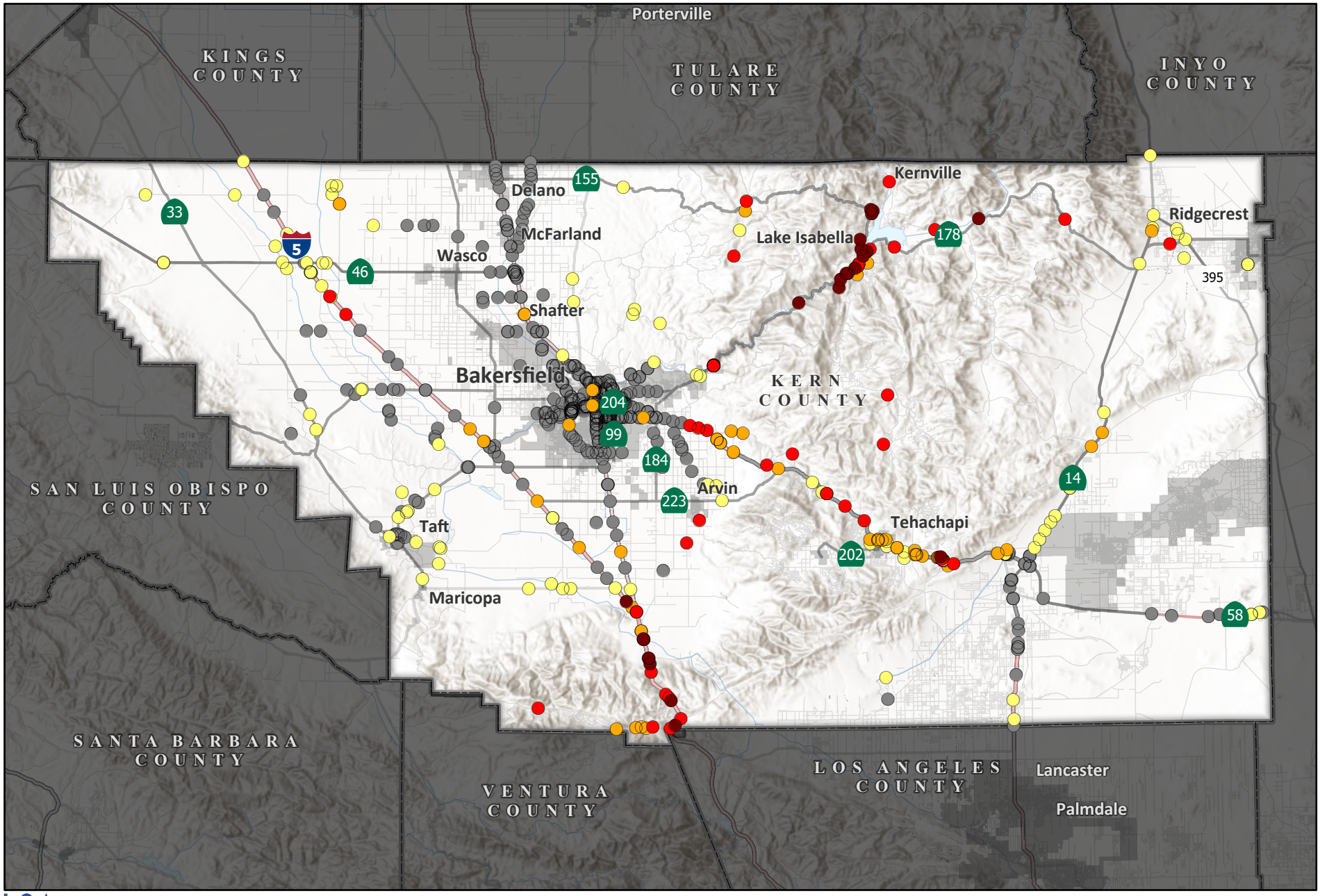
Feature Being Crossed	Facility	Location Details	Latitude	Longitude	Earthquake Relative Risk (%)	Landslide Relative Risk (%)	Wildfire Relative Risk (%)	Temperature Relative Risk (%)	Riverine Flooding Relative Risk (%)	Cross-Hazard Prioritization Score (%)	Cross-Hazard Climate Risk Index
Kern River	SR-155	06-KER-155-70.08	35.63995899	-118.4827986	24	89	77	81	88	**100**	**1**
Kern River	SR-178	06-KER-178-R31.72	35.54828101	-118.6145456	24	88	71	66	88	**94**	**1**
French Gulch	SR-155	06-KER-155-R68.69	35.65687799	-118.4847456	24	89	52	81	86	**93**	**1**
Grapevine Creek	Grapevine Rd	6.7 MI S OF FORT TEJON SP	34.92931209	-118.9270816	50	70	72	47	86	**90**	**1**
Grapevine Road	I-5 NB	06-KER-005-10.16R	34.93928709	-118.9296516	53	73	60	48	86	**89**	**1**
SR-178	Boundary Flat Rd	06-KER-178-R39.88	35.59828099	-118.5144906	24	88	48	73	83	**88**	**1**
California Aqueduct	I-5 NB	06-KER-005-12.47	34.97157809	-118.9407096	38	74	56	52	87	**85**	**1**
California Aqueduct	I-5 SB	06-KER-005-12.47	34.97157809	-118.9404296	38	74	56	52	86	**85**	**1**
Kern River	SR-178	06-KER-178-R41.16	35.60756699	-118.4957436	12	77	60	66	73	**80**	**1**
Cuddy Creek	I-5	06-KER-005-R0.55	34.8240281	-118.8749876	64	57	52	36	73	**78**	**1**
Grapevine Road	I-5 SB	06-KER-005-10.16L	34.93905109	-118.9307686	52	36	58	47	84	**77**	**1**
South Fork Kern River	Doyle Ranch Rd	0.1 MI N OF RTE 178	35.69086197	-118.2350267	24	21	47	90	90	**75**	**1**
South Fork Kern River	Faye Ranch Rd	0.6 MI N OF RTE 178	35.67251397	-118.2900347	24	21	49	89	88	**75**	**1**
Cache Creek	Tehachapi Blvd	0.3 MI E OF SAN CANYON RD	35.11092603	-118.3202377	37	51	36	60	86	**74**	**1**
Kern River	SR-178	06-KER-178-R38.84	35.588328	-118.5261206	13	78	38	62	77	**74**	**1**
Kern River	SR-178	06-KER-178-R40.00	35.59890899	-118.5108126	12	77	37	62	76	**73**	**1**
Tillie Creek	SR-155	06-KER-155-R60.69	35.70563698	-118.4570936	24	17	52	81	86	**72**	**1**
Tillie Creek Overflow	SR-155	06-KER-155-R60.88	35.70818398	-118.4621596	24	17	52	81	86	**72**	**1**
Rattlesnake Creek	SR-155	06-KER-155-64.92	35.70046998	-118.4603266	24	17	52	81	85	**72**	**1**
SR-178	SR-155	06-KER-155-R70.98	35.62792299	-118.4788316	24	19	52	81	83	**72**	**1**
Borel Canal	Eva Drive	EAST OF BARLOW DRIVE	35.63667299	-118.4705516	24	18	52	81	84	**71**	**1**
I-5	Sabodan St	06-KER-005-17.58	35.03632308	-118.9766316	37	37	53	47	83	**71**	**1**
I-5	Lebec Rd	06-KER-005-4.07	34.86598709	-118.8835126	50	34	40	49	83	**71**	**1**
Clear Creek	Kern River Cyn Rd	AT MIRACLE HOT SPRINGS	35.574012	-118.5295486	8	76	33	63	76	**71**	**1**
I-5	DWR Service Rd	06-KER-005-12.53	34.97224209	-118.9411816	37	34	54	45	83	**70**	**2**
Poso Creek	SR-155	06-KER-155-38.79	35.722981	-118.7238376	17	21	54	67	89	**68**	**2**
SR-58	Cameron Rd	09-KER-058-R101.56	35.09931403	-118.2930127	37	34	30	60	83	**68**	**2**
Cane Brake Creek	SR-178	09-KER-178-76.98	35.68885596	-118.0536457	24	17	41	76	86	**67**	**2**
I-5	Lebec Service Rd	06-KER-005-1.61	34.83572309	-118.8633156	60	54	28	34	66	**67**	**2**
Cuddy Creek	Frazier Mtn Rd	2.5 MI WEST OF I-5	34.8211231	-118.9217566	61	20	48	37	75	**67**	**2**
Rancheria Creek	Walker Basin Rd	1.17 MI W PIUTE MOUNTN RD	35.38988401	-118.4288907	17	75	15	59	74	**66**	**2**
Tehachapi Creek	Caliente Bodfish Rd	NORTH BEALVILLE RD	35.28892303	-118.6290016	24	44	45	43	78	**65**	**2**
Grapevine Rd	I-5 SB	06-KER-005-8.47L	34.91546709	-118.9246096	36	58	32	37	69	**64**	**2**
Poso Creek	Poso Flat Rd	3.5 MI E OF GRANITE RD	35.62912301	-118.7501686	17	18	42	62	88	**62**	**2**

Table O: Top Priority Bridges by Cross-Hazard Risk

Feature Being Crossed	Facility	Location Details	Latitude	Longitude	Earthquake Relative Risk (%)	Landslide Relative Risk (%)	Wildfire Relative Risk (%)	Temperature Relative Risk (%)	Riverine Flooding Relative Risk (%)	Cross-Hazard Prioritization Score (%)	Cross-Hazard Climate Risk Index
Grapevine Creek	I-5	06-KER-005-4.47	34.87082309	-118.8879046	37	56	27	33	73	**62**	**2**
Kissack Creek	SR-178	06-KER-178-49.90	35.64326998	-118.4129547	18	4	62	68	73	**62**	**2**
SR-99 Truck Ramp SB	I-5 SB	06-KER-005-R15.51L	35.01861708	-118.9556066	25	58	40	30	70	**61**	**2**
Walker Creek	SR-178	09-KER-178-91.20	35.64454795	-117.8336377	31	17	19	72	84	**61**	**2**
SR-99	I-5 NB	06-KER-005-R15.82R	35.01838708	-118.9553236	23	57	39	29	69	**59**	**2**
Elizabeth Norris Rd	SR-178 EB	06-KER-178-R41.64	35.61156699	-118.4895816	12	7	60	65	71	**59**	**2**
I-5	Fort Tejon OC	06-KER-005-5.02	34.87694809	-118.8946906	34	54	30	30	66	**59**	**2**
Erskine Creek	SR-178 EB Off-Ramp	06-KER-178-R41.59	35.61528699	-118.4876346	12	5	60	63	74	**59**	**2**
South Fork Kern River	Sierra Way	1.0 MI N/O SH 178	35.67248097	-118.3273597	11	10	33	79	76	**57**	**2**
SR-58	Broome Rd	09-KER-058-R85.15	35.19878904	-118.5190907	18	39	34	46	70	**57**	**2**
SR-58	Tower Line Rd	06-KER-058-R65.68	35.32985304	-118.8074766	8	73	39	20	67	**57**	**2**
Cuddy Creek	Lebec Rd	0.06 MI N FRAZIER MTN RD	34.8190621	-118.8847016	60	17	23	32	72	**56**	**2**
Arvin-Edison Canal	Rancho Dr	3 MI NORTH OF DAVID RD	35.13652606	-118.8506376	20	54	37	24	68	**56**	**2**
Bena Rd	SR-58	06-KER-058-74.18	35.27010304	-118.6824986	17	39	38	38	69	**55**	**2**
Hillside	SR-178	06-KER-178-13.74	35.44116703	-118.7935706	19	16	66	20	79	**55**	**2**
Hillside	SR-178	06-KER-178-13.74	35.44116703	-118.7935706	19	16	66	20	79	**55**	**2**
Hillside	SR-178	06-KER-178-13.74	35.44116703	-118.7935706	19	16	66	20	79	**55**	**2**

Source: Compiled by LSA (December 2024).

Blvd = Boulevard
Dr = Drive
DWR = Department of Water Resources
EB = eastbound
I-5 = Interstate 5
Mtn = Mountain
NB = northbound
OC = Overcrossing
Rd = Road
SB = southbound
SR-155 = State Route 155
SR-178 = State Route 178
SR-58 = State Route 58
SR-99 = State Route 99
St = Street



LSA

Cross-Hazard Climate Risk Score Index

- 1
- 2
- 3
- 4
- 5

Assets were assigned an index number based on their cross hazard climate risk score with 1's representing highest risk assets and 5's representing lowest risk assets

FIGURE 29

0 7.5 15

Miles

SOURCE: Esri Terrain Basemap (2023). Kern County (20224)

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KARGO Community Protection/Prosperity Study

Bridges Symbolized by Cross-hazard Climate Risk

Table P: Large Culvert Exposures and Consequences Hazard Weighting

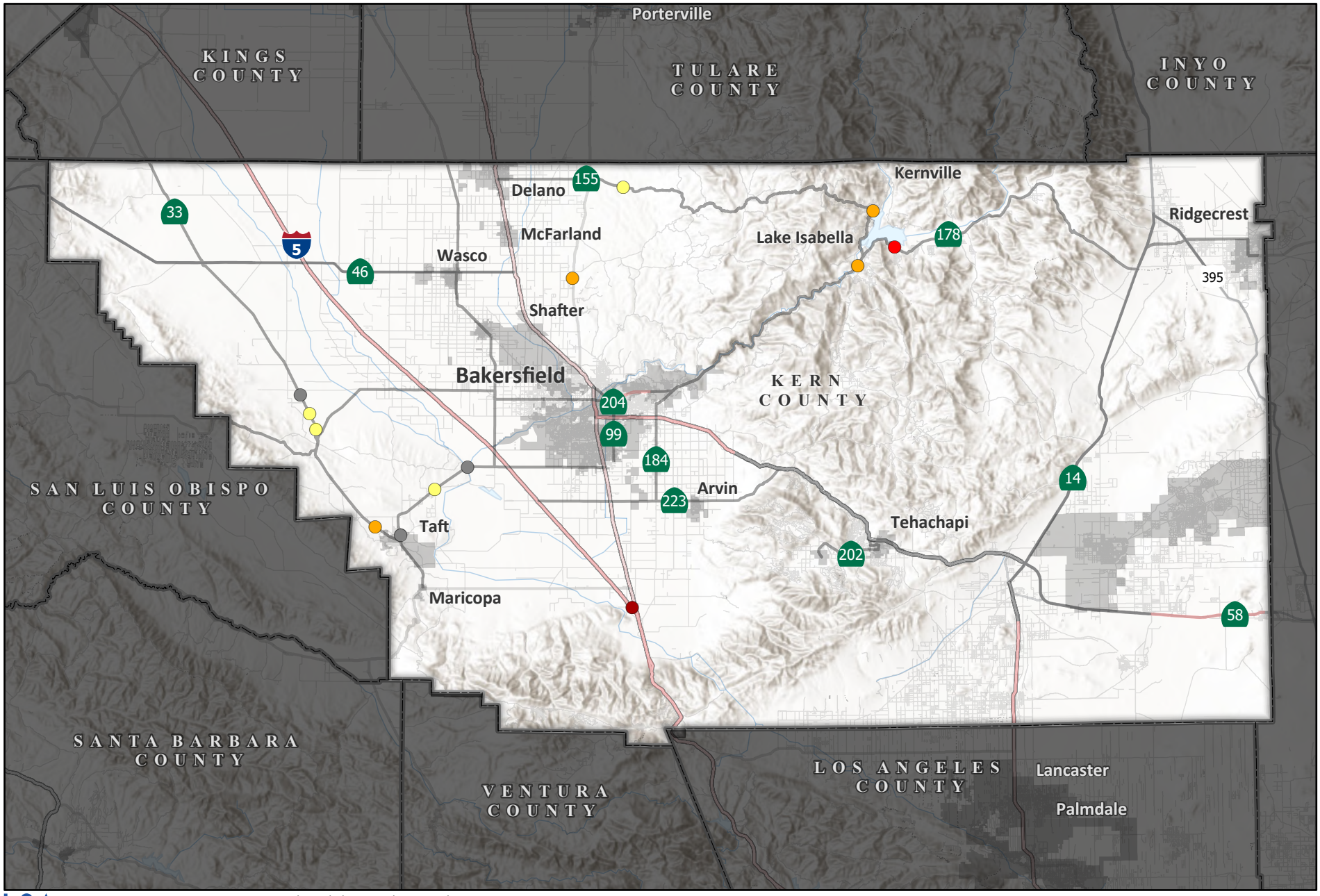
Metrics	Large Culvert Hazards and Weights			
	Earthquake	Landslide	Wildfire	Riverine Flooding
Exposure				
Historic Wildfire	–	–	20%	–
Earthquake Risk (Horizontal Acceleration)	65%	–	–	–
Annualized Landslide Frequency	–	65%	–	–
Decadal Wildfire Probability	–	–	45%	–
Annualized Riverine Flooding Frequency	–	–	–	65%
Consequences				
Channel and Channel Protection Condition Rating	2.5%	2.5%	2.5%	2.5%
Culvert Condition Rating	2.5%	2.5%	2.5%	2.5%
Average Annual Daily Traffic (AADT)	10%	10%	10%	10%
Average Annual Daily Truck Traffic (AADTT)	5%	5%	5%	5%
Incremental Detour Travel Distance	15%	15%	15%	15%
TOTAL	**100%**	**100%**	**100%**	**100%**

Source: Compiled by LSA (December 2024).

Table Q: Top Priority Large Culverts by Cross-Hazard Risk

Name	Facility	Caltrans Location Identifier	Latitude	Longitude	Earthquake Relative Risk (%)	Landslide Relative Risk (%)	Wildfire Relative Risk (%)	Riverine Flooding Relative Risk (%)	Cross-Hazard Prioritization Score (%)	Cross-Hazard Climate Risk Index
Tecuya Creek	I-5	06-KER-005-16.57	35.0259	-118.964	78	80	62	80	100	1
Kissack Creek	SR-178	06-KER-178-49.90	35.64323	-118.413	46	3	64	68	36	2
Little Creek	SR-65	06-KER-065-11.00	35.59113	-119.09	16	19	63	84	36	3
Seventeen Canyon	SR-33	06-KER-033-21.49	35.1637	-119.501	73	9	18	74	32	3
Tillie Creek	SR-155	06-KER-155-R60.69	35.70584	-118.457	31	10	53	75	29	3
Erskine Creek	SR-178	06-KER-178-R41.61	35.61115	-118.49	26	6	60	71	27	3
McKittrick Wash	SR-33	06-KER-033-35.89	35.33043	-119.626	70	6	15	71	26	4
Wasp Wash	SR-33	06-KER-033-37.89	35.35671	-119.64	70	6	14	71	25	4
Rag Gulch	SR-155	06-KER-155-R15.28	35.7473	-118.983	15	15	42	80	20	4
Lakeview Wash	SR-119	06-KER-119-8.78	35.22832	-119.377	49	5	22	70	17	4
Sandy Creek	SR-119	06-KER-119-0.97-TAF	35.14985	-119.448	68	4	5	69	17	5
Cymric Wash	SR-33	06-KER-033-40.38	35.38855	-119.659	49	6	13	71	13	5
Buena Vista Slough	SR-119	06-KER-119-14.98	35.26662	-119.309	30	9	9	74	4	5
Rag Gulch	SR-65	06-KER-065-23.59	35.76788	-119.053	5	7	32	72	1	5
East Side Canal	SR-178	06-KER-178-R2.42-BKD	35.38248	-119.003	12	12	13	77	0	5

Source: Compiled by LSA (December 2024).
I-5 = Interstate 5
SR-119 = State Route 119
SR-155 = State Route 155
SR-178 = State Route 178
SR-178 = State Route 178
SR-33 = State Route 33
SR-65 = State 65



LSA

Cross-hazard Climate Risk Score Index

- 1
- 2
- 3
- 4
- 5

Assets were assigned an index number based on their cross hazard climate risk score with 1's representing highest risk assets and 5's representing lowest risk assets

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap (2023). Kern County (20224)

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FIGURE 30

KARGO Community Protection/Prosperity Study

Large Culverts Symbolized by Cross-hazard Climate Risk

Small Culverts

There are 246 small culverts in Kern County as designated by Caltrans. Similar to large culverts, small culverts exist to channel streams and stormwater under roadways and are also vulnerable to earthquakes, landslides, wildfires, and riverine flooding. Small culverts have a smaller cross-section and are suited to handle smaller volumes of water. Culvert materials vary based on size, which influences how resilient the culverts are to climate hazards. The difference between the sizes also influences how likely it is that something would get lodged in the culvert and create a blockage, thereby causing the culvert to fail or underperform.

A culvert's vulnerability or resiliency to a climate hazard is highly dependent on its condition. The culvert condition rating was considered for earthquakes, landslides, and flooding. For wildfires, culvert material was considered as a key determinant of resiliency to wildfire. The scale of impact was also determined based on network demand, considering AADT, AADTT, and how long it would take to detour the asset, measured by the incremental detour travel distance. Table R shows the weights for exposures and consequences used to generate each hazard score for small culverts.



Sierra Way re-opening progress after flooding damage. (Photo credit: Turn to 23 Bakersfield 2024).

Table S shows the small culverts with the highest climate vulnerability in order of cross-hazard climate risk scores. The top small culverts are all on I-5 and SR-178 because of the way in which the methodology accounts for the scale of consequence for failures and how average annual traffic volumes are a primary input for scale of consequence. The hazard-specific risk scores highlight how different culverts are exposed to different hazards and can influence the adaptation strategies and how culverts are considered in future projects. Figure 31 displays the small culverts based on their cross-hazard climate risk scores. The complete Excel workbook accompanying this report includes the condition data of the various culverts, which is significant in assessing the vulnerability in the planning and design of the projects over time.

Table R: Small Culvert Exposures and Consequences Hazard Weighting

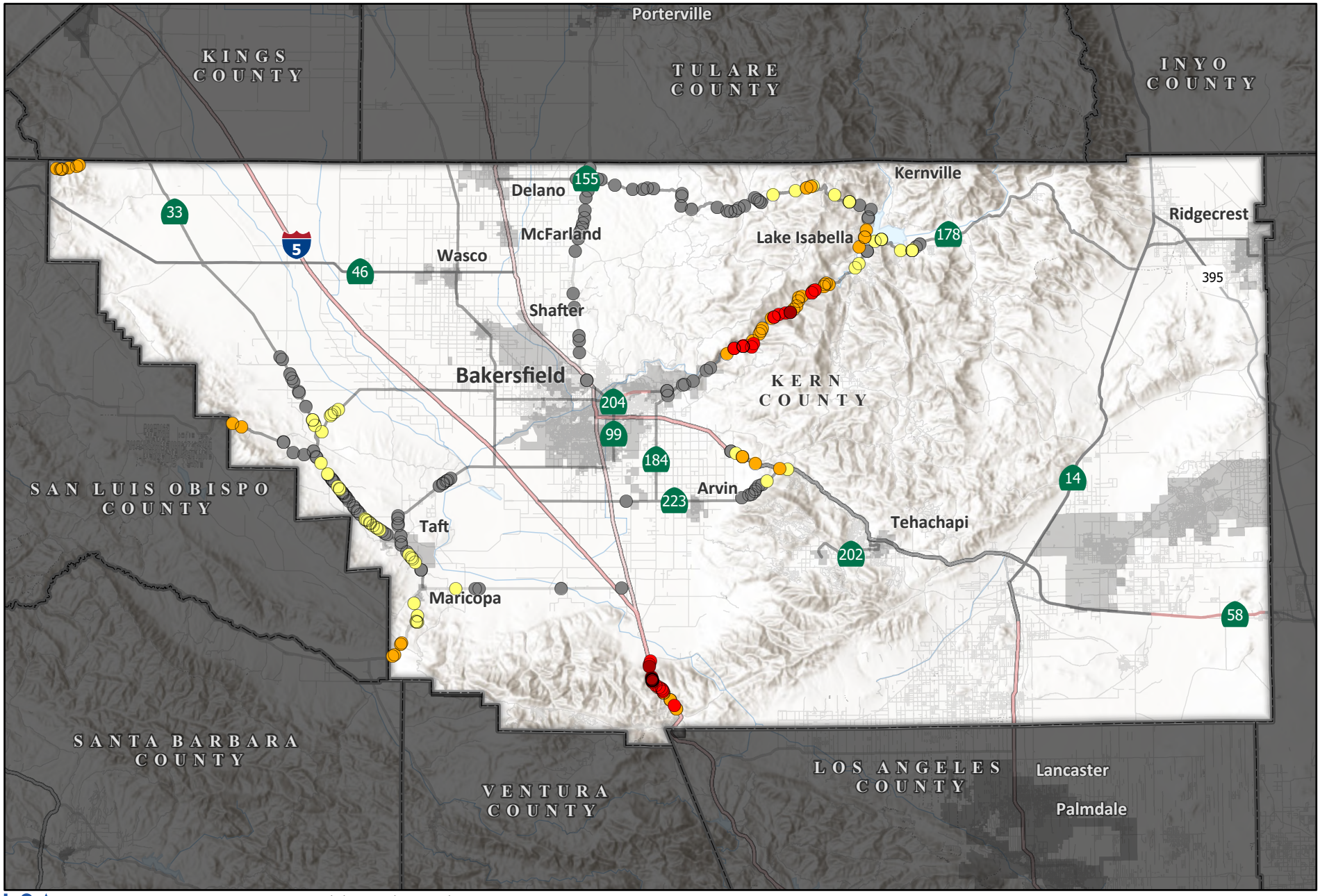
Metrics	Small Culvert Hazards and Weights			
	Earthquake	Landslide	Wildfire	Riverine Flooding
Exposure				
Historic Wildfire	–	–	20%	–
Earthquake Risk (Horizontal Acceleration)	65%	–	–	–
Annualized Landslide Frequency	–	65%	–	–
Initial Timeframe for Elevated Wildfire Level of Concern	–	–	18%	–
Highest Projected Wildfire Level of Concern	–	–	18%	–
Annualized Riverine Flooding Frequency	–	–	–	65%
Consequences				
Culvert Condition Rating	5%	5%	–	5%
Culvert Material	–	–	20%	–
Average Annual Daily Traffic (AADT)	10%	10%	7%	10%
Average Annual Daily Truck Traffic (AADTT)	5%	5%	3%	5%
Incremental Detour Travel Distance	15%	15%	15%	15%
TOTAL	**100%**	**100%**	**100%**	**100%**

Source: Compiled by LSA (December 2024).

Table S: Top Priority Small Culverts by Cross-Hazard Risk

System Route	System Post Mile Begin	Latitude	Longitude	Earthquake Relative Risk (%)	Landslide Relative Risk (%)	Wildfire Relative Risk (%)	Riverine Flooding Relative Risk (%)	Cross-Hazard Prioritization Score (%)	Cross-Hazard Climate Risk Index
I-5	9.73	34.90267	-118.9234	69	78	88	95	**100**	**1**
I-5	7.26	34.89918	-118.9224	61	71	83	87	**91**	**1**
I-5	7.37	34.90064	-118.9227	61	71	83	87	**91**	**1**
I-5	9.73	34.90356	-118.923	61	71	83	87	**91**	**1**
I-5	7.36	34.90055	-118.923	69	45	88	95	**89**	**1**
I-5	7.46	34.90173	-118.9232	61	37	83	87	**79**	**1**
I-5	9.73	34.92507	-118.9289	61	37	83	87	**79**	**1**
SR-178	30.03	35.53226	-118.632	26	78	82	78	**77**	**1**
I-5	6.67	34.89244	-118.9151	61	71	43	87	**77**	**2**
I-5	9.73	34.90725	-118.9236	61	71	43	87	**77**	**2**
I-5	9.73	34.93349	-118.9262	61	71	43	87	**77**	**2**
I-5	7.25	34.89844	-118.9224	61	37	63	87	**72**	**2**
I-5	9.9	34.92871	-118.9291	61	37	63	87	**72**	**2**
SR-178	26.71	35.52848	-118.6565	26	78	62	78	**71**	**2**
SR-178	29.38	35.53052	-118.6425	26	78	62	78	**71**	**2**
I-5	5.89	34.88433	-118.9007	48	58	52	74	**66**	**2**
I-5	5.89	34.88642	-118.9034	48	58	52	74	**66**	**2**
I-5	6.18	34.88856	-118.9082	48	58	52	74	**66**	**2**
I-5	3.3	34.85723	-118.8759	46	56	54	72	**65**	**2**
SR-178	25.83	35.52427	-118.6664	17	69	73	69	**65**	**2**
I-5	5.89	34.88245	-118.9008	47	56	50	73	**64**	**2**
SR-178	34.52	35.56505	-118.5869	14	66	76	66	**63**	**2**
SR-178	35.05	35.57023	-118.5805	14	66	76	66	**63**	**2**
SR-178	17.35	35.47033	-118.7504	17	69	67	69	**63**	**2**
SR-178	20.68	35.4729	-118.7133	17	69	67	69	**63**	**2**
SR-178	21.24	35.47978	-118.7102	17	69	67	69	**63**	**2**

Source: Compiled by LSA (December 2024).
I-5 = Interstate 5
SR-178 = State Route 178



LSA

Cross-Hazard Climate Risk Score Index

- 1
- 2
- 3
- 4
- 5

Assets were assigned an index number based on their cross hazard climate risk score with 1's representing highest risk assets and 5's representing lowest risk assets

0 7.5 15
Miles

SOURCE: Esri Terrain Basemap (2023). Kern County (20224)

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FIGURE 31

KARGO Community Protection/Prosperity Study

Small Culverts Symbolized by Cross-hazard Climate Risk

CONCLUSIONS AND NEXT STEPS

This report has identified the roads, railway, bridge, large culvert, and small culvert assets exposed to a variety of climate hazards in Kern County and assigned them priority index scores based on their cross-hazard vulnerability ranking. Consistent with the FHWA Adaptation Decision-Making Process, this assessment completes the first four steps in the process including: (1) articulating objectives and defining the study scope; (2) presentation of asset data; (3) presentation of climate data; and (4) assessment of asset vulnerability. This assessment then informs the next steps in the Adaptation Decision-Making Process by providing foundational research and analysis on climate projections and vulnerabilities for assets across Kern County.

Based on the assessment, consideration of adaptation measures can be incorporated into transportation network planning, project prioritization, project design decisions, and funding opportunities. The project team and Kern COG staff will evaluate this assessment to identify key high-risk corridors for further study and design.

There are also opportunities to secure funding to advance various projects. Several State and federal initiatives, like California's Senate Bill 1 and the Biden-Harris Culvert Grant Program, aim to inspect and upgrade culverts due to old infrastructure and climate change effects. Additional climate funding grants are available for sustainable transportation planning, which may include building resilience to hazards, such as flooding, through vegetative adaptation strategies and other measures.

APPENDIX A

TOP 500 ASSETS SORTED BY CROSS-HAZARD SCORES

Appendix Table A: Top Roads by Cross-Hazard Risk

Route	Begin Latitude	Begin Longitude	End Latitude	End Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
I-5	34.833005	-118.86578	34.83355	-118.8655	83.0%	64.9%	50.5%	45.3%	83.0%	**100.0%**	**1**
I-5	34.832535	-118.86625	34.83301	-118.8658	83.0%	64.9%	50.4%	45.2%	83.0%	**99.9%**	**1**
I-5	34.831515	-118.8673	34.83254	-118.8662	83.0%	64.9%	50.4%	45.2%	83.0%	**99.9%**	**1**
I-5	34.831185	-118.86765	34.83152	-118.8673	83.0%	64.9%	50.3%	45.2%	83.0%	**99.9%**	**1**
I-5	34.830435	-118.86844	34.83119	-118.8676	83.0%	64.9%	50.3%	45.2%	83.0%	**99.9%**	**1**
I-5	34.828635	-118.8703	34.83044	-118.8684	83.0%	64.9%	50.2%	45.1%	83.0%	**99.8%**	**1**
I-5	34.82565	-118.87367	34.82864	-118.8703	83.0%	64.9%	50.0%	45.0%	83.0%	**99.7%**	**1**
I-5	34.82565	-118.87367	34.82565	-118.8737	83.0%	64.9%	50.0%	45.0%	83.0%	**99.7%**	**1**
I-5	34.82565	-118.87367	34.82565	-118.8737	83.0%	64.9%	50.0%	45.0%	83.0%	**99.7%**	**1**
I-5	34.824505	-118.87472	34.82511	-118.8742	83.0%	64.9%	49.9%	45.0%	83.0%	**99.6%**	**1**
I-5	34.825108	-118.87417	34.82565	-118.8737	83.0%	64.9%	49.9%	45.0%	83.0%	**99.6%**	**1**
I-5	34.825108	-118.87417	34.82565	-118.8737	83.0%	64.9%	49.9%	45.0%	83.0%	**99.6%**	**1**
I-5	34.82277	-118.87648	34.82451	-118.8747	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.821546	-118.87771	34.82277	-118.8765	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.821546	-118.87771	34.82277	-118.8765	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.819866	-118.87935	34.82094	-118.8783	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.820942	-118.8783	34.82155	-118.8777	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.820942	-118.8783	34.82155	-118.8777	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.813983	-118.88394	34.8136	-118.8841	82.1%	64.0%	48.4%	43.5%	82.1%	**97.5%**	**1**
I-5	34.813983	-118.88394	34.81398	-118.8839	82.1%	64.0%	48.4%	43.5%	82.1%	**97.5%**	**1**
I-5	34.819065	-118.88028	34.81987	-118.8794	81.4%	63.4%	48.0%	42.7%	81.4%	**96.3%**	**1**
I-5	34.817851	-118.8814	34.81907	-118.8803	81.4%	63.4%	47.9%	42.7%	81.4%	**96.3%**	**1**
I-5	34.814722	-118.88338	34.8141	-118.8838	81.4%	63.4%	47.8%	42.6%	81.4%	**96.2%**	**1**
I-5	34.938367	-118.92986	34.93906	-118.93	59.9%	65.2%	64.1%	41.2%	83.2%	**95.1%**	**1**
I-5	34.923507	-118.92709	34.92859	-118.9284	59.9%	65.2%	60.8%	41.4%	83.2%	**94.0%**	**1**
I-5	34.909444	-118.92364	34.91	-118.9238	59.9%	65.2%	56.9%	41.8%	83.2%	**92.7%**	**1**
I-5	34.90767	-118.92322	34.9083	-118.9234	59.9%	65.2%	56.9%	41.8%	83.2%	**92.7%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**92.7%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**92.7%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**92.7%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**92.7%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**92.7%**	**1**
I-5	34.895582	-118.91984	34.89329	-118.9169	60.0%	65.3%	53.9%	42.8%	83.3%	**91.9%**	**1**
I-5	34.892148	-118.91537	34.89136	-118.9143	60.0%	65.3%	53.9%	42.8%	83.3%	**91.9%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**91.9%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**91.9%**	**1**
I-5	35.000303	-118.94958	35.00378	-118.9507	47.4%	64.4%	72.2%	38.6%	82.4%	**91.9%**	**1**
I-5	35.003775	-118.9507	35.00417	-118.9508	47.4%	64.4%	72.3%	38.3%	82.4%	**91.8%**	**1**
I-5	35.004165	-118.95082	35.00472	-118.951	47.4%	64.4%	72.3%	38.3%	82.4%	**91.8%**	**1**
I-5	34.892921	-118.91453	34.8932	-118.9149	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.891125	-118.9123	34.8916	-118.9129	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**91.8%**	**1**
I-5	34.953101	-118.93446	34.95346	-118.9346	47.6%	64.5%	67.3%	40.1%	82.6%	**90.8%**	**1**
I-5	34.839455	-118.863	34.84203	-118.8646	83.0%	64.9%	25.6%	45.3%	83.0%	**90.7%**	**1**
I-5	34.839039	-118.86318	34.83946	-118.863	83.0%	64.9%	25.5%	45.3%	83.0%	**90.7%**	**1**
I-5	34.842025	-118.86459	34.84483	-118.8666	83.0%	64.9%	25.6%	45.1%	83.0%	**90.6%**	**1**
I-5	34.844826	-118.86663	34.84483	-118.8666	83.0%	64.9%	25.6%	45.1%	83.0%	**90.6%**	**1**
I-5	34.83455	-118.86535	34.8333	-118.8659	83.3%	29.2%	50.8%	45.7%	83.3%	**87.2%**	**1**
I-5	34.833295	-118.86588	34.8313	-118.8679	83.3%	29.2%	50.7%	45.7%	83.3%	**87.1%**	**1**
I-5	34.831295	-118.86794	34.83065	-118.8686	83.3%	29.2%	50.6%	45.6%	83.3%	**87.0%**	**1**
I-5	34.830645	-118.86863	34.82904	-118.8703	83.3%	29.2%	50.5%	45.6%	83.3%	**87.0%**	**1**
I-5	34.829035	-118.8703	34.82628	-118.8735	83.3%	29.2%	50.4%	45.5%	83.3%	**86.9%**	**1**
I-5	34.826279	-118.87353	34.82624	-118.8736	83.3%	29.2%	50.3%	45.4%	83.3%	**86.8%**	**1**
I-5	34.826236	-118.87358	34.8256	-118.8743	83.3%	29.2%	50.3%	45.4%	83.3%	**86.8%**	**1**

I-5	34.826236	-118.87358	34.8256	-118.8743	83.3%	29.2%	50.3%	45.4%	83.3%	**86.8%**	**1**
I-5	34.824699	-118.87514	34.82378	-118.876	83.3%	29.2%	50.2%	45.4%	83.3%	**86.8%**	**1**
I-5	34.825601	-118.87426	34.8247	-118.8751	83.3%	29.2%	50.2%	45.4%	83.3%	**86.8%**	**1**
I-5	34.825601	-118.87426	34.8247	-118.8751	83.3%	29.2%	50.2%	45.4%	83.3%	**86.8%**	**1**
I-5	34.82201	-118.87784	34.82171	-118.8781	83.3%	29.2%	50.0%	45.3%	83.3%	**86.7%**	**1**
I-5	34.823778	-118.87604	34.82221	-118.8776	83.3%	29.2%	50.0%	45.3%	83.3%	**86.7%**	**1**
I-5	34.82171	-118.87814	34.82055	-118.8793	83.3%	29.2%	49.9%	45.2%	83.3%	**86.7%**	**1**
I-5	34.833545	-118.86554	34.83474	-118.865	83.0%	28.9%	50.5%	45.3%	83.0%	**86.5%**	**1**
I-5	34.939855	-118.93007	34.94166	-118.9309	59.9%	65.2%	40.7%	41.1%	83.2%	**86.4%**	**1**
I-5	34.937458	-118.93062	34.9309	-118.9299	60.0%	65.3%	39.1%	41.3%	83.3%	**85.9%**	**1**
I-5	34.945484	-118.93214	34.94627	-118.9324	59.2%	64.5%	42.3%	40.1%	82.6%	**85.9%**	**1**
I-5	34.93927	-118.92999	34.93837	-118.9299	59.9%	65.2%	39.1%	41.2%	83.2%	**85.8%**	**1**
I-5	34.944089	-118.93171	34.94548	-118.9321	59.2%	64.5%	41.1%	40.2%	82.6%	**85.4%**	**1**
I-5	34.941657	-118.93093	34.94409	-118.9317	59.2%	64.5%	40.6%	40.2%	82.6%	**85.2%**	**1**
I-5	34.928586	-118.92836	34.92985	-118.9287	59.9%	65.2%	35.8%	41.4%	83.2%	**84.6%**	**1**
I-5	34.820546	-118.87925	34.81924	-118.8804	82.1%	28.0%	48.7%	43.6%	82.1%	**84.2%**	**1**
I-5	34.819235	-118.88045	34.81785	-118.8819	82.1%	28.0%	48.6%	43.5%	82.1%	**84.2%**	**1**
I-5	34.909999	-118.92378	34.90944	-118.9236	59.9%	65.2%	31.9%	41.8%	83.2%	**83.3%**	**1**
I-5	34.979327	-118.94287	34.98291	-118.9441	47.6%	64.5%	47.2%	39.4%	82.6%	**83.0%**	**1**
I-5	34.978784	-118.94307	34.97712	-118.9426	47.6%	64.6%	46.0%	39.8%	82.6%	**82.9%**	**1**
I-5	34.991645	-118.94711	34.989	-118.9463	47.5%	64.4%	47.1%	38.9%	82.5%	**82.7%**	**1**
I-5	34.959624	-118.93665	34.96693	-118.939	47.6%	64.5%	46.0%	39.7%	82.6%	**82.7%**	**1**
I-5	34.966932	-118.93895	34.97933	-118.9429	47.6%	64.5%	46.0%	39.7%	82.6%	**82.7%**	**1**
I-5	35.004125	-118.95105	34.99165	-118.9471	47.5%	64.4%	47.3%	38.6%	82.5%	**82.7%**	**1**
I-5	34.895912	-118.92027	34.89004	-118.9126	60.0%	65.3%	28.9%	42.8%	83.3%	**82.6%**	**1**
I-5	35.005525	-118.95147	35.00413	-118.951	47.5%	64.4%	47.4%	38.3%	82.5%	**82.6%**	**1**
I-5	34.991225	-118.94667	35.0003	-118.9496	47.4%	64.4%	47.2%	38.6%	82.4%	**82.6%**	**1**
I-5	35.004723	-118.95099	35.00516	-118.9511	47.4%	64.4%	47.3%	38.3%	82.4%	**82.5%**	**1**
I-5	34.889432	-118.9102	34.88122	-118.9	59.9%	65.2%	28.8%	42.7%	83.2%	**82.5%**	**1**
I-5	35.005155	-118.95113	35.0068	-118.9516	47.4%	64.4%	47.3%	38.2%	82.4%	**82.5%**	**1**
I-5	34.955919	-118.9353	34.95962	-118.9366	47.6%	64.5%	44.4%	40.0%	82.6%	**82.2%**	**1**
CA-155	35.679185	-118.47015	35.67924	-118.4701	25.2%	71.9%	49.8%	60.1%	71.9%	**82.2%**	**1**
CA-155	35.679185	-118.47015	35.67924	-118.4701	25.2%	71.9%	49.8%	60.1%	71.9%	**82.2%**	**1**
CA-155	35.679185	-118.47015	35.67721	-118.4706	25.2%	71.9%	49.9%	60.0%	71.9%	**82.1%**	**1**
CA-155	35.679185	-118.47015	35.67721	-118.4706	25.2%	71.9%	49.9%	60.0%	71.9%	**82.1%**	**1**
CA-155	35.669529	-118.47014	35.66957	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.669529	-118.47014	35.66957	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.666905	-118.47143	35.66797	-118.4709	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.666905	-118.47143	35.66797	-118.4709	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**82.1%**	**2**
CA-155	35.664881	-118.47111	35.66477	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.664881	-118.47111	35.66477	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.666905	-118.47143	35.66559	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**82.1%**	**2**

CA-155	35.666905	-118.47143	35.66559	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**82.1%**	**2**
CA-155	35.66477	-118.47108	35.66029	-118.4754	25.2%	71.9%	50.2%	59.4%	71.9%	**82.0%**	**2**
CA-155	35.66477	-118.47108	35.66029	-118.4754	25.2%	71.9%	50.2%	59.4%	71.9%	**82.0%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**82.0%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**82.0%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**82.0%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**82.0%**	**2**
I-5	34.953642	-118.93462	34.95592	-118.9353	47.6%	64.5%	43.7%	40.0%	82.6%	**82.0%**	**2**
I-5	34.844827	-118.86663	34.84724	-118.8684	59.6%	64.9%	25.6%	45.1%	83.0%	**81.9%**	**2**
I-5	34.844826	-118.86663	34.84483	-118.8666	59.6%	64.9%	25.6%	45.1%	83.0%	**81.9%**	**2**
CA-155	35.659139	-118.47809	35.65892	-118.4786	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
CA-155	35.659139	-118.47809	35.65892	-118.4786	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
CA-155	35.660285	-118.47542	35.66028	-118.4754	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
CA-155	35.660285	-118.47542	35.66028	-118.4754	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**81.9%**	**2**
I-5	34.847235	-118.86839	34.85549	-118.8747	59.6%	64.9%	25.9%	44.6%	83.0%	**81.9%**	**2**
I-5	34.868233	-118.88571	34.87104	-118.8881	59.6%	64.9%	26.7%	43.8%	83.0%	**81.8%**	**2**
I-5	34.855486	-118.87474	34.85551	-118.8748	59.6%	64.9%	26.7%	43.8%	83.0%	**81.8%**	**2**
I-5	34.875111	-118.89247	34.87511	-118.8925	59.6%	64.9%	27.4%	43.0%	83.0%	**81.8%**	**2**
I-5	34.871045	-118.88813	34.87332	-118.8906	59.6%	64.9%	27.2%	43.2%	83.0%	**81.8%**	**2**
I-5	34.873316	-118.89057	34.8739	-118.8912	59.6%	64.9%	27.3%	43.1%	83.0%	**81.8%**	**2**
CA-155	35.658911	-118.47862	35.65842	-118.4806	25.2%	71.9%	50.0%	58.9%	71.9%	**81.8%**	**2**
CA-155	35.658911	-118.47862	35.65842	-118.4806	25.2%	71.9%	50.0%	58.9%	71.9%	**81.8%**	**2**
I-5	34.930563	-118.92991	34.93044	-118.9299	60.0%	29.2%	64.1%	41.3%	83.3%	**81.8%**	**2**
I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**81.8%**	**2**
I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**81.8%**	**2**
I-5	34.875265	-118.89264	34.8756	-118.893	59.5%	64.8%	27.3%	42.8%	82.8%	**81.6%**	**2**
I-5	34.953455	-118.93457	34.9531	-118.9345	47.6%	64.5%	42.3%	40.1%	82.6%	**81.5%**	**2**
CA-155	35.649601	-118.48563	35.64765	-118.4851	25.2%	71.9%	49.2%	58.0%	71.9%	**81.1%**	**2**
CA-155	35.649601	-118.48563	35.64765	-118.4851	25.2%	71.9%	49.2%	58.0%	71.9%	**81.1%**	**2**
CA-155	35.641142	-118.48367	35.63947	-118.483	25.4%	72.0%	48.5%	57.8%	72.0%	**81.0%**	**2**
CA-155	35.641142	-118.48367	35.63947	-118.483	25.4%	72.0%	48.5%	57.8%	72.0%	**81.0%**	**2**
CA-155	35.646705	-118.48488	35.64728	-118.485	25.2%	71.9%	48.8%	57.8%	71.9%	**80.9%**	**2**
CA-155	35.646705	-118.48488	35.64728	-118.485	25.2%	71.9%	48.8%	57.8%	71.9%	**80.9%**	**2**
CA-155	35.642545	-118.48425	35.64311	-118.4843	25.2%	71.9%	48.8%	57.8%	71.9%	**80.9%**	**2**
CA-155	35.642545	-118.48425	35.64311	-118.4843	25.2%	71.9%	48.8%	57.8%	71.9%	**80.9%**	**2**
I-5	34.923351	-118.92705	34.92351	-118.9271	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**

I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**80.5%**	**2**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**

I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**80.5%**	**2**
I-5	34.982905	-118.94407	34.98572	-118.945	46.2%	63.2%	45.8%	37.5%	81.2%	**80.3%**	**2**
I-5	34.986375	-118.94515	34.98638	-118.9451	46.2%	63.2%	45.9%	37.4%	81.2%	**80.3%**	**2**
I-5	34.982855	-118.94435	34.97878	-118.9431	45.8%	62.8%	45.4%	37.1%	80.8%	**79.6%**	**2**
I-5	34.985655	-118.94524	34.98286	-118.9443	45.8%	62.8%	45.4%	37.0%	80.8%	**79.5%**	**2**
I-5	34.986305	-118.94544	34.98566	-118.9452	45.8%	62.8%	45.4%	36.9%	80.8%	**79.5%**	**2**
I-5	34.988995	-118.94629	34.98631	-118.9454	45.8%	62.8%	45.5%	36.9%	80.8%	**79.5%**	**2**
I-5	34.986641	-118.94522	34.98664	-118.9452	45.8%	62.7%	45.4%	36.8%	80.8%	**79.4%**	**2**
I-5	34.989095	-118.94601	34.99123	-118.9467	45.8%	62.7%	45.4%	36.7%	80.8%	**79.4%**	**2**
I-5	34.915507	-118.9251	34.91099	-118.924	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**79.2%**	**2**
I-5	34.90556	-118.92409	34.90539	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.905363	-118.92404	34.90307	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**

I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**79.2%**	**2**
FRENCH GULCH	35.653153	-118.58764	35.6518	-118.5886	23.3%	70.0%	58.5%	47.6%	70.0%	**78.7%**	**2**
FRENCH GULCH	35.653153	-118.58764	35.6518	-118.5886	23.3%	70.0%	58.5%	47.6%	70.0%	**78.7%**	**2**
FRENCH GULCH	35.658821	-118.58375	35.65315	-118.5876	23.3%	70.0%	58.5%	47.6%	70.0%	**78.7%**	**2**
FRENCH GULCH	35.658821	-118.58375	35.65315	-118.5876	23.3%	70.0%	58.5%	47.6%	70.0%	**78.7%**	**2**
RANCHERIA RD	35.637947	-118.59644	35.63192	-118.601	23.5%	70.2%	59.2%	46.5%	70.2%	**78.6%**	**2**
RANCHERIA RD	35.637947	-118.59644	35.63192	-118.601	23.5%	70.2%	59.2%	46.5%	70.2%	**78.6%**	**2**
FRENCH GULCH	35.6681	-118.57143	35.65982	-118.5826	23.3%	70.0%	57.3%	48.7%	70.0%	**78.6%**	**2**
FRENCH GULCH	35.6681	-118.57143	35.65982	-118.5826	23.3%	70.0%	57.3%	48.7%	70.0%	**78.6%**	**2**
RANCHERIA RD	35.631705	-118.60095	35.63192	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**78.5%**	**2**
RANCHERIA RD	35.631705	-118.60095	35.63192	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**78.5%**	**2**
RANCHERIA RD	35.631705	-118.60095	35.63136	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**78.5%**	**2**
RANCHERIA RD	35.631705	-118.60095	35.63136	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**78.5%**	**2**
I-5	34.881435	-118.90144	34.88053	-118.9003	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.879817	-118.89934	34.87951	-118.8989	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.896765	-118.92138	34.89668	-118.9213	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.889945	-118.91251	34.8899	-118.9125	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**78.5%**	**3**
FRENCH GULCH	35.669567	-118.56559	35.6696	-118.5654	23.3%	70.0%	55.7%	49.8%	70.0%	**78.4%**	**3**
FRENCH GULCH	35.669567	-118.56559	35.6696	-118.5654	23.3%	70.0%	55.7%	49.8%	70.0%	**78.4%**	**3**
I-5	34.8814	-118.90024	34.88144	-118.9003	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.88897	-118.90963	34.88921	-118.9099	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**78.4%**	**3**
RANCHERIA RD	35.627711	-118.60257	35.62562	-118.6035	23.5%	70.2%	58.8%	46.1%	70.2%	**78.4%**	**3**
RANCHERIA RD	35.627711	-118.60257	35.62562	-118.6035	23.5%	70.2%	58.8%	46.1%	70.2%	**78.4%**	**3**
I-5	34.865867	-118.88398	34.8657	-118.8838	60.0%	29.2%	51.8%	44.4%	83.3%	**78.3%**	**3**

I-5	34.866724	-118.88475	34.86587	-118.884	60.0%	29.2%	52.3%	43.8%	83.3%	**78.3%**	**3**
FRENCH GULCH	35.680042	-118.48629	35.68004	-118.4888	23.3%	70.0%	48.1%	57.1%	70.0%	**78.3%**	**3**
FRENCH GULCH	35.680042	-118.48629	35.68004	-118.4888	23.3%	70.0%	48.1%	57.1%	70.0%	**78.3%**	**3**
FRENCH GULCH	35.680026	-118.47132	35.68003	-118.4705	23.3%	70.0%	48.1%	57.1%	70.0%	**78.3%**	**3**
FRENCH GULCH	35.680026	-118.47132	35.68003	-118.4705	23.3%	70.0%	48.1%	57.1%	70.0%	**78.3%**	**3**
CA-178	35.607562	-118.49527	35.60735	-118.4958	25.0%	71.7%	45.6%	54.7%	71.7%	**78.3%**	**3**
CA-178	35.607562	-118.49527	35.60735	-118.4958	25.0%	71.7%	45.6%	54.7%	71.7%	**78.3%**	**3**
I-5	35.006745	-118.95185	35.00553	-118.9515	45.3%	62.3%	45.2%	35.4%	80.3%	**78.3%**	**3**
I-5	35.008605	-118.95248	35.00675	-118.9518	45.3%	62.3%	45.3%	35.3%	80.3%	**78.3%**	**3**
FRENCH GULCH	35.669605	-118.56544	35.66748	-118.5635	23.3%	70.0%	54.9%	50.2%	70.0%	**78.2%**	**3**
FRENCH GULCH	35.669605	-118.56544	35.66748	-118.5635	23.3%	70.0%	54.9%	50.2%	70.0%	**78.2%**	**3**
RANCHERIA RD	35.623055	-118.6046	35.62454	-118.6039	23.5%	70.2%	58.5%	45.9%	70.2%	**78.2%**	**3**
RANCHERIA RD	35.623055	-118.6046	35.62454	-118.6039	23.5%	70.2%	58.5%	45.9%	70.2%	**78.2%**	**3**
LAKE ISABELLA B	35.596048	-118.49183	35.5966	-118.4917	25.2%	71.9%	44.8%	54.5%	71.9%	**78.2%**	**3**
LAKE ISABELLA B	35.596048	-118.49183	35.5966	-118.4917	25.2%	71.9%	44.8%	54.5%	71.9%	**78.2%**	**3**
I-5	34.813983	-118.88394	34.81398	-118.8839	82.1%	12.1%	48.4%	43.5%	82.1%	**78.2%**	**3**
RANCHERIA RD	35.623055	-118.6046	35.62306	-118.6046	23.5%	70.2%	58.6%	45.7%	70.2%	**78.2%**	**3**
RANCHERIA RD	35.623055	-118.6046	35.62306	-118.6046	23.5%	70.2%	58.6%	45.7%	70.2%	**78.2%**	**3**
RANCHERIA RD	35.624545	-118.61117	35.62444	-118.6108	23.5%	70.2%	58.8%	45.5%	70.2%	**78.1%**	**3**
RANCHERIA RD	35.624545	-118.61117	35.62444	-118.6108	23.5%	70.2%	58.8%	45.5%	70.2%	**78.1%**	**3**
FRENCH GULCH	35.678343	-118.49242	35.68004	-118.4888	23.3%	70.0%	48.3%	56.3%	70.0%	**78.1%**	**3**
FRENCH GULCH	35.678343	-118.49242	35.68004	-118.4888	23.3%	70.0%	48.3%	56.3%	70.0%	**78.1%**	**3**
FRENCH GULCH	35.678215	-118.49349	35.67813	-118.493	23.3%	70.0%	48.3%	56.2%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.678215	-118.49349	35.67813	-118.493	23.3%	70.0%	48.3%	56.2%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.676465	-118.49595	35.67664	-118.4957	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.676465	-118.49595	35.67664	-118.4957	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.677786	-118.49409	35.67821	-118.4935	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.677786	-118.49409	35.67821	-118.4935	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.67664	-118.4957	35.67779	-118.4941	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.67664	-118.4957	35.67779	-118.4941	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.67664	-118.4957	35.67779	-118.4941	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
FRENCH GULCH	35.67664	-118.4957	35.67779	-118.4941	23.3%	70.0%	48.3%	56.0%	70.0%	**78.0%**	**3**
CA-178	35.605166	-118.50005	35.60398	-118.5024	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
CA-178	35.605166	-118.50005	35.60398	-118.5024	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
CA-178	35.598635	-118.51281	35.59953	-118.5111	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
CA-178	35.598635	-118.51281	35.59953	-118.5111	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**78.0%**	**3**
RANCHERIA RD	35.623771	-118.61171	35.62454	-118.6112	23.5%	70.2%	58.5%	45.3%	70.2%	**77.9%**	**3**
RANCHERIA RD	35.623771	-118.61171	35.62454	-118.6112	23.5%	70.2%	58.5%	45.3%	70.2%	**77.9%**	**3**
FRENCH GULCH	35.676464	-118.49596	35.67642	-118.4968	23.3%	70.0%	48.3%	55.9%	70.0%	**77.9%**	**3**
FRENCH GULCH	35.676464	-118.49596	35.67642	-118.4968	23.3%	70.0%	48.3%	55.9%	70.0%	**77.9%**	**3**
FRENCH GULCH	35.676265	-118.49959	35.67641	-118.4968	23.3%	70.0%	48.3%	55.8%	70.0%	**77.9%**	**3**
FRENCH GULCH	35.676265	-118.49959	35.67641	-118.4968	23.3%	70.0%	48.3%	55.8%	70.0%	**77.9%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.7%	49.4%	71.7%	**77.9%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.7%	49.4%	71.7%	**77.9%**	**3**
I-5	34.841915	-118.86487	34.83939	-118.8633	83.3%	29.2%	25.9%	45.7%	83.3%	**77.9%**	**3**
FRENCH GULCH	35.670685	-118.54694	35.66748	-118.5635	23.3%	70.0%	52.9%	51.1%	70.0%	**77.9%**	**3**
FRENCH GULCH	35.670685	-118.54694	35.66748	-118.5635	23.3%	70.0%	52.9%	51.1%	70.0%	**77.9%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.4%	49.7%	71.7%	**77.9%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.4%	49.7%	71.7%	**77.9%**	**3**
CA-178	35.581689	-118.55613	35.58173	-118.5547	25.0%	71.7%	49.4%	49.7%	71.7%	**77.9%**	**3**
CA-178	35.581689	-118.55613	35.58173	-118.5547	25.0%	71.7%	49.4%	49.7%	71.7%	**77.9%**	**3**
I-5	34.839385	-118.86331	34.83455	-118.8653	83.3%	29.2%	25.8%	45.7%	83.3%	**77.9%**	**3**
FRENCH GULCH	35.675685	-118.50063	35.67626	-118.4996	23.3%	70.0%	48.3%	55.7%	70.0%	**77.8%**	**3**
FRENCH GULCH	35.675685	-118.50063	35.67626	-118.4996	23.3%	70.0%	48.3%	55.7%	70.0%	**77.8%**	**3**
FRENCH GULCH	35.67568	-118.50067	35.6754	-118.503	23.3%	70.0%	48.3%	55.5%	70.0%	**77.8%**	**3**
FRENCH GULCH	35.67568	-118.50067	35.6754	-118.503	23.3%	70.0%	48.3%	55.5%	70.0%	**77.8%**	**3**
FRENCH GULCH	35.675405	-118.50301	35.67526	-118.5043	23.3%	70.0%	48.3%	55.5%	70.0%	**77.8%**	**3**
FRENCH GULCH	35.675405	-118.50301	35.67526	-118.5043	23.3%	70.0%	48.3%	55.5%	70.0%	**77.8%**	**3**
FRENCH GULCH	35.675405	-118.50301	35.67526	-118.5043	23.3%	70.0%	48.3%	55.5%	70.0%	**77.8%**	**3**
FRENCH GULCH	35.675405	-118.50301	35.67526	-118.5043	23.3%	70.0%	48.3%	55.5%	70.0%	**77.8%**	**3**
CA-178	35.581735	-118.55468	35.58149	-118.5541	25.0%	71.7%	49.0%	49.8%	71.7%	**77.8%**	**3**
CA-178	35.581735	-118.55468	35.58149	-118.5541	25.0%	71.7%	49.0%	49.8%	71.7%	**77.8%**	**3**
CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**77.8%**	**3**
CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**77.8%**	**3**

CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**77.8%**	**3**
CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**77.8%**	**3**
I-5	34.844908	-118.86715	34.84192	-118.8649	83.3%	29.2%	26.1%	45.2%	83.3%	**77.8%**	**3**
CA-178	35.578815	-118.56045	35.57847	-118.5608	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.578815	-118.56045	35.57847	-118.5608	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.574263	-118.56469	35.57423	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.574263	-118.56469	35.57423	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**77.8%**	**3**
CA-178	35.580244	-118.55101	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**77.7%**	**3**
CA-178	35.580244	-118.55101	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**77.7%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**77.7%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**77.7%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**77.7%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**77.7%**	**3**
CA-178	35.569062	-118.57541	35.56908	-118.5754	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569062	-118.57541	35.56908	-118.5754	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.574037	-118.56509	35.57276	-118.5677	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.574037	-118.56509	35.57276	-118.5677	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**

CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**77.6%**	**3**
CA-178	35.598469	-118.51304	35.5952	-118.5176	25.0%	71.7%	45.5%	52.8%	71.7%	**77.6%**	**3**
CA-178	35.598469	-118.51304	35.5952	-118.5176	25.0%	71.7%	45.5%	52.8%	71.7%	**77.6%**	**3**
CA-178	35.598635	-118.51281	35.59849	-118.513	25.0%	71.7%	45.5%	52.8%	71.7%	**77.6%**	**3**
CA-178	35.598635	-118.51281	35.59849	-118.513	25.0%	71.7%	45.5%	52.8%	71.7%	**77.6%**	**3**
RANCHERIA RD	35.615085	-118.62154	35.61367	-118.6267	23.5%	70.2%	58.0%	44.6%	70.2%	**77.5%**	**3**
RANCHERIA RD	35.615085	-118.62154	35.61367	-118.6267	23.5%	70.2%	58.0%	44.6%	70.2%	**77.5%**	**3**
CA-178	35.581367	-118.54408	35.58014	-118.5506	25.0%	71.7%	47.8%	50.2%	71.7%	**77.5%**	**3**
CA-178	35.581367	-118.54408	35.58014	-118.5506	25.0%	71.7%	47.8%	50.2%	71.7%	**77.5%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**77.5%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**77.5%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**77.5%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**77.5%**	**3**
RANCHERIA RD	35.61484	-118.62892	35.61481	-118.6284	23.5%	70.2%	58.2%	44.4%	70.2%	**77.5%**	**3**
RANCHERIA RD	35.61484	-118.62892	35.61481	-118.6284	23.5%	70.2%	58.2%	44.4%	70.2%	**77.5%**	**3**
FRENCH GULCH	35.670685	-118.54694	35.67068	-118.5469	23.3%	70.0%	50.8%	52.1%	70.0%	**77.5%**	**3**
FRENCH GULCH	35.670685	-118.54694	35.67068	-118.5469	23.3%	70.0%	50.8%	52.1%	70.0%	**77.5%**	**3**
RANCHERIA RD	35.614767	-118.62831	35.61351	-118.6269	23.5%	70.2%	58.1%	44.4%	70.2%	**77.5%**	**3**
RANCHERIA RD	35.614767	-118.62831	35.61351	-118.6269	23.5%	70.2%	58.1%	44.4%	70.2%	**77.5%**	**3**
RANCHERIA RD	35.613505	-118.62691	35.61367	-118.6267	23.5%	70.2%	58.0%	44.5%	70.2%	**77.4%**	**3**
RANCHERIA RD	35.613505	-118.62691	35.61367	-118.6267	23.5%	70.2%	58.0%	44.5%	70.2%	**77.4%**	**3**
I-5	34.822212	-118.87763	34.82201	-118.8778	83.3%	29.2%	25.0%	45.3%	83.3%	**77.4%**	**3**
CA-178	35.582255	-118.53934	35.58143	-118.5437	25.0%	71.7%	47.0%	50.6%	71.7%	**77.3%**	**3**
CA-178	35.582255	-118.53934	35.58143	-118.5437	25.0%	71.7%	47.0%	50.6%	71.7%	**77.3%**	**3**
FRENCH GULCH	35.672909	-118.51304	35.66849	-118.5296	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.672909	-118.51304	35.66849	-118.5296	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.675237	-118.50434	35.67525	-118.5043	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.675237	-118.50434	35.67525	-118.5043	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.675237	-118.50434	35.67525	-118.5043	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.675237	-118.50434	35.67525	-118.5043	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.668215	-118.53058	35.66825	-118.5305	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.668215	-118.53058	35.66825	-118.5305	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.668215	-118.53058	35.66825	-118.5305	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
FRENCH GULCH	35.668215	-118.53058	35.66825	-118.5305	23.3%	70.0%	48.0%	54.4%	70.0%	**77.3%**	**3**
MAIN DAM C G	35.643655	-118.48357	35.6439	-118.4834	23.3%	70.0%	46.9%	55.4%	70.0%	**77.2%**	**3**
MAIN DAM C G	35.643655	-118.48357	35.6439	-118.4834	23.3%	70.0%	46.9%	55.4%	70.0%	**77.2%**	**3**
I-5	34.83474	-118.86503	34.83904	-118.8632	83.0%	28.9%	25.5%	45.3%	83.0%	**77.2%**	**3**
FRENCH GULCH	35.668755	-118.54283	35.66894	-118.5432	23.3%	70.0%	49.8%	52.5%	70.0%	**77.2%**	**3**
FRENCH GULCH	35.668755	-118.54283	35.66894	-118.5432	23.3%	70.0%	49.8%	52.5%	70.0%	**77.2%**	**3**
MAIN DAM C G	35.643655	-118.48357	35.64324	-118.4837	23.3%	70.0%	46.9%	55.4%	70.0%	**77.2%**	**3**
MAIN DAM C G	35.643655	-118.48357	35.64324	-118.4837	23.3%	70.0%	46.9%	55.4%	70.0%	**77.2%**	**3**
CA-178	35.582255	-118.53934	35.58233	-118.5388	25.0%	71.7%	46.3%	51.0%	71.7%	**77.2%**	**3**
CA-178	35.582255	-118.53934	35.58233	-118.5388	25.0%	71.7%	46.3%	51.0%	71.7%	**77.2%**	**3**
CA-178	35.582449	-118.53789	35.583	-118.5337	25.0%	71.7%	46.3%	51.0%	71.7%	**77.2%**	**3**
CA-178	35.582449	-118.53789	35.583	-118.5337	25.0%	71.7%	46.3%	51.0%	71.7%	**77.2%**	**3**
RANCHERIA RD	35.614696	-118.62917	35.61167	-118.6324	23.5%	70.2%	57.7%	44.0%	70.2%	**77.2%**	**3**
RANCHERIA RD	35.614696	-118.62917	35.61167	-118.6324	23.5%	70.2%	57.7%	44.0%	70.2%	**77.2%**	**3**
CA-178	35.588385	-118.52576	35.5882	-118.526	25.0%	71.7%	45.5%	51.7%	71.7%	**77.2%**	**3**
CA-178	35.588385	-118.52576	35.5882	-118.526	25.0%	71.7%	45.5%	51.7%	71.7%	**77.2%**	**3**
CA-178	35.587976	-118.52623	35.58673	-118.5277	25.0%	71.7%	45.5%	51.7%	71.7%	**77.2%**	**3**
CA-178	35.587976	-118.52623	35.58673	-118.5277	25.0%	71.7%	45.5%	51.7%	71.7%	**77.2%**	**3**
CA-178	35.586291	-118.52838	35.58319	-118.5334	25.0%	71.7%	45.6%	51.4%	71.7%	**77.1%**	**3**
CA-178	35.586291	-118.52838	35.58319	-118.5334	25.0%	71.7%	45.6%	51.4%	71.7%	**77.1%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**77.1%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**77.1%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**77.1%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**77.1%**	**3**
FRENCH GULCH	35.667314	-118.53546	35.66731	-118.5354	23.3%	70.0%	48.9%	52.8%	70.0%	**77.0%**	**3**

FRENCH GULCH	35.667314	-118.53546	35.66731	-118.5354	23.3%	70.0%	48.9%	52.8%	70.0%	**77.0%**	**3**
FRENCH GULCH	35.667314	-118.53546	35.66731	-118.5354	23.3%	70.0%	48.9%	52.8%	70.0%	**77.0%**	**3**
FRENCH GULCH	35.667314	-118.53546	35.66731	-118.5354	23.3%	70.0%	48.9%	52.8%	70.0%	**77.0%**	**3**
CA-178	35.567533	-118.5806	35.56586	-118.5863	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.567533	-118.5806	35.56586	-118.5863	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.559674	-118.60741	35.55941	-118.6083	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.559674	-118.60741	35.55941	-118.6083	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**77.0%**	**3**
LAKE ISABELLA B	35.593395	-118.49248	35.594	-118.4923	24.6%	71.3%	44.1%	53.6%	71.3%	**77.0%**	**3**
LAKE ISABELLA B	35.593395	-118.49248	35.594	-118.4923	24.6%	71.3%	44.1%	53.6%	71.3%	**77.0%**	**3**
FRENCH GULCH	35.667375	-118.53461	35.66737	-118.5347	23.3%	70.0%	48.4%	53.1%	70.0%	**76.9%**	**3**
FRENCH GULCH	35.667375	-118.53461	35.66737	-118.5347	23.3%	70.0%	48.4%	53.1%	70.0%	**76.9%**	**3**
FRENCH GULCH	35.667366	-118.53474	35.66731	-118.5354	23.3%	70.0%	48.4%	53.1%	70.0%	**76.9%**	**3**
FRENCH GULCH	35.667366	-118.53474	35.66731	-118.5354	23.3%	70.0%	48.4%	53.1%	70.0%	**76.9%**	**3**
FRENCH GULCH	35.667366	-118.53474	35.66731	-118.5354	23.3%	70.0%	48.4%	53.1%	70.0%	**76.9%**	**3**
FRENCH GULCH	35.667366	-118.53474	35.66731	-118.5354	23.3%	70.0%	48.4%	53.1%	70.0%	**76.9%**	**3**
LAKE ISABELLA B	35.593366	-118.49249	35.5923	-118.4929	24.6%	71.3%	44.0%	53.5%	71.3%	**76.9%**	**3**
LAKE ISABELLA B	35.593366	-118.49249	35.5923	-118.4929	24.6%	71.3%	44.0%	53.5%	71.3%	**76.9%**	**3**
LAKE ISABELLA B	35.592302	-118.49292	35.59337	-118.4925	24.6%	71.3%	44.0%	53.5%	71.3%	**76.9%**	**3**
LAKE ISABELLA B	35.592302	-118.49292	35.59337	-118.4925	24.6%	71.3%	44.0%	53.5%	71.3%	**76.9%**	**3**
LAKE ISABELLA B	35.592302	-118.49292	35.59337	-118.4925	24.6%	71.3%	44.0%	53.5%	71.3%	**76.9%**	**3**
LAKE ISABELLA B	35.592302	-118.49292	35.59337	-118.4925	24.6%	71.3%	44.0%	53.5%	71.3%	**76.9%**	**3**
FRENCH GULCH	35.667375	-118.53461	35.66754	-118.5319	23.3%	70.0%	48.0%	53.2%	70.0%	**76.8%**	**3**
FRENCH GULCH	35.667375	-118.53461	35.66754	-118.5319	23.3%	70.0%	48.0%	53.2%	70.0%	**76.8%**	**3**
FRENCH GULCH	35.667545	-118.53193	35.66757	-118.5319	23.3%	70.0%	47.7%	53.4%	70.0%	**76.8%**	**3**
FRENCH GULCH	35.667545	-118.53193	35.66757	-118.5319	23.3%	70.0%	47.7%	53.4%	70.0%	**76.8%**	**3**
FRENCH GULCH	35.667712	-118.53159	35.66821	-118.5306	23.3%	70.0%	47.7%	53.4%	70.0%	**76.8%**	**3**
FRENCH GULCH	35.667712	-118.53159	35.66821	-118.5306	23.3%	70.0%	47.7%	53.4%	70.0%	**76.8%**	**3**
FRENCH GULCH	35.667712	-118.53159	35.66821	-118.5306	23.3%	70.0%	47.7%	53.4%	70.0%	**76.8%**	**3**
FRENCH GULCH	35.667712	-118.53159	35.66821	-118.5306	23.3%	70.0%	47.7%	53.4%	70.0%	**76.8%**	**3**
CALIENTE BODFIS	35.585233	-118.49892	35.58525	-118.499	24.6%	71.3%	43.4%	52.9%	71.3%	**76.4%**	**3**
CALIENTE BODFIS	35.585233	-118.49892	35.58525	-118.499	24.6%	71.3%	43.4%	52.9%	71.3%	**76.4%**	**3**
CA-178	35.5512	-118.61558	35.54912	-118.6155	25.0%	71.7%	48.5%	43.2%	71.7%	**75.1%**	**3**
CA-178	35.5512	-118.61558	35.54912	-118.6155	25.0%	71.7%	48.5%	43.2%	71.7%	**75.1%**	**3**
CA-178	35.548315	-118.61544	35.54912	-118.6155	25.0%	71.7%	48.2%	43.1%	71.7%	**74.9%**	**3**
CA-178	35.548315	-118.61544	35.54912	-118.6155	25.0%	71.7%	48.2%	43.1%	71.7%	**74.9%**	**3**
CA-178	35.547625	-118.61548	35.54831	-118.6154	25.0%	71.7%	48.0%	43.0%	71.7%	**74.9%**	**3**
CA-178	35.547625	-118.61548	35.54831	-118.6154	25.0%	71.7%	48.0%	43.0%	71.7%	**74.9%**	**3**
205	34.814481	-118.88343	34.81412	-118.8837	70.6%	52.6%	37.0%	28.2%	70.6%	**74.8%**	**3**
CA-178	35.546188	-118.61654	35.54584	-118.6168	25.0%	71.7%	47.2%	42.5%	71.7%	**74.4%**	**3**
CA-178	35.546188	-118.61654	35.54584	-118.6168	25.0%	71.7%	47.2%	42.5%	71.7%	**74.4%**	**3**
CALIENTE BODFIS	35.586103	-118.50095	35.58727	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.586103	-118.50095	35.58727	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.587274	-118.50094	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.587274	-118.50094	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.587274	-118.50094	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.587274	-118.50094	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.586584	-118.50018	35.58702	-118.5004	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.586584	-118.50018	35.58702	-118.5004	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**

CALIENTE BODFIS	35.587016	-118.50043	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.587016	-118.50043	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.587016	-118.50043	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.587016	-118.50043	35.58789	-118.5009	23.5%	70.2%	42.6%	51.3%	70.2%	**74.3%**	**3**
CALIENTE BODFIS	35.585708	-118.50099	35.58452	-118.5019	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.585708	-118.50099	35.58452	-118.5019	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.584516	-118.50193	35.58132	-118.5044	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.584516	-118.50193	35.58132	-118.5044	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.584516	-118.50193	35.58132	-118.5044	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.584516	-118.50193	35.58132	-118.5044	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.580741	-118.50489	35.58057	-118.505	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.580741	-118.50489	35.58057	-118.505	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.580741	-118.50489	35.58057	-118.505	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.580741	-118.50489	35.58057	-118.505	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.581317	-118.50444	35.58074	-118.5049	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.581317	-118.50444	35.58074	-118.5049	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.581317	-118.50444	35.58074	-118.5049	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.581317	-118.50444	35.58074	-118.5049	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.581317	-118.50444	35.58074	-118.5049	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.581317	-118.50444	35.58074	-118.5049	23.5%	70.2%	42.4%	51.0%	70.2%	**74.1%**	**3**
CALIENTE BODFIS	35.580294	-118.50507	35.57766	-118.5055	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.580294	-118.50507	35.57766	-118.5055	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.569295	-118.50702	35.57517	-118.506	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.569295	-118.50702	35.57517	-118.506	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.580538	-118.50502	35.58029	-118.5051	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.580538	-118.50502	35.58029	-118.5051	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.580538	-118.50502	35.58029	-118.5051	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.580538	-118.50502	35.58029	-118.5051	23.5%	70.2%	41.8%	50.6%	70.2%	**73.7%**	**3**
CALIENTE BODFIS	35.299367	-118.59278	35.30078	-118.5913	35.5%	70.5%	45.0%	34.5%	70.5%	**73.6%**	**3**
CALIENTE BODFIS	35.299367	-118.59278	35.30078	-118.5913	35.5%	70.5%	45.0%	34.5%	70.5%	**73.6%**	**3**
CALIENTE BODFIS	35.304795	-118.58375	35.30242	-118.5895	35.5%	70.5%	44.6%	34.6%	70.5%	**73.6%**	**3**
CALIENTE BODFIS	35.304795	-118.58375	35.30242	-118.5895	35.5%	70.5%	44.6%	34.6%	70.5%	**73.6%**	**3**
CALIENTE BODFIS	35.569295	-118.50702	35.56929	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.569295	-118.50702	35.56929	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.569287	-118.50702	35.5689	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.569287	-118.50702	35.5689	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.569287	-118.50702	35.5689	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.569287	-118.50702	35.5689	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568901	-118.50699	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568901	-118.50699	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568901	-118.50699	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568901	-118.50699	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568901	-118.50699	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568901	-118.50699	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56881	-118.507	23.5%	70.2%	41.3%	50.3%	70.2%	**73.4%**	**3**
CA-178	35.538438	-118.62577	35.53837	-118.6259	25.0%	71.7%	45.8%	41.2%	71.7%	**73.4%**	**3**
CA-178	35.538438	-118.62577	35.53837	-118.6259	25.0%	71.7%	45.8%	41.2%	71.7%	**73.4%**	**3**
CA-178	35.538374	-118.62589	35.53671	-118.629	25.0%	71.7%	45.8%	41.2%	71.7%	**73.4%**	**3**
CA-178	35.538374	-118.62589	35.53671	-118.629	25.0%	71.7%	45.8%	41.2%	71.7%	**73.4%**	**3**
CALIENTE BODFIS	35.567519	-118.50611	35.56661	-118.5054	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.567519	-118.50611	35.56661	-118.5054	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568576	-118.50689	35.56506	-118.5043	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568576	-118.50689	35.56506	-118.5043	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568576	-118.50689	35.56506	-118.5043	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568576	-118.50689	35.56506	-118.5043	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56776	-118.5063	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56776	-118.5063	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56776	-118.5063	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56776	-118.5063	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56776	-118.5063	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
CALIENTE BODFIS	35.568695	-118.50698	35.56776	-118.5063	23.5%	70.2%	41.0%	50.3%	70.2%	**73.3%**	**3**
I-5	34.817855	-118.88192	34.81782	-118.882	82.1%	12.1%	48.6%	43.5%	68.3%	**73.1%**	**3**
I-5	34.941535	-118.93132	34.93974	-118.9308	60.0%	29.2%	40.7%	41.2%	83.3%	**73.0%**	**3**

I-5	34.817817	-118.88196	34.81298	-118.8845	82.1%	12.1%	48.4%	43.5%	68.3%	**73.0%**	**3**
CA-155	35.677213	-118.47058	35.67449	-118.4712	25.2%	71.9%	24.9%	60.0%	71.9%	**72.8%**	**3**
CA-155	35.677213	-118.47058	35.67449	-118.4712	25.2%	71.9%	24.9%	60.0%	71.9%	**72.8%**	**3**
CA-155	35.671065	-118.47083	35.66976	-118.47	25.2%	71.9%	25.1%	59.9%	71.9%	**72.8%**	**3**
CA-155	35.671065	-118.47083	35.66976	-118.47	25.2%	71.9%	25.1%	59.9%	71.9%	**72.8%**	**3**
CA-155	35.674495	-118.47119	35.67106	-118.4708	25.2%	71.9%	25.0%	59.9%	71.9%	**72.8%**	**3**
CA-155	35.674495	-118.47119	35.67106	-118.4708	25.2%	71.9%	25.0%	59.9%	71.9%	**72.8%**	**3**
CA-155	35.669571	-118.47012	35.66976	-118.47	25.2%	71.9%	25.1%	59.8%	71.9%	**72.8%**	**3**
CA-155	35.669571	-118.47012	35.66976	-118.47	25.2%	71.9%	25.1%	59.8%	71.9%	**72.8%**	**3**
CALIENTE BODFIS	35.557639	-118.50608	35.55646	-118.5064	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.557639	-118.50608	35.55646	-118.5064	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.543625	-118.50942	35.54659	-118.5087	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.543625	-118.50942	35.54659	-118.5087	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.556456	-118.50636	35.55764	-118.5061	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.556456	-118.50636	35.55764	-118.5061	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.556456	-118.50636	35.55764	-118.5061	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.556456	-118.50636	35.55764	-118.5061	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.560922	-118.5053	35.5553	-118.5066	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.560922	-118.5053	35.5553	-118.5066	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.560922	-118.5053	35.5553	-118.5066	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.560922	-118.5053	35.5553	-118.5066	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.56506	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.56506	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.56506	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.56506	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.565052	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.565052	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.565052	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.565052	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.565052	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CALIENTE BODFIS	35.565052	-118.50431	35.56506	-118.5043	23.5%	70.2%	40.0%	49.8%	70.2%	**72.8%**	**3**
CA-178	35.536715	-118.62903	35.53537	-118.6323	25.0%	71.7%	44.9%	40.1%	71.7%	**72.7%**	**3**
CA-178	35.536715	-118.62903	35.53537	-118.6323	25.0%	71.7%	44.9%	40.1%	71.7%	**72.7%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**72.7%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**72.7%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**72.7%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**72.7%**	**3**
CA-155	35.658918	-118.4786	35.65891	-118.4786	25.2%	71.9%	25.1%	59.1%	71.9%	**72.6%**	**3**
CA-155	35.658918	-118.4786	35.65891	-118.4786	25.2%	71.9%	25.1%	59.1%	71.9%	**72.6%**	**3**
CA-155	35.658915	-118.47861	35.65835	-118.4808	25.2%	71.9%	25.0%	58.9%	71.9%	**72.5%**	**3**
CA-155	35.658915	-118.47861	35.65835	-118.4808	25.2%	71.9%	25.0%	58.9%	71.9%	**72.5%**	**3**
I-5	34.939735	-118.93085	34.93056	-118.9299	60.0%	29.2%	39.1%	41.3%	83.3%	**72.5%**	**3**
CA-155	35.658305	-118.48149	35.65835	-118.4808	25.2%	71.9%	25.0%	58.8%	71.9%	**72.4%**	**3**
CA-155	35.658305	-118.48149	35.65835	-118.4808	25.2%	71.9%	25.0%	58.8%	71.9%	**72.4%**	**3**
RANCHERIA RD	35.565055	-118.68161	35.56537	-118.6814	23.5%	70.2%	49.6%	39.1%	70.2%	**72.3%**	**3**
RANCHERIA RD	35.565055	-118.68161	35.56537	-118.6814	23.5%	70.2%	49.6%	39.1%	70.2%	**72.3%**	**3**
CA-155	35.658305	-118.48149	35.65558	-118.4846	25.2%	71.9%	24.9%	58.7%	71.9%	**72.3%**	**3**
CA-155	35.658305	-118.48149	35.65558	-118.4846	25.2%	71.9%	24.9%	58.7%	71.9%	**72.3%**	**3**
CA-178	35.535255	-118.6323	35.53537	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**72.3%**	**3**
CA-178	35.535255	-118.6323	35.53537	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**72.3%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**72.3%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**72.3%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**72.3%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**72.3%**	**3**
I-5	34.946352	-118.93311	34.94487	-118.9325	59.3%	28.5%	41.5%	40.3%	82.6%	**72.2%**	**3**
CALIENTE BODFIS	35.537515	-118.51058	35.54362	-118.5094	23.5%	70.2%	39.1%	49.2%	70.2%	**72.2%**	**3**
CALIENTE BODFIS	35.537515	-118.51058	35.54362	-118.5094	23.5%	70.2%	39.1%	49.2%	70.2%	**72.2%**	**3**
CA-155	35.653745	-118.48524	35.65558	-118.4846	25.2%	71.9%	24.7%	58.4%	71.9%	**72.2%**	**3**
CA-155	35.653745	-118.48524	35.65558	-118.4846	25.2%	71.9%	24.7%	58.4%	71.9%	**72.2%**	**3**
CA-155	35.653745	-118.48524	35.65289	-118.4858	25.2%	71.9%	24.6%	58.3%	71.9%	**72.1%**	**3**
CA-155	35.653745	-118.48524	35.65289	-118.4858	25.2%	71.9%	24.6%	58.3%	71.9%	**72.1%**	**3**
CALIENTE BODFIS	35.536859	-118.5107	35.53751	-118.5106	23.5%	70.2%	38.9%	49.0%	70.2%	**72.1%**	**3**
CALIENTE BODFIS	35.536859	-118.5107	35.53751	-118.5106	23.5%	70.2%	38.9%	49.0%	70.2%	**72.1%**	**3**
CALIENTE BODFIS	35.351557	-118.56902	35.34736	-118.5722	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.351557	-118.56902	35.34736	-118.5722	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.338986	-118.57866	35.3404	-118.5776	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.338986	-118.57866	35.3404	-118.5776	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.348948	-118.57102	35.34487	-118.5741	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**

CALIENTE BODFIS	35.348948	-118.57102	35.34487	-118.5741	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.348948	-118.57102	35.34487	-118.5741	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.348948	-118.57102	35.34487	-118.5741	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.340399	-118.57758	35.34459	-118.5744	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.340399	-118.57758	35.34459	-118.5744	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.340399	-118.57758	35.34459	-118.5744	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.340399	-118.57758	35.34459	-118.5744	35.4%	70.4%	40.2%	35.4%	70.4%	**72.0%**	**3**
CALIENTE BODFIS	35.497141	-118.52297	35.49711	-118.523	29.3%	70.2%	35.8%	46.2%	70.2%	**72.0%**	**3**
CALIENTE BODFIS	35.497141	-118.52297	35.49711	-118.523	29.3%	70.2%	35.8%	46.2%	70.2%	**72.0%**	**3**
CA-99	35.410235	-119.05278	35.40641	-119.0485	44.7%	27.2%	43.1%	39.5%	97.2%	**72.0%**	**3**
CA-155	35.650675	-118.48601	35.65289	-118.4858	25.2%	71.9%	24.4%	58.2%	71.9%	**72.0%**	**3**
CA-155	35.650675	-118.48601	35.65289	-118.4858	25.2%	71.9%	24.4%	58.2%	71.9%	**72.0%**	**3**
I-5	34.944874	-118.93253	34.94153	-118.9313	59.3%	28.5%	40.7%	40.3%	82.6%	**72.0%**	**3**
CA-155	35.650315	-118.48584	35.65067	-118.486	25.2%	71.9%	24.3%	58.1%	71.9%	**71.9%**	**3**
CA-155	35.650315	-118.48584	35.65067	-118.486	25.2%	71.9%	24.3%	58.1%	71.9%	**71.9%**	**3**
CA-99	35.377007	-119.04429	35.37136	-119.0433	52.1%	28.7%	28.7%	43.1%	98.7%	**71.9%**	**3**
CALIENTE BODFIS	35.493565	-118.52266	35.49711	-118.523	29.3%	70.2%	35.5%	46.0%	70.2%	**71.9%**	**3**
CALIENTE BODFIS	35.493565	-118.52266	35.49711	-118.523	29.3%	70.2%	35.5%	46.0%	70.2%	**71.9%**	**3**
CA-155	35.650315	-118.48584	35.64729	-118.485	25.2%	71.9%	24.2%	58.0%	71.9%	**71.8%**	**3**
CA-155	35.650315	-118.48584	35.64729	-118.485	25.2%	71.9%	24.2%	58.0%	71.9%	**71.8%**	**3**
I-5	34.817725	-118.88152	34.81785	-118.8814	81.4%	11.4%	47.9%	42.7%	67.6%	**71.8%**	**3**
CA-155	35.641495	-118.48409	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**71.8%**	**3**
CA-155	35.641495	-118.48409	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**71.8%**	**3**
CA-155	35.641285	-118.48373	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**71.8%**	**3**
CA-155	35.641285	-118.48373	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**71.8%**	**3**
CALIENTE BODFIS	35.526807	-118.51155	35.52552	-118.5116	23.5%	70.2%	38.3%	48.7%	70.2%	**71.8%**	**3**
CALIENTE BODFIS	35.526807	-118.51155	35.52552	-118.5116	23.5%	70.2%	38.3%	48.7%	70.2%	**71.8%**	**3**
I-5	34.817378	-118.88173	34.8134	-118.8842	81.4%	11.4%	47.8%	42.6%	67.6%	**71.7%**	**3**
CALIENTE BODFIS	35.492535	-118.5226	35.49356	-118.5227	29.3%	70.2%	35.2%	45.9%	70.2%	**71.7%**	**3**
CALIENTE BODFIS	35.492535	-118.5226	35.49356	-118.5227	29.3%	70.2%	35.2%	45.9%	70.2%	**71.7%**	**3**
CA-155	35.641285	-118.48373	35.64114	-118.4837	25.4%	72.0%	23.5%	57.8%	72.0%	**71.6%**	**3**
CA-155	35.641285	-118.48373	35.64114	-118.4837	25.4%	72.0%	23.5%	57.8%	72.0%	**71.6%**	**3**
CALIENTE BODFIS	35.492535	-118.5226	35.49243	-118.5226	29.3%	70.2%	35.1%	45.8%	70.2%	**71.6%**	**3**
CALIENTE BODFIS	35.492535	-118.5226	35.49243	-118.5226	29.3%	70.2%	35.1%	45.8%	70.2%	**71.6%**	**3**
CA-155	35.647281	-118.48497	35.64255	-118.4842	25.2%	71.9%	23.8%	57.8%	71.9%	**71.6%**	**3**
CA-155	35.647281	-118.48497	35.64255	-118.4842	25.2%	71.9%	23.8%	57.8%	71.9%	**71.6%**	**3**
CA-178	35.531712	-118.64089	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**71.6%**	**3**
CA-178	35.531712	-118.64089	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**71.6%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**71.6%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**71.6%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**71.6%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**71.6%**	**3**
CALIENTE BODFIS	35.490957	-118.52308	35.48944	-118.5242	29.3%	70.2%	34.9%	45.6%	70.2%	**71.5%**	**3**
CALIENTE BODFIS	35.490957	-118.52308	35.48944	-118.5242	29.3%	70.2%	34.9%	45.6%	70.2%	**71.5%**	**3**
CALIENTE BODFIS	35.525525	-118.51165	35.52326	-118.513	23.5%	70.2%	37.8%	48.4%	70.2%	**71.4%**	**3**
CALIENTE BODFIS	35.525525	-118.51165	35.52326	-118.513	23.5%	70.2%	37.8%	48.4%	70.2%	**71.4%**	**3**
CALIENTE BODFIS	35.521855	-118.51386	35.52326	-118.513	23.5%	70.2%	37.7%	48.2%	70.2%	**71.3%**	**3**
CALIENTE BODFIS	35.521855	-118.51386	35.52326	-118.513	23.5%	70.2%	37.7%	48.2%	70.2%	**71.3%**	**3**
CALIENTE BODFIS	35.520735	-118.51416	35.52185	-118.5139	23.5%	70.2%	37.7%	48.1%	70.2%	**71.3%**	**3**
CALIENTE BODFIS	35.520735	-118.51416	35.52185	-118.5139	23.5%	70.2%	37.7%	48.1%	70.2%	**71.3%**	**3**
CALIENTE BODFIS	35.520735	-118.51416	35.51915	-118.5148	23.5%	70.2%	37.6%	48.0%	70.2%	**71.2%**	**3**
CALIENTE BODFIS	35.520735	-118.51416	35.51915	-118.5148	23.5%	70.2%	37.6%	48.0%	70.2%	**71.2%**	**3**
CA-99	35.406611	-119.04837	35.40681	-119.0486	44.2%	26.7%	42.7%	39.0%	96.7%	**71.1%**	**3**
CA-99	35.40681	-119.04858	35.41041	-119.0526	44.2%	26.7%	42.7%	38.9%	96.7%	**71.1%**	**3**
CA-99	35.410405	-119.05261	35.41099	-119.0533	44.2%	26.7%	42.7%	38.9%	96.7%	**71.1%**	**3**
WALKER BASIN RD	35.40171	-118.52057	35.3947	-118.5282	29.3%	70.2%	37.6%	41.9%	70.2%	**71.1%**	**3**
WALKER BASIN RD	35.40171	-118.52057	35.3947	-118.5282	29.3%	70.2%	37.6%	41.9%	70.2%	**71.1%**	**3**
CA-178	35.531445	-118.64737	35.53144	-118.6474	25.0%	71.7%	43.2%	37.6%	71.7%	**71.0%**	**3**
CA-178	35.531445	-118.64737	35.53144	-118.6474	25.0%	71.7%	43.2%	37.6%	71.7%	**71.0%**	**3**
CA-99	35.018625	-118.95558	35.00861	-118.9525	41.7%	58.6%	41.8%	30.2%	76.7%	**71.0%**	**3**
CALIENTE BODFIS	35.518664	-118.51511	35.51915	-118.5148	23.5%	70.2%	37.4%	47.7%	70.2%	**71.0%**	**3**
CALIENTE BODFIS	35.518664	-118.51511	35.51915	-118.5148	23.5%	70.2%	37.4%	47.7%	70.2%	**71.0%**	**3**
CA-99	35.019102	-118.95573	35.01863	-118.9556	41.7%	58.6%	41.9%	30.0%	76.7%	**71.0%**	**3**
CALIENTE BODFIS	35.479428	-118.52895	35.4777	-118.5297	29.3%	70.2%	34.2%	44.9%	70.2%	**70.9%**	**3**
CALIENTE BODFIS	35.479428	-118.52895	35.4777	-118.5297	29.3%	70.2%	34.2%	44.9%	70.2%	**70.9%**	**3**
CA-178	35.531111	-118.64827	35.53082	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.531111	-118.64827	35.53082	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**

CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**70.9%**	**3**
CA-99	35.006795	-118.95162	35.00852	-118.9521	41.6%	58.6%	41.6%	30.4%	76.6%	**70.9%**	**3**
CA-99	35.017949	-118.95511	35.01795	-118.9551	41.6%	58.6%	41.7%	30.1%	76.6%	**70.8%**	**3**
PIUTE MOUNTAIN	35.425068	-118.41272	35.42516	-118.4126	29.2%	70.0%	29.4%	49.9%	70.0%	**70.8%**	**3**
PIUTE MOUNTAIN	35.425068	-118.41272	35.42516	-118.4126	29.2%	70.0%	29.4%	49.9%	70.0%	**70.8%**	**3**
BAKERSFIELD TEH	35.263747	-118.63333	35.26373	-118.6334	40.5%	39.4%	54.3%	38.8%	75.5%	**70.8%**	**3**
CALIENTE BODFIS	35.414995	-118.54191	35.41505	-118.5418	29.4%	70.3%	37.1%	41.3%	70.3%	**70.8%**	**3**
CALIENTE BODFIS	35.414995	-118.54191	35.41505	-118.5418	29.4%	70.3%	37.1%	41.3%	70.3%	**70.8%**	**3**
CALIENTE BODFIS	35.417246	-118.53698	35.41998	-118.5369	29.3%	70.2%	37.0%	41.7%	70.2%	**70.8%**	**3**
CALIENTE BODFIS	35.417246	-118.53698	35.41998	-118.5369	29.3%	70.2%	37.0%	41.7%	70.2%	**70.8%**	**3**

Appendix Table B: Top Roads by Earthquake Risk

Route	Begin Latitude	Begin Longitude	End Latitude	End Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
I-5	34.83455	-118.86535	34.8333	-118.8659	83.3%	29.2%	50.8%	45.7%	83.3%	**88.5%**	**1**
I-5	34.833295	-118.86588	34.8313	-118.8679	83.3%	29.2%	50.7%	45.7%	83.3%	**88.4%**	**1**
I-5	34.831295	-118.86794	34.83065	-118.8686	83.3%	29.2%	50.6%	45.6%	83.3%	**88.4%**	**1**
I-5	34.830645	-118.86863	34.82904	-118.8703	83.3%	29.2%	50.5%	45.6%	83.3%	**88.3%**	**1**
I-5	34.829035	-118.8703	34.82628	-118.8735	83.3%	29.2%	50.4%	45.5%	83.3%	**88.2%**	**1**
I-5	34.826279	-118.87353	34.82624	-118.8736	83.3%	29.2%	50.3%	45.4%	83.3%	**88.2%**	**1**
I-5	34.826236	-118.87358	34.8256	-118.8743	83.3%	29.2%	50.3%	45.4%	83.3%	**88.2%**	**1**
I-5	34.826236	-118.87358	34.8256	-118.8743	83.3%	29.2%	50.3%	45.4%	83.3%	**88.2%**	**1**
I-5	34.824699	-118.87514	34.82378	-118.876	83.3%	29.2%	50.2%	45.4%	83.3%	**88.1%**	**1**
I-5	34.825601	-118.87426	34.8247	-118.8751	83.3%	29.2%	50.2%	45.4%	83.3%	**88.1%**	**1**
I-5	34.825601	-118.87426	34.8247	-118.8751	83.3%	29.2%	50.2%	45.4%	83.3%	**88.1%**	**1**
I-5	34.82201	-118.87784	34.82171	-118.8781	83.3%	29.2%	50.0%	45.3%	83.3%	**88.1%**	**1**
I-5	34.823778	-118.87604	34.82221	-118.8776	83.3%	29.2%	50.0%	45.3%	83.3%	**88.1%**	**1**
I-5	34.82171	-118.87814	34.82055	-118.8793	83.3%	29.2%	49.9%	45.2%	83.3%	**88.0%**	**1**
I-5	34.841915	-118.86487	34.83939	-118.8633	83.3%	29.2%	25.9%	45.7%	83.3%	**80.1%**	**3**
I-5	34.839385	-118.86331	34.83455	-118.8653	83.3%	29.2%	25.8%	45.7%	83.3%	**80.1%**	**3**
I-5	34.844908	-118.86715	34.84192	-118.8649	83.3%	29.2%	26.1%	45.2%	83.3%	**80.0%**	**3**
I-5	34.822212	-118.87763	34.82201	-118.8778	83.3%	29.2%	25.0%	45.3%	83.3%	**79.7%**	**3**
I-5	34.833005	-118.86578	34.83355	-118.8655	83.0%	64.9%	50.5%	45.3%	83.0%	**100.0%**	**1**
I-5	34.832535	-118.86625	34.83301	-118.8658	83.0%	64.9%	50.4%	45.2%	83.0%	**99.9%**	**1**
I-5	34.831515	-118.8673	34.83254	-118.8662	83.0%	64.9%	50.4%	45.2%	83.0%	**99.9%**	**1**
I-5	34.831185	-118.86765	34.83152	-118.8673	83.0%	64.9%	50.3%	45.2%	83.0%	**99.9%**	**1**
I-5	34.830435	-118.86844	34.83119	-118.8676	83.0%	64.9%	50.3%	45.2%	83.0%	**99.9%**	**1**
I-5	34.828635	-118.8703	34.83044	-118.8684	83.0%	64.9%	50.2%	45.1%	83.0%	**99.8%**	**1**
I-5	34.82565	-118.87367	34.82864	-118.8703	83.0%	64.9%	50.0%	45.0%	83.0%	**99.8%**	**1**
I-5	34.82565	-118.87367	34.82565	-118.8737	83.0%	64.9%	50.0%	45.0%	83.0%	**99.8%**	**1**
I-5	34.82565	-118.87367	34.82565	-118.8737	83.0%	64.9%	50.0%	45.0%	83.0%	**99.8%**	**1**
I-5	34.824505	-118.87472	34.82511	-118.8742	83.0%	64.9%	49.9%	45.0%	83.0%	**99.7%**	**1**
I-5	34.825108	-118.87417	34.82565	-118.8737	83.0%	64.9%	49.9%	45.0%	83.0%	**99.7%**	**1**
I-5	34.825108	-118.87417	34.82565	-118.8737	83.0%	64.9%	49.9%	45.0%	83.0%	**99.7%**	**1**
I-5	34.82277	-118.87648	34.82451	-118.8747	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.821546	-118.87771	34.82277	-118.8765	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.821546	-118.87771	34.82277	-118.8765	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.819866	-118.87935	34.82094	-118.8783	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.820942	-118.8783	34.82155	-118.8777	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.820942	-118.8783	34.82155	-118.8777	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.839455	-118.863	34.84203	-118.8646	83.0%	64.9%	25.6%	45.3%	83.0%	**91.6%**	**1**
I-5	34.839039	-118.86318	34.83946	-118.863	83.0%	64.9%	25.5%	45.3%	83.0%	**91.6%**	**1**
I-5	34.842025	-118.86459	34.84483	-118.8666	83.0%	64.9%	25.6%	45.1%	83.0%	**91.6%**	**1**
I-5	34.844826	-118.86663	34.84483	-118.8666	83.0%	64.9%	25.6%	45.1%	83.0%	**91.6%**	**1**
I-5	34.833545	-118.86554	34.83474	-118.865	83.0%	28.9%	50.5%	45.3%	83.0%	**87.9%**	**1**
I-5	34.83474	-118.86503	34.83904	-118.8632	83.0%	28.9%	25.5%	45.3%	83.0%	**79.5%**	**3**
I-5	34.813983	-118.88394	34.8136	-118.8841	82.1%	64.0%	48.4%	43.5%	82.1%	**97.8%**	**1**
I-5	34.813983	-118.88394	34.81398	-118.8839	82.1%	64.0%	48.4%	43.5%	82.1%	**97.8%**	**1**
I-5	34.820546	-118.87925	34.81924	-118.8804	82.1%	28.0%	48.7%	43.6%	82.1%	**85.8%**	**1**
I-5	34.819235	-118.88045	34.81785	-118.8819	82.1%	28.0%	48.6%	43.5%	82.1%	**85.8%**	**1**
I-5	34.813983	-118.88394	34.81398	-118.8839	82.1%	12.1%	48.4%	43.5%	82.1%	**80.4%**	**3**
I-5	34.817855	-118.88192	34.81782	-118.882	82.1%	12.1%	48.6%	43.5%	68.3%	**75.8%**	**3**
I-5	34.817817	-118.88196	34.81298	-118.8845	82.1%	12.1%	48.4%	43.5%	68.3%	**75.8%**	**3**
I-5	34.819065	-118.88028	34.81987	-118.8794	81.4%	63.4%	48.0%	42.7%	81.4%	**96.7%**	**1**
I-5	34.817851	-118.8814	34.81907	-118.8803	81.4%	63.4%	47.9%	42.7%	81.4%	**96.7%**	**1**
I-5	34.814722	-118.88338	34.8141	-118.8838	81.4%	63.4%	47.8%	42.6%	81.4%	**96.6%**	**1**
I-5	34.817725	-118.88152	34.81785	-118.8814	81.4%	11.4%	47.9%	42.7%	67.6%	**74.6%**	**3**
I-5	34.817378	-118.88173	34.8134	-118.8842	81.4%	11.4%	47.8%	42.6%	67.6%	**74.6%**	**3**
FRAZIER MOUNTAI	34.817858	-118.88253	34.81788	-118.8826	73.3%	19.1%	39.7%	31.7%	73.3%	**70.0%**	**4**
FRAZIER MOUNTAI	34.817858	-118.88253	34.81788	-118.8826	73.3%	19.1%	39.7%	31.7%	73.3%	**70.0%**	**4**
FRAZIER MOUNTAI	34.817875	-118.88258	34.81794	-118.8827	73.3%	19.1%	39.7%	31.7%	73.3%	**70.0%**	**4**
FRAZIER MOUNTAI	34.817875	-118.88258	34.81794	-118.8827	73.3%	19.1%	39.7%	31.7%	73.3%	**70.0%**	**4**
FRAZIER MOUNTAI	34.817935	-118.88274	34.81798	-118.883	73.3%	19.1%	39.7%	31.7%	73.3%	**70.0%**	**4**
FRAZIER MOUNTAI	34.817935	-118.88274	34.81798	-118.883	73.3%	19.1%	39.7%	31.7%	73.3%	**70.0%**	**4**
FRAZIER MOUNTAI	34.817975	-118.88296	34.81799	-118.8832	73.3%	19.1%	39.6%	31.7%	73.3%	**69.9%**	**4**
FRAZIER MOUNTAI	34.817975	-118.88296	34.81799	-118.8832	73.3%	19.1%	39.6%	31.7%	73.3%	**69.9%**	**4**

FRAZIER MOUNTAI	34.817865	-118.88378	34.81799	-118.8832	73.3%	19.1%	39.6%	31.7%	73.3%	**69.9%**	**4**
FRAZIER MOUNTAI	34.817865	-118.88378	34.81799	-118.8832	73.3%	19.1%	39.6%	31.7%	73.3%	**69.9%**	**4**
FRAZIER MOUNTAI	34.817756	-118.88448	34.81787	-118.8838	73.3%	19.1%	39.6%	31.7%	73.3%	**69.9%**	**4**
FRAZIER MOUNTAI	34.817756	-118.88448	34.81787	-118.8838	73.3%	19.1%	39.6%	31.7%	73.3%	**69.9%**	**4**
FRAZIER MOUNTAI	34.818015	-118.89349	34.81793	-118.8921	73.3%	19.1%	39.0%	31.4%	73.3%	**69.6%**	**4**
FRAZIER MOUNTAI	34.818015	-118.89349	34.81793	-118.8921	73.3%	19.1%	39.0%	31.4%	73.3%	**69.6%**	**4**
FRAZIER MOUNTAI	34.817846	-118.89108	34.81788	-118.8914	73.3%	19.1%	14.1%	31.4%	73.3%	**61.3%**	**5**
FRAZIER MOUNTAI	34.817846	-118.89108	34.81788	-118.8914	73.3%	19.1%	14.1%	31.4%	73.3%	**61.3%**	**5**
FRAZIER MOUNTAI	34.817875	-118.89141	34.81793	-118.892	73.3%	19.1%	14.1%	31.4%	73.3%	**61.3%**	**5**
FRAZIER MOUNTAI	34.817875	-118.89141	34.81793	-118.892	73.3%	19.1%	14.1%	31.4%	73.3%	**61.3%**	**5**
FRAZIER MOUNTAI	34.818015	-118.89349	34.81793	-118.892	73.3%	19.1%	14.0%	31.4%	73.3%	**61.3%**	**5**
FRAZIER MOUNTAI	34.818015	-118.89349	34.81793	-118.892	73.3%	19.1%	14.0%	31.4%	73.3%	**61.3%**	**5**
FRAZIER MOUNTAI	34.817835	-118.88246	34.81786	-118.8825	73.3%	3.3%	39.7%	31.7%	59.5%	**60.0%**	**5**
FRAZIER MOUNTAI	34.817835	-118.88246	34.81786	-118.8825	73.3%	3.3%	39.7%	31.7%	59.5%	**60.0%**	**5**
FRAZIER MOUNTAI	34.817715	-118.88475	34.81776	-118.8845	73.3%	3.3%	39.6%	31.7%	59.5%	**60.0%**	**5**
FRAZIER MOUNTAI	34.817715	-118.88475	34.81776	-118.8845	73.3%	3.3%	39.6%	31.7%	59.5%	**60.0%**	**5**
FRAZIER MOUNTAI	34.817715	-118.88475	34.81772	-118.8848	73.3%	3.3%	39.5%	31.6%	59.5%	**59.9%**	**5**
FRAZIER MOUNTAI	34.817715	-118.88475	34.81772	-118.8848	73.3%	3.3%	39.5%	31.6%	59.5%	**59.9%**	**5**
FRAZIER MOUNTAI	34.817715	-118.88477	34.81773	-118.8856	73.3%	3.3%	14.5%	31.6%	59.5%	**51.6%**	**6**
FRAZIER MOUNTAI	34.817715	-118.88477	34.81773	-118.8856	73.3%	3.3%	14.5%	31.6%	59.5%	**51.6%**	**6**
FRAZIER MOUNTAI	34.817735	-118.88722	34.81773	-118.8856	73.3%	3.3%	14.4%	31.6%	59.5%	**51.5%**	**6**
FRAZIER MOUNTAI	34.817735	-118.88722	34.81773	-118.8856	73.3%	3.3%	14.4%	31.6%	59.5%	**51.5%**	**6**
FRAZIER MOUNTAI	34.817735	-118.88722	34.81774	-118.8879	73.3%	3.3%	14.4%	31.6%	59.5%	**51.5%**	**6**
FRAZIER MOUNTAI	34.817735	-118.88722	34.81774	-118.8879	73.3%	3.3%	14.4%	31.6%	59.5%	**51.5%**	**6**
FRAZIER MOUNTAI	34.817755	-118.88948	34.81774	-118.8879	73.3%	3.3%	14.3%	31.5%	59.5%	**51.4%**	**6**
FRAZIER MOUNTAI	34.817755	-118.88948	34.81774	-118.8879	73.3%	3.3%	14.3%	31.5%	59.5%	**51.4%**	**6**
FRAZIER MOUNTAI	34.817825	-118.89084	34.81776	-118.8895	73.3%	3.3%	14.2%	31.5%	59.5%	**51.4%**	**6**
FRAZIER MOUNTAI	34.817825	-118.89084	34.81776	-118.8895	73.3%	3.3%	14.2%	31.5%	59.5%	**51.4%**	**6**
FRAZIER MOUNTAI	34.817825	-118.89084	34.81785	-118.8911	73.3%	3.3%	14.1%	31.4%	59.5%	**51.4%**	**6**
FRAZIER MOUNTAI	34.817825	-118.89084	34.81785	-118.8911	73.3%	3.3%	14.1%	31.4%	59.5%	**51.4%**	**6**
FRAZIER MOUNTAI	34.81806	-118.90194	34.81804	-118.8984	73.1%	19.0%	38.5%	31.0%	73.1%	**69.2%**	**4**
FRAZIER MOUNTAI	34.81806	-118.90194	34.81804	-118.8984	73.1%	19.0%	38.5%	31.0%	73.1%	**69.2%**	**4**
FRAZIER MOUNTAI	34.818181	-118.91159	34.81819	-118.9118	73.1%	19.0%	37.6%	30.9%	73.1%	**68.9%**	**4**
FRAZIER MOUNTAI	34.818181	-118.91159	34.81819	-118.9118	73.1%	19.0%	37.6%	30.9%	73.1%	**68.9%**	**4**
FRAZIER MOUNTAI	34.818516	-118.91375	34.81823	-118.9122	73.1%	19.0%	37.4%	31.1%	73.1%	**68.8%**	**4**
FRAZIER MOUNTAI	34.818516	-118.91375	34.81823	-118.9122	73.1%	19.0%	37.4%	31.1%	73.1%	**68.8%**	**4**
FRAZIER MOUNTAI	34.818189	-118.91184	34.8182	-118.912	73.1%	3.1%	37.6%	30.9%	73.1%	**63.5%**	**4**
FRAZIER MOUNTAI	34.818189	-118.91184	34.8182	-118.912	73.1%	3.1%	37.6%	30.9%	73.1%	**63.5%**	**4**
FRAZIER MOUNTAI	34.818585	-118.91413	34.8182	-118.912	73.1%	3.1%	37.4%	31.1%	73.1%	**63.5%**	**4**
FRAZIER MOUNTAI	34.818585	-118.91413	34.8182	-118.912	73.1%	3.1%	37.4%	31.1%	73.1%	**63.5%**	**4**
FRAZIER MOUNTAI	34.818585	-118.91413	34.82093	-118.9225	73.1%	3.1%	36.8%	31.3%	73.1%	**63.4%**	**4**
FRAZIER MOUNTAI	34.818585	-118.91413	34.82093	-118.9225	73.1%	3.1%	36.8%	31.3%	73.1%	**63.4%**	**4**
FRAZIER MOUNTAI	34.818065	-118.90292	34.81802	-118.8935	73.1%	19.0%	13.5%	31.0%	73.1%	**60.8%**	**5**
FRAZIER MOUNTAI	34.818065	-118.90292	34.81802	-118.8935	73.1%	19.0%	13.5%	31.0%	73.1%	**60.8%**	**5**
FRAZIER MOUNTAI	34.818065	-118.90292	34.81809	-118.9088	73.1%	19.0%	13.0%	30.8%	73.1%	**60.6%**	**5**
FRAZIER MOUNTAI	34.818065	-118.90292	34.81809	-118.9088	73.1%	19.0%	13.0%	30.8%	73.1%	**60.6%**	**5**
FRAZIER MOUNTAI	34.818085	-118.90884	34.81818	-118.9116	73.1%	19.0%	12.6%	30.9%	73.1%	**60.5%**	**5**
FRAZIER MOUNTAI	34.818085	-118.90884	34.81818	-118.9116	73.1%	19.0%	12.6%	30.9%	73.1%	**60.5%**	**5**
FRAZIER MOUNTAI	34.821434	-118.92427	34.82144	-118.9243	73.1%	19.0%	11.8%	31.3%	73.1%	**60.3%**	**5**
FRAZIER MOUNTAI	34.821434	-118.92427	34.82144	-118.9243	73.1%	19.0%	11.8%	31.3%	73.1%	**60.3%**	**5**
FRAZIER MOUNTAI	34.821434	-118.92428	34.82144	-118.9243	73.1%	19.0%	11.2%	31.7%	73.1%	**60.2%**	**5**
FRAZIER MOUNTAI	34.821434	-118.92428	34.82144	-118.9243	73.1%	19.0%	11.2%	31.7%	73.1%	**60.2%**	**5**
FRAZIER MOUNTAI	34.820934	-118.92249	34.82143	-118.9243	73.1%	3.1%	11.8%	31.3%	73.1%	**55.0%**	**5**
FRAZIER MOUNTAI	34.820934	-118.92249	34.82143	-118.9243	73.1%	3.1%	11.8%	31.3%	73.1%	**55.0%**	**5**
FRAZIER MOUNTAI	34.820865	-118.92818	34.82143	-118.9243	73.1%	3.1%	11.2%	31.7%	73.1%	**54.9%**	**5**
FRAZIER MOUNTAI	34.820865	-118.92818	34.82143	-118.9243	73.1%	3.1%	11.2%	31.7%	73.1%	**54.9%**	**5**
FRAZIER MOUNTAI	34.819955	-118.934	34.82087	-118.9282	73.1%	3.1%	10.7%	31.9%	73.1%	**54.8%**	**5**
FRAZIER MOUNTAI	34.819955	-118.934	34.82087	-118.9282	73.1%	3.1%	10.7%	31.9%	73.1%	**54.8%**	**5**
FRAZIER MOUNTAI	34.818695	-118.93924	34.81996	-118.934	73.1%	3.1%	10.2%	32.2%	73.1%	**54.8%**	**5**
FRAZIER MOUNTAI	34.818695	-118.93924	34.81996	-118.934	73.1%	3.1%	10.2%	32.2%	73.1%	**54.8%**	**5**
FRAZIER MOUNTAI	34.818695	-118.93924	34.82006	-118.9434	72.8%	2.8%	9.4%	31.9%	72.8%	**54.1%**	**5**
FRAZIER MOUNTAI	34.818695	-118.93924	34.82006	-118.9434	72.8%	2.8%	9.4%	31.9%	72.8%	**54.1%**	**5**
FRAZIER MOUNTAI	34.820605	-118.94557	34.82006	-118.9434	72.8%	2.8%	9.1%	32.1%	72.8%	**54.0%**	**5**
FRAZIER MOUNTAI	34.820605	-118.94557	34.82006	-118.9434	72.8%	2.8%	9.1%	32.1%	72.8%	**54.0%**	**5**
FRAZIER MOUNTAI	34.817596	-118.88208	34.81738	-118.8817	72.2%	2.2%	38.6%	30.3%	58.4%	**58.1%**	**5**
FRAZIER MOUNTAI	34.817596	-118.88208	34.81738	-118.8817	72.2%	2.2%	38.6%	30.3%	58.4%	**58.1%**	**5**
FRAZIER MOUNTAI	34.820133	-118.98155	34.82017	-118.9811	71.7%	17.6%	30.5%	31.9%	71.7%	**65.4%**	**4**
FRAZIER MOUNTAI	34.820133	-118.98155	34.82017	-118.9811	71.7%	17.6%	30.5%	31.9%	71.7%	**65.4%**	**4**

FRAZIER MOUNTAI	34.820171	-118.98115	34.82043	-118.9784	71.7%	17.6%	30.5%	31.9%	71.7%	**65.4%**	**4**
FRAZIER MOUNTAI	34.820171	-118.98115	34.82043	-118.9784	71.7%	17.6%	30.5%	31.9%	71.7%	**65.4%**	**4**
FRAZIER MOUNTAI	34.820155	-118.98688	34.82015	-118.9866	71.7%	17.6%	30.3%	32.1%	71.7%	**65.3%**	**4**
FRAZIER MOUNTAI	34.820155	-118.98688	34.82015	-118.9866	71.7%	17.6%	30.3%	32.1%	71.7%	**65.3%**	**4**
FRAZIER MOUNTAI	34.820155	-118.98688	34.82015	-118.9869	71.7%	17.6%	30.2%	32.1%	71.7%	**65.3%**	**4**
FRAZIER MOUNTAI	34.820155	-118.98688	34.82015	-118.9869	71.7%	17.6%	30.2%	32.1%	71.7%	**65.3%**	**4**
FRAZIER MOUNTAI	34.821265	-118.96966	34.82078	-118.9666	71.7%	1.7%	31.0%	31.7%	71.7%	**60.1%**	**5**
FRAZIER MOUNTAI	34.821265	-118.96966	34.82078	-118.9666	71.7%	1.7%	31.0%	31.7%	71.7%	**60.1%**	**5**
FRAZIER MOUNTAI	34.820095	-118.98195	34.82013	-118.9816	71.7%	1.7%	30.5%	31.9%	71.7%	**60.1%**	**5**
FRAZIER MOUNTAI	34.820095	-118.98195	34.82013	-118.9816	71.7%	1.7%	30.5%	31.9%	71.7%	**60.1%**	**5**
FRAZIER MOUNTAI	34.820431	-118.97842	34.82127	-118.9697	71.7%	1.7%	30.5%	31.9%	71.7%	**60.1%**	**5**
FRAZIER MOUNTAI	34.820431	-118.97842	34.82127	-118.9697	71.7%	1.7%	30.5%	31.9%	71.7%	**60.1%**	**5**
FRAZIER MOUNTAI	34.820152	-118.98664	34.8201	-118.9819	71.7%	1.7%	30.3%	32.1%	71.7%	**60.0%**	**5**
FRAZIER MOUNTAI	34.820152	-118.98664	34.8201	-118.9819	71.7%	1.7%	30.3%	32.1%	71.7%	**60.0%**	**5**
FRAZIER MOUNTAI	34.820155	-118.98688	34.82015	-118.9874	71.7%	17.6%	5.2%	32.1%	71.7%	**56.9%**	**5**
FRAZIER MOUNTAI	34.820155	-118.98688	34.82015	-118.9874	71.7%	17.6%	5.2%	32.1%	71.7%	**56.9%**	**5**
CUDDY VALLEY RD	34.828555	-119.02245	34.82522	-119.0118	71.7%	17.6%	4.3%	32.5%	71.7%	**56.8%**	**5**
CUDDY VALLEY RD	34.828555	-119.02245	34.82522	-119.0118	71.7%	17.6%	4.3%	32.5%	71.7%	**56.8%**	**5**
CUDDY VALLEY RD	34.829235	-119.02417	34.82856	-119.0224	71.7%	17.6%	4.1%	32.6%	71.7%	**56.7%**	**5**
CUDDY VALLEY RD	34.829235	-119.02417	34.82856	-119.0224	71.7%	17.6%	4.1%	32.6%	71.7%	**56.7%**	**5**
FRAZIER MOUNTAI	34.820605	-118.94557	34.82054	-118.9527	71.7%	1.7%	7.6%	30.9%	71.7%	**52.0%**	**6**
FRAZIER MOUNTAI	34.820605	-118.94557	34.82054	-118.9527	71.7%	1.7%	7.6%	30.9%	71.7%	**52.0%**	**6**
FRAZIER MOUNTAI	34.820255	-118.95457	34.82054	-118.9527	71.7%	1.7%	7.2%	31.1%	71.7%	**51.9%**	**6**
FRAZIER MOUNTAI	34.820255	-118.95457	34.82054	-118.9527	71.7%	1.7%	7.2%	31.1%	71.7%	**51.9%**	**6**
FRAZIER MOUNTAI	34.820005	-118.95885	34.82026	-118.9546	71.7%	1.7%	6.9%	31.3%	71.7%	**51.9%**	**6**
FRAZIER MOUNTAI	34.820005	-118.95885	34.82026	-118.9546	71.7%	1.7%	6.9%	31.3%	71.7%	**51.9%**	**6**
FRAZIER MOUNTAI	34.820005	-118.95885	34.82005	-118.9621	71.7%	1.7%	6.5%	31.4%	71.7%	**51.8%**	**6**
FRAZIER MOUNTAI	34.820005	-118.95885	34.82005	-118.9621	71.7%	1.7%	6.5%	31.4%	71.7%	**51.8%**	**6**
FRAZIER MOUNTAI	34.820775	-118.96662	34.82005	-118.9621	71.7%	1.7%	6.0%	31.7%	71.7%	**51.8%**	**6**
FRAZIER MOUNTAI	34.820775	-118.96662	34.82005	-118.9621	71.7%	1.7%	6.0%	31.7%	71.7%	**51.8%**	**6**
FRAZIER MOUNTAI	34.820145	-118.98741	34.82015	-118.9874	71.7%	1.7%	5.2%	32.1%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.820145	-118.98741	34.82015	-118.9874	71.7%	1.7%	5.2%	32.1%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.820145	-118.98741	34.81905	-118.9918	71.7%	1.7%	5.1%	32.1%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.820145	-118.98741	34.81905	-118.9918	71.7%	1.7%	5.1%	32.1%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818965	-118.99209	34.81905	-118.9918	71.7%	1.7%	5.1%	32.2%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818965	-118.99209	34.81905	-118.9918	71.7%	1.7%	5.1%	32.2%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818965	-118.99209	34.81836	-118.9944	71.7%	1.7%	5.0%	32.2%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818965	-118.99209	34.81836	-118.9944	71.7%	1.7%	5.0%	32.2%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818325	-118.99721	34.81836	-118.9944	71.7%	1.7%	4.9%	32.2%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818325	-118.99721	34.81836	-118.9944	71.7%	1.7%	4.9%	32.2%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818325	-118.99721	34.81863	-119.0021	71.7%	1.7%	4.8%	32.3%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818325	-118.99721	34.81863	-119.0021	71.7%	1.7%	4.8%	32.3%	71.7%	**51.6%**	**6**
FRAZIER MOUNTAI	34.818855	-119.00283	34.81863	-119.0021	71.7%	1.7%	4.7%	32.3%	71.7%	**51.5%**	**6**
FRAZIER MOUNTAI	34.818855	-119.00283	34.81863	-119.0021	71.7%	1.7%	4.7%	32.3%	71.7%	**51.5%**	**6**
FRAZIER MOUNTAI	34.819055	-119.00351	34.81886	-119.0028	71.7%	1.7%	4.7%	32.3%	71.7%	**51.5%**	**6**
FRAZIER MOUNTAI	34.819055	-119.00351	34.81886	-119.0028	71.7%	1.7%	4.7%	32.3%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.819055	-119.00351	34.81947	-119.0045	71.7%	1.7%	4.7%	32.3%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.819055	-119.00351	34.81947	-119.0045	71.7%	1.7%	4.7%	32.3%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.819465	-119.00446	34.82182	-119.0068	71.7%	1.7%	4.6%	32.3%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.819465	-119.00446	34.82182	-119.0068	71.7%	1.7%	4.6%	32.3%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.821815	-119.00682	34.82387	-119.0092	71.7%	1.7%	4.6%	32.4%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.821815	-119.00682	34.82387	-119.0092	71.7%	1.7%	4.6%	32.4%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.825145	-119.01154	34.82387	-119.0092	71.7%	1.7%	4.5%	32.4%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.825145	-119.01154	34.82387	-119.0092	71.7%	1.7%	4.5%	32.4%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.825225	-119.01179	34.82515	-119.0115	71.7%	1.7%	4.3%	32.5%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.825225	-119.01179	34.82515	-119.0115	71.7%	1.7%	4.3%	32.5%	71.7%	**51.5%**	**6**
CUDDY VALLEY RD	34.829235	-119.02417	34.83434	-119.037	71.5%	17.4%	3.7%	32.4%	71.5%	**56.3%**	**5**
CUDDY VALLEY RD	34.829235	-119.02417	34.83434	-119.037	71.5%	17.4%	3.7%	32.4%	71.5%	**56.3%**	**5**
CUDDY VALLEY RD	34.834335	-119.03705	34.83549	-119.04	71.5%	17.4%	3.5%	32.3%	71.5%	**56.2%**	**5**
CUDDY VALLEY RD	34.834335	-119.03705	34.83549	-119.04	71.5%	17.4%	3.5%	32.3%	71.5%	**56.2%**	**5**
CUDDY VALLEY RD	34.835605	-119.0403	34.83549	-119.04	71.5%	17.4%	3.4%	32.3%	71.5%	**56.2%**	**5**
CUDDY VALLEY RD	34.835605	-119.0403	34.83549	-119.04	71.5%	17.4%	3.4%	32.3%	71.5%	**56.2%**	**5**
CUDDY VALLEY RD	34.835605	-119.0403	34.83781	-119.0472	71.5%	17.4%	3.3%	32.2%	71.5%	**56.2%**	**5**
CUDDY VALLEY RD	34.835605	-119.0403	34.83781	-119.0472	71.5%	17.4%	3.3%	32.2%	71.5%	**56.2%**	**5**
CUDDY VALLEY RD	34.838475	-119.05004	34.83781	-119.0472	71.5%	17.4%	3.1%	32.1%	71.5%	**56.1%**	**5**
CUDDY VALLEY RD	34.838475	-119.05004	34.83781	-119.0472	71.5%	17.4%	3.1%	32.1%	71.5%	**56.1%**	**5**
CUDDY VALLEY RD	34.838308	-119.04934	34.83826	-119.0491	71.5%	17.4%	3.1%	32.1%	71.5%	**56.1%**	**5**
CUDDY VALLEY RD	34.838308	-119.04934	34.83826	-119.0491	71.5%	17.4%	3.1%	32.1%	71.5%	**56.1%**	**5**

CUDDY VALLEY RD	34.838494	-119.05011	34.83848	-119.05	71.5%	17.4%	3.1%	32.1%	71.5%	**56.0%**	**5**
CUDDY VALLEY RD	34.838494	-119.05011	34.83848	-119.05	71.5%	17.4%	3.1%	32.1%	71.5%	**56.0%**	**5**
CUDDY VALLEY RD	34.838755	-119.05118	34.83849	-119.0501	71.5%	17.4%	3.1%	32.1%	71.5%	**56.0%**	**5**
CUDDY VALLEY RD	34.838755	-119.05118	34.83849	-119.0501	71.5%	17.4%	3.1%	32.1%	71.5%	**56.0%**	**5**
CUDDY VALLEY RD	34.838945	-119.05196	34.83876	-119.0512	71.5%	17.4%	3.0%	32.0%	71.5%	**56.0%**	**5**
CUDDY VALLEY RD	34.838945	-119.05196	34.83876	-119.0512	71.5%	17.4%	3.0%	32.0%	71.5%	**56.0%**	**5**
CA-33	34.994018	-119.42484	34.994	-119.4249	71.4%	1.4%	32.3%	7.6%	71.4%	**52.2%**	**6**
CA-33	34.994018	-119.42484	34.994	-119.4249	71.4%	1.4%	32.3%	7.6%	71.4%	**52.2%**	**6**
CA-33	34.995375	-119.42091	34.99555	-119.4208	71.4%	1.4%	7.9%	7.6%	71.4%	**44.0%**	**6**
CA-33	34.995375	-119.42091	34.99555	-119.4208	71.4%	1.4%	7.9%	7.6%	71.4%	**44.0%**	**6**
CA-33	34.995548	-119.42079	34.99653	-119.4201	71.4%	1.4%	7.9%	7.6%	71.4%	**44.0%**	**6**
CA-33	34.995548	-119.42079	34.99653	-119.4201	71.4%	1.4%	7.9%	7.6%	71.4%	**44.0%**	**6**
CA-33	34.995375	-119.42091	34.99441	-119.4229	71.4%	1.4%	7.6%	7.6%	71.4%	**44.0%**	**6**
CA-33	34.995375	-119.42091	34.99441	-119.4229	71.4%	1.4%	7.6%	7.6%	71.4%	**44.0%**	**6**
CA-33	34.994405	-119.42295	34.99433	-119.4232	71.4%	1.4%	7.5%	7.6%	71.4%	**43.9%**	**6**
CA-33	34.994405	-119.42295	34.99433	-119.4232	71.4%	1.4%	7.5%	7.6%	71.4%	**43.9%**	**6**
CA-33	34.994026	-119.4248	34.99367	-119.4267	71.4%	1.4%	7.3%	7.6%	71.4%	**43.8%**	**6**
CA-33	34.994026	-119.4248	34.99367	-119.4267	71.4%	1.4%	7.3%	7.6%	71.4%	**43.8%**	**6**
CA-33	34.993595	-119.42713	34.99348	-119.4286	71.4%	1.4%	7.0%	7.6%	71.4%	**43.7%**	**6**
CA-33	34.993595	-119.42713	34.99348	-119.4286	71.4%	1.4%	7.0%	7.6%	71.4%	**43.7%**	**6**
CA-33	34.993365	-119.42914	34.99348	-119.4286	71.4%	1.4%	6.9%	7.7%	71.4%	**43.7%**	**6**
CA-33	34.993365	-119.42914	34.99348	-119.4286	71.4%	1.4%	6.9%	7.7%	71.4%	**43.7%**	**6**
CA-33	34.991905	-119.43072	34.99337	-119.4291	71.4%	1.4%	6.7%	7.7%	71.4%	**43.7%**	**6**
CA-33	34.991905	-119.43072	34.99337	-119.4291	71.4%	1.4%	6.7%	7.7%	71.4%	**43.7%**	**6**
CA-33	34.989475	-119.43084	34.99191	-119.4307	71.4%	1.4%	6.5%	7.7%	71.4%	**43.6%**	**6**
CA-33	34.989475	-119.43084	34.99191	-119.4307	71.4%	1.4%	6.5%	7.7%	71.4%	**43.6%**	**6**
CA-33	34.988855	-119.431	34.98948	-119.4308	71.4%	1.4%	6.3%	7.7%	71.4%	**43.5%**	**6**
CA-33	34.988855	-119.431	34.98948	-119.4308	71.4%	1.4%	6.3%	7.7%	71.4%	**43.5%**	**6**
CA-33	34.988855	-119.431	34.98789	-119.4314	71.4%	1.4%	6.2%	7.7%	71.4%	**43.5%**	**6**
CA-33	34.988855	-119.431	34.98789	-119.4314	71.4%	1.4%	6.2%	7.7%	71.4%	**43.5%**	**6**
CA-33	34.975165	-119.4355	34.98789	-119.4314	71.4%	1.4%	5.4%	7.9%	71.4%	**43.3%**	**6**
CA-33	34.975165	-119.4355	34.98789	-119.4314	71.4%	1.4%	5.4%	7.9%	71.4%	**43.3%**	**6**
CA-33	34.975165	-119.4355	34.97413	-119.4358	71.4%	1.4%	4.7%	8.0%	71.4%	**43.1%**	**6**
CA-33	34.975165	-119.4355	34.97413	-119.4358	71.4%	1.4%	4.7%	8.0%	71.4%	**43.1%**	**6**
CA-33	34.972615	-119.43676	34.97413	-119.4358	71.4%	1.4%	4.5%	8.0%	71.4%	**43.0%**	**6**
CA-33	34.972615	-119.43676	34.97413	-119.4358	71.4%	1.4%	4.5%	8.0%	71.4%	**43.0%**	**6**
CA-33	34.969555	-119.43751	34.97262	-119.4368	71.4%	1.4%	4.2%	8.1%	71.4%	**43.0%**	**6**
CA-33	34.969555	-119.43751	34.97262	-119.4368	71.4%	1.4%	4.2%	8.1%	71.4%	**43.0%**	**6**
CA-33	34.967005	-119.44003	34.96956	-119.4375	71.4%	1.4%	3.8%	8.2%	71.4%	**42.9%**	**7**
CA-33	34.967005	-119.44003	34.96956	-119.4375	71.4%	1.4%	3.8%	8.2%	71.4%	**42.9%**	**7**
CA-33	34.967005	-119.44003	34.96493	-119.4443	71.4%	1.4%	3.4%	8.4%	71.4%	**42.8%**	**7**
CA-33	34.967005	-119.44003	34.96493	-119.4443	71.4%	1.4%	3.4%	8.4%	71.4%	**42.8%**	**7**
CA-33	34.963245	-119.4461	34.96493	-119.4443	71.4%	1.4%	3.0%	8.5%	71.4%	**42.7%**	**7**
CA-33	34.963245	-119.4461	34.96493	-119.4443	71.4%	1.4%	3.0%	8.5%	71.4%	**42.7%**	**7**
CA-33	34.963245	-119.4461	34.96115	-119.4475	71.4%	1.4%	2.7%	8.7%	71.4%	**42.6%**	**7**
CA-33	34.963245	-119.4461	34.96115	-119.4475	71.4%	1.4%	2.7%	8.7%	71.4%	**42.6%**	**7**
CA-33	34.961025	-119.44754	34.96115	-119.4475	71.4%	1.4%	2.6%	8.8%	71.4%	**42.6%**	**7**
CA-33	34.961025	-119.44754	34.96115	-119.4475	71.4%	1.4%	2.6%	8.8%	71.4%	**42.6%**	**7**
CUDDY VALLEY RD	34.842165	-119.06326	34.84216	-119.0633	71.2%	17.1%	2.6%	31.6%	71.2%	**55.4%**	**5**
CUDDY VALLEY RD	34.842165	-119.06326	34.84216	-119.0633	71.2%	17.1%	2.6%	31.6%	71.2%	**55.4%**	**5**
CUDDY VALLEY RD	34.840922	-119.0589	34.83895	-119.052	71.2%	17.1%	2.6%	31.6%	71.2%	**55.4%**	**5**
CUDDY VALLEY RD	34.840922	-119.0589	34.83895	-119.052	71.2%	17.1%	2.6%	31.6%	71.2%	**55.4%**	**5**
CUDDY VALLEY RD	34.842163	-119.06325	34.84092	-119.0589	71.2%	17.1%	2.6%	31.6%	71.2%	**55.4%**	**5**
CUDDY VALLEY RD	34.842163	-119.06325	34.84092	-119.0589	71.2%	17.1%	2.6%	31.6%	71.2%	**55.4%**	**5**
CUDDY VALLEY RD	34.842165	-119.06326	34.84336	-119.0669	71.2%	17.1%	2.3%	31.4%	71.2%	**55.3%**	**5**
CUDDY VALLEY RD	34.842165	-119.06326	34.84336	-119.0669	71.2%	17.1%	2.3%	31.4%	71.2%	**55.3%**	**5**
CUDDY VALLEY RD	34.843363	-119.06687	34.84339	-119.0669	71.2%	17.1%	2.3%	31.4%	71.2%	**55.3%**	**5**
CUDDY VALLEY RD	34.843363	-119.06687	34.84339	-119.0669	71.2%	17.1%	2.3%	31.4%	71.2%	**55.3%**	**5**
CUDDY VALLEY RD	34.843382	-119.06696	34.84176	-119.0828	71.2%	17.1%	2.0%	31.2%	71.2%	**55.1%**	**5**
CUDDY VALLEY RD	34.843382	-119.06696	34.84176	-119.0828	71.2%	17.1%	2.0%	31.2%	71.2%	**55.1%**	**5**
CUDDY VALLEY RD	34.843385	-119.06694	34.84174	-119.083	71.2%	17.1%	2.0%	31.2%	71.2%	**55.1%**	**5**
CUDDY VALLEY RD	34.843385	-119.06694	34.84174	-119.083	71.2%	17.1%	2.0%	31.2%	71.2%	**55.1%**	**5**
CUDDY VALLEY RD	34.841645	-119.0834	34.84174	-119.083	71.2%	17.1%	1.7%	31.1%	71.2%	**55.0%**	**5**
CUDDY VALLEY RD	34.841645	-119.0834	34.84174	-119.083	71.2%	17.1%	1.7%	31.1%	71.2%	**55.0%**	**5**
CUDDY VALLEY RD	34.841435	-119.08399	34.84165	-119.0834	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**
CUDDY VALLEY RD	34.841435	-119.08399	34.84165	-119.0834	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**
CUDDY VALLEY RD	34.841305	-119.08433	34.84144	-119.084	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**
CUDDY VALLEY RD	34.841305	-119.08433	34.84144	-119.084	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**

MIL POTRERO HWY	34.841735	-119.08523	34.84131	-119.0843	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**
MIL POTRERO HWY	34.841735	-119.08523	34.84131	-119.0843	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**
MIL POTRERO HWY	34.841735	-119.08523	34.84189	-119.0853	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**
MIL POTRERO HWY	34.841735	-119.08523	34.84189	-119.0853	71.2%	17.1%	1.7%	31.0%	71.2%	**55.0%**	**5**
MIL POTRERO HWY	34.843955	-119.08569	34.84189	-119.0853	71.2%	17.1%	1.7%	31.0%	71.2%	**54.9%**	**5**
MIL POTRERO HWY	34.843955	-119.08569	34.84189	-119.0853	71.2%	17.1%	1.7%	31.0%	71.2%	**54.9%**	**5**
MIL POTRERO HWY	34.843955	-119.08569	34.84731	-119.088	71.2%	17.1%	1.8%	30.8%	71.2%	**54.9%**	**5**
MIL POTRERO HWY	34.843955	-119.08569	34.84731	-119.088	71.2%	17.1%	1.8%	30.8%	71.2%	**54.9%**	**5**
MIL POTRERO HWY	34.848005	-119.09239	34.84731	-119.088	71.2%	17.1%	1.9%	30.5%	71.2%	**54.8%**	**5**
MIL POTRERO HWY	34.848005	-119.09239	34.84731	-119.088	71.2%	17.1%	1.9%	30.5%	71.2%	**54.8%**	**5**
MIL POTRERO HWY	34.848005	-119.09239	34.85221	-119.1204	71.2%	17.1%	2.6%	29.7%	71.2%	**54.8%**	**5**
MIL POTRERO HWY	34.848005	-119.09239	34.85221	-119.1204	71.2%	17.1%	2.6%	29.7%	71.2%	**54.8%**	**5**
205	34.814481	-118.88343	34.81412	-118.8837	70.6%	52.6%	37.0%	28.2%	70.6%	**77.3%**	**3**
205	34.815326	-118.88286	34.81334	-118.8842	70.6%	0.6%	37.0%	28.2%	56.8%	**55.3%**	**5**
MIL POTRERO HWY	34.854835	-119.1905	34.85304	-119.1804	70.6%	16.5%	5.0%	26.7%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.854835	-119.1905	34.85304	-119.1804	70.6%	16.5%	5.0%	26.7%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.851025	-119.16947	34.85083	-119.1687	70.6%	16.5%	4.7%	27.1%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.851025	-119.16947	34.85083	-119.1687	70.6%	16.5%	4.7%	27.1%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.850825	-119.16873	34.85097	-119.1667	70.6%	16.5%	4.6%	27.1%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.850825	-119.16873	34.85097	-119.1667	70.6%	16.5%	4.6%	27.1%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.853435	-119.17544	34.85304	-119.1804	70.6%	16.5%	4.9%	26.8%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.853435	-119.17544	34.85304	-119.1804	70.6%	16.5%	4.9%	26.8%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.852895	-119.17199	34.85103	-119.1695	70.6%	16.5%	4.7%	26.9%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.852895	-119.17199	34.85103	-119.1695	70.6%	16.5%	4.7%	26.9%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.851835	-119.16503	34.85097	-119.1667	70.6%	16.5%	4.6%	27.0%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.851835	-119.16503	34.85097	-119.1667	70.6%	16.5%	4.6%	27.0%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.853435	-119.17544	34.85344	-119.1749	70.6%	16.5%	4.8%	26.8%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.853435	-119.17544	34.85344	-119.1749	70.6%	16.5%	4.8%	26.8%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.852895	-119.17199	34.85344	-119.1749	70.6%	16.5%	4.8%	26.8%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.852895	-119.17199	34.85344	-119.1749	70.6%	16.5%	4.8%	26.8%	70.6%	**54.0%**	**5**
MIL POTRERO HWY	34.861115	-119.20961	34.85484	-119.1905	70.6%	16.5%	5.3%	26.2%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.861115	-119.20961	34.85484	-119.1905	70.6%	16.5%	5.3%	26.2%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.851835	-119.16503	34.85292	-119.163	70.6%	16.5%	4.6%	26.9%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.851835	-119.16503	34.85292	-119.163	70.6%	16.5%	4.6%	26.9%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.852915	-119.16304	34.85297	-119.1624	70.6%	16.5%	4.5%	26.8%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.852915	-119.16304	34.85297	-119.1624	70.6%	16.5%	4.5%	26.8%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.852795	-119.16033	34.85297	-119.1624	70.6%	16.5%	4.5%	26.8%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.852795	-119.16033	34.85297	-119.1624	70.6%	16.5%	4.5%	26.8%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.852795	-119.16033	34.85275	-119.1598	70.6%	16.5%	4.5%	26.9%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.852795	-119.16033	34.85275	-119.1598	70.6%	16.5%	4.5%	26.9%	70.6%	**53.9%**	**5**
MIL POTRERO HWY	34.853415	-119.15628	34.85275	-119.1598	70.6%	16.5%	4.4%	26.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853415	-119.15628	34.85275	-119.1598	70.6%	16.5%	4.4%	26.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.851685	-119.1456	34.85281	-119.148	70.6%	16.5%	4.0%	27.2%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.851685	-119.1456	34.85281	-119.148	70.6%	16.5%	4.0%	27.2%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.851685	-119.1456	34.85204	-119.139	70.6%	16.5%	3.8%	27.4%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.851685	-119.1456	34.85204	-119.139	70.6%	16.5%	3.8%	27.4%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853415	-119.15628	34.8536	-119.1539	70.6%	16.5%	4.3%	26.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853415	-119.15628	34.8536	-119.1539	70.6%	16.5%	4.3%	26.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853315	-119.14904	34.85281	-119.148	70.6%	16.5%	4.1%	27.1%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853315	-119.14904	34.85281	-119.148	70.6%	16.5%	4.1%	27.1%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853825	-119.15046	34.8536	-119.1539	70.6%	16.5%	4.2%	26.9%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853825	-119.15046	34.8536	-119.1539	70.6%	16.5%	4.2%	26.9%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853315	-119.14904	34.85355	-119.1496	70.6%	16.5%	4.1%	27.0%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853315	-119.14904	34.85355	-119.1496	70.6%	16.5%	4.1%	27.0%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853825	-119.15046	34.85355	-119.1496	70.6%	16.5%	4.1%	27.0%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.853825	-119.15046	34.85355	-119.1496	70.6%	16.5%	4.1%	27.0%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852035	-119.13896	34.85268	-119.1369	70.6%	16.5%	3.6%	27.5%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852035	-119.13896	34.85268	-119.1369	70.6%	16.5%	3.6%	27.5%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852335	-119.13219	34.85268	-119.1369	70.6%	16.5%	3.4%	27.6%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852335	-119.13219	34.85268	-119.1369	70.6%	16.5%	3.4%	27.6%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852335	-119.13219	34.8522	-119.1287	70.6%	16.5%	3.2%	27.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852335	-119.13219	34.8522	-119.1287	70.6%	16.5%	3.2%	27.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852805	-119.12725	34.8522	-119.1287	70.6%	16.5%	3.1%	27.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.852805	-119.12725	34.8522	-119.1287	70.6%	16.5%	3.1%	27.8%	70.6%	**53.8%**	**5**
MIL POTRERO HWY	34.851915	-119.12338	34.85191	-119.1228	70.6%	16.5%	2.9%	28.1%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.851915	-119.12338	34.85191	-119.1228	70.6%	16.5%	2.9%	28.1%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.852985	-119.12588	34.85192	-119.1234	70.6%	16.5%	3.0%	28.0%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.852985	-119.12588	34.85192	-119.1234	70.6%	16.5%	3.0%	28.0%	70.6%	**53.7%**	**5**

MIL POTRERO HWY	34.852805	-119.12725	34.85299	-119.1259	70.6%	16.5%	3.1%	27.8%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.852805	-119.12725	34.85299	-119.1259	70.6%	16.5%	3.1%	27.8%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.851955	-119.12243	34.85191	-119.1228	70.6%	16.5%	2.8%	28.1%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.851955	-119.12243	34.85191	-119.1228	70.6%	16.5%	2.8%	28.1%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.852205	-119.12037	34.85196	-119.1224	70.6%	16.5%	2.8%	28.1%	70.6%	**53.7%**	**5**
MIL POTRERO HWY	34.852205	-119.12037	34.85196	-119.1224	70.6%	16.5%	2.8%	28.1%	70.6%	**53.7%**	**5**
CERRO NOROESTE	34.917978	-119.41125	34.9175	-119.4101	70.3%	16.2%	26.9%	13.9%	70.3%	**56.7%**	**5**
CERRO NOROESTE	34.917978	-119.41125	34.9175	-119.4101	70.3%	16.2%	26.9%	13.9%	70.3%	**56.7%**	**5**
CERRO NOROESTE	34.928377	-119.40798	34.92426	-119.4097	70.3%	16.2%	27.4%	11.1%	70.3%	**56.0%**	**5**
CERRO NOROESTE	34.928377	-119.40798	34.92426	-119.4097	70.3%	16.2%	27.4%	11.1%	70.3%	**56.0%**	**5**
CERRO NOROESTE	34.930149	-119.40725	34.92838	-119.408	70.3%	16.2%	27.4%	11.1%	70.3%	**56.0%**	**5**
CERRO NOROESTE	34.930149	-119.40725	34.92838	-119.408	70.3%	16.2%	27.4%	11.1%	70.3%	**56.0%**	**5**
CERRO NOROESTE	34.861465	-119.2127	34.86139	-119.2113	70.3%	16.2%	5.3%	25.3%	70.3%	**53.3%**	**5**
CERRO NOROESTE	34.861465	-119.2127	34.86139	-119.2113	70.3%	16.2%	5.3%	25.3%	70.3%	**53.3%**	**5**
CERRO NOROESTE	34.861115	-119.20961	34.86139	-119.2113	70.3%	16.2%	5.2%	25.4%	70.3%	**53.3%**	**5**
CERRO NOROESTE	34.861115	-119.20961	34.86139	-119.2113	70.3%	16.2%	5.2%	25.4%	70.3%	**53.3%**	**5**
CERRO NOROESTE	34.863335	-119.22689	34.86147	-119.2127	70.3%	16.2%	5.3%	25.2%	70.3%	**53.3%**	**5**
CERRO NOROESTE	34.863335	-119.22689	34.86147	-119.2127	70.3%	16.2%	5.3%	25.2%	70.3%	**53.3%**	**5**
CERRO NOROESTE	34.863125	-119.22803	34.86334	-119.2269	70.3%	16.2%	5.3%	25.0%	70.3%	**53.2%**	**5**
CERRO NOROESTE	34.863125	-119.22803	34.86334	-119.2269	70.3%	16.2%	5.3%	25.0%	70.3%	**53.2%**	**5**
CERRO NOROESTE	34.863125	-119.22803	34.86377	-119.2473	70.3%	16.2%	5.1%	24.9%	70.3%	**53.1%**	**5**
CERRO NOROESTE	34.863125	-119.22803	34.86377	-119.2473	70.3%	16.2%	5.1%	24.9%	70.3%	**53.1%**	**5**
CERRO NOROESTE	34.868045	-119.26024	34.86377	-119.2473	70.3%	16.2%	4.8%	24.4%	70.3%	**52.9%**	**6**
CERRO NOROESTE	34.868045	-119.26024	34.86377	-119.2473	70.3%	16.2%	4.8%	24.4%	70.3%	**52.9%**	**6**
CERRO NOROESTE	34.868045	-119.26024	34.86823	-119.261	70.3%	16.2%	4.4%	23.7%	70.3%	**52.5%**	**6**
CERRO NOROESTE	34.868045	-119.26024	34.86823	-119.261	70.3%	16.2%	4.4%	23.7%	70.3%	**52.5%**	**6**
CERRO NOROESTE	34.868226	-119.26098	34.87202	-119.2765	70.3%	16.2%	4.4%	23.7%	70.3%	**52.5%**	**6**
CERRO NOROESTE	34.868226	-119.26098	34.87202	-119.2765	70.3%	16.2%	4.4%	23.7%	70.3%	**52.5%**	**6**
CERRO NOROESTE	34.959771	-119.44471	34.95912	-119.4432	70.3%	0.3%	27.3%	8.1%	70.3%	**49.6%**	**6**
CERRO NOROESTE	34.959771	-119.44471	34.95912	-119.4432	70.3%	0.3%	27.3%	8.1%	70.3%	**49.6%**	**6**
BALLINGER CANYO	34.903395	-119.37468	34.89304	-119.3736	70.3%	16.2%	2.6%	15.6%	70.3%	**49.2%**	**6**
BALLINGER CANYO	34.903395	-119.37468	34.89304	-119.3736	70.3%	16.2%	2.6%	15.6%	70.3%	**49.2%**	**6**
CERRO NOROESTE	34.918385	-119.41227	34.91571	-119.4056	70.3%	16.2%	1.9%	13.9%	70.3%	**48.4%**	**6**
CERRO NOROESTE	34.918385	-119.41227	34.91571	-119.4056	70.3%	16.2%	1.9%	13.9%	70.3%	**48.4%**	**6**
CERRO NOROESTE	34.915714	-119.40557	34.91013	-119.3916	70.3%	16.2%	1.9%	13.9%	70.3%	**48.4%**	**6**
CERRO NOROESTE	34.915714	-119.40557	34.91013	-119.3916	70.3%	16.2%	1.9%	13.9%	70.3%	**48.4%**	**6**
CERRO NOROESTE	34.910127	-119.39155	34.9034	-119.3747	70.3%	16.2%	1.9%	13.9%	70.3%	**48.4%**	**6**
CERRO NOROESTE	34.910127	-119.39155	34.9034	-119.3747	70.3%	16.2%	1.9%	13.9%	70.3%	**48.4%**	**6**
CERRO NOROESTE	34.924262	-119.40967	34.92081	-119.4111	70.3%	16.2%	2.4%	11.1%	70.3%	**47.6%**	**6**
CERRO NOROESTE	34.924262	-119.40967	34.92081	-119.4111	70.3%	16.2%	2.4%	11.1%	70.3%	**47.6%**	**6**
CERRO NOROESTE	34.938265	-119.40392	34.93015	-119.4073	70.3%	16.2%	2.4%	11.1%	70.3%	**47.6%**	**6**
CERRO NOROESTE	34.938265	-119.40392	34.93015	-119.4073	70.3%	16.2%	2.4%	11.1%	70.3%	**47.6%**	**6**
CERRO NOROESTE	34.918705	-119.41246	34.92081	-119.4111	70.3%	16.2%	1.3%	12.1%	70.3%	**47.6%**	**6**
CERRO NOROESTE	34.918705	-119.41246	34.92081	-119.4111	70.3%	16.2%	1.3%	12.1%	70.3%	**47.6%**	**6**
CERRO NOROESTE	34.94104	-119.4071	34.93827	-119.4039	70.3%	16.2%	3.4%	9.9%	70.3%	**47.5%**	**6**
CERRO NOROESTE	34.94104	-119.4071	34.93827	-119.4039	70.3%	16.2%	3.4%	9.9%	70.3%	**47.5%**	**6**
CERRO NOROESTE	34.918385	-119.41227	34.91871	-119.4125	70.3%	16.2%	1.1%	12.2%	70.3%	**47.5%**	**6**
CERRO NOROESTE	34.918385	-119.41227	34.91871	-119.4125	70.3%	16.2%	1.1%	12.2%	70.3%	**47.5%**	**6**
CERRO NOROESTE	34.946368	-119.4134	34.94573	-119.4113	70.3%	16.2%	3.3%	8.9%	70.3%	**47.2%**	**6**
CERRO NOROESTE	34.946368	-119.4134	34.94573	-119.4113	70.3%	16.2%	3.3%	8.9%	70.3%	**47.2%**	**6**
CERRO NOROESTE	34.945727	-119.41129	34.94571	-119.4112	70.3%	16.2%	3.3%	8.9%	70.3%	**47.2%**	**6**
CERRO NOROESTE	34.945727	-119.41129	34.94571	-119.4112	70.3%	16.2%	3.3%	8.9%	70.3%	**47.2%**	**6**
CERRO NOROESTE	34.958839	-119.4426	34.94978	-119.4221	70.3%	16.2%	2.3%	8.1%	70.3%	**46.5%**	**6**
CERRO NOROESTE	34.958839	-119.4426	34.94978	-119.4221	70.3%	16.2%	2.3%	8.1%	70.3%	**46.5%**	**6**
CERRO NOROESTE	34.872021	-119.27648	34.87226	-119.2774	70.3%	34.2%	4.4%	23.7%	29.0%	**44.7%**	**6**
CERRO NOROESTE	34.872021	-119.27648	34.87226	-119.2774	70.3%	34.2%	4.4%	23.7%	29.0%	**44.7%**	**6**
CERRO NOROESTE	34.941055	-119.40712	34.94104	-119.4071	70.3%	0.3%	3.4%	9.9%	70.3%	**42.2%**	**7**
CERRO NOROESTE	34.941055	-119.40712	34.94104	-119.4071	70.3%	0.3%	3.4%	9.9%	70.3%	**42.2%**	**7**
CERRO NOROESTE	34.941055	-119.40712	34.94245	-119.41	70.3%	0.3%	3.4%	9.6%	70.3%	**42.1%**	**7**
CERRO NOROESTE	34.941055	-119.40712	34.94245	-119.41	70.3%	0.3%	3.4%	9.6%	70.3%	**42.1%**	**7**
CERRO NOROESTE	34.942445	-119.41	34.94569	-119.4111	70.3%	0.3%	3.4%	9.3%	70.3%	**42.0%**	**7**
CERRO NOROESTE	34.942445	-119.41	34.94569	-119.4111	70.3%	0.3%	3.4%	9.3%	70.3%	**42.0%**	**7**
CERRO NOROESTE	34.947355	-119.41667	34.94637	-119.4134	70.3%	0.3%	3.3%	8.9%	70.3%	**41.9%**	**7**
CERRO NOROESTE	34.947355	-119.41667	34.94637	-119.4134	70.3%	0.3%	3.3%	8.9%	70.3%	**41.9%**	**7**
CERRO NOROESTE	34.945709	-119.41123	34.94569	-119.4111	70.3%	0.3%	3.3%	8.9%	70.3%	**41.9%**	**7**
CERRO NOROESTE	34.945709	-119.41123	34.94569	-119.4111	70.3%	0.3%	3.3%	8.9%	70.3%	**41.9%**	**7**
CERRO NOROESTE	34.961025	-119.44754	34.94736	-119.4167	70.3%	0.3%	2.3%	8.1%	70.3%	**41.2%**	**7**
CERRO NOROESTE	34.961025	-119.44754	34.94736	-119.4167	70.3%	0.3%	2.3%	8.1%	70.3%	**41.2%**	**7**

BITTERWATER VAL	35.560716	-120.05912	35.56105	-120.0622	70.0%	15.9%	0.0%	8.1%	70.0%	**45.5%**	**6**
BITTERWATER VAL	35.560716	-120.05912	35.56105	-120.0622	70.0%	15.9%	0.0%	8.1%	70.0%	**45.5%**	**6**
BITTERWATER VAL	35.560716	-120.05912	35.56072	-120.0591	70.0%	15.9%	0.0%	8.1%	70.0%	**45.5%**	**6**
BITTERWATER VAL	35.560716	-120.05912	35.56072	-120.0591	70.0%	15.9%	0.0%	8.1%	70.0%	**45.5%**	**6**
I-5	34.895582	-118.91984	34.89329	-118.9169	60.0%	65.3%	53.9%	42.8%	83.3%	**92.8%**	**1**
I-5	34.892148	-118.91537	34.89136	-118.9143	60.0%	65.3%	53.9%	42.8%	83.3%	**92.8%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**92.8%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**92.8%**	**1**
I-5	34.937458	-118.93062	34.9309	-118.9299	60.0%	65.3%	39.1%	41.3%	83.3%	**87.3%**	**1**
I-5	34.895912	-118.92027	34.89004	-118.9126	60.0%	65.3%	28.9%	42.8%	83.3%	**84.4%**	**1**
I-5	34.930563	-118.92991	34.93044	-118.9299	60.0%	29.2%	64.1%	41.3%	83.3%	**83.6%**	**2**
I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**83.6%**	**2**
I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**83.6%**	**2**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**

I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.5%**	**2**
I-5	34.90556	-118.92409	34.90539	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.905363	-118.92404	34.90307	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.3%**	**2**
I-5	34.881435	-118.90144	34.88053	-118.9003	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.879817	-118.89934	34.87951	-118.8989	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.896765	-118.92138	34.89668	-118.9213	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.889945	-118.91251	34.8899	-118.9125	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**

I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.7%**	**3**
I-5	34.865867	-118.88398	34.8657	-118.8838	60.0%	29.2%	51.8%	44.4%	83.3%	**80.5%**	**3**
I-5	34.866724	-118.88475	34.86587	-118.884	60.0%	29.2%	52.3%	43.8%	83.3%	**80.5%**	**3**
I-5	34.941535	-118.93132	34.93974	-118.9308	60.0%	29.2%	40.7%	41.2%	83.3%	**75.8%**	**3**
I-5	34.939735	-118.93085	34.93056	-118.9299	60.0%	29.2%	39.1%	41.3%	83.3%	**75.2%**	**3**
I-5	34.881435	-118.90144	34.87802	-118.897	60.0%	29.2%	28.9%	42.8%	83.3%	**72.3%**	**4**
I-5	34.89668	-118.92126	34.88994	-118.9125	60.0%	29.2%	28.9%	42.8%	83.3%	**72.3%**	**4**
I-5	34.855153	-118.87498	34.84491	-118.8672	60.0%	29.2%	26.1%	45.2%	83.3%	**72.2%**	**4**
I-5	34.844909	-118.86715	34.84491	-118.8672	60.0%	29.2%	26.1%	45.2%	83.3%	**72.2%**	**4**
I-5	34.865696	-118.88384	34.86286	-118.8814	60.0%	29.2%	26.8%	44.4%	83.3%	**72.1%**	**4**
I-5	34.862857	-118.88145	34.85515	-118.875	60.0%	29.2%	26.8%	44.4%	83.3%	**72.1%**	**4**
I-5	34.875115	-118.89282	34.87404	-118.8917	60.0%	29.2%	27.7%	43.4%	83.3%	**72.1%**	**4**
I-5	34.874035	-118.89168	34.87381	-118.8915	60.0%	29.2%	27.7%	43.5%	83.3%	**72.1%**	**4**
I-5	34.873805	-118.89147	34.87335	-118.891	60.0%	29.2%	27.6%	43.5%	83.3%	**72.1%**	**4**
I-5	34.873345	-118.89099	34.87198	-118.8896	60.0%	29.2%	27.6%	43.5%	83.3%	**72.1%**	**4**
I-5	34.871975	-118.88959	34.87115	-118.8887	60.0%	29.2%	27.5%	43.6%	83.3%	**72.1%**	**4**
I-5	34.871145	-118.88874	34.86672	-118.8848	60.0%	29.2%	27.3%	43.8%	83.3%	**72.1%**	**4**
I-5	34.878018	-118.897	34.87512	-118.8928	60.0%	29.2%	27.8%	43.3%	83.3%	**72.1%**	**4**
I-5	34.938367	-118.92986	34.93906	-118.93	59.9%	65.2%	64.1%	41.2%	83.2%	**95.6%**	**1**
I-5	34.923507	-118.92709	34.92859	-118.9284	59.9%	65.2%	60.8%	41.4%	83.2%	**94.6%**	**1**
I-5	34.909444	-118.92364	34.91	-118.9238	59.9%	65.2%	56.9%	41.8%	83.2%	**93.4%**	**1**
I-5	34.90767	-118.92322	34.9083	-118.9234	59.9%	65.2%	56.9%	41.8%	83.2%	**93.4%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**93.4%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**93.4%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.4%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.4%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.4%**	**1**
I-5	34.892921	-118.91453	34.8932	-118.9149	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.891125	-118.9123	34.8916	-118.9129	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.7%**	**1**
I-5	34.939855	-118.93007	34.94166	-118.9309	59.9%	65.2%	40.7%	41.1%	83.2%	**87.7%**	**1**
I-5	34.93927	-118.92999	34.93837	-118.9299	59.9%	65.2%	39.1%	41.2%	83.2%	**87.2%**	**1**
I-5	34.928586	-118.92836	34.92985	-118.9287	59.9%	65.2%	35.8%	41.4%	83.2%	**86.2%**	**1**
I-5	34.909999	-118.92378	34.90944	-118.9236	59.9%	65.2%	31.9%	41.8%	83.2%	**85.0%**	**1**
I-5	34.889432	-118.9102	34.88122	-118.9	59.9%	65.2%	28.8%	42.7%	83.2%	**84.3%**	**1**
I-5	34.923351	-118.92705	34.92351	-118.9271	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**

I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.5%**	**2**
I-5	34.915507	-118.9251	34.91099	-118.924	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**81.3%**	**2**
I-5	34.8814	-118.90024	34.88144	-118.9003	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.88897	-118.90963	34.88921	-118.9099	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.6%**	**3**
I-5	34.910457	-118.92389	34.91098	-118.924	59.9%	29.1%	31.9%	41.8%	83.2%	**72.9%**	**4**
I-5	34.881219	-118.90001	34.8814	-118.9002	59.9%	29.1%	28.8%	42.7%	83.2%	**72.2%**	**4**
I-5	34.889209	-118.90992	34.88943	-118.9102	59.9%	29.1%	28.8%	42.7%	83.2%	**72.2%**	**4**
I-5	34.844827	-118.86663	34.84724	-118.8684	59.6%	64.9%	25.6%	45.1%	83.0%	**83.8%**	**2**
I-5	34.844826	-118.86663	34.84483	-118.8666	59.6%	64.9%	25.6%	45.1%	83.0%	**83.8%**	**2**
I-5	34.847235	-118.86839	34.85549	-118.8747	59.6%	64.9%	25.9%	44.6%	83.0%	**83.7%**	**2**
I-5	34.868233	-118.88571	34.87104	-118.8881	59.6%	64.9%	26.7%	43.8%	83.0%	**83.7%**	**2**
I-5	34.855486	-118.87474	34.85551	-118.8748	59.6%	64.9%	26.7%	43.8%	83.0%	**83.7%**	**2**
I-5	34.875111	-118.89247	34.87511	-118.8925	59.6%	64.9%	27.4%	43.0%	83.0%	**83.7%**	**2**
I-5	34.871045	-118.88813	34.87332	-118.8906	59.6%	64.9%	27.2%	43.2%	83.0%	**83.7%**	**2**
I-5	34.873316	-118.89057	34.8739	-118.8912	59.6%	64.9%	27.3%	43.1%	83.0%	**83.7%**	**2**
I-5	34.862897	-118.88112	34.86823	-118.8857	59.6%	28.9%	26.7%	43.8%	83.0%	**71.6%**	**4**
I-5	34.855514	-118.87477	34.8629	-118.8811	59.6%	28.9%	26.7%	43.8%	83.0%	**71.6%**	**4**

I-5	34.875265	-118.89264	34.8756	-118.893	59.5%	64.8%	27.3%	42.8%	82.8%	**83.4%**	**2**
I-5	34.946352	-118.93311	34.94487	-118.9325	59.3%	28.5%	41.5%	40.3%	82.6%	**75.0%**	**3**
I-5	34.944874	-118.93253	34.94153	-118.9313	59.3%	28.5%	40.7%	40.3%	82.6%	**74.8%**	**3**
I-5	34.945484	-118.93214	34.94627	-118.9324	59.2%	64.5%	42.3%	40.1%	82.6%	**87.3%**	**1**
I-5	34.944089	-118.93171	34.94548	-118.9321	59.2%	64.5%	41.1%	40.2%	82.6%	**86.9%**	**1**
I-5	34.941657	-118.93093	34.94409	-118.9317	59.2%	64.5%	40.6%	40.2%	82.6%	**86.7%**	**1**
CA-99	35.342085	-119.03945	35.34462	-119.0394	53.3%	30.0%	30.0%	46.1%	30.0%	**54.0%**	**5**
CA-99	35.344615	-119.03943	35.34569	-119.0394	53.3%	30.0%	30.0%	46.0%	30.0%	**54.0%**	**5**
CA-99	35.345685	-119.03942	35.34592	-119.0394	53.3%	30.0%	30.0%	46.0%	30.0%	**54.0%**	**5**
CA-99	35.346721	-119.03941	35.34672	-119.0394	53.3%	30.0%	30.0%	46.0%	30.0%	**54.0%**	**5**
CA-99	35.346725	-119.03941	35.34673	-119.0394	53.3%	30.0%	30.0%	46.0%	30.0%	**54.0%**	**5**
CA-99	35.346734	-119.03941	35.34718	-119.0394	53.3%	30.0%	30.0%	46.0%	30.0%	**54.0%**	**5**
CA-99	35.345685	-119.03966	35.34462	-119.0397	52.9%	29.6%	29.6%	45.5%	29.6%	**53.3%**	**5**
CA-99	35.346725	-119.03965	35.34569	-119.0397	52.9%	29.6%	29.6%	45.5%	29.6%	**53.3%**	**5**
CA-99	35.346736	-119.03965	35.34673	-119.0396	52.9%	29.6%	29.6%	45.4%	29.6%	**53.2%**	**5**
CA-99	35.348495	-119.03964	35.34674	-119.0396	52.9%	29.6%	29.6%	45.4%	29.6%	**53.2%**	**5**
CA-99	35.348935	-119.03964	35.3485	-119.0396	52.9%	29.6%	29.6%	45.4%	29.6%	**53.2%**	**5**
CA-99	35.350655	-119.03963	35.34894	-119.0396	52.9%	29.6%	29.6%	45.3%	29.6%	**53.2%**	**5**
CA-99	35.377007	-119.04429	35.37136	-119.0433	52.1%	28.7%	28.7%	43.1%	98.7%	**74.7%**	**3**
CA-99	35.356725	-119.03937	35.35943	-119.0394	51.5%	44.0%	28.1%	43.1%	28.1%	**55.8%**	**5**
CA-99	35.359425	-119.03936	35.36042	-119.0393	51.5%	44.0%	28.1%	43.0%	28.1%	**55.8%**	**5**
CA-99	35.36132	-119.03951	35.36132	-119.0395	51.5%	44.0%	28.1%	42.9%	28.1%	**55.8%**	**5**
CA-99	35.373769	-119.04345	35.37367	-119.0434	51.3%	28.0%	28.0%	42.1%	98.0%	**73.5%**	**4**
CA-99	35.360415	-119.03957	35.35943	-119.0396	51.3%	43.9%	28.0%	42.8%	28.0%	**55.5%**	**5**
CA-99	35.360795	-119.03958	35.36042	-119.0396	51.3%	43.9%	28.0%	42.8%	28.0%	**55.5%**	**5**
CA-99	35.361315	-119.03961	35.3608	-119.0396	51.3%	43.9%	28.0%	42.7%	28.0%	**55.5%**	**5**
CA-99	35.364615	-119.04033	35.36132	-119.0396	51.3%	43.9%	28.0%	42.7%	28.0%	**55.5%**	**5**
CA-99	35.367495	-119.0416	35.36462	-119.0403	51.3%	43.9%	28.0%	42.5%	28.0%	**55.4%**	**5**
CA-99	35.363948	-119.04018	35.36188	-119.0397	51.3%	28.0%	28.0%	42.7%	28.0%	**50.2%**	**6**
CA-99	35.369525	-119.04222	35.37136	-119.043	49.4%	26.1%	26.1%	39.7%	96.1%	**70.0%**	**4**
CA-99	35.322335	-119.03754	35.32133	-119.0373	49.3%	26.0%	26.0%	41.2%	26.0%	**46.9%**	**6**
CA-99	35.322965	-119.03771	35.32234	-119.0375	49.3%	26.0%	26.0%	41.1%	26.0%	**46.9%**	**6**
CA-99	35.324125	-119.03801	35.32297	-119.0377	49.3%	26.0%	26.0%	41.1%	26.0%	**46.9%**	**6**
CA-99	35.325475	-119.03837	35.32496	-119.0382	49.3%	26.0%	26.0%	41.1%	26.0%	**46.9%**	**6**
CA-99	35.32496	-119.03823	35.32413	-119.038	49.3%	26.0%	26.0%	41.1%	26.0%	**46.9%**	**6**
CA-99	35.332205	-119.03976	35.32548	-119.0384	49.3%	26.0%	26.0%	41.0%	26.0%	**46.9%**	**6**
CA-99	35.335785	-119.03968	35.33222	-119.0398	49.3%	26.0%	26.0%	40.9%	26.0%	**46.9%**	**6**
CA-99	35.332223	-119.03976	35.33221	-119.0398	49.3%	26.0%	26.0%	40.9%	26.0%	**46.9%**	**6**
CA-46	35.726455	-120.19378	35.72626	-120.1933	49.3%	18.5%	5.5%	9.4%	72.6%	**42.5%**	**7**
CA-46	35.726455	-120.19378	35.72626	-120.1933	49.3%	18.5%	5.5%	9.4%	72.6%	**42.5%**	**7**
CA-46	35.726255	-120.19332	35.7257	-120.1921	49.3%	18.5%	5.5%	9.3%	72.6%	**42.5%**	**7**
CA-46	35.726255	-120.19332	35.7257	-120.1921	49.3%	18.5%	5.5%	9.3%	72.6%	**42.5%**	**7**
CA-46	35.632499	-120.00232	35.65107	-120.0406	49.3%	18.5%	4.0%	13.5%	72.6%	**43.4%**	**6**
CA-46	35.632499	-120.00232	35.65107	-120.0406	49.3%	18.5%	4.0%	13.5%	72.6%	**43.4%**	**6**
CA-33	35.075245	-119.40188	35.07479	-119.4019	49.2%	2.6%	15.4%	9.0%	72.6%	**40.4%**	**7**
CA-33	35.075245	-119.40188	35.07479	-119.4019	49.2%	2.6%	15.4%	9.0%	72.6%	**40.4%**	**7**
CA-33	35.074785	-119.4019	35.06683	-119.402	49.2%	2.6%	15.3%	9.0%	72.6%	**40.3%**	**7**
CA-33	35.074785	-119.4019	35.06683	-119.402	49.2%	2.6%	15.3%	9.0%	72.6%	**40.3%**	**7**
CA-33	35.065485	-119.40171	35.06683	-119.402	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CA-33	35.065485	-119.40171	35.06683	-119.402	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.065485	-119.40171	35.0653	-119.4017	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.065485	-119.40171	35.0653	-119.4017	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.065225	-119.40164	35.0653	-119.4017	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.065225	-119.40164	35.0653	-119.4017	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.065225	-119.40164	35.06416	-119.4016	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.065225	-119.40164	35.06416	-119.4016	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.063965	-119.40163	35.06416	-119.4016	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.063965	-119.40163	35.06416	-119.4016	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.062505	-119.40166	35.06397	-119.4016	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.062505	-119.40166	35.06397	-119.4016	49.2%	2.6%	15.1%	9.0%	72.6%	**40.3%**	**7**
CALIFORNIA ST	35.062145	-119.40167	35.06251	-119.4017	49.2%	2.6%	15.0%	9.0%	72.6%	**40.2%**	**7**
CALIFORNIA ST	35.062145	-119.40167	35.06251	-119.4017	49.2%	2.6%	15.0%	9.0%	72.6%	**40.2%**	**7**
CALIFORNIA ST	35.060445	-119.40146	35.06215	-119.4017	49.1%	2.5%	14.9%	8.8%	72.5%	**40.1%**	**7**
CALIFORNIA ST	35.060445	-119.40146	35.06215	-119.4017	49.1%	2.5%	14.9%	8.8%	72.5%	**40.1%**	**7**
CALIFORNIA ST	35.060445	-119.40146	35.05843	-119.4009	49.1%	2.5%	14.9%	8.8%	72.5%	**40.1%**	**7**
CALIFORNIA ST	35.060445	-119.40146	35.05843	-119.4009	49.1%	2.5%	14.9%	8.8%	72.5%	**40.1%**	**7**
CA-99	35.321835	-119.03716	35.32208	-119.0372	48.8%	25.5%	25.5%	40.5%	25.5%	**46.1%**	**6**
CA-99	35.322075	-119.03721	35.32301	-119.0375	48.8%	25.5%	25.5%	40.5%	25.5%	**46.1%**	**6**

CA-99	35.332201	-119.03948	35.3309	-119.0392	48.8%	25.5%	25.5%	40.4%	25.5%	**46.1%**	**6**
CA-99	35.32495	-119.03788	35.32495	-119.0379	48.8%	25.5%	25.5%	40.4%	25.5%	**46.1%**	**6**
CA-99	35.332221	-119.03948	35.33432	-119.0395	48.8%	25.5%	25.5%	40.3%	25.5%	**46.0%**	**6**
CA-99	35.332205	-119.03948	35.33222	-119.0395	48.8%	25.5%	25.5%	40.3%	25.5%	**46.0%**	**6**
CA-99	35.334315	-119.0395	35.33806	-119.0395	48.8%	25.5%	25.5%	40.2%	25.5%	**46.0%**	**6**
POSO ST	35.058425	-119.39982	35.05843	-119.4003	48.5%	1.8%	14.3%	7.9%	71.8%	**38.9%**	**7**
POSO ST	35.058425	-119.39982	35.05843	-119.4003	48.5%	1.8%	14.3%	7.9%	71.8%	**38.9%**	**7**
POSO ST	35.058425	-119.40061	35.05843	-119.4003	48.5%	1.8%	14.3%	7.9%	71.8%	**38.9%**	**7**
POSO ST	35.058425	-119.40061	35.05843	-119.4003	48.5%	1.8%	14.3%	7.9%	71.8%	**38.9%**	**7**
POSO ST	35.058425	-119.40061	35.05843	-119.4008	48.5%	1.8%	14.2%	7.9%	71.8%	**38.9%**	**7**
POSO ST	35.058425	-119.40061	35.05843	-119.4008	48.5%	1.8%	14.2%	7.9%	71.8%	**38.9%**	**7**
POSO ST	35.058425	-119.40094	35.05843	-119.4008	48.5%	1.8%	14.2%	7.9%	71.8%	**38.9%**	**7**
POSO ST	35.058425	-119.40094	35.05843	-119.4008	48.5%	1.8%	14.2%	7.9%	71.8%	**38.9%**	**7**

Appendix Table C: Top Roads by Landslide Risk

Route	Begin Latitude	Begin Longitude	End Latitude	End Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
BAKERSFIELD TEH	35.31865	-118.7908	35.32838	-118.8023	27.8%	74.5%	43.0%	20.7%	74.5%	**71.6%**	**4**
BAKERSFIELD TEH	35.316056	-118.78773	35.31865	-118.7908	27.8%	74.5%	43.0%	20.7%	74.5%	**71.6%**	**4**
BAKERSFIELD TEH	35.328378	-118.80233	35.32846	-118.8024	27.8%	74.5%	43.0%	20.7%	74.5%	**71.6%**	**4**
BAKERSFIELD TEH	35.327998	-118.80226	35.32699	-118.8011	27.8%	74.5%	43.0%	20.6%	74.5%	**71.5%**	**4**
BAKERSFIELD TEH	35.328213	-118.80251	35.328	-118.8023	27.8%	74.5%	43.0%	20.6%	74.5%	**71.5%**	**4**
BAKERSFIELD TEH	35.331055	-118.8125	35.33336	-118.822	27.8%	74.4%	41.7%	17.5%	74.4%	**70.0%**	**4**
BAKERSFIELD TEH	35.334136	-118.82528	35.33414	-118.8253	27.8%	74.4%	40.1%	16.7%	74.4%	**69.2%**	**4**
BAKERSFIELD TEH	35.329765	-118.80749	35.32976	-118.8075	27.8%	74.4%	42.8%	18.2%	74.4%	**70.6%**	**4**
BAKERSFIELD TEH	35.337135	-118.83883	35.33079	-118.8125	27.7%	74.3%	40.5%	16.9%	74.3%	**69.3%**	**4**
BAKERSFIELD TEH	35.330785	-118.81253	35.32821	-118.8025	27.7%	74.3%	42.7%	18.1%	74.3%	**70.4%**	**4**
BAKERSFIELD TEH	35.338434	-118.84313	35.33843	-118.8431	27.6%	74.3%	38.3%	15.7%	74.3%	**68.1%**	**4**
BAKERSFIELD TEH	35.338186	-118.84319	35.33714	-118.8388	27.6%	74.2%	38.2%	15.6%	74.2%	**68.0%**	**4**
S COMANCHE DR	35.338434	-118.84313	35.33817	-118.8431	25.5%	72.2%	36.1%	12.8%	72.2%	**64.4%**	**4**
S COMANCHE DR	35.338434	-118.84313	35.33817	-118.8431	25.5%	72.2%	36.1%	12.8%	72.2%	**64.4%**	**4**
CA-155	35.641142	-118.48367	35.63947	-118.483	25.4%	72.0%	48.5%	57.8%	72.0%	**83.1%**	**2**
CA-155	35.641142	-118.48367	35.63947	-118.483	25.4%	72.0%	48.5%	57.8%	72.0%	**83.1%**	**2**
CA-155	35.641495	-118.48409	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**75.0%**	**3**
CA-155	35.641495	-118.48409	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**75.0%**	**3**
CA-155	35.641285	-118.48373	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**75.0%**	**3**
CA-155	35.641285	-118.48373	35.64145	-118.484	25.4%	72.0%	23.7%	57.9%	72.0%	**75.0%**	**3**
CA-155	35.641285	-118.48373	35.64114	-118.4837	25.4%	72.0%	23.5%	57.8%	72.0%	**74.9%**	**3**
CA-155	35.641285	-118.48373	35.64114	-118.4837	25.4%	72.0%	23.5%	57.8%	72.0%	**74.9%**	**3**
LAKE ISABELLA B	35.596048	-118.49183	35.5966	-118.4917	25.2%	71.9%	44.8%	54.5%	71.9%	**80.7%**	**3**
LAKE ISABELLA B	35.596048	-118.49183	35.5966	-118.4917	25.2%	71.9%	44.8%	54.5%	71.9%	**80.7%**	**3**
LAKE ISABELLA B	35.594765	-118.49216	35.59605	-118.4918	25.2%	71.9%	19.8%	54.5%	71.9%	**72.4%**	**4**
LAKE ISABELLA B	35.594765	-118.49216	35.59605	-118.4918	25.2%	71.9%	19.8%	54.5%	71.9%	**72.4%**	**4**
CA-155	35.679185	-118.47015	35.67924	-118.4701	25.2%	71.9%	49.8%	60.1%	71.9%	**84.2%**	**1**
CA-155	35.679185	-118.47015	35.67924	-118.4701	25.2%	71.9%	49.8%	60.1%	71.9%	**84.2%**	**1**
CA-155	35.679185	-118.47015	35.67721	-118.4706	25.2%	71.9%	49.9%	60.0%	71.9%	**84.2%**	**1**
CA-155	35.679185	-118.47015	35.67721	-118.4706	25.2%	71.9%	49.9%	60.0%	71.9%	**84.2%**	**1**
CA-155	35.669529	-118.47014	35.66957	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.669529	-118.47014	35.66957	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.666905	-118.47143	35.66797	-118.4709	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.666905	-118.47143	35.66797	-118.4709	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.667965	-118.47091	35.66892	-118.4704	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.669526	-118.47014	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.668915	-118.47044	35.66953	-118.4701	25.2%	71.9%	50.1%	59.8%	71.9%	**84.2%**	**2**
CA-155	35.664881	-118.47111	35.66477	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.664881	-118.47111	35.66477	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66488	-118.4711	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665105	-118.47117	35.66543	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.665435	-118.47126	35.66558	-118.4713	25.2%	71.9%	50.2%	59.7%	71.9%	**84.2%**	**2**

CA-155	35.666905	-118.47143	35.66559	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.666905	-118.47143	35.66559	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.66559	-118.4713	35.66558	-118.4713	25.2%	71.9%	50.1%	59.7%	71.9%	**84.2%**	**2**
CA-155	35.66477	-118.47108	35.66029	-118.4754	25.2%	71.9%	50.2%	59.4%	71.9%	**84.1%**	**2**
CA-155	35.66477	-118.47108	35.66029	-118.4754	25.2%	71.9%	50.2%	59.4%	71.9%	**84.1%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**84.1%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**84.1%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**84.1%**	**2**
CA-155	35.660289	-118.47541	35.66477	-118.4711	25.2%	71.9%	50.2%	59.4%	71.9%	**84.1%**	**2**
CA-155	35.659139	-118.47809	35.65892	-118.4786	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.659139	-118.47809	35.65892	-118.4786	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.660285	-118.47542	35.66028	-118.4754	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.660285	-118.47542	35.66028	-118.4754	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.660278	-118.47543	35.65914	-118.4781	25.2%	71.9%	50.1%	59.1%	71.9%	**84.0%**	**2**
CA-155	35.658911	-118.47862	35.65842	-118.4806	25.2%	71.9%	50.0%	58.9%	71.9%	**83.9%**	**2**
CA-155	35.658911	-118.47862	35.65842	-118.4806	25.2%	71.9%	50.0%	58.9%	71.9%	**83.9%**	**2**
CA-155	35.649601	-118.48563	35.64765	-118.4851	25.2%	71.9%	49.2%	58.0%	71.9%	**83.3%**	**2**
CA-155	35.649601	-118.48563	35.64765	-118.4851	25.2%	71.9%	49.2%	58.0%	71.9%	**83.3%**	**2**
CA-155	35.646705	-118.48488	35.64728	-118.485	25.2%	71.9%	48.8%	57.8%	71.9%	**83.1%**	**2**
CA-155	35.646705	-118.48488	35.64728	-118.485	25.2%	71.9%	48.8%	57.8%	71.9%	**83.1%**	**2**
CA-155	35.642545	-118.48425	35.64311	-118.4843	25.2%	71.9%	48.8%	57.8%	71.9%	**83.1%**	**2**
CA-155	35.642545	-118.48425	35.64311	-118.4843	25.2%	71.9%	48.8%	57.8%	71.9%	**83.1%**	**2**
CA-155	35.677213	-118.47058	35.67449	-118.4712	25.2%	71.9%	24.9%	60.0%	71.9%	**75.9%**	**3**
CA-155	35.677213	-118.47058	35.67449	-118.4712	25.2%	71.9%	24.9%	60.0%	71.9%	**75.9%**	**3**
CA-155	35.671065	-118.47083	35.66976	-118.47	25.2%	71.9%	25.1%	59.9%	71.9%	**75.9%**	**3**
CA-155	35.671065	-118.47083	35.66976	-118.47	25.2%	71.9%	25.1%	59.9%	71.9%	**75.9%**	**3**
CA-155	35.674495	-118.47119	35.67106	-118.4708	25.2%	71.9%	25.0%	59.9%	71.9%	**75.9%**	**3**
CA-155	35.674495	-118.47119	35.67106	-118.4708	25.2%	71.9%	25.0%	59.9%	71.9%	**75.9%**	**3**
CA-155	35.669571	-118.47012	35.66976	-118.47	25.2%	71.9%	25.1%	59.8%	71.9%	**75.9%**	**3**
CA-155	35.669571	-118.47012	35.66976	-118.47	25.2%	71.9%	25.1%	59.8%	71.9%	**75.9%**	**3**
CA-155	35.658918	-118.4786	35.65891	-118.4786	25.2%	71.9%	25.1%	59.1%	71.9%	**75.7%**	**3**
CA-155	35.658918	-118.4786	35.65891	-118.4786	25.2%	71.9%	25.1%	59.1%	71.9%	**75.7%**	**3**
CA-155	35.658915	-118.47861	35.65835	-118.4808	25.2%	71.9%	25.0%	58.9%	71.9%	**75.6%**	**3**
CA-155	35.658915	-118.47861	35.65835	-118.4808	25.2%	71.9%	25.0%	58.9%	71.9%	**75.6%**	**3**
CA-155	35.658305	-118.48149	35.65835	-118.4808	25.2%	71.9%	25.0%	58.8%	71.9%	**75.6%**	**3**
CA-155	35.658305	-118.48149	35.65835	-118.4808	25.2%	71.9%	25.0%	58.8%	71.9%	**75.6%**	**3**
CA-155	35.658305	-118.48149	35.65558	-118.4846	25.2%	71.9%	24.9%	58.7%	71.9%	**75.5%**	**3**
CA-155	35.658305	-118.48149	35.65558	-118.4846	25.2%	71.9%	24.9%	58.7%	71.9%	**75.5%**	**3**
CA-155	35.653745	-118.48524	35.65558	-118.4846	25.2%	71.9%	24.7%	58.4%	71.9%	**75.4%**	**3**
CA-155	35.653745	-118.48524	35.65558	-118.4846	25.2%	71.9%	24.7%	58.4%	71.9%	**75.4%**	**3**
CA-155	35.653745	-118.48524	35.65289	-118.4858	25.2%	71.9%	24.6%	58.3%	71.9%	**75.3%**	**3**
CA-155	35.653745	-118.48524	35.65289	-118.4858	25.2%	71.9%	24.6%	58.3%	71.9%	**75.3%**	**3**
CA-155	35.650675	-118.48601	35.65289	-118.4858	25.2%	71.9%	24.4%	58.2%	71.9%	**75.2%**	**3**
CA-155	35.650675	-118.48601	35.65289	-118.4858	25.2%	71.9%	24.4%	58.2%	71.9%	**75.2%**	**3**
CA-155	35.650315	-118.48584	35.65067	-118.486	25.2%	71.9%	24.3%	58.1%	71.9%	**75.1%**	**3**
CA-155	35.650315	-118.48584	35.65067	-118.486	25.2%	71.9%	24.3%	58.1%	71.9%	**75.1%**	**3**
CA-155	35.650315	-118.48584	35.64729	-118.485	25.2%	71.9%	24.2%	58.0%	71.9%	**75.1%**	**3**
CA-155	35.650315	-118.48584	35.64729	-118.485	25.2%	71.9%	24.2%	58.0%	71.9%	**75.1%**	**3**
CA-155	35.647281	-118.48497	35.64255	-118.4842	25.2%	71.9%	23.8%	57.8%	71.9%	**74.9%**	**3**
CA-155	35.647281	-118.48497	35.64255	-118.4842	25.2%	71.9%	23.8%	57.8%	71.9%	**74.9%**	**3**
CA-178	35.529895	-118.65308	35.52942	-118.6553	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529895	-118.65308	35.52942	-118.6553	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.528874	-118.65783	35.52883	-118.658	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.528874	-118.65783	35.52883	-118.658	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529795	-118.65354	35.52946	-118.6551	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529795	-118.65354	35.52946	-118.6551	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529795	-118.65354	35.52946	-118.6551	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529795	-118.65354	35.52946	-118.6551	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529741	-118.65379	35.52949	-118.655	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529741	-118.65379	35.52949	-118.655	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529741	-118.65379	35.52949	-118.655	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529741	-118.65379	35.52949	-118.655	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**

CA-178	35.529741	-118.65379	35.52949	-118.655	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.529741	-118.65379	35.52949	-118.655	25.0%	71.7%	42.9%	36.1%	71.7%	**73.8%**	**4**
CA-178	35.528394	-118.6592	35.52786	-118.6606	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.528394	-118.6592	35.52786	-118.6606	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527325	-118.6621	35.52733	-118.6621	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527325	-118.6621	35.52733	-118.6621	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527325	-118.6621	35.52733	-118.6621	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527325	-118.6621	35.52733	-118.6621	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527975	-118.66034	35.52787	-118.6606	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527975	-118.66034	35.52787	-118.6606	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527975	-118.66034	35.52787	-118.6606	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527975	-118.66034	35.52787	-118.6606	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527874	-118.66061	35.52797	-118.6603	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527874	-118.66061	35.52797	-118.6603	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527874	-118.66061	35.52797	-118.6603	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527874	-118.66061	35.52797	-118.6603	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527874	-118.66061	35.52797	-118.6603	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.527874	-118.66061	35.52797	-118.6603	25.0%	71.7%	42.9%	35.2%	71.7%	**73.5%**	**4**
CA-178	35.526991	-118.66284	35.52732	-118.6621	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526991	-118.66284	35.52732	-118.6621	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526991	-118.66284	35.52732	-118.6621	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526991	-118.66284	35.52732	-118.6621	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526755	-118.66337	35.52678	-118.6633	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526755	-118.66337	35.52678	-118.6633	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526755	-118.66337	35.52678	-118.6633	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526755	-118.66337	35.52678	-118.6633	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526777	-118.66332	35.52699	-118.6628	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526777	-118.66332	35.52699	-118.6628	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526777	-118.66332	35.52699	-118.6628	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526777	-118.66332	35.52699	-118.6628	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526777	-118.66332	35.52699	-118.6628	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526777	-118.66332	35.52699	-118.6628	25.0%	71.7%	43.0%	34.6%	71.7%	**73.3%**	**4**
CA-178	35.526755	-118.66337	35.52482	-118.6657	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526755	-118.66337	35.52482	-118.6657	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526755	-118.66337	35.52482	-118.6657	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526755	-118.66337	35.52482	-118.6657	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524711	-118.66588	35.52446	-118.6662	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524711	-118.66588	35.52446	-118.6662	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524711	-118.66588	35.52446	-118.6662	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524711	-118.66588	35.52446	-118.6662	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526437	-118.66376	35.52572	-118.6646	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526437	-118.66376	35.52572	-118.6646	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526437	-118.66376	35.52572	-118.6646	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526437	-118.66376	35.52572	-118.6646	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526437	-118.66376	35.52572	-118.6646	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.526437	-118.66376	35.52572	-118.6646	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524822	-118.66574	35.52471	-118.6659	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524822	-118.66574	35.52471	-118.6659	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524822	-118.66574	35.52471	-118.6659	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524822	-118.66574	35.52471	-118.6659	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524822	-118.66574	35.52471	-118.6659	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.524822	-118.66574	35.52471	-118.6659	25.0%	71.7%	43.1%	34.0%	71.7%	**73.2%**	**4**
CA-178	35.523655	-118.66786	35.52446	-118.6662	25.0%	71.7%	43.2%	33.4%	71.7%	**73.0%**	**4**
CA-178	35.523655	-118.66786	35.52446	-118.6662	25.0%	71.7%	43.2%	33.4%	71.7%	**73.0%**	**4**
CA-178	35.523655	-118.66786	35.52446	-118.6662	25.0%	71.7%	43.2%	33.4%	71.7%	**73.0%**	**4**
CA-178	35.523655	-118.66786	35.52446	-118.6662	25.0%	71.7%	43.2%	33.4%	71.7%	**73.0%**	**4**
CA-178	35.523315	-118.66872	35.52365	-118.6679	25.0%	71.7%	43.2%	33.1%	71.7%	**72.9%**	**4**
CA-178	35.523315	-118.66872	35.52365	-118.6679	25.0%	71.7%	43.2%	33.1%	71.7%	**72.9%**	**4**
CA-178	35.523315	-118.66872	35.52365	-118.6679	25.0%	71.7%	43.2%	33.1%	71.7%	**72.9%**	**4**
CA-178	35.523315	-118.66872	35.52365	-118.6679	25.0%	71.7%	43.2%	33.1%	71.7%	**72.9%**	**4**
CA-178	35.522849	-118.66988	35.52331	-118.6687	25.0%	71.7%	43.3%	32.4%	71.7%	**72.7%**	**4**
CA-178	35.522849	-118.66988	35.52331	-118.6687	25.0%	71.7%	43.3%	32.4%	71.7%	**72.7%**	**4**
CA-178	35.523308	-118.66874	35.52331	-118.6687	25.0%	71.7%	43.3%	32.4%	71.7%	**72.7%**	**4**
CA-178	35.523308	-118.66874	35.52331	-118.6687	25.0%	71.7%	43.3%	32.4%	71.7%	**72.7%**	**4**
CA-178	35.523308	-118.66874	35.52331	-118.6687	25.0%	71.7%	43.3%	32.4%	71.7%	**72.7%**	**4**
CA-178	35.523308	-118.66874	35.52331	-118.6687	25.0%	71.7%	43.3%	32.4%	71.7%	**72.7%**	**4**
CA-178	35.518824	-118.67836	35.51284	-118.6894	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.518824	-118.67836	35.51284	-118.6894	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**

CA-178	35.516982	-118.68176	35.51733	-118.6811	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.516982	-118.68176	35.51733	-118.6811	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.516982	-118.68176	35.51733	-118.6811	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.516982	-118.68176	35.51733	-118.6811	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.512841	-118.6894	35.51317	-118.6888	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.512841	-118.6894	35.51317	-118.6888	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.512841	-118.6894	35.51317	-118.6888	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.512841	-118.6894	35.51317	-118.6888	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517789	-118.68027	35.51882	-118.6784	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517789	-118.68027	35.51882	-118.6784	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517789	-118.68027	35.51882	-118.6784	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517789	-118.68027	35.51882	-118.6784	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517789	-118.68027	35.51882	-118.6784	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517789	-118.68027	35.51882	-118.6784	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517327	-118.68113	35.51779	-118.6803	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517327	-118.68113	35.51779	-118.6803	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517327	-118.68113	35.51779	-118.6803	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517327	-118.68113	35.51779	-118.6803	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517327	-118.68113	35.51779	-118.6803	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517327	-118.68113	35.51779	-118.6803	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.517327	-118.68113	35.51779	-118.6803	25.0%	71.7%	43.8%	29.0%	71.7%	**71.8%**	**4**
CA-178	35.496509	-118.69695	35.49631	-118.697	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.496509	-118.69695	35.49631	-118.697	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.496314	-118.69704	35.49483	-118.6977	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.496314	-118.69704	35.49483	-118.6977	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.504456	-118.69344	35.50001	-118.6954	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.504456	-118.69344	35.50001	-118.6954	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.512474	-118.6899	35.5126	-118.6898	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.512474	-118.6899	35.5126	-118.6898	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.500005	-118.69541	35.50446	-118.6934	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.500005	-118.69541	35.50446	-118.6934	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.500005	-118.69541	35.50446	-118.6934	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.500005	-118.69541	35.50446	-118.6934	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.50985	-118.69106	35.51247	-118.6899	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.50985	-118.69106	35.51247	-118.6899	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.50985	-118.69106	35.51247	-118.6899	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.50985	-118.69106	35.51247	-118.6899	25.0%	71.7%	44.6%	24.9%	71.7%	**70.7%**	**4**
CA-178	35.494088	-118.69825	35.4942	-118.698	25.0%	71.7%	45.2%	22.2%	71.7%	**69.9%**	**4**
CA-178	35.494088	-118.69825	35.4942	-118.698	25.0%	71.7%	45.2%	22.2%	71.7%	**69.9%**	**4**
CA-178	35.477355	-118.71039	35.47869	-118.7095	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.477355	-118.71039	35.47869	-118.7095	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.488896	-118.70308	35.49313	-118.7004	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.488896	-118.70308	35.49313	-118.7004	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.487203	-118.70415	35.4889	-118.7031	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.487203	-118.70415	35.4889	-118.7031	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483951	-118.70621	35.47889	-118.7094	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483951	-118.70621	35.47889	-118.7094	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483951	-118.70621	35.47889	-118.7094	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483951	-118.70621	35.47889	-118.7094	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.485321	-118.70534	35.4872	-118.7042	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.485321	-118.70534	35.4872	-118.7042	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.485321	-118.70534	35.4872	-118.7042	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.485321	-118.70534	35.4872	-118.7042	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483185	-118.7067	35.4804	-118.7085	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483185	-118.7067	35.4804	-118.7085	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483185	-118.7067	35.4804	-118.7085	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483185	-118.7067	35.4804	-118.7085	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483185	-118.7067	35.4804	-118.7085	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.483185	-118.7067	35.4804	-118.7085	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.484239	-118.70603	35.48532	-118.7053	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.484239	-118.70603	35.48532	-118.7053	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.484239	-118.70603	35.48532	-118.7053	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.484239	-118.70603	35.48532	-118.7053	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.484239	-118.70603	35.48532	-118.7053	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.484239	-118.70603	35.48532	-118.7053	25.0%	71.7%	45.7%	19.3%	71.7%	**69.2%**	**4**
CA-178	35.477214	-118.71064	35.47394	-118.7166	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.477214	-118.71064	35.47394	-118.7166	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**

CA-178	35.476141	-118.71259	35.4741	-118.7163	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.476141	-118.71259	35.4741	-118.7163	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.476141	-118.71259	35.4741	-118.7163	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.476141	-118.71259	35.4741	-118.7163	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.476781	-118.71143	35.47721	-118.7106	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.476781	-118.71143	35.47721	-118.7106	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.476781	-118.71143	35.47721	-118.7106	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.476781	-118.71143	35.47721	-118.7106	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.473345	-118.71768	35.47342	-118.7175	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.473345	-118.71768	35.47342	-118.7175	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.473345	-118.71768	35.47342	-118.7175	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.473345	-118.71768	35.47342	-118.7175	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.474097	-118.71631	35.47614	-118.7126	25.0%	71.7%	46.4%	15.7%	71.7%	**68.2%**	**4**
CA-178	35.473345	-118.71768	35.4756	-118.7224	25.0%	71.7%	46.5%	14.3%	71.7%	**67.8%**	**4**
CA-178	35.473345	-118.71768	35.4756	-118.7224	25.0%	71.7%	46.5%	14.3%	71.7%	**67.8%**	**4**
CA-178	35.473345	-118.71768	35.4756	-118.7224	25.0%	71.7%	46.5%	14.3%	71.7%	**67.8%**	**4**
CA-178	35.473345	-118.71768	35.4756	-118.7224	25.0%	71.7%	46.5%	14.3%	71.7%	**67.8%**	**4**
CA-178	35.475645	-118.72421	35.47563	-118.7234	25.0%	71.7%	46.5%	13.9%	71.7%	**67.7%**	**4**
CA-178	35.475645	-118.72421	35.47563	-118.7234	25.0%	71.7%	46.5%	13.9%	71.7%	**67.7%**	**4**
CA-178	35.475628	-118.72343	35.4756	-118.7224	25.0%	71.7%	46.5%	13.9%	71.7%	**67.7%**	**4**
CA-178	35.475628	-118.72343	35.4756	-118.7224	25.0%	71.7%	46.5%	13.9%	71.7%	**67.7%**	**4**
CA-178	35.475628	-118.72343	35.4756	-118.7224	25.0%	71.7%	46.5%	13.9%	71.7%	**67.7%**	**4**
CA-178	35.475628	-118.72343	35.4756	-118.7224	25.0%	71.7%	46.5%	13.9%	71.7%	**67.7%**	**4**
CA-178	35.475645	-118.72421	35.47564	-118.7243	25.0%	71.7%	46.5%	13.7%	71.7%	**67.6%**	**4**
CA-178	35.475645	-118.72421	35.47564	-118.7243	25.0%	71.7%	46.5%	13.7%	71.7%	**67.6%**	**4**
CA-178	35.475503	-118.7249	35.47564	-118.7243	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475503	-118.7249	35.47564	-118.7243	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.4755	-118.72491	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.4755	-118.72491	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.4755	-118.72491	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.4755	-118.72491	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475378	-118.72538	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475378	-118.72538	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475378	-118.72538	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475378	-118.72538	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475378	-118.72538	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475378	-118.72538	35.4755	-118.7249	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474709	-118.72795	35.47472	-118.7279	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474709	-118.72795	35.47472	-118.7279	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474709	-118.72795	35.47472	-118.7279	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474709	-118.72795	35.47472	-118.7279	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474709	-118.72795	35.47472	-118.7279	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474709	-118.72795	35.47472	-118.7279	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.474723	-118.7279	35.47538	-118.7254	25.0%	71.7%	46.6%	13.3%	71.7%	**67.5%**	**4**
CA-178	35.475022	-118.7291	35.47483	-118.7285	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475022	-118.7291	35.47483	-118.7285	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475684	-118.7313	35.47565	-118.7312	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475684	-118.7313	35.47565	-118.7312	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475442	-118.73049	35.4753	-118.73	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475442	-118.73049	35.4753	-118.73	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475695	-118.73134	35.47568	-118.7313	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475695	-118.73134	35.47568	-118.7313	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475695	-118.73134	35.47568	-118.7313	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475695	-118.73134	35.47568	-118.7313	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**

CA-178	35.475695	-118.73134	35.47568	-118.7313	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.475695	-118.73134	35.47568	-118.7313	25.0%	71.7%	46.7%	12.6%	71.7%	**67.3%**	**4**
CA-178	35.478225	-118.73203	35.47899	-118.7324	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.478225	-118.73203	35.47899	-118.7324	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477065	-118.73147	35.47762	-118.7317	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477065	-118.73147	35.47762	-118.7317	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477065	-118.73147	35.47762	-118.7317	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477065	-118.73147	35.47762	-118.7317	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477616	-118.73173	35.47823	-118.732	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477616	-118.73173	35.47823	-118.732	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477616	-118.73173	35.47823	-118.732	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477616	-118.73173	35.47823	-118.732	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477616	-118.73173	35.47823	-118.732	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477616	-118.73173	35.47823	-118.732	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.477616	-118.73173	35.47823	-118.732	25.0%	71.7%	46.5%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479031	-118.73316	35.47903	-118.7325	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479031	-118.73316	35.47903	-118.7325	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479035	-118.73369	35.47903	-118.7332	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479035	-118.73369	35.47903	-118.7332	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479035	-118.73369	35.47903	-118.7332	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479035	-118.73369	35.47903	-118.7332	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479035	-118.73369	35.47903	-118.7332	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479035	-118.73369	35.47903	-118.7332	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.479035	-118.73369	35.47903	-118.7332	25.0%	71.7%	46.4%	12.8%	71.7%	**67.3%**	**4**
CA-178	35.475771	-118.73134	35.47627	-118.7314	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.475771	-118.73134	35.47627	-118.7314	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.476272	-118.73139	35.47706	-118.7315	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.476272	-118.73139	35.47706	-118.7315	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.476272	-118.73139	35.47706	-118.7315	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.476272	-118.73139	35.47706	-118.7315	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.475695	-118.73134	35.47577	-118.7313	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.475695	-118.73134	35.47577	-118.7313	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.475695	-118.73134	35.47577	-118.7313	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.475695	-118.73134	35.47577	-118.7313	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.475695	-118.73134	35.47577	-118.7313	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.475695	-118.73134	35.47577	-118.7313	25.0%	71.7%	46.6%	12.5%	71.7%	**67.2%**	**4**
CA-178	35.479755	-118.73854	35.47936	-118.7359	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479755	-118.73854	35.47936	-118.7359	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479755	-118.73854	35.47936	-118.7359	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479755	-118.73854	35.47936	-118.7359	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.47976	-118.73858	35.47975	-118.7385	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.47976	-118.73858	35.47975	-118.7385	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.47976	-118.73858	35.47975	-118.7385	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.47976	-118.73858	35.47975	-118.7385	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480406	-118.74294	35.47923	-118.735	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480406	-118.74294	35.47923	-118.735	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480406	-118.74294	35.47923	-118.735	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480406	-118.74294	35.47923	-118.735	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480425	-118.74307	35.48041	-118.7429	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480425	-118.74307	35.48041	-118.7429	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480425	-118.74307	35.48041	-118.7429	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480425	-118.74307	35.48041	-118.7429	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480425	-118.74307	35.48041	-118.7429	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.480425	-118.74307	35.48041	-118.7429	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.48029	-118.74216	35.47976	-118.7386	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.48029	-118.74216	35.47976	-118.7386	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.48029	-118.74216	35.47976	-118.7386	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.48029	-118.74216	35.47976	-118.7386	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.48029	-118.74216	35.47976	-118.7386	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.48029	-118.74216	35.47976	-118.7386	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479227	-118.73498	35.4791	-118.7341	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479227	-118.73498	35.4791	-118.7341	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479227	-118.73498	35.4791	-118.7341	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479227	-118.73498	35.4791	-118.7341	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479227	-118.73498	35.4791	-118.7341	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479227	-118.73498	35.4791	-118.7341	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**

CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.479096	-118.7341	35.47903	-118.7337	25.0%	71.7%	46.4%	11.9%	71.7%	**67.0%**	**4**
CA-178	35.481585	-118.74611	35.48157	-118.7461	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481585	-118.74611	35.48157	-118.7461	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481585	-118.74611	35.48157	-118.7461	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481585	-118.74611	35.48157	-118.7461	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480443	-118.74311	35.48042	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480443	-118.74311	35.48042	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480443	-118.74311	35.48042	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480443	-118.74311	35.48042	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480443	-118.74311	35.48042	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480443	-118.74311	35.48042	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480469	-118.74318	35.48044	-118.7431	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481141	-118.74494	35.48094	-118.7444	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481141	-118.74494	35.48094	-118.7444	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481141	-118.74494	35.48094	-118.7444	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481141	-118.74494	35.48094	-118.7444	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481141	-118.74494	35.48094	-118.7444	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481141	-118.74494	35.48094	-118.7444	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481141	-118.74494	35.48094	-118.7444	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481566	-118.74606	35.48153	-118.746	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481147	-118.74496	35.48114	-118.7449	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.481531	-118.74597	35.48115	-118.745	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**

CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480945	-118.74443	35.48086	-118.7442	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.48055	-118.7434	35.48047	-118.7432	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.480864	-118.74422	35.48055	-118.7434	25.0%	71.7%	46.4%	11.0%	71.7%	**66.7%**	**4**
CA-178	35.478511	-118.75046	35.47909	-118.7496	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.478511	-118.75046	35.47909	-118.7496	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.47909	-118.74964	35.47851	-118.7505	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.47909	-118.74964	35.47851	-118.7505	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481554	-118.74615	35.47971	-118.7488	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481554	-118.74615	35.47971	-118.7488	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481554	-118.74615	35.47971	-118.7488	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481554	-118.74615	35.47971	-118.7488	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479714	-118.74875	35.47977	-118.7487	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479714	-118.74875	35.47977	-118.7487	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479714	-118.74875	35.47977	-118.7487	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479714	-118.74875	35.47977	-118.7487	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479714	-118.74875	35.47977	-118.7487	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479714	-118.74875	35.47977	-118.7487	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.481492	-118.74624	35.48155	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
CA-178	35.479768	-118.74868	35.48149	-118.7462	25.0%	71.7%	46.6%	10.1%	71.7%	**66.4%**	**4**
KERN CANYON RD	35.478235	-118.75085	35.47807	-118.7509	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.478235	-118.75085	35.47807	-118.7509	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.473908	-118.75175	35.47351	-118.7518	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.473908	-118.75175	35.47351	-118.7518	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474198	-118.75169	35.47391	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474198	-118.75169	35.47391	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474198	-118.75169	35.47391	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474198	-118.75169	35.47391	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.478065	-118.75088	35.47766	-118.751	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.478065	-118.75088	35.47766	-118.751	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**

KERN CANYON RD	35.478065	-118.75088	35.47766	-118.751	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.478065	-118.75088	35.47766	-118.751	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.478065	-118.75088	35.47766	-118.751	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.478065	-118.75088	35.47766	-118.751	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.47766	-118.75097	35.477	-118.7511	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.47766	-118.75097	35.477	-118.7511	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.47766	-118.75097	35.477	-118.7511	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.47766	-118.75097	35.477	-118.7511	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.47766	-118.75097	35.477	-118.7511	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.47766	-118.75097	35.477	-118.7511	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.474396	-118.75164	35.4742	-118.7517	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476996	-118.75111	35.47661	-118.7512	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.476609	-118.75119	35.4744	-118.7516	25.0%	71.7%	47.0%	8.6%	71.7%	**66.1%**	**4**
KERN CANYON RD	35.472677	-118.75106	35.47351	-118.7518	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472677	-118.75106	35.47351	-118.7518	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.4723	-118.7507	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.4723	-118.7507	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.4723	-118.7507	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.4723	-118.7507	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.4723	-118.7507	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.4723	-118.7507	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472298	-118.75071	35.47268	-118.7511	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472298	-118.75071	35.47268	-118.7511	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472298	-118.75071	35.47268	-118.7511	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472298	-118.75071	35.47268	-118.7511	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472298	-118.75071	35.47268	-118.7511	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.472298	-118.75071	35.47268	-118.7511	25.0%	71.7%	47.3%	7.9%	71.7%	**65.9%**	**4**
KERN CANYON RD	35.46985	-118.75262	35.46867	-118.7536	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.46985	-118.75262	35.46867	-118.7536	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.468675	-118.75359	35.468	-118.7542	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.468675	-118.75359	35.468	-118.7542	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.468	-118.75415	35.46756	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.468	-118.75415	35.46756	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.468	-118.75415	35.46756	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.468	-118.75415	35.46756	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.467565	-118.75451	35.46752	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.467565	-118.75451	35.46752	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.467565	-118.75451	35.46752	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.467565	-118.75451	35.46752	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.467565	-118.75451	35.46752	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.467565	-118.75451	35.46752	-118.7545	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.47179	-118.75101	35.46985	-118.7526	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.47179	-118.75101	35.46985	-118.7526	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.47179	-118.75101	35.46985	-118.7526	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.47179	-118.75101	35.46985	-118.7526	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**

KERN CANYON RD	35.47179	-118.75101	35.46985	-118.7526	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.47179	-118.75101	35.46985	-118.7526	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.47214	-118.7507	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.47214	-118.7507	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.47214	-118.7507	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.47214	-118.7507	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.47214	-118.7507	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472225	-118.75065	35.47214	-118.7507	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472144	-118.75071	35.47179	-118.751	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472144	-118.75071	35.47179	-118.751	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472144	-118.75071	35.47179	-118.751	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472144	-118.75071	35.47179	-118.751	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472144	-118.75071	35.47179	-118.751	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.472144	-118.75071	35.47179	-118.751	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.471059	-118.75161	35.47022	-118.7523	25.0%	71.7%	47.6%	7.1%	71.7%	**65.8%**	**4**
KERN CANYON RD	35.467345	-118.75468	35.46752	-118.7545	25.0%	71.7%	47.9%	6.3%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467345	-118.75468	35.46752	-118.7545	25.0%	71.7%	47.9%	6.3%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467345	-118.75468	35.46752	-118.7545	25.0%	71.7%	47.9%	6.3%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467345	-118.75468	35.46752	-118.7545	25.0%	71.7%	47.9%	6.3%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467345	-118.75468	35.46752	-118.7545	25.0%	71.7%	47.9%	6.3%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467345	-118.75468	35.46752	-118.7545	25.0%	71.7%	47.9%	6.3%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465465	-118.75737	35.46582	-118.7569	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465465	-118.75737	35.46582	-118.7569	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.466092	-118.75648	35.46528	-118.7576	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.466092	-118.75648	35.46528	-118.7576	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467231	-118.75484	35.46515	-118.7578	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467231	-118.75484	35.46515	-118.7578	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467231	-118.75484	35.46515	-118.7578	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467231	-118.75484	35.46515	-118.7578	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465823	-118.75686	35.46609	-118.7565	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465823	-118.75686	35.46609	-118.7565	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465823	-118.75686	35.46609	-118.7565	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465823	-118.75686	35.46609	-118.7565	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467322	-118.75471	35.46734	-118.7547	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467322	-118.75471	35.46734	-118.7547	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467322	-118.75471	35.46734	-118.7547	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467322	-118.75471	35.46734	-118.7547	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467322	-118.75471	35.46734	-118.7547	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.467322	-118.75471	35.46734	-118.7547	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465285	-118.75763	35.46546	-118.7574	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465285	-118.75763	35.46546	-118.7574	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465285	-118.75763	35.46546	-118.7574	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465285	-118.75763	35.46546	-118.7574	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465285	-118.75763	35.46546	-118.7574	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.465285	-118.75763	35.46546	-118.7574	25.0%	71.7%	48.0%	6.1%	71.7%	**65.6%**	**4**
CA-178	35.529425	-118.65527	35.52887	-118.6578	25.0%	71.7%	17.9%	36.1%	71.7%	**65.6%**	**4**
CA-178	35.529425	-118.65527	35.52887	-118.6578	25.0%	71.7%	17.9%	36.1%	71.7%	**65.6%**	**4**
KERN CANYON RD	35.464531	-118.76022	35.46435	-118.7609	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464531	-118.76022	35.46435	-118.7609	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464335	-118.76099	35.46187	-118.7707	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464335	-118.76099	35.46187	-118.7707	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.460811	-118.77484	35.46077	-118.775	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.460811	-118.77484	35.46077	-118.775	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.465135	-118.75785	35.46453	-118.7602	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.465135	-118.75785	35.46453	-118.7602	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.465135	-118.75785	35.46453	-118.7602	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.465135	-118.75785	35.46453	-118.7602	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.460774	-118.77498	35.46076	-118.775	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.460774	-118.77498	35.46076	-118.775	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.460774	-118.77498	35.46076	-118.775	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.460774	-118.77498	35.46076	-118.775	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**

KERN CANYON RD	35.464998	-118.75839	35.4646	-118.76	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464998	-118.75839	35.4646	-118.76	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464998	-118.75839	35.4646	-118.76	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464998	-118.75839	35.4646	-118.76	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464998	-118.75839	35.4646	-118.76	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.464998	-118.75839	35.4646	-118.76	25.0%	71.7%	48.6%	4.4%	71.7%	**65.2%**	**4**
KERN CANYON RD	35.455671	-118.78079	35.45689	-118.7802	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.455671	-118.78079	35.45689	-118.7802	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.457005	-118.78011	35.45769	-118.7798	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.457005	-118.78011	35.45769	-118.7798	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.457691	-118.77976	35.45701	-118.7801	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.457691	-118.77976	35.45701	-118.7801	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.457691	-118.77976	35.45701	-118.7801	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.457691	-118.77976	35.45701	-118.7801	25.0%	71.7%	49.8%	2.3%	71.7%	**64.9%**	**4**
KERN CANYON RD	35.460761	-118.77545	35.46076	-118.775	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460761	-118.77545	35.46076	-118.775	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460761	-118.77545	35.46076	-118.775	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460761	-118.77545	35.46076	-118.775	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.46076	-118.7755	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.46076	-118.7755	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.46076	-118.7755	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.46076	-118.7755	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.46076	-118.7755	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.46076	-118.7755	25.0%	71.7%	49.1%	2.6%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.458788	-118.77956	35.4585	-118.7796	25.0%	71.7%	49.5%	2.2%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.458788	-118.77956	35.4585	-118.7796	25.0%	71.7%	49.5%	2.2%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.4585	-118.7796	35.45784	-118.7797	25.0%	71.7%	49.5%	2.2%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.4585	-118.7796	35.45784	-118.7797	25.0%	71.7%	49.5%	2.2%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.4585	-118.7796	35.45784	-118.7797	25.0%	71.7%	49.5%	2.2%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.4585	-118.7796	35.45784	-118.7797	25.0%	71.7%	49.5%	2.2%	71.7%	**64.8%**	**4**
KERN CANYON RD	35.459802	-118.77925	35.45969	-118.7794	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.459802	-118.77925	35.45969	-118.7794	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.459929	-118.77909	35.4598	-118.7793	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.459929	-118.77909	35.4598	-118.7793	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.459929	-118.77909	35.4598	-118.7793	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.459929	-118.77909	35.4598	-118.7793	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.45993	-118.7791	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.45993	-118.7791	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.45993	-118.7791	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.45993	-118.7791	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.45993	-118.7791	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
KERN CANYON RD	35.460735	-118.77804	35.45993	-118.7791	25.0%	71.7%	49.3%	2.2%	71.7%	**64.7%**	**4**
CA-178	35.521475	-118.67332	35.52285	-118.6699	25.0%	71.7%	18.3%	32.4%	71.7%	**64.5%**	**4**
CA-178	35.521475	-118.67332	35.52285	-118.6699	25.0%	71.7%	18.3%	32.4%	71.7%	**64.5%**	**4**
CA-178	35.521475	-118.67332	35.51918	-118.6777	25.0%	71.7%	18.5%	31.3%	71.7%	**64.1%**	**4**
CA-178	35.521475	-118.67332	35.51918	-118.6777	25.0%	71.7%	18.5%	31.3%	71.7%	**64.1%**	**4**
CA-178	35.519021	-118.678	35.51918	-118.6777	25.0%	71.7%	18.8%	29.0%	71.7%	**63.5%**	**4**
CA-178	35.519021	-118.678	35.51918	-118.6777	25.0%	71.7%	18.8%	29.0%	71.7%	**63.5%**	**4**
CA-178	35.494826	-118.69769	35.4958	-118.6973	25.0%	71.7%	19.6%	24.9%	71.7%	**62.4%**	**5**
CA-178	35.494826	-118.69769	35.4958	-118.6973	25.0%	71.7%	19.6%	24.9%	71.7%	**62.4%**	**5**
CA-178	35.509804	-118.69108	35.50985	-118.6911	25.0%	71.7%	19.6%	24.9%	71.7%	**62.4%**	**5**
CA-178	35.509804	-118.69108	35.50985	-118.6911	25.0%	71.7%	19.6%	24.9%	71.7%	**62.4%**	**5**
CA-178	35.493225	-118.70034	35.49409	-118.6983	25.0%	71.7%	20.2%	22.2%	71.7%	**61.7%**	**5**
CA-178	35.493225	-118.70034	35.49409	-118.6983	25.0%	71.7%	20.2%	22.2%	71.7%	**61.7%**	**5**
CA-178	35.49313	-118.7004	35.49322	-118.7003	25.0%	71.7%	20.7%	19.3%	71.7%	**60.9%**	**5**
CA-178	35.49313	-118.7004	35.49322	-118.7003	25.0%	71.7%	20.7%	19.3%	71.7%	**60.9%**	**5**
CA-178	35.474695	-118.72801	35.47471	-118.728	25.0%	71.7%	21.6%	13.3%	71.7%	**59.2%**	**5**
CA-178	35.474695	-118.72801	35.47471	-118.728	25.0%	71.7%	21.6%	13.3%	71.7%	**59.2%**	**5**
CA-178	35.475649	-118.73118	35.47469	-118.728	25.0%	71.7%	21.7%	12.6%	71.7%	**59.0%**	**5**
CA-178	35.475649	-118.73118	35.47469	-118.728	25.0%	71.7%	21.7%	12.6%	71.7%	**59.0%**	**5**
CA-178	35.478988	-118.7324	35.47902	-118.7324	25.0%	71.7%	21.5%	12.8%	71.7%	**59.0%**	**5**
CA-178	35.478988	-118.7324	35.47902	-118.7324	25.0%	71.7%	21.5%	12.8%	71.7%	**59.0%**	**5**
CA-178	35.479026	-118.73252	35.47902	-118.7324	25.0%	71.7%	21.4%	12.8%	71.7%	**59.0%**	**5**
CA-178	35.479026	-118.73252	35.47902	-118.7324	25.0%	71.7%	21.4%	12.8%	71.7%	**59.0%**	**5**
KERN CANYON RD	35.464352	-118.76092	35.46081	-118.7748	25.0%	71.7%	23.6%	4.4%	71.7%	**56.9%**	**5**
KERN CANYON RD	35.464352	-118.76092	35.46081	-118.7748	25.0%	71.7%	23.6%	4.4%	71.7%	**56.9%**	**5**
KERN CANYON RD	35.459645	-118.77946	35.45879	-118.7796	25.0%	71.7%	24.5%	2.2%	71.7%	**56.5%**	**5**
KERN CANYON RD	35.459645	-118.77946	35.45879	-118.7796	25.0%	71.7%	24.5%	2.2%	71.7%	**56.5%**	**5**

KERN CANYON RD	35.459687	-118.7794	35.45964	-118.7795	25.0%	71.7%	24.3%	2.2%	71.7%	**56.5%**	**5**
KERN CANYON RD	35.459687	-118.7794	35.45964	-118.7795	25.0%	71.7%	24.3%	2.2%	71.7%	**56.5%**	**5**
CA-178	35.607562	-118.49527	35.60735	-118.4958	25.0%	71.7%	45.6%	54.7%	71.7%	**80.8%**	**3**
CA-178	35.607562	-118.49527	35.60735	-118.4958	25.0%	71.7%	45.6%	54.7%	71.7%	**80.8%**	**3**
CA-178	35.605166	-118.50005	35.60398	-118.5024	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.605166	-118.50005	35.60398	-118.5024	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.598635	-118.51281	35.59953	-118.5111	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.598635	-118.51281	35.59953	-118.5111	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.60398	-118.50236	35.60517	-118.5	25.0%	71.7%	45.5%	53.8%	71.7%	**80.5%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.7%	49.4%	71.7%	**80.4%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.7%	49.4%	71.7%	**80.4%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.4%	49.7%	71.7%	**80.4%**	**3**
CA-178	35.581625	-118.55816	35.58162	-118.5582	25.0%	71.7%	49.4%	49.7%	71.7%	**80.4%**	**3**
CA-178	35.581689	-118.55613	35.58173	-118.5547	25.0%	71.7%	49.4%	49.7%	71.7%	**80.4%**	**3**
CA-178	35.581689	-118.55613	35.58173	-118.5547	25.0%	71.7%	49.4%	49.7%	71.7%	**80.4%**	**3**
CA-178	35.581735	-118.55468	35.58149	-118.5541	25.0%	71.7%	49.0%	49.8%	71.7%	**80.3%**	**3**
CA-178	35.581735	-118.55468	35.58149	-118.5541	25.0%	71.7%	49.0%	49.8%	71.7%	**80.3%**	**3**
CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**80.3%**	**3**
CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**80.3%**	**3**
CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**80.3%**	**3**
CA-178	35.581717	-118.55463	35.58169	-118.5546	25.0%	71.7%	49.0%	49.8%	71.7%	**80.3%**	**3**
CA-178	35.578815	-118.56045	35.57847	-118.5608	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.578815	-118.56045	35.57847	-118.5608	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.574263	-118.56469	35.57423	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.574263	-118.56469	35.57423	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.578471	-118.56077	35.57426	-118.5647	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.575803	-118.56326	35.57453	-118.5644	25.0%	71.7%	49.7%	49.1%	71.7%	**80.3%**	**3**
CA-178	35.580244	-118.55101	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**80.2%**	**3**
CA-178	35.580244	-118.55101	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**80.2%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**80.2%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**80.2%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**80.2%**	**3**
CA-178	35.580235	-118.55099	35.58024	-118.551	25.0%	71.7%	48.6%	49.9%	71.7%	**80.2%**	**3**
CA-178	35.569062	-118.57541	35.56908	-118.5754	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569062	-118.57541	35.56908	-118.5754	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.574037	-118.56509	35.57276	-118.5677	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.574037	-118.56509	35.57276	-118.5677	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569079	-118.57538	35.56926	-118.575	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572605	-118.56806	35.57272	-118.5678	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.569264	-118.57499	35.57032	-118.5728	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572439	-118.5684	35.57261	-118.5681	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**

CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570321	-118.5728	35.5705	-118.5724	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.570501	-118.57243	35.57226	-118.5688	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572358	-118.56857	35.57244	-118.5684	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.572258	-118.56878	35.57236	-118.5686	25.0%	71.7%	50.1%	48.3%	71.7%	**80.2%**	**3**
CA-178	35.598469	-118.51304	35.5952	-118.5176	25.0%	71.7%	45.5%	52.8%	71.7%	**80.2%**	**3**
CA-178	35.598469	-118.51304	35.5952	-118.5176	25.0%	71.7%	45.5%	52.8%	71.7%	**80.2%**	**3**
CA-178	35.598635	-118.51281	35.59849	-118.513	25.0%	71.7%	45.5%	52.8%	71.7%	**80.2%**	**3**
CA-178	35.598635	-118.51281	35.59849	-118.513	25.0%	71.7%	45.5%	52.8%	71.7%	**80.2%**	**3**
CA-178	35.581367	-118.54408	35.58014	-118.5506	25.0%	71.7%	47.8%	50.2%	71.7%	**80.1%**	**3**
CA-178	35.581367	-118.54408	35.58014	-118.5506	25.0%	71.7%	47.8%	50.2%	71.7%	**80.1%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**80.1%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**80.1%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**80.1%**	**3**
CA-178	35.580138	-118.55065	35.58137	-118.5441	25.0%	71.7%	47.8%	50.2%	71.7%	**80.1%**	**3**
CA-178	35.582255	-118.53934	35.58143	-118.5437	25.0%	71.7%	47.0%	50.6%	71.7%	**79.9%**	**3**
CA-178	35.582255	-118.53934	35.58143	-118.5437	25.0%	71.7%	47.0%	50.6%	71.7%	**79.9%**	**3**
CA-178	35.582255	-118.53934	35.58233	-118.5388	25.0%	71.7%	46.3%	51.0%	71.7%	**79.8%**	**3**
CA-178	35.582255	-118.53934	35.58233	-118.5388	25.0%	71.7%	46.3%	51.0%	71.7%	**79.8%**	**3**
CA-178	35.582449	-118.53789	35.583	-118.5337	25.0%	71.7%	46.3%	51.0%	71.7%	**79.8%**	**3**
CA-178	35.582449	-118.53789	35.583	-118.5337	25.0%	71.7%	46.3%	51.0%	71.7%	**79.8%**	**3**
CA-178	35.588385	-118.52576	35.5882	-118.526	25.0%	71.7%	45.5%	51.7%	71.7%	**79.8%**	**3**
CA-178	35.588385	-118.52576	35.5882	-118.526	25.0%	71.7%	45.5%	51.7%	71.7%	**79.8%**	**3**
CA-178	35.587976	-118.52623	35.58673	-118.5277	25.0%	71.7%	45.5%	51.7%	71.7%	**79.8%**	**3**
CA-178	35.587976	-118.52623	35.58673	-118.5277	25.0%	71.7%	45.5%	51.7%	71.7%	**79.8%**	**3**
CA-178	35.586291	-118.52838	35.58319	-118.5334	25.0%	71.7%	45.6%	51.4%	71.7%	**79.7%**	**3**
CA-178	35.586291	-118.52838	35.58319	-118.5334	25.0%	71.7%	45.6%	51.4%	71.7%	**79.7%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**79.7%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**79.7%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**79.7%**	**3**
CA-178	35.583188	-118.53344	35.58629	-118.5284	25.0%	71.7%	45.6%	51.4%	71.7%	**79.7%**	**3**
CA-178	35.567533	-118.5806	35.56586	-118.5863	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.567533	-118.5806	35.56586	-118.5863	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.559674	-118.60741	35.55941	-118.6083	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.559674	-118.60741	35.55941	-118.6083	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565861	-118.58631	35.56584	-118.5864	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**

CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.563159	-118.59552	35.55967	-118.6074	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565837	-118.58639	35.56557	-118.5873	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.565569	-118.58731	35.56316	-118.5955	25.0%	71.7%	50.5%	46.2%	71.7%	**79.6%**	**3**
CA-178	35.5512	-118.61558	35.54912	-118.6155	25.0%	71.7%	48.5%	43.2%	71.7%	**78.0%**	**3**
CA-178	35.5512	-118.61558	35.54912	-118.6155	25.0%	71.7%	48.5%	43.2%	71.7%	**78.0%**	**3**
CA-178	35.548315	-118.61544	35.54912	-118.6155	25.0%	71.7%	48.2%	43.1%	71.7%	**77.8%**	**3**
CA-178	35.548315	-118.61544	35.54912	-118.6155	25.0%	71.7%	48.2%	43.1%	71.7%	**77.8%**	**3**
CA-178	35.547625	-118.61548	35.54831	-118.6154	25.0%	71.7%	48.0%	43.0%	71.7%	**77.8%**	**3**
CA-178	35.547625	-118.61548	35.54831	-118.6154	25.0%	71.7%	48.0%	43.0%	71.7%	**77.8%**	**3**
CA-178	35.546188	-118.61654	35.54584	-118.6168	25.0%	71.7%	47.2%	42.5%	71.7%	**77.3%**	**3**
CA-178	35.546188	-118.61654	35.54584	-118.6168	25.0%	71.7%	47.2%	42.5%	71.7%	**77.3%**	**3**
CA-178	35.538438	-118.62577	35.53837	-118.6259	25.0%	71.7%	45.8%	41.2%	71.7%	**76.4%**	**3**
CA-178	35.538438	-118.62577	35.53837	-118.6259	25.0%	71.7%	45.8%	41.2%	71.7%	**76.4%**	**3**
CA-178	35.538374	-118.62589	35.53671	-118.629	25.0%	71.7%	45.8%	41.2%	71.7%	**76.4%**	**3**
CA-178	35.538374	-118.62589	35.53671	-118.629	25.0%	71.7%	45.8%	41.2%	71.7%	**76.4%**	**3**
CA-178	35.536715	-118.62903	35.53537	-118.6323	25.0%	71.7%	44.9%	40.1%	71.7%	**75.8%**	**3**
CA-178	35.536715	-118.62903	35.53537	-118.6323	25.0%	71.7%	44.9%	40.1%	71.7%	**75.8%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**75.8%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**75.8%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**75.8%**	**3**
CA-178	35.5362	-118.63029	35.53556	-118.6319	25.0%	71.7%	44.9%	40.1%	71.7%	**75.8%**	**3**
CA-178	35.535255	-118.6323	35.53537	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**75.5%**	**3**
CA-178	35.535255	-118.6323	35.53537	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**75.5%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**75.5%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**75.5%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**75.5%**	**3**
CA-178	35.532095	-118.63232	35.53526	-118.6323	25.0%	71.7%	44.4%	39.7%	71.7%	**75.5%**	**3**
CA-178	35.531712	-118.64089	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**74.8%**	**3**
CA-178	35.531712	-118.64089	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**74.8%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**74.8%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**74.8%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**74.8%**	**3**
CA-178	35.532095	-118.63232	35.53209	-118.6323	25.0%	71.7%	43.6%	38.6%	71.7%	**74.8%**	**3**
CA-178	35.531445	-118.64737	35.53144	-118.6474	25.0%	71.7%	43.2%	37.6%	71.7%	**74.4%**	**3**
CA-178	35.531445	-118.64737	35.53144	-118.6474	25.0%	71.7%	43.2%	37.6%	71.7%	**74.4%**	**3**
CA-178	35.531111	-118.64827	35.53082	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.531111	-118.64827	35.53082	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.531057	-118.64841	35.53111	-118.6483	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530818	-118.64901	35.53083	-118.649	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.530829	-118.64898	35.53106	-118.6484	25.0%	71.7%	43.1%	37.3%	71.7%	**74.3%**	**3**
CA-178	35.53055	-118.64979	35.53057	-118.6497	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.53055	-118.64979	35.53057	-118.6497	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.530485	-118.65012	35.52992	-118.653	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.530485	-118.65012	35.52992	-118.653	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.53052	-118.64994	35.53055	-118.6498	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.53052	-118.64994	35.53055	-118.6498	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**

CA-178	35.53052	-118.64994	35.53055	-118.6498	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.53052	-118.64994	35.53055	-118.6498	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.530479	-118.65015	35.52993	-118.6529	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.530479	-118.65015	35.52993	-118.6529	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.530479	-118.65015	35.52993	-118.6529	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.530479	-118.65015	35.52993	-118.6529	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.529927	-118.65292	35.53013	-118.6519	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.529927	-118.65292	35.53013	-118.6519	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.529927	-118.65292	35.53013	-118.6519	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.529927	-118.65292	35.53013	-118.6519	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.529927	-118.65292	35.53013	-118.6519	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.529927	-118.65292	35.53013	-118.6519	25.0%	71.7%	43.0%	36.8%	71.7%	**74.1%**	**4**
CA-178	35.599527	-118.51106	35.60107	-118.5081	25.0%	71.7%	20.5%	53.8%	71.7%	**72.3%**	**4**
CA-178	35.599527	-118.51106	35.60107	-118.5081	25.0%	71.7%	20.5%	53.8%	71.7%	**72.3%**	**4**
CA-178	35.581625	-118.55816	35.5789	-118.5604	25.0%	71.7%	24.7%	49.4%	71.7%	**72.2%**	**4**
CA-178	35.581625	-118.55816	35.5789	-118.5604	25.0%	71.7%	24.7%	49.4%	71.7%	**72.2%**	**4**
CA-178	35.581625	-118.55816	35.58169	-118.5561	25.0%	71.7%	24.4%	49.7%	71.7%	**72.2%**	**4**
CA-178	35.581625	-118.55816	35.58169	-118.5561	25.0%	71.7%	24.4%	49.7%	71.7%	**72.2%**	**4**
CA-178	35.581493	-118.55408	35.58143	-118.5539	25.0%	71.7%	24.0%	49.8%	71.7%	**72.1%**	**4**
CA-178	35.581493	-118.55408	35.58143	-118.5539	25.0%	71.7%	24.0%	49.8%	71.7%	**72.1%**	**4**
CA-178	35.578905	-118.56037	35.57419	-118.5648	25.0%	71.7%	24.7%	49.1%	71.7%	**72.1%**	**4**
CA-178	35.578905	-118.56037	35.57419	-118.5648	25.0%	71.7%	24.7%	49.1%	71.7%	**72.1%**	**4**
CA-178	35.580479	-118.55159	35.58143	-118.5539	25.0%	71.7%	23.6%	49.9%	71.7%	**72.0%**	**4**
CA-178	35.580479	-118.55159	35.58143	-118.5539	25.0%	71.7%	23.6%	49.9%	71.7%	**72.0%**	**4**
CA-178	35.569045	-118.57545	35.56906	-118.5754	25.0%	71.7%	25.1%	48.3%	71.7%	**72.0%**	**4**
CA-178	35.569045	-118.57545	35.56906	-118.5754	25.0%	71.7%	25.1%	48.3%	71.7%	**72.0%**	**4**
CA-178	35.574104	-118.56495	35.57404	-118.5651	25.0%	71.7%	25.1%	48.3%	71.7%	**72.0%**	**4**
CA-178	35.574104	-118.56495	35.57404	-118.5651	25.0%	71.7%	25.1%	48.3%	71.7%	**72.0%**	**4**
CA-178	35.59849	-118.51301	35.59506	-118.5178	25.0%	71.7%	20.5%	52.8%	71.7%	**71.9%**	**4**
CA-178	35.59849	-118.51301	35.59506	-118.5178	25.0%	71.7%	20.5%	52.8%	71.7%	**71.9%**	**4**
CA-178	35.591525	-118.52182	35.59506	-118.5178	25.0%	71.7%	20.5%	52.3%	71.7%	**71.7%**	**4**
CA-178	35.591525	-118.52182	35.59506	-118.5178	25.0%	71.7%	20.5%	52.3%	71.7%	**71.7%**	**4**
CA-178	35.582041	-118.54048	35.58156	-118.543	25.0%	71.7%	22.0%	50.6%	71.7%	**71.7%**	**4**
CA-178	35.582041	-118.54048	35.58156	-118.543	25.0%	71.7%	22.0%	50.6%	71.7%	**71.7%**	**4**
CA-178	35.590825	-118.5227	35.59152	-118.5218	25.0%	71.7%	20.5%	52.1%	71.7%	**71.7%**	**4**
CA-178	35.590825	-118.5227	35.59152	-118.5218	25.0%	71.7%	20.5%	52.1%	71.7%	**71.7%**	**4**
CA-178	35.590825	-118.5227	35.58926	-118.5247	25.0%	71.7%	20.5%	52.0%	71.7%	**71.6%**	**4**
CA-178	35.590825	-118.5227	35.58926	-118.5247	25.0%	71.7%	20.5%	52.0%	71.7%	**71.6%**	**4**
CA-178	35.582328	-118.53879	35.58245	-118.5379	25.0%	71.7%	21.3%	51.0%	71.7%	**71.6%**	**4**
CA-178	35.582328	-118.53879	35.58245	-118.5379	25.0%	71.7%	21.3%	51.0%	71.7%	**71.6%**	**4**
CA-178	35.589265	-118.52475	35.58798	-118.5262	25.0%	71.7%	20.5%	51.7%	71.7%	**71.5%**	**4**
CA-178	35.589265	-118.52475	35.58798	-118.5262	25.0%	71.7%	20.5%	51.7%	71.7%	**71.5%**	**4**
CA-178	35.569045	-118.57545	35.56753	-118.5806	25.0%	71.7%	25.5%	46.2%	71.7%	**71.4%**	**4**
CA-178	35.569045	-118.57545	35.56753	-118.5806	25.0%	71.7%	25.5%	46.2%	71.7%	**71.4%**	**4**
CA-178	35.559406	-118.60832	35.559	-118.6097	25.0%	71.7%	25.5%	46.2%	71.7%	**71.4%**	**4**
CA-178	35.559406	-118.60832	35.559	-118.6097	25.0%	71.7%	25.5%	46.2%	71.7%	**71.4%**	**4**
CA-178	35.555615	-118.61569	35.559	-118.6097	25.0%	71.7%	25.0%	44.1%	71.7%	**70.5%**	**4**
CA-178	35.555615	-118.61569	35.559	-118.6097	25.0%	71.7%	25.0%	44.1%	71.7%	**70.5%**	**4**
CA-178	35.551685	-118.61561	35.55561	-118.6157	25.0%	71.7%	24.2%	43.5%	71.7%	**70.0%**	**4**
CA-178	35.551685	-118.61561	35.55561	-118.6157	25.0%	71.7%	24.2%	43.5%	71.7%	**70.0%**	**4**
CA-178	35.551685	-118.61561	35.54937	-118.6155	25.0%	71.7%	23.5%	43.2%	71.7%	**69.7%**	**4**
CA-178	35.551685	-118.61561	35.54937	-118.6155	25.0%	71.7%	23.5%	43.2%	71.7%	**69.7%**	**4**
CA-178	35.545835	-118.6168	35.54341	-118.6186	25.0%	71.7%	22.2%	42.5%	71.7%	**69.1%**	**4**
CA-178	35.545835	-118.6168	35.54341	-118.6186	25.0%	71.7%	22.2%	42.5%	71.7%	**69.1%**	**4**
CA-178	35.541475	-118.62002	35.53844	-118.6258	25.0%	71.7%	20.8%	41.2%	71.7%	**68.2%**	**4**
CA-178	35.541475	-118.62002	35.53844	-118.6258	25.0%	71.7%	20.8%	41.2%	71.7%	**68.2%**	**4**
CA-178	35.531445	-118.64688	35.53171	-118.6409	25.0%	71.7%	18.6%	38.6%	71.7%	**66.6%**	**4**
CA-178	35.531445	-118.64688	35.53171	-118.6409	25.0%	71.7%	18.6%	38.6%	71.7%	**66.6%**	**4**
CA-178	35.531445	-118.64688	35.53144	-118.6474	25.0%	71.7%	18.2%	37.6%	71.7%	**66.1%**	**4**
CA-178	35.531445	-118.64688	35.53144	-118.6474	25.0%	71.7%	18.2%	37.6%	71.7%	**66.1%**	**4**
CA-178	35.530595	-118.64957	35.53074	-118.6492	25.0%	71.7%	18.1%	37.3%	71.7%	**66.0%**	**4**
CA-178	35.530595	-118.64957	35.53074	-118.6492	25.0%	71.7%	18.1%	37.3%	71.7%	**66.0%**	**4**
CA-178	35.530574	-118.64967	35.53036	-118.6507	25.0%	71.7%	18.0%	36.8%	71.7%	**65.8%**	**4**
CA-178	35.530574	-118.64967	35.53036	-118.6507	25.0%	71.7%	18.0%	36.8%	71.7%	**65.8%**	**4**

Appendix Table D: Top Roads by Wildfire Risk

Route	Begin Latitude	Begin Longitude	End Latitude	End Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
I-5	35.004165	-118.95082	35.00472	-118.951	47.4%	64.4%	72.3%	38.3%	82.4%	**92.5%**	**1**
I-5	35.003775	-118.9507	35.00417	-118.9508	47.4%	64.4%	72.3%	38.3%	82.4%	**92.5%**	**1**
I-5	35.000303	-118.94958	35.00378	-118.9507	47.4%	64.4%	72.2%	38.6%	82.4%	**92.6%**	**1**
CA-155	35.738209	-118.63185	35.73851	-118.6284	17.7%	0.2%	69.6%	43.4%	70.2%	**57.2%**	**5**
CA-155	35.738209	-118.63185	35.73851	-118.6284	17.7%	0.2%	69.6%	43.4%	70.2%	**57.2%**	**5**
CA-155	35.738515	-118.62839	35.73947	-118.6237	17.7%	0.2%	68.2%	45.1%	70.2%	**57.3%**	**5**
CA-155	35.738515	-118.62839	35.73947	-118.6237	17.7%	0.2%	68.2%	45.1%	70.2%	**57.3%**	**5**
I-5	34.953101	-118.93446	34.95346	-118.9346	47.6%	64.5%	67.3%	40.1%	82.6%	**91.6%**	**1**
CA-155	35.737695	-118.61329	35.73765	-118.6136	23.5%	0.2%	67.0%	46.0%	70.2%	**59.2%**	**5**
CA-155	35.737695	-118.61329	35.73765	-118.6136	23.5%	0.2%	67.0%	46.0%	70.2%	**59.2%**	**5**
CA-155	35.737695	-118.61329	35.73763	-118.6128	23.5%	0.2%	66.6%	46.3%	70.2%	**59.1%**	**5**
CA-155	35.737695	-118.61329	35.73763	-118.6128	23.5%	0.2%	66.6%	46.3%	70.2%	**59.1%**	**5**
CA-155	35.746775	-118.59082	35.74325	-118.5993	23.5%	0.2%	65.1%	47.3%	70.2%	**59.0%**	**5**
CA-155	35.746775	-118.59082	35.74325	-118.5993	23.5%	0.2%	65.1%	47.3%	70.2%	**59.0%**	**5**
CA-155	35.739047	-118.6094	35.73763	-118.6128	23.5%	0.2%	65.1%	47.3%	70.2%	**59.0%**	**5**
CA-155	35.739047	-118.6094	35.73763	-118.6128	23.5%	0.2%	65.1%	47.3%	70.2%	**59.0%**	**5**
I-5	34.930563	-118.92991	34.93044	-118.9299	60.0%	29.2%	64.1%	41.3%	83.3%	**83.3%**	**2**
I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**83.3%**	**2**
I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**83.3%**	**2**
I-5	34.938367	-118.92986	34.93906	-118.93	59.9%	65.2%	64.1%	41.2%	83.2%	**95.5%**	**1**
CA-155	35.746805	-118.58955	35.74678	-118.5908	23.5%	0.2%	63.4%	48.6%	70.2%	**58.8%**	**5**
CA-155	35.746805	-118.58955	35.74678	-118.5908	23.5%	0.2%	63.4%	48.6%	70.2%	**58.8%**	**5**
CA-155	35.746864	-118.58704	35.7468	-118.5895	23.5%	0.2%	63.4%	48.6%	70.2%	**58.8%**	**5**
CA-155	35.746864	-118.58704	35.7468	-118.5895	23.5%	0.2%	63.4%	48.6%	70.2%	**58.8%**	**5**
CA-155	35.746864	-118.58704	35.7468	-118.5895	23.5%	0.2%	63.4%	48.6%	70.2%	**58.8%**	**5**
CA-155	35.746864	-118.58704	35.7468	-118.5895	23.5%	0.2%	63.4%	48.6%	70.2%	**58.8%**	**5**
BAKERSFIELD TEH	35.283642	-118.7308	35.28445	-118.7328	33.6%	38.4%	63.2%	27.4%	74.5%	**69.5%**	**4**
CA-155	35.748902	-118.58388	35.74887	-118.5839	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
CA-155	35.748902	-118.58388	35.74887	-118.5839	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
CA-155	35.748271	-118.58485	35.74773	-118.5857	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
CA-155	35.748271	-118.58485	35.74773	-118.5857	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58382	35.74686	-118.587	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58382	35.74686	-118.587	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58382	35.74686	-118.587	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58382	35.74686	-118.587	23.5%	0.2%	62.9%	49.0%	70.2%	**58.8%**	**5**
S GRANITE RD	35.53021	-118.96214	35.52908	-118.966	18.1%	0.6%	62.9%	14.6%	70.6%	**45.5%**	**6**
S GRANITE RD	35.53021	-118.96214	35.52908	-118.966	18.1%	0.6%	62.9%	14.6%	70.6%	**45.5%**	**6**
S GRANITE RD	35.530215	-118.96213	35.52966	-118.964	18.1%	0.6%	62.9%	14.6%	70.6%	**45.5%**	**6**
S GRANITE RD	35.530215	-118.96213	35.52966	-118.964	18.1%	0.6%	62.9%	14.6%	70.6%	**45.5%**	**6**
S GRANITE RD	35.530215	-118.96213	35.53094	-118.9617	18.0%	0.5%	62.7%	14.7%	70.5%	**45.3%**	**6**
S GRANITE RD	35.530215	-118.96213	35.53094	-118.9617	18.0%	0.5%	62.7%	14.7%	70.5%	**45.3%**	**6**
CA-155	35.748945	-118.58366	35.74894	-118.5832	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58366	35.74894	-118.5832	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58376	35.74894	-118.5838	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58376	35.74894	-118.5838	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58376	35.74894	-118.5838	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58376	35.74894	-118.5838	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
S GRANITE RD	35.532325	-118.96129	35.53094	-118.9617	18.0%	0.5%	62.6%	14.8%	70.5%	**45.4%**	**6**
S GRANITE RD	35.532325	-118.96129	35.53094	-118.9617	18.0%	0.5%	62.6%	14.8%	70.5%	**45.4%**	**6**
CA-155	35.748945	-118.58319	35.74885	-118.5831	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
CA-155	35.748945	-118.58319	35.74885	-118.5831	23.5%	0.2%	62.6%	49.3%	70.2%	**58.8%**	**5**
CA-155	35.748855	-118.58309	35.74774	-118.5827	23.5%	0.2%	62.5%	49.4%	70.2%	**58.8%**	**5**
CA-155	35.748855	-118.58309	35.74774	-118.5827	23.5%	0.2%	62.5%	49.4%	70.2%	**58.8%**	**5**
CA-155	35.747745	-118.58274	35.74506	-118.5819	23.5%	0.2%	62.5%	49.4%	70.2%	**58.8%**	**5**
CA-155	35.747745	-118.58274	35.74506	-118.5819	23.5%	0.2%	62.5%	49.4%	70.2%	**58.8%**	**5**
CA-155	35.747745	-118.58274	35.74506	-118.5819	23.5%	0.2%	62.5%	49.4%	70.2%	**58.8%**	**5**
CA-155	35.747745	-118.58274	35.74506	-118.5819	23.5%	0.2%	62.5%	49.4%	70.2%	**58.8%**	**5**
CA-155	35.744254	-118.5814	35.74271	-118.5805	23.5%	0.2%	62.4%	49.6%	70.2%	**58.8%**	**5**
CA-155	35.744254	-118.5814	35.74271	-118.5805	23.5%	0.2%	62.4%	49.6%	70.2%	**58.8%**	**5**
CA-155	35.745065	-118.58189	35.74425	-118.5814	23.5%	0.2%	62.4%	49.6%	70.2%	**58.8%**	**5**
CA-155	35.745065	-118.58189	35.74425	-118.5814	23.5%	0.2%	62.4%	49.6%	70.2%	**58.8%**	**5**
CA-155	35.745065	-118.58189	35.74425	-118.5814	23.5%	0.2%	62.4%	49.6%	70.2%	**58.8%**	**5**

CA-155	35.745065	-118.58189	35.74425	-118.5814	23.5%	0.2%	62.4%	49.6%	70.2%	**58.8%**	**5**
S GRANITE RD	35.532325	-118.96129	35.53616	-118.9599	18.0%	0.5%	62.1%	15.1%	70.5%	**45.3%**	**6**
S GRANITE RD	35.532325	-118.96129	35.53616	-118.9599	18.0%	0.5%	62.1%	15.1%	70.5%	**45.3%**	**6**
CA-155	35.743079	-118.56687	35.74296	-118.5713	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.743079	-118.56687	35.74296	-118.5713	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.743112	-118.56562	35.74308	-118.5668	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.743112	-118.56562	35.74308	-118.5668	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742807	-118.57705	35.74271	-118.5805	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742807	-118.57705	35.74271	-118.5805	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.74308	-118.5669	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.74308	-118.5669	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.74308	-118.5669	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.74308	-118.5669	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.74296	-118.57134	35.74272	-118.5801	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.74296	-118.57134	35.74272	-118.5801	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.74296	-118.57134	35.74272	-118.5801	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.74296	-118.57134	35.74272	-118.5801	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742861	-118.57503	35.74281	-118.577	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742861	-118.57503	35.74281	-118.577	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742861	-118.57503	35.74281	-118.577	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742861	-118.57503	35.74281	-118.577	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742937	-118.5722	35.74286	-118.575	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742937	-118.5722	35.74286	-118.575	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742937	-118.5722	35.74286	-118.575	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742937	-118.5722	35.74286	-118.575	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742937	-118.5722	35.74286	-118.575	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
CA-155	35.742937	-118.5722	35.74286	-118.575	23.5%	0.2%	61.3%	50.7%	70.2%	**58.8%**	**5**
I-5	34.923507	-118.92709	34.92859	-118.9284	59.9%	65.2%	60.8%	41.4%	83.2%	**94.5%**	**1**
I-5	34.923351	-118.92705	34.92351	-118.9271	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**82.2%**	**2**
S GRANITE RD	35.541952	-118.95926	35.53654	-118.9599	18.0%	0.5%	60.8%	15.8%	70.5%	**45.1%**	**6**
S GRANITE RD	35.541952	-118.95926	35.53654	-118.9599	18.0%	0.5%	60.8%	15.8%	70.5%	**45.1%**	**6**
BAKERSFIELD TEH	35.271925	-118.70496	35.27108	-118.703	33.6%	4.4%	60.6%	30.5%	74.4%	**58.0%**	**5**
BAKERSFIELD TEH	35.27191	-118.70492	35.27127	-118.7034	33.6%	4.4%	60.6%	30.5%	74.4%	**58.0%**	**5**
BAKERSFIELD TEH	35.27191	-118.70492	35.27127	-118.7034	33.6%	4.4%	60.6%	30.5%	74.4%	**58.0%**	**5**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**

I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**82.2%**	**2**
CA-155	35.743519	-118.56498	35.74346	-118.5651	23.5%	0.2%	60.1%	51.8%	70.2%	**58.8%**	**5**
CA-155	35.743519	-118.56498	35.74346	-118.5651	23.5%	0.2%	60.1%	51.8%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.7433	-118.5653	23.5%	0.2%	60.1%	51.8%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.7433	-118.5653	23.5%	0.2%	60.1%	51.8%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.7433	-118.5653	23.5%	0.2%	60.1%	51.8%	70.2%	**58.8%**	**5**
CA-155	35.743115	-118.56552	35.7433	-118.5653	23.5%	0.2%	60.1%	51.8%	70.2%	**58.8%**	**5**
S GRANITE RD	35.518498	-118.9776	35.50494	-118.985	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.518498	-118.9776	35.50494	-118.985	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.527374	-118.97277	35.52369	-118.9748	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**

S GRANITE RD	35.527374	-118.97277	35.52369	-118.9748	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.519617	-118.97699	35.51932	-118.9772	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.519617	-118.97699	35.51932	-118.9772	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.523689	-118.97477	35.52173	-118.9758	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.523689	-118.97477	35.52173	-118.9758	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.518621	-118.97753	35.5185	-118.9776	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.518621	-118.97753	35.5185	-118.9776	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.521732	-118.97584	35.51962	-118.977	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.521732	-118.97584	35.51962	-118.977	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.521732	-118.97584	35.51962	-118.977	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
S GRANITE RD	35.521732	-118.97584	35.51962	-118.977	18.1%	0.6%	60.0%	12.8%	70.6%	**43.9%**	**6**
CA-155	35.747069	-118.5619	35.74458	-118.5637	23.5%	0.2%	59.8%	52.1%	70.2%	**58.8%**	**5**
CA-155	35.747069	-118.5619	35.74458	-118.5637	23.5%	0.2%	59.8%	52.1%	70.2%	**58.8%**	**5**
CA-155	35.74694	-118.56199	35.74483	-118.5635	23.5%	0.2%	59.8%	52.1%	70.2%	**58.8%**	**5**
CA-155	35.74694	-118.56199	35.74483	-118.5635	23.5%	0.2%	59.8%	52.1%	70.2%	**58.8%**	**5**
CA-155	35.74694	-118.56199	35.74483	-118.5635	23.5%	0.2%	59.8%	52.1%	70.2%	**58.8%**	**5**
CA-155	35.74694	-118.56199	35.74483	-118.5635	23.5%	0.2%	59.8%	52.1%	70.2%	**58.8%**	**5**
RANCHERIA RD	35.664455	-118.58776	35.66071	-118.5886	23.5%	0.2%	59.6%	47.8%	70.2%	**57.2%**	**5**
RANCHERIA RD	35.664455	-118.58776	35.66071	-118.5886	23.5%	0.2%	59.6%	47.8%	70.2%	**57.2%**	**5**
CA-155	35.750123	-118.5597	35.74901	-118.5605	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
CA-155	35.750123	-118.5597	35.74901	-118.5605	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
CA-155	35.749724	-118.55998	35.74922	-118.5603	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
CA-155	35.749724	-118.55998	35.74922	-118.5603	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
CA-155	35.75007	-118.55974	35.74972	-118.56	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
CA-155	35.75007	-118.55974	35.74972	-118.56	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
CA-155	35.75007	-118.55974	35.74972	-118.56	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
CA-155	35.75007	-118.55974	35.74972	-118.56	23.5%	0.2%	59.6%	52.4%	70.2%	**58.8%**	**5**
RANCHERIA RD	35.652313	-118.58914	35.65122	-118.5892	23.5%	0.2%	59.3%	47.6%	70.2%	**57.1%**	**5**
RANCHERIA RD	35.652313	-118.58914	35.65122	-118.5892	23.5%	0.2%	59.3%	47.6%	70.2%	**57.1%**	**5**
RANCHERIA RD	35.659261	-118.58873	35.66071	-118.5886	23.5%	0.2%	59.3%	47.6%	70.2%	**57.1%**	**5**
RANCHERIA RD	35.659261	-118.58873	35.66071	-118.5886	23.5%	0.2%	59.3%	47.6%	70.2%	**57.1%**	**5**
CA-155	35.747395	-118.55637	35.75018	-118.5594	23.5%	0.2%	59.3%	52.6%	70.2%	**58.8%**	**5**
CA-155	35.747395	-118.55637	35.75018	-118.5594	23.5%	0.2%	59.3%	52.6%	70.2%	**58.8%**	**5**
RANCHERIA RD	35.637947	-118.59644	35.63192	-118.601	23.5%	70.2%	59.2%	46.5%	70.2%	**80.5%**	**2**
RANCHERIA RD	35.637947	-118.59644	35.63192	-118.601	23.5%	70.2%	59.2%	46.5%	70.2%	**80.5%**	**2**
RANCHERIA RD	35.677839	-118.57919	35.68514	-118.5745	23.5%	0.2%	59.1%	48.9%	70.2%	**57.4%**	**5**
RANCHERIA RD	35.677839	-118.57919	35.68514	-118.5745	23.5%	0.2%	59.1%	48.9%	70.2%	**57.4%**	**5**
RANCHERIA RD	35.664455	-118.58776	35.67784	-118.5792	23.5%	0.2%	59.1%	48.9%	70.2%	**57.4%**	**5**
RANCHERIA RD	35.664455	-118.58776	35.67784	-118.5792	23.5%	0.2%	59.1%	48.9%	70.2%	**57.4%**	**5**
RANCHERIA RD	35.650985	-118.58921	35.64486	-118.5917	23.5%	0.2%	59.1%	47.3%	70.2%	**56.9%**	**5**
RANCHERIA RD	35.650985	-118.58921	35.64486	-118.5917	23.5%	0.2%	59.1%	47.3%	70.2%	**56.9%**	**5**
RANCHERIA RD	35.737056	-118.55739	35.73057	-118.5586	23.7%	0.3%	59.1%	52.8%	70.3%	**58.9%**	**5**
RANCHERIA RD	35.737056	-118.55739	35.73057	-118.5586	23.7%	0.3%	59.1%	52.8%	70.3%	**58.9%**	**5**
RANCHERIA RD	35.631705	-118.60095	35.63192	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**80.4%**	**2**
RANCHERIA RD	35.631705	-118.60095	35.63192	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**80.4%**	**2**
RANCHERIA RD	35.650985	-118.58921	35.65105	-118.5892	23.5%	0.2%	59.0%	47.5%	70.2%	**56.9%**	**5**
RANCHERIA RD	35.650985	-118.58921	35.65105	-118.5892	23.5%	0.2%	59.0%	47.5%	70.2%	**56.9%**	**5**
RANCHERIA RD	35.631705	-118.60095	35.63136	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**80.4%**	**2**
RANCHERIA RD	35.631705	-118.60095	35.63136	-118.601	23.5%	70.2%	59.0%	46.3%	70.2%	**80.4%**	**2**
CA-155	35.747395	-118.55637	35.74362	-118.5567	23.5%	0.2%	59.0%	52.8%	70.2%	**58.8%**	**5**
CA-155	35.747395	-118.55637	35.74362	-118.5567	23.5%	0.2%	59.0%	52.8%	70.2%	**58.8%**	**5**
RANCHERIA RD	35.738815	-118.5563	35.73809	-118.5569	23.7%	0.3%	59.0%	52.9%	70.3%	**59.0%**	**5**
RANCHERIA RD	35.738815	-118.5563	35.73809	-118.5569	23.7%	0.3%	59.0%	52.9%	70.3%	**59.0%**	**5**
CA-65	35.543784	-119.08589	35.54434	-119.086	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-65	35.543784	-119.08589	35.54434	-119.086	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-65	35.543329	-119.08579	35.54244	-119.0856	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-65	35.543329	-119.08579	35.54244	-119.0856	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-65	35.542435	-119.08559	35.54333	-119.0858	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-65	35.542435	-119.08559	35.54333	-119.0858	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-65	35.542435	-119.08559	35.54333	-119.0858	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-65	35.542435	-119.08559	35.54333	-119.0858	20.6%	3.1%	59.0%	15.5%	73.1%	**47.0%**	**6**
CA-155	35.743625	-118.55674	35.74209	-118.5571	23.5%	0.2%	59.0%	52.7%	70.2%	**58.7%**	**5**
CA-155	35.743625	-118.55674	35.74209	-118.5571	23.5%	0.2%	59.0%	52.7%	70.2%	**58.7%**	**5**
CA-155	35.737842	-118.55609	35.73881	-118.5563	23.7%	0.4%	59.0%	53.1%	70.4%	**59.1%**	**5**
CA-155	35.737842	-118.55609	35.73881	-118.5563	23.7%	0.4%	59.0%	53.1%	70.4%	**59.1%**	**5**
CA-155	35.738815	-118.5563	35.74209	-118.5571	23.5%	0.2%	58.9%	52.8%	70.2%	**58.7%**	**5**
CA-155	35.738815	-118.5563	35.74209	-118.5571	23.5%	0.2%	58.9%	52.8%	70.2%	**58.7%**	**5**
FRENCH GULCH	35.650985	-118.58921	35.65106	-118.5891	23.3%	0.0%	58.9%	47.3%	70.0%	**56.6%**	**5**

FRENCH GULCH	35.650985	-118.58921	35.65106	-118.5891	23.3%	0.0%	58.9%	47.3%	70.0%	**56.6%**	**5**
RANCHERIA RD	35.627711	-118.60257	35.62562	-118.6035	23.5%	70.2%	58.8%	46.1%	70.2%	**80.2%**	**3**
RANCHERIA RD	35.627711	-118.60257	35.62562	-118.6035	23.5%	70.2%	58.8%	46.1%	70.2%	**80.2%**	**3**
RANCHERIA RD	35.627612	-118.60261	35.62695	-118.6029	23.5%	0.2%	58.8%	46.1%	70.2%	**56.4%**	**5**
RANCHERIA RD	35.627612	-118.60261	35.62695	-118.6029	23.5%	0.2%	58.8%	46.1%	70.2%	**56.4%**	**5**
RANCHERIA RD	35.624545	-118.61117	35.62444	-118.6108	23.5%	70.2%	58.8%	45.5%	70.2%	**80.0%**	**3**
RANCHERIA RD	35.624545	-118.61117	35.62444	-118.6108	23.5%	70.2%	58.8%	45.5%	70.2%	**80.0%**	**3**
RANCHERIA RD	35.624437	-118.61077	35.62443	-118.6108	23.5%	0.2%	58.8%	45.5%	70.2%	**56.2%**	**5**
RANCHERIA RD	35.624437	-118.61077	35.62443	-118.6108	23.5%	0.2%	58.8%	45.5%	70.2%	**56.2%**	**5**
CA-155	35.736589	-118.55496	35.73571	-118.5547	23.7%	0.4%	58.7%	53.2%	70.4%	**59.0%**	**5**
CA-155	35.736589	-118.55496	35.73571	-118.5547	23.7%	0.4%	58.7%	53.2%	70.4%	**59.0%**	**5**
RANCHERIA RD	35.623055	-118.6046	35.62306	-118.6046	23.5%	70.2%	58.6%	45.7%	70.2%	**80.0%**	**3**
RANCHERIA RD	35.623055	-118.6046	35.62306	-118.6046	23.5%	70.2%	58.6%	45.7%	70.2%	**80.0%**	**3**
RANCHERIA RD	35.623059	-118.60461	35.62443	-118.6108	23.5%	0.2%	58.6%	45.7%	70.2%	**56.2%**	**5**
RANCHERIA RD	35.623059	-118.60461	35.62443	-118.6108	23.5%	0.2%	58.6%	45.7%	70.2%	**56.2%**	**5**
RANCHERIA RD	35.697699	-118.56956	35.69791	-118.5695	23.5%	0.2%	58.6%	50.6%	70.2%	**57.8%**	**5**
RANCHERIA RD	35.697699	-118.56956	35.69791	-118.5695	23.5%	0.2%	58.6%	50.6%	70.2%	**57.8%**	**5**
RANCHERIA RD	35.694275	-118.56985	35.6977	-118.5696	23.5%	0.2%	58.6%	50.6%	70.2%	**57.8%**	**5**
RANCHERIA RD	35.694275	-118.56985	35.6977	-118.5696	23.5%	0.2%	58.6%	50.6%	70.2%	**57.8%**	**5**
RANCHERIA RD	35.694275	-118.56985	35.6977	-118.5696	23.5%	0.2%	58.6%	50.6%	70.2%	**57.8%**	**5**
RANCHERIA RD	35.694275	-118.56985	35.6977	-118.5696	23.5%	0.2%	58.6%	50.6%	70.2%	**57.8%**	**5**
RANCHERIA RD	35.697915	-118.56954	35.70528	-118.5646	23.5%	0.2%	58.6%	51.0%	70.2%	**58.0%**	**5**
RANCHERIA RD	35.697915	-118.56954	35.70528	-118.5646	23.5%	0.2%	58.6%	51.0%	70.2%	**58.0%**	**5**
FRENCH GULCH	35.653153	-118.58764	35.6518	-118.5886	23.3%	70.0%	58.5%	47.6%	70.0%	**80.5%**	**2**
FRENCH GULCH	35.653153	-118.58764	35.6518	-118.5886	23.3%	70.0%	58.5%	47.6%	70.0%	**80.5%**	**2**
FRENCH GULCH	35.658821	-118.58375	35.65315	-118.5876	23.3%	70.0%	58.5%	47.6%	70.0%	**80.5%**	**2**
FRENCH GULCH	35.658821	-118.58375	35.65315	-118.5876	23.3%	70.0%	58.5%	47.6%	70.0%	**80.5%**	**2**
FRENCH GULCH	35.659045	-118.5836	35.65882	-118.5838	23.3%	0.0%	58.5%	47.6%	70.0%	**56.6%**	**5**
FRENCH GULCH	35.659045	-118.5836	35.65882	-118.5838	23.3%	0.0%	58.5%	47.6%	70.0%	**56.6%**	**5**
RANCHERIA RD	35.623055	-118.6046	35.62454	-118.6039	23.5%	70.2%	58.5%	45.9%	70.2%	**80.1%**	**3**
RANCHERIA RD	35.623055	-118.6046	35.62454	-118.6039	23.5%	70.2%	58.5%	45.9%	70.2%	**80.1%**	**3**
RANCHERIA RD	35.623771	-118.61171	35.62454	-118.6112	23.5%	70.2%	58.5%	45.3%	70.2%	**79.8%**	**3**
RANCHERIA RD	35.623771	-118.61171	35.62454	-118.6112	23.5%	70.2%	58.5%	45.3%	70.2%	**79.8%**	**3**
RANCHERIA RD	35.619664	-118.61457	35.62377	-118.6117	23.5%	0.2%	58.5%	45.3%	70.2%	**56.0%**	**5**
RANCHERIA RD	35.619664	-118.61457	35.62377	-118.6117	23.5%	0.2%	58.5%	45.3%	70.2%	**56.0%**	**5**
RANCHERIA RD	35.707845	-118.56347	35.70528	-118.5646	23.5%	0.2%	58.5%	51.5%	70.2%	**58.1%**	**5**
RANCHERIA RD	35.707845	-118.56347	35.70528	-118.5646	23.5%	0.2%	58.5%	51.5%	70.2%	**58.1%**	**5**
RANCHERIA RD	35.685145	-118.57451	35.68591	-118.5727	23.5%	0.2%	58.4%	49.9%	70.2%	**57.5%**	**5**
RANCHERIA RD	35.685145	-118.57451	35.68591	-118.5727	23.5%	0.2%	58.4%	49.9%	70.2%	**57.5%**	**5**
S GRANITE RD	35.545425	-118.95887	35.56089	-118.956	18.0%	0.5%	58.4%	17.1%	70.5%	**44.7%**	**6**
S GRANITE RD	35.545425	-118.95887	35.56089	-118.956	18.0%	0.5%	58.4%	17.1%	70.5%	**44.7%**	**6**
CA-155	35.735066	-118.5529	35.73463	-118.5516	23.7%	0.4%	58.4%	53.4%	70.4%	**59.0%**	**5**
CA-155	35.735066	-118.5529	35.73463	-118.5516	23.7%	0.4%	58.4%	53.4%	70.4%	**59.0%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.69427	-118.5698	23.5%	0.2%	58.4%	50.5%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.69427	-118.5698	23.5%	0.2%	58.4%	50.5%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.69427	-118.5698	23.5%	0.2%	58.4%	50.5%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.69427	-118.5698	23.5%	0.2%	58.4%	50.5%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.709535	-118.56203	35.70784	-118.5635	23.5%	0.2%	58.4%	51.7%	70.2%	**58.1%**	**5**
RANCHERIA RD	35.709535	-118.56203	35.70784	-118.5635	23.5%	0.2%	58.4%	51.7%	70.2%	**58.1%**	**5**
BAKERSFIELD TEH	35.269493	-118.69056	35.26949	-118.6906	33.6%	38.4%	58.4%	33.1%	74.5%	**69.8%**	**4**
BAKERSFIELD TEH	35.269636	-118.68669	35.26954	-118.6894	33.6%	4.5%	58.4%	33.1%	74.5%	**58.2%**	**5**
RANCHERIA	35.686955	-118.57284	35.68711	-118.5726	23.5%	0.2%	58.4%	50.0%	70.2%	**57.6%**	**5**
RANCHERIA	35.686955	-118.57284	35.68711	-118.5726	23.5%	0.2%	58.4%	50.0%	70.2%	**57.6%**	**5**
RANCHERIA RD	35.688815	-118.5719	35.68711	-118.5726	23.5%	0.2%	58.4%	50.3%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.688815	-118.5719	35.68711	-118.5726	23.5%	0.2%	58.4%	50.3%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.68882	-118.5719	23.5%	0.2%	58.4%	50.3%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.68882	-118.5719	23.5%	0.2%	58.4%	50.3%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.68882	-118.5719	23.5%	0.2%	58.4%	50.3%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.693985	-118.56965	35.68882	-118.5719	23.5%	0.2%	58.4%	50.3%	70.2%	**57.7%**	**5**
RANCHERIA RD	35.724859	-118.55658	35.7234	-118.5561	23.5%	0.2%	58.3%	52.6%	70.2%	**58.4%**	**5**
RANCHERIA RD	35.724859	-118.55658	35.7234	-118.5561	23.5%	0.2%	58.3%	52.6%	70.2%	**58.4%**	**5**
RANCHERIA RD	35.723404	-118.55606	35.72486	-118.5566	23.5%	0.2%	58.3%	52.6%	70.2%	**58.4%**	**5**
RANCHERIA RD	35.723404	-118.55606	35.72486	-118.5566	23.5%	0.2%	58.3%	52.6%	70.2%	**58.4%**	**5**
RANCHERIA RD	35.723404	-118.55606	35.72486	-118.5566	23.5%	0.2%	58.3%	52.6%	70.2%	**58.4%**	**5**
RANCHERIA RD	35.723404	-118.55606	35.72486	-118.5566	23.5%	0.2%	58.3%	52.6%	70.2%	**58.4%**	**5**
RANCHERIA	35.686955	-118.57284	35.68608	-118.5725	23.5%	0.2%	58.3%	50.0%	70.2%	**57.5%**	**5**
RANCHERIA	35.686955	-118.57284	35.68608	-118.5725	23.5%	0.2%	58.3%	50.0%	70.2%	**57.5%**	**5**
BAKERSFIELD TEH	35.268759	-118.69428	35.26882	-118.6931	33.6%	38.3%	58.3%	33.0%	74.4%	**69.6%**	**4**

BAKERSFIELD TEH	35.268957	-118.6901	35.26899	-118.6894	33.6%	4.4%	58.3%	33.0%	74.4%	**58.1%**	**5**
RANCHERIA RD	35.685915	-118.57272	35.68608	-118.5725	23.5%	0.2%	58.3%	50.0%	70.2%	**57.5%**	**5**
RANCHERIA RD	35.685915	-118.57272	35.68608	-118.5725	23.5%	0.2%	58.3%	50.0%	70.2%	**57.5%**	**5**
RANCHERIA RD	35.710921	-118.56091	35.70953	-118.562	23.5%	0.2%	58.3%	51.9%	70.2%	**58.2%**	**5**
RANCHERIA RD	35.710921	-118.56091	35.70953	-118.562	23.5%	0.2%	58.3%	51.9%	70.2%	**58.2%**	**5**
RANCHERIA RD	35.687115	-118.57264	35.68608	-118.5725	23.3%	0.0%	58.2%	49.8%	70.0%	**57.3%**	**5**
RANCHERIA RD	35.687115	-118.57264	35.68608	-118.5725	23.3%	0.0%	58.2%	49.8%	70.0%	**57.3%**	**5**
RANCHERIA RD	35.61484	-118.62892	35.61481	-118.6284	23.5%	70.2%	58.2%	44.4%	70.2%	**79.4%**	**3**
RANCHERIA RD	35.61484	-118.62892	35.61481	-118.6284	23.5%	70.2%	58.2%	44.4%	70.2%	**79.4%**	**3**
RANCHERIA RD	35.614845	-118.62901	35.6148	-118.6283	23.5%	0.2%	58.2%	44.4%	70.2%	**55.6%**	**5**
RANCHERIA RD	35.614845	-118.62901	35.6148	-118.6283	23.5%	0.2%	58.2%	44.4%	70.2%	**55.6%**	**5**
BRECKENRIDGE RD	35.375018	-118.84231	35.37624	-118.8395	23.3%	0.0%	58.1%	7.4%	70.0%	**42.8%**	**6**
BRECKENRIDGE RD	35.375018	-118.84231	35.37624	-118.8395	23.3%	0.0%	58.1%	7.4%	70.0%	**42.8%**	**6**
RANCHERIA RD	35.614767	-118.62831	35.61351	-118.6269	23.5%	70.2%	58.1%	44.4%	70.2%	**79.4%**	**3**
RANCHERIA RD	35.614767	-118.62831	35.61351	-118.6269	23.5%	70.2%	58.1%	44.4%	70.2%	**79.4%**	**3**
RANCHERIA RD	35.614779	-118.62832	35.61477	-118.6283	23.5%	0.2%	58.1%	44.4%	70.2%	**55.5%**	**5**
RANCHERIA RD	35.614779	-118.62832	35.61477	-118.6283	23.5%	0.2%	58.1%	44.4%	70.2%	**55.5%**	**5**
RANCHERIA RD	35.615085	-118.62154	35.6151	-118.6207	23.5%	0.2%	58.1%	44.9%	70.2%	**55.7%**	**5**
RANCHERIA RD	35.615085	-118.62154	35.6151	-118.6207	23.5%	0.2%	58.1%	44.9%	70.2%	**55.7%**	**5**
CA-155	35.734625	-118.55163	35.73352	-118.5503	23.7%	0.4%	58.0%	53.7%	70.4%	**59.0%**	**5**
CA-155	35.734625	-118.55163	35.73352	-118.5503	23.7%	0.4%	58.0%	53.7%	70.4%	**59.0%**	**5**
RANCHERIA RD	35.615085	-118.62154	35.61367	-118.6267	23.5%	70.2%	58.0%	44.6%	70.2%	**79.5%**	**3**
RANCHERIA RD	35.615085	-118.62154	35.61367	-118.6267	23.5%	70.2%	58.0%	44.6%	70.2%	**79.5%**	**3**
RANCHERIA RD	35.615085	-118.62154	35.61406	-118.6253	23.5%	0.2%	58.0%	44.6%	70.2%	**55.6%**	**5**
RANCHERIA RD	35.615085	-118.62154	35.61406	-118.6253	23.5%	0.2%	58.0%	44.6%	70.2%	**55.6%**	**5**
RANCHERIA RD	35.613505	-118.62691	35.61367	-118.6267	23.5%	70.2%	58.0%	44.5%	70.2%	**79.4%**	**3**
RANCHERIA RD	35.613505	-118.62691	35.61367	-118.6267	23.5%	70.2%	58.0%	44.5%	70.2%	**79.4%**	**3**
RANCHERIA RD	35.714477	-118.55761	35.71424	-118.5547	23.5%	0.2%	57.8%	52.5%	70.2%	**58.2%**	**5**
RANCHERIA RD	35.714477	-118.55761	35.71424	-118.5547	23.5%	0.2%	57.8%	52.5%	70.2%	**58.2%**	**5**
EVANS RD	35.732706	-118.54914	35.73352	-118.5503	23.7%	0.4%	57.7%	53.9%	70.4%	**58.9%**	**5**
EVANS RD	35.732706	-118.54914	35.73352	-118.5503	23.7%	0.4%	57.7%	53.9%	70.4%	**58.9%**	**5**
RANCHERIA RD	35.614696	-118.62917	35.61167	-118.6324	23.5%	70.2%	57.7%	44.0%	70.2%	**79.1%**	**3**
RANCHERIA RD	35.614696	-118.62917	35.61167	-118.6324	23.5%	70.2%	57.7%	44.0%	70.2%	**79.1%**	**3**
RANCHERIA RD	35.614822	-118.62903	35.61384	-118.6301	23.5%	0.2%	57.7%	44.0%	70.2%	**55.3%**	**5**
RANCHERIA RD	35.614822	-118.62903	35.61384	-118.6301	23.5%	0.2%	57.7%	44.0%	70.2%	**55.3%**	**5**
RANCHERIA RD	35.718115	-118.55418	35.71424	-118.5547	23.5%	0.2%	57.6%	52.7%	70.2%	**58.2%**	**5**
RANCHERIA RD	35.718115	-118.55418	35.71424	-118.5547	23.5%	0.2%	57.6%	52.7%	70.2%	**58.2%**	**5**
FRENCH GULCH	35.6681	-118.57143	35.65982	-118.5826	23.3%	70.0%	57.3%	48.7%	70.0%	**80.4%**	**2**
FRENCH GULCH	35.6681	-118.57143	35.65982	-118.5826	23.3%	70.0%	57.3%	48.7%	70.0%	**80.4%**	**2**
FRENCH GULCH	35.668125	-118.5714	35.65904	-118.5836	23.3%	0.0%	57.3%	48.7%	70.0%	**56.6%**	**5**
FRENCH GULCH	35.668125	-118.5714	35.65904	-118.5836	23.3%	0.0%	57.3%	48.7%	70.0%	**56.6%**	**5**
EVANS RD	35.73144	-118.54359	35.73112	-118.5423	23.7%	0.4%	56.9%	54.4%	70.4%	**58.8%**	**5**
EVANS RD	35.73144	-118.54359	35.73112	-118.5423	23.7%	0.4%	56.9%	54.4%	70.4%	**58.8%**	**5**
I-5	34.909444	-118.92364	34.91	-118.9238	59.9%	65.2%	56.9%	41.8%	83.2%	**93.3%**	**1**
I-5	34.90767	-118.92322	34.9083	-118.9234	59.9%	65.2%	56.9%	41.8%	83.2%	**93.3%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**93.3%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**93.3%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.3%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.3%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.3%**	**1**
I-5	34.915507	-118.9251	34.91099	-118.924	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**81.0%**	**2**
S GRANITE RD	35.562359	-118.95532	35.56089	-118.956	18.0%	0.5%	56.8%	18.1%	70.5%	**44.5%**	**6**
S GRANITE RD	35.562359	-118.95532	35.56089	-118.956	18.0%	0.5%	56.8%	18.1%	70.5%	**44.5%**	**6**
I-5	34.90556	-118.92409	34.90539	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.905363	-118.92404	34.90307	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**

I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**81.0%**	**2**
EVANS RD	35.730865	-118.54122	35.73112	-118.5423	23.7%	0.4%	56.5%	54.7%	70.4%	**58.8%**	**5**
EVANS RD	35.730865	-118.54122	35.73112	-118.5423	23.7%	0.4%	56.5%	54.7%	70.4%	**58.8%**	**5**
EVANS RD	35.730865	-118.54122	35.73074	-118.5397	23.7%	0.4%	56.3%	54.9%	70.4%	**58.7%**	**5**
EVANS RD	35.730865	-118.54122	35.73074	-118.5397	23.7%	0.4%	56.3%	54.9%	70.4%	**58.7%**	**5**
S GRANITE RD	35.501009	-118.99207	35.50099	-118.9921	18.1%	0.6%	56.2%	11.1%	70.6%	**42.0%**	**6**
S GRANITE RD	35.501009	-118.99207	35.50099	-118.9921	18.1%	0.6%	56.2%	11.1%	70.6%	**42.0%**	**6**
FRENCH GULCH	35.669567	-118.56559	35.6696	-118.5654	23.3%	70.0%	55.7%	49.8%	70.0%	**80.3%**	**3**
FRENCH GULCH	35.669567	-118.56559	35.6696	-118.5654	23.3%	70.0%	55.7%	49.8%	70.0%	**80.3%**	**3**
FRENCH GULCH	35.668125	-118.5714	35.66957	-118.5656	23.3%	0.0%	55.7%	49.8%	70.0%	**56.4%**	**5**
FRENCH GULCH	35.668125	-118.5714	35.66957	-118.5656	23.3%	0.0%	55.7%	49.8%	70.0%	**56.4%**	**5**
CA-65	35.659658	-119.0774	35.66471	-119.0754	19.2%	1.7%	55.5%	25.1%	71.7%	**47.6%**	**6**
CA-65	35.659658	-119.0774	35.66471	-119.0754	19.2%	1.7%	55.5%	25.1%	71.7%	**47.6%**	**6**
BAKERSFIELD TEH	35.263151	-118.6437	35.26324	-118.6448	34.6%	5.5%	55.2%	37.9%	75.5%	**59.8%**	**5**
BAKERSFIELD TEH	35.26266	-118.64015	35.26265	-118.6401	34.6%	5.4%	55.1%	37.9%	75.4%	**59.7%**	**5**
BAKERSFIELD TEH	35.262977	-118.64379	35.26286	-118.6424	34.6%	5.4%	55.1%	37.9%	75.4%	**59.7%**	**5**
KERN CANYON RD	35.427023	-118.81475	35.43785	-118.7989	25.0%	1.7%	55.0%	5.7%	71.7%	**42.8%**	**6**
KERN CANYON RD	35.427023	-118.81475	35.43785	-118.7989	25.0%	1.7%	55.0%	5.7%	71.7%	**42.8%**	**6**
KERN CANYON RD	35.424842	-118.81795	35.42702	-118.8148	25.0%	1.7%	55.0%	5.7%	71.7%	**42.8%**	**6**
KERN CANYON RD	35.424842	-118.81795	35.42702	-118.8148	25.0%	1.7%	55.0%	5.7%	71.7%	**42.8%**	**6**
FRENCH GULCH	35.669605	-118.56544	35.66748	-118.5635	23.3%	70.0%	54.9%	50.2%	70.0%	**80.1%**	**3**
FRENCH GULCH	35.669605	-118.56544	35.66748	-118.5635	23.3%	70.0%	54.9%	50.2%	70.0%	**80.1%**	**3**

FRENCH GULCH	35.669288	-118.56514	35.66749	-118.5635	23.3%	0.0%	54.9%	50.2%	70.0%	**56.3%**	**5**
FRENCH GULCH	35.669288	-118.56514	35.66749	-118.5635	23.3%	0.0%	54.9%	50.2%	70.0%	**56.3%**	**5**
EVANS RD	35.730724	-118.53964	35.73068	-118.5395	23.7%	0.4%	54.8%	55.6%	70.4%	**58.5%**	**5**
EVANS RD	35.730724	-118.53964	35.73068	-118.5395	23.7%	0.4%	54.8%	55.6%	70.4%	**58.5%**	**5**
EVANS RD	35.724665	-118.52348	35.7293	-118.5358	23.7%	0.4%	54.8%	55.6%	70.4%	**58.5%**	**5**
EVANS RD	35.724665	-118.52348	35.7293	-118.5358	23.7%	0.4%	54.8%	55.6%	70.4%	**58.5%**	**5**
EVANS RD	35.724665	-118.52348	35.7293	-118.5358	23.7%	0.4%	54.8%	55.6%	70.4%	**58.5%**	**5**
EVANS RD	35.724665	-118.52348	35.7293	-118.5358	23.7%	0.4%	54.8%	55.6%	70.4%	**58.5%**	**5**
ALFRED HARRELL	35.429748	-118.86827	35.42256	-118.8583	18.1%	16.5%	54.4%	6.9%	0.6%	**21.5%**	**8**
ALFRED HARRELL	35.429748	-118.86827	35.42256	-118.8583	18.1%	16.5%	54.4%	6.9%	0.6%	**21.5%**	**8**
BAKERSFIELD TEH	35.263747	-118.63333	35.26373	-118.6334	40.5%	39.4%	54.3%	38.8%	75.5%	**73.3%**	**3**
BAKERSFIELD TEH	35.263052	-118.63727	35.26331	-118.6354	40.4%	5.4%	54.3%	38.8%	75.4%	**61.7%**	**4**
BAKERSFIELD TEH	35.263052	-118.63727	35.26305	-118.6373	40.4%	5.4%	54.3%	38.8%	75.4%	**61.7%**	**4**
BAKERSFIELD TEH	35.262653	-118.64007	35.26268	-118.6399	34.6%	5.4%	54.3%	38.8%	75.4%	**59.7%**	**5**
BAKERSFIELD TEH	35.263036	-118.63738	35.26305	-118.6373	34.6%	5.4%	54.3%	38.8%	75.4%	**59.7%**	**5**
BAKERSFIELD TEH	35.263052	-118.63727	35.26305	-118.6373	34.6%	5.4%	54.3%	38.8%	75.4%	**59.7%**	**5**
CA-223	35.221343	-118.71307	35.22036	-118.7145	31.2%	2.0%	54.0%	30.7%	72.0%	**53.4%**	**5**
CA-223	35.221343	-118.71307	35.22036	-118.7145	31.2%	2.0%	54.0%	30.7%	72.0%	**53.4%**	**5**
CA-223	35.236245	-118.69111	35.23604	-118.6914	31.2%	2.0%	54.0%	30.7%	72.0%	**53.4%**	**5**
CA-223	35.236245	-118.69111	35.23604	-118.6914	31.2%	2.0%	54.0%	30.7%	72.0%	**53.4%**	**5**
CA-223	35.232849	-118.69611	35.23243	-118.6967	31.2%	2.0%	54.0%	30.7%	72.0%	**53.4%**	**5**
CA-223	35.232849	-118.69611	35.23243	-118.6967	31.2%	2.0%	54.0%	30.7%	72.0%	**53.4%**	**5**
I-5	34.895582	-118.91984	34.89329	-118.9169	60.0%	65.3%	53.9%	42.8%	83.3%	**92.6%**	**1**
I-5	34.892148	-118.91537	34.89136	-118.9143	60.0%	65.3%	53.9%	42.8%	83.3%	**92.6%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**92.6%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**92.6%**	**1**
I-5	34.881435	-118.90144	34.88053	-118.9003	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.879817	-118.89934	34.87951	-118.8989	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.896765	-118.92138	34.89668	-118.9213	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.889945	-118.91251	34.8899	-118.9125	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**80.3%**	**3**
I-5	34.892921	-118.91453	34.8932	-118.9149	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.891125	-118.9123	34.8916	-118.9129	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.5%**	**1**
I-5	34.8814	-118.90024	34.88144	-118.9003	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.88897	-118.90963	34.88921	-118.9099	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**

I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**80.2%**	**3**
EVANS RD	35.724657	-118.52345	35.72417	-118.5219	23.7%	0.4%	53.4%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.724657	-118.52345	35.72417	-118.5219	23.7%	0.4%	53.4%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.724665	-118.52348	35.72466	-118.5235	23.7%	0.4%	53.4%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.724665	-118.52348	35.72466	-118.5235	23.7%	0.4%	53.4%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.724665	-118.52348	35.72466	-118.5235	23.7%	0.4%	53.4%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.724665	-118.52348	35.72466	-118.5235	23.7%	0.4%	53.4%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.723215	-118.5216	35.72417	-118.5219	23.7%	0.4%	53.2%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.723215	-118.5216	35.72417	-118.5219	23.7%	0.4%	53.2%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.723215	-118.5216	35.72239	-118.5212	23.7%	0.4%	53.1%	56.3%	70.4%	**58.2%**	**5**
EVANS RD	35.723215	-118.5216	35.72239	-118.5212	23.7%	0.4%	53.1%	56.3%	70.4%	**58.2%**	**5**
BAKERSFIELD TEH	35.262151	-118.62162	35.26211	-118.6215	40.4%	5.4%	53.0%	39.8%	75.4%	**61.6%**	**5**
FRENCH GULCH	35.670685	-118.54694	35.66748	-118.5635	23.3%	70.0%	52.9%	51.1%	70.0%	**79.8%**	**3**
FRENCH GULCH	35.670685	-118.54694	35.66748	-118.5635	23.3%	70.0%	52.9%	51.1%	70.0%	**79.8%**	**3**
FRENCH GULCH	35.66922	-118.55451	35.66754	-118.5632	23.3%	0.0%	52.9%	51.1%	70.0%	**55.9%**	**5**
FRENCH GULCH	35.66922	-118.55451	35.66754	-118.5632	23.3%	0.0%	52.9%	51.1%	70.0%	**55.9%**	**5**
EVANS RD	35.722017	-118.52075	35.72066	-118.5191	23.7%	0.4%	52.9%	56.3%	70.4%	**58.1%**	**5**
EVANS RD	35.722017	-118.52075	35.72066	-118.5191	23.7%	0.4%	52.9%	56.3%	70.4%	**58.1%**	**5**
EVANS RD	35.720664	-118.51907	35.72202	-118.5207	23.7%	0.4%	52.9%	56.3%	70.4%	**58.1%**	**5**
EVANS RD	35.720664	-118.51907	35.72202	-118.5207	23.7%	0.4%	52.9%	56.3%	70.4%	**58.1%**	**5**
EVANS RD	35.720664	-118.51907	35.72202	-118.5207	23.7%	0.4%	52.9%	56.3%	70.4%	**58.1%**	**5**
EVANS RD	35.720664	-118.51907	35.72202	-118.5207	23.7%	0.4%	52.9%	56.3%	70.4%	**58.1%**	**5**
KERN CANYON RD	35.440077	-118.7949	35.44014	-118.7948	25.0%	1.7%	52.8%	4.4%	71.7%	**41.6%**	**7**
KERN CANYON RD	35.440077	-118.7949	35.44014	-118.7948	25.0%	1.7%	52.8%	4.4%	71.7%	**41.6%**	**7**
ALFRED HARRELL	35.430265	-118.87382	35.43023	-118.8731	17.6%	16.0%	52.8%	6.7%	0.1%	**20.4%**	**8**
ALFRED HARRELL	35.430265	-118.87382	35.43023	-118.8731	17.6%	16.0%	52.8%	6.7%	0.1%	**20.4%**	**8**
ALFRED HARRELL	35.430227	-118.87311	35.43004	-118.8697	17.6%	0.1%	52.8%	6.7%	70.1%	**38.8%**	**7**
ALFRED HARRELL	35.430227	-118.87311	35.43004	-118.8697	17.6%	0.1%	52.8%	6.7%	70.1%	**38.8%**	**7**
EVANS RD	35.720515	-118.51889	35.72028	-118.5176	23.7%	0.4%	52.7%	56.4%	70.4%	**58.0%**	**5**
EVANS RD	35.720515	-118.51889	35.72028	-118.5176	23.7%	0.4%	52.7%	56.4%	70.4%	**58.0%**	**5**
FAMOSO RD	35.614164	-118.98159	35.61475	-118.9819	17.6%	0.1%	52.6%	21.4%	70.1%	**43.8%**	**6**
FAMOSO RD	35.614164	-118.98159	35.61475	-118.9819	17.6%	0.1%	52.6%	21.4%	70.1%	**43.8%**	**6**
KERN CANYON RD	35.440145	-118.79478	35.44029	-118.7946	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440145	-118.79478	35.44029	-118.7946	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440286	-118.79463	35.44067	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440286	-118.79463	35.44067	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440286	-118.79463	35.44067	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440286	-118.79463	35.44067	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440671	-118.79423	35.44072	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440671	-118.79423	35.44072	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440671	-118.79423	35.44072	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440671	-118.79423	35.44072	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440671	-118.79423	35.44072	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440671	-118.79423	35.44072	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440671	-118.79423	35.44072	-118.7942	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**

KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
KERN CANYON RD	35.440718	-118.79418	35.44085	-118.794	25.0%	1.7%	52.6%	4.3%	71.7%	**41.5%**	**7**
EVANS RD	35.721694	-118.51563	35.72028	-118.5176	23.7%	0.4%	52.5%	56.5%	70.4%	**58.0%**	**5**
EVANS RD	35.721694	-118.51563	35.72028	-118.5176	23.7%	0.4%	52.5%	56.5%	70.4%	**58.0%**	**5**
EVANS RD	35.721955	-118.51526	35.7204	-118.5175	23.7%	0.4%	52.5%	56.5%	70.4%	**58.0%**	**5**
EVANS RD	35.721955	-118.51526	35.7204	-118.5175	23.7%	0.4%	52.5%	56.5%	70.4%	**58.0%**	**5**
EVANS RD	35.721955	-118.51526	35.7204	-118.5175	23.7%	0.4%	52.5%	56.5%	70.4%	**58.0%**	**5**
EVANS RD	35.721955	-118.51526	35.7204	-118.5175	23.7%	0.4%	52.5%	56.5%	70.4%	**58.0%**	**5**
BAKERSFIELD TEH	35.260953	-118.61864	35.26182	-118.6201	40.4%	39.3%	52.4%	40.2%	75.4%	**73.1%**	**4**
KERN CANYON RD	35.442255	-118.79251	35.44086	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.442255	-118.79251	35.44086	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.442255	-118.79251	35.44086	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.442255	-118.79251	35.44086	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.442255	-118.79251	35.44086	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.442255	-118.79251	35.44086	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
KERN CANYON RD	35.440859	-118.79403	35.44085	-118.794	25.0%	1.7%	52.4%	4.1%	71.7%	**41.4%**	**7**
I-5	34.866724	-118.88475	34.86587	-118.884	60.0%	29.2%	52.3%	43.8%	83.3%	**80.2%**	**3**
KERN CANYON RD	35.442385	-118.79233	35.44225	-118.7925	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44225	-118.7925	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44225	-118.7925	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44225	-118.7925	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44225	-118.7925	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44225	-118.7925	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
EVANS RD	35.721955	-118.51526	35.72234	-118.5124	23.7%	0.4%	52.2%	56.7%	70.4%	**58.0%**	**5**
EVANS RD	35.721955	-118.51526	35.72234	-118.5124	23.7%	0.4%	52.2%	56.7%	70.4%	**58.0%**	**5**
EVANS RD	35.721955	-118.51526	35.72234	-118.5124	23.7%	0.4%	52.2%	56.7%	70.4%	**58.0%**	**5**
EVANS RD	35.721955	-118.51526	35.72234	-118.5124	23.7%	0.4%	52.2%	56.7%	70.4%	**58.0%**	**5**
KERN CANYON RD	35.442385	-118.79233	35.44244	-118.7923	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44244	-118.7923	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44244	-118.7923	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44244	-118.7923	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44244	-118.7923	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.442385	-118.79233	35.44244	-118.7923	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
KERN CANYON RD	35.44244	-118.79227	35.44264	-118.792	25.0%	1.7%	52.2%	4.0%	71.7%	**41.3%**	**7**
MASTERSON ST	35.398984	-118.87959	35.40189	-118.8793	23.8%	0.5%	52.1%	8.1%	0.5%	**17.7%**	**8**
MASTERSON ST	35.398984	-118.87959	35.40189	-118.8793	23.8%	0.5%	52.1%	8.1%	0.5%	**17.7%**	**8**
FAMOSO RD	35.613003	-118.97765	35.6138	-118.9812	17.6%	0.1%	51.8%	21.0%	70.1%	**43.4%**	**6**
FAMOSO RD	35.613003	-118.97765	35.6138	-118.9812	17.6%	0.1%	51.8%	21.0%	70.1%	**43.4%**	**6**
I-5	34.865867	-118.88398	34.8657	-118.8838	60.0%	29.2%	51.8%	44.4%	83.3%	**80.2%**	**3**
KERN CANYON RD	35.446732	-118.78762	35.44687	-118.7875	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446732	-118.78762	35.44687	-118.7875	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446732	-118.78762	35.44687	-118.7875	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446732	-118.78762	35.44687	-118.7875	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**

KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446446	-118.78793	35.44673	-118.7876	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.44628	-118.78811	35.44645	-118.7879	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.442645	-118.79204	35.44318	-118.7915	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443184	-118.79146	35.44335	-118.7913	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.446262	-118.78813	35.44628	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**

KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.443349	-118.79128	35.44488	-118.7896	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**
KERN CANYON RD	35.444879	-118.78962	35.44626	-118.7881	25.0%	1.7%	51.8%	3.7%	71.7%	**41.1%**	**7**

Appendix Table E: Top Roads by Temperature Risk

Route	Begin Latitude	Begin Longitude	End Latitude	End Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
EVANS RD	35.706765	-118.45652	35.70671	-118.4587	25.3%	2.0%	24.4%	61.4%	72.0%	**52.0%**	**6**
EVANS RD	35.706765	-118.45652	35.70671	-118.4587	25.3%	2.0%	24.4%	61.4%	72.0%	**52.0%**	**6**
CA-178	35.664165	-118.30321	35.66402	-118.3049	24.4%	1.1%	19.8%	61.3%	71.1%	**49.5%**	**6**
CA-178	35.664165	-118.30321	35.66402	-118.3049	24.4%	1.1%	19.8%	61.3%	71.1%	**49.5%**	**6**
CA-178	35.663415	-118.30671	35.66402	-118.3049	24.4%	1.1%	19.6%	61.3%	71.1%	**49.4%**	**6**
CA-178	35.663415	-118.30671	35.66402	-118.3049	24.4%	1.1%	19.6%	61.3%	71.1%	**49.4%**	**6**
CA-178	35.659252	-118.31478	35.66341	-118.3067	24.4%	1.1%	18.8%	61.2%	71.1%	**49.1%**	**6**
CA-178	35.659252	-118.31478	35.66341	-118.3067	24.4%	1.1%	18.8%	61.2%	71.1%	**49.1%**	**6**
CA-178	35.657375	-118.31842	35.65925	-118.3148	24.4%	1.1%	18.8%	61.2%	71.1%	**49.1%**	**6**
CA-178	35.657375	-118.31842	35.65925	-118.3148	24.4%	1.1%	18.8%	61.2%	71.1%	**49.1%**	**6**
CA-178	35.657165	-118.32278	35.65737	-118.3184	24.4%	1.1%	17.8%	61.2%	71.1%	**48.8%**	**6**
CA-178	35.657165	-118.32278	35.65737	-118.3184	24.4%	1.1%	17.8%	61.2%	71.1%	**48.8%**	**6**
CA-178	35.639675	-118.40533	35.63915	-118.4042	31.0%	1.8%	44.6%	61.0%	71.8%	**60.5%**	**5**
CA-178	35.639675	-118.40533	35.63915	-118.4042	31.0%	1.8%	44.6%	61.0%	71.8%	**60.5%**	**5**
CA-155	35.701465	-118.45958	35.6992	-118.461	25.2%	1.9%	24.3%	61.0%	71.9%	**51.7%**	**6**
CA-155	35.701465	-118.45958	35.6992	-118.461	25.2%	1.9%	24.3%	61.0%	71.9%	**51.7%**	**6**
CA-178	35.639155	-118.40425	35.63835	-118.4026	31.0%	1.8%	44.4%	61.0%	71.8%	**60.5%**	**5**
CA-178	35.639155	-118.40425	35.63835	-118.4026	31.0%	1.8%	44.4%	61.0%	71.8%	**60.5%**	**5**
CA-178	35.639675	-118.40533	35.64117	-118.4084	31.0%	1.8%	44.9%	61.0%	71.8%	**60.6%**	**5**
CA-178	35.639675	-118.40533	35.64117	-118.4084	31.0%	1.8%	44.9%	61.0%	71.8%	**60.6%**	**5**
CA-178	35.656985	-118.32584	35.65716	-118.3228	24.2%	0.9%	17.3%	61.0%	70.9%	**48.4%**	**6**
CA-178	35.656985	-118.32584	35.65716	-118.3228	24.2%	0.9%	17.3%	61.0%	70.9%	**48.4%**	**6**
CA-178	35.637385	-118.40059	35.63835	-118.4026	31.0%	1.8%	44.2%	61.0%	71.8%	**60.4%**	**5**
CA-178	35.637385	-118.40059	35.63835	-118.4026	31.0%	1.8%	44.2%	61.0%	71.8%	**60.4%**	**5**
CA-178	35.656985	-118.32584	35.65687	-118.3278	24.2%	0.9%	17.1%	61.0%	70.9%	**48.3%**	**6**
CA-178	35.656985	-118.32584	35.65687	-118.3278	24.2%	0.9%	17.1%	61.0%	70.9%	**48.3%**	**6**
CA-178	35.641305	-118.40866	35.64117	-118.4084	31.0%	1.8%	45.1%	61.0%	71.8%	**60.7%**	**5**
CA-178	35.641305	-118.40866	35.64117	-118.4084	31.0%	1.8%	45.1%	61.0%	71.8%	**60.7%**	**5**
CA-178	35.656875	-118.32781	35.65653	-118.3351	24.2%	0.9%	16.7%	61.0%	70.9%	**48.1%**	**6**
CA-178	35.656875	-118.32781	35.65653	-118.3351	24.2%	0.9%	16.7%	61.0%	70.9%	**48.1%**	**6**
CA-178	35.637385	-118.40059	35.63723	-118.4003	31.0%	1.8%	44.1%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.637385	-118.40059	35.63723	-118.4003	31.0%	1.8%	44.1%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.641305	-118.40866	35.64134	-118.4087	31.0%	1.8%	45.1%	61.0%	71.8%	**60.7%**	**5**
CA-178	35.641305	-118.40866	35.64134	-118.4087	31.0%	1.8%	45.1%	61.0%	71.8%	**60.7%**	**5**
CA-178	35.637235	-118.40027	35.63693	-118.3997	31.0%	1.8%	44.0%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.637235	-118.40027	35.63693	-118.3997	31.0%	1.8%	44.0%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.636935	-118.39968	35.63686	-118.3995	31.0%	1.8%	44.0%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.636935	-118.39968	35.63686	-118.3995	31.0%	1.8%	44.0%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.636935	-118.39968	35.63686	-118.3995	31.0%	1.8%	44.0%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.636935	-118.39968	35.63686	-118.3995	31.0%	1.8%	44.0%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.649715	-118.4186	35.64959	-118.4185	31.0%	1.8%	46.8%	61.0%	71.8%	**61.3%**	**5**
CA-178	35.649715	-118.4186	35.64959	-118.4185	31.0%	1.8%	46.8%	61.0%	71.8%	**61.3%**	**5**
CA-178	35.651005	-118.41918	35.64971	-118.4186	31.0%	1.8%	46.8%	61.0%	71.8%	**61.3%**	**5**
CA-178	35.651005	-118.41918	35.64971	-118.4186	31.0%	1.8%	46.8%	61.0%	71.8%	**61.3%**	**5**
CA-178	35.651005	-118.41918	35.64971	-118.4186	31.0%	1.8%	46.8%	61.0%	71.8%	**61.3%**	**5**
CA-178	35.651005	-118.41918	35.64971	-118.4186	31.0%	1.8%	46.8%	61.0%	71.8%	**61.3%**	**5**
CA-178	35.636765	-118.39933	35.63686	-118.3995	31.0%	1.8%	43.9%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.636765	-118.39933	35.63686	-118.3995	31.0%	1.8%	43.9%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.636765	-118.39933	35.63686	-118.3995	31.0%	1.8%	43.9%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.636765	-118.39933	35.63686	-118.3995	31.0%	1.8%	43.9%	61.0%	71.8%	**60.3%**	**5**
CA-178	35.641345	-118.40874	35.64171	-118.4095	31.0%	1.8%	45.2%	61.0%	71.8%	**60.7%**	**5**
CA-178	35.641345	-118.40874	35.64171	-118.4095	31.0%	1.8%	45.2%	61.0%	71.8%	**60.7%**	**5**
CA-155	35.699115	-118.46117	35.6992	-118.461	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
CA-155	35.699115	-118.46117	35.6992	-118.461	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
CA-178	35.636765	-118.39933	35.6358	-118.3972	31.0%	1.8%	43.8%	60.9%	71.8%	**60.2%**	**5**
CA-178	35.636765	-118.39933	35.6358	-118.3972	31.0%	1.8%	43.8%	60.9%	71.8%	**60.2%**	**5**
CA-178	35.636765	-118.39933	35.6358	-118.3972	31.0%	1.8%	43.8%	60.9%	71.8%	**60.2%**	**5**
CA-178	35.636765	-118.39933	35.6358	-118.3972	31.0%	1.8%	43.8%	60.9%	71.8%	**60.2%**	**5**
CA-178	35.641715	-118.40949	35.64191	-118.4099	31.0%	1.8%	45.2%	60.9%	71.8%	**60.7%**	**5**
CA-178	35.641715	-118.40949	35.64191	-118.4099	31.0%	1.8%	45.2%	60.9%	71.8%	**60.7%**	**5**
CA-178	35.642055	-118.41019	35.64191	-118.4099	31.0%	1.8%	45.3%	60.9%	71.8%	**60.7%**	**5**
CA-178	35.642055	-118.41019	35.64191	-118.4099	31.0%	1.8%	45.3%	60.9%	71.8%	**60.7%**	**5**

CA-178	35.632915	-118.38835	35.6358	-118.3972	31.0%	1.8%	43.2%	60.9%	71.8%	**60.0%**	**5**
CA-178	35.632915	-118.38835	35.6358	-118.3972	31.0%	1.8%	43.2%	60.9%	71.8%	**60.0%**	**5**
CA-178	35.632915	-118.38835	35.6358	-118.3972	31.0%	1.8%	43.2%	60.9%	71.8%	**60.0%**	**5**
CA-178	35.632915	-118.38835	35.6358	-118.3972	31.0%	1.8%	43.2%	60.9%	71.8%	**60.0%**	**5**
CA-178	35.632755	-118.38786	35.63258	-118.3871	31.0%	1.8%	42.7%	60.9%	71.8%	**59.9%**	**5**
CA-178	35.632755	-118.38786	35.63258	-118.3871	31.0%	1.8%	42.7%	60.9%	71.8%	**59.9%**	**5**
CA-178	35.632755	-118.38786	35.63258	-118.3871	31.0%	1.8%	42.7%	60.9%	71.8%	**59.9%**	**5**
CA-178	35.632755	-118.38786	35.63258	-118.3871	31.0%	1.8%	42.7%	60.9%	71.8%	**59.9%**	**5**
CA-178	35.632915	-118.38835	35.63275	-118.3879	31.0%	1.8%	42.8%	60.9%	71.8%	**59.9%**	**5**
CA-178	35.632915	-118.38835	35.63275	-118.3879	31.0%	1.8%	42.8%	60.9%	71.8%	**59.9%**	**5**
CA-178	35.632915	-118.38835	35.63275	-118.3879	31.0%	1.8%	42.8%	60.9%	71.8%	**59.9%**	**5**
CA-178	35.632915	-118.38835	35.63275	-118.3879	31.0%	1.8%	42.8%	60.9%	71.8%	**59.9%**	**5**
WOFFORD BLVD	35.699115	-118.46117	35.69841	-118.4621	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
WOFFORD BLVD	35.699115	-118.46117	35.69841	-118.4621	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
CA-178	35.643435	-118.41301	35.64205	-118.4102	31.0%	1.8%	45.5%	60.9%	71.8%	**60.8%**	**5**
CA-178	35.643435	-118.41301	35.64205	-118.4102	31.0%	1.8%	45.5%	60.9%	71.8%	**60.8%**	**5**
CA-155	35.698215	-118.46242	35.69841	-118.4621	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
CA-155	35.698215	-118.46242	35.69841	-118.4621	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
CA-178	35.651005	-118.41918	35.65044	-118.4229	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.651005	-118.41918	35.65044	-118.4229	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.651005	-118.41918	35.65044	-118.4229	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.651005	-118.41918	35.65044	-118.4229	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.650717	-118.42111	35.65066	-118.4215	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.650717	-118.42111	35.65066	-118.4215	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.650717	-118.42111	35.65066	-118.4215	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.650717	-118.42111	35.65066	-118.4215	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.650717	-118.42111	35.65066	-118.4215	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.650717	-118.42111	35.65066	-118.4215	31.0%	1.8%	47.0%	60.9%	71.8%	**61.3%**	**5**
CA-178	35.653645	-118.34713	35.65653	-118.3351	24.2%	0.9%	16.0%	60.9%	70.9%	**47.9%**	**6**
CA-178	35.653645	-118.34713	35.65653	-118.3351	24.2%	0.9%	16.0%	60.9%	70.9%	**47.9%**	**6**
CA-155	35.698215	-118.46242	35.69732	-118.4631	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
CA-155	35.698215	-118.46242	35.69732	-118.4631	25.2%	1.9%	24.3%	60.9%	71.9%	**51.7%**	**6**
CA-178	35.643895	-118.41396	35.64343	-118.413	31.0%	1.8%	45.7%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.643895	-118.41396	35.64343	-118.413	31.0%	1.8%	45.7%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.649595	-118.41855	35.64953	-118.4186	31.0%	1.8%	46.6%	60.9%	71.8%	**61.2%**	**5**
CA-178	35.649595	-118.41855	35.64953	-118.4186	31.0%	1.8%	46.6%	60.9%	71.8%	**61.2%**	**5**
CA-178	35.649533	-118.41856	35.6472	-118.4192	31.0%	1.8%	46.6%	60.9%	71.8%	**61.2%**	**5**
CA-178	35.649533	-118.41856	35.6472	-118.4192	31.0%	1.8%	46.6%	60.9%	71.8%	**61.2%**	**5**
CA-178	35.649533	-118.41856	35.6472	-118.4192	31.0%	1.8%	46.6%	60.9%	71.8%	**61.2%**	**5**
CA-178	35.649533	-118.41856	35.6472	-118.4192	31.0%	1.8%	46.6%	60.9%	71.8%	**61.2%**	**5**
CA-178	35.643953	-118.41409	35.64389	-118.414	31.0%	1.8%	45.8%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.643953	-118.41409	35.64389	-118.414	31.0%	1.8%	45.8%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.644095	-118.4144	35.64395	-118.4141	31.0%	1.8%	45.8%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.644095	-118.4144	35.64395	-118.4141	31.0%	1.8%	45.8%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.644095	-118.4144	35.64395	-118.4141	31.0%	1.8%	45.8%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.644095	-118.4144	35.64395	-118.4141	31.0%	1.8%	45.8%	60.9%	71.8%	**60.9%**	**5**
CA-178	35.665855	-118.29004	35.66606	-118.2882	24.1%	0.8%	20.7%	60.9%	70.8%	**49.3%**	**6**
CA-178	35.665855	-118.29004	35.66606	-118.2882	24.1%	0.8%	20.7%	60.9%	70.8%	**49.3%**	**6**
CA-178	35.665855	-118.29004	35.66543	-118.2934	24.1%	0.8%	20.5%	60.8%	70.8%	**49.2%**	**6**
CA-178	35.665855	-118.29004	35.66543	-118.2934	24.1%	0.8%	20.5%	60.8%	70.8%	**49.2%**	**6**
CA-155	35.697105	-118.46316	35.69732	-118.4631	25.2%	1.9%	24.3%	60.8%	71.9%	**51.7%**	**6**
CA-155	35.697105	-118.46316	35.69732	-118.4631	25.2%	1.9%	24.3%	60.8%	71.9%	**51.7%**	**6**
CA-178	35.665435	-118.29345	35.66512	-118.296	24.1%	0.8%	20.2%	60.8%	70.8%	**49.2%**	**6**
CA-178	35.665435	-118.29345	35.66512	-118.296	24.1%	0.8%	20.2%	60.8%	70.8%	**49.2%**	**6**
CA-178	35.664635	-118.30001	35.66512	-118.296	24.1%	0.8%	20.0%	60.8%	70.8%	**49.1%**	**6**
CA-178	35.664635	-118.30001	35.66512	-118.296	24.1%	0.8%	20.0%	60.8%	70.8%	**49.1%**	**6**
CA-178	35.664165	-118.30321	35.66463	-118.3	24.1%	0.8%	19.7%	60.8%	70.8%	**49.0%**	**6**
CA-178	35.664165	-118.30321	35.66463	-118.3	24.1%	0.8%	19.7%	60.8%	70.8%	**49.0%**	**6**
CA-178	35.644095	-118.4144	35.64504	-118.4163	31.0%	1.8%	45.9%	60.8%	71.8%	**60.9%**	**5**
CA-178	35.644095	-118.4144	35.64504	-118.4163	31.0%	1.8%	45.9%	60.8%	71.8%	**60.9%**	**5**
CA-178	35.644095	-118.4144	35.64504	-118.4163	31.0%	1.8%	45.9%	60.8%	71.8%	**60.9%**	**5**
CA-178	35.644095	-118.4144	35.64504	-118.4163	31.0%	1.8%	45.9%	60.8%	71.8%	**60.9%**	**5**
CA-178	35.645725	-118.41776	35.64504	-118.4163	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645725	-118.41776	35.64504	-118.4163	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645725	-118.41776	35.64504	-118.4163	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645725	-118.41776	35.64504	-118.4163	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645467	-118.41721	35.64512	-118.4165	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645467	-118.41721	35.64512	-118.4165	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**

CA-178	35.645467	-118.41721	35.64512	-118.4165	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645467	-118.41721	35.64512	-118.4165	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645467	-118.41721	35.64512	-118.4165	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.645467	-118.41721	35.64512	-118.4165	31.0%	1.8%	46.1%	60.8%	71.8%	**61.0%**	**5**
CA-178	35.656595	-118.43012	35.65661	-118.4301	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656595	-118.43012	35.65661	-118.4301	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656611	-118.43015	35.65664	-118.4302	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656611	-118.43015	35.65664	-118.4302	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656611	-118.43015	35.65664	-118.4302	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656611	-118.43015	35.65664	-118.4302	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657981	-118.43279	35.658	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657981	-118.43279	35.658	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657981	-118.43279	35.658	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657981	-118.43279	35.658	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.65664	-118.43021	35.65684	-118.4306	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.65664	-118.43021	35.65684	-118.4306	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.65664	-118.43021	35.65684	-118.4306	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.65664	-118.43021	35.65684	-118.4306	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.65664	-118.43021	35.65684	-118.4306	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.65664	-118.43021	35.65684	-118.4306	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657924	-118.43268	35.65798	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657924	-118.43268	35.65798	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657924	-118.43268	35.65798	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657924	-118.43268	35.65798	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657924	-118.43268	35.65798	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.657924	-118.43268	35.65798	-118.4328	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.656837	-118.43059	35.65792	-118.4327	31.0%	1.8%	48.3%	60.8%	71.8%	**61.7%**	**5**
CA-178	35.647205	-118.41917	35.64572	-118.4178	31.0%	1.8%	46.3%	60.8%	71.8%	**61.1%**	**5**
CA-178	35.647205	-118.41917	35.64572	-118.4178	31.0%	1.8%	46.3%	60.8%	71.8%	**61.1%**	**5**
CA-178	35.647205	-118.41917	35.64572	-118.4178	31.0%	1.8%	46.3%	60.8%	71.8%	**61.1%**	**5**
CA-178	35.647205	-118.41917	35.64572	-118.4178	31.0%	1.8%	46.3%	60.8%	71.8%	**61.1%**	**5**
CA-178	35.667035	-118.27243	35.66606	-118.2882	24.1%	0.8%	20.6%	60.8%	70.8%	**49.3%**	**6**
CA-178	35.667035	-118.27243	35.66606	-118.2882	24.1%	0.8%	20.6%	60.8%	70.8%	**49.3%**	**6**
BURLANDO RD	35.708565	-118.44579	35.70867	-118.4454	24.7%	1.3%	23.9%	60.8%	71.3%	**51.0%**	**6**
BURLANDO RD	35.708565	-118.44579	35.70867	-118.4454	24.7%	1.3%	23.9%	60.8%	71.3%	**51.0%**	**6**
CA-155	35.697105	-118.46316	35.6949	-118.4656	25.2%	1.9%	24.3%	60.8%	71.9%	**51.6%**	**6**
CA-155	35.697105	-118.46316	35.6949	-118.4656	25.2%	1.9%	24.3%	60.8%	71.9%	**51.6%**	**6**
CA-178	35.652165	-118.3532	35.65226	-118.3528	24.2%	0.9%	40.9%	60.8%	70.9%	**56.3%**	**5**
CA-178	35.652165	-118.3532	35.65226	-118.3528	24.2%	0.9%	40.9%	60.8%	70.9%	**56.3%**	**5**
CA-178	35.652258	-118.35282	35.65364	-118.3471	24.2%	0.9%	15.9%	60.8%	70.9%	**47.8%**	**6**
CA-178	35.652258	-118.35282	35.65364	-118.3471	24.2%	0.9%	15.9%	60.8%	70.9%	**47.8%**	**6**
CA-178	35.657439	-118.43445	35.65783	-118.4333	31.0%	1.8%	48.4%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657439	-118.43445	35.65783	-118.4333	31.0%	1.8%	48.4%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657831	-118.43333	35.65744	-118.4344	31.0%	1.8%	48.4%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657831	-118.43333	35.65744	-118.4344	31.0%	1.8%	48.4%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657831	-118.43333	35.65744	-118.4344	31.0%	1.8%	48.4%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657831	-118.43333	35.65744	-118.4344	31.0%	1.8%	48.4%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.667185	-118.26783	35.66703	-118.2724	24.1%	0.8%	20.3%	60.7%	70.8%	**49.1%**	**6**
CA-178	35.667185	-118.26783	35.66703	-118.2724	24.1%	0.8%	20.3%	60.7%	70.8%	**49.1%**	**6**
CA-178	35.656595	-118.43012	35.6543	-118.4296	31.0%	1.8%	47.8%	60.7%	71.8%	**61.5%**	**5**
CA-178	35.656595	-118.43012	35.6543	-118.4296	31.0%	1.8%	47.8%	60.7%	71.8%	**61.5%**	**5**
CA-178	35.652763	-118.42918	35.64973	-118.4284	31.0%	1.8%	47.8%	60.7%	71.8%	**61.5%**	**5**
CA-178	35.652763	-118.42918	35.64973	-118.4284	31.0%	1.8%	47.8%	60.7%	71.8%	**61.5%**	**5**
CA-178	35.654305	-118.42956	35.65276	-118.4292	31.0%	1.8%	22.8%	60.7%	71.8%	**53.0%**	**5**
CA-178	35.654305	-118.42956	35.65276	-118.4292	31.0%	1.8%	22.8%	60.7%	71.8%	**53.0%**	**5**
CA-178	35.648977	-118.42731	35.65006	-118.4241	31.0%	1.8%	47.1%	60.7%	71.8%	**61.3%**	**5**
CA-178	35.648977	-118.42731	35.65006	-118.4241	31.0%	1.8%	47.1%	60.7%	71.8%	**61.3%**	**5**
CA-178	35.650061	-118.42408	35.64898	-118.4273	31.0%	1.8%	47.1%	60.7%	71.8%	**61.3%**	**5**
CA-178	35.650061	-118.42408	35.64898	-118.4273	31.0%	1.8%	47.1%	60.7%	71.8%	**61.3%**	**5**
CA-178	35.650061	-118.42408	35.64898	-118.4273	31.0%	1.8%	47.1%	60.7%	71.8%	**61.3%**	**5**
CA-178	35.650061	-118.42408	35.64898	-118.4273	31.0%	1.8%	47.1%	60.7%	71.8%	**61.3%**	**5**

CA-178	35.657405	-118.43455	35.65739	-118.4347	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657405	-118.43455	35.65739	-118.4347	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657405	-118.43455	35.65739	-118.4347	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657405	-118.43455	35.65739	-118.4347	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-155	35.694905	-118.46561	35.6941	-118.4678	25.2%	1.9%	24.4%	60.7%	71.9%	**51.6%**	**6**
CA-155	35.694905	-118.46561	35.6941	-118.4678	25.2%	1.9%	24.4%	60.7%	71.9%	**51.6%**	**6**
CA-178	35.667215	-118.26763	35.66718	-118.2678	24.1%	0.8%	20.1%	60.7%	70.8%	**49.1%**	**6**
CA-178	35.667215	-118.26763	35.66718	-118.2678	24.1%	0.8%	20.1%	60.7%	70.8%	**49.1%**	**6**
CA-178	35.657395	-118.43467	35.65731	-118.4354	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657395	-118.43467	35.65731	-118.4354	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657395	-118.43467	35.65731	-118.4354	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.657395	-118.43467	35.65731	-118.4354	31.0%	1.8%	48.5%	60.7%	71.8%	**61.7%**	**5**
CA-178	35.693165	-118.22353	35.69472	-118.2191	24.0%	0.7%	16.7%	60.7%	70.7%	**47.8%**	**6**
CA-178	35.693165	-118.22353	35.69472	-118.2191	24.0%	0.7%	16.7%	60.7%	70.7%	**47.8%**	**6**
CA-178	35.694725	-118.21906	35.69627	-118.2152	24.0%	0.7%	16.5%	60.7%	70.7%	**47.8%**	**6**
CA-178	35.694725	-118.21906	35.69627	-118.2152	24.0%	0.7%	16.5%	60.7%	70.7%	**47.8%**	**6**
KERNVILLE RD	35.755325	-118.42125	35.75533	-118.4235	23.9%	0.5%	21.3%	60.7%	70.5%	**49.2%**	**6**
KERNVILLE RD	35.755325	-118.42125	35.75533	-118.4235	23.9%	0.5%	21.3%	60.7%	70.5%	**49.2%**	**6**
CA-178	35.652015	-118.35345	35.65216	-118.3532	24.2%	0.9%	41.2%	60.6%	70.9%	**56.3%**	**5**
CA-178	35.652015	-118.35345	35.65216	-118.3532	24.2%	0.9%	41.2%	60.6%	70.9%	**56.3%**	**5**
CA-178	35.648995	-118.35853	35.65202	-118.3534	24.2%	0.9%	16.2%	60.6%	70.9%	**47.9%**	**6**
CA-178	35.648995	-118.35853	35.65202	-118.3534	24.2%	0.9%	16.2%	60.6%	70.9%	**47.9%**	**6**
CA-178	35.693165	-118.22353	35.69206	-118.2267	24.0%	0.7%	17.0%	60.6%	70.7%	**47.9%**	**6**
CA-178	35.693165	-118.22353	35.69206	-118.2267	24.0%	0.7%	17.0%	60.6%	70.7%	**47.9%**	**6**
KERNVILLE RD	35.755335	-118.42366	35.75533	-118.4235	23.9%	0.5%	21.3%	60.6%	70.5%	**49.2%**	**6**
KERNVILLE RD	35.755335	-118.42366	35.75533	-118.4235	23.9%	0.5%	21.3%	60.6%	70.5%	**49.2%**	**6**
CA-155	35.692275	-118.46767	35.6941	-118.4678	25.2%	1.9%	24.4%	60.6%	71.9%	**51.6%**	**6**
CA-155	35.692275	-118.46767	35.6941	-118.4678	25.2%	1.9%	24.4%	60.6%	71.9%	**51.6%**	**6**
CA-178	35.689535	-118.23348	35.69206	-118.2267	24.0%	0.7%	17.5%	60.6%	70.7%	**48.1%**	**6**
CA-178	35.689535	-118.23348	35.69206	-118.2267	24.0%	0.7%	17.5%	60.6%	70.7%	**48.1%**	**6**
KELSO VALLEY RD	35.664165	-118.30321	35.65697	-118.288	23.9%	0.6%	19.7%	60.6%	70.6%	**48.7%**	**6**
KELSO VALLEY RD	35.664165	-118.30321	35.65697	-118.288	23.9%	0.6%	19.7%	60.6%	70.6%	**48.7%**	**6**
BURLANDO RD	35.749945	-118.42283	35.74881	-118.4222	23.9%	0.5%	21.7%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.749945	-118.42283	35.74881	-118.4222	23.9%	0.5%	21.7%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.749945	-118.42283	35.75174	-118.4243	23.9%	0.5%	21.6%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.749945	-118.42283	35.75174	-118.4243	23.9%	0.5%	21.6%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.751745	-118.42429	35.75191	-118.4244	23.9%	0.5%	21.5%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.751745	-118.42429	35.75191	-118.4244	23.9%	0.5%	21.5%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.752935	-118.42521	35.75191	-118.4244	23.9%	0.5%	21.5%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.752935	-118.42521	35.75191	-118.4244	23.9%	0.5%	21.5%	60.6%	70.5%	**49.3%**	**6**
BURLANDO RD	35.747656	-118.42205	35.74865	-118.4222	23.9%	0.5%	46.8%	60.6%	70.5%	**57.9%**	**5**
BURLANDO RD	35.747656	-118.42205	35.74865	-118.4222	23.9%	0.5%	46.8%	60.6%	70.5%	**57.9%**	**5**
BURLANDO RD	35.748647	-118.42217	35.74766	-118.422	23.9%	0.5%	21.8%	60.6%	70.5%	**49.4%**	**6**
BURLANDO RD	35.748647	-118.42217	35.74766	-118.422	23.9%	0.5%	21.8%	60.6%	70.5%	**49.4%**	**6**
CA-178	35.648982	-118.42733	35.64973	-118.4284	31.0%	1.8%	47.2%	60.6%	71.8%	**61.3%**	**5**
CA-178	35.648982	-118.42733	35.64973	-118.4284	31.0%	1.8%	47.2%	60.6%	71.8%	**61.3%**	**5**
CA-178	35.648975	-118.42732	35.64898	-118.4273	31.0%	1.8%	47.2%	60.6%	71.8%	**61.3%**	**5**
CA-178	35.648975	-118.42732	35.64898	-118.4273	31.0%	1.8%	47.2%	60.6%	71.8%	**61.3%**	**5**
CA-178	35.648975	-118.42732	35.64898	-118.4273	31.0%	1.8%	47.2%	60.6%	71.8%	**61.3%**	**5**
CA-178	35.648975	-118.42732	35.64898	-118.4273	31.0%	1.8%	47.2%	60.6%	71.8%	**61.3%**	**5**
CA-178	35.657002	-118.43866	35.65709	-118.4377	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.657002	-118.43866	35.65709	-118.4377	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.657222	-118.43635	35.65717	-118.4369	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.657222	-118.43635	35.65717	-118.4369	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.657222	-118.43635	35.65717	-118.4369	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.657222	-118.43635	35.65717	-118.4369	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656901	-118.43972	35.657	-118.4387	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656901	-118.43972	35.657	-118.4387	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656901	-118.43972	35.657	-118.4387	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656901	-118.43972	35.657	-118.4387	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.6572	-118.43658	35.65718	-118.4368	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.6572	-118.43658	35.65718	-118.4368	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.6572	-118.43658	35.65718	-118.4368	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.6572	-118.43658	35.65718	-118.4368	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.6572	-118.43658	35.65718	-118.4368	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.6572	-118.43658	35.65718	-118.4368	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656895	-118.43979	35.6569	-118.4397	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656895	-118.43979	35.6569	-118.4397	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**

CA-178	35.656895	-118.43979	35.6569	-118.4397	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656895	-118.43979	35.6569	-118.4397	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656895	-118.43979	35.6569	-118.4397	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656895	-118.43979	35.6569	-118.4397	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65689	-118.4398	31.0%	1.8%	48.6%	60.6%	71.8%	**61.8%**	**5**
CA-178	35.689508	-118.23354	35.68953	-118.2335	24.0%	0.7%	18.2%	60.6%	70.7%	**48.3%**	**6**
CA-178	35.689508	-118.23354	35.68953	-118.2335	24.0%	0.7%	18.2%	60.6%	70.7%	**48.3%**	**6**
CA-178	35.684345	-118.24499	35.68951	-118.2335	24.0%	0.7%	18.2%	60.6%	70.7%	**48.3%**	**6**
CA-178	35.684345	-118.24499	35.68951	-118.2335	24.0%	0.7%	18.2%	60.6%	70.7%	**48.3%**	**6**
CA-178	35.696275	-118.21521	35.69627	-118.2109	24.0%	0.7%	16.4%	60.6%	70.7%	**47.7%**	**6**
CA-178	35.696275	-118.21521	35.69627	-118.2109	24.0%	0.7%	16.4%	60.6%	70.7%	**47.7%**	**6**
CA-178	35.669907	-118.26285	35.66991	-118.2628	24.0%	0.7%	19.8%	60.6%	70.7%	**48.9%**	**6**
CA-178	35.669907	-118.26285	35.66991	-118.2628	24.0%	0.7%	19.8%	60.6%	70.7%	**48.9%**	**6**
CA-178	35.667215	-118.26763	35.66991	-118.2629	24.0%	0.7%	19.8%	60.6%	70.7%	**48.9%**	**6**
CA-178	35.667215	-118.26763	35.66991	-118.2629	24.0%	0.7%	19.8%	60.6%	70.7%	**48.9%**	**6**
SIERRA WAY	35.753145	-118.41552	35.75359	-118.4158	23.8%	0.4%	46.4%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.753145	-118.41552	35.75359	-118.4158	23.8%	0.4%	46.4%	60.6%	70.4%	**57.6%**	**5**
BURLANDO RD	35.746607	-118.42223	35.74666	-118.4222	23.9%	0.5%	47.0%	60.6%	70.5%	**57.9%**	**5**
BURLANDO RD	35.746607	-118.42223	35.74666	-118.4222	23.9%	0.5%	47.0%	60.6%	70.5%	**57.9%**	**5**
BURLANDO RD	35.746661	-118.42221	35.74661	-118.4222	23.9%	0.5%	22.0%	60.6%	70.5%	**49.4%**	**6**
BURLANDO RD	35.746661	-118.42221	35.74661	-118.4222	23.9%	0.5%	22.0%	60.6%	70.5%	**49.4%**	**6**
SIERRA WAY	35.754325	-118.41636	35.75359	-118.4158	23.8%	0.4%	46.4%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.754325	-118.41636	35.75359	-118.4158	23.8%	0.4%	46.4%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.753936	-118.41606	35.75391	-118.416	23.8%	0.4%	21.4%	60.6%	70.4%	**49.1%**	**6**
SIERRA WAY	35.753936	-118.41606	35.75391	-118.416	23.8%	0.4%	21.4%	60.6%	70.4%	**49.1%**	**6**
SIERRA WAY	35.753145	-118.41552	35.75296	-118.4154	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.753145	-118.41552	35.75296	-118.4154	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.751666	-118.41472	35.75164	-118.4147	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.751666	-118.41472	35.75164	-118.4147	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.751666	-118.41472	35.75164	-118.4147	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.751666	-118.41472	35.75164	-118.4147	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.751666	-118.41472	35.75164	-118.4147	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.751666	-118.41472	35.75164	-118.4147	23.8%	0.4%	46.5%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.750641	-118.41418	35.75051	-118.4141	29.6%	0.4%	21.5%	60.6%	70.4%	**51.1%**	**6**
SIERRA WAY	35.750641	-118.41418	35.75051	-118.4141	29.6%	0.4%	21.5%	60.6%	70.4%	**51.1%**	**6**
SIERRA WAY	35.752961	-118.41542	35.75064	-118.4142	23.8%	0.4%	21.5%	60.6%	70.4%	**49.2%**	**6**
SIERRA WAY	35.752961	-118.41542	35.75064	-118.4142	23.8%	0.4%	21.5%	60.6%	70.4%	**49.2%**	**6**
SIERRA WAY	35.754325	-118.41636	35.75528	-118.4172	23.8%	0.4%	46.3%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.754325	-118.41636	35.75528	-118.4172	23.8%	0.4%	46.3%	60.6%	70.4%	**57.6%**	**5**
SIERRA WAY	35.755495	-118.41735	35.75528	-118.4172	23.8%	0.4%	46.2%	60.6%	70.4%	**57.5%**	**5**
SIERRA WAY	35.755495	-118.41735	35.75528	-118.4172	23.8%	0.4%	46.2%	60.6%	70.4%	**57.5%**	**5**
SIERRA WAY	35.755775	-118.41759	35.75549	-118.4173	23.8%	0.4%	46.2%	60.6%	70.4%	**57.5%**	**5**
SIERRA WAY	35.755775	-118.41759	35.75549	-118.4173	23.8%	0.4%	46.2%	60.6%	70.4%	**57.5%**	**5**
KELSO VALLEY RD	35.652985	-118.28121	35.65697	-118.288	23.9%	0.6%	20.0%	60.6%	70.6%	**48.8%**	**6**
KELSO VALLEY RD	35.652985	-118.28121	35.65697	-118.288	23.9%	0.6%	20.0%	60.6%	70.6%	**48.8%**	**6**
SIERRA WAY	35.746955	-118.41378	35.74782	-118.4139	29.6%	0.4%	46.8%	60.6%	70.4%	**59.7%**	**5**
SIERRA WAY	35.746955	-118.41378	35.74782	-118.4139	29.6%	0.4%	46.8%	60.6%	70.4%	**59.7%**	**5**
SIERRA WAY	35.746955	-118.41378	35.74782	-118.4139	29.6%	0.4%	46.8%	60.6%	70.4%	**59.7%**	**5**
SIERRA WAY	35.746955	-118.41378	35.74782	-118.4139	29.6%	0.4%	46.8%	60.6%	70.4%	**59.7%**	**5**
SIERRA WAY	35.746955	-118.41378	35.74782	-118.4139	29.6%	0.4%	46.8%	60.6%	70.4%	**59.7%**	**5**
SIERRA WAY	35.746955	-118.41378	35.74782	-118.4139	29.6%	0.4%	46.8%	60.6%	70.4%	**59.7%**	**5**
SIERRA WAY	35.747822	-118.41386	35.75051	-118.4141	29.6%	0.4%	21.8%	60.6%	70.4%	**51.2%**	**6**
SIERRA WAY	35.747822	-118.41386	35.75051	-118.4141	29.6%	0.4%	21.8%	60.6%	70.4%	**51.2%**	**6**
BURLANDO RD	35.745261	-118.42278	35.74476	-118.423	23.9%	0.5%	47.0%	60.6%	70.5%	**57.9%**	**5**
BURLANDO RD	35.745261	-118.42278	35.74476	-118.423	23.9%	0.5%	47.0%	60.6%	70.5%	**57.9%**	**5**
BURLANDO RD	35.745605	-118.4226	35.74526	-118.4228	23.9%	0.5%	22.0%	60.6%	70.5%	**49.4%**	**6**
BURLANDO RD	35.745605	-118.4226	35.74526	-118.4228	23.9%	0.5%	22.0%	60.6%	70.5%	**49.4%**	**6**
CA-178	35.684301	-118.24505	35.67898	-118.252	24.0%	0.7%	18.9%	60.6%	70.7%	**48.5%**	**6**
CA-178	35.684301	-118.24505	35.67898	-118.252	24.0%	0.7%	18.9%	60.6%	70.7%	**48.5%**	**6**
CA-178	35.684345	-118.24499	35.6843	-118.245	24.0%	0.7%	18.9%	60.6%	70.7%	**48.5%**	**6**
CA-178	35.684345	-118.24499	35.6843	-118.245	24.0%	0.7%	18.9%	60.6%	70.7%	**48.5%**	**6**

CA-178	35.669915	-118.26284	35.67334	-118.2588	24.0%	0.7%	19.5%	60.5%	70.7%	**48.8%**	**6**
CA-178	35.669915	-118.26284	35.67334	-118.2588	24.0%	0.7%	19.5%	60.5%	70.7%	**48.8%**	**6**
CA-178	35.67334	-118.25876	35.67437	-118.2575	24.0%	0.7%	19.5%	60.5%	70.7%	**48.8%**	**6**
CA-178	35.67334	-118.25876	35.67437	-118.2575	24.0%	0.7%	19.5%	60.5%	70.7%	**48.8%**	**6**
BURLANDO RD	35.744765	-118.42304	35.74415	-118.4234	23.9%	0.5%	47.1%	60.5%	70.5%	**57.9%**	**5**
BURLANDO RD	35.744765	-118.42304	35.74415	-118.4234	23.9%	0.5%	47.1%	60.5%	70.5%	**57.9%**	**5**
CA-178	35.678735	-118.2523	35.67898	-118.252	24.0%	0.7%	19.1%	60.5%	70.7%	**48.6%**	**6**
CA-178	35.678735	-118.2523	35.67898	-118.252	24.0%	0.7%	19.1%	60.5%	70.7%	**48.6%**	**6**
CA-178	35.677875	-118.25335	35.67874	-118.2523	24.0%	0.7%	19.1%	60.5%	70.7%	**48.6%**	**6**
CA-178	35.677875	-118.25335	35.67874	-118.2523	24.0%	0.7%	19.1%	60.5%	70.7%	**48.6%**	**6**
CA-178	35.676942	-118.25446	35.67469	-118.2572	24.0%	0.7%	19.3%	60.5%	70.7%	**48.7%**	**6**
CA-178	35.676942	-118.25446	35.67469	-118.2572	24.0%	0.7%	19.3%	60.5%	70.7%	**48.7%**	**6**
CA-178	35.677875	-118.25335	35.67437	-118.2575	24.0%	0.7%	19.3%	60.5%	70.7%	**48.7%**	**6**
CA-178	35.677875	-118.25335	35.67437	-118.2575	24.0%	0.7%	19.3%	60.5%	70.7%	**48.7%**	**6**
BURLANDO RD	35.743791	-118.42358	35.74415	-118.4234	23.9%	0.5%	47.1%	60.5%	70.5%	**57.9%**	**5**
BURLANDO RD	35.743791	-118.42358	35.74415	-118.4234	23.9%	0.5%	47.1%	60.5%	70.5%	**57.9%**	**5**
BURLANDO RD	35.742985	-118.42409	35.74379	-118.4236	23.9%	0.5%	22.1%	60.5%	70.5%	**49.5%**	**6**
BURLANDO RD	35.742985	-118.42409	35.74379	-118.4236	23.9%	0.5%	22.1%	60.5%	70.5%	**49.5%**	**6**
CA-178	35.647555	-118.36089	35.64899	-118.3585	24.2%	0.9%	16.3%	60.5%	70.9%	**47.9%**	**6**
CA-178	35.647555	-118.36089	35.64899	-118.3585	24.2%	0.9%	16.3%	60.5%	70.9%	**47.9%**	**6**
CA-155	35.692092	-118.46768	35.69124	-118.4677	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.692092	-118.46768	35.69124	-118.4677	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.688001	-118.46792	35.68737	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.688001	-118.46792	35.68737	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.686358	-118.46802	35.68597	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.686358	-118.46802	35.68597	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.691242	-118.46773	35.69096	-118.4677	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.691242	-118.46773	35.69096	-118.4677	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.691242	-118.46773	35.69096	-118.4677	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.691242	-118.46773	35.69096	-118.4677	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.690957	-118.46775	35.688	-118.4679	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.690957	-118.46775	35.688	-118.4679	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.690957	-118.46775	35.688	-118.4679	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.690957	-118.46775	35.688	-118.4679	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.687374	-118.46796	35.68636	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.687374	-118.46796	35.68636	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.687374	-118.46796	35.68636	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.687374	-118.46796	35.68636	-118.468	25.2%	1.9%	49.5%	60.5%	71.9%	**60.1%**	**5**
CA-155	35.692275	-118.46767	35.69209	-118.4677	25.2%	1.9%	24.5%	60.5%	71.9%	**51.6%**	**6**
CA-155	35.692275	-118.46767	35.69209	-118.4677	25.2%	1.9%	24.5%	60.5%	71.9%	**51.6%**	**6**
SIERRA WAY	35.746955	-118.41378	35.7438	-118.4141	29.6%	0.4%	47.2%	60.5%	70.4%	**59.8%**	**5**
SIERRA WAY	35.746955	-118.41378	35.7438	-118.4141	29.6%	0.4%	47.2%	60.5%	70.4%	**59.8%**	**5**
SIERRA WAY	35.746955	-118.41378	35.7438	-118.4141	29.6%	0.4%	47.2%	60.5%	70.4%	**59.8%**	**5**
SIERRA WAY	35.746955	-118.41378	35.7438	-118.4141	29.6%	0.4%	47.2%	60.5%	70.4%	**59.8%**	**5**
SIERRA WAY	35.746955	-118.41378	35.7438	-118.4141	29.6%	0.4%	47.2%	60.5%	70.4%	**59.8%**	**5**
SIERRA WAY	35.746955	-118.41378	35.7438	-118.4141	29.6%	0.4%	47.2%	60.5%	70.4%	**59.8%**	**5**
SIERRA WAY	35.743803	-118.41411	35.7398	-118.4145	29.6%	0.4%	22.2%	60.5%	70.4%	**51.3%**	**6**
SIERRA WAY	35.743803	-118.41411	35.7398	-118.4145	29.6%	0.4%	22.2%	60.5%	70.4%	**51.3%**	**6**
SIERRA WAY	35.755775	-118.41759	35.75591	-118.4177	23.7%	0.4%	46.2%	60.5%	70.4%	**57.4%**	**5**
SIERRA WAY	35.755775	-118.41759	35.75591	-118.4177	23.7%	0.4%	46.2%	60.5%	70.4%	**57.4%**	**5**
KELSO VALLEY RD	35.652985	-118.28121	35.65246	-118.2784	23.9%	0.6%	19.9%	60.5%	70.6%	**48.7%**	**6**
KELSO VALLEY RD	35.652985	-118.28121	35.65246	-118.2784	23.9%	0.6%	19.9%	60.5%	70.6%	**48.7%**	**6**
CA-178	35.647555	-118.36089	35.64732	-118.3613	24.2%	0.9%	16.3%	60.5%	70.9%	**47.9%**	**6**
CA-178	35.647555	-118.36089	35.64732	-118.3613	24.2%	0.9%	16.3%	60.5%	70.9%	**47.9%**	**6**
SIERRA WAY	35.739805	-118.41453	35.73877	-118.4144	29.6%	0.4%	22.5%	60.5%	70.4%	**51.4%**	**6**
SIERRA WAY	35.739805	-118.41453	35.73877	-118.4144	29.6%	0.4%	22.5%	60.5%	70.4%	**51.4%**	**6**
CA-178	35.647135	-118.36158	35.64732	-118.3613	24.2%	0.9%	16.3%	60.5%	70.9%	**47.9%**	**6**
CA-178	35.647135	-118.36158	35.64732	-118.3613	24.2%	0.9%	16.3%	60.5%	70.9%	**47.9%**	**6**
BURLANDO RD	35.736595	-118.42722	35.74298	-118.4241	23.9%	0.5%	22.4%	60.5%	70.5%	**49.5%**	**6**
BURLANDO RD	35.736595	-118.42722	35.74298	-118.4241	23.9%	0.5%	22.4%	60.5%	70.5%	**49.5%**	**6**
SIERRA WAY	35.738775	-118.41443	35.73772	-118.4145	29.6%	0.4%	22.6%	60.5%	70.4%	**51.5%**	**6**
SIERRA WAY	35.738775	-118.41443	35.73772	-118.4145	29.6%	0.4%	22.6%	60.5%	70.4%	**51.5%**	**6**
SIERRA WAY	35.737595	-118.4145	35.73772	-118.4145	29.6%	0.4%	22.6%	60.5%	70.4%	**51.5%**	**6**
SIERRA WAY	35.737595	-118.4145	35.73772	-118.4145	29.6%	0.4%	22.6%	60.5%	70.4%	**51.5%**	**6**
SIERRA WAY	35.737595	-118.4145	35.73637	-118.4146	29.6%	0.4%	22.7%	60.5%	70.4%	**51.5%**	**6**
SIERRA WAY	35.737595	-118.4145	35.73637	-118.4146	29.6%	0.4%	22.7%	60.5%	70.4%	**51.5%**	**6**
SIERRA WAY	35.763495	-118.42197	35.76331	-118.4218	23.7%	0.3%	45.5%	60.5%	70.3%	**57.2%**	**5**
SIERRA WAY	35.763495	-118.42197	35.76331	-118.4218	23.7%	0.3%	45.5%	60.5%	70.3%	**57.2%**	**5**

SIERRA WAY	35.763457	-118.42194	35.76336	-118.4219	23.7%	0.3%	45.5%	60.5%	70.3%	**57.2%**	**5**
SIERRA WAY	35.763457	-118.42194	35.76336	-118.4219	23.7%	0.3%	45.5%	60.5%	70.3%	**57.2%**	**5**
SIERRA WAY	35.763457	-118.42194	35.76336	-118.4219	23.7%	0.3%	45.5%	60.5%	70.3%	**57.2%**	**5**
SIERRA WAY	35.763457	-118.42194	35.76336	-118.4219	23.7%	0.3%	45.5%	60.5%	70.3%	**57.2%**	**5**
SIERRA WAY	35.763315	-118.42185	35.76297	-118.4216	23.7%	0.3%	45.6%	60.5%	70.3%	**57.2%**	**5**
SIERRA WAY	35.763315	-118.42185	35.76297	-118.4216	23.7%	0.3%	45.6%	60.5%	70.3%	**57.2%**	**5**
SIERRA WAY	35.763495	-118.42197	35.76436	-118.4226	23.7%	0.3%	45.5%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.763495	-118.42197	35.76436	-118.4226	23.7%	0.3%	45.5%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.766495	-118.42454	35.76436	-118.4226	23.7%	0.3%	45.4%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.766495	-118.42454	35.76436	-118.4226	23.7%	0.3%	45.4%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.765838	-118.42395	35.76549	-118.4236	23.7%	0.3%	45.4%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.765838	-118.42395	35.76549	-118.4236	23.7%	0.3%	45.4%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.765838	-118.42395	35.76549	-118.4236	23.7%	0.3%	45.4%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.765838	-118.42395	35.76549	-118.4236	23.7%	0.3%	45.4%	60.5%	70.3%	**57.1%**	**5**
SIERRA WAY	35.766387	-118.42444	35.76584	-118.424	23.7%	0.3%	20.4%	60.5%	70.3%	**48.6%**	**6**
SIERRA WAY	35.766387	-118.42444	35.76584	-118.424	23.7%	0.3%	20.4%	60.5%	70.3%	**48.6%**	**6**
SIERRA WAY	35.736375	-118.41461	35.73603	-118.4146	29.6%	0.4%	22.7%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.736375	-118.41461	35.73603	-118.4146	29.6%	0.4%	22.7%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.762488	-118.42138	35.75984	-118.4202	23.7%	0.3%	45.7%	60.4%	70.3%	**57.2%**	**5**
SIERRA WAY	35.762488	-118.42138	35.75984	-118.4202	23.7%	0.3%	45.7%	60.4%	70.3%	**57.2%**	**5**
SIERRA WAY	35.759835	-118.42018	35.76249	-118.4214	23.7%	0.3%	20.7%	60.4%	70.3%	**48.8%**	**6**
SIERRA WAY	35.759835	-118.42018	35.76249	-118.4214	23.7%	0.3%	20.7%	60.4%	70.3%	**48.8%**	**6**
SIERRA WAY	35.767042	-118.42586	35.76649	-118.4245	23.7%	0.3%	45.3%	60.4%	70.3%	**57.1%**	**5**
SIERRA WAY	35.767042	-118.42586	35.76649	-118.4245	23.7%	0.3%	45.3%	60.4%	70.3%	**57.1%**	**5**
SIERRA WAY	35.767365	-118.42665	35.76704	-118.4259	23.7%	0.3%	20.3%	60.4%	70.3%	**48.6%**	**6**
SIERRA WAY	35.767365	-118.42665	35.76704	-118.4259	23.7%	0.3%	20.3%	60.4%	70.3%	**48.6%**	**6**
SIERRA WAY	35.755915	-118.4177	35.75616	-118.4179	23.7%	0.3%	46.1%	60.4%	70.3%	**57.3%**	**5**
SIERRA WAY	35.755915	-118.4177	35.75616	-118.4179	23.7%	0.3%	46.1%	60.4%	70.3%	**57.3%**	**5**
SIERRA WAY	35.756955	-118.41855	35.75616	-118.4179	23.7%	0.3%	46.1%	60.4%	70.3%	**57.3%**	**5**
SIERRA WAY	35.756955	-118.41855	35.75616	-118.4179	23.7%	0.3%	46.1%	60.4%	70.3%	**57.3%**	**5**
SIERRA WAY	35.758255	-118.41947	35.75695	-118.4185	23.7%	0.3%	46.0%	60.4%	70.3%	**57.3%**	**5**
SIERRA WAY	35.758255	-118.41947	35.75695	-118.4185	23.7%	0.3%	46.0%	60.4%	70.3%	**57.3%**	**5**
SIERRA WAY	35.734725	-118.41523	35.73603	-118.4146	29.6%	0.4%	22.8%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.734725	-118.41523	35.73603	-118.4146	29.6%	0.4%	22.8%	60.4%	70.4%	**51.5%**	**6**
KELSO VALLEY RD	35.651595	-118.27582	35.65246	-118.2784	23.9%	0.6%	19.5%	60.4%	70.6%	**48.6%**	**6**
KELSO VALLEY RD	35.651595	-118.27582	35.65246	-118.2784	23.9%	0.6%	19.5%	60.4%	70.6%	**48.6%**	**6**
CA-178	35.645635	-118.36401	35.64589	-118.3636	30.1%	0.9%	16.4%	60.4%	70.9%	**49.8%**	**6**
CA-178	35.645635	-118.36401	35.64589	-118.3636	30.1%	0.9%	16.4%	60.4%	70.9%	**49.8%**	**6**
CA-178	35.645893	-118.36359	35.64713	-118.3616	24.2%	0.9%	16.4%	60.4%	70.9%	**47.9%**	**6**
CA-178	35.645893	-118.36359	35.64713	-118.3616	24.2%	0.9%	16.4%	60.4%	70.9%	**47.9%**	**6**
SIERRA WAY	35.734305	-118.41562	35.73472	-118.4152	29.6%	0.4%	22.8%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.734305	-118.41562	35.73472	-118.4152	29.6%	0.4%	22.8%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.733835	-118.41606	35.7343	-118.4156	29.6%	0.4%	22.9%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.733835	-118.41606	35.7343	-118.4156	29.6%	0.4%	22.9%	60.4%	70.4%	**51.5%**	**6**
BURLANDO RD	35.736595	-118.42722	35.73586	-118.4273	23.9%	0.5%	22.6%	60.4%	70.5%	**49.6%**	**6**
BURLANDO RD	35.736595	-118.42722	35.73586	-118.4273	23.9%	0.5%	22.6%	60.4%	70.5%	**49.6%**	**6**
SIERRA WAY	35.733375	-118.41652	35.73383	-118.4161	29.6%	0.4%	22.9%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.733375	-118.41652	35.73383	-118.4161	29.6%	0.4%	22.9%	60.4%	70.4%	**51.5%**	**6**
CA-178	35.656793	-118.4423	35.6567	-118.4459	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656793	-118.4423	35.6567	-118.4459	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656791	-118.4424	35.65672	-118.4451	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656791	-118.4424	35.65672	-118.4451	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656791	-118.4424	35.65672	-118.4451	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656791	-118.4424	35.65672	-118.4451	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656699	-118.44593	35.6567	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656699	-118.44593	35.6567	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656699	-118.44593	35.6567	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656699	-118.44593	35.6567	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656834	-118.44074	35.65679	-118.4423	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656834	-118.44074	35.65679	-118.4423	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656834	-118.44074	35.65679	-118.4423	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656834	-118.44074	35.65679	-118.4423	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656841	-118.44046	35.65683	-118.4407	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656841	-118.44046	35.65683	-118.4407	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656841	-118.44046	35.65683	-118.4407	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656841	-118.44046	35.65683	-118.4407	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656841	-118.44046	35.65683	-118.4407	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656841	-118.44046	35.65683	-118.4407	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**

CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656844	-118.44036	35.65684	-118.4405	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
CA-178	35.656845	-118.44031	35.65684	-118.4404	31.0%	1.8%	48.9%	60.4%	71.8%	**61.8%**	**5**
SIERRA WAY	35.733375	-118.41652	35.73303	-118.4168	29.6%	0.4%	22.9%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.733375	-118.41652	35.73303	-118.4168	29.6%	0.4%	22.9%	60.4%	70.4%	**51.5%**	**6**
SIERRA WAY	35.730715	-118.41691	35.73303	-118.4168	29.6%	0.4%	23.0%	60.4%	70.4%	**51.6%**	**6**
SIERRA WAY	35.730715	-118.41691	35.73303	-118.4168	29.6%	0.4%	23.0%	60.4%	70.4%	**51.6%**	**6**
CA-178	35.644975	-118.3651	35.64563	-118.364	30.1%	0.9%	16.4%	60.4%	70.9%	**49.8%**	**6**
CA-178	35.644975	-118.3651	35.64563	-118.364	30.1%	0.9%	16.4%	60.4%	70.9%	**49.8%**	**6**
CA-178	35.644635	-118.36565	35.64497	-118.3651	30.1%	0.9%	16.4%	60.4%	70.9%	**49.8%**	**6**
CA-178	35.644635	-118.36565	35.64497	-118.3651	30.1%	0.9%	16.4%	60.4%	70.9%	**49.8%**	**6**
KERNVILLE RD	35.755915	-118.4177	35.75579	-118.4179	23.6%	0.3%	46.0%	60.3%	70.3%	**57.2%**	**5**
KERNVILLE RD	35.75579	-118.41785	35.75571	-118.4179	23.6%	0.3%	21.0%	60.3%	70.3%	**48.8%**	**6**
KERNVILLE RD	35.755687	-118.41773	35.75577	-118.4176	23.6%	0.3%	46.1%	60.3%	70.3%	**57.2%**	**5**
KERNVILLE RD	35.755515	-118.418	35.75569	-118.4177	23.6%	0.3%	21.1%	60.3%	70.3%	**48.8%**	**6**
KELSO VALLEY RD	35.651595	-118.27582	35.64891	-118.2728	23.9%	0.6%	19.1%	60.3%	70.6%	**48.4%**	**6**
KELSO VALLEY RD	35.651595	-118.27582	35.64891	-118.2728	23.9%	0.6%	19.1%	60.3%	70.6%	**48.4%**	**6**
KERNVILLE RD	35.755715	-118.41795	35.75552	-118.4183	23.6%	0.3%	21.1%	60.3%	70.3%	**48.8%**	**6**
KERNVILLE RD	35.755385	-118.41832	35.75551	-118.418	23.6%	0.3%	21.1%	60.3%	70.3%	**48.8%**	**6**
CA-178	35.644635	-118.36565	35.6445	-118.3658	30.1%	0.9%	16.4%	60.3%	70.9%	**49.8%**	**6**
CA-178	35.644635	-118.36565	35.6445	-118.3658	30.1%	0.9%	16.4%	60.3%	70.9%	**49.8%**	**6**
KERNVILLE RD	35.755525	-118.41834	35.75539	-118.4193	23.6%	0.3%	21.1%	60.3%	70.3%	**48.8%**	**6**
KERNVILLE RD	35.755255	-118.41931	35.75538	-118.4183	23.6%	0.3%	21.1%	60.3%	70.3%	**48.8%**	**6**
SIERRA WAY	35.730715	-118.41691	35.72162	-118.4167	29.6%	0.4%	23.4%	60.3%	70.4%	**51.7%**	**6**
SIERRA WAY	35.730715	-118.41691	35.72162	-118.4167	29.6%	0.4%	23.4%	60.3%	70.4%	**51.7%**	**6**
BURLANDO RD	35.733832	-118.42819	35.72689	-118.4311	23.9%	0.5%	47.9%	60.3%	70.5%	**58.1%**	**5**
BURLANDO RD	35.733832	-118.42819	35.72689	-118.4311	23.9%	0.5%	47.9%	60.3%	70.5%	**58.1%**	**5**
BURLANDO RD	35.735865	-118.42734	35.72623	-118.4314	23.9%	0.5%	22.9%	60.3%	70.5%	**49.6%**	**6**
BURLANDO RD	35.735865	-118.42734	35.72623	-118.4314	23.9%	0.5%	22.9%	60.3%	70.5%	**49.6%**	**6**
KERNVILLE RD	35.755395	-118.41931	35.75539	-118.4203	23.6%	0.3%	21.1%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755255	-118.42025	35.75525	-118.4193	23.6%	0.3%	21.1%	60.3%	70.3%	**48.8%**	**6**
CA-178	35.644505	-118.36585	35.64382	-118.367	30.1%	0.9%	16.5%	60.3%	70.9%	**49.8%**	**6**
CA-178	35.644505	-118.36585	35.64382	-118.367	30.1%	0.9%	16.5%	60.3%	70.9%	**49.8%**	**6**
CA-178	35.696275	-118.2109	35.69599	-118.1931	24.0%	0.7%	16.0%	60.3%	70.7%	**47.5%**	**6**
CA-178	35.696275	-118.2109	35.69599	-118.1931	24.0%	0.7%	16.0%	60.3%	70.7%	**47.5%**	**6**
KERNVILLE RD	35.755395	-118.42028	35.75539	-118.4207	23.6%	0.3%	21.1%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755255	-118.42065	35.75525	-118.4202	23.6%	0.3%	21.1%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755325	-118.42125	35.75525	-118.4206	23.6%	0.3%	21.1%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755395	-118.42071	35.75532	-118.4212	23.6%	0.3%	21.1%	60.3%	70.3%	**48.7%**	**6**
SIERRA WAY	35.721435	-118.41673	35.72162	-118.4167	29.6%	0.4%	23.8%	60.3%	70.4%	**51.8%**	**6**
SIERRA WAY	35.721435	-118.41673	35.72162	-118.4167	29.6%	0.4%	23.8%	60.3%	70.4%	**51.8%**	**6**
SIERRA WAY	35.720755	-118.41676	35.72143	-118.4167	29.6%	0.4%	23.8%	60.3%	70.4%	**51.8%**	**6**
SIERRA WAY	35.720755	-118.41676	35.72143	-118.4167	29.6%	0.4%	23.8%	60.3%	70.4%	**51.8%**	**6**
CA-178	35.643825	-118.36698	35.64334	-118.3678	30.1%	0.9%	16.5%	60.3%	70.9%	**49.8%**	**6**
CA-178	35.643825	-118.36698	35.64334	-118.3678	30.1%	0.9%	16.5%	60.3%	70.9%	**49.8%**	**6**
CA-155	35.683795	-118.46878	35.68013	-118.47	25.2%	1.9%	49.7%	60.3%	71.9%	**60.1%**	**5**
CA-155	35.683795	-118.46878	35.68013	-118.47	25.2%	1.9%	49.7%	60.3%	71.9%	**60.1%**	**5**
CA-155	35.680126	-118.47002	35.6838	-118.4688	25.2%	1.9%	49.7%	60.3%	71.9%	**60.1%**	**5**
CA-155	35.680126	-118.47002	35.6838	-118.4688	25.2%	1.9%	49.7%	60.3%	71.9%	**60.1%**	**5**
CA-155	35.680126	-118.47002	35.6838	-118.4688	25.2%	1.9%	49.7%	60.3%	71.9%	**60.1%**	**5**
CA-155	35.680126	-118.47002	35.6838	-118.4688	25.2%	1.9%	49.7%	60.3%	71.9%	**60.1%**	**5**

KERNVILLE RD	35.755265	-118.42405	35.75533	-118.4237	23.6%	0.3%	21.0%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755335	-118.42366	35.75532	-118.424	23.6%	0.3%	21.0%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755185	-118.42433	35.75526	-118.424	23.6%	0.3%	21.0%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755325	-118.42405	35.75523	-118.4244	23.6%	0.3%	21.0%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.754725	-118.42507	35.75518	-118.4243	23.6%	0.3%	21.0%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.755235	-118.4244	35.75477	-118.4252	23.6%	0.3%	21.0%	60.3%	70.3%	**48.7%**	**6**
KERNVILLE RD	35.753905	-118.42545	35.75472	-118.4251	23.6%	0.3%	21.1%	60.2%	70.3%	**48.7%**	**6**
BURLANDO RD	35.724515	-118.43223	35.72458	-118.4322	23.9%	0.5%	48.2%	60.2%	70.5%	**58.2%**	**5**
BURLANDO RD	35.724515	-118.43223	35.72458	-118.4322	23.9%	0.5%	48.2%	60.2%	70.5%	**58.2%**	**5**
BURLANDO RD	35.724579	-118.4322	35.72623	-118.4314	23.9%	0.5%	23.2%	60.2%	70.5%	**49.7%**	**6**
BURLANDO RD	35.724579	-118.4322	35.72623	-118.4314	23.9%	0.5%	23.2%	60.2%	70.5%	**49.7%**	**6**
KERNVILLE RD	35.754775	-118.42517	35.75394	-118.4256	23.6%	0.3%	21.1%	60.2%	70.3%	**48.7%**	**6**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656695	-118.44607	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656692	-118.44608	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656692	-118.44608	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656692	-118.44608	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656692	-118.44608	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656692	-118.44608	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656692	-118.44608	35.65669	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656688	-118.4461	35.65668	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656688	-118.4461	35.65668	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656688	-118.4461	35.65668	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656688	-118.4461	35.65668	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656688	-118.4461	35.65668	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656688	-118.4461	35.65668	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656688	-118.4461	35.65668	-118.4461	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656021	-118.44907	35.656	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656685	-118.44611	35.65664	-118.4463	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656377	-118.44748	35.65602	-118.4491	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**

CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
CA-178	35.656637	-118.44632	35.65638	-118.4475	31.0%	1.8%	49.2%	60.2%	71.8%	**61.8%**	**5**
BURLANDO RD	35.753415	-118.42539	35.7539	-118.4254	23.6%	0.3%	21.1%	60.2%	70.3%	**48.7%**	**6**
CA-178	35.641635	-118.37053	35.64334	-118.3678	30.1%	0.9%	16.5%	60.2%	70.9%	**49.8%**	**6**
CA-178	35.641635	-118.37053	35.64334	-118.3678	30.1%	0.9%	16.5%	60.2%	70.9%	**49.8%**	**6**
BURLANDO RD	35.753945	-118.42556	35.75346	-118.4255	23.6%	0.3%	21.1%	60.2%	70.3%	**48.7%**	**6**
BURLANDO RD	35.752935	-118.42521	35.75341	-118.4254	23.6%	0.3%	21.2%	60.2%	70.3%	**48.8%**	**6**
BURLANDO RD	35.753465	-118.42552	35.75293	-118.4252	23.6%	0.3%	21.2%	60.2%	70.3%	**48.8%**	**6**
KELSO VALLEY RD	35.648915	-118.27278	35.64531	-118.2708	23.9%	0.6%	18.5%	60.2%	70.6%	**48.2%**	**6**
KELSO VALLEY RD	35.648915	-118.27278	35.64531	-118.2708	23.9%	0.6%	18.5%	60.2%	70.6%	**48.2%**	**6**
BURLANDO RD	35.721855	-118.43437	35.72451	-118.4322	23.9%	0.5%	48.3%	60.2%	70.5%	**58.2%**	**5**
BURLANDO RD	35.721855	-118.43437	35.72451	-118.4322	23.9%	0.5%	48.3%	60.2%	70.5%	**58.2%**	**5**
SIERRA WAY	35.715662	-118.41872	35.71934	-118.4173	29.6%	0.4%	48.7%	60.2%	70.4%	**60.2%**	**5**
SIERRA WAY	35.715662	-118.41872	35.71934	-118.4173	29.6%	0.4%	48.7%	60.2%	70.4%	**60.2%**	**5**
SIERRA WAY	35.709415	-118.42114	35.70959	-118.4211	29.6%	0.4%	48.7%	60.2%	70.4%	**60.2%**	**5**
SIERRA WAY	35.709415	-118.42114	35.70959	-118.4211	29.6%	0.4%	48.7%	60.2%	70.4%	**60.2%**	**5**
SIERRA WAY	35.71934	-118.4173	35.71566	-118.4187	29.6%	0.4%	23.7%	60.2%	70.4%	**51.7%**	**6**
SIERRA WAY	35.71934	-118.4173	35.71566	-118.4187	29.6%	0.4%	23.7%	60.2%	70.4%	**51.7%**	**6**
CA-178	35.641635	-118.37053	35.64073	-118.372	30.1%	0.9%	16.5%	60.2%	70.9%	**49.8%**	**6**
CA-178	35.641635	-118.37053	35.64073	-118.372	30.1%	0.9%	16.5%	60.2%	70.9%	**49.8%**	**6**
SIERRA WAY	35.671245	-118.33744	35.67157	-118.3345	23.6%	0.3%	17.8%	60.2%	70.3%	**47.6%**	**6**
SIERRA WAY	35.671245	-118.33744	35.67157	-118.3345	23.6%	0.3%	17.8%	60.2%	70.3%	**47.6%**	**6**
SIERRA WAY	35.671568	-118.33447	35.67236	-118.3272	23.6%	0.3%	17.8%	60.2%	70.3%	**47.6%**	**6**
SIERRA WAY	35.671568	-118.33447	35.67236	-118.3272	23.6%	0.3%	17.8%	60.2%	70.3%	**47.6%**	**6**
SIERRA WAY	35.673075	-118.34118	35.67159	-118.3382	23.6%	0.3%	17.4%	60.2%	70.3%	**47.5%**	**6**
SIERRA WAY	35.673075	-118.34118	35.67159	-118.3382	23.6%	0.3%	17.4%	60.2%	70.3%	**47.5%**	**6**
SIERRA WAY	35.673067	-118.34116	35.67181	-118.3387	23.6%	0.3%	17.4%	60.2%	70.3%	**47.5%**	**6**
SIERRA WAY	35.673067	-118.34116	35.67181	-118.3387	23.6%	0.3%	17.4%	60.2%	70.3%	**47.5%**	**6**
SIERRA WAY	35.671245	-118.33744	35.67159	-118.3382	23.6%	0.3%	17.4%	60.2%	70.3%	**47.5%**	**6**
SIERRA WAY	35.671245	-118.33744	35.67159	-118.3382	23.6%	0.3%	17.4%	60.2%	70.3%	**47.5%**	**6**
BURLANDO RD	35.721855	-118.43437	35.72075	-118.4358	23.9%	0.5%	48.3%	60.1%	70.5%	**58.2%**	**5**
BURLANDO RD	35.721855	-118.43437	35.72075	-118.4358	23.9%	0.5%	48.3%	60.1%	70.5%	**58.2%**	**5**
SIERRA WAY	35.661335	-118.32263	35.67236	-118.3272	23.6%	0.3%	17.7%	60.1%	70.3%	**47.6%**	**6**
SIERRA WAY	35.661335	-118.32263	35.67236	-118.3272	23.6%	0.3%	17.7%	60.1%	70.3%	**47.6%**	**6**
CA-155	35.679185	-118.47015	35.67924	-118.4701	25.2%	71.9%	49.8%	60.1%	71.9%	**83.8%**	**1**
CA-155	35.679185	-118.47015	35.67924	-118.4701	25.2%	71.9%	49.8%	60.1%	71.9%	**83.8%**	**1**
CA-155	35.679237	-118.47014	35.68002	-118.4701	25.2%	1.9%	49.8%	60.1%	71.9%	**60.1%**	**5**
CA-155	35.679237	-118.47014	35.68002	-118.4701	25.2%	1.9%	49.8%	60.1%	71.9%	**60.1%**	**5**
CA-178	35.640075	-118.37309	35.64073	-118.372	30.1%	0.9%	16.6%	60.1%	70.9%	**49.8%**	**6**
CA-178	35.640075	-118.37309	35.64073	-118.372	30.1%	0.9%	16.6%	60.1%	70.9%	**49.8%**	**6**
SIERRA WAY	35.657165	-118.32278	35.66133	-118.3226	23.6%	0.3%	17.0%	60.1%	70.3%	**47.3%**	**6**
SIERRA WAY	35.657165	-118.32278	35.66133	-118.3226	23.6%	0.3%	17.0%	60.1%	70.3%	**47.3%**	**6**
BURLANDO RD	35.719925	-118.43687	35.72075	-118.4358	23.9%	0.5%	48.4%	60.1%	70.5%	**58.2%**	**5**
BURLANDO RD	35.719925	-118.43687	35.72075	-118.4358	23.9%	0.5%	48.4%	60.1%	70.5%	**58.2%**	**5**
SIERRA WAY	35.679885	-118.37002	35.67656	-118.3559	29.4%	0.3%	18.5%	60.1%	70.3%	**49.8%**	**6**
SIERRA WAY	35.679885	-118.37002	35.67656	-118.3559	29.4%	0.3%	18.5%	60.1%	70.3%	**49.8%**	**6**
SIERRA WAY	35.676557	-118.35592	35.67307	-118.3412	23.6%	0.3%	18.5%	60.1%	70.3%	**47.8%**	**6**
SIERRA WAY	35.676557	-118.35592	35.67307	-118.3412	23.6%	0.3%	18.5%	60.1%	70.3%	**47.8%**	**6**
SIERRA WAY	35.679852	-118.36988	35.67678	-118.3569	29.4%	0.3%	18.5%	60.1%	70.3%	**49.8%**	**6**
SIERRA WAY	35.679852	-118.36988	35.67678	-118.3569	29.4%	0.3%	18.5%	60.1%	70.3%	**49.8%**	**6**
BURLANDO RD	35.719925	-118.43687	35.71902	-118.4376	23.9%	0.5%	48.4%	60.1%	70.5%	**58.2%**	**5**
BURLANDO RD	35.719925	-118.43687	35.71902	-118.4376	23.9%	0.5%	48.4%	60.1%	70.5%	**58.2%**	**5**
BURLANDO RD	35.719024	-118.43763	35.7179	-118.4386	23.9%	0.5%	48.4%	60.1%	70.5%	**58.2%**	**5**
BURLANDO RD	35.719024	-118.43763	35.7179	-118.4386	23.9%	0.5%	48.4%	60.1%	70.5%	**58.2%**	**5**
CA-178	35.695995	-118.19308	35.69675	-118.1891	24.0%	0.7%	15.7%	60.1%	70.7%	**47.3%**	**6**
CA-178	35.695995	-118.19308	35.69675	-118.1891	24.0%	0.7%	15.7%	60.1%	70.7%	**47.3%**	**6**
SIERRA WAY	35.709415	-118.42114	35.70929	-118.4212	29.6%	0.4%	48.4%	60.1%	70.4%	**60.1%**	**5**
SIERRA WAY	35.709415	-118.42114	35.70929	-118.4212	29.6%	0.4%	48.4%	60.1%	70.4%	**60.1%**	**5**
SIERRA WAY	35.709286	-118.42123	35.70887	-118.4215	29.6%	0.4%	23.4%	60.1%	70.4%	**51.6%**	**6**
SIERRA WAY	35.709286	-118.42123	35.70887	-118.4215	29.6%	0.4%	23.4%	60.1%	70.4%	**51.6%**	**6**
KELSO VALLEY RD	35.636215	-118.2655	35.64531	-118.2708	23.9%	0.6%	17.4%	60.0%	70.6%	**47.8%**	**6**
KELSO VALLEY RD	35.636215	-118.2655	35.64531	-118.2708	23.9%	0.6%	17.4%	60.0%	70.6%	**47.8%**	**6**
CA-155	35.679185	-118.47015	35.67721	-118.4706	25.2%	71.9%	49.9%	60.0%	71.9%	**83.8%**	**1**
CA-155	35.679185	-118.47015	35.67721	-118.4706	25.2%	71.9%	49.9%	60.0%	71.9%	**83.8%**	**1**
CA-155	35.677213	-118.47058	35.67449	-118.4712	25.2%	71.9%	24.9%	60.0%	71.9%	**75.3%**	**3**
CA-155	35.677213	-118.47058	35.67449	-118.4712	25.2%	71.9%	24.9%	60.0%	71.9%	**75.3%**	**3**
SIERRA WAY	35.679885	-118.37002	35.6801	-118.3711	29.4%	0.3%	19.7%	60.0%	70.3%	**50.2%**	**6**
SIERRA WAY	35.679885	-118.37002	35.6801	-118.3711	29.4%	0.3%	19.7%	60.0%	70.3%	**50.2%**	**6**

CA-178	35.655063	-118.451	35.65547	-118.4502	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655063	-118.451	35.65547	-118.4502	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.654626	-118.45186	35.65506	-118.451	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.654626	-118.45186	35.65506	-118.451	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655474	-118.45019	35.65558	-118.45	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655474	-118.45019	35.65558	-118.45	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655474	-118.45019	35.65558	-118.45	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655474	-118.45019	35.65558	-118.45	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655584	-118.44997	35.65595	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655584	-118.44997	35.65595	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655584	-118.44997	35.65595	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655584	-118.44997	35.65595	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655584	-118.44997	35.65595	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655584	-118.44997	35.65595	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655964	-118.44922	35.65599	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655949	-118.44925	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655956	-118.44923	35.65596	-118.4492	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.654345	-118.45241	35.65463	-118.4519	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.654345	-118.45241	35.65463	-118.4519	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.653546	-118.45399	35.65429	-118.4525	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.653546	-118.45399	35.65429	-118.4525	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.654293	-118.45251	35.65434	-118.4524	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.654293	-118.45251	35.65434	-118.4524	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.654293	-118.45251	35.65434	-118.4524	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.654293	-118.45251	35.65434	-118.4524	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.655987	-118.44917	35.656	-118.4491	31.0%	1.8%	49.3%	60.0%	71.8%	**61.8%**	**5**
CA-178	35.653405	-118.45427	35.65355	-118.454	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.653405	-118.45427	35.65355	-118.454	25.2%	1.8%	49.3%	60.0%	71.8%	**59.8%**	**5**
CA-178	35.699625	-118.18553	35.69675	-118.1891	24.0%	0.7%	15.7%	60.0%	70.7%	**47.3%**	**6**
CA-178	35.699625	-118.18553	35.69675	-118.1891	24.0%	0.7%	15.7%	60.0%	70.7%	**47.3%**	**6**
CA-178	35.640031	-118.37317	35.63817	-118.3769	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.640031	-118.37317	35.63817	-118.3769	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.638167	-118.37687	35.63758	-118.378	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.638167	-118.37687	35.63758	-118.378	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.638167	-118.37687	35.63758	-118.378	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.638167	-118.37687	35.63758	-118.378	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.63758	-118.37803	35.63617	-118.3808	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.63758	-118.37803	35.63617	-118.3808	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**

CA-178	35.63758	-118.37803	35.63617	-118.3808	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.63758	-118.37803	35.63617	-118.3808	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.63758	-118.37803	35.63617	-118.3808	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.63758	-118.37803	35.63617	-118.3808	30.1%	0.9%	41.6%	60.0%	70.9%	**58.2%**	**5**
CA-178	35.640075	-118.37309	35.63919	-118.3748	30.1%	0.9%	16.6%	60.0%	70.9%	**49.8%**	**6**
CA-178	35.640075	-118.37309	35.63919	-118.3748	30.1%	0.9%	16.6%	60.0%	70.9%	**49.8%**	**6**
SIERRA WAY	35.706304	-118.4223	35.70855	-118.4216	29.6%	0.4%	48.3%	60.0%	70.4%	**60.0%**	**5**
SIERRA WAY	35.706304	-118.4223	35.70855	-118.4216	29.6%	0.4%	48.3%	60.0%	70.4%	**60.0%**	**5**
SIERRA WAY	35.70855	-118.42163	35.7063	-118.4223	29.6%	0.4%	23.3%	60.0%	70.4%	**51.5%**	**6**
SIERRA WAY	35.70855	-118.42163	35.7063	-118.4223	29.6%	0.4%	23.3%	60.0%	70.4%	**51.5%**	**6**
CA-178	35.70021	-118.18494	35.70255	-118.1826	24.0%	0.7%	15.8%	60.0%	70.7%	**47.3%**	**6**
CA-178	35.70021	-118.18494	35.70255	-118.1826	24.0%	0.7%	15.8%	60.0%	70.7%	**47.3%**	**6**
CA-178	35.699625	-118.18553	35.70021	-118.1849	24.0%	0.7%	15.8%	60.0%	70.7%	**47.3%**	**6**
CA-178	35.699625	-118.18553	35.70021	-118.1849	24.0%	0.7%	15.8%	60.0%	70.7%	**47.3%**	**6**
WOFFORD BLVD	35.706765	-118.45652	35.70506	-118.4575	24.3%	0.9%	23.3%	60.0%	70.9%	**50.1%**	**6**
CA-178	35.702555	-118.18258	35.70315	-118.1821	24.0%	0.7%	15.8%	60.0%	70.7%	**47.3%**	**6**
CA-178	35.702555	-118.18258	35.70315	-118.1821	24.0%	0.7%	15.8%	60.0%	70.7%	**47.3%**	**6**
WOFFORD BLVD	35.704945	-118.45743	35.70674	-118.4564	24.3%	0.9%	23.3%	60.0%	70.9%	**50.1%**	**6**
CA-178	35.703155	-118.18213	35.70482	-118.1808	24.0%	0.7%	15.9%	60.0%	70.7%	**47.3%**	**6**
CA-178	35.703155	-118.18213	35.70482	-118.1808	24.0%	0.7%	15.9%	60.0%	70.7%	**47.3%**	**6**
BURLANDO RD	35.712881	-118.44173	35.71648	-118.4395	23.9%	0.5%	48.3%	60.0%	70.5%	**58.1%**	**5**
BURLANDO RD	35.712881	-118.44173	35.71648	-118.4395	23.9%	0.5%	48.3%	60.0%	70.5%	**58.1%**	**5**
BURLANDO RD	35.716876	-118.43922	35.7179	-118.4386	23.9%	0.5%	48.3%	60.0%	70.5%	**58.1%**	**5**
BURLANDO RD	35.716876	-118.43922	35.7179	-118.4386	23.9%	0.5%	48.3%	60.0%	70.5%	**58.1%**	**5**
BURLANDO RD	35.716481	-118.43947	35.71288	-118.4417	23.9%	0.5%	23.3%	60.0%	70.5%	**49.7%**	**6**
BURLANDO RD	35.716481	-118.43947	35.71288	-118.4417	23.9%	0.5%	23.3%	60.0%	70.5%	**49.7%**	**6**

Appendix Table F: Top Roads by Riverine Flooding Risk

Route	Begin Latitude	Begin Longitude	End Latitude	End Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
CA-99	35.377007	-119.04429	35.37136	-119.0433	52.1%	28.7%	28.7%	43.1%	98.7%	**73.7%**	**3**
CA-99	35.378405	-119.04454	35.37701	-119.0443	46.2%	28.7%	28.7%	43.1%	98.7%	**71.6%**	**4**
CA-99	35.379066	-119.04454	35.37841	-119.0445	46.2%	28.7%	28.7%	42.9%	98.7%	**71.6%**	**4**
CA-99	35.379575	-119.04455	35.37907	-119.0445	46.2%	28.7%	28.7%	42.9%	98.7%	**71.6%**	**4**
CA-99	35.373769	-119.04345	35.37367	-119.0434	51.3%	28.0%	28.0%	42.1%	98.0%	**72.3%**	**4**
CA-99	35.377019	-119.04405	35.37842	-119.0443	45.5%	28.0%	28.0%	42.1%	98.0%	**70.3%**	**4**
CA-99	35.410235	-119.05278	35.40641	-119.0485	44.7%	27.2%	43.1%	39.5%	97.2%	**73.8%**	**3**
CA-99	35.406611	-119.04837	35.40681	-119.0486	44.2%	26.7%	42.7%	39.0%	96.7%	**73.0%**	**3**
CA-99	35.40681	-119.04858	35.41041	-119.0526	44.2%	26.7%	42.7%	38.9%	96.7%	**73.0%**	**3**
CA-99	35.410405	-119.05261	35.41099	-119.0533	44.2%	26.7%	42.7%	38.9%	96.7%	**73.0%**	**3**
CA-99	35.369525	-119.04222	35.37136	-119.043	49.4%	26.1%	26.1%	39.7%	96.1%	**68.8%**	**4**
CA-99	35.368355	-119.04195	35.36833	-119.0419	47.9%	24.6%	24.6%	37.9%	94.6%	**66.1%**	**4**
CA-99	35.369375	-119.0424	35.36836	-119.0419	47.9%	24.6%	24.6%	37.8%	94.6%	**66.0%**	**4**
CA-99	35.371355	-119.04328	35.36938	-119.0424	47.9%	24.6%	24.6%	37.7%	94.6%	**66.0%**	**4**
CA-99	35.368403	-119.04171	35.3684	-119.0417	47.4%	24.1%	24.1%	37.2%	94.1%	**65.1%**	**4**
CA-99	35.368405	-119.04171	35.36953	-119.0422	47.4%	24.1%	24.1%	37.2%	94.1%	**65.1%**	**4**
CA-99	35.380085	-119.04456	35.37958	-119.0445	40.7%	23.2%	23.2%	35.5%	93.2%	**61.3%**	**4**
CA-99	35.382485	-119.04459	35.38009	-119.0446	40.7%	23.2%	23.2%	35.4%	93.2%	**61.2%**	**4**
CA-99	35.389485	-119.04468	35.3875	-119.0446	39.8%	22.3%	22.3%	34.0%	92.3%	**59.5%**	**5**
CA-99	35.394225	-119.04477	35.38949	-119.0447	39.8%	22.3%	22.3%	33.8%	92.3%	**59.5%**	**5**
CA-99	35.379235	-119.04431	35.37963	-119.0443	39.5%	22.0%	22.0%	33.9%	92.0%	**59.0%**	**5**
CA-99	35.378415	-119.04431	35.37924	-119.0443	39.5%	22.0%	22.0%	33.9%	92.0%	**59.0%**	**5**
CA-99	35.379625	-119.04432	35.38037	-119.0443	39.5%	22.0%	22.0%	33.9%	92.0%	**59.0%**	**5**
CA-99	35.380365	-119.04434	35.38251	-119.0443	39.5%	22.0%	22.0%	33.8%	92.0%	**59.0%**	**5**
CA-99	35.389485	-119.04443	35.39419	-119.0445	39.1%	21.6%	21.6%	32.8%	91.6%	**58.1%**	**5**
TRUXTUN AVE	35.372965	-119.04746	35.37285	-119.0514	44.1%	20.7%	20.7%	32.4%	90.7%	**58.8%**	**5**
TRUXTUN AVE	35.372965	-119.04746	35.37285	-119.0514	44.1%	20.7%	20.7%	32.4%	90.7%	**58.8%**	**5**
TRUXTUN AVE	35.372195	-119.05444	35.37285	-119.0514	44.1%	20.7%	20.7%	32.3%	90.7%	**58.7%**	**5**
TRUXTUN AVE	35.372195	-119.05444	35.37285	-119.0514	44.1%	20.7%	20.7%	32.3%	90.7%	**58.7%**	**5**
CA-99	35.383055	-119.0446	35.38249	-119.0446	38.2%	20.7%	20.7%	32.0%	90.7%	**56.6%**	**5**
CA-99	35.387495	-119.04464	35.38306	-119.0446	38.2%	20.7%	20.7%	31.9%	90.7%	**56.5%**	**5**
CA-99	35.418568	-119.05986	35.41528	-119.0584	38.0%	20.5%	36.5%	30.6%	90.5%	**61.3%**	**4**
24TH ST	35.381065	-119.03608	35.38106	-119.0351	38.0%	20.5%	20.5%	32.0%	90.5%	**56.2%**	**5**
24TH ST	35.381065	-119.03608	35.38106	-119.0351	38.0%	20.5%	20.5%	32.0%	90.5%	**56.2%**	**5**
24TH ST	35.381065	-119.03627	35.38107	-119.0361	38.0%	20.5%	20.5%	32.0%	90.5%	**56.2%**	**5**
24TH ST	35.381065	-119.03627	35.38107	-119.0361	38.0%	20.5%	20.5%	32.0%	90.5%	**56.2%**	**5**
CA-99	35.415525	-119.05834	35.41713	-119.059	37.9%	20.4%	36.4%	30.5%	90.4%	**61.2%**	**4**
CA-99	35.413955	-119.05664	35.41553	-119.0583	37.9%	20.4%	36.4%	30.5%	90.4%	**61.2%**	**4**
CA-99	35.382505	-119.04435	35.38303	-119.0444	37.6%	20.1%	20.1%	31.3%	90.1%	**55.5%**	**5**
CA-99	35.383194	-119.04436	35.38319	-119.0444	37.6%	20.1%	20.1%	31.2%	90.1%	**55.4%**	**5**
CA-99	35.387475	-119.04442	35.38949	-119.0444	37.6%	20.1%	20.1%	31.0%	90.1%	**55.4%**	**5**
24TH ST	35.381055	-119.03278	35.38105	-119.0316	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
24TH ST	35.381055	-119.03278	35.38105	-119.0316	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
24TH ST	35.381055	-119.03386	35.38106	-119.0328	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
24TH ST	35.381055	-119.03386	35.38106	-119.0328	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
24TH ST	35.381055	-119.03386	35.38106	-119.0339	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
24TH ST	35.381055	-119.03386	35.38106	-119.0339	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
24TH ST	35.381055	-119.03511	35.38106	-119.0339	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
24TH ST	35.381055	-119.03511	35.38106	-119.0339	37.4%	19.9%	19.9%	31.3%	89.9%	**55.2%**	**5**
CA-99	35.410835	-119.05345	35.41024	-119.0528	37.2%	19.7%	35.7%	29.6%	89.7%	**59.9%**	**5**
CA-99	35.412375	-119.05522	35.41084	-119.0534	37.2%	19.7%	35.7%	29.6%	89.7%	**59.9%**	**5**
CA-99	35.410985	-119.05326	35.41219	-119.0546	37.1%	19.6%	35.5%	29.4%	89.6%	**59.6%**	**5**
CA-99	35.412265	-119.05474	35.41227	-119.0547	37.1%	19.6%	35.5%	29.4%	89.6%	**59.6%**	**5**
CA-99	35.412375	-119.05486	35.41245	-119.0549	37.1%	19.6%	35.5%	29.4%	89.6%	**59.6%**	**5**
CA-99	35.412445	-119.05494	35.41396	-119.0566	37.1%	19.6%	35.5%	29.3%	89.6%	**59.6%**	**5**
24TH ST	35.381035	-119.02813	35.38104	-119.0279	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**
24TH ST	35.381035	-119.02813	35.38104	-119.0279	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**
24TH ST	35.381035	-119.02813	35.38104	-119.0285	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**
24TH ST	35.381035	-119.02813	35.38104	-119.0285	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**
24TH ST	35.381045	-119.02929	35.38104	-119.0285	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**
24TH ST	35.381045	-119.02929	35.38104	-119.0285	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**
24TH ST	35.381045	-119.03044	35.38105	-119.0293	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**

24TH ST	35.381045	-119.03044	35.38105	-119.0293	36.6%	19.1%	30.0%	30.3%	89.1%	**57.5%**	**5**
24TH ST	35.381045	-119.03161	35.38105	-119.0304	36.6%	19.1%	19.1%	30.2%	89.1%	**53.7%**	**5**
24TH ST	35.381045	-119.03161	35.38105	-119.0304	36.6%	19.1%	19.1%	30.2%	89.1%	**53.7%**	**5**
CA-99	35.494475	-119.15734	35.49603	-119.1593	36.6%	19.1%	19.1%	35.5%	89.1%	**55.5%**	**5**
CA-99	35.496029	-119.15931	35.49655	-119.16	36.6%	19.1%	19.1%	35.5%	89.1%	**55.5%**	**5**
CA-99	35.471742	-119.12635	35.49448	-119.1573	36.6%	19.1%	19.1%	33.4%	89.1%	**54.8%**	**5**
CA-99	35.467919	-119.12144	35.47174	-119.1263	36.6%	19.1%	35.5%	31.2%	89.1%	**59.7%**	**5**
CA-99	35.449455	-119.09765	35.44953	-119.0977	36.6%	19.1%	35.1%	29.9%	89.1%	**59.1%**	**5**
CA-99	35.449528	-119.09774	35.46792	-119.1214	36.6%	19.1%	35.1%	29.9%	89.1%	**59.1%**	**5**
CA-99	35.446295	-119.09335	35.44946	-119.0976	36.6%	19.1%	35.1%	28.7%	89.1%	**58.7%**	**5**
CA-99	35.443415	-119.0873	35.4463	-119.0933	36.6%	19.1%	35.1%	28.6%	89.1%	**58.7%**	**5**
CA-99	35.497405	-119.16116	35.49644	-119.1601	36.4%	18.9%	18.9%	35.6%	88.9%	**55.3%**	**5**
CA-99	35.495996	-119.15958	35.49432	-119.1575	36.4%	18.9%	18.9%	35.3%	88.9%	**55.2%**	**5**
CA-99	35.496435	-119.16013	35.496	-119.1596	36.4%	18.9%	18.9%	35.3%	88.9%	**55.2%**	**5**
CA-99	35.494315	-119.15747	35.47149	-119.1273	36.4%	18.9%	18.9%	33.2%	88.9%	**54.5%**	**5**
CA-99	35.471489	-119.12732	35.46762	-119.1224	36.4%	18.9%	35.3%	31.0%	88.9%	**59.5%**	**5**
CA-99	35.449221	-119.09768	35.44612	-119.0935	36.4%	18.9%	35.0%	29.6%	88.9%	**58.8%**	**5**
CA-99	35.467621	-119.12238	35.44922	-119.0977	36.4%	18.9%	35.0%	29.6%	88.9%	**58.8%**	**5**
CA-99	35.413765	-119.05679	35.41238	-119.0552	36.3%	18.8%	34.8%	28.3%	88.8%	**58.2%**	**5**
CA-99	35.415275	-119.05845	35.41377	-119.0568	36.3%	18.8%	34.8%	28.3%	88.8%	**58.2%**	**5**
BAKERSFIELD TEH	35.352325	-118.97462	35.35237	-118.974	41.6%	18.3%	29.2%	30.8%	88.3%	**58.6%**	**5**
BAKERSFIELD TEH	35.352306	-118.97548	35.35229	-118.976	41.6%	18.3%	29.2%	30.8%	88.3%	**58.6%**	**5**
CA-99	35.441394	-119.08401	35.44139	-119.084	35.5%	18.0%	34.1%	27.2%	88.0%	**56.7%**	**5**
CA-99	35.441405	-119.08403	35.44342	-119.0873	35.5%	18.0%	34.1%	27.2%	88.0%	**56.7%**	**5**
CA-99	35.394185	-119.04452	35.39853	-119.0447	35.1%	17.6%	17.6%	27.4%	87.6%	**50.6%**	**6**
CA-99	35.398893	-119.04467	35.39947	-119.0447	35.1%	17.6%	17.6%	27.3%	87.6%	**50.6%**	**6**
CA-99	35.398525	-119.04466	35.39889	-119.0447	35.1%	17.6%	17.6%	27.3%	87.6%	**50.6%**	**6**
CA-99	35.399465	-119.04469	35.39956	-119.0447	35.1%	17.6%	17.6%	27.2%	87.6%	**50.6%**	**6**
CA-99	35.399555	-119.04469	35.39967	-119.0447	35.1%	17.6%	17.6%	27.2%	87.6%	**50.6%**	**6**
CA-99	35.399665	-119.04469	35.40265	-119.0454	35.1%	17.6%	17.6%	27.2%	87.6%	**50.6%**	**6**
CA-99	35.402652	-119.0454	35.40315	-119.0455	35.1%	17.6%	17.6%	27.1%	87.6%	**50.5%**	**6**
CA-99	35.403145	-119.04547	35.40408	-119.0459	35.1%	17.6%	17.6%	27.0%	87.6%	**50.5%**	**6**
CA-99	35.40448	-119.04631	35.40632	-119.0481	35.1%	17.6%	17.6%	26.9%	87.6%	**50.5%**	**6**
CA-99	35.404084	-119.04592	35.40448	-119.0463	35.1%	17.6%	17.6%	26.9%	87.6%	**50.5%**	**6**
CA-99	35.406324	-119.04808	35.40661	-119.0484	35.1%	17.6%	33.6%	26.8%	87.6%	**56.0%**	**5**
CA-99	35.555315	-119.1972	35.55431	-119.1971	34.9%	17.4%	17.4%	39.5%	87.4%	**54.6%**	**5**
CA-99	35.554305	-119.19715	35.53357	-119.1919	34.9%	17.4%	17.4%	38.8%	87.4%	**54.3%**	**5**
CA-99	35.533545	-119.1916	35.55429	-119.1968	34.8%	17.3%	17.3%	38.6%	87.3%	**54.1%**	**5**
CA-99	35.532925	-119.19127	35.53355	-119.1916	34.8%	17.3%	17.3%	37.9%	87.3%	**53.8%**	**5**
CA-99	35.399395	-119.0449	35.39887	-119.0449	34.7%	17.2%	17.2%	26.7%	87.2%	**49.8%**	**6**
CA-99	35.398867	-119.04488	35.39423	-119.0448	34.7%	17.2%	17.2%	26.7%	87.2%	**49.8%**	**6**
CA-99	35.403265	-119.04581	35.3994	-119.0449	34.7%	17.2%	17.2%	26.5%	87.2%	**49.7%**	**6**
CA-99	35.406405	-119.04852	35.40619	-119.0483	34.7%	17.2%	17.2%	26.3%	87.2%	**49.6%**	**6**
CA-99	35.406191	-119.04833	35.40327	-119.0458	34.7%	17.2%	17.2%	26.3%	87.2%	**49.6%**	**6**
CA-99	35.526455	-119.18874	35.52588	-119.1885	34.6%	17.1%	17.1%	37.1%	87.1%	**53.3%**	**5**
CA-99	35.525875	-119.18854	35.52103	-119.1845	34.6%	17.1%	17.1%	36.8%	87.1%	**53.2%**	**5**
CA-99	35.521034	-119.18445	35.51775	-119.1814	34.6%	17.1%	17.1%	36.3%	87.1%	**53.0%**	**5**
CA-99	35.517747	-119.18143	35.50193	-119.1673	34.6%	17.1%	17.1%	35.0%	87.1%	**52.6%**	**5**
CA-99	35.533565	-119.19195	35.53286	-119.1916	34.6%	17.1%	17.1%	37.7%	87.1%	**53.5%**	**5**
CA-99	35.532855	-119.19158	35.52646	-119.1887	34.6%	17.1%	17.1%	37.4%	87.1%	**53.4%**	**5**
CA-99	35.520147	-119.18294	35.52614	-119.1883	34.5%	17.0%	17.0%	36.5%	87.0%	**52.9%**	**5**
CA-99	35.517213	-119.18037	35.52015	-119.1829	34.5%	17.0%	17.0%	36.0%	87.0%	**52.7%**	**5**
CA-99	35.502135	-119.16736	35.51721	-119.1804	34.5%	17.0%	17.0%	34.8%	87.0%	**52.3%**	**5**
CA-99	35.499765	-119.16339	35.49977	-119.1634	34.5%	17.0%	17.0%	33.6%	87.0%	**51.9%**	**5**
CA-99	35.499642	-119.16323	35.49964	-119.1632	34.5%	17.0%	17.0%	33.3%	87.0%	**51.8%**	**5**
CA-99	35.52971	-119.18984	35.52971	-119.1898	34.4%	16.9%	16.9%	37.2%	86.9%	**53.1%**	**5**
CA-99	35.526135	-119.18831	35.52657	-119.1884	34.4%	16.9%	16.9%	36.9%	86.9%	**53.0%**	**5**
CA-99	35.600065	-119.21091	35.59696	-119.2102	34.4%	16.9%	16.9%	41.0%	86.9%	**54.3%**	**5**
CA-99	35.596955	-119.21018	35.59599	-119.2099	34.4%	16.9%	16.9%	40.9%	86.9%	**54.3%**	**5**
CA-99	35.595985	-119.20994	35.56199	-119.1989	34.4%	16.9%	16.9%	40.1%	86.9%	**54.0%**	**5**
BAKERSFIELD TEH	35.352515	-118.95855	35.35247	-118.9579	40.0%	16.7%	29.4%	29.2%	86.7%	**56.4%**	**5**
BAKERSFIELD TEH	35.352695	-118.96158	35.35252	-118.9585	40.0%	16.7%	28.9%	29.1%	86.7%	**56.2%**	**5**
BAKERSFIELD TEH	35.352805	-118.96347	35.3527	-118.9616	40.0%	16.7%	28.6%	29.0%	86.7%	**56.1%**	**5**
CA-99	35.596065	-119.20959	35.59704	-119.2099	34.1%	16.6%	16.6%	40.7%	86.6%	**53.9%**	**5**
CA-99	35.561945	-119.19849	35.59607	-119.2096	34.1%	16.6%	16.6%	39.8%	86.6%	**53.6%**	**5**
CA-99	35.559555	-119.19744	35.56195	-119.1985	34.1%	16.6%	16.6%	38.8%	86.6%	**53.3%**	**5**
MOHAWK ST	35.362265	-119.06267	35.36206	-119.0622	39.6%	16.2%	16.2%	26.7%	86.2%	**50.5%**	**6**
MOHAWK ST	35.362265	-119.06267	35.36206	-119.0622	39.6%	16.2%	16.2%	26.7%	86.2%	**50.5%**	**6**

MOHAWK ST	35.362265	-119.06267	35.36303	-119.0639	39.6%	16.2%	16.2%	26.6%	86.2%	**50.5%**	**6**
MOHAWK ST	35.362265	-119.06267	35.36303	-119.0639	39.6%	16.2%	16.2%	26.6%	86.2%	**50.5%**	**6**
MOHAWK ST	35.363025	-119.06395	35.36362	-119.0646	39.6%	16.2%	16.2%	26.6%	86.2%	**50.5%**	**6**
MOHAWK ST	35.363025	-119.06395	35.36362	-119.0646	39.6%	16.2%	16.2%	26.6%	86.2%	**50.5%**	**6**
MOHAWK ST	35.364225	-119.06499	35.36362	-119.0646	39.6%	16.2%	16.2%	26.5%	86.2%	**50.5%**	**6**
MOHAWK ST	35.364225	-119.06499	35.36362	-119.0646	39.6%	16.2%	16.2%	26.5%	86.2%	**50.5%**	**6**
MOHAWK ST	35.365125	-119.06543	35.36423	-119.065	39.6%	16.2%	16.2%	26.5%	86.2%	**50.4%**	**6**
MOHAWK ST	35.365125	-119.06543	35.36423	-119.065	39.6%	16.2%	16.2%	26.5%	86.2%	**50.4%**	**6**
CA-99	35.616129	-119.21244	35.64222	-119.2188	33.6%	16.1%	16.1%	40.9%	86.1%	**53.3%**	**5**
CA-99	35.604065	-119.21154	35.61613	-119.2124	33.6%	16.1%	16.1%	40.4%	86.1%	**53.1%**	**5**
CA-99	35.603065	-119.21136	35.60407	-119.2115	33.6%	16.1%	16.1%	40.2%	86.1%	**53.0%**	**5**
CA-99	35.601938	-119.21109	35.60194	-119.2111	33.6%	16.1%	16.1%	40.1%	86.1%	**53.0%**	**5**
CA-99	35.561985	-119.19887	35.55949	-119.1978	33.6%	16.1%	16.1%	38.1%	86.1%	**52.2%**	**5**
CA-99	35.558487	-119.19763	35.55532	-119.1972	33.6%	16.1%	16.1%	37.9%	86.1%	**52.1%**	**5**
CA-99	35.559485	-119.19777	35.55849	-119.1976	33.6%	16.1%	16.1%	37.9%	86.1%	**52.1%**	**5**
CA-99	35.644645	-119.22021	35.6422	-119.2191	33.5%	16.0%	16.0%	41.1%	86.0%	**53.2%**	**5**
CA-99	35.642195	-119.21915	35.61611	-119.2127	33.5%	16.0%	16.0%	40.7%	86.0%	**53.1%**	**5**
CA-99	35.616105	-119.21274	35.60405	-119.2118	33.5%	16.0%	16.0%	40.2%	86.0%	**52.9%**	**5**
CA-99	35.604045	-119.21179	35.60295	-119.2116	33.5%	16.0%	16.0%	40.1%	86.0%	**52.9%**	**5**
CA-99	35.671775	-119.22595	35.67011	-119.2254	33.3%	15.8%	35.1%	41.9%	85.8%	**60.0%**	**5**
CA-99	35.670115	-119.2254	35.66721	-119.2247	33.3%	15.8%	35.1%	41.8%	85.8%	**59.9%**	**5**
CA-99	35.659942	-119.22306	35.6505	-119.2209	33.3%	15.8%	15.8%	41.3%	85.8%	**53.0%**	**5**
CA-99	35.667205	-119.22468	35.65994	-119.2231	33.3%	15.8%	15.8%	41.3%	85.8%	**53.0%**	**5**
CA-99	35.650495	-119.22095	35.649	-119.2208	33.3%	15.8%	15.8%	40.9%	85.8%	**52.9%**	**5**
CA-99	35.648995	-119.22085	35.64465	-119.2202	33.3%	15.8%	15.8%	40.9%	85.8%	**52.9%**	**5**
CA-99	35.55848	-119.1973	35.55848	-119.1973	33.3%	15.8%	15.8%	37.6%	85.8%	**51.7%**	**5**
CA-99	35.558489	-119.1973	35.55956	-119.1974	33.3%	15.8%	15.8%	37.6%	85.8%	**51.7%**	**5**
CA-99	35.554285	-119.19684	35.55534	-119.1969	33.3%	15.8%	15.8%	37.4%	85.8%	**51.6%**	**5**
CA-99	35.443215	-119.08742	35.44133	-119.0844	33.3%	15.8%	31.9%	24.3%	85.8%	**52.6%**	**5**
CA-99	35.446115	-119.09352	35.44322	-119.0874	33.3%	15.8%	31.9%	24.2%	85.8%	**52.6%**	**5**
CA-178	35.383664	-119.00297	35.38366	-119.003	33.3%	15.8%	26.7%	26.6%	85.8%	**51.6%**	**5**
CA-99	35.667205	-119.22444	35.67013	-119.2252	33.1%	15.6%	34.9%	41.5%	85.6%	**59.5%**	**5**
CA-99	35.650545	-119.22062	35.65994	-119.2228	33.1%	15.6%	15.6%	41.0%	85.6%	**52.6%**	**5**
CA-99	35.659942	-119.22277	35.6672	-119.2244	33.1%	15.6%	15.6%	41.0%	85.6%	**52.6%**	**5**
CA-99	35.649085	-119.22053	35.65055	-119.2206	33.1%	15.6%	15.6%	40.6%	85.6%	**52.5%**	**5**
CA-99	35.645654	-119.22002	35.64565	-119.22	33.1%	15.6%	15.6%	40.6%	85.6%	**52.4%**	**5**
CA-99	35.642215	-119.2188	35.64469	-119.2199	33.1%	15.6%	15.6%	40.5%	85.6%	**52.4%**	**5**
CA-99	35.70949	-119.2346	35.71495	-119.2359	32.9%	15.4%	34.7%	43.2%	85.4%	**59.8%**	**5**
CA-99	35.690365	-119.22989	35.70949	-119.2346	32.9%	15.4%	34.7%	43.2%	85.4%	**59.8%**	**5**
CA-99	35.689155	-119.22961	35.69036	-119.2299	32.9%	15.4%	34.7%	42.5%	85.4%	**59.6%**	**5**
CA-99	35.689105	-119.2296	35.68915	-119.2296	32.9%	15.4%	34.7%	42.5%	85.4%	**59.6%**	**5**
CA-99	35.687325	-119.22918	35.6891	-119.2296	32.9%	15.4%	34.7%	42.4%	85.4%	**59.6%**	**5**
CA-99	35.685675	-119.22883	35.68732	-119.2292	32.9%	15.4%	34.7%	42.3%	85.4%	**59.5%**	**5**
CA-99	35.501925	-119.16734	35.49975	-119.1636	32.9%	15.4%	15.4%	31.6%	85.4%	**49.0%**	**6**
CA-99	35.499745	-119.16365	35.49927	-119.163	32.9%	15.4%	15.4%	31.3%	85.4%	**48.9%**	**6**
CA-99	35.499265	-119.16301	35.49741	-119.1612	32.9%	15.4%	15.4%	31.1%	85.4%	**48.9%**	**6**
CA-99	35.497215	-119.16065	35.49913	-119.1626	32.9%	15.4%	15.4%	31.0%	85.4%	**48.8%**	**6**
CA-99	35.496545	-119.15997	35.49722	-119.1606	32.9%	15.4%	15.4%	30.8%	85.4%	**48.7%**	**6**
CA-99	35.743835	-119.24261	35.74334	-119.2425	32.8%	15.3%	31.7%	44.3%	85.3%	**59.0%**	**5**
CA-99	35.743345	-119.24246	35.72199	-119.2377	32.8%	15.3%	33.0%	44.1%	85.3%	**59.4%**	**5**
CA-99	35.601005	-119.21087	35.60138	-119.211	32.8%	15.3%	15.3%	39.0%	85.3%	**51.4%**	**5**
CA-99	35.600115	-119.21065	35.60101	-119.2109	32.8%	15.3%	15.3%	39.0%	85.3%	**51.4%**	**5**
CA-99	35.597035	-119.20994	35.60012	-119.2106	32.8%	15.3%	15.3%	38.9%	85.3%	**51.4%**	**5**
BAKERSFIELD TEH	35.352649	-118.96746	35.35264	-118.9676	38.6%	15.3%	26.6%	27.0%	85.3%	**53.2%**	**5**
CA-99	35.602945	-119.2116	35.60142	-119.2112	32.5%	15.0%	15.0%	38.7%	85.0%	**51.0%**	**5**
CA-99	35.601415	-119.21123	35.60097	-119.2111	32.5%	15.0%	15.0%	38.6%	85.0%	**51.0%**	**5**
CA-99	35.600973	-119.21112	35.60007	-119.2109	32.5%	15.0%	15.0%	38.6%	85.0%	**51.0%**	**5**
CA-99	35.718063	-119.23733	35.71805	-119.2373	32.5%	15.0%	34.1%	43.4%	85.0%	**59.2%**	**5**
CA-99	35.721995	-119.23769	35.71806	-119.2373	32.5%	15.0%	34.1%	43.4%	85.0%	**59.2%**	**5**
CA-99	35.718055	-119.23733	35.71768	-119.2373	32.5%	15.0%	34.3%	43.3%	85.0%	**59.3%**	**5**
CA-99	35.717685	-119.23726	35.7149	-119.2361	32.5%	15.0%	34.3%	43.3%	85.0%	**59.3%**	**5**
CA-99	35.714905	-119.23613	35.70947	-119.2348	32.5%	15.0%	34.3%	42.6%	85.0%	**59.0%**	**5**
CA-99	35.709467	-119.23479	35.6903	-119.2301	32.5%	15.0%	34.3%	42.6%	85.0%	**59.0%**	**5**
CA-178	35.383425	-119.00432	35.38343	-119.0029	32.4%	14.9%	25.8%	25.5%	84.9%	**50.0%**	**6**
CA-178	35.383405	-119.00516	35.38343	-119.0043	32.4%	14.9%	25.8%	25.5%	84.9%	**50.0%**	**6**
CA-99	35.676925	-119.2271	35.68012	-119.2278	32.4%	14.9%	34.1%	41.1%	84.9%	**58.3%**	**5**
CA-99	35.674442	-119.22643	35.67444	-119.2264	32.4%	14.9%	34.1%	40.8%	84.9%	**58.2%**	**5**
CA-99	35.670135	-119.22518	35.67175	-119.2257	32.4%	14.9%	34.1%	40.6%	84.9%	**58.1%**	**5**

CA-99	35.687305	-119.22937	35.68561	-119.229	32.3%	14.8%	34.0%	41.4%	84.8%	**58.3%**	**5**
CA-99	35.685615	-119.22904	35.67998	-119.228	32.3%	14.8%	34.0%	41.2%	84.8%	**58.2%**	**5**
CA-99	35.679985	-119.22801	35.67701	-119.2273	32.3%	14.8%	34.0%	40.9%	84.8%	**58.1%**	**5**
MOHAWK ST	35.365125	-119.06543	35.36527	-119.0655	38.0%	14.7%	14.7%	24.4%	84.7%	**47.5%**	**6**
MOHAWK ST	35.365125	-119.06543	35.36527	-119.0655	38.0%	14.7%	14.7%	24.4%	84.7%	**47.5%**	**6**
CA-99	35.721885	-119.2375	35.7434	-119.2423	32.0%	14.5%	32.2%	43.0%	84.5%	**58.0%**	**5**
CA-99	35.755425	-119.24752	35.75452	-119.2471	31.8%	14.3%	29.3%	43.1%	84.3%	**56.7%**	**5**
CA-99	35.754525	-119.24715	35.75008	-119.2452	31.8%	14.3%	29.6%	43.0%	84.3%	**56.8%**	**5**
CA-99	35.718063	-119.23716	35.71806	-119.2372	31.8%	14.3%	33.3%	42.4%	84.3%	**57.8%**	**5**
CA-99	35.718065	-119.23716	35.72188	-119.2375	31.8%	14.3%	33.3%	42.4%	84.3%	**57.8%**	**5**
CA-99	35.717755	-119.23708	35.71804	-119.2372	31.8%	14.3%	33.5%	42.3%	84.3%	**57.9%**	**5**
CA-99	35.714955	-119.23595	35.71775	-119.2371	31.8%	14.3%	33.5%	42.3%	84.3%	**57.9%**	**5**
CA-99	35.750115	-119.24506	35.75458	-119.247	31.6%	14.1%	29.4%	42.7%	84.1%	**56.4%**	**5**
CA-99	35.749275	-119.2447	35.75011	-119.2451	31.6%	14.1%	29.7%	42.7%	84.1%	**56.5%**	**5**
BAKERSFIELD TEH	35.352425	-118.93639	35.35243	-118.9408	37.3%	13.9%	29.6%	26.3%	83.9%	**52.6%**	**5**
BAKERSFIELD TEH	35.352405	-118.94314	35.3524	-118.9443	37.3%	13.9%	29.0%	26.2%	83.9%	**52.3%**	**5**
BAKERSFIELD TEH	35.352425	-118.94084	35.35241	-118.9431	37.3%	13.9%	29.0%	26.2%	83.9%	**52.3%**	**5**
MOHAWK ST	35.383255	-119.06549	35.38339	-119.0655	31.3%	13.8%	13.8%	22.4%	83.8%	**43.6%**	**6**
MOHAWK ST	35.383255	-119.06549	35.38339	-119.0655	31.3%	13.8%	13.8%	22.4%	83.8%	**43.6%**	**6**
CA-99	35.677015	-119.22732	35.67177	-119.2259	31.3%	13.8%	33.0%	39.4%	83.8%	**56.2%**	**5**
BAKERSFIELD TEH	35.352125	-118.94082	35.35215	-118.9369	37.1%	13.7%	29.3%	26.1%	83.7%	**52.2%**	**5**
BAKERSFIELD TEH	35.352125	-118.94088	35.35212	-118.9409	37.1%	13.7%	28.8%	25.9%	83.7%	**52.0%**	**5**
CA-99	35.690305	-119.23008	35.68914	-119.2298	30.9%	13.4%	32.7%	39.8%	83.4%	**55.8%**	**5**
CA-99	35.689136	-119.2298	35.68909	-119.2298	30.9%	13.4%	32.7%	39.8%	83.4%	**55.8%**	**5**
CA-99	35.689095	-119.22979	35.6873	-119.2294	30.9%	13.4%	32.7%	39.7%	83.4%	**55.8%**	**5**
CA-99	35.750085	-119.24524	35.7493	-119.2449	30.8%	13.3%	29.0%	41.7%	83.3%	**55.1%**	**5**
CA-99	35.746887	-119.24389	35.74383	-119.2426	30.8%	13.3%	29.3%	41.7%	83.3%	**55.2%**	**5**
CA-99	35.749305	-119.24491	35.74689	-119.2439	30.8%	13.3%	29.3%	41.7%	83.3%	**55.2%**	**5**
CA-99	35.764585	-119.2499	35.75862	-119.2485	30.8%	13.3%	27.5%	41.9%	83.3%	**54.7%**	**5**
CA-99	35.758625	-119.24853	35.75542	-119.2475	30.8%	13.3%	28.1%	41.8%	83.3%	**54.8%**	**5**
I-5	34.841915	-118.86487	34.83939	-118.8633	83.3%	29.2%	25.9%	45.7%	83.3%	**79.3%**	**3**
I-5	34.83455	-118.86535	34.8333	-118.8659	83.3%	29.2%	50.8%	45.7%	83.3%	**88.0%**	**1**
I-5	34.839385	-118.86331	34.83455	-118.8653	83.3%	29.2%	25.8%	45.7%	83.3%	**79.3%**	**3**
I-5	34.833295	-118.86588	34.8313	-118.8679	83.3%	29.2%	50.7%	45.7%	83.3%	**87.9%**	**1**
I-5	34.831295	-118.86794	34.83065	-118.8686	83.3%	29.2%	50.6%	45.6%	83.3%	**87.9%**	**1**
I-5	34.830645	-118.86863	34.82904	-118.8703	83.3%	29.2%	50.5%	45.6%	83.3%	**87.8%**	**1**
I-5	34.829035	-118.8703	34.82628	-118.8735	83.3%	29.2%	50.4%	45.5%	83.3%	**87.7%**	**1**
I-5	34.826279	-118.87353	34.82624	-118.8736	83.3%	29.2%	50.3%	45.4%	83.3%	**87.7%**	**1**
I-5	34.826236	-118.87358	34.8256	-118.8743	83.3%	29.2%	50.3%	45.4%	83.3%	**87.7%**	**1**
I-5	34.826236	-118.87358	34.8256	-118.8743	83.3%	29.2%	50.3%	45.4%	83.3%	**87.7%**	**1**
I-5	34.824699	-118.87514	34.82378	-118.876	83.3%	29.2%	50.2%	45.4%	83.3%	**87.6%**	**1**
I-5	34.825601	-118.87426	34.8247	-118.8751	83.3%	29.2%	50.2%	45.4%	83.3%	**87.6%**	**1**
I-5	34.825601	-118.87426	34.8247	-118.8751	83.3%	29.2%	50.2%	45.4%	83.3%	**87.6%**	**1**
I-5	34.82201	-118.87784	34.82171	-118.8781	83.3%	29.2%	50.0%	45.3%	83.3%	**87.6%**	**1**
I-5	34.823778	-118.87604	34.82221	-118.8776	83.3%	29.2%	50.0%	45.3%	83.3%	**87.6%**	**1**
I-5	34.822212	-118.87763	34.82201	-118.8778	83.3%	29.2%	25.0%	45.3%	83.3%	**78.8%**	**3**
I-5	34.82171	-118.87814	34.82055	-118.8793	83.3%	29.2%	49.9%	45.2%	83.3%	**87.5%**	**1**
I-5	34.844908	-118.86715	34.84192	-118.8649	83.3%	29.2%	26.1%	45.2%	83.3%	**79.2%**	**3**
I-5	34.855153	-118.87498	34.84491	-118.8672	60.0%	29.2%	26.1%	45.2%	83.3%	**71.0%**	**4**
I-5	34.844909	-118.86715	34.84491	-118.8672	60.0%	29.2%	26.1%	45.2%	83.3%	**71.0%**	**4**
I-5	34.865867	-118.88398	34.8657	-118.8838	60.0%	29.2%	51.8%	44.4%	83.3%	**79.7%**	**3**
I-5	34.865696	-118.88384	34.86286	-118.8814	60.0%	29.2%	26.8%	44.4%	83.3%	**71.0%**	**4**
I-5	34.862857	-118.88145	34.85515	-118.875	60.0%	29.2%	26.8%	44.4%	83.3%	**71.0%**	**4**
I-5	34.866724	-118.88475	34.86587	-118.884	60.0%	29.2%	52.3%	43.8%	83.3%	**79.7%**	**3**
I-5	34.871145	-118.88874	34.86672	-118.8848	60.0%	29.2%	27.3%	43.8%	83.3%	**71.0%**	**4**
I-5	34.871975	-118.88959	34.87115	-118.8887	60.0%	29.2%	27.5%	43.6%	83.3%	**71.0%**	**4**
I-5	34.873345	-118.89099	34.87198	-118.8896	60.0%	29.2%	27.6%	43.5%	83.3%	**71.0%**	**4**
I-5	34.873805	-118.89147	34.87335	-118.891	60.0%	29.2%	27.6%	43.5%	83.3%	**71.0%**	**4**
I-5	34.874035	-118.89168	34.87381	-118.8915	60.0%	29.2%	27.7%	43.5%	83.3%	**71.0%**	**4**
I-5	34.875115	-118.89282	34.87404	-118.8917	60.0%	29.2%	27.7%	43.4%	83.3%	**71.0%**	**4**
I-5	34.878018	-118.897	34.87512	-118.8928	60.0%	29.2%	27.8%	43.3%	83.3%	**71.0%**	**4**
I-5	34.895582	-118.91984	34.89329	-118.9169	60.0%	65.3%	53.9%	42.8%	83.3%	**92.5%**	**1**
I-5	34.892148	-118.91537	34.89136	-118.9143	60.0%	65.3%	53.9%	42.8%	83.3%	**92.5%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**92.5%**	**1**
I-5	34.893288	-118.91685	34.89215	-118.9154	60.0%	65.3%	53.9%	42.8%	83.3%	**92.5%**	**1**
I-5	34.881435	-118.90144	34.88053	-118.9003	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.879817	-118.89934	34.87951	-118.8989	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**

I-5	34.881652	-118.90172	34.88144	-118.9014	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.881658	-118.90173	34.88165	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.896765	-118.92138	34.89668	-118.9213	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.889945	-118.91251	34.8899	-118.9125	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.896893	-118.92154	34.89677	-118.9214	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.889905	-118.91245	34.88985	-118.9124	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.89744	-118.92225	34.89689	-118.9215	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.88985	-118.91238	34.88166	-118.9017	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.889163	-118.91149	34.88785	-118.9098	60.0%	29.2%	53.9%	42.8%	83.3%	**79.9%**	**3**
I-5	34.895912	-118.92027	34.89004	-118.9126	60.0%	65.3%	28.9%	42.8%	83.3%	**83.7%**	**1**
I-5	34.881435	-118.90144	34.87802	-118.897	60.0%	29.2%	28.9%	42.8%	83.3%	**71.1%**	**4**
I-5	34.89668	-118.92126	34.88994	-118.9125	60.0%	29.2%	28.9%	42.8%	83.3%	**71.1%**	**4**
I-5	34.90556	-118.92409	34.90539	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.905363	-118.92404	34.90307	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.899266	-118.92267	34.89919	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.912024	-118.92555	34.91028	-118.9252	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90307	-118.92352	34.90277	-118.9235	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.902758	-118.92345	34.9001	-118.9229	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90582	-118.92415	34.90556	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.905391	-118.92405	34.90536	-118.924	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.912995	-118.92577	34.91202	-118.9255	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.897581	-118.92228	34.89744	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.898398	-118.92247	34.89829	-118.9224	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.899191	-118.92265	34.8988	-118.9226	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.902771	-118.92346	34.89927	-118.9227	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.91028	-118.92515	34.90582	-118.9241	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.900744	-118.923	34.90006	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.901783	-118.92323	34.90148	-118.9232	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.90006	-118.92284	34.89987	-118.9228	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**

I-5	34.898805	-118.92256	34.89758	-118.9223	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.901482	-118.92317	34.90074	-118.923	60.0%	29.2%	56.5%	42.0%	83.3%	**80.5%**	**2**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.929617	-118.92981	34.92825	-118.9295	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914638	-118.92617	34.91409	-118.926	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914852	-118.92622	34.91481	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.920301	-118.92755	34.91987	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926124	-118.92896	34.92549	-118.9288	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.928249	-118.92948	34.92785	-118.9294	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914086	-118.92603	34.913	-118.9258	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.914813	-118.92621	34.91464	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.925489	-118.92881	34.92509	-118.9287	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.917365	-118.92683	34.91485	-118.9262	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.919874	-118.92744	34.91975	-118.9274	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.920774	-118.92766	34.9203	-118.9275	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.924445	-118.92855	34.92358	-118.9283	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926155	-118.92897	34.92612	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927845	-118.92938	34.92765	-118.9293	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.926975	-118.92917	34.92616	-118.929	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.925095	-118.92871	34.92444	-118.9286	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.919749	-118.92741	34.91737	-118.9268	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.923585	-118.92835	34.92077	-118.9277	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.927651	-118.92934	34.92698	-118.9292	60.0%	29.2%	60.4%	41.5%	83.3%	**81.7%**	**2**
I-5	34.930563	-118.92991	34.93044	-118.9299	60.0%	29.2%	64.1%	41.3%	83.3%	**82.9%**	**2**

I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**82.9%**	**2**
I-5	34.93044	-118.9299	34.92962	-118.9298	60.0%	29.2%	64.1%	41.3%	83.3%	**82.9%**	**2**
I-5	34.937458	-118.93062	34.9309	-118.9299	60.0%	65.3%	39.1%	41.3%	83.3%	**86.8%**	**1**
I-5	34.939735	-118.93085	34.93056	-118.9299	60.0%	29.2%	39.1%	41.3%	83.3%	**74.2%**	**3**
I-5	34.941535	-118.93132	34.93974	-118.9308	60.0%	29.2%	40.7%	41.2%	83.3%	**74.7%**	**3**
CA-99	35.269945	-119.02355	35.27092	-119.0238	36.6%	13.3%	13.3%	25.4%	83.3%	**45.9%**	**6**
CA-99	35.270915	-119.02381	35.27202	-119.0241	36.6%	13.3%	13.3%	25.4%	83.3%	**45.9%**	**6**
CA-99	35.272015	-119.0241	35.27402	-119.0246	36.6%	13.3%	13.3%	25.3%	83.3%	**45.9%**	**6**
CA-178	35.383058	-119.00641	35.3825	-119.0084	30.8%	13.3%	24.2%	23.2%	83.3%	**46.9%**	**6**
CA-178	35.38208	-119.00973	35.38208	-119.0097	30.8%	13.3%	24.2%	23.1%	83.3%	**46.9%**	**6**
I-5	34.892921	-118.91453	34.8932	-118.9149	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.891125	-118.9123	34.8916	-118.9129	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.893891	-118.91574	34.89177	-118.9131	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.893203	-118.91488	34.89387	-118.9157	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.896095	-118.91847	34.89806	-118.9209	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.89391	-118.91576	34.89285	-118.9144	59.9%	65.2%	53.8%	42.7%	83.2%	**92.3%**	**1**
I-5	34.8814	-118.90024	34.88144	-118.9003	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.881444	-118.90029	34.88216	-118.9012	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.88897	-118.90963	34.88921	-118.9099	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.888891	-118.90953	34.88312	-118.9024	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887878	-118.90827	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.884841	-118.90451	34.88453	-118.9041	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887698	-118.90805	34.88788	-118.9083	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.887601	-118.90793	34.8876	-118.9079	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.884532	-118.90412	34.88484	-118.9045	59.9%	29.1%	53.8%	42.7%	83.2%	**79.7%**	**3**
I-5	34.889432	-118.9102	34.88122	-118.9	59.9%	65.2%	28.8%	42.7%	83.2%	**83.6%**	**1**
I-5	34.881219	-118.90001	34.8814	-118.9002	59.9%	29.1%	28.8%	42.7%	83.2%	**71.0%**	**4**
I-5	34.889209	-118.90992	34.88943	-118.9102	59.9%	29.1%	28.8%	42.7%	83.2%	**71.0%**	**4**
I-5	34.909444	-118.92364	34.91	-118.9238	59.9%	65.2%	56.9%	41.8%	83.2%	**93.1%**	**1**
I-5	34.90767	-118.92322	34.9083	-118.9234	59.9%	65.2%	56.9%	41.8%	83.2%	**93.1%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**93.1%**	**1**
I-5	34.906537	-118.92294	34.89964	-118.9213	59.9%	65.2%	56.9%	41.8%	83.2%	**93.1%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.1%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.1%**	**1**
I-5	34.899639	-118.92129	34.90654	-118.9229	59.9%	65.2%	56.9%	41.8%	83.2%	**93.1%**	**1**
I-5	34.915507	-118.9251	34.91099	-118.924	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.910991	-118.92401	34.91176	-118.9242	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.914141	-118.92477	34.91551	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.915927	-118.9252	34.91568	-118.9251	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.911758	-118.9242	34.91414	-118.9248	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**
I-5	34.915681	-118.92514	34.91593	-118.9252	59.9%	29.1%	56.9%	41.8%	83.2%	**80.5%**	**2**

I-5	34.909999	-118.92378	34.90944	-118.9236	59.9%	65.2%	31.9%	41.8%	83.2%	**84.4%**	**1**
I-5	34.910457	-118.92389	34.91098	-118.924	59.9%	29.1%	31.9%	41.8%	83.2%	**71.8%**	**4**
I-5	34.923507	-118.92709	34.92859	-118.9284	59.9%	65.2%	60.8%	41.4%	83.2%	**94.4%**	**1**
I-5	34.923351	-118.92705	34.92351	-118.9271	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.916139	-118.92525	34.91672	-118.9254	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.923153	-118.927	34.92312	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.919441	-118.92608	34.92105	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.923118	-118.92699	34.92315	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.91672	-118.9254	34.91944	-118.9261	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.921054	-118.92648	34.92125	-118.9265	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.922773	-118.92691	34.92303	-118.927	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.921252	-118.92653	34.92141	-118.9266	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.922672	-118.92688	34.92277	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.92141	-118.92657	34.92267	-118.9269	59.9%	29.1%	60.8%	41.4%	83.2%	**81.7%**	**2**
I-5	34.928586	-118.92836	34.92985	-118.9287	59.9%	65.2%	35.8%	41.4%	83.2%	**85.6%**	**1**
I-5	34.938367	-118.92986	34.93906	-118.93	59.9%	65.2%	64.1%	41.2%	83.2%	**95.4%**	**1**
I-5	34.93927	-118.92999	34.93837	-118.9299	59.9%	65.2%	39.1%	41.2%	83.2%	**86.7%**	**1**
I-5	34.939855	-118.93007	34.94166	-118.9309	59.9%	65.2%	40.7%	41.1%	83.2%	**87.2%**	**1**
BAKERSFIELD TEH	35.352395	-118.94429	35.3524	-118.945	36.4%	13.1%	27.8%	25.0%	83.1%	**50.7%**	**6**
BAKERSFIELD TEH	35.352471	-118.94974	35.35247	-118.9497	36.4%	13.1%	27.0%	24.8%	83.1%	**50.3%**	**6**
CA-99	35.746881	-119.24369	35.74688	-119.2437	30.6%	13.1%	29.1%	41.3%	83.1%	**54.7%**	**5**
CA-99	35.746888	-119.24369	35.74927	-119.2447	30.6%	13.1%	29.1%	41.3%	83.1%	**54.7%**	**5**
CA-99	35.743405	-119.24227	35.74397	-119.2425	30.6%	13.1%	29.4%	41.3%	83.1%	**54.8%**	**5**
CA-99	35.761395	-119.24896	35.76139	-119.249	30.5%	13.0%	27.2%	41.5%	83.0%	**54.1%**	**5**
CA-99	35.755425	-119.24732	35.75857	-119.2483	30.5%	13.0%	27.8%	41.4%	83.0%	**54.2%**	**5**
CA-99	35.754585	-119.24696	35.75542	-119.2473	30.5%	13.0%	28.0%	41.3%	83.0%	**54.3%**	**5**
I-5	34.839455	-118.863	34.84203	-118.8646	83.0%	64.9%	25.6%	45.3%	83.0%	**91.3%**	**1**
I-5	34.833005	-118.86578	34.83355	-118.8655	83.0%	64.9%	50.5%	45.3%	83.0%	**100.0%**	**1**
I-5	34.833545	-118.86554	34.83474	-118.865	83.0%	28.9%	50.5%	45.3%	83.0%	**87.4%**	**1**
I-5	34.839039	-118.86318	34.83946	-118.863	83.0%	64.9%	25.5%	45.3%	83.0%	**91.3%**	**1**
I-5	34.83474	-118.86503	34.83904	-118.8632	83.0%	28.9%	25.5%	45.3%	83.0%	**78.7%**	**3**
I-5	34.832535	-118.86625	34.83301	-118.8658	83.0%	64.9%	50.4%	45.2%	83.0%	**99.9%**	**1**
I-5	34.831515	-118.8673	34.83254	-118.8662	83.0%	64.9%	50.4%	45.2%	83.0%	**99.9%**	**1**
I-5	34.831185	-118.86765	34.83152	-118.8673	83.0%	64.9%	50.3%	45.2%	83.0%	**99.9%**	**1**
I-5	34.830435	-118.86844	34.83119	-118.8676	83.0%	64.9%	50.3%	45.2%	83.0%	**99.9%**	**1**
I-5	34.828635	-118.8703	34.83044	-118.8684	83.0%	64.9%	50.2%	45.1%	83.0%	**99.8%**	**1**
I-5	34.842025	-118.86459	34.84483	-118.8666	83.0%	64.9%	25.6%	45.1%	83.0%	**91.2%**	**1**
I-5	34.844826	-118.86663	34.84483	-118.8666	83.0%	64.9%	25.6%	45.1%	83.0%	**91.2%**	**1**
I-5	34.844827	-118.86663	34.84724	-118.8684	59.6%	64.9%	25.6%	45.1%	83.0%	**83.1%**	**2**
I-5	34.844826	-118.86663	34.84483	-118.8666	59.6%	64.9%	25.6%	45.1%	83.0%	**83.1%**	**2**
I-5	34.82565	-118.87367	34.82864	-118.8703	83.0%	64.9%	50.0%	45.0%	83.0%	**99.7%**	**1**
I-5	34.82565	-118.87367	34.82565	-118.8737	83.0%	64.9%	50.0%	45.0%	83.0%	**99.7%**	**1**
I-5	34.82565	-118.87367	34.82565	-118.8737	83.0%	64.9%	50.0%	45.0%	83.0%	**99.7%**	**1**
I-5	34.824505	-118.87472	34.82511	-118.8742	83.0%	64.9%	49.9%	45.0%	83.0%	**99.7%**	**1**
I-5	34.825108	-118.87417	34.82565	-118.8737	83.0%	64.9%	49.9%	45.0%	83.0%	**99.7%**	**1**
I-5	34.825108	-118.87417	34.82565	-118.8737	83.0%	64.9%	49.9%	45.0%	83.0%	**99.7%**	**1**
I-5	34.82277	-118.87648	34.82451	-118.8747	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**

I-5	34.821546	-118.87771	34.82277	-118.8765	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.821546	-118.87771	34.82277	-118.8765	83.0%	64.9%	49.8%	44.9%	83.0%	**99.6%**	**1**
I-5	34.819866	-118.87935	34.82094	-118.8783	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.820942	-118.8783	34.82155	-118.8777	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.820942	-118.8783	34.82155	-118.8777	83.0%	64.9%	49.6%	44.8%	83.0%	**99.5%**	**1**
I-5	34.847235	-118.86839	34.85549	-118.8747	59.6%	64.9%	25.9%	44.6%	83.0%	**83.0%**	**2**
I-5	34.868233	-118.88571	34.87104	-118.8881	59.6%	64.9%	26.7%	43.8%	83.0%	**83.0%**	**2**
I-5	34.855486	-118.87474	34.85551	-118.8748	59.6%	64.9%	26.7%	43.8%	83.0%	**83.0%**	**2**
I-5	34.862897	-118.88112	34.86823	-118.8857	59.6%	28.9%	26.7%	43.8%	83.0%	**70.4%**	**4**
I-5	34.855514	-118.87477	34.8629	-118.8811	59.6%	28.9%	26.7%	43.8%	83.0%	**70.4%**	**4**
I-5	34.871045	-118.88813	34.87332	-118.8906	59.6%	64.9%	27.2%	43.2%	83.0%	**83.0%**	**2**
I-5	34.873316	-118.89057	34.8739	-118.8912	59.6%	64.9%	27.3%	43.1%	83.0%	**83.0%**	**2**
I-5	34.875111	-118.89247	34.87511	-118.8925	59.6%	64.9%	27.4%	43.0%	83.0%	**83.0%**	**2**
KNUDSEN DR	35.405655	-119.0585	35.40711	-119.0587	30.4%	12.9%	12.9%	20.2%	82.9%	**41.5%**	**6**
KNUDSEN DR	35.405655	-119.0585	35.40711	-119.0587	30.4%	12.9%	12.9%	20.2%	82.9%	**41.5%**	**6**
BAKERSFIELD TEH	35.352192	-118.94982	35.35211	-118.9454	36.2%	12.9%	26.8%	24.5%	82.9%	**49.9%**	**6**
I-5	34.875265	-118.89264	34.8756	-118.893	59.5%	64.8%	27.3%	42.8%	82.8%	**82.7%**	**2**
OAK ST	35.378205	-119.03857	35.37917	-119.0386	30.3%	12.8%	12.8%	21.8%	82.8%	**42.0%**	**6**
OAK ST	35.378205	-119.03857	35.37917	-119.0386	30.3%	12.8%	12.8%	21.8%	82.8%	**42.0%**	**6**
OAK ST	35.381005	-119.03856	35.37917	-119.0386	30.3%	12.8%	12.8%	21.7%	82.8%	**41.9%**	**6**
OAK ST	35.381005	-119.03856	35.37917	-119.0386	30.3%	12.8%	12.8%	21.7%	82.8%	**41.9%**	**6**
CA-99	35.682762	-119.22831	35.68276	-119.2283	30.3%	12.8%	32.0%	38.5%	82.8%	**54.5%**	**5**
OLIVE DR	35.412265	-119.05723	35.41227	-119.0568	30.3%	12.8%	28.7%	20.2%	82.8%	**46.9%**	**6**
KNUDSEN DR	35.412265	-119.05877	35.40855	-119.0587	30.3%	12.8%	28.7%	20.1%	82.8%	**46.9%**	**6**
KNUDSEN DR	35.412265	-119.05877	35.40855	-119.0587	30.3%	12.8%	28.7%	20.1%	82.8%	**46.9%**	**6**
I-5	34.946352	-118.93311	34.94487	-118.9325	59.3%	28.5%	41.5%	40.3%	82.6%	**74.0%**	**3**
I-5	34.947071	-118.9334	34.94635	-118.9331	47.6%	28.5%	41.5%	40.3%	82.6%	**69.9%**	**4**
I-5	34.949374	-118.93415	34.94707	-118.9334	47.6%	28.5%	42.0%	40.2%	82.6%	**70.1%**	**4**
I-5	34.953255	-118.93546	34.94937	-118.9341	47.6%	28.5%	42.8%	40.2%	82.6%	**70.3%**	**4**
I-5	34.956817	-118.93672	34.95325	-118.9355	47.6%	28.5%	43.8%	40.1%	82.6%	**70.7%**	**4**
I-5	34.959581	-118.93764	34.95682	-118.9367	47.6%	28.5%	44.5%	40.1%	82.6%	**70.9%**	**4**
I-5	34.978784	-118.94307	34.97712	-118.9426	47.6%	64.6%	46.0%	39.8%	82.6%	**84.0%**	**1**
I-5	34.966841	-118.9397	34.95958	-118.9376	47.6%	28.5%	46.0%	39.8%	82.6%	**71.4%**	**4**
I-5	34.97712	-118.9426	34.96684	-118.9397	47.6%	28.5%	46.0%	39.8%	82.6%	**71.4%**	**4**
I-5	34.944874	-118.93253	34.94153	-118.9313	59.3%	28.5%	40.7%	40.3%	82.6%	**73.7%**	**3**
OLIVE DR	35.412265	-119.05877	35.41227	-119.0572	30.1%	12.6%	28.6%	20.0%	82.6%	**46.6%**	**6**
ROSEDALE HWY	35.383194	-119.04436	35.38318	-119.0442	30.1%	12.6%	12.6%	21.2%	82.6%	**41.5%**	**6**
ROSEDALE HWY	35.383217	-119.0446	35.38322	-119.0446	30.1%	12.6%	12.6%	21.2%	82.6%	**41.5%**	**6**
I-5	34.944089	-118.93171	34.94548	-118.9321	59.2%	64.5%	41.1%	40.2%	82.6%	**86.3%**	**1**
I-5	34.953101	-118.93446	34.95346	-118.9346	47.6%	64.5%	67.3%	40.1%	82.6%	**91.4%**	**1**
I-5	34.945484	-118.93214	34.94627	-118.9324	59.2%	64.5%	42.3%	40.1%	82.6%	**86.8%**	**1**
I-5	34.953455	-118.93457	34.9531	-118.9345	47.6%	64.5%	42.3%	40.1%	82.6%	**82.7%**	**2**
I-5	34.953642	-118.93462	34.95592	-118.9353	47.6%	64.5%	43.7%	40.0%	82.6%	**83.1%**	**2**
I-5	34.955919	-118.9353	34.95962	-118.9366	47.6%	64.5%	44.4%	40.0%	82.6%	**83.4%**	**1**
I-5	34.959624	-118.93665	34.96693	-118.939	47.6%	64.5%	46.0%	39.7%	82.6%	**83.8%**	**1**
I-5	34.966932	-118.93895	34.97933	-118.9429	47.6%	64.5%	46.0%	39.7%	82.6%	**83.8%**	**1**
I-5	34.979327	-118.94287	34.98291	-118.9441	47.6%	64.5%	47.2%	39.4%	82.6%	**84.1%**	**1**
I-5	34.941657	-118.93093	34.94409	-118.9317	59.2%	64.5%	40.6%	40.2%	82.6%	**86.2%**	**1**
KNUDSEN DR	35.407105	-119.05867	35.40855	-119.0587	30.0%	12.5%	28.5%	19.8%	82.5%	**46.5%**	**6**
KNUDSEN DR	35.407105	-119.05867	35.40855	-119.0587	30.0%	12.5%	28.5%	19.8%	82.5%	**46.5%**	**6**
CA-99	35.769611	-119.25108	35.76909	-119.251	30.0%	12.5%	25.8%	41.0%	82.5%	**52.9%**	**5**
CA-99	35.274016	-119.0249	35.27087	-119.0241	35.8%	12.5%	12.5%	24.3%	82.5%	**44.4%**	**6**
I-5	34.991645	-118.94711	34.989	-118.9463	47.5%	64.4%	47.1%	38.9%	82.5%	**83.8%**	**1**
I-5	35.004125	-118.95105	34.99165	-118.9471	47.5%	64.4%	47.3%	38.6%	82.5%	**83.8%**	**1**
I-5	35.005525	-118.95147	35.00413	-118.951	47.5%	64.4%	47.4%	38.3%	82.5%	**83.7%**	**1**
I-5	35.000303	-118.94958	35.00378	-118.9507	47.4%	64.4%	72.2%	38.6%	82.4%	**92.4%**	**1**
I-5	34.991225	-118.94667	35.0003	-118.9496	47.4%	64.4%	47.2%	38.6%	82.4%	**83.7%**	**1**
I-5	35.003775	-118.9507	35.00417	-118.9508	47.4%	64.4%	72.3%	38.3%	82.4%	**92.4%**	**1**
I-5	35.004165	-118.95082	35.00472	-118.951	47.4%	64.4%	72.3%	38.3%	82.4%	**92.3%**	**1**
I-5	35.004723	-118.95099	35.00516	-118.9511	47.4%	64.4%	47.3%	38.3%	82.4%	**83.6%**	**1**
I-5	35.005155	-118.95113	35.0068	-118.9516	47.4%	64.4%	47.3%	38.2%	82.4%	**83.6%**	**1**
MOHAWK ST	35.362055	-119.0622	35.3612	-119.0601	35.6%	12.2%	12.2%	21.4%	82.2%	**43.1%**	**6**
MOHAWK ST	35.362055	-119.0622	35.3612	-119.0601	35.6%	12.2%	12.2%	21.4%	82.2%	**43.1%**	**6**
CA-99	35.769597	-119.25087	35.7696	-119.2509	29.7%	12.2%	25.5%	40.6%	82.2%	**52.3%**	**5**
CA-178	35.382365	-119.00975	35.38216	-119.0101	29.6%	12.1%	23.1%	21.6%	82.1%	**44.8%**	**6**
I-5	34.820546	-118.87925	34.81924	-118.8804	82.1%	28.0%	48.7%	43.6%	82.1%	**85.2%**	**1**
I-5	34.819235	-118.88045	34.81785	-118.8819	82.1%	28.0%	48.6%	43.5%	82.1%	**85.2%**	**1**
I-5	34.813983	-118.88394	34.8136	-118.8841	82.1%	64.0%	48.4%	43.5%	82.1%	**97.7%**	**1**

I-5	34.813983	-118.88394	34.81398	-118.8839	82.1%	64.0%	48.4%	43.5%	82.1%	**97.7%**	**1**
I-5	34.813983	-118.88394	34.81398	-118.8839	82.1%	12.1%	48.4%	43.5%	82.1%	**79.5%**	**3**
OAK ST	35.373405	-119.03866	35.37354	-119.0387	35.4%	12.0%	12.0%	21.0%	82.0%	**42.6%**	**6**
OAK ST	35.373405	-119.03866	35.37354	-119.0387	35.4%	12.0%	12.0%	21.0%	82.0%	**42.6%**	**6**
OAK ST	35.373535	-119.03866	35.37534	-119.0386	35.3%	12.0%	12.0%	20.9%	82.0%	**42.6%**	**6**
OAK ST	35.373535	-119.03866	35.37534	-119.0386	35.3%	12.0%	12.0%	20.9%	82.0%	**42.6%**	**6**
ROSEDALE HWY	35.383145	-119.04769	35.38314	-119.0472	29.4%	11.9%	11.9%	20.2%	81.9%	**40.1%**	**7**
CA-99	35.769095	-119.25096	35.76458	-119.2499	29.4%	11.9%	25.5%	40.1%	81.9%	**51.8%**	**5**
CA-99	35.764365	-119.24965	35.76909	-119.2508	29.3%	11.8%	25.4%	40.0%	81.8%	**51.7%**	**5**
OLIVE DR	35.412375	-119.05455	35.41238	-119.0545	29.1%	11.6%	27.6%	18.7%	81.6%	**44.8%**	**6**
OLIVE DR	35.412375	-119.05486	35.41238	-119.0552	29.1%	11.6%	27.6%	18.7%	81.6%	**44.8%**	**6**
OLIVE DR	35.412375	-119.05528	35.41238	-119.0552	29.1%	11.6%	27.6%	18.7%	81.6%	**44.8%**	**6**
OAK ST	35.375335	-119.03865	35.37632	-119.0386	34.9%	11.5%	11.5%	20.2%	81.5%	**41.6%**	**6**
OAK ST	35.375335	-119.03865	35.37632	-119.0386	34.9%	11.5%	11.5%	20.2%	81.5%	**41.6%**	**6**
I-5	34.819065	-118.88028	34.81987	-118.8794	81.4%	63.4%	48.0%	42.7%	81.4%	**96.6%**	**1**
I-5	34.817851	-118.8814	34.81907	-118.8803	81.4%	63.4%	47.9%	42.7%	81.4%	**96.5%**	**1**
I-5	34.814722	-118.88338	34.8141	-118.8838	81.4%	63.4%	47.8%	42.6%	81.4%	**96.5%**	**1**
TRUXTUN AVE	35.373905	-119.04251	35.37371	-119.0439	34.7%	11.4%	11.4%	20.0%	81.4%	**41.4%**	**6**
TRUXTUN AVE	35.373705	-119.0439	35.37368	-119.0441	34.7%	11.4%	11.4%	20.0%	81.4%	**41.4%**	**6**
TRUXTUN AVE	35.373675	-119.04413	35.37365	-119.0442	34.7%	11.4%	11.4%	20.0%	81.4%	**41.4%**	**6**
TRUXTUN AVE	35.373654	-119.0442	35.37337	-119.0452	34.7%	11.4%	11.4%	20.0%	81.4%	**41.4%**	**6**
TRUXTUN AVE	35.373365	-119.04517	35.37297	-119.0475	34.7%	11.4%	11.4%	20.0%	81.4%	**41.4%**	**6**
ALLEN RD	35.360978	-119.14557	35.36098	-119.1456	34.6%	11.3%	11.3%	22.9%	81.3%	**42.3%**	**6**
ALLEN RD	35.360978	-119.14557	35.36098	-119.1456	34.6%	11.3%	11.3%	22.9%	81.3%	**42.3%**	**6**
CA-178	35.383655	-119.0043	35.38364	-119.0052	28.8%	11.3%	22.2%	20.7%	81.3%	**43.3%**	**6**
CA-178	35.383635	-119.00517	35.38327	-119.0075	28.8%	11.3%	22.2%	20.6%	81.3%	**43.3%**	**6**
CA-178	35.383265	-119.00755	35.38237	-119.0097	28.8%	11.3%	22.2%	20.5%	81.3%	**43.2%**	**6**
I-5	34.982905	-118.94407	34.98572	-118.945	46.2%	63.2%	45.8%	37.5%	81.2%	**81.6%**	**2**
I-5	34.986375	-118.94515	34.98638	-118.9451	46.2%	63.2%	45.9%	37.4%	81.2%	**81.6%**	**2**
ROSEDALE HWY	35.383165	-119.04982	35.38315	-119.0477	28.7%	11.2%	11.2%	19.2%	81.2%	**38.8%**	**7**
ROSEDALE HWY	35.383215	-119.05207	35.38317	-119.0498	28.7%	11.2%	11.2%	19.2%	81.2%	**38.8%**	**7**
TRUXTUN AVE	35.371075	-119.05727	35.37003	-119.0589	34.5%	11.1%	11.1%	19.5%	81.1%	**40.9%**	**6**
TRUXTUN AVE	35.372195	-119.05444	35.37199	-119.0553	34.5%	11.1%	11.1%	19.5%	81.1%	**40.9%**	**6**
TRUXTUN AVE	35.371985	-119.05526	35.37108	-119.0573	34.5%	11.1%	11.1%	19.5%	81.1%	**40.9%**	**6**
OAK ST	35.376315	-119.03858	35.37731	-119.0386	34.5%	11.1%	11.1%	19.6%	81.1%	**40.9%**	**6**
OAK ST	35.376315	-119.03858	35.37731	-119.0386	34.5%	11.1%	11.1%	19.6%	81.1%	**40.9%**	**6**
OAK ST	35.37731	-119.03857	35.37821	-119.0386	28.6%	11.1%	11.1%	19.6%	81.1%	**38.9%**	**7**
OAK ST	35.37731	-119.03857	35.37821	-119.0386	28.6%	11.1%	11.1%	19.6%	81.1%	**38.9%**	**7**
TRUXTUN AVE	35.373572	-119.04019	35.37357	-119.0402	34.4%	11.1%	11.1%	19.7%	81.1%	**40.9%**	**6**
TRUXTUN AVE	35.373678	-119.04116	35.37368	-119.0412	34.4%	11.1%	11.1%	19.7%	81.1%	**40.9%**	**6**
TRUXTUN AVE	35.373835	-119.04188	35.37391	-119.0425	34.4%	11.1%	11.1%	19.7%	81.1%	**40.9%**	**6**
CALLOWAY DR	35.360741	-119.11607	35.35923	-119.1161	34.3%	11.0%	11.0%	20.6%	81.0%	**41.0%**	**6**
CALLOWAY DR	35.355295	-119.11556	35.35334	-119.115	34.3%	10.9%	10.9%	20.9%	80.9%	**41.1%**	**6**
CALLOWAY DR	35.356015	-119.1158	35.3553	-119.1156	34.3%	10.9%	10.9%	20.8%	80.9%	**41.0%**	**6**
CALLOWAY DR	35.356094	-119.11581	35.35602	-119.1158	34.3%	10.9%	10.9%	20.7%	80.9%	**41.0%**	**6**
CALLOWAY DR	35.35923	-119.11611	35.35609	-119.1158	34.3%	10.9%	10.9%	20.7%	80.9%	**41.0%**	**6**
CALLOWAY DR	35.358501	-119.11604	35.35657	-119.1159	34.3%	10.9%	10.9%	20.7%	80.9%	**41.0%**	**6**
CA-99	35.257148	-119.0205	35.2522	-119.0192	34.2%	10.9%	10.9%	23.2%	80.9%	**41.8%**	**6**
CA-99	35.259495	-119.02111	35.25715	-119.0205	34.2%	10.9%	10.9%	22.9%	80.9%	**41.7%**	**6**
CA-99	35.262495	-119.02189	35.2595	-119.0211	34.2%	10.9%	10.9%	22.8%	80.9%	**41.7%**	**6**
CA-99	35.263745	-119.02221	35.2625	-119.0219	34.2%	10.9%	10.9%	22.7%	80.9%	**41.6%**	**6**
BAKERSFIELD TEH	35.352505	-118.91909	35.35249	-118.925	34.2%	10.9%	29.1%	23.0%	80.9%	**48.1%**	**6**
BAKERSFIELD TEH	35.352485	-118.92504	35.35247	-118.9281	34.2%	10.9%	28.4%	22.8%	80.9%	**47.8%**	**6**
ROSEDALE HWY	35.383275	-119.04594	35.38332	-119.0472	28.4%	10.9%	10.9%	18.8%	80.9%	**38.2%**	**7**
ROSEDALE HWY	35.383315	-119.04724	35.38333	-119.0477	28.4%	10.9%	10.9%	18.8%	80.9%	**38.2%**	**7**
I-5	34.982855	-118.94435	34.97878	-118.9431	45.8%	62.8%	45.4%	37.1%	80.8%	**80.9%**	**2**
I-5	34.985655	-118.94524	34.98286	-118.9443	45.8%	62.8%	45.4%	37.0%	80.8%	**80.8%**	**2**
I-5	34.986305	-118.94544	34.98566	-118.9452	45.8%	62.8%	45.4%	36.9%	80.8%	**80.8%**	**2**
I-5	34.988995	-118.94629	34.98631	-118.9454	45.8%	62.8%	45.5%	36.9%	80.8%	**80.8%**	**2**
MOHAWK ST	35.383385	-119.06547	35.38749	-119.0654	28.3%	10.8%	10.8%	18.3%	80.8%	**38.0%**	**7**
MOHAWK ST	35.383385	-119.06547	35.38749	-119.0654	28.3%	10.8%	10.8%	18.3%	80.8%	**38.0%**	**7**
MOHAWK ST	35.392205	-119.06595	35.39295	-119.066	28.3%	10.8%	10.8%	17.9%	80.8%	**37.8%**	**7**
MOHAWK ST	35.392205	-119.06595	35.39295	-119.066	28.3%	10.8%	10.8%	17.9%	80.8%	**37.8%**	**7**
MOHAWK ST	35.393475	-119.06603	35.39295	-119.066	28.3%	10.8%	10.8%	17.9%	80.8%	**37.8%**	**7**
MOHAWK ST	35.393475	-119.06603	35.39295	-119.066	28.3%	10.8%	10.8%	17.9%	80.8%	**37.8%**	**7**
CA-99	35.252206	-119.01892	35.25717	-119.0202	34.1%	10.8%	10.8%	23.0%	80.8%	**41.6%**	**6**
CA-99	35.257175	-119.02022	35.25951	-119.0208	34.1%	10.8%	10.8%	22.8%	80.8%	**41.5%**	**6**
CA-99	35.259505	-119.02083	35.26256	-119.0216	34.1%	10.8%	10.8%	22.6%	80.8%	**41.5%**	**6**

I-5	34.986641	-118.94522	34.98664	-118.9452	45.8%	62.7%	45.4%	36.8%	80.8%	**80.7%**	**2**
I-5	34.989095	-118.94601	34.99123	-118.9467	45.8%	62.7%	45.4%	36.7%	80.8%	**80.7%**	**2**
CA-99	35.267585	-119.02294	35.26995	-119.0235	34.1%	10.7%	10.7%	22.1%	80.7%	**41.2%**	**6**
CA-99	35.266425	-119.02291	35.26375	-119.0222	34.0%	10.7%	10.7%	22.2%	80.7%	**41.2%**	**6**
CALLOWAY DR	35.359246	-119.11592	35.36077	-119.1158	34.0%	10.7%	10.7%	20.2%	80.7%	**40.4%**	**7**
BAKERSFIELD TEH	35.352195	-118.92778	35.3522	-118.9243	34.0%	10.7%	28.7%	22.6%	80.7%	**47.6%**	**6**
BAKERSFIELD TEH	35.352203	-118.92433	35.35222	-118.9193	34.0%	10.7%	28.7%	22.6%	80.7%	**47.6%**	**6**
CALLOWAY DR	35.353385	-119.11475	35.35533	-119.1154	34.0%	10.6%	10.6%	20.5%	80.6%	**40.5%**	**7**
CALLOWAY DR	35.355325	-119.11543	35.35606	-119.1157	34.0%	10.6%	10.6%	20.4%	80.6%	**40.5%**	**7**
CALLOWAY DR	35.356055	-119.11566	35.35617	-119.1157	34.0%	10.6%	10.6%	20.3%	80.6%	**40.5%**	**7**
CALLOWAY DR	35.35617	-119.11567	35.35925	-119.1159	34.0%	10.6%	10.6%	20.3%	80.6%	**40.5%**	**7**
ROSEDALE HWY	35.383245	-119.06356	35.38325	-119.0629	28.1%	10.6%	10.6%	18.1%	80.6%	**37.6%**	**7**
ROSEDALE HWY	35.383255	-119.06549	35.38325	-119.0636	28.1%	10.6%	10.6%	18.1%	80.6%	**37.6%**	**7**
ROSEDALE HWY	35.383245	-119.06112	35.38324	-119.059	28.1%	10.6%	10.6%	18.2%	80.6%	**37.6%**	**7**
ROSEDALE HWY	35.383245	-119.06286	35.38325	-119.0611	28.1%	10.6%	10.6%	18.1%	80.6%	**37.6%**	**7**
ROSEDALE HWY	35.383215	-119.0536	35.38322	-119.0521	28.1%	10.6%	10.6%	18.3%	80.6%	**37.6%**	**7**
ROSEDALE HWY	35.383215	-119.0543	35.38322	-119.0536	28.1%	10.6%	10.6%	18.3%	80.6%	**37.6%**	**7**
GOLDEN STATE AV	35.389635	-119.023	35.39078	-119.0245	28.0%	10.5%	21.4%	18.7%	80.5%	**41.5%**	**6**
GOLDEN STATE AV	35.395503	-119.03071	35.39608	-119.0315	28.0%	10.5%	10.5%	18.4%	80.5%	**37.5%**	**7**
GOLDEN STATE AV	35.390775	-119.02446	35.3955	-119.0307	28.0%	10.5%	10.5%	18.4%	80.5%	**37.5%**	**7**
GOLDEN STATE AV	35.396075	-119.03147	35.39721	-119.033	28.0%	10.5%	10.5%	18.2%	80.5%	**37.4%**	**7**
GOLDEN STATE AV	35.39987	-119.03676	35.39991	-119.0368	28.0%	10.5%	10.5%	18.0%	80.5%	**37.4%**	**7**
GOLDEN STATE AV	35.399443	-119.03615	35.39761	-119.0336	28.0%	10.5%	10.5%	18.0%	80.5%	**37.4%**	**7**
GOLDEN STATE AV	35.397611	-119.03355	35.39944	-119.0362	28.0%	10.5%	10.5%	18.0%	80.5%	**37.4%**	**7**
ROSEDALE HWY	35.383235	-119.059	35.38323	-119.0564	28.0%	10.5%	10.5%	18.1%	80.5%	**37.4%**	**7**
CA-99	35.262555	-119.02163	35.26314	-119.0218	33.8%	10.5%	10.5%	22.1%	80.5%	**40.8%**	**6**
CA-99	35.263135	-119.02178	35.26496	-119.0222	33.8%	10.5%	10.5%	22.0%	80.5%	**40.8%**	**6**
CA-99	35.264955	-119.02225	35.26645	-119.0226	33.8%	10.5%	10.5%	21.9%	80.5%	**40.8%**	**6**
CA-99	35.266872	-119.02274	35.26687	-119.0227	33.8%	10.5%	10.5%	21.9%	80.5%	**40.8%**	**6**
COFFEE RD	35.357055	-119.09233	35.35638	-119.0923	33.8%	10.5%	10.5%	18.8%	80.5%	**39.7%**	**7**
COFFEE RD	35.357495	-119.09233	35.35706	-119.0923	33.8%	10.4%	10.4%	18.8%	80.4%	**39.6%**	**7**
CA-99	35.267545	-119.0232	35.26643	-119.0229	33.8%	10.4%	10.4%	21.8%	80.4%	**40.7%**	**6**
CA-99	35.269465	-119.0237	35.26755	-119.0232	33.8%	10.4%	10.4%	21.7%	80.4%	**40.6%**	**6**
CA-99	35.269915	-119.02383	35.26947	-119.0237	33.8%	10.4%	10.4%	21.7%	80.4%	**40.6%**	**6**
CA-99	35.270865	-119.02409	35.26992	-119.0238	33.8%	10.4%	10.4%	21.6%	80.4%	**40.6%**	**6**
ROSEDALE HWY	35.383225	-119.05644	35.38322	-119.0543	27.9%	10.4%	10.4%	18.0%	80.4%	**37.3%**	**7**
24TH ST	35.381065	-119.03627	35.3811	-119.0373	27.9%	10.4%	10.4%	18.5%	80.4%	**37.4%**	**7**
24TH ST	35.381095	-119.03731	35.38116	-119.0386	27.9%	10.4%	10.4%	18.5%	80.4%	**37.4%**	**7**
ROSEDALE HWY	35.383275	-119.07073	35.38326	-119.0655	27.8%	10.3%	10.3%	17.6%	80.3%	**37.0%**	**7**
ROSEDALE HWY	35.383275	-119.07417	35.38328	-119.0707	27.8%	10.3%	10.3%	17.5%	80.3%	**37.0%**	**7**
24TH ST	35.380955	-119.03728	35.38107	-119.0363	27.8%	10.3%	10.3%	18.4%	80.3%	**37.3%**	**7**
24TH ST	35.381005	-119.03856	35.38096	-119.0373	27.8%	10.3%	10.3%	18.4%	80.3%	**37.3%**	**7**
I-5	35.006745	-118.95185	35.00553	-118.9515	45.3%	62.3%	45.2%	35.4%	80.3%	**79.7%**	**3**
I-5	35.008605	-118.95248	35.00675	-118.9518	45.3%	62.3%	45.3%	35.3%	80.3%	**79.7%**	**3**
ROSEDALE HWY	35.383365	-119.05039	35.38336	-119.0521	27.8%	10.3%	10.3%	18.0%	80.3%	**37.1%**	**7**
BAKERSFIELD TEH	35.352446	-118.93199	35.35245	-118.932	33.6%	10.3%	27.0%	21.8%	80.3%	**46.3%**	**6**
BAKERSFIELD TEH	35.352163	-118.93365	35.3522	-118.9278	33.6%	10.2%	26.9%	21.7%	80.2%	**46.2%**	**6**
BAKERSFIELD TEH	35.352145	-118.93686	35.35216	-118.9337	33.6%	10.2%	26.9%	21.7%	80.2%	**46.2%**	**6**
ROSEDALE HWY	35.383325	-119.04769	35.38336	-119.0498	27.7%	10.2%	10.2%	18.0%	80.2%	**37.0%**	**7**
ROSEDALE HWY	35.383355	-119.04981	35.38337	-119.0504	27.7%	10.2%	10.2%	17.9%	80.2%	**37.0%**	**7**
GOLDEN STATE AV	35.391055	-119.02508	35.39075	-119.0247	27.7%	10.2%	21.1%	18.3%	80.2%	**40.9%**	**6**
GOLDEN STATE AV	35.395995	-119.03155	35.3954	-119.0308	27.7%	10.2%	10.2%	18.1%	80.2%	**37.0%**	**7**
GOLDEN STATE AV	35.395402	-119.03077	35.39106	-119.0251	27.7%	10.2%	10.2%	18.1%	80.2%	**37.0%**	**7**
GOLDEN STATE AV	35.399825	-119.0369	35.396	-119.0315	27.7%	10.2%	10.2%	17.7%	80.2%	**36.9%**	**7**
GOLDEN STATE AV	35.400145	-119.03746	35.39985	-119.0369	27.7%	10.2%	10.2%	17.5%	80.2%	**36.9%**	**7**
GOLDEN STATE AV	35.399848	-119.03694	35.39983	-119.0369	27.7%	10.2%	10.2%	17.5%	80.2%	**36.9%**	**7**
GOLDEN STATE AV	35.400385	-119.03789	35.40015	-119.0375	27.7%	10.2%	10.2%	17.5%	80.2%	**36.8%**	**7**
ROSEDALE HWY	35.383245	-119.0449	35.38328	-119.0459	27.6%	10.1%	10.1%	17.9%	80.1%	**36.8%**	**7**
COFFEE RD	35.361995	-119.09194	35.36188	-119.092	33.4%	10.1%	10.1%	18.0%	80.1%	**38.8%**	**7**
ALLEN RD	35.356585	-119.14554	35.35751	-119.1455	33.4%	10.0%	10.0%	21.4%	80.0%	**40.0%**	**7**
ALLEN RD	35.356585	-119.14554	35.35751	-119.1455	33.4%	10.0%	10.0%	21.4%	80.0%	**40.0%**	**7**
ALLEN RD	35.358935	-119.14555	35.35751	-119.1455	33.4%	10.0%	10.0%	21.3%	80.0%	**39.9%**	**7**
ALLEN RD	35.358935	-119.14555	35.35751	-119.1455	33.4%	10.0%	10.0%	21.3%	80.0%	**39.9%**	**7**
ALLEN RD	35.358935	-119.14555	35.35964	-119.1455	33.4%	10.0%	10.0%	21.2%	80.0%	**39.9%**	**7**
ALLEN RD	35.358935	-119.14555	35.35964	-119.1455	33.4%	10.0%	10.0%	21.2%	80.0%	**39.9%**	**7**
27	35.404184	-119.04705	35.40327	-119.0458	27.5%	10.0%	10.0%	16.8%	80.0%	**36.3%**	**7**
27	35.406405	-119.04852	35.40625	-119.0484	27.5%	10.0%	10.0%	16.7%	80.0%	**36.2%**	**7**
27	35.40625	-119.04841	35.40418	-119.0471	27.5%	10.0%	10.0%	16.7%	80.0%	**36.2%**	**7**

GOLDEN STATE AV	35.402105	-119.04155	35.40039	-119.0379	27.5%	10.0%	10.0%	17.1%	80.0%	**36.3%**	**7**
MOHAWK ST	35.394305	-119.06591	35.39348	-119.066	27.5%	10.0%	10.0%	16.7%	80.0%	**36.2%**	**7**
MOHAWK ST	35.394305	-119.06591	35.39348	-119.066	27.5%	10.0%	10.0%	16.7%	80.0%	**36.2%**	**7**
MOHAWK ST	35.394305	-119.06591	35.39478	-119.0658	27.5%	10.0%	10.0%	16.6%	80.0%	**36.2%**	**7**
MOHAWK ST	35.394305	-119.06591	35.39478	-119.0658	27.5%	10.0%	10.0%	16.6%	80.0%	**36.2%**	**7**
MOHAWK ST	35.396255	-119.06535	35.39478	-119.0658	27.5%	10.0%	10.0%	16.6%	80.0%	**36.2%**	**7**
MOHAWK ST	35.396255	-119.06535	35.39478	-119.0658	27.5%	10.0%	10.0%	16.6%	80.0%	**36.2%**	**7**
MOHAWK ST	35.397815	-119.06549	35.39634	-119.0654	27.5%	10.0%	10.0%	16.5%	80.0%	**36.1%**	**7**
MOHAWK ST	35.397815	-119.06549	35.39634	-119.0654	27.5%	10.0%	10.0%	16.5%	80.0%	**36.1%**	**7**
MOHAWK ST	35.396337	-119.06535	35.39626	-119.0653	27.5%	10.0%	10.0%	16.5%	80.0%	**36.1%**	**7**
MOHAWK ST	35.396337	-119.06535	35.39626	-119.0653	27.5%	10.0%	10.0%	16.5%	80.0%	**36.1%**	**7**

Appendix Table G: All Railways by Cross-Hazard Risk														
Owner	Freight Operat	Begin Mil	End Mile F	Begin Latitu	Begin Longitu	End Latitude	End Longitu	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relativ	**Cross-hazard prioritization score**	Cross-hazard climate risk index
UP	UP,BNSF	330.6	335.4	35.29547	-118.6476	35.295415	-118.6475	84%	98%	77%	62%	50%	**100%**	**1**
UP	UP,BNSF	328.1	330.6	35.31691	-118.70355	35.316909	-118.7036	84%	98%	81%	52%	50%	**98%**	**1**
UP	UP,BNSF	328.1	330.6	35.32113	-118.70871	35.320096	-118.7068	70%	98%	81%	50%	50%	**93%**	**1**
UP	UP,BNSF	330.6	335.4	35.29623	-118.66889	35.295908	-118.6681	84%	98%	47%	61%	50%	**90%**	**1**
UP	UP,BNSF	330.6	335.4	35.29542	-118.64752	35.294851	-118.647	84%	98%	47%	61%	50%	**90%**	**1**
UP	UP,BNSF	328.1	330.6	35.31908	-118.7053	35.313302	-118.7004	84%	98%	51%	52%	50%	**88%**	**1**
UP	UP,BNSF	340.6	341.8	35.26695	-118.61563	35.26953	-118.6173	96%	52%	71%	63%	48%	**87%**	**1**
UP	UP,BNSF	325	328.1	35.32574	-118.73386	35.325739	-118.7339	70%	99%	61%	48%	51%	**87%**	**1**
UP	UP,BNSF	325	328.1	35.32574	-118.73386	35.325739	-118.7339	70%	99%	61%	48%	51%	**87%**	**1**
UP	UP,BNSF	330.6	335.4	35.28911	-118.64014	35.289049	-118.6425	84%	54%	77%	64%	50%	**86%**	**1**
UP	UP,BNSF	343.3	345.1	35.25117	-118.58698	35.251313	-118.5849	96%	52%	68%	65%	48%	**86%**	**1**
UP	UP,BNSF	328.1	330.6	35.30403	-118.67682	35.29921	-118.6697	84%	54%	81%	58%	50%	**86%**	**1**
UP	UP,BNSF	330.6	335.4	35.29921	-118.66975	35.297033	-118.6632	84%	54%	77%	61%	50%	**85%**	**1**
UP	UP,BNSF	330.6	335.4	35.29678	-118.6589	35.295468	-118.6476	84%	54%	77%	61%	50%	**85%**	**1**
UP	UP,BNSF	325	328.1	35.32963	-118.76218	35.325665	-118.7334	70%	99%	61%	44%	51%	**85%**	**1**
UP	UP,BNSF	328.1	330.6	35.3112	-118.69049	35.309822	-118.6877	84%	54%	81%	55%	50%	**85%**	**1**
UP	UP,BNSF	335.4	338	35.27335	-118.64346	35.274266	-118.6424	82%	53%	77%	61%	49%	**84%**	**1**
UP	UP,BNSF	335.4	338	35.27335	-118.64346	35.274266	-118.6424	82%	53%	77%	61%	49%	**84%**	**1**
UP	UP,BNSF	335.4	338	35.27427	-118.64236	35.273351	-118.6435	82%	53%	77%	61%	49%	**84%**	**1**
UP	UP,BNSF	335.4	338	35.28839	-118.64309	35.278801	-118.6456	82%	53%	77%	60%	49%	**84%**	**1**
UP	UP,BNSF	335.4	338	35.28905	-118.64245	35.286203	-118.6561	82%	53%	77%	59%	49%	**83%**	**1**
UP	UP,BNSF	335.4	338	35.28651	-118.65588	35.286429	-118.6559	82%	53%	77%	58%	49%	**83%**	**1**
UP	UP,BNSF	335.4	338	35.28651	-118.65588	35.286429	-118.6559	82%	53%	77%	58%	49%	**83%**	**1**
UP	UP,BNSF	320.1	325	35.328	-118.78723	35.331788	-118.8029	70%	99%	60%	38%	51%	**83%**	**1**
UP	UP,BNSF	320.1	325	35.33179	-118.80295	35.341484	-118.8432	70%	99%	60%	38%	51%	**83%**	**1**
UP	UP,BNSF	365	370.3	35.09642	-118.29968	35.096253	-118.3003	99%	34%	53%	80%	52%	**83%**	**1**
UP	UP,BNSF	328.1	330.6	35.32508	-118.72807	35.319084	-118.7053	70%	98%	51%	48%	50%	**82%**	**1**
UP	UP,BNSF	330.6	335.4	35.29121	-118.62559	35.287543	-118.6264	98%	54%	47%	66%	50%	**82%**	**1**
UP	UP,BNSF	330.6	335.4	35.29121	-118.62559	35.287543	-118.6264	98%	54%	47%	66%	50%	**82%**	**1**
UP	UP,BNSF	328.1	330.6	35.32508	-118.72807	35.325076	-118.7281	69.6%	97.9%	50.7%	46.8%	50.1%	**81.9%**	**2**
UP	UP,BNSF	328.1	330.6	35.32508	-118.72807	35.325076	-118.7281	69.6%	97.9%	50.7%	46.8%	50.1%	**81.9%**	**2**
UP	UP,BNSF	338	339.5	35.27455	-118.64196	35.274903	-118.6415	81.8%	52.1%	73.6%	59.3%	48.1%	**81.9%**	**2**
UP	UP,BNSF	365	370.3	35.11826	-118.33965	35.110276	-118.3265	99.3%	55.5%	23.3%	82.2%	51.5%	**80.9%**	**2**
UP	UP,BNSF	328.1	330.6	35.32149	-118.70958	35.321129	-118.7087	69.6%	54.1%	80.7%	50.1%	50.1%	**78.5%**	**2**
UP	UP,BNSF	330.6	335.4	35.29121	-118.62559	35.287543	-118.6264	83.7%	54.1%	46.9%	66.2%	50.1%	**77.3%**	**2**
UP	UP,BNSF	338	339.5	35.27469	-118.63061	35.272043	-118.6259	95.9%	52.1%	43.6%	61.0%	48.1%	**77.3%**	**2**
UP	UP,BNSF	341.8	343.3	35.27274	-118.61557	35.26655	-118.5975	95.9%	52.1%	39.6%	63.7%	48.1%	**76.9%**	**2**
UP	UP,BNSF	340.6	341.8	35.26953	-118.61727	35.266948	-118.6156	95.9%	52.1%	40.7%	62.4%	48.1%	**76.8%**	**2**
UP	UP,BNSF	339.5	340.6	35.27204	-118.62589	35.265127	-118.6192	95.9%	52.1%	41.3%	61.8%	48.1%	**76.8%**	**2**
UP	UP,BNSF	345.1	346.8	35.23841	-118.5754	35.238413	-118.5754	95.9%	52.1%	37.5%	65.0%	48.1%	**76.6%**	**2**
UP	UP,BNSF	343.3	345.1	35.26655	-118.59749	35.249883	-118.5823	95.9%	52.1%	37.7%	64.8%	48.1%	**76.6%**	**2**
UP	UP,BNSF	345.1	346.8	35.24988	-118.58227	35.238414	-118.5754	95.9%	52.1%	37.5%	65.0%	48.1%	**76.6%**	**2**
UP	UP,BNSF	330.6	335.4	35.29908	-118.66974	35.295871	-118.6676	83.7%	54.1%	46.9%	63.9%	50.1%	**76.6%**	**2**
UP	UP,BNSF	330.6	335.4	35.29667	-118.66027	35.28911	-118.6401	83.7%	54.1%	46.9%	63.9%	50.1%	**76.6%**	**2**
UP	UP,BNSF	365	370.3	35.12099	-118.35706	35.118263	-118.3397	85.2%	55.5%	23.3%	82.7%	51.5%	**76.4%**	**2**
UP	UP,BNSF	365	370.3	35.1219	-118.37089	35.120987	-118.3571	85.2%	55.5%	23.3%	82.7%	51.5%	**76.4%**	**2**
BNSF	BNSF,UP	772.9	784	34.97431	-117.46281	34.99176	-117.5218	71.0%	14.3%	14.5%	97.0%	99.3%	**75.8%**	**2**
BNSF	BNSF,UP	772.9	784	34.99176	-117.52177	34.994814	-117.578	71.0%	14.3%	14.5%	97.0%	99.3%	**75.8%**	**2**
BNSF	BNSF,UP	772.9	784	34.99481	-117.57801	34.994814	-117.578	71.0%	14.3%	14.5%	97.0%	99.3%	**75.8%**	**2**
UP	UP,BNSF	362.4	365	35.12753	-118.4115	35.121903	-118.3709	85.2%	55.5%	19.9%	82.6%	51.5%	**75.3%**	**2**
UP	UP	428.4	431.7	35.472	-117.62995	35.456366	-117.6207	95.0%	10.0%	12.1%	81.6%	95.0%	**75.0%**	**2**
UP	UP,BNSF	328.1	330.6	35.31836	-118.70463	35.304032	-118.6768	83.7%	54.1%	50.7%	54.9%	50.1%	**74.9%**	**2**
UP	UP	420.9	428.4	35.43927	-117.6337	35.452938	-117.6216	95.0%	10.0%	12.3%	81.0%	95.0%	**74.9%**	**2**
UP	UP	420.9	428.4	35.45294	-117.62158	35.476162	-117.6301	95.0%	10.0%	12.3%	81.0%	95.0%	**74.9%**	**2**
UP	UP,BNSF	335.4	338	35.28876	-118.64278	35.272898	-118.6471	82.3%	52.6%	46.8%	59.5%	48.6%	**73.7%**	**2**
UP	UP,BNSF	365	370.3	35.11028	-118.32647	35.096422	-118.2997	99.3%	33.6%	23.3%	80.9%	51.5%	**73.4%**	**2**
UP	UP,BNSF	347.9	349.7	35.22607	-118.55857	35.20724	-118.5422	81.8%	52.1%	37.8%	66.1%	48.1%	**72.5%**	**2**
UP	UP,BNSF	346.8	347.9	35.2307	-118.56661	35.22607	-118.5586	81.8%	52.1%	38.2%	65.7%	48.1%	**72.5%**	**2**
UP	UP,BNSF	349.7	351.1	35.20724	-118.54224	35.19961	-118.5372	81.8%	52.1%	36.3%	67.3%	48.1%	**72.4%**	**2**

UP	UP,BNSF	338	339.5	35.2749	-118.64152	35.27469	-118.6306	81.8%	52.1%	43.6%	60.1%	48.1%	**72.4%**	**2**
UP	UP,BNSF	351.1	352.2	35.19961	-118.53715	35.197451	-118.5376	81.8%	52.1%	35.1%	67.5%	48.1%	**72.1%**	**2**
UP	UP,BNSF	345.1	346.8	35.2335	-118.57345	35.230697	-118.5666	81.8%	52.1%	37.5%	65.1%	48.1%	**72.1%**	**2**
UP	UP,BNSF	345.1	346.8	35.23841	-118.5754	35.233504	-118.5734	81.8%	52.1%	37.5%	65.1%	48.1%	**72.1%**	**2**
UP	UP,BNSF	345.1	346.8	35.23841	-118.5754	35.238413	-118.5754	81.8%	52.1%	37.5%	65.0%	48.1%	**72.1%**	**2**
UP	UP,BNSF	325	328.1	35.32952	-118.76371	35.32562	-118.733	70.3%	54.8%	61.5%	46.1%	50.8%	**71.7%**	**2**
UP	UP,BNSF	325	328.1	35.32562	-118.73304	35.3253	-118.7303	70.3%	54.8%	61.5%	46.1%	50.8%	**71.7%**	**2**
BNSF	BNSF,UP	772.9	784	34.99481	-117.57801	34.994814	-117.578	56.8%	14.3%	14.5%	97.0%	99.3%	**71.2%**	**2**
BNSF	BNSF,UP	772.9	784	34.99481	-117.57801	34.997759	-117.6323	56.8%	14.3%	14.5%	97.0%	99.3%	**71.2%**	**2**
UP	UP,BNSF	328.1	330.6	35.3253	-118.73033	35.319607	-118.706	69.6%	54.1%	50.7%	48.4%	50.1%	**68.2%**	**3**
UP	UP,BNSF	328.1	330.6	35.32459	-118.72346	35.324592	-118.7235	69.6%	54.1%	50.7%	47.5%	50.1%	**68.0%**	**3**
UP	UP,BNSF	328.1	330.6	35.32459	-118.72346	35.324592	-118.7235	69.6%	54.1%	50.7%	47.5%	50.1%	**68.0%**	**3**
UP	UP	380.8	402.5	35.30226	-117.97949	35.311482	-117.9649	97.2%	12.2%	18.0%	91.5%	49.3%	**66.8%**	**3**
UP	UP	380.8	402.5	35.19857	-118.04535	35.301802	-117.9802	97.2%	12.2%	18.0%	91.5%	49.3%	**66.8%**	**3**
UP	UP	380.8	402.5	35.3018	-117.98021	35.302259	-117.9795	97.2%	12.2%	18.0%	91.5%	49.3%	**66.8%**	**3**
UP	UP,BNSF	370.3	374.3	35.09783	-118.29494	35.114349	-118.2287	97.2%	31.5%	18.8%	70.3%	49.3%	**66.4%**	**3**
UP	UP	380.8	402.5	35.18999	-118.04742	35.198574	-118.0453	97.2%	12.2%	18.0%	88.7%	49.3%	**65.8%**	**3**
UP	UP	402.5	420.9	35.42386	-117.7282	35.422131	-117.693	97.2%	12.2%	16.5%	88.7%	49.3%	**65.4%**	**3**
UP	UP	402.5	420.9	35.31148	-117.96493	35.373915	-117.8562	97.2%	12.2%	16.5%	88.7%	49.3%	**65.4%**	**3**
UP	UP	402.5	420.9	35.37392	-117.85617	35.423856	-117.7282	97.2%	12.2%	16.5%	88.7%	49.3%	**65.4%**	**3**
UP	UP,BNSF	374.3	380.7	35.11435	-118.22867	35.116424	-118.2205	96.8%	31.1%	16.4%	64.2%	49.0%	**63.3%**	**3**
UP	UP,BNSF	374.3	380.7	35.11642	-118.22046	35.115206	-118.1946	96.8%	31.1%	16.4%	64.2%	49.0%	**63.3%**	**3**
UP	UP,BNSF	362.4	365	35.12821	-118.41631	35.127527	-118.4115	85.2%	14.3%	19.9%	82.3%	51.5%	**61.9%**	**3**
UP	UP	394.3	399.3	34.83537	-118.15795	34.82069	-118.1556	85.2%	14.3%	14.4%	84.8%	51.5%	**61.0%**	**3**
UP	UP	394.3	399.3	34.83733	-118.15826	34.835369	-118.1579	85.2%	14.3%	14.4%	84.8%	51.5%	**60.9%**	**3**
UP	UP	394.3	399.3	34.83733	-118.15826	34.837332	-118.1583	85.2%	14.3%	14.4%	84.7%	51.5%	**60.9%**	**3**
UP	UP	389.9	390.4	35.02705	-118.31543	35.019082	-118.3222	81.6%	30.0%	23.0%	65.9%	47.9%	**60.3%**	**3**
UP	UP	420.9	428.4	35.47616	-117.63012	35.47651	-117.6304	95.0%	10.0%	12.3%	82.4%	47.2%	**59.9%**	**3**
UP	UP	428.4	431.7	35.47651	-117.63042	35.458757	-117.63	95.0%	10.0%	12.1%	81.8%	47.2%	**59.6%**	**3**
TRC	TRC	0.5	13.1	35.54484	-117.47517	35.548928	-117.4506	85.7%	0.7%	2.3%	70.8%	85.7%	**59.4%**	**3**
TRC	TRC	0.5	13.1	35.50802	-117.63017	35.508996	-117.6058	85.7%	0.7%	2.3%	70.8%	85.7%	**59.4%**	**3**
TRC	TRC	0.5	13.1	35.509	-117.60582	35.54484	-117.4752	85.7%	0.7%	2.3%	70.8%	85.7%	**59.4%**	**3**
UP	UP	380.8	402.5	35.18323	-118.04982	35.189985	-118.0474	83.0%	12.2%	18.0%	82.4%	49.3%	**59.2%**	**3**
UP	UP	380.8	402.5	35.12552	-118.09026	35.128119	-118.0867	83.0%	12.2%	18.0%	82.4%	49.3%	**59.2%**	**3**
UP	UP	380.8	402.5	35.12812	-118.08668	35.18323	-118.0498	83.0%	12.2%	18.0%	82.4%	49.3%	**59.2%**	**3**
BNSF	BNSF	924.6	932.3	35.76112	-119.34548	35.790284	-119.3555	57.5%	34.3%	41.3%	59.7%	52.2%	**59.2%**	**3**
UP	UP,BNSF	351.1	352.2	35.19745	-118.53762	35.19821	-118.5339	81.8%	10.9%	35.1%	67.7%	48.1%	**58.8%**	**3**
UP	UP	394.3	399.3	34.82069	-118.15562	34.788025	-118.1504	85.2%	14.3%	14.4%	85.1%	44.2%	**58.7%**	**3**
UP	UP	420.9	428.4	35.42213	-117.69297	35.439274	-117.6337	95.0%	10.0%	12.3%	78.7%	47.2%	**58.7%**	**3**
UP	UP,BNSF	352.2	353	35.19821	-118.53386	35.19506	-118.5219	81.8%	10.9%	33.6%	68.1%	48.1%	**58.5%**	**3**
UP	UP,BNSF	374.3	380.7	35.1152	-118.19461	35.107788	-118.1891	82.6%	31.1%	16.4%	62.4%	49.0%	**58.1%**	**3**
UP	UP,BNSF	353	354.2	35.19506	-118.52186	35.18455	-118.5083	81.8%	10.9%	30.4%	68.8%	48.1%	**57.7%**	**3**
BNSF	BNSF,UP	797.1	803.6	34.99334	-117.98909	34.993308	-117.9944	71.0%	14.3%	16.9%	86.0%	51.5%	**57.6%**	**3**
BNSF	BNSF	921.2	924.6	35.7104	-119.33064	35.761119	-119.3455	57.5%	34.3%	38.0%	57.2%	52.2%	**57.4%**	**3**
BNSF	BNSF	919.2	921.2	35.68138	-119.33092	35.697417	-119.3308	57.5%	34.3%	40.1%	54.4%	52.2%	**57.1%**	**3**
BNSF	BNSF	919.2	921.2	35.69742	-119.33076	35.710396	-119.3306	57.5%	34.3%	40.1%	54.4%	52.2%	**57.1%**	**3**
UP	UP	381	389.9	35.02913	-118.25348	35.02705	-118.3154	81.6%	30.0%	17.0%	60.7%	47.9%	**56.7%**	**3**
UP	UP,BNSF	354.2	356.4	35.1826	-118.5038	35.17062	-118.4778	81.8%	10.9%	26.1%	70.0%	48.1%	**56.6%**	**3**
UP	UP,BNSF	354.2	356.4	35.18455	-118.50828	35.182599	-118.5038	81.8%	10.9%	26.1%	70.0%	48.1%	**56.6%**	**3**
UP	UP,BNSF	360.6	362.4	35.13247	-118.44687	35.128206	-118.4163	82.6%	11.8%	19.0%	74.0%	49.0%	**56.5%**	**3**
UP	UP	394.3	399.3	34.83733	-118.15826	34.837332	-118.1583	71.0%	14.3%	14.4%	84.7%	51.5%	**56.4%**	**3**
BNSF	BNSF	914	919.2	35.61604	-119.33156	35.681385	-119.3309	57.5%	34.3%	40.1%	51.4%	52.2%	**56.2%**	**3**
UP	UP,BNSF	356.4	358.5	35.17062	-118.47779	35.157844	-118.4751	81.8%	10.9%	23.5%	70.8%	48.1%	**56.0%**	**3**
UP	UP,BNSF	356.4	358.5	35.15784	-118.47506	35.14438	-118.4746	81.8%	10.9%	23.5%	70.6%	48.1%	**56.0%**	**3**
UP	UP	394.3	399.3	34.83779	-118.15833	34.837332	-118.1583	71.0%	14.3%	14.4%	83.5%	51.5%	**56.0%**	**3**
UP	UP	394.3	399.3	34.86473	-118.16262	34.837787	-118.1583	71.0%	14.3%	14.4%	83.5%	51.5%	**56.0%**	**3**
BNSF	BNSF,UP	784	789.6	35.00002	-117.70303	35.00002	-117.7032	56.8%	14.3%	15.4%	96.2%	51.5%	**55.8%**	**3**
BNSF	BNSF,UP	784	789.6	34.99887	-117.65295	34.999166	-117.6584	56.8%	14.3%	15.4%	96.2%	51.5%	**55.8%**	**3**
BNSF	BNSF,UP	784	789.6	34.99917	-117.65837	35.000019	-117.703	56.8%	14.3%	15.4%	96.2%	51.5%	**55.8%**	**3**
BNSF	BNSF,UP	772.9	784	34.99776	-117.63228	34.998866	-117.653	56.8%	14.3%	14.5%	96.9%	51.5%	**55.8%**	**3**
BNSF	BNSF,UP	803.6	810.1	35.0074	-118.06614	35.000304	-118.1056	71.0%	14.3%	15.7%	80.3%	51.5%	**55.4%**	**4**
BNSF	BNSF,UP	803.6	810.1	34.99331	-117.99441	35.007397	-118.0661	71.0%	14.3%	15.7%	80.3%	51.5%	**55.4%**	**4**
UP	UP,BNSF	358.5	360.6	35.13543	-118.46729	35.13509	-118.4659	81.8%	10.9%	21.6%	70.4%	48.1%	**55.3%**	**4**
UP	UP,BNSF	358.5	360.6	35.13509	-118.46587	35.132472	-118.4469	81.8%	10.9%	21.6%	70.4%	48.1%	**55.3%**	**4**

UP	UP,BNSF	358.5	360.6	35.14438	-118.47462	35.135434	-118.4673	81.8%	10.9%	21.6%	70.1%	48.1%	**55.2%**	**4**
UP	UP	391.1	394.3	34.87833	-118.16474	34.864731	-118.1626	71.0%	14.3%	12.4%	81.2%	51.5%	**54.5%**	**4**
UP	UP,BNSF	320.1	325	35.34148	-118.8432	35.350085	-118.8789	70.3%	13.6%	60.1%	35.2%	50.8%	**54.4%**	**4**
UP	UP	380.8	402.5	35.08422	-118.14699	35.125516	-118.0903	83.0%	12.2%	18.0%	66.8%	49.3%	**54.2%**	**4**
UP	UP	391.1	394.3	34.90888	-118.15207	34.878335	-118.1647	71.0%	14.3%	12.4%	78.6%	51.5%	**53.7%**	**4**
UP	UP	384.4	389.5	34.95213	-118.14857	34.949884	-118.1486	71.0%	14.3%	14.4%	73.9%	51.5%	**52.9%**	**4**
UP	UP	384.4	389.5	34.94988	-118.14863	34.931857	-118.1492	71.0%	14.3%	14.4%	73.9%	51.5%	**52.9%**	**4**
UP	UP	389.5	391.1	34.93186	-118.14921	34.908882	-118.1521	71.0%	14.3%	12.2%	76.0%	51.5%	**52.9%**	**4**
UP	UP	384.4	389.5	35.00475	-118.15874	34.952127	-118.1486	71.0%	14.3%	14.4%	69.8%	51.5%	**51.5%**	**4**
UP	UP	380.8	402.5	35.06694	-118.1707	35.084217	-118.147	83.0%	12.2%	18.0%	57.3%	49.3%	**51.1%**	**4**
UP	UP,BNSF	374.3	380.7	35.10779	-118.18911	35.083617	-118.1841	82.6%	11.8%	16.4%	58.3%	49.0%	**50.6%**	**4**
UP	UP,BNSF	316.6	320.1	35.35008	-118.87889	35.358569	-118.9143	70.3%	13.6%	47.9%	34.7%	50.8%	**50.3%**	**4**
UP	UP,BNSF	380.7	381.3	35.05777	-118.17596	35.054853	-118.175	83.4%	12.5%	13.9%	57.4%	49.7%	**50.2%**	**4**
UP	UP,BNSF	380.7	381.3	35.05831	-118.17613	35.057767	-118.176	83.4%	12.5%	13.9%	57.4%	49.7%	**50.2%**	**4**
UP	UP,BNSF	316.6	320.1	35.35857	-118.91426	35.36164	-118.927	70.3%	13.6%	47.9%	33.9%	50.8%	**50.1%**	**4**
UP	UP,BNSF	374.3	380.7	35.08362	-118.1841	35.058315	-118.1761	82.6%	11.8%	16.4%	55.9%	49.0%	**49.8%**	**4**
UP	UP,BNSF	338	339.5	35.27469	-118.63061	35.27469	-118.6306	10.9%	52.1%	43.6%	60.7%	48.1%	**49.7%**	**4**
UP	UP	380.1	380.8	35.05831	-118.17613	35.066937	-118.1707	83.0%	12.2%	14.4%	56.5%	49.3%	**49.7%**	**4**
UP	UP,SJVR	284	290.7	35.7224	-119.23704	35.718069	-119.236	56.1%	13.6%	38.5%	56.2%	50.8%	**49.7%**	**4**
UP	UP,SJVR	282.3	284	35.7435	-119.24194	35.743499	-119.2419	56.1%	13.6%	36.4%	56.9%	50.8%	**49.2%**	**4**
UP	UP,SJVR	282.3	284	35.7435	-119.24194	35.743499	-119.2419	56.1%	13.6%	36.4%	56.9%	50.8%	**49.2%**	**4**
UP	UP,SJVR	282.3	284	35.74485	-119.24226	35.722398	-119.237	56.1%	13.6%	36.4%	56.7%	50.8%	**49.1%**	**4**
UP	UP,SJVR	282.3	284	35.73422	-119.23978	35.734218	-119.2398	56.1%	13.6%	36.4%	56.6%	50.8%	**49.1%**	**4**
UP	UP,SJVR	282.3	284	35.73422	-119.23978	35.734218	-119.2398	56.1%	13.6%	36.4%	56.6%	50.8%	**49.1%**	**4**
UP	UP,SJVR	282.3	284	35.74438	-119.24215	35.724697	-119.2376	56.1%	13.6%	36.4%	56.5%	50.8%	**49.1%**	**4**
UP	UP,SJVR	284	290.7	35.71807	-119.23603	35.709558	-119.2341	56.1%	13.6%	38.5%	52.7%	50.8%	**48.5%**	**4**
UP	UP,SJVR	284	290.7	35.70956	-119.23406	35.626996	-119.2147	56.1%	13.6%	38.5%	52.7%	50.8%	**48.5%**	**4**
UP	UP,SJVR	284	290.7	35.68917	-119.2293	35.659943	-119.2225	56.1%	13.6%	38.5%	52.6%	50.8%	**48.5%**	**4**
UP	UP,SJVR	280.7	282.3	35.7614	-119.24613	35.744851	-119.2423	56.1%	13.6%	32.9%	57.2%	50.8%	**48.2%**	**4**
UP	UP	381	389.9	35.04431	-118.21063	35.029134	-118.2535	81.6%	10.7%	17.0%	52.1%	47.9%	**47.7%**	**4**
UP	UP	381	389.9	35.05776	-118.17602	35.044973	-118.2081	81.6%	10.7%	17.0%	51.0%	47.9%	**47.4%**	**4**
UP	UP	381	389.9	35.04497	-118.20815	35.044309	-118.2106	81.6%	10.7%	17.0%	51.0%	47.9%	**47.4%**	**4**
UP	UP	381	389.9	35.05831	-118.17613	35.057759	-118.176	81.6%	10.7%	17.0%	51.0%	47.9%	**47.4%**	**4**
BNSF	BNSF	924.6	932.3	35.79028	-119.35551	35.805159	-119.3606	57.5%	15.0%	41.3%	60.2%	33.3%	**47.1%**	**4**
BNSF	BNSF	924.6	932.3	35.80516	-119.36063	35.864307	-119.3859	57.5%	15.0%	41.3%	60.2%	33.3%	**47.1%**	**4**
BNSF	BNSF,UP	797.1	803.6	34.9985	-117.97206	34.993343	-117.9891	71.0%	14.3%	16.9%	86.9%	14.3%	**45.9%**	**4**
UP	UP,BNSF	380.7	381.3	35.05485	-118.17502	35.041394	-118.1706	69.2%	12.5%	13.9%	57.2%	49.7%	**45.5%**	**4**
UP	UP,BNSF	315	316.6	35.36164	-118.92697	35.362747	-118.9316	70.3%	13.6%	33.1%	33.4%	50.8%	**45.1%**	**4**
UP	UP,BNSF	315	316.6	35.36275	-118.93159	35.364976	-118.9409	70.3%	13.6%	33.1%	33.0%	50.8%	**45.0%**	**4**
BNSF	BNSF,UP	810.1	814.7	35.0003	-118.10562	35.018158	-118.134	67.8%	11.1%	10.8%	59.9%	48.2%	**44.0%**	**4**
TRC	TRC	0.5	13.1	35.4854	-117.63731	35.50802	-117.6302	85.7%	0.7%	2.3%	70.2%	37.9%	**43.7%**	**4**
TRC	TRC	0	0.5	35.47651	-117.63042	35.4854	-117.6373	85.7%	0.7%	2.5%	69.7%	37.9%	**43.6%**	**4**
BNSF	BNSF,UP	784	789.6	35.00002	-117.7032	34.999732	-117.7517	56.8%	14.3%	15.4%	94.7%	14.3%	**43.3%**	**4**
UP	UP	381	389.9	35.0547	-118.17531	35.045715	-118.1883	67.4%	10.7%	17.0%	51.6%	47.9%	**43.0%**	**4**
UP	UP,BNSF	313.6	315	35.37278	-118.97341	35.37278	-118.9734	70.3%	13.6%	28.4%	31.0%	50.8%	**42.8%**	**4**
BNSF	BNSF,UP	789.6	797.1	35.00107	-117.79411	35.006427	-117.8837	56.8%	14.3%	15.9%	92.5%	14.3%	**42.8%**	**4**
BNSF	BNSF,UP	789.6	797.1	34.99973	-117.75167	35.001068	-117.7941	56.8%	14.3%	15.9%	92.5%	14.3%	**42.8%**	**4**
BNSF	BNSF,UP	797.1	803.6	35.00643	-117.88371	35.009246	-117.9309	56.8%	14.3%	16.9%	91.0%	14.3%	**42.6%**	**4**
BNSF	BNSF,UP	797.1	803.6	35.00925	-117.93094	34.998505	-117.9721	56.8%	14.3%	16.9%	91.0%	14.3%	**42.6%**	**4**
UP	UP	381.3	384.4	35.02473	-118.1652	35.004751	-118.1587	67.8%	11.1%	11.2%	55.1%	48.2%	**42.6%**	**4**
BNSF	BNSF,UP	810.1	814.7	35.01816	-118.13396	35.041394	-118.1706	67.8%	11.1%	10.8%	54.4%	48.2%	**42.2%**	**4**
UP	UP	381.3	384.4	35.04139	-118.17065	35.024727	-118.1652	67.8%	11.1%	11.2%	53.0%	48.2%	**41.9%**	**4**
UP	UP,SJVR	299.3	304.5	35.49593	-119.16011	35.45526	-119.1061	56.1%	13.6%	36.8%	32.9%	50.8%	**41.6%**	**4**
UP	UP,SJVR	299.3	304.5	35.50736	-119.17465	35.495929	-119.1601	56.1%	13.6%	36.8%	32.9%	50.8%	**41.6%**	**4**
UP	UP,SJVR	274.6	280.7	35.8179	-119.25925	35.790438	-119.2529	56.1%	13.6%	29.9%	57.9%	31.9%	**41.3%**	**4**
UP	UP,SJVR	274.6	280.7	35.85601	-119.26804	35.817899	-119.2593	56.1%	13.6%	29.9%	57.9%	31.9%	**41.3%**	**4**
UP	UP	0	0	35.04139	-118.17065	35.04833	-118.1762	67.4%	10.7%	11.8%	51.7%	47.9%	**41.3%**	**4**
BNSF	BNSF	905.4	910.5	35.49993	-119.26996	35.506704	-119.2782	57.5%	15.0%	15.0%	49.8%	52.2%	**41.3%**	**4**
BNSF	BNSF	899.5	905.4	35.49982	-119.26982	35.499927	-119.27	57.5%	15.0%	15.0%	49.6%	52.2%	**41.3%**	**4**
BNSF	BNSF	913	914	35.59363	-119.33179	35.601518	-119.3317	57.5%	15.0%	15.0%	49.5%	52.2%	**41.2%**	**4**
BNSF	BNSF	899.5	905.4	35.4924	-119.26075	35.499817	-119.2698	57.5%	15.0%	15.0%	49.4%	52.2%	**41.2%**	**4**
BNSF	BNSF	910.5	913	35.5858	-119.33189	35.593631	-119.3318	57.5%	15.0%	15.0%	49.2%	52.2%	**41.1%**	**4**
BNSF	BNSF	910.5	913	35.57975	-119.33195	35.585804	-119.3319	57.5%	15.0%	15.0%	49.2%	52.2%	**41.1%**	**4**
BNSF	BNSF	910.5	913	35.55801	-119.33021	35.579751	-119.3319	57.5%	15.0%	15.0%	48.9%	52.2%	**41.0%**	**4**

BNSF	BNSF	905.4	910.5	35.52904	-119.3056	35.557999	-119.3302	57.5%	15.0%	15.0%	48.7%	52.2%	**41.0%**	**5**
BNSF	BNSF	910.5	913	35.558	-119.3302	35.558013	-119.3302	57.5%	15.0%	15.0%	48.7%	52.2%	**41.0%**	**5**
UP	UP	310.8	312.9	35.3755	-118.98461	35.376726	-118.9896	69.6%	12.9%	27.1%	28.3%	50.1%	**40.8%**	**5**
BNSF	BNSF,SJVR	888	889.2	35.37142	-119.02497	35.37144	-119.0431	71.7%	15.0%	15.0%	33.0%	52.2%	**40.5%**	**5**
BNSF	BNSF,SJVR	889.2	889.7	35.37144	-119.04311	35.371444	-119.0434	71.7%	15.0%	15.0%	32.7%	52.2%	**40.4%**	**5**
BNSF	BNSF,SJVR	889.2	889.7	35.37144	-119.04339	35.372772	-119.0569	71.7%	15.0%	15.0%	32.5%	52.2%	**40.3%**	**5**
BNSF	BNSF,SJVR	889.2	889.7	35.37277	-119.05687	35.37485	-119.0604	71.7%	15.0%	15.0%	32.1%	52.2%	**40.2%**	**5**
BNSF	BNSF	892.5	895.7	35.37637	-119.10136	35.37637	-119.1105	71.7%	15.0%	15.0%	32.0%	52.2%	**40.1%**	**5**
BNSF	BNSF	899.5	905.4	35.4748	-119.23924	35.477975	-119.2431	57.5%	15.0%	15.0%	44.5%	52.2%	**39.6%**	**5**
BNSF	BNSF	899.5	905.4	35.44162	-119.19871	35.474798	-119.2392	57.5%	15.0%	15.0%	44.5%	52.2%	**39.6%**	**5**
UP	UP,SJVR	290.7	292.3	35.627	-119.21471	35.604106	-119.2093	56.1%	13.6%	13.6%	49.6%	50.8%	**39.5%**	**5**
UP	UP,SJVR	292.3	297.6	35.60411	-119.20934	35.601279	-119.2087	56.1%	13.6%	13.6%	47.7%	50.8%	**38.9%**	**5**
UP	UP,SJVR	292.3	297.6	35.60128	-119.20868	35.558483	-119.1986	56.1%	13.6%	13.6%	47.7%	50.8%	**38.9%**	**5**
UP	UP,SJVR	304.5	306.3	35.44882	-119.09761	35.441113	-119.0875	56.1%	13.6%	34.5%	26.6%	50.8%	**38.8%**	**5**
UP	UP,SJVR	304.5	306.3	35.45526	-119.1061	35.448816	-119.0976	56.1%	13.6%	34.5%	26.6%	50.8%	**38.8%**	**5**
BNSF	BNSF	899.5	905.4	35.44151	-119.19858	35.44162	-119.1987	57.5%	15.0%	15.0%	41.4%	52.2%	**38.6%**	**5**
UP	UP	380.8	402.5	35.18999	-118.04742	35.189987	-118.0474	12.2%	12.2%	18.0%	88.3%	49.3%	**38.2%**	**5**
UP	UP,SJVR	308.6	310.8	35.39714	-119.02917	35.39137	-119.0215	56.1%	13.6%	31.3%	28.0%	50.8%	**38.2%**	**5**
UP	UP,SJVR	308.6	310.8	35.413	-119.0502	35.40029	-119.0334	56.1%	13.6%	31.3%	26.9%	50.8%	**37.9%**	**5**
UP	UP,SJVR	308.6	310.8	35.40029	-119.03335	35.397136	-119.0292	56.1%	13.6%	31.3%	26.9%	50.8%	**37.9%**	**5**
BNSF	BNSF	897.7	899.5	35.41965	-119.17194	35.441513	-119.1986	57.5%	15.0%	15.0%	39.1%	52.2%	**37.8%**	**5**
UP	UP,SJVR	292.3	297.6	35.55848	-119.19861	35.5274	-119.1898	56.1%	13.6%	13.6%	44.5%	50.8%	**37.8%**	**5**
BNSF	BNSF	914	919.2	35.60876	-119.33162	35.616045	-119.3316	57.5%	15.0%	40.1%	50.0%	15.0%	**37.5%**	**5**
SJVR	SJVR	333.1	333.5	35.20179	-118.82347	35.194712	-118.8234	70.8%	0.0%	44.7%	24.8%	37.2%	**37.4%**	**5**
SJVR	SJVR	7.2	10	35.18014	-119.10994	35.18014	-119.1101	70.8%	0.0%	55.0%	14.2%	37.2%	**37.3%**	**5**
SJVR	SJVR	7.2	10	35.19	-119.10124	35.180143	-119.1099	70.8%	0.0%	55.0%	14.2%	37.2%	**37.3%**	**5**
SJVR	SJVR	328.8	333.1	35.20912	-118.824	35.203392	-118.8239	70.8%	0.0%	44.5%	24.6%	37.2%	**37.3%**	**5**
SJVR	SJVR	328.8	333.1	35.20339	-118.82393	35.201789	-118.8235	70.8%	0.0%	44.5%	24.6%	37.2%	**37.3%**	**5**
SJVR	SJVR	10	12.3	35.18014	-119.1101	35.179829	-119.1608	70.8%	0.0%	54.9%	14.0%	37.2%	**37.3%**	**5**
SJVR	SJVR	328.8	333.1	35.23048	-118.82425	35.209119	-118.824	70.8%	0.0%	44.5%	23.8%	37.2%	**37.1%**	**5**
BNSF	BNSF,SJVR	889.7	891.1	35.37625	-119.0649	35.37625	-119.0649	70.3%	13.6%	13.6%	27.6%	50.8%	**36.9%**	**5**
UP	UP	312.9	313.6	35.37439	-118.98027	35.375497	-118.9846	67.8%	11.1%	25.3%	23.1%	48.2%	**36.8%**	**5**
BNSF	BNSF	891.1	892.5	35.37636	-119.0937	35.376365	-119.1014	70.3%	13.6%	13.6%	27.1%	50.8%	**36.8%**	**5**
BNSF	BNSF	891.1	892.5	35.37632	-119.08407	35.376355	-119.0937	70.3%	13.6%	13.6%	27.1%	50.8%	**36.8%**	**5**
BNSF	BNSF	891.1	892.5	35.37628	-119.07272	35.376321	-119.0841	70.3%	13.6%	13.6%	27.1%	50.8%	**36.8%**	**5**
UP	UP,SJVR	297.6	299.3	35.5274	-119.18978	35.50736	-119.1747	56.1%	13.6%	13.6%	41.1%	50.8%	**36.7%**	**5**
BNSF	BNSF	895.7	897.7	35.40885	-119.15877	35.419654	-119.1719	57.5%	15.0%	15.0%	35.6%	52.2%	**36.7%**	**5**
UP	UP,SJVR	280.7	282.3	35.7677	-119.24759	35.7614	-119.2461	56.1%	13.6%	32.9%	57.5%	13.6%	**36.3%**	**5**
SJVR	SJVR	12.3	14.6	35.17988	-119.18368	35.17991	-119.1987	70.8%	0.0%	51.5%	14.3%	37.2%	**36.2%**	**5**
SJVR	SJVR	12.3	14.6	35.17983	-119.16084	35.179878	-119.1837	70.8%	0.0%	51.5%	14.3%	37.2%	**36.2%**	**5**
BNSF	BNSF	895.7	897.7	35.39916	-119.14696	35.408846	-119.1588	57.5%	15.0%	15.0%	34.0%	52.2%	**36.2%**	**5**
BNSF	BNSF	892.5	895.7	35.399	-119.14677	35.39916	-119.147	57.5%	15.0%	15.0%	33.8%	52.2%	**36.1%**	**5**
BNSF	BNSF,SJVR	885.2	886.9	35.37439	-118.98027	35.374715	-118.9837	67.4%	10.7%	24.9%	22.0%	47.9%	**36.0%**	**5**
UP	UP	310.8	312.9	35.38023	-119.00256	35.39137	-119.0215	55.4%	12.9%	27.1%	26.9%	50.1%	**35.8%**	**5**
UP	UP,BNSF	374.3	380.7	35.11521	-118.19461	35.115205	-118.1946	11.8%	31.1%	16.4%	63.4%	49.0%	**35.6%**	**5**
BNSF	BNSF,SJVR	887.5	888	35.37141	-119.02355	35.37142	-119.025	67.4%	10.7%	24.9%	20.5%	47.9%	**35.5%**	**5**
UP	UP,SJVR	274.6	280.7	35.79044	-119.25287	35.775873	-119.2495	56.1%	13.6%	29.9%	57.9%	13.6%	**35.4%**	**5**
UP	UP,SJVR	274.6	280.7	35.77587	-119.24949	35.767702	-119.2476	56.1%	13.6%	29.9%	57.7%	13.6%	**35.4%**	**5**
SJVR	SJVR	14.6	18.3	35.17991	-119.19865	35.15437	-119.2351	70.8%	0.0%	46.2%	14.4%	37.2%	**34.6%**	**5**
UP	UP,BNSF	315	316.6	35.36612	-118.94567	35.367098	-118.9498	70.3%	13.6%	33.1%	32.5%	13.6%	**32.8%**	**5**
UP	UP,BNSF	315	316.6	35.36498	-118.94089	35.366119	-118.9457	70.3%	13.6%	33.1%	32.5%	13.6%	**32.8%**	**5**
SJVR	SJVR	18.3	19.5	35.15252	-119.23506	35.123444	-119.2645	70.8%	0.0%	42.4%	12.4%	37.2%	**32.7%**	**5**
SJVR	SJVR	18.3	19.5	35.15437	-119.23507	35.152521	-119.2351	70.8%	0.0%	42.4%	12.4%	37.2%	**32.7%**	**5**
SJVR	SJVR	7.2	10	35.20903	-119.10124	35.189998	-119.1012	56.7%	0.0%	55.0%	13.9%	37.2%	**32.7%**	**5**
UP	UP,BNSF	315	316.6	35.3671	-118.94975	35.369207	-118.9586	70.3%	13.6%	33.1%	32.0%	13.6%	**32.7%**	**5**
SJVR	SJVR	328.8	333.1	35.23822	-118.82434	35.230482	-118.8242	56.7%	0.0%	44.5%	22.6%	37.2%	**32.1%**	**5**
SJVR	SJVR	328.8	333.1	35.25286	-118.83445	35.238223	-118.8243	56.7%	0.0%	44.5%	21.0%	37.2%	**31.6%**	**5**
UP	UP,BNSF	313.6	315	35.36921	-118.95856	35.371356	-118.9675	70.3%	13.6%	28.4%	31.5%	13.6%	**31.0%**	**5**
SJVR	SJVR	326.8	328.8	35.25273	-118.87831	35.252861	-118.8344	56.7%	0.0%	45.8%	17.8%	37.2%	**31.0%**	**5**
BNSF	BNSF	913	914	35.60152	-119.3317	35.608764	-119.3316	57.5%	15.0%	15.0%	49.7%	15.0%	**29.3%**	**5**
BNSF	BNSF	905.4	910.5	35.5067	-119.27824	35.529039	-119.3056	57.5%	15.0%	15.0%	49.6%	15.0%	**29.2%**	**5**
BNSF	BNSF	899.5	905.4	35.48454	-119.25115	35.492396	-119.2608	57.5%	15.0%	15.0%	48.4%	15.0%	**28.8%**	**5**
BNSF	BNSF	899.5	905.4	35.47798	-119.24312	35.484544	-119.2512	57.5%	15.0%	15.0%	48.4%	15.0%	**28.8%**	**5**
UP	UP	310.8	312.9	35.37673	-118.9896	35.379347	-119	69.6%	12.9%	27.1%	28.0%	12.9%	**28.7%**	**5**

BNSF	BNSF	892.5	895.7	35.37637	-119.11047	35.379932	-119.1235	71.7%	15.0%	15.0%	33.0%	15.0%	**28.4%**	**5**
BNSF	BNSF,UP	797.1	803.6	34.9985	-117.97206	34.998505	-117.9721	14.3%	14.3%	16.9%	87.6%	14.3%	**27.8%**	**5**
UP	UP,SJVR	306.3	308.6	35.42129	-119.06115	35.413025	-119.0502	56.1%	13.6%	34.4%	26.2%	13.6%	**26.6%**	**5**
UP	UP,SJVR	306.3	308.6	35.42696	-119.06865	35.421291	-119.0611	56.1%	13.6%	34.4%	26.1%	13.6%	**26.6%**	**5**
UP	UP,SJVR	306.3	308.6	35.43751	-119.08271	35.426956	-119.0687	56.1%	13.6%	34.4%	25.9%	13.6%	**26.5%**	**5**
UP	UP,SJVR	304.5	306.3	35.44111	-119.08746	35.437507	-119.0827	56.1%	13.6%	34.5%	25.9%	13.6%	**26.5%**	**5**
UP	UP,SJVR	308.6	310.8	35.41303	-119.05024	35.412999	-119.0502	56.1%	13.6%	31.3%	26.3%	13.6%	**25.7%**	**5**
BNSF	BNSF	892.5	895.7	35.38353	-119.12791	35.387906	-119.1333	57.5%	15.0%	15.0%	33.6%	15.0%	**24.1%**	**5**
BNSF	BNSF	892.5	895.7	35.38791	-119.13326	35.398999	-119.1468	57.5%	15.0%	15.0%	33.6%	15.0%	**24.1%**	**5**
UP	UP	310.8	312.9	35.37935	-119.00001	35.380228	-119.0026	55.4%	12.9%	27.1%	27.6%	12.9%	**24.0%**	**5**
BNSF	BNSF	892.5	895.7	35.38351	-119.12789	35.383526	-119.1279	57.5%	15.0%	15.0%	33.4%	15.0%	**24.0%**	**5**
BNSF	BNSF	892.5	895.7	35.37993	-119.12352	35.383507	-119.1279	57.5%	15.0%	15.0%	33.3%	15.0%	**24.0%**	**5**
BNSF	BNSF,SJVR	885.2	886.9	35.37472	-118.98371	35.372302	-119.0029	67.4%	10.7%	24.9%	21.6%	10.7%	**23.8%**	**5**
BNSF	BNSF,SJVR	885.2	886.9	35.3723	-119.00293	35.371704	-119.0077	67.4%	10.7%	24.9%	21.1%	10.7%	**23.7%**	**5**
BNSF	BNSF,SJVR	886.9	887.5	35.3717	-119.00772	35.371369	-119.0183	67.4%	10.7%	24.9%	20.9%	10.7%	**23.6%**	**5**
BNSF	BNSF,SJVR	887.5	888	35.37137	-119.01826	35.371408	-119.0236	67.4%	10.7%	24.9%	20.6%	10.7%	**23.5%**	**5**
SJVR	SJVR	316.9	321.1	35.29605	-118.92328	35.29587	-118.9233	56.7%	0.0%	23.5%	9.7%	37.2%	**21.1%**	**5**
SJVR	SJVR	316.9	321.1	35.30253	-118.92326	35.296054	-118.9233	56.7%	0.0%	23.5%	8.8%	37.2%	**20.8%**	**5**
SJVR	SJVR	316.9	321.1	35.35221	-118.92322	35.302525	-118.9233	56.7%	0.0%	23.5%	8.8%	37.2%	**20.8%**	**5**
SJVR	SJVR	316.9	321.1	35.35724	-118.92425	35.352208	-118.9232	56.7%	0.0%	23.5%	7.9%	37.2%	**20.5%**	**5**
SJVR	SJVR	316.6	316.9	35.3612	-118.92633	35.357241	-118.9243	56.7%	0.0%	23.1%	7.8%	37.2%	**20.4%**	**5**
SJVR	SJVR	316.6	316.9	35.36164	-118.92697	35.361203	-118.9263	56.7%	0.0%	23.1%	7.7%	37.2%	**20.3%**	**5**
SJVR	SJVR	331.9	343.1	35.36747	-119.25218	35.372324	-119.2578	56.7%	0.0%	10.0%	19.5%	37.2%	**19.9%**	**5**
SJVR	SJVR	331.9	343.1	35.37232	-119.25777	35.398459	-119.3615	56.7%	0.0%	10.0%	19.5%	37.2%	**19.9%**	**5**
SJVR	SJVR	331.9	343.1	35.39846	-119.36146	35.398638	-119.3994	56.7%	0.0%	10.0%	19.5%	37.2%	**19.9%**	**5**
SJVR	SJVR	343.1	343.3	35.39864	-119.39942	35.398695	-119.4111	56.7%	0.0%	9.7%	17.8%	37.2%	**19.3%**	**5**
SJVR	SJVR	0	0	35.37278	-118.97341	35.37296	-118.9756	56.7%	0.0%	14.2%	5.1%	37.2%	**16.7%**	**5**
SJVR	SJVR	313.6	316	35.37304	-118.97756	35.37439	-118.9803	56.7%	0.0%	14.2%	5.0%	37.2%	**16.6%**	**5**
SJVR	SJVR	343.3	346.3	35.39869	-119.41108	35.399	-119.4736	56.7%	0.0%	5.8%	12.3%	37.2%	**16.3%**	**5**
SJVR	SJVR	325.9	326.8	35.25273	-118.87841	35.25273	-118.8783	56.7%	0.0%	0.0%	16.1%	37.2%	**15.6%**	**5**
SJVR	SJVR	325.9	326.8	35.25268	-118.88967	35.252729	-118.8784	56.7%	0.0%	0.0%	15.6%	37.2%	**15.5%**	**5**
SJVR	SJVR	324.8	325.9	35.25266	-118.89647	35.252683	-118.8897	56.7%	0.0%	0.0%	15.0%	37.2%	**15.2%**	**5**
SJVR	SJVR	322.6	331.9	35.32631	-119.20483	35.332957	-119.2125	56.7%	0.0%	0.0%	14.8%	37.2%	**15.2%**	**5**
SJVR	SJVR	322.6	331.9	35.33296	-119.21246	35.354331	-119.237	56.7%	0.0%	0.0%	14.8%	37.2%	**15.2%**	**5**
SJVR	SJVR	324.8	325.9	35.25262	-118.90526	35.252656	-118.8965	56.7%	0.0%	0.0%	14.4%	37.2%	**15.0%**	**5**
SJVR	SJVR	324.6	324.8	35.25259	-118.90984	35.252619	-118.9053	56.7%	0.0%	0.0%	13.9%	37.2%	**14.9%**	**5**
SJVR	SJVR	324.6	324.8	35.25257	-118.91265	35.252592	-118.9098	56.7%	0.0%	0.0%	13.6%	37.2%	**14.8%**	**5**
SJVR	SJVR	321.1	324.6	35.25257	-118.91442	35.25257	-118.9127	56.7%	0.0%	0.0%	13.4%	37.2%	**14.7%**	**5**
SJVR	SJVR	6	7.2	35.22707	-119.10123	35.209028	-119.1012	56.7%	0.0%	0.0%	13.4%	37.2%	**14.7%**	**5**
SJVR	SJVR	304	304.8	35.67789	-119.18474	35.66687	-119.1915	42.5%	0.0%	0.0%	27.4%	37.2%	**14.7%**	**5**
SJVR	SJVR	5.1	6	35.23798	-119.10122	35.227074	-119.1012	56.7%	0.0%	0.0%	12.8%	37.2%	**14.5%**	**5**
SJVR	SJVR	110.8	113.5	35.40634	-119.04853	35.397229	-119.0581	43.2%	0.7%	21.5%	3.0%	37.9%	**14.4%**	**5**
SJVR	SJVR	110.8	113.5	35.39723	-119.05814	35.378349	-119.0612	43.2%	0.7%	21.5%	3.0%	37.9%	**14.4%**	**5**
SJVR	SJVR	0	5.1	35.23801	-119.10122	35.237981	-119.1012	56.7%	0.0%	0.0%	12.4%	37.2%	**14.4%**	**5**
SJVR	SJVR	321.1	324.6	35.26697	-118.92335	35.25257	-118.9144	56.7%	0.0%	0.0%	12.4%	37.2%	**14.4%**	**5**
SJVR	SJVR	322.6	331.9	35.31086	-119.12807	35.326313	-119.2048	56.7%	0.0%	0.0%	12.2%	37.2%	**14.4%**	**5**
SJVR	SJVR	110.8	113.5	35.413	-119.05021	35.406345	-119.0485	43.2%	0.7%	21.5%	2.6%	37.9%	**14.3%**	**5**
SJVR	SJVR	304.8	306.1	35.66687	-119.19149	35.64813	-119.2001	42.5%	0.0%	0.0%	25.8%	37.2%	**14.2%**	**5**
SJVR	SJVR	321.1	324.6	35.28154	-118.92333	35.266974	-118.9234	56.7%	0.0%	0.0%	10.9%	37.2%	**13.9%**	**5**
SJVR	SJVR	307.3	306.1	35.64813	-119.20011	35.631265	-119.2069	42.5%	0.0%	0.0%	24.7%	37.2%	**13.8%**	**5**
SJVR	SJVR	321.1	324.6	35.29587	-118.92328	35.281536	-118.9233	56.7%	0.0%	0.0%	10.0%	37.2%	**13.6%**	**5**
SJVR	SJVR	308.5	307.3	35.63127	-119.20694	35.614408	-119.2117	42.5%	0.0%	0.0%	24.0%	37.2%	**13.6%**	**5**
SJVR	SJVR	311.6	311.9	35.42153	-118.99589	35.423995	-118.9813	42.5%	0.0%	18.5%	5.0%	37.2%	**13.4%**	**5**
SJVR	SJVR	308.6	311.2	35.41942	-119.01282	35.419423	-119.0091	42.5%	0.0%	18.5%	3.1%	37.2%	**12.8%**	**5**
SJVR	SJVR	113.5	113.7	35.37717	-119.06117	35.37485	-119.0604	57.4%	0.7%	0.7%	4.1%	37.9%	**12.7%**	**5**
SJVR	SJVR	0	0	35.37718	-119.06151	35.37625	-119.0649	57.4%	0.7%	0.7%	4.0%	37.9%	**12.6%**	**5**
SJVR	SJVR	311.2	311.6	35.41942	-119.00913	35.421533	-118.9959	42.5%	0.0%	17.2%	3.8%	37.2%	**12.6%**	**5**
SJVR	SJVR	308.6	311.2	35.4194	-119.03449	35.419417	-119.0128	42.5%	0.0%	18.5%	2.0%	37.2%	**12.5%**	**5**
SJVR	SJVR	113.5	113.7	35.37835	-119.06117	35.377168	-119.0612	43.2%	0.7%	0.7%	3.9%	37.9%	**8.0%**	**5**
SJVR	SJVR	0	0	35.37835	-119.06117	35.377182	-119.0615	43.2%	0.7%	0.7%	3.9%	37.9%	**8.0%**	**5**
SJVR	SJVR	331.9	343.1	35.35435	-119.23707	35.367471	-119.2522	56.7%	0.0%	10.0%	16.2%	0.0%	**6.9%**	**5**
SJVR	SJVR	0	0	35.37296	-118.97559	35.37136	-118.9774	56.7%	0.0%	14.2%	5.0%	0.0%	**4.6%**	**5**

SJVR	SJVR	313.6	316	35.37136	-118.97737	35.37136	-118.9774	56.7%	0.0%	14.2%	5.0%	0.0%	**4.6%**	**5**
SJVR	SJVR	316	316.7	35.33902	-119.00303	35.338115	-119.004	56.7%	0.0%	14.2%	4.9%	0.0%	**4.6%**	**5**
SJVR	SJVR	313.6	316	35.35611	-118.98528	35.368537	-118.9784	56.7%	0.0%	14.2%	4.9%	0.0%	**4.6%**	**5**
SJVR	SJVR	316	316.7	35.33946	-119.00257	35.339021	-119.003	56.7%	0.0%	14.2%	4.9%	0.0%	**4.6%**	**5**
SJVR	SJVR	316	316.7	35.34713	-118.99455	35.339463	-119.0026	56.7%	0.0%	14.2%	4.8%	0.0%	**4.5%**	**5**
SJVR	SJVR	313.6	316	35.35233	-118.98906	35.356109	-118.9853	56.7%	0.0%	14.2%	4.8%	0.0%	**4.5%**	**5**
SJVR	SJVR	313.6	316	35.34713	-118.99455	35.35233	-118.9891	56.7%	0.0%	14.2%	4.8%	0.0%	**4.5%**	**5**
SJVR	SJVR	322.6	331.9	35.35433	-119.23705	35.354348	-119.2371	56.7%	0.0%	0.0%	15.7%	0.0%	**3.5%**	**5**
SJVR	SJVR	110.8	113.5	35.41303	-119.05024	35.412997	-119.0502	43.2%	0.7%	21.5%	2.6%	0.7%	**2.3%**	**5**
SJVR	SJVR	0	5.1	35.29616	-119.10115	35.280572	-119.1012	56.7%	0.0%	0.0%	10.6%	0.0%	**1.8%**	**5**
SJVR	SJVR	0	5.1	35.28057	-119.10118	35.238009	-119.1012	56.7%	0.0%	0.0%	10.6%	0.0%	**1.8%**	**5**
SJVR	SJVR	322.6	331.9	35.31084	-119.11878	35.310865	-119.1281	56.7%	0.0%	0.0%	9.1%	0.0%	**1.3%**	**5**
SJVR	SJVR	322.6	331.9	35.3108	-119.11	35.310835	-119.1188	56.7%	0.0%	0.0%	8.4%	0.0%	**1.1%**	**5**
SJVR	SJVR	0	5.1	35.31078	-119.09691	35.296163	-119.1012	56.7%	0.0%	0.0%	7.8%	0.0%	**0.9%**	**5**
SJVR	SJVR	322.6	331.9	35.31078	-119.09691	35.310804	-119.11	56.7%	0.0%	0.0%	7.5%	0.0%	**0.8%**	**5**
SJVR	SJVR	0	0	35.42056	-119.06018	35.41947	-119.0502	42.5%	0.0%	20.8%	0.4%	0.0%	**0.7%**	**5**
SJVR	SJVR	321	322.6	35.31076	-119.09217	35.31078	-119.0969	56.7%	0.0%	0.0%	6.8%	0.0%	**0.6%**	**5**
SJVR	SJVR	321	322.6	35.3107	-119.07444	35.310757	-119.0922	56.7%	0.0%	0.0%	6.5%	0.0%	**0.5%**	**5**
SJVR	SJVR	321	322.6	35.31069	-119.07184	35.310701	-119.0744	56.7%	0.0%	0.0%	6.2%	0.0%	**0.4%**	**5**
SJVR	SJVR	321	322.6	35.31068	-119.06695	35.310693	-119.0718	56.7%	0.0%	0.0%	6.2%	0.0%	**0.4%**	**5**
SJVR	SJVR	318.8	321	35.31062	-119.05669	35.310677	-119.0669	56.7%	0.0%	0.0%	6.0%	0.0%	**0.3%**	**5**
SJVR	SJVR	318.8	321	35.31162	-119.0348	35.310624	-119.0567	56.7%	0.0%	0.0%	5.6%	0.0%	**0.2%**	**5**
SJVR	SJVR	318.8	321	35.31801	-119.02506	35.311619	-119.0348	56.7%	0.0%	0.0%	5.2%	0.0%	**0.1%**	**5**
SJVR	SJVR	316.7	318.8	35.32167	-119.02122	35.31801	-119.0251	56.7%	0.0%	0.0%	5.2%	0.0%	**0.1%**	**5**
SJVR	SJVR	316.7	318.8	35.32493	-119.01781	35.321672	-119.0212	56.7%	0.0%	0.0%	5.1%	0.0%	**0.1%**	**5**
SJVR	SJVR	316.7	318.8	35.3322	-119.01019	35.324929	-119.0178	56.7%	0.0%	0.0%	5.1%	0.0%	**0.0%**	**5**
SJVR	SJVR	308.6	311.2	35.41947	-119.05019	35.41947	-119.0502	42.5%	0.0%	18.5%	0.8%	0.0%	**0.0%**	**5**
SJVR	SJVR	316.7	318.8	35.33811	-119.00398	35.332199	-119.0102	56.7%	0.0%	0.0%	5.0%	0.0%	**0.0%**	**5**

Appendix Table H: All Bridges by Cross-Hazard Risk											
Feature Being Crossed	Facility	Location Details	Latitude	Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Temperature Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
KERN RIVER	STATE ROUTE 155	06-KER-155-70.08	35.63995899	-118.4827986	24%	89%	77%	81%	88%	**100%**	**1**
KERN RIVER	SR 178	06-KER-178-R31.72	35.54828101	-118.6145456	24%	88%	71%	66%	88%	**94%**	**1**
FRENCH GULCH	STATE ROUTE 155	06-KER-155-R68.69	35.65687799	-118.4847456	24%	89%	52%	81%	86%	**93%**	**1**
GRAPEVINE CREEK	GRAPEVINE ROAD	6.7 MI S OF FORT TEJON SP	34.92931209	-118.9270816	50%	70%	72%	47%	86%	**90%**	**1**
GRAPEVINE ROAD	INTERSTATE 5 NB	06-KER-005-10.16R	34.93928709	-118.9296516	53%	73%	60%	48%	86%	**89%**	**1**
STATE ROUTE 178	BOUNDARY FLAT RD	06-KER-178-R39.88	35.59828099	-118.5144906	24%	88%	48%	73%	83%	**88%**	**1**
CALIFORNIA AQUEDUCT	INTERSTATE 5 NB	06-KER-005-12.47	34.97157809	-118.9407096	38%	74%	56%	52%	87%	**85%**	**1**
CALIFORNIA AQUEDUCT	INTERSTATE 5 SB	06-KER-005-12.47	34.97157809	-118.9404296	38%	74%	56%	52%	86%	**85%**	**1**
KERN RIVER	STATE ROUTE 178	06-KER-178-R41.16	35.60756699	-118.4957436	12%	77%	60%	66%	73%	**80%**	**1**
CUDDY CREEK	INTERSTATE 5	06-KER-005-R0.55	34.8240281	-118.8749876	64%	57%	52%	36%	73%	**78%**	**1**
GRAPEVINE ROAD	INTERSTATE 5 SB	06-KER-005-10.16L	34.93905109	-118.9307686	52%	36%	58%	47%	84%	**77%**	**1**
SOUTH FORK KERN RIVER	DOYLE RANCH RD	0.1 MI N OF RTE 178	35.69086197	-118.2350267	24%	21%	47%	90%	90%	**75%**	**1**
SOUTH FORK KERN RIVER	FAYE RANCH RD	0.6 MI N OF RTE 178	35.67251397	-118.2900347	24%	21%	49%	89%	88%	**75%**	**1**
CACHE CREEK	TEHACHAPI BLVD	0.3 MI E OF SAN CANYON RD	35.11092603	-118.3202377	37%	51%	36%	60%	86%	**74%**	**1**
KERN RIVER	STATE ROUTE 178	06-KER-178-R38.84	35.588328	-118.5261206	13%	78%	38%	62%	77%	**74%**	**1**
KERN RIVER	STATE ROUTE 178	06-KER-178-R40.00	35.59890899	-118.5108126	12%	77%	37%	62%	76%	**73%**	**1**
TILLIE CREEK	STATE ROUTE 155	06-KER-155-R60.69	35.70563698	-118.4570936	24%	17%	52%	81%	86%	**72%**	**1**
TILLIE CREEK OVERFLOW	STATE ROUTE 155	06-KER-155-R60.88	35.70818398	-118.4621596	24%	17%	52%	81%	86%	**72%**	**1**
RATTLESNAKE CREEK	STATE ROUTE 155	06-KER-155-64.92	35.70046998	-118.4603266	24%	17%	52%	81%	85%	**72%**	**1**
STATE ROUTE 178	STATE ROUTE 155	06-KER-155-R70.98	35.62792299	-118.4788316	24%	19%	52%	81%	83%	**72%**	**1**
BOREL CANAL	EVA DRIVE	EAST OF BARLOW DRIVE	35.63667299	-118.4705516	24%	18%	52%	81%	84%	**71%**	**1**
INTERSTATE 5	SABODAN ST	06-KER-005-17.58	35.03632308	-118.9766316	37%	37%	53%	47%	83%	**71%**	**1**
INTERSTATE 5	LEBEC RD	06-KER-005-4.07	34.86598709	-118.8835126	50%	34%	40%	49%	83%	**71%**	**1**
CLEAR CREEK	KERN RIVER CYN RD	AT MIRACLE HOT SPRINGS	35.574012	-118.5295486	8%	76%	33%	63%	76%	**71%**	**1**
INTERSTATE 5	DWR SERVICE RD	06-KER-005-12.53	34.97224209	-118.9411816	37%	34%	54%	45%	83%	**70%**	**2**
POSO CREEK	STATE ROUTE 155	06-KER-155-38.79	35.722981	-118.7238376	17%	21%	54%	67%	89%	**68%**	**2**
STATE ROUTE 58	CAMERON ROAD	09-KER-058-R101.56	35.09931403	-118.2930127	37%	34%	30%	60%	83%	**68%**	**2**
CANE BRAKE CREEK	STATE ROUTE 178	09-KER-178-76.98	35.68885596	-118.0536457	24%	17%	41%	76%	86%	**67%**	**2**
INTERSTATE 5	LEBEC SERVICE ROAD	06-KER-005-1.61	34.83572309	-118.8633156	60%	54%	28%	34%	66%	**67%**	**2**
CUDDY CREEK	FRAZIER MTN ROAD	2.5 MI WEST OF I-5	34.8211231	-118.9217566	61%	20%	48%	37%	75%	**67%**	**2**
RANCHERIA CREEK	WALKER BASIN RD	1.17 MI W PIUTE MOUNTN RD	35.38988401	-118.4288907	17%	75%	15%	59%	74%	**66%**	**2**
TEHACHAPI CREEK	CALIENTE-BODFISH R	NORTH BEALVILLE RD	35.28892303	-118.6290016	24%	44%	45%	43%	78%	**65%**	**2**
GRAPEVINE ROAD	INTERSTATE 5 SB	06-KER-005-8.47L	34.91546709	-118.9246096	36%	58%	32%	37%	69%	**64%**	**2**
POSO CREEK	POSO FLAT ROAD	3.5 MI E OF GRANITE RD	35.62912301	-118.7501686	17%	18%	42%	62%	88%	**62%**	**2**
GRAPEVINE CREEK	INTERSTATE 5	06-KER-005-4.47	34.87082309	-118.8879046	37%	56%	27%	33%	73%	**62%**	**2**
KISSACK CREEK	STATE ROUTE 178	06-KER-178-49.90	35.64326998	-118.4129547	18%	4%	62%	68%	73%	**62%**	**2**
SR 99 TRUCK RAMP SB	INTERSTATE 5 SB	06-KER-005-R15.51L	35.01861708	-118.9556066	25%	58%	40%	30%	70%	**61%**	**2**
WALKER CREEK	STATE HIGHWAY 178	09-KER-178-91.20	35.64454795	-117.8336377	31%	17%	19%	72%	84%	**61%**	**2**
STATE ROUTE 99	INTERSTATE 5 NB	06-KER-005-R15.82R	35.01838708	-118.9553236	23%	57%	39%	29%	69%	**59%**	**2**
ELIZABETH NORRIS ROAD	STATE ROUTE 178 EB	06-KER-178-R41.64	35.61156699	-118.4895816	12%	7%	60%	65%	71%	**59%**	**2**
INTERSTATE 5	FORT TEJON OC	06-KER-005-5.02	34.87694809	-118.8946906	34%	54%	30%	30%	66%	**59%**	**2**
ERSKINE CREEK	178 EASTBND OFFRP	06-KER-178-R41.59	35.61528699	-118.4876346	12%	5%	60%	63%	74%	**59%**	**2**
SOUTH FORK KERN RIVER	SIERRA WAY	1.0 MI N/O SH 178	35.67248097	-118.3273597	11%	10%	33%	79%	76%	**57%**	**2**
STATE ROUTE 58	BROOME ROAD	09-KER-058-R85.15	35.19878904	-118.5190907	18%	39%	34%	46%	70%	**57%**	**2**
SR 58	TOWER LINE ROAD	06-KER-058-R65.68	35.32985304	-118.8074766	8%	73%	39%	20%	67%	**57%**	**2**
CUDDY CREEK	LEBEC ROAD	0.06 MI N FRAZIER MTN RD	34.8190621	-118.8847016	60%	17%	23%	32%	72%	**56%**	**2**
ARVIN-EDISON CANAL	RANCHO DRIVE	3 MI NORTH OF DAVID RD	35.13652606	-118.8506376	20%	54%	37%	24%	68%	**56%**	**2**
BENA ROAD	STATE ROUTE 58	06-KER-058-74.18	35.27010304	-118.6824986	17%	39%	38%	38%	69%	**55%**	**2**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.74	35.44116703	-118.7935706	19%	16%	66%	20%	79%	**55%**	**2**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.74	35.44116703	-118.7935706	19%	16%	66%	20%	79%	**55%**	**2**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.74	35.44116703	-118.7935706	19%	16%	66%	20%	79%	**55%**	**2**
KERN RIVER	KERNVILLE RD	EAST OF BUENA VISTA DR	35.75529797	-118.4226156	12%	6%	36%	73%	73%	**55%**	**2**
CACHE CREEK	STATE ROUTE 58 WB	06-KER-058-99.81	35.10763403	-118.3180737	22%	37%	21%	47%	72%	**54%**	**2**
INDIAN CREEK	CALIENTE CREEK RD	WEST OF INDIAN CREEK RD	35.30464202	-118.4383797	17%	37%	24%	47%	72%	**54%**	**2**
SR 58	COMANCHE DRIVE	06-KER-058-R63.58	35.33844504	-118.8431766	8%	72%	34%	15%	67%	**54%**	**2**
UP RR TEHACHAPI CREEK	STATE ROUTE 58 WB	09-KER-058-82.64	35.22079504	-118.5572707	15%	37%	31%	44%	69%	**54%**	**2**
UP RR TEHACHAPI CREEK	STATE ROUTE 58 EB	09-KER-058-82.64	35.22063704	-118.5574097	14%	36%	31%	43%	72%	**53%**	**2**
SAN EMIGDIO CREEK	MIL POTRERO HWY	AT WOODLAND DR.	34.85276711	-119.1602936	62%	18%	14%	32%	70%	**53%**	**2**
BRANCH TEHACHAPI CREEK	STATE ROUTE 58	09-KER-058-R88.57	35.17425604	-118.4795517	17%	39%	18%	48%	72%	**53%**	**2**
BEAR VALLEY CREEK	TEJON HIGHWAY	2.3 MI S OF HIGHWAY 223	35.17550906	-118.8237686	14%	52%	37%	22%	69%	**53%**	**2**
SR 58	TEJON HWY	06-KER-058-R64.63	35.33412304	-118.8252956	7%	72%	33%	14%	66%	**53%**	**2**
ISABELLA DRAIN	STATE ROUTE 178	06-KER-178-R44.10	35.64024199	-118.4642796	11%	4%	39%	66%	73%	**53%**	**2**
INTERSTATE 5	MERCED AVE	06-KER-005-65.17	35.52819507	-119.5650375	24%	34%	17%	35%	83%	**53%**	**2**
INTERSTATE 5	CANAL SERVICE RD	06-KER-005-68.00	35.55852607	-119.5990235	24%	34%	17%	35%	83%	**53%**	**2**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.76	35.44146703	-118.7932766	19%	14%	66%	15%	78%	**52%**	**3**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.76	35.44146703	-118.7932766	19%	14%	66%	15%	78%	**52%**	**3**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.76	35.44146703	-118.7932766	19%	14%	66%	15%	78%	**52%**	**3**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.78	35.44160603	-118.7931436	19%	14%	66%	15%	78%	**52%**	**3**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.78	35.44160603	-118.7931436	19%	14%	66%	15%	78%	**52%**	**3**
HILLSIDE	STATE ROUTE 178	06-KER-178-13.78	35.44160603	-118.7931436	19%	14%	66%	15%	78%	**52%**	**3**
ELIZABETH NORRIS ROAD	STATE ROUTE 178 WB	06-KER-178-R41.64	35.61156699	-118.4895816	7%	2%	55%	61%	66%	**52%**	**3**
STATE ROUTE 58	STATE ROUTE 202	09-KER-202-11.99	35.14148104	-118.4672737	15%	39%	16%	51%	68%	**52%**	**3**
CUDDY CREEK	FRAZIER MTN ROAD	0.5 MI E OF MONTEREY TRL	34.8192231	-118.9358986	60%	2%	23%	32%	72%	**52%**	**3**
CALIENTE CREEK OVERFLOW	STATE ROUTE 58	06-KER-058-67.85	35.30870304	-118.7792796	11%	39%	39%	27%	72%	**52%**	**3**
ERSKINE CREEK	STATE ROUTE 178	06-KER-178-R41.61	35.61092299	-118.4900186	7%	0%	55%	58%	68%	**52%**	**3**
ERSKINE CREEK	178 EASTBND OFFRP	06-KER-178-R41.59	35.61528699	-118.4876346	12%	5%	35%	63%	74%	**51%**	**3**
UP RR & BNSF RY	STATE ROUTE 58 WB	09-KER-058-R99.26	35.11041703	-118.3266547	21%	36%	19%	46%	66%	**51%**	**3**
SAND CANYON ROAD	STATE ROUTE 58 WB	09-KER-058-R99.49	35.11016403	-118.3228957	21%	36%	19%	46%	66%	**51%**	**3**
CUDDY CREEK	MONTEREY TRAIL RD	0.01 MI N FRAZIER MTN RD	34.8208451	-118.9453706	60%	2%	17%	36%	72%	**51%**	**3**
CUDDY CREEK	FRAZIER MTN ROAD	0.7 MI W OF MONTEREY TRL	34.8199761	-118.9567816	60%	2%	17%	35%	71%	**51%**	**3**
STATE ROUTE 99	SANDRINI RD	06-KER-099-7.29	35.12199507	-118.9881096	30%	18%	17%	36%	83%	**51%**	**3**
BOREL CANAL	LAKE ISABELLA RD	0.75 MI N OF NUGGET AVE	35.63633099	-118.4701656	7%	4%	35%	70%	68%	**50%**	**3**

MILL STREET DRAIN	STATE ROUTE 58	09-KER-058-R91.46-THPI	35.14137304	-118.4505047	16%	37%	17%	45%	70%	**50%**	**3**
CACHE CREEK	STATE ROUTE 58 WB	09-KER-058-R107.61	35.11679803	-118.2006817	21%	39%	10%	41%	72%	**50%**	**3**
CACHE CREEK	CAMERON RD	1.8 MI W OF SR 58	35.09613903	-118.3047987	22%	22%	15%	50%	74%	**50%**	**3**
WHITE ROCK CREEK	TEHACHAPI BLVD	1.4 MI E TEHCHPI WILLOW S	35.12190904	-118.3740237	15%	35%	20%	44%	70%	**50%**	**3**
INTERSTATE 5	ASHE ROAD	06-KER-005-26.06	35.12932808	-119.0748956	30%	18%	17%	35%	83%	**50%**	**3**
CUDDY CREEK	LAKEWOOD PLACE	0.02 MI N LAKEWOOD DR	34.81743411	-118.9974046	60%	1%	16%	35%	69%	**50%**	**3**
BODFISH CREEK	LAKE ISABELLA RD	S BODFISH CYN RD	35.59679799	-118.4915686	10%	4%	33%	61%	73%	**49%**	**3**
CACHE CREEK	STATE ROUTE 58 EB	06-KER-058-99.82	35.10735603	-118.3180437	22%	19%	21%	47%	72%	**49%**	**3**
CACHE CREEK OVERFLOW #4	STATE ROUTE 58	09-KER-058-R100.14	35.10452803	-118.3138407	23%	19%	22%	46%	70%	**49%**	**3**
CACHE CREEK OVERFLOW #3	STATE ROUTE 58	09-KER-058-R100.09	35.10502303	-118.3145657	23%	19%	22%	46%	70%	**49%**	**3**
CACHE CREEK OVERFLOW #2	STATE ROUTE 58	09-KER-058-R100.04	35.10552303	-118.3152957	23%	19%	22%	46%	70%	**49%**	**3**
CACHE CREEK OVERFLOW #1	STATE ROUTE 58	09-KER-058-R99.98	35.10590303	-118.3158737	23%	19%	22%	46%	70%	**49%**	**3**
CALIENTE CREEK OVERFLOW	STATE ROUTE 58	06-KER-058-67.85	35.30848704	-118.7793066	9%	38%	37%	25%	71%	**49%**	**3**
INTERSTATE 5	UTILITY SERVICE RD	06-KER-005-42.97	35.31125107	-119.2751905	24%	18%	17%	38%	83%	**49%**	**3**
INTERSTATE 5	DWR SERVICE ROAD	06-KER-005-45.13	35.33177307	-119.3038875	24%	18%	17%	38%	83%	**49%**	**3**
UP RR BNSF TEHACHAPI BL	STATE ROUTE 58 WB	09-KER-058-R94.16	35.12723404	-118.4110737	15%	36%	13%	48%	67%	**49%**	**3**
UP RR BNSF TEHACHAPI BL	STATE ROUTE 58 EB	09-KER-058-R94.16	35.12727604	-118.4113877	15%	36%	13%	48%	67%	**49%**	**3**
BOREL CANAL	STATE ROUTE 178 EB	06-KER-178-R43.69	35.63633099	-118.4701656	7%	2%	35%	64%	69%	**48%**	**3**
BOREL CANAL	STATE ROUTE 178 WB	06-KER-178-R43.69	35.63667299	-118.4705516	7%	2%	35%	64%	69%	**48%**	**3**
ARVIN-EDISON CANAL	MING AVE	0.2 MI W GOSFORD RD	35.33977806	-119.0967316	25%	20%	18%	28%	86%	**48%**	**3**
INTERSTATE 5	STATE ROUTE 223	06-KER-223-1.88	35.20910107	-119.1625876	24%	18%	17%	34%	83%	**48%**	**3**
TECUYA CREEK	INTERSTATE 5	06-KER-005-16.57	35.02599808	-118.9645126	23%	18%	38%	25%	70%	**48%**	**3**
CALIENTE CREEK	BENA ROAD	3.4 MI EAST NEUMARKEL RD	35.32524504	-118.7326566	9%	36%	37%	22%	71%	**48%**	**3**
STATE ROUTE 58	MILL STREET	09-KER-058-R91.67-THPI	35.13985604	-118.4508157	13%	35%	15%	45%	66%	**47%**	**3**
INTERSTATE 5	WHEELER RIDGE RD N	06-KER-005-13.52	34.98575308	-118.9454906	21%	18%	38%	29%	67%	**47%**	**3**
INTERSTATE 5	WHEELER RIDGE RD S	06-KER-005-13.54	34.98593108	-118.9455686	21%	18%	38%	29%	67%	**47%**	**3**
WEST DRAINAGE CHANNEL	CHALLENGER DRIVE	0.5 MI E OF CAPITAL HILLS	35.14041204	-118.4423487	14%	34%	15%	43%	68%	**47%**	**3**
MONOLITH DRAIN #3	STATE ROUTE 58	09-KER-058-R96.79	35.11498704	-118.3704237	16%	19%	22%	46%	70%	**47%**	**3**
UP RR	MERCED AVE	WEST OF S.H. 99	35.52975904	-119.1908205	17%	18%	17%	38%	83%	**47%**	**3**
STATE ROUTE 99	MERCED AVE	06-KER-099-R39.12	35.52975604	-119.1897435	17%	18%	17%	38%	83%	**47%**	**3**
WALKER BASIN CREEK	BENA ROAD	2.0 MI EAST NEUMARKEL RD	35.32898104	-118.7567296	9%	36%	40%	17%	71%	**47%**	**3**
EAST DRAINAGE CHANNEL	CHALLENGER DRIVE	1.0 MI E OF CAPITAL HILLS	35.14150604	-118.4344097	14%	34%	12%	44%	68%	**47%**	**3**
MILL STREET DRAIN	MILL STREET	09-KER-058-R91.68-THPI	35.14138404	-118.4505567	13%	34%	15%	42%	67%	**47%**	**3**
FREEMAN GULCH	STATE ROUTE 14	09-KER-014-56.35	35.66759795	-117.8716097	18%	6%	7%	62%	78%	**47%**	**3**
WHITE WOLF EQUIPMENT U	STATE ROUTE 58	06-KER-058-75.17	35.26378404	-118.6584186	16%	6%	37%	42%	69%	**47%**	**3**
UP RR & BNSF RY	STATE ROUTE 58 EB	09-KER-058-R99.26	35.11019503	-118.3263267	21%	18%	19%	46%	66%	**46%**	**3**
POSO CREEK CHANNEL	CORCORAN RD	7.4 MI N/O SR 46	35.71748105	-119.5801294	5%	25%	30%	32%	77%	**46%**	**3**
SHRUB PEAK DRAIN	STATE ROUTE 58	09-KER-058-R97.46	35.11237304	-118.3584237	16%	18%	21%	45%	70%	**46%**	**3**
MONOLITH DRAIN #2	STATE ROUTE 58	09-KER-058-R96.73	35.11494204	-118.3707097	16%	18%	21%	45%	70%	**46%**	**3**
MONOLITH DRAIN #1	STATE ROUTE 58	09-KER-058-R96.67	35.11508904	-118.3740237	16%	18%	21%	45%	70%	**46%**	**3**
BOREL CANAL	ERSKINE CREEK RD	EAST OF EDNA ST.	35.61640299	-118.4694376	8%	2%	31%	61%	68%	**46%**	**3**
POSO CREEK	GRANITE RD	0.8 MI S OF S.H. 155	35.706859	-118.7259816	4%	5%	41%	49%	72%	**46%**	**3**
SR 58	STERLING ROAD	06-KER-058-R57.93	35.35233405	-118.9408126	24%	18%	17%	28%	83%	**46%**	**3**
SAND CANYON ROAD	STATE ROUTE 58 EB	09-KER-058-R99.49	35.11000603	-118.3229767	21%	18%	19%	46%	66%	**46%**	**3**
CANTIL WASH	STATE ROUTE 14	09-KER-014-37.32	35.32206999	-117.9796628	23%	4%	8%	60%	74%	**46%**	**3**
JAWBONE CANYON WASH	STATE ROUTE 14	09-KER-014-35.40	35.29829199	-118.0028657	23%	4%	11%	60%	70%	**46%**	**3**
CARRIER CANAL	EMPIRE DRIVE	SOUTH OF TRUXTUN	35.37271705	-119.0475706	24%	17%	17%	25%	85%	**46%**	**3**
CALIENTE CREEK	STATE ROUTE 58 EB	06-KER-058-67.30	35.31496704	-118.7868956	7%	36%	39%	18%	68%	**46%**	**3**
GENERAL BEALE ROAD	STATE ROUTE 58	06-KER-058-69.75	35.29255304	-118.7525956	7%	36%	35%	23%	66%	**46%**	**3**
LOS ANGELES AQUEDUCT	RANDSBURG CUTOFF	1.3 MI E OF SR 58	35.12226202	-118.1815157	22%	37%	6%	34%	69%	**45%**	**3**
CALLOWAY CANAL	STANDARD STREET	0.6 MI N GILMORE AVE	35.39904805	-119.0477706	17%	19%	17%	25%	89%	**45%**	**3**
CALIENTE CREEK	STATE ROUTE 58 WB	06-KER-058-67.30	35.31502604	-118.7867126	7%	36%	39%	18%	68%	**45%**	**3**
HART FLAT ROAD	STATE ROUTE 58	09-KER-058-80.24	35.24066704	-118.5872067	22%	4%	31%	42%	68%	**45%**	**4**
CALIFORNIA AQUEDUCT	STATE ROUTE 166	06-KER-166-17.44	35.05900309	-119.0928816	22%	7%	33%	32%	72%	**45%**	**4**
RED ROCK CANYON	STATE ROUTE 14	09-KER-014-39.88	35.35643699	-117.9760268	23%	4%	8%	60%	71%	**45%**	**4**
CACHE CREEK	STATE ROUTE 58 EB	09-KER-058-R107.60	35.11668103	-118.2019437	21%	21%	10%	41%	72%	**45%**	**4**
POSO CREEK	GRANITE RD	3 MI S/O BKRFLD-GLNVLE RD	35.673823	-118.7378046	1%	5%	33%	52%	73%	**45%**	**4**
PLEITITO CREEK	STATE ROUTE 166	06-KER-166-16.54	35.05886209	-119.1094486	22%	18%	33%	22%	69%	**44%**	**4**
RAG GULCH	STATE ROUTE 155	06-KER-155-R15.28	35.74729201	-118.9830125	7%	7%	34%	40%	75%	**44%**	**4**
LA DWP WEST AQUEDUCT	STATE ROUTE 58 WB	09-KER-058-M108.47	35.11533402	-118.1863487	15%	37%	5%	33%	72%	**44%**	**4**
ARVIN-EDISON CANAL	STATE ROUTE 223	06-KER-223-23.84	35.20929205	-118.7766046	17%	5%	36%	32%	71%	**44%**	**4**
KEENE ROAD	STATE ROUTE 58	09-KER-058-82.06	35.22357604	-118.5670937	16%	4%	31%	42%	68%	**44%**	**4**
LA DWP WEST AQUEDUCT	STATE ROUTE 58 EB	09-KER-058-M108.47	35.11514502	-118.1863657	15%	36%	5%	33%	72%	**44%**	**4**
GOOSE LAKE CANAL	STATE ROUTE 46	06-KER-046-35.13	35.61618406	-119.6069315	11%	25%	17%	32%	74%	**43%**	**4**
COTTONWOOD CREEK	STATE ROUTE 178	06-KER-178-R11.66	35.42317303	-118.8215046	13%	10%	42%	21%	75%	**43%**	**4**
LA DWP EAST AQUEDUCT	STATE ROUTE 58 EB	09-KER-058-M108.60	35.11468903	-118.1839937	14%	36%	5%	33%	72%	**43%**	**4**
LA DWP EAST AQUEDUCT	STATE ROUTE 58 WB	09-KER-058-M108.60	35.11490602	-118.1839707	14%	36%	5%	33%	71%	**43%**	**4**
GRANITE CANYON CREEK	BAKERSFLD-GLEN RD	0.5 MI N/O RND MTN RD	35.53828103	-118.9591686	3%	8%	48%	29%	72%	**43%**	**4**
CALIFORNIA AQUEDUCT	STATE ROUTE 46	06-KER-046-29.98	35.61616407	-119.6987064	17%	23%	20%	26%	72%	**43%**	**4**
LITTLE DIXIE WASH	BROWN-INYOKERN RD	2 MI S OF RTE 178	35.61978095	-117.8042988	15%	5%	2%	63%	73%	**43%**	**4**
LA DWP EAST AQUEDUCT	SR-58 WB ON-RAMP	09-KER-058-M108.60	35.11503102	-118.1839517	14%	36%	4%	32%	71%	**43%**	**4**
ST RTE 99 (@PM 2.73)	E166-N99 N99-W166	06-KER-166-24.57	35.05783708	-118.9677766	22%	3%	37%	27%	68%	**42%**	**4**
LA DWP EAST AQUEDUCT	SR-58 EB OFF RAMP	09-KER-058-M108.60	35.11458403	-118.1840067	14%	36%	4%	32%	71%	**42%**	**4**
MAIN DRAIN CANAL	STATE ROUTE 46	06-KER-046-34.63	35.61618906	-119.6147405	11%	24%	17%	29%	74%	**42%**	**4**
HIGHLINE RD CANAL	TEHACHAPI WIL SPRG	AT HIGHLINE RD	35.10970904	-118.3966547	14%	17%	12%	43%	69%	**42%**	**4**
STATE ROUTE 58	WILLOW SPRINGS RD	09-KER-058-R95.21	35.12007304	-118.3965187	14%	17%	12%	45%	66%	**42%**	**4**
UP RR BNSF TEHACHAPI CRK	STATE ROUTE 202	09-KER-202-R9.59-THPI	35.13465104	-118.4670987	15%	3%	16%	47%	72%	**42%**	**4**
INTERSTATE 5 (@PM 19.61)	STATE ROUTE 166	06-KER-166-22.76	35.05937608	-118.9994126	21%	2%	37%	26%	67%	**41%**	**4**
DWP MOJAVE CONDUIT	172ND STREET WEST	3.0 MI N. OF ROSAMOND RD	34.90395306	-118.4359347	14%	18%	16%	39%	66%	**41%**	**4**
POSO CREEK	ROUND MOUNTAIN RD	3.89 MI E BKFLD GLENVL RD	35.51410603	-118.9059266	3%	5%	44%	26%	74%	**41%**	**4**
AIRPORT WASH	BROWN-INYOKERN RD	1.2 MI N OF RTE 178	35.66221694	-117.8168737	14%	4%	2%	63%	69%	**41%**	**4**
RAG GULCH	STATE ROUTE 65	06-KER-065-23.59	35.76755101	-119.0532545	3%	3%	29%	43%	71%	**41%**	**4**
BUENA VISTA CREEK	ELK HILLS ROAD	2.3 MI N OF SO. HO 119	35.22299209	-119.4456205	16%	8%	25%	26%	76%	**41%**	**4**
POSO CREEK	BAKERSFLD-GLEN RD	S OF ROUND MTN RD	35.52917803	-118.9628316	3%	4%	48%	21%	74%	**41%**	**4**
INTERSTATE 5	LOST HILLS RD	06-KER-005-77.05	35.66570606	-119.6901954	11%	22%	23%	23%	70%	**41%**	**4**
PINE TREE WASH	STATE ROUTE 14 SB	09-KER-014-29.51	35.227134	-118.0490908	20%	0%	5%	54%	68%	**40%**	**4**
PINE TREE WASH	STATE ROUTE 14 NB	09-KER-014-29.51	35.22716401	-118.0491817	20%	0%	5%	54%	68%	**40%**	**4**

BOWMAN WASH	S CHINA LAKE BLVD	S CHINA LAKE & BOWMAN	35.60796694	-117.6706268	21%	2%	1%	56%	68%	**40%**	**4**
KERN RIVER FLOOD CANAL	INTERSTATE 5 NB	06-KER-005-71.66	35.60056706	-119.6401045	11%	24%	5%	29%	77%	**39%**	**4**
CALIFORNIA AQUEDUCT	GP ROAD	1.4 MI W LOST HILLS ROAD	35.64460106	-119.7142954	14%	20%	19%	24%	69%	**39%**	**4**
DUCK POND CREEK	STATE ROUTE 14	09-KER-014-25.76	35.18005301	-118.0806317	22%	2%	6%	47%	69%	**39%**	**4**
WALKER CREEK	STATE ROUTE 14	09-KER-014-58.50	35.61136995	-117.8979567	14%	1%	6%	55%	68%	**39%**	**4**
U.S. HIGHWAY 395 SB	STATE ROUTE 14 NB	09-KER-014-64.54	35.69407294	-117.8671567	14%	2%	3%	59%	67%	**39%**	**4**
MILLUX ROAD & SUNSET RR	INTERSTATE 5 NB	06-KER-005-30.75	35.17959207	-119.1303596	15%	3%	39%	19%	68%	**39%**	**4**
COASTAL AQUEDUCT	KECKS ROAD	1 MI WEST OF BARKER ROAD	35.73059507	-119.9885844	22%	19%	19%	16%	69%	**39%**	**4**
ARVIN-EDISON CANAL	TOWERLINE ROAD	0.1 MI S BUENA VISTA BLVD	35.23666205	-118.8065436	14%	2%	33%	28%	67%	**39%**	**4**
LAKEVIEW WASH	STATE ROUTE 119	06-KER-119-8.78	35.22838909	-119.3772015	18%	5%	28%	19%	74%	**39%**	**4**
BROWN ROAD	U.S. HIGHWAY 395	09-KER-395-R25.08	35.66966194	-117.8188347	14%	2%	2%	58%	67%	**39%**	**4**
U.S. HIGHWAY 395	STATE ROUTE 178	09-KER-178-R93.23	35.65142294	-117.8007158	14%	2%	2%	58%	67%	**39%**	**4**
SAN EMIGDIO CREEK	STATE ROUTE 166	06-KER-166-12.52	35.05863409	-119.1804046	22%	2%	33%	16%	71%	**38%**	**4**
WEED CREEK	STATE ROUTE 119	06-KER-119-4.41	35.18907009	-119.4358795	21%	5%	24%	22%	70%	**38%**	**4**
MILLUX ROAD & SUNSET RR	INTERSTATE 5 SB	06-KER-005-30.75	35.17976408	-119.1309016	15%	3%	38%	18%	67%	**38%**	**4**
COLLEGE HEIGHTS WASH	E BOWMAN ROAD	S CHINA LAKE & BOWMAN	35.60791194	-117.6699878	20%	0%	0%	53%	68%	**38%**	**4**
MARSH UNIT 1/MARSH UNT	UNIT 1/UNIT 2 DIKE	2.0 MI SSW OF HDQTRS	35.73366205	-119.5958204	0%	19%	26%	25%	72%	**38%**	**4**
CALIFORNIA AQUEDUCT	LOST HILLS ROAD	0.7 MI S OF S.H. 46	35.60607807	-119.6899014	14%	20%	17%	22%	69%	**38%**	**4**
BITTERWATER CREEK	STATE ROUTE 33	06-KER-033-12.74	35.0743591	-119.4020185	35%	3%	22%	11%	70%	**38%**	**4**
LERDO CANAL	STATE ROUTE 99 NB	06-KER-099-32.42	35.45908405	-119.1103236	7%	10%	28%	19%	76%	**38%**	**4**
MARSH UNT 2/MARSH UNT	UNIT2/UNIT 6B DIKE	1.2 MI SW OF HDQTRS	35.74849505	-119.5963204	0%	19%	26%	25%	71%	**38%**	**4**
MARSH UNIT 2/MARSH UNT	UNIT 2/UNIT 3 DIKE	0.8 MI SSW OF HDQTRS	35.74899505	-119.5863204	0%	19%	26%	25%	71%	**38%**	**4**
KERN RIVER	RANCHERIA ROAD	0.7 MI NORTH OF SR 178	35.42590603	-118.8292566	9%	6%	37%	17%	71%	**38%**	**4**
COUNTY LINE WASH	US HIGHWAY 395	09-KER-395-R36.70	35.79676393	-117.8724907	14%	1%	3%	56%	68%	**38%**	**4**
INDIAN WELLS WASH	STATE ROUTE 14	09-KER-014-62.97	35.67210095	-117.8698627	14%	1%	2%	55%	68%	**38%**	**4**
BITTERWATER CREEK	STATE ROUTE 46 EB	06-KER-046-15.75	35.61423708	-119.9491184	21%	18%	16%	17%	69%	**38%**	**4**
BITTERWATER CREEK	STATE ROUTE 46 WB	06-KER-046-15.75	35.61448708	-119.9491934	21%	18%	16%	17%	69%	**38%**	**4**
ARVIN-EDISON CANAL	ROCKPILE ROAD	0.2 MI S BUENA VISTA BLVD	35.23519805	-118.7882626	14%	0%	33%	26%	68%	**38%**	**4**
TEHACHAPI STORM DRAIN	TEHACHAPI BLVD	WEST OF DENNISON	35.13023404	-118.4324937	14%	0%	12%	44%	69%	**37%**	**4**
STATE ROUTE 58	DENNISON ROAD	09-KER-058-R92.75	35.13847304	-118.4319627	14%	1%	12%	46%	66%	**37%**	**4**
CALIFORNIA AQUEDUCT	GARDNER FIELD ROAD	0.5 MI EAST OF DUVALL ST	35.1292371	-119.3673045	20%	4%	29%	17%	68%	**37%**	**4**
STATE ROUTE 14	CALIFORNIA CITY BL	09-KER-014-21.16	35.12531202	-118.1242567	15%	3%	5%	49%	67%	**37%**	**4**
CALIFORNIA AQUEDUCT	OLD RIVER ROAD	0.5 MI NORTH OF RTE 166	35.06673109	-119.1331986	21%	1%	34%	14%	68%	**37%**	**4**
JOSHUA DRAIN	STATE ROUTE 14	09-KER-014-R0.76	34.83153405	-118.1699768	15%	2%	4%	47%	69%	**37%**	**4**
SANDY CREEK	GARDNER FIELD ROAD	0.9 MI E DUVALL ST	35.1266311	-119.3643765	21%	2%	29%	13%	72%	**37%**	**4**
KERN RIVER FLOOD CANAL	INTERSTATE 5 SB	06-KER-005-71.64	35.60020106	-119.6401015	10%	23%	3%	27%	75%	**37%**	**4**
BROAD CREEK	STATE ROUTE 119	06-KER-119-4.65	35.19119509	-119.4326625	15%	5%	24%	22%	71%	**37%**	**4**
INTERSTATE 5	MAIN DRAIN RD	06-KER-005-69.55	35.57615307	-119.6165125	10%	20%	16%	22%	69%	**37%**	**4**
WEST SIDE CANAL	STATE ROUTE 58	06-KER-058-24.08	35.39943708	-119.5301795	11%	6%	24%	20%	76%	**37%**	**4**
KERN RIV FLOOD CANAL RD	INTERSTATE 5 SB	06-KER-005-71.56	35.59880307	-119.6387845	11%	23%	5%	26%	71%	**37%**	**4**
BUENA VISTA SLOUGH	STATE ROUTE 58	06-KER-058-24.01	35.39948108	-119.5324595	11%	6%	24%	20%	75%	**36%**	**4**
SANDY CREEK	STATE ROUTE 33	06-KER-033-19.51-TAF	35.1471121	-119.4713295	22%	6%	18%	19%	72%	**36%**	**4**
Poso Creek	E Refuge Bound. Rd	S.E. corner of refuge.	35.71766205	-119.5799874	1%	17%	26%	20%	71%	**36%**	**4**
GENERAL BEALE ROAD	STATE ROUTE 58	06-KER-058-69.75	35.29238104	-118.7525956	7%	2%	35%	23%	66%	**36%**	**4**
LITTLE CREEK	STATE ROUTE 65	06-KER-065-11.00	35.59048403	-119.0897315	3%	3%	37%	21%	70%	**36%**	**4**
MCKITTRICK WASH	STATE ROUTE 33	06-KER-033-35.89	35.32991409	-119.6261625	23%	3%	22%	15%	71%	**36%**	**4**
STATE ROUTE 14	ROSAMOND BLVD	09-KER-014-R3.02	34.86431205	-118.1715598	9%	3%	4%	49%	68%	**36%**	**4**
POLLUTION CREEK	MIDWAY ROAD	0.4 MI W OF SH 119	35.1806421	-119.4529545	21%	4%	16%	17%	74%	**36%**	**4**
CALIFORNIA AQUEDUCT	TUPMAN ROAD	2 MI S OF STATION ROAD	35.30594208	-119.3694905	8%	5%	23%	27%	70%	**36%**	**4**
INTERSTATE 5	COUNTY LINE RD	06-KER-005-87.02	35.78964806	-119.7828684	24%	21%	17%	41%	30%	**36%**	**4**
POSO CREEK	STATE ROUTE 65	06-KER-065-8.29	35.55101204	-119.0872845	2%	4%	36%	17%	73%	**35%**	**4**
CALIFORNIA AQUEDUCT	CADET ROAD	1.5 MI W GARDNER FIELD RD	35.1011371	-119.3685185	20%	4%	23%	16%	68%	**35%**	**4**
BORON AVE DRAIN	STATE ROUTE 58	09-KER-058-R142.52	35.009898	-117.6557208	2%	2%	3%	55%	69%	**35%**	**4**
SANDY CREEK	GARDNER FIELD ROAD	0.15 MI W GAS COMPANY RD	35.1370561	-119.4155625	21%	2%	23%	12%	72%	**35%**	**4**
KERN RIVER PARK	RIVER ROAD	EAST OF HARBOR ROAD	35.44752003	-118.9182596	0%	5%	34%	21%	70%	**35%**	**4**
DRAINAGE DITCH	ACCESS ROAD	09-KER-014-22.35	35.14025902	-118.1131627	13%	0%	4%	45%	67%	**35%**	**4**
DRAINAGE DITCH	ACCESS ROAD	09-KER-014-23.65	35.15478102	-118.1018127	13%	0%	4%	45%	67%	**35%**	**4**
DRAINAGE DITCH	ACCESS ROAD	09-KER-014-24.88	35.16957601	-118.0898657	13%	0%	4%	45%	67%	**35%**	**4**
EAST SIDE CANAL	INTERSTATE 5	06-KER-005-67.96	35.55790307	-119.5968515	11%	21%	5%	20%	73%	**35%**	**4**
CALIFORNIA AQUEDUCT	TWISSELMAN ROAD	2.7 MI EAST HOLLOWAY ROAD	35.73149806	-119.8005544	14%	20%	1%	25%	69%	**35%**	**4**
WASP WASH	STATE ROUTE 33	06-KER-033-37.89	35.35607809	-119.6395155	22%	2%	21%	14%	70%	**35%**	**4**
POSO CREEK	GUN CLUB ROAD	5.5 MI N/O SR 46	35.68084805	-119.5085905	3%	23%	3%	29%	72%	**35%**	**4**
BNSF RY	STATE HWY 58 WB	09-KER-058-R141.49	35.00687601	-117.6734348	1%	2%	2%	56%	67%	**35%**	**4**
BNSF RY	STATE HWY 58 EB	09-KER-058-R141.50	35.00648701	-117.6731488	1%	2%	2%	56%	67%	**35%**	**4**
MAIN FLOOD CANAL	STATE ROUTE 46	06-KER-046-32.80	35.61626206	-119.6484844	10%	21%	4%	22%	72%	**34%**	**4**
BUENA VISTA CREEK	STATE ROUTE 119	06-KER-119-6.32	35.20583409	-119.4108735	14%	2%	23%	17%	72%	**34%**	**5**
CACHE CREEK	RANDSBURG CUTOFF	5 MI NORTH OF MOJAVE	35.11774202	-118.1770877	14%	4%	4%	37%	69%	**34%**	**5**
INTERSTATE 5	STATE ROUTE 46	06-KER-046-32.50	35.61621406	-119.6529954	11%	21%	4%	23%	70%	**34%**	**5**
POSO CREEK OVERFLOW	STATE ROUTE 99	06-KER-099-41.85	35.59659804	-119.2097905	7%	8%	7%	30%	75%	**34%**	**5**
DWP PIPELINE	170TH STREET WEST	0.3 MI N OF ROSAMOND BLVD	34.86768907	-118.4322017	20%	2%	0%	37%	66%	**34%**	**5**
BROAD CREEK	ELK HILLS ROAD	0.2 MI N OF S.H. 119	35.19014809	-119.4456955	20%	0%	23%	14%	68%	**34%**	**5**
WEST SIDE CANAL	INTERSTATE 5	06-KER-005-71.61	35.59969506	-119.6396295	10%	19%	4%	20%	72%	**34%**	**5**
POSO CREEK	STATE ROUTE 99	06-KER-099-44.54	35.60563104	-119.2118935	6%	8%	6%	31%	74%	**33%**	**5**
SEVENTEEN CANYON	STATE ROUTE 33	06-KER-033-21.49	35.1630731	-119.5001185	21%	1%	20%	12%	70%	**33%**	**5**
STATE ROUTE 58	GEPHART ROAD	09-KER-058-R137.77	35.00703701	-117.7391568	0%	2%	1%	55%	66%	**33%**	**5**
STATE ROUTE 58	BORAX ROAD	09-KER-058-R139.80	35.00658701	-117.7032688	0%	2%	1%	55%	66%	**33%**	**5**
STATE ROUTE 58	BORON AVENUE	09-KER-058-R142.88	35.010464	-117.6498048	0%	1%	1%	55%	66%	**33%**	**5**
INTERSTATE 5	TWISSELMAN RD	06-KER-005-82.35	35.73206206	-119.7394654	8%	21%	1%	26%	67%	**33%**	**5**
INTERSTATE 5	WEISER ROAD	06-KER-005-80.01	35.70283406	-119.7176934	8%	21%	1%	26%	67%	**33%**	**5**
SR 58	MALAGA ROAD	06-KER-058-R62.53	35.34272004	-118.8609546	7%	2%	33%	15%	66%	**33%**	**5**
STATE ROUTE 58	20 MULE TEAM ROAD	09-KER-058-R136.40	35.00383401	-117.7629708	0%	2%	3%	53%	66%	**33%**	**5**
CACHE CREEK	STATE ROUTE 14 SB	09-KER-014-20.18	35.11183402	-118.1344707	14%	2%	5%	33%	69%	**33%**	**5**
CACHE CREEK	STATE ROUTE 14 NB	09-KER-014-20.18	35.11185302	-118.1339347	14%	2%	5%	33%	69%	**33%**	**5**
BNSF RY & AMTRAK	STATE ROUTE 99	06-KER-099-24.78-BKD	35.37121705	-119.0430126	14%	9%	8%	18%	74%	**33%**	**5**
TRUXTUN AVE	STATE ROUTE 99	06-KER-099-24.99-BKD	35.37370105	-119.0439436	14%	9%	8%	18%	74%	**33%**	**5**
CALIFORNIA AQUEDUCT	STATE ROUTE 58	06-KER-058-23.03	35.39102308	-119.5452435	8%	5%	20%	21%	69%	**33%**	**5**
WESTSIDE CANAL	TUPMAN ROAD	1.4 MI S OF STATION ROAD	35.31363908	-119.3767545	9%	3%	18%	20%	73%	**33%**	**5**

SHORT MAIN CANAL	TUPMAN ROAD	1 MI SOUTH OF STATION RD	35.31847008	-119.3767795	9%	3%	18%	20%	73%	**33%**	**5**
KERN RIV FLOOD CANAL RD	INTERSTATE 5 NB	06-KER-005-71.56	35.59906206	-119.6386905	10%	20%	3%	22%	69%	**33%**	**5**
KERN RIVER	STATE ROUTE 99	06-KER-099-25.35-BKD	35.37969205	-119.0443956	9%	10%	9%	16%	79%	**33%**	**5**
CALIFORNIA AQUEDUCT	ELK HILLS ROAD	1.5 MI SOUTH OF BRITE RD	35.34713408	-119.4692955	8%	5%	18%	23%	69%	**33%**	**5**
UNION PACIFIC RR (UP RR)	STATE ROUTE 58 EB	09-KER-058-M111.78	35.09388902	-118.1342817	14%	2%	5%	33%	67%	**32%**	**5**
WESTSIDE CANAL	BUTTONWILLOW DRIVE	0.5 MI SOUTH OF BRITE RD	35.36331408	-119.4742235	8%	3%	19%	18%	73%	**32%**	**5**
SANDY CREEK	AIRPORT ROAD	0.65 MI NE OF SR 119	35.1461671	-119.4391295	20%	1%	16%	12%	72%	**32%**	**5**
BUENA VISTA SLOUGH	BUTTONWILLOW DRIVE	0.6 MI S OF BRITE RD	35.36117008	-119.4742315	8%	3%	19%	18%	73%	**32%**	**5**
POSO CREEK	WILDWOOD ROAD	2.4 MI S OF POND ROAD	35.68098104	-119.4373155	2%	19%	2%	23%	75%	**32%**	**5**
UNION PACIFIC RR (UP RR)	STATE ROUTE 58 WB	09-KER-058-M111.78	35.09413902	-118.1339237	14%	2%	5%	33%	67%	**32%**	**5**
CALIFORNIA AQUEDUCT	LOKERN ROAD	1.5 MI WEST OF HWY 58	35.39857808	-119.5620875	7%	4%	20%	21%	69%	**32%**	**5**
BUENA VISTA CREEK	VALLEY WEST ROAD	.75 MILE WEST OF SH 119	35.20965909	-119.4184065	14%	0%	23%	14%	69%	**32%**	**5**
GREGORY DRAIN	STATE ROUTE 14	09-KER-014-16.40	35.07009203	-118.1733767	14%	1%	5%	30%	70%	**32%**	**5**
RENATA DRAIN	STATE ROUTE 14	09-KER-014-16.45	35.07050303	-118.1729567	14%	1%	5%	30%	70%	**32%**	**5**
CALIFORNIA AQUEDUCT	STATE ROUTE 119	06-KER-119-14.92	35.26650308	-119.3096455	11%	6%	4%	27%	71%	**32%**	**5**
KERN RIVER	ST RT 43 (ENOS LN)	06-KER-043-2.58	35.30330307	-119.2524765	9%	6%	2%	28%	74%	**32%**	**5**
WOOD CANYON WASH	REWARD ROAD	2 MI E MARIA VLY HWY	35.32267309	-119.6784685	20%	0%	19%	12%	68%	**32%**	**5**
STATE ROUTE 58	STATE ROUTE 14 NB	09-KER-014-19.00	35.09837302	-118.1443987	14%	2%	4%	32%	66%	**32%**	**5**
STATE ROUTE 58	STATE ROUTE 14 SB	09-KER-014-19.00	35.09850902	-118.1446957	14%	2%	4%	32%	66%	**32%**	**5**
STATE ROUTE 58	BUSINESS ROUTE 58	09-KER-058-M108.90	35.11411702	-118.1790297	14%	2%	4%	32%	66%	**32%**	**5**
CYMRIC WASH	STATE ROUTE 33	06-KER-033-40.38	35.38863409	-119.6595455	15%	1%	19%	14%	70%	**32%**	**5**
STATE ROUTE 14	SILVER QUEEN ROAD	09-KER-014-R12.15	34.99546704	-118.1598628	8%	2%	3%	38%	67%	**32%**	**5**
ROUTE 14	AVENUE "A"	07-LA-014-R77.00	34.82050906	-118.1706238	14%	1%	3%	47%	53%	**31%**	**5**
SOUTH TAFT CREEK	SUPPLY ROW AVENUE	0.18 MI N CRYSTAL STREET	35.1367421	-119.4533515	20%	1%	16%	12%	68%	**31%**	**5**
STATE ROUTE 58	BUSINESS 58 EAST	09-KER-058-M116.37	35.03825603	-118.1066408	7%	3%	1%	41%	67%	**31%**	**5**
STATE ROUTE 58 & TVRR	INTERSTATE 5 SB	06-KER-005-52.09	35.39884507	-119.3970845	11%	6%	5%	25%	71%	**31%**	**5**
SILVER QUEEN RD DRAIN	STATE ROUTE 14	09-KER-014-R11.30	34.98420104	-118.1588268	8%	1%	3%	36%	69%	**31%**	**5**
SOUTH TAFT CREEK	OLIVE AVENUE	0.08 MI N CRYSTAL STREET	35.1355091	-119.4562515	20%	1%	16%	12%	68%	**31%**	**5**
STATE ROUTE 14	DAWN ROAD	09-KER-014-R6.12	34.90813705	-118.1646628	7%	1%	2%	42%	66%	**31%**	**5**
KERN RIVER	STATE ROUTE 119	06-KER-119-15.08	35.26690308	-119.3069735	11%	5%	4%	25%	73%	**31%**	**5**
VIVACQUA DRAIN	STATE ROUTE 14	09-KER-014-16.53	35.07130603	-118.1721187	14%	1%	5%	30%	68%	**31%**	**5**
STATE ROUTE 99	ELEVENTH AVE	06-KER-099-56.10-DLN	35.76951202	-119.2508515	1%	2%	18%	30%	67%	**31%**	**5**
BACKUS ROAD DRAIN NO. 1	STATE ROUTE 14	09-KER-014-R9.30	34.95508904	-118.1604878	8%	1%	3%	36%	69%	**31%**	**5**
BACKUS ROAD DRAIN NO. 2	STATE ROUTE 14	09-KER-014-R9.80	34.96253404	-118.1600628	8%	1%	3%	36%	69%	**31%**	**5**
SANDY CREEK	N 10TH STREET	0.22 MI S OF ASH STREET	35.1480701	-119.4651955	21%	1%	16%	10%	69%	**31%**	**5**
UP RR & BNSF RY SR 14	OAK CREEK ROAD	350 FT WEST OF ROUTE 14	35.05845603	-118.1766407	14%	2%	2%	33%	66%	**31%**	**5**
SANDY CREEK	STATE ROUTE 119	06-KER-119-0.97-TAF	35.1499671	-119.4478705	20%	0%	16%	10%	69%	**31%**	**5**
LERDO CANAL	STATE ROUTE 99	06-KER-099-37.22	35.50614205	-119.1725685	7%	7%	7%	22%	74%	**31%**	**5**
SANDY CREEK	6TH STREET	SOUTH OF ASH STREET	35.1512201	-119.4563185	21%	1%	16%	10%	68%	**31%**	**5**
INTERSTATE 5	COPUS RD	06-KER-005-22.88	35.09500908	-119.0375206	22%	3%	2%	20%	68%	**31%**	**5**
STATE ROUTE 99	DAVID ROAD	06-KER-099-5.34	35.09445608	-118.9793456	22%	3%	2%	21%	68%	**31%**	**5**
FRIANT-KERN CANAL	ST RTE 99 & UP RR	06-KER-099-46.32	35.63078703	-119.2162205	5%	5%	5%	27%	73%	**31%**	**5**
SANDY CREEK	4TH STREET	SOUTH OF ASH STREET	35.1506981	-119.4527435	20%	0%	16%	10%	69%	**31%**	**5**
SANDY CREEK	EMMONS PARK DRIVE	SOUTH OF ASH STREET	35.1509511	-119.4601015	20%	0%	16%	9%	69%	**30%**	**5**
CALIFORNIA AQUEDUCT	LERDO HIGHWAY	6 MI WEST OF INTERSTATE 5	35.49928408	-119.6478155	15%	5%	2%	22%	70%	**30%**	**5**
POSO CREEK OVERFLOW	STATE ROUTE 99	06-KER-099-45.49	35.59662004	-119.2101295	5%	5%	5%	26%	73%	**30%**	**5**
STATE ROUTE 58 & TVRR	INTERSTATE 5 NB	06-KER-005-52.09	35.39885107	-119.3977095	11%	5%	4%	24%	70%	**30%**	**5**
POSO CREEK	SCOFIELD AVE	2.4 MI S OF POND AVE	35.68097004	-119.4013455	1%	18%	1%	22%	72%	**30%**	**5**
FAMOSO CATTLEPASS	STATE ROUTE 99	06-KER-099-43.96	35.60197804	-119.2111235	5%	6%	5%	28%	70%	**30%**	**5**
POSO CREEK	LEONARD AVE	0.5 MI S ELMO HIGHWAY	35.68116204	-119.3835205	1%	18%	1%	22%	72%	**30%**	**5**
STATE ROUTE 14	BACKUS ROAD	09-KER-014-R9.14	34.95187604	-118.1613628	7%	1%	2%	37%	66%	**30%**	**5**
SR 99	SR 155 (GARCES HWY	06-KER-155-0.41-DLN	35.76129502	-119.2489185	3%	4%	3%	34%	69%	**30%**	**5**
BUENA VISTA SLOUGH	STATE ROUTE 119	06-KER-119-14.98	35.26701708	-119.3068375	11%	4%	4%	22%	72%	**30%**	**5**
INTERSTATE 5	7TH STANDARD RD	06-KER-005-56.64	35.44221207	-119.4570685	11%	5%	4%	23%	70%	**30%**	**5**
FRIANT-KERN CANAL	STATE ROUTE 46	06-KER-046-56.29	35.60185904	-119.2397815	3%	6%	3%	29%	71%	**30%**	**5**
KERN RIVER	INTERSTATE 5 NB	06-KER-005-42.00	35.30166207	-119.2626435	8%	5%	1%	27%	72%	**30%**	**5**
KERN RIVER	INTERSTATE 5 SB	06-KER-005-42.00	35.30185607	-119.2628905	8%	5%	1%	27%	72%	**30%**	**5**
SR 178 (ROSEDALE HWY)	STATE ROUTE 99	06-KER-099-25.63-BKD	35.38317605	-119.0444296	8%	9%	8%	15%	73%	**30%**	**5**
INTERSTATE 5	OLD RIVER RD	06-KER-005-29.07	35.16132008	-119.1108236	16%	4%	3%	21%	69%	**30%**	**5**
LERDO CANAL	STATE ROUTE 99	06-KER-099-R43.90L	35.60197004	-119.2133155	5%	5%	5%	25%	73%	**30%**	**5**
POSO CREEK	ZERKER RD	0.3 MI N KIMBERLINA RD	35.56266704	-119.1510735	2%	6%	2%	30%	73%	**30%**	**5**
INTERSTATE 5	VALPREDO AVE	06-KER-005-21.17	35.07634808	-119.0175516	22%	3%	2%	19%	67%	**30%**	**5**
BACKUS ROAD DRAIN NO. 1	EAST FRONTAGE ROAD	09-KER-014-R9.30	34.95491704	-118.1597658	7%	0%	2%	35%	68%	**30%**	**5**
WESTSIDE CANAL	LERDO HIGHWAY	0.8 MI OF MAIN DRAIN RD	35.49938707	-119.6180815	9%	4%	3%	21%	74%	**30%**	**5**
INTERSTATE 5	HERRING RD	06-KER-005-28.16	35.15168408	-119.1001406	16%	4%	3%	20%	68%	**30%**	**5**
CANAL LATERAL 29	STATE ROUTE 99	06-KER-099-27.80	35.41169505	-119.0540956	8%	8%	8%	13%	75%	**29%**	**5**
FRIANT-KERN CANAL	WOOLLOMES AVE	0.3 MI EAST OF ZACHARY AV	35.74687802	-119.1823435	1%	3%	1%	34%	73%	**29%**	**5**
POSO CREEK	WHISLER ROAD	2.9 MI E STATE HWY 43	35.64522304	-119.2790625	2%	5%	2%	28%	74%	**29%**	**5**
POSO CREEK	STATE ROUTE 43	06-KER-043-29.52	35.66186204	-119.3308045	3%	4%	3%	25%	75%	**29%**	**5**
MAIN DRAIN CANAL	STATE ROUTE 58	06-KER-058-27.82	35.39967607	-119.4647565	9%	6%	2%	19%	74%	**29%**	**5**
UP RR & BNSF RY	STATE ROUTE 14 NB	09-KER-014-R15.30	35.03864503	-118.1696267	7%	2%	2%	33%	66%	**29%**	**5**
UP RR & BNSF RY	STATE ROUTE 14 SB	09-KER-014-R15.33	35.03905103	-118.1698267	7%	2%	2%	33%	66%	**29%**	**5**
ARVIN-EDISON CANAL	VALOS RD	0.3 MI S DAVID RD	35.08978107	-118.8996706	20%	1%	0%	21%	67%	**29%**	**5**
KERN RIVER	STOCKDALE HWY	0.3 MI W BUENA VISTA RD	35.35185606	-119.1327156	11%	5%	4%	18%	72%	**29%**	**5**
MAIN CANAL	INTERSTATE 5	06-KER-005-42.89	35.31057607	-119.2735345	10%	3%	3%	22%	71%	**29%**	**5**
FRIANT-KERN CANAL	CECIL AVE	0.5 MI EAST OF ZACHARY AV	35.77591202	-119.1781045	1%	3%	1%	37%	68%	**29%**	**5**
CALLOWAY CANAL	STATE ROUTE 46	06-KER-046-54.89	35.60178904	-119.2624405	3%	4%	3%	25%	74%	**29%**	**5**
CALLOWAY CANAL	STATE ROUTE 99	06-KER-099-26.70	35.39846205	-119.0447066	6%	7%	6%	14%	76%	**29%**	**5**
GILMORE AVE	STATE ROUTE 99	06-KER-099-26.08-BKD	35.38948405	-119.0444816	7%	8%	7%	15%	73%	**29%**	**5**
FRIANT-KERN CANAL	9TH AVE	0.6 MI EAST OF ZACHARY AV	35.76864502	-119.1767795	0%	3%	0%	37%	68%	**29%**	**5**
LERDO CANAL	KIMBERLINA RD	0.7 MI W OF DRIVER RD	35.55841704	-119.2182655	3%	4%	3%	24%	74%	**29%**	**5**
UP RR	POND ROAD	19.4 MI E OF CORCORAN RD	35.71802603	-119.2360015	1%	4%	1%	35%	67%	**28%**	**5**
FRIANT-KERN CANAL	STATE ROUTE 155	06-KER-155-R4.06	35.76143402	-119.1767515	1%	2%	1%	35%	69%	**28%**	**5**
INTERSTATE 5	ST RT 43 (ENOS LN)	06-KER-043-1.86	35.29358707	-119.2525345	9%	4%	3%	23%	68%	**28%**	**5**
INTERSTATE 5	STOCKDALE HIGHWAY	06-KER-005-47.55	35.35493107	-119.3358265	9%	4%	3%	23%	68%	**28%**	**5**
FRIANT-KERN CANAL	POND RD	0.3 MI EAST OF ZACHARY AV	35.71786202	-119.1822315	1%	3%	1%	34%	69%	**28%**	**5**
UP RR	SHERWOOD AVE	0.1 MI W SAN JUAN ST	35.67323703	-119.2255705	1%	6%	1%	33%	67%	**28%**	**5**

UP RR	STATE ROUTE 99 NB	06-KER-099-R43.60R	35.59078704	-119.2062375	3%	5%	3%	27%	69%	**28%**	**5**
ARVIN-EDISON CANAL	AKERS RD	0.3 MI S PANAMA LN	35.29241706	-119.0478706	24%	18%	17%	28%	19%	**28%**	**5**
INTERSTATE 5	BUTTONWILLOW DR	06-KER-005-58.01	35.45517807	-119.4748595	9%	4%	3%	22%	68%	**28%**	**5**
BEARDSLEY CANAL	CHINA GRADE LOOP	0.1MI S/O ROUND MT. DRIVE	35.42729804	-118.9677346	1%	5%	14%	17%	69%	**28%**	**5**
FRIANT-KERN CANAL	ZACHARY AVE	0.4 MI SOUTH OF POND RD	35.71178402	-119.1871485	1%	3%	1%	34%	68%	**28%**	**5**
CALLOWAY CANAL	SHAFTER AVE	0.7 MI S KIMBERLINA RD	35.54987805	-119.2770405	1%	5%	1%	27%	72%	**28%**	**5**
FRIANT-KERN CANAL	COUNTY LINE RD	0.5 MI EAST OF ZACHARY AV	35.79049802	-119.1781515	1%	2%	1%	34%	68%	**28%**	**5**
GOOSE LAKE SLOUGH	ST RT 43 (ENOS LN)	06-KER-043-7.12	35.36923406	-119.2521875	8%	3%	1%	22%	72%	**28%**	**5**
KERN RIVER	COFFEE ROAD SB	0.2 MI N OF TRUXTUN AVE	35.36319806	-119.0916626	10%	5%	4%	13%	74%	**28%**	**5**
NORRIS RD UP RR OILDALE	STATE ROUTE 99 SB	06-KER-099-R28.56	35.23712806	-119.0152956	10%	5%	3%	18%	69%	**28%**	**5**
INTERSTATE 5	STATE ROUTE 119	06-KER-119-19.74	35.26708907	-119.2247795	9%	4%	3%	21%	68%	**28%**	**5**
STATE ROUTE 99	7TH STANDARD RD WB	06-KER-099-R30.54	35.44139505	-119.0847566	2%	3%	23%	10%	68%	**28%**	**5**
FRIANT-KERN CANAL	PETERSON RD	0.3 MI WEST OF ZACHARY AV	35.70337603	-119.1916345	1%	3%	1%	32%	68%	**28%**	**5**
STATE ROUTE 99	KIMBERLINA RD	06-KER-099-R41.16	35.55845904	-119.1974265	3%	5%	3%	24%	69%	**28%**	**5**
STATE ROUTE 99	WHISLER ROAD	06-KER-099-R47.37	35.64563403	-119.2201125	3%	4%	3%	27%	68%	**28%**	**5**
UP RR	STATE ROUTE 99 SB	06-KER-099-R43.42L	35.59313704	-119.2067985	3%	4%	3%	26%	69%	**28%**	**5**
INTERSTATE 5	LERDO HIGHWAY	06-KER-005-62.60	35.50029207	-119.5349795	9%	3%	2%	22%	68%	**28%**	**5**
FRIANT-KERN CANAL	7TH STANDARD ROAD	WEST OF VERDUGO ROAD	35.44157605	-119.1228015	1%	2%	22%	9%	69%	**27%**	**5**
CALLOWAY CANAL	STATE ROUTE 58	0.5 MI W OF MOHAWK ST.	35.38322305	-119.0755546	4%	7%	4%	14%	74%	**27%**	**5**
UP RR	PERKINS AVE	0.25 MI W BROWNING RD	35.68278703	-119.2277875	1%	4%	1%	31%	67%	**27%**	**5**
CROSS VALLEY CANAL	COFFEE ROAD SB	06-KER-058-R48.52-BKD	35.36609205	-119.0920096	10%	5%	4%	13%	71%	**27%**	**5**
CROSS VALLEY CANAL	COFFEE ROAD NB	JUST S OF ROUTE 58	35.36617605	-119.0918296	10%	5%	4%	13%	71%	**27%**	**5**
CALLOWAY CANAL	ROSEDALE HWY	0.2 MI EAST COFFEE RD	35.38326405	-119.0881516	3%	7%	3%	14%	74%	**27%**	**5**
FRIANT-KERN CANAL	KIMBERLINA ROAD	1.7 MI EAST OF SHAFTER AV	35.55832304	-119.2459935	3%	4%	3%	24%	70%	**27%**	**5**
ALFRED HARRELL HWY	ALFRED HARRELL HWY	0.4 MI E CHINA GRADE LOOP	35.41716204	-118.9591936	1%	4%	14%	17%	67%	**27%**	**5**
KERN RIVER	COFFEE ROAD NB	0.2 MI N TRUXTUN AVE	35.36313405	-119.0918656	10%	4%	3%	13%	73%	**27%**	**5**
NORRIS RD UP RR OILDALE	STATE ROUTE 99 NB	06-KER-099-R28.56	35.23716706	-119.0150046	9%	4%	3%	18%	69%	**27%**	**5**
INTERSTATE 5	CANAL SERVICE RD	06-KER-005-36.10	35.23741407	-119.1934376	9%	3%	2%	21%	68%	**27%**	**5**
STATE ROUTE 99	WOOLLOMES AVE	06-KER-099-54.48-DLN	35.74682302	-119.2436405	1%	2%	1%	30%	67%	**27%**	**5**
STATE ROUTE 99	PERKINS AVE	06-KER-099-49.95-MCF	35.68269203	-119.2284065	0%	4%	0%	30%	67%	**27%**	**5**
STATE ROUTE 99	POND ROAD	06-KER-099-52.45	35.71801403	-119.2373265	1%	2%	1%	30%	67%	**27%**	**5**
STATE ROUTE 99	HERRING RD	06-KER-099-9.30	35.15004807	-118.9968956	14%	2%	1%	19%	66%	**27%**	**5**
FRIANT-KERN CANAL	ELMO HIGHWAY	0.5 MI WEST OF ZACHARY AV	35.68910103	-119.1955765	1%	2%	1%	30%	68%	**27%**	**5**
FRIANT-KERN CANAL	LERDO HIGHWAY	1.9 MI EAST OF CHERRY AVE	35.49973405	-119.2072765	3%	4%	3%	21%	70%	**27%**	**5**
KERN RIVER	CHINAGRADE LOOP RD	0.1 MI S ROUND MTN RD	35.42592804	-118.9677376	1%	3%	15%	13%	70%	**27%**	**5**
STATE ROUTE 99	STATE ROUTE 46	06-KER-046-R57.76	35.60177604	-119.2115875	2%	3%	2%	25%	68%	**26%**	**5**
UP RR	KIMBERLINA RD	WEST OF SH 99	35.55844804	-119.1985545	2%	4%	2%	24%	68%	**26%**	**5**
STATE ROUTE 99	UNION AVE-S99 ONRP	06-KER-099-10.93	35.17297007	-119.0042346	14%	2%	1%	16%	67%	**26%**	**5**
POSO CREEK	FAMOSO WOODY ROAD	0.1 MI E FAMOSO PORTERVLE	35.60201704	-119.2050875	1%	2%	1%	24%	72%	**26%**	**5**
CALLOWAY CANAL	LERDO HIGHWAY WB	0.9 MI E CHERRY AVE	35.49965105	-119.2251875	3%	3%	3%	18%	72%	**26%**	**5**
ALEJANDRO CANAL	INTERSTATE 5	06-KER-005-40.44	35.28493707	-119.2437955	9%	2%	2%	18%	69%	**26%**	**5**
ARVIN-EDISON CANAL	BUENA VISTA BLVD	0.5 MI EAST OF TEJON HWY	35.23828405	-118.8152206	7%	2%	0%	23%	68%	**26%**	**5**
EAST SIDE CANAL	STATE ROUTE 178	06-KER-178-R2.42-BKD	35.38341405	-119.0030096	5%	5%	5%	11%	73%	**26%**	**5**
EAST SIDE CANAL	WILLIAMS ST	350 FT S MONTEREY ST	35.37657005	-118.9779706	7%	0%	14%	9%	68%	**26%**	**5**
TVRR	STATE ROUTE 58 WB	06-KER-058-R58.92	35.35245904	-118.9231686	9%	4%	2%	16%	68%	**26%**	**5**
STATE ROUTE 99	ELMO HWY	06-KER-099-50.41	35.68911703	-119.2295405	0%	2%	0%	30%	66%	**26%**	**5**
CALLOWAY CANAL	KIMBERLINA RD	WEST SHAFTER AVE	35.55819204	-119.2783935	1%	2%	1%	22%	72%	**26%**	**5**
EAST SIDE CANAL	BROWN STREET	SOUTH OF MONTEREY ST	35.37694805	-118.9795016	7%	0%	14%	9%	68%	**26%**	**5**
UP RR	LERDO HIGHWAY	0.2 MI E OF ZERKER RD	35.49961205	-119.1649295	3%	6%	3%	17%	69%	**26%**	**5**
SR 184 (WEEDPATCH HWY)	STATE ROUTE 58 WB	06-KER-058-R59.43	35.35240105	-118.9140626	9%	3%	2%	16%	68%	**26%**	**5**
KERN RIVER	ALLEN ROAD	0.5 MI SOUTH OF STOCKDALE	35.34627306	-119.1450206	8%	3%	1%	15%	70%	**26%**	**5**
BNSF AMTRAK FRONTAGE R	COFFEE ROAD	0.46 MI SOUTH OF SR 58	35.37605905	-119.0935516	10%	5%	4%	9%	69%	**26%**	**5**
KERN ISLAND CANAL	WIBLE ROAD	0.5 MI SOUTH OF MOCAL RD	35.17210907	-119.0393816	14%	0%	0%	13%	69%	**25%**	**5**
EAST SIDE CANAL	STATION ROAD	0.6 MI EAST OF TUPMAN RD	35.33308908	-119.3716265	8%	1%	1%	19%	68%	**25%**	**5**
FRIANT-KERN CANAL	SHERWOOD AVE	0.5 MI WEST OF ZACHARY AV	35.67454503	-119.1955765	1%	2%	1%	26%	68%	**25%**	**5**
FRIANT-KERN CANAL	HANAWALT AVE	0.15 MI EAST OF DRIVER RD	35.66007303	-119.2017295	1%	2%	1%	25%	68%	**25%**	**5**
UP RR	WHISTLER RD	0.07 MI EAST OF SR 99	35.64564803	-119.2190905	1%	2%	1%	26%	67%	**25%**	**5**
EIGHTY FOOT DITCH	STATE ROUTE 58	06-KER-058-26.38	35.39930308	-119.4892845	8%	3%	2%	14%	69%	**25%**	**5**
ARVIN-EDISON CANAL	PANAMA LANE	0.1 MI E MALAGA RD	35.29633105	-118.8597936	7%	2%	1%	19%	68%	**25%**	**5**
ARVIN-EDISON CANAL	MALAGA RD	0.5 MI N PANAMA LN	35.30208705	-118.8607596	7%	2%	1%	19%	68%	**25%**	**5**
ARVIN-EDISON CANAL	HERMOSA RD	0.4 MI W MALAGA RD	35.31086205	-118.8672126	7%	2%	1%	19%	68%	**25%**	**5**
ARVIN-EDISON CANAL	MOUNTAIN VIEW RD	0.4 MI W COMANCHE DR	35.28182605	-118.8501236	7%	2%	1%	19%	68%	**25%**	**5**
KERN RIVER	CALLOWAY DRIVE	0.1 MI N OF STOCKDALE HWY	35.35617806	-119.1157686	8%	4%	1%	14%	69%	**25%**	**5**
TVRR	STATE ROUTE 58 EB	06-KER-058-R58.92	35.35220905	-118.9231706	8%	3%	2%	15%	67%	**25%**	**5**
ARVIN-EDISON CANAL	BEAR MT WINERY RD	0.1 MI E COMANCHE DR	35.26006405	-118.8396626	7%	2%	0%	19%	68%	**25%**	**5**
FRIANT-KERN CANAL	DRIVER ROAD	AT WHISLER RD	35.64478703	-119.2044205	0%	2%	0%	25%	68%	**25%**	**5**
KERN RIVER	MOHAWK STREET	0.17 MI NORTH OF TRUXTUN	35.36663105	-119.0656956	9%	3%	2%	12%	70%	**25%**	**5**
STATE ROUTE 99	HOUGHTON ROAD	06-KER-099-15.43	35.23756206	-119.0151046	8%	3%	1%	16%	67%	**25%**	**5**
SR 58	VINELAND ROAD	06-KER-058-R60.45	35.35065104	-118.8964376	8%	3%	2%	15%	67%	**25%**	**5**
EAST SIDE CANAL	EDISON ROAD	0.7 MI N OF ROUTE 223	35.21957806	-118.8780986	7%	0%	0%	17%	71%	**25%**	**5**
LERDO CANAL	LERDO HIGHWAY	0.6 MI E/O SR 99	35.49956704	-119.1531185	1%	4%	1%	16%	73%	**25%**	**5**
STATE ROUTE 99	SHERWOOD AVE	06-KER-099-49.30-MCF	35.67317303	-119.2261875	1%	2%	1%	25%	66%	**25%**	**5**
MT VERNON AVENUE	STATE ROUTE 58 EB	06-KER-058-R56.41	35.35284205	-118.9674236	9%	3%	2%	13%	68%	**25%**	**5**
STATE ROUTE 99	LERDO HIGHWAY	06-KER-099-36.52	35.49974804	-119.1632485	3%	4%	3%	15%	69%	**25%**	**5**
UP TRACKS EDISON HWY	FAIRFAX ROAD	0.7 MI NORTH OF SR58	35.36219205	-118.9314486	8%	3%	1%	15%	67%	**25%**	**5**
ARVIN-EDISON CANAL	GOSFORD RD SB	0.3 MI S TRUXTUN AVE	35.35903405	-119.0923626	8%	3%	2%	11%	69%	**25%**	**5**
KERN RIVER CANAL	GOSFORD ROAD SB	0.2 MI S TRUXTUN AVE	35.35940905	-119.0923656	8%	3%	2%	11%	69%	**25%**	**5**
OSWELL STREET	STATE ROUTE 58 WB	06-KER-058-R57.41	35.35233405	-118.9496936	9%	3%	2%	12%	68%	**24%**	**5**
STINE CANAL	STATE ROUTE 204	06-KER-204-5.49	35.39320905	-119.0277626	3%	4%	3%	10%	74%	**24%**	**5**
KERN RIVER	CHESTER AVE NB	0.3 MI S ROBERTS LANE	35.40198405	-119.0194566	1%	5%	1%	14%	73%	**24%**	**5**
KERN RIVER	ROSEDALE HWY	0.2 MI EAST SR 99	35.38223105	-119.0412376	2%	5%	2%	15%	70%	**24%**	**5**
FRIANT-KERN CANAL	WESTSIDE PARKWAY	NEAR BRIMHALL ROAD	35.36822805	-119.0876816	8%	3%	2%	11%	69%	**24%**	**5**
BEARDSLEY CANAL	STATE ROUTE 99 NB	06-KER-099-R28.39	35.41861705	-119.0601936	3%	5%	3%	11%	71%	**24%**	**5**
BEARDSLEY CANAL	STATE ROUTE 99 SB	06-KER-099-R28.39	35.41869505	-119.0604566	3%	5%	3%	11%	71%	**24%**	**5**
STATE ROUTE 99	STATE ROUTE 223	06-KER-223-R10.51	35.20851706	-119.0104486	8%	2%	1%	16%	67%	**24%**	**5**
BNSF RY & AMTRAK	OAK STREET	0.1 MI N/O CALIFORNIA AVE	35.37097005	-119.0387016	8%	3%	2%	12%	68%	**24%**	**5**
CALLOWAY CANAL	STATE ROUTE 204	06-KER-204-5.90	35.39719205	-119.0330206	3%	4%	3%	10%	73%	**24%**	**5**

CROSS VALLEY CANAL	ALLEN ROAD	0.4 MI NORTH OF STOCKDALE	35.34871706	-119.1450376	8%	1%	1%	13%	69%	**24%**	**5**
EAST SIDE CANAL	STATE ROUTE 58	06-KER-058-28.41	35.39911407	-119.4536015	8%	2%	2%	11%	70%	**24%**	**5**
WESTSIDE PARKWAY	MOHAWK STREET	NORTH OF KERN RIVER	35.37118405	-119.0657736	9%	3%	2%	12%	68%	**24%**	**5**
STINE CANAL	TRUXTUN AVE	0.2 MI WEST OF OAK ST	35.37386405	-119.0418766	9%	2%	2%	10%	70%	**24%**	**5**
STATE ROUTE 58	JEWETTA AVE	0.8 MI NORTH OF STOCKDALE	35.36155906	-119.1280046	8%	2%	1%	15%	67%	**24%**	**5**
KERN RIVER	STATE ROUTE 204	06-KER-204-5.61	35.39519805	-119.0303766	3%	4%	3%	10%	73%	**24%**	**5**
CROSS VALLEY CANAL	CALLOWAY DRIVE	0.5 MI N OF STOCKDALE HWY	35.35791206	-119.1160376	8%	3%	1%	11%	69%	**24%**	**5**
BEARDSLEY CANAL	AIRPORT DRIVE	0.1 MI S OF OLIVE DR	35.41075905	-119.0389016	2%	5%	2%	14%	69%	**24%**	**5**
TRUXTUN AVENUE	WESTSIDE PARKWAY	NE OF COMMERCIAL WAY	35.37031705	-119.0587566	8%	3%	2%	12%	67%	**24%**	**5**
COFFEE ROAD	STATE ROUTE 58	NORTH OF KERN RIVER	35.36643405	-119.0922956	8%	3%	2%	11%	67%	**24%**	**5**
FRIANT-KERN CANAL	ROSEDALE HWY	COFFEE RD(2.7 MI W RTE99)	35.38323105	-119.0918096	3%	5%	3%	9%	71%	**24%**	**5**
SR 58	FAIRFAX ROAD	06-KER-058-R58.44	35.36254804	-118.9316066	8%	2%	1%	14%	67%	**24%**	**5**
SR 184 (WEEDPATCH HWY)	STATE ROUTE 58 EB	06-KER-058-R59.43	35.35210304	-118.9140626	8%	2%	1%	14%	67%	**24%**	**5**
SR 58	EDISON ROAD	06-KER-058-R61.51	35.34542004	-118.8786626	8%	2%	1%	14%	67%	**24%**	**5**
EAST SIDE CANAL	FAIRFAX RD	NORTH OF DEACON AVE	35.36128404	-118.9317376	8%	1%	1%	12%	69%	**24%**	**5**
ARVIN-EDISON CANAL	COTTONWOOD RD	0.3 MI SE PANAMA RD	35.29195906	-118.9853796	7%	2%	1%	13%	68%	**24%**	**5**
ARVIN-EDISON CANAL	MULLER RD	0.1 MI E EDISON RD	35.32540304	-118.8765486	7%	2%	1%	14%	68%	**24%**	**5**
STATE ROUTE 58	CALLOWAY DRIVE	0.6 MI NORTH OF STOCKDALE	35.36142606	-119.1157846	8%	3%	2%	11%	67%	**24%**	**5**
STATE ROUTE 99	SR 119 (TAFT HWY)	06-KER-119-31.26	35.26685106	-119.0230546	8%	2%	1%	12%	67%	**24%**	**5**
CALLOWAY CANAL	ZERKER RD	1.8 MI N 7TH STANDARD RD	35.46829205	-119.1534205	1%	3%	1%	13%	72%	**24%**	**5**
EAST SIDE CANAL	PANAMA RD	0.7 MI EAST SH 184	35.26701205	-118.9011126	7%	1%	1%	13%	69%	**24%**	**5**
CROSS VALLEY CANAL	MOHAWK STREET	NORTH OF KERN RIVER	35.36933905	-119.0654736	9%	2%	2%	9%	69%	**24%**	**5**
UP RR & ESPEE STREET	STATE ROUTE 178 WB	06-KER-178-R2.09-BKD	35.38298105	-119.0088846	2%	5%	2%	13%	68%	**24%**	**5**
STATE ROUTE 58	RENFRO ROAD	0.4 MI N STOCKDALE HWY	35.35927306	-119.1630986	7%	2%	1%	14%	66%	**24%**	**5**
STATE ROUTE 58	ALLEN ROAD	06-KER-058-R45.37-BKD	35.36088406	-119.1453096	7%	2%	0%	14%	66%	**23%**	**5**
EAST SIDE CANAL	HERMOSA RD.	0.1 MI E OF SH 184	35.31068705	-118.9118906	7%	1%	1%	13%	68%	**23%**	**5**
EAST SIDE CANAL	MOUNTAIN VIEW RD	0.1 MI W OF VINELAND ROAD	35.28159505	-118.8984816	7%	1%	1%	13%	68%	**23%**	**5**
EAST SIDE CANAL	34TH STREET	WEST OF UNION AVE	35.39044505	-119.0039546	1%	5%	1%	14%	69%	**23%**	**5**
BNSF RY SANTA FE WAY	7TH STANDARD ROAD	6 MI WEST OF SR99	35.44124805	-119.1993685	1%	2%	1%	19%	67%	**23%**	**5**
CARRIER CANAL	MOHAWK STREET	SOUTH OF TRUXTUN AVE	35.36410105	-119.0650796	8%	1%	1%	9%	70%	**23%**	**5**
CARRIER CANAL	24TH ST (OLD 178)	0.5 MI EAST SR 99	35.38062805	-119.0370066	3%	3%	3%	9%	71%	**23%**	**5**
FRIANT-KERN CANAL	WESTSIDEPKY OFFRMP	NEAR BRIMHALL ROAD	35.36871705	-119.0876766	7%	2%	1%	10%	68%	**23%**	**5**
BNSF RAILROAD TRACKS	MOHAWK STREET	MOHAWK	35.37596405	-119.0657456	9%	3%	2%	8%	68%	**23%**	**5**
SR 99 BUCK OWENS CALLOV	AIRPORT DR-S99 ON	06-KER-099-26.78	35.40208105	-119.0415316	1%	5%	1%	14%	67%	**23%**	**5**
CROSS VALLY CANAL	WESTSIDE PARKWAY	0.2 MI W OF KERN RIVER BR	35.37145105	-119.0626596	8%	2%	2%	9%	68%	**23%**	**5**
KERN RIVER	WB SR 58 OFF-RAMP	NW OF TRUXTUN AVE	35.37235605	-119.0617096	7%	1%	0%	10%	70%	**23%**	**5**
EAST SIDE CANAL	MULLER ROAD	0.15 MI WEST OF S.H. 184	35.32522305	-118.9195796	7%	1%	1%	12%	68%	**23%**	**5**
KERN RIVER	ROSEDALE HWY	0.2 MI EAST RTE 99	35.38209205	-119.0414126	2%	3%	2%	10%	72%	**23%**	**5**
CALLOWAY BYPASS CANAL	ZERKER RD	1.8 MI N 7TH STANDARD RD	35.46805305	-119.1534295	1%	3%	1%	13%	69%	**23%**	**5**
KERN RIVER	WESTSIDE PARKWAY	0.2 MI NW TRUXTUN AVE	35.37123905	-119.0615046	7%	2%	0%	11%	68%	**23%**	**5**
KERN RIVER	WESTSIDE PARKWAY	WEST OF TRUXTUN AVE	35.37169505	-119.0607656	7%	2%	0%	11%	68%	**23%**	**5**
FRIANT-KERN CANAL	ZERKER RD	2.2 MI N 7TH STANDARD RD	35.47409205	-119.1532485	1%	3%	1%	13%	69%	**23%**	**5**
KERN RIVER CANAL	MING AVE	AT RIVER RUN AVE	35.34008406	-119.1391876	7%	0%	0%	12%	68%	**23%**	**5**
GOOSE LAKE SLOUGH	ALLEN ROAD	BAKERSFIELD	35.36019206	-119.1452986	7%	0%	0%	12%	67%	**23%**	**5**
GOOSE LAKE SLOUGH	STATE ROUTE 58	1000 FT W OF ALLEN RD	35.36024806	-119.1478956	7%	0%	0%	12%	67%	**23%**	**5**
STINE CANAL	OAK STREET 19TH ST	19TH STREET	35.37674805	-119.0385766	8%	2%	2%	7%	69%	**23%**	**5**
MANOR STREET	PANORAMA DRIVE	0.15 MI FROM COLUMBUS AV	35.39988905	-119.0037376	1%	5%	1%	14%	67%	**23%**	**5**
AIRPORT DRIVE	STATE ROUTE 204	06-KER-204-6.70	35.40211405	-119.0413346	2%	4%	2%	10%	68%	**23%**	**5**
CALLOWAY CANAL	7TH STANDARD ROAD	WEST OF CALLOWAY ROAD	35.44158905	-119.1302015	1%	2%	1%	13%	69%	**23%**	**5**
ST RTE 204 & Q STREET	STATE ROUTE 178 EB	06-KER-178-R1.95-BKD	35.38204805	-119.0097486	2%	4%	2%	10%	68%	**22%**	**5**
UP RR & ESPEE STREET	STATE ROUTE 178 EB	06-KER-178-R2.09-BKD	35.38287805	-119.0086656	2%	4%	2%	10%	68%	**22%**	**5**
KERN RIVER	MANOR STREET NB	0.2 MI S ROBERTS LANE	35.40755905	-119.0098656	1%	2%	1%	9%	73%	**22%**	**5**
KERN RIVER	MANOR STREET SB	0.2 MI S ROBERTS LANE	35.40762304	-119.0097236	1%	2%	1%	9%	73%	**22%**	**5**
CHESTER AVE	SR 204 (GOLDEN ST)	06-KER-204-4.88-BKD	35.38654505	-119.0179626	2%	3%	2%	10%	68%	**22%**	**5**
UP RR & ESPEE STREET	UNION AVE-W178 ON	06-KER-178-R2.09-BKD	35.38293105	-119.0087816	1%	4%	1%	12%	67%	**22%**	**5**
BUCK OWEN CALLOWAY CN	N99-AIRPORT DR OFF	06-KER-099-26.70	35.39796405	-119.0441456	1%	2%	1%	9%	71%	**22%**	**5**
CARRIER CANAL	MANOR STREET NB	0.3 MI N OF COLUMBUS AVE	35.40190605	-119.0052296	1%	2%	1%	9%	72%	**22%**	**5**
TRUXTUN AVE	SR 58 OFF-RAMP	NE OF COMMERCIAL WAY	35.37071705	-119.0582656	7%	1%	0%	10%	66%	**22%**	**5**
CROSS VALLEY CANAL	ROUTE 58 EB RAMPS	W OF COFFEE ROAD	35.36462305	-119.0934186	7%	1%	1%	8%	68%	**22%**	**5**
CALLOWAY CANAL	BUCK OWENS BLVD	1 MI NORTH OF S.R. 178	35.39775905	-119.0432206	1%	2%	1%	9%	72%	**22%**	**5**
ST RTE 204 & Q STREET	STATE ROUTE 178 WB	06-KER-178-R1.95-BKD	35.38216405	-119.0100456	2%	3%	2%	9%	67%	**21%**	**5**
UP RR & SUMNER ST	UNION AVE	0.2 MI SOUTH OF SH 178	35.37999505	-119.0026206	2%	3%	2%	9%	67%	**21%**	**5**
BEARDSLEY CANAL	N CHESTER AVE	SOUTH OF DECATUR DRIVE	35.41312804	-119.0210346	1%	3%	1%	9%	68%	**21%**	**5**
CALLOWAY CANAL	MOHAWK STREET	0.6 MI N OF ROSEDALE HWY	35.39188405	-119.0657656	2%	3%	2%	7%	69%	**21%**	**5**
CARRIER CANAL	MANOR STREET SB	0.3 MI N OF COLUMBUS AVE	35.40182304	-119.0053456	1%	2%	1%	9%	69%	**21%**	**5**
STATE ROUTE 99 & OFFRAM	OLIVE DRIVE	06-KER-099-27.87	35.41225305	-119.0547516	1%	3%	1%	9%	67%	**21%**	**5**
STATE ROUTE 99	S99-S204 CONNECTOR	06-KER-099-27.05	35.40326205	-119.0458456	1%	3%	1%	9%	67%	**21%**	**5**
BEARDSLEY CANAL	MANOR STREET	S/O FERGUSON AVENUE	35.41578104	-119.0126706	1%	2%	1%	9%	69%	**21%**	**5**
CANAL LATERAL 29	OLIVE DRIVE	EAST OF STATE RD	35.41238105	-119.0521456	2%	2%	2%	7%	69%	**21%**	**5**
LERDO CANAL	ZERKER RD	SOUTH OF LERDO HWY	35.49935304	-119.1524375	1%	1%	1%	10%	69%	**21%**	**5**
UP RR & ESPEE STREET	E178-UNION AVE OFF	06-KER-178-R2.09-BKD	35.38250105	-119.0084876	1%	2%	1%	9%	67%	**21%**	**5**
LEVEE CANAL	CHESTER AVE	NORTH OF 42ND ST	35.39888405	-119.0187796	1%	1%	1%	7%	70%	**21%**	**5**
KERN RIVER	CHESTER AVE SB	0.3 MI S ROBERTS LANE	35.40149805	-119.0193046	1%	2%	1%	9%	68%	**20%**	**5**
BEARDSLEY CANAL	OILDALE DRIVE	0.04 MI S OF DECATUR DR	35.41293705	-119.0300236	0%	2%	0%	8%	68%	**20%**	**5**
BEARDSLEY CANAL	SEQUOIA ROAD	0.09 MI S OF OLIVE DR	35.41251205	-119.0344486	0%	2%	0%	8%	68%	**20%**	**5**
MANOR STREET	ROBERTS LANE	AT MANOR ST	35.41056204	-119.0124016	1%	2%	1%	9%	66%	**20%**	**5**
BEARDSLEY CANAL	IRIS STREET	0.06 MI S FERGUSON AVE	35.41462304	-119.0165766	0%	1%	0%	8%	68%	**20%**	**5**
BEARDSLEY CANAL	OLIVE DRIVE	0.1 MI W AIRPORT DR	35.41226205	-119.0411796	1%	1%	1%	6%	69%	**20%**	**5**
KERN ISLAND CANAL	COLUMBUS AVE	0.2 MI W UNION AVE	35.39724505	-119.0067596	1%	1%	1%	6%	69%	**20%**	**5**
KERN ISLAND CANAL	34TH STREET	WEST OF UNION	35.39045605	-119.0045656	1%	1%	1%	6%	69%	**20%**	**5**
CANAL LATERAL 29	STATE ROAD	SOUTH OF OLIVE DRIVE	35.41223105	-119.0522876	1%	1%	1%	6%	69%	**20%**	**5**
FRIANT-KERN CANAL	JET WAY	JUST EAST OF COFFEE RD	35.38053405	-119.0914986	0%	2%	0%	6%	68%	**20%**	**5**
CALLOWAY CANAL	FRUITVALE AVE	0.03 MI N OF ROSEDALE HWY	35.38380605	-119.0741296	1%	1%	1%	4%	69%	**19%**	**5**
EAST SIDE CANAL	30TH STREET	WEST OF UNION AVE	35.38574505	-119.0031596	0%	0%	0%	6%	69%	**19%**	**5**
CALIFORNIA AVENUE	STATE ROUTE 99	06-KER-099-24.60-BKD	35.36827305	-119.0417016	15%	25%	8%	18%	9%	**19%**	**5**
KERN ISLAND CANAL	30TH STREET	0.1 MI W UNION AVE	35.38607605	-119.0050406	0%	0%	0%	6%	68%	**19%**	**5**
STINE CANAL	21ST STREET	0.1 MI E OF OAK STREET	35.37822005	-119.0376156	0%	0%	0%	6%	67%	**19%**	**5**

CALLOWAY CANAL	ARROW STREET	S OF RTE 204 E OF RTE 99	35.39640905	-119.0387016	0%	0%	0%	6%	67%	**19%**	**5**
GOODMANVILLE ACCESS RD	ALFRED HARREL HWY	1.5 MI NE OF FAIRFAX RD	35.43602804	-118.9319846	3%	20%	27%	16%	3%	**17%**	**5**
GOODMANVILLE ACCESS RD	ALFRED HARREL HWY	1.5 MI NE OF FAIRFAX RD	35.43602804	-118.9318096	3%	20%	27%	16%	3%	**17%**	**5**
HIGH ST & UP RR	STATE ROUTE 99	06-KER-099-57.10-DLN	35.78358102	-119.2519625	3%	5%	20%	32%	4%	**16%**	**5**
STATE ROUTE 58	CLAY MINE ROAD	09-KER-058-R132.04	35.00663402	-117.8395408	0%	2%	3%	53%	1%	**15%**	**5**
STATE ROUTE 58	MUROC RD	09-KER-058-R129.67	35.00988702	-117.8811188	0%	2%	2%	54%	1%	**15%**	**5**
FAIRFAX ROAD	ALFRED HARREL HWY	1.2 MI NE OF PANORAMA DR	35.42169504	-118.9488656	3%	20%	16%	14%	3%	**14%**	**5**
FAIRFAX ROAD	ALFRED HARREL HWY	1.2 MI NE OF PANORAMA DR	35.42180104	-118.9489546	3%	20%	16%	14%	3%	**14%**	**5**
SR 99 & WIBLE ROAD	REAL RD-E58 ON RMP	06-KER-058-T52.33	35.36132305	-119.0395846	9%	22%	2%	18%	4%	**13%**	**5**
STATE ROUTE 99	CECIL AVE	06-KER-099-56.54-DLN	35.77584802	-119.2523295	1%	2%	17%	30%	1%	**12%**	**5**
SR 58 SR 99 & WIBLE RD	S99-E58 CONNECTOR	06-KER-099-23.49-BKD	35.36132805	-119.0393796	8%	21%	1%	17%	3%	**12%**	**5**
STATE ROUTE 178	FAIRFAX ROAD	06-KER-178-R6.77-BKD	35.39696204	-118.9300266	1%	3%	26%	14%	2%	**11%**	**5**
PACHECO ROAD	STATE ROUTE 99	06-KER-099-20.56	35.31011406	-119.0342846	12%	6%	5%	16%	6%	**11%**	**5**
TVRR & BNSF RY	STATE ROUTE 99	06-KER-099-20.65	35.31145606	-119.0345766	12%	6%	5%	16%	6%	**11%**	**5**
STATE ROUTE 178	MORNING DRIVE	06-KER-178-R7.00	35.39701204	-118.9133096	1%	2%	25%	14%	1%	**10%**	**5**
STATE ROUTE 99	7TH STANDARD RD EB	06-KER-099-R30.53	35.44126705	-119.0845186	2%	3%	23%	10%	3%	**10%**	**5**
FRIANT-KERN CANAL	7TH STANDARD RD EB	WEST OF VERDUGO ROAD	35.44138105	-119.1228796	1%	2%	22%	9%	6%	**10%**	**5**
LERDO (BEARDSLEY) CANAL	7TH STANDARD RD EB	WEST OF COFFEE ROAD	35.44118105	-119.0951876	1%	2%	22%	9%	6%	**10%**	**5**
STATE ROUTE 99	BRUNDAGE LANE	06-KER-099-23.62-BKD	35.35414205	-119.0393566	8%	18%	1%	12%	2%	**9%**	**5**
W58-N99 CONNECTOR RAM	BRUNDAGE LN & OAK	06-KER-058-R52.38-BKD	35.35395905	-119.0385296	8%	18%	1%	11%	2%	**9%**	**5**
UP RR SUMNER ST KENTUCK	BEALE AVE	SOUTH MONTEREY ST	35.37615605	-118.9897846	8%	3%	15%	13%	2%	**9%**	**5**
UP RR TRACKS	7TH STANDARD ROAD	0.1 MI WEST OF SR99	35.44092605	-119.0874706	2%	3%	23%	9%	2%	**9%**	**5**
LERDO (BEARDSLEY) CANAL	7TH STANDARD ROAD	WEST OF COFFEE ROAD	35.44137605	-119.0952436	1%	2%	22%	9%	4%	**9%**	**5**
ST RTE 178	OSWELL ST	06-KER-178-R5.60-BKD	35.39649204	-118.9497126	2%	3%	15%	13%	3%	**8%**	**5**
STATE ROUTE 178	MT VERNON AVE	06-KER-178-R4.59-BKD	35.39439804	-118.9675986	2%	3%	15%	13%	3%	**8%**	**5**
CROSS VALLEY CANAL	STOCKDALE HWY	0.7 MI E ALLEN RD	35.35261206	-119.1338796	9%	4%	2%	16%	5%	**8%**	**5**
EAST SIDE CANAL	BEALE AVENUE	SOUTH MONTEREY STREET	35.37915605	-118.9887236	7%	1%	14%	9%	4%	**8%**	**5**
BNSF RY & AMTRAK	STATE ROUTE 58	0.2 MI W OF ENGER ST	35.38336705	-119.1281816	3%	7%	3%	18%	4%	**8%**	**5**
STATE ROUTE 99	PANAMA LANE	06-KER-099-19.54	35.29594506	-119.0303516	10%	4%	3%	14%	4%	**8%**	**5**
SR 99 & WIBLE ROAD	W58-S99 CONNECTOR	06-KER-058-T52.33	35.35253105	-119.0393686	8%	5%	1%	17%	3%	**8%**	**5**
EAST SIDE CANAL	MILLER ST	0.1 MI S MONTEREY ST	35.37768405	-118.9825876	7%	1%	14%	9%	3%	**8%**	**5**
CALLOWAY CANAL	LERDO HIGHWAY EB	0.9 MI E CHERRY AVE	35.49977305	-119.2252595	3%	3%	3%	18%	6%	**8%**	**5**
BEARDSLEY CANAL	COFFEE ROAD	0.1 MI S OF 7TH STD RD	35.43872605	-119.0921626	1%	1%	22%	6%	4%	**7%**	**5**
EAST SIDE CANAL	OWENS ST	SOUTH OF MONTEREY ST	35.37880105	-118.9872296	7%	0%	14%	9%	3%	**7%**	**5**
EAST SIDE CANAL	KING BAKER KERN ST	AT LAKE STREET	35.37997305	-118.9918486	7%	0%	14%	9%	3%	**7%**	**5**
EAST SIDE CANAL	ROBINSON ST	SOUTH OF MONTEREY ST	35.37805605	-118.9841206	7%	0%	14%	9%	3%	**7%**	**5**
EAST SIDE CANAL	GAGE ST	0.1 MI S MONTEREY ST	35.37842605	-118.9856486	7%	0%	14%	9%	3%	**7%**	**5**
EAST SIDE CANAL	HALEY ST	SOUTH MONTEREY ST	35.37730305	-118.9810236	7%	0%	14%	9%	3%	**7%**	**5**
ST RTE 178	ALTA VISTA DR	06-KER-178-R2.74-BKD	35.38345905	-118.9973346	1%	3%	14%	14%	2%	**7%**	**5**
SOUTH P STREET	STATE ROUTE 58 EB	06-KER-058-R53.91-BKD	35.35232305	-119.0118796	8%	5%	1%	16%	2%	**7%**	**5**
SOUTH P STREET	STATE ROUTE 58 WB	06-KER-058-R53.91-BKD	35.35262305	-119.0118736	8%	5%	1%	16%	2%	**7%**	**5**
STATE ROUTE 99	WILSON ROAD	06-KER-099-22.11-BKD	35.33220305	-119.0394766	9%	4%	3%	13%	3%	**7%**	**5**
MING AVE-N99 ON RAMP	WIBLE ROAD	06-KER-099-22.70-BKD	35.34047805	-119.0389936	9%	4%	3%	13%	3%	**7%**	**5**
COTTONWOOD ROAD	STATE ROUTE 58 EB	06-KER-058-R55.40	35.35224805	-118.9852316	9%	4%	3%	13%	3%	**7%**	**5**
MADISON STREET	STATE ROUTE 58	06-KER-058-R54.91	35.35253105	-118.9941236	9%	4%	3%	13%	3%	**7%**	**5**
STATE ROUTE 178	HALEY ST	06-KER-178-R4.09-BKD	35.39199504	-118.9763736	1%	2%	14%	12%	2%	**7%**	**5**
STATE ROUTE 99	WIBLE ROAD	06-KER-099-21.96-BKD	35.33045105	-119.0393296	9%	4%	3%	13%	3%	**7%**	**5**
STATE ROUTE 99	MING AVENUE	06-KER-099-22.60-BKD	35.33951205	-119.0394296	9%	4%	3%	13%	3%	**7%**	**5**
N99-MING AVE OFF RAMP	WIBLE ROAD	06-KER-099-22.65-BKD	35.34110905	-119.0389846	9%	4%	3%	13%	3%	**7%**	**5**
TVRR	STATE ROUTE 58 EB	06-KER-058-R55.19	35.35223105	-118.9891736	9%	4%	2%	13%	3%	**7%**	**5**
KERN RIVER CANAL	TRUXTUN AVE	0.1 MI EAST COFFEE RD	35.36188705	-119.0908566	9%	4%	2%	12%	4%	**7%**	**5**
ARVIN-EDISON CANAL	TRUXTUN AVE	0.13 MI E OF COFFEE RD	35.36198705	-119.0903486	9%	4%	2%	12%	4%	**7%**	**5**
UP RR BNSF RY EDISON HWY	MT VERNON AVE	0.3 MI N CALIFORNIA ST.	35.37107605	-118.9674796	9%	4%	2%	13%	3%	**7%**	**5**
SR 58	HUGHES LANE	06-KER-058-R52.89-BKD	35.35264205	-119.0299816	7%	4%	1%	16%	2%	**7%**	**5**
STATE ROUTE 178	BEALE AVE	06-KER-178-R3.38-BKD	35.38625905	-118.9862736	1%	2%	14%	12%	2%	**7%**	**5**
STATE ROUTE 178	BERNARD ST	06-KER-178-R3.80-BKD	35.38985104	-118.9807626	1%	2%	14%	12%	1%	**6%**	**5**
STATE ROUTE 99	WHITE LANE	06-KER-099-21.08-BKD	35.31772306	-119.0360766	7%	4%	1%	16%	2%	**6%**	**5**
58E OFFRAMP TO H ST	99-58E CONNECTOR	06-KER-099-23.48-BKD	35.35203705	-119.0349626	9%	3%	2%	12%	3%	**6%**	**5**
ARVIN-EDISON CANAL	WHITE LANE	0.2 MI E OF GOSFORD RD	35.31821706	-119.0880376	9%	3%	2%	12%	4%	**6%**	**5**
MADISON STREET	STATE ROUTE 58	06-KER-058-R54.91	35.35224505	-118.9941236	9%	3%	2%	13%	3%	**6%**	**5**
COTTONWOOD ROAD	STATE ROUTE 58	06-KER-058-R55.40	35.35254805	-118.9852296	9%	3%	2%	13%	3%	**6%**	**5**
ARVIN-EDISON CANAL	GOSFORD RD NB	0.3 MI S TRUXTUN AVE	35.35919805	-119.0922016	8%	3%	2%	12%	4%	**6%**	**5**
KERN RIVER CANAL	GOSFORD RD NB	0.2 MI S TRUXTUN AVE	35.35957805	-119.0921986	8%	3%	2%	12%	4%	**6%**	**5**
STATE ROUTE 178	NILES ST	06-KER-178-R2.81-BKD	35.38351705	-118.9962656	1%	2%	14%	12%	1%	**6%**	**5**
STATE ROUTE 58	SR 204 (UNION AVE)	06-KER-204-R0.03-BKD	35.35232305	-119.0028956	9%	3%	2%	12%	3%	**6%**	**5**
SR 58	WASHINGTON STREET	06-KER-058-R55.92-BKD	35.35248705	-118.9765266	7%	4%	0%	16%	2%	**6%**	**5**
CHESTER AVE	SERVICE ROAD	NORTH OF 14TH STREET	35.37120105	-119.0187846	7%	4%	0%	16%	2%	**6%**	**5**
TVRR	STATE ROUTE 58 WB	06-KER-058-R55.20	35.35253705	-118.9888546	9%	3%	2%	13%	3%	**6%**	**5**
STATE ROUTE 178	BAKER ST	06-KER-178-R3.16-BKD	35.38522005	-118.9899736	0%	2%	14%	12%	1%	**6%**	**5**
MT VERNON AVENUE	STATE ROUTE 58 WB	06-KER-058-R56.41	35.35314205	-118.9674266	9%	3%	2%	12%	3%	**6%**	**5**
STATE ROUTE 178	FLOWER ST	06-KER-178-R3.33-BKD	35.38567605	-118.9873436	0%	2%	13%	11%	1%	**6%**	**5**
ARVIN-EDISON CANAL	GOSFORD ROAD	0.23 MI S FRASER RD	35.32171706	-119.0921296	8%	3%	2%	11%	4%	**6%**	**5**
UP TRACKS EDISON HWY	OSWELL STREET	1 MILE NORTH OF SR58	35.36663705	-118.9499846	8%	3%	2%	12%	2%	**6%**	**5**
ARVIN-EDISON CANAL	WIBLE RD	0.23 MI S/O PANAMA LANE	35.29200906	-119.0389486	8%	3%	1%	13%	3%	**6%**	**5**
OSWELL STREET	STATE ROUTE 58 EB	06-KER-058-R57.41	35.35207005	-118.9496876	8%	3%	2%	12%	2%	**6%**	**5**
EAST BRANCH CANAL	UNION AVENUE	0.05MI N/O BELLE TERRACE	35.34753105	-119.0028876	9%	2%	2%	10%	5%	**6%**	**5**
EAST SIDE CANAL	TULARE ST	SOUTH OF MONTEREY ST	35.38062805	-118.9949766	0%	0%	14%	9%	3%	**5%**	**5**
EAST SIDE CANAL	ALTA VISTA DR	SOUTH OF MONTEREY ST	35.38138705	-118.9980986	0%	0%	14%	9%	3%	**5%**	**5**
EAST SIDE CANAL	SACRAMENTO ST	SOUTH OF MONTEREY ST	35.38175905	-118.9995906	0%	0%	14%	9%	3%	**5%**	**5**
EAST SIDE CANAL	INYO ST	SOUTH MONTEREY ST	35.38099505	-118.9965296	0%	0%	14%	9%	3%	**5%**	**5**
ARVIN-EDISON CANAL	PANAMA LANE	0.2 MI W STINE RD	35.29580106	-119.0590686	8%	2%	1%	12%	3%	**5%**	**5**
KERN ISLAND CANAL	WHITE LANE	EAST OF SOUTH H ST	35.31758705	-119.0210436	8%	2%	2%	10%	5%	**5%**	**5**
CARRIER CANAL	TRUXTUN AVE	EAST OF QUAILRIDGE	35.36246205	-119.0881596	8%	2%	2%	9%	5%	**5%**	**5**
ARVIN-EDISON CANAL	OLD STEIN RD	0.3 MI S PANAMA LN	35.29244806	-119.0567266	8%	2%	1%	12%	3%	**5%**	**5**
ROUTE 58	S CHESTER AVE OC	06-KER-058-R53.52-BKD	35.35240305	-119.0189346	8%	3%	1%	12%	2%	**5%**	**5**
KERN ISLAND CANAL	S CHESTER AVE	SOUTH OF TERRACE WAY	35.34905305	-119.0189486	8%	1%	1%	9%	7%	**5%**	**5**
SR 178 SPUR WB\24TH ST	SR 178	06-KER-178-R1.90-BKD	35.38192305	-119.0099766	3%	4%	3%	11%	4%	**5%**	**5**

ARVIN-EDISON CANAL	SOUTH H ST	0.2 MI S PANAMA LANE	35.29234506	-119.0212816	7%	2%	1%	12%	3%	**5%**	**5**
ARVIN-EDISON CANAL	ASHE RD &HARRIS RD	ASHE ROAD AT HARRIS ROAD	35.30302606	-119.0742816	8%	1%	1%	12%	3%	**5%**	**5**
KERN RIVER CANAL	OLD RIVER RD	SOUTH OF STOCKDALE HGHWY	35.35291706	-119.1149206	8%	2%	2%	9%	4%	**5%**	**5**
ARVIN-EDISON CANAL	LAUREL GLEN BL	0.19 MI W GOSFORD RD	35.32508906	-119.0957406	8%	2%	1%	11%	3%	**5%**	**5**
CALLOWAY CANAL	7TH STANDARD RD EB	WEST OF CALLOWAY ROAD	35.44139805	-119.1301735	1%	2%	1%	13%	7%	**5%**	**5**
KERN ISLAND CANAL	CALIFORNIA AVE	WEST OF R ST	35.36832005	-119.0101296	8%	1%	1%	9%	5%	**5%**	**5**
STATE ROUTE 99	HOSKING AVENUE	06-KER-099-18.52-BKD	35.28141206	-119.0268766	8%	2%	1%	12%	2%	**5%**	**5**
ST RTE 204 (UNION AVE)	TRUXTUN AVENUE	06-KER-204-3.41-BKD	35.37331205	-119.0029956	8%	2%	1%	11%	2%	**5%**	**5**
WIBLE ROAD	N99 -E58 CONNECTOR	06-KER-099-23.36-BKD	35.35048905	-119.0389046	8%	2%	1%	11%	2%	**5%**	**5**
ARVIN-EDISON CANAL	MONITOR STREET	S OF IVY TRAE LANE	35.29226706	-119.0117936	7%	2%	0%	12%	3%	**5%**	**5**
BEARDSLEY CANAL	KNUDSEN DRIVE	0.2 MI S/O NORRIS RD	35.41881405	-119.0608766	1%	4%	1%	14%	4%	**4%**	**5**
KERN ISLAND CANAL	PLANZ ROAD	EAST OF SOUTH H ST	35.32489805	-119.0209686	8%	1%	1%	9%	4%	**4%**	**5**
SR 58	SOUTH H ST	06-KER-058-R53.39-BKD	35.35241205	-119.0211906	7%	2%	1%	11%	1%	**4%**	**5**
KERN ISLAND CANAL	PACHECO ROAD	EAST OF SOUTH H ST	35.31038106	-119.0210126	8%	1%	1%	10%	4%	**4%**	**5**
KERN ISLAND CANAL	MING AVE	EAST OF SOUTH H ST	35.33943705	-119.0209546	8%	1%	1%	9%	4%	**4%**	**5**
KERN ISLAND CANAL	TRUXTUN AVE	EAST OF Q ST	35.37339805	-119.0099096	8%	1%	1%	9%	4%	**4%**	**5**
FRIANT-KERN CANAL	COFFEE ROAD	0.30 MI N OF ROSEDALE HWY	35.38861705	-119.0922296	3%	4%	3%	8%	5%	**4%**	**5**
KERN ISLAND CANAL	STATE ROUTE 58	06-KER-058-R53.66-BKD	35.35236405	-119.0164766	8%	1%	1%	9%	3%	**4%**	**5**
STATE ROUTE 99	PALM AVENUE	06-KER-099-24.11-BKD	35.36124805	-119.0398406	7%	2%	1%	11%	1%	**4%**	**5**
UNION AVE	SR 178 EB	06-KER-178-R2.41-BKD	35.38341705	-119.0027596	2%	4%	2%	10%	3%	**4%**	**5**
KERN ISLAND CANAL	17TH STREET	EAST OF "R" STREET	35.37413705	-119.0092816	7%	1%	0%	10%	3%	**4%**	**5**
STATE ROUTE 99	PLANZ ROAD	06-KER-099-21.60-BKD	35.32493705	-119.0379516	7%	2%	0%	11%	1%	**4%**	**5**
EAST SIDE CANAL	EDISON HIGHWAY	EAST OF WEBSTER ST	35.36970305	-118.9617796	7%	1%	1%	9%	4%	**4%**	**5**
KERN ISLAND CANAL	8TH STREET	EAST OF R ST	35.36452305	-119.0083736	7%	1%	1%	8%	4%	**4%**	**5**
ARVIN-EDISON CANAL	DISTRICT BLVD	0.6 MI W OF ASHE ROAD	35.31310106	-119.0821346	8%	1%	1%	8%	3%	**4%**	**5**
KERN ISLAND CNL CNTRL BR	BRUNDAGE LANE	0.1 MI E/O P STREET	35.35386205	-119.0095596	7%	0%	0%	8%	4%	**4%**	**5**
KERN ISLAND CANAL	18TH STREET	EAST OF R STREET	35.37512605	-119.0085516	7%	2%	0%	8%	3%	**4%**	**5**
H STREET	15TH ST	H STREET	35.37152805	-119.0211656	7%	1%	0%	11%	1%	**4%**	**5**
KERN ISLAND CANAL	N STREET	150 FT N OF BRUNDAGE LN	35.35440605	-119.0142456	7%	0%	0%	8%	4%	**4%**	**5**
KERN ISLAND CANAL	WILSON RD	EAST OF SOUTH H ST	35.33216205	-119.0209486	7%	1%	1%	8%	3%	**4%**	**5**
KERN ISLAND CANAL	CALCUTTA DR	EAST OF SOUTH H ST	35.31404806	-119.0210236	7%	1%	1%	8%	3%	**4%**	**5**
KERN ISLAND CANAL	BELLE TERRACE WAY	EAST OF H STREET	35.34668405	-119.0206126	7%	0%	0%	8%	4%	**4%**	**5**
KERN ISLAND CANAL	BRUNDAGE LANE	WEST OF N STREET	35.35388405	-119.0152796	7%	0%	0%	8%	4%	**4%**	**5**
KERN ISLAND CANAL	P STREET	0.1 MI N BRUNDAGE LANE	35.35517805	-119.0118986	7%	0%	0%	8%	3%	**3%**	**5**
KERN ISLAND CANAL	10TH STREET	BETWEEN Q & R ST	35.36645305	-119.0102046	7%	0%	0%	8%	4%	**3%**	**5**
UNION AVE	SR 178 WB	06-KER-178-R2.41-BKD	35.38364205	-119.0027626	2%	3%	2%	10%	3%	**3%**	**5**
KERN ISLAND CANAL	TERRACE WAY	200 E CHESTER AVE	35.35028705	-119.0180296	7%	0%	0%	8%	3%	**3%**	**5**
KERN ISLAND CANAL	4TH STREET	0.3 MI W OF UNION AVE	35.36071705	-119.0075656	7%	0%	0%	8%	3%	**3%**	**5**
Q STREET	PARKING LOT ACCESS	SOUTH OF TRUXTUN AVENUE	35.37156205	-119.0106986	7%	1%	0%	10%	1%	**3%**	**5**
KERN ISLAND CNL CNTRL BR	TERRACE WAY	0.1 MI W OF P ST	35.35030105	-119.0116816	7%	0%	0%	8%	3%	**3%**	**5**
KERN ISLAND CANAL	SOUTH GATE DR	EAST OF SOUTH H ST	35.33582305	-119.0209566	7%	0%	0%	8%	4%	**3%**	**5**
STATE ROUTE 99	BELLE TERRACE	06-KER-099-23.10-BKD	35.34663405	-119.0399456	7%	1%	0%	10%	1%	**3%**	**5**
KERN ISLAND CANAL	LAFRANCE DR	EAST OF SOUTH H ST	35.34303105	-119.0209456	7%	0%	0%	8%	4%	**3%**	**5**
KERN ISLAND CANAL	VERNAL PLACE	0.1 MI N TERRACE WAY	35.35182805	-119.0168956	7%	0%	0%	8%	4%	**3%**	**5**
KERN ISLAND CANAL	16TH STREET	EAST OF O ST	35.37237005	-119.0101566	7%	0%	0%	8%	3%	**3%**	**5**
KERN ISLAND CNL CNTRL BR	SOUTH P STREET	SOUTH OF SNYDER LANE	35.35170305	-119.0117046	7%	0%	0%	8%	3%	**3%**	**5**
CALLOWAY CANAL	COFFEE ROAD	0.3 MI N OF ROSEDALE HWY	35.38772605	-119.0922706	3%	3%	3%	6%	4%	**3%**	**5**
FRIANT-KERN CANAL	HAGEMAN ROAD	SOUTH OF OLIVE DRIVE	35.39823105	-119.1020596	2%	3%	2%	7%	4%	**3%**	**5**
SR 204 (GOLDEN ST) Q ST	S204-E178 CONNECTR	06-KER-204-4.22-BKD	35.38196205	-119.0099016	2%	3%	2%	9%	2%	**3%**	**5**
SR 204 & Q STREET	SR 178 EB RAMP	06-KER-178-R1.95-BKD	35.38131705	-119.0108346	2%	3%	2%	9%	2%	**3%**	**5**
CALLOWAY CANAL	SNOW ROAD	0.8 MI W CALLOWAY DR	35.42680905	-119.1252096	0%	2%	0%	10%	3%	**2%**	**5**
CALLOWAY DRIVE	FRONTAGE ROAD	0.5 MI SOUTH OF SR58	35.37652305	-119.1107096	7%	1%	0%	6%	1%	**2%**	**5**
STATE ROUTE 99	S65-S99 CONNECTOR	06-KER-065-R0.01	35.43480105	-119.0759596	1%	3%	1%	7%	2%	**2%**	**5**
CALLOWAY CANAL	HAGEMAN ROAD	0.5 MI WEST OF COFFEE RD	35.39800105	-119.1024956	2%	2%	2%	5%	4%	**2%**	**5**
Q STREET	W178-N204 CONNECTR	06-KER-178-R1.97-BKD	35.38187005	-119.0105796	1%	2%	1%	9%	1%	**2%**	**5**
UP RR & GOLDEN STATE HW	KNUDSEN DRIVE	0.25 MI N OF NORRIS RD W	35.42137005	-119.0614686	1%	2%	1%	9%	1%	**2%**	**5**
FRIANT-KERN CANAL	SNOW ROAD	0.6 M WEST OF CALLOWAY DR	35.42686405	-119.1216546	0%	2%	0%	6%	3%	**1%**	**5**
BEARDSLEY CANAL	ROBERTS LANE	NORTH OF OLIVE DRIVE	35.41280605	-119.0489736	1%	1%	1%	6%	4%	**1%**	**5**
24TH STREET	E178-UNION AVE OFF	06-KER-178-R1.90-BKD	35.38120605	-119.0113906	0%	2%	0%	8%	1%	**1%**	**5**
BEARDSLEY CANAL	FRUITVALE AVE	0.4 MI N NORRIS AVE	35.42508405	-119.0745456	1%	1%	1%	4%	4%	**1%**	**5**
EAST SIDE CANAL	STOCKTON ST	NORTH KENTUCKY ST	35.38211705	-119.0010986	0%	0%	0%	6%	3%	**1%**	**5**
BEARDSLEY CANAL	SNOW ROAD	0.1 MI W FRUITVALE AVE	35.42695305	-119.0770956	1%	1%	1%	4%	3%	**0%**	**5**
CALLOWAY CANAL	OLIVE DRIVE	W OF CALLOWAY DRIVE	35.41315105	-119.1121816	0%	0%	0%	4%	3%	**0%**	**5**
CALLOWAY CANAL	CALLOWAY DRIVE	1.9 MI NORTH OF S.R. 58	35.41161405	-119.1100156	1%	1%	1%	4%	2%	**0%**	**5**
FRIANT-KERN CANAL	CALLOWAY DR OLIVE	2 MI NORTH OF SR 58	35.41241405	-119.1095936	0%	0%	0%	4%	2%	**0%**	**5**

Appendix Table I: All Large Culverts by Cross-Hazard Risk

Name	Facility	Caltrans Location Identifier	Latitude	Longitude	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
TECUYA CREEK	INTERSTATE 5	06-KER-005-16.57	35.0259	-118.964	78%	80%	62%	80%	100%	1
KISSACK CREEK	STATE ROUTE 178	06-KER-178-49.90	35.64323	-118.413	46%	3%	64%	68%	36%	2
LITTLE CREEK	STATE ROUTE 65	06-KER-065-11.00	35.59113	-119.09	16%	19%	63%	84%	36%	3
SEVENTEEN CANYON	STATE ROUTE 33	06-KER-033-21.49	35.1637	-119.501	73%	9%	18%	74%	32%	3
TILLIE CREEK	STATE ROUTE 155	06-KER-155-R60.69	35.70584	-118.457	31%	10%	53%	75%	29%	3
ERSKINE CREEK	STATE ROUTE 178	06-KER-178-R41.61	35.61115	-118.49	26%	6%	60%	71%	27%	3
MCKITTRICK WASH	STATE ROUTE 33	06-KER-033-35.89	35.33043	-119.626	70%	6%	15%	71%	26%	4
WASP WASH	STATE ROUTE 33	06-KER-033-37.89	35.35671	-119.64	70%	6%	14%	71%	25%	4
RAG GULCH	STATE ROUTE 155	06-KER-155-R15.28	35.7473	-118.983	15%	15%	42%	80%	20%	4
LAKEVIEW WASH	STATE ROUTE 119	06-KER-119-8.78	35.22832	-119.377	49%	5%	22%	70%	17%	4
SANDY CREEK	STATE ROUTE 119	06-KER-119-0.97-TAF	35.14985	-119.448	68%	4%	5%	69%	17%	5
CYMRIC WASH	STATE ROUTE 33	06-KER-033-40.38	35.38855	-119.659	49%	6%	13%	71%	13%	5
BUENA VISTA SLOUGH	STATE ROUTE 119	06-KER-119-14.98	35.26662	-119.309	30%	9%	9%	74%	4%	5
RAG GULCH	STATE ROUTE 65	06-KER-065-23.59	35.76788	-119.053	5%	7%	32%	72%	1%	5
EAST SIDE CANAL	STATE ROUTE 178	06-KER-178-R2.42-BKD	35.38248	-119.003	12%	12%	13%	77%	0%	5

Appendix Table J: All Small Culverts by Cross-Hazard Risk									
System Route	System Post Mile Begin	Latitude In	Longitude In	Earthquake Relative Risk	Landslide Relative Risk	Wildfire Relative Risk	Riverine Flooding Relative Risk	Cross-hazard prioritization score	Cross-hazard climate risk index
I-5	9.73	34.90267	-118.9234	69.0%	78.2%	88.3%	95.0%	**100%**	**1**
I-5	9.73	34.90267	-118.9234	69%	78%	88%	95%	**100%**	**1**
I-5	7.26	34.89918	-118.9224	61%	71%	83%	87%	**91%**	**1**
I-5	7.37	34.90064	-118.9227	61%	71%	83%	87%	**91%**	**1**
I-5	7.37	34.90064	-118.9227	61%	71%	83%	87%	**91%**	**1**
I-5	9.73	34.90356	-118.923	61%	71%	83%	87%	**91%**	**1**
I-5	7.36	34.90055	-118.923	69%	45%	88%	95%	**89%**	**1**
I-5	7.36	34.90055	-118.923	69%	45%	88%	95%	**89%**	**1**
I-5	7.46	34.90173	-118.9232	61%	37%	83%	87%	**79%**	**1**
I-5	7.46	34.90173	-118.9232	61%	37%	83%	87%	**79%**	**1**
I-5	9.73	34.90484	-118.924	61%	37%	83%	87%	**79%**	**1**
I-5	9.73	34.92507	-118.9289	61%	37%	83%	87%	**79%**	**1**
SH-178	30.03	35.53226	-118.632	26%	78%	82%	78%	**77%**	**1**
SH-178	30.03	35.53226	-118.632	26%	78%	82%	78%	**77%**	**1**
I-5	6.67	34.89244	-118.9151	61%	71%	43%	87%	**77%**	**2**
I-5	9.73	34.90725	-118.9236	61%	71%	43%	87%	**77%**	**2**
I-5	9.73	34.93349	-118.9262	61%	71%	43%	87%	**77%**	**2**
I-5	7.25	34.89844	-118.9224	61%	37%	63%	87%	**72%**	**2**
I-5	9.9	34.92871	-118.9291	61%	37%	63%	87%	**72%**	**2**
SH-178	26.71	35.52848	-118.6565	26%	78%	62%	78%	**71%**	**2**
SH-178	29.38	35.53052	-118.6425	26%	78%	62%	78%	**71%**	**2**
I-5	5.89	34.88433	-118.9007	48%	58%	52%	74%	**66%**	**2**
I-5	5.89	34.88642	-118.9034	48%	58%	52%	74%	**66%**	**2**
I-5	6.18	34.88856	-118.9082	48%	58%	52%	74%	**66%**	**2**
I-5	3.3	34.85723	-118.8759	46%	56%	54%	72%	**65%**	**2**
SH-178	25.83	35.52427	-118.6664	17%	69%	73%	69%	**65%**	**2**
SH-178	25.83	35.52427	-118.6664	17%	69%	73%	69%	**65%**	**2**
I-5	5.89	34.88245	-118.9008	47%	56%	50%	73%	**64%**	**2**
SH-178	34.52	35.56505	-118.5869	14%	66%	76%	66%	**63%**	**2**
SH-178	35.05	35.57023	-118.5805	14%	66%	76%	66%	**63%**	**2**
SH-178	17.35	35.47033	-118.7504	17%	69%	67%	69%	**63%**	**2**
SH-178	17.35	35.47033	-118.7504	17%	69%	67%	69%	**63%**	**2**
SH-178	20.68	35.4729	-118.7133	17%	69%	67%	69%	**63%**	**2**
SH-178	19.57	35.47421	-118.73	17%	69%	67%	69%	**63%**	**2**
SH-178	19.57	35.47421	-118.73	17%	69%	67%	69%	**63%**	**2**
SH-178	19.57	35.47421	-118.73	17%	69%	67%	69%	**63%**	**2**
SH-178	19.57	35.47421	-118.73	17%	69%	67%	69%	**63%**	**2**
SH-178	21.24	35.47978	-118.7102	17%	69%	67%	69%	**63%**	**2**
SH-178	30.69	35.53705	-118.6257	14.5%	66.5%	70.6%	66.5%	**61.4%**	**3**
SH-178	31.87	35.55114	-118.6157	14.5%	66.5%	70.6%	66.5%	**61.4%**	**3**
SH-155	69.7	35.64366	-118.4869	20.9%	72.9%	51.0%	72.9%	**61.3%**	**3**
SH-155	68.08	35.66067	-118.4752	20.1%	72.1%	50.2%	72.1%	**60.2%**	**3**
SH-155	68.08	35.66067	-118.4752	20.1%	72.1%	50.2%	72.1%	**60.2%**	**3**
I-5	4.18	34.86774	-118.8851	47.3%	56.5%	35.2%	73.3%	**59.5%**	**3**
SH-41	1.71	35.7724	-120.1655	46.2%	22.0%	70.1%	72.2%	**58.9%**	**3**

SH-41	1.82	35.77287	-120.1638	46.2%	22.0%	70.1%	72.2%	**58.9%**	**3**
SH-178	25.48	35.52199	-118.672	16.9%	68.9%	53.0%	68.9%	**57.9%**	**3**
I-5	5.89	34.87932	-118.8987	46.6%	55.8%	30.1%	72.6%	**57.0%**	**3**
I-5	5.89	34.87978	-118.8991	46.6%	55.8%	30.1%	72.6%	**57.0%**	**3**
SH-178	34.52	35.56505	-118.5869	14.5%	66.5%	56.3%	66.5%	**56.5%**	**3**
SH-178	34.69	35.56775	-118.5856	14.5%	66.5%	56.3%	66.5%	**56.5%**	**3**
SH-178	34.85	35.56955	-118.5838	14.5%	66.5%	56.3%	66.5%	**56.5%**	**3**
SH-178	35.05	35.57023	-118.5805	14.5%	66.5%	56.3%	66.5%	**56.5%**	**3**
SH-178	16.17	35.46145	-118.7652	16.9%	68.9%	47.1%	68.9%	**55.9%**	**3**
SH-178	19.97	35.47561	-118.7251	16.9%	68.9%	47.1%	68.9%	**55.9%**	**3**
SH-178	21.53	35.48385	-118.7113	16.9%	68.9%	47.1%	68.9%	**55.9%**	**3**
SH-178	22.97	35.49564	-118.6972	16.9%	68.9%	47.1%	68.9%	**55.9%**	**3**
I-5	2.9	34.85243	-118.8721	46.0%	55.3%	28.0%	72.0%	**55.7%**	**3**
SH-33	2.36	34.96179	-119.4468	71.7%	6.7%	49.9%	71.7%	**55.3%**	**3**
SH-178	31.27	35.54283	-118.6183	14.5%	66.5%	50.6%	66.5%	**54.6%**	**3**
SH-178	32.34	35.55819	-118.6142	14.5%	66.5%	50.6%	66.5%	**54.6%**	**3**
SH-178	32.74	35.55951	-118.6075	14.5%	66.5%	50.6%	66.5%	**54.6%**	**3**
SH-155	67.09	35.67301	-118.4715	20.1%	72.1%	30.2%	72.1%	**53.4%**	**3**
SH-178	23.31	35.50021	-118.6939	16.9%	68.9%	38.8%	68.9%	**53.0%**	**3**
SH-178	23.7	35.50527	-118.691	16.9%	68.9%	38.8%	68.9%	**53.0%**	**3**
SH-178	36.39	35.57647	-118.5616	14.5%	66.5%	44.6%	66.5%	**52.5%**	**3**
SH-178	36.64	35.58018	-118.5605	14.5%	66.5%	44.6%	66.5%	**52.5%**	**3**
SH-178	37.29	35.58022	-118.5502	14.5%	66.5%	44.6%	66.5%	**52.5%**	**3**
SH-178	36.9	35.58224	-118.5563	14.5%	66.5%	44.6%	66.5%	**52.5%**	**3**
SH-41	1.52	35.77242	-120.1693	46.2%	22.0%	50.1%	72.2%	**52.0%**	**3**
SH-41	1.09	35.7735	-120.1766	46.2%	22.0%	50.1%	72.2%	**52.0%**	**3**
SH-41	2.54	35.77508	-120.1513	46.2%	22.0%	50.1%	72.2%	**52.0%**	**3**
SH-58	72.67	35.27323	-118.7067	26.2%	38.2%	48.4%	71.7%	**49.9%**	**3**
SH-33	2.58	34.96442	-119.4449	67.0%	2.0%	45.1%	67.0%	**48.7%**	**3**
SH-58	75.78	35.26394	-118.6556	24.8%	36.8%	47.6%	70.3%	**48.2%**	**3**
SH-33	0.6	34.94135	-119.464	66.0%	1.0%	44.1%	66.0%	**47.4%**	**3**
SH-33	0.91	34.94465	-119.4593	66.0%	1.0%	44.1%	66.0%	**47.4%**	**3**
SH-41	3.54	35.77801	-120.1347	33.0%	21.8%	50.0%	72.0%	**47.3%**	**3**
SH-41	3.87	35.78008	-120.1291	33.0%	21.8%	50.0%	72.0%	**47.3%**	**3**
SH-155	48.46	35.74536	-118.597	18.9%	5.9%	80.9%	70.9%	**47.2%**	**3**
SH-155	49.17	35.74794	-118.5874	18.9%	5.9%	80.9%	70.9%	**47.2%**	**3**
I-5	4.18	34.8676	-118.8853	46.7%	22.4%	34.6%	72.7%	**47.2%**	**3**
SH-58	70.95	35.28496	-118.7329	23.9%	35.9%	47.0%	69.4%	**47.1%**	**3**
SH-58	70.95	35.28465	-118.7334	23.9%	35.9%	46.9%	69.4%	**47.1%**	**3**
SH-58	4.68	35.33338	-119.7822	45.3%	6.3%	49.6%	71.3%	**45.8%**	**3**
SH-58	3.39	35.33991	-119.8015	45.3%	6.3%	49.6%	71.3%	**45.8%**	**3**
I-5	5.89	34.88626	-118.9037	46.6%	22.3%	30.1%	72.6%	**45.5%**	**4**
I-5	6.67	34.8894	-118.9113	46.6%	22.3%	30.1%	72.6%	**45.5%**	**4**
I-5	2.9	34.85229	-118.8723	46.4%	22.1%	28.3%	72.4%	**44.6%**	**4**
SH-178	50.64	35.63691	-118.3998	24.0%	4.5%	67.6%	69.5%	**43.4%**	**4**
SH-178	52.19	35.63775	-118.3751	24.0%	4.5%	67.6%	69.5%	**43.4%**	**4**
SH-178	47.49	35.65686	-118.4398	24.0%	4.5%	67.6%	69.5%	**43.4%**	**4**
SH-178	47.49	35.65686	-118.4398	24.0%	4.5%	67.6%	69.5%	**43.4%**	**4**
SH-155	57.28	35.72181	-118.5067	15.0%	2.0%	76.9%	67.0%	**41.8%**	**4**
SH-155	57.28	35.72181	-118.5067	15.0%	2.0%	76.9%	67.0%	**41.8%**	**4**
SH-58	76.7	35.26257	-118.6395	24.8%	36.8%	27.6%	70.3%	**41.3%**	**4**

SH-178	46.59	35.65356	-118.4537	17.5%	4.5%	67.6%	69.5%	**41.2%**	**4**
SH-155	48.46	35.74536	-118.597	18.9%	5.9%	60.9%	70.9%	**40.4%**	**4**
SH-155	49.17	35.74794	-118.5874	18.9%	5.9%	60.9%	70.9%	**40.4%**	**4**
SH-155	49.53	35.74901	-118.5831	18.9%	5.9%	60.9%	70.9%	**40.4%**	**4**
SH-33	9.22	35.0325	-119.4193	40.8%	1.8%	44.9%	66.8%	**39.5%**	**4**
SH-33	6.8	34.99981	-119.4116	39.9%	0.9%	44.0%	65.9%	**38.3%**	**4**
SH-33	6.66	35.00047	-119.4144	39.9%	0.9%	44.0%	65.9%	**38.3%**	**4**
SH-33	6.56	35.00208	-119.4152	39.9%	0.9%	44.0%	65.9%	**38.3%**	**4**
SH-33	7.58	35.01114	-119.4122	39.9%	0.9%	44.0%	65.9%	**38.3%**	**4**
SH-33	30.08	35.25393	-119.6014	29.7%	3.7%	46.8%	68.7%	**37.7%**	**4**
SH-33	31.6	35.27219	-119.6154	29.7%	3.7%	46.8%	68.7%	**37.7%**	**4**
SH-58	16.9	35.32615	-119.614	28.1%	2.1%	51.3%	67.1%	**37.6%**	**4**
SH-223	30.07	35.2426	-118.682	21.4%	1.9%	56.8%	66.9%	**37.0%**	**4**
SH-178	41.24	35.60768	-118.4948	14.4%	1.4%	64.6%	66.4%	**37.0%**	**4**
SH-58	70.11	35.29047	-118.747	19.7%	6.7%	48.4%	71.7%	**36.9%**	**4**
SH-178	52.19	35.63775	-118.3751	24.0%	4.5%	47.6%	69.5%	**36.6%**	**4**
SH-178	52.19	35.63775	-118.3751	24.0%	4.5%	47.6%	69.5%	**36.6%**	**4**
SH-178	47.49	35.65686	-118.4398	24.0%	4.5%	47.6%	69.5%	**36.6%**	**4**
SH-178	41.93	35.61532	-118.487	13.9%	0.9%	64.0%	65.9%	**36.2%**	**4**
SH-33	27.76	35.22781	-119.576	28.4%	2.4%	45.5%	67.4%	**35.9%**	**4**
SH-33	27.81	35.22836	-119.5765	28.4%	2.4%	45.5%	67.4%	**35.9%**	**4**
SH-33	28.13	35.23209	-119.5802	28.4%	2.4%	45.5%	67.4%	**35.9%**	**4**
SH-58	19.11	35.35364	-119.5962	21.6%	2.1%	51.3%	67.1%	**35.4%**	**4**
SH-58	19.33	35.35597	-119.5938	21.6%	2.1%	51.3%	67.1%	**35.4%**	**4**
SH-58	19.75	35.35955	-119.5879	21.6%	2.1%	51.3%	67.1%	**35.4%**	**4**
SH-58	20.23	35.36434	-119.5796	21.6%	2.1%	51.3%	67.1%	**35.4%**	**4**
SH-166	3.96	35.05808	-119.3328	28.0%	2.0%	45.1%	67.0%	**35.4%**	**4**
SH-155	42.88	35.73457	-118.6675	10.4%	3.9%	58.9%	68.9%	**35.4%**	**4**
SH-155	46.17	35.74105	-118.6203	10.4%	3.9%	58.9%	68.9%	**35.4%**	**4**
SH-33	20.97	35.15844	-119.492	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	21.3	35.16103	-119.4967	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	21.46	35.16236	-119.4991	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	21.88	35.166	-119.5057	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	22.27	35.16927	-119.5116	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	22.34	35.16988	-119.5127	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	22.84	35.17429	-119.5191	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	23	35.17574	-119.5212	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-33	23.12	35.17681	-119.5228	27.8%	1.8%	44.9%	66.8%	**35.2%**	**4**
SH-155	57.28	35.72181	-118.5067	15.0%	2.0%	56.9%	67.0%	**34.9%**	**4**
SH-155	54.53	35.73334	-118.5381	15.0%	2.0%	56.9%	67.0%	**34.9%**	**4**
SH-33	36.37	35.33679	-119.6287	27.5%	1.5%	44.7%	66.5%	**34.7%**	**4**
SH-33	37.14	35.34623	-119.6337	27.5%	1.5%	44.7%	66.5%	**34.7%**	**4**
SH-33	37.15	35.34644	-119.6338	27.5%	1.5%	44.7%	66.5%	**34.7%**	**4**
SH-33	15	35.10269	-119.4176	27.5%	1.5%	44.6%	66.5%	**34.7%**	**4**
SH-33	15.49	35.10834	-119.4231	27.5%	1.5%	44.6%	66.5%	**34.7%**	**4**
SH-33	15.74	35.11117	-119.4258	27.5%	1.5%	44.6%	66.5%	**34.7%**	**4**
SH-33	106.24	35.11618	-119.4307	27.5%	1.5%	44.6%	66.5%	**34.7%**	**4**
SH-33	24.89	35.19579	-119.5445	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**
SH-33	25.97	35.20777	-119.5563	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**
SH-33	26.41	35.21274	-119.5612	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**
SH-33	26.65	35.21541	-119.5638	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**

SH-33	26.83	35.21746	-119.5658	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**
SH-33	27.13	35.22077	-119.5691	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**
SH-33	27.24	35.22205	-119.5703	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**
SH-33	27.33	35.22303	-119.5713	27.5%	1.5%	44.6%	66.5%	**34.6%**	**5**
SH-119	2.45	35.1699	-119.4539	27.4%	1.4%	44.4%	66.4%	**34.6%**	**5**
SH-119	2.97	35.17784	-119.4539	27.4%	1.4%	44.4%	66.4%	**34.6%**	**5**
SH-119	2.24	35.16682	-119.4536	27.4%	1.4%	44.4%	66.4%	**34.5%**	**5**
SH-33	13.93	35.0897	-119.4049	27.3%	1.3%	44.3%	66.3%	**34.4%**	**5**
SH-33	13.96	35.09006	-119.4053	27.3%	1.3%	44.3%	66.3%	**34.4%**	**5**
SH-33	16.67	35.12073	-119.4352	27.3%	1.3%	44.3%	66.3%	**34.4%**	**5**
SH-178	53.4	35.64845	-118.3593	17.5%	4.5%	47.6%	69.5%	**34.3%**	**5**
SH-33	17.66	35.13274	-119.4468	27.2%	1.2%	44.3%	66.2%	**34.3%**	**5**
SH-33	32.43	35.28181	-119.6239	27.2%	1.2%	44.4%	66.2%	**34.3%**	**5**
SH-33	32.61	35.2839	-119.626	27.2%	1.2%	44.4%	66.2%	**34.3%**	**5**
SH-33	20.23	35.15242	-119.4812	27.2%	1.2%	44.3%	66.2%	**34.3%**	**5**
SH-33	19.87	35.14979	-119.4764	27.0%	1.0%	44.1%	66.0%	**34.0%**	**5**
SH-33	23.85	35.18468	-119.5326	26.9%	0.9%	44.1%	65.9%	**33.9%**	**5**
SH-33	24.27	35.18928	-119.5375	26.9%	0.9%	44.1%	65.9%	**33.9%**	**5**
SH-33	24.42	35.1909	-119.5393	26.9%	0.9%	44.1%	65.9%	**33.9%**	**5**
SH-33	29.05	35.24253	-119.5905	26.9%	0.9%	44.0%	65.9%	**33.8%**	**5**
SH-33	29.13	35.24341	-119.5914	26.9%	0.9%	44.0%	65.9%	**33.8%**	**5**
SH-178	12.65	35.43297	-118.8085	16.9%	3.9%	47.1%	68.9%	**33.6%**	**5**
SH-155	40.85	35.72103	-118.6929	10.4%	3.9%	53.1%	68.9%	**33.4%**	**5**
SH-155	40.61	35.72302	-118.6963	10.4%	3.9%	53.1%	68.9%	**33.4%**	**5**
SH-155	40.3	35.72633	-118.7001	10.4%	3.9%	53.1%	68.9%	**33.4%**	**5**
SH-119	9.51	35.23453	-119.3676	21.7%	2.2%	45.1%	67.2%	**33.4%**	**5**
SH-119	9.98	35.2385	-119.3607	21.7%	2.2%	45.1%	67.2%	**33.4%**	**5**
SH-119	10.07	35.23962	-119.3588	21.7%	2.2%	45.1%	67.2%	**33.4%**	**5**
SH-58	15	35.29325	-119.6313	26.5%	0.5%	43.8%	65.5%	**33.3%**	**5**
SH-58	13.56	35.28716	-119.6502	26.4%	0.4%	43.7%	65.4%	**33.3%**	**5**
SH-58	12.19	35.2903	-119.6739	26.4%	0.4%	43.7%	65.4%	**33.3%**	**5**
SH-58	10.4	35.3084	-119.6945	26.4%	0.4%	43.7%	65.4%	**33.3%**	**5**
SH-58	10.44	35.30844	-119.6938	26.4%	0.4%	43.7%	65.4%	**33.3%**	**5**
SH-166	6.2	35.05793	-119.292	28.5%	17.3%	22.4%	67.5%	**33.1%**	**5**
SH-166	6.7	35.05792	-119.2836	28.5%	17.3%	22.4%	67.5%	**33.1%**	**5**
SH-155	58.76	35.71509	-118.4857	15.0%	2.0%	51.1%	67.0%	**32.9%**	**5**
SH-166	23.48	35.05932	-118.9867	28.3%	17.1%	22.2%	67.3%	**32.9%**	**5**
SH-155	36.16	35.70495	-118.7568	10.0%	3.5%	52.7%	68.5%	**32.9%**	**5**
SH-155	35.66	35.70671	-118.7642	10.0%	3.5%	52.7%	68.5%	**32.9%**	**5**
SH-155	36.8	35.7068	-118.7474	10.0%	3.5%	52.7%	68.5%	**32.9%**	**5**
SH-155	37.39	35.71163	-118.7397	10.0%	3.5%	52.7%	68.5%	**32.9%**	**5**
SH-155	34.22	35.71234	-118.7852	10.0%	3.5%	52.7%	68.5%	**32.9%**	**5**
SH-155	38.16	35.71545	-118.7279	10.0%	3.5%	52.7%	68.5%	**32.9%**	**5**
SH-33	40.73	35.39309	-119.6624	21.0%	1.5%	44.7%	66.5%	**32.6%**	**5**
SH-33	40.84	35.39462	-119.6633	21.0%	1.5%	44.7%	66.5%	**32.6%**	**5**
SH-33	38.65	35.36951	-119.6479	21.0%	1.5%	44.7%	66.5%	**32.5%**	**5**
SH-33	42.15	35.41209	-119.674	20.9%	1.4%	44.5%	66.4%	**32.3%**	**5**
SH-33	45.06	35.44936	-119.6979	20.8%	1.3%	44.5%	66.3%	**32.2%**	**5**
SH-33	45.5	35.45431	-119.7028	20.8%	1.3%	44.5%	66.3%	**32.2%**	**5**
SH-155	65.65	35.69236	-118.4678	14.3%	1.3%	50.4%	66.3%	**32.0%**	**5**
SH-155	65.49	35.69472	-118.4674	14.3%	1.3%	50.4%	66.3%	**32.0%**	**5**

SH-65	9.24	35.56521	-119.0879	10.9%	4.4%	47.2%	69.4%	**31.8%**	**5**
SH-33	42.62	35.41815	-119.6777	20.5%	1.0%	44.1%	66.0%	**31.8%**	**5**
SH-33	43.16	35.42523	-119.682	20.5%	1.0%	44.1%	66.0%	**31.8%**	**5**
SH-178	52.85	35.64374	-118.367	20.3%	0.8%	43.9%	65.8%	**31.5%**	**5**
SH-166	16.45	35.05884	-119.1127	27.3%	16.0%	21.2%	66.3%	**31.5%**	**5**
SH-119	10.46	35.24261	-119.3533	15.2%	2.2%	45.1%	67.2%	**31.2%**	**5**
SH-119	10.67	35.24436	-119.3503	15.2%	2.2%	45.1%	67.2%	**31.2%**	**5**
SH-119	11.11	35.24783	-119.3441	15.2%	2.2%	45.1%	67.2%	**31.2%**	**5**
SH-155	60.3	35.70819	-118.4619	13.7%	0.7%	49.8%	65.7%	**31.1%**	**5**
SH-33	29.94	35.2523	-119.6001	29.7%	3.7%	26.8%	68.7%	**30.9%**	**5**
SH-65	7.54	35.54102	-119.0855	10.1%	3.6%	46.5%	68.6%	**30.8%**	**5**
SH-65	16.72	35.67116	-119.0737	10.0%	3.5%	46.3%	68.5%	**30.6%**	**5**
SH-65	17.29	35.67887	-119.0699	10.0%	3.5%	46.3%	68.5%	**30.6%**	**5**
SH-65	17.7	35.68501	-119.0677	10.0%	3.5%	46.3%	68.5%	**30.6%**	**5**
SH-178	9.36	35.40801	-118.8581	14.7%	1.7%	44.6%	66.7%	**30.4%**	**5**
SH-155	16.42	35.744	-118.9631	9.7%	3.2%	46.5%	68.2%	**30.4%**	**5**
SH-155	17.91	35.7441	-118.9413	9.7%	3.2%	46.5%	68.2%	**30.4%**	**5**
SH-155	18.45	35.74639	-118.932	9.7%	3.2%	46.5%	68.2%	**30.4%**	**5**
SH-155	14.15	35.75093	-119.0005	9.7%	3.2%	46.5%	68.2%	**30.4%**	**5**
SH-155	11.3	35.76212	-119.0477	9.7%	3.2%	46.5%	68.2%	**30.4%**	**5**
SH-155	11.92	35.76216	-119.037	9.7%	3.2%	46.5%	68.2%	**30.4%**	**5**
SH-155	19.25	35.74486	-118.919	9.7%	3.2%	46.5%	68.2%	**30.4%**	**5**
SH-65	4.23	35.49293	-119.076	9.3%	2.8%	45.7%	67.8%	**29.7%**	**5**
SH-178	43.7	35.6368	-118.4698	13.7%	0.7%	43.9%	65.7%	**29.1%**	**5**
SH-178	43.7	35.63705	-118.4698	13.7%	0.7%	43.9%	65.7%	**29.1%**	**5**
SH-33	28.76	35.23925	-119.5873	28.4%	2.4%	25.5%	67.4%	**29.1%**	**5**
SH-223	26.31	35.21395	-118.7351	21.4%	1.9%	33.4%	66.9%	**29.1%**	**5**
SH-223	27.22	35.21916	-118.7203	21.4%	1.9%	33.4%	66.9%	**29.1%**	**5**
SH-223	27.58	35.22023	-118.7143	21.4%	1.9%	33.3%	66.9%	**29.0%**	**5**
SH-223	28.06	35.22482	-118.7086	21.4%	1.9%	33.3%	66.9%	**29.0%**	**5**
SH-223	28.31	35.2277	-118.7057	21.4%	1.9%	33.3%	66.9%	**29.0%**	**5**
SH-65	19.32	35.70763	-119.0634	8.8%	2.3%	45.1%	67.3%	**29.0%**	**5**
SH-155	39.88	35.72897	-118.7061	7.0%	0.5%	49.7%	65.5%	**28.7%**	**5**
SH-58	69.47	35.29436	-118.7574	16.3%	34.8%	2.5%	68.3%	**28.4%**	**5**
SH-58	69.47	35.29453	-118.7573	16.2%	34.7%	2.4%	68.2%	**28.3%**	**5**
SH-33	20.58	35.15585	-119.4874	27.8%	1.8%	24.9%	66.8%	**28.3%**	**5**
SH-99	28.25	35.41743	-119.0598	14.4%	7.9%	25.4%	72.9%	**28.0%**	**5**
SH-99	28.25	35.41753	-119.0596	14.4%	7.9%	25.4%	72.9%	**28.0%**	**5**
SH-33	36.63	35.34036	-119.6301	27.5%	1.5%	24.7%	66.5%	**27.9%**	**5**
SH-33	15.84	35.11232	-119.427	27.5%	1.5%	24.6%	66.5%	**27.9%**	**5**
SH-33	25.14	35.1986	-119.5473	27.5%	1.5%	24.6%	66.5%	**27.8%**	**5**
SH-119	3.32	35.18273	-119.4533	27.4%	1.4%	24.3%	66.4%	**27.6%**	**5**
SH-33	29.37	35.2459	-119.5938	26.9%	0.9%	24.0%	65.9%	**27.0%**	**5**
SH-155	24.57	35.71525	-118.8613	8.7%	2.2%	39.6%	67.2%	**27.0%**	**5**
SH-155	22.91	35.73676	-118.8591	8.7%	2.2%	39.6%	67.2%	**27.0%**	**5**
SH-178	13.24	35.43715	-118.8002	16.9%	3.9%	27.1%	68.9%	**26.7%**	**5**
SH-119	0.89	35.14865	-119.4479	27.4%	1.4%	21.1%	66.4%	**26.5%**	**5**
SH-178	10.66	35.41479	-118.8362	15.7%	2.7%	25.5%	67.7%	**24.9%**	**5**
SH-184	11.36	35.39028	-118.8895	15.3%	2.3%	25.2%	67.3%	**24.4%**	**5**
SH-178	9.6	35.40918	-118.8541	14.7%	1.7%	24.6%	66.7%	**23.6%**	**5**
SH-155	12.35	35.76043	-119.0297	9.7%	3.2%	26.5%	68.2%	**23.5%**	**5**

SH-223	12.46	35.20871	-118.9766	15.4%	2.4%	22.1%	67.4%	**23.4%**	**5**
SH-65	3.57	35.48364	-119.0752	9.3%	2.8%	25.7%	67.8%	**22.9%**	**5**
SH-223	28.71	35.23409	-118.7004	21.4%	1.9%	13.3%	66.9%	**22.1%**	**5**
SH-223	29.37	35.23698	-118.6922	21.4%	1.9%	13.3%	66.9%	**22.1%**	**5**
SH-65	23.34	35.76431	-119.0531	8.5%	2.0%	24.8%	67.0%	**21.7%**	**5**
SH-65	14.29	35.63743	-119.0837	9.2%	2.7%	22.2%	67.7%	**21.5%**	**5**
SH-65	15.94	35.65956	-119.0774	9.2%	2.7%	22.2%	67.7%	**21.5%**	**5**
SH-155	26	35.70991	-118.8392	8.7%	2.2%	19.6%	67.2%	**20.1%**	**5**
SH-155	23.23	35.73232	-118.8596	8.7%	2.2%	19.6%	67.2%	**20.1%**	**5**
SH-119	0.15	35.13794	-119.4474	27.2%	1.2%	1.0%	66.2%	**19.4%**	**5**
SH-155	9.38	35.76199	-119.0818	7.2%	0.7%	20.7%	65.7%	**19.0%**	**5**
SH-65	18.51	35.69571	-119.0641	10.0%	3.5%	3.1%	68.5%	**15.8%**	**5**
SH-65	20.86	35.7294	-119.0612	8.8%	2.3%	1.9%	67.3%	**14.2%**	**5**
SH-65	21.71	35.74111	-119.0569	8.8%	2.3%	1.9%	67.3%	**14.2%**	**5**
SH-65	24.44	35.77978	-119.0532	1.9%	1.9%	1.5%	66.9%	**11.4%**	**5**
SH-178	8.96	35.39796	-118.8916	16.7%	3.7%	46.1%	3.7%	**10.7%**	**5**
SH-178	9.01	35.39788	-118.8905	15.3%	2.3%	45.2%	2.3%	**9.0%**	**5**
SH-65	2.19	35.46349	-119.0746	9.0%	2.5%	25.1%	2.5%	**0.0%**	**5**

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MARK THOMAS

MEMORANDUM

To:	Rob Ball, Kern Council of Governments	Project No.:	24-00050
Cc:	Karl Davisson, Kern Council of Governments		
From:	Ed Noriega, Amber Collins | Mark Thomas		
Date:	January 17, 2025		
RE:	**KARGO Community Prosperity/Protection Study – Technical Analyses and Project Prioritization**		

Introduction

Kern Council of Governments (Kern COG) is advancing the Community Prosperity/Protection Study as part of a phase (Phase III) of the Kern Area Regional Goods-Movement Operations (KARGO) initiative. The overarching objective of the KARGO initiative is to evaluate and plan for the growth of goods movement industries in and through Kern County. This includes developing strategies to enhance the transportation system's capacity to meet these needs while mitigating the impacts of increased freight activity on local communities. Phase III of KARGO, the Community Prosperity/Protection Study, focuses on addressing the impacts of climate change on the transportation projects that support KARGO and prioritization of those projects for implementation.

This Memorandum provides a comprehensive summary of the preceding phases of the KARGO initiative, highlighting the key findings and outcomes from Phase I and Phase II while establishing the strategic objectives for Phase III. It also presents key insights from the current study's regional vulnerability assessment and economic assessment. Additionally, it outlines public engagement efforts, summarizing stakeholder feedback received during Round 1.

The Memorandum describes the project evaluation criteria and prioritization process and methodology based on the technical analysis and public and stakeholder input. The next phase of the study will focus on developing concept designs for the highest priority projects and evaluating a project's benefits and costs.

Background

KARGO Sustainability Study Phase I: Integrated Circulation Study

The KARGO Sustainability Study Phase I: Integrated Circulation Study was prepared to analyze strategies for addressing the growing industrial and warehousing industries along 7th Standard Road, situated between Bakersfield and Shafter. The primary objective was to develop an integrated circulation study incorporating input from multiple agencies. The evaluation process considered existing conditions,

future projections, and stakeholder inputs to comprehensively assess transportation and infrastructure requirements.

Phase I analyzed ten distinct alternatives for roadway improvements and developed conceptual designs at twenty critical locations to inform future network needs effectively. The study served as a tool for the cities of Bakersfield and Shafter, as well as Kern County, to update their circulation elements while emphasizing the significance of key corridors for goods movement in the region.

The final report included a list of the following sustainable strategies aimed at mitigating any adverse effects on the transportation system and air quality.

1) Targeted Logistics Transportation Fee: Implementation of an equitable fee system across Kern County to fund transportation improvements and address infrastructure impacts from warehouse and e-commerce developments.
    - Logistics Mitigation Fee: A one-time fee based on facility size to finance highway improvements.
    - Mobility Fee: Charges applied to all new developments to mitigate their transportation system impacts.
2) Freight Modal Shift Program: Introduction of a program to shift freight transportation from roadways to rail or intermodal systems, reducing vehicular traffic and emissions.
3) Utilization of Clean Technology: Zero-emission technologies, such as electric trucks, to reduce environmental impacts, including greenhouse gas emissions and diesel particulate matter.
4) Revision to Building Codes: Revise commercial/industrial building codes to require supporting electric truck charging infrastructure for EVSE in new construction and major renovations.

KARGO Sustainability Study Phase II

KARGO Phase II focused on goods movement while addressing the regional economy and potential impacts of future land use and development. The study evaluated the effects and opportunities associated with increased vehicular activity and roadway damage due to the growth of the warehouse and e-commerce industries. This phase culminated in a refined and comprehensive list of infrastructure improvements, supported by a detailed implementation strategy.

To address the anticipated surge in truck traffic, a Nexus Study was conducted to establish a fair-share cost framework for funding roadway network improvement projects. These projects were assessed against key objectives to ensure alignment with KARGO Phase II goals:

- improving roadway maintenance,
- promoting the adoption of clean logistics technologies,
- maintaining regional competitiveness and economic benefits, and
- enhancing network capacity, particularly for truck traffic.

The implementation strategy involved evaluating various funding mechanisms, such as a regional

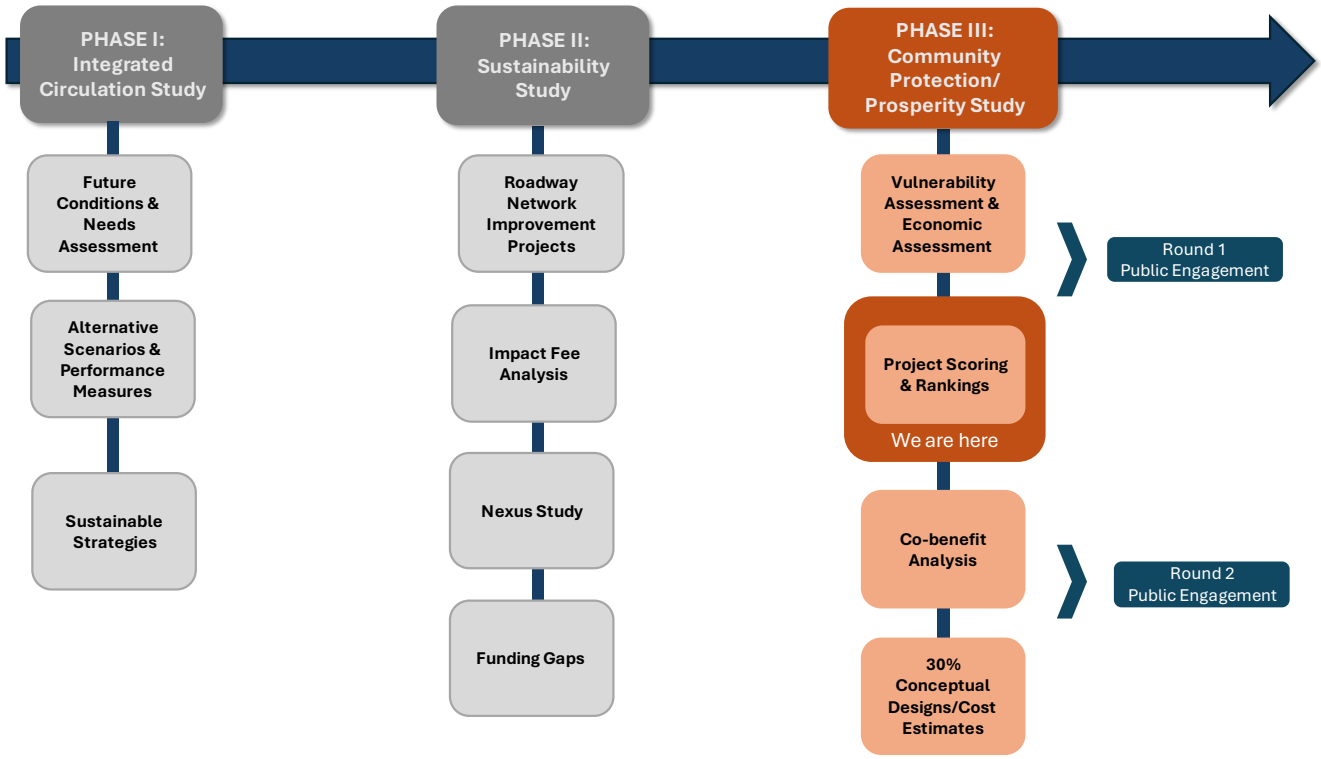
logistics mitigation fee program, and initiating an outreach campaign to engage stakeholders, including disadvantaged communities. The final report prioritized several critical strategies, focusing on infrastructure needs to support regional economic growth and expand network capacity for goods movement.

KARGO Community Prosperity/Protection Study Phase III

Building upon previous phases of the KARGO initiative, Phase III focuses on developing climate-resilient transportation infrastructure improvements to position for implementation. This phase focuses on integrating findings from a climate vulnerability assessment and economic analysis to develop more resilient projects. Public and stakeholder input has also been collected to help inform the development of high priority projects. Upon prioritization of the projects, conceptual-level design and cost estimates will be developed for further implementation.

Figure 1. KARGO Project Approach– Phase I, Phase II, Phase III provides an illustration of the preceding phases of KARGO, detailing the key objectives of Phase I and Phase II, and establishes the objectives for Phase III.

Figure 1. KARGO Project Approach– Phase I, Phase II, Phase III



Community Prosperity/Protection Study

Community Climate Vulnerability/Resiliency Assessment

A Vulnerability and Resiliency Assessment Report was prepared by LSA to supplement the KARGO Community Prosperity/Protection Study by documenting climate projections for Kern County and demonstrating climate-related vulnerabilities to county-wide transportation network assets, including roads, railways, bridges, large culverts, and small culverts. *Appendix C* provides the Vulnerability and Resiliency Assessment Report discussed in this section.

Establishing regional climate projections was a foundational step in identifying climate vulnerabilities for Kern County's transportation assets. Using Cal-Adapt, a California state climate modeling tool, the study assessed multiple climate intensity scenarios (RCPs) to analyze temperature, precipitation, wildfire, and wind risks. Region-specific data, enhanced with Localized Constructed Analogs (LOCA), and supplemental information from FEMA, Caltrans, and CAL FIRE provided a detailed understanding of projected changes. The analysis indicates that Kern County will face more frequent extreme heat events, prolonged drought, heightened wildfire risks, and increased flooding potential due to intensified precipitation from singular storm events combined with extended dry spells.

To assess transportation network vulnerabilities, climate data were integrated with spatial transportation network data to evaluate climate exposure. Attributes like average traffic volumes and asset condition ratings were analyzed to determine potential consequences. Assets, grouped by type (e.g., roads, railways, bridges, large and small culverts), were ranked based on their unique exposures and consequences. Both hazard-specific and cross-hazard scores were generated using a spreadsheet-based tool. The methodology built on the Caltrans District 6 Adaptation Priority Report, with refinements tailored to Kern County's geography, climate risks, asset types, and stakeholder feedback.

The climate hazards in the Vulnerability and Resiliency Assessment Report included extreme heat, wildfire, flooding, and landslide. Additional hazards for consideration were identified through the public process and included in the vulnerability assessment, including wind, snowfall, and earthquake. Earthquake risk was included in the assessment and wind and snowfall were analyzed but not included as a standard metric due to less than significant findings for change throughout the century.

The results of the Vulnerability and Resiliency Assessment Report identifies the transportation assets most vulnerable to future climate change impacts, based on the cross-hazard prioritization scores, and identify the most highly impacted transportation assets for each specific climate hazard type. These results can be combined with broader KARGO analyses to identify key high-risk corridors and facilities. The identification of high-risk projects can help expedite mitigation and adaptation planning to increase resiliency.

Community Economic Profile

A county-wide economic profile was developed by EBP consulting. The purpose of the Kern County Economic Profile report is to provide a comprehensive analysis of the county's economy, highlighting key sectors, trends, and future opportunities. It examines historical and current economic data, including gross domestic product (GDP), employment, and sectoral performance, while offering forecasts for growth and challenges over the next several decades. The report also evaluates transportation infrastructure and freight dependency. Interviews with local stakeholders supplement the quantitative data to provide a nuanced understanding of the region's economic dynamics. *Appendix B* provides the Kern County Economic Profile summarized in this section.

The Kern County Economic Profile assessed the most freight-dependent target industry clusters critical to Kern County's economic future: value-added agriculture, transportation and logistics, and energy and natural resources. Long-term forecasts predict steady GPD growth, particularly in freight-intensive sectors such as agriculture, energy, and manufacturing. However, agriculture, energy, and freight-dependent industries remain highly exposed to environmental, regulatory, and market shifts. Without economic diversification, the local economy remains at risk of over-reliance on a few key industries.

The Kern County Economic Profile highlights several challenges that could impact the region's economic growth and sustainability. These challenges include dependance of vulnerable sectors, manufacturing employment declines, high unemployment rates, impact of environmental regulations, aging infrastructure, limited multimodal freight connectivity, regional competitiveness, and climate and natural resource risks. Addressing these challenges requires a multifaceted approach, including investments in the workforce education, infrastructure improvements, regulatory adaptation, and economic diversification.

Recommendations and opportunities outlined in the Economic Profile include an investment in infrastructure, particularly multimodal freight connectivity and road improvements; supporting the diversification of the energy sector, and leveraging Kern County's strategic position to attract investment in logistics and emerging industries.

Round 1: Public Engagement

Kern Council of Governments (Kern COG) held a series of public engagement activities during the Summer of 2024 to obtain feedback from the community on KARGO Community Prosperity/Protection Study project. *Appendix C* provides a detailed report of the Round 1 Public Engagement process, including the public input received and identified concerns.

A total of four in-person workshops were held countywide, and two workshops were held virtually via Zoom. A digital survey was available on the project website to collect community input during the virtual workshops and for participants unable to attend a workshop. A total of 92 participants attended a workshop and a total of 30 online surveys were received.

The community expressed a variety of concerns and priorities regarding Kern County's transportation

system for goods movement operations and growth. The key themes collected from the community included lighting and safety improvements, road maintenance and expansion, accessibility to transit and bicycle infrastructure, air quality and pollution concerns, and job preservation amid technological changes. The overall priorities reflect a need for infrastructure improvements, safety enhancements, environmental protections, and a balance between industrial growth and community well-being.

Project Scoring and Rankings

As part of the KARGO Community Prosperity/Protection Study, a comprehensive list of infrastructure projects has been developed based on insights from previous phases and studies. The current phase involves an initial qualitative screening of these projects using the Study's established performance measures, which serve as evaluation criteria. This process aims to identify corridor improvement projects that best align with the Study's overarching goals and objectives. *Appendix D* provides the detailed screening process for each project, including each project description, scores across each performance measures, and priority rankings.

Goals, Objectives, and Performance Measures

The KARGO Community Prosperity/Protection Study established five (5) key objectives to guide the growth of goods movement industries in Kern County. These objectives support the Study's broad goal of optimizing the transportation system to support economic development while addressing critical challenges, such as mitigating the impacts of freight movement on disadvantaged communities and enhancing climate resilience. The Study's key goals and objectives are outlined below.

- Economic and Goods Movement
    - Identify projects that facilitate economic development and improve goods movement.
- Climate Vulnerability
    - Assess climate change vulnerabilities and prioritize projects that implement adaptive climate mitigation measures.
    - Reduce impacts of extreme weather events.
    - Enhance transportation system resilience.
- Deliverability
    - Identify critical projects positioned for expedited implementation.
- Community Support
    - Solicit public feedback to prioritize projects effectively.
- Disadvantaged Communities Co-Benefit
    - Prioritize investments that directly benefit disadvantaged communities

The performance measures developed to support these objectives, along with their respective weighting factors, were aligned with the principles of the Adaptation Planning Grant Program (APGP) guidelines. Their development incorporated feedback and consensus from project stakeholders, including the Kern COG Board of Directors.

Economic and Goods Movement

Economic vitality and goods movement efficiency are critical for Kern County, reflecting the region's role as a major hub for freight and industry. Performance measures evaluate the ability to support economic growth while ensuring the seamless and sustainable flow of goods through the county's transportation network. Prioritizing these metrics enables strategic planning to balance economic development with community and environmental considerations. A summary of performance measures supporting economic and goods movement is provided below.

Level of Service: The Kern COG traffic demand model utilizes a "Level of Service" (LOS) analysis to evaluate traffic congestion on roadways, typically categorized from A (free flow) to F (severe congestion), allowing planners to assess the potential impacts of new development or transportation projects on traffic conditions within the Kern County region.

Safety (Collisions): Safety utilizes data from the California Statewide Integrated Traffic Records System (SWITRS), accessed via the Statewide SWITRS Summary tool, to analyze and map crash and injury occurrences across the state. The measure specifically evaluates the rate of collisions per 1,000 daily truck vehicle miles traveled (VMT) over the 2019–2023 period. This collision rate was evaluated across various project types, including complete streets, roadway improvements, interchanges, and rail projects.

Population Exposure (Truck Activity): Population Exposure evaluates the potential impact of truck traffic on nearby populations by analyzing Truck Average Daily Trips (ADT) data. It assesses the population residing within a 900-foot radius of a proposed project to estimate the extent of exposure to truck activity. This metric helps prioritize projects based on their proximity to population centers and their potential to mitigate or exacerbate exposure-related concerns, such as air quality and noise. This metric was evaluated across various project types, including complete streets, roadway improvements, interchanges, and rail projects.

Nearby Employment (Job Accessibility): Job Accessibility evaluates the potential impact of a project on employment accessibility by analyzing the number of jobs located within a one-mile radius of the proposed project. This metric helps identify projects that enhance access to employment centers, supporting economic activity and workforce mobility in the surrounding area. This metric was evaluated across various project types, including complete streets, roadway improvements, interchanges, and rail projects.

Freight Accessibility: Freight accessibility evaluates how effectively a project provides connectivity to freight generators, focusing on industrial and agricultural employment within a one-mile radius. This metric was assessed by calculating employment in these sectors near each project and cross-checking scores visually to ensure alignment with key freight-generating areas, such as distribution centers around 7th Standard Road and Santa Fe Way. Projects directly serving major freight hubs received the lowest scores, while complete streets projects, not designed for freight connectivity, achieved the highest. Although similar to an employment-based metric, this measure specifically targets two key

sectors, offering a nuanced reflection of how different project types support freight-related uses. Scoring all projects together, rather than by category, highlights the varying degrees to which projects serve freight accessibility needs.

Climate Vulnerability

Addressing climate vulnerability is a critical component of the KARGO Community Protection and Prosperity Study, focusing on the resilience of Kern County's transportation infrastructure. This measure involves assessing vulnerabilities to climate change and prioritizing projects that incorporate adaptive mitigation strategies. By reducing the impacts of extreme weather events and enhancing the resilience of the transportation system, the study aims to safeguard critical infrastructure and ensure continuity in goods movement and community connectivity amidst evolving climate challenges.

Hazards Assessment: The consultant team utilized a high-level feasibility matrix to assess the level of environmental constraints within the project area. Data was based off preliminary research performed by technical staff and use of online resources connected to the project study area. Environmental measures included the following hazards: Extreme Heat, Flood, Landslide, Earthquake, and Wildfire.

Deliverability

The concept of deliverability in the KARGO Community Prosperity/Protection Study focuses on evaluating projects based on their level of scoping and progress toward implementation. By ranking projects according to their readiness for execution, the study prioritizes those with advanced planning stages, ensuring efficient allocation of resources and timely delivery of critical infrastructure improvements. This approach supports the strategic advancement of projects that are poised to address immediate transportation and community needs.

Community Support

Community support serves as a core objective of the KARGO Community Prosperity/Protection Study, emphasizing the importance of aligning project priorities with public needs and preferences. To measure this, projects were ranked based on the level of community support gathered during extensive public engagement activities conducted in the summer of 2024. These activities included hybrid workshops, online surveys, and the collection of public comments, providing a comprehensive understanding of stakeholder perspectives. This approach ensures that the selected projects reflect the priorities of the community, fostering trust and promoting collaborative decision-making in the planning process. *Appendix B* provides an overview of the public engagement process, including the type of activities, marketing approach and public comments received.

Disadvantaged Communities

The disadvantaged communities co-benefits performance measure evaluates how effectively projects address the needs of historically underserved and vulnerable populations. This measure prioritizes investments that deliver tangible benefits to disadvantaged communities, such as improved access to transportation, enhanced safety, and reduced environmental impacts. By incorporating this metric, the

study ensures that equity considerations are central to project planning and resource allocation, fostering inclusive growth and mitigating the disproportionate impacts of goods movement on these communities.

USDOT ETC: The US DOT Equitable Transportation Community (ETC) Explorer is an interactive web application that uses 2020 census tracts and data, to explore the cumulative burden communities experience, as a result of underinvestment in transportation, in the following five components: Transportation Insecurity, Climate and Disaster Risk Burden, Environmental Burden, Health Vulnerability, and Social Vulnerability.

CalEnviroScreen: The California Environmental Screen (CalEnviroScreen) utilizes 21 publicly available U.S. Census demographic indicators to assess cumulative burdens and vulnerabilities experienced by communities throughout the State of California, which are averaged into four components: Exposure, Environmental Effects, Sensitive Populations, and Socioeconomic Factors).

Median Household Income: The U.S. Department of Housing and Urban Development uses median household income to identify the presence of disadvantaged communities based on socio-economic factors. The median household income in California was reported as $91,905 in 2022. U.S. Census American Community Survey (ACS) was used to identify census tracts where the median household income was less than 80% of the median statewide income (<$73,524). Households earning under 80% are considered low-income households by the HUD.

Screening Methodology

Based on the Phase III key objectives and performance measures outlined in the preceding section, a screening rubric was developed for the initial evaluation of each project. The screening process included a methodical approach to ensure consistency in prioritizing projects. *Appendix D* details the screening process for each project, including descriptions, scores for each performance measure, and priority rankings.

Scoring Scale

A numerical score for each performance measure ranging from zero (0) to five (5) was used to identify a project's consistency with the Study's goals and objectives. For each performance measure, projects that were deemed to have a "Major positive impact likely" for the particular performance measure were awarded a lower score, projects that were deemed to have a "Minor positive impact likely" were awarded a higher score.

The following outlines the scoring rubric for each performance measure developed to support the Study's goals and objectives.

Economic & Goods Movement

PHASE III Objective(s):

- Identify projects that facilitate economic development and goods movement

TYPE OF PROJECT BY PERFORMANCE MEASURE & SCORING					POINTS
Complete Streets	**Roadway**	**Interchange**	**Rail**	**All Categories**	
Level of Service Scores					
1	1	1	1	1	3
2	2	2	2	2	2
3	3	3	3	3	1
Collisions per 1000 Daily Truck VMT Scores					
0 to 1	0 to 1	0 to .3	All	0 to 1	5
1 to 2	1 to 2	.3 to .6		1 to 2	4
2 to 3	2 to 3	.6 to .9		2 to 3	3
3 to 4	3 to 4	.9 to 1.2		3 to 4	2
>4	>4	>1.2		>4	1
Population Exposure (Truck Activity) Scores					
0 to 1 million	>4 million	>400	>2 million	>4 million	5
1 to 2 million	3 to 4 million	300 to 400	1.5 to 2 million	3 to 4 million	4
2 to 3 million	2 to 3 million	200 to 300	1 to 1.5 million	2 to 3 million	3
3 to 4 million	1 to 2 million	100 to 200	500k to 1 million	1 to 2 million	2
>4 million	0 to 1 million	0 to 100	0 to 500k	0 to 1 million	1
Job Accessibility Scores					
0 to 0.59%	0 to 0.29%	0 to 0.15%	0 to 0.01%	0 to 0.59%	5
0.59% to 0.88%	0.29% to 0.59%	0.15% to 0.29%	0.01% to 0.03%	0.59% to 0.88%	4
0.88% to 1.18%	0.58% to 0.88%	0.29% to 0.44%	0.03% to 0.04%	0.88% to 1.18%	3
1.18% to 1.47%	0.88% to 1.18%	0.44% to 0.59%	0.04% to 0.06%	1.18% to 1.47%	2
>1.47%	>1.18%	>0.59%	>0.06%	>1.47%	1
Freight Accessibility: Agricultural and Industrial Employment within 1 Mile Scores					
All	0 to 1000	0 to 1000	0 to 1000		5
	1000 to 2000	1000 to 2000	1000 to 2000		4
	2000 to 3000	2000 to 3000	2000 to 3000		3
	3000 to 4000	3000 to 4000	3000 to 4000		2
	>4000	>4000	>4000		1
			Total Points Received by Project		
			Weighted Score		

Climate Vulnerability

PHASE III Objective(s):

- Assess climate change vulnerabilities and advance critical projects that implement adaptive climate mitigation measures
- Reduce Impacts of Extreme Weather Events
- Enhance Transportation Resilience

PERFORMANCE MEASURE & SCORING	POINTS
Hazards Assessment: Extreme Heat, Flood, Landslide, Earthquake, and Wildfire	
Low Vulnerability	5
Medium-Low Vulnerability	4
Medium Vulnerability	3
High-Medium Vulnerability	2
High Vulnerability	1
Total Points Received By Project	
Weighted Score	

Deliverability

PHASE III Objective(s):

- Identify critical projects positioned for expedited implementation

PERFORMANCE MEASURE & SCORING	POINTS
Deliverability: Projects ranked by level of project scoping and progress towards implementation.	
Low Potential	5
Medium-Low Potential	4
Medium Potential	3
Medium High Potential	2
High Potential	1
Total Points Received By Project	
Weighted Score	

Community Support

PHASE III Objective(s):

- Solicit public feedback on project priorities

PERFORMANCE MEASURE & SCORING	POINTS
***Community Support*:** Projects ranked by community support during public engagement	
Low Priority	5
Medium Low Priority	4
Medium Priority	3
Medium High Priority	2
High Priority	1
Total Points Received By Project	
Weighted Score	

Disadvantaged Communities Co-Benefits

PERFORMANCE MEASURE & SCORING	POINTS
USDOT ETC	
less than 20%	5
40%-20%	4
60%-40%	3
80%-60%	2
over 80%	1
CalEnviroScreen 4.0	
less than 20%	5
40%-20%	4
60%-40%	3
80%-60%	2
over 80%	1
Median Household Income	
$93,000+	5
$73,000 to $93,000	4
$53,000 to $73,000	3
$33,000 to $53,000	2
Less than $33,000	1
Total Points Received By Project	
Weighted Score	

Total Weighted Score

To calculate the Total Weighted Score, each project was first evaluated for a score in each goal category. Those scores were then "normalized" by dividing the awarded score by to total available score. This normalized score for each goal was then multiplied by the goal's weighting factor. The weighted score for each goal was calculated as follows:

*(r/a) * w = t*
r = Total points received in goal category
a = Total points available in goal category
w = Goal category weighting factor
t = Total weighted points received in goal category

Using the above formula, the following is an example calculation for a project's weighted score for the Disadvantaged Communities Co-Benefit Goal category:

Project A has received a score of 2, 2, and 3 for the three (3) respective performance measures in the Disadvantaged Communities Goal category. This means it has received seven (7) points out of the fifteen (15) points available. The Disadvantaged Communities Goal category has a 20 weighting factor.

*(7/15) * 20 = 11.67*

This project receives a weighted score of 11.67 for the Disadvantaged Communities Goal category.

The weighted scores for each of the five (5) goal categories were summed to identify a project's Total Weighted Score (out of 100 points). The Total Weighted Scores were then used to rank and identify the projects that best align with the Study's Goals and Objectives.

Goal Weighting

The goal weighting factors were incorporated into this analysis by assigning a maximum number of points available for the each goal as discussed and agreed to by the various stakeholder groups. The Goal categories were weighted as follows:

- Economic and Goods Movement – 20 points
- Climate Vulnerability – 20 points
- Deliverability – 20 points
- Community Support – 20 points
- Disadvantaged Communities Co-Benefit – 20 points

The summation of points for these five (5) Goal categories equates to 100. This means that the maximum Total Weighted Score for each project is 100 points.

Next Steps

Phase III focuses on addressing the impacts of climate change on the transportation projects that support KARGO and prioritization of those projects for implementation. Upon prioritization of the projects, conceptual-level design and cost estimates will be developed for further implementation. These projects will move forward to 30% conceptual design and cost estimates for future funding opportunities. *Appendix E* provides maps of the projects that were initially screened in the project prioritization process.

KARGO Community Protection/Prosperity Study Project Priority List For Applying Conceptual Design Resources

Rank	District	Location	Cond. Project Number	Prev. Project Number	Project Title	Project Description	Type of Improvement	Routes (miles)	Economic & Goods Movement (20 points)	Climate Vulner-ability (20 points)	Deliver-ability (20 points)	Comm. Support (20 points)	DAC Co-Benefit (20 points)	Total Weighted Score (100 points)	Preliminary Conceptual Lead agency
1	D2 - S Kern	Tejon	32	32	S Arvin Corridor Green pass	S. Arvin Expressway/rail corridor (new alignment) connection between SR-233 to SR-99	Connecting Resiliency Route Corridors, rail extension	16	12.80	8.00	4.00	4.00	8.00	36.80	CALTRANS
2	D4 - E Kern	Keene-Caliente	25	25	SR58 Truck Climb/Safety Passing Lanes	add truck climb and passing lanes on SR-58 from Tower Line Road to SR-233, runaway truck ramp, critter crossings, resiliency corridor for I-5	Roadway Improvements	9	12.80	8.00	4.00	16.00	5.33	46.13	CALTRANS / Kern County
3	D3 - N Kern	Delano	1	1	Delano Green-pass: Pond Road	Realignment of SR-155 to Pond Road, connecting Richgrove Drive/SR-155 to SR-43	Safety improvement and rehab	13	12.00	12.00	4.00	16.00	5.33	49.33	CALTRANS or Kern County
4	D2 - S Kern	Tejon	46	46	I-5 Southbound Weigh Station	relocate weigh station	Roadway Improvements	2	12.80	4.00	4.00	20.00	9.33	50.13	CALTRANS
5	D2 - S Kern	Tejon	32	28	Green-pass: Copus/David Rd I-5-Wheeler Ridge	Safety Rehab on Copus Road connecting I-5 to SR-99	Safety Rehab	3	12.00	16.00	12.00	4.00	6.67	50.67	HSR / CALTRANS / Kern County
6	D2 - S Kern	Bakersfield	23	23	Lamont Green-pass: Edison Road	Safety Rehab on Edison Road from SR-58 to SR-233	Safety Rehab	9	9.60	16.00	4.00	16.00	6.67	52.27	Cities of Bakersfield and Shafter +
7	D2 - S Kern	Lebec	51	51	I-5 Truck Safety Passing Lanes Grapevine to Lebec	Expand from 1 passing lane each direction to 2 passing lanes each direction	Passing Lanes	7	12.00	4.00	8.00	20.00	9.33	53.33	CALTRANS
8	D4 - E Kern	Keene	25	26	SR58 Truck Climb/Safety Passing Lanes	Add Truck Climbing Lanes on SR-58 from Keene to Cable	Roadway Improvements	7	12.80	4.00	12.00	16.00	9.33	54.13	CALTRANS

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8	D4 - E Kern	Indian Wells V.	27	27	US-395 Safety Passing Lanes	Extend Passing Lanes North of Garlock Rd	Roadway Improvements	6	12.80	4.00	12.00	16.00	9.33	54.13	CALTRANS
10	D1 - C Kern	Rosedale	7	7	Shafter/Bakersfiel d Green-pass: Superior Road Corridor	New Road/Expressway, Add 1 Grade Separation	Roadway Improvements	7	12.80	16.00	4.00	16.00	6.67	55.47	CALTRANS
11	D4 - E Kern	Keene	25	42	SR58/SR223 Interchange	Interchange improvements	Roadway Improvements	2	11.20	8.00	12.00	16.00	9.33	56.53	CALTRANS
12	D4 - E Kern	Rosamond	35.1	35.1	Tehachapi-Willow Springs Road Corridor Green	improvements to resiliency route connections, TWS Rd-Av A- United St	Connecting Resiliency Route Corridors	15	12.80	12.00	4.00	20.00	8.00	56.80	CALTRANS
13	D1 - C Kern	Shafter	15	18	Main Drain Road Safety Rehab	Safety Rehab on Main Drain Road connecting Lerdo Hwy to 7th Standard Road	Safety Rehab	5	12.80	12.00	8.00	20.00	5.33	58.13	Union Pacific
13	D4 - E Kern	Keene	25	47	SR-58 Cultural Biological Interpretive Center	Cultural Biological Interpretive Center possibly near Broome Rd	Public Amenities, Safety Rest Area	7	12.80	12.00	4.00	20.00	9.33	58.13	CALTRANS
15	D4 - E Kern	Keene	25	45	SR-58 Eastbound Weigh Station	relocate weigh station	Roadway Improvements	2	13.60	4.00	12.00	20.00	9.33	58.93	City of Shafter / Kern County / CALTRANS

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16	D1 - C Kern	Bakersfield	8	43	Panama Ln Green-pass/Mt Vernon-Edison Rd	Safety Rehab,	Safety Rehab	2	9.60	16.00	12.00	16.00	5.33	58.93	CALTRANS
17	D4 - E Kern	Tehachapi	12	12	SR58 Summit Interchange	Summit Interchange improvements SR-58 and Tehachapi Blvd	Roadway Improvements	2	12.80	4.00	20.00	16.00	6.67	59.47	Kern County
17	D1 - C Kern	Shafter	15	17.2	7th Standard Road/Lerdo Safety Rehab	Safety Rehab on 7th Standard Road and Lerdo Hwy connecting to I-5 and SR-33	Safety Rehab	12	12.80	12.00	8.00	20.00	6.67	59.47	Union Pacific
17	D1 - C Kern	Bakersfield	19	38	I-5/SR58 Stockdale Hwy Interchange	Add Safety Passing Lanes, left turn pockets; approaching I-5. National goods movement corridor	Roadway Improvements	2	12.80	12.00	12.00	16.00	6.67	59.47	City of Delano
20	D1 - C Kern	Shafter	15	17.1	7th Standard Road/Lerdo Safety Rehab	Safety Rehab on 7th Standard Road and Lerdo Hwy connecting to I-5 and SR-33	Safety Rehab	12	14.40	12.00	8.00	20.00	5.33	59.73	Union Pacific
20	D4 - E Kern	Keene	69.1	69.1	UP Tehachapi Pass Additions Seg 1	Add 3 sidings	Rail Corridor		14.40	8.00	12.00	20.00	5.33	59.73	City of Shafter / City of Bakersfield / Kern County
20	D4 - E Kern	Keene	69.2	69.2	UP Tehachapi Pass Additions Seg 2	Add 3 sidings	Rail Corridor		14.40	8.00	12.00	20.00	5.33	59.73	CALTRANS
20	D4 - E Kern	Keene	69.3	69.3	UP Tehachapi Pass Additions Seg 3	Add 3 sidings	Rail Corridor		14.40	4.00	12.00	20.00	9.33	59.73	BNSF
20	D4 - E Kern	Tehachapi	70	70	UP Tehachapi Pass Improvements	Retaining Wall Project	Rail Corridor		14.40	4.00	12.00	20.00	9.33	59.73	CALTRANS
25	D1 - C Kern	Lamont	56	56	SR 184 - Lamont Complete Streets Corridor	Move trucks to Edison Rd and make 184 through Lamont more bike/pedestrian friendly	Complete Streets Corridor	1	8.80	16.00	16.00	16.00	4.00	60.80	Union Pacific

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26	D2 - S Kern	Grapevine	9	9	Wheeler Ridge/Laval Road TRCC Core	Route improvements along SR-184/Wheeler Ridge Road crossing I-5	Safety Rehab	1	8.80	4.00	20.00	20.00	9.33	62.13	CALTRANS
26	D1 - C Kern	Bakersfield	8	22	Bakersfield Green-pass: Mt Vernon Ave Extension	Road extension from Planz Road to Panama Lane	Roadway Improvements	2	12.80	16.00	12.00	16.00	5.33	62.13	Cities of Bakersfield and Shafter + CALTRANS
26	D3 - N Kern	Delano	1	36	SR-99/Pond Road Interchange	Interchange improvements	Roadway Improvements	2	12.80	12.00	12.00	20.00	5.33	62.13	Kern County
29	D1 - C Kern	Rosedale	4	16	7th Standard Road/I-5-Aiport Dr	Safety Rehab on 7th Standard Road from I-5 to Airport Drive	Safety Rehab	24	12.80	16.00	8.00	20.00	6.67	63.47	CALTRANS
29	D1 - C Kern	Rosedale	19	19	SR-58 Stockdale Hwy Safety Passing Lanes	Add safety passing lanes on SR-58 between and at the approaches to I-5 to SR-43/Enos Lane	Roadway Improvements	5	12.80	12.00	12.00	20.00	6.67	63.47	Union Pacific
29	D4 - E Kern	Mojave	41	41	SR14/Purdy Ave Interchange	Interchange improvements	Roadway Improvements	2	12.80	8.00	20.00	16.00	6.67	63.47	CALTRANS
32	D4 - E Kern	Keene	25	71	HSR Tunnel Tailings Repurposing				14.40	8.00	12.00	20.00	9.33	63.73	City of Wasco/HSR
33	D1 - C Kern	Bakersfield	8	8	Bakersfield Green-pass: Mt Vernon Ave	Safety Rehab on Mt Vernon Avenue from SR-58 to Planz Road	Safety Rehab	2	11.20	20.00	12.00	16.00	5.33	64.53	CALTRANS
34	D3 - N Kern	Lost Hills	30	30	SR-46 Improvements	extend safety passing lanes, near countyline	Roadway Improvements	0	12.80	4.00	20.00	20.00	8.00	64.80	CALTRANS
35	D2 - S Kern	Tejon	67	67	Arvin-Tejon Commerce Center Rail Spur	Extend existing Arvin Subdivisoin to TRCC adjacent the Arvin Green-pass	Rail Corridor	10	13.60	4.00	20.00	20.00	8.00	65.60	City of Shafter / CALTRANS
36	D2 - S Kern	Taft/Maricopa	32	33	Copus Rd Safety Realignment	diagonal removing 2 dangerous 90' turns on rural road; resiliency connection from Copus Road to SR 166	Connecting Resiliency Route Corridors	1	12.80	12.00	12.00	20.00	9.33	66.13	City of Bakersfield

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37	D2 - S Kern	Arvin	8	24	S Lamont Green-pass: Edison Road/223-S Arvin Green-pass	Safety Rehab on Edison Road south of SR-233 to S. Arvin Green-pass diagonal	Safety Rehab	2	10.40	12.00	20.00	16.00	8.00	66.40	Cities of Bakersfield and Shafter + CALTRANS
37	D2 - S Kern	Taft	32	34	Realign SR 166 to Copus Rd via Old River Rd	resiliency connection between Copus Road to SR 166,	Connecting Resiliency Route Corridors	3	10.40	8.00	20.00	20.00	8.00	66.40	CALTRANS
37	D2 - S Kern	Taft	63	63	Taft Complete Streets Corridor		Complete Streets Corridor	1	10.40	8.00	20.00	20.00	8.00	66.40	CALTRANS
40	D3 - N Kern	Delano	52	52	Delano Complete Streets Corridor	Garces Hwy in town	Complete Streets Corridor	2	9.60	12.00	20.00	20.00	5.33	66.93	
41	D1 - C Kern	Shafter	2	2	Shafter Green-pass: Merced Avenue-Expressway	Add 2 Canal Bridges on Merced Avenue from SR-43 to SR-99	Connecting Resiliency Route Corridors	7	12.80	16.00	12.00	16.00	10.67	67.47	CALTRANS
41	D1 - C Kern	Shafter	4	4	Shafter Green-pass: 7th Standard Road Passing Lanes	Add safety passing lanes from I-5 to SR-43	Roadway Improvements	12	12.80	16.00	12.00	20.00	6.67	67.47	CALTRANS
41	D3 - N Kern	McFarland	1	13	McFarland Resiliency Route: Driver Road	Safety Rehab on Driver Road from Pond Road to Famoso Road	Safety Rehab	8	12.80	16.00	12.00	20.00	6.67	67.47	Kern County
44	D1 - C Kern	Shafter	4	11	I-5/7th Standard Road Interchange	Add missing ramps, and safety improvements	Roadway Improvements	2	13.60	12.00	16.00	20.00	6.67	68.27	CALTRANS
45	D1 - C Kern	Shafter	4	5	Shafter Green-pass: 7th Standard Road Concrete Rehab	Concrete Rehab from SR43-SR99	Roadway Improvements	9	11.20	16.00	12.00	20.00	9.33	68.53	Kern County

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45	D2 - S Kern	Arvin	57	57	SR223 Arvin Complete Streets Corridor		Complete Streets Corridor	1	11.20	12.00	20.00	20.00	5.33	68.53	City of Maricopa / CALTRANS
45	D2 - S Kern	Arvin	67	68	Arvin Rail Corridor		Rail Corridor	9	15.20	8.00	20.00	20.00	5.33	68.53	CALTRANS
48	D1 - C Kern	Shafter	15	15	Merced Avenue Safety Rehab	Safety Rehab from SR-99 to SR-43	Safety Rehab	3	12.80	16.00	8.00	20.00	12.00	68.80	CALTRANS
49	D1 - C Kern	Shafter	3	3	Shafter Green-pass: Cherry Avenue-Expressway	Add 2 Grade Separations from Merced Avenue to 7th Standard Road	Connecting Resiliency Route Corridors	7	11.20	20.00	12.00	16.00	10.67	69.87	CALTRANS
50	D4 - E Kern	Indian Wells V.	49	49	SR 14 Safety Passing Lanes: North of Red Rock	Safety Project on existing 2 lane segment of SR 14	Safety Passing Lanes	13	12.80	8.00	20.00	20.00	9.33	70.13	CALTRANS
51	D1 - C Kern	Bakersfield	61	61	178 Complete Streets Corridor		Complete Streets Corridor	1	6.40	20.00	20.00	20.00	4.00	70.40	CALTRANS
52	D1 - C Kern	Bakersfield	60	60	Bakersfield Complete Streets Corridor		Complete Streets Corridor	7	5.60	20.00	20.00	20.00	5.33	70.93	CALTRANS
53	D1 - C Kern	Bakersfield	62	62	24th St Complete Streets Corridor		Complete Streets Corridor	1	7.20	20.00	20.00	20.00	4.00	71.20	CALTRANS
53	D2 - S Kern	Maricopa	64	64	Maricorpa Complete Streets Corridor		Complete Streets Corridor	0	15.20	8.00	20.00	20.00	8.00	71.20	City of Bakersfield / Kern County / City of Shafter /
53	D2 - S Kern	Maricopa	65	65	Maricorpa Complete Streets		Complete Streets Corridor	0	15.20	8.00	20.00	20.00	8.00	71.20	Kern County/ CALTRANS

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56	D4 - E Kern	California City	29	29	SR-58, Extend Cal City Blvd to 140th St.	connection from California City Blvd to N Gate Blvd possibly as a frontage Rd, converting 4 miles of 58 to controlled access freeway	Connecting Resiliency Route Corridors	2	12.80	8.00	20.00	20.00	10.67	71.47	CALTRANS
56	D3 - N Kern	McFarland	35.2	35.2	SR99/Whistler Road Interchange			2	12.80	16.00	12.00	16.00	14.67	71.47	CALTRANS
58	D1 - C Kern	Bakersfield	39	39	SR99/SR58 Interchange	Add Ramps	Roadway Improvements	2	10.40	20.00	20.00	16.00	5.33	71.73	CALTRANS
59	D4 - E Kern	Indian Wells V.	48	48	US 395 Searles Stn Intermodal Rail Facility	Existing UP/Trona Railway Transfer Point to Port of L.A., Add Inland Port	Inland Port	1	12.80	8.00	20.00	20.00	12.00	72.80	CALTRANS
59	D3 - N Kern	Wasco	54	54	Wasco Complete Streets Corridor		Complete Streets Corridor	1	12.80	16.00	20.00	20.00	4.00	72.80	CALTRANS
61	D1 - C Kern	Taft, Bakersfield	40	40	I-5/SR43 Interchange	Interchange improvements	Roadway Improvements	2	10.40	16.00	20.00	20.00	6.67	73.07	CALTRANS / Kern County / City of Shafter
61	D1 - C Kern	Buttonwillo w	59	59	Buttonwillow Complete Streets Corridor		Complete Streets Corridor	1	14.40	12.00	20.00	20.00	6.67	73.07	CALTRANS
63	D4 - E Kern	Rosamond	58	58	Rosamond Complete Streets		Complete Streets Corridor	1	12.00	12.00	20.00	20.00	9.33	73.33	City of Maricopa /
64	D3 - N Kern	McFarland	53	53	McFarland Complete Streets		Complete Streets Corridor	1	12.80	16.00	20.00	20.00	6.67	75.47	CALTRANS
65	D1 - C Kern	Shafter	50	50	Zerker Road	Route connecting SR-99 from Merced Avenue to Driver Road	Connecting Resiliency Route Corridors	10	12.00	12.00	20.00	20.00	12.00	76.00	CALTRANS
65	D1 - C Kern	Bakersfield	73	73	Shafter/Bakersfiel d West Urban Corridor	Reserver RoW for future expressway connecting to West Urban Corridor Freeway		2	12.00	16.00	12.00	20.00	16.00	76.00	City of Bakersfield

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67	D1 - C Kern	BFL Airport	31	31	SR-99 Burbank Corr-Beardslee Canal	Burbank Corr to Beardslee Canal	Safety widening	5	11.20	20.00	20.00	20.00	5.33	76.53	CALTRANS
67	D1 - C Kern	Shafter	55	55	Shafter Complete Streets Corridor	Downtown Shafter SR 43 & Lerdo Hwy bike ped improvements	Complete Streets Corridor	1	11.20	20.00	20.00	20.00	5.33	76.53	CALTRANS
69	D1 - C Kern	Bakersfield	37	37	SR99/7th Standard Road Interchange	Interchange improvements	Roadway Improvements	2	8.00	20.00	20.00	20.00	9.33	77.33	City of Taft / Kern County
70	D1 - C Kern	Rosedale	20	20	SR-58 Stockdale Hwy	between SR-43/Enos Lane to Heath Road, Safety Rehab	Connecting Resiliency Route Corridors	4	12.80	16.00	20.00	20.00	9.33	78.13	CALTRANS
71	D1 - C Kern	Rosedale	6	6	Santa Fe Way, Burbank-Rosedale Hwy	shared railroad tracks over the Tehachapi Pass	Roadway Improvements	8	12.00	20.00	20.00	16.00	10.67	78.67	Kern County
72	D1 - C Kern	Shafter	10	10	SR99/Merced Avenue	Interchange improvements	Roadway Improvements	2	12.00	16.00	20.00	20.00	12.00	80.00	CALTRANS
72	D1 - C Kern	Lamont	23	44	SR58 Edison Rd Interchange /58-223 Green-pass	Interchange improvments, Safety Rehab	Safety Rehab	2	16.00	12.00	20.00	20.00	12.00	80.00	City of Shafter / City of Bakersfield / CALTRANS
74	D3 - N Kern	Wasco	14	14	Wasco Ave Frontage Road to HSR Kimberlina-Jackson	Wasco Ave Frontage Road to High Speed Rail State Alignments from Kimberlina Rd to Jackson Ave	Roadway Improvements	1	12.80	16.00	20.00	20.00	12.00	80.80	City of Bakersfield
74	D1 - C Kern	Shafter	66	66	Shafter Rail Spur	Connecting Buttowillow Sub to BNSF mainline in Shafter	Rail Corridor	2	12.80	16.00	20.00	20.00	12.00	80.80	City of McFarland
76	D1 - C Kern	Bakersfield	21	21	Bakersfield: Allen Road White-Panama	connecting Allen Road between White Lane and Panama Lane	Connecting Resiliency Route Corridors	2	12.80	16.00	20.00	16.00	17.33	82.13	CALTRANS

Fehr & Peers

Memo

Date: 2/6/2025

To: Rob Ball, KernCOG

From: Fehr & Peers in coordination with EBP and Mark Thomas

Subject: Forecasting and Transportation Analysis Approach and Results for KARGO

Potential transportation improvements (KARGO Projects) were analyzed for 12 focus areas around Kern County. These improvements were identified based on analysis of existing conditions and adverse impacts of trucking activities on nearby communities. Future conditions were also analyzed both with and without the projects to understand the effects of the improvements.

Existing Conditions

The following metrics were reviewed for all proposed KARGO Projects in the focus areas:

- Exposed Population – Population within 900 feet of corridors with high average daily truck traffic exposed to on-road emissions
- Employment – Jobs within 1-mile of KARGO Projects that benefit from improved accessibility
- Safety – Number of crashes over the last five years where someone was killed or seriously injured within 50 feet of KARGO Projects. An additional metric was calculated normalizing collisions to 1000 daily truck VMT to understand the relationship between trucks and number of crashes where someone was killed or seriously injured.

The following data sources were used for these calculations:

- Population and Employment – KernCOG Travel Demand Model for 2022 RTP/SCS for year 2023
- ADT – KernCOG Travel Demand Model for scenario year 2023, Replica data (Fall 2023), and KernCOG traffic counts for multiple years
- Crash Data – UC Berkeley's Transportation Injury Mapping System (TIMS), crashes occurring between 2019 and 2024.

Replica data from Fall 2023 and Atri truck data from 2024 were examined to understand existing travel patterns on key roadways for vehicles and trucks in areas with potential transportation improvements. Replica provides estimates for number of vehicle trips between zip codes which use a given roadway, as well as how those trips travel throughout the roadway network.

Future Forecasting

To understand the effects of potential transportation improvements, Fehr & Peers modeled and analyzed a regional Buildout scenario, three Buildout Plus Inland Port scenarios (Baseline for KARGO projects) and three Baseline Plus KARGO Project scenarios.

The **Regional Buildout** scenario represents high land use growth in Kern County establishes conditions under which Kern County continues to grow and RTP projects are constructed but no other transportation and rail improvements are made. A household, employment, and enrollment capacity analysis was performed for all other areas of the County. The following assumptions were made:

- Buildout[1] land use totals developed in 2022 for the Bakersfield and Shafter regional statistical areas (RSAs) were used.
- For all other RSAs, we tripled 2023-2046 RTP growth to obtain buildout land use totals for households/school enrollment and other non-industrial/non-agricultural SED categories.
- For all other RSAs, 2023-2049 retail and office employment growth was tripled
- Industrial areas designated in the General Plans countywide were assumed built out using average employment rates for medium industrial that Kern COG uses in is Uplan model, and airport property was omitted.
- Land use totals for recent general plan amendments were checked against buildout land uses to ensure they were accounted for. If not, additional households, population, enrollment, and/or employment were added to the SED to account for the project(s).
- 2023-49 growth in gateway trips was tripled.

The **Baseline** scenarios establish conditions where inland ports are constructed (one scenario per inland port), generating further industrial land use growth at the inland port facilities. No additional transportation improvements were assumed. Three inland ports were analyzed:

- Shafter Inland Port
- Tejon Inland Port
- Mojave Inland Port

By making these assumptions, we were able to compare back to the Regional Buildout scenario and assess the deterioration in the regional (Kern County) transportation network, therefore establishing the need for regional transportation improvements where inland ports are proposed to be constructed. We also assessed the benefits and savings of inter-regional transportation to and from seaports because of constructing the inland port facilities. Specifically, the scenarios were used to calculate the VMT savings resulting from a reduction in truck traffic on major highways outside the region (such as I-5 and I-710) compared to the increased trips within the Kern County around these inland ports.

[1] For this analysis full buildout means the buildout and average population, household, and employment rates of existing and/or approved general plan entitlements that are currently vacant or under used. At current significantly reduced growth rates, "full buildout" of greater Shafter and Bakersfield may not occur until sometime in the next century. Buildout could occur sooner if growth were to spillover from the coastal regions sooner. For example, the recent moratorium on warehousing in the Inland Empire has resulted in a recent doubling of warehousing growth in this region

The **Baseline Plus Project** scenarios establish conditions where relevant KARGO projects are constructed in addition to the inland ports and associated land use growth. We then compared back to the Baseline scenarios to assess the benefits associated with the improvement in regional transportation performance resulting from implementation of the KARGO projects.

For all scenarios, we reviewed and analyzed transportation network ADT/congestion forecasts and VMT forecasts. Multiple KARGO projects primarily provide safety benefits and are not expected to change network capacity or induce additional truck and vehicle demand. Other metrics were analyzed for the transportation analyses related to crash rates, speeds, and travel times to capture the benefits of non-capacity projects.

Notably, the I-5 and SR-58 projects include truck climbing lanes and other project features which would improve safety by reducing the interactions between trucks and passenger vehicles and providing travel time benefits to all road users. The model is not sensitive to this so these types of improvements were analyzed off-model to show how operations on the freeway segments will improve. We used the future baseline model to forecast demand for these facilities, and no changes in demand are be expected because of the projects.

The analysis scenarios are summarized below in Table 1 and the sections below:

Table 1. Scenarios

Scenario	Benefits Captured
Regional Buildout	
KARGO Baseline Scenarios (Compared back to Regional Buildout)	
1a. Shafter Inland Port	Increase in regional emp and pop (asserted buildout) Deterioration in regional (in model) transportation performance on users, communities, and wider economic activities Savings in transportation (VMT) from seaports (based on port capacity)
2a. Tejon Inland Port	Same as 1a
3a. Mojave Inland Port	Same as 1a
KARGO Baseline Plus Project Scenarios (Compared back to KARGO Baseline)	
1b. In-region Improvements for Port 1 (incremental to scenario 1)	Improvement in regional transportation performance (TDM) Secondary job benefits (capturing the asserted buildout by supporting regional economic competitiveness)
2b. In-region Improvements for Port 2	Same as 1b
3b. In-region Improvements for Port 3	Same as 1b
Other In-region Safety Improvements (incremental to KARGO baseline)	Societal benefits of reduced crashes Economic productivity and inter-industry effects of reduced crashes
Other In-Region Operational Improvements	Improvement in regional transportation performance (non-TDM) Secondary job benefits (capturing the asserted buildout by supporting regional economic competitiveness)

Model and Analysis Scenarios

Scenarios 1a and 1b: North Bakersfield

Scenario 1a – KARGO Baseline: Regional Buildout Plus Shafter Inland Port/Wonderful Logistics Ctr.

Model Edits and Results:

- Addition of inland port facilities (via OD adjustments)
  - The inland port under construction in the Project 7 area was been extensively studied regarding what the rail usage would be and was used as a reference
- Model outputs were used to forecast future changes in interregional VMT

Scenario 1b – Baseline Plus North Bakersfield KARGO Projects

Projects:

- 3–Delano/McFarland Greenpass Network (Capacity Improvement)
- 7–NW Bakersfield Greenpass Network (Capacity Improvement)
- 9–SR 33/7th Standard Road Corridor Improvements (Safety Improvement)
- 10–SR 58/Stockdale Highway Connection to I-5 Safety Corridor Improvements (Safety Improvement)
- 11–Wasco Ave/HSR Frontage (Safety Improvement)

Model Edits and Results:

- Added new roadway segments and increased capacity on relevant segments in the model
- Used model outputs to forecast future traffic on the project facilities

Project 3 background and information:

- There are three phases but not all phases are adding new roadway capacity.
- An improved Pond Road will be signed as the new SR-155 between Porterville Highway and SR-99. While capacity is not added, trucks routes will change as a result of this designation.
- There will also be an improved interchange at Whisler Road and Driver Road would also be improved
- Since the model is not sensitive to truck routing, an analysis was completed using model assignment results on Garces Highway and Sherwood Avenue to determine that between 32% and 39% of truck trips on those facilities would be shifted to Pond Road with the proposed improvements and truck route designations. With the future land use forecasts, this translates to a reduction in forecast population exposure (truck ADT * population within 900 feet) of 5.5 million.

Project 7 and 11 background and information:

- The concept is to have an inner expressway, and outer expressway, and two interconnects.
- The outer expressway follows Cherry Avenue north from SR-43 South of Kratzmeyer Road to the north to Merced Avenue, and then follows Merced Avenue east to SR-99
- There are no capacity changes to Kratzmeyer Road
- Superior Road will either be new roadway or existing roadway sections will be widened to 6 lanes

- Merced Avenue will either be new roadway or existing roadway sections will be widened to 6 lanes
- Model results show that the inner expressway, with a forecast ADT of 100,000, has a major effect on reducing traffic on parallel facilities (a forecast reduction of 35%). The outer expressway is forecast to reduce ADT on Enos Road by 28%.
- Proposed improvements along Santa Fe Way are forecast to save approximately 83 daily vehicle-hours traveled by improving traffic flow along the corridor.
- The proposed improvements to the north were forecast to reduce truck ADT on SR-43 through Wasco by 16% and through Shafter by 34%. Additional off-model adjustments were made when completing these forecasts to account for changes in truck routing which the model is not sensitive to. These shifts in traffic reduce forecast population exposure in Wasco and Shafter by 16.7 million.

Project 9 background and information:

- Passing lanes are proposed along 7th Standard Road to enhance safety and facilitate reliable goods movement along the corridor. The corridor currently serves 1,500 truck ADT.
- Model results show passing lanes improving congested travel speeds along the corridor where implemented. With a forecast corridor ADT of 25,500 with a truck percentage of 12%, a 16% reduction in VHT for passenger vehicles was calculated along sections of 7th Standard Road where passing lanes were implemented based on model results.

Project 10 background and information:

- Passing lanes are proposed along SR-58 between Enos Road and I-5 to enhance safety and facilitate reliable goods movement along the corridor. The corridor currently serves 8,000 truck ADT at its most congested section.
- Model results show passing lanes improving congested travel speeds along the corridor where implemented. With a forecast corridor truck percentage of 12%, an 8% reduction in VHT for passenger vehicles was calculated along sections of 7th Standard Road where passing lanes were implemented based on model results.

Scenarios 2a and 2b: South Bakersfield

Scenario 2a – KARGO Baseline: Regional Buildout Plus Tejon Inland Port

Model Edits and Results:

- Added inland port facility
- Used model outputs to forecast future changes in interregional VMT

Scenario 2B – Baseline Plus South Bakersfield Kargo Projects

Projects:

- 1-Arvin/Maricopa/Taft Green-pass Network (Capacity)
- 4-I-5 Grapevine Improvements (Safety)
- 5-Lamont/SE Bakersfield Green-pass Network (Capacity)

Model Edits and Results:

- Added new roadway segments and increased capacity on relevant segments in the model

- Used model outputs to forecast future traffic on the project facilities
- Forecast changes in truck and vehicle traffic on new facilities as well as existing facilities which should experience reductions in vehicle traffic (i.e. reductions in traffic in Bakersfield and an increase in demand for the new facilities compared to the Baseline scenario (SR-223 through Arvine, SR-184 through Lamont, and Union Avenue in Bakersfield)
- We manually shifted truck traffic from SR-184 to Edison Road since that will be the new designated truck route

Project 1 background and information:

- East/West sections of the green-pass already exist. Diagonal sections will be new facilities and add capacity to the roadway network.
- The green-pass will provide a northwest/southeast connection between I-5 and SR-223/SR-58 which would be shorter than existing routes.
- Improvements west of I-5 are primarily improvements to existing roads to improve network resiliency to the west when the Cajon and Tehachapi passes are closed.
- Using model assignment results, 5,000 ADT are forecast to use the greenpass, reducing daily VMT by 14,000 by providing a shorter route for many trips. Results also showed a reduction of 700 daily truck trips through Arvin, reducing population exposure by 23.7 million.

Project 4 background and information:

- I-5 serves local, regional, and statewide travel, serving 15,000 truck ADT currently. Model forecasts show that truck ADT is expected to increase, making up about 13% of a total forecast ADT of 160,000 on I-5.
- Along sections of I-5 where truck climbing and truck passing lanes are proposed, daily VHT is forecast to be reduced by 15%.

Project 5 background and information:

- Edison road will be improved and designated as the new Hwy 184 (non-capacity improvement)
- White Lane will be extended from it's current terminus eastward to Edison Road (capacity improvement)
- Mt. Vernon Avenue will be extended from its current terminus southward to White Lane (capacity improvement)
- Need: There is a lot of truck demand (including large amounts of truck parking) near the intersection of Union Avenue and White Lane, and a large proportion of those truck trips travel along Union Avenue (over 1000 trucks per day). The White Lane and Mt.Vernon Avenue extensions provide alternative options for trucks to access SR-58.
- Forecast reductions in total ADT based on model results are 5% for SR-184 through Lamont and 7% on Cottonwood Road. The reduction in truck ADT is much higher, around 20% to 30%. For Lamont, this results in a reduction in population exposure of 7.2 million.

Scenarios 3a and 3b: Mojave

Scenario 3a – KARGO Baseline: Mojave Inland Port

Model Edits and Results:

- Added inland port facility
- Used model outputs to forecast future changes in interregional VMT

Scenario 3b – Baseline Plus Mojave KARGO Projects

Projects:

- 2- Tehachapi Pass (Safety)
- 6- Searles Station improvements/US 395 Goods Movement/Safety Improvements (Safety)
- 8-Rosamond Green-pass Network (Capacity)
- 12- California City Boulevard Extension to EAFB North Gate Safety Corridor (Safety)

Model Edits and Results:

- Added new roadway segments and increased capacity on relevant segments in the model
- Used model outputs to forecast future traffic on the project facilities

Project 2 background and information:

- SR-58 serves local, regional, statewide, and national travel, serving 3,100 truck ADT currently. Model forecasts show that truck ADT is expected to double, making up about 10% of a total forecast ADT of 65,900 on SR-58.
- Along sections of SR-58 where truck climbing and truck passing lanes are proposed, daily VHT is forecast to be reduced by 13%.

Project 6 background and information:

- Passing lanes are proposed along US-395 to enhance safety and facilitate reliable goods movement along the corridor. The corridor currently serves 1,500 truck ADT.
- Model results show passing lanes improving congested travel speeds along the corridor where implemented. With a forecast corridor ADT of 15,900 on US-395, a 7% reduction in VHT for passenger vehicles was calculated along sections of US-395 where passing lanes were implemented based on model results.

Project 8 background and information:

- Access to air force base is a concern. 8000 people go from Lancaster and Palmdale to airport
- Queues to turn onto SR-14 are currently very long and back down Rosamond Boulevard into downtown Rosamond.
- A new roadway would be built along the diagonal high speed rail right-of-way between Avenue A and Tehachapi Willow Springs Road. This would provide a secondary (and approximately five miles shorter) path of travel from SR-58 to SR-14 via Tehachapi Willow Springs Roadway and the new roadway, and Avenue A.
- The greenpass is forecast to serve 7,300 ADT based on model results, reducing daily VMT by 19,200. By providing an alternative to Rosamond Boulevard, 1,000 fewer daily truck trips are forecast on Rosamond Boulevard.

Project 12 background and information:

- The rate of killed or seriously injured (KSI) crashes near the California City Boulevard/SR-58 intersection is 5.5 per 1,000 daily truck VMT, much higher than the countywide average of 0.82.

- With model results showing a forecast 14,800 ADT on California City Boulevard and 37,000 along SR-58, moving access to California City Boulevard to the Rosamond Boulevard interchange significantly reduces the safety risk for users of both facilities.

Economic Analysis Overview

This section details the economic analysis results for the three baseline scenarios and the three baseline plus KARGO project scenarios for the Shafter, Mojave, and Tehachapi inland ports. The Baseline scenarios establish conditions where inland ports are constructed (one scenario per inland port), generating further industrial land use growth at the inland port facilities. No additional transportation improvements were included in these scenarios. The Baseline Plus Project scenarios establish outcomes from inland port development and the construction of relevant KARGO projects supporting that port. These scenarios are compared to their respective Baseline scenarios to determine the relative improvement in regional transportation performance resulting from construction of the KARGO infrastructure projects. In each scenario, the impacts for each inland port are considered independently of the other ports based on the set of relevant KARGO projects for that port. The cost of the Baseline Plus Project scenarios for each inland port is the sum of the costs of the associated KARGO projects for relevant corridors (as defined by each scenario).

The benefits and costs for these scenarios were compared using the TREDIS economic impact model[1]. Benefit cost ratios were calculated for each of the scenarios over an assumed 30-year timeframe based on a comparison of construction costs and summed benefits across measured changes in employment, gross regional product (GRP), travel costs, and emissions costs. The analysis is built on assumptions derived from consultant team research and vetted parameters used in the TREDIS mode. These assumptions were used to generate a profile of system activity over time to use for evaluating the relative benefits of KARGO projects compared to their cost in TREDIS given the increase in network demand projected with the introduction of each inland port. The following sections present the methodology and assumptions in more detail followed by a summary of the economic analysis results.

EBP Data Preparation Methodology for TREDIS Analysis

The network-level travel demand outputs from the Kern COG transportation model were converted to inputs suitable for ingestion by the TREDIS economic analysis model. This conversion was executed through scripting in the R programming language to generate a set of inputs for each scenario the Kern COG model evaluated. The workflow takes in the

[1] https://tredis.com/products/tredis-6/tredis-overview

data from the .DBF output files and outputs .csv files with the key data inputs used in TREDIS.

The unique identifier for each row is based on the Segment, Default Mode/Purpose, and Year. Segments are defined by the time of day given in the Kern COG output and include A03, M07, P03, and E11. These segments translate to AM peak 3 hours, middle 7 hours, PM peak 3 hours, and 11-hour evening time periods respectively.

On import, the script retained the relevant data fields, including segment distance, free-flow speed, facility type, traffic volumes by vehicle class, and modeled time-of-day speed. The passenger vehicle mode is then split into three separate modes based on trip purpose with an assumed composition of 11.8% business trips (US DOT Benefit Cost Analysis guidance), 26% commute (based on analysis of the 2017 National Household Travel Survey) and the 62.2% remainder comprised of personal trips. A daily (24-hour) speed was computed using hour-weighted speeds from the A03, M07, P03, and E11 segments (which together comprise a full 24-hour span). Any origin-destination on improved links use the base speed of 50 mph.

Travel Performance Metrics

Free-flow speed, facility type (FACTYP), and area type (AREATYP) are used to compute reliability metrics including the Travel Time Index (TTI) to calculate the total buffer time for each segment following the SHRP2 travel reliability methodology[2]. Origin-destination pairs in the Kern COG model output data were grouped into one of the three highway types defined for SHRP2 calculations. These groupings include Urban Freeway, Rural Freeway, and Signalized Arterial. Any facility type that doesn't fit in one of these three categories were assumed to be in a 4th "Other" category. The distinctions between categories were used to apply the appropriate reliability exponents with assumptions for these categories as shown in Table 1.

Table 1: Facility and Area Type Classifications for SHRP2 Exponent Selection

SHRP2 Classification	COG Model AREATYP	COG Model FACTYP	Exponent
Urban Freeway	CBD or U	Freeway, Highway (1, 2)	1.8834

[2] National Academies of Sciences, Engineering, and Medicine. 2012. *Analytical Procedures for Determining the Impacts of Reliability Mitigation Strategies*. Washington, DC: The National Academies Press.

Rural Freeway	R or SU	Freeway, Highway (1, 2)	2.1365
Signalized Arterial	CBD or U (for Collector)	Arterial or Collector (4, 5)	1.9125
Other	All other area types	All other facility types	1

Aggregation and Output

The primary travel data inputs for TREDIS include vehicle-miles traveled (VMT), vehicle-hours traveled (VHT), and buffer time. These fields were calculated based on the distance and volume of trips for each origin-destination pair in the Kern COG model run outputs by summing across origin-destination pairs to produce a final dataset with one row for each time segment and vehicle mode/purpose. An assumed growth rate of 1% was derived from a comparison between the VMT from the Future Buildout scenario in 2100 and the 2023 Base Year VMT. The VMT, VHT, and buffer time were each scaled back by this growth rate to calculate annual values for 30 years for use in benefit-cost ratio calculations. The resulting table was exported and adapted to the formatting of TREDIS input files for execution in the TREDIS model.

Vehicle Hours Traveled Estimation

Because some portion of truck trips are not captured in the Kern COG transportation model, i.e., the miles traveled between County border to the Port of Long Beach, separate calculations and assumptions were required.

Vehicle Hours Traveled (VHT): For each of the three inland port scenarios (Shafter, Mojave, Tehachapi), EBP calculated the miles of a hypothetical truck route along major routes from the geographic epicenters of these three towns to the Port of Long Beach. The miles were then reduced to reflect only those occurring between the County border and the port. Average speeds were calculated using Google Maps estimates of travel time reflecting future departure at 12:00pm on Wednesday, February 25, 2026:

- Shafter 1h 40m - 2h 40m = avg 2.17h
- Tehachapi 1h 50m - 2h 50m = avg 2.33h
- Mojave 1h 50m - 2h 50m = avg 2.33h

Trip mileage was then divided by these estimated average speeds to calculate average speeds. Speeds were then multiplied by the estimated number of truck trips shifted in

each of the three inland port scenarios to calculate the reduction in VHT external to Kern County.

Fuel Consumption and Emissions Estimation

Fuel consumption and emissions rates are imported from external lookup tables derived from assumptions in CAL-BC[3]. Fuel consumption estimates are split between autos (TREDIS passenger cars) and trucks (TREDIS tractor trailer truck) with medium-duty vehicles (TREDIS light/medium duty truck) included in the auto category in CAL-BC and those assumptions are maintained. For each origin-destination pair, mode, and time period, fuel consumption rates are assigned using nearest-neighbor matching based on modeled speed. Highway emission factors by highway speed are also drawn from CAL-BC for autos and trucks for model year 2024 vehicles and medium-duty vehicles are again assumed to have the same emission factors as autos. Values for CO, CO2, NOx, PM10, SOX, VOC, and PM2.5 in grams/mile were included.

Passenger vehicles are assumed to be fueled by gasoline while light/medium duty trucks and tractor-trailer trucks are assumed to use diesel fuel. Emissions totals (in grams) and fuel consumption totals (in gallons) are calculated by multiplying speed-varying per-mile emission rates by VMT for each origin-destination pair in the modeled data. The reduction in truck VMT external to the region resulting in each scenario are included in the emission reduction calculation as those external portions of trips are not accounted for in the TREDIS model runs. Assumptions for emission monetization rates were derived from running the COBRA model for Kern County for highway diesel and gasoline light-duty vehicles[4].

Inland Port Employment Impacts Estimation

The inland port developments are anticipated to create direct employment as follows:

- Shafter ~18,250 jobs
- Mojave ~5,700 jobs
- Tehachapi ~3,000 jobs

Direct employment generates additional economic activity as spending and production ripple through the regional economy, giving rise to both indirect and induced employment

[3] https://dot.ca.gov/programs/transportation-planning/division-of-transportation-planning/state-planning/transportation-economics
[4] https://cobra.epa.gov/

effects. Indirect impacts reflect jobs created within supply chains as firms purchase goods and services from other industries, while induced impacts result from household spending by workers whose incomes are supported by direct and indirect employment. The magnitude of these downstream effects varies by the industry composition of the direct jobs. To estimate total employment impacts, EBP developed scenario-based models for each inland port that incorporate baseline employment at the ports as well as employment in surrounding industries that both support and overlap with inland port activity. The results of those impacts are summarized in the next section with a more detailed breakdown of the projection for impacts by industry summarized in Table 9.

Inland ports typically anchor a mix of transportation and logistics-related employment — such as warehousing and storage, truck and rail transportation, support activities (e.g., loading and handling), couriers and messengers, and wholesale/distribution services — which together form the core of inland freight movement and supply-chain activity. Economic impact studies of port systems consistently show that a substantial share of jobs supported by port activity are concentrated in these logistics and distribution sectors, with logistics activity often accounting for a large share of direct employment supported by freight movements and related services in a region's economy.

Across the three inland port scenarios developed for this analysis, we estimate that approximately 50-54 % of employment in 2045 at these inland ports is best classified within these logistics-oriented subsectors, reflecting their foundational role in facilitating goods movement and supply-chain operations. The remaining portion of inland port employment is associated with goods-producing industries (denoted with "mfg" in the tabular results) and other sectors that are supported indirectly through port-related freight activity and distribution networks. By aligning our employment breakdown with observed patterns in port impact studies the scenario estimates provide a defensible structure for modeling inland port employment composition[5]. These employment scenarios were used as inputs in TREDIS to model full employment impact (direct, indirect, and induced jobs).

Economic Results:

The ongoing operations of the modeled inland ports are projected to generate substantial and sustained economic benefits for the regional economy. The economic impact results presented below reflect the annual operational impacts in 2045

[5] For example, see "Economic Impacts of Ports," Ports of Indiana (2023)

associated with each inland port in addition to outcomes associated with the baseline and baseline plus project scenarios for the respective port. The inland ports are also compared in these results in terms of their impact on jobs, GRP, travel costs, and emission costs from changes in transportation network performance based on changes in travel demand and infrastructure buildout (for baseline plus project).

Employment represents the total number of full- and part-time jobs supported by inland port operations across the regional economy, including jobs generated through on-site port activities, supply chain and vendor relationships, and additional employment supported by household spending of earned income. GRP measures the contribution of inland port operations to GRP and represents the net new economic value created in the regional economy, including employee compensation, business income, and taxes on production. Travel Benefits represent changes in travel time, travel reliability, safety costs, and vehicle operating costs. Emission Benefits are calculated based on the changes in transportation network performance based on changes in travel demand and infrastructure buildout.

The sums of construction cost for the projects associated with each of those scenarios are summarized in Table 2 along with the estimated benefit cost ratios for those projects. These ratios were developed using a 3.1% discount rate over a 30-year operating period and assumed 1% annual assumed travel growth. Note that the values used in these calculations include environmental and travel benefits but do not include port on-site development benefits. The ratio for Shafter projects is significantly higher than for Mojave or Tehachapi primarily due to much greater expected travel benefits from the KARGO projects for that inland port.

Table 2: Construction cost assumptions used for Baseline Plus Project Scenario Economic Analysis

Baseline Plus Scenario	Associated KARGO Project Construction Costs ($M)	Benefit Cost Ratio (30 years)
Shafter	$1,913.17	4.42
Mojave	$1,190.40	0.295
Tehachapi	$1,726.50	0.376

Shafter Inland Port

In 2045, operations at the Shafter Inland Port are estimated to support 48,454 jobs and contribute $8.85 billion in value added to GRP annually (Table 3). The additional strain on the transportation network with no additional infrastructure investment is projected to impose $31 million in regional costs compared to the baseline case with no inland port. Additionally, the increased congestion on the network in the Baseline scenario would result in a social cost of approximately $489M due to increases in travel time, increases in safety and vehicle operating costs, and lower travel reliability. The construction of the KARGO projects associated with Shafter would produce $76.8 million in GRP value in that year and $413 million in travel benefits compared to the Baseline with no construction (Table 4). With a steep increase in travel demand projected, based on the opening of the Shafter port, emissions are also expected to increase, contributing to $14.43 million in social costs. These costs are lowered by $5.45 million with the KARGO projects.

Table 3 Shafter Inland Port Operation Employment Impacts (2045)

	Employment	GRP ($M)
Direct	18,250	$5,411
Indirect	18,987	$1,949
Induced	11,217	$1,487
Total	**48,454**	**$8,847**

Table 4 Shafter Transportation Impacts Compared (2045)

Scenario	Jobs	GRP ($M)	Travel Benefit ($M)	Emission Benefit ($M)
Port On-site Development	48,454	$8,847	N/A	N/A
Baseline Scenario	-158	-$31.03	-$489.36	-$14.43
Baseline Plus Project	624	$76.8	$413.29	$5.45

Mojave Inland Port

In 2045, operations at the Mojave Inland Port are estimated to support 13,385 jobs and contribute $2.65 billion to regional GRP (Table 5). The additional strain on the transportation network with no additional infrastructure investment is projected to impose $5.71 million in regional costs compared to the baseline case with no inland port. Additionally, the increased congestion on the network in the Baseline scenario would result in a social cost of approximately $152M due to increases in travel time, increases in safety and vehicle operating costs, and lower travel reliability. The construction of the KARGO projects associated with Mojave would produce $4 million in GRP value in that year and $17 million in travel benefits compared to the Baseline with no construction (Table 6). With a steep increase in travel demand projected, based on the opening of the Mojave port, emissions are also expected to increase, contributing to $5.76 million in social costs. These costs are lowered by $0.3 million with the KARGO projects.

Table 5 Mojave Inland Port Operation Employment Impacts (2045)

	Employment	GRP ($M)
Direct	5,669	$1,776
Indirect	5,016	$514
Induced	2,701	$358
Total	**13,385**	**$2,648**

Table 6 Mojave Transportation Impacts Compared (2045)

Scenario	Jobs	GRP ($M)	Travel Benefit ($M)	Emission Benefit ($M)
Port On-site Development	13,385	$2,648	N/A	N/A
Baseline Scenario	2	-$5.71	-151.88	-$5.76
Baseline Plus Project	2	$4.04	$16.98	$0.338

Tehachapi Inland Port

In 2045, operations at the Tehachapi Inland Port are estimated to support 7,761 jobs and contribute $1.37 billion to regional GRP (Table 7). The additional strain on the transportation network with no additional infrastructure investment is projected to impose $7.9 million in regional costs compared to the baseline case with no inland port. Additionally, the increased congestion on the network in the Baseline scenario would result in a social cost of approximately $125M due to increases in travel time, increases in safety and vehicle operating costs, and lower travel reliability. The construction of the KARGO projects associated with Tehachapi would produce $10.2 million in GRP value in that year and $32.7 million in travel benefits compared to the Baseline with no construction (Table 8). With a steep increase in travel demand projected, based on the opening of the Tehachapi port, emissions are also expected to increase, contributing to $5.02 million in social costs. These costs are lowered by $1.54 million with the KARGO projects.

Table 7 Tehachapi Inland Port Operation Employment Impacts (2045)

	Jobs	GRP ($M)
Direct	3,000	$822
Indirect	2,940	$308
Induced	1,821	$241
Total	**7,761**	**$1,372**

Table 8 Tehachapi Transportation Impacts Compared (2045)

Scenario	Jobs	GRP ($M)	Travel Benefit ($M)	Emission Benefit ($M)
Port On-site Development	7,761	$1,372.0	N/A	N/A
Baseline Scenario	-32	-$7.93	-$125.42	-$5.02
Baseline Plus Project	61	$10.21	$32.69	$1.54

Table 9 Inland Port Employment Scenarios (2045)

Subsector	Shafter	Mojave	Tehachapi	Rationale
Warehousing & Storage	16%	16%	16%	Typical inland port activity
Truck Transportation	16%	16%	16%	Typical inland port activity
Support activities for transportation	6%	6%	6%	Typical inland port activity
Rail Transportation	3%	3%	3%	Typical inland port activity
Couriers & Messengers	3%	3%	3%	Typical inland port activity
Food & Beverage Manufacturing	25%	6%	6%	Key employment cluster for the county: Shafter has significant agribusiness
Industrial Machinery Mfg	11%	22%	29%	Key employment cluster for the county: Shafter has smallest industrial mfg presence
Transportation Equipment Mfg	10%	22%	15%	Key employment cluster for the county: Mojave has a large manufacturing presence, especially in aerospace
Wholesale	10%	6%	6%	Key employment cluster for the county: Shafter services a population-dense corridor

Table 10 Food and Beverage Manufacturing Subsector Breakdown

Food & Beverage Manufacturing- Subsectors	
Other animal food mfg	1.8%
Frozen fruits, juices and vegetables mfg	1.5%
Frozen specialties mfg	1.0%
Canned fruits and vegetables mfg	1.9%
Fluid milk mfg	1.0%
Ice cream and frozen dessert mfg	23.1%
Bread and bakery product, except frozen, mfg	8.2%
Roasted nuts and peanut butter mfg	19.2%
Other snack food mfg	17.6%
All other food mfg	20.0%
Bottled and canned soft drinks and water	3.2%

Table 11 Industrial Machinery Manufacturing Subsector Breakdown

Industrial Machinery Mfg- Subsectors	
Farm machinery and equipment mfg	7.4%
Oil and gas field machinery and equipment mfg	31.0%
Sawmill, woodworking, and paper machinery	11.0%

All other industrial machinery mfg	8.8%
Commercial and service industry machinery mfg	6.3%
Machine tool mfg	5.9%
Turbine and turbine generator set units mfg	1.4%
Other engine equipment mfg	0.3%
Measuring, dispensing, and other pumping equipment mfg	8.8%
Air and gas compressor mfg	5.6%
Conveyor and conveying equipment mfg	1.3%
Overhead cranes, hoists, and monorail systems mfg	1.3%
Industrial truck, trailer, and stacker mfg	2.3%
Power-driven handtool mfg	0.3%
Welding and soldering equipment mfg	4.9%
Packaging machinery mfg	0.6%
Scales, balances, and miscellaneous general purpose machinery mfg	3.0%

Table 12 Transportation Equipment Manufacturing Subsector Breakdown

Transportation Equipment Mfg- Subsectors	
Automobile and light duty motor vehicle mfg	3.2%
Motor vehicle body mfg	3.4%
Truck trailer mfg	12.3%
Motor vehicle electrical and electronic equipment mfg	0.2%
Other motor vehicle parts mfg	5.2%
Motor vehicle steering, suspension component (except spring), and brake systems mfg	1.1%
Aircraft mfg	23.5%
Aircraft engine and engine parts mfg	4.7%
Other aircraft parts and auxiliary equipment mfg	5.9%
Guided missile and space vehicle mfg	40.3%
Motorcycle, bicycle, and parts mfg	0.1%
All other transportation equipment mfg	0.1%

Appendix B - Public Engagement

- KARGO Community Prosperity/Protection Study – Public Engagement Summary Phase 1
- KARGO Community Prosperity/Protection Study – Public Engagement Summary Phase 2
- KARGO Community Prosperity/Protection Study - Transportation Technical Advisory Committee May 2026
- Kern COG KARGO Study - Agency Comments and Responses

Kern Council of Governments

October 2024

Kern Council of Governments | Kern Area Regional Goods Movement (KARGO) Community Protection/Prosperity Study
Public Engagement Summary
Phases 1



Prepared by:

MARK THOMAS

SOUTHWEST STRATEGIES

EXECUTIVE SUMMARY

Kern Council of Governments (Kern COG) held a series of public engagement activities during the Summer of 2024 to obtain feedback from the community on KARGO Community Prosperity/Protection Study project. A total of four in-person workshops were held countywide, and two workshops were held virtually via Zoom. A digital survey was available on the project website to collect community input during the virtual workshops and for participants unable to attend a workshop. A total of 92 participants attended a workshop and a total of 30 online surveys were received.

Key Themes

The community expressed a variety of concerns and priorities regarding Kern County's transportation system for goods movement operations and growth. The following key themes, and community priorities were received.

Infrastructure and Safety

1. Lighting and Safety Improvements:
    - Requests for street lighting on key roads such as David, Corpus, and Wheeler Ridge, particularly at intersections and dangerous curves (Board 6).
    - Improved lighting for pedestrian safety at bus stops and traffic lights with clearer visibility and distance from each other (Board 2).
2. Road Maintenance and Expansion:
    - Repaving and widening roads like David and Wheeler Ridge (Board 6), and concerns over potholes and gravel on roads (Board 6).
    - Requests for new roundabouts and the improvement of existing roundabouts for safer motorist navigation (Board 2).
    - Corridors or areas most important for improvements included Highway 14 and Highway 58 (Board 4).
3. Public Transit and Bicycle Infrastructure:
    - More benches and shade at bus stops (Board 2).
    - Calls for expanded bike lanes, bike ways, and pedestrian pathways, especially in areas like Rosamond and Arvin (Board 2).
4. Flood and Wildfire Risk Mitigation:
    - Improvements to roads prone to flooding, particularly near schools and residential areas (Board 3, Board 4).
    - Support for additional emergency routes to be created in case of wildfires and floods (Board 3).

Environmental Concerns

1. Air Quality and Pollution:
    - Concerns about air pollution caused by diesel trucks, heavy freight, and industrial areas (Board 3).
    - Participants expressed interest in reducing industrial emissions and opposed further industrial growth that could negatively impact the environment.
2. Heavy Trucks and Freight:

- Calls to divert heavy truck routes away from residential neighborhoods, schools, and the City of Arvin to avoid pollution and noise (Board 3).
- Advocating for cleaner, zero-emission transportation solutions, although concerns were raised about the costs and effectiveness of electric vehicles and charging stations (Board 8).

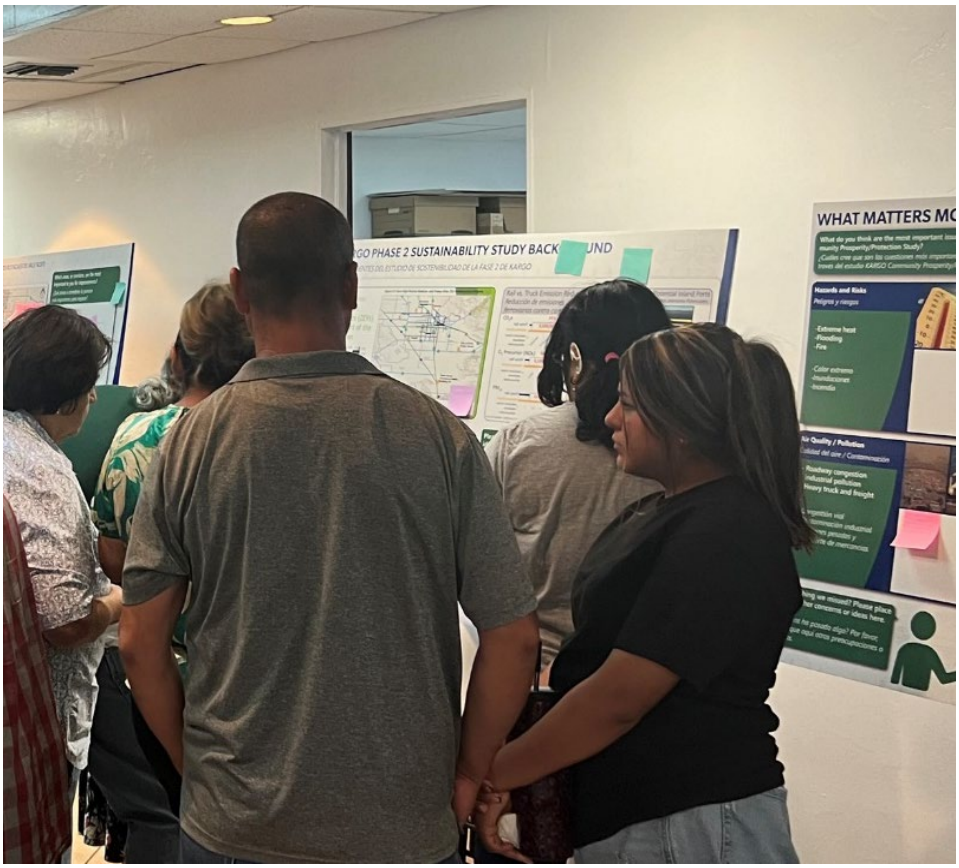
Employment and Economic Impact

1. Job Preservation Amid Technological Changes:
    - Concerns were raised about the impact of automation and industrialization on job availability for farm workers and local communities (Board 3).
    - Participants expressed the need for job training and workforce development in response to new technologies and automation in transportation and warehousing.

Miscellaneous

- Interest in alternative routes for trucks to minimize their impact on traffic, particularly during peak congestion times, and rerouting freight traffic away from sensitive areas (Board 5).
- Support for additional EV charging stations and expanding infrastructure for electric vehicles (Board 8).

The overall priorities reflect a need for infrastructure improvements, safety enhancements, environmental protections, and a balance between industrial growth and community well-being.



Priority Projects

The following projects were specifically identified by the public as community priorities.

Priority Projects	Count
Project 32: S Arvin Corridor	18
Project 28: Copus Rd I-5-Wheeler Ridge Safety Rehab	15
Project 41: SR14/Purdy Ave Interchange	4
Project 6: Santa Fe Way, Burbank-Rosedale Hwy	3
Project 3: Cherry Avenue-Expressway 2 Grade Separations	2
Project 8: Mt Vernon Ave/SR58 Planz Safety Rehab	2
Project 22: Mt Vernon Extension Planz-Panama	2
Project 38: I-5/SR58 Stockdale Interchange/Passing Lanes to SR43	2
Project 39: SR99/SR58 Interchange Missing Ramps	3
Project 43: Panama Ln/Mt Vernon-Edison, safety rehab	2
Project 1: Pond Road, Richgrove/SR43-SR155 Safety Improvement and Rehab	2
Project 56: Lamont Complete Streets Corridor	2
Project 2: Merced Avenue-Expressway 2 Canal Bridges	1
Project 7: Cherry Avenue-Expressway 2 Grade Separations	1
Project 12: Near SR58 Summit Interchange	1
Project 21: Allen Road White-Panama	1
Project 23: Edison Road/SR58-SR223 Safety Rehab	1
Project 25: SR58 Truck Climb/Passing Lanes	1
Project 24: Edison Road/SR223-S Arvin Corridor Safety Rehab	1
Project 26: SR58 Truck Climb/Passing LanesKeene-Cable	1
Project 27: US-395 Passing Lanes	1
Project 35: SR99/Whistler Road Interchange	1
Project 42: SR58/SR223 Interchange	1

SUMMARY OF PUBLIC ENGAGEMENT

Overview

In July and August of 2024, the Kern Council of Governments (Kern COG) held a series of public workshops throughout the county to obtain feedback on the KARGO Community Prosperity/Protection Study project. These served as an opportunity for the public to provide feedback on climate vulnerabilities throughout the region and express their thoughts on needed solutions for these challenges. Information garnered during this outreach will also be integrated into Kern COG's Regional Transportation Plan (RTP).

The following is a summary of the workshops that were held, which includes information on how these were promoted, the feedback received, and the overall number of attendees for each workshop. There were four hybrid workshops that included in person and online engagement, and there were two online only workshops that were held.

Promotion of Workshops



These workshops were promoted through an e-toolkit and multiple eblasts shared with the Kern COG KARGO C-CAMS Stakeholder Advisory Committee and RTP/SCS Business, Industry, Environmental and Social Equity Roundtable Member. Additionally, digital ads were run through the Bakersfield Californian Newspaper from July 23 – August 2, 10 social media posts were posted on the Kern COG Facebook page, and meeting dates and details were placed on the community calendars of prominent sites in each of the four communities.

Coordination with the San Joaquin Valley Air Pollution Control District was also undertaken to ensure engagement of the Assembly Bill 617 Steering Committees in Shafter and Arvin, respectively. Further, our team worked with the Tejon Indian Tribe, the Center on Race, Poverty and the Environment, the Rosamond Community Services District, and the Rosamond Municipal Advisory Council to coordinate logistics and help promote these meetings.

To promote the project, an animated video in English and Spanish was posted on YouTube and linked to the project website. The 3-minute video provides an overview of the project, including the goals and objectives of the project, and directs viewers to participate by visiting the project website to learn more. The project website listed the dates, times, and locations for each community workshop and provided a link to the project survey.

Meeting Summaries

Cummings Valley Elementary School Cafeteria – Tehachapi, July 24
This meeting was conducted in-person and virtually in a hybrid format. Sixteen (16) total participants attended online and virtually from various interest areas in the community, including the City of Tehachapi, Caltrans, Kern County Public Works, Communications Workers of America Union (CWA) and Tehachapi News. Feedback included participants citing mudslide concerns, emergency fire access route improvements and flooding.

Tejon Indian Tribe, Auditorium – Tejon, July 29
This meeting was conducted in-person and virtually in a hybrid format. Eighteen participants attended from various interest areas in the community, including Caltrans, Kern County Public Works and members of the Tejon Indian Tribe. Common feedback provided included David Road needs traffic signal lights, improvements to David Road and Wheeler Ridge Road and the re-pavement of David Road.

Rosamond Community Services District, Board Room – Rosamond, July 30
This meeting was conducted in-person and virtually in a hybrid format. Five (5) participants attended from various interest areas in the community, including Rosamond CSD and Sequoia Riverlands Trust. Common feedback provided included expansion of bikeways, electric vehicle (EV) Hubs and expanding Rosamond Boulevard East.

Center for Race, Poverty, and the Environment – Delano, August 2
This meeting was conducted in-person and virtually in a hybrid format. T Thirty-five (35) participants attended from various interest areas in the community, including a The Center on Race, Poverty & the Environment, Committee for a Better Arvin, Delano Guardians, California Air Resources Board (CARB), community members from Delano, Shafter and Arvin and a member of the Delano City Council. Common feedback provided included pollution reduction, rerouting of trucks from main roads in communities and safer crosswalks.

Virtual Workshops

West Kern Virtual Workshop - August 14
This meeting was conducted virtually in coordination with the San Joaquin Valley Air Pollution Control District's Assembly Bill 617 Steering Committees for Shafter and Arvin. Fourteen (14) participants attended from various interest areas in the community, including the California Air Resources Board (CARB), Tejon Ranch, community members and AB 617 steering committee members from Shafter and Arvin, and the Wonderful Company. Common feedback provided included truck dust, rerouting of trucks from main city roads and heavy-duty trucks damaging roads.

East Kern Virtual Workshop - August 22
This meeting was conducted virtually in coordination with the Rosamond Municipal Advisory Council. Four (4) participants attended from various interest areas in the community, including the Rosamond Municipal Advisory Council, community members of Rosamond and the Central California Asthma Collaborative. Common feedback provided included overpass recommendations, consideration of EV chagrining ports and heavy use of Rosamond Boulevard causing traffic.

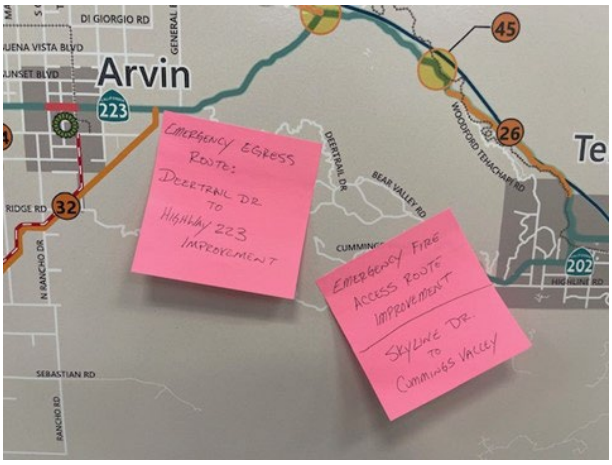
Attendees

A total of 92 participants attended a community workshop either in-person or virtual. The following table provides a breakdown of the total attendees for each workshop.

Location	In-person	Virtual
Tehachapi (Cummings Valley)	6	10
Tejon Indian Tribe	16	2
Rosamond	4	1
Delano	33	2
Virtual Workshop #1		14
Virtual Workshop # 2		4

Feedback Received

The following is a summary of comments received at in-person workshops. These were either written on comment cards or included as Post-It note comments on the boards. Attendees were also given the option of emailing in further comments after the workshops. Where possible, the board in question is indicated in the below, in addition to English translations of feedback where applicable. *Appendix A* provides a list of comments received via the workshops and survey.



In-Person Workshops

Delano

The comments from the Delano workshop highlight significant community concerns primarily centered around transportation, safety, and environmental issues. There is a strong demand for improvements to infrastructure, including pedestrian crossings, better public lighting and enhanced bus stops. Many community residents expressed concerns about pollution from trucks and trains, calling for measures to reroute heavy traffic away from residential areas. Additionally, the community seeks more effective emergency routes and improved management of flooding, emphasizing the immediate attention to local hazards. Overall, the feedback reflects a desire for safer, cleaner and more accessible transportation options.

Rosamond

The workshop comments for Rosamond reveal a strong focus on transportation improvements, environmental concerns and community development. Stakeholders are particularly interested in expanding commuting access in the event of emergencies, adding bike lanes and public transit to enhance mobility, especially on the east side of Rosamond. There are notable concerns about air quality and the impact of heavy truck traffic on local roads, alongside calls for increased resources to combat wildfires. Additionally, the community expressed a priority for infrastructure projects like the realignment of key roads and the establishment of EV charging hubs, reflecting a push towards modernizing the local economy and addressing climate-related challenges. Overall, the feedback highlights a desire for safer, more sustainable transportation options and enhanced emergency preparedness.

Tejon
The Tejon workshop comments indicate a strong emphasis related to transportation safety, infrastructure improvement and environmental hazards. There is a strong call for enhanced street lighting, particularly on David and Corpus roads to improve visibility and safety. Multiple suggestions focus on road maintenance, including addressing potholes and flooding issues and a need for sidewalk repair and signal lights. Additionally, concerns about air quality and potential environmental hazards, such as subsidence and drought, highlight the communities' awareness of broader climate impacts. Overall, the feedback emphasizes a desire for safer, better-maintained roads and improved environmental management.

Tehachapi
The workshop comments from Tehachapi highlight key concerns regarding transportation infrastructure, emergency routes and historical flooding issues. Community residents emphasize the need for improvements to major routes, including Dennison Road and the overcrossings at Willow Springs, to better facilitate traffic flow and accommodate oversized loads. There is also a strong focus on establishing and enhancing emergency routes, particularly for fire access and evacuation. Additionally, references to past mudslides underscore the community's awareness of geological hazards, pointing to a need for ongoing monitoring and infrastructure resilience. Overall, the feedback reflects a proactive approach to improving safety and accessibility in the region.

Virtual Workshop

The following are summaries of the group discussions that occurred during the virtual workshops for East Kern and the AB 617 Steering Committees in Shafter and Arvin/Lamont. The brackets [ ] indicate a paraphrased response to an inquiry and are included for reference only.

East Kern Verbal Comments
There needs to be an alternate route at Avenue A because of morning traffic to Edwards Air Force Base from 14 to Rosamond Boulevard.
Rosamond Boulevard and Sierra Highway has no overpass, and a train accident or an emergency would be a problem for through traffic. A better overpass option for this area would be at Avenue A over Rosamond Boulevard.
We need a second overpass for east west access across town and to divert some of the base traffic in case of a disaster, major accident or emergency.
Is there the opportunity to coordinate with HSR on the Willow Springs cut off?
[There is funding for 15% conceptual design, etc. so if get county and base on board to fund it, might be a method there. Base commander is looking at a 25%] Lots of hiring at the base,
We need a 15th street or United Connector. That's our #1 priority. With limited resources available, that's our top project.
WAT EV has a lot of connecting stations throughout California. If you're thinking about rerouting, the EV mandates for heavy transport vehicles should be considered. They have a few stations that are opening, and I wanted to highlight that.

AB 617 Shafter and Arvin Steering Committee Comments
[A clarification was made regarding traffic impacts in this area and how to stay engaged with local agencies. If the issue is south of 7th Standard Road, reach out to the City of Bakersfield and County of Kern. If it's north of 7th Standard Road, reach out to Shafter. Stay engaged with both groups.]
[A clarification was made that some of the increasing traffic would go from 7th Standard Road to 43 South down to Cherry Avenue to Superior]
[Freight]
[Making sure local roads can handle the wear and tear from traffic like this is part of the study.]
[Staff mentioned there is a regulation about heavy duty trucks that will need to comply to new standards by sometime in the 2030s]
[The State of California is working to electrify and/or deploy hydrogen trains to make them less polluting. One advantage of a train is that you can add more cars to it if needed, so the capacity can increase with a similar amount of emissions.]
[Warehouses are increasing automation, so that means individuals working there are higher skilled and better paid because they need additional training to operate the machinery to be able to keep robots running. There is an effort to make sure local people have the skills to attract those jobs to the region. That could also mean a potential to roadways and air quality, so we have to balance getting jobs and meeting other goals.]
[We're in the planning stage for this work. The funds are going to be identifying what is the priority to build. All of those things would be what we want to add to the corridor].
[We're looking at an increase in truck activity in this area because of the industrial that's already going in. The City of Bakersfield is also adding industrial in this area. We are trying to figure out how we can see these higher paying jobs coming in. I hear you saying Cherry Avenue is too close to Shafter.]
A comment was made about a rerouting of traffic on Cherry Avenue, stating that the 7th Standard Road development isn't in Shafter yet the rerouting will make it so Shafter is bearing the burden of the new development.
A comment was made about Cherry Avenue and Lerdo being dangerous. In addition, there is housing construction off of Beech, and she wants to make sure this study is being done in coordination with the City of Shafter. She suggests that Driver Road should be considered as an alternative, or just generally moving everything east more to lessen emissions impacts to Shafter.
A comment was made about Driver being an alternative to Cherry Avenue.
A comment was made about Driver being an alternative to Cherry Avenue. Additional feedback was made regarding local schools, including the pickup on Enos Avenue being dangerous.
A comment was made about heavy duty trucks damaging roads from high-speed rail construction and the need to work with Kern County on roads.
A comment was made about making the areas safer for our residents driving, expressing concern about how far trucks turn off in both lanes at Lerdo and Cherry. There is a blind corner and it's very dangerous. She would like to see a plan to widen it so they can swing out and get into Lerdo where it isn't a danger.

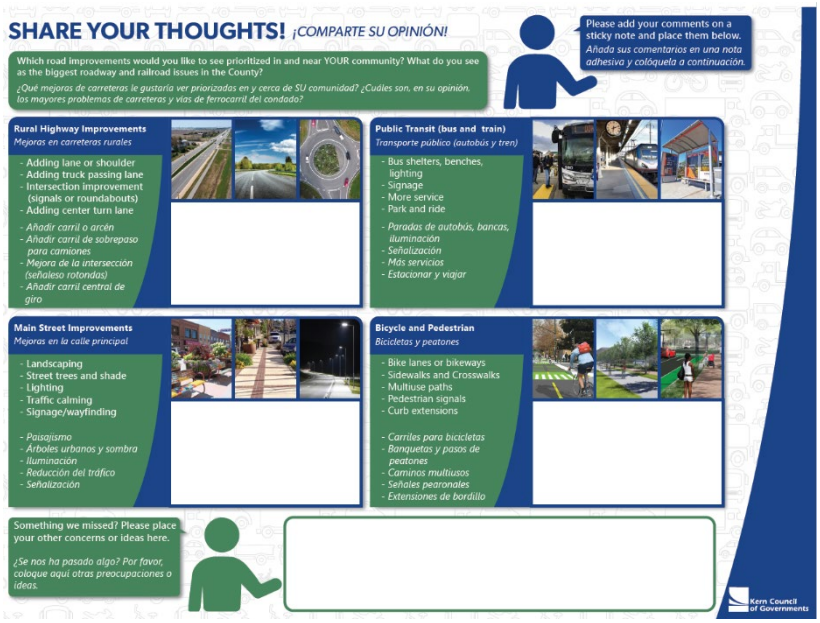
A comment was made about reducing truck activity—including trucks parking—along the Union Avenue corridor.
A comment was made about trucks in this area reducing emissions, including the truck traffic on Union Avenue.
A comment was made reiterating a prior comment about keeping this community focused. There's going to be more industrial development in our region. There will be more air quality impacts and there will be more traffic impacts. The truck traffic is going to increase. The focus should be on communities to make sure our roads are safe. It sounds like the purpose of the study is to make sure there is more capacity for truck traffic, and I hope we find opportunities to address them as well. The shift is to accommodate truck traffic not to accommodate communities. It's not to reduce truck traffic in general. We need to improve local roads and invest in local infrastructure so people have good roads to travel on. Shifting the attention to local communities is important.
A comment was made that Kern COG should focus on where the community is living for the study. That's more important than roadways where people are from out of the area. This needs to focus on here, on Kern County, starting from the bottom up with communities.
A comment was made that rerouting of some traffic from 7TH Standard Road to Cherry Avenue will have visual impacts for a lot of people, including residents and a school.
A comment was made that SR-43 is 3 miles from Shafter, so the diversion of traffic would divert the traffic from SR-43 to Shafter.
A comment was made that the traffic issue is coming from somewhere else, but the proposed rerouting at Cherry would be sending it in the Shafter community's direction. It doesn't seem very fair that that's where you're going to shove the traffic. Why can't you improve 7th Standard Road instead of moving traffic?
Clarification on whether the rail improvements are for passenger or freight trains.
Comment that trucks—even electric trucks—still emit dust. There was a train service from the 1970s through Arvin, Lamont and Tehachapi, and there was a question about whether this could be integrated into the study.
Concern was raised about trucks that come in to supply supermarkets in residential areas.
EV trucks are great for reducing emissions. Trucks from other states do not have the same emissions rules that we do, so we would still experience those pollution challenges. Would there be any sort of regulations for trucks passing through the area?
If you are moving them and the train dust is less than truck traffic, the train runs through the disadvantaged communities. We are the closest to that. We're questioning how much focus is being placed on vulnerable communities who are suffering from the most pollution. We have the highest rate of chronic diseases and respiratory issues.

Is there anything that can help with the truck dust? The SJVAPCD has given money for landscaping to block dust.
Multiple questions were asked regarding the locations and specifics of EV charging facilities shown on the map]
The presentation mentioned high-paying jobs and warehouse jobs. Are the warehouse jobs high paying?
Union Avenue is a parallel corridor that goes through Arvin and Lamont. One of the things we're hoping to do is get the trucks off of 184 and move them to Edison, further from Union Avenue and Bakersfield.
You talked about moving trucks on I-5, SR-99 and SR-58. What about Union Avenue that runs through disadvantaged communities and where we are suffering from pollution?

Digital Survey

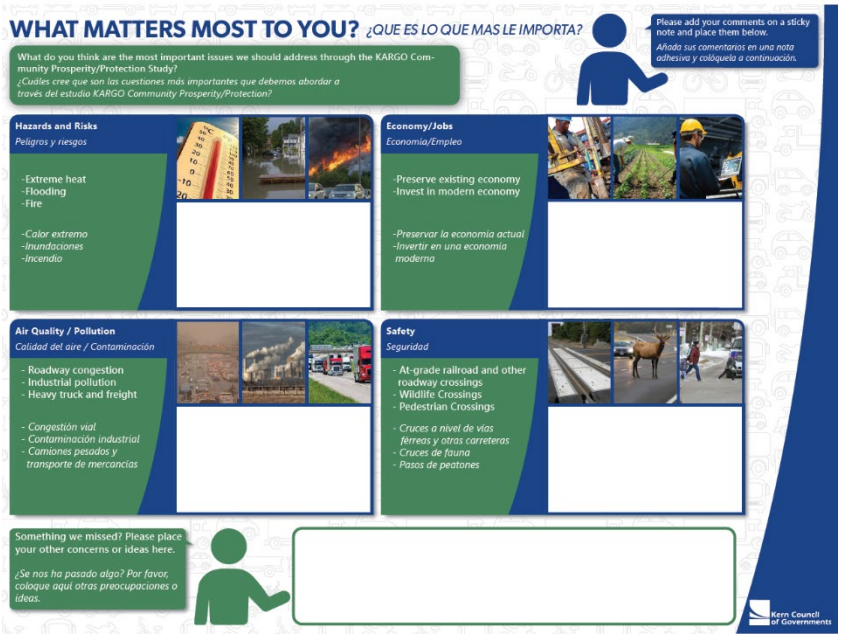
The following provides a summary of input received from each public input board posted on the survey.

- **Board 2 - Share Your Thoughts**
  The community expressed a strong need for improved bicycle and pedestrian infrastructure. Suggestions include the development of dedicated bike paths and pedestrian-friendly hubs to enhance active transportation options on Ave A to United Street. There's a particular emphasis on better lighting at bus stops and safer crossings, which would promote accessibility and safety for all residents.
  Project Priorities: #1



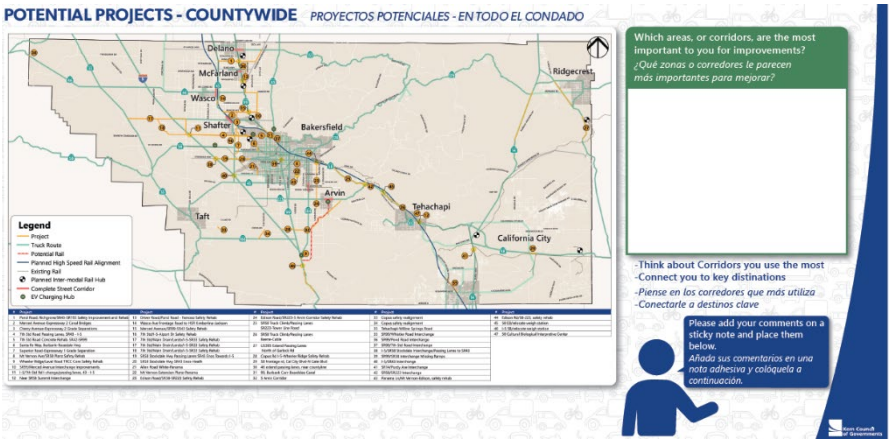
- **Board 3 – What Matters Most To You?**
  Concerns regarding environmental hazards are prevalent, with calls for better management of

wildfire risks and improved air quality measures. Community members highlighted the impact of heavy truck traffic on local roads and expressed a desire to alternative routes to mitigate these risks. Additional concerns included flooding and the need for comprehensive disaster preparedness.



- **Board 4 – Potential Projects - Countywide**
  There is significant support for various infrastructure projects aimed at alleviating traffic congestion and improving safety. Key proposals include the #28/#32 bypass to reduce truck traffic in urban areas and the need for overpasses to address heavy traffic zones. Community members also highlighted specific flooding concerns in #39 and the necessity for coordinated planning to enhance overall transportation efficiency.

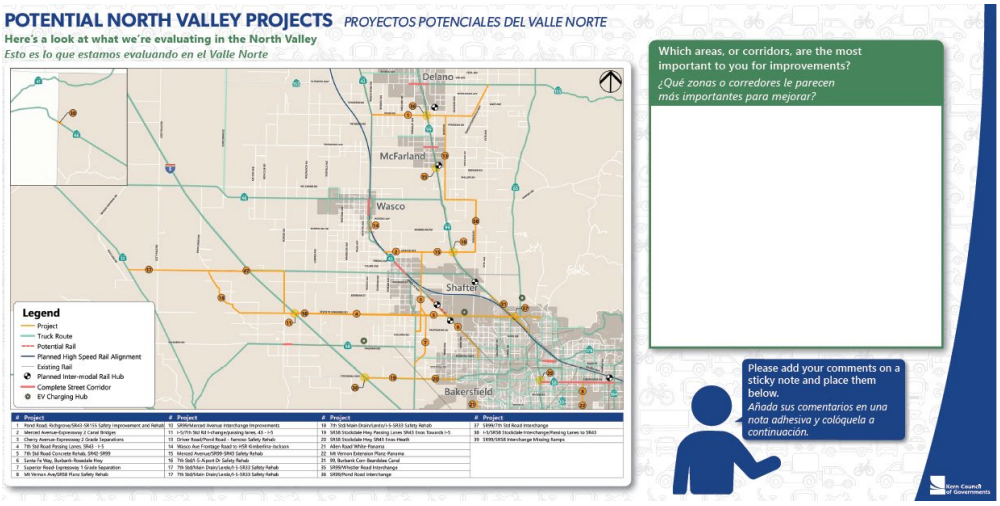
  Priorities: #28, #32 and #39



- **Board 5 – Potential North Valley Projects**
  Community members voiced their opinions on several potential North Valley projects, prioritizing

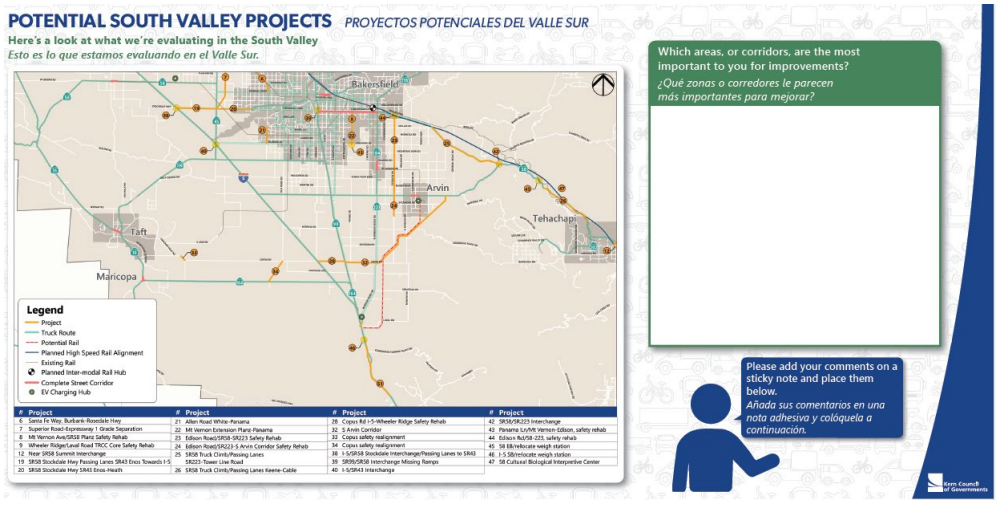
grade separations and improved road connections. There are strong sentiments against new rail yards and truck routes that could further exacerbate existing traffic and pollution issues. Community feedback received emphasizes the need for routes that minimize disruption to neighborhoods and support local traffic needs.

Priorities: #2, #15 and #3



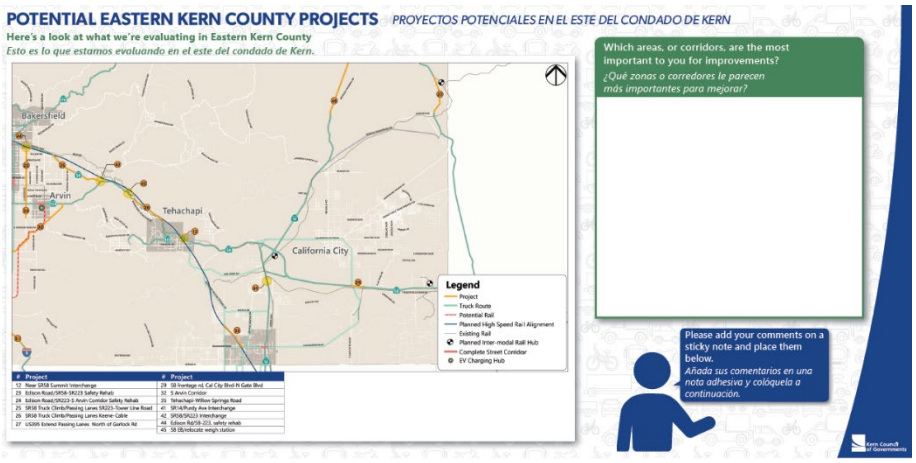
- **Board 6 – Potential South Valley Projects**
  Feedback centered around the need for various safety and infrastructure improvements in the South Valley area. Priorities include better lighting on major roads, repaving and widening initiatives on David Road and Wheeler Ridge and the installation of roundabouts to enhance traffic flow. There is also a concern about flooding, with community members advocating for drainage improvements to prevent water-related hazards.

Priorities: #28 and #32



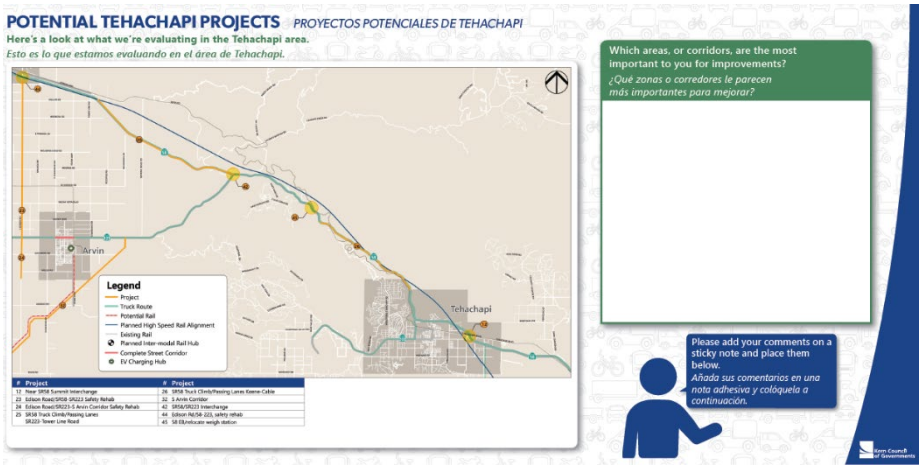
- **Board 7 – East Kern**
  Community discussions highlighted the importance of documenting and addressing historical

environmental challenges, such as floodings and infrastructure resilience. Residents suggested incorporating historical data into planning processes could potentially provide valuable insights for future projects. Emphasis was placed on creating awareness about past climate stressors and their ongoing impact in the county.



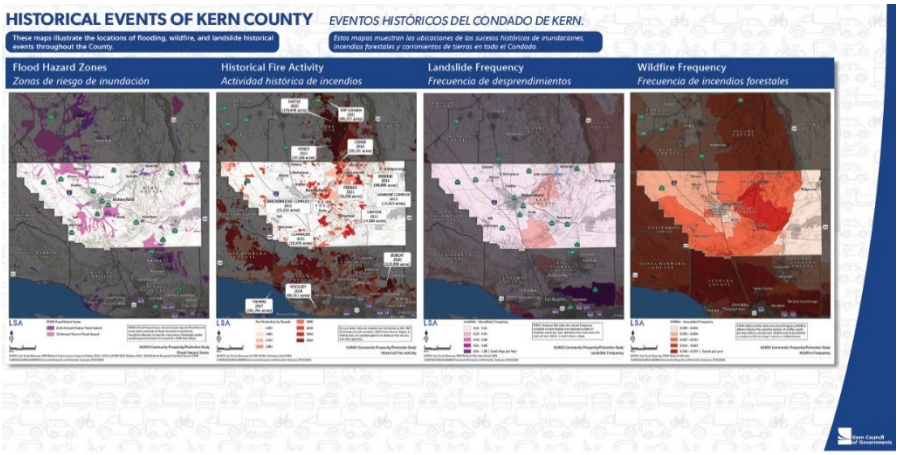
- **Board 8 - Potential Tehachapi Projects**

Comments focused on critical infrastructure improvements and emergency preparedness in Eastern Kern County. Community members emphasized the need for enhanced emergency routes, specifically mentioning improvements from Deertrail Drive to Highway 223 and from Skyline Drive to Cummings Valley. Concerns about flooding, particularly in relations to past events, were also raised, urging the necessity of planning for stormwater management. Additionally, there was an interest in optimizing rail alignments to improve transport efficiency while ensuring safety. Overall, the feedback underscores a community commitment to both addressing immediate infrastructure needs and preparing for future environmental challenges.
Priority: #12

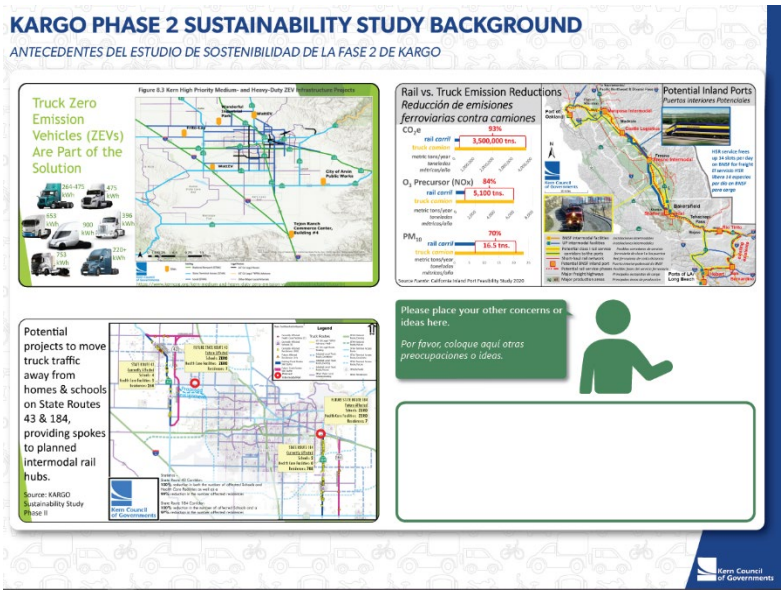


- **Board 9 –Historical Events of Kern County**

Comments received highlighted the importance of understanding the region's historical vulnerabilities, particularly in relation to natural hazards. Participants called for a comprehensive analysis of past events, such as flooding and mudslides, to inform future impact of climate stressors and the need for consistent data to guide community actions. This emphasis on historical context aims to enhance resilience against future environmental challenges, ensuring that lessons from the past inform proactive measures.



- **Board 10 – KARGO Phase 2 Sustainability Study Background**
  Feedback received focused on the expansion of electrical vehicles (EV) infrastructure in Kern County. Community members expressed strong support for the establishment of EV charging stations, particularly for trucking and freight vehicles, indicating a recognition of the growing need for sustainable transportation options. Suggestions included prioritizing the integration of charging stations in strategic locations to facilitate easier access for both residents and commercial operators. Overall, the feedback reflected a forward-looking approach to enhancing the region's transportation infrastructure while promoting cleaner energy solutions.



Appendix A: Public Input Matrix

Workshop/ Survey	Board Name	Comment	Priority Project Number
Tejon Workshop	Board 6, Potential South Valley Projects	#28 and #32 David and Corpus need street lighting	28 32
Tejon Workshop	Board 9, Historical Events of Kern County	build and maintenance on the inconsistant Road gutters to avoid floods	
Tejon Workshop	Board 9, Historical Events of Kern County	having a single map with layers highlighting ALL the climate stressors will shed light on actions needed	
Tejon Workshop	Board 6, Potential South Valley Projects	#28 Corpus Rd 1-5 Wheeler Rdige Safety Rehab	28
Tejon Workshop	Board 6, Potential South Valley Projects	21. Side walk on (trees) Allen Rd.... Panama	21
Tejon Workshop	Board 6, Potential South Valley Projects	22/8/43	22 8 43
Tejon Workshop	Board 6, Potential South Valley Projects	32. Repave David Rd.	32
Tejon Workshop	Board 6, Potential South Valley Projects	32. Widening David Rd/Wheeler Ridge	32
Tejon Workshop	Board 6, Potential South Valley Projects	Curve heading west before 99 ramp Sharp turn, no street lighting	
Tejon Workshop	Board 6, Potential South Valley Projects	Flooding on David Rd. and Wheeler Rdige Rd.	32
Tejon Workshop	Board 6, Potential South Valley Projects	Improvements and more light on 99	
Tejon Workshop	Board 6, Potential South Valley Projects	More lighting	
Tejon Workshop	Board 6, Potential South Valley Projects	More or stronger lights by David exit/on ramp to 99. Winter starts early at 5:00 PMish, it is so dark!	28 32

Workshop/ Survey	Board Name	Comment	Priority Project Number
Tejon Workshop	Board 6, Potential South Valley Projects	Other side of Sr99 from 43 Match board of potential projects showing S Beltwa?? Pumpkin to Red	
Tejon Workshop	Board 6, Potential South Valley Projects	Potholes and loose gravel on David Rd.	28
			32
Tejon Workshop	Board 6, Potential South Valley Projects	Potholes on David Rd.	28
			32
Tejon Workshop	Board 6, Potential South Valley Projects	Roundabout at 32 David Rd and Wheeler Ridge Rd.	28
			32
Tejon Workshop	Board 6, Potential South Valley Projects	Side walks	
Tejon Workshop	Board 6, Potential South Valley Projects	Signal lights on David Rd.	28
			32
Tejon Workshop	Board 6, Potential South Valley Projects	Widening David Rd. and Wheeler Rdidge Rd. Add stop lights	28
Tejon Workshop	Board 5, Potential North Valley Projects	32/28	32
			28
Tejon Workshop	Board 5, Potential North Valley Projects	39/6	39
			6
Tejon Workshop	Board 3, Block Something we missed	Air qualty hazard/safety economy	
Tejon Workshop	Board 3, Block Something we missed	Subsidance?	
Tejon Workshop	Board 3, block Air Quality/Pollution	Need COz filters	
Tejon Workshop	Board 3, bloack Hazards and Risks	Heavy truck and freight another route	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Tejon Workshop	Board 3, bloack Hazards and Risks	secondary hazards: landslide subsidence drought	
Tejon Workshop	Board 2, block Something we missed?	1 Rural 2 Main St. 3. Bicycles 4 Public	
Tejon Workshop	Board 2, block Public Transit	Lighting on bus shelters	
Tejon Workshop	Board 2, block Bicyle and Pedestrian	Active transporation connection hubs for multi-modal	
Tejon Workshop	Board 10, EV Information	With proposed realignments highliting to "potential" active transporation corridors would help sell	
Tejon Workshop		#51 not listed	
Delano Workshop	Could not determine board	Include effects of snow and ice on Willow Springs route	
Delano Workshop	Board 2, Share Your Thoughts!	Benches and shade at bus stops	
Delano Workshop	Board 2, Share Your Thoughts!	Crosses with preventive lights or safe sealing	
Delano Workshop	Board 2, Share Your Thoughts!	Lamont Edison and Digiorgio railroad tracks and signs	
Delano Workshop	Board 2, Share Your Thoughts!	Lamont improvements to railroad crossings at Myrtle and Digiorgio	
Delano Workshop	Board 2, Share Your Thoughts!	Roundabouts cause more danger to motorists, signs need to be placed further apart and visible	
Delano Workshop	Board 2, Share Your Thoughts!	Roundabouts are not safe	
Delano Workshop	Board 2, Share Your Thoughts!	Lights with less distance from each other for better illumination	
Delano Workshop	Board 2, Share Your Thoughts!	More urban trees	
Delano Workshop	Board 2, Share Your Thoughts!	More bike paths in 184 because there are none in Lamont	56
Delano Workshop	Board 2, Share Your Thoughts!	More public lighting	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Board 2, Share Your Thoughts!	More vanquelas and safe pedestrian crossings	
Delano Workshop	Board 2, Share Your Thoughts!	Put traffic lights with arrows to turn at the traffic lights on 184	
Delano Workshop	Board 2, Share Your Thoughts!	We want more lighting at bus stops	
Delano Workshop	Board 2, Share Your Thoughts!	Safer, wider roundabouts	
Delano Workshop	Board 2, Share Your Thoughts!	More effective distance and visibility signs	
Delano Workshop	Board 2, Share Your Thoughts!	More visible and more distant signs to avoid accidents	
Delano Workshop	Board 2, Share Your Thoughts!	Sidewalks there are many ones that are old and have crcks tat is very easy for ppl to have falls especially older ppl	
Delano Workshop	Board 2, Share Your Thoughts!	Shadows or trees at school bus stops	
Delano Workshop	Board 3, What Matters Most To You?	Alternate emergency routes for wildfires and flood zones More ditches and storm drains in flood prone communities More firefighters	
Delano Workshop	Board 3, What Matters Most To You?	Alternate truck routes avoiding sensitive receptors like neighborhoods and school districts Smoke from brush and wildfires migrate to other communities and contaminate the air	
Delano Workshop	Board 3, What Matters Most To You?	Divert heavy trucks passing through the city of Arvin	
Delano Workshop	Board 3, What Matters Most To You?	Diesel PM is a carcinogen and until trains and trucks are truly zero emissions freight infrastructure will worsen air and health	
Delano Workshop	Board 3, What Matters Most To You?	The extreme heat is causing many fires and we need to have clean air.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Board 3, What Matters Most To You?	In the city of Lumont we want to reduce the number of trucks passing through 184; this causes a lot of pollution.	
Delano Workshop	Board 3, What Matters Most To You?	Over-zealousness for over-zealousness due to over-traffic of cars and trucks. Pay more attention to pollution in our county. A lot of sick people.	
Delano Workshop	Board 3, What Matters Most To You?	If warehouses are automated, that will mean less jobs. Same with automated trucks.	
Delano Workshop	Board 3, What Matters Most To You?	Trains bring a lot of pollution	
Delano Workshop	Board 3, What Matters Most To You?	Make sure that displaced workers, especially farmworkers, have access to new jobs + workforce development Enforceable PLAs with local+targeted hire	
Delano Workshop	Board 3, What Matters Most To You?	My concern is extreme heat and pollutions. we want more clean air.	
Delano Workshop	Board 3, What Matters Most To You?	More efforts for wildfire and brushfire preventions in rural ommunities like Lost Hills We would like emergency routes for whenever there is a fire	
Delano Workshop	Board 3, What Matters Most To You?	We need safe crosses	
Delano Workshop	Board 3, What Matters Most To You?	I do not support industries bringing more pollution.	
Delano Workshop	Board 3, What Matters Most To You?	No Charging Stations/electric trucks expensive	
Delano Workshop	Board 3, What Matters Most To You?	No industrial pollution	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Board 3, What Matters Most To You?	No industrial parks	
Delano Workshop	Board 3, What Matters Most To You?	No machinery, instead of human hands, takes away our jobs	
Delano Workshop	Board 3, What Matters Most To You?	No more industrial pollution	
Delano Workshop	Board 3, What Matters Most To You?	No more forest fires	
Delano Workshop	Board 3, What Matters Most To You?	No, because there is no more work due to all the electronics that the industry is using.	
Delano Workshop	Board 3, What Matters Most To You?	We don't want more trains and trailers to Shafter that pollute	
Delano Workshop	Board 3, What Matters Most To You?	We don't want more trains. More trains bring more pollution and diseases	
Delano Workshop	Board 3, What Matters Most To You?	No we don't want carbon secuestration / Calor extremo, floods, fires	
Delano Workshop	Board 3, What Matters Most To You?	Pedestrian walk bridges and well-lit corridors Designated pedestrian zones and crossing lights	
Delano Workshop	Board 3, What Matters Most To You?	Pond Rd school area gets flooded needs attention	
Delano Workshop	Board 3, What Matters Most To You?	Preserve the current economy for farm workers	
Delano Workshop	Board 3, What Matters Most To You?	If the trains and industrial zones expand further, they will pollute more and bring more traffic to our Shafter area.	
Delano Workshop	Board 3, What Matters Most To You?	Tax on automation	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Board 3, What Matters Most To You?	Tax on warehouse and packing sheds for general fund	
Delano Workshop	Board 3, What Matters Most To You?	We are concerned that you will bring more industries polluting our communities.	
Delano Workshop	Board 3, What Matters Most To You?	We need better air quality!	
Delano Workshop	Board 3, What Matters Most To You?	We want better air quality No more trains No more junk in air	
Delano Workshop	Board 3, What Matters Most To You?	We want safe crosswalks for the children/people	
Delano Workshop	Board 4, Potential Projects Countywide	#1 Flooding concern and how the truck traffic can be re-routed? Also how will trucks get to places like wonderful	
Delano Workshop	Board 4, Potential Projects Countywide	119!	
Delano Workshop	Board 4, Potential Projects Countywide	184 realign is a great project as well	
Delano Workshop	Board 4, Potential Projects Countywide	28/32 I support this bypass	28
			32
Delano Workshop	Board 4, Potential Projects Countywide	39/6	39
			6
Delano Workshop	Board 4, Potential Projects Countywide	We support the 28/32 for Arvin	28
			32
Delano Workshop	Board 4, Potential Projects Countywide	I support this route by 91 via to help lower truck traffic on Lumon X.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Board 4, Potential Projects Countywide	Delano - Albany St. mucho trafico	
Delano Workshop	Board 4, Potential Projects Countywide	Don't support Burbank	
Delano Workshop	Board 4, Potential Projects Countywide	In need of a brdget too much traffic. get etic	
Delano Workshop	Board 4, Potential Projects Countywide	Lamont and Arvin in flood with zone study increase in impervious surface and mitigation stormwater impact	
Delano Workshop	Board 4, Potential Projects Countywide	Surely we would benefit from this release of 28/32.	28
			32
Delano Workshop	Board 4, Potential Projects Countywide	Support 1, but should stop on 99 to avoid the school at the other side	1
Delano Workshop	Board 4, Potential Projects Countywide	Support 28, 32	28
			32
Delano Workshop	Board 4, Potential Projects Countywide	We need another bridge that can connect the Garcas Hwy to Woblooms St through High St because is a lot of traffic that stuck in Lexington & Wolooms	
Delano Workshop	Board 4, Potential Projects Countywide	We realled need Pond & Browny Rd to be considered because ther is a school and the area gets flooded	1
Delano Workshop	Board 4, Potential Projects Countywide	What project is this?	
Delano Workshop	Board 4, Potential Projects Countywide	Woolams Ave, Delano very heavy truck traffic need overpas on Cecil Ave - rail roads crossing-accidents Delano needs at least 2 overpasses	
Delano Workshop	Board 4, Potential Projects Countywide	Woolams Road and Pont Road gets flooded	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Board 5, Potential North Valley Projects	2c grade separations. We need at least 2 over passes on Cecil Ave and one on 11th Ave. Too much traffic in case of emergency at working hours we will be in trouble	
Delano Workshop	Board 5, Potential North Valley Projects	Don't support Rail yard	
Delano Workshop	Board 5, Potential North Valley Projects	High St to Belmont - this will help the westside of trafic to not get congested at the west-east side	
Delano Workshop	Board 5, Potential North Valley Projects	Hwy 184 Lamont just local truck we don't want non-local trucks	
Delano Workshop	Board 5, Potential North Valley Projects	I like this idea a purpose to continue 8-22 mt. Vernon.	8 22
Delano Workshop	Board 5, Potential North Valley Projects	Is there a way to consider High St. to not top at the end of the street? Is there a way that we can connect it..... we can also reach Market please not only come from south to north and we can also do it from south to north.	
Delano Workshop	Board 5, Potential North Valley Projects	I don't agree Shafter is polluting us.	
Delano Workshop	Board 5, Potential North Valley Projects	We don't want this here because they are going to pass the Lamont and this causes a lot of noise.	
Delano Workshop	Board 5, Potential North Valley Projects	We don't want to go down Burbank Street, it would bring too much traffic.	
Delano Workshop	Board 5, Potential North Valley Projects	They're going to take away the heavy roads but they're going to put the train and it's the same thing, it's going to be the same problem.	
Delano Workshop	Board 5, Potential North Valley Projects	Don't let it go past Santa Fe enough traffic -Lexva	
Delano Workshop	Board 5, Potential North Valley Projects	We want 2.15, 3 is the best route.	3

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Board 5, Potential North Valley Projects	Railex - Trains is it cost effective? Charging stations	
Delano Workshop	Board 5, Potential North Valley Projects	Shafter - we don't want trucks on Lendo Ave. We want them to go out of town - we already have too much pollution.	
Delano Workshop	Board 5, Potential North Valley Projects	Transit hub on 184 hwy. Hall Rb. Lamont CA	56
Delano Workshop	Board 5, Potential North Valley Projects	We want an alternate truck route so heavy duty trucks don't have to keep using Lerdo Hwy when they transfer from 99 to I-5 - comng from cherry to Fresno Ave - Poplar Ave to 7 Standard - (coming from I-5).	
Delano Workshop	Could not determine board	28/32 to reduce 223 traffic on Arvin.	28 32
Delano Workshop	Could not determine board	32/42 freeing up traffic through downtown.	32 42
Delano Workshop	Could not determine board	I support the release or route, 28-32.	28 32
Delano Workshop	Could not determine board	Avoid Burbank W of [indiscernable] existing 140 HWY	
Delano Workshop	Could not determine board	Blended hydrogen fuel has high local emissions Inclusing NOx that contributes to ozone	
Delano Workshop	Could not determine board	Edison is a flood zone and needs to reconsider as a highway need an alternate route	
Delano Workshop	Could not determine board	They need to change the railroad so that it does not pass through the center of Delano.	
Delano Workshop	Could not determine board	Need to take immediate steps to realign 43 and 184 because the process is long with CTC + legislation	
Delano Workshop	Could not determine board	No nitrogen	
Delano Workshop	Could not determine board	We don't want trucks that use nitrogen that pollute the environment even more.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Delano Workshop	Could not determine board	Pond Rd school area gets so flooded. Also Browny Rd is the back road that can be used instead but we cant	
Delano Workshop	Could not determine board	Support 184 moved to Edison	
Delano Workshop	Could not determine board	Support 2,3,7	2
			3
			7
Delano Workshop	Could not determine board	Support us	
Delano Workshop	Could not determine board	There is a very congestion of traffic on Wolooms & Lexington due to the trucks circulations that comes from wonderful industry.	
Delano Workshop	Could not determine board	This project is really needed to get truck traffic out of Arvin	
Tehachapi Workshop	Board 8, Eastern Kern County Projects	#35 down to Ave A to 10th and up 10th to S. Rosamond (arrow pointing to #35)	35
Tehachapi Workshop	Board 4, Potential Countywide Projects	Dennison Road overcrossing (City project needs), willow springs overcrossing (City project needs), no interchange oversize load compications	
Tehachapi Workshop	Board 4, Potential Countywide Projects	History of Willow Springs flood	
Tehachapi Workshop	Board 8, Eastern Kern County Projects	Emergency egress route: Deertrail dr to Highway 223 improvement	
Tehachapi Workshop	Board 8, Eastern Kern County Projects	Emergency fire access route improvement, skyline dr to Cummings Valley	
Tehachapi Workshop	Board 8, Eastern Kern County Projects	Potentional rail shift to right to meet existing rail (arrow pointing to rail near 24 in Arvin)	24
Tehachapi Workshop	Board 9, Historical Events of Kern County	2015 & 2023 Mudslide? D9 Data? (Arrow pointing to route 58)	
Tehachap Workshop	Could not determine board	Priority Order: #25, #26, # 43, #12	25
			26
			43

Workshop/ Survey	Board Name	Comment	Priority Project Number
			12
Tehachapi Workshop	Potential Projects - Countywide	INTERP Breen road, RAF - rain history	
Rosamond Workshop	Board 3, block Harzards and Risks	Fires	
Rosamond Workshop	Board 2, block Bicycle and Pedestrian	Bike lanes and bike ways expand what's already there	
Rosamond Workshop	Board 2, block Bicycle and Pedestrian	Better places bike lanes	
Rosamond Workshop	Board 2, block Public Transit	Expand to East side of Rosamond	
Rosamond Workshop	Board 2, block Rural Highway Improvements	Adding lanes on Rosamond blvd east of the 14 to Edwards AFB	
Rosamond Workshop	Board 3, block Air quality/Pollution	Heavy truck and freigth and impact on local roads	
Rosamond Workshop	Board 3, block Economy/Jobs	Invest in modern economy	
Rosamond Workshop	Board 3, block Harzards and Risks	Wildfires, add L Resources for fire	
Rosamond Workshop	Board 4, Countywide	186 realign is a great project as well (Arrow pointing to #23)	23
Rosamond Workshop	Board 4, Countywide	This project is really needed to get truck traffic out of Arvin (pointing to raail near S Edison road near #32)	32
Rosamond Workshop	Board 4, Countywide	119! (Arrow pointing to Highway 43, indicating it is incorrect on the map)	
Rosamond Workshop	Board 4, Countywide	What project is this? (Arrow pointing to Highway 14, yellow line)	
Rosamond Workshop	Board 4, Countywide	#39 and #6	39
Rosamond Workshop			6
Rosamond Workshop	Board 8, Eastern Kern County Projects	#2 EV charging	
Rosamond Workshop	Board 8, Eastern Kern County Projects	#1 Ave A to United St is a community priority	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Rosamond Workshop	Board 8, Eastern Kern County Projects	E.V charging #2	
Rosamond Workshop	Board 8, Eastern Kern County Projects	Ave A to United is a high priority for community #1 (Arrow pointing to road near Highway 14)	
Rosamond Workshop	Board 8, Eastern Kern County Projects	Road doesn't exist (Indiciating small road near #29 and Lancaster BLVD)	
Rosamond Workshop	Board 9, Historical Events of Kern County	Include effects of snow and ice on Willow Springs route	
Rosamond Workshop	Board 10, EV Information	Trucking EV Hubs in Rosamond and Mojave	
Public Survey	Board 2 - Something we missed	Caltrans is developing plans for new and improved wildlife crossings for SR 58 as part of the SR 58 Truck Climbing Lane/Keene Pavement Project between PM 75 and PM 90 . Want to make sure that this project is not redundant to that effort	
Public Survey	Board 2 - Something we missed	Fill the potholes/large cracks and resurface the streets! Hageman road is especially bad, particularly north of Calloway.	
Public Survey	Board 2 - Something we missed	There are major arterials in Bakersfield with very little street lighting, making it difficult to drive at night.	
Public Survey	Board 2 - Something we missed	Lower the cost	
Public Survey	Board 2 - Something we missed	Making intersection walkways wider to avoid are wheelchair travelers.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 2 - Something we missed	Cleaning of streets advising first to move parked vehicles and please make sure every owner of RV's or camping trailers are not left parked on the streets more than necessary. It is a safety concern because children can't be seen, running from behind those large vehicles. We already have close calls here in Laurelwood Ct	
Public Survey	Board 2 - Something we missed	Grade separations with the railroad	
Public Survey	Board 2 - Something we missed	Add a secondary freeway entrance and exit between Rosamond blvd and Ave A. Connecting 30 Th or20th west to Ave A. This need became very apperant during the recent road work on Rosamond blvd. The Rosamond bridge is in need of desperate expansion! One lane connecting east and west doesn't work anymore. Too much new housing for the existing lanes. There's been times traffic has been backed up fire 30min and worse that people block the freeway entrance lane while trying to bully there way into the one and only lane that goes straight. I really thought this was something that was going to be worked on during the recent closure. Please please address this ASAP. Thank you.	
Public Survey	Board 2 - Something we missed	Expanding the Rosamond Blvd overpass of highway 14 to be 2 lanes in each direction. This is a chokepoint multiple times a day during the morning and evening commutes, and when school gets in and out in Rosamond Elementary School and Rosamond High School.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 2 - Something we missed	Rosamond Blvd and Sierra Hwy in Rosamond, CA are heavily used. There is to much speeding on these roads. It would be good to have this survey collect data on how heavily used these roads are use appropriate action to slow down traffic on these roads.	
Public Survey	Board 2 - Something we missed	No 1 is putting passenger trains back on the existing tracks between Lancaster & Bakersfield. Removing them in the first place was idiotic. The proposal to spend some INSANE amount of money building a new train system is also rather insane, when this low cost solution is right there. The other no. 1 solution is putting electro magnetic monorail trains down the center of the freeways. The Superman ride at Magic Mountain proves that this technology will even work vertically. This was proposed for the Ventura Freeway through LA and the Unions wouldn't allow a Japanese firm to do it for Free. Instead they put in this idiot bus system that has caused numerous car wrecks. At this point I could write a book about all this.	
Public Survey	Board 2 - Something we missed	Drainage	
Public Survey	Board 2 - Something we missed	pot holes and cracks should be fixed.	
Public Survey	Board 2 - Something we missed	Fixing 4" horizontal cracks on major roads ie 35th & 40th St W leading to Westpark Elementary School and in neighborhoods as well.	
Public Survey	Board 2 - Something we missed	More access for pedestrians.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 2 - Something we missed	We appreciate the continued partnership, collaboration, and coordination.	
Public Survey	Board 3- Something we missed	catch speeders, they are dangerous to every person walking as they go too fast near the curves.	
Public Survey	Board 3- Something we missed	I believe that if a more diversified economy is sought, then training should be available for those careers/occupations that the new business(es) will bring. Is the school system (from the Adult school to Bakersfield College to CSUB) involved? Education should be a key partner is the collaboration.	
Public Survey	Board 3- Something we missed	I'm not sure what this is getting at as proposed solutions are often worse than the problems. Roundabouts are wheels of chaos wherein one has to Guess the actions of numerous other vehicles. It has been proven that this is more dangerous than a Normal intersection However they are being adopted due to statistics stating the resulting crashes are less sever via the wheel of chaos.	
Public Survey	Board 3- Something we missed	Rosamond should become incorporated and needs a Walmart or Target.	
Public Survey	Board 3- Something we missed	Think I added everything in the prior answer.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 3- Something we missed	We live in an incorporated area. We need to have our concerns heard regarding the traffic in our area, Rosamond, CA. Traffic is extremely heavy in the morning and evenings when everyone is going to work or returning home after working. Our area is getting several new growth projects in our area...Steal Mill and Hyrdostar projects. Our roads need to expanded to accommodate these businesses. We need more CHP in our area and a Sheriff station to serve our community and the surrounding area.	
Public Survey	Board 3- Something we missed	What about Meadows Field airport? We have an underutilized airport, that needs a significantly higher level of management and economic development than the county currently provides. Both cargo and passenger improvements are needed. The county basically ignores it. An airport district should be established so it can be improved for the betterment of our community.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 3- Something we missed	Wildlife crossings absolutely matter on Highway 58 and we are so excited to see this as part of the project. Please note however that The Nature Conservancy (TNC) and Caltrans D9 as well as CDFW and other collaborators are working on the wildlife crossing plans for two wildlife under crossings and other upgrades as part of mitigation for the in-process truck lane widening project. The widlife crossing plans and upgrades start at PM78 and move east to PM90 so any additional improvements needed for additional wildlife crossing studies and work and so it is not redundent but complementary could be focused west of PM78 and into the SJ valley where the first truck widening project is not yet funded. This could be so valuable and awesome! As these two newly planned wildlife under-crossings are definitely being planned as part of the project as included in the Env Document and will be implemented while other upgrades under 58 are also planned, TNC and partners will continue to develop the wildlife crossing infrastructure plan for SR 58 between Post Miles 78 and 90, that will include the locations for these 2 new wildlife crossings, enhancements for existing culverts that could be functional for wildlife if debris blockers or other barriers were removed, and locations/designs for wildlife directional fencing	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	SR 58	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	14 in that I go Rosamond to Lancaster daily. I also take E to 50 or 90th to Littlerock. E has no stop signs except at 90th. which is great and removing them from 90th & 50th would be great. There should also be a Relative speed law as it is actually dangerous for a road such as E to be posted 55 as virtually everyone goes 70 to 90 and if one did go 55 everyone would be passing and it could create congestion like on Pearblossom Hwy.	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	All are important and property taxes must cover them. Every owner must contribute to get those concerns.	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Brining new businesses to Rosamond / Rosamond Blvd (e.g. GameStop, Burger King, Carl's Jr, Vallarta grocery store, Superior grocery store, a Mall, NO MORE GAS STATIONS ON ROSAMOND BLVD --- there are at least 7)	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	East Kern, Rosamond	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Grade separations at Sierra Highway and Rosamond Blvd. Improve traffic control Glen Dower and Rosamond Blvd. Rosamond Blvd. and Eagle Way. Traffic signal	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Highway 14 corridor.	41
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Highway 58 and I-5	38
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Highways 58,14 and 395	38
			41
			27
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Hwy 14 from Lancaster thru Mojave and the area beyond to accommodate the growth that is expected. We need some better road surfuracing and/or additional side roads to off load heavily traffic areas.	41
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Hwy 14 Lancaster to Rosamond and from Rosamond to Mojave.	41

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	I-5	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	I'm not sure. I would like to see more improvements to the downtown area but what those improvements would be, I couldn't tell you.	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Rosamond	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Rosamond	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Rosamond	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Rosamond	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Rosamond	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Rosamond Blvd and cross streets, Ave A, Sierra Ave, Tropico Rd	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	Rosamond to Tehachapi.	
Public Survey	Board 4 - Which areas, or corridors, are the most important to you for improvements? (Countywide)	This map is difficult to read. Complete the Highway 58 freeway extension out to I-5. Connect 178 with Hwy 99 or Hwy 58 for full freeway access. High Speed Rail Line.	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	As I said earlier the freeways need electro magnetic monorails down the center.	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	Connection to Rosamond, Mojave, and California City.	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	East Kern	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	Highway 58 and I-5	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	Highways 58, 14, and 395	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	Hwy 14 needs to be upgraded to four lanes. Traveling southbound on Hwy 14, there is a significant lack of signage when approaching the "new" Hwy 58 exit. Insignificant signage indicating that the Bakersfield exit is ahead.	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	Hwy 14, Sierra Hwy (from Palmdale thru Mojave), Rosamond Blvd, Tropico Road	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	No answer	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	Rosamond	
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	Rosamond	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 5 - Which areas, or corridors, are the most important to you for improvements? (North Valley)	This is not my area	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	A 58 exit between the first one and the next one to get closer to central downtown area.	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	East Kern	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	Highway 58	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	Highway 58 and I-5	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	Improve Highway 58, upgrade the route to Freeway standards. There is no freeway interchange at Hwy 223 and Hwy 58, it is an at grade intersection. This is dangerous and silly.	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	most all of them because of children and other walkers due to various schools in town	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	Rosamond	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	SR 58	
Public Survey	Board 6 - Which areas, or corridors, are the most important to you for improvements? (South Valley)	Tehachapi	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	As I said earlier the freeways need electro magnetic monorails down the center.	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	Connection to Rosamond, Mojave, and California City.	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	East Kern	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	Highway 58 and I-5	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	Highways 58, 14, and 395	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	Hwy 14 needs to be upgraded to four lanes. Traveling southbound on Hwy 14, there is a significant lack of signage when approaching the "new" Hwy 58 exit. Insignificant signage indicating that the Bakersfield exit is ahead.	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	Hwy 14, Sierra Hwy (from Palmdale thru Mojave), Rosamond Blvd, Tropico Road	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	Rosamond	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	Rosamond	
Public Survey	Board 7- Which areas, or corridors, are the most important to you for improvements?	This is not my area	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	General Comments	That Caltrans District 9, in collaboration with Cal Fish and Wildlife, The Nature Conservancy, and others, is developing a wildlife crossing infrastructure plan for SR 58 between Post Miles 75 and 90, that will identify locations for 2 new wildlife crossings, enhancements for existing culverts that could be functional if debris blockers or other barriers were removed, and locations/designs for wildlife directional fencing associated with new/upgraded wildlife crossings. Just want to make sure that any "wildlife crossing planning" for SR 58 that is planned by this KERN COG project is not redundant, and maybe focuses on another part of SR 58 that has not undergone wildlife crossing assessment/planning (eg, segments of SR 58 west of PM 75). Thanks!	
Public Survey	General Comments	Actually, I want to thank you for what has done so far in town, it is a good start...	
Public Survey	General Comments	Glad you are providing the opportunity to have community input for the well being of community through wise traffic decisions and upkeep of these vital assets.	
Public Survey	General Comments	Highway 58 is especially problematic with the condition of the pavement in the right lane where all the trucks travel. Between Highway 14 and the Keene exit, it is just better to drive the left lane rather than try to travel in the right. Also, coming up the hill from Bakersfield can get backed up with the slow truck traffic climbing that hill.	

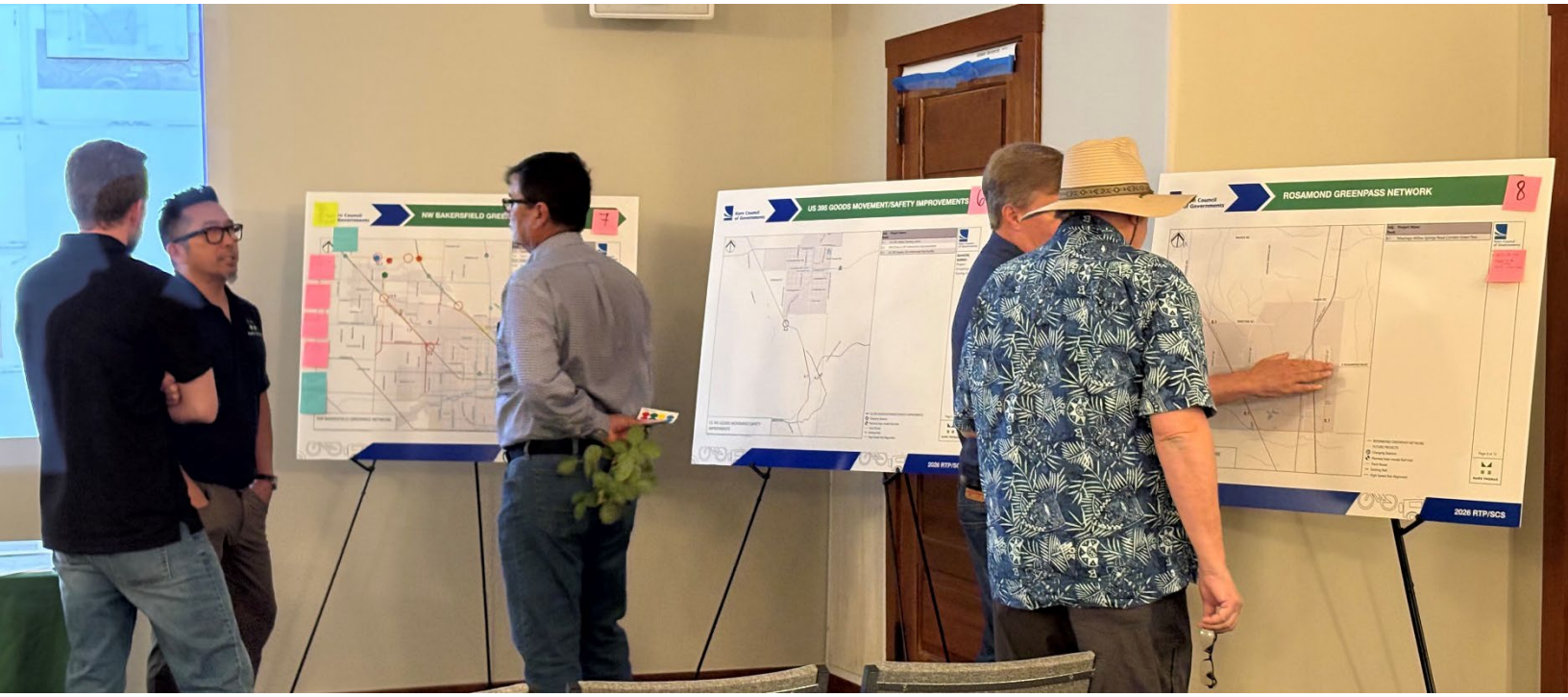
Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	General Comments	Improvement of overall street maintenance, Tree trimming, street sweeping, pot hole repairs and clearing of debris and tumble weeds from sidewalks.	
Public Survey	General Comments	More lanes added into 14 freeway. Especially in Rosamond proper grounds.	
Public Survey	General Comments	Slow down the new housing building till our roads are expanded and can accommodate the added traffic that will come from the new housing.	
Public Survey	General Comments	There is a significant issue with a lack of the basic roadway infrastructure in Bakersfield. Many six-lane arterials have almost no street lighting. Also, the directional signage is horrible. Example, traveling on Mohawk Street south approaching California Avenue, the lanes split into unusual travel lane configurations. There is no sign indicating which lanes go straight, turn left, or turn right. Drivers end up making last second movements which causes serious accidents. This is a very large intersection with a lot of movements. It feeds into Rosedale Hwy and the new interchange at Hwy 58. Very busy intersection and very dangerous.	
Public Survey	General Comments	What they are doing to the 14 presently is certainly annoying & I have NO IDEA what they are doing. Are they adding another lane in each direction? Another thing is they have barricaded all the cross streets in Rosamond like the one I live on. People obviously don't like this & everyday remove parts of them. Is this being done in that they are going to just close the 14 for some amount of time?	

Workshop/ Survey	Board Name	Comment	Priority Project Number
Public Survey	General Comments	Wildlife crossings absolutely matter on Highway 58 and we are so excited to see this as part of the project. Please note however that The Nature Conservancy (TNC) and Caltrans D9 as well as CDFW and other collaborators are working on the wildlife crossing plans for two wildlife under crossings and other upgrades as part of mitigation for the in-process truck lane widening project. The widlife crossing plans and upgrades start at PM78 and move east to PM90 so any additional improvements needed for additional wildlife crossing studies and work and so it is not redundent but complementary could be focused west of PM78 and into the SJ valley where the first truck widening project is not yet funded. This could be so valuable and awesome! As these two newly planned wildlife under-crossings are definitely being planned as part of the project as included in the Env Document and will be implemented while other upgrades under 58 are also planned, TNC and partners will continue to develop the wildlife crossing infrastructure plan for SR 58 between Post Miles 78 and 90, that will include the locations for these 2 new wildlife crossings, enhancements for existing culverts that could be functional for wildlife if debris blockers or other barriers were removed, and locations/designs for wildlife directional fencing	

Projects	Count
Project 32: S Arvin Corridor	18
Project 28: Copus Rd I-5-Wheeler Ridge Safety Rehab	15
Project 41: SR14/Purdy Ave Interchange	4
Project 6: Santa Fe Way, Burbank-Rosedale Hwy	3
Project 3: Cherry Avenue-Expressway 2 Grade Separations	2
Project 8: Mt Vernon Ave/SR58 Planz Safety Rehab	2
Project 22: Mt Vernon Extension Planz-Panama	2
Project 38: I-5/SR58 Stockdale Interchange/Passing Lanes to SR43	2
Project 39: SR99/SR58 Interchange Missing Ramps	3
Project 43: Panama Ln/Mt Vernon-Edison, safety rehab	2
Project 1: Pond Road, Richgrove/SR43-SR155 Safety Improvement and Rehab	2
Project 56: Lamont Complete Streets Corridor	2
Project 2: Merced Avenue-Expressway 2 Canal Bridges	1
Project 7: Cherry Avenue-Expressway 2 Grade Separations	1
Project 12: Near SR58 Summit Interchange	1
Project 21: Allen Road White-Panama	1
Project 23: Edison Road/SR58-SR223 Safety Rehab	1
Project 25: SR58 Truck Climb/Passing Lanes	1
Project 24: Edison Road/SR223-S Arvin Corridor Safety Rehab	1
Project 26: SR58 Truck Climb/Passing LanesKeene-Cable	1
Project 27: US-395 Passing Lanes	1

July 1, 2025

Kern Council of Governments | Kern Area Regional Goods Movement (KARGO) Community Protection/Prosperity Study Outreach Summary Phase 2



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KARGO Community Prosperity/Protection Study

Community Workshops Spring 2025

Overview

In May and June of 2025, the Kern Council of Governments (Kern COG) conducted the second phase of public workshops across the county to gather final feedback on the selected projects from the KARGO Community Prosperity/Protection Study. This study evaluates the durability of Kern County's transportation network in extreme weather events, identifies improvements, and explores funding opportunities. The workshops provided an opportunity for the public to share their opinions on the 12 projects identified as most important for the region. The feedback collected during this outreach will also be incorporated into Kern COG's Regional Transportation Plan (RTP).

Below is a summary of the workshops held, including information on their promotion, the feedback received, and the overall attendance for each session. A total of four hybrid workshops, which combined in-person and online participation, were held, along with three fully remote sessions.

Promotion of Workshops

These workshops were promoted through multiple eblasts shared with the Kern COG KARGO C-CAMS Stakeholder Advisory Committee and RTP/SCS Business, Industry, Environmental and Social Equity Roundtable Members and community partners. To further enhance visibility, we shared a total of 14 engaging posts on Kern COG's Facebook page, highlighting the significance of the workshops and encouraging participation. Additionally, we ensured that meeting dates and details were featured on the community calendars of key local websites in targeted communities and local community Facebook pages.



To facilitate these workshops, we collaborated closely with various contacts, including representatives from the Arvin City Council, the Wonderful Company, the Cesar E. Chavez National Monument, and the California City City Hall. This coordination was essential for managing logistical arrangements and promoting the meetings through local channels.

Project Ranking Framework

Projects were evaluated by Mark Thomas, the engineering firm overseeing the study, using performance-based criteria that aligned with the study's goals and objectives.

Criteria	Description	Points Possible
Economic & Goods Movement	Supports economic growth & improves freight efficiency	20
Climate Vulnerability	Prioritizes climate adaptation & infrastructure resilience	20
Deliverability	Emphasizes readiness and potential for swift implementation	20
Community Support	Reflects public input & aligns with community needs (Feedback gathered summer 2024)	20
Disadvantaged Communities	Provides direct benefits to disadvantaged and underserved communities	20
TOTAL		**100**

Meeting Summaries

Arvin City Council Chamber – Arvin, May 21

This meeting was conducted in-person and virtually in a hybrid format. The meeting provided participants with an opportunity to provide feedback on the KARGO Community Prosperity/Protections Study, 2026 Regional Transportation Plan, and Sustainable Communities Strategy. Twenty-five (25) participants attended in person and online from various interest areas in the community, including the City of Arvin, Caltrans, a member of the Arvin City Council, and various community-based organizations. Feedback was provided for a series of projects, but most of the community's interest was on project 1 (Arvin/Maricopa/Taft Greenpass Network) and project 5 (Lamont/SE Bakersfield Greenpass Network). Common concerns included traffic signals and commercial trucks.

Wonderful Company – Shafter, May 22

This meeting was conducted in-person and virtually in a hybrid format. The meeting provided participants with an opportunity to provide feedback on the KARGO Community Prosperity/Protections Study, 2026 Regional Transportation Plan, and Sustainable Communities Strategy. Twenty-one (21) participants attended from various interest areas in the community, including the Shafter community, Caltrans, and Wonderful Company staff. Feedback was provided across projects near Shafter, but most of the community's interest was on project 7 (NW Bakersfield Greenpass Network). Feedback was varied with no clear primary concern.

Cesar E. Chavez National Monument – Keene, May 27

This meeting was conducted in-person and virtually in a hybrid format. The meeting provided participants with an opportunity to provide feedback on the KARGO Community Prosperity/Protections Study, 2026 Regional Transportation Plan, and Sustainable Communities Strategy. Fourteen (14) participants attended from various interest areas in the community, including Caltrans. Participants gave feedback on projects 1, 2, and 8. Most of the community focus was on project 2 (SR 58 Tehachapi Grade Improvements). Feedback was varied with no clear primary concern.

City of California City Hall – California City, May 28

This meeting was conducted in-person and virtually in a hybrid format. The meeting provided participants with an opportunity to provide feedback on the KARGO Community Prosperity/Protections Study, 2026 Regional Transportation Plan, and Sustainable Communities Strategy. Seventeen (17) participants attended from various interest areas in the community, including Caltrans. Participants gave feedback on projects 2, 6, 7, 8, and 12. Most of the community focus was on project 12 (California City BL Extension to EAFB North Gate Safety Corridor). Potholes were the top concern among participants.

Virtual Makeup Workshops – Via Zoom, June 2-4

These meetings were conducted virtually on Zoom. The meeting provided participants with an opportunity to provide feedback on the KARGO Community Prosperity/Protections Study, 2026 Regional Transportation Plan, and Sustainable Communities Strategy. There was a collective of three (3) participants across the virtual workshops. No feedback was provided, but attendees had a variety of questions that were answered during the workshops. Most questions were centered around commercial truck concerns and flooding concerns.

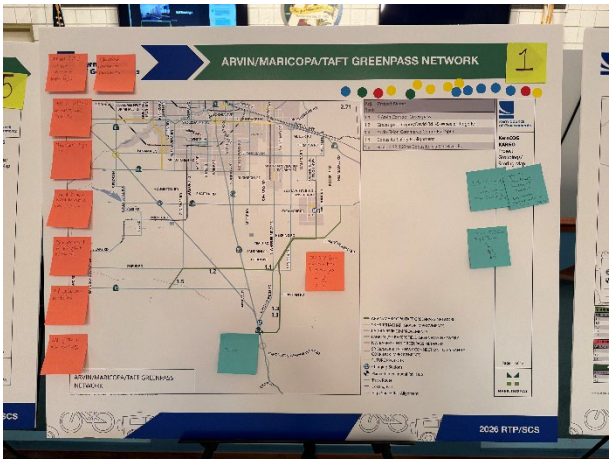
Attendees

The below provides a summary of total attendees for the hybrid and virtual workshops.

Location	In-person	Virtual
Arvin City Council Chamber – Arvin	17	8
Wonderful Company – Shafter	12	9
Cesar E. Chavez National Monument – Keene	8	6
City of California City Hall – California City	12	5
Virtual Workshop #1		2
Virtual Workshop #2		0
Virtual Workshop #3		1

Written and Verbal Comments Received

The table below is a summary of comments received at in person workshops. The comments were either written on comment cards or included as Post-it note comments placed on the boards. Attendees were also given the option of emailing further comments after the workshops. Where possible, the board in question is indicated below. In addition to Post-it notes, attendees were provided with stickers to place on boards they considered priority items. The sticker tallies can be found under the Boards Feedback section.



Workshop Location	Board Name	Comment
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Walnut & 223 need more lighting and traffic light
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Education campaign on roundabouts
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Add a light signal on Varsity and Comanche
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Prefer traffic light +1
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Like that train would be outside of City of Arvin
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Place intermodal rail hub outside of the city
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Rail system must be electric
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Add lighting to major roadways
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Move 223 from downtown Arvin to greenpass +8 +1
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Prefer 4-way stop traffic signal rather than roundabout
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Open to roundabouts by end of workshop. More education on intention and benefits of roundabouts are needed
Arvin	Board 1 Arvin/Maricopa/Taft Greenpass Network	Arvin - workshop comments. Project priorities 1, 5, 4

Arvin (Virtual)	Board 2 SR 58 Tehachapi Grade Improvements	Division between 223 and 58 gets really hectic at Clearcreek. Are you looking at any expansions? People tend to use 58 as an alternative route when 99/Grapevine have issues. The area turns into 2 lanes and gets backed up quickly when there is bad weather. Add reflectors as safety measure and have signals during harsh weather
Arvin	Board 2 SR 58 Tehachapi Grade Improvements	Good idea to add overpass
Arvin	Board 2 SR 58 Tehachapi Grade Improvements	2.4 Interpretive Center - great idea
Arvin	Board 2 SR 58 Tehachapi Grade Improvements	Project 2 underpass - great idea
Arvin	Board 2 SR 58 Tehachapi Grade Improvements	Project 2 truck passing lane - great idea
Arvin	Board 2 SR 58 Tehachapi Grade Improvements	Deer Creek (division between 223 and 58) needs expansion and safety measures
Arvin (Virtual)	Board 4 I-5 Grapevine Improvements	Are they doing anything beyond truck safety lanes for Lebec? Fires and rockslides frequently block and damage the roads. Are you considering weather as a factor?
Arvin	Board 4 I-5 Grapevine Improvements	Good idea to move truck weigh station
Arvin	Board 4 I-5 Grapevine Improvements	Are you considering weather and rock falls?
Arvin (Virtual)	Board 5 Lamont/SE Bakersfield Greenpass Network	Are we considering flooding for Lamont? What's the alternative road for that?
Arvin	Board 5 Lamont/SE Bakersfield Greenpass Network	Widen existing roundabouts
Arvin	Board 5 Lamont/SE Bakersfield Greenpass Network	Good idea to move truck traffic out of city center
Arvin	Board 5 Lamont/SE Bakersfield Greenpass Network	Blue pass is good
Arvin	Board 5 Lamont/SE Bakersfield Greenpass Network	Add traffic signal at Sunset and Rockpile Rd.
Arvin	Board 5 Lamont/SE Bakersfield Greenpass Network	Improve visibility for traffic traveling NE on Sunset toward Rockpile Rd.

Arvin	Board 5 Lamont/SE Bakersfield Greenpass Network	How will you mitigate flooding zones?
Arvin (Virtual)	Board 7 NW Bakersfield Greenpass Network	Is there a plan to detour truck routes along routes like 7 Standard Rd. or Cherry Ave. so they don't pass through residential areas?
Arvin	Board 7 NW Bakersfield Greenpass Network	Are there plans to reroute truck routes away from residential areas?
Arvin	Comment Card	Great idea!
Arvin	Comment Card	Helps alleviate accidents currently at very dangerous intersection
Arvin	Comment Card	Great idea to reduce traffic/pollution!
Shafter	Board 1 Arvin/Maricopa/Taft Greenpass	Place inter-modal rail hub outside of the city
Shafter (Virtual)	Board 7 NW Bakersfield Greenpass Network	How are you factoring in statutes enacted through AB 98? Regarding truck routes: have you identified the number of overpasses?
Shafter	Board 7 NW Bakersfield Greenpass Network	SR43 traffic congestion is not safe for peds/bicyclists. Cherry Ave. - top votes
Shafter	Board 7 NW Bakersfield Greenpass Network	I-84 roundabout
Shafter	Board 7 NW Bakersfield Greenpass Network	In favor of 2-way lanes
Keene	Board 1 Arvin/Maricopa/Taft Greenpass Network	I would want the highway option
Keene	Board 1 Arvin/Maricopa/Taft Greenpass Network	If bicycle lane is added to the roads, please have road signs ahead of all the road
Keene	Board 2 SR 58 Tehachapi Grade Improvements	Collective/collaboration presentation with "Nature Conservatory" and impacts from Arvin - Tehachapi
Keene	Board 2 SR 58 Tehachapi Grade Improvements	Numbers/data train upgrades vs. trade routes upgrades. Take into account train robberies
Keene	Board 2 SR 58 Tehachapi Grade Improvements	Road improvements priority b/c 5 Rd. become truck route and road are terrible

Keene	Board 2 SR 58 Tehachapi Grade Improvements	Erosion under the shoulder of the Woodland Tehachapi Road about where it goes under HW 58
Keene	Board 2 SR 58 Tehachapi Grade Improvements	The location of 2.4 might be less accessible because of the large amounts of trailers on that lane
Keene	Board 8 Rosamond Greenpass Network	I like the improvements to 10th St. West. I also appreciate that the sewage treatment plant would not be impacted. Community wanted road access for a long time
Keene (Virtual)	Board 8 Rosamond Greenpass Network	Important connection and priority for the community
California City	Board 2 SR 58 Tehachapi Grade Improvements	From Bakersfield 58 is the most important, Because of the trucks entering and leaving
California City	Board 2 SR 58 Tehachapi Grade Improvements	From Bakerfield to Tehachapi absolutely need 3 lane. East Bound I've seen (XX) get squished passing trucks. WILD
California City	Board 2 SR 58 Tehachapi Grade Improvements	Clear freeway when it snows
California City	Board 6 US 395 Goods Movement/Safety Improvements	Highest priority
California City	Board 6 US 395 Goods Movement/Safety Improvements	Make 395 four lanes period
California City	Board 7 NW Bakersfield Greenpass Network	Roundabouts: Navigating, lighting, additional lighting highway, wider lanes (2-lanes)
California City (Virtual)	Board 8 Rosamond Greenpass Network	Willow Springs-Tehachapi Road is often used by truck drivers to bypass weigh scales. This project may encourage more trucks to go bypass and go through Tehachapi
California City	Board 8 Rosamond Greenpass Network	Raise profile 2' due to flooding
California City	Board 12 California City BL Extension to EAFB North Gate Safety Corridor	Hyundai employees may be inconvenienced
California City	Board 12 California City BL Extension to EAFB North Gate Safety Corridor	Potholes, Fuchsia Ave. BTW Corwin and 90
California City	Board 12 California City BL Extension to EAFB North Gate Safety Corridor	Yerba Blvd. pothole
California City	Board 12 California City BL Extension to EAFB North Gate Safety Corridor	Yerba Blvd. and California City trim trees. Trees are very low

California City	Board 12 California City BL Extension to EAFB North Gate Safety Corridor	88th St. & Airway St. Neuralia Rd. streets are very damaged. Many holes and please fix
California City	Board 12 California City BL Extension to EAFB North Gate Safety Corridor	Potholes. South side walks. South Loop and Nipa Ave.

Written and Verbal Comments Received in Person Summary

Arvin

Public feedback from the Arvin workshop identified priorities such as improved lighting and traffic signals at major intersections (5). There was strong support for relocating Highway 223 from downtown Arvin to Greenpass (9) and calls to move the intermodal rail hub outside the city (2). While roundabouts received mixed reactions, participants expressed openness with more education (2). Safety concerns related to weather impacts (2) and truck traffic (4) were raised frequently. Several participants supported specific project proposals, including underpasses, overpasses, and truck lanes, and called for rerouting truck traffic away from residential areas.

Shafter

The Shafter workshop's input included five individual comments addressing safety, infrastructure, and planning considerations. One participant recommended locating the intermodal rail hub outside the city to reduce urban impacts. Another questioned how truck route planning is accounting for legal requirements under AB 98 and the number of overpasses. One comment highlighted safety concerns for pedestrians and bicyclists due to traffic congestion on SR 43, particularly near Cherry Avenue. A single participant supported the addition of a roundabout at I-84, while another expressed support for implementing two-way lanes. Each comment reflects a unique perspective on transportation improvements.

Keene

Public feedback from the Keene workshop was varied with no consensus on Keene's priorities. One comment emphasized the importance of prioritizing highway improvements. Another focused on road conditions, especially where roads are heavily used by freight traffic. One participant supported adding bike lanes with proper signage and highlighted the need for collaboration with environmental organizations to assess regional impacts. Concerns were raised about erosion along Woodland Tehachapi Road, accessibility issues due to trailer congestion, and the need to compare rail and trade route upgrades. A community member expressed support for planned improvements on 10th Street West, valuing both enhanced access and minimal disruption to existing infrastructure. Overall, improving key connections and addressing road safety and usability remain top community priorities.

California City

Community feedback from the California City workshop highlights priorities focused on truck concerns (3), lane expansion (3), and road maintenance (5). Highway 58 and Highway 395 were directly identified as corridors in need of attention. Weather concerns were also emphasized, highlighting snow and flooding concerns (2). Overall, the need for improved infrastructure and proactive planning was a consistent theme.

Virtual Workshop Feedback

The following are summaries of the group discussions that occurred during the virtual workshops during the makeup virtual workshops.

Northwest Kern County Comment/Questions
None received.
Southwest Kern County Comment/Questions
None received.
East Kern County Comment/Questions
Are the land use assumptions already established in the RTP?
Is there an analysis of funding mechanism?
Is there a scenario in which developers/business owners fund these projects?
Does this study include an analysis of how the projects' development will impact local government's ability to maintain other roads?
Does the RTP EIR also count for projects on the unconstrained list that do not have funding?

Virtual Workshop Comments Summary

Although feedback was not provided, attendees had a variety of questions that were answered during the workshops. Most questions focused on commercial truck concerns and flooding concerns.

Digital Survey Feedback

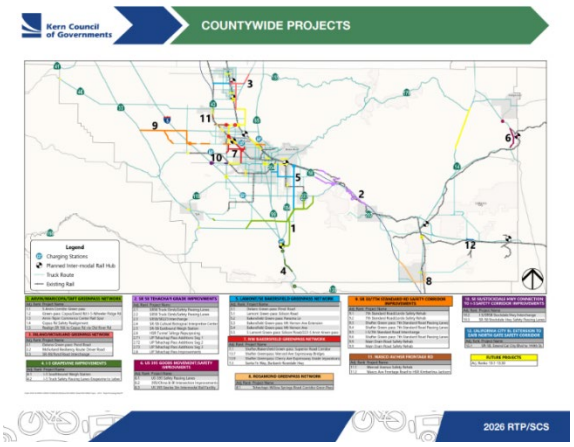
A digital survey was made available for participants who wanted to provide additional feedback on the project. The survey was hosted on the Kern COG website, but no submissions were received.

Feedback on Display Boards

<u>Overview Board – Countywide Projects</u>

The comments from the Arvin workshop prioritized projects 1, 5, and 4. There were inquiries regarding how the AB 98 statutes are being considered, particularly in relation to truck routes and their proximity to sensitive receptors. Questions were raised about the existing overpasses and grade separations at Lerdo Highway. Participants suggested implementing an educational campaign about roundabouts. There is a recommendation to improve lighting and traffic signals at the intersection of Walnut and Highway 223, as well as to add a signal at the intersection of Varsity and Comanche. A preference for traffic lights has been expressed. Support was voiced for relocating the train station outside the City of Arvin and establishing an intermodal rail hub in the area, with an emphasis on utilizing electric rail systems. Additionally, there is a call for improved lighting on major roadways and a proposal to move Highway 223 away from downtown Arvin to Green Pass.

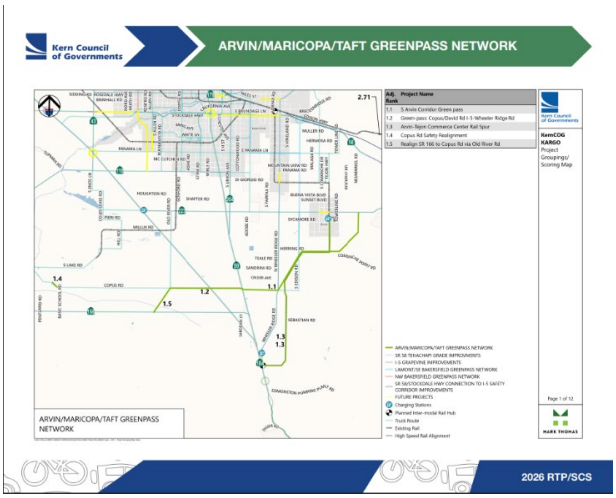
Priority Projects: # 1, 4, 5



Board 1 – Arvin/Maricopa/Taft Greenpass Network (19 priority stickers)

Participant comments on the Arvin/Maricopa/Taft Greenpass Network reveal community priorities in transportation safety. There is significant concern over roadway safety, with multiple comments asking for improved lighting and light signals, particularly at intersections like Walnut & 223 and Varsity & Comanche. There is a clear preference for traffic lights over roundabouts. However, participants weren't entirely against roundabouts. They believe roundabouts would become a viable option if there was better education on how to properly drive through one. Bicycle safety is also a priority, with requests for clear road signage accompanying any new bike lanes. Outside of safety concerns, some comments also show a preference for electric rail systems and the placement of an intermodal rail hub outside the city to reduce urban congestion. Overall, the feedback highlights priorities such as improved road infrastructure, safer intersections, and sustainable transportation solutions.

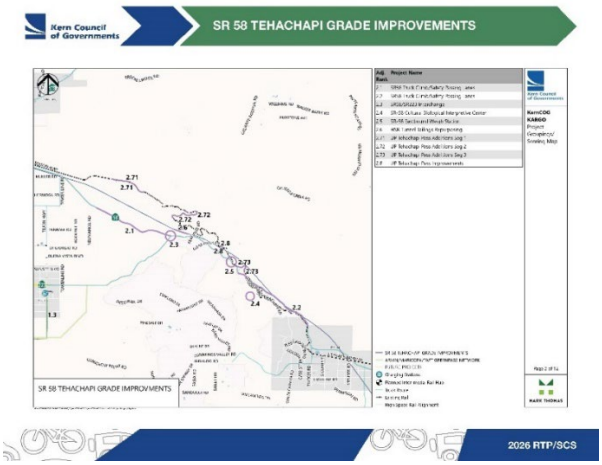
Priority Projects: 1.1, 1.2, 1.3



Board 2 – SR 58 Tehachapi Grade Improvements (6 priority stickers)

Participants indicated the interpretive center for Project 2 as a good idea, along with an underpass and a truck passing lane for the same project. Deer Creek, located between Highways 223 and 58, needs to be expanded and made safer. They suggested working with the Nature Conservancy to discuss environmental impacts between Arvin and Tehachapi. They also emphasized the need to analyze data on train system upgrades compared to improvements in trade routes, especially regarding train robberies. Improving roads is a priority because 5th Road has become heavily used as a truck route, and its condition is deteriorating. Additionally, erosion under the shoulder of Woodland Tehachapi Road near Highway 58 needs attention. The location for the interpretive center (2.4) may not be easily accessible because of the many trailers using that lane. From Bakersfield, Highway 58 is the main route due to the high number of trucks accessing it. The road from Bakersfield to Tehachapi requires expansion to three lanes in the eastbound direction. One participant reported witnessing several close calls when vehicles attempted to pass trucks, which raises serious concerns.

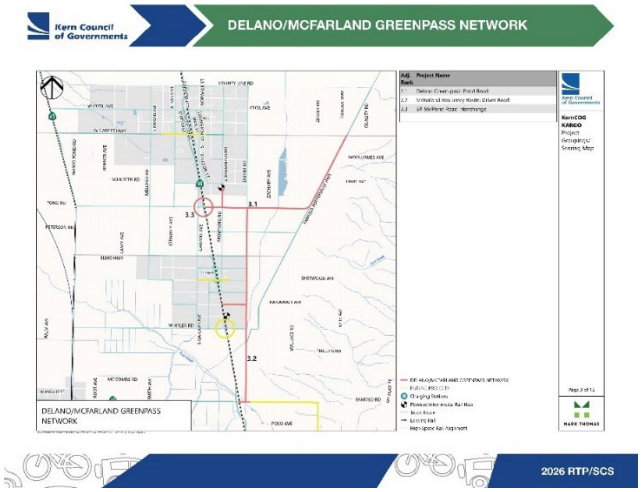
Priority Projects: 2.1, 2.3



<u>Board 3 – Delano/McFarland Greenpass Network</u> (3 priority stickers)

There was little discussion on the Delano/McFarland Greenpass Network, but several participants ranked it as a priority project.

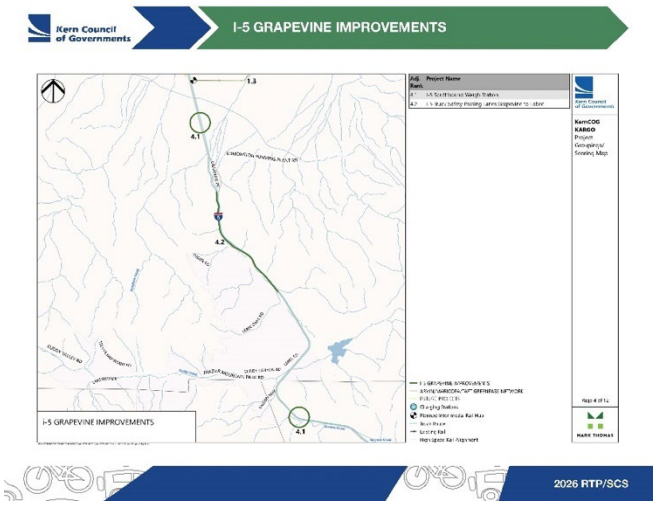
Priority Projects: 3.1



Board 4 – I-5 Grapevine Improvements (0 priority stickers)

I-5 Grapevine Improvements had little interest among attendees. Although it was not ranked as a high-priority project, one comment noted that the I-5 Southbound Weigh Station (4.1) was well received. Other participants had concerns about the weather and rockslides.

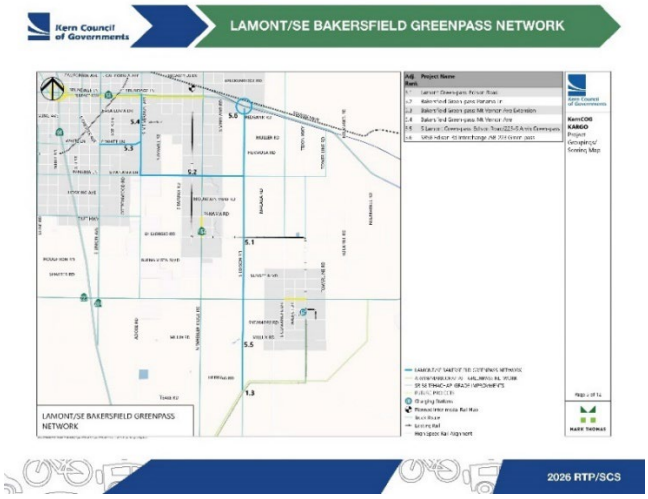
Priority Projects: None Noted



Board 5 – Lamont/SE Bakersfield Greenpass Network (3 priority stickers)

The comments indicate support for traffic flow improvements and safety enhancements, such as widening existing roundabouts and installing a traffic signal at the Sunset and Rockpile Road intersection. There is agreement on the benefit of redirecting truck traffic away from city centers. A participant also highlighted visibility issues for northeast-bound traffic on Sunset toward Rockpile. Additionally, there is concern about how the project will address areas prone to flooding.

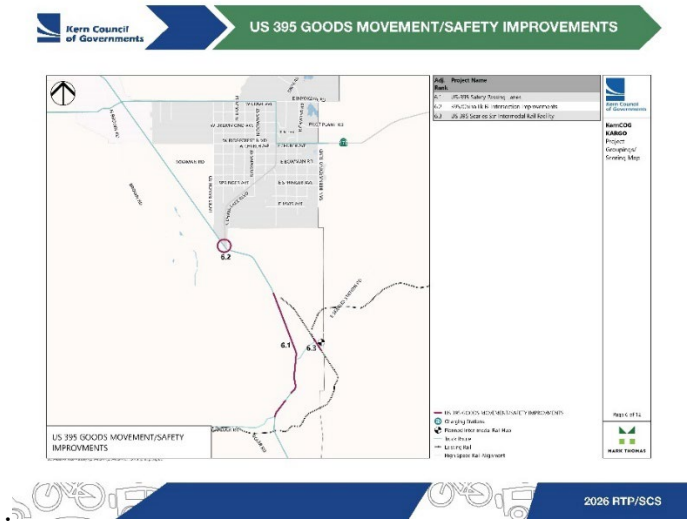
Priority Projects: 5.1, 5.2



Board 6 – US 395 Goods Movement/Safety Improvements (1 priority sticker)

The US 395 Goods Movement/Safety Improvements project was the subject of only limited discussion and was addressed primarily during the California City workshop. One attendee indicated the project as a priority. Another comment took a firm stance on the expansion of US-395 to four lanes

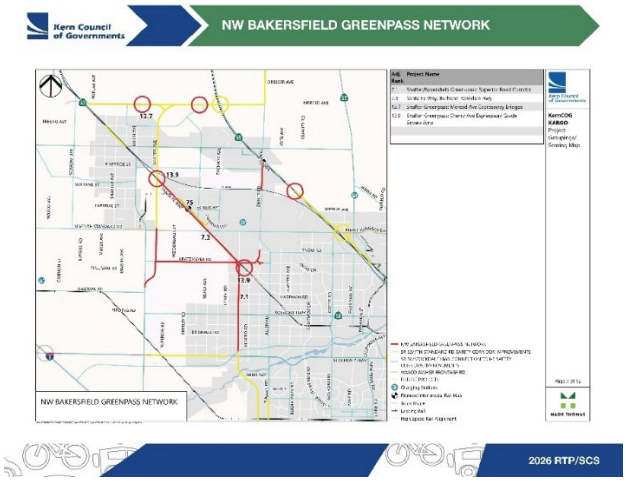
Priority Projects: 6.1



Board 7 – NW Bakersfield Greenpass Network (5 priority stickers)

The North West Bakersfield Greenpass Network was prioritized by several attendees, particularly in the Shafter workshop. Comments highlight a robust emphasis on safety measures, particularly concerning traffic flow management, road lighting infrastructure, and the protection of pedestrians and cyclists. One attendee expressed concerns about the safety of truck routes passing through residential areas and asked about the possibility of rerouting truck traffic away from neighborhoods. It is important to note that SR 43 is considered to be a particularly hazardous route for pedestrians and cyclists. Cherry Avenue has been identified as a priority for improvements. Participants expressed a broadly favorable view on roundabouts, emphasizing the necessity for enhanced navigation, sufficient lighting, and the incorporation of two-lane designs to optimize traffic flow. The addition of lighting on Lerdo Highway between I-5 and Highway 99 is also suggested to enhance visibility and safety. Overall, safety remains the top priority, along with better infrastructure and traffic management.

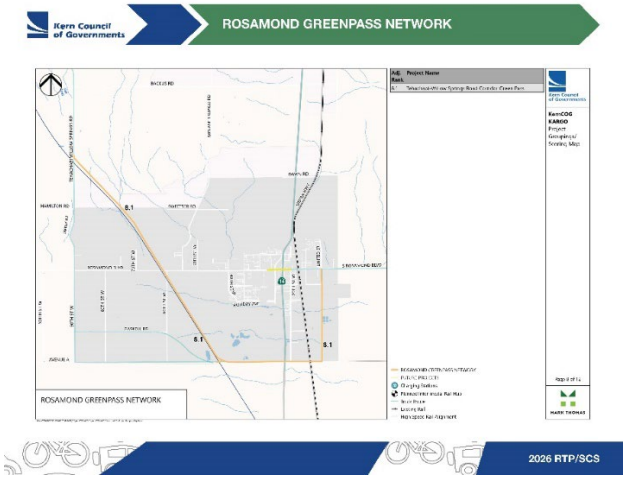
Priority Projects: 13.7



Board 8 – Rosamond Greenpass Network (2 priority stickers)

Comments indicate support for the Tehachapi-Willow Springs Road Corridor Green Pass, with one participant expressing appreciation for the measures taken to minimize negative impacts. The enhancements to 10th Street West are appreciated, particularly because they improve road access without affecting the sewage treatment plant. While the project has met with general approval, concerns have been raised that improvements to Willow Springs-Tehachapi Road might unintentionally lead to an increase in truck traffic through Tehachapi, driven by drivers seeking to bypass weigh stations. In terms of flood mitigation, the proposal includes raising the roadway by two feet. Furthermore, a proposal has been made for the installation of a protected bus stop with restroom facilities along SR 14 through Mojave.

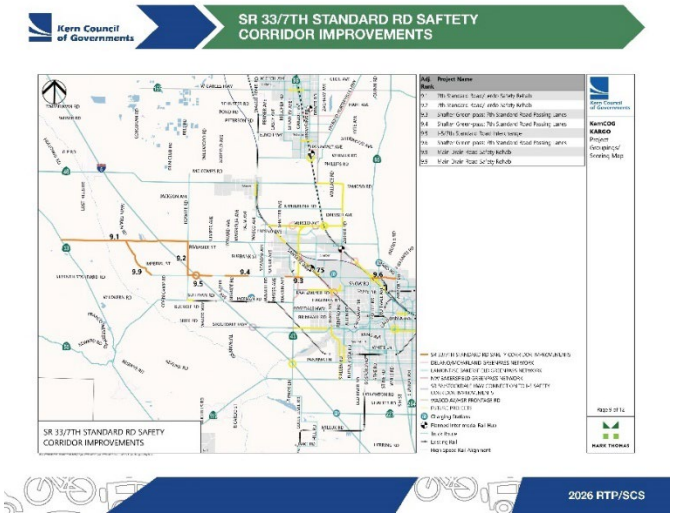
Priority Projects: 8.1



Board 9 – SR 33/7th Standard Rd Safety Corridor Improvements (1 priority sticker)

There was no discussion on SR 33/7th Standard Rd Safety Corridor Improvements. One participant indicated the project as a priority.

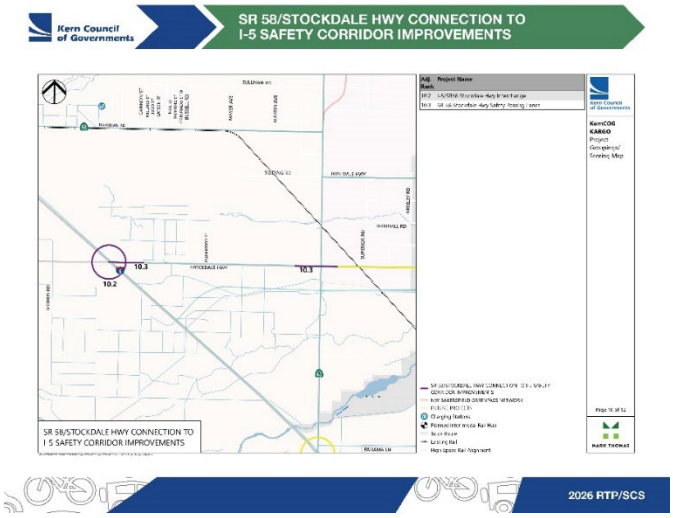
Priority Projects: None



Board 10 – SR 58/Stockdale HWY Connection to I-5 Safety Corridor Improvements (3 priority stickers)

Participants did not comment on the SR 58/Stockdale Highway Connection to the I-5 Safety Corridor Improvements. However, two attendees identified the project as a priority.

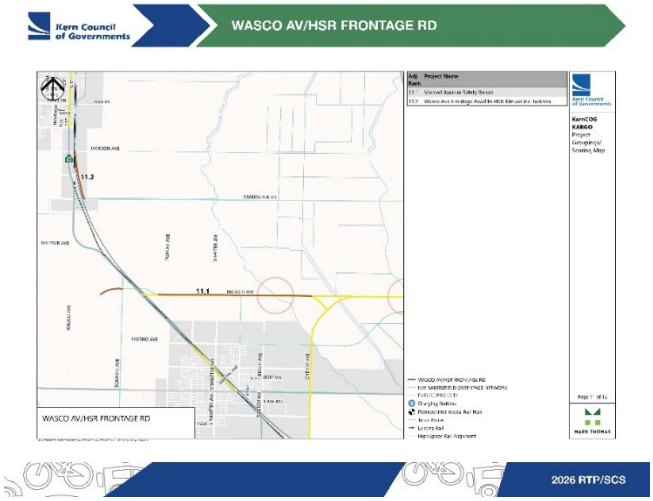
Priority Projects: 10.2, 10.3



Board 11 – Wasco AV/HSR Frontage Rd (0 priority stickers)

There was minimal discussion about the Wasco AV/HSR Frontage Road. However, one attendee noted that the Merced Avenue Safety Rehabilitation (11.1) would benefit the residents of Wasco. Another attendee emphasized the importance of routing trucks away from communities, especially during the harvest season.

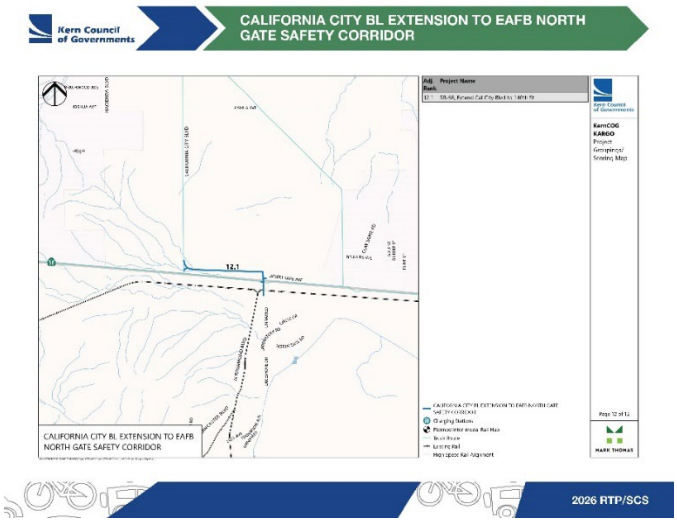
Priority Projects: None



Board 12 – California City BL Extension to EAFB North Gate Safety Corridor (8 priority stickers)

The comments regarding the California City BL Extension to the EAFB North Gate Safety Corridor highlight a widespread concern about poor road conditions and maintenance issues that impact both safety and accessibility. Many locations, including Fuchsia Avenue, Yerba Boulevard, and streets such as 88th, Airway, and Neuralia Road, have been reported to have significant potholes and surface damage that create dangerous driving conditions. Additionally, there are requests for sidewalk repairs, particularly along South Loop and Nipa Avenue. One participant mentioned the excessive trimming of trees along Yerba Boulevard and California City. Another comment noted that Hyundai employees may face inconveniences due to these conditions. Overall, the feedback emphasizes the need for road repairs, tree maintenance, and sidewalk improvements to enhance safety in the corridor.

Priority Projects: 12.1



Appendix

[Pending]

###

Kern Council of Governments

KARGO – Kern Area Regional Goods Movement and Operations

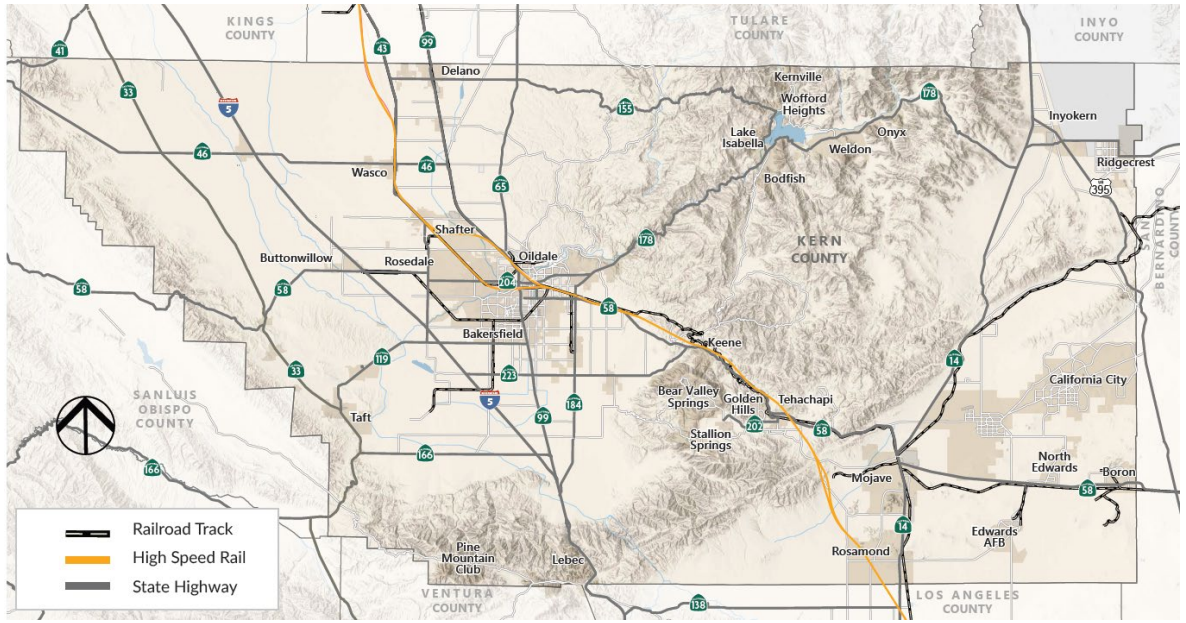
Community Prosperity/Protection Study

Transportation Technical Advisory Committee
May 2026

Kern Council of Governments

Community Prosperity/Protection Study

Purpose:
Evaluates the County's transportation network's durability in extreme weather events, identifies improvements to strengthen the transportation system, and identifies funding opportunities for these proposed projects.



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Community Prosperity/Protection Study

Project Benefits:

- Attracts high-paying, high-tech industries like logistics
- Maintains and improves roadways
- Enhances air quality and safety
- Builds resilience in the face of climate events



Kern Council of Governments

Project Outcomes/Benefits

These projects will help Kern County by…

- Ensuring high paying jobs in our region by attracting new high-tech industries, like logistics
- Finding funding solutions for transportation improvements
- Maintaining our roadways
- Ensuring safety, especially on rural highways
- Keeping our transportation system reliable in the face of more extreme weather events
- Identifying improvements that will continue to improve air quality



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Project Development Process

Technical Analysis & Climate Risk Assessment

Project Concept Development

6 workshops held countywide

Project Prioritization Analysis

7 workshops held countywide

Preliminary Project Design & Cost Estimates

Draft & Final Study

Kern Council of Governments

Network Improvement Types

- **Safety Goods Movement Corridors** - Focus on improving truck and freight routes to enhance safety, reliability, and infrastructure durability to better accommodate heavy vehicles while reducing collision risk and roadway damage (e.g. pavement, intersection and interchange upgrades, operational safety enhancements)
- **Green-Pass Networks** - Designed to reroute regional and long-haul truck traffic away from downtown areas and neighborhood streets, and enabling Complete Streets concepts, while reducing noise, emissions, and safety conflicts in disadvantaged and residential areas.





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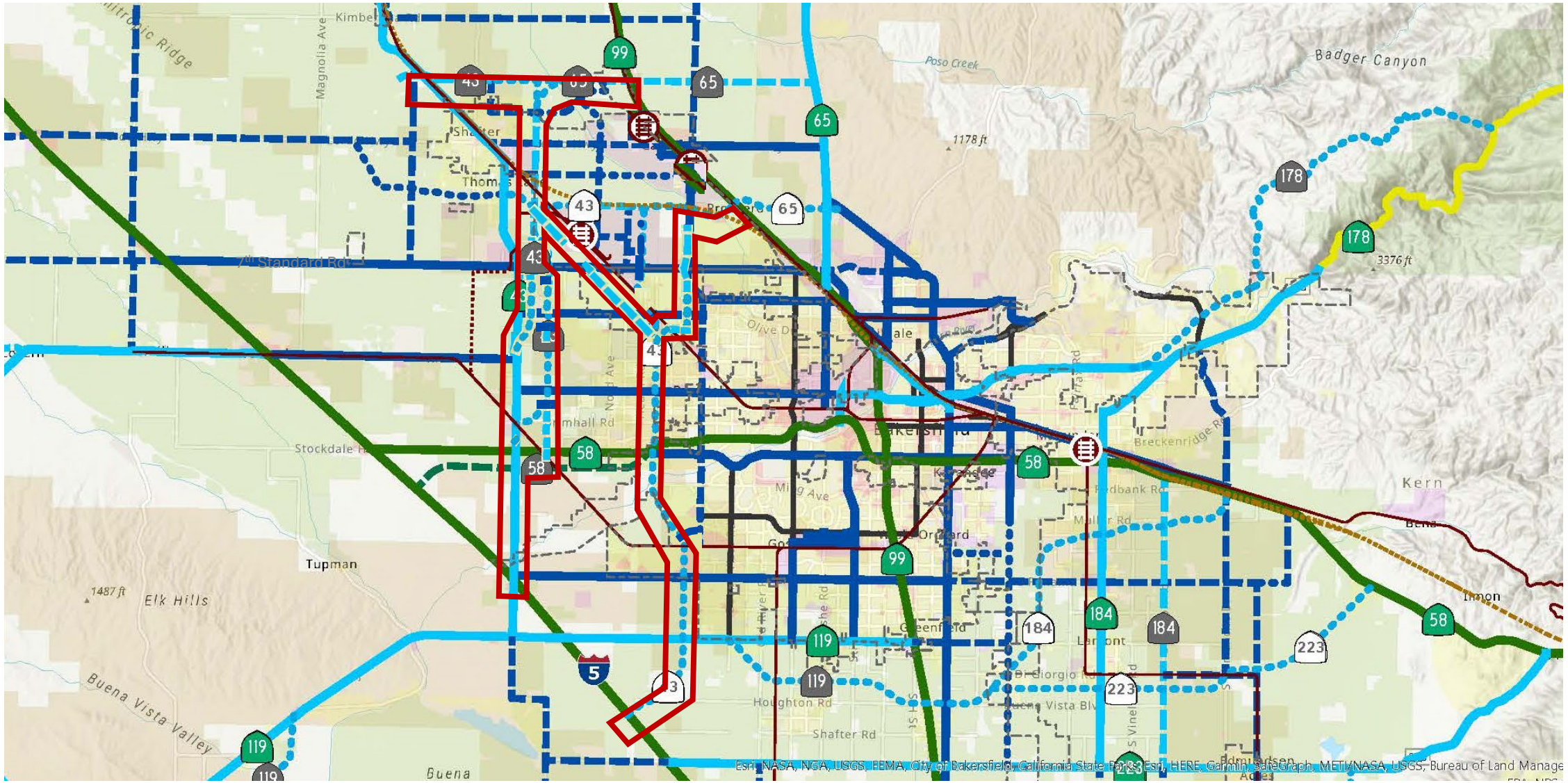
Federal/State STAA and Local Truck Routes – Greenpass Alignments



6 Miles

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Existing	Candidate	Future	
			National Network (STAA)
			State Terminal Access (STAA)
			Local (STAA)

Legal Routes
- 65' CA Legal Route
- 65' CA Legal *KPRA Advisory
- Other Major Local Arterials

Potential Highway Phases
- Existing
- Phase 1
- Phase 2

Rail
- Existing Rail
- Future Rail
- High Speed Rail Alignment

Intermodal Freight Hub
- Existing
- Potential

Combined General Plan Land
- Residential
- Commercial
- Industrial
- Agriculture Production
- Oil Production

W Urban Corridor Greenpass Alignments

Public Engagement – Phase I

Phase I Workshops (in-person, hybrid, and virtual)

- July 24, 2024 – Tehachapi, Cummings Valley Elementary School Cafeteria
- July 29, 2024 – Tejon, Tejon Indian Tribe, Auditorium
- July 30, 2024 – Rosamond, Rosamond Community Services District, Board Room
- August 2, 2024 – Delano, Center for Race, Poverty, and the Environment
- August 14, 2024 – West Kern, West Kern Virtual Workshop
- August 22, 2024 – East Kern, East Kern Virtual Workshop

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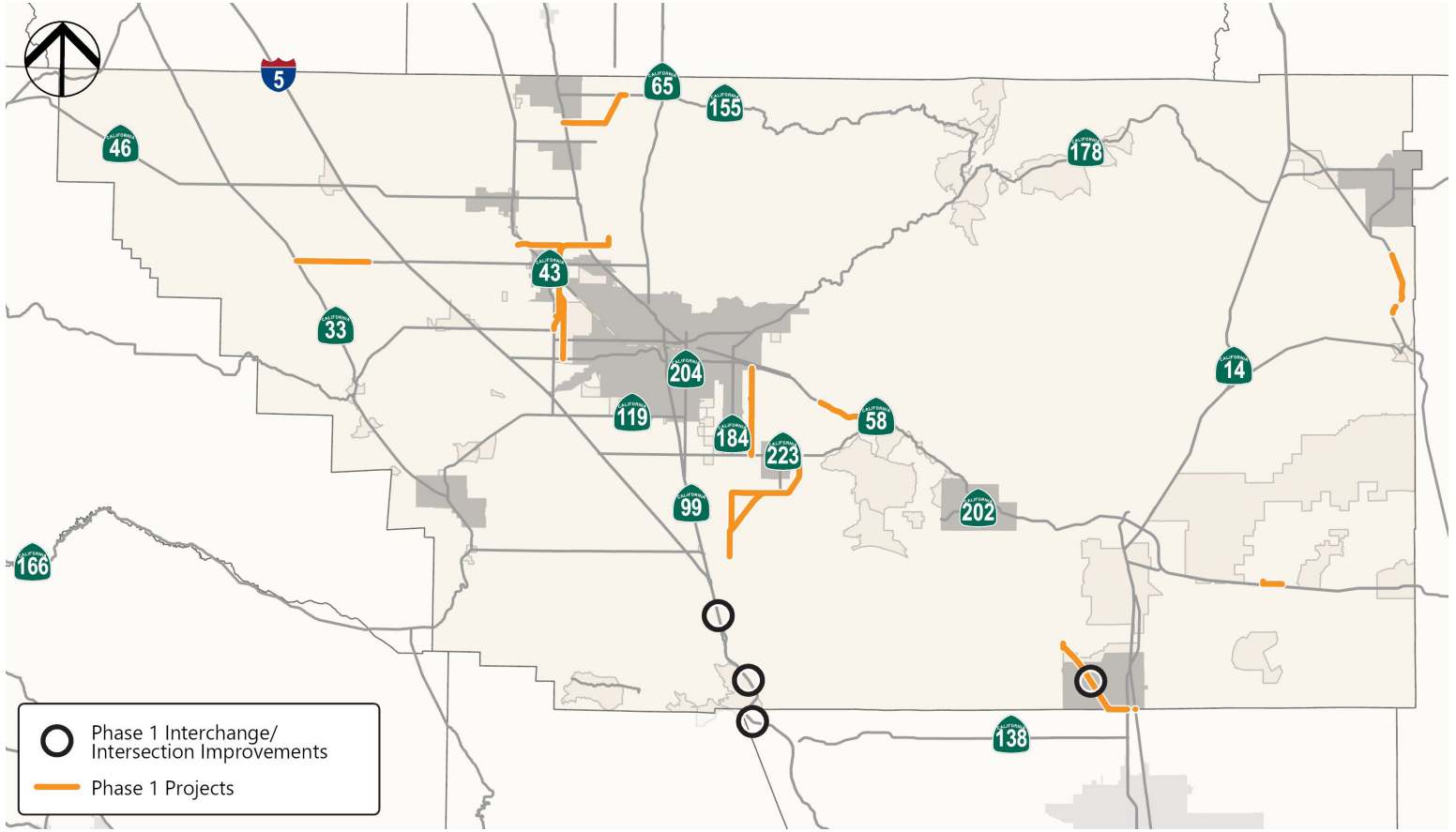
Phase 1 Public Engagement – Identified Priorities

Participants identified priority improvement areas across the region, informing a phased project delivery approach.



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Public Engagement – Phase II

Phase II Workshops (in-person, hybrid, and virtual)

- May 21, 2025 – Arvin, Arvin City Council Chamber
- May 22, 2025 – Shafter, Wonderful Company
- May 27, 2025 – Keene, Cesar E. Chavez National Monument
- May 28, 2025 – California City, City of California City Hall
- June 2, 2025 – Virtual Workshop
- June 3, 2025 – Virtual Workshop
- June 4, 2025 – Virtual Workshop

Kern Council of Governments

North Kern County – Community Priorities

What We Heard

Safety & Infrastructure Improvements
Priorities include improved road connections and safer crossings

Pollution & Truck Traffic
Calls for rerouting heavy trucks away from residential areas and schools

Local Traffic Needs
Emphasis on minimizing disruption to neighborhoods and supporting local traffic rather than through-traffic (e.g., redirecting trucks off roads like SR 43 through the center of Shafter)

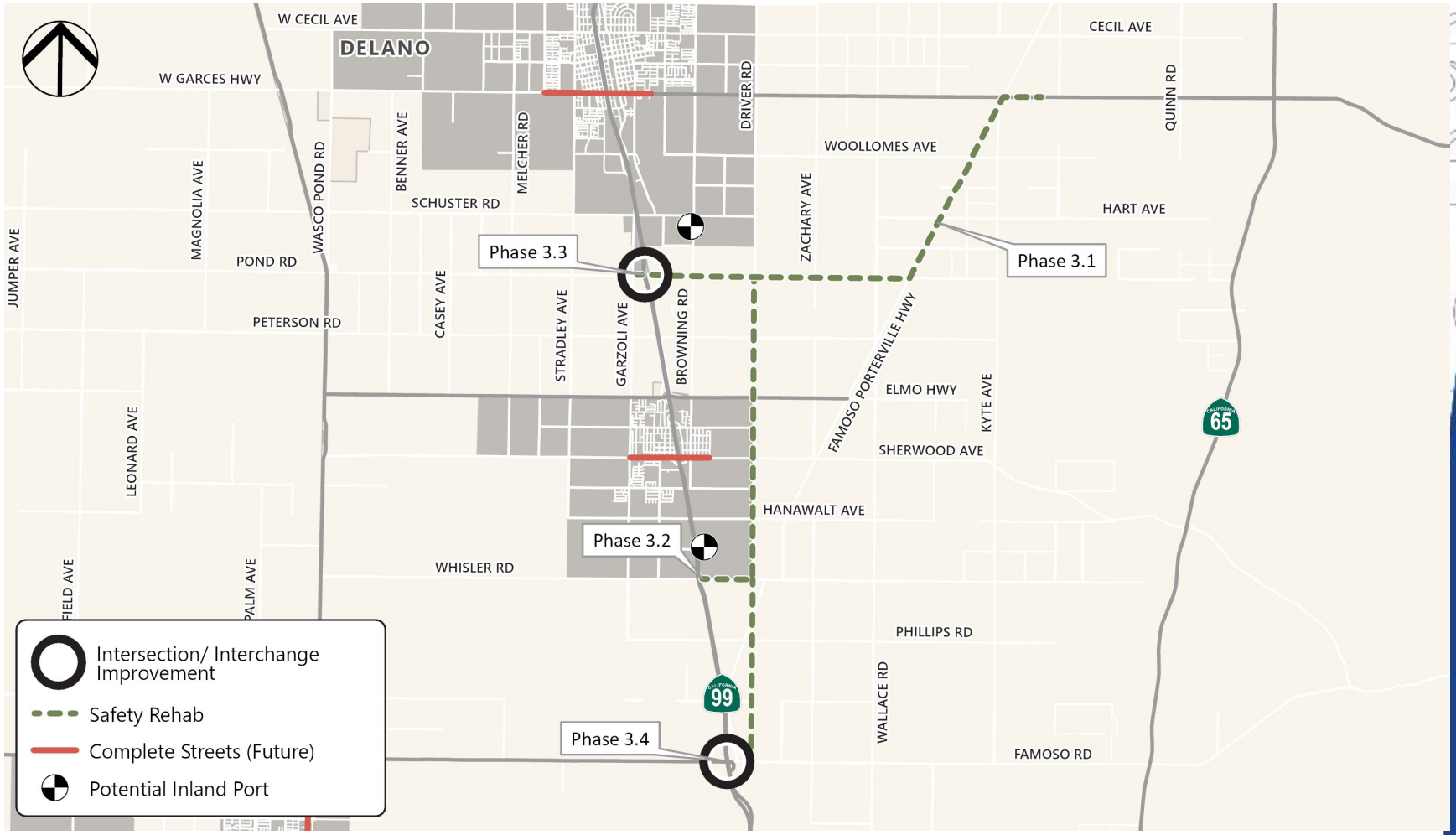
Economic Development
Interest in balancing job creation (especially higher-skilled warehouse jobs) with air quality and community health

Kern Council of Governments

Delano/McFarland Green-Pass Network

What We Are Doing

Realignment and rehabilitation to strengthen east-west mobility, support freight movement, and improve roadway safety.



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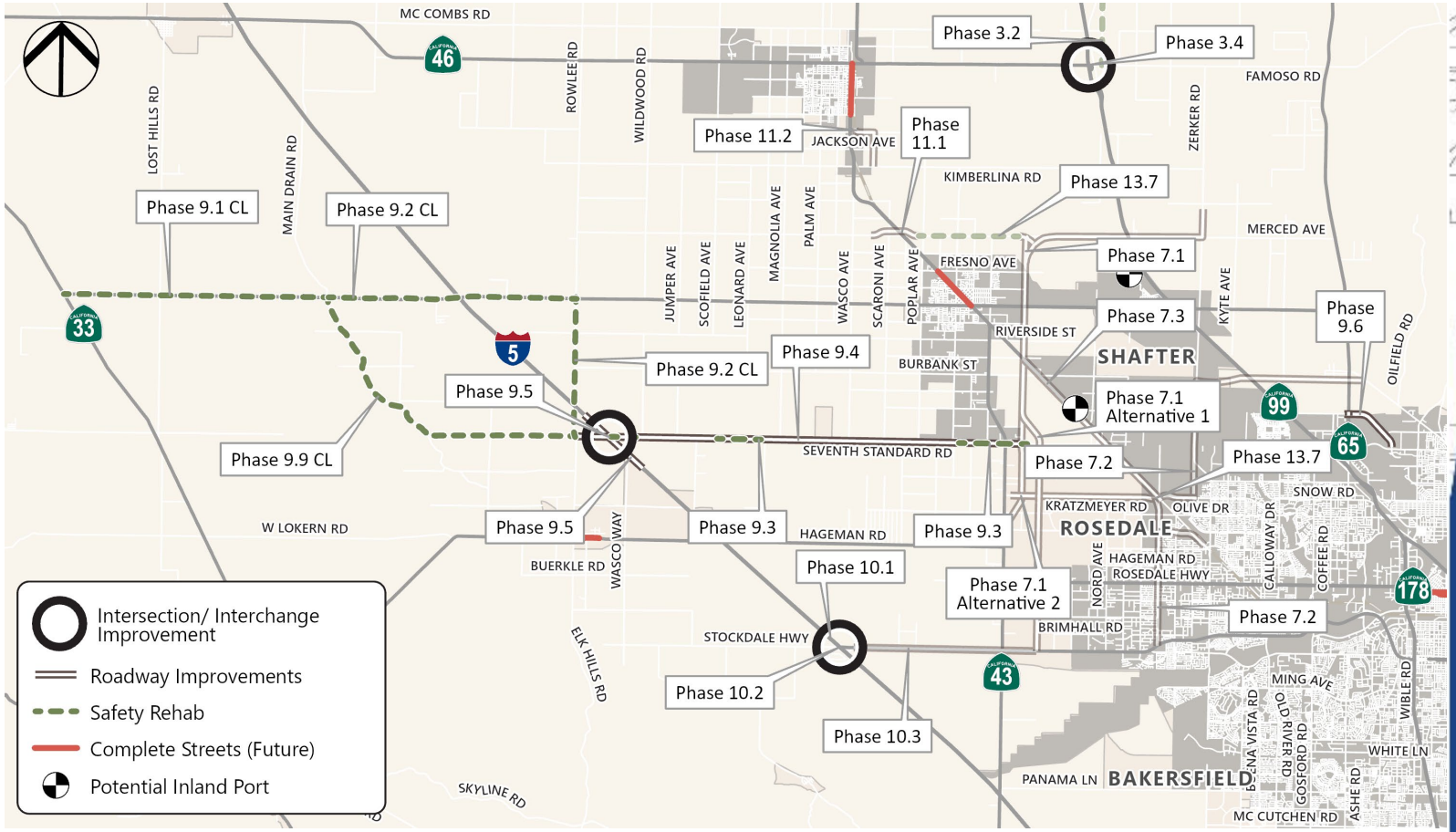
SR 33/7th Standard Rd Safety Corridor

What We Are Doing

Roadway and safety rehabilitation projects totaling over 30 miles of improvements across Lerdo Highway, Rowlee Road, 7th Standard Road, and Main Drain Road in the Shafter and Rosedale areas.



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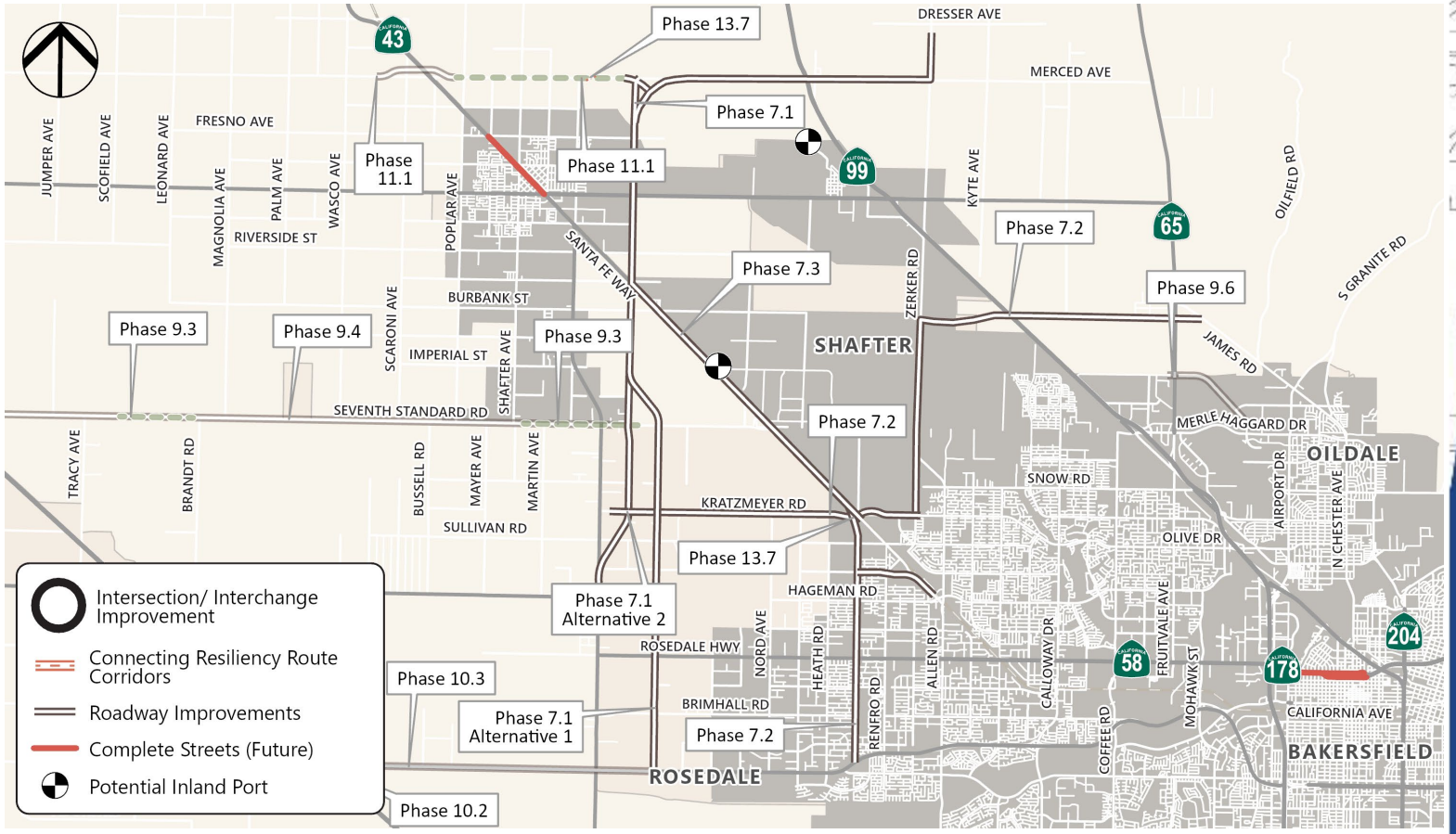
Bakersfield Green-Pass Network

What We Are Doing

The NW Bakersfield Green-Pass Network Program consists of multiple roadway improvement projects totaling over 10.8 miles of new and upgraded corridors to enhance freight mobility, regional connectivity, and community safety.



Kern Council of Governments

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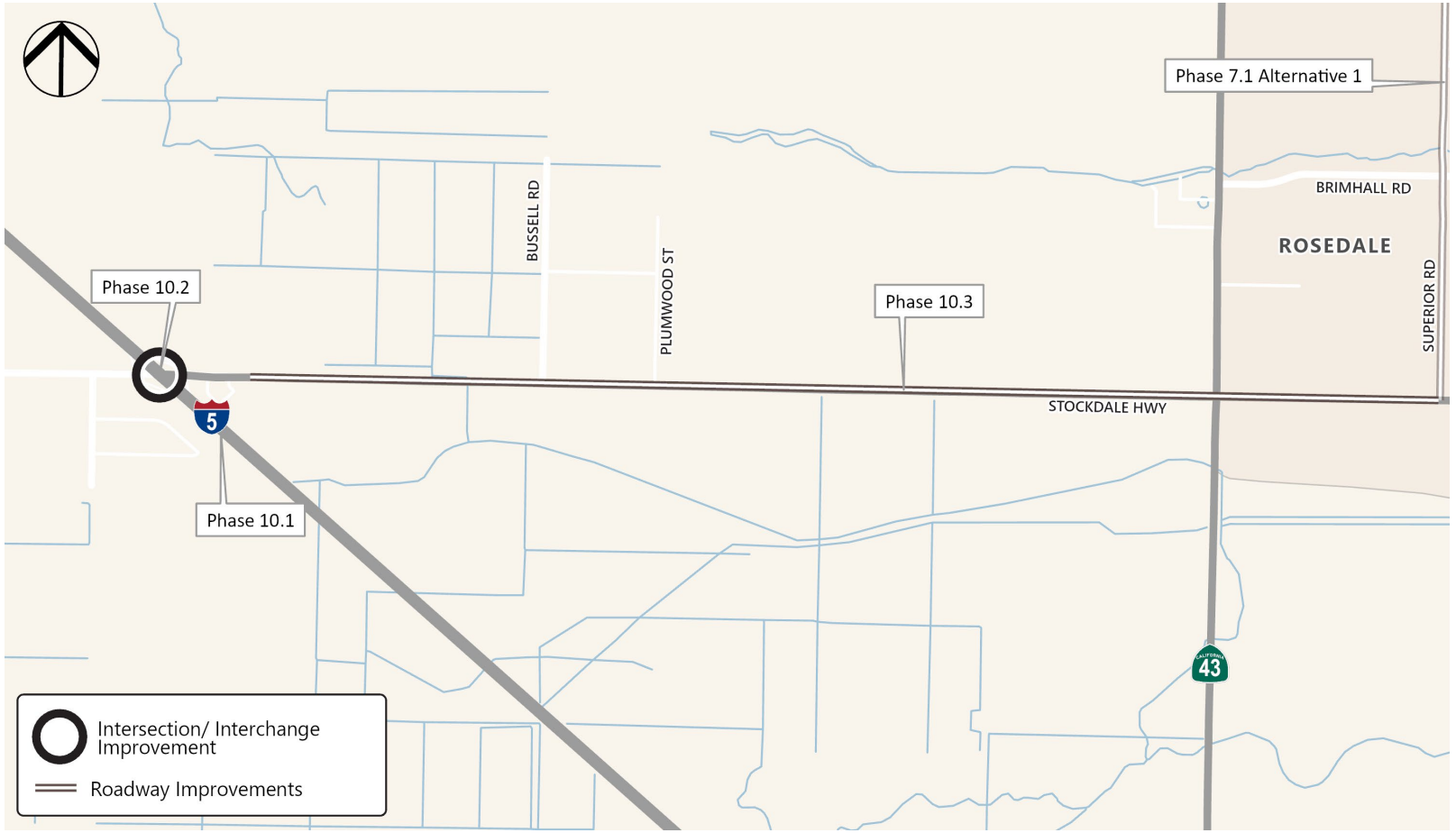
SR 58/Stockdale Hwy Connection to I-5

What We Are Doing

Improving safety and traffic flow along the I-5/SR-58 corridor. These upgrades will reduce congestion, improve safety, and support efficient freight movement through this key corridor.



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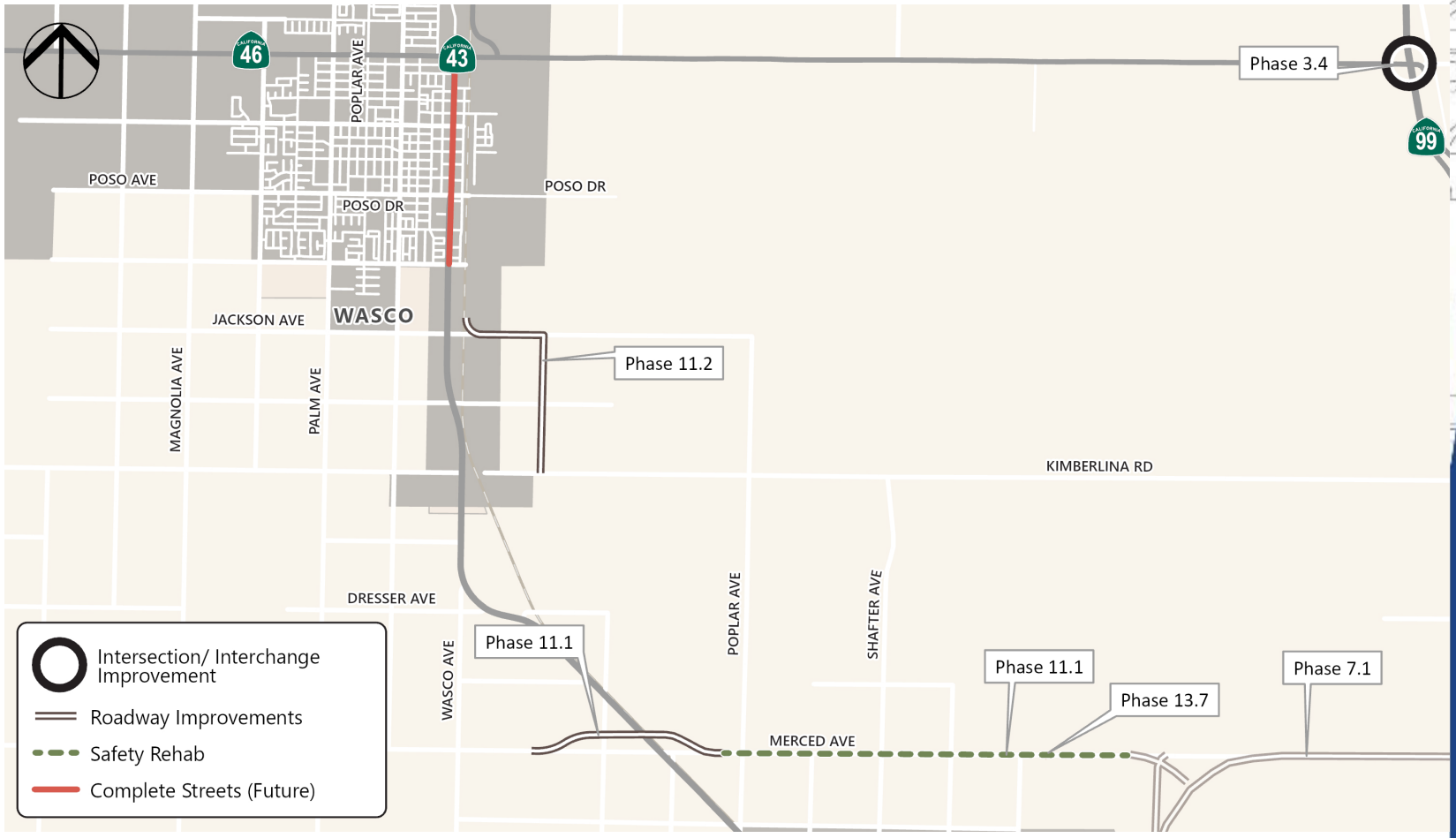
Wasco Av/HSR Frontage Road

What We Are Doing

Safety and connectivity improvements across two key corridors in Shafter and Wasco, totaling 13.94 miles of new and rehabilitated roadway. Together, these projects will improve roadway durability, enhance traffic safety, and strengthen regional mobility.



Kern Council of Governments

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South Kern County – Community Priorities

What We Heard

Safety Enhancements
Requests for improved lighting on major roads, installation of roundabouts, and better visibility at intersections

Road Maintenance & Expansion
Calls for repaving, widening, and drainage improvements to prevent flooding and water-related hazards

Public Transit & Active Transportation
Support for more benches and shade at bus stops, expanded bike lanes, and pedestrian pathways

Environmental Protection
Concerns about air pollution from trucks and industrial growth, with advocacy for cleaner transportation solutions and additional EV charging stations

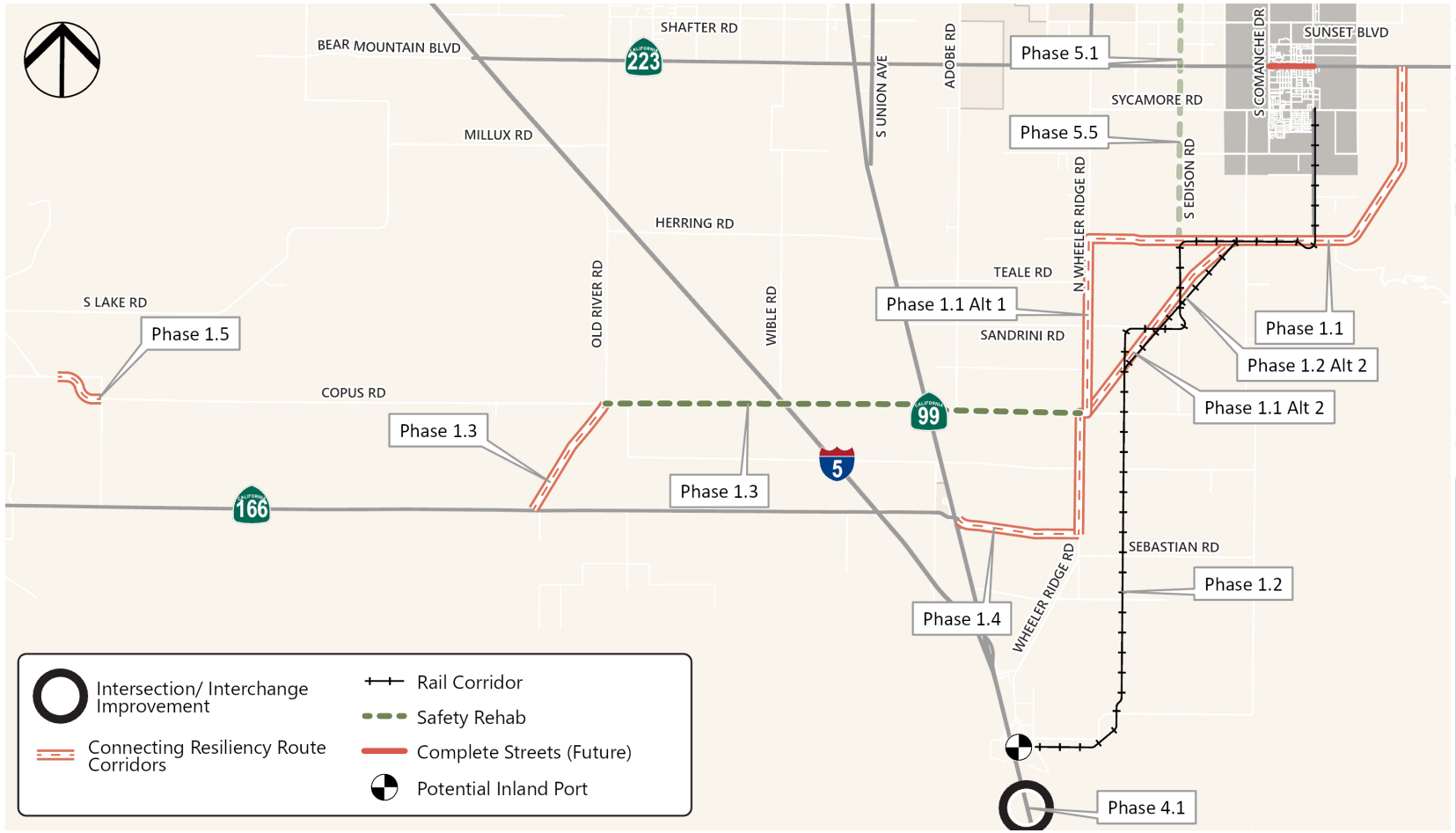
Community Well-being
Desire for infrastructure improvements that balance industrial growth with safety, health, and quality of life

Kern Council of Governments

Arvin/Maricopa/Taft Green-Pass

What We Are Doing

Roadway and rail improvements designed to enhance regional connectivity, freight movement, and climate resilience in Kern County.



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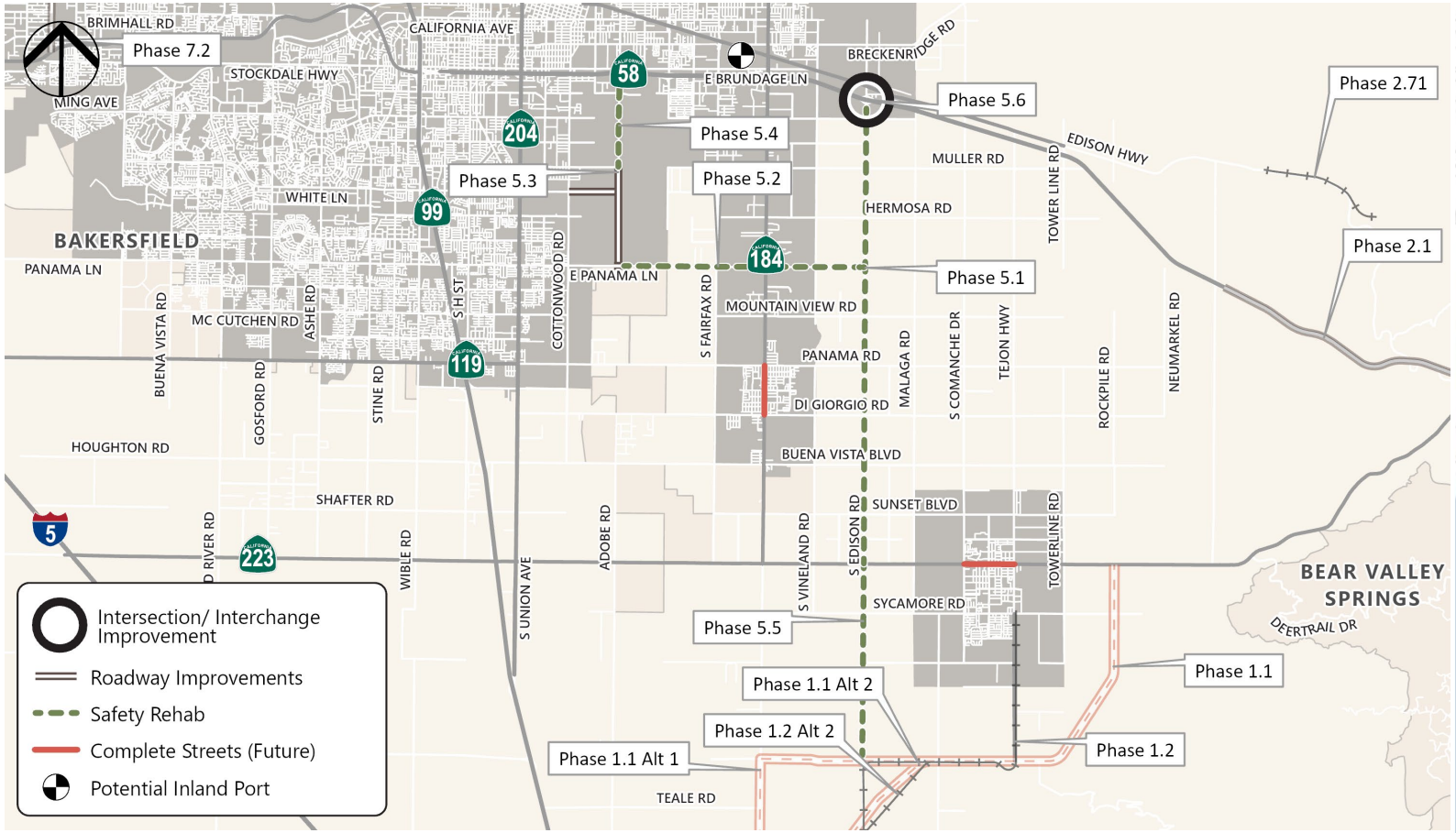
Lamont/SE Bakersfield Green-Pass Network

What We Are Doing

Roadway improvements and safety rehabilitation designed to enhance connectivity, reduce flood-related closures, and improve regional mobility in the Lamont and Arvin areas.



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I-5 Grapevine Improvements

What We Are Doing

The I-5 Grapevine Improvements Program encompasses two critical infrastructure improvements along the I-5 corridor to enhance freight efficiency, roadway safety, and regional mobility. These improvements will alleviate congestion on steep grades, enhance operational efficiency for freight and passenger vehicles, and strengthen the resiliency of this critical interstate corridor.



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East Kern County – Community Priorities

What We Heard

Emergency Preparedness
Improve emergency access routes and overpasses to support evacuation and disaster response

Flooding Hazards
Concerns about safety and traffic impacts due to flooding and mudslides

Traffic & Connectivity
Need for alternate routes to address morning base traffic and improve east-west access

Sustainable Transportation
Expand EV charging infrastructure and optimize rail alignments for safety and efficiency

Climate Resilience Planning
Address past climate stressors and prepare for future environmental challenges

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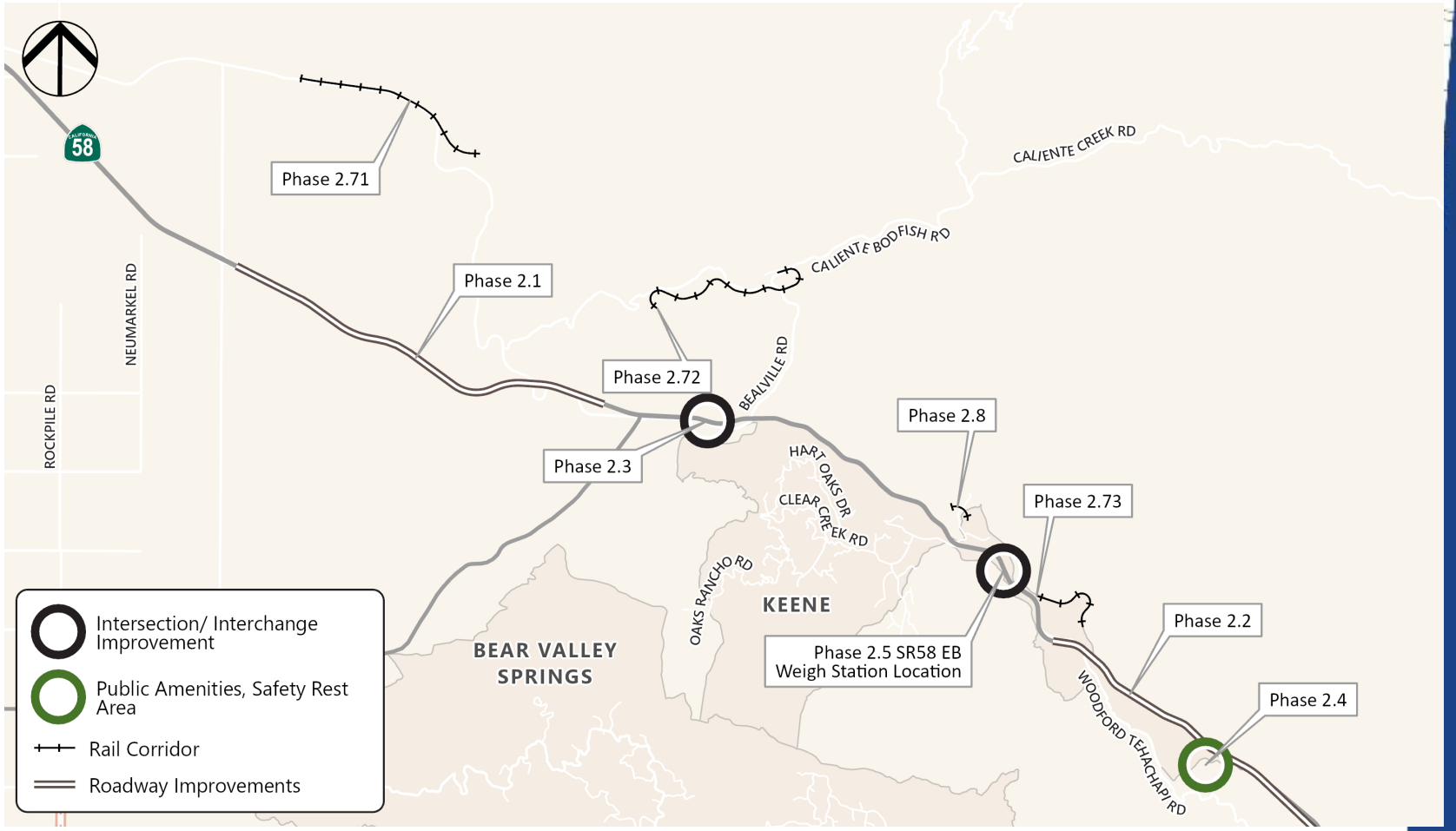
SR-58 Tehachapi Grade Improvements

What We Are Doing

Enhancing roadway and rail infrastructure along the Tehachapi Pass.

Key roadway upgrades such as 5.2 miles of truck climbing and safety passing lanes between Tower Line Road and SR 233, and 6.5 miles of similar improvements between Keene and Cable to address steep grades and improve traffic flow.



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US 395 Goods Movement/Safety Improvements

What We Are Doing

The US 395 Goods Movement/Safety Improvements Program in Indian Wells Valley is a multi-phase infrastructure project designed to enhance safety, improve traffic flow, and support regional freight mobility.



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How Much Does Each Project Cost?

Project Name	Cost Estimate
Arvin/Maricopa/Taft Green-pass Network – Phase 1	$92.2M
SR 58 Tehachapi Grade Improvements – Phase 1	$115M
Delano/McFarland Green-pass Network – Phase 1	$78.3M
I-5 Grapevine Improvements – Phase 1	$44.9M
Lamon/SE Bakersfield Green-pass Network – Phase 1	$111M
US 395 Goods Movement/Safety Improvements – Phase 1	$54.6M
NW Bakersfield Green-pass Network – Phase 1	$63.6M
Rosamond Green-pass Network – Phase 1	$82M
SR 33/7th Standard Rd Safety Improvements – Phase 1	$110M
SR 58/Stockdale Hwy Connection to I-5 Corridor Improvements – Phase 1	$6.5M
Wasco Ave/HSR Frontage Road – Phase 1	$41.8M
California City Blvd Extension to EAFB North Gate Safety Corridor – Phase 1	$38.8M

Kern Council of Governments

** Total project costs at $838.9M; these projects are not currently funded.*

Next Steps

- Public Review for Draft Study – closes May 6, 2026
- Kern COG approve final Community Prosperity/Protection Study (June 2026)
- Incorporate the Study's public input and findings into the Regional Transportation Plan
- Pursue grant funding for implementation of proposed projects

Kern Council of Governments

Thank you!

kerncog.org/KARGO

Contact Information:
Rachel Audino
raudino@swspr.com

Kern Council of Governments



Kern COG KARGO Study - Agency Comments

City of Taft

1. They would like us to add some passing lane projects on 119. Please insert these projects in the Final KARGO Study as part of the Arvin Greenpass project. They have corresponding projects in the RTP unconstrained table 5.2 but the prices are for full widenings. Please prepare a quick cost estimate for these two passing lane projects and include in the final KARGO study. The projects will remain in the unconstrained portion of the RTP.

   Phase 1.6 and 1.7 now include passing lanes, shown in map (Chapter 5) and exhibits and cost estimates (Appendix C and D).

City of Shafter

1. Table 2-1 (pg. 21)

   a. It looks like some projects are listed twice. (ex 7th Standard Road/I-5 Airport Dr., Sante Fe Way, Burbank-Rosedale Hwy).

      Projects are listed twice due to different types of improvement. Table revisions made to combine projects with same name.

   b. Please verify they are not the same projects and adjust descriptions as needed.

      Projects are listed twice due to different types of improvement. Table revisions made to combine projects with same name.

   c. Sante Fe Way is spelled wrong should be Santa Fe Way

      Text revision.

   d. Shafter is spelled wrong on Number 55 (Shaffter)

      Text revision.

2. Table 2-2 (pg 23)

   a. Check Spelling of Santa Fe way

      Text revision.

3. Table 2-4 (pg 27)

   a. Why is 7th Standard on this again, does it fall in the eastern Kern Region?

      Projects are listed twice due to different types of improvement. Table revisions made to combine projects with same name.

4. Pg 55 needs to be rotated in the pdf

   Format revision.

5. Table 4-1

    a. Why is Merced Ave expressway on the NW Bakersfield Green pass Network

    Merced Ave is a safety rehab along Merced Ave. Phase 13.7 is a bridge that will allow Merced Ave to connect to Cherry Ave as part of the NW Bakersfield network. Both are in the same area of Bakersfield.

    b. Why is Lerdo Hwy on the ST 33/7th Standard Rd corridor

    Lerdo Hwy is included in the 7th Std Rd because it is part of the proposed resiliency route connecting 33 to Cherry Ave, via Lerdo to Rowlee and/or Main Drain Rd to 7th Std.

Caltrans District 6

Questions via General Comments on page 3

1. On page 20 (Figure 2-1) What criteria were used for determining the feasibility of potential inland port site locations?
   Potential inland port locations were provided based on Kern COG's stakeholder engagement process, which included feedback from key industry representatives and local developers.

2. On page 23 (Table 2-2) What funding opportunities will be projected in funding the ongoing maintenance of proposed future truck routes?
   Funding opportunities are detailed in Phase II KARGO Study and include strategies such as economic improvement districts, developer mitigation, etc.

3. On page 47 (Truck Parking Analysis) Does the study report show any locations for future truck parking locations? Expanding and enhancing truck parking facilities is a very important freight issue in California.
   Specific locations for truck parking were not identified as part of this Study, only the need or demand was analyzed.

4. Page 52/53 (Community Context) The blue font is bold on page 52 but not bold on page 53.
   Formatting revision.

5. Please note that Work Element (WE) 605.2 Kern Area Regional Goods-movement Operation (KARGO) Climate-Change Adaptation Mitigation Study (C-CAMS)

   Added reference to OWP after the cover page.

Caltrans District 9

1. Table 2-4: Searles- not Seales
   Text revision
2. Page 36: None of the D09 culverts are listed

   Culverts are listed in the Appendix.

3. Page 39: SR 58 mudslides not accounted for
   Mudslide risk (especially SR 58) is addressed in the report through text, visuals, and cost acknowledgment so it holds up during adoption.

4. Page 47: Great visualization
   No changes requested.

5. Page 83: Why is the ranking different from the total score -- i.e. the highest score would have the highest rank? The SR 14/Purdy Rd interchange project is missing from Table 4-1.
   The lower scores indicate a higher need or priority.
   SR 14/Purdy Road received higher scores, indicating a lower need or priority, therefore grouped in future projects category.

6. Page 85: Why no scores? (Phase 6.2 US 365/China Lk Bl Interchange)
   Project was included upon robust community engagement, and was identified by stakeholders after the project prioritization was conducted.

7. Page 106: My question once again - Once the trucks get to Tehachapi Willow Springs road, there is still a two lane highway between SR 58 and the north end of Rosamond Green- Pass Network. Why is the upgrade of Tehachapi Willow Springs to four lanes not included in this project?
   Rosamond Green-pass Network is intended to provide a secondary route crossing the railroad/highway within Rosamond to maintain connection to Edwards Air Force Base. Truck demand analysis was not conducted along Tehachapi Willow Springs Road.

Appendix C - Cost Estimates

- Summary Combined Total
- Arvin/Maricopa/Taft Greenpass Network
- TSR 58 Tehachapi Grade Improvements
- Delano/Mcfarland and Greenpass Network
- I-5 Grapevine Improvements
- Lamont/SE Bakersfield Greenpass Network
- US 395 Goods Movement/Safety Improvements
- NW Bakersfield Greenpass Network
- Rosamond Greenpass Network
- SR 33/7th Standard Rd Safety Improvements
- SR 58/Stockdale Hwy Connection to I-5 Safety Corridor Improvements
- Wasco AV/HSR Frontage Rd
- California City Bl Extension to EAFB North Gate Safety Corridor

KERN COG (0 - Summary Combined Total)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
1	Arvin/Maricopa/Taft Greenpass Network	$608,400,000	$902,050,000
2	SR 58 Tehachapi Grade Improvements	$661,150,000	$978,500,000
3	Delano/Mcfarland and Greenpass Network	$171,770,000	$254,730,000
4	I-5 Grapevine Improvements	$176,950,000	$261,600,000
5	Lamont/SE Bakersfield Greenpass Network	$280,000,000	$414,050,000
6	US 395 Goods Movement/Safety Improvements	$168,200,000	$249,200,000
7	NW Bakersfield Greenpass Network	$415,800,000	$585,500,000
8	Rosamond Greenpass Network	$128,350,000	$190,400,000
9	SR 33/7th Standard Rd Safety Improvements	$382,650,000	$565,450,000
10	SR 58/Stockdale Hwy Connection to I-5 Safety Corridor Improvements	$51,450,000	$76,200,000
11	Wasco AV/HSR Frontage Rd	$53,400,000	$79,100,000
12	California City Bl Extension to EAFB North Gate Safety Corridor	$55,750,000	$82,500,000
	GRAND TOTAL =	**$3,153,870,000**	**$4,639,280,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (119 Passing Lanes)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
1.1	119 Passing Lanes	$14,750,000	$21,850,000
1.2	119 4 Lane Widening	$34,750,000	$51,400,000
	GRAND TOTAL =	**$49,500,000**	**$73,250,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1 - ARVIN/MARICOPA/TAFT GREENPASS NETWORK)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
1.1	S Arvin Corridor Green pass	$92,200,000	$137,000,000
1.1 Alt 1	Alt 1 S Arvin Corridor Green pass	$109,000,000	$162,000,000
1.1 Alt 2	Alt 2 S Arvin Corridor Green pass	$77,600,000	$115,000,000
1.2	Arvin-Tejon Commerce Center Rail Spur	$211,000,000	$312,000,000
1.3	Green-pass: Copus/David Rd I-5-Wheeler Ridge Rd	$86,800,000	$129,000,000
1.4	Copus Rd Safety Realignment	$12,950,000	$19,150,000
1.5	Realign SR 166 to Copus Rd via Old River Rd	$18,850,000	$27,900,000
	GRAND TOTAL =	**$608,400,000**	**$902,050,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.1 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 57,969,000	$ 85,808,281
TOTAL RIGHT OF WAY COST		$ 3,049,600	$ 4,514,153
TOTAL CAPITAL OUTLAY COSTS		**$ 61,019,000**	**$ 90,323,000**
DESIGN	PA/ED (12.5%)*	$ 7,630,000	$ 11,294,264
DESIGN	PS&E (17.5%)	$ 10,680,000	$ 15,809,009
DESIGN	RIGHT OF WAY (2%)	$ 1,230,000	$ 1,820,700
CM	CONSTRUCTION (19%)	$ 11,600,000	$ 17,170,834
TOTAL DELIVERY COST		**$ 31,140,000**	**$ 46,095,000**
TOTAL PROJECT COST		**$ 92,200,000**	**$ 137,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.1 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$349,000	$349,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	35	$10,000	$350,000
4	Remove Asphalt Concrete Pavement	CY		$180	$0
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Civil Improvements	LS			$1,000,000
11	Imported Borrow	CY	30,893	$20	$617,862
12	Roadway Excavation	CY	4,371	$60	$262,260
13	Hot Mix Asphalt (Type A)	TON	125,020	$190	$23,753,800
14	Aggregate Base (Class 2)	CY	100,580	$90	$9,052,200
15	Portland Cement Concrete (Roundabout)	CY	1017	$200	$203,333
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF		$5	$0
24	Signing and Striping	LS	1	$50,000	$50,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF		$700	
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	1	$250	$250
29	12" RCB	LF	2369	$255	$604,044
30	36" RCB	LF	127	$454	$57,613

KERN COG (1.1 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ELECTRICAL					
31	New Traffic Signal	EA	1	$450,000	$450,000
32	Signal Modification	EA		$250,000	$0
33	Lighting	EA		$20,000	$0
34	Minor Items (10%)*	LS	1	$3,686,000	$3,686,000
35	Mobilization (10%)	LS	1	$4,054,000	$4,054,000
RAILROAD					
36	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF		$630	$0
37	Install Signal House	LS		$150,000	$0
38	Install Type 9 Railroad Gate	LS		$30,000	$0
				SUBTOTAL=	$44,590,362
				CONTINGENCY (30%) =**	$13,378,000
				GRAND TOTAL =	**$57,969,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (1.1 Alt 1 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 68,960,000	$ 102,077,646
TOTAL RIGHT OF WAY COST		$ 3,049,600	$ 4,514,153
TOTAL CAPITAL OUTLAY COSTS		**$ 72,010,000**	**$ 106,592,000**
DESIGN	PA/ED (12.5%)*	$ 9,010,000	$ 13,337,001
DESIGN	PS&E (17.5%)	$ 12,610,000	$ 18,665,880
DESIGN	RIGHT OF WAY (2%)	$ 1,450,000	$ 2,146,354
CM	CONSTRUCTION (19%)	$ 13,690,000	$ 20,264,544
TOTAL DELIVERY COST		**$ 36,760,000**	**$ 54,414,000**
TOTAL PROJECT COST		**$ 109,000,000**	**$ 162,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.1 Alt 1 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$425,000	$425,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	35	$10,000	$350,000
4	Remove Asphalt Concrete Pavement	CY	9,300	$180	$1,674,000
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Civil Improvements	LS			$1,000,000
11	Imported Borrow	CY	34,837	$20	$696,738
12	Roadway Excavation	CY	4,929	$60	$295,740
13	Hot Mix Asphalt (Type A)	TON	140,980	$190	$26,786,200
14	Aggregate Base (Class 2)	CY	113,420	$90	$10,207,800
15	Portland Cement Concrete (Roundabout)	CY	1017	$200	$203,333
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF		$5	$0
24	Signing and Striping	LS	1	$50,000	$50,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF		$700	
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	1	$250,000	$250,000
29	12" RCB	LF		$255	$0
30	36" RCB	LF		$454	$0

KERN COG (1.1 Alt 1 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ELECTRICAL					
31	New Traffic Signal	EA	4	$450,000	$1,800,000
32	Signal Modification	EA		$250,000	$0
33	Lighting	EA		$20,000	$0
34	Minor Items (10%)*	LS	1	$4,384,000	$4,384,000
35	Mobilization (10%)	LS	1	$4,823,000	$4,823,000
RAILROAD					
36	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF		$630	$0
37	Install Signal House	LS		$150,000	$0
38	Install Type 9 Railroad Gate	LS		$30,000	$0
				SUBTOTAL=	$53,045,811
				CONTINGENCY (30%) =**	$15,914,000
				GRAND TOTAL =	**$68,960,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (1.1 Alt 2 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 48,299,000	$ 71,494,319
TOTAL RIGHT OF WAY COST		$ 3,049,600	$ 4,514,153
TOTAL CAPITAL OUTLAY COSTS		**$ 51,349,000**	**$ 76,009,000**
DESIGN	PA/ED (12.5%)*	$ 6,420,000	$ 9,503,168
DESIGN	PS&E (17.5%)	$ 8,990,000	$ 13,307,396
DESIGN	RIGHT OF WAY (2%)	$ 1,030,000	$ 1,524,652
CM	CONSTRUCTION (19%)	$ 9,760,000	$ 14,447,184
TOTAL DELIVERY COST		**$ 26,200,000**	**$ 38,783,000**
TOTAL PROJECT COST		**$ 77,600,000**	**$ 115,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.1 Alt 2 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$288,000	$288,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	25	$10,000	$250,000
4	Remove Asphalt Concrete Pavement	CY	1,200	$180	$216,000
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Civil Improvements	LS			$1,000,000
11	Imported Borrow	CY	25,100	$20	$502,000
12	Roadway Excavation	CY	3,600	$60	$216,000
13	Hot Mix Asphalt (Type A)	TON	101,500	$190	$19,285,000
14	Aggregate Base (Class 2)	CY	81,662	$90	$7,349,580
15	Portland Cement Concrete (Roundabout)	CY	1020	$200	$204,000
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF		$5	$0
24	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF		$700	
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	1	$500,000	$500,000
29	12" RCB	LF	2240	$255	$571,200
30	36" RCB	LF	269	$454	$122,126

KERN COG (1.1 Alt 2 - S Arvin Corridor Green pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ELECTRICAL					
31	New Traffic Signal	EA		$450,000	$0
32	Signal Modification	EA		$250,000	$0
33	Lighting	EA		$20,000	$0
34	Minor Items (10%)*	LS	1	$3,071,000	$3,071,000
35	Mobilization (10%)	LS	1	$3,378,000	$3,378,000
RAILROAD					
36	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF		$630	$0
37	Install Signal House	LS		$150,000	$0
38	Install Type 9 Railroad Gate	LS		$30,000	$0
				SUBTOTAL=	$37,152,906
				CONTINGENCY (30%) =**	$11,146,000
				GRAND TOTAL =	**$48,299,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (1.2 - Arvin-Tejon Commerce Center Rail Spur)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 133,803,000	$ 198,061,126
TOTAL RIGHT OF WAY COST		$ 5,664,600	$ 8,384,992
TOTAL CAPITAL OUTLAY COSTS		**$ 139,468,000**	**$ 206,447,000**
DESIGN	PA/ED (12.5%)*	$ 17,440,000	$ 25,815,460
DESIGN	PS&E (17.5%)	$ 24,410,000	$ 36,132,763
DESIGN	RIGHT OF WAY (2%)	$ 2,790,000	$ 4,129,882
CM	CONSTRUCTION (19%)	$ 26,500,000	$ 39,226,474
TOTAL DELIVERY COST		**$ 71,140,000**	**$ 105,305,000**
TOTAL PROJECT COST		**$ 211,000,000**	**$ 312,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.2 - Arvin-Tejon Commerce Center Rail Spur)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$106,000	$106,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	71	$10,000	$707,071
4	Remove Asphalt Concrete Pavement	CY	1,446	$180	$260,267
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Civil Improvements	LS			$1,000,000
11	Imported Borrow	CY	342,223	$20	$6,844,460
12	Roadway Excavation	CY	0	$60	$0
13	Hot Mix Asphalt (Type A)	TON	6,439	$190	$1,223,353
14	Aggregate Base (Class 2)	CY	5,167	$90	$465,000
15	Portland Cement Concrete (Roundabout)	CY		$200	$0
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF		$5	$0
24	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF	2	$150,000	$300,000
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	1.0	$500,000	$500,000
29	12" RCB	LF	8400	$255	$2,142,000
30	36" RCB	LF	270	$454	$122,580

KERN COG (1.2 - Arvin-Tejon Commerce Center Rail Spur)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ELECTRICAL					
31	New Traffic Signal	EA		$450,000	$0
32	Signal Modification	EA		$250,000	$0
33	Lighting	EA		$20,000	$0
34	Minor Items (10%)*	LS	1	$8,507,000	$8,507,000
35	Mobilization (10%)	LS	1	$9,357,000	$9,357,000
RAILROAD					
36	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF	110000	$630	$69,300,000
37	Install Signal House	LS	9	$150,000	$1,350,000
38	Install Type 9 Railroad Gate	EA	18	$30,000	$540,000
				SUBTOTAL=	$102,924,730
				CONTINGENCY (30%) =**	$30,878,000
				GRAND TOTAL =	**$133,803,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (1.3 - Green-pass Alt 1: Realign SR 166 Via Old River Rd/Copus Rd/David Rd)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 56,900,000	$ 84,225,900
	TOTAL RIGHT OF WAY COST	$ 557,600	$ 825,384
	TOTAL CAPITAL OUTLAY COSTS	**$ 57,458,000**	**$ 85,052,000**
DESIGN	PA/ED (12.5%)*	$ 7,190,000	$ 10,642,956
DESIGN	PS&E (17.5%)	$ 10,060,000	$ 14,891,258
DESIGN	RIGHT OF WAY (2%)	$ 1,150,000	$ 1,702,281
CM	CONSTRUCTION (19%)	$ 10,920,000	$ 16,164,268
	TOTAL DELIVERY COST	**$ 29,320,000**	**$ 43,401,000**
	TOTAL PROJECT COST	**$ 86,800,000**	**$ 129,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.3 - Green-pass Alt 1: Realign SR 166 Via Old River Rd/Copus Rd/David Rd)

MARK THOMAS

30% Estimate

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$348,000	$348,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	53	$10,000	$530,000
4	Remove Asphalt Concrete Pavement	CY		$180	$0
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Civil Improvements	LS			$1,000,000
11	Imported Borrow	CY	127,480	$20	$2,549,600
12	Roadway Excavation	CY	23,782	$60	$1,426,893
13	Hot Mix Asphalt (Type A)	TON	112,000	$190	$21,280,000
14	Aggregate Base (Class 2)	CY	91,000	$90	$8,190,000
15	Portland Cement Concrete (Roundabout)	CY		$200	$0
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF		$5	$0
24	Signing and Striping	LS	1	$200,000	$200,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF		$700	
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	1.0	$500,000	$500,000
29	12" RCB	LF		$255	$0
30	36" RCB	LF	112	$454	$50,848

KERN COG (1.3 - Green-pass Alt 1: Realign SR 166 Via Old River Rd/Copus Rd/David Rd)

MARK THOMAS

30% Estimate

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ELECTRICAL					
31	New Traffic Signal	EA		$450,000	$0
32	Signal Modification	EA		$250,000	$0
33	Lighting	EA		$20,000	$0
34	Minor Items (10%)*	LS	1	$3,618,000	$3,618,000
35	Mobilization (10%)	LS	1	$3,975,000	$3,975,000
RAILROAD					
36	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF		$630	$0
37	Install Signal House	LS		$150,000	$0
38	Install Type 9 Railroad Gate	LS		$30,000	$0
				SUBTOTAL=	$43,768,341
				CONTINGENCY (30%) =**	$13,131,000
				GRAND TOTAL =	**$56,900,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (1.4 - Realign SR 166 to Copus Rd via Old River Rd)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 12,236,000	$ 18,112,269
	TOTAL RIGHT OF WAY COST	$ 233,600	$ 345,785
	TOTAL CAPITAL OUTLAY COSTS	**$ 12,470,000**	**$ 18,459,000**
DESIGN	PA/ED (12.5%)*	$ 1,560,000	$ 2,309,181
DESIGN	PS&E (17.5%)	$ 2,190,000	$ 3,241,735
DESIGN	RIGHT OF WAY (2%)	$ 250,000	$ 370,061
CM	CONSTRUCTION (19%)	$ 2,370,000	$ 3,508,179
	TOTAL DELIVERY COST	**$ 6,370,000**	**$ 9,430,000**
	TOTAL PROJECT COST	**$ 18,850,000**	**$ 27,900,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.4 - Realign SR 166 to Copus Rd via Old River Rd)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$68,000	$68,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	9	$10,000	$90,000
4	Remove Asphalt Concrete Pavement	CY	3,250	$180	$585,000
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Civil Improvements	LS			$1,000,000
11	Imported Borrow	CY	21,700	$20	$434,000
12	Roadway Excavation	CY	4,100	$60	$246,000
13	Hot Mix Asphalt (Type A)	TON	19,000	$190	$3,610,000
14	Aggregate Base (Class 2)	CY	15,500	$90	$1,395,000
15	Portland Cement Concrete (Roundabout)	CY		$200	$0
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF		$5	$0
24	Signing and Striping	LS	1	$50,000	$50,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF		$700	
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	1.0	$200,000	$200,000
29	12" RCB	LF		$255	$0
30	36" RCB	LF		$454	$0

KERN COG (1.4 - Realign SR 166 to Copus Rd via Old River Rd)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ELECTRICAL					
31	New Traffic Signal	EA		$450,000	$0
32	Signal Modification	EA		$250,000	$0
33	Lighting	EA		$20,000	$0
34	Minor Items (10%)*	LS	1	$778,000	$778,000
35	Mobilization (10%)	LS	1	$856,000	$856,000
RAILROAD					
36	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF		$630	$0
37	Install Signal House	LS		$150,000	$0
38	Install Type 9 Railroad Gate	LS		$30,000	$0
				SUBTOTAL=	$9,412,000
				CONTINGENCY (30%) =**	$2,824,000
				GRAND TOTAL =	**$12,236,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (1.5 - Copus Rd Safety Realignment)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 8,258,000	$ 12,223,857
	TOTAL RIGHT OF WAY COST	$ 292,600	$ 433,119
	TOTAL CAPITAL OUTLAY COSTS	**$ 8,551,000**	**$ 12,657,000**
DESIGN	PA/ED (12.5%)*	$ 1,070,000	$ 1,583,861
DESIGN	PS&E (17.5%)	$ 1,500,000	$ 2,220,366
DESIGN	RIGHT OF WAY (2%)	$ 180,000	$ 266,444
CM	CONSTRUCTION (19%)	$ 1,630,000	$ 2,412,798
	TOTAL DELIVERY COST	**$ 4,380,000**	**$ 6,484,000**
	TOTAL PROJECT COST	**$ 12,950,000**	**$ 19,150,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (1.5 - Copus Rd Safety Realignment)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$43,000	$43,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	6	$10,000	$60,000
4	Remove Asphalt Concrete Pavement	CY	500	$180	$90,000
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Civil Improvements	LS			$1,000,000
11	Imported Borrow	CY	5,890	$20	$117,800
12	Roadway Excavation	CY	454	$60	$27,253
13	Hot Mix Asphalt (Type A)	TON	13,000	$190	$2,470,000
14	Aggregate Base (Class 2)	CY	11,000	$90	$990,000
15	Portland Cement Concrete (Roundabout)	CY		$200	$0
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF		$5	$0
24	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF		$700	
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	0.5	$500,000	$250,000
29	12" RCB	LF		$255	$0
30	36" RCB	LF		$454	$0

KERN COG (1.5 - Copus Rd Safety Realignment)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ELECTRICAL					
31	New Traffic Signal	EA		$450,000	$0
32	Signal Modification	EA		$250,000	$0
33	Lighting	EA		$20,000	$0
34	Minor Items (10%)*	LS	1	$525,000	$525,000
35	Mobilization (10%)	LS	1	$578,000	$578,000
RAILROAD					
36	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF		$630	$0
37	Install Signal House	LS		$150,000	$0
38	Install Type 9 Railroad Gate	LS		$30,000	$0
				SUBTOTAL=	$6,351,053
				CONTINGENCY (30%) =**	$1,906,000
				GRAND TOTAL =	**$8,258,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (2 - SR 58 TEHACHAPI GRADE IMPROVMENTS)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
2.1	SR58 Truck Climb/Safety Passing Lanes	$155,000,000	$230,000,000
2.2	SR58 Truck Climb/Safety Passing Lanes	$204,000,000	$301,000,000
2.3	SR58/SR223 Interchange	$165,000,000	$244,000,000
2.4	SR-58 Cultural Biological Interpretive Center	$25,050,000	$37,100,000
2.5	SR-58 Eastbound Weigh Station	$31,100,000	$46,000,000
2.7	UP Tehachapi Pass Additions	$69,900,000	$104,000,000
2.8	UP Tehachapi Pass Improvements	$11,100,000	$16,400,000
	GRAND TOTAL =	**$661,150,000**	**$978,500,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.1 - SR58 Truck Climb/Safety Passing Lanes)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 102,608,000	$ 151,884,906
TOTAL RIGHT OF WAY COST		$ -	$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 102,608,000**	**$ 151,885,000**
DESIGN	PA/ED (12.5%)*	$ 12,830,000	$ 18,991,534
DESIGN	PS&E (17.5%)	$ 17,960,000	$ 26,585,187
DESIGN	RIGHT OF WAY (2%)	$ 2,060,000	$ 3,049,303
CM	CONSTRUCTION (19%)	$ 19,500,000	$ 28,864,764
TOTAL DELIVERY COST		**$ 52,350,000**	**$ 77,491,000**
TOTAL PROJECT COST		**$ 155,000,000**	**$ 230,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.1 - SR58 TCL) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$3,103,000	$3,103,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$3,610,549	$3,610,549
ROADWAY					
4	Civil Improvements	LS	1	$50,689,092	$50,689,092
5	Signing and Striping	LS	1	$1,034,000	$1,034,000
STRUCTURE					
6	New Bridge	SF	0	$500	$0
7	Reconstruct Bridge	SF	8,728	$700	$6,109,600
8	Install Retaining Wall	SF	0	$450	$0
9	Mudslide Protection	LS	1	100000	$100,000
DRAINAGE					
10	Drainage Work	LS	1	$500,000	$500,000
ELECTRICAL					
11	New Traffic Signal	EA	0	$450,000	$0
12	Signal Modification	EA	0	$250,000	$0
13	Lighting	EA	0	$20,000	$0
14	Minor Items (10%)*	LS	1	$6,515,000	$6,515,000
15	Mobilization (10%)	LS	1	$7,167,000	$7,167,000
				SUBTOTAL=	$78,928,241
				CONTINGENCY (30%) =**	$23,679,000
				GRAND TOTAL =	**$102,608,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (2.2 - SR58 Truck Climb/Safety Passing Lanes)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 134,085,000	$ 198,478,555
TOTAL RIGHT OF WAY COST		$ 528,000	$ 781,569
TOTAL CAPITAL OUTLAY COSTS		**$ 134,613,000**	**$ 199,261,000**
DESIGN	PA/ED (12.5%)*	$ 16,830,000	$ 24,912,511
DESIGN	PS&E (17.5%)	$ 23,560,000	$ 34,874,555
DESIGN	RIGHT OF WAY (2%)	$ 2,700,000	$ 3,996,660
CM	CONSTRUCTION (19%)	$ 25,580,000	$ 37,864,649
TOTAL DELIVERY COST		**$ 68,670,000**	**$ 101,649,000**
TOTAL PROJECT COST		**$ 204,000,000**	**$ 301,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.2 - SR58 TCL) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$4,500,000	$4,500,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$10,315,000	$10,315,000
ROADWAY					
4	Civil Improvements	LS	1	$58,000,000	$58,000,000
5	Signing and Striping	LS	1	$944,000	$944,000
STRUCTURE					
6	Mudslide Protection	LS	1	100000	$100,000
7	New Bridge	SF	6,135	$500	$3,067,500
8	Widen Bridge	SF	10,800	$700	$7,560,000
DRAINAGE					
9	Drainage Work	LS	1	$500,000	$500,000
10	Minor Items (10%)*	LS	1	$9,000,000	$9,000,000
11	Mobilization (10%)	LS	1	$10,000,000	$10,000,000
				SUBTOTAL=	$103,141,650
				CONTINGENCY (30%)** =	$30,943,000
				GRAND TOTAL =	**$134,085,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (2.3 - SR58/SR223 Interchange)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 108,409,000	$ 160,471,803
TOTAL RIGHT OF WAY COST		$ 732,000	$ 1,083,539
TOTAL CAPITAL OUTLAY COSTS		**$ 109,141,000**	**$ 161,556,000**
DESIGN	PA/ED (12.5%)*	$ 13,650,000	$ 20,205,334
DESIGN	PS&E (17.5%)	$ 19,100,000	$ 28,272,666
DESIGN	RIGHT OF WAY (2%)	$ 2,190,000	$ 3,241,735
CM	CONSTRUCTION (19%)	$ 20,740,000	$ 30,700,266
TOTAL DELIVERY COST		**$ 55,680,000**	**$ 82,421,000**
TOTAL PROJECT COST		**$ 165,000,000**	**$ 244,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.3 - SR58/SR223 Interchange) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$4,080,000	$4,080,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$17,696,000	$17,696,000
ROADWAY					
4	Civil Improvements	LS	1	$24,000,000	$24,000,000
5	Signing and Striping	LS	1	$856,000	$856,000
STRUCTURE					
6	New Bridge	SF	42,960	$500	$21,480,000
DRAINAGE					
7	Drainage Work	LS	1	$500,000	$500,000
8	Minor Items (10%)*	LS	1	$7,000,000	$7,000,000
9	Mobilization (10%)	LS	1	$8,000,000	$8,000,000
				SUBTOTAL=	$83,390,864
				CONTINGENCY (30%) =**	$25,018,000
				GRAND TOTAL =	**$108,409,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (2.4.2 - SR-58 Cultural Biological Interpretive Center)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 16,568,000	$ 24,524,687
TOTAL RIGHT OF WAY COST		$ -	$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 16,568,000**	**$ 24,525,000**
DESIGN	PA/ED (12.5%)*	$ 2,080,000	$ 3,078,908
DESIGN	PS&E (17.5%)	$ 2,900,000	$ 4,292,708
DESIGN	RIGHT OF WAY (2%)	$ 340,000	$ 503,283
CM	CONSTRUCTION (19%)	$ 3,150,000	$ 4,662,769
TOTAL DELIVERY COST		**$ 8,470,000**	**$ 12,538,000**
TOTAL PROJECT COST		**$ 25,050,000**	**$ 37,100,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.4 - SR58 INTERPRETIVE CENTER)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$301,000	$301,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	4	$10,000	$40,000
ROADWAY					
4	Civil Improvements	LS	1	$5,372,496	$5,372,496
5	Imported Borrow	CY	30,200	$20	$604,000
6	Hot Mix Asphalt (Type A)	TON	3,600	$190	$684,000
7	Aggregate Base (Class 2)	CY	6,000	$90	$540,000
8	Install Concrete - Curb Ramp	EA	2	$8,000	$16,000
9	Install Concrete - Curb	LF	206	$30	$6,180
10	Install Concrete - Sidewalk/Driveway	SF	2618	$12	$31,416
11	Install MGS	LF	326	$50	$16,300
12	Install Concrete Barrier	LF	216	$250	$54,000
13	Reinforced Concrete	CY	32,646	$100	$3,264,600
14	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
15	Overlook Center	SF	3,645	$700	$2,551,500
16	Interpretive Center	SF	3,645	$700	$2,551,500
DRAINAGE					
17	Drainage Work	LS	1	$500,000	$500,000
18	Minor Items (10%)*	LS	1	$632,000	$632,000
19	Mobilization (10%)	LS	1	$695,000	$695,000
				SUBTOTAL=	$12,743,496
				CONTINGENCY (30%) =**	$3,824,000
				GRAND TOTAL =	**$16,568,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (2.5 - SR-58 Eastbound Weigh Station)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 20,022,000	$ 29,637,451
	TOTAL RIGHT OF WAY COST	$ 540,000	$ 799,332
	TOTAL CAPITAL OUTLAY COSTS	**$ 20,562,000**	**$ 30,437,000**
DESIGN	PA/ED (12.5%)*	$ 2,580,000	$ 3,819,030
DESIGN	PS&E (17.5%)	$ 3,600,000	$ 5,328,879
DESIGN	RIGHT OF WAY (2%)	$ 420,000	$ 621,703
CM	CONSTRUCTION (19%)	$ 3,910,000	$ 5,787,755
	TOTAL DELIVERY COST	**$ 10,510,000**	**$ 15,558,000**
	TOTAL PROJECT COST	**$ 31,100,000**	**$ 46,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.5 - SR58 EASTBOUND WEIGH STATION)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$461,000	$461,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	2	$760,000	$1,520,000
ROADWAY					
4	Civil Improvements	LS	2	$1,330,000	$2,660,000
5	Signing and Striping	LS	2	$14,000	$28,000
DRAINAGE					
6	Drainage Work	LS	2	$1,000,000	$2,000,000
STRUCTURE					
7	Weight Station Building	SF	0	$500	$0
ELECTRICAL					
8	New Traffic Signal	EA	8	$450,000	$3,600,000
9	Signal Modification	EA	0	$250,000	$0
10	Lighting	EA	70	$20,000	$1,400,000
11	Weight Scale	EA	2	$100,000.00	$200,000
12	Minor Items (10%)*	LS	1	$967,000	$967,000
13	Mobilization (10%)	LS	1	$1,064,000	$1,064,000
				SUBTOTAL=	$15,400,605
				CONTINGENCY (30%) =**	$4,621,000
				GRAND TOTAL =	**$20,022,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (2.7 - UP Tehachapi Pass Additions)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 46,245,000	$ 68,453,897
	TOTAL RIGHT OF WAY COST	$ -	$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 46,245,000**	**$ 68,454,000**
DESIGN	PA/ED (12.5%)*	$ 5,790,000	$ 8,570,614
DESIGN	PS&E (17.5%)	$ 8,100,000	$ 11,989,979
DESIGN	RIGHT OF WAY (2%)	$ 930,000	$ 1,376,627
CM	CONSTRUCTION (19%)	$ 8,790,000	$ 13,011,347
	TOTAL DELIVERY COST	**$ 23,610,000**	**$ 34,949,000**
	TOTAL PROJECT COST	**$ 69,900,000**	**$ 104,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.7 UP TEHACHAPI ADDITIONS)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,400,000	$1,400,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	9	$10,000	$85,000
RAIL					
4	Civil Improvements	LS	1	$9,759,240	$9,759,240
STRUCTURE					
5	New Bridge	SF	17,000	$500	$8,500,000
DRAINAGE					
6	Drainage Work	LS	1	$500,000	$500,000
ELECTRICAL					
7	New Rail Signal	EA	6	$3,000,000	$18,000,000
8	Minor Items (10%)*	LS	1	$2,940,000	$2,940,000
9	Mobilization (10%)	LS	1	$3,234,000	$3,234,000
				SUBTOTAL=	$35,572,270
				CONTINGENCY (30%) =**	$10,672,000
				GRAND TOTAL =	**$46,245,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (1.5 - Realign SR 166 to Copus Rd via Old River Rd)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 7,312,000	$ 10,823,546
TOTAL RIGHT OF WAY COST		$ -	$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 7,312,000**	**$ 10,824,000**
DESIGN	PA/ED (12.5%)*	$ 920,000	$ 1,361,825
DESIGN	PS&E (17.5%)	$ 1,280,000	$ 1,894,713
DESIGN	RIGHT OF WAY (2%)	$ 150,000	$ 222,037
CM	CONSTRUCTION (19%)	$ 1,390,000	$ 2,057,540
TOTAL DELIVERY COST		**$ 3,740,000**	**$ 5,537,000**
TOTAL PROJECT COST		**$ 11,100,000**	**$ 16,400,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (2.8 UP TEHACHAPI IMPROVEMENTS)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$222,000	$222,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	1	$10,000	$10,000
STRUCTURE					
4	Install Retaining Wall	SF	8,255	$450	$3,714,750
DRAINAGE					
5	Drainage Work	LS	1	$500,000	$500,000
6	Minor Items (10%)*	LS	1	$465,000	$465,000
7	Mobilization (10%)	LS	1	$512,000	$512,000
				SUBTOTAL=	$5,623,750
				CONTINGENCY (30%) =**	$1,688,000
				GRAND TOTAL =	**$7,312,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (3 - DELANO/MCFARLAND GREENPASS NETWORK)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
3.1	Delano Green-pass: Pond Road	$78,300,000	$116,000,000
3.2	McFarland Resiliency Route: Driver Road	$92,300,000	$137,000,000
3.3	SR-99/Pond Road Interchange	$1,170,000	$1,730,000
	GRAND TOTAL =	**$171,770,000**	**$254,730,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (3.1 - Delano Green-pass: Pond Road)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 51,231,000	$ 75,834,395
	TOTAL RIGHT OF WAY COST	$ 572,000	$ 846,700
	TOTAL CAPITAL OUTLAY COSTS	**$ 51,803,000**	**$ 76,682,000**
DESIGN	PA/ED (12.5%)*	$ 6,480,000	$ 9,591,983
DESIGN	PS&E (17.5%)	$ 9,070,000	$ 13,425,816
DESIGN	RIGHT OF WAY (2%)	$ 1,040,000	$ 1,539,454
CM	CONSTRUCTION (19%)	$ 9,850,000	$ 14,580,406
	TOTAL DELIVERY COST	**$ 26,440,000**	**$ 39,138,000**
	TOTAL PROJECT COST	**$ 78,300,000**	**$ 116,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (3.1 DELANO GREEN-PASS: POND ROAD)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,551,000	$1,551,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$420,000	$420,000
ROADWAY					
4	Civil Improvements	LS	1	$29,585,000	$29,585,000
5	Signing and Striping	LS	1	$421,380	$421,380
STRUCTURE					
DRAINAGE					
6	Drainage Work	LS	1	$500,000	$500,000
ELECTRICAL					
7	Minor Items (10%)*	LS	1	$3,257,000	$3,257,000
8	Mobilization (10%)	LS	1	$3,583,000	$3,583,000
				SUBTOTAL=	$39,407,017
				CONTINGENCY (30%) =**	$11,823,000
				GRAND TOTAL =	**$51,231,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (3.2 - McFarland Resiliency Route: Driver Road)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 60,856,000	$ 90,081,746
TOTAL RIGHT OF WAY COST		$ 209,000	$ 309,371
TOTAL CAPITAL OUTLAY COSTS		**$ 61,065,000**	**$ 90,392,000**
DESIGN	PA/ED (12.5%)*	$ 7,640,000	$ 11,309,066
DESIGN	PS&E (17.5%)	$ 10,690,000	$ 15,823,811
DESIGN	RIGHT OF WAY (2%)	$ 1,230,000	$ 1,820,700
CM	CONSTRUCTION (19%)	$ 11,610,000	$ 17,185,636
TOTAL DELIVERY COST		**$ 31,170,000**	**$ 46,140,000**
TOTAL PROJECT COST		**$ 92,300,000**	**$ 137,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (3.2 MCFARLAND RESILIENCY ROUTE: DRIVER ROAD)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,843,000	$1,843,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$5,660,000	$5,660,000
ROADWAY					
4	Civil Improvements	LS	1	$27,590,000	$27,590,000
5	Signing and Striping	LS	1	$275,900	$275,900
STRUCTURE					
6	Widen Bridge	SF	3,882	$700	$2,717,400
DRAINAGE					
7	Drainage Work	LS	1	$500,000	$500,000
8	Minor Items (10%)*	LS	1	$3,869,000	$3,869,000
9	Mobilization (10%)	LS	1	$4,256,000	$4,256,000
				SUBTOTAL=	$46,811,300
				CONTINGENCY (30%) =**	$14,044,000
				GRAND TOTAL =	**$60,856,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (3.3 - SR-99/Pond Road Interchange)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 753,000	$ 1,114,624
TOTAL RIGHT OF WAY COST		$ -	$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 753,000**	**$ 1,115,000**
DESIGN	PA/ED (12.5%)*	$ 100,000	$ 148,024
DESIGN	PS&E (17.5%)	$ 140,000	$ 207,234
DESIGN	RIGHT OF WAY (2%)	$ 20,000	$ 29,605
CM	CONSTRUCTION (19%)	$ 150,000	$ 222,037
TOTAL DELIVERY COST		**$ 410,000**	**$ 607,000**
TOTAL PROJECT COST		**$ 1,170,000**	**$ 1,730,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (3.3 POND ROAD INTERCHANGE)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$23,000	$23,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$152,000	$152,000
ROADWAY					
4	Civil Improvements	LS	1	$169,000	$169,000
5	Signing and Striping	LS	1	$17,000	$17,000
DRAINAGE					
6	Drainage Work	LS	1	$17,000	$17,000
7	Minor Items (10%)*	LS	1	$48,000	$48,000
8	Mobilization (10%)	LS	1	$53,000	$53,000
				SUBTOTAL=	$578,444
				CONTINGENCY (30%) =**	$174,000
				GRAND TOTAL =	**$753,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (4 - I-5 GRAPEVINE IMPROVEMENTS)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
4.1	I-5 Weight Stations	$44,950,000	$66,600,000
4.2	I-5 Truck Safety Passing Lanes Grapevine to Lebec	$132,000,000	$195,000,000
	GRAND TOTAL =	**$176,950,000**	**$261,600,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (4.1 - I-5 Weight Stations)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 29,756,000	$ 44,046,149
	TOTAL RIGHT OF WAY COST	$ -	$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 29,756,000**	**$ 44,047,000**
DESIGN	PA/ED (12.5%)*	$ 3,720,000	$ 5,506,509
DESIGN	PS&E (17.5%)	$ 5,210,000	$ 7,712,073
DESIGN	RIGHT OF WAY (2%)	$ 600,000	$ 888,147
CM	CONSTRUCTION (19%)	$ 5,660,000	$ 8,378,183
	TOTAL DELIVERY COST	**$ 15,190,000**	**$ 22,485,000**
	TOTAL PROJECT COST	**$ 44,950,000**	**$ 66,600,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (4.1 - I-5 Weight Stations) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (10%)	LS	1	$100,000	$100,000
2	SWPPP and Erosion Control	LS	1	$200,000	$200,000
DEMOLITION					
3	Clearing And Grubbing	AC	9	$10,000	$90,000
4	Remove Asphalt Concrete Pavement	CY	0	$180	$0
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	70500	$60	$4,230,000
12	Hot Mix Asphalt (Type A)	TON	22500	$190	$4,275,000
13	Aggregate Base (Class 2)	CY	14400	$90	$1,296,000
14	Install Concrete - Curb Ramp	EA	2	$8,000	$16,000
15	Install Concrete - Curb	LF	1160	$30	$34,800
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	1200	$12	$14,400
18	Install Fence	LF	4930	$150	$739,500
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$350	$0
23	Signing and Striping	LS	1	$65,000	$65,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	$0
26	Weight Station Building	SF	14,210	$500	$7,105,000
27	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
28	Drainage Work	LS	1	$250,000	$250,000
ELECTRICAL					
29	New Traffic Signal	EA	0	$450,000	$0
30	Weight Scale	EA	4	$100,000	$400,000
31	Signal Modification	EA	0	$250,000	$0
32	Lighting	LS	1	$100,000	$100,000
33	Minor Items (10%)*	LS	1	$1,892,000	$1,892,000
34	Mobilization (10%)	LS	1	$2,081,000	$2,081,000

KERN COG (4.1 - I-5 Weight Stations) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
				SUBTOTAL=	$22,888,700
				CONTINGENCY (30%)** =	$6,867,000
				GRAND TOTAL =	**$29,756,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (4.2 - I-5 Truck Safety Passing Lanes)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 86,716,000	$ 128,360,863
	TOTAL RIGHT OF WAY COST	$ 114,000	$ 168,748
	TOTAL CAPITAL OUTLAY COSTS	**$ 86,830,000**	**$ 128,530,000**
DESIGN	PA/ED (12.5%)*	$ 10,860,000	$ 16,075,453
DESIGN	PS&E (17.5%)	$ 15,200,000	$ 22,499,713
DESIGN	RIGHT OF WAY (2%)	$ 1,740,000	$ 2,575,625
CM	CONSTRUCTION (19%)	$ 16,500,000	$ 24,424,031
	TOTAL DELIVERY COST	**$ 44,300,000**	**$ 65,575,000**
	TOTAL PROJECT COST	**$ 132,000,000**	**$ 195,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (4.2 - I-5 Truck Safety Passing Lanes) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (15%)	LS	1	$7,191,000	$7,191,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	29	$10,000	$290,000
4	Remove Asphalt Concrete Pavement	CY	2,200	$180	$396,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	460	$5	$2,300
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	6	$1,000	$6,000
9	Remove MGS	LF	4,800	$20	$96,000
ROADWAY					
10	Imported Borrow	CY	24,000	$50	$1,200,000
11	Roadway Excvation	CY	96,000	$120	$11,520,000
12	Hot Mix Asphalt (Type A)	TON	43,700	$190	$8,303,000
13	Aggregate Base (Class 2)	CY	29,200	$110	$3,212,000
14	Install Concrete - Concrete Pavement	CY	270	$150	$40,500
15	Install Concrete - Curb	LF	580	$30	$17,400
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	6	$4,000	$24,000
20	Install MGS	LF	4900	$50	$245,000
21	Install Concrete Barrier	LF	1330	$250	$332,500
22	Rockfall Protection	LF	4600	$175	$805,000
23	Install HMA Dike	LF	5,000	$5	$25,000
24	Signing and Striping	LS	1	$710,000	$710,000
STRUCTURE					
25	New Bridge	SF	0	$500	$0
26	Widen Bridge	SF	1,880	$700	$1,316,000
27	Culvert/Animal Crossing Widening	LS	1	$2,500,000	$2,500,000
28	Install Retaining Wall	SF	35,100	$450	$15,795,000
DRAINAGE					
29	Drainage Work	LS	1	$1,000,000	$1,000,000
ELECTRICAL					
30	New Traffic Signal	EA	0	$450,000	$0
31	Signal Modification	EA	0	$250,000	$0
32	Lighting	EA	0	$20,000	$0
33	Minor Items (10%)*	LS	1	$5,513,000	$5,513,000
34	Mobilization (10%)	LS	1	$6,064,000	$6,064,000

KERN COG (4.2 - I-5 Truck Safety Passing Lanes) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
				SUBTOTAL=	$66,703,700
				CONTINGENCY (30%) =**	$20,012,000
				GRAND TOTAL =	**$86,716,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (5 - Lamont/SE Bakerfield Greenpass Network Total)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
5.1	Lamont Green-pass: Edison Road	$111,000,000	$164,000,000
5.2	Panama Ln Green-Pass/Mt Vernon-Edison Rd	$55,100,000	$81,500,000
5.3	Bakersfield Green-pass: Mt Vernon Ave Extension	$45,300,000	$67,100,000
5.4	Bakersfield Green-pass: Mt Vernon Ave	$15,050,000	$22,300,000
5.5	S Lamont Green-pass: Edison Road/223-S Arvin Green-pass	$45,300,000	$67,000,000
5.6	SR58 Edison Rd Interchange /58-223 Green-pass	$8,250,000	$12,150,000
	GRAND TOTAL =	**$280,000,000**	**$414,050,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (5.1 - Lamont Green-pass: Edison Road)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 72,409,000	$ 107,183,008
TOTAL RIGHT OF WAY COST		$ 742,437	$ 1,098,988
TOTAL CAPITAL OUTLAY COSTS		$ 73,152,000	$ 108,282,000
DESIGN	PA/ED (12.5%)*	$ 9,150,000	$ 13,544,235
DESIGN	PS&E (17.5%)	$ 12,810,000	$ 18,961,929
DESIGN	RIGHT OF WAY (2%)	$ 1,470,000	$ 2,175,959
CM	CONSTRUCTION (19%)	$ 13,900,000	$ 20,575,396
TOTAL DELIVERY COST		$ 37,330,000	$ 55,258,000
TOTAL PROJECT COST		$ 111,000,000	$ 164,000,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (5.1 - Lamont Green-pass: Edison Road)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$2,192,000	$2,192,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	40	$10,000	$400,000
4	Remove Asphalt Concrete Pavement	CY	37,684	$180	$6,783,120
ROADWAY					
5	Hot Mix Asphalt (Type A)	TON	123,599	$190	$23,483,810
6	Aggregate Base (Class 2)	CY	99,677	$90	$8,970,930
7	Minor Concrete	CY	767	$1,500	$1,150,500
8	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
9	Widen Bridge	EA	1	$150,000	$150,000
ELECTRICAL					
10	New Traffic Signal	EA	6	$450,000	$2,700,000
11	Minor Items (10%)*	LS	1	$4,604,000	$4,604,000
12	Mobilization (10%)	LS	1	$5,064,000	$5,064,000
				SUBTOTAL=	$55,698,360
				CONTINGENCY (30%) =**	$16,710,000
				GRAND TOTAL =	**$72,409,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (5.2 - Panama Ln Green-pass: Mt Vernon Ave)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 36,017,000	$ 53,313,958
TOTAL RIGHT OF WAY COST		$ 394,832	$ 584,447
TOTAL CAPITAL OUTLAY COSTS		$ 36,412,000	$ 53,899,000
DESIGN	PA/ED (12.5%)*	$ 4,560,000	$ 6,749,914
DESIGN	PS&E (17.5%)	$ 6,380,000	$ 9,443,959
DESIGN	RIGHT OF WAY (2%)	$ 730,000	$ 1,080,578
CM	CONSTRUCTION (19%)	$ 6,920,000	$ 10,243,290
TOTAL DELIVERY COST		$ 18,590,000	$ 27,518,000
TOTAL PROJECT COST		$ 55,100,000	$ 81,500,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (5.2 - Panama Ln Green-pass: Mt Vernon Ave)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,095,000	$1,095,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	25	$10,000	$250,000
4	Remove Asphalt Concrete Pavement	CY	18,412	$180	$3,314,160
ROADWAY					
5	Hot Mix Asphalt (Type A)	TON	59,191	$190	$11,246,290
6	Aggregate Base (Class 2)	CY	47,734	$90	$4,296,060
7	Minor Concrete	CY	320	$1,500	$480,000
8	Signing and Striping	LS	1	$100,000	$100,000
9	Widen Bridge	SF	0	$700	
DRAINAGE					
10	Drainage Work	LS	1	$500,000	$500,000
ELECTRICAL					
11	New Traffic Signal	EA	3	$450,000	$1,350,000
12	Signal Modification	EA	1	$250,000	$250,000
13	Minor Items (10%)*	LS	1	$2,249,000	$2,249,000
14	Mobilization (10%)	LS	1	$2,474,000	$2,474,000
				SUBTOTAL=	$27,704,510
				CONTINGENCY (30%) =**	$8,312,000
				GRAND TOTAL =	**$36,017,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (5.3 - Bakersfield Green-pass: Mt Vernon Ave Extension)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)		Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 29,365,000	$	43,467,373
TOTAL RIGHT OF WAY COST		$ 626,939	$	928,022
TOTAL CAPITAL OUTLAY COSTS		$ 29,992,000	$	44,396,000
DESIGN	PA/ED (12.5%)*	$ 3,750,000	$	5,550,916
DESIGN	PS&E (17.5%)	$ 5,250,000	$	7,771,282
DESIGN	RIGHT OF WAY (2%)	$ 600,000	$	888,147
CM	CONSTRUCTION (19%)	$ 5,700,000	$	8,437,392
TOTAL DELIVERY COST		$ 15,300,000	$	22,648,000
TOTAL PROJECT COST		$ 45,300,000	$	67,100,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (5.3 - Bakersfield Green-pass: Mt Vernon Ave Extension)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$893,000	$893,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	31	$10,000	$310,000
4	Remove Asphalt Concrete Pavement	CY	1,208	$180	$217,440
ROADWAY					
5	Imported Borrow	CY	47,926	$20	$958,520
6	Roadway Excavation	CY	47,926	$60	$2,875,560
7	Hot Mix Asphalt (Type A)	TON	45,173	$190	$8,582,870
8	Aggregate Base (Class 2)	CY	40,903	$90	$3,681,270
8	Minor Concrete	CY	384	$1,500	$576,000
9	Signing and Striping	LS	1	$100,000	$100,000
ELECTRICAL					
10	New Traffic Signal	EA	1	$450,000	$450,000
11	Minor Items (10%)*	LS	1	$1,830,000	$1,830,000
12	Mobilization (10%)	LS	1	$2,013,000	$2,013,000
				SUBTOTAL=	$22,587,660
				CONTINGENCY (30%) =**	$6,777,000
				GRAND TOTAL =	**$29,365,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (5.4 - Bakersfield Green-pass: Mt Vernon Ave)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 9,761,000	$ 14,448,664
	TOTAL RIGHT OF WAY COST	$ 185,985	$ 275,303
	TOTAL CAPITAL OUTLAY COSTS	$ 9,947,000	$ 14,724,000
DESIGN	PA/ED (12.5%)*	$ 1,250,000	$ 1,850,305
DESIGN	PS&E (17.5%)	$ 1,750,000	$ 2,590,427
DESIGN	RIGHT OF WAY (2%)	$ 200,000	$ 296,049
CM	CONSTRUCTION (19%)	$ 1,890,000	$ 2,797,662
	TOTAL DELIVERY COST	$ 5,090,000	$ 7,535,000
	TOTAL PROJECT COST	$ 15,050,000	$ 22,300,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (5.4 - Bakersfield Green-pass: Mt Vernon Ave)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$296,000	$296,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	7	$10,000	$70,000
4	Remove Asphalt Concrete Pavement	CY	4,593	$180	$826,740
ROADWAY					
5	Hot Mix Asphalt (Type A)	TON	16,908	$190	$3,212,520
6	Aggregate Base (Class 2)	CY	15,310	$90	$1,377,900
7	Install Concrete - Curb and Gutter	LF	2,638	$50	$131,900
8	Install Concrete - Sidewalk/Driveway	SF	7,333	$12	$87,996
9	Signing and Striping	LS	1	$100,000	$100,000
DRAINAGE					
10	12" RCB	LS	1	$255	$255
11	Minor Items (10%)*	LS	1	$621,000	$621,000
12	Mobilization (10%)	LS	1	$683,000	$683,000
				SUBTOTAL=	$7,507,311
				CONTINGENCY (30%) =**	$2,253,000
				GRAND TOTAL =	**$9,761,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (5.5 - S Lamont Green-pass: Edison Road/223-S Arvin Green-pass)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 29,592,000	$ 43,803,389
TOTAL RIGHT OF WAY COST		$ 368,439	$ 545,380
TOTAL CAPITAL OUTLAY COSTS		$ 29,961,000	$ 44,349,000
DESIGN	PA/ED (12.5%)*	$ 3,750,000	$ 5,550,916
DESIGN	PS&E (17.5%)	$ 5,250,000	$ 7,771,282
DESIGN	RIGHT OF WAY (2%)	$ 600,000	$ 888,147
CM	CONSTRUCTION (19%)	$ 5,700,000	$ 8,437,392
TOTAL DELIVERY COST		$ 15,300,000	$ 22,648,000
TOTAL PROJECT COST		$ 45,300,000	$ 67,000,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (5.5 - S Lamont Green-pass: Edison Road/223-S Arvin Green-pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$896,000	$896,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	23	$10,000	$230,000
ROADWAY					
4	Imported Borrow	CY	18,495	$20	$369,900
5	Roadway Excavation	CY	18,495	$60	$1,109,700
6	Hot Mix Asphalt (Type A)	TON	55,973	$190	$10,634,870
7	Aggregate Base (Class 2)	CY	45,139	$90	$4,062,510
8	Minor Concrete	CY	272	$1,500	$408,000
9	Signing and Striping	LS	1	$100,000	$100,000
DRAINAGE					
10	Culvert	EA	2	$450,000	$900,000
ELECTRICAL					
10	New Traffic Signal	EA	2	$450,000	$900,000
11	Minor Items (10%)*	LS	1	$1,882,000	$1,882,000
12	Mobilization (10%)	LS	1	$2,070,000	$2,070,000
				SUBTOTAL=	$22,762,980
				CONTINGENCY (30%) =**	$6,829,000
				GRAND TOTAL =	**$29,592,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (5.6 - SR58 Edison Rd Interchange/58-223 Green-pass)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 5,320,000	$ 7,874,900
TOTAL RIGHT OF WAY COST		$ 102,299	$ 151,428
TOTAL CAPITAL OUTLAY COSTS		$ 5,423,000	$ 8,027,000
DESIGN	PA/ED (12.5%)*	$ 680,000	$ 1,006,566
DESIGN	PS&E (17.5%)	$ 950,000	$ 1,406,232
DESIGN	RIGHT OF WAY (2%)	$ 110,000	$ 162,827
CM	CONSTRUCTION (19%)	$ 1,040,000	$ 1,539,454
TOTAL DELIVERY COST		$ 2,780,000	$ 4,116,000
TOTAL PROJECT COST		$ 8,250,000	$ 12,150,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (5.6 SR58 Edison Rd Interchange /58-223 Green-pass)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$161,000	$161,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	1	$10,000	$10,000
4	Remove Asphalt Concrete Pavement	CY	2,318	$180	$417,240
5	Remove Concrete Pavement	CY	15	$190	$2,850
6	Remove Fence	LF	15	$5	$75
7	Remove Concrete Barrier	LF	15	$50	$750
8	Remove MGS	LF	100	$20	$2,000
ROADWAY					
9	Imported Borrow	CY	3,983	$20	$79,660
10	Roadway Excavation	CY	3,983	$60	$238,980
11	Hot Mix Asphalt (Type A)	TON	8,115	$190	$1,541,850
12	Aggregate Base (Class 2)	CY	6,545	$90	$589,050
13	Install Concrete - Curb & Gutter	LF	1245	$50	$62,250
14	Install Concrete - Sidewalk/Driveway	SF	6267	$12	$75,205
15	Signing and Striping	LS	1	$100,000	$100,000
16	Minor Items (10%)*	LS	1	$339,000	$339,000
17	Mobilization (10%)	LS	1	$372,000	$372,000
				SUBTOTAL=	$4,091,910
				CONTINGENCY (30%) =**	$1,228,000
				GRAND TOTAL =	**$5,320,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (6 - US GOODS MOVEMENT/SAFETY IMPROVEMENTS)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
6.1	US 395 Safety Passing Lanes	$54,600,000	$80,800,000
6.2	US 395/China Lake Boulevard Interchange	$40,100,000	$59,400,000
6.3	US 395 Searles Station Intermodal Rail Facility	$73,500,000	$109,000,000
	GRAND TOTAL =	**$168,200,000**	**$249,200,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (US 395 SAFETY PASSING LANES)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 36,090,000	$ 53,423,000
	TOTAL RIGHT OF WAY COST		$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 36,090,000**	**$ 53,423,000**
DESIGN	PA/ED (12.5%)*	$ 4,520,000	$ 6,691,000
DESIGN	PS&E (17.5%)	$ 6,320,000	$ 9,356,000
DESIGN	RIGHT OF WAY (2%)	$ 730,000	$ 1,081,000
CM	CONSTRUCTION (19%)	$ 6,860,000	$ 10,155,000
	TOTAL DELIVERY COST	**$ 18,430,000**	**$ 27,283,000**
	TOTAL PROJECT COST	**$ 54,600,000**	**$ 80,800,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (US 395 Safety Passing Lanes)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,093,000	$1,093,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	15	$2,000	$30,096
4	Remove Asphalt Concrete Pavement	CY	2,200	$180	$396,000
5	Remove Concrete Pavement	CY	3,800	$190	$722,000
ROADWAY					
6	Imported Borrow	CY	0	$0	$0
7	Roadway Excavation	CY	2,200	$60	$132,000
8	Hot Mix Asphalt (Type A)	TON	87,400	$190	$16,606,000
9	Aggregate Base (Class 2)	CY	41,800	$90	$3,762,000
10	Signing and Striping	LS	1	$100,000	$100,000
	Minor Items (10%)	LS	1	$2,295,000	$2,295,000
	Mobilization (10%)	LS	1	$2,524,000	$2,524,000
				SUBTOTAL=	$27,760,096
				CONTINGENCY (30%) =**	$8,329,000
				GRAND TOTAL =	**$36,090,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (US 395/CHINA LAKE BOULEVARD INTERCHANGE)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 26,525,000	$ 39,264,000
TOTAL RIGHT OF WAY COST			$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 26,525,000**	**$ 39,264,000**
DESIGN	PA/ED (12.5%)*	$ 3,320,000	$ 4,915,000
DESIGN	PS&E (17.5%)	$ 4,650,000	$ 6,884,000
DESIGN	RIGHT OF WAY (2%)	$ 540,000	$ 800,000
CM	CONSTRUCTION (19%)	$ 5,040,000	$ 7,461,000
TOTAL DELIVERY COST		**$ 13,550,000**	**$ 20,060,000**
TOTAL PROJECT COST		**$ 40,100,000**	**$ 59,400,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (US 395/China Lake Boulveard IC)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$803,000	$803,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	6	$10,000	$61,926
4	Remove Asphalt Concrete Pavement	CY	1,800	$180	$324,000
5	Remove Concrete Pavement	CY	3,080	$190	$585,200
ROADWAY					
6	Imported Borrow	CY		$20	$0
7	Roadway Excavation	CY	1,800	$60	$108,000
8	Hot Mix Asphalt (Type A)	TON	43,300	$190	$8,227,000
9	Aggregate Base (Class 2)	CY	72,800	$90	$6,552,000
10	Signing and Striping	LS	1	$100,000	$100,000
11	Minor Items (10%)	LS	1	$1,687,000	$1,687,000
12	Mobilization (10%)	LS	1	$1,855,000	$1,855,000
				SUBTOTAL=	$20,403,126
				CONTINGENCY (30%) =**	$6,121,000
				GRAND TOTAL =	**$26,525,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (US 395 SEARLES STATION INTERMODAL RAIL FACILITY)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 48,519,000	$ 71,820,000
	TOTAL RIGHT OF WAY COST	$ 107,000	$ 159,000
	TOTAL CAPITAL OUTLAY COSTS	**$ 48,626,000**	**$ 71,979,000**
DESIGN	PA/ED (12.5%)*	$ 6,080,000	$ 9,000,000
DESIGN	PS&E (17.5%)	$ 8,510,000	$ 12,597,000
DESIGN	RIGHT OF WAY (2%)	$ 980,000	$ 1,451,000
CM	CONSTRUCTION (19%)	$ 9,240,000	$ 13,678,000
	TOTAL DELIVERY COST	**$ 24,810,000**	**$ 36,726,000**
	TOTAL PROJECT COST	**$ 73,500,000**	**$ 109,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (US 395 Searles Station Intermodal Rail Facility)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,705,000	$1,705,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	17	$10,000	$172,188
ROADWAY					
4	Imported Borrow	CY	0	$20	$0
5	Roadway Excavation	CY	14,000	$60	$840,000
6	Hot Mix Asphalt (Type A)	TON	9,000	$190	$1,710,000
7	Aggregate Base (Class 2)	CY	4,300	$90	$387,000
8	Reinforced Concrete	CY	22,500	$100	$2,250,000
9	Signing and Striping	LS	1	$100,000	$100,000
RAILROAD					
10	TRACK NEW 136# (CWR Rail, Plates, 10' Wood Ties, Ballast, OTM)	TF	4696	$630	$2,958,480
11	Straight Mast Forklift	LS	1	$500,000	$500,000
12	Pre-Fabricated Building	LS	1	$72,250	$72,250
13	Railroad Signal	EA	2	$12,500,000	$25,000,000
14	Minor Items (10%)	LS	1	$727,000	$727,000
15	Mobilization (10%)	LS	1	$800,000	$800,000
				SUBTOTAL=	$37,321,918
				CONTINGENCY (30%) =**	$11,197,000
				GRAND TOTAL =	**$48,519,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (7 - NW BAKERSFIELD GREENPASS NETWORK)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
7.1	Shafter/Bakersfield Green-pass: Superior Road Corridor	$63,600,000	$94,100,000
7.2	Shafter/Bakersfield West Urban Corridor	$207,000,000	$276,000,000
7.3	Santa Fe Way, Burbank-Rosedale Hwy	$126,000,000	$187,000,000
13.7	Shafter Greenpass: Merced Ave Expressway Bridges	$12,250,000	$18,100,000
13.9	Shafter Greenpass: Cherry Ave Expressway Grade Separations	$6,950,000	$10,300,000
	GRAND TOTAL =	**$415,800,000**	**$585,500,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

KERN COG (7.1 - Shafter/Bakersfield Green-pass: Superior Road Corridor)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 41,322,000	$ 61,166,654
	TOTAL RIGHT OF WAY COST	$ 754,000	$ 1,116,104
	TOTAL CAPITAL OUTLAY COSTS	**$ 42,076,000**	**$ 62,283,000**
DESIGN	PA/ED (12.5%)*	$ 5,260,000	$ 7,786,085
DESIGN	PS&E (17.5%)	$ 7,370,000	$ 10,909,400
DESIGN	RIGHT OF WAY (2%)	$ 850,000	$ 1,258,208
CM	CONSTRUCTION (19%)	$ 8,000,000	$ 11,841,954
	TOTAL DELIVERY COST	**$ 21,480,000**	**$ 31,796,000**
	TOTAL PROJECT COST	**$ 63,600,000**	**$ 94,100,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

ERN COG (7.1 - Shafter/Bakersfield Green-pass: Superior Road Corridor) 30% Estimat

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,251,000	$1,251,000
2	SWPPP and Erosion Control	LS	1	$270,000	$270,000
DEMOLITION					
3	Clearing And Grubbing	AC	16	$10,000	$160,000
4	Remove Asphalt Concrete Pavement	CY	8,300	$180	$1,494,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	75,000	$60	$4,500,000
12	Hot Mix Asphalt (Type A)	TON	58,100	$190	$11,039,000
13	Aggregate Base (Class 2)	CY	55,500	$90	$4,995,000
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	0	$30	$0
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	1	$560,000	$560,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	1	$200,000	$200,000
ELECTRICAL					
28	New Traffic Signal	EA	4	$450,000	$1,800,000
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$2,627,000	$2,627,000
29	Mobilization (10%)	LS	1	$2,890,000	$2,890,000
				SUBTOTAL=	$31,786,000

ERN COG (7.1 - Shafter/Bakersfield Green-pass: Superior Road Corridor) 30% Estimat

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
				CONTINGENCY (30%)** =	$9,536,000
				GRAND TOTAL =	**$41,322,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (7.2 - Shafter/Bakersfield West Urban Corridor)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 135,717,000	$ 200,894,314
TOTAL RIGHT OF WAY COST		$ 1,278,000	$ 1,891,752
TOTAL CAPITAL OUTLAY COSTS		**$ 136,995,000**	**$ 202,787,000**
DESIGN	PA/ED (12.5%)*	$ 17,130,000	$ 25,356,585
DESIGN	PS&E (17.5%)	$ 23,980,000	$ 21,581,962
DESIGN	RIGHT OF WAY (2%)	$ 2,740,000	$ 2,472,008
CM	CONSTRUCTION (19%)	$ 26,030,000	$ 23,432,267
TOTAL DELIVERY COST		**$ 69,880,000**	**$ 72,843,000**
TOTAL PROJECT COST		**$ 207,000,000**	**$ 276,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (7.2 - Shafter/Bakersfield West Urban Corridor) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$4,109,000	$4,109,000
2	SWPPP and Erosion Control	LS	1	$220,000	$220,000
DEMOLITION					
3	Clearing And Grubbing	AC	27	$10,000	$273,000
4	Remove Asphalt Concrete Pavement	CY	20,500	$180	$3,690,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	279,100	$60	$16,746,000
12	Hot Mix Asphalt (Type A)	TON	203,800	$190	$38,722,000
13	Aggregate Base (Class 2)	CY	194,800	$90	$17,532,000
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	2200	$30	$66,000
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	1	$2,110,000	$2,110,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	1	$560,000	$560,000
ELECTRICAL					
28	New Traffic Signal	EA	5	$450,000	$2,250,000
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$8,628,000	$8,628,000
29	Mobilization (10%)	LS	1	$9,491,000	$9,491,000
				SUBTOTAL=	$104,397,000

KERN COG (7.2 - Shafter/Bakersfield West Urban Corridor) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
				CONTINGENCY (30%) =**	$31,320,000
				GRAND TOTAL =	**$135,717,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (7.3 - Santa Fe Way, Burbank-Rosedale Hwy)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 82,853,000	$ 122,642,680
TOTAL RIGHT OF WAY COST		$ 430,000	$ 636,505
TOTAL CAPITAL OUTLAY COSTS		**$ 83,283,000**	**$ 123,280,000**
DESIGN	PA/ED (12.5%)*	$ 10,420,000	$ 15,424,145
DESIGN	PS&E (17.5%)	$ 14,580,000	$ 21,581,962
DESIGN	RIGHT OF WAY (2%)	$ 1,670,000	$ 2,472,008
CM	CONSTRUCTION (19%)	$ 15,830,000	$ 23,432,267
TOTAL DELIVERY COST		**$ 42,500,000**	**$ 62,911,000**
TOTAL PROJECT COST		**$ 126,000,000**	**$ 187,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (7.3 - Santa Fe Way, Burbank-Rosedale Hwy) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$2,509,000	$2,509,000
2	SWPPP and Erosion Control	LS	1	$140,000	$140,000
DEMOLITION					
3	Clearing And Grubbing	AC	26	$10,000	$264,000
4	Remove Asphalt Concrete Pavement	CY	28,800	$180	$5,184,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	187,000	$60	$11,220,000
12	Hot Mix Asphalt (Type A)	TON	112,300	$190	$21,337,000
13	Aggregate Base (Class 2)	CY	107,300	$90	$9,657,000
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	0	$30	$0
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	1	$1,110,000	$1,110,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	1	$350,000	$350,000
ELECTRICAL					
28	New Traffic Signal	EA	2	$450,000	$900,000
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$5,268,000	$5,268,000
29	Mobilization (10%)	LS	1	$5,794,000	$5,794,000
				SUBTOTAL=	$63,733,000

KERN COG (7.3 - Santa Fe Way, Burbank-Rosedale Hwy) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
				CONTINGENCY (30%) =**	$19,120,000
				GRAND TOTAL =	**$82,853,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (13.7 - Shafter Greenpass: Merced Ave Expressway Bridges)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 8,079,000	$ 11,958,894
TOTAL RIGHT OF WAY COST		$ -	$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 8,079,000**	**$ 11,958,894**
DESIGN	PA/ED (12.5%)*	$ 1,010,000	$ 1,495,047
DESIGN	PS&E (17.5%)	$ 1,420,000	$ 2,101,947
DESIGN	RIGHT OF WAY (2%)	$ 170,000	$ 251,642
CM	CONSTRUCTION (19%)	$ 1,540,000	$ 2,279,576
TOTAL DELIVERY COST		**$ 4,140,000**	**$ 6,129,000**
TOTAL PROJECT COST		**$ 12,250,000**	**$ 18,100,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (13.7 - Shafter Greenpass: Merced Ave Expressway Bridges) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$100,000	$100,000
2	SWPPP and Erosion Control	LS	1	$50,000	$50,000
DEMOLITION					
3	Clearing And Grubbing	AC	1	$10,000	$10,000
4	Remove Asphalt Concrete Pavement	CY	0	$180	$0
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	0	$60	$0
12	Hot Mix Asphalt (Type A)	TON	0	$190	$0
13	Aggregate Base (Class 2)	CY	0	$90	$0
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	0	$30	$0
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	0	$2,110,000	$0
STRUCTURE					
24	New Bridge	SF	9,750	$500	$4,875,000
25	Widen Bridge	SF	0	$700	
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	1	$100,000	$100,000
ELECTRICAL					
28	New Traffic Signal	EA	0	$450,000	$0
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$514,000	$514,000
29	Mobilization (10%)	LS	1	$565,000	$565,000
				SUBTOTAL=	$6,214,000

KERN COG (13.7 - Shafter Greenpass: Merced Ave Expressway Bridges) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
				CONTINGENCY (30%)** =	$1,865,000
				GRAND TOTAL =	**$8,079,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (13.9 - Shafter Greenpass: Cherry Ave Expressway Grade Separations)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 4,579,000	$ 6,778,039
TOTAL RIGHT OF WAY COST		$ -	$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 4,579,000**	**$ 6,779,000**
DESIGN	PA/ED (12.5%)*	$ 580,000	$ 858,542
DESIGN	PS&E (17.5%)	$ 810,000	$ 1,198,998
DESIGN	RIGHT OF WAY (2%)	$ 100,000	$ 148,024
CM	CONSTRUCTION (19%)	$ 880,000	$ 1,302,615
TOTAL DELIVERY COST		**$ 2,370,000**	**$ 3,509,000**
TOTAL PROJECT COST		**$ 6,950,000**	**$ 10,300,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (13.9 - Shafter Greenpass: Cherry Ave Expressway Grade Separations)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$100,000	$100,000
2	SWPPP and Erosion Control	LS	1	$50,000	$50,000
DEMOLITION					
3	Clearing And Grubbing	AC	1	$10,000	$10,000
4	Remove Asphalt Concrete Pavement	CY	0	$180	$0
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	0	$60	$0
12	Hot Mix Asphalt (Type A)	TON	0	$190	$0
13	Aggregate Base (Class 2)	CY	0	$90	$0
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	0	$30	$0
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	0	$2,110,000	$0
STRUCTURE					
24	New Bridge	SF	5,300	$500	$2,650,000
25	Widen Bridge	SF	0	$700	
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	1	$100,000	$100,000
ELECTRICAL					
28	New Traffic Signal	EA	0	$450,000	$0
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$291,000	$291,000
29	Mobilization (10%)	LS	1	$321,000	$321,000
				SUBTOTAL=	$3,522,000

KERN COG (13.9 - Shafter Greenpass: Cherry Ave Expressway Grade Separations)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
				CONTINGENCY (30%) =**	$1,057,000
				GRAND TOTAL =	**$4,579,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (8 - Rosamond Greenpass Network) 30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
8.1	Rosamond Greenpass Network	$82,200,000	$122,000,000
8.2	Rosamond Greenpass Network	$46,150,000	$68,400,000
	GRAND TOTAL =	**$128,350,000**	**$190,400,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (Rosamond Greenpass Network)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 52,145,000	$ 77,188,000
TOTAL RIGHT OF WAY COST		$ 2,270,000	$ 3,361,000
TOTAL CAPITAL OUTLAY COSTS		**$ 54,415,000**	**$ 80,549,000**
DESIGN	PA/ED (12.5%)*	$ 6,810,000	$ 10,090,000
DESIGN	PS&E (17.5%)	$ 9,530,000	$ 14,110,000
DESIGN	RIGHT OF WAY (2%)	$ 1,090,000	$ 1,620,000
CM	CONSTRUCTION (19%)	$ 10,340,000	$ 15,310,000
TOTAL DELIVERY COST		**$ 27,770,000**	**$ 41,130,000**
TOTAL PROJECT COST		**$ 82,200,000**	**$ 122,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (Rosamond Greenpass Network) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$1,583,000	$1,583,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	110	$2,000	$220,000
ROADWAY					
4	Imported Borrow	CY	45,300	$25	$1,132,500
5	Roadway Excavation	CY	190,000	$25	$4,750,000
6	Hot Mix Asphalt (Type A)	TON	209,900	$85	$17,841,500
7	Aggregate Base (Class 2)	CY	190,000	$30	$5,700,000
8	Minor Concrete	SF	2,500	$50	$125,000
9	Portland Cement Concrete (Roundabout)	CY	170	$200	$34,000
10	Pavement Delineation	LF	85,600	$5	$428,000
DRAINAGE					
11	Install 48" RCP Culvert	LF	613	$1,400	$858,200
12	Minor Items (10%)	LS	1	$3,278,000	$3,278,000
13	Mobilization (10%)	LS	1	$3,606,000	$3,606,000
RAILROAD					
14	TRACK NEW (CWR Rail, Plates, Wood Ties, Ballast, OTM)	TF	49	$630	$30,870
15	TRACK REMOVAL	TF	32	$100	$3,200
16	Remove Wood Ties	EA	5	$50	$250
17	Install Signal House	LS	1	$150,000	$150,000
18	Remove Existing Signal House	LS	1	$150,000	$150,000
19	Install Type 9 Railroad Gate	LS	2	$30,000	$60,000
20	Remove Type 9 Railroad Gate	LS	2	$30,000	$60,000
				SUBTOTAL=	$40,110,520
				CONTINGENCY (30%) =**	$12,034,000
				GRAND TOTAL =	**$52,145,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (Rosamond Blvd Interchange)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 27,822,000	$ 41,184,000
TOTAL RIGHT OF WAY COST		$ 2,722,700	$ 4,031,000
TOTAL CAPITAL OUTLAY COSTS		**$ 30,545,000**	**$ 45,215,000**
DESIGN	PA/ED (12.5%)*	$ 3,820,000	$ 5,660,000
DESIGN	PS&E (17.5%)	$ 5,350,000	$ 7,920,000
DESIGN	RIGHT OF WAY (2%)	$ 620,000	$ 920,000
CM	CONSTRUCTION (19%)	$ 5,810,000	$ 8,610,000
TOTAL DELIVERY COST		**$ 15,600,000**	**$ 23,110,000**
TOTAL PROJECT COST		**$ 46,150,000**	**$ 68,400,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (Rosamond Blvd Interchange) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
ROSAMOND BLVD (STRUCTURE)					
	Retaining Wall (Structure Backfill)	CY	81,300	$25	$2,032,500
	Excavation	CY	22,600	$15	$339,000
	HMA	TONS	3,300	$85	$280,500
	Aggregate Base Class 2	CY	5,200	$55	$286,000
	Structure Concrete (Retaining Walls)	CY	16200	$65	$1,053,000
	Steel (Retaining Wall)	LB	605,600	$1	$575,320
	Bridge Structure	SF	26,700	$350	$9,345,000
	Minor Concrete (Structure) Approach Slabs	CY	1,390	$45	$62,550
	Minor Concrete (Misc. SW + Curb + Gutter)	SF	13,600	$7	$95,200
	TOTAL=				$14,069,070
ROSAMOND BLVD (REHAB)					
	Traffic Control System	LS		200,000	$200,000
	Pavement Delinitation	LF	20,000	$5	$100,000
	Cold Plain HMA	CY	9,200	$5	$46,000
	Place HMA 3"	TONS	1,650	$85	$140,250
	TOTAL=				$486,250
SIERRA HWY					
	Traffic Control System	LS		$200,000	$200,000
	Pavement Deliniation and Channelization	LF	10,000	$5	$50,000
	Cold Plain HMA	CY	7,500	$5	$37,500
	Place HMA 3"	TONS	1,350	$85	$114,750
	TOTAL:				$402,250
ROSEWOOD					
	Rosewood (New Road)				
	Pavement Deliniation	LF	10,000	$5	$50,000
	Excavation	CY	26,400	$15	$396,000
	Imported Borrow	CY	52,800	$25	$1,320,000
	Hot Mix Asphalt	TONS	880	$85	$74,800
	Aggregate Base Class 2	CY	870	$55	$47,850
	Minor Concrete	SF	13,200	$7	$92,400
	TOTAL=				$1,981,050
DESERT					
	Excavation	CY	26400	$15	$396,000
	Traffic Control System	LS		$200,000	$200,000
	Pavement Deliniations	LF	10000	$5	$50,000
	Imported Borrow	CY	52800	$25	$1,320,000
	Hot Mix Ashpalt	TONS	1120	$85	$95,200
	Aggregate Base Class 2	CY	1106	$55	$60,830
	Minor Concrete	Sq	16800	$7	$117,600
	TOTAL=				$2,239,630
	SUM Total				$19,178,250
	AllProject Items				
	Traffic Control (5% of Total Project)				$958,913
	SWPPP and Erosion Control (2.5% of Total Projects)				$479,456
	Clearing and Grubbing (2% of Total Project)				$383,565
	Drainage Items				$400,000
	Total Length of Project	LF	20000	3.76 MI	
SUBTOTAL=					$21,400,184
CONTINGENCY (30%) =**					$6,421,000
GRAND TOTAL =					**$27,822,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (9 - SR 33/7TH STANDARD RD SAFETY CORRIDOR IMPROVEMENTS)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
9.1	7th Standard Road/Lerdo Safety Rehab	$110,000,000	$162,000,000
9.2	Rowlee Rd/Lerdo Safety Rehab Alternative	$31,850,000	$47,150,000
9.3	Shafter Green-pass: 7th Standard Road Passing Lanes	$18,800,000	$27,850,000
9.4	Shafter Green-pass: 7th Standard Road Widening	$119,000,000	$176,000,000
9.5	I-5/7th Standard Road Interchange	$47,300,000	$70,000,000
9.6	Shafter Green-pass: Wings Way	$15,100,000	$22,350,000
9.9	Main Drain Road Safety Rehab Alternative	$40,600,000	$60,100,000
	GRAND TOTAL =	**$382,650,000**	**$565,450,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.1 - 7th STANDARD ROAD/LERDO SAFETY REHAB)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 72,427,000	$ 107,209,653
	TOTAL RIGHT OF WAY COST		$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 72,427,000**	**$ 107,210,000**
DESIGN	PA/ED (12.5%)*	$ 9,060,000	$ 13,411,013
DESIGN	PS&E (17.5%)	$ 12,680,000	$ 18,769,498
DESIGN	RIGHT OF WAY (2%)	$ 1,450,000	$ 2,146,354
CM	CONSTRUCTION (19%)	$ 13,770,000	$ 20,382,964
	TOTAL DELIVERY COST	**$ 36,960,000**	**$ 54,710,000**
	TOTAL PROJECT COST	**$ 110,000,000**	**$ 162,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.1 - 7th STANDARD ROAD/LERDO SAFETY REHAB)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$2,193,000	$2,193,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$7,020,000	$7,020,000
ROADWAY					
4	Civil Improvements	LS	1	$36,130,000	$36,130,000
5	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
6	New Bridge	SF	11,350	$500	$5,675,000
DRAINAGE					
7	Drainage Work	LS	1	$500,000	$500,000
8	Minor Items (10%)*	LS	1	$4,605,000	$4,605,000
9	Mobilization (10%)	LS	1	$5,065,000	$5,065,000
				SUBTOTAL=	$55,713,000
				CONTINGENCY (30%) =**	$16,714,000
				GRAND TOTAL =	**$72,427,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (9.2 - 7th STANDARD ROAD/LERDO SAFETY REHAB)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 21,060,000	$ 31,173,945
	TOTAL RIGHT OF WAY COST	$ -	$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 21,060,000**	**$ 31,174,000**
DESIGN	PA/ED (12.5%)*	$ 2,640,000	$ 3,907,845
DESIGN	PS&E (17.5%)	$ 3,690,000	$ 5,462,101
DESIGN	RIGHT OF WAY (2%)	$ 430,000	$ 636,505
CM	CONSTRUCTION (19%)	$ 4,010,000	$ 5,935,780
	TOTAL DELIVERY COST	**$ 10,770,000**	**$ 15,943,000**
	TOTAL PROJECT COST	**$ 31,850,000**	**$ 47,150,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.2 - 7th STANDARD ROAD/LERDO SAFETY REHAB)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$638,000	$638,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$1,980,000	$1,980,000
ROADWAY					
4	Civil Improvements	LS	1	$10,070,000	$10,070,000
5	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
6	New Bridge	SF	12,247	$500	$6,123,500
DRAINAGE					
7	Drainage Work	LS	1	$500,000	$500,000
8	Minor Items (10%)*	LS	1	$1,339,000	$1,339,000
9	Mobilization (10%)	LS	1	$1,473,000	$1,473,000
				SUBTOTAL=	$16,200,000
				CONTINGENCY (30%) =**	$4,860,000
				GRAND TOTAL =	**$21,060,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (9.3 - SHAFTER GREEN-PASS: 7TH STANDARD ROAD PASSING LANES)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 12,422,000	$ 18,387,595
	TOTAL RIGHT OF WAY COST	$ -	$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 12,422,000**	**$ 18,388,000**
DESIGN	PA/ED (12.5%)*	$ 1,560,000	$ 2,309,181
DESIGN	PS&E (17.5%)	$ 2,180,000	$ 3,226,933
DESIGN	RIGHT OF WAY (2%)	$ 250,000	$ 370,061
CM	CONSTRUCTION (19%)	$ 2,370,000	$ 3,508,179
	TOTAL DELIVERY COST	**$ 6,360,000**	**$ 9,415,000**
	TOTAL PROJECT COST	**$ 18,800,000**	**$ 27,850,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.3 - SHAFTER GREEN-PASS: 7TH STANDARD ROAD PASSING LANES) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$376,000	$376,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$1,200,000	$1,200,000
ROADWAY					
4	Civil Improvements	LS	1	$5,620,000	$5,620,000
5	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
6	New Bridge	SF		$500	$0
7	Widen Bridge	SF		$700	
8	Install Retaining Wall	SF		$450	$0
DRAINAGE					
9	Drainage Work	LS	1	$500,000	$500,000
10	Minor Items (10%)*	LS	1	$790,000	$790,000
11	Mobilization (10%)	LS	1	$869,000	$869,000
				SUBTOTAL=	$9,555,000
				CONTINGENCY (30%) =**	$2,867,000
				GRAND TOTAL =	**$12,422,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (9.4 - SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 78,307,000	$ 115,913,489
	TOTAL RIGHT OF WAY COST	$ -	$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 78,307,000**	**$ 115,914,000**
DESIGN	PA/ED (12.5%)*	$ 9,790,000	$ 14,491,592
DESIGN	PS&E (17.5%)	$ 13,710,000	$ 20,294,149
DESIGN	RIGHT OF WAY (2%)	$ 1,570,000	$ 2,323,984
CM	CONSTRUCTION (19%)	$ 14,880,000	$ 22,026,035
	TOTAL DELIVERY COST	**$ 39,950,000**	**$ 59,136,000**
	TOTAL PROJECT COST	**$ 119,000,000**	**$ 176,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.4 - SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$2,371,000	$2,371,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$7,340,000	$7,340,000
ROADWAY					
4	Civil Improvements	LS	1	$36,490,000	$36,490,000
5	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
6	New Bridge	SF	5,760	$500	$2,880,000
7	Minor Items (10%)*	LS	1	$4,979,000	$4,979,000
8	Mobilization (10%)	LS	1	$5,476,000	$5,476,000
				SUBTOTAL=	$60,236,000
				CONTINGENCY (30%) =**	$18,071,000
				GRAND TOTAL =	**$78,307,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (9.5 - I-5/7th STANDARD ROAD INTERCHANGE)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 30,762,000	$ 45,535,275
	TOTAL RIGHT OF WAY COST	$ 539,000	$ 797,852
	TOTAL CAPITAL OUTLAY COSTS	**$ 31,301,000**	**$ 46,334,000**
DESIGN	PA/ED (12.5%)*	$ 3,920,000	$ 5,802,558
DESIGN	PS&E (17.5%)	$ 5,480,000	$ 8,111,739
DESIGN	RIGHT OF WAY (2%)	$ 630,000	$ 932,554
CM	CONSTRUCTION (19%)	$ 5,950,000	$ 8,807,453
	TOTAL DELIVERY COST	**$ 15,980,000**	**$ 23,655,000**
	TOTAL PROJECT COST	**$ 47,300,000**	**$ 70,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.5 - I-5/7th STANDARD ROAD INTERCHANGE)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$932,000	$932,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$650,000	$650,000
ROADWAY					
4	Civil Improvements	LS	1	$5,280,000	$5,280,000
5	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
6	Widen Bridge	SF	17,132	$700	$11,992,400
DRAINAGE					
7	Drainage Work	LS	1	$500,000	$500,000
8	Minor Items (10%)*	LS	1	$1,956,000	$1,956,000
9	Mobilization (10%)	LS	1	$2,152,000	$2,152,000
				SUBTOTAL=	$23,662,400
				CONTINGENCY (30%) =**	$7,099,000
				GRAND TOTAL =	**$30,762,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (9.6 SHAFTER GREEN-PASS: WINGS WAY)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 9,995,000	$ 14,795,042
	TOTAL RIGHT OF WAY COST	$ -	$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 9,995,000**	**$ 14,796,000**
DESIGN	PA/ED (12.5%)*	$ 1,250,000	$ 1,850,305
DESIGN	PS&E (17.5%)	$ 1,750,000	$ 2,590,427
DESIGN	RIGHT OF WAY (2%)	$ 200,000	$ 296,049
CM	CONSTRUCTION (19%)	$ 1,900,000	$ 2,812,464
	TOTAL DELIVERY COST	**$ 5,100,000**	**$ 7,550,000**
	TOTAL PROJECT COST	**$ 15,100,000**	**$ 22,350,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.6 SHAFTER GREEN-PASS: WINGS WAY) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$303,000	$303,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$900,000	$900,000
ROADWAY					
4	Civil Improvements	LS	1	$4,450,000	$4,450,000
5	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
6	New Bridge	SF		$500	$0
7	Widen Bridge	SF		$700	
8	Install Retaining Wall	SF		$450	$0
DRAINAGE					
9	Drainage Work	LS	1	$500,000	$500,000
10	Minor Items (10%)*	LS	1	$636,000	$636,000
11	Mobilization (10%)	LS	1	$699,000	$699,000
				SUBTOTAL=	$7,688,000
				CONTINGENCY (30%) =**	$2,307,000
				GRAND TOTAL =	**$9,995,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (9.9 MAIN DRAIN ROAD SAFETY REHAB)

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 26,875,000	$ 39,781,565
	TOTAL RIGHT OF WAY COST	$ -	$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 26,875,000**	**$ 39,782,000**
DESIGN	PA/ED (12.5%)*	$ 3,360,000	$ 4,973,621
DESIGN	PS&E (17.5%)	$ 4,710,000	$ 6,971,951
DESIGN	RIGHT OF WAY (2%)	$ 540,000	$ 799,332
CM	CONSTRUCTION (19%)	$ 5,110,000	$ 7,564,048
	TOTAL DELIVERY COST	**$ 13,720,000**	**$ 20,309,000**
	TOTAL PROJECT COST	**$ 40,600,000**	**$ 60,100,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (9.9 MAIN DRAIN ROAD SAFETY REHAB)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$814,000	$814,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Demolition	LS	1	$2,520,000	$2,520,000
ROADWAY					
4	Civil Improvements	LS	1	$13,050,000	$13,050,000
5	Signing and Striping	LS	1	$100,000	$100,000
6	Minor Items (10%)*	LS	1	$1,709,000	$1,709,000
7	Mobilization (10%)	LS	1	$1,880,000	$1,880,000
				SUBTOTAL=	$20,673,000
				CONTINGENCY (30%) =**	$6,202,000
				GRAND TOTAL =	**$26,875,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (10 - SR-58/STOCKDALE HWY CONNECTION TO I-5 CORRIDOR SAFETY IMPROVEMENTS)

30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
10.2	I-5/SR58 Stockdale Hwy Interchange	$6,550,000	$9,700,000
10.3	SR-58 Stockdale Hwy Safety Passing Lanes	$44,900,000	$66,500,000
	GRAND TOTAL =	**$51,450,000**	**$76,200,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG 10.2 I-5/SR58 STOCKDALE HWY INTERCHANGE

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 4,370,000	$ 6,468,668
TOTAL RIGHT OF WAY COST***		$ 12,000	$ 17,763
TOTAL CAPITAL OUTLAY COSTS		$ 4,382,000	$ 6,487,000
DESIGN	PA/ED (12.5%)*	$ 550,000	$ 820,000
DESIGN	PS&E (17.5%)	$ 770,000	$ 1,140,000
DESIGN	RIGHT OF WAY	$ -	$ -
CM	CONSTRUCTION (19%)	$ 840,000	$ 1,250,000
TOTAL DELIVERY COST		$ 2,160,000	$ 3,210,000
TOTAL PROJECT COST		$ 6,550,000	$ 9,700,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

***ROW assumes a $20,000 per acre cost for farmland acquisition, with 5.0 acres of R/W required

KERN COG (I-5/SR58 STOCKDALE HWY INTERCHANGE)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$133,000	$133,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	2	$10,000	$16,570
4	Remove Asphalt Concrete Pavement	CY	3,200	$180	$576,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excavation	CY	3,000	$60	$180,000
12	Hot Mix Asphalt (Type A)	TON	4,300	$190	$817,000
13	Aggregate Base (Class 2)	CY	4,100	$90	$369,000
14	Install Concrete - Curb Ramp	EA	4	$8,000	$32,000
15	Install Concrete - Curb	LF	85	$30	$2,550
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	$0
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	0	$500,000	$0
ELECTRICAL					
28	New Traffic Signal	EA	1	$450,000	$450,000
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$278,000	$278,000
29	Mobilization (10%)	LS	1	$306,000	$306,000
				SUBTOTAL=	$3,360,120
				CONTINGENCY (30%) =**	$1,009,000
				GRAND TOTAL =	**$4,370,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

KERN COG 10.3 SR-58 STOCKDALE SAFETY PASSING LANES

30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 29,601,000	$ 43,816,711
TOTAL RIGHT OF WAY COST***		$ 88,000	$ 130,261
TOTAL CAPITAL OUTLAY COSTS		$ 29,689,000	$ 43,947,000
DESIGN	PA/ED (12.5%)*	$ 3,720,000	$ 5,510,000
DESIGN	PS&E (17.5%)	$ 5,200,000	$ 7,700,000
DESIGN	RIGHT OF WAY	$ 600,000	$ 890,000
CM	CONSTRUCTION (19%)	$ 5,650,000	$ 8,370,000
TOTAL DELIVERY COST		$ 15,170,000	$ 22,470,000
TOTAL PROJECT COST		$ 44,900,000	$ 66,500,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

***ROW assumes a $20,000 per acre cost for farmland acquisition, with 5.0 acres of R/W required

KERN COG (10.3 SR-58 STOCKDALE HWY SAFETY PASSING LANES)

30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$897,000	$897,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	3	$10,000	$30,000
4	Remove Asphalt Concrete Pavement	CY	30,700	$180	$5,526,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	2,500	$5	$12,500
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excavation	CY	23,400	$60	$1,404,000
12	Hot Mix Asphalt (Type A)	TON	37,700	$190	$7,163,000
13	Aggregate Base (Class 2)	CY	36,000	$90	$3,240,000
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	0	$30	$0
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	2300	$150	$345,000
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	$0
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	0	$500,000	$0
ELECTRICAL					
28	New Traffic Signal	EA	0	$450,000	$0
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$1,882,000	$1,882,000
29	Mobilization (10%)	LS	1	$2,070,000	$2,070,000
				SUBTOTAL=	$22,769,500
				CONTINGENCY (30%) =**	$6,831,000
				GRAND TOTAL =	**$29,601,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

KERN COG (11 - WASCO AV/HSR FRONTAGE RD)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
11.1	Merced Avenue Safety Rehab	$41,850,000	$62,000,000
11.2	Wasco Ave Frontage Road to HSR Kimberlina-Jackson	$11,550,000	$17,100,000
	GRAND TOTAL =	**$53,400,000**	**$79,100,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (11.1 - Merced Avenue Safety Rehab)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 27,365,000	$ 40,506,885
TOTAL RIGHT OF WAY COST		$ 328,000	$ 485,520
TOTAL CAPITAL OUTLAY COSTS		$ 27,693,000	$ 40,993,000
DESIGN	PA/ED (12.5%)*	$ 3,470,000	$ 5,136,448
DESIGN	PS&E (17.5%)	$ 4,850,000	$ 7,179,185
DESIGN	RIGHT OF WAY (2%)	$ 560,000	$ 828,937
CM	CONSTRUCTION (19%)	$ 5,270,000	$ 7,800,887
TOTAL DELIVERY COST		$ 14,150,000	$ 20,946,000
TOTAL PROJECT COST		$ 41,850,000	$ 62,000,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (11.1 - Merced Avenue Safety Rehab)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$829,000	$829,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	11	$10,000	$110,000
4	Remove Asphalt Concrete Pavement	CY	9,600	$180	$1,728,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	67	$5	$334
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	30,400	$60	$1,824,000
12	Hot Mix Asphalt (Type A)	TON	27,900	$190	$5,301,000
13	Aggregate Base (Class 2)	CY	26,700	$90	$2,403,000
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	0	$30	$0
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	1	$100,000	$100,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	10	$500,000	$5,000,000
ELECTRICAL					
28	New Traffic Signal	EA	0	$450,000	$0
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA		$20,000	$0
28	Minor Items (10%)*	LS	1	$1,740,000	$1,740,000
29	Mobilization (10%)	LS	1	$1,914,000	$1,914,000
				SUBTOTAL=	$21,049,334
				CONTINGENCY (30%) =**	$6,315,000
				GRAND TOTAL =	**$27,365,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

KERN COG (11.1 - Merced Avenue Safety Rehab)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
General Note	Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.				

KERN COG (11.2 - Wasco Ave Frontage Road to HSR Kimberlina-Jackson)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 7,382,000	$ 10,927,163
TOTAL RIGHT OF WAY COST		$ 236,000	$ 349,338
TOTAL CAPITAL OUTLAY COSTS		$ 7,618,000	$ 11,277,000
DESIGN	PA/ED (12.5%)*	$ 960,000	$ 1,421,035
DESIGN	PS&E (17.5%)	$ 1,340,000	$ 1,983,527
DESIGN	RIGHT OF WAY (2%)	$ 160,000	$ 236,839
CM	CONSTRUCTION (19%)	$ 1,450,000	$ 2,146,354
TOTAL DELIVERY COST		$ 3,910,000	$ 5,788,000
TOTAL PROJECT COST		$ 11,550,000	$ 17,100,000

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (11.2 - Wasco Ave Frontage Road to HSR Kimberlina-Jackson)
30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$224,000	$224,000
2	SWPPP and Erosion Control	LS	1	$50,000	$50,000
DEMOLITION					
3	Clearing And Grubbing	AC	5	$10,000	$50,000
4	Remove Asphalt Concrete Pavement	CY	3,200	$180	$576,000
5	Remove Concrete Pavement	CY	0	$190	$0
6	Remove Fence	LF	0	$5	$0
7	Remove Concrete Barrier	LF	0	$50	$0
8	Remove In-line Terminal System	EA	0	$1,000	$0
9	Remove MGS	LF	0	$20	$0
ROADWAY					
10	Imported Borrow	CY	0	$20	$0
11	Roadway Excvation	CY	13,100	$60	$786,000
12	Hot Mix Asphalt (Type A)	TON	7,300	$190	$1,387,000
13	Aggregate Base (Class 2)	CY	12,200	$90	$1,098,000
14	Install Concrete - Curb Ramp	EA	0	$8,000	$0
15	Install Concrete - Curb	LF	0	$30	$0
16	Install Concrete - Curb and Gutter	LF	0	$50	$0
17	Install Concrete - Sidewalk/Driveway	SF	0	$12	$0
18	Install Fence	LF	0	$150	$0
19	Install In-line Terminal System	EA	0	$4,000	$0
20	Install MGS	LF	0	$50	$0
21	Install Concrete Barrier	LF	0	$250	$0
22	Install HMA Dike	LF	0	$5	$0
23	Signing and Striping	LS	1	$20,000	$20,000
STRUCTURE					
24	New Bridge	SF	0	$500	$0
25	Widen Bridge	SF	0	$700	
26	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
27	Drainage Work	LS	1	$500,000	$500,000
ELECTRICAL					
28	New Traffic Signal	EA	0	$450,000	$0
29	Signal Modification	EA	0	$250,000	$0
30	Lighting	EA	0	$20,000	$0
28	Minor Items (10%)*	LS	1	$470,000	$470,000
29	Mobilization (10%)	LS	1	$517,000	$517,000
				SUBTOTAL=	$5,678,000
				CONTINGENCY (30%) =**	$1,704,000
				GRAND TOTAL =	**$7,382,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note: Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (12 - California City Blvd. & 140th Street)
30% Estimate

MARK THOMAS

PHASE No.	PROJECT PHASE DESCRIPTION	PROJECT COST	ESCALATED COST (2035)
GENERAL			
12.1	SR-58, Extend Cal City Blvd to 140th St.	$38,850,000	$57,500,000
12.2	140th Street Interchange	$16,900,000	$25,000,000
	GRAND TOTAL =	**$55,750,000**	**$82,500,000**

* Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG
(SR58 EXTEND CALIFORNIA CITY BLVD TO 140th Street)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
TOTAL CONSTRUCTION COST		$ 25,698,000	$ 38,039,318
TOTAL RIGHT OF WAY COST			$ -
TOTAL CAPITAL OUTLAY COSTS		**$ 25,698,000**	**$ 38,040,000**
DESIGN	PA/ED (12.5%)*	$ 3,220,000	$ 4,770,000
DESIGN	PS&E (17.5%)	$ 4,500,000	$ 6,670,000
DESIGN	RIGHT OF WAY (2%)	$ 520,000	$ 770,000
CM	CONSTRUCTION (19%)	$ 4,890,000	$ 7,240,000
TOTAL DELIVERY COST		**$ 13,130,000**	**$ 19,450,000**
TOTAL PROJECT COST		**$ 38,850,000**	**$ 57,500,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

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KERN COG (California City Blvd. & 140th Street) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (2%)	LS	2	$314,000	$628,000
2	SWPPP and Erosion Control	LS	2	$100,000	$200,000
DEMOLITION					
3	Clearing And Grubbing	AC	13	$10,000	$125,000
4	Remove Asphalt Concrete	CY	1,614	$180	$290,455
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Imported Borrow	CY	30,100	$20	$602,000
11	Roadway Excavation	CY	0	$60	$0
12	Hot Mix Asphalt (Type A)	TON	16,934	$190	$3,217,374
13	Aggregate Base (Class 2)	CY	21,800	$90	$1,961,976
14	Install concrete slurry over Water Pipe	CY	4,500	$750	$3,375,000
15	Install Concrete - Curb Ramp	EA		$8,000	$0
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF	3,000	$5	$15,000
24	Signing and Striping	LS	3	$100,000	$250,000
STRUCTURE					
25	New Bridge	SF	0	$500	$0
26	Widen Bridge	SF	6,500	$700	$4,550,000
27	Install Retaining Wall	SF	0	$450	$0
DRAINAGE					
28	Drainage Work	LS	2	$90,000	$180,000
ELECTRICAL					
29	New Traffic Signal	EA	2	$450,000	$900,000
30	Signal Modification	EA	0	$250,000	$0
31	Lighting	EA	0	$20,000	$0

KERN COG (California City Blvd. & 140th Street) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
RIGHT OF WAY					
32	Acquisition, including excess lands	LS	1	$450,000	$450,000
33	Minor Items (10%)*	LS	1	$1,675,000	$1,675,000
34	Mobilization (10%)	LS	1	$1,797,000	$1,797,000
				SUBTOTAL=	$19,766,805
				CONTINGENCY (30%) =**	$5,931,000
				GRAND TOTAL =	**$25,698,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

KERN COG (140th Street Interchange)
30% Estimate

MARK THOMAS

SUMMARY OF PROJECT COST ESTIMATE

		Current Year Cost (2025)	Escalated Cost (2035)**
	TOTAL CONSTRUCTION COST	$ 11,151,000	$ 16,506,204
	TOTAL RIGHT OF WAY COST		$ -
	TOTAL CAPITAL OUTLAY COSTS	**$ 11,151,000**	**$ 16,507,000**
DESIGN	PA/ED (12.5%)*	$ 1,400,000	$ 2,080,000
DESIGN	PS&E (17.5%)	$ 1,960,000	$ 2,910,000
DESIGN	RIGHT OF WAY (2%)	$ 230,000	$ 350,000
CM	CONSTRUCTION (19%)	$ 2,120,000	$ 3,140,000
	TOTAL DELIVERY COST	**$ 5,710,000**	**$ 8,480,000**
	TOTAL PROJECT COST	**$ 16,900,000**	**$ 25,000,000**

* Support cost percentages reference the Multi-Agency CIP Benchmarking Study (2019) for streets projects

** Assumes escalation of 4% per year. No Adjustments in escalation for time between design and construction were made.

KERN COG (140th Street Interchange) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
GENERAL					
1	Traffic Control (5%)	LS	1	$338,000	$338,000
2	SWPPP and Erosion Control	LS	1	$100,000	$100,000
DEMOLITION					
3	Clearing And Grubbing	AC	1	$10,000	$10,000
4	Remove Asphalt Concrete	CY	1,059	$180	$190,555
5	Remove Concrete Pavement	CY		$190	$0
6	Remove Fence	LF		$5	$0
7	Remove Concrete Barrier	LF		$50	$0
8	Remove In-line Terminal System	EA		$1,000	$0
9	Remove MGS	LF		$20	$0
ROADWAY					
10	Imported Borrow	CY		$20	$0
11	Roadway Excavation	CY		$60	$0
12	Hot Mix Asphalt (Type A)	TON	2,734	$190	$519,374
13	Aggregate Base (Class 2)	CY	3,600	$90	$323,976
14	Install concrete slurry over Water Pipe	CY		$750	$0
15	Install Concrete - Curb Ramp	EA		$8,000	$0
16	Install Concrete - Curb	LF		$30	$0
17	Install Concrete - Curb and Gutter	LF		$50	$0
18	Install Concrete - Sidewalk/Driveway	SF		$12	$0
19	Install Fence	LF		$150	$0
20	Install In-line Terminal System	EA		$4,000	$0
21	Install MGS	LF		$50	$0
22	Install Concrete Barrier	LF		$250	$0
23	Install HMA Dike	LF	3,000	$5	$15,000
24	Signing and Striping	LS	0.5	$100,000	$50,000
STRUCTURE					
25	New Bridge	SF		$500	$0
26	Widen Bridge	SF	6,500	$700	$4,550,000
27	Install Retaining Wall	SF		$450	$0
DRAINAGE					
28	Drainage Work	LS	1	$90,000	$90,000
ELECTRICAL					
29	New Traffic Signal	EA	2	$450,000	$900,000
30	Signal Modification	EA		$250,000	$0
31	Lighting	EA		$20,000	$0

KERN COG (140th Street Interchange) 30% Estimate

MARK THOMAS

ITEM No.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
RIGHT OF WAY					
32	Acquisition, including excess lands	LS	1	$10,000	$10,000
33	Minor Items (10%)*	LS	1	$710,000	$710,000
34	Mobilization (10%)	LS	1	$780,000	$780,000
				SUBTOTAL=	$8,576,905
				CONTINGENCY (30%) =**	$2,574,000
				GRAND TOTAL =	**$11,151,000**

* Minor items (for example, fencing, signage, sidewalk repair, utility adjustments, etc.) have been estimated by using a percentage.

** This feasibility level estimate includes a 30% contingency intended to compensate for the use of preliminary and limited information.

General Note Where applicable, only minor drainage improvements for transportation projects to address safety are included. Utility improvements such as water, communication, gas, etc. are not included in these estimates.

Appendix D - Conceptual Plans

- Arvin/Maricopa/Taft Greenpass Network
- TSR 58 Tehachapi Grade Improvements
- Delano/Mcfarland and Greenpass Network
- I-5 Grapevine Improvements
- Lamont/SE Bakersfield Greenpass Network
- US 395 Goods Movement/Safety Improvements
- NW Bakersfield Greenpass Network
- Rosamond Greenpass Network
- SR 33/7th Standard Rd Safety Improvements
- SR 58/Stockdale Hwy Connection to I-5 Safety Corridor Improvements
- Wasco AV/HSR Frontage Rd
- California City Bl Extension to EAFB North Gate Safety Corridor

LEGEND:

- PHASE 1.1 S ARVIN CORRIDOR GREEN PASS
- PHASE 1.1 ALT 1 S ARVIN CORRIDOR GREEN PASS
- PHASE 1.1 ALT 2 S ARVIN CORRIDOR GREENPASS
- PHASE 1.2 ARVIN–TEJON COMMERCE CENTER RAIL SPUR
- PHASE 1.3 GREEN–PASS ALT 1:REALIGN SR VIA OLD RIVER RD/COPUS RD/DAVID RD
- PHASE 1.4 GREEN–PASS ALT 2: MARICOPA HWY EXTENSION TO WHEELER RIDGE RD
- PHASE 1.5 COPUS RD SAFETY REALIGNMENT
- ADJACENT PROJECT
- WATER QUALITY WELL
- OIL WELL

PROJECT PHASING TABLE

PHASE 1.1: S ARVIN CORRIDOR GREEN PASS
PHASE 1.1: ALT 1 S ARVIN CORRIDOR GREEN PASS
PHASE 1.1: ALT 2 S ARVIN CORRIDOR GREENPASS
PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR
PHASE 1.3: GREEN–PASS ALT 1:REALIGN SR VIA OLD RIVER RD/COPUS RD/DAVID RD
PHASE 1.4: GREEN–PASS ALT 2: MARICOPA HWY EXTENSION TO WHEELER RIDGE RD
PHASE 1.5: COPUS RD SAFETY REALIGNMENT



30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=5000'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

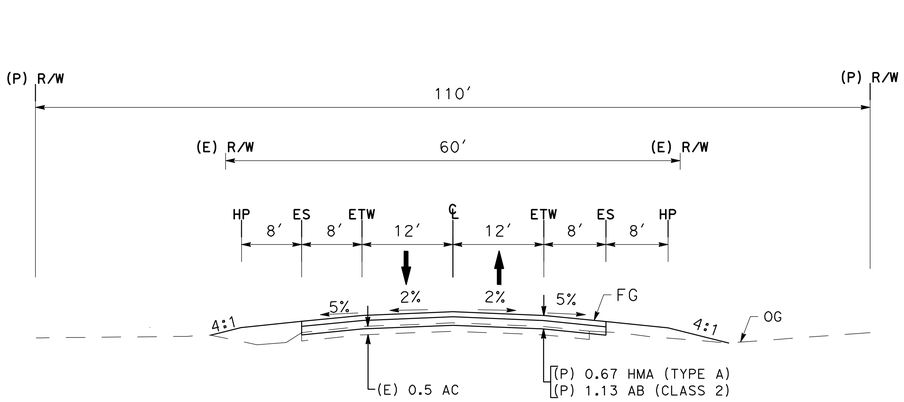
S ARVIN CORRIDOR GREEN PASS

LEGEND:

- PHASE 1.1 S ARVIN CORRIDOR GREEN PASS
- PHASE 1.1 ALT 1 S ARVIN CORRIDOR GREEN PASS
- PHASE 1.1 ALT 2 S ARVIN CORRIDOR GREENPASS
- PHASE 1.2 ARVIN–TEJON COMMERCE CENTER RAIL SPUR
- PHASE 1.3 GREEN–PASS ALT 1:REALIGN SR VIA OLD RIVER RD/COPUS RD/DAVID RD
- PHASE 1.4 GREEN–PASS ALT 2: MARICOPA HWY EXTENSION TO WHEELER RIDGE RD
- PHASE 1.5 COPUS RD SAFETY REALIGNMENT
- ADJACENT PROJECT
- WATER QUALITY WELL
- OIL WELL

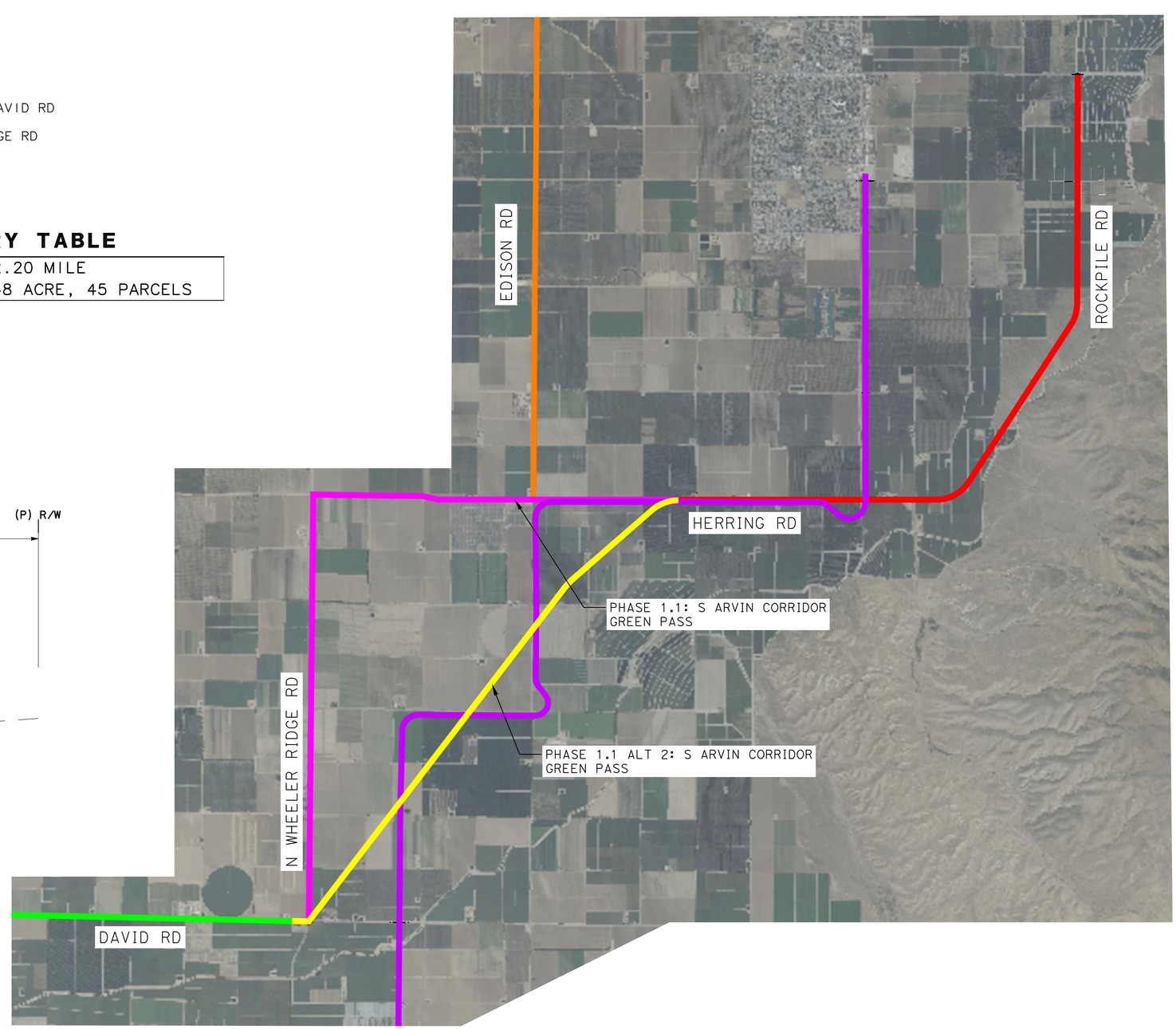
SUMMARY TABLE

TOTAL LENGTH	12.20 MILE
R/W REQUIREMENTS	148 ACRE, 45 PARCELS



GENERAL CROSS SECTION

SCALE: 1"=10'



SCALE: 1"=3000'

30% CONCEPTUAL DESIGN

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DATE: 1/14/26

LEGEND:

WATER QUALITY WELL

PHASE 1.1 ALT 2 S ARVIN CORRIDOR GREENPASS



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C13	1500.00'	013°24'04"	176.23'	350.84'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

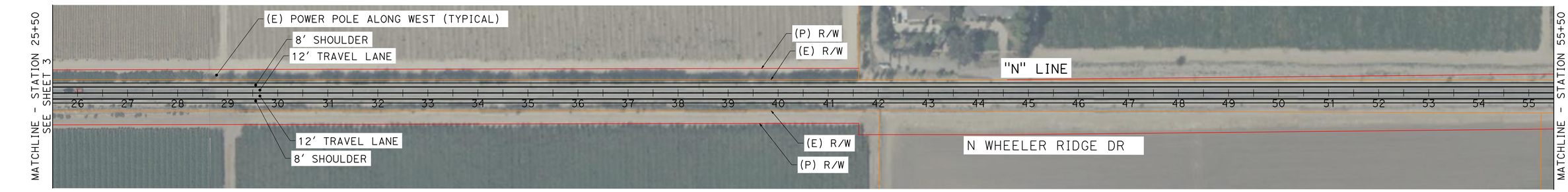
30% CONCEPTUAL DESIGN

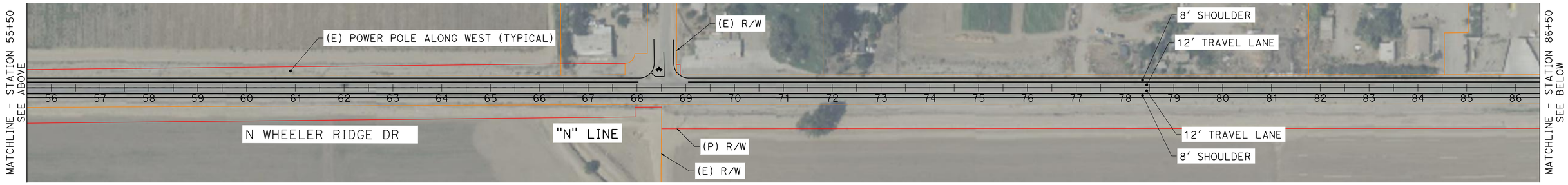
SCALE: 1"=100'

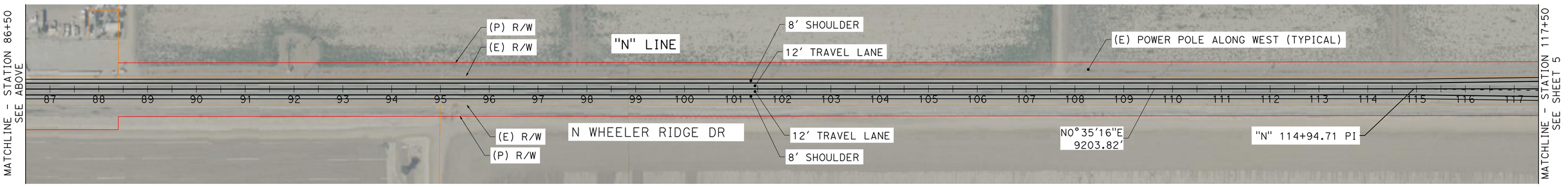
MARK THOMAS

KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.1 ALTERNATIVE 1
S ARVIN CORRIDOR GREEN PASS







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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

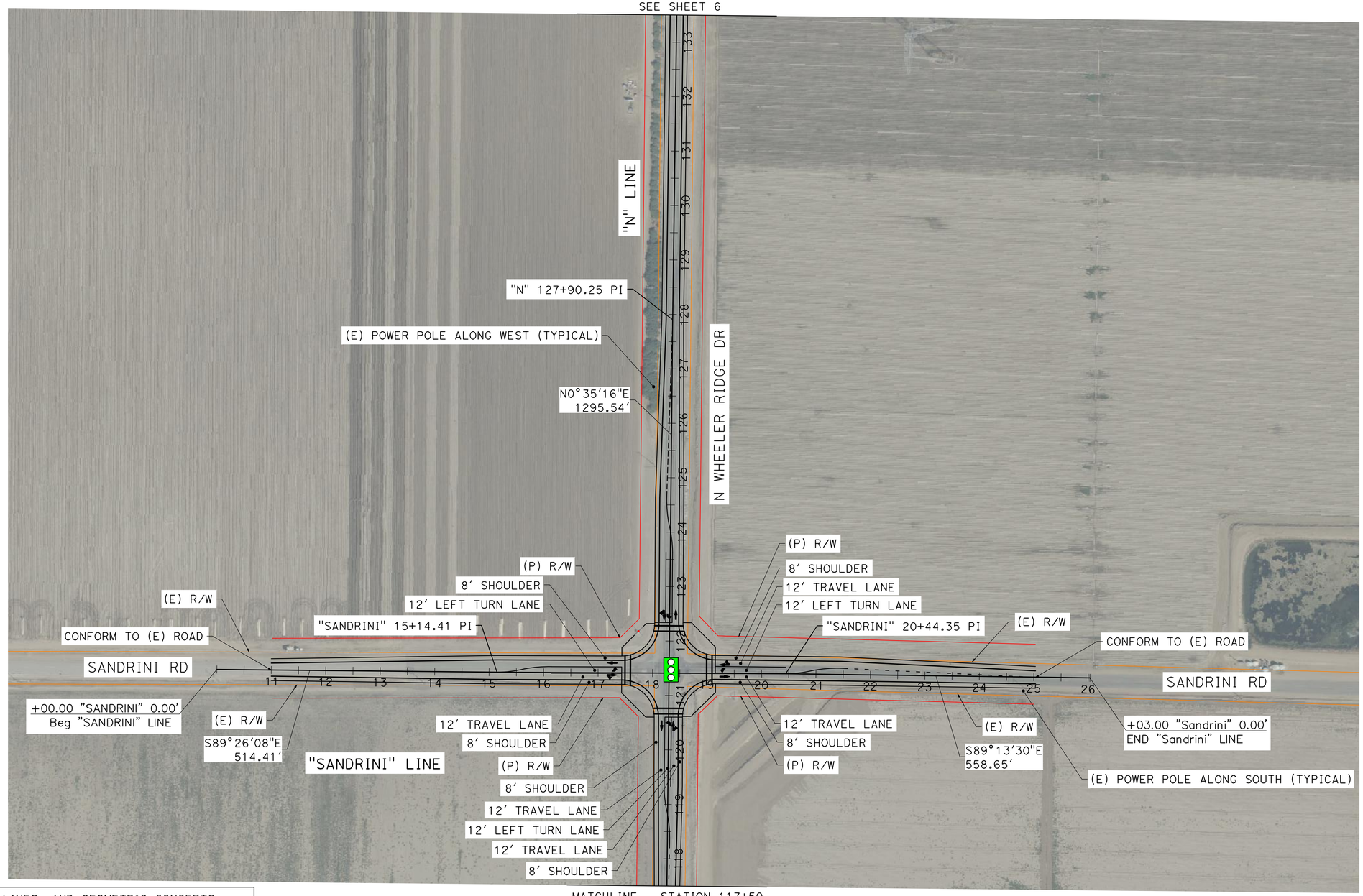
1.1 ALTERNATIVE 1

S ARVIN CORRIDOR GREEN PASS

LEGEND:

(P)SIGNALIZED INTERSECTION

WATER QUALITY WELL



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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

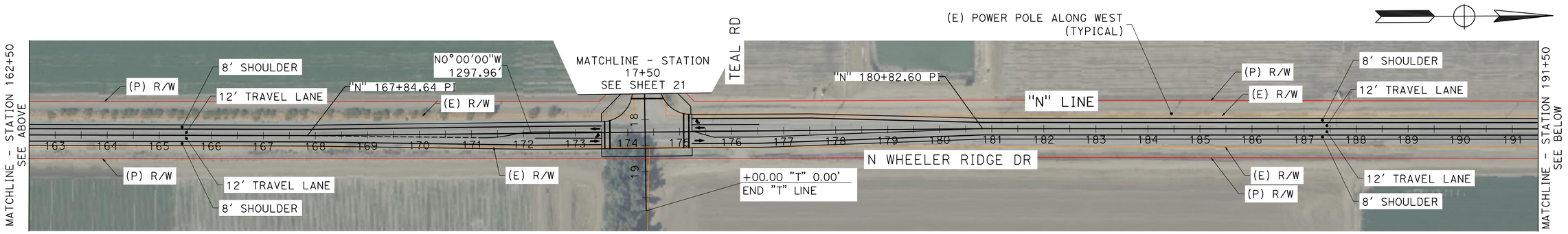
1.1 ALTERNATIVE 1

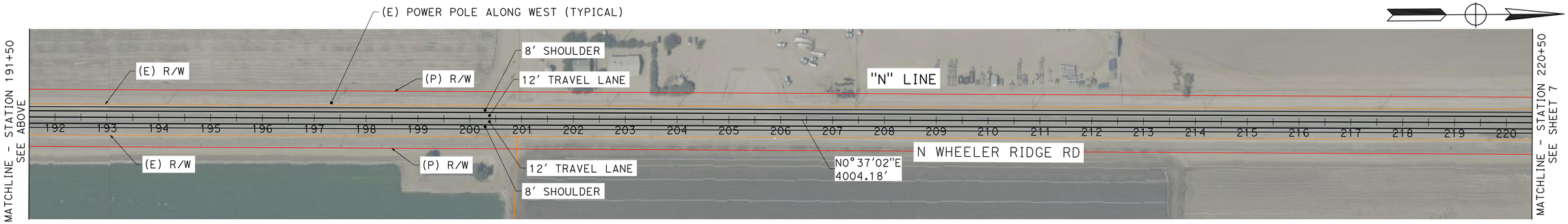
S ARVIN CORRIDOR GREEN PASS

LEGEND:

× WATER QUALITY WELL







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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

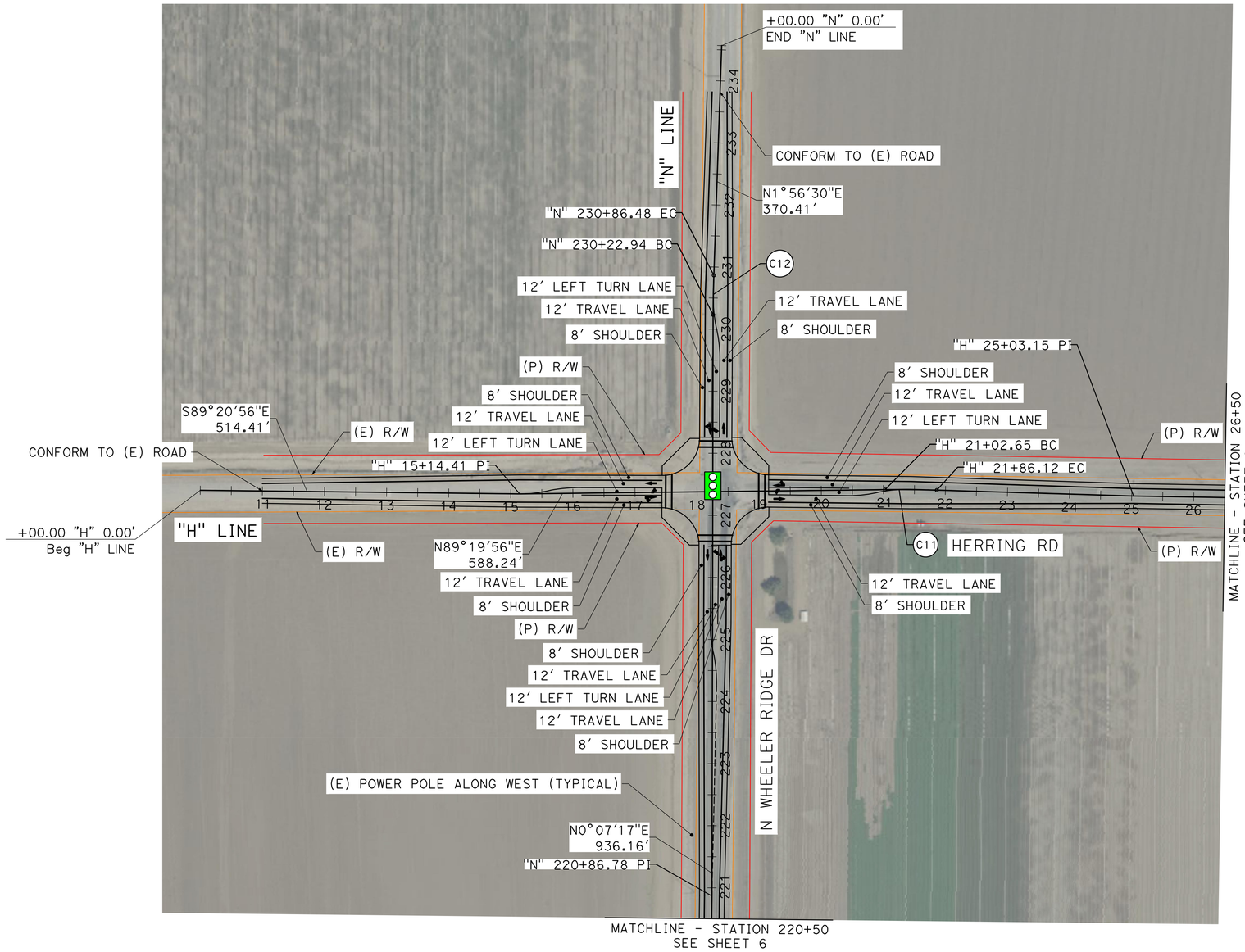
1.1 ALTERNATIVE 1

S ARVIN CORRIDOR GREEN PASS

30% CONCEPTUAL DESIGN

LEGEND:

(P)SIGNALIZED INTERSECTION



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C11	2000.00'	002°23'28"	41.74'	83.47'
C12	2000.00'	001°49'13"	31.77'	63.54'

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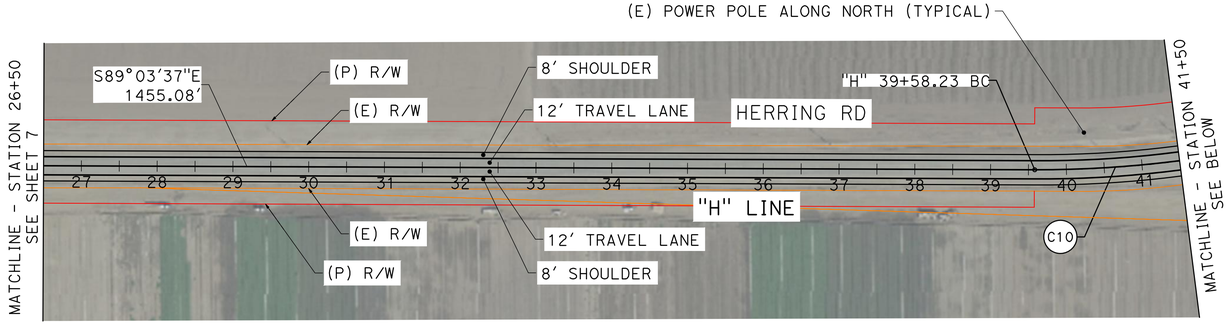
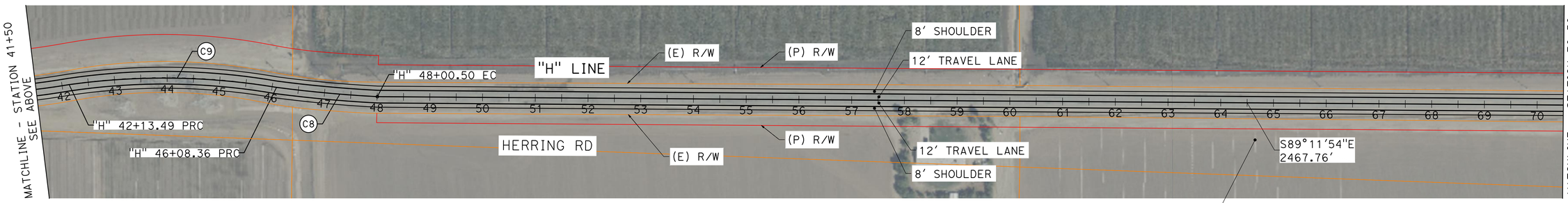
DATE: 1/14/26

30% CONCEPTUAL DESIGN





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C8	2500.00'	004°24'13"	96.12'	192.14'
C9	1300.00'	017°24'13"	198.97'	394.88'
C10	1500.00'	009°45'00"	127.94'	255.25'

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

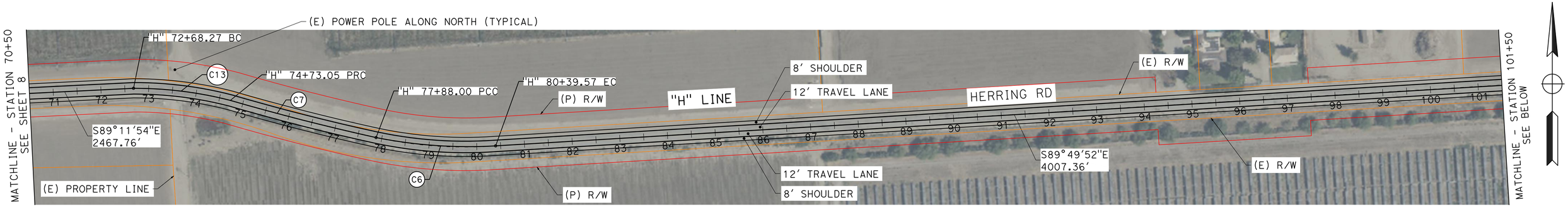
1.1 ALTERNATIVE 1
S ARVIN CORRIDOR GREEN PASS

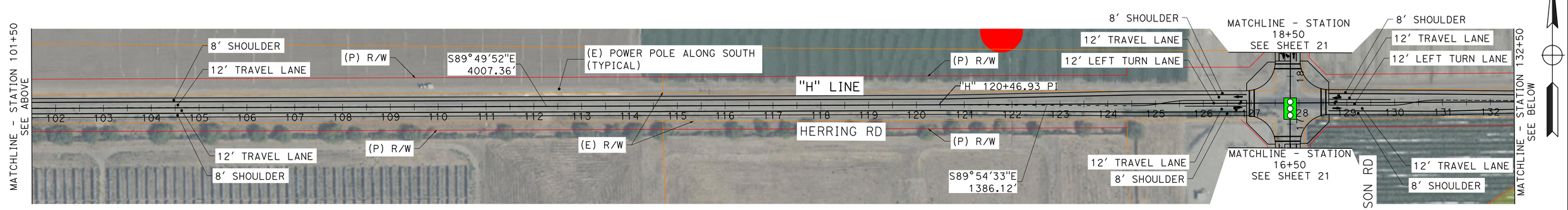
LEGEND:

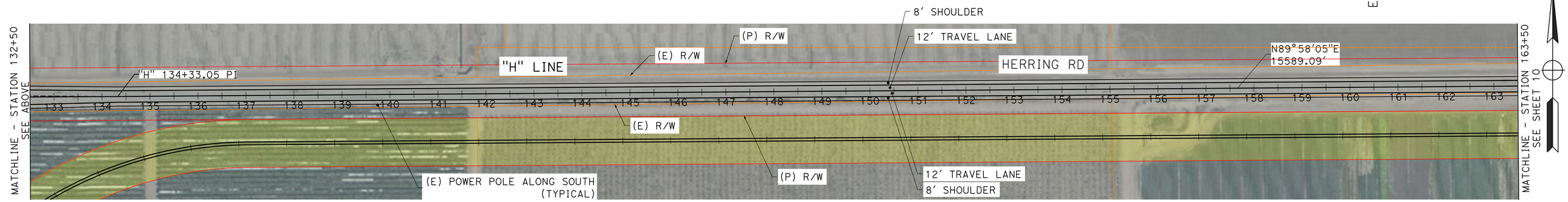
PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR

(P)SIGNALIZED INTERSECTION

WATER QUALITY WELL







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C6	1000.00'	014°24'50"	126.45'	251.57'
C7	5000.00'	003°36'32"	157.52'	314.94'
C13	800.00'	014°40'00"	102.96'	204.79'

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

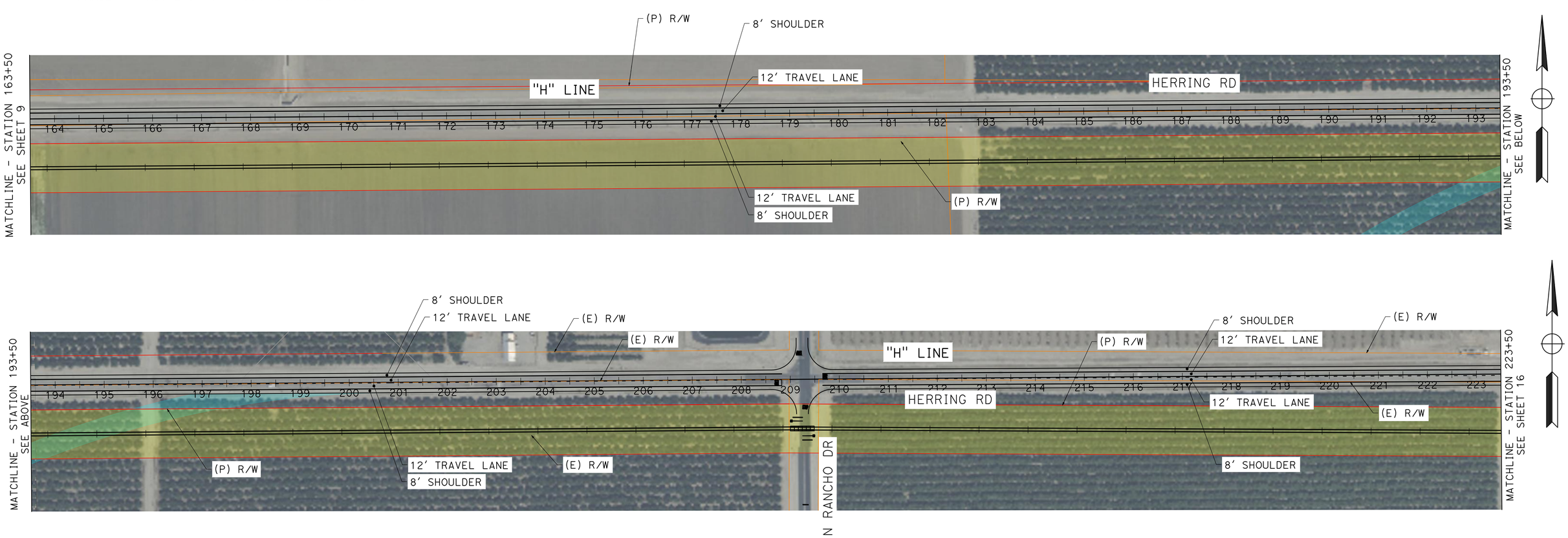
1.1 ALTERNATIVE 1

S ARVIN CORRIDOR GREEN PASS

LEGEND:

PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR

PHASE 1.1 ALT 2 S ARVIN CORRIDOR GREENPASS



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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

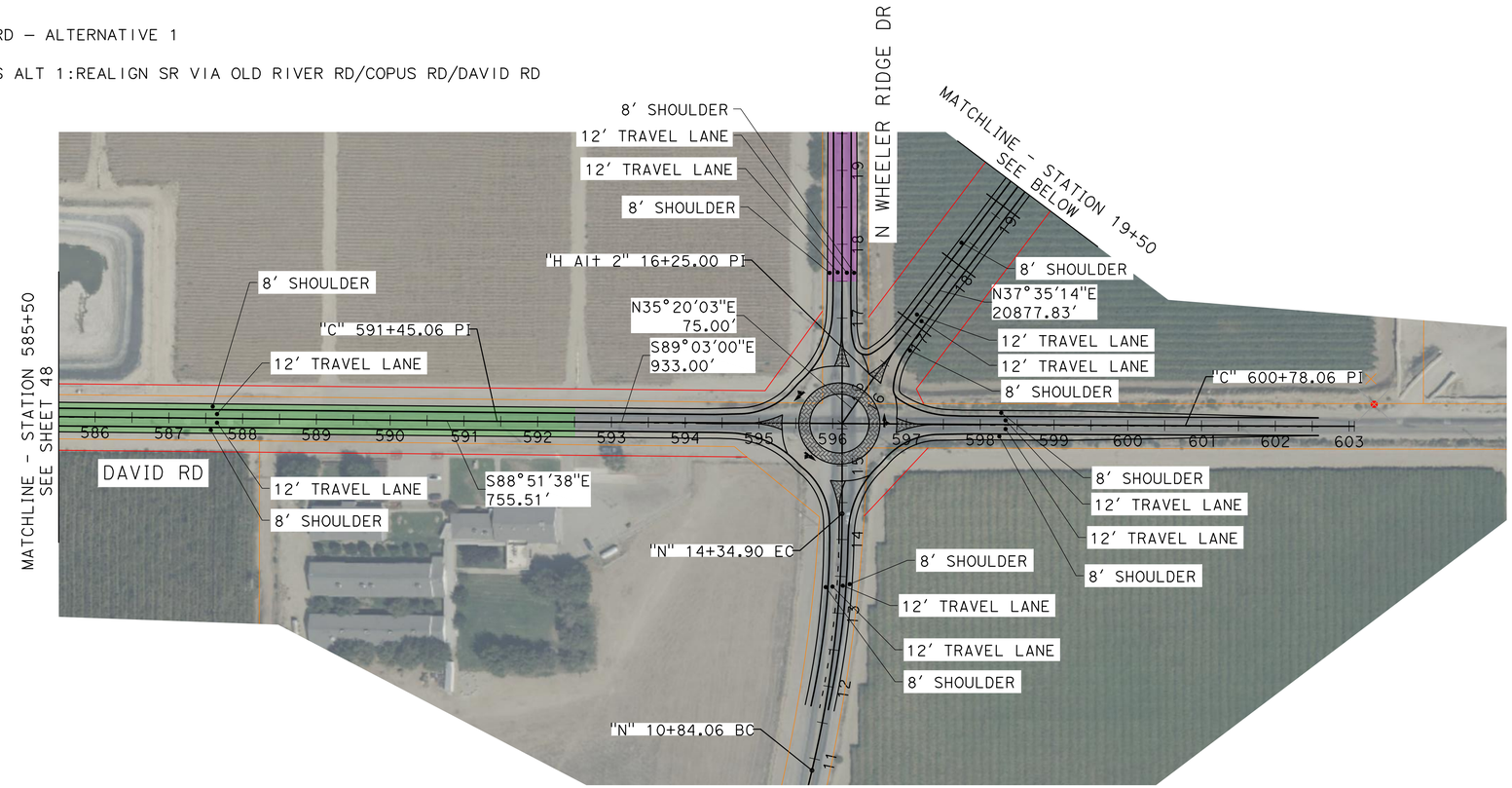
1.1 ALTERNATIVE 1

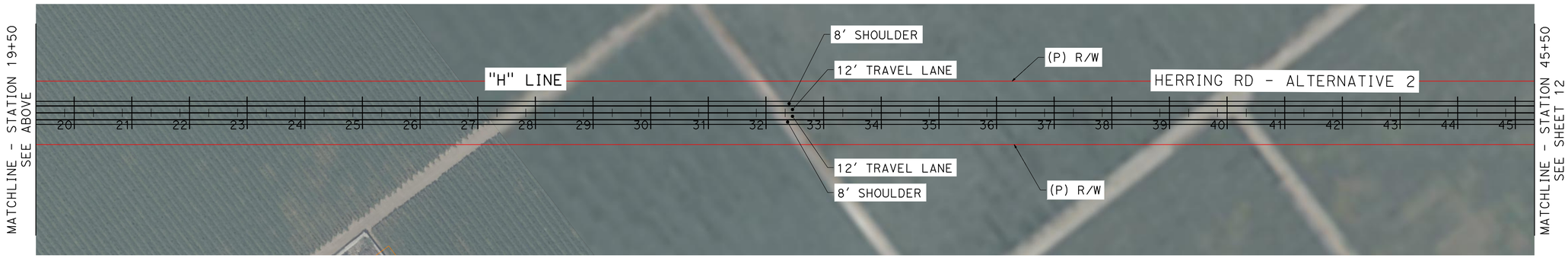
S ARVIN CORRIDOR GREEN PASS

LEGEND:

PHASE 1.1: HERRING RD – ALTERNATIVE 1

PHASE 1.3 GREEN–PASS ALT 1:REALIGN SR VIA OLD RIVER RD/COPUS RD/DAVID RD





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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

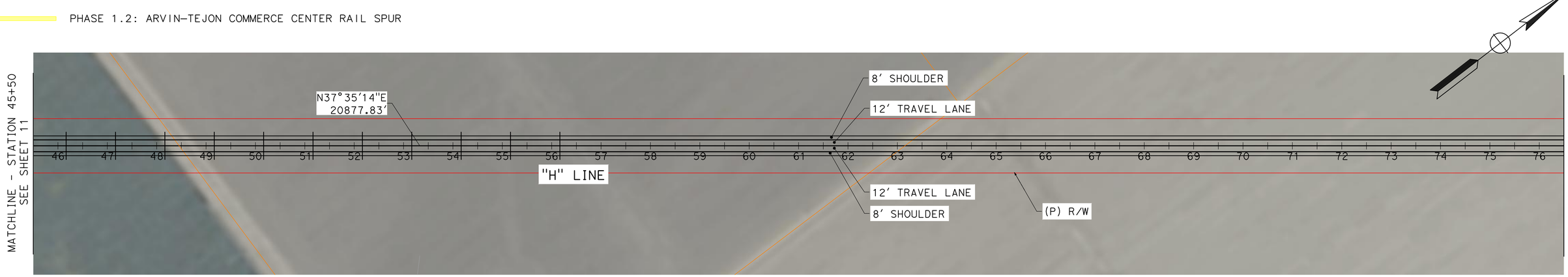
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

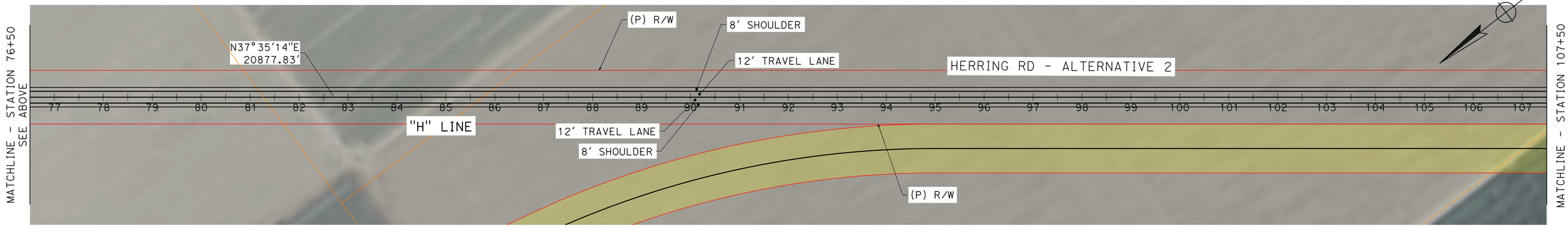
1.1 ALTERNATIVE 2

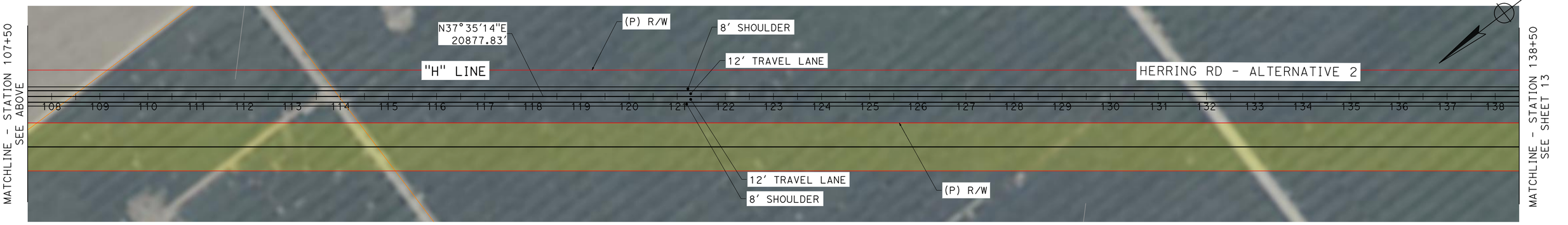
S ARVIN CORRIDOR GREEN PASS

LEGEND:

PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR







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DATE: 1/14/26

SCALE: 1"=100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 1

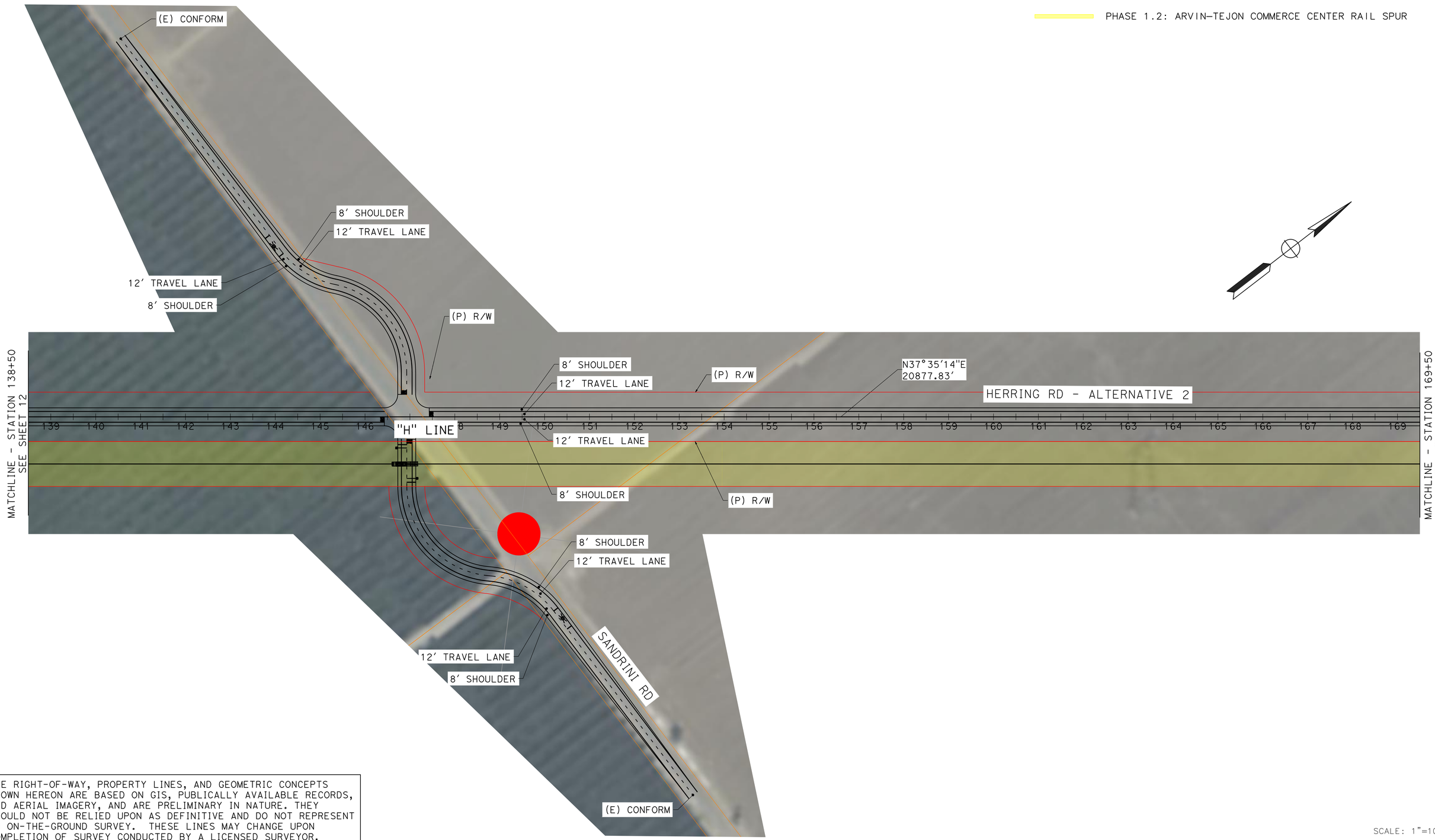
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.1 ALTERNATIVE 2

S ARVIN CORRIDOR GREEN PASS

LEGEND:

PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR



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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

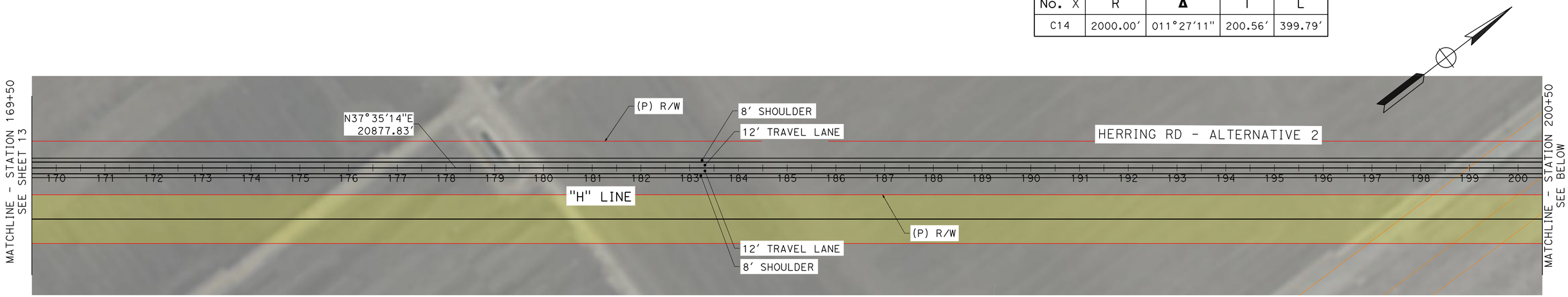
1.1 ALTERNATIVE 2

S ARVIN CORRIDOR GREEN PASS

LEGEND:

PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C14	2000.00′	011°27′11"	200.56′	399.79′





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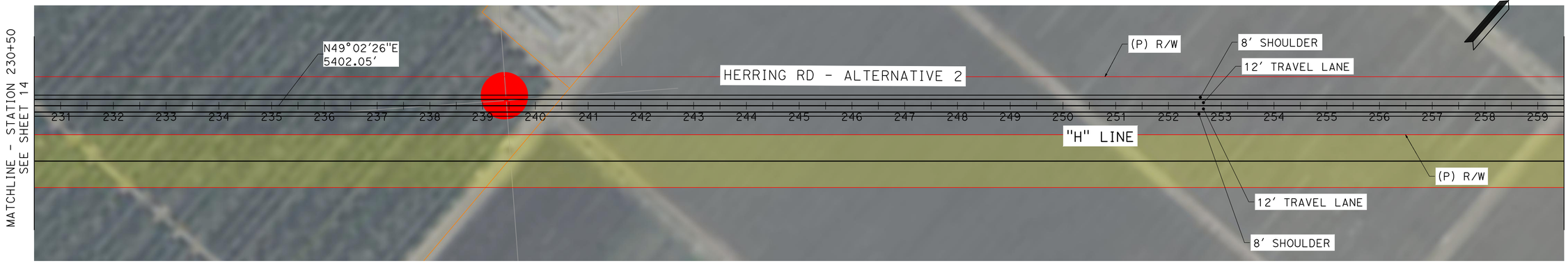
DATE: 1/14/26

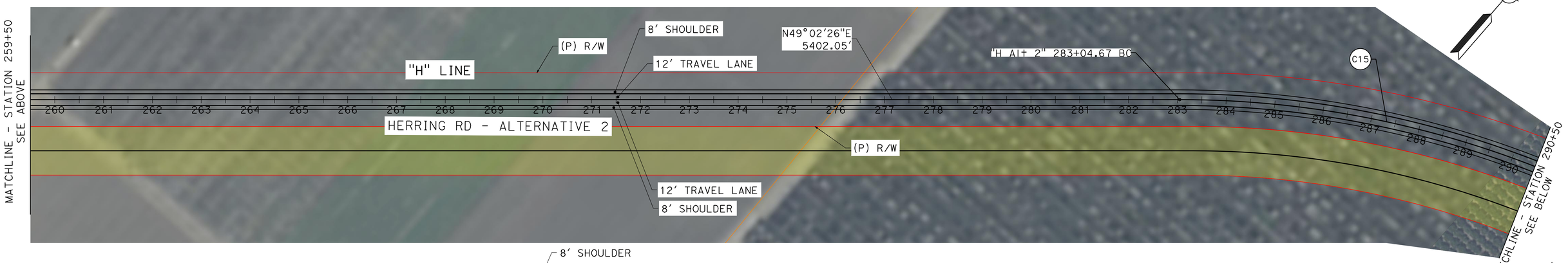
SCALE: 1"=100'

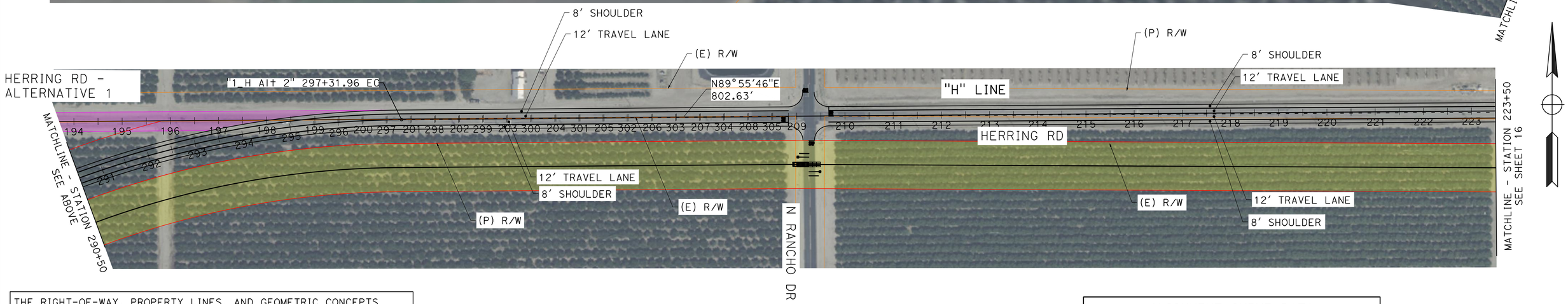
LEGEND:

PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR

PHASE 1.1: HERRING RD – ALTERNATIVE 1







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DATE: 1/14/26

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C15	2000.00'	040°53'20"	745.56'	1427.29'

SCALE: 1"=100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 1

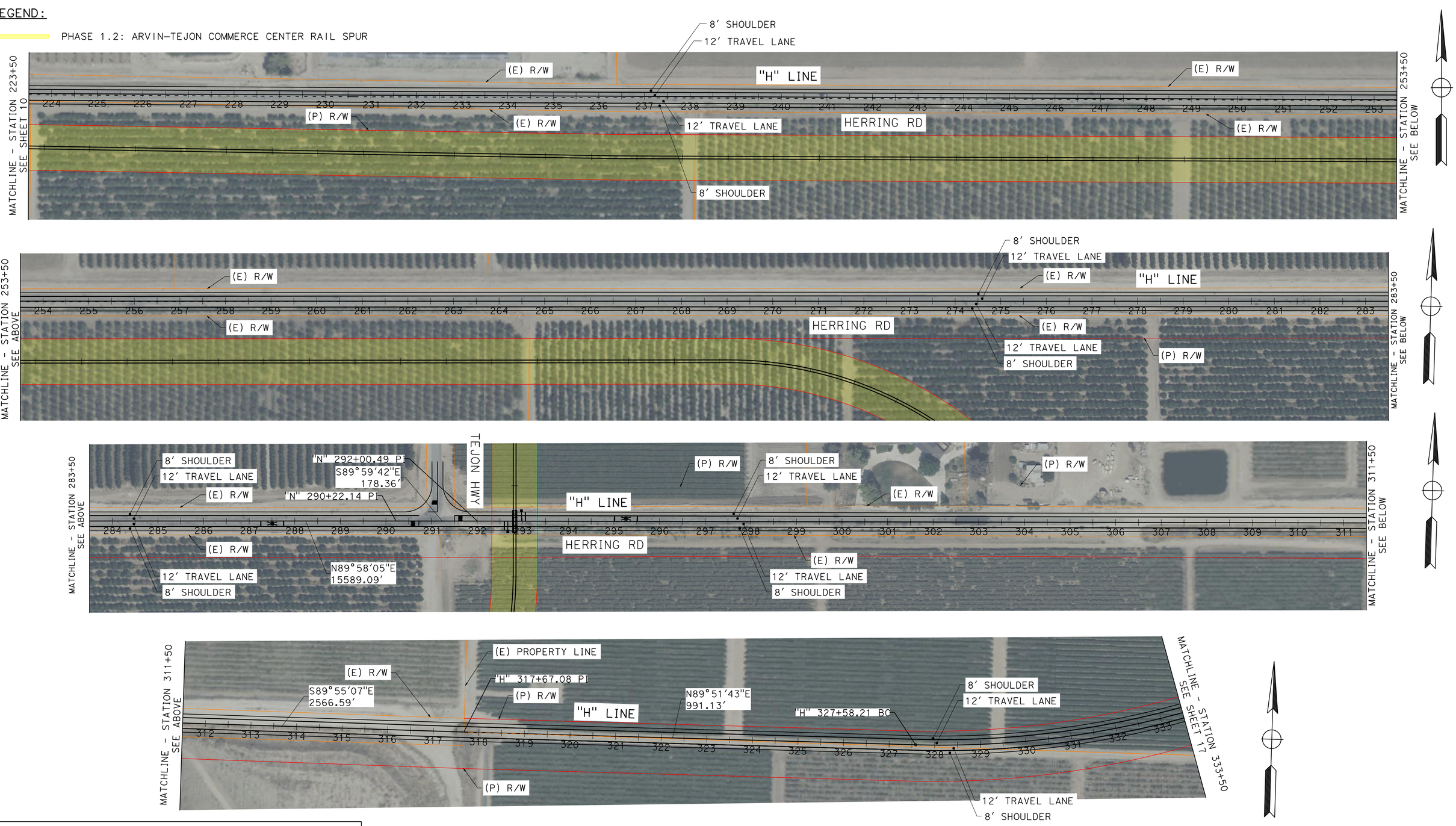
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.1 ALTERNATIVE 2

S ARVIN CORRIDOR GREEN PASS

LEGEND:

PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR



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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

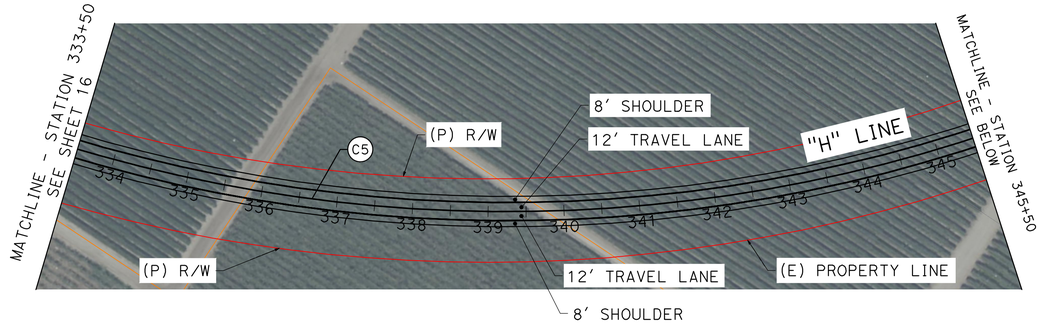
KARGO CCAMS - PROJECT 1

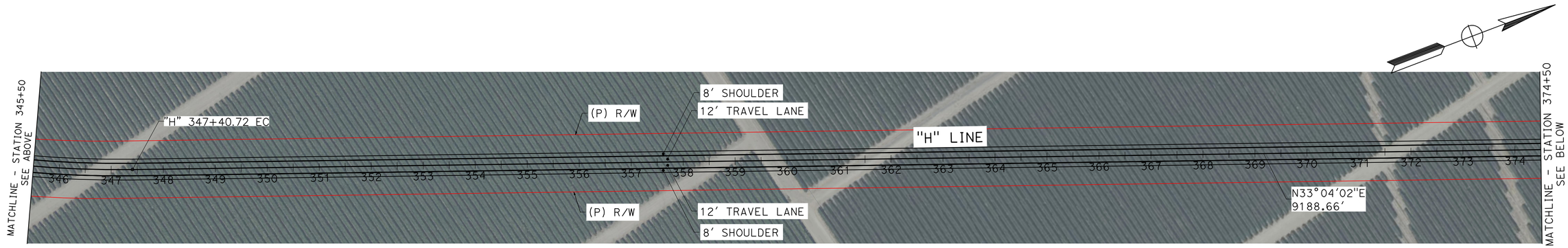
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

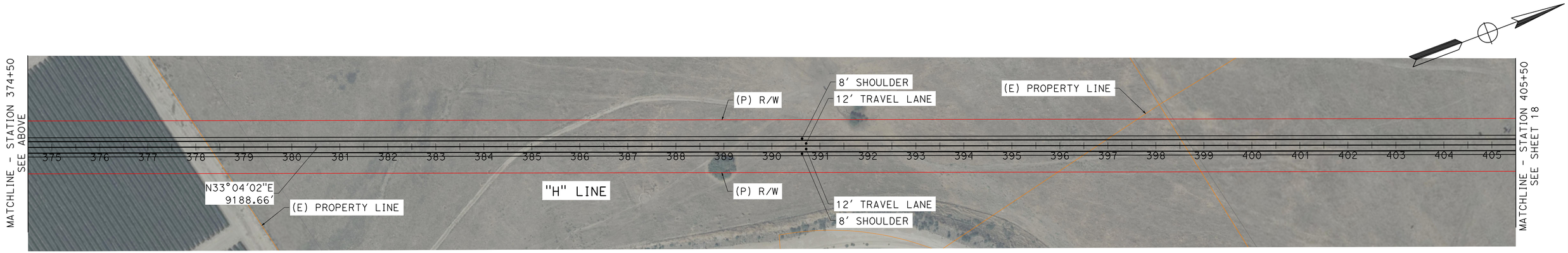
1.1

S ARVIN CORRIDOR GREEN PASS

30% CONCEPTUAL DESIGN







THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C5	2000.00'	056°47'42"	1081.28'	1982.51'

SCALE: 1"=100'

SHEET 17 OF 54

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 1

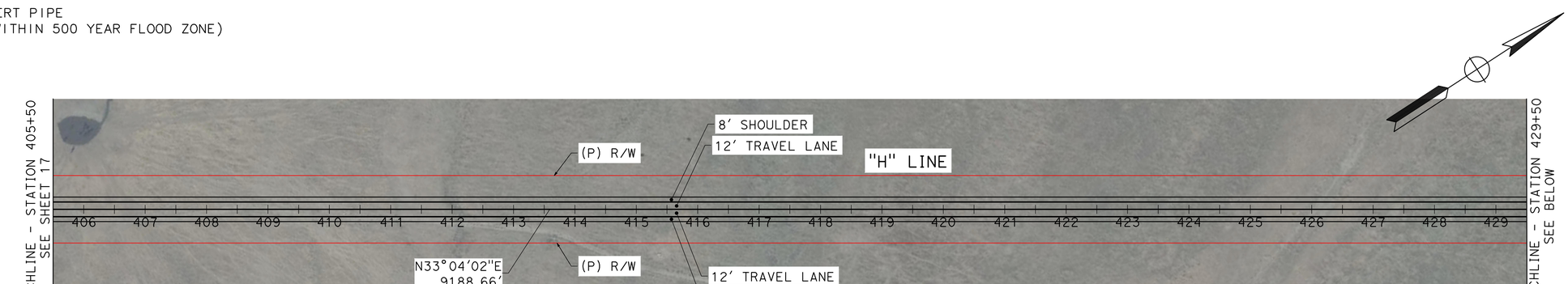
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

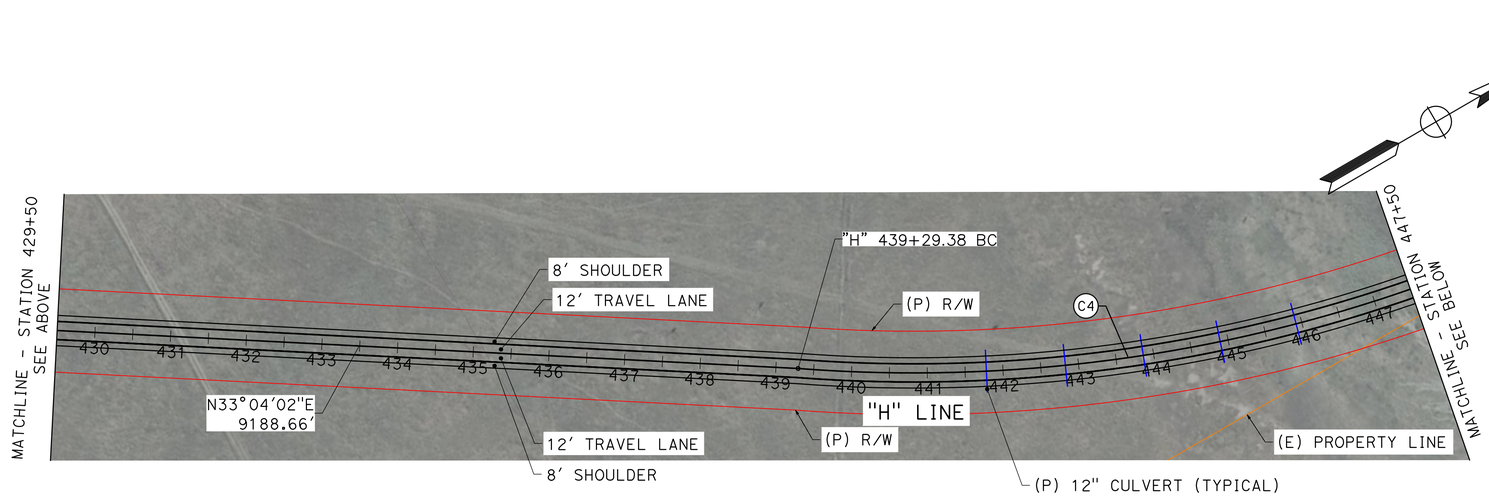
1.1

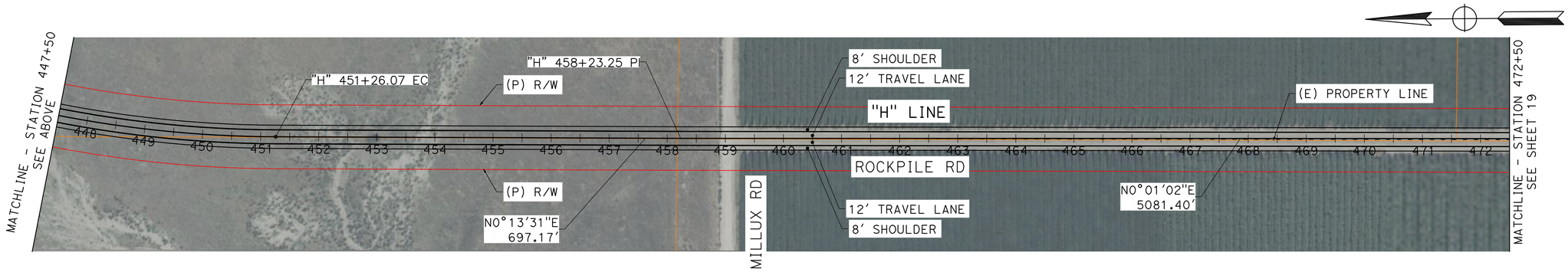
S ARVIN CORRIDOR GREEN PASS

LEGEND:

(P) 12" CULVERT PIPE
(EVERY 100' WITHIN 500 YEAR FLOOD ZONE)







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DATE: 1/14/26

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C4	2000.00'	034°16'57"	616.86'	1196.69'

SCALE: 1"=100'

SHEET 18 OF 54

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.1
S ARVIN CORRIDOR GREEN PASS

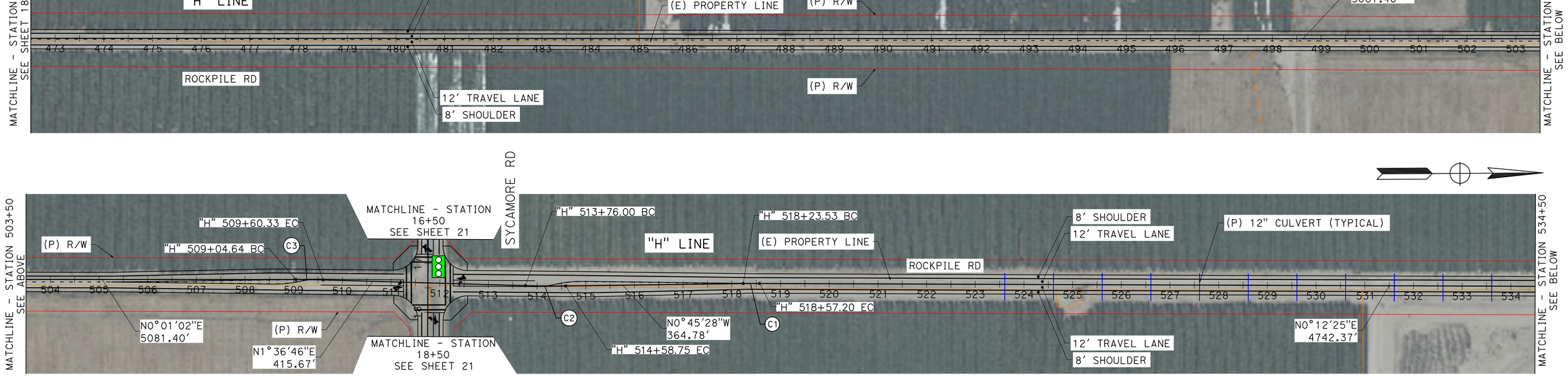
LEGEND:

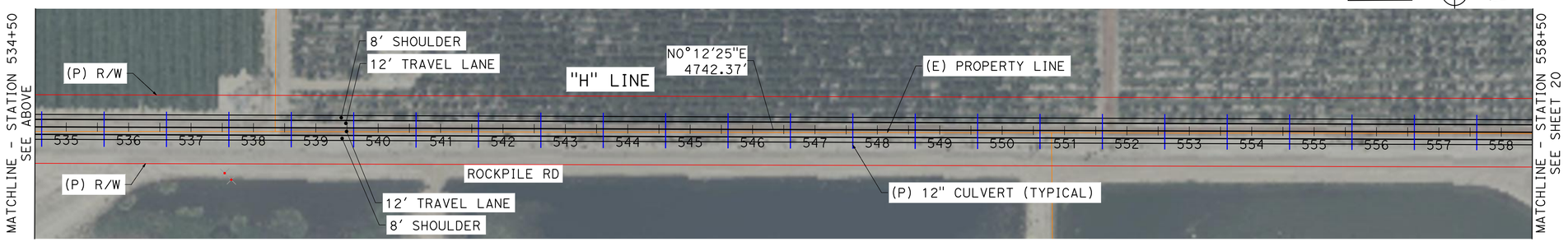
(P) 12" CULVERT PIPE
(EVERY 100' WITHIN 500 YEAR FLOOD ZONE)

(P) SIGNALIZED INTERSECTION

WATER
QUALITY
WELL







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C1	2000.00'	000°57'53"	16.84'	33.67'
C2	2000.00'	002°22'14"	41.38'	82.75'
C3	2000.00'	001°35'43"	27.85'	55.69'

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

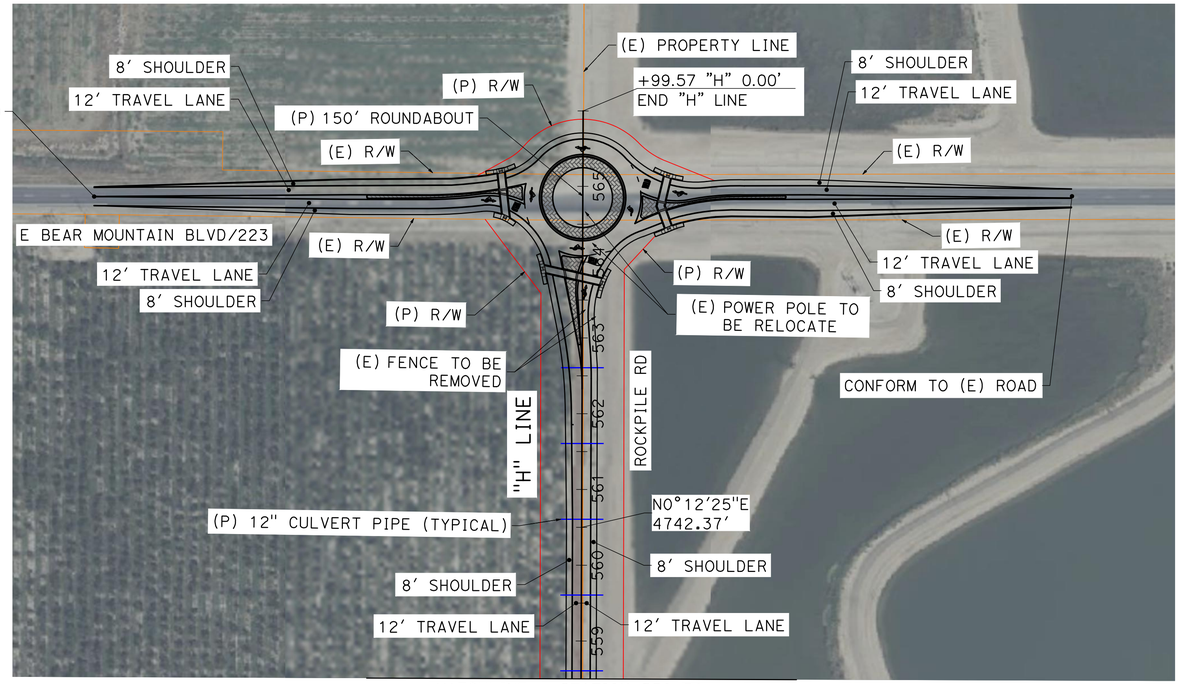
MARK THOMAS

KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.1
S ARVIN CORRIDOR GREEN PASS

LEGEND:

(P) 12" CULVERT PIPE
(EVERY 100' WITHIN 500 YEAR FLOOD ZONE)



MATCHLINE - STATION 558+50
SEE SHEET 19

30% CONCEPTUAL DESIGN

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DATE: 1/14/26

SCALE: 1"=100'

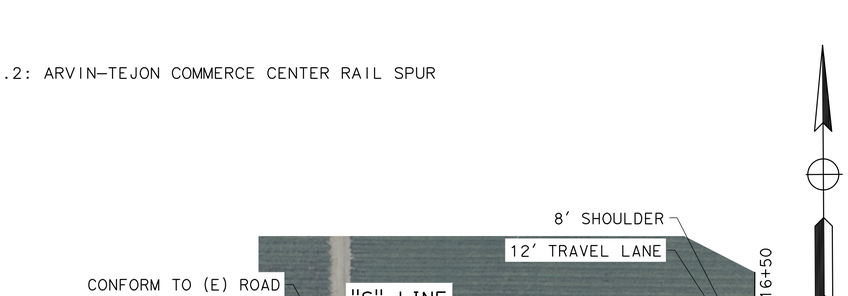
MARK THOMAS

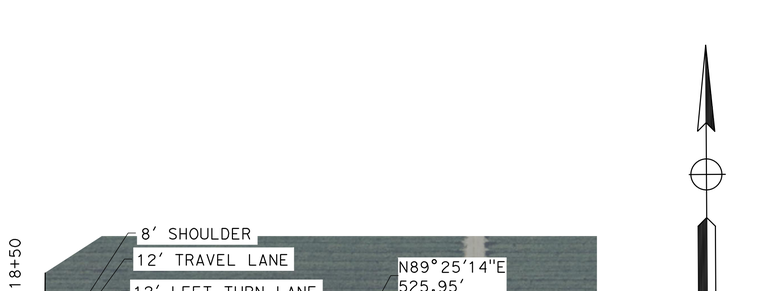
KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

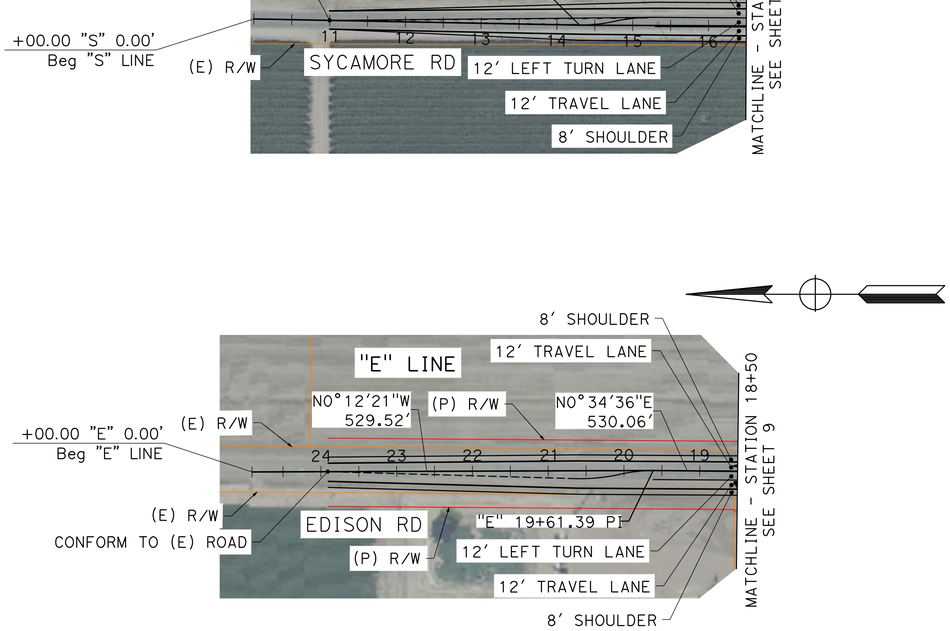
1.1
S ARVIN CORRIDOR GREEN PASS

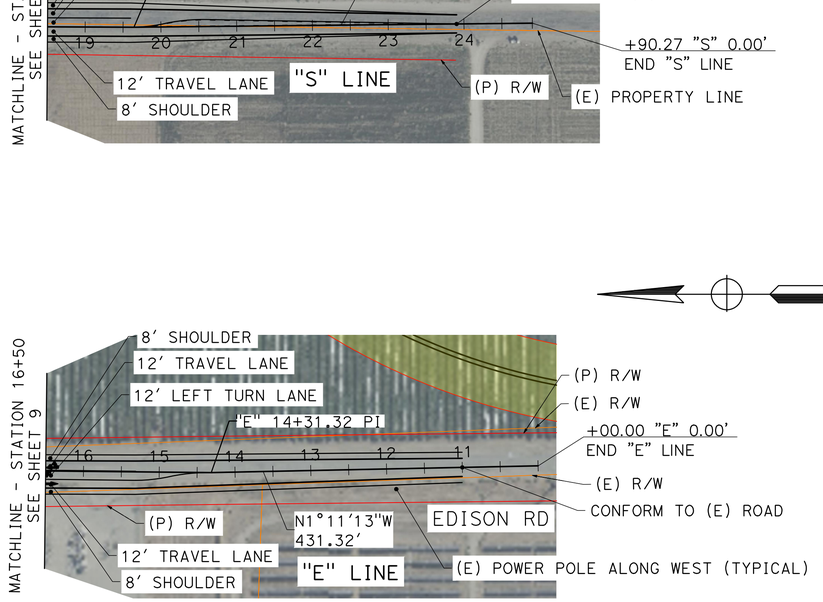
LEGEND:

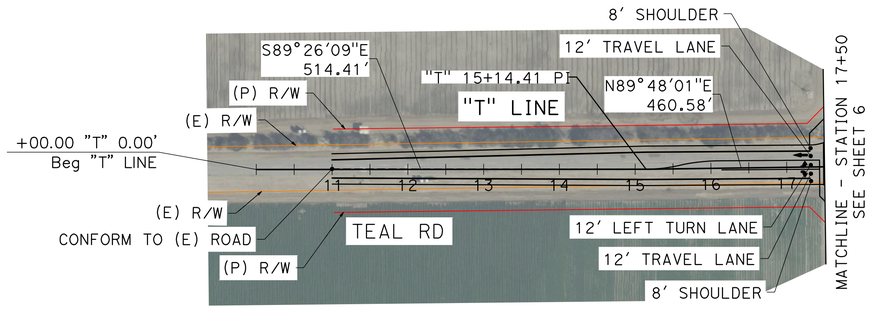
PHASE 1.2: ARVIN–TEJON COMMERCE CENTER RAIL SPUR











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DATE: 1/14/26

SCALE: 1"=100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.1

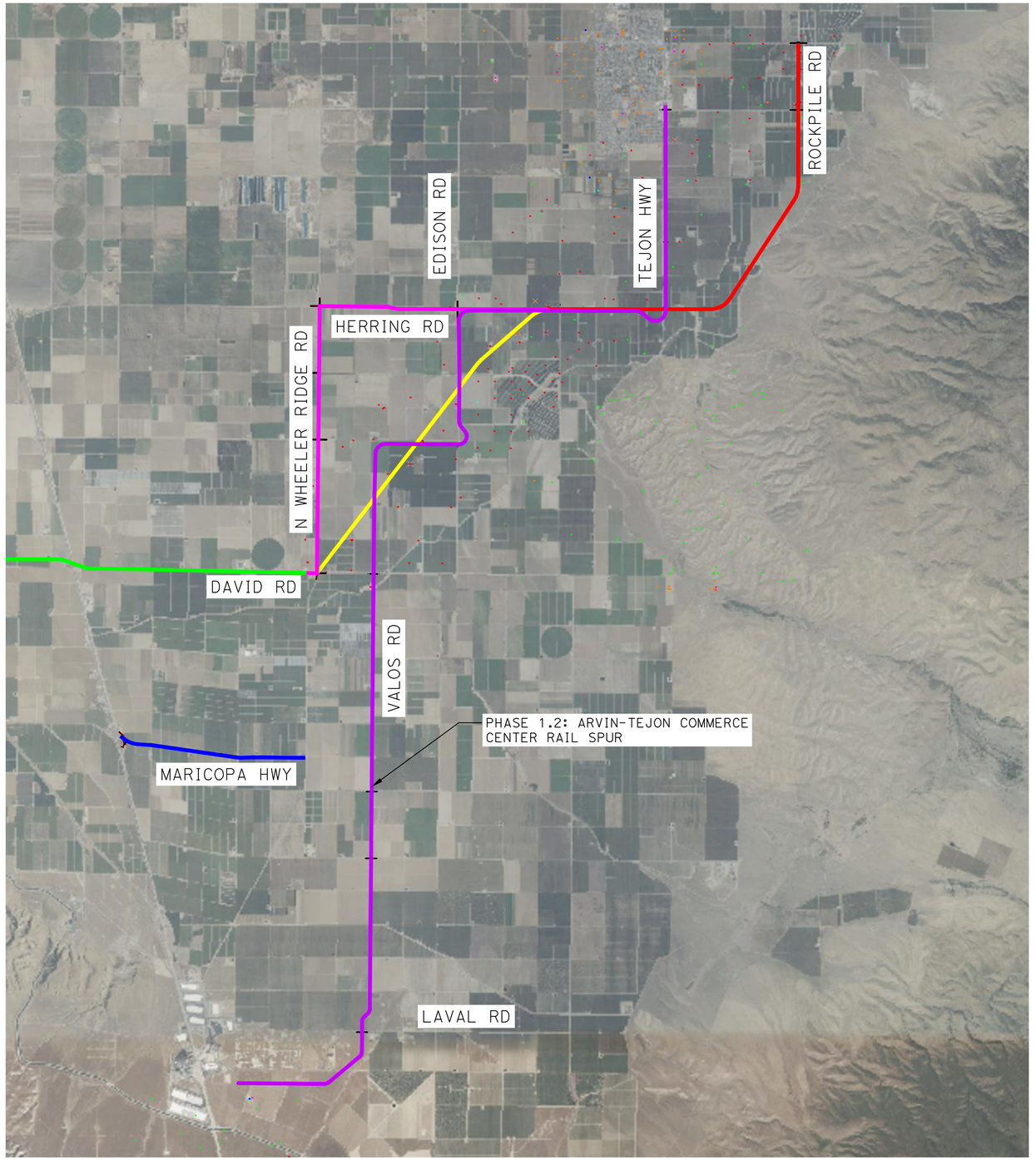
S ARVIN CORRIDOR GREEN PASS

LEGEND:

- PHASE 1.1 S ARVIN CORRIDOR GREEN PASS
- PHASE 1.1 ALT 1 S ARVIN CORRIDOR GREEN PASS
- PHASE 1.1 ALT 2 S ARVIN CORRIDOR GREENPASS
- PHASE 1.2 ARVIN–TEJON COMMERCE CENTER RAIL SPUR
- PHASE 1.3 GREEN–PASS ALT 1:REALIGN SR VIA OLD RIVER RD/COPUS RD/DAVID RD
- PHASE 1.4 GREEN–PASS ALT 2: MARICOPA HWY EXTENSION TO WHEELER RIDGE RD
- WATER QUALITY WELL
- OIL WELL

ARVIN BYPASS SUMMARY TABLE

TOTAL LENGTH	19.20 MILES
ROW REQUIREMENTS	233 ACRE, 72 PARCELS



SCALE: 1"=5000'

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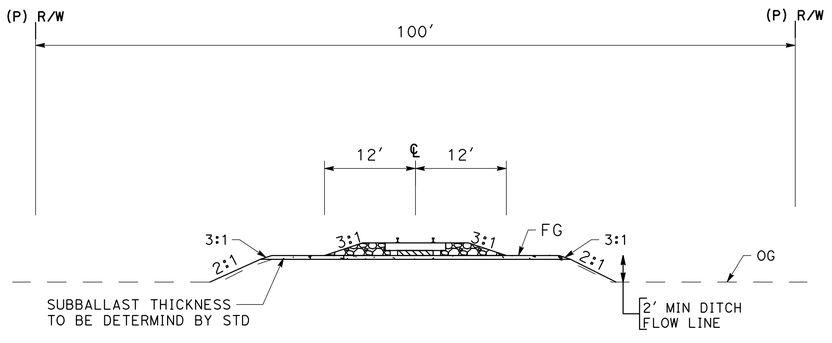
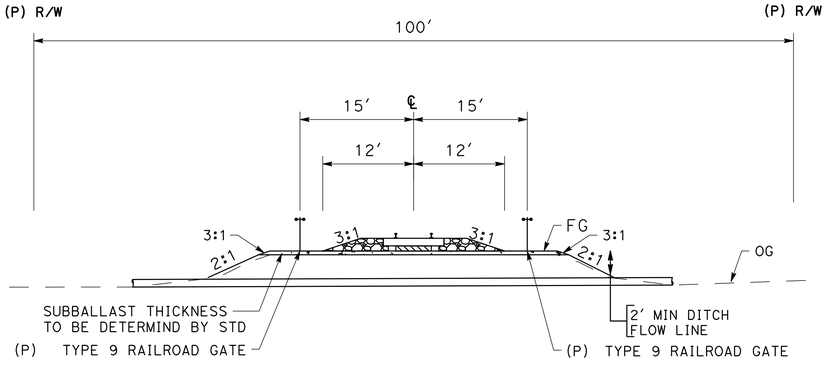
DATE: 1/14/26

30% CONCEPTUAL DESIGN



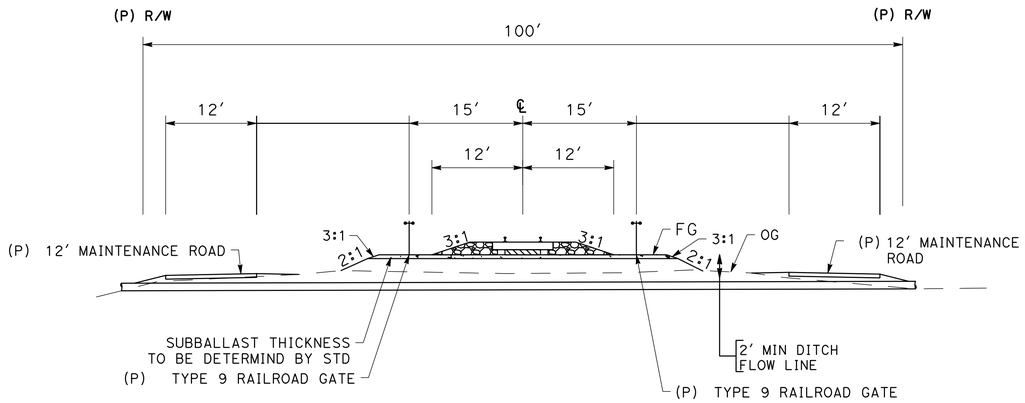
GENERAL RAILROAD

"RR" Sta 10+00.00 TO 1108+37.50



GENERAL RAILROAD CROSSING

"RR" Sta 135+14.00 TO 135+62.75
"RR" Sta 275+03.91 TO 275+52.66
"RR" Sta 327+93.22 TO 328+41.97
"RR" Sta 500+54.98 TO 501+03.73
"RR" Sta 665+32.36 TO 665+81.11
"RR" Sta 854+65.08 TO 855+13.84
"RR" Sta 946+47.27 TO 946+96.02
"RR" Sta 999+44.71 TO 999+93.46
"RR" Sta 1104+66.90 TO 1105+15.65



RAILROAD MAINTENANCE ROAD

"RR" Sta 489+73.09 TO 500+59.36

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: NTS

MARK THOMAS

KARGO CCAMS - PROJECT 1

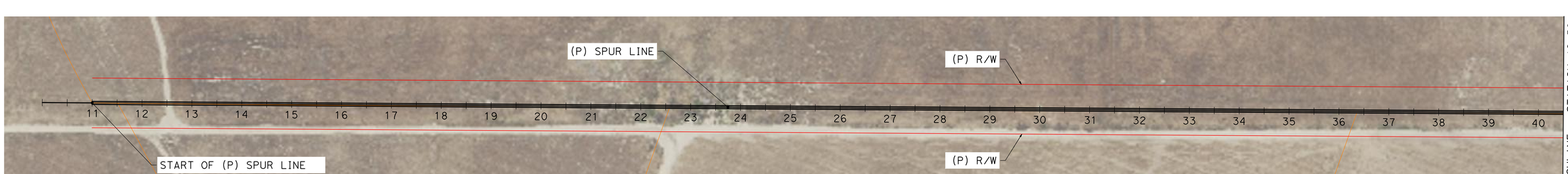
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

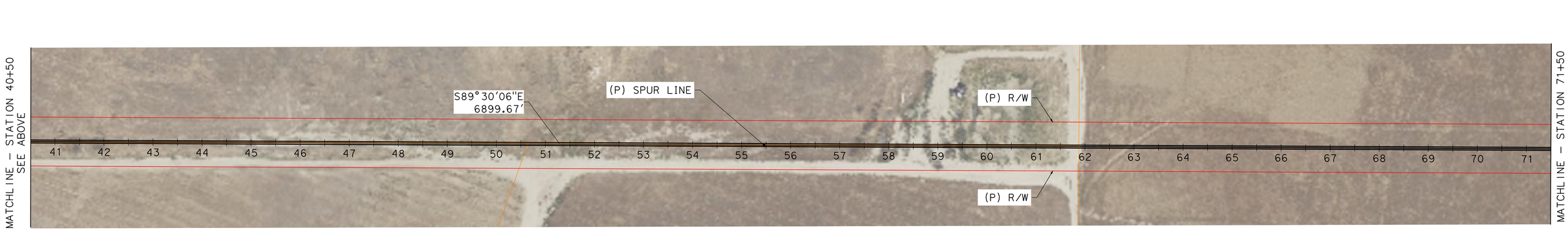
1.2

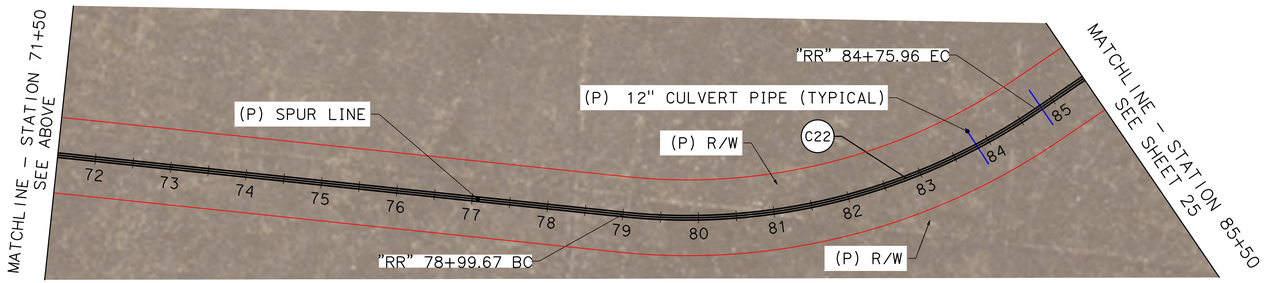
ARVIN-TEJON COMMERCE CENTER RAIL SPUR

LEGEND:

——— (P) 12" CULVERT PIPE
(EVERY 100' WITHIN THE 500 YEAR FLOOD ZONE)







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C22	820.00'	040°16'03"	300.63'	576.30'

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DATE: 1/14/26

SCALE: 1"=100'

SHEET 24 OF 54

30% CONCEPTUAL DESIGN

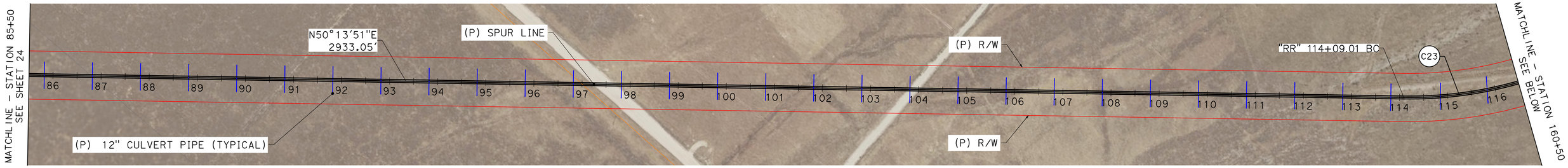
MARK THOMAS

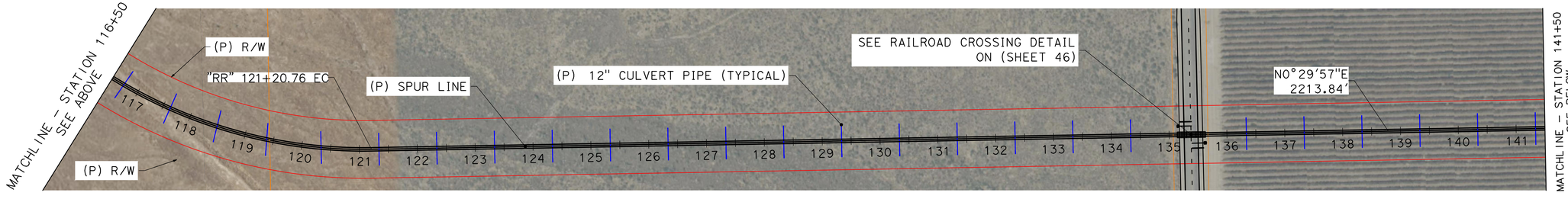
KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

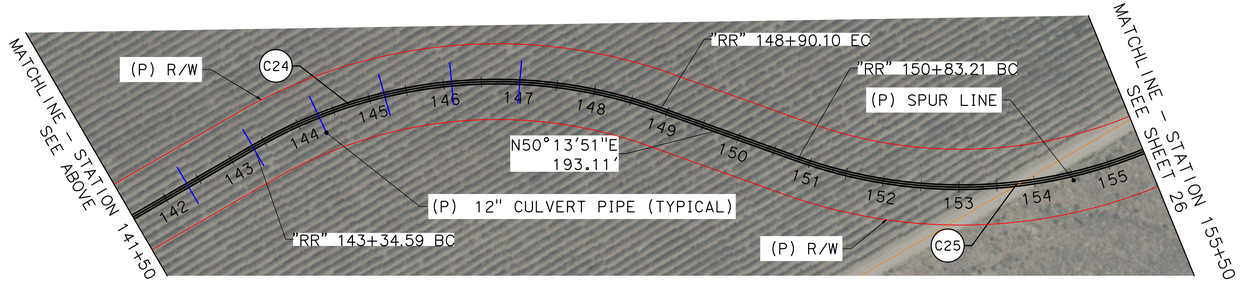
1.2
ARVIN-TEJON COMMERCE CENTER RAIL SPUR

LEGEND:

(P) 12" CULVERT PIPE
(EVERY 100' WITHIN THE 500 YEAR FLOOD ZONE)







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C23	820.00'	049°43'54"	380.04'	711.75'
C24	640.00'	049°43'54"	296.61'	555.51'
C25	640.00'	049°43'54"	296.61'	555.51'

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

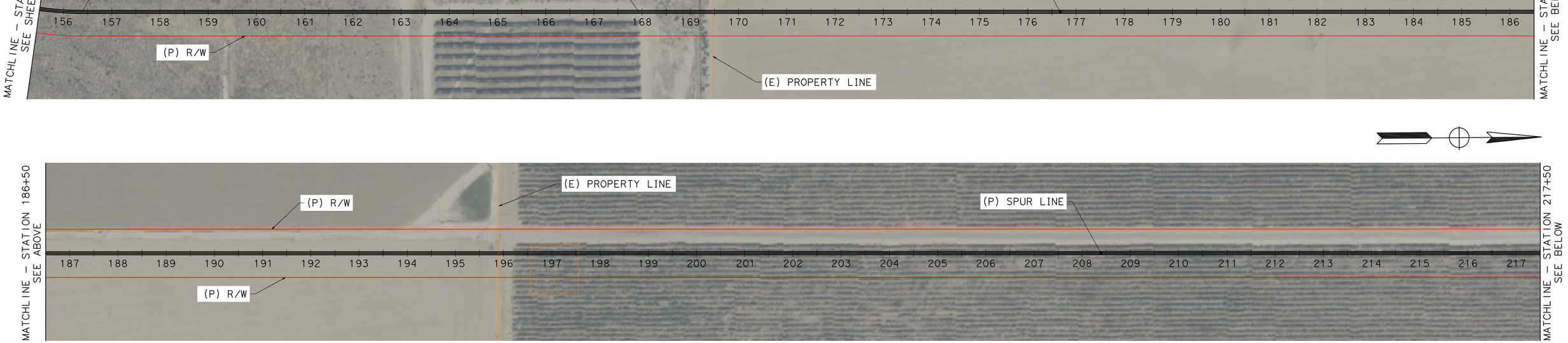
SCALE: 1"=100'

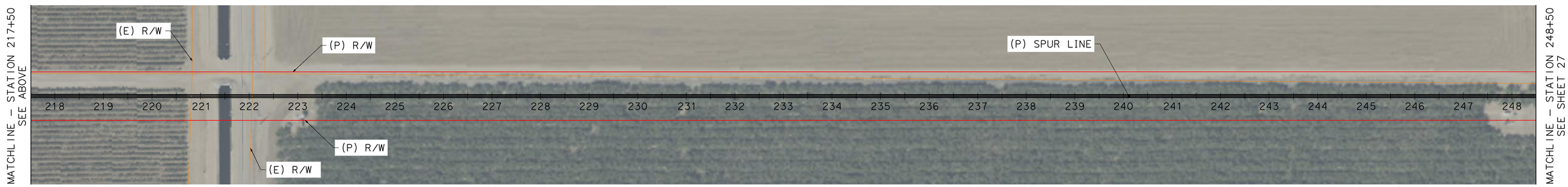
MARK THOMAS

KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.2
ARVIN-TEJON COMMERCE CENTER RAIL SPUR







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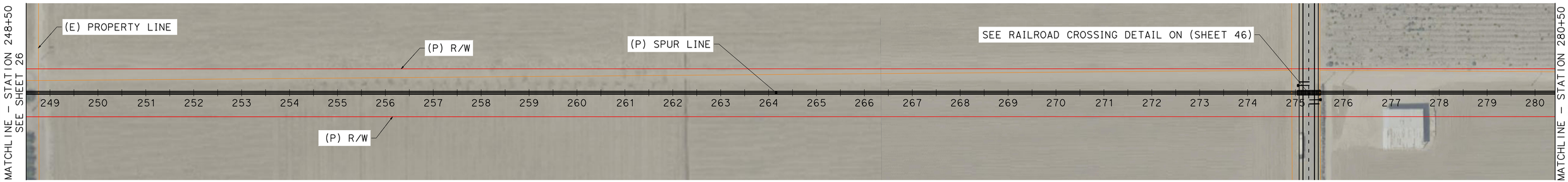
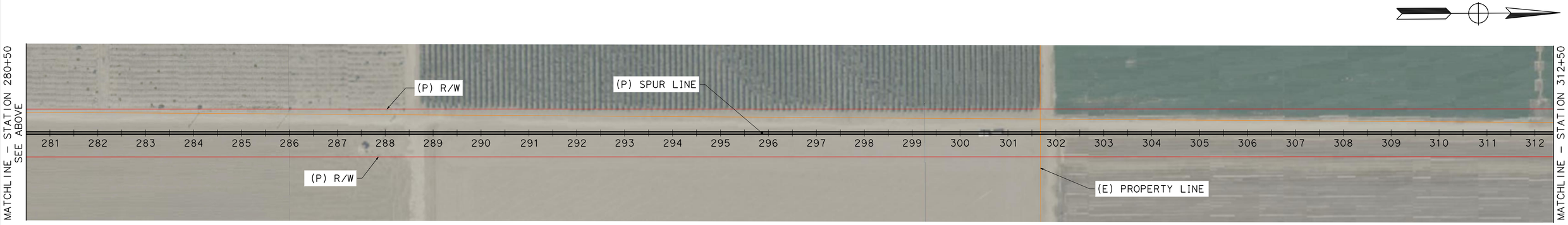
DATE: 1/14/26

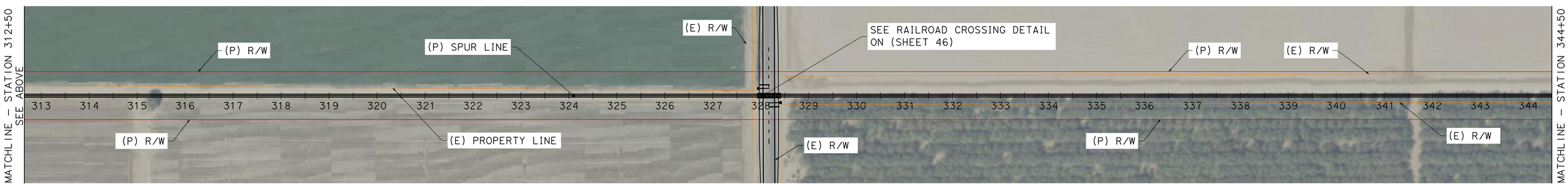
SCALE: 1"=100'

SHEET 26 OF 54

30% CONCEPTUAL DESIGN







30% CONCEPTUAL DESIGN

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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

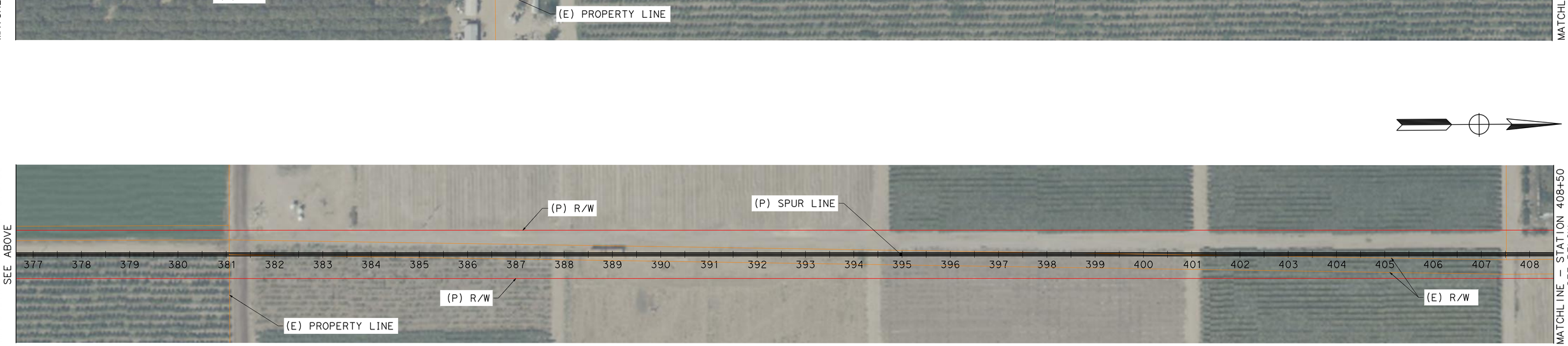
KARGO CCAMS - PROJECT 1

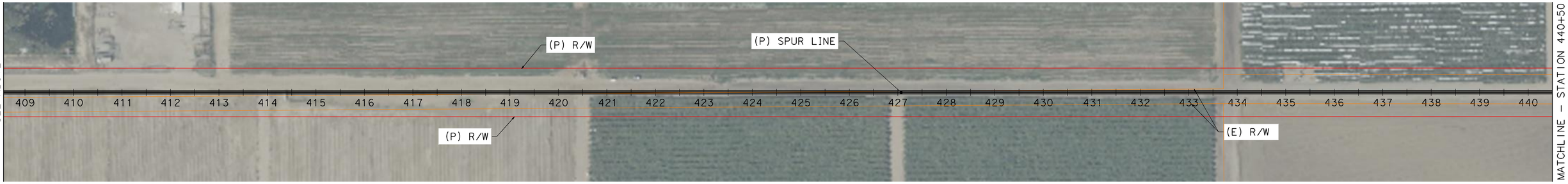
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.2

ARVIN-TEJON COMMERCE CENTER RAIL SPUR







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DATE: 1/14/26

SCALE: 1"=100'

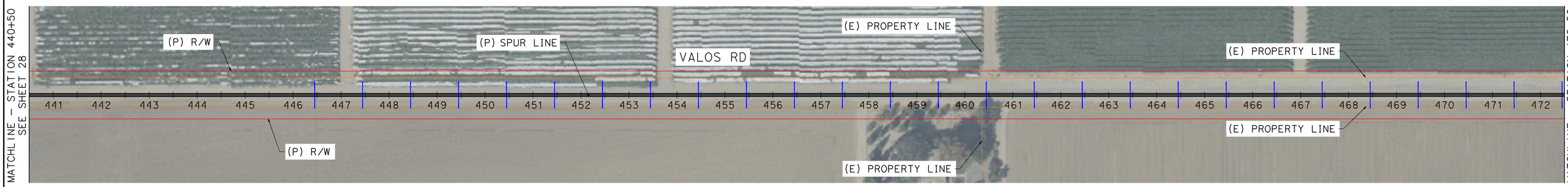
SHEET 28 OF 54

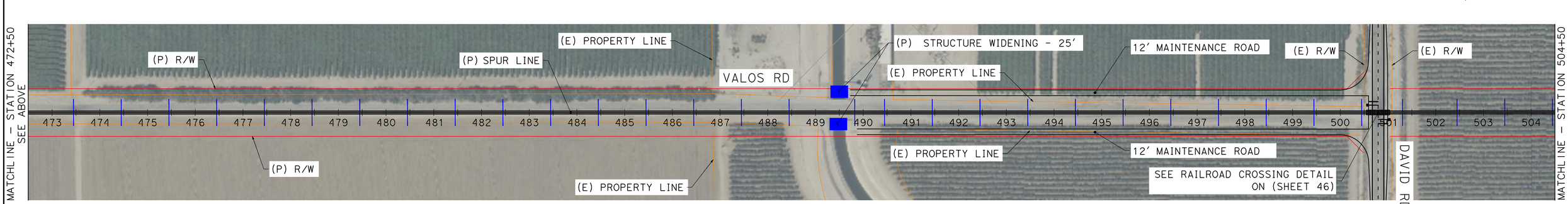
30% CONCEPTUAL DESIGN

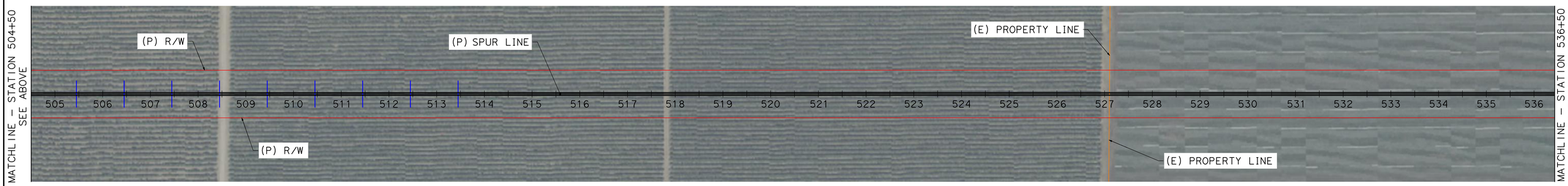
LEGEND:

(P) STRUCTURE WIDENING – 25'

(P) 12" CULVERT PIPE
(EVERY 100' WITHIN THE 500 YEAR FLOOD ZONE)







THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

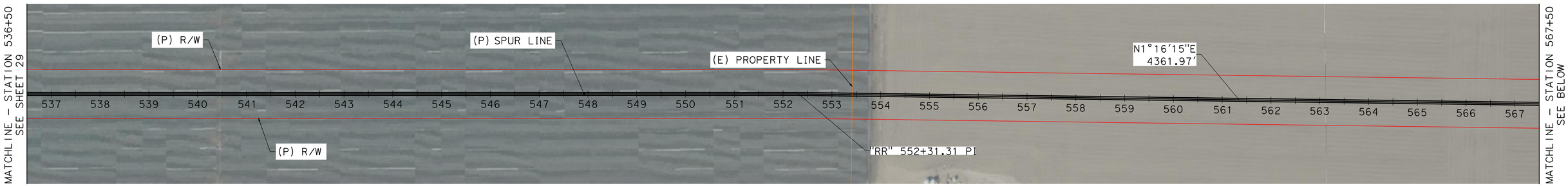
SCALE: 1"=100'

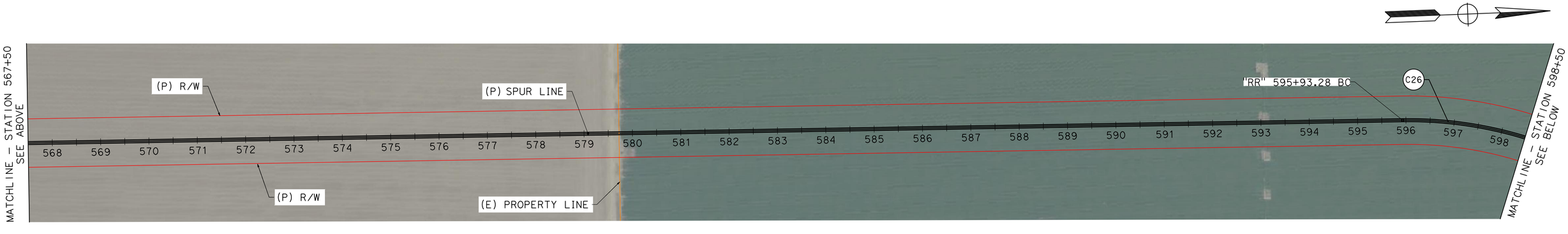
30% CONCEPTUAL DESIGN

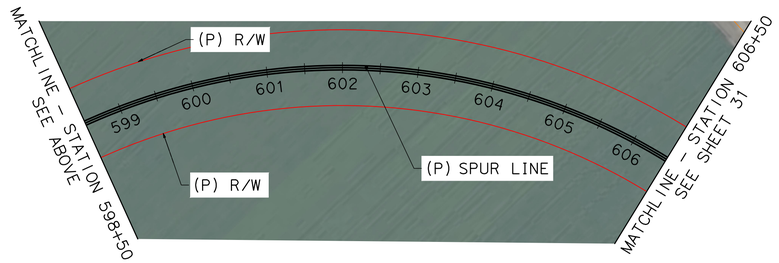
MARK THOMAS

KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.2
ARVIN-TEJON COMMERCE CENTER RAIL SPUR







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C26	820.00′	089°11′27"	808.50′	1276.47′

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

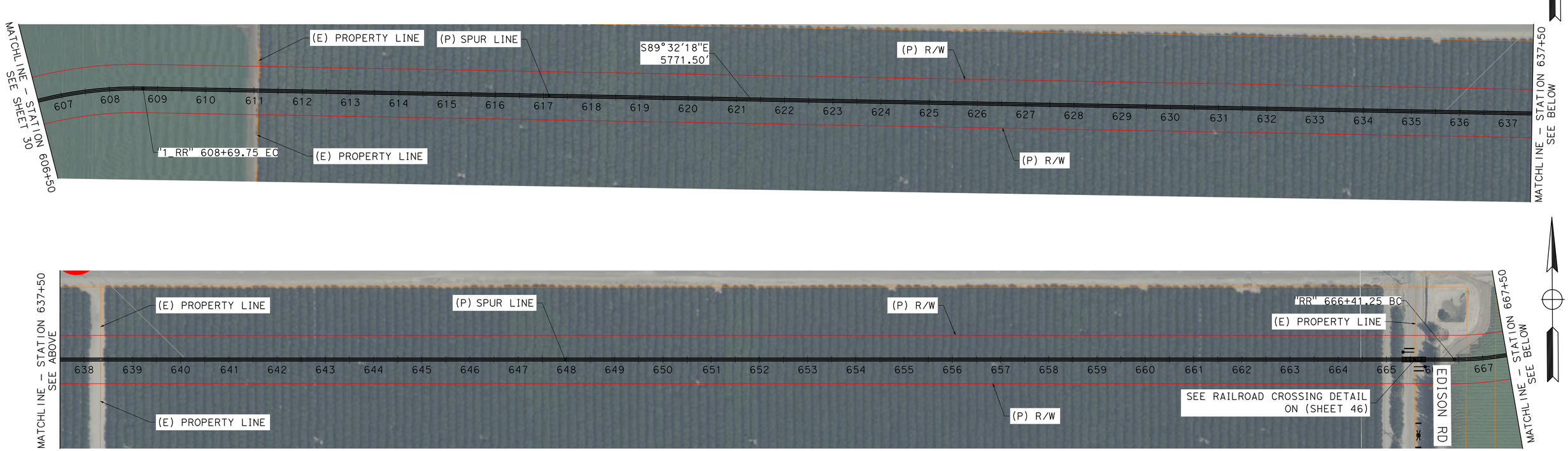
SCALE: 1"=100'

SHEET 30 OF 54

30% CONCEPTUAL DESIGN

LEGEND:

- WATER QUALITY WELL
- OIL WELL



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C27	640.00'	128°55'46"	1339.67'	1440.16'

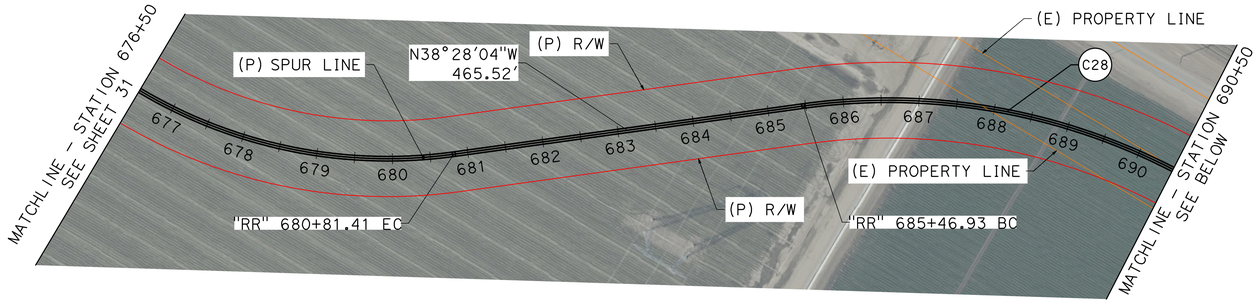
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

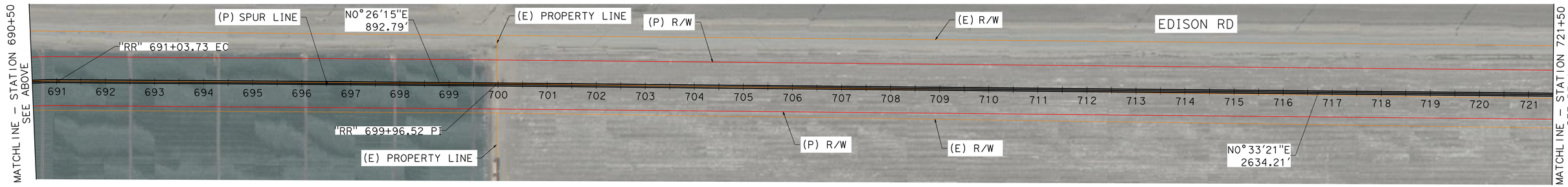
DATE: 1/14/26

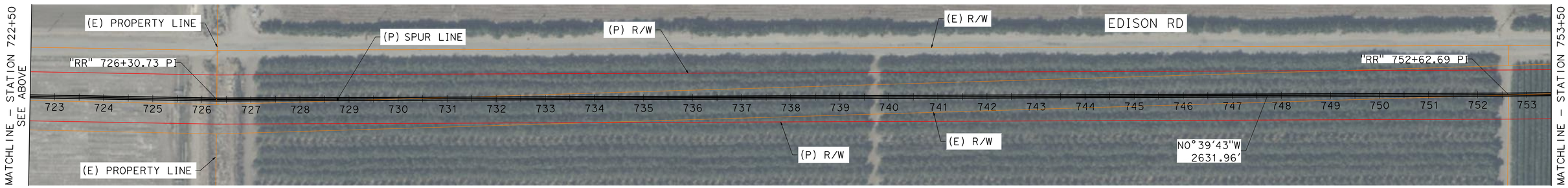
SCALE: 1"=100'

SHEET 31 OF 54

30% CONCEPTUAL DESIGN







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C28	820.00'	038°54'19"	289.61'	556.80'

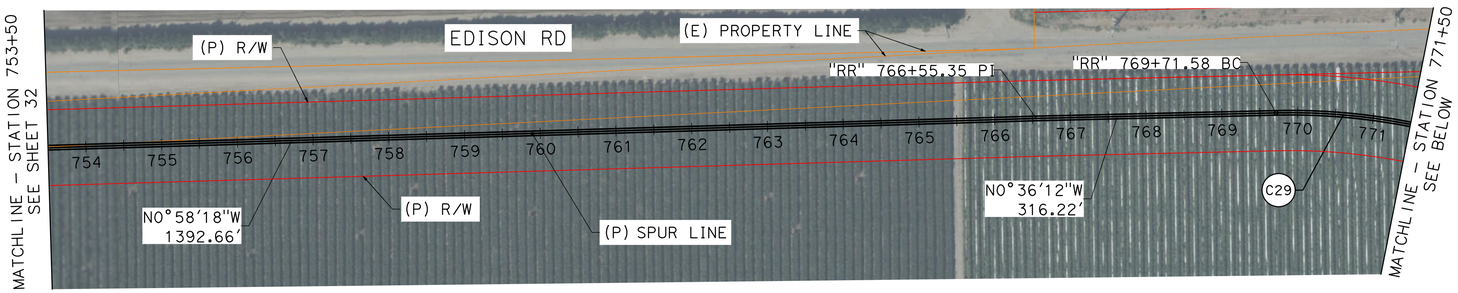
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

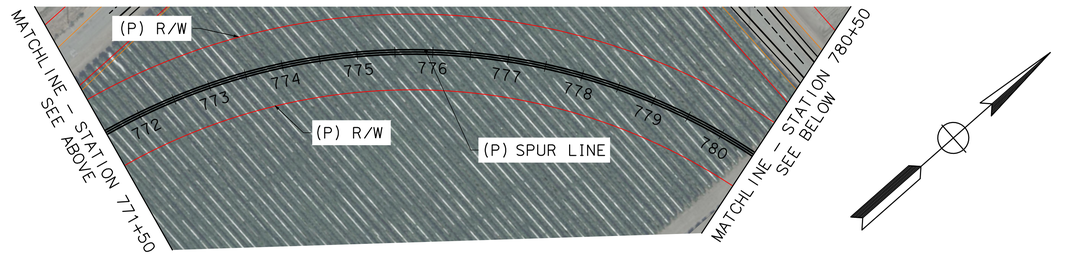
DATE: 1/14/26

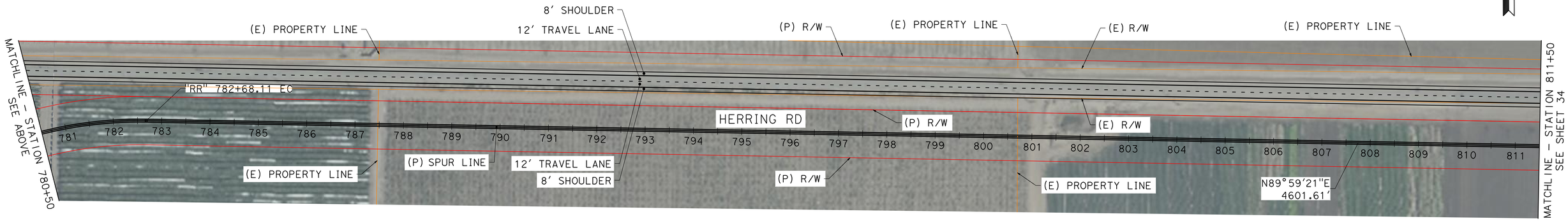
SCALE: 1"=100'

SHEET 32 OF 54

30% CONCEPTUAL DESIGN







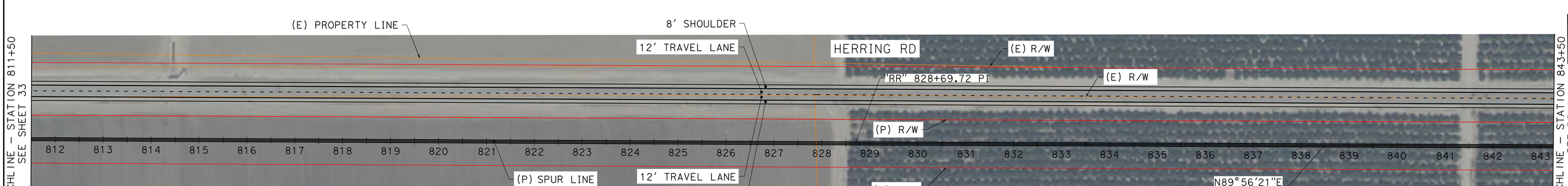
ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C29	820.00'	090°35'34"	828.53'	1296.54'

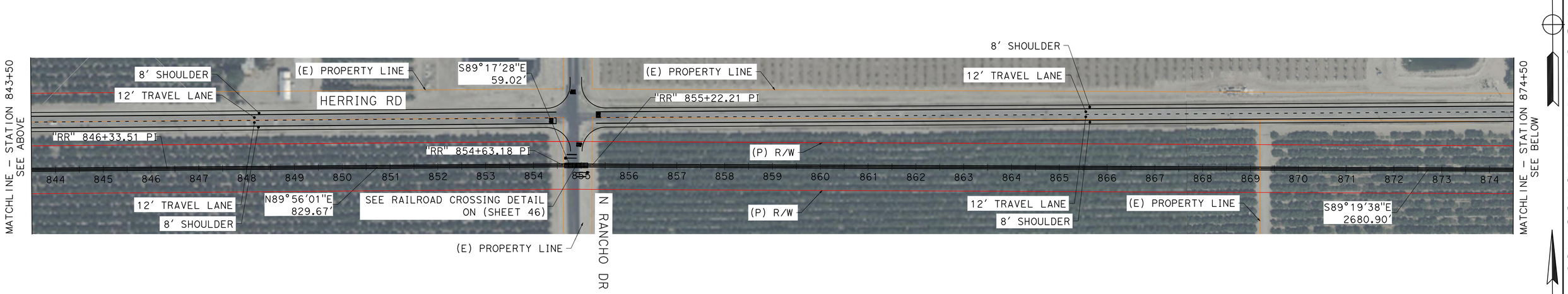
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

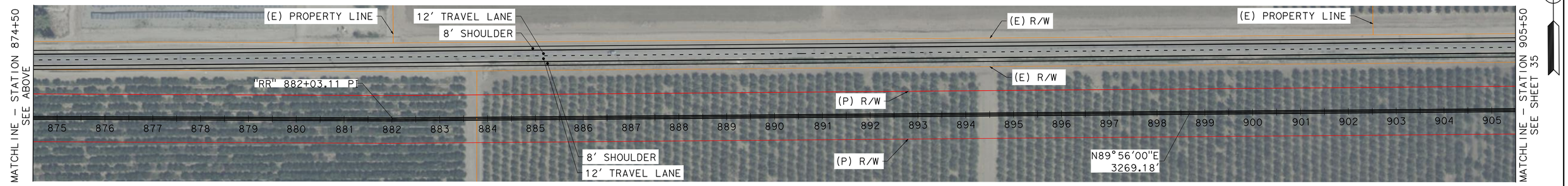
DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'







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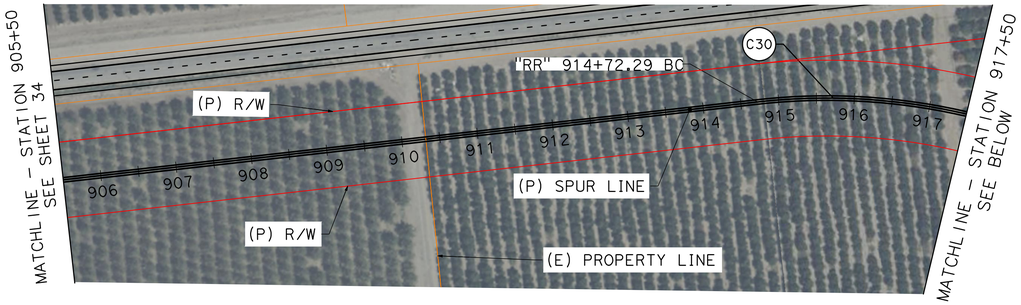
DATE: 1/14/26

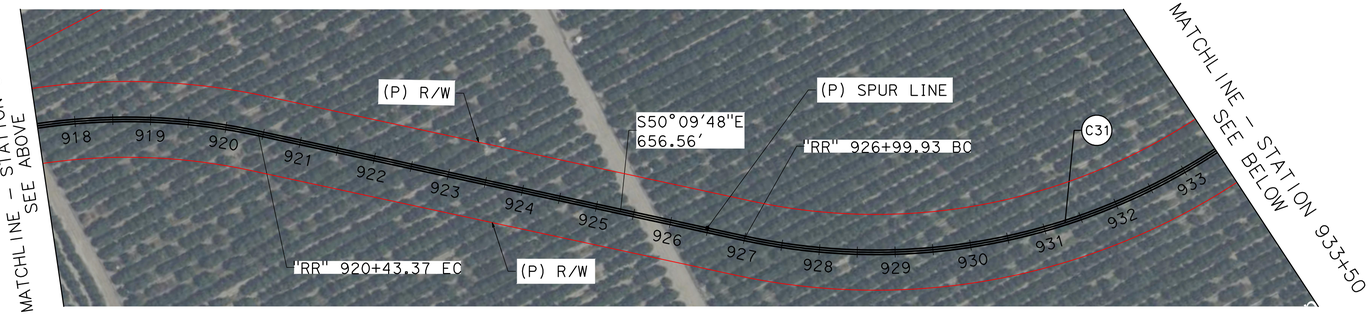
SCALE: 1"=100'

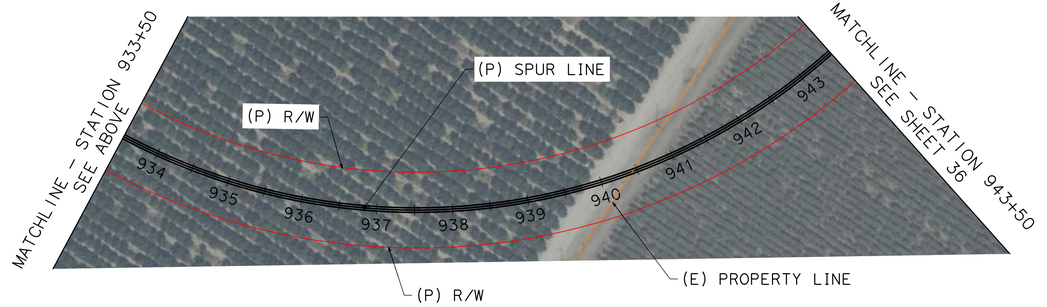
30% CONCEPTUAL DESIGN

LEGEND:

- WATER QUALITY WELL
- OIL WELL







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C30	820.00′	039°54′13"	297.67′	571.09′
C31	820.00′	129°50′12"	1751.98′	1858.19′

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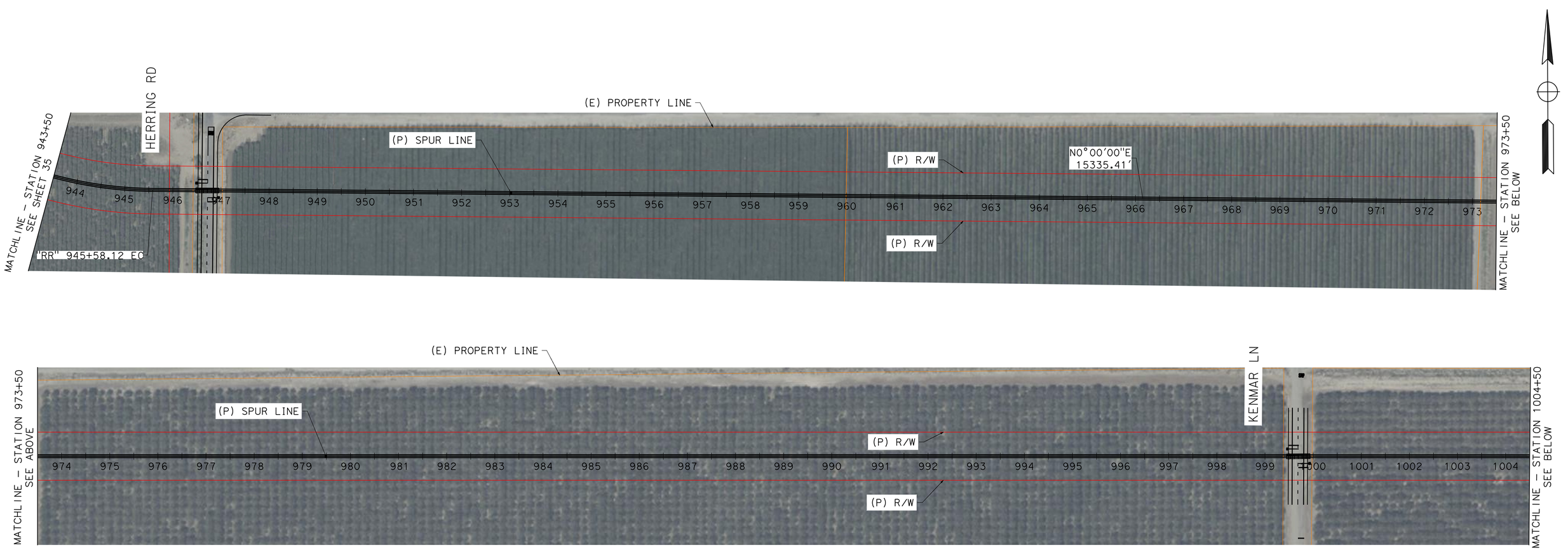
DATE: 1/14/26

SCALE: 1"=100'



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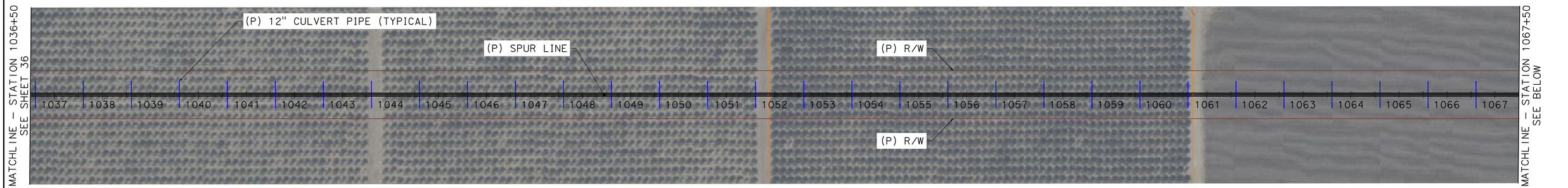
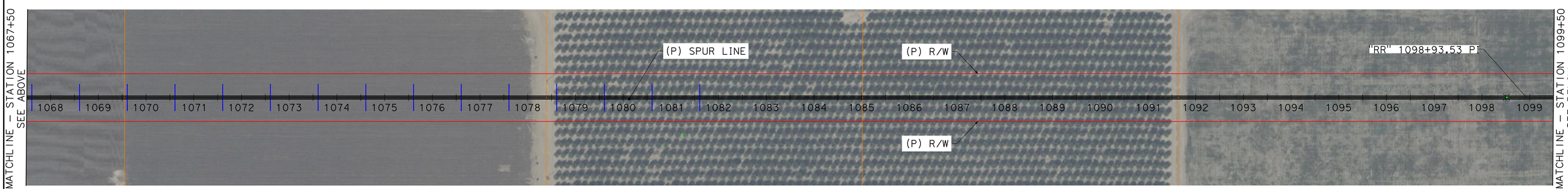
DATE: 1/14/26

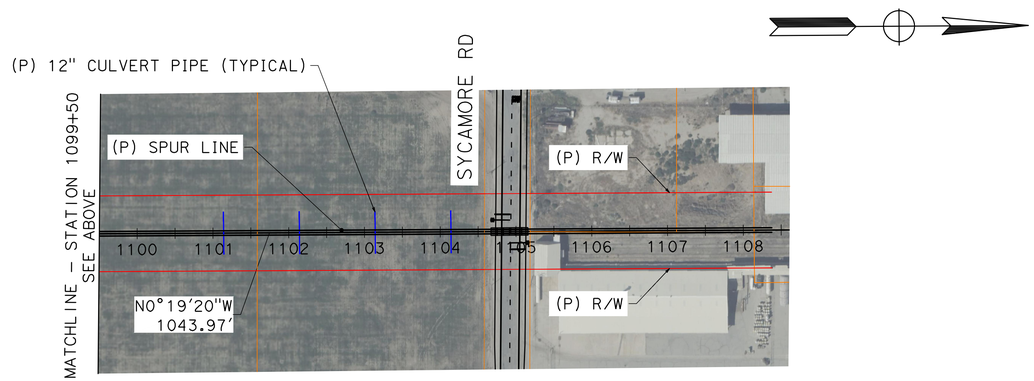
SCALE: 1"=100'

SHEET 36 OF 54

30% CONCEPTUAL DESIGN







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DATE: 1/14/26

SCALE: 1"=100'

SHEET 37 OF 54

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 1

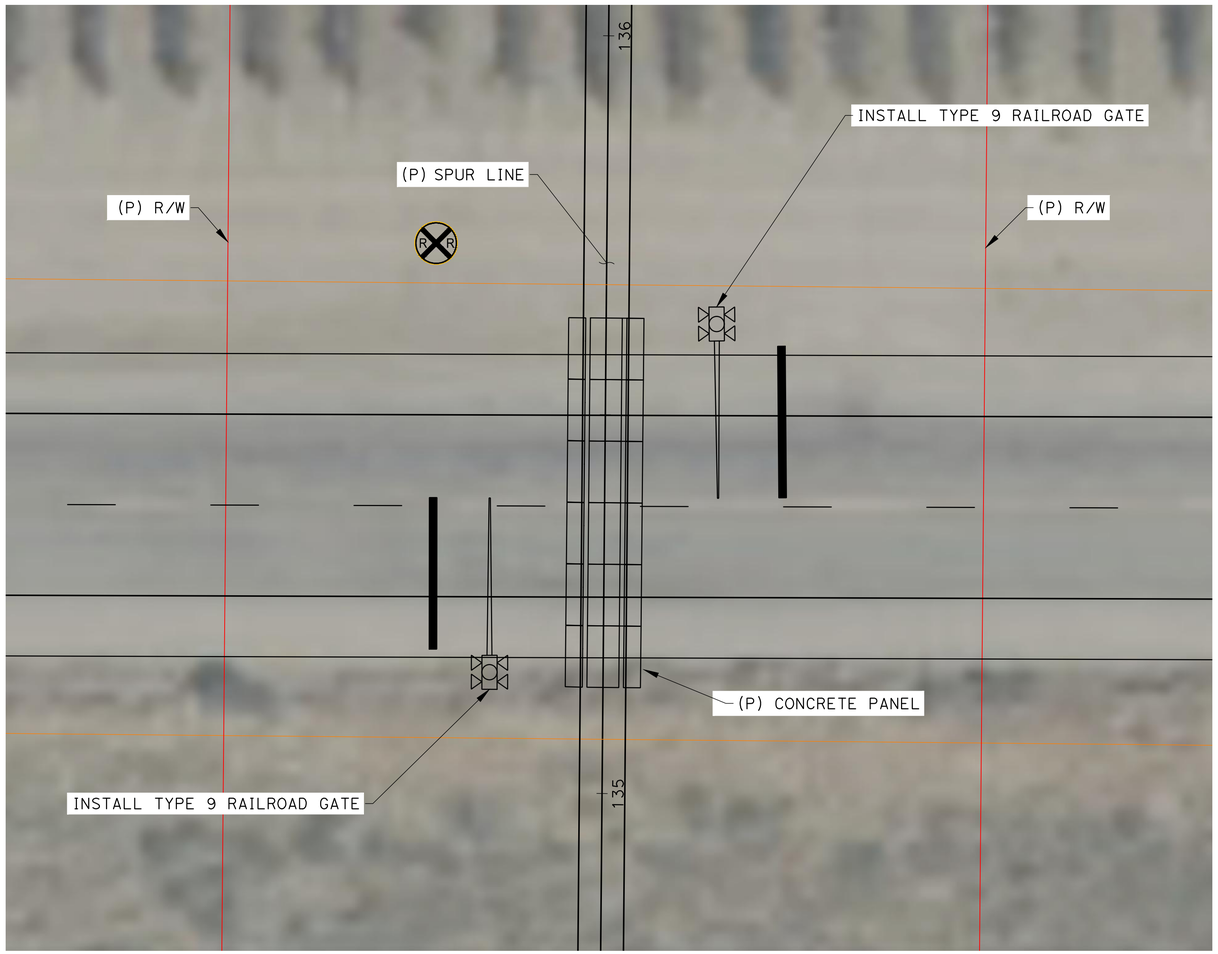
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.2

ARVIN-TEJON COMMERCE CENTER RAIL SPUR

LEGEND:

(P) RAILROAD CROSSING



RAILROAD CROSSING DETAIL

SCALE: 1" = 10'

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DATE: 1/14/26

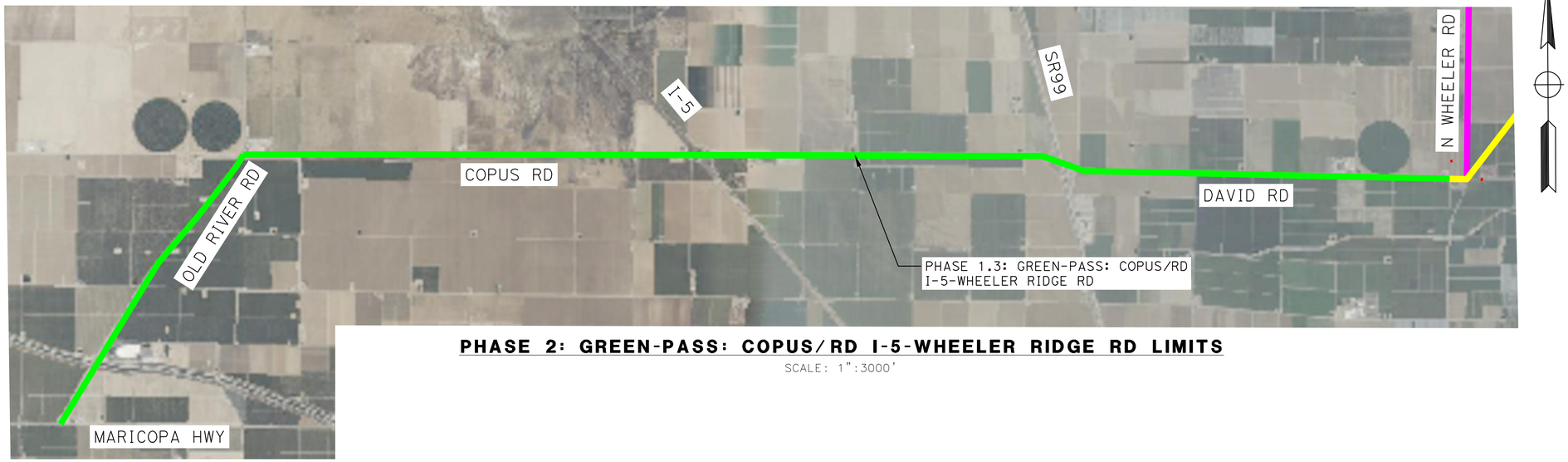
SCALE: 1"=10'

LEGEND:

- PHASE 1.1 ALT 1 S ARVIN CORRIDOR GREEN PASS
- PHASE 1.1 ALT 2 S ARVIN CORRIDOR GREENPASS
- PHASE 1.3 GREEN–PASS ALT 1:REALIGN SR VIA OLD RIVER RD/COPUS RD/DAVID RD
- ADJACENT PROJECT
- WATER QUALITY WELL
- OIL WELL

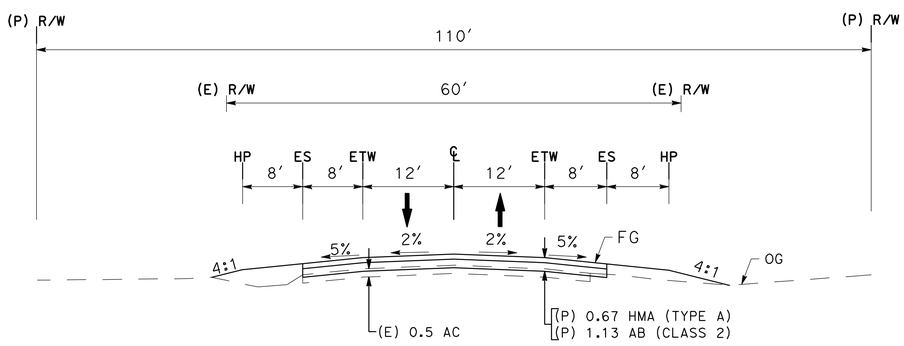
SUMMARY TABLE

TOTAL LENGTH	13.60 MILE
R/W REQUIREMENTS	31 ACRE, 64 PARCELS



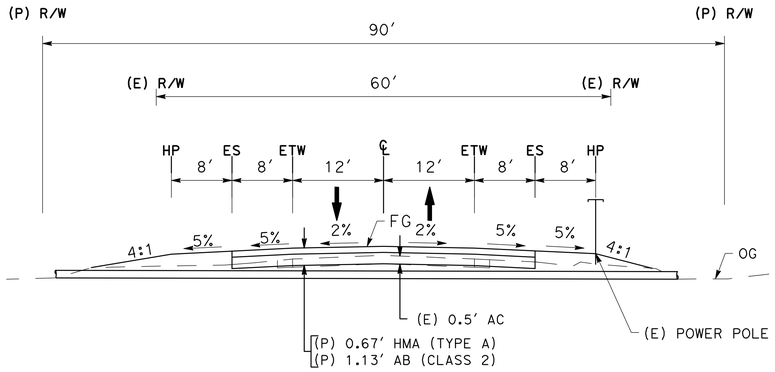
PHASE 2: GREEN-PASS: COPUS/RD I-5-WHEELER RIDGE RD LIMITS

SCALE: 1":3000'



OLD RIVER ROAD

"O" Sta 12+81.00 TO 168+19.68



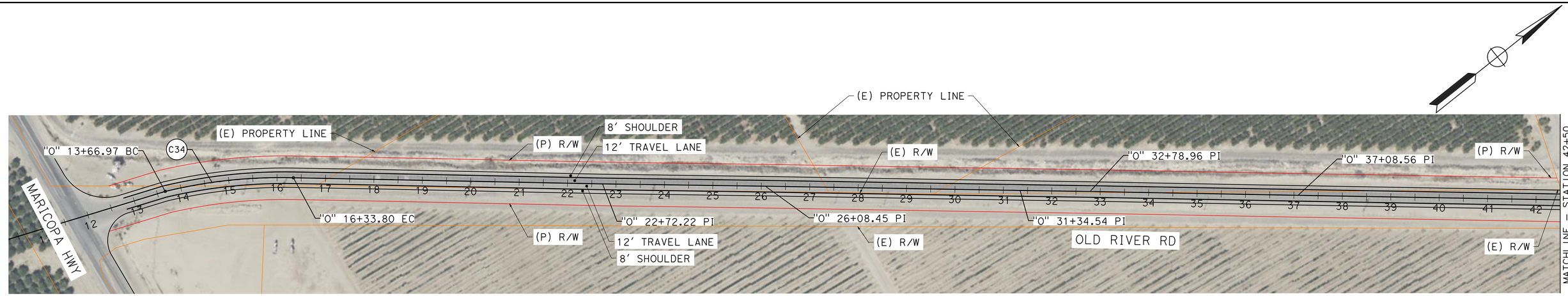
COPUS/DAVID ROAD

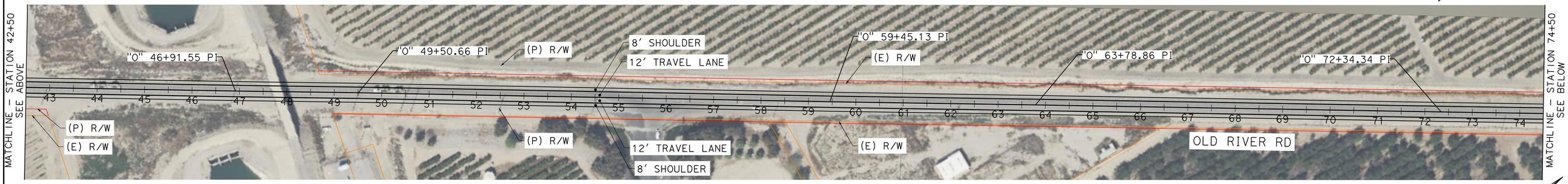
"C" Sta 11+71.99 TO 591+45.06

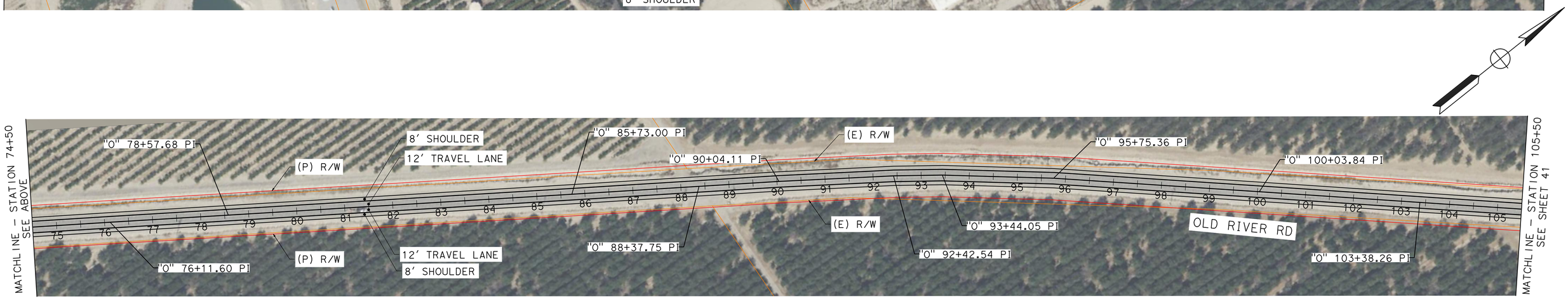
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN







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DATE: 1/14/26

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C34	1000.00′	015°17′18"	134.21′	266.83′

SCALE: 1"=100'

SHEET 40 OF 54

30% CONCEPTUAL DESIGN

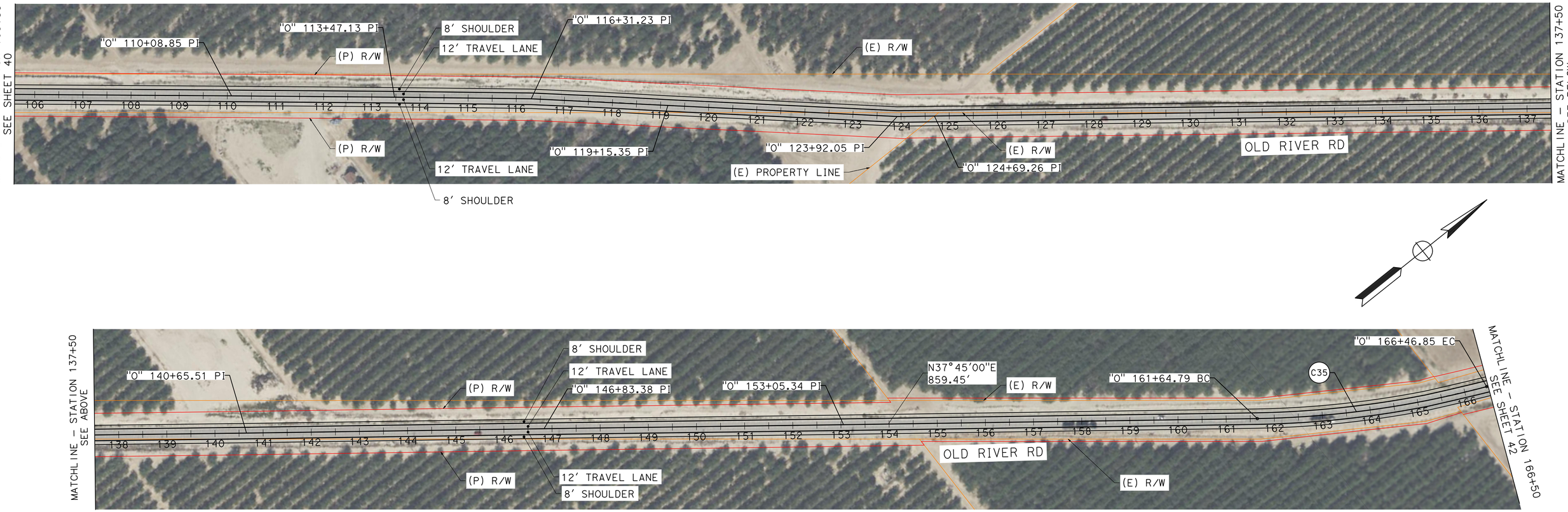
MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.3

REALIGN SR 166 TO COPUS RD VIA OLD RIVER RD



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C35	1983.75'	013°55'23"	242.22'	482.05'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

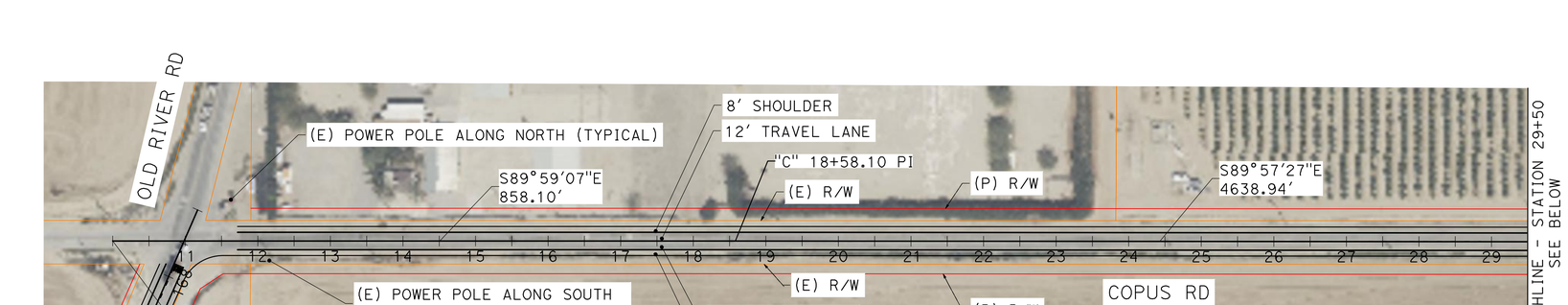
KARGO CCAMS - PROJECT 1

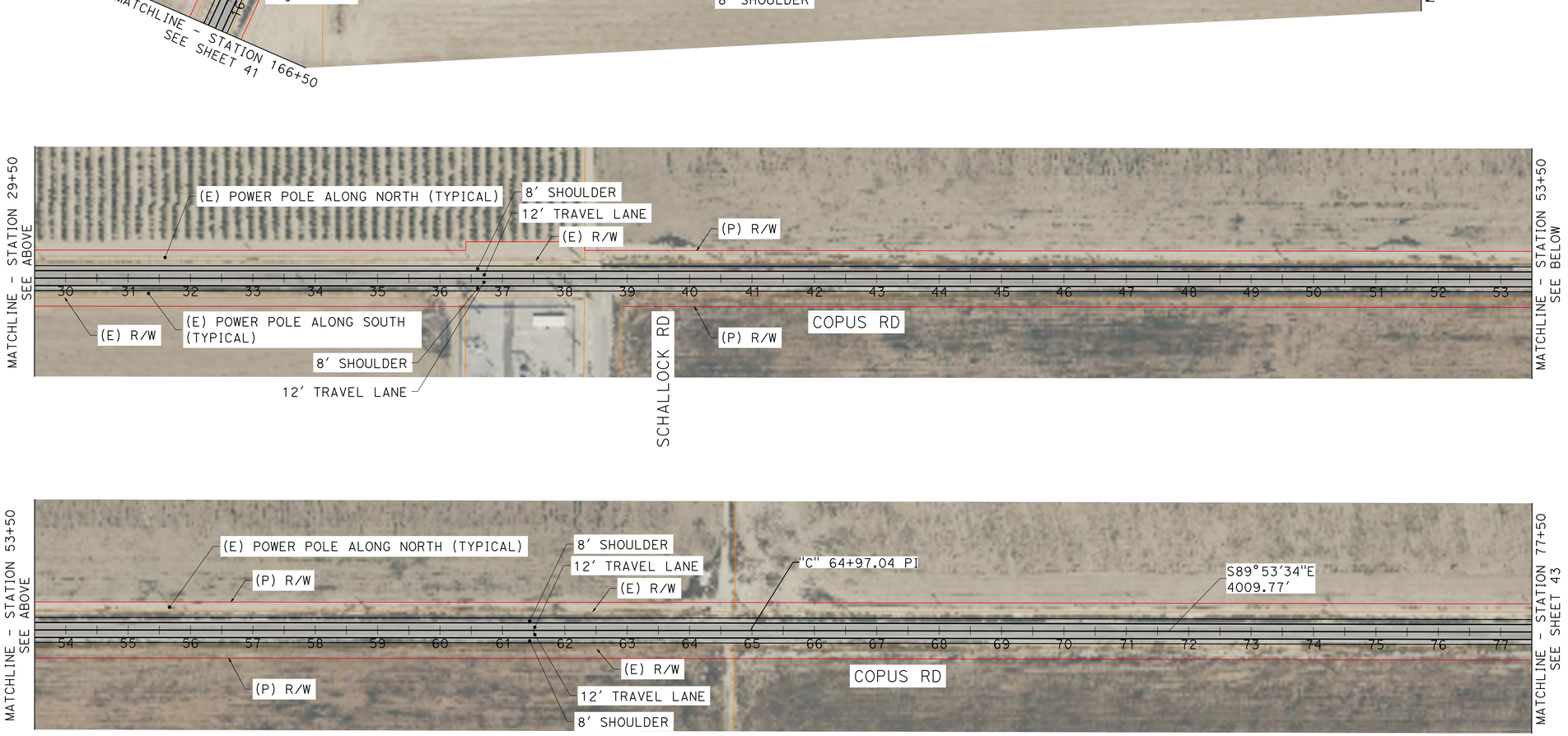
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.3

REALIGN SR 166 TO COPUS RD VIA OLD RIVER RD

30% CONCEPTUAL DESIGN





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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

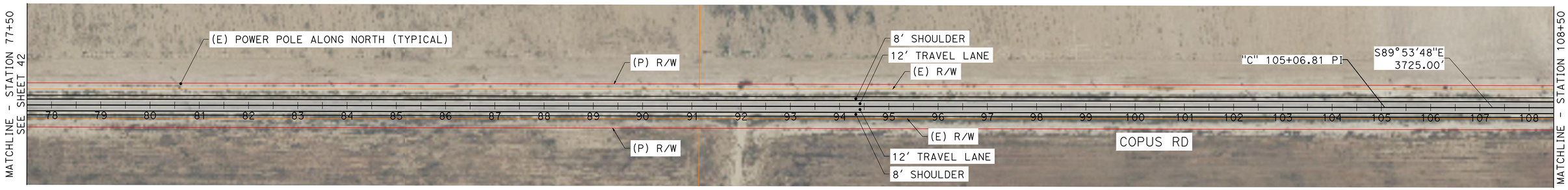
KARGO CCAMS - PROJECT 1

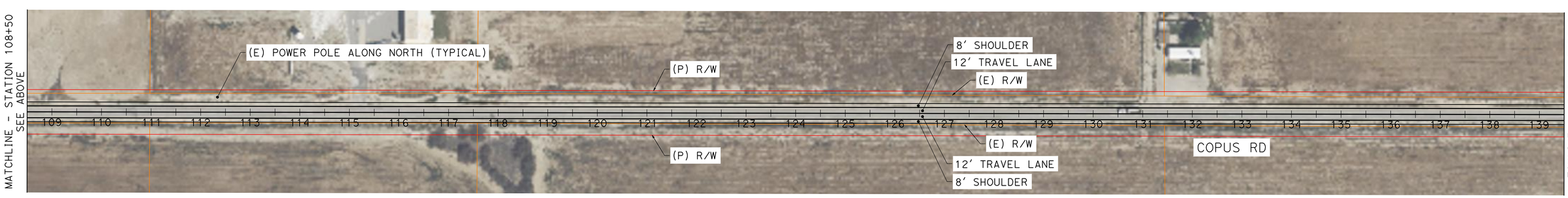
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

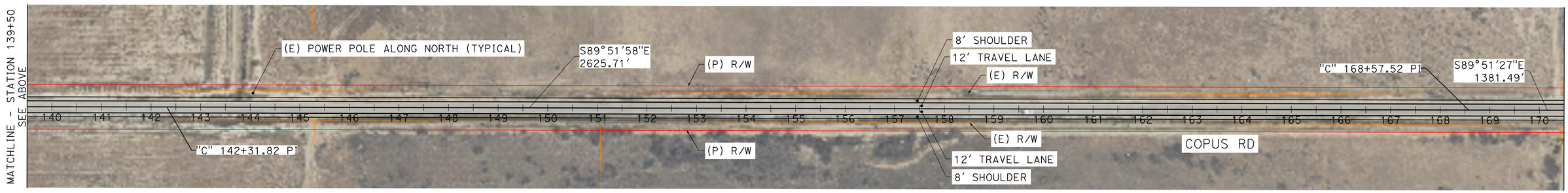
1.3

S ARVIN CORRIDOR GREEN PASS

30% CONCEPTUAL DESIGN







30% CONCEPTUAL DESIGN

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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

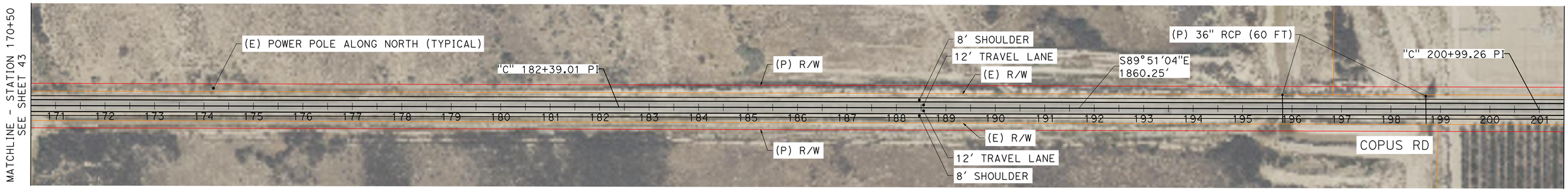
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

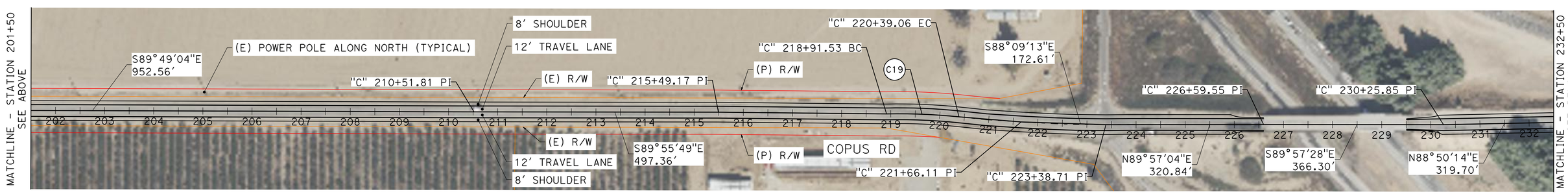
1.3

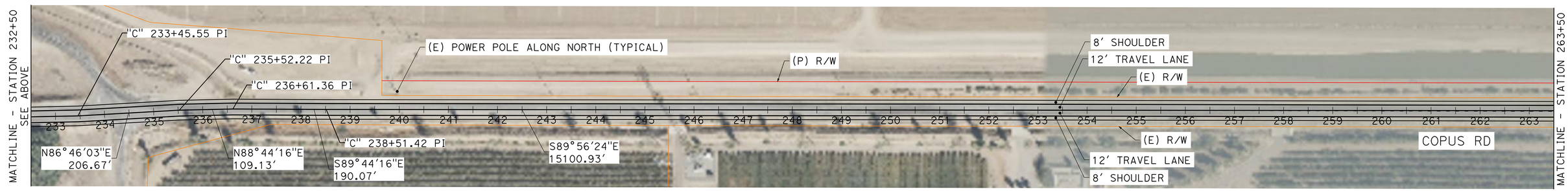
S ARVIN CORRIDOR GREEN PASS

LEGEND:

——— (P) 36" RCP (60FT)







30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C19	1200.00'	007°02'38"	73.86'	147.53'

SCALE: 1"=100'

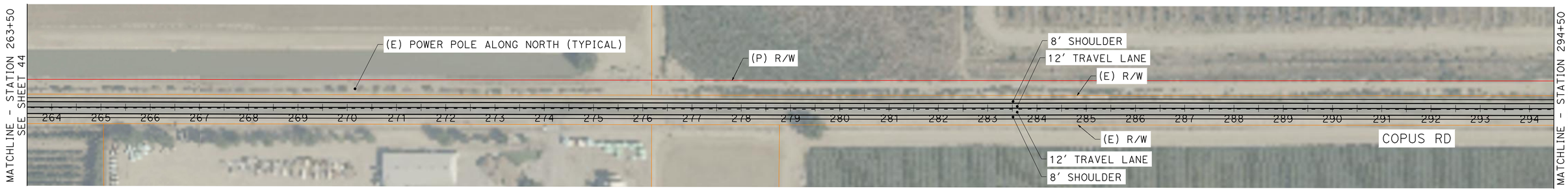
MARK THOMAS

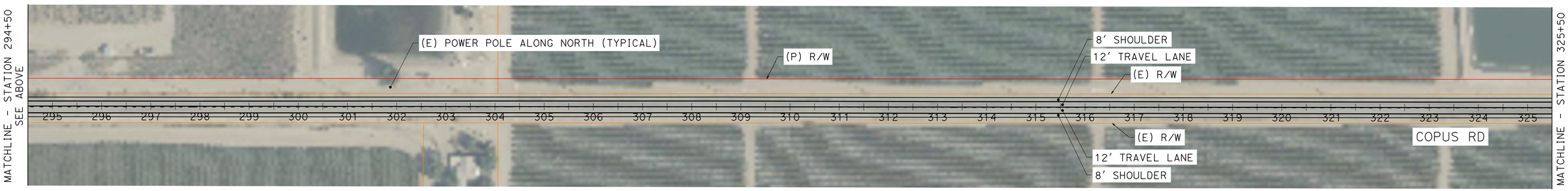
KARGO CCAMS - PROJECT 1

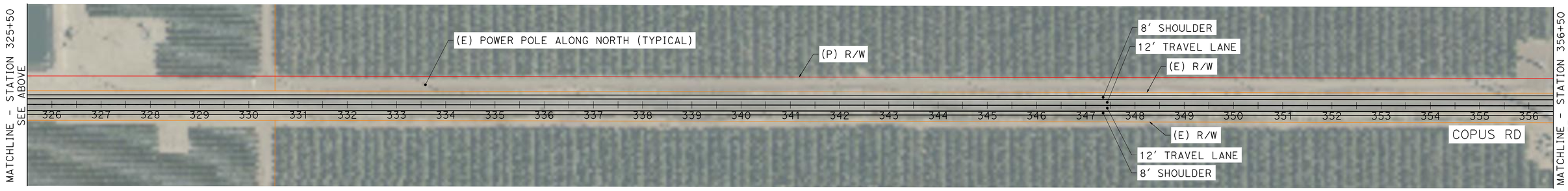
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.3

S ARVIN CORRIDOR GREEN PASS







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DATE: 1/14/26

SCALE: 1"=100'

SHEET 45 OF 54

30% CONCEPTUAL DESIGN

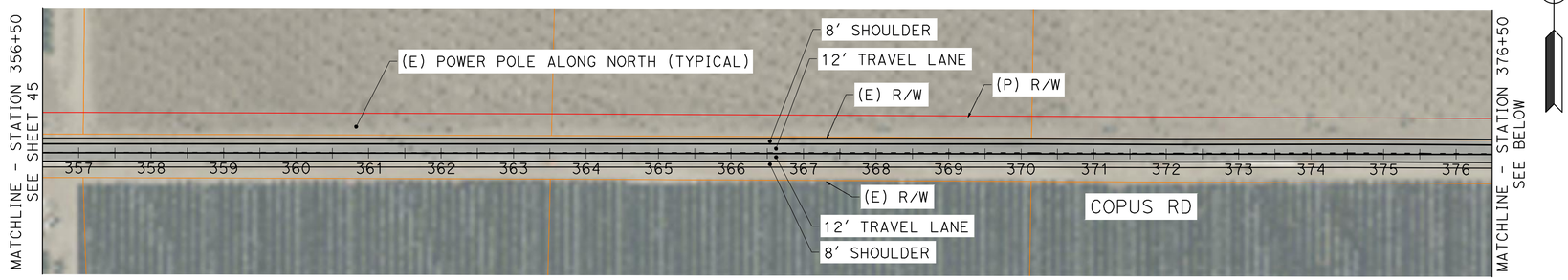
MARK THOMAS

KARGO CCAMS - PROJECT 1

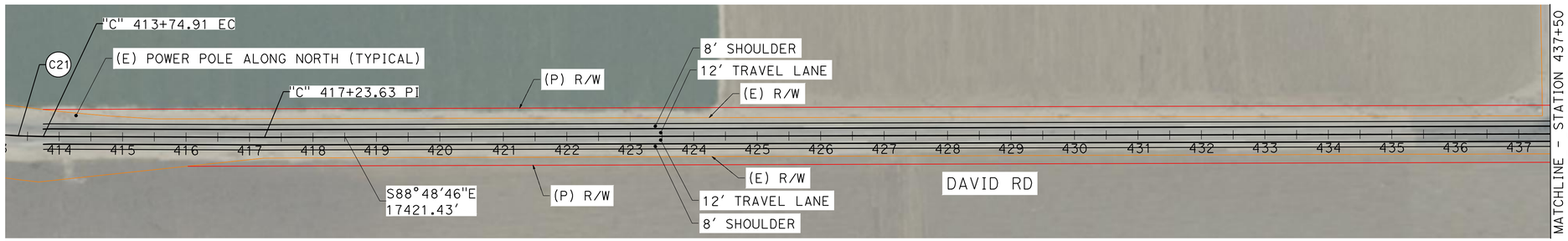
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.3

S ARVIN CORRIDOR GREEN PASS







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C20	1000.00'	016°51'19"	148.16'	294.18'
C21	1000.00'	019°25'58"	171.23'	339.17'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.3
S ARVIN CORRIDOR GREEN PASS



30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=100'

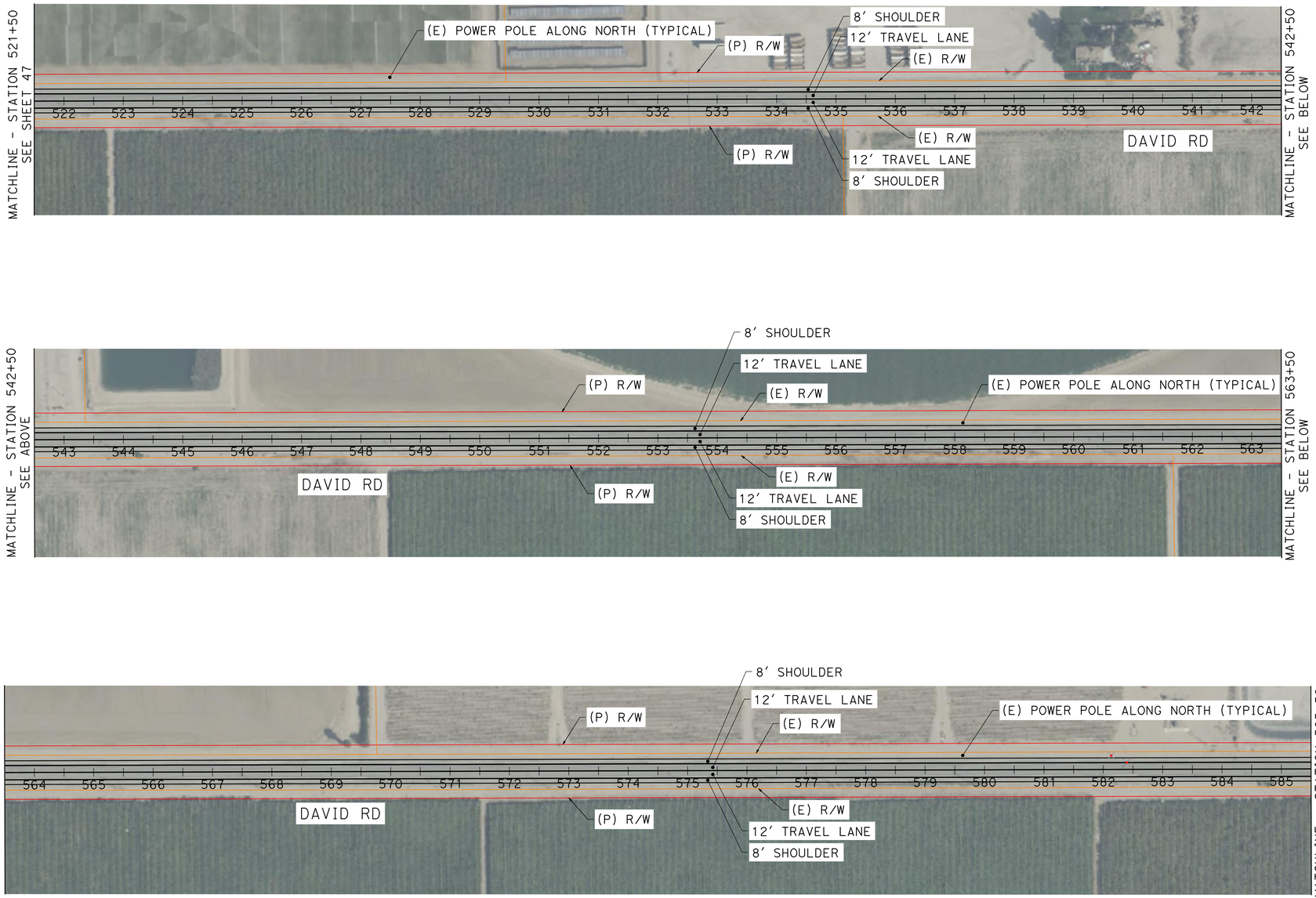
MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.3

S ARVIN CORRIDOR GREEN PASS



30% CONCEPTUAL DESIGN

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DATE: 1/14/26

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.3

S ARVIN CORRIDOR GREEN PASS

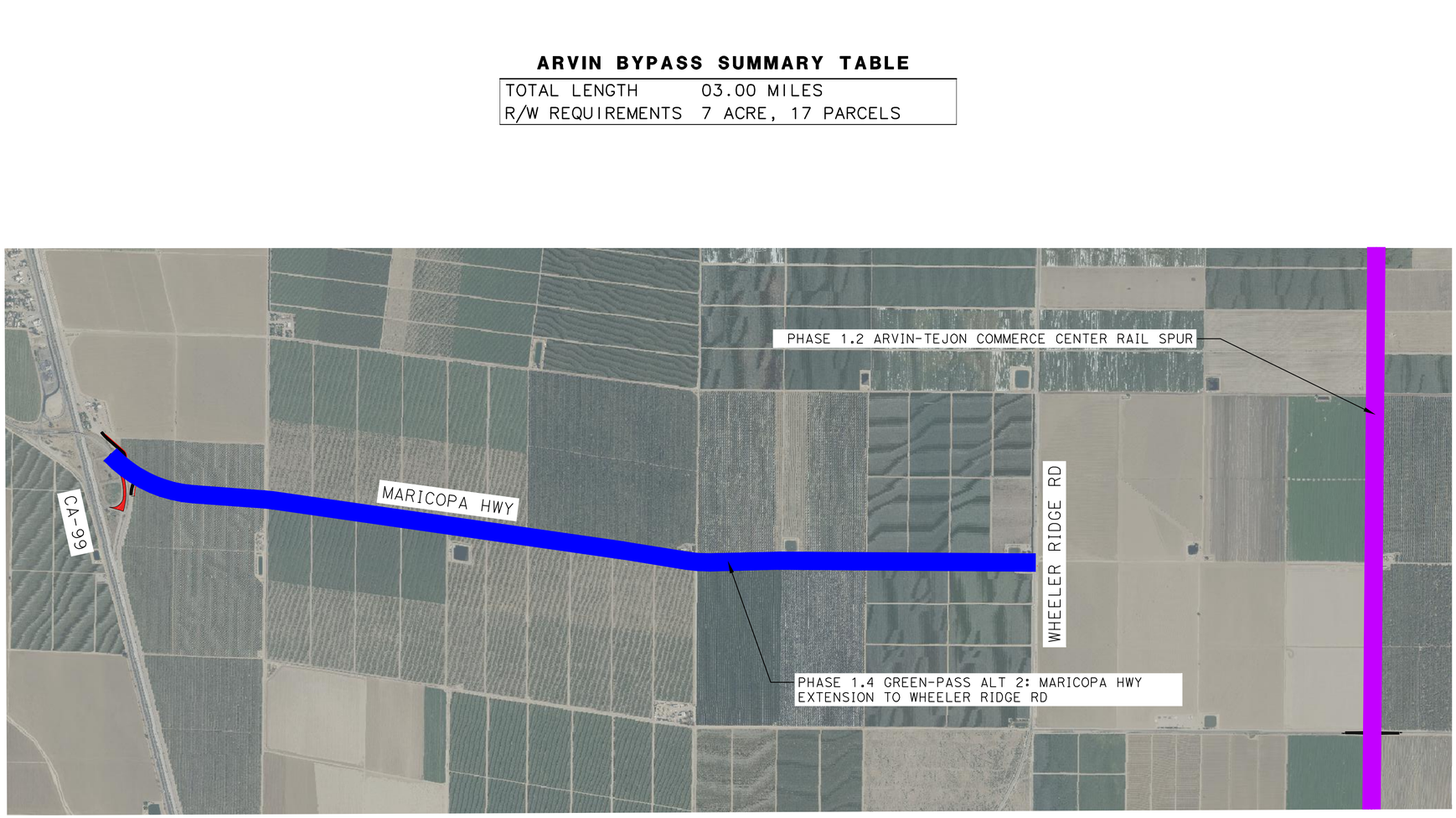
LEGEND:

PHASE 1.2 ARVIN–TEJON COMMERCE CENTER RAIL SPUR

PHASE 1.4 GREEN–PASS ALT 2: MARICOPA HWY EXTENSION TO WHEELER RIDGE RD

ARVIN BYPASS SUMMARY TABLE

TOTAL LENGTH	03.00 MILES
R/W REQUIREMENTS	7 ACRE, 17 PARCELS



30% CONCEPTUAL DESIGN

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DATE: 1/14/26

SCALE: 1"=1000"

MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.4

REALIGN SR 166 TO COPUS RD VIA OLD RIVER RD

LEGEND:

STOP (P) STOP INTERSECTION

(P) ROAD OBSTRUCTION



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C14	2000.00'	045°22'00"	835.94'	1583.60'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

SHEET 50 OF 54

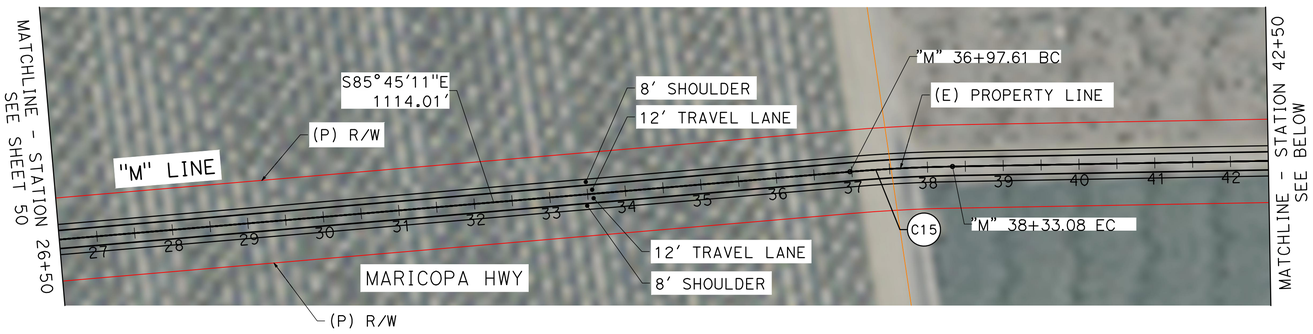
MARK THOMAS

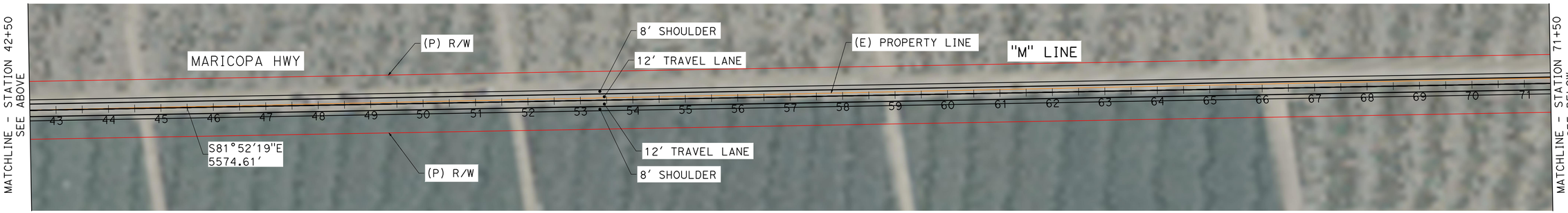
KARGO CCAMS - PROJECT 1

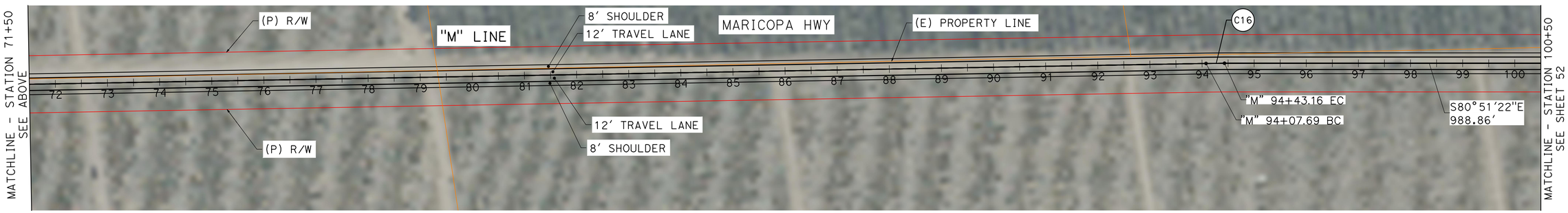
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.4

S ARVIN CORRIDOR GREEN PASS







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C15	2000.00'	003°52'52"	67.76'	135.47'
C16	2000.00'	001°00'58"	17.73'	35.47'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 1

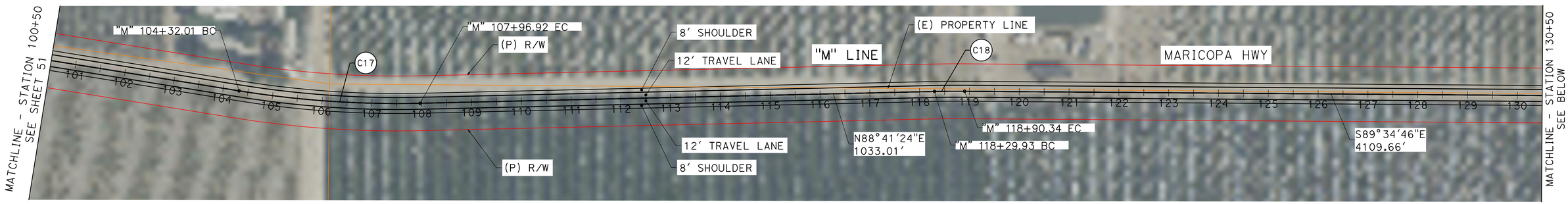
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

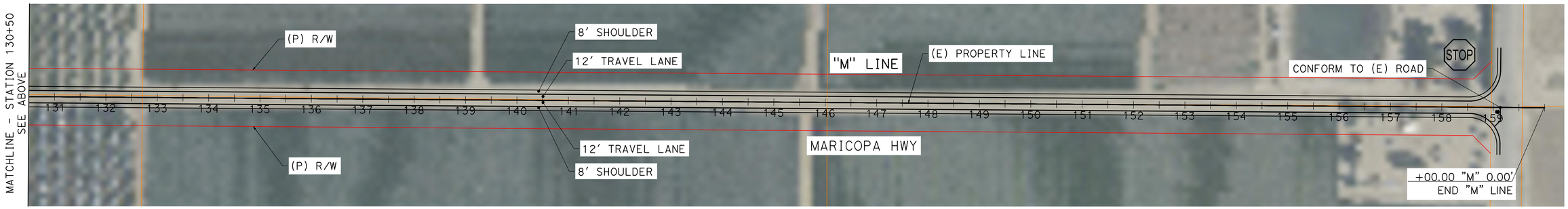
1.4

S ARVIN CORRIDOR GREEN PASS

LEGEND:

STOP (P) STOP INTERSECTION





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C17	2000.00'	010°27'14"	182.96'	364.91'
C18	2000.00'	001°43'50"	30.21'	60.41'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=50'

MARK THOMAS

KARGO CCAMS - PROJECT 1

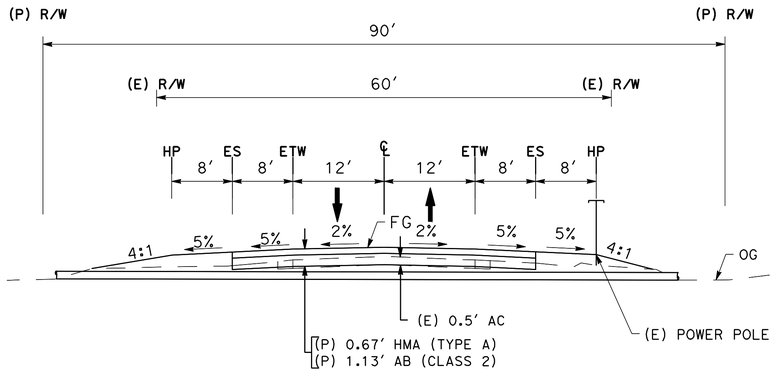
ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.4

S ARVIN CORRIDOR GREEN PASS

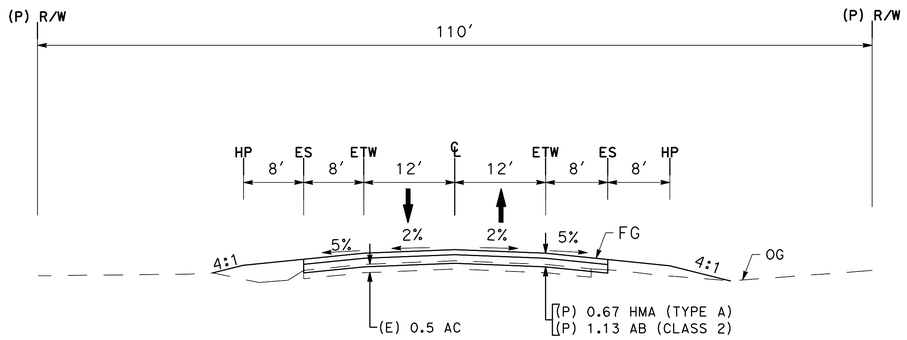
LEGEND:

PHASE 1.5 COPUS RD SAFETY REALIGNMENT



CADET ROAD

"COPUS" Sta 11+00.00 TO 19+13.71



COPUS ROAD REALIGNMENT

"COPUS" Sta 19+13.71 TO 71+81.70

ARVIN BYPASS SUMMARY TABLE

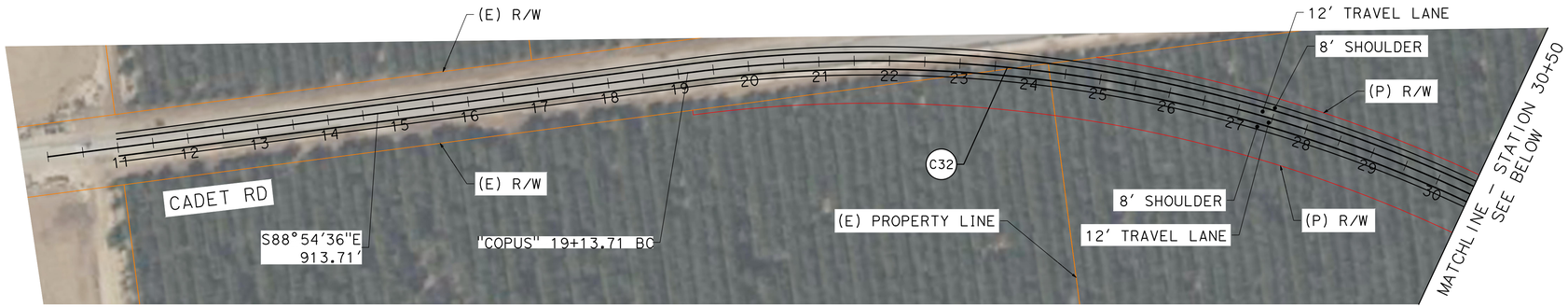
TOTAL LENGTH	01.20 MILES
R/W REQUIREMENTS	10 ACRE, 6 PARCELS

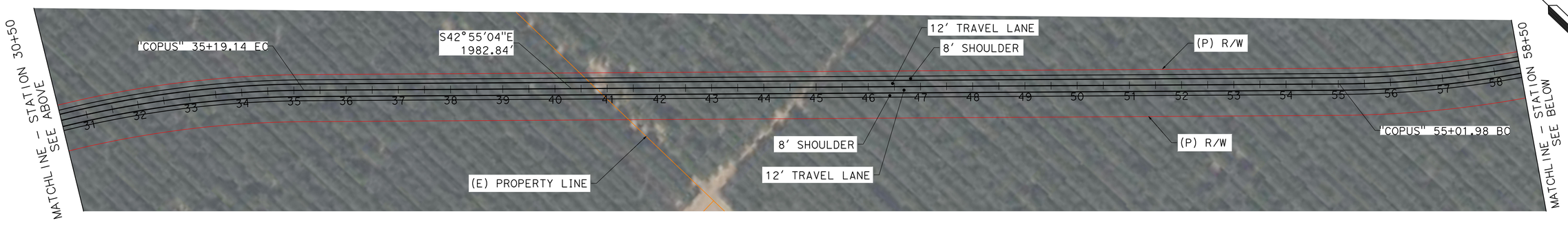


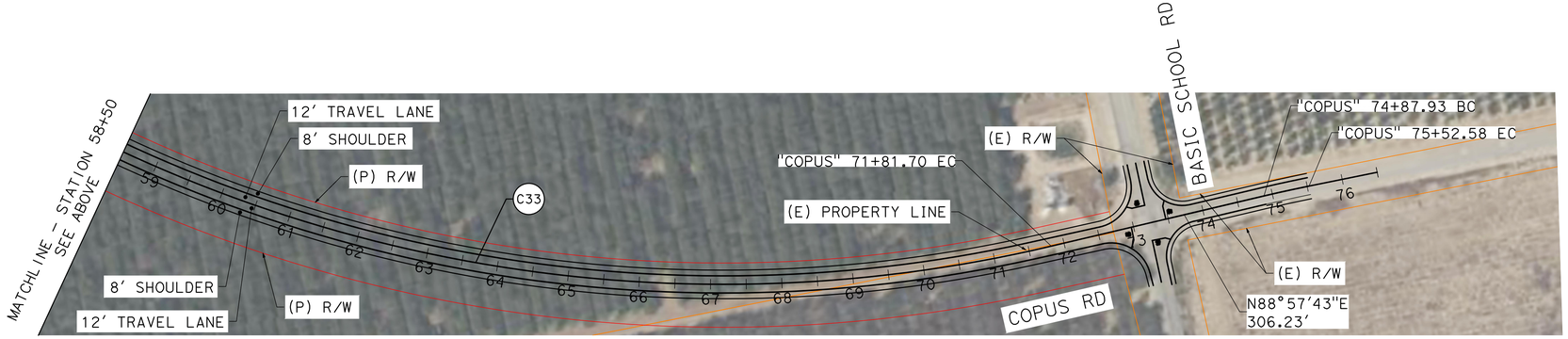
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1'= 500"







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C32	2000.00'	045°59'32"	848.79'	1605.43'
C33	2000.00'	048°07'13"	892.97'	1679.71'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"= 500"

SHEET 54 OF 54

30% CONCEPTUAL DESIGN

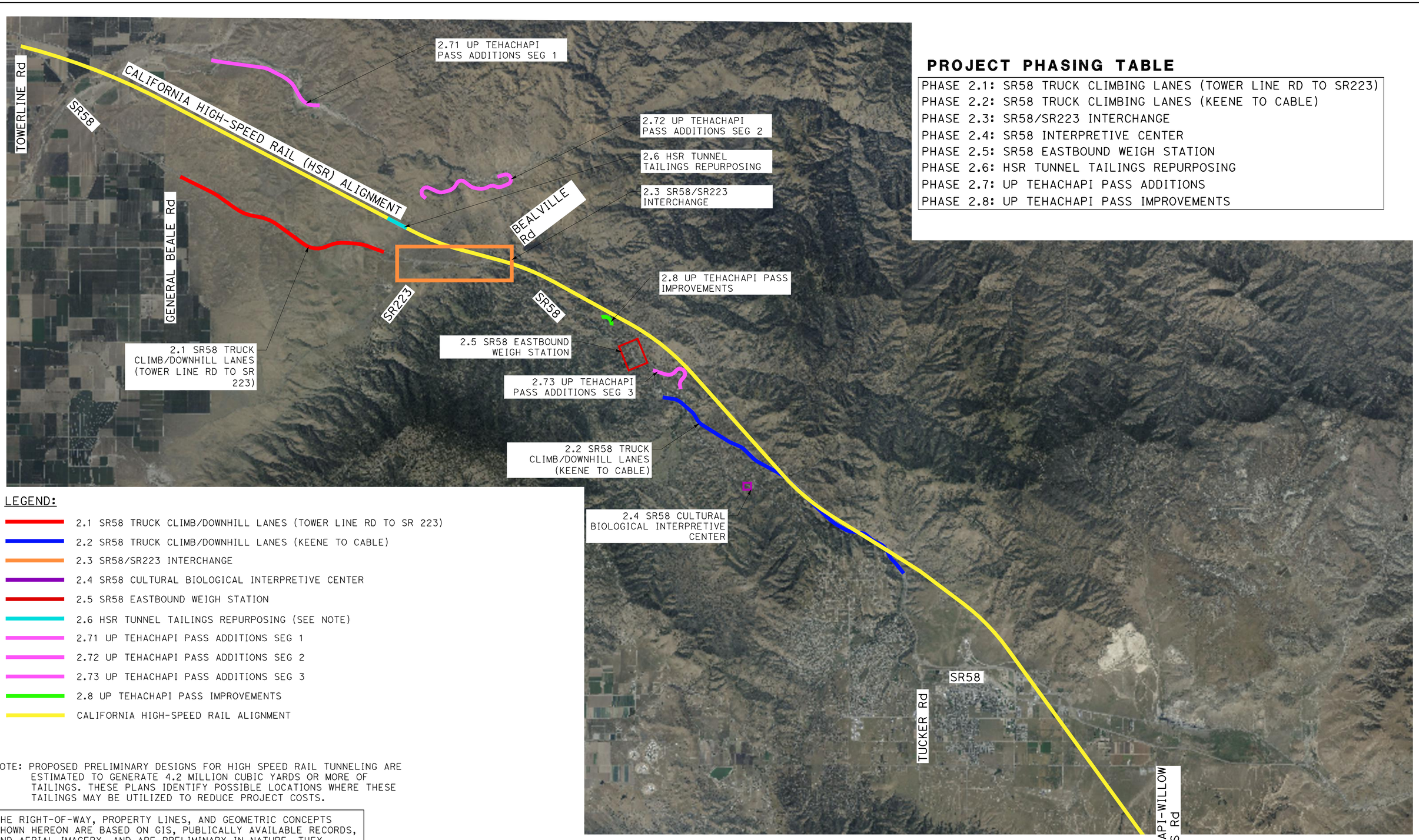
MARK THOMAS

KARGO CCAMS - PROJECT 1

ARVIN/MARICOPA/TAFT GREENPASS NETWORK

1.5

COPUS RD SAFETY REALIGNMENT



PROJECT PHASING TABLE

PHASE 2.1: SR58 TRUCK CLIMBING LANES (TOWER LINE RD TO SR223)
PHASE 2.2: SR58 TRUCK CLIMBING LANES (KEENE TO CABLE)
PHASE 2.3: SR58/SR223 INTERCHANGE
PHASE 2.4: SR58 INTERPRETIVE CENTER
PHASE 2.5: SR58 EASTBOUND WEIGH STATION
PHASE 2.6: HSR TUNNEL TAILINGS REPURPOSING
PHASE 2.7: UP TEHACHAPI PASS ADDITIONS
PHASE 2.8: UP TEHACHAPI PASS IMPROVEMENTS

LEGEND:

- 2.1 SR58 TRUCK CLIMB/DOWNHILL LANES (TOWER LINE RD TO SR 223)
- 2.2 SR58 TRUCK CLIMB/DOWNHILL LANES (KEENE TO CABLE)
- 2.3 SR58/SR223 INTERCHANGE
- 2.4 SR58 CULTURAL BIOLOGICAL INTERPRETIVE CENTER
- 2.5 SR58 EASTBOUND WEIGH STATION
- 2.6 HSR TUNNEL TAILINGS REPURPOSING (SEE NOTE)
- 2.71 UP TEHACHAPI PASS ADDITIONS SEG 1
- 2.72 UP TEHACHAPI PASS ADDITIONS SEG 2
- 2.73 UP TEHACHAPI PASS ADDITIONS SEG 3
- 2.8 UP TEHACHAPI PASS IMPROVEMENTS
- CALIFORNIA HIGH-SPEED RAIL ALIGNMENT

NOTE: PROPOSED PRELIMINARY DESIGNS FOR HIGH SPEED RAIL TUNNELING ARE ESTIMATED TO GENERATE 4.2 MILLION CUBIC YARDS OR MORE OF TAILINGS. THESE PLANS IDENTIFY POSSIBLE LOCATIONS WHERE THESE TAILINGS MAY BE UTILIZED TO REDUCE PROJECT COSTS.

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 5000'

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

LEGEND:

2.1 SR58 TRUCK CLIMB/DOWNHILL LANES (TOWER LINE RD TO SR 223)

2.3 SR58/SR223 INTERCHANGE

SUMMARY TABLE

TOTAL LENGTH	05.20 MILE
R/W REQUIREMENTS	00.00 ACRE, 00 PARCELS

EXISTING PAVEMENT STRUCTURAL SECTIONS

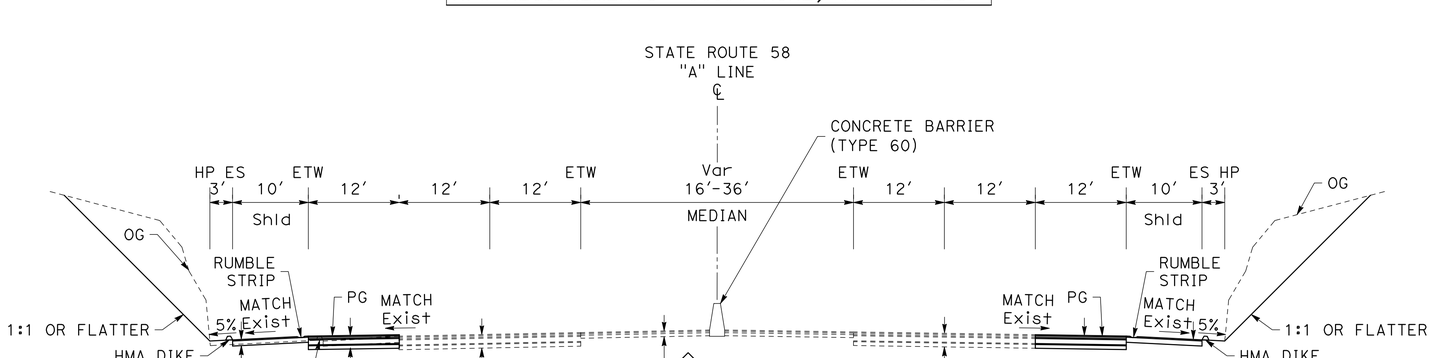
A
- 0.15′ RAC (TYPE G)
- 0.20′ AC (TYPE A)
- PRF
- 0.15′ AC (TYPE A)
- 0.67′ PCC
- 0.12′ CTB
- 0.50′ AS

B
- 0.15′ RAC (TYPE G)
- 0.20′ AC (TYPE A)
- 0.40′ AC CI 2 AB

TYPICAL PAVEMENT STRUCTURAL SECTIONS

1
- 0.15′ RAC (TYPE G)
- 0.20′ HMA (TYPE A)
- PRF
- 0.15′ HMA (TYPE A)
- 0.67′ PCC
- 0.12′ CTB
- 0.50′ AS

2
- 0.15′ HMA (TYPE A)
- 0.67′ PCC



GENERAL CROSS SECTION



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DATE: 1/14/26

SCALE: 1′:1000′′

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

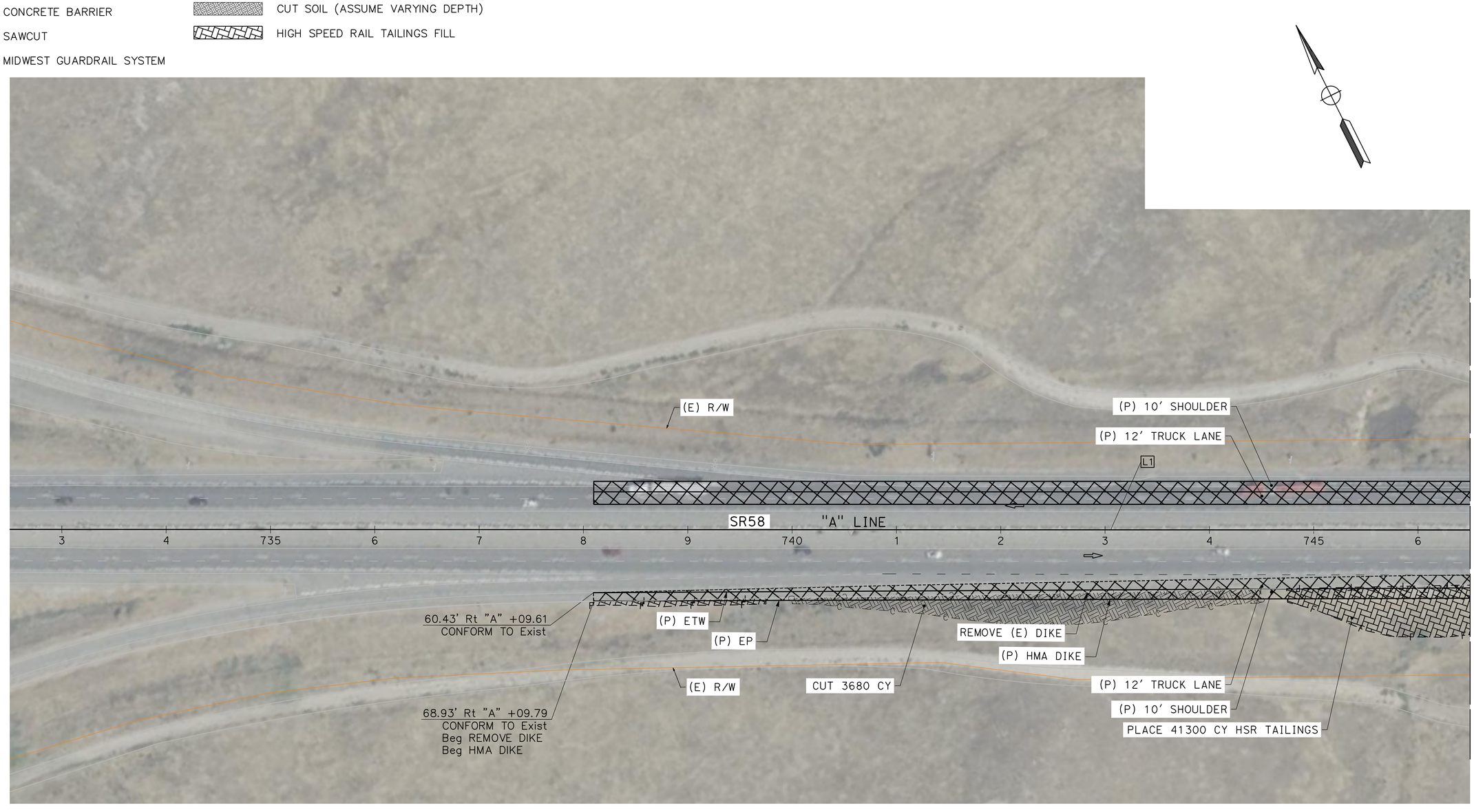
2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.1 Truck Lanes Plans Subtitle.dwg

LEGEND:

- PROPOSED PAVEMENT
- CONCRETE BARRIER
- SAWCUT
- MIDWEST GUARDRAIL SYSTEM
- TRUCK CLIMBING LANES
- CUT SOIL (ASSUME VARYING DEPTH)
- HIGH SPEED RAIL TAILINGS FILL



ALIGNMENT LINE TABLE		
No. X	L	D
L1	8610.74'	S63°31'57"E

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DATE: 1/14/26

SCALE: 1"=50'

30% CONCEPTUAL DESIGN

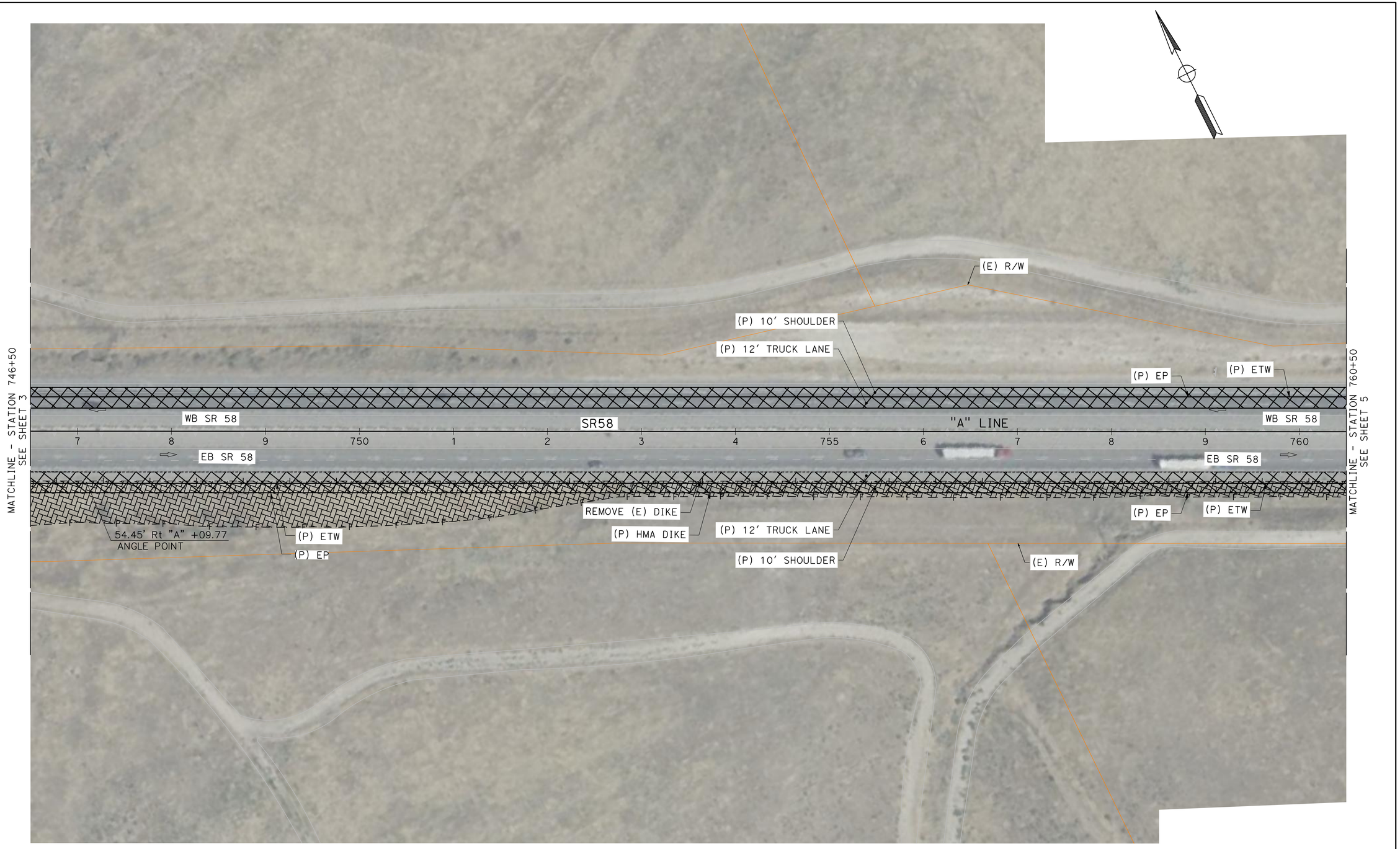
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



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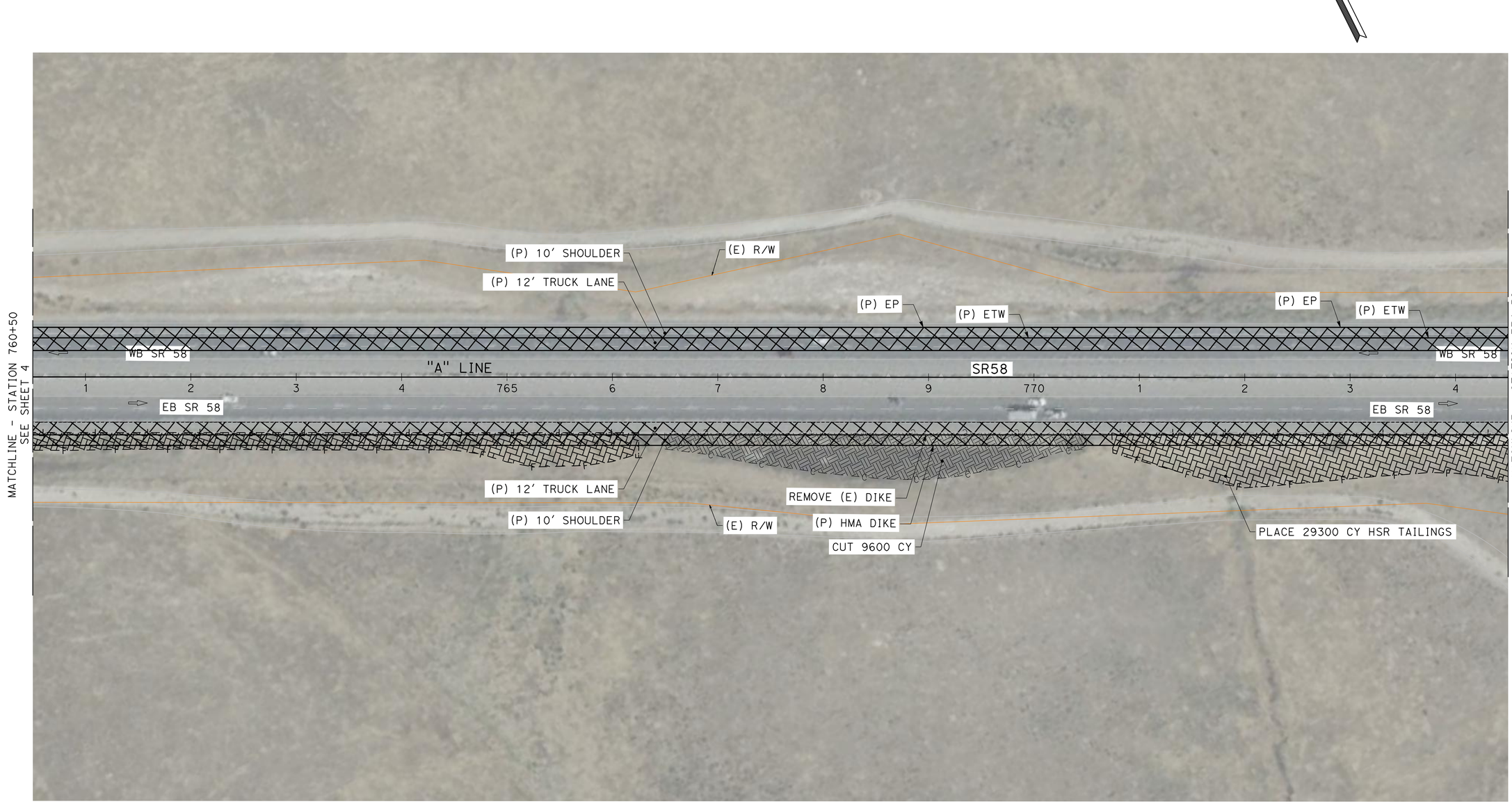
DATE: 1/14/26

SCALE: 1"=50'

SHEET 4 OF 46

30% CONCEPTUAL DESIGN



30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=50'

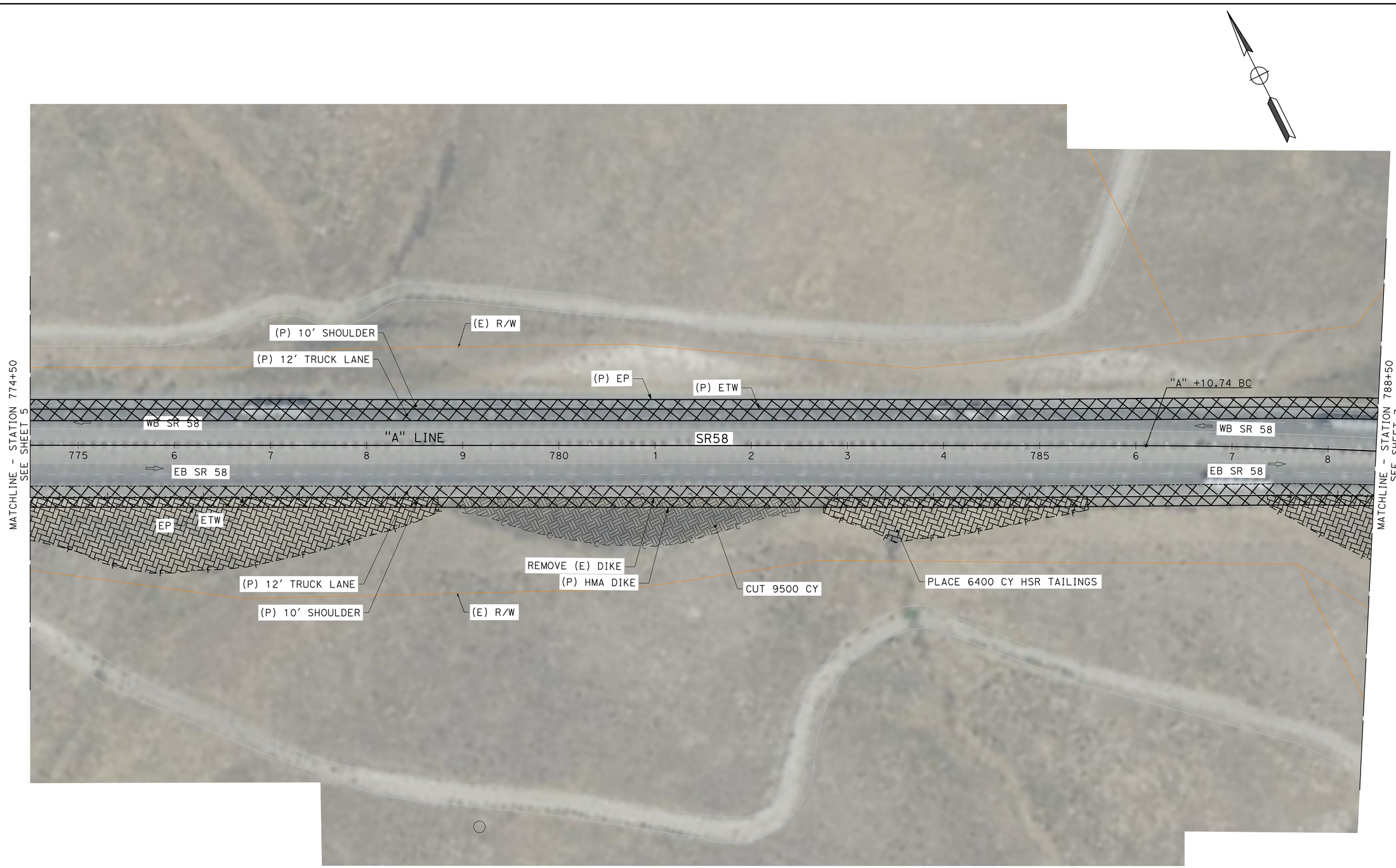
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



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DATE: 1/14/26

SCALE: 1"=50'

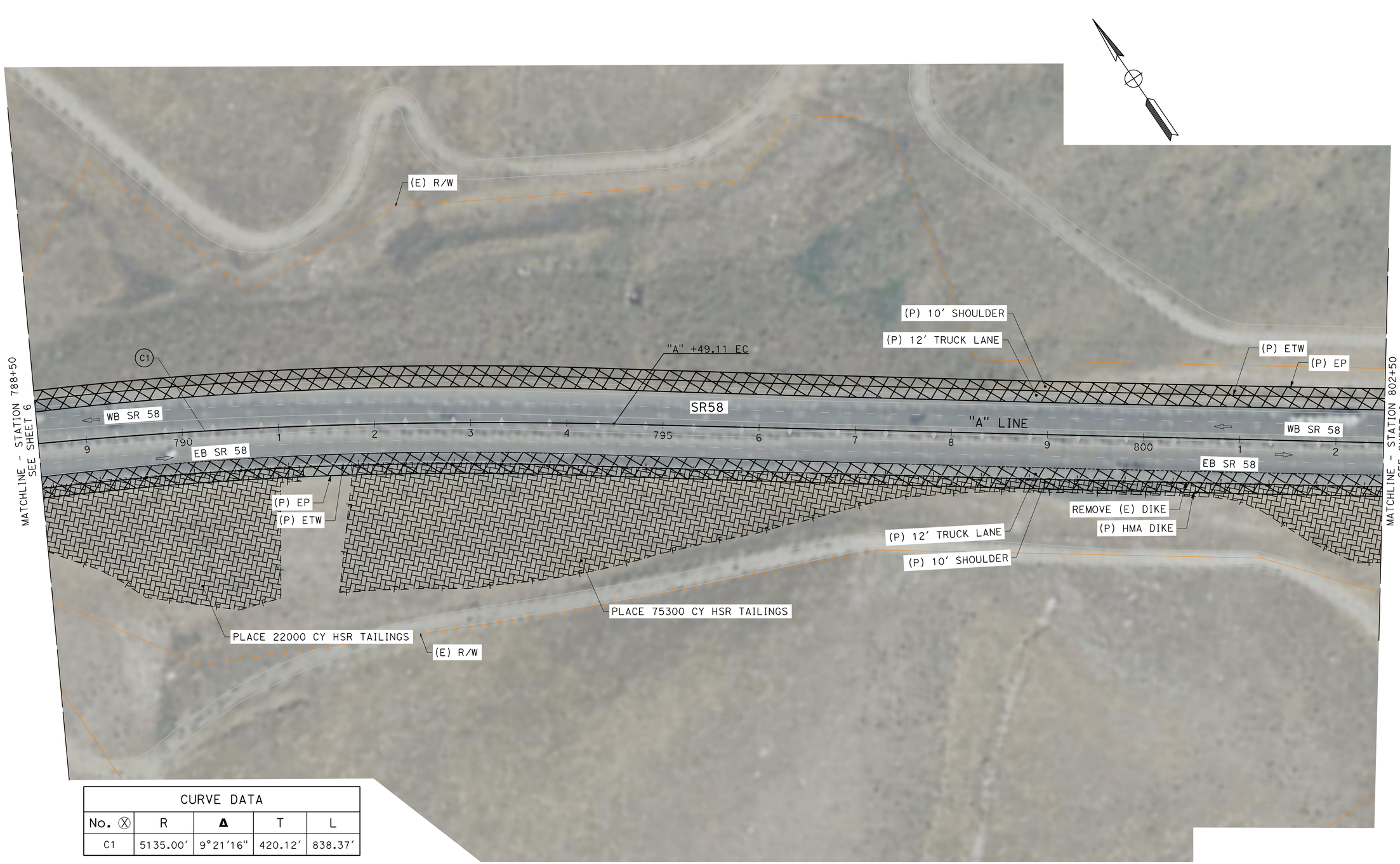
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



CURVE DATA				
No. Ⓧ	R	Δ	T	L
C1	5135.00'	9°21'16"	420.12'	838.37'

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DATE: 1/14/26

SCALE: 1"=50'

30% CONCEPTUAL DESIGN

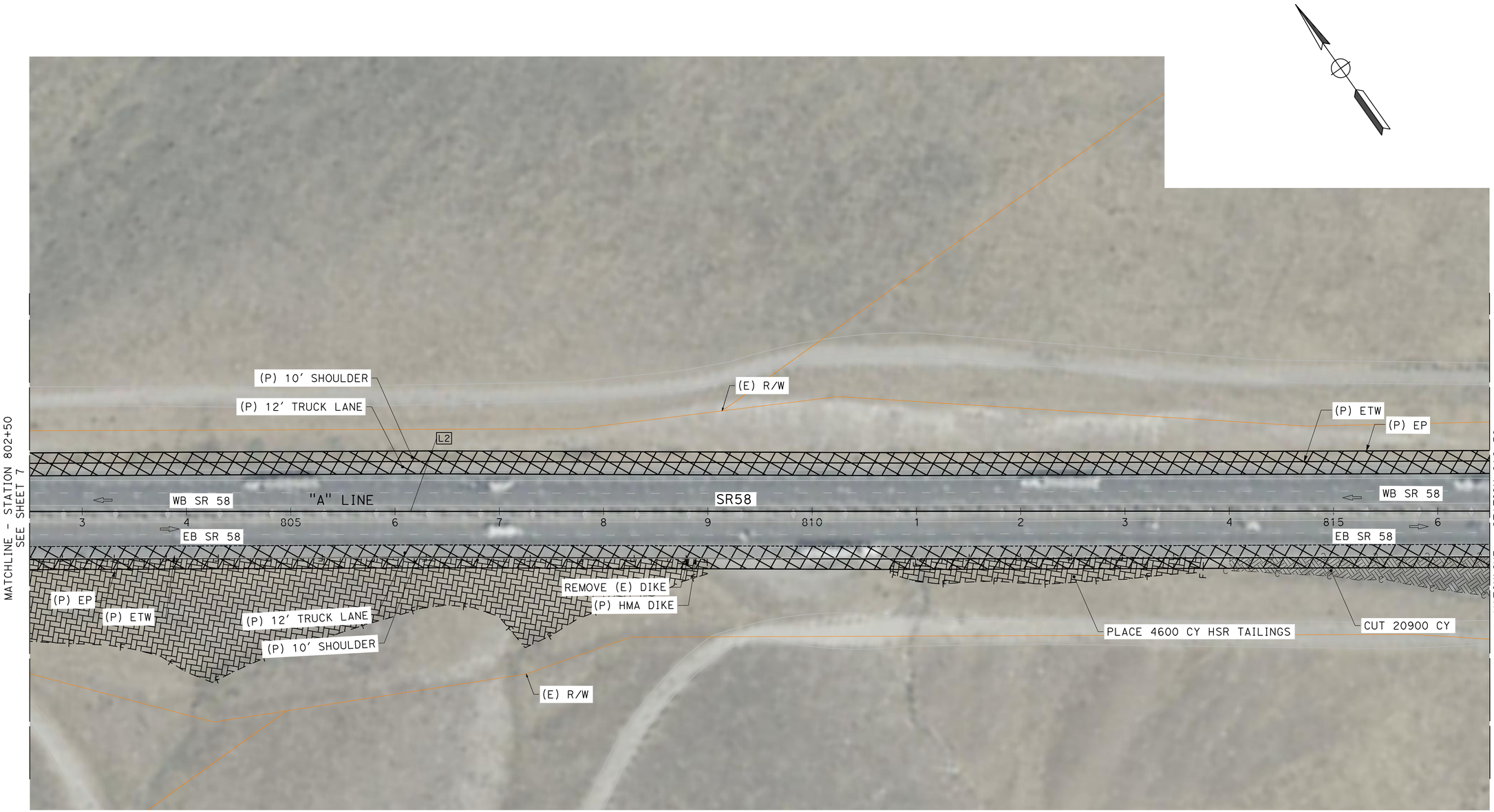
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



ALIGNMENT LINE TABLE

No. X	L	D
L2	2331.75'	S54°10'41"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=50'

MARK THOMAS

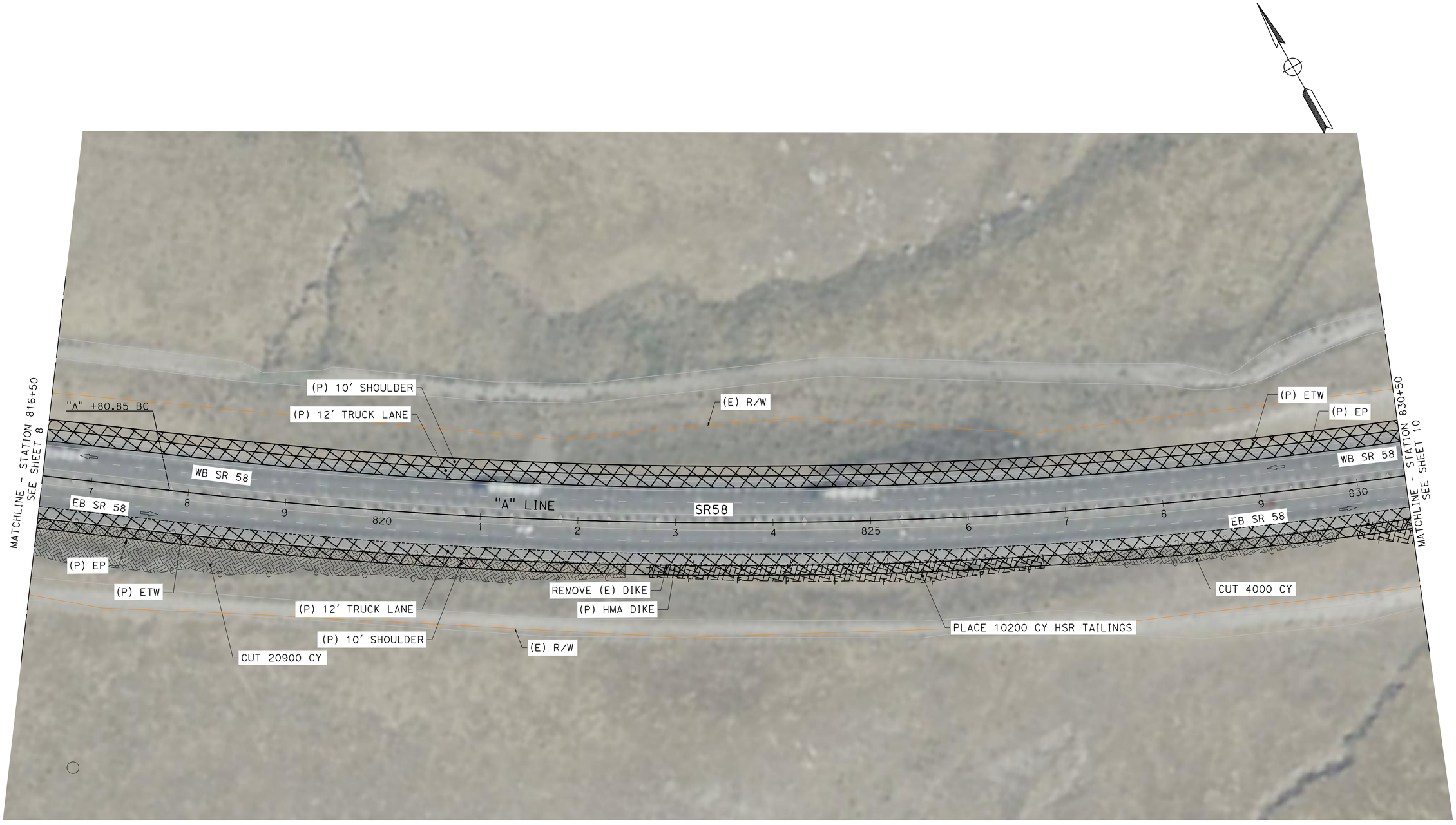
KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES

30% CONCEPTUAL DESIGN



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DATE: 1/14/26

SCALE: 1"=50'

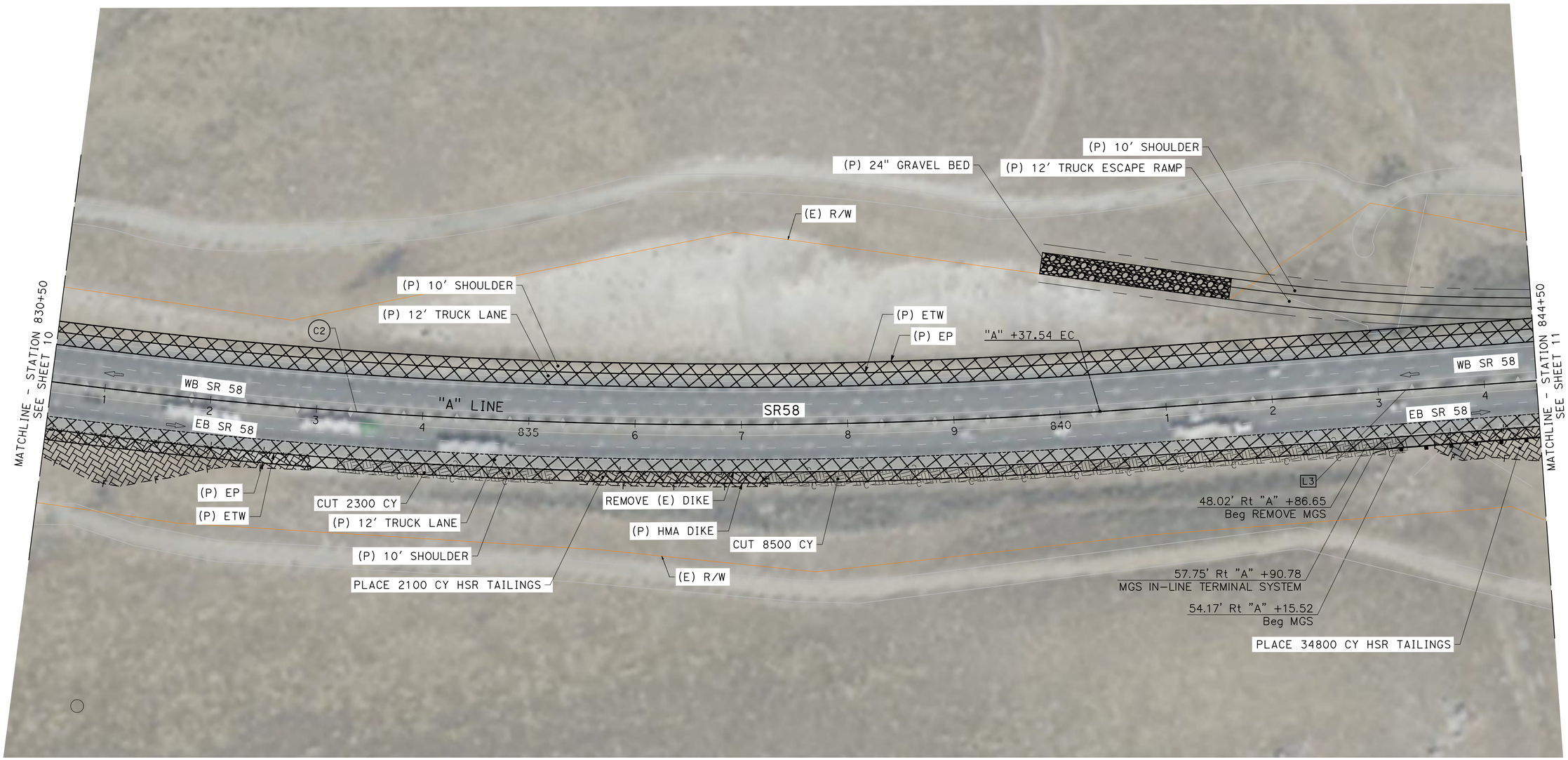
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



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DATE: 1/14/26

CURVE DATA				
No. X	R	Δ	T	L
C2	4985.00'	25°56'15"	1148.02'	2256.69'

ALIGNMENT LINE TABLE		
No. X	L	D
L3	577.09'	S80°06'57"E

SCALE: 1"=50'

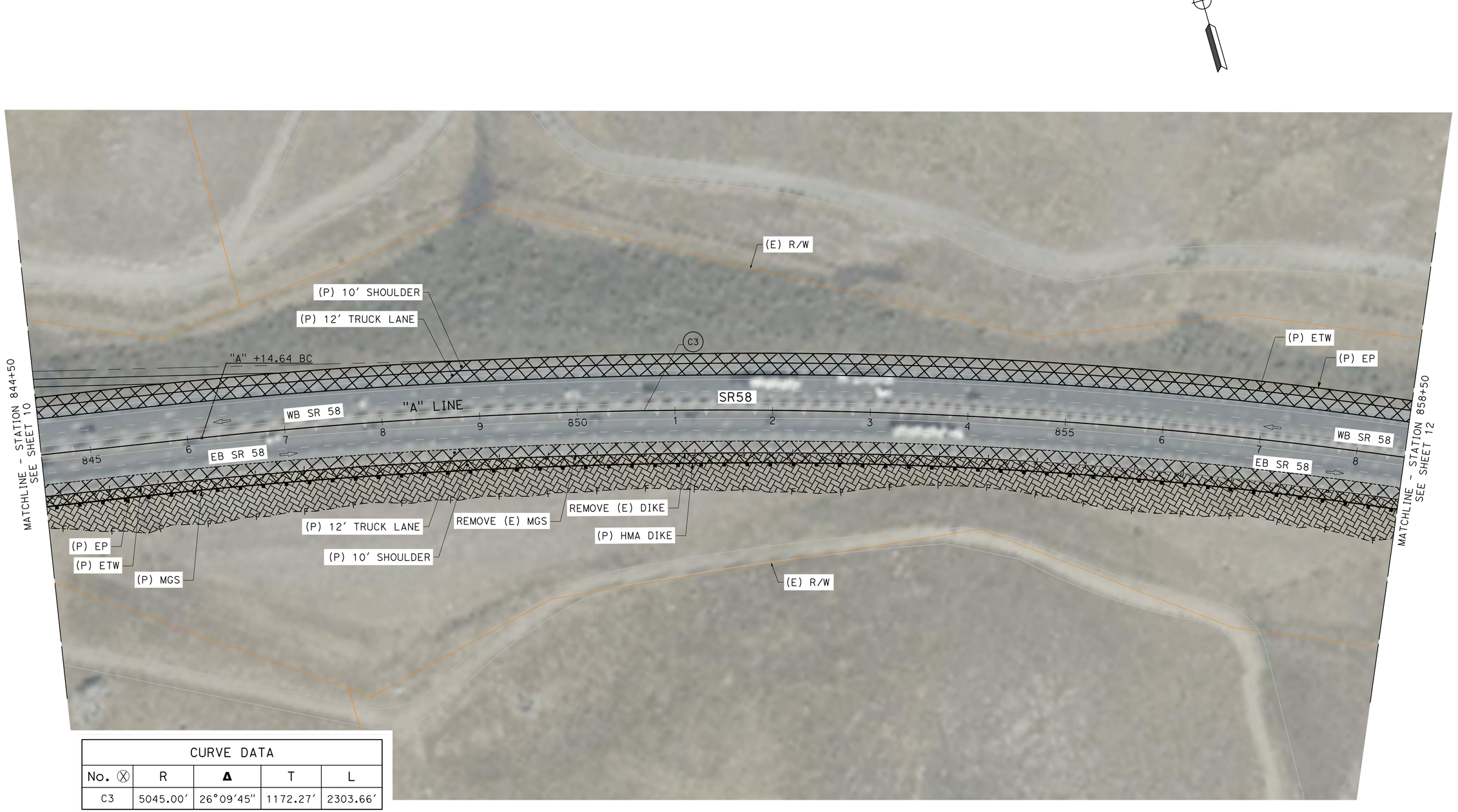
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



CURVE DATA				
No. ⓧ	R	Δ	T	L
C3	5045.00'	26°09'45"	1172.27'	2303.66'

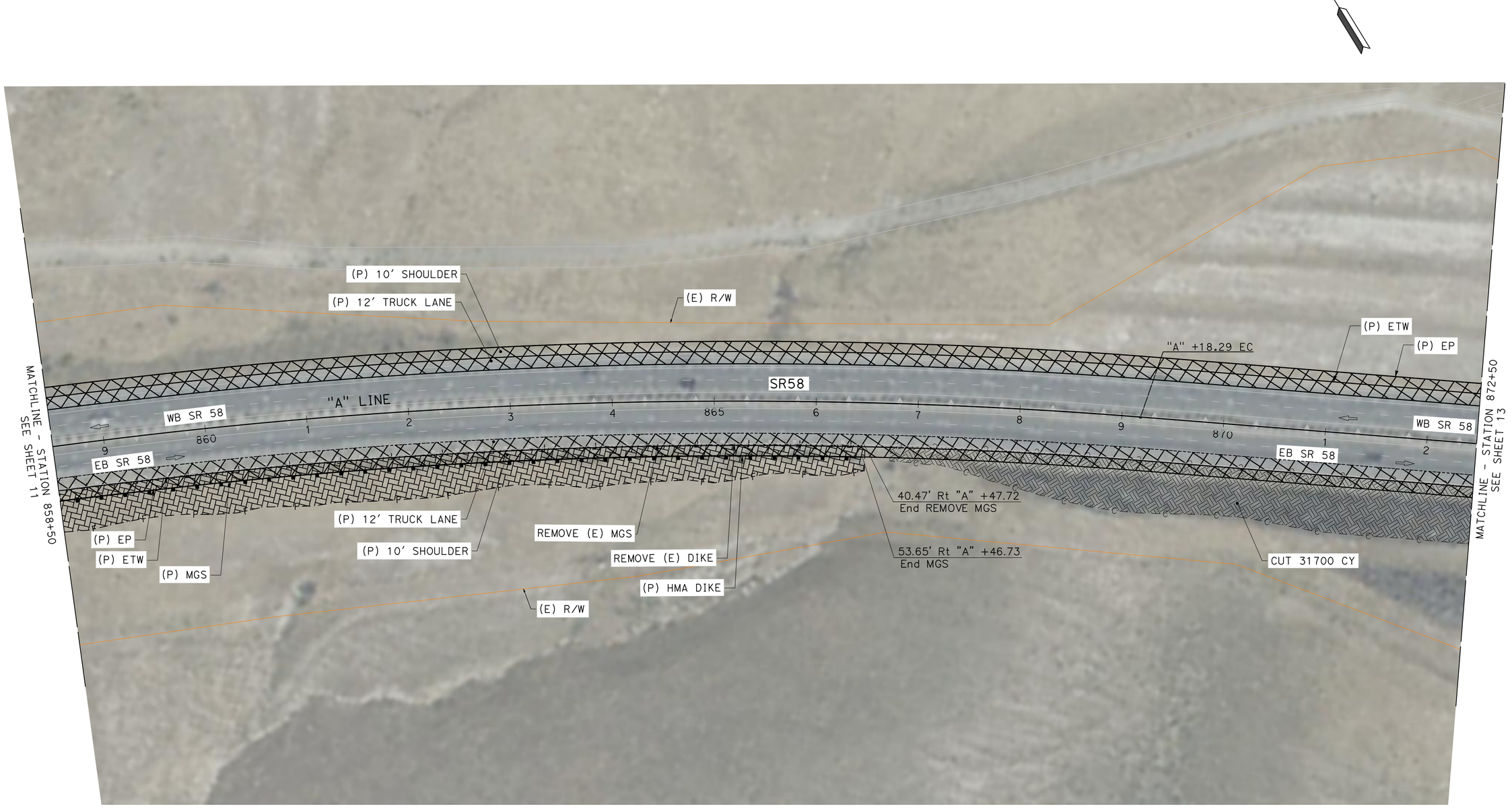
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=50'

SHEET 11 OF 46

30% CONCEPTUAL DESIGN



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DATE: 1/14/26

SCALE: 1"=50'

MARK THOMAS

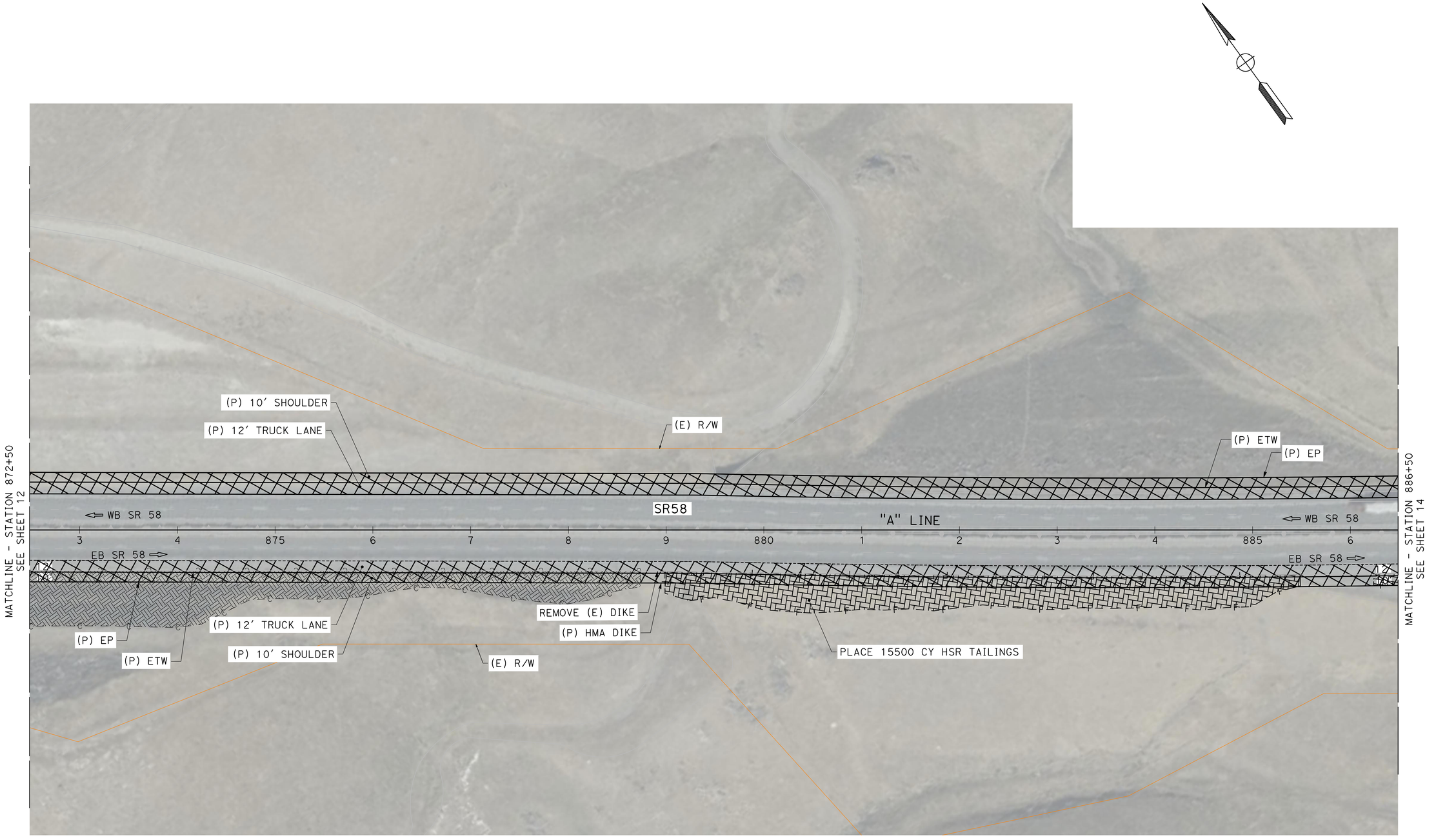
KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES

30% CONCEPTUAL DESIGN



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DATE: 1/14/26

SCALE: 1"=50'

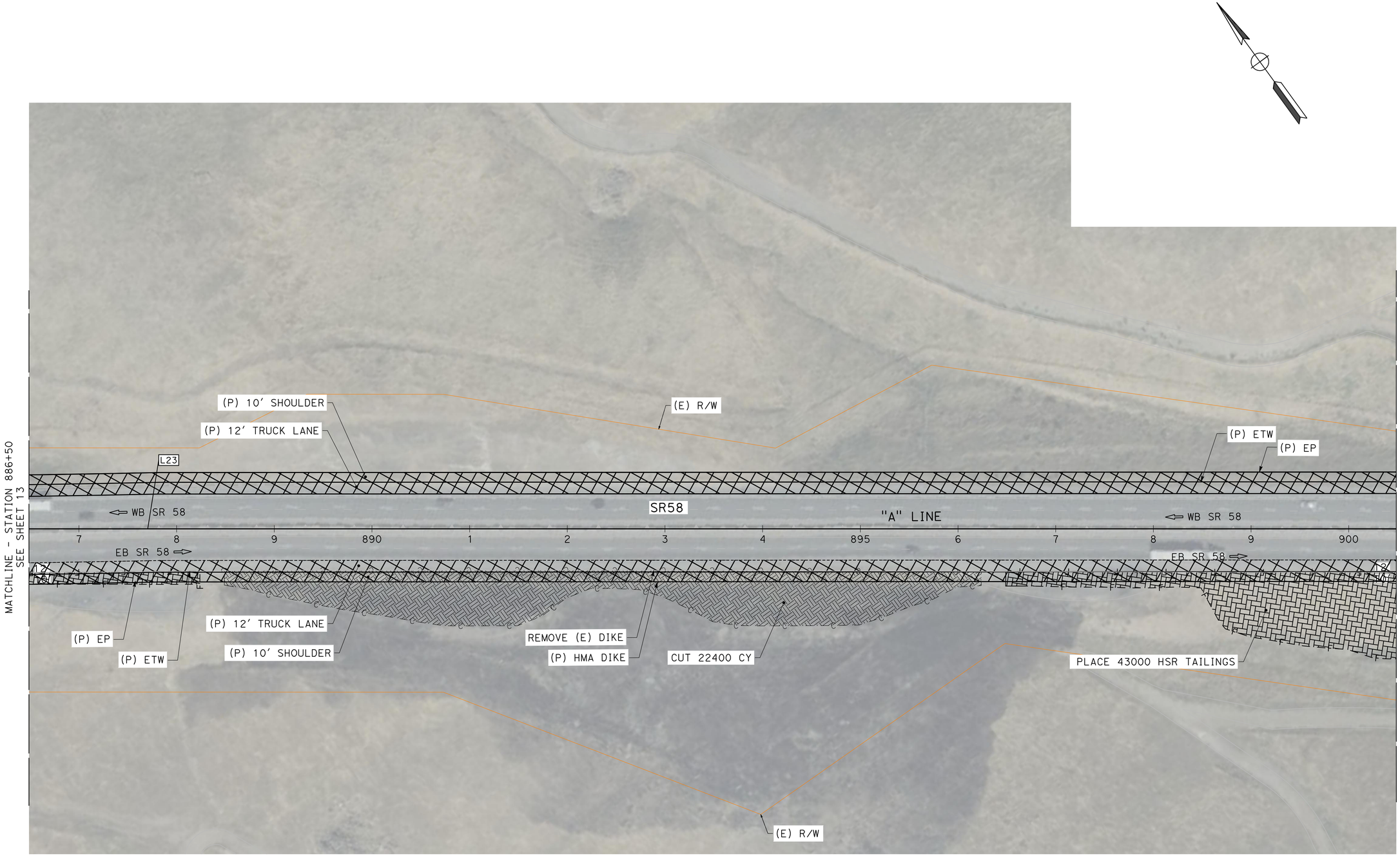
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



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DATE: 1/14/26

ALIGNMENT LINE TABLE

No. X	L	D
L23	3704.29'	S53°57'12"E

SCALE: 1"=50'

SHEET 14 OF 46

30% CONCEPTUAL DESIGN

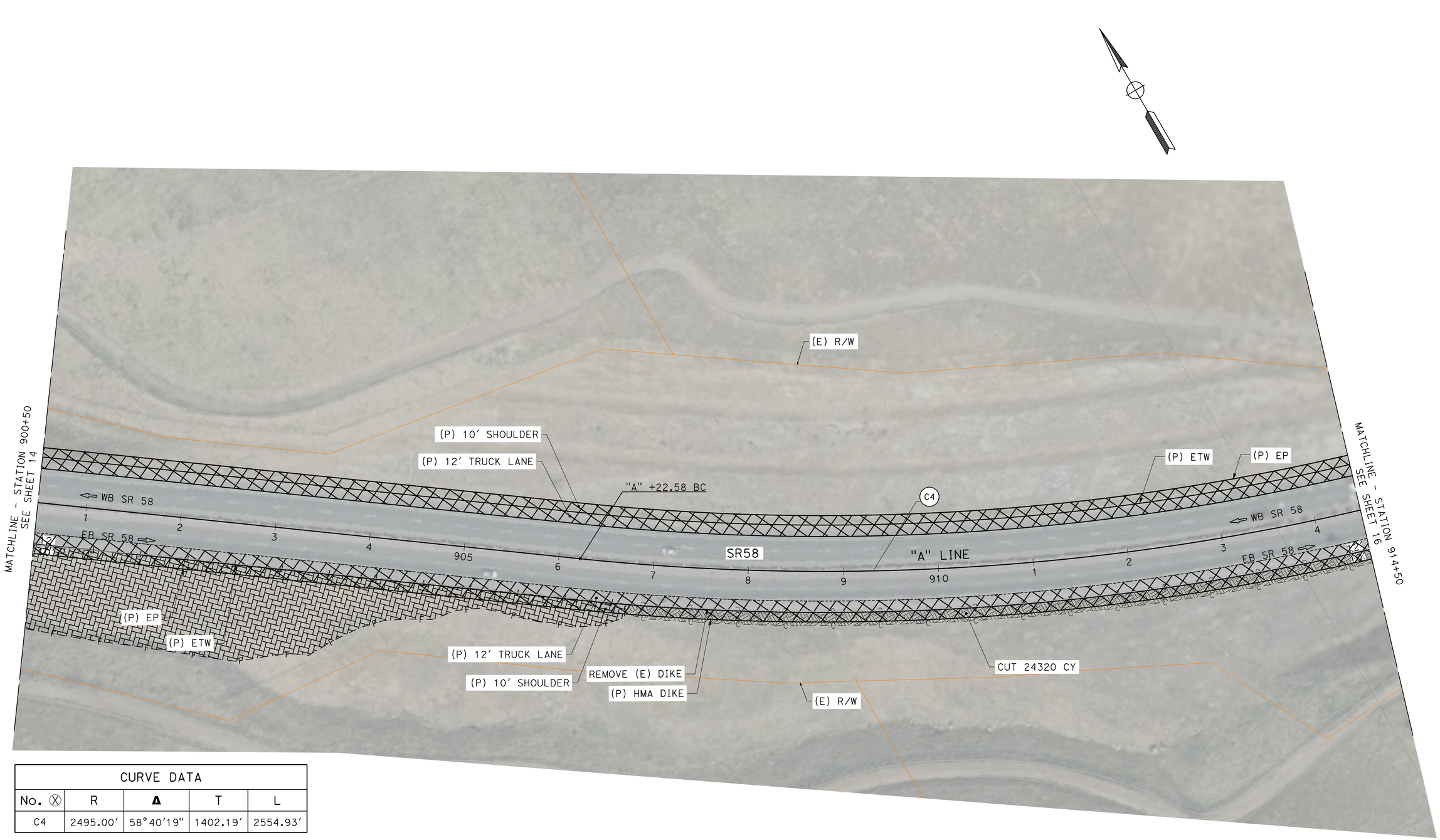
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



CURVE DATA				
No. Ⓧ	R	Δ	T	L
C4	2495.00'	58°40'19"	1402.19'	2554.93'

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DATE: 1/14/26

SCALE: 1"=50'

30% CONCEPTUAL DESIGN

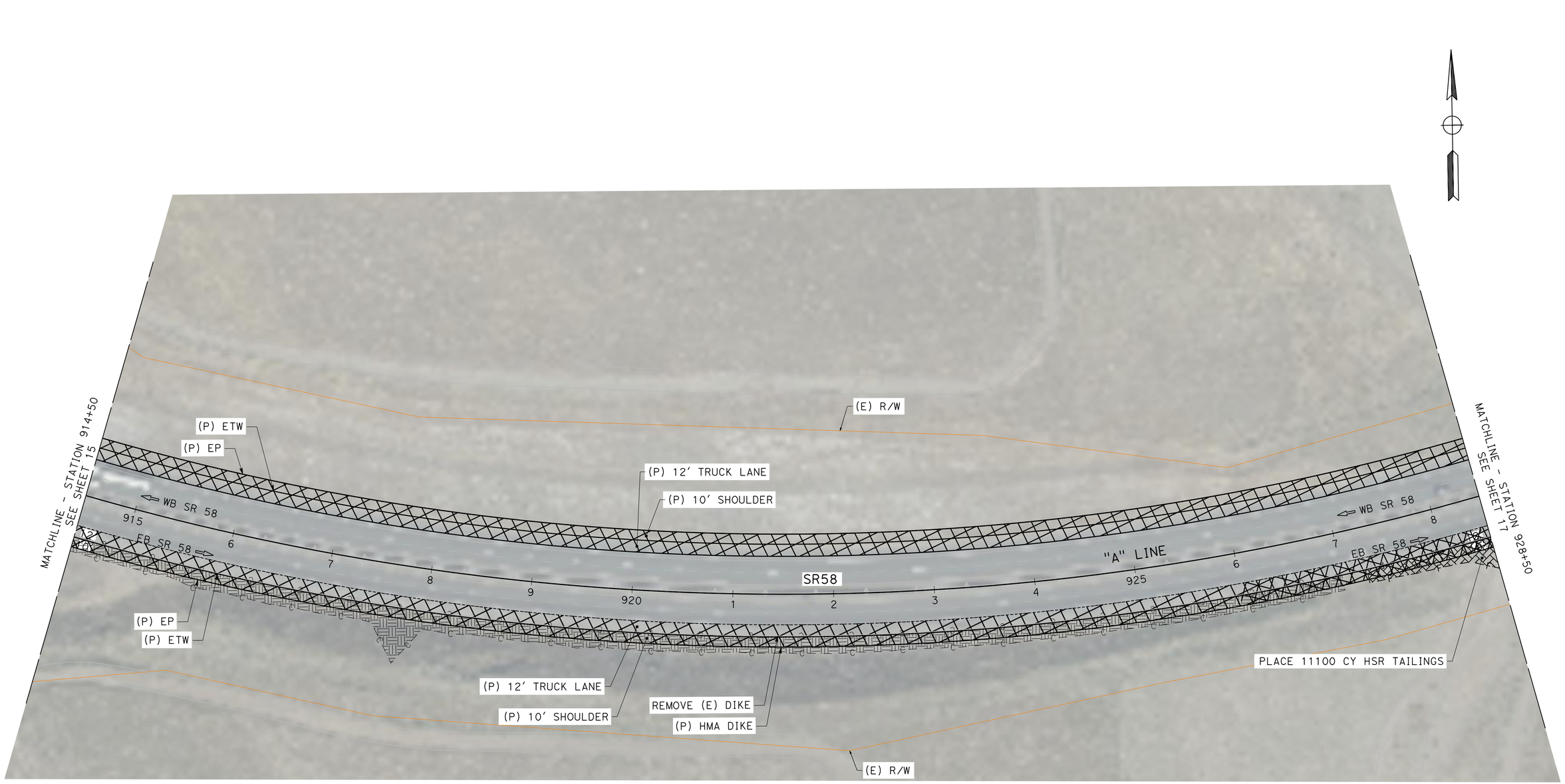
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



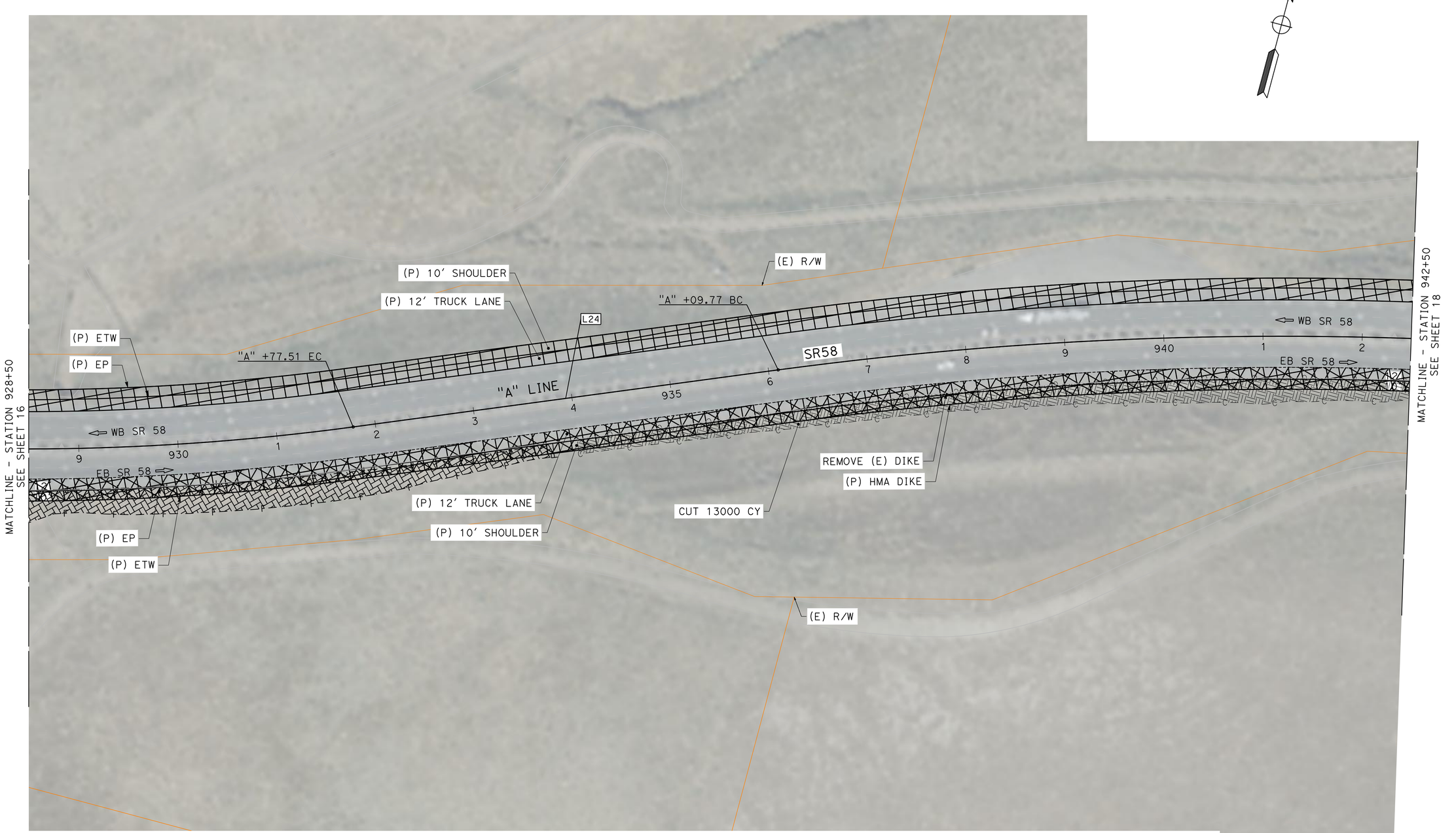
30% CONCEPTUAL DESIGN

SCALE: 1"=50'

SHEET 16 OF 46

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26



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DATE: 1/14/26

ALIGNMENT LINE TABLE

No. X	L	D
L24	432.26'	N67°22'29"E

SCALE: 1"=50'

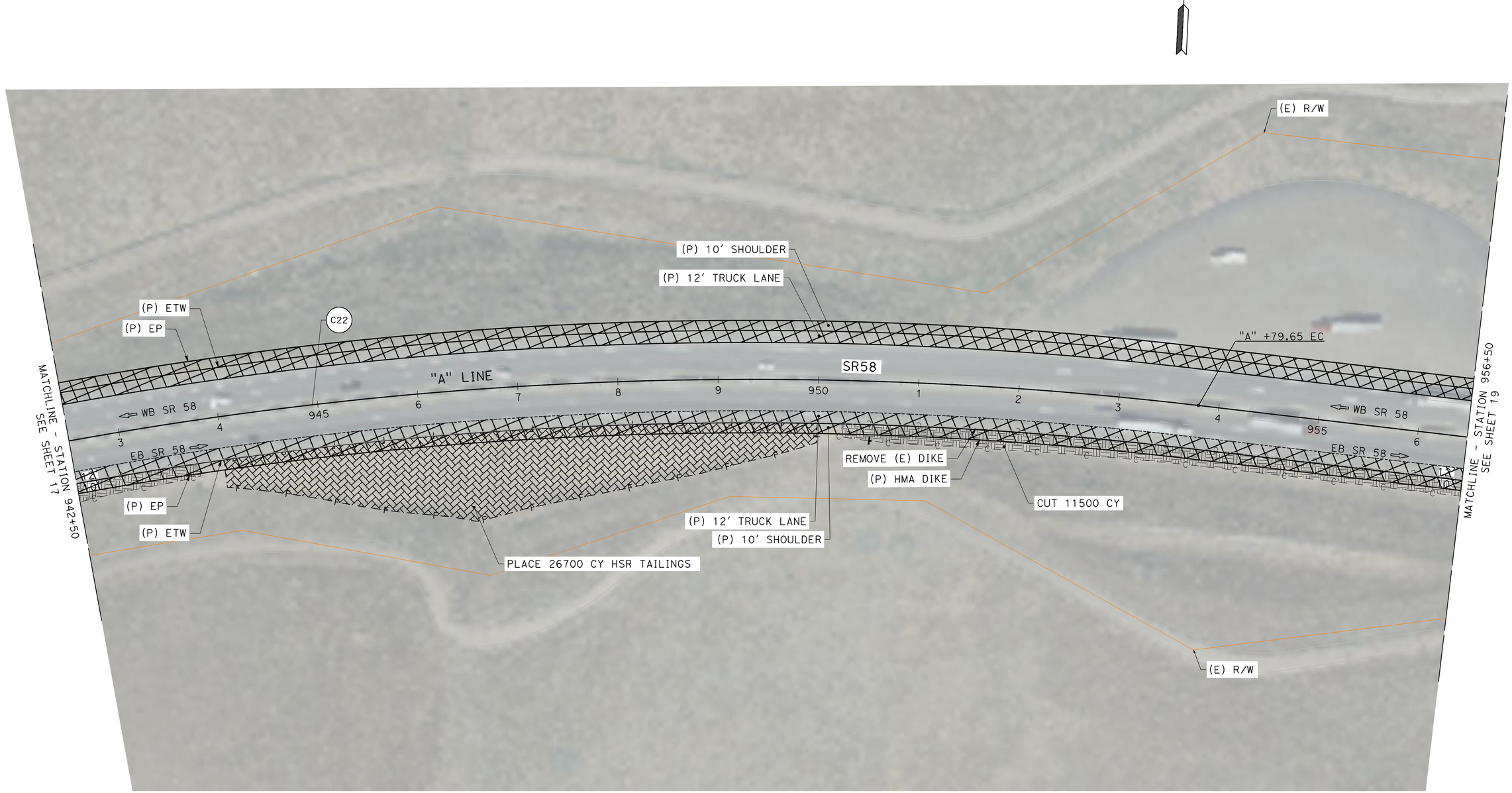
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



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DATE: 1/14/26

SCALE: 1"=50'

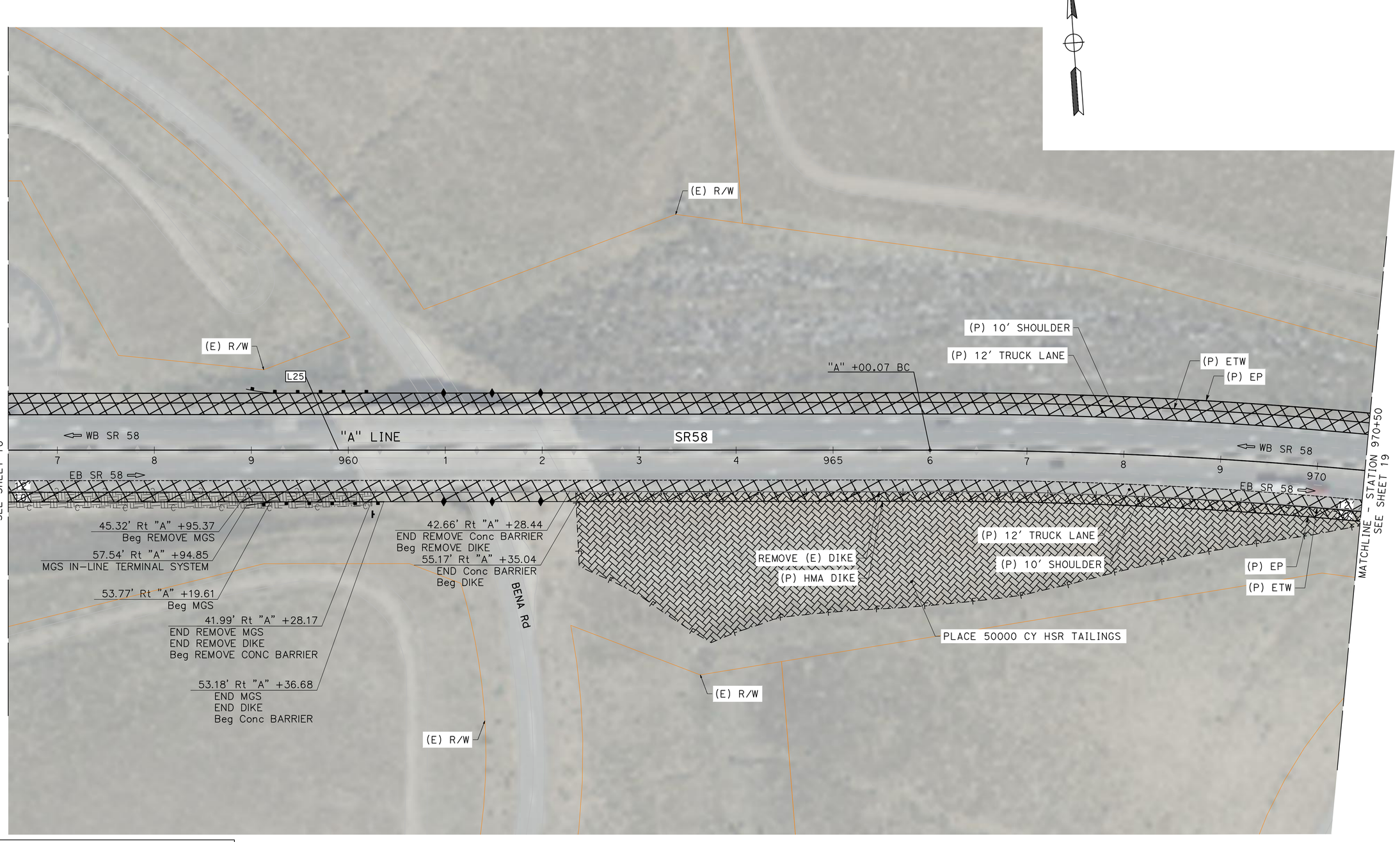
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



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DATE: 1/14/26

ALIGNMENT LINE TABLE		
No. X	L	D
L25	1220.41'	S86°00'34"E

SCALE: 1"=50'

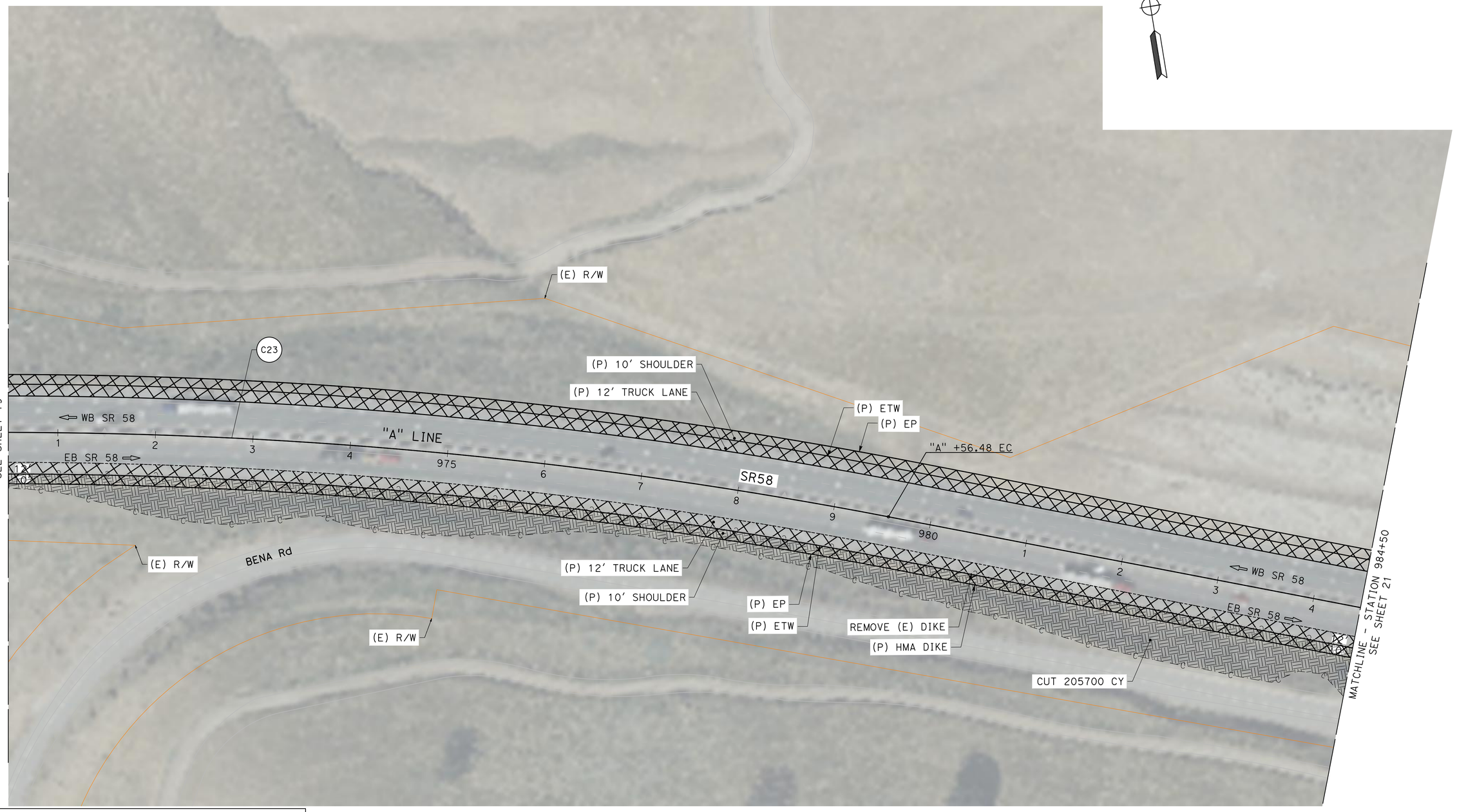
MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES



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DATE: 1/14/26

CURVE DATA				
No. X	R	Δ	T	L
C23	4805.00'	16°10'27"	682.75'	1356.41'

SCALE: 1"=50'

MARK THOMAS

KARGO CCAMS - PROJECT 2

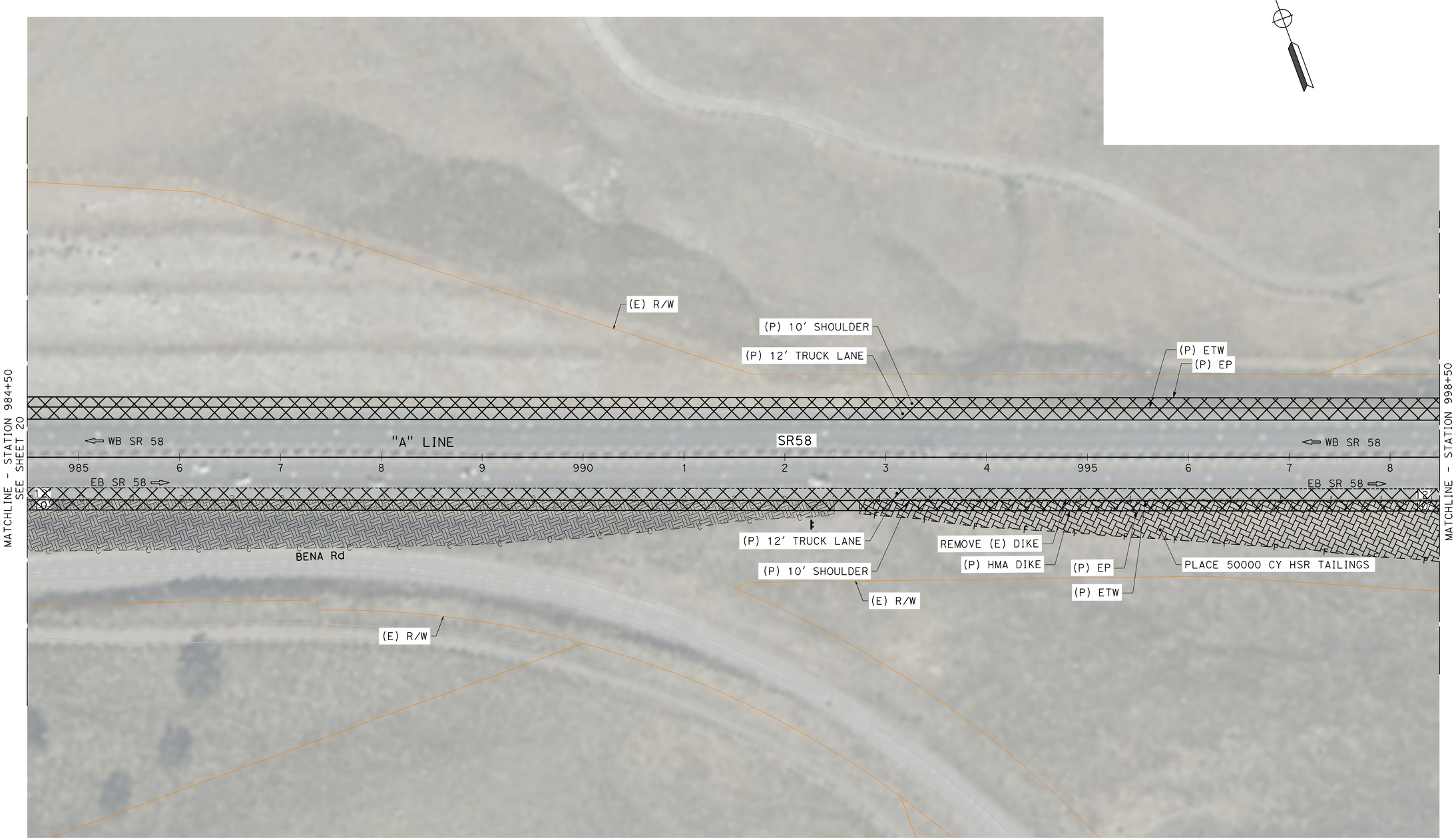
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.1

SR58 TRUCK CLIMB/SAFETY PASSING LANES

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



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DATE: 1/14/26

SCALE: 1"=50'

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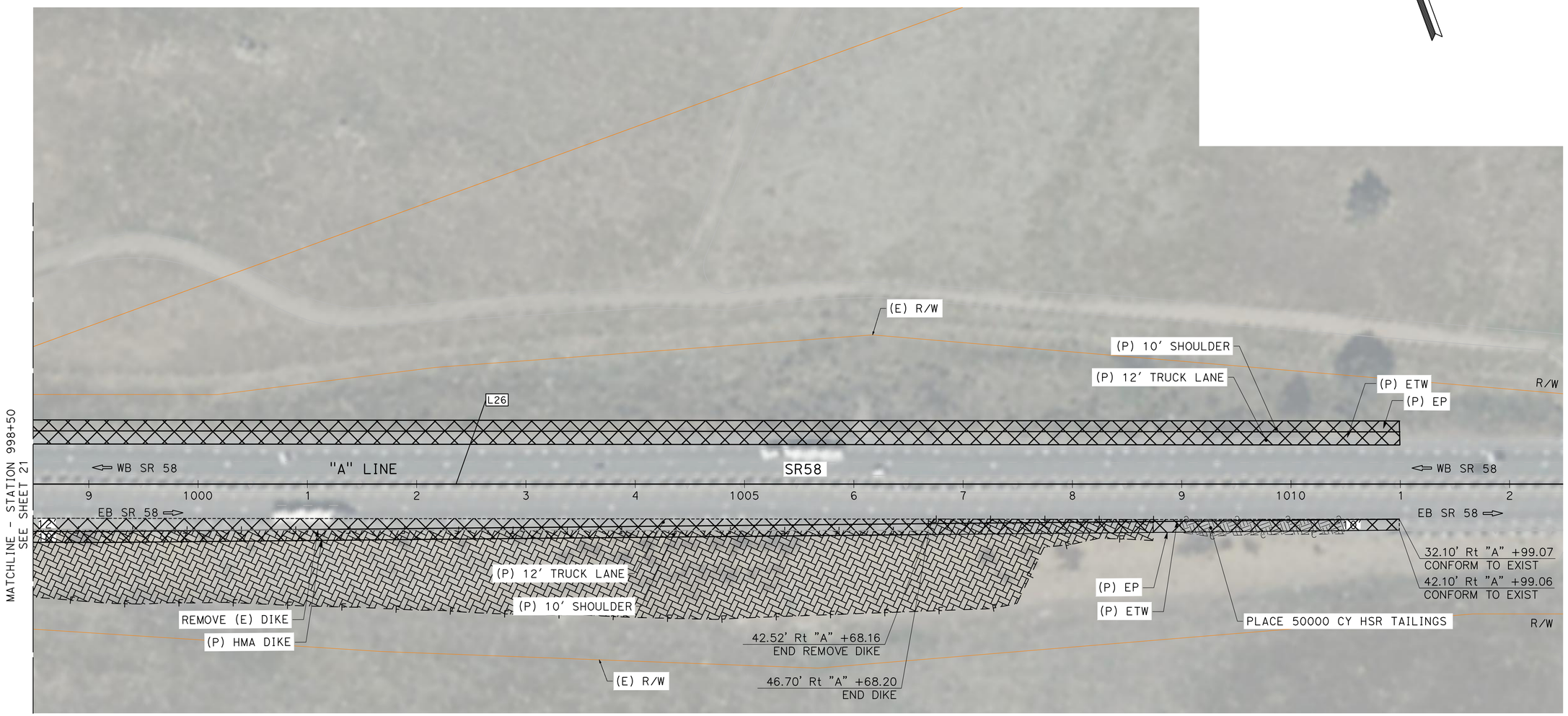

ALIGNMENT LINE TABLE

No. X	L	D
L26	4559.02'	S69°50'07"E

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DATE: 1/14/26

SCALE: 1"=50'

LEGEND:

- 2.2 SR58 TRUCK CLIMB/DOWNHILL LANES (KEENE TO CABLE)
- 2.4 SR58 CULTURAL BIOLOGICAL INTERPRETIVE CENTER
- CALIFORNIA HIGH-SPEED RAIL ALIGNMENT
- TRUCK CLIMBING LANES
- HIGH SPEED RAIL TAILINGS FILL

EXISTING PAVEMENT STRUCTURAL SECTIONS

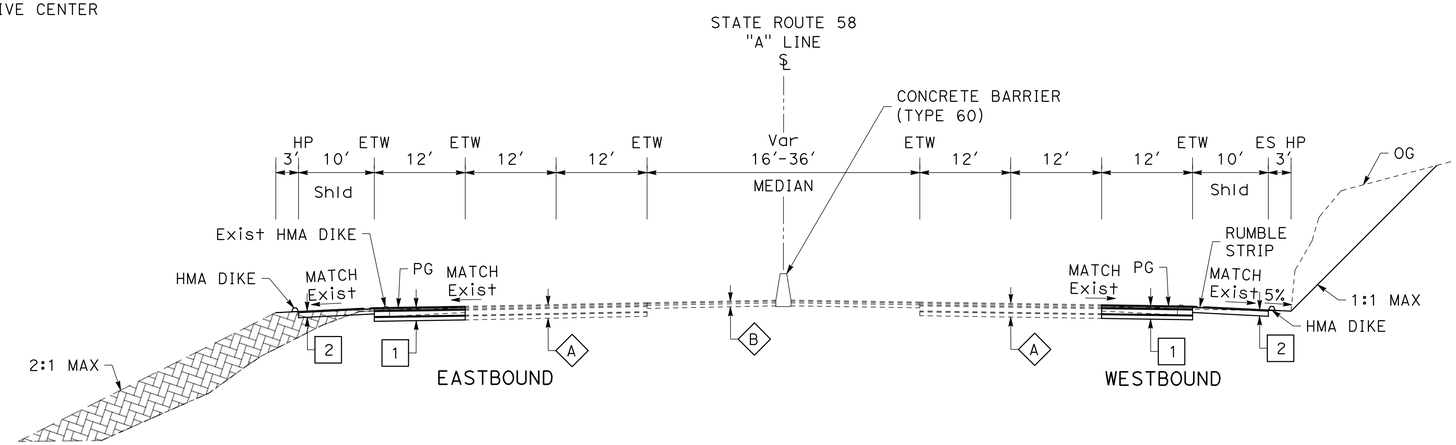
A
- 0.15' RAC (TYPE G)
- 0.20' AC (TYPE A)
- PRF
- 0.15' AC (TYPE A)
- 0.67' PCC
- 0.12' CTB
- 0.50' AS

B
- 0.15' RAC (TYPE G)
- 0.20' AC (TYPE A)
- 0.40' AC CI 2 AB

TYPICAL PAVEMENT STRUCTURAL SECTIONS

1
- 0.15' RAC (TYPE G)
- 0.20' HMA (TYPE A)
- PRF
- 0.15' HMA (TYPE A)
- 0.67' PCC
- 0.12' CTB
- 0.50' AS

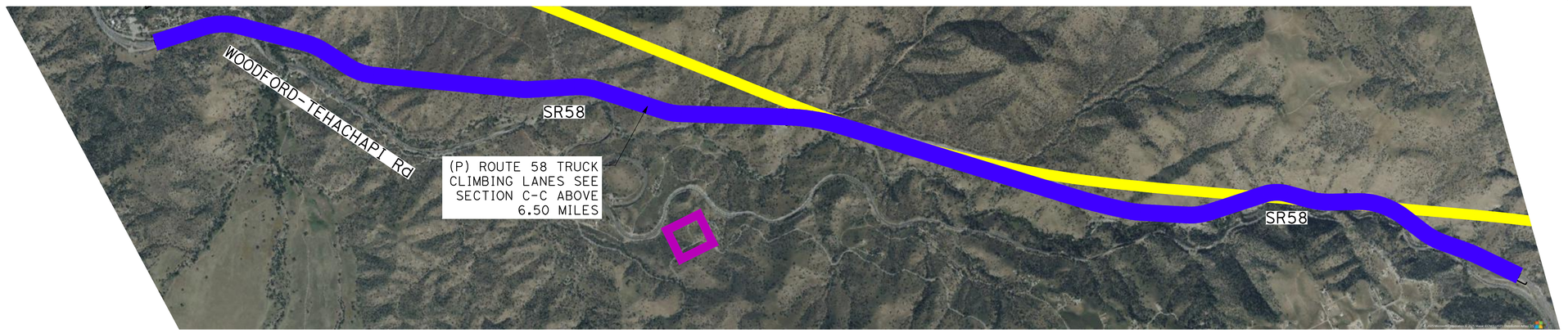
2
- 0.15' HMA (TYPE A)
- 0.67' PCC



GENERAL CROSS SECTION

SUMMARY TABLE

TOTAL LENGTH	06.50 MILE
R/W REQUIREMENTS	21.72 ACRE, 04 PARCELS



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DATE: 1/14/26

SCALE: 1':1500"

MARK THOMAS

KARGO CCAMS - PROJECT 2

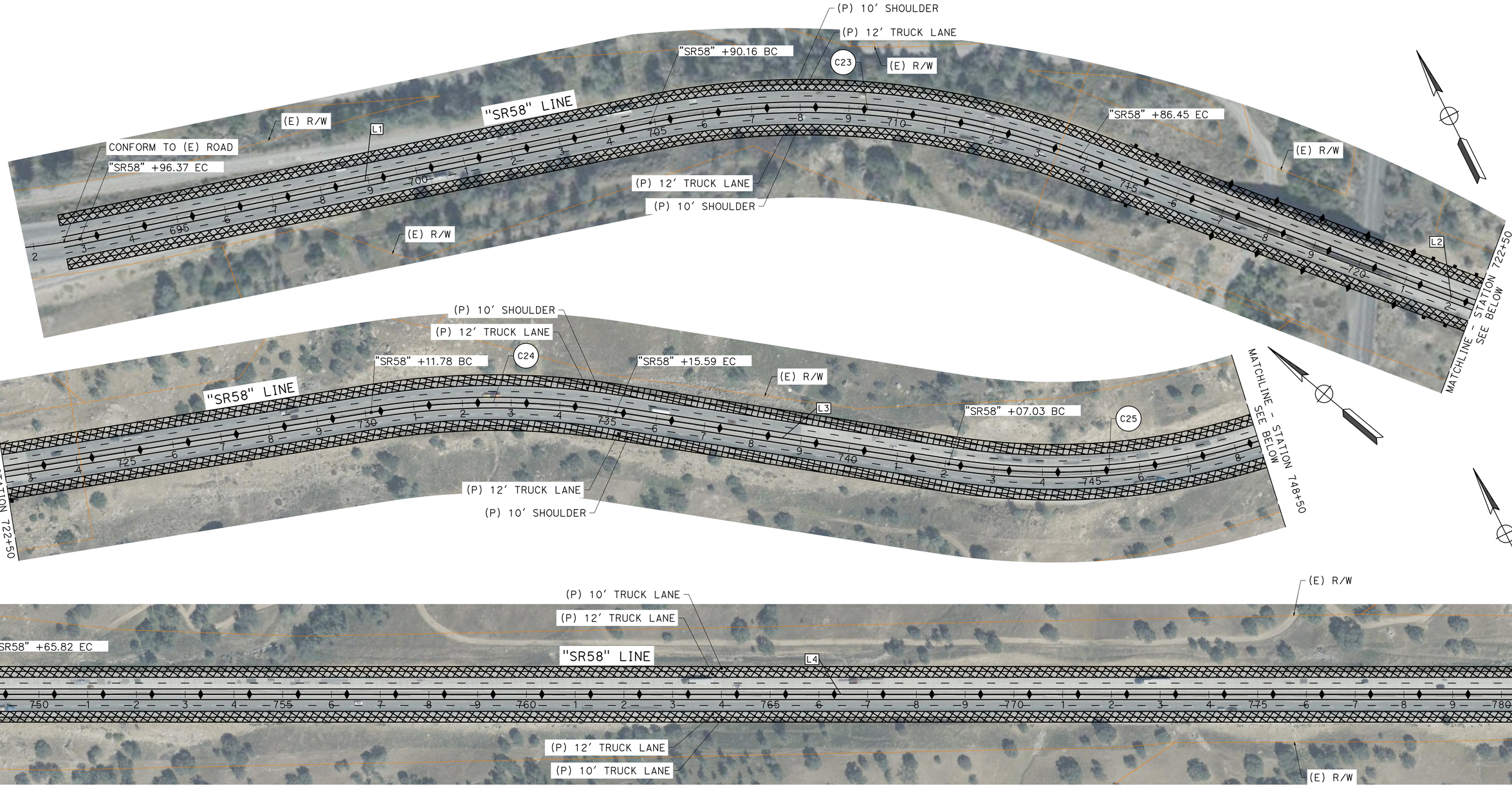
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.2

SR58 TRUCK CLIMB/SAFETY PASSING LANES

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg



30% CONCEPTUAL DESIGN

ALIGNMENT LINE TABLE		
No. X	L	D
L1	1193.79'	S81°11'49"E
L2	1625.33'	S49°06'04"E
L3	691.44'	S31°03'35"E
L4	3558.36'	S58°01'16"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C23	1600.00'	032°05'45"	460.24'	896.29'
C24	1600.00'	018°02'29"	254.01'	503.81'
C25	1400.00'	026°57'41"	335.61'	658.79'

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DATE: 1/14/26

SCALE: 1":100'

MARK THOMAS

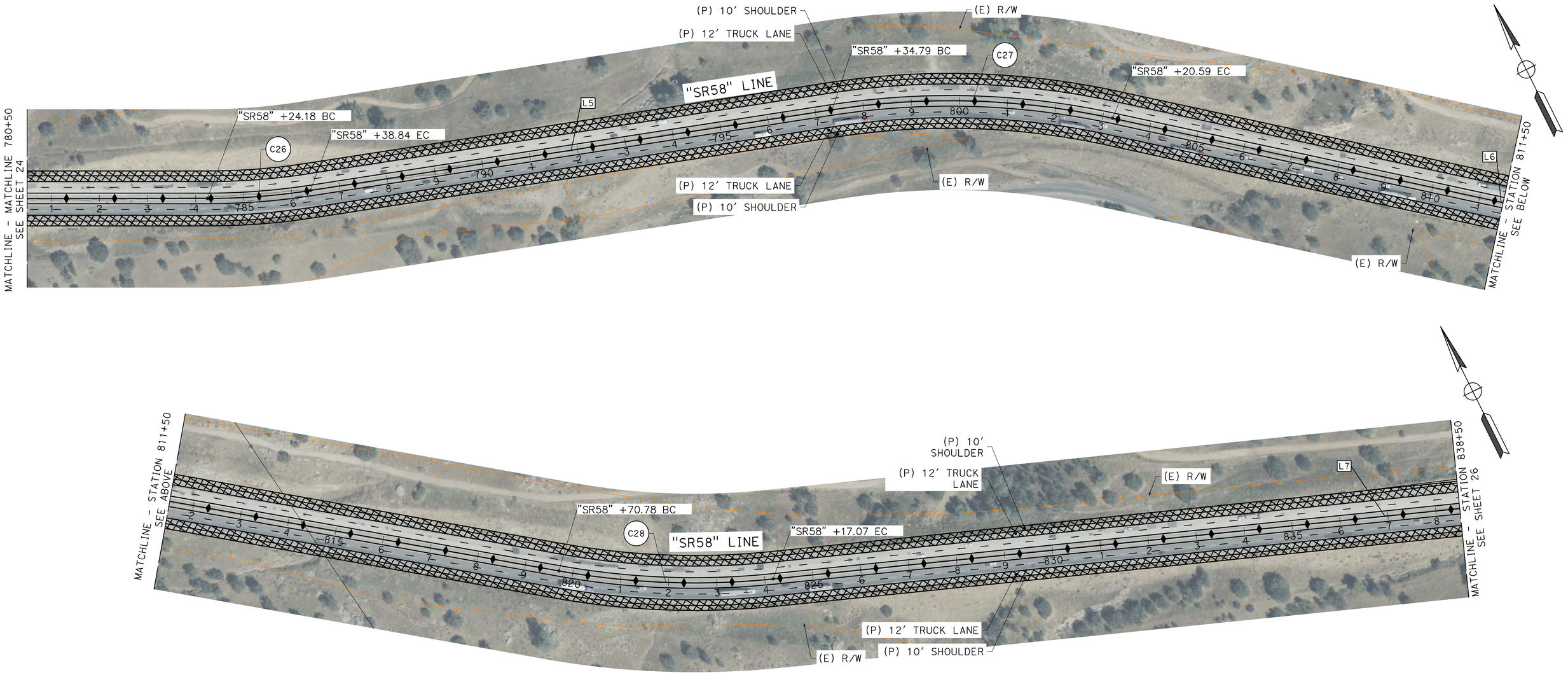
KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.2

SR58 TRUCK CLIMB/SAFETY PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg



ALIGNMENT LINE TABLE

No. X	L	D
L5	1095.95'	S66°48'22"E
L6	1650.19'	S45°49'43"E
L7	2553.74'	S61°48'37"E

ALIGNMENT CURVE DATA

No. X	R	Δ	T	L
C26	1400.00'	008°47'06"	107.54'	214.65'
C27	1600.00'	020°58'38"	296.22'	585.80'
C28	1600.00'	015°58'54"	224.60'	446.29'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1':100"

SHEET 25 OF 46

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.2

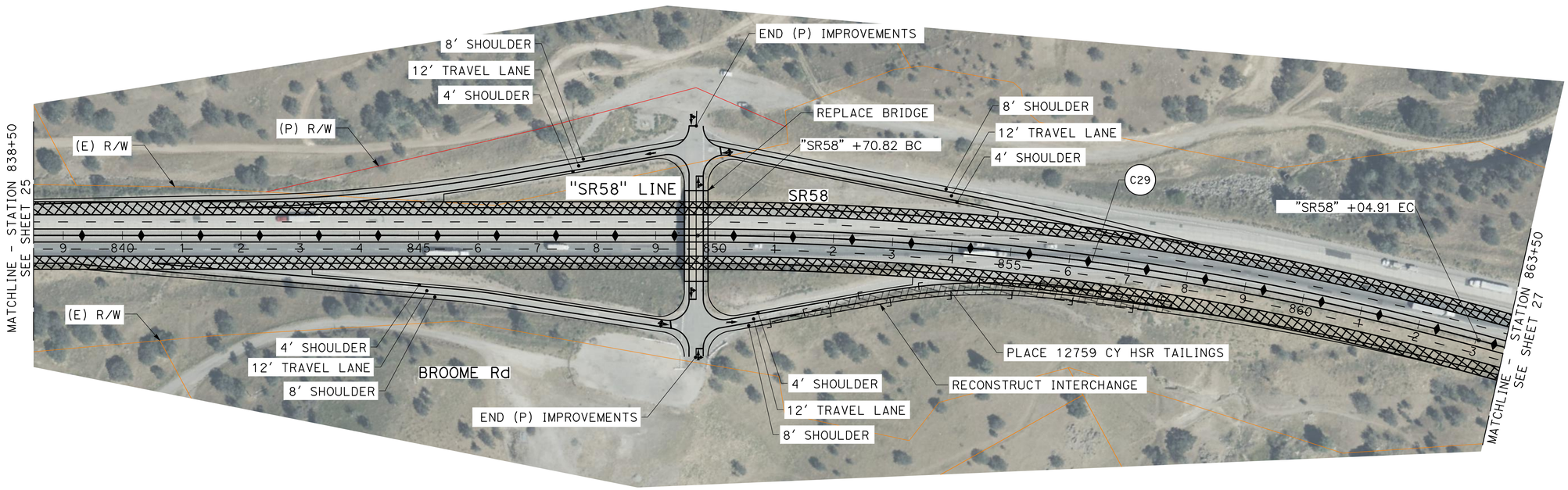
SR58 TRUCK CLIMB/SAFETY PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg

LEGEND:

TRUCK CLIMBING LANES

HIGH SPEED RAIL TAILINGS FILL



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C29	5000.00'	015°17'16"	671.04'	1334.10'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1':100"

MARK THOMAS

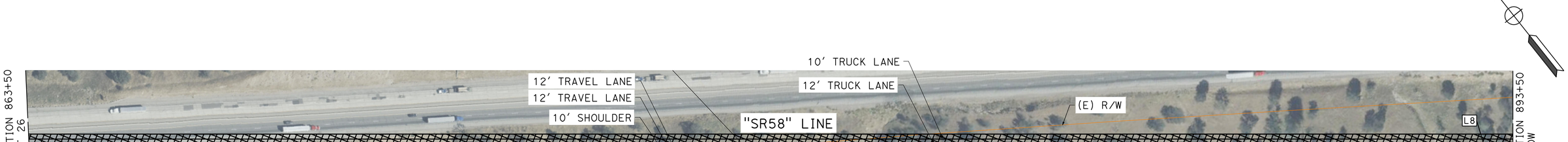
KARGO CCAMS - PROJECT 2

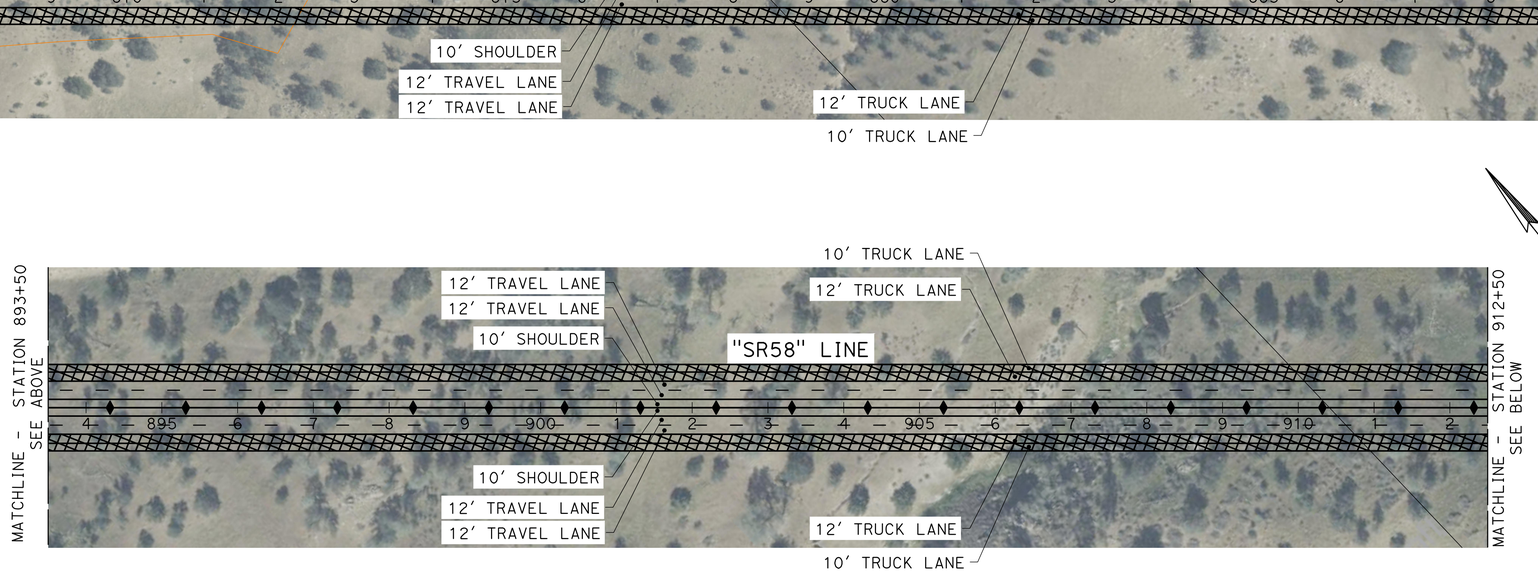
SR-58 TEHACHAPI GRADE IMPROVEMENTS

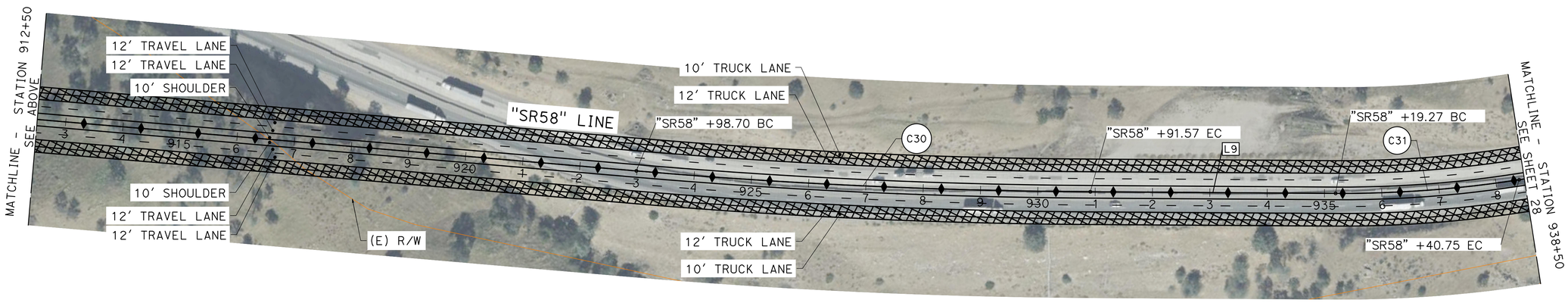
2.2

SR58 TRUCK CLIMB/SAFETY PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg







30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

ALIGNMENT LINE TABLE

No. X	L	D
L8	5993.79'	S46°31'22"E
L9	427.70'	S51°03'56"E

ALIGNMENT CURVE DATA

No. X	R	Δ	T	L
C30	10000.00'	004°32'34"	396.64'	792.87'
C31	2000.00'	009°12'35"	161.09'	321.48'

SCALE: 1":100"

MARK THOMAS

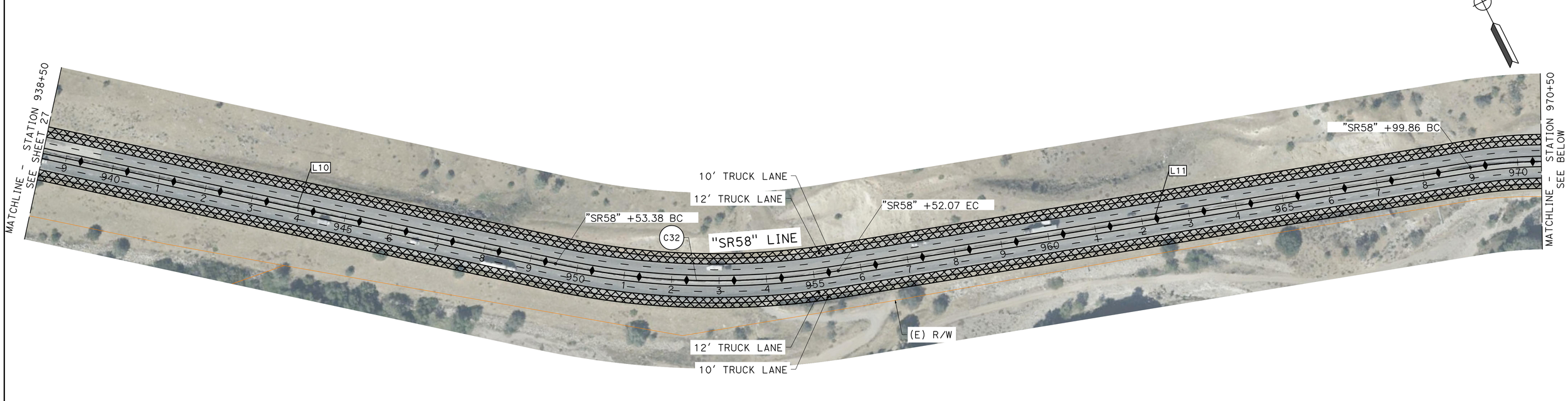
KARGO CCAMS - PROJECT 2

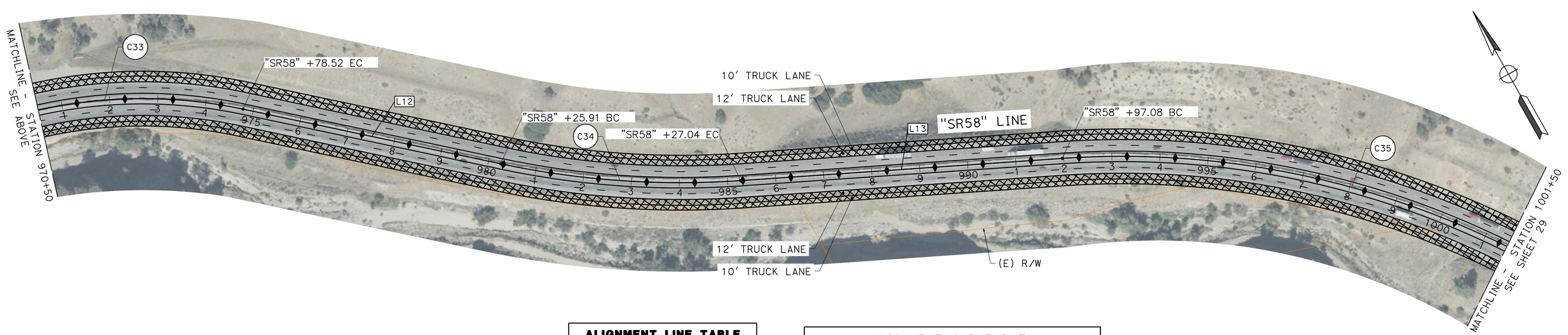
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.2

SR58 TRUCK CLIMB/SAFETY PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L10	1112.63'	S60°16'31"E
L11	1347.79'	S81°42'51"E
L12	547.39'	S48°33'32"E
L13	670.04'	S64°30'38"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C32	1600.00'	021°26'20"	302.88'	598.68'
C33	1000.00'	033°09'18"	297.69'	578.67'
C34	1800.00'	015°57'06"	252.20'	501.13'
C35	1800.00'	038°38'47"	631.17'	1214.11'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1':100"

SHEET 28 OF 46

30% CONCEPTUAL DESIGN

MARK THOMAS

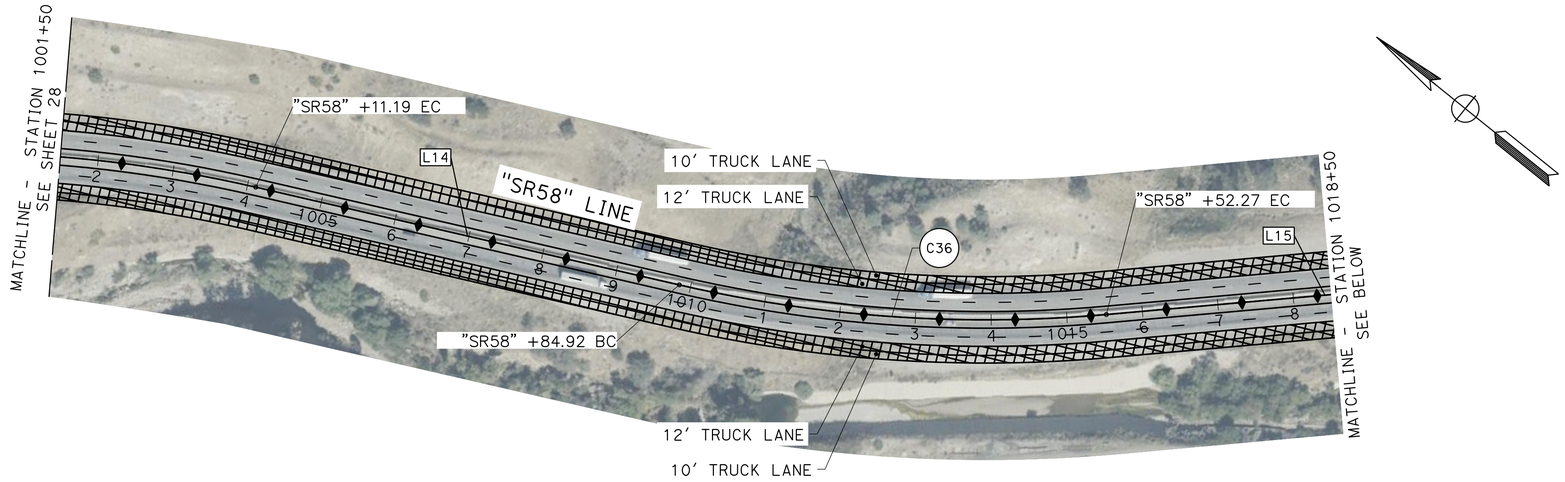
KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.2

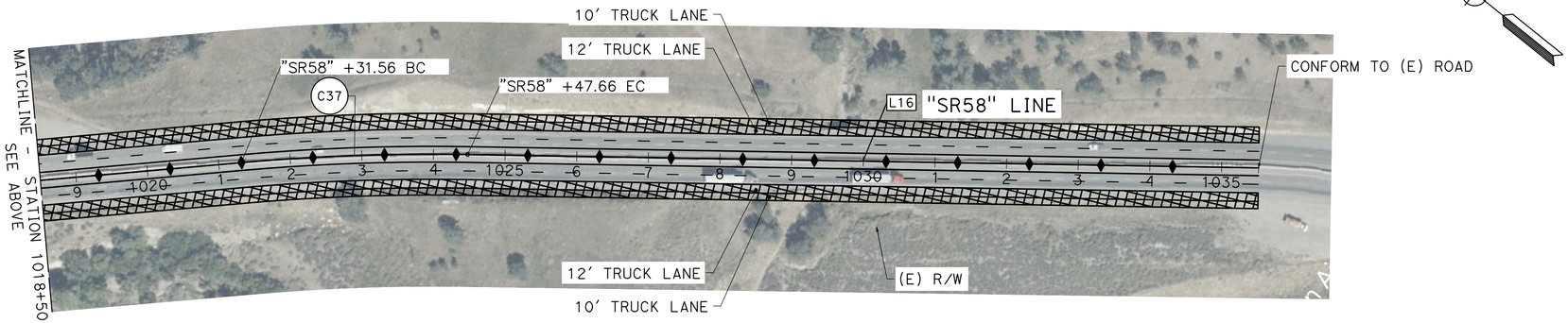
SR58 TRUCK CLIMB/SAFETY PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L14	573.73'	S25°51'51"E
L15	579.29'	S43°55'25"E
L16	1104.03'	S37°53'12"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C36	1800.00'	018°03'34"	286.05'	567.35'
C37	3000.00'	006°02'13"	158.20'	316.10'



THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1':100"

MARK THOMAS

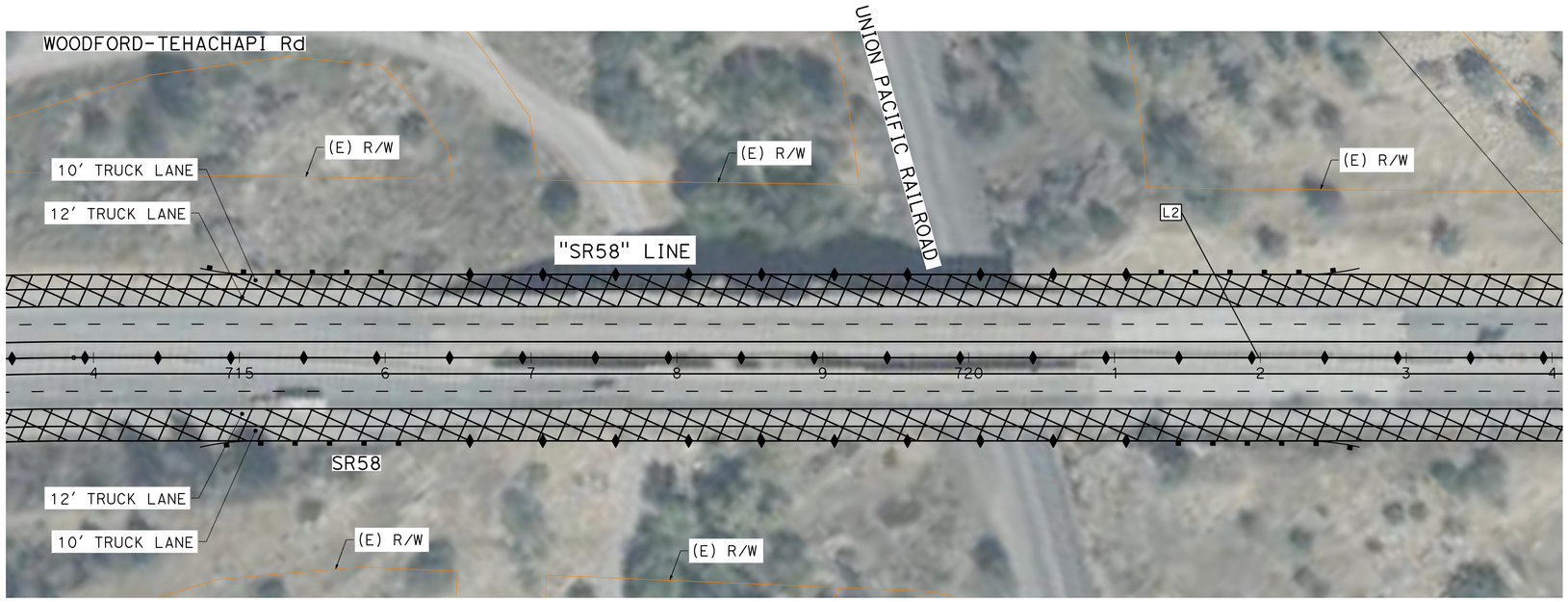
KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

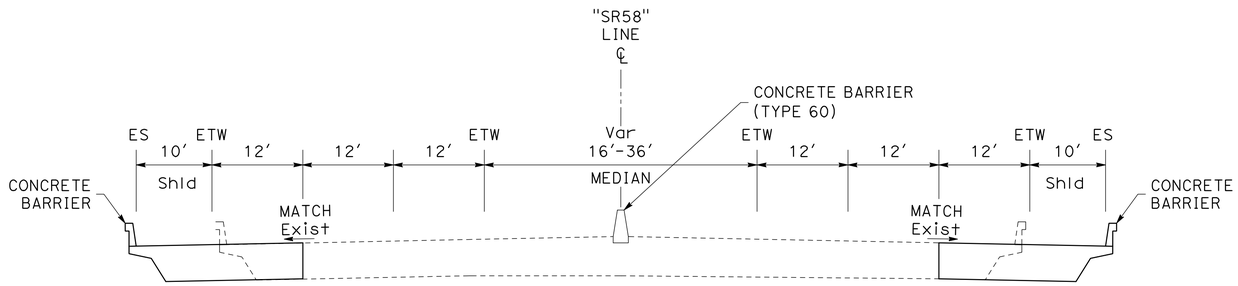
2.2

SR58 TRUCK CLIMB/SAFETY PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg



SR-58 OVER CROSSING



SR-58 OVER CROSSING

"SR58" Sta 716+15.27 TO 721+25.84

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1":50'

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.2

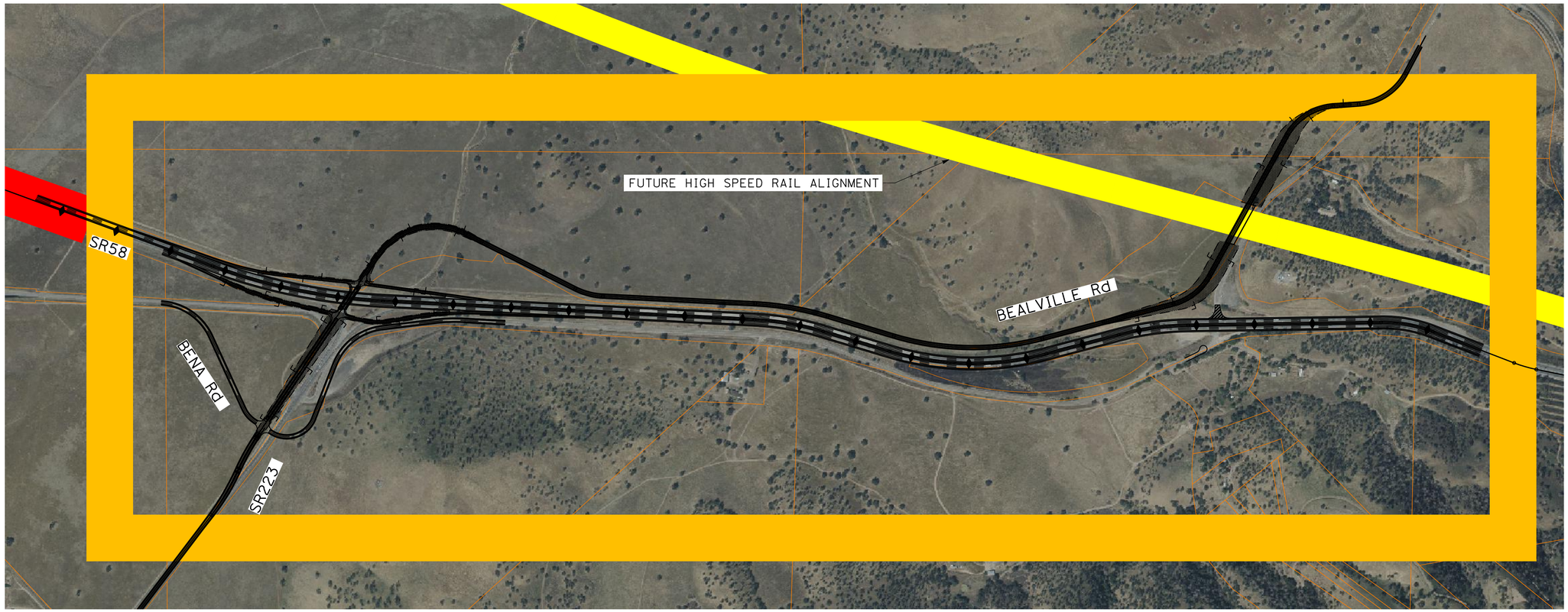
SR58 TRUCK CLIMB/SAFETY PASSING LANES

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.2 Keene Cable Truck Lanes Plans.dwg

LEGEND:

- 2.1 SR58 TRUCK CLIMB/DOWNHILL LANES (TOWER LINE RD TO SR 223)
- 2.3 SR58/SR223 INTERCHANGE
- CALIFORNIA HIGH-SPEED RAIL ALIGNMENT
- (P) ROAD CLOSURE
- HIGH SPEED RAIL TAILINGS FILL
- (P) STOP SIGN
- (P) STOP SIGN



SUMMARY TABLE

TOTAL LENGTH	07.09 MILE
R/W REQUIREMENTS	11.04 ACRE, 06 PARCELS

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1":500'

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

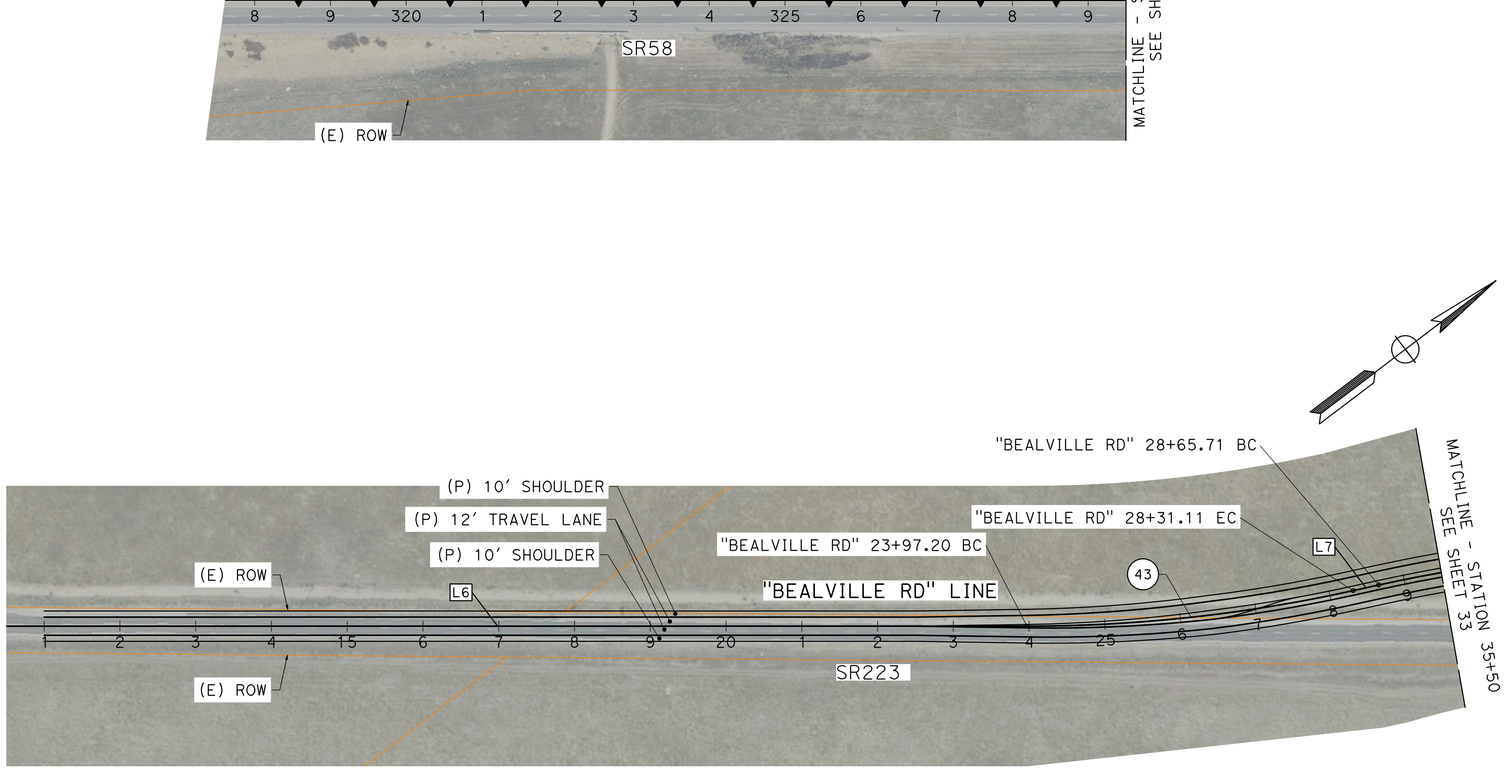
2.3

SR58/SR223 INTERCHANGE

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.3 SR58-SR228 IC Plans.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L6	1397.20'	N37°08'36"E
L7	34.60'	N24°42'45"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
43	2000.00'	012°25'51"	217.81'	433.91'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1':100"

MARK THOMAS

KARGO CCAMS - PROJECT 2

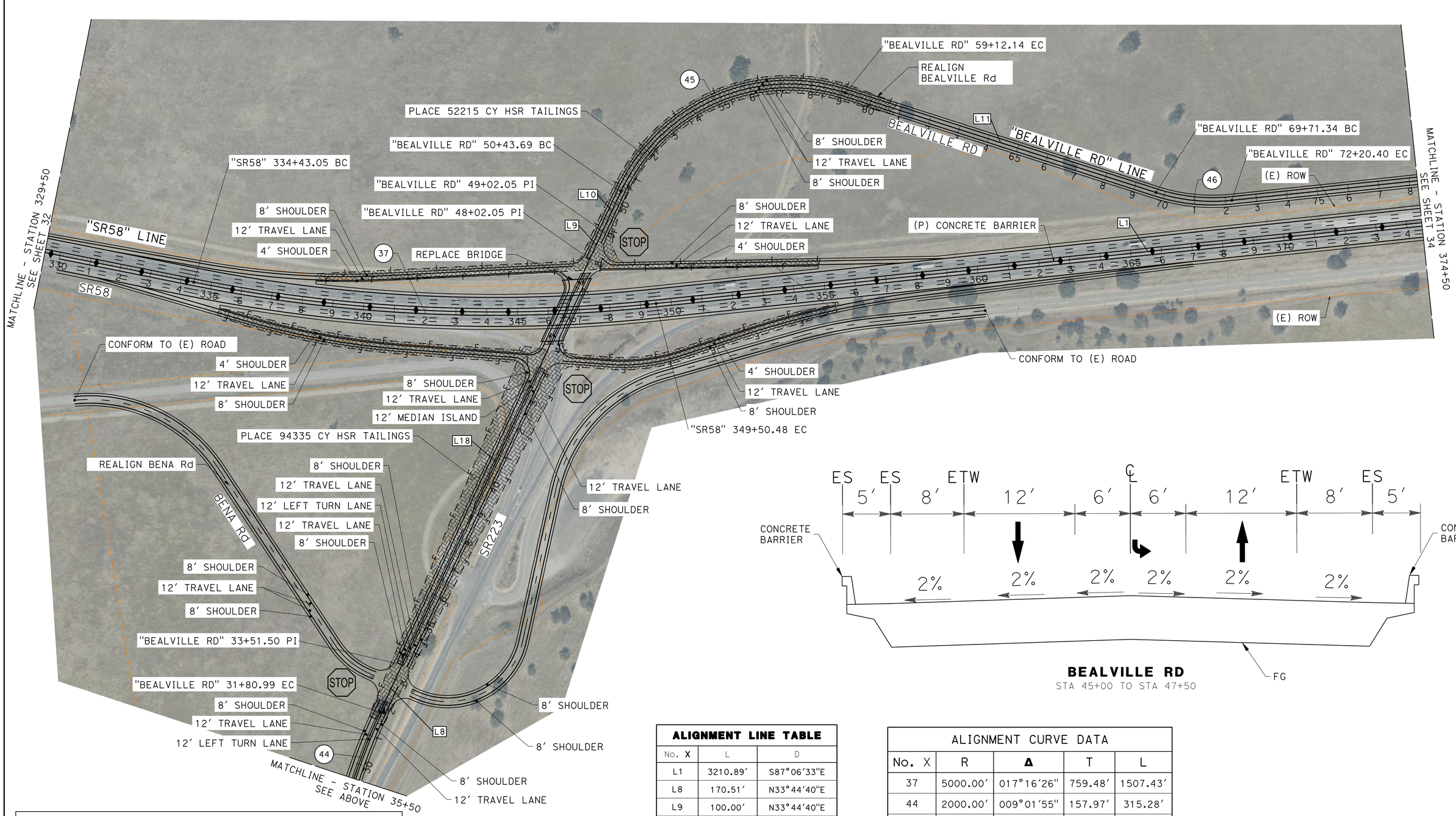
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.3

SR58/SR223 INTERCHANGE

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.3 SR58-SR228 IC Plans.dwg



BEALVILLE RD
STA 45+00 TO STA 47+50

ALIGNMENT LINE TABLE

No. X	L	D
L1	3210.89′	S87°06′33"E
L8	170.51′	N33°44′40"E
L9	100.00′	N33°44′40"E
L10	141.65′	N33°44′40"E
L11	1059.20′	S63°19′30"E
L18	1450.55′	N33°44′40"E

ALIGNMENT CURVE DATA

No. X	R	Δ	T	L
37	5000.00′	017°16′26"	759.48′	1507.43′
44	2000.00′	009°01′55"	157.97′	315.28′
45	600.00′	082°55′50"	530.19′	868.45′
46	600.00′	023°47′03"	126.35′	249.07′

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1':150"

SHEET 33 OF 46

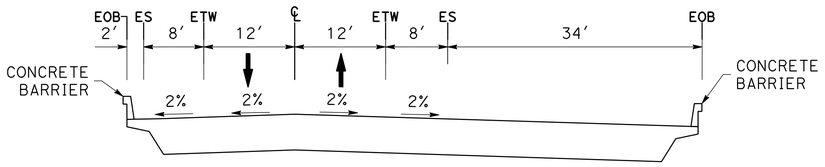
30% CONCEPTUAL DESIGN

MARK THOMAS

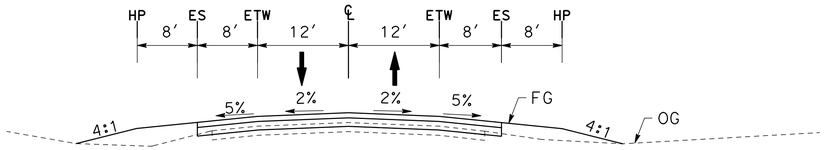
KARGO CCAMS - PROJECT 2
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.3
SR58/SR223 INTERCHANGE

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.3 SR58-SR228 IC Plans.dwg



BEALVILLE RD LINE
STA 29+50 TO STA 33+50
SCALE: 1"=10′



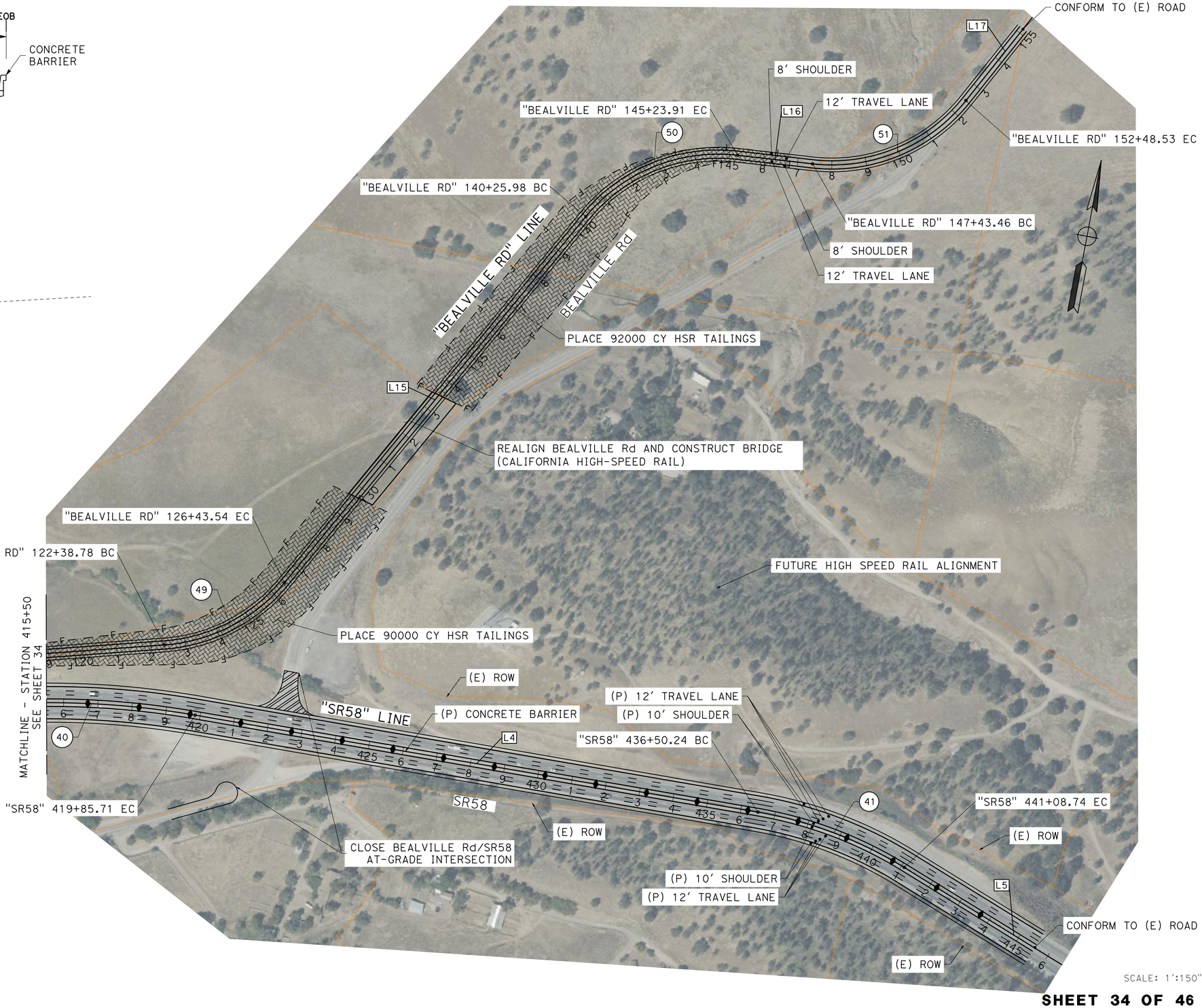
BEALVILLE RD LINE
STA 147+00 TO STA 155+00
SCALE: 1"=10′

ALIGNMENT LINE TABLE		
No. X	L	D
L4	1664.53′	N89°09′08"E
L5	751.30′	S68°57′21"E
L15	1382.44′	N28°50′23"E
L16	219.55′	N85°53′51"E
L17	366.56′	N28°01′11"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
40	2500.00′	013°55′47"	305.40′	607.80′
41	1200.00′	021°53′31"	232.08′	458.50′
49	500.00′	046°22′58"	214.21′	404.77′
50	500.00′	057°03′28"	271.80′	497.92′
51	500.00′	057°52′40"	276.46′	505.08′

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26



SCALE: 1′:150"

SHEET 34 OF 46

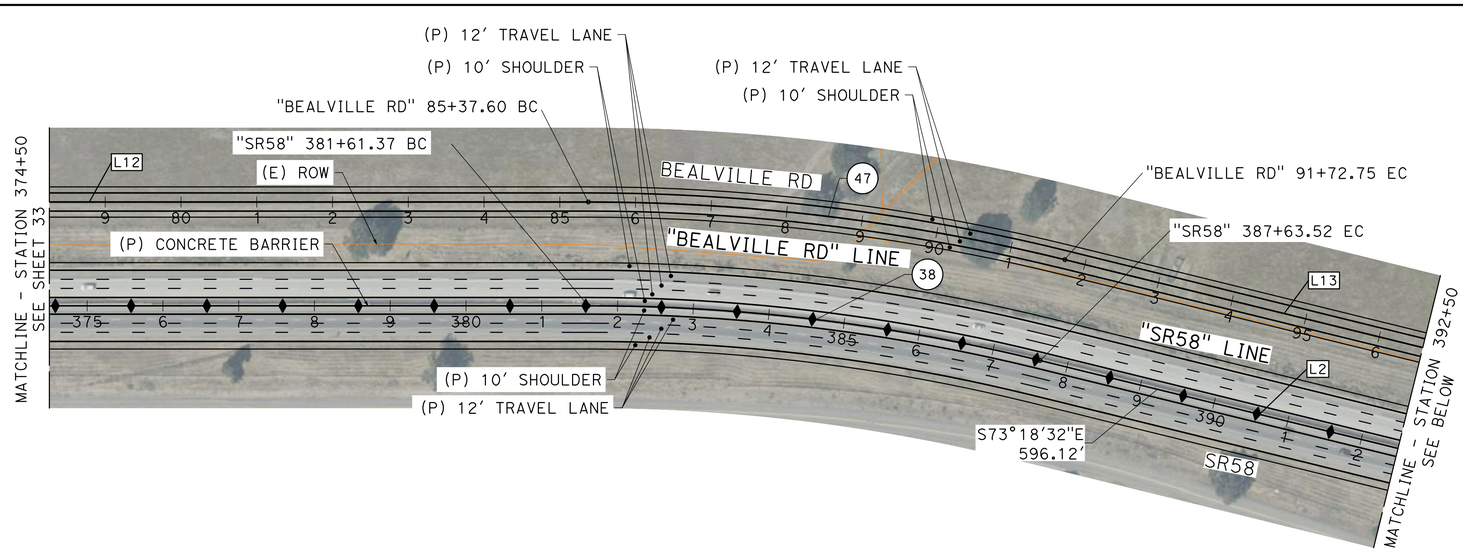
30% CONCEPTUAL DESIGN

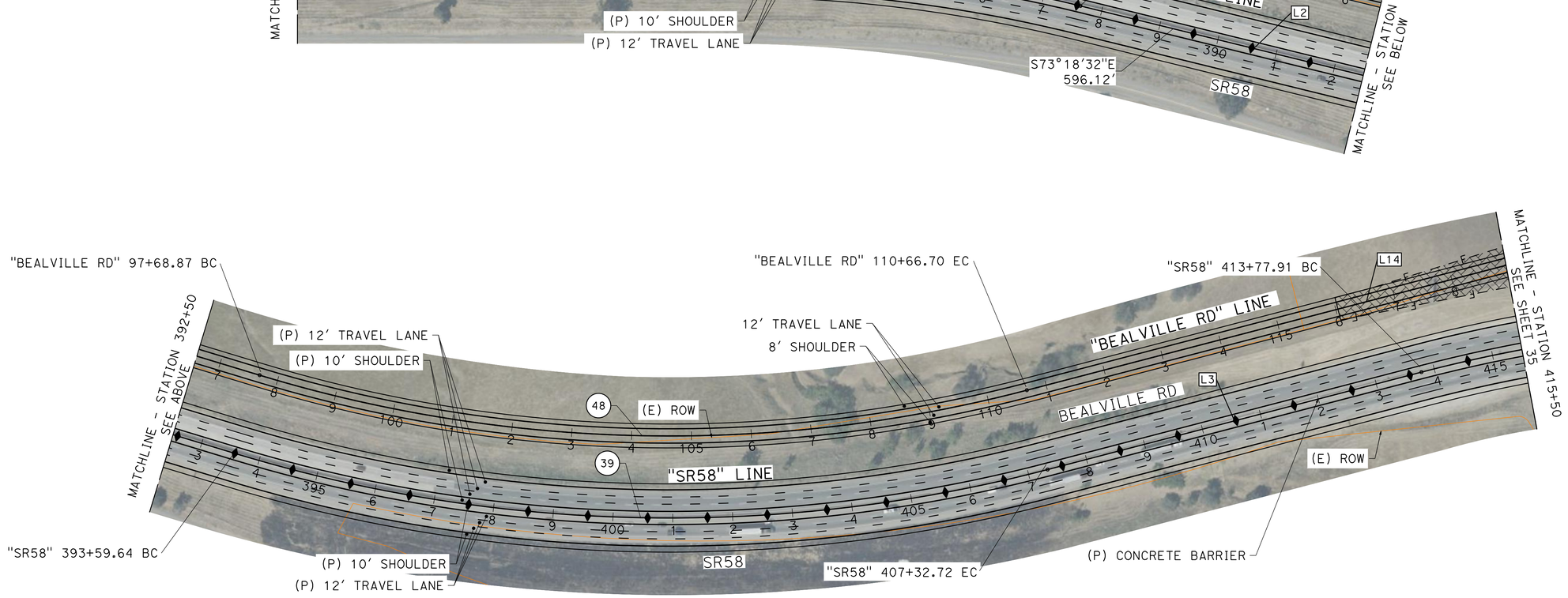
MARK THOMAS

KARGO CCAMS - PROJECT 2
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.3
SR58/SR223 INTERCHANGE

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.3 SR58-SR223 IC Plans.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L2	596.12'	S73°18'32"E
L3	645.20'	N75°13'21"E
L12	1317.20'	S87°06'33"E
L13	596.12'	S73°18'32"E
L14	1172.07'	N75°13'21"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
38	2500.00'	013°48'01"	302.54'	602.15'
39	2500.00'	031°28'07"	704.33'	1373.08'
47	2637.00'	013°48'01"	319.12'	635.15'
48	2363.00'	031°28'07"	665.74'	1297.83'

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DATE: 1/14/26

SCALE: 1':100"

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.3

SR58/SR223 INTERCHANGE

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.3 SR58-SR228 IC Plans.dwg

LEGEND:

- 2.2 SR58 TRUCK CLIMB/DOWNHILL LANES (KEENE TO CABLE)
- 2.4 SR58 CULTURAL BIOLOGICAL INTERPRETIVE CENTER
- CALIFORNIA HIGH-SPEED RAIL ALIGNMENT



SUMMARY TABLE

TOTAL LENGTH	00.01 MILE
R/W REQUIREMENTS	1.2 ACRE, 1 PARCELS

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: NTS

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

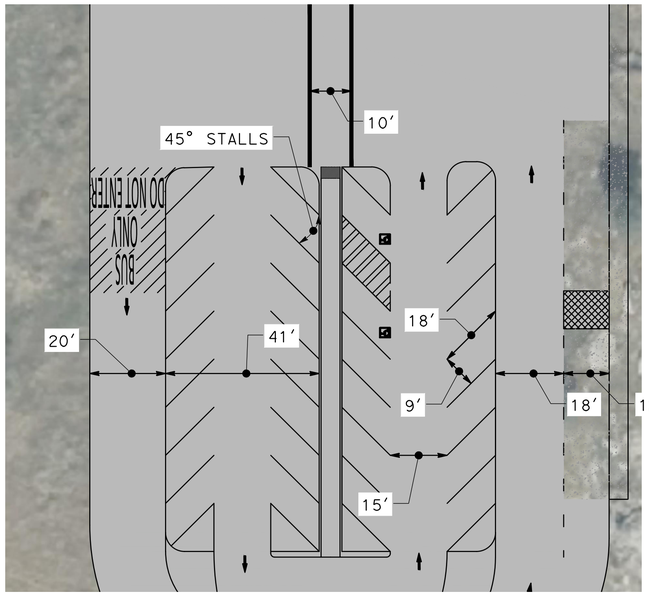
2.4

SR58 CULTURAL BIOLOGICAL INTERPRETIVE CENTER

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.4 Interpretive Ctr Exhibit Alternative Without Road.dwg

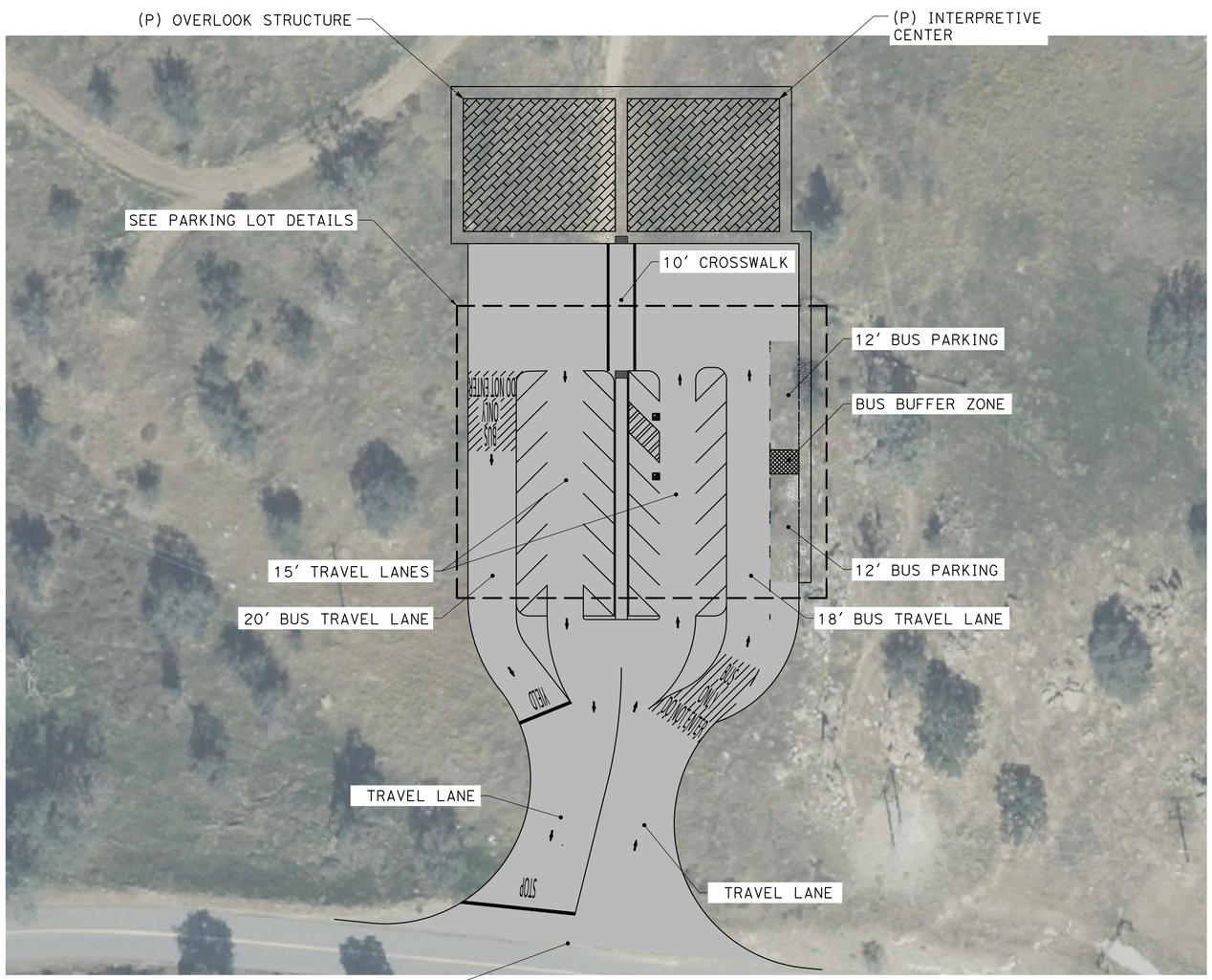
LEGEND:

- (P) SIDEWALK
- (P) PAVEMENT
- (P) BUILDINGS
- (P) ADA LOADING STALLS



PARKING LOT DETAILS

SCALE: NTS



TEHACHAPI LOOP OVERLOOK

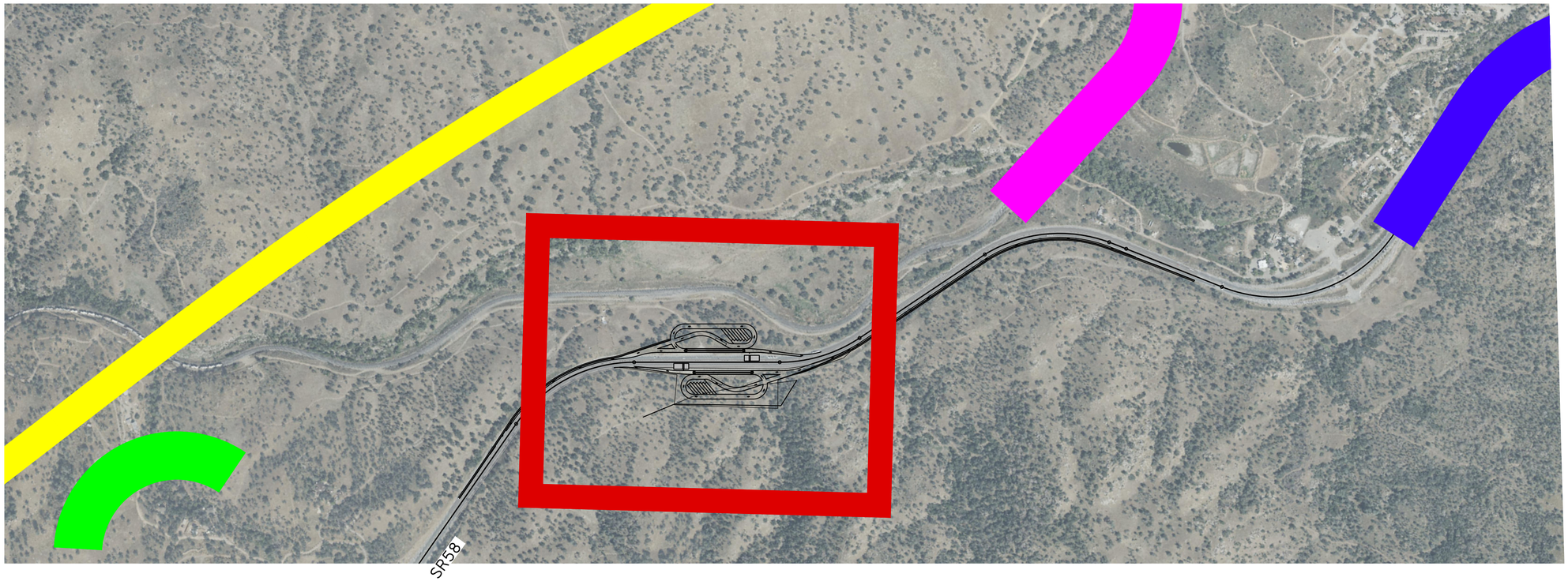
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: NTS

LEGEND:

- 2.2 SR58 TRUCK CLIMB/SAFETY PASSING LANES (KEENE TO CABLE)
- 2.5 SR58 EASTBOUND WEIGH STATION
- 2.71 UP TEHACHAPI PASS ADDITIONS SEG 3
- 2.8 UP TEHACHAPI PASS IMPROVEMENTS
- CALIFORNIA HIGH-SPEED RAIL ALIGNMENT



SUMMARY TABLE

TOTAL LENGTH	00.20 MILE
R/W REQUIREMENTS	6.84 ACRES, 2 PARCELS

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1":500'

MARK THOMAS

KARGO CCAMS - PROJECT 2

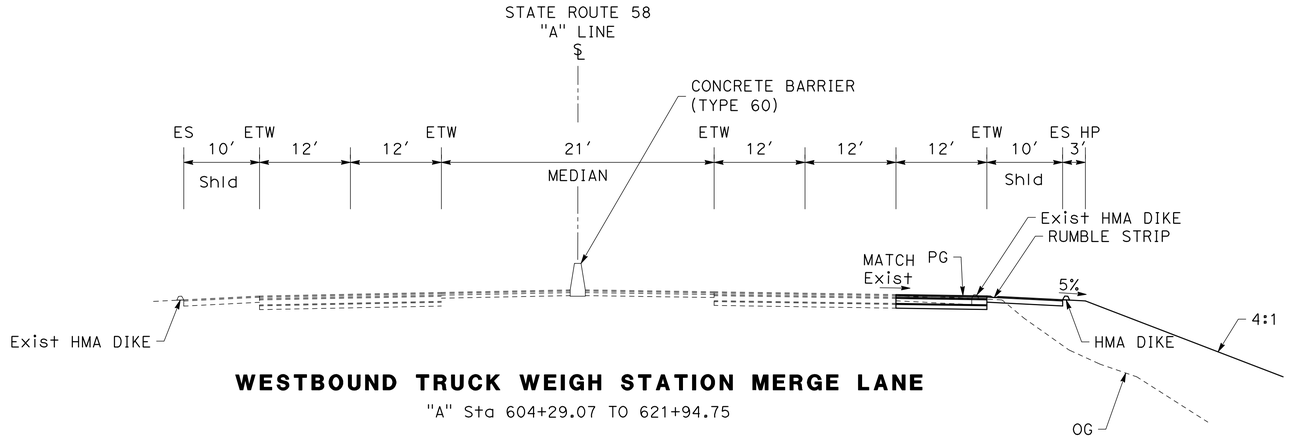
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.5

SR58 EASTBOUND WEIGH STATION

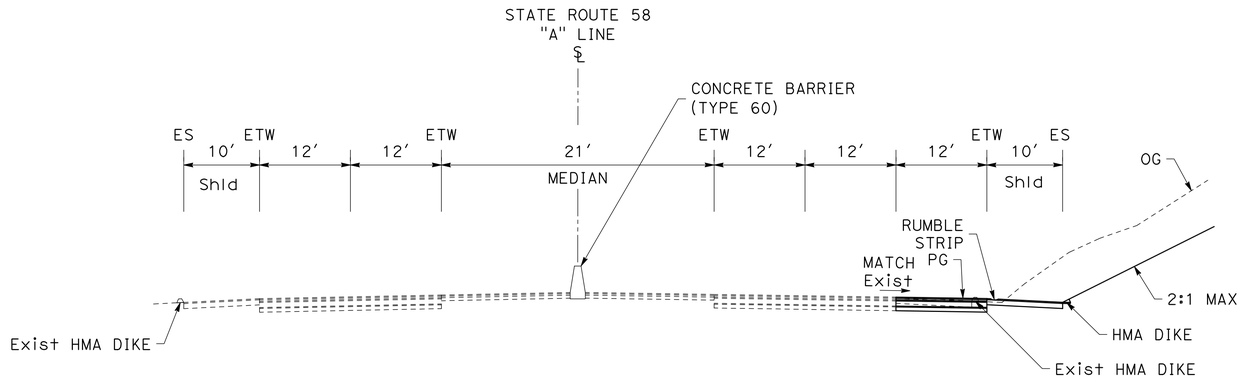
30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.5 Weigh Station Exhibit.dwg



WESTBOUND TRUCK WEIGH STATION MERGE LANE

"A" Sta 604+29.07 TO 621+94.75



EASTBOUND TRUCK WEIGH STATION MERGE LANE

"A" Sta 641+71.66 TO 666+26.90

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: NTS

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.5

SR58 EASTBOUND WEIGH STATION

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.5 Weigh Station Exhibit.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L1	1819.94'	S79°01'07"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
41	1200.00'	055°12'02"	627.35'	1156.12'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1':100"

MARK THOMAS

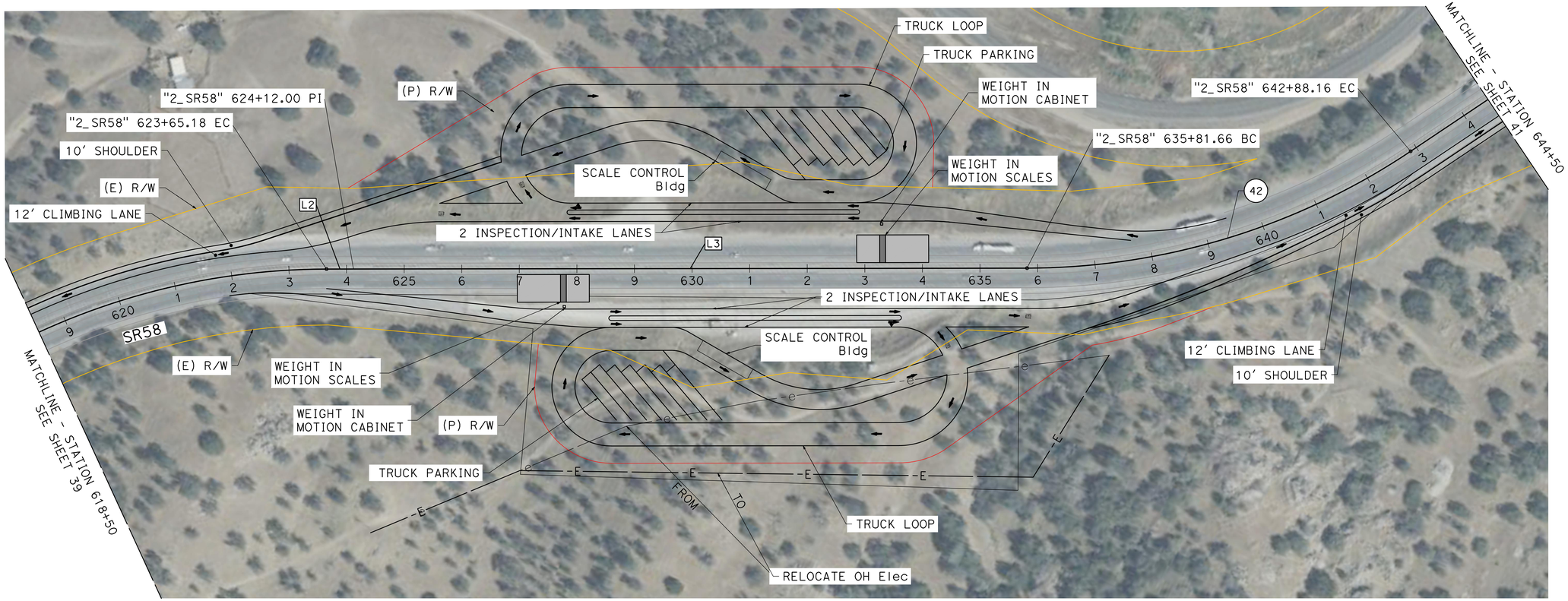
KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.5

SR58 EASTBOUND WEIGH STATION

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.5 Weigh Station Exhibit.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L2	46.82'	S23°49'05"E
L3	1169.66'	S23°49'05"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
42	1200.00'	033°43'58"	363.82'	706.50'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1':100"

MARK THOMAS

KARGO CCAMS - PROJECT 2

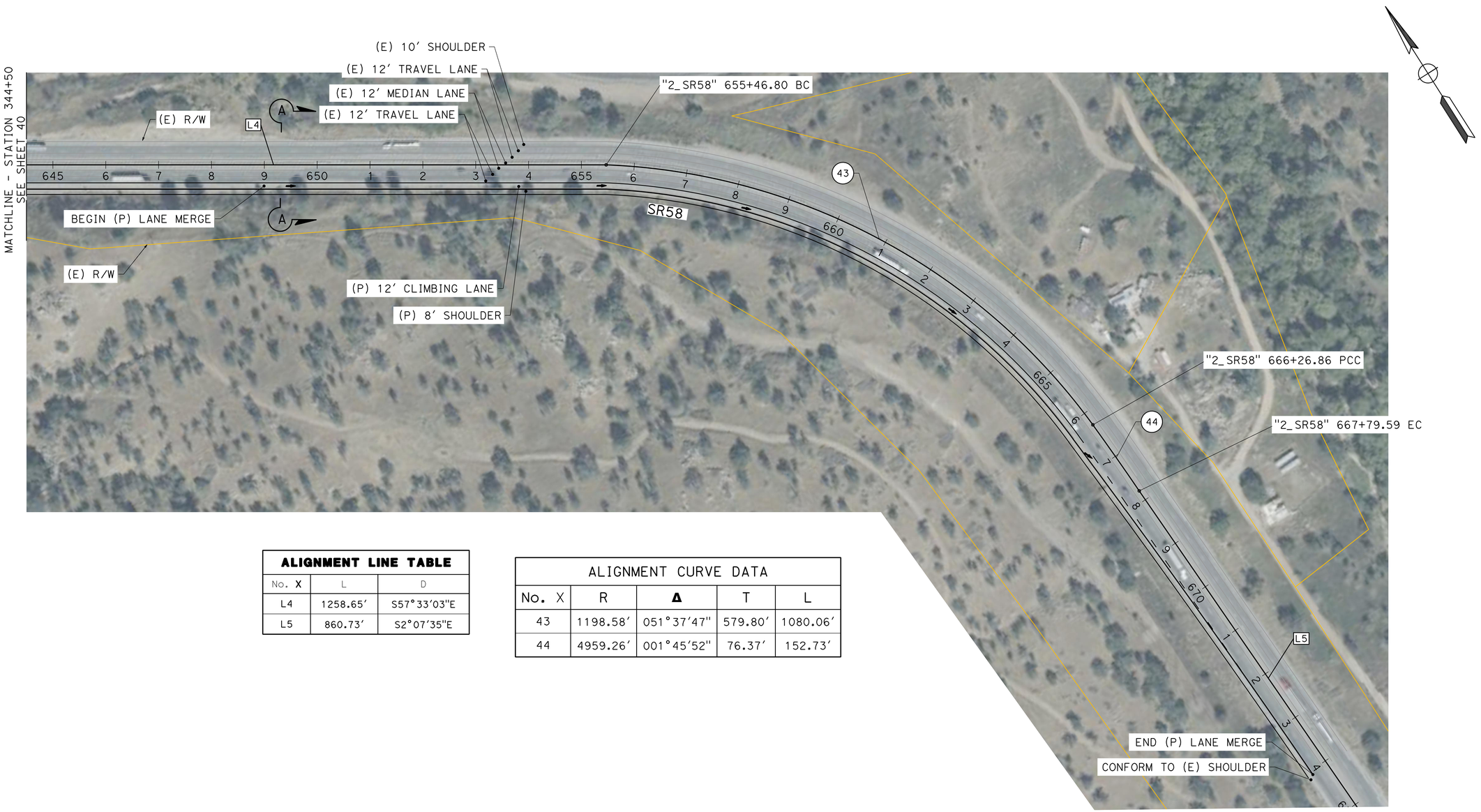
SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.5

SR58 EASTBOUND WEIGH STATION

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.5 Weigh Station Exhibit.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L4	1258.65'	S57°33'03"E
L5	860.73'	S2°07'35"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
43	1198.58'	051°37'47"	579.80'	1080.06'
44	4959.26'	001°45'52"	76.37'	152.73'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1':100"

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.5

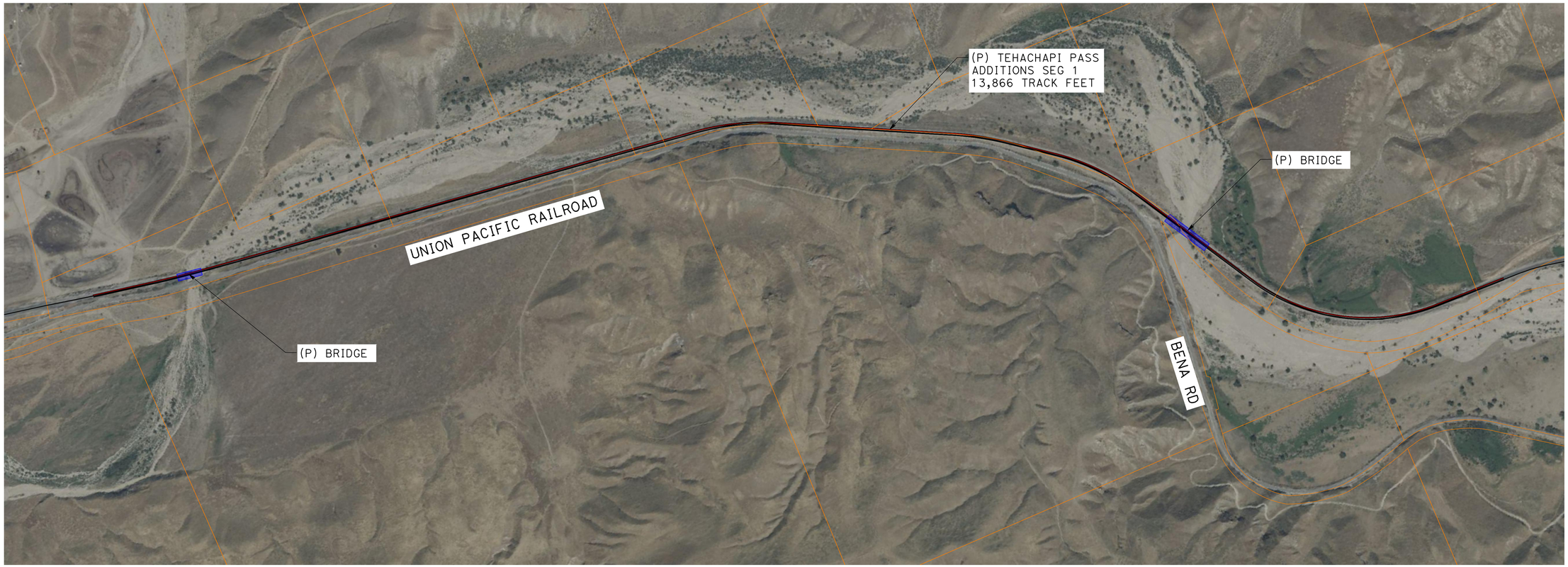
SR58 EASTBOUND WEIGH STATION

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.5 Weigh Station Exhibit.dwg

LEGEND:

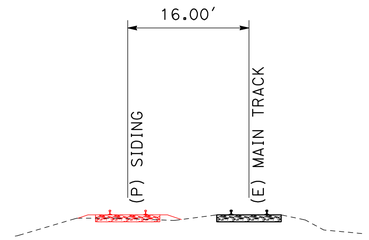
TRACK ADDITION

BRIDGE



SUMMARY TABLE

TOTAL LENGTH	02.63 MILE
R/W REQUIREMENTS	02.03 ACRE, 7 PARCELS



TYPICAL SECTION

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1':500"

SHEET 43 OF 46

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.71

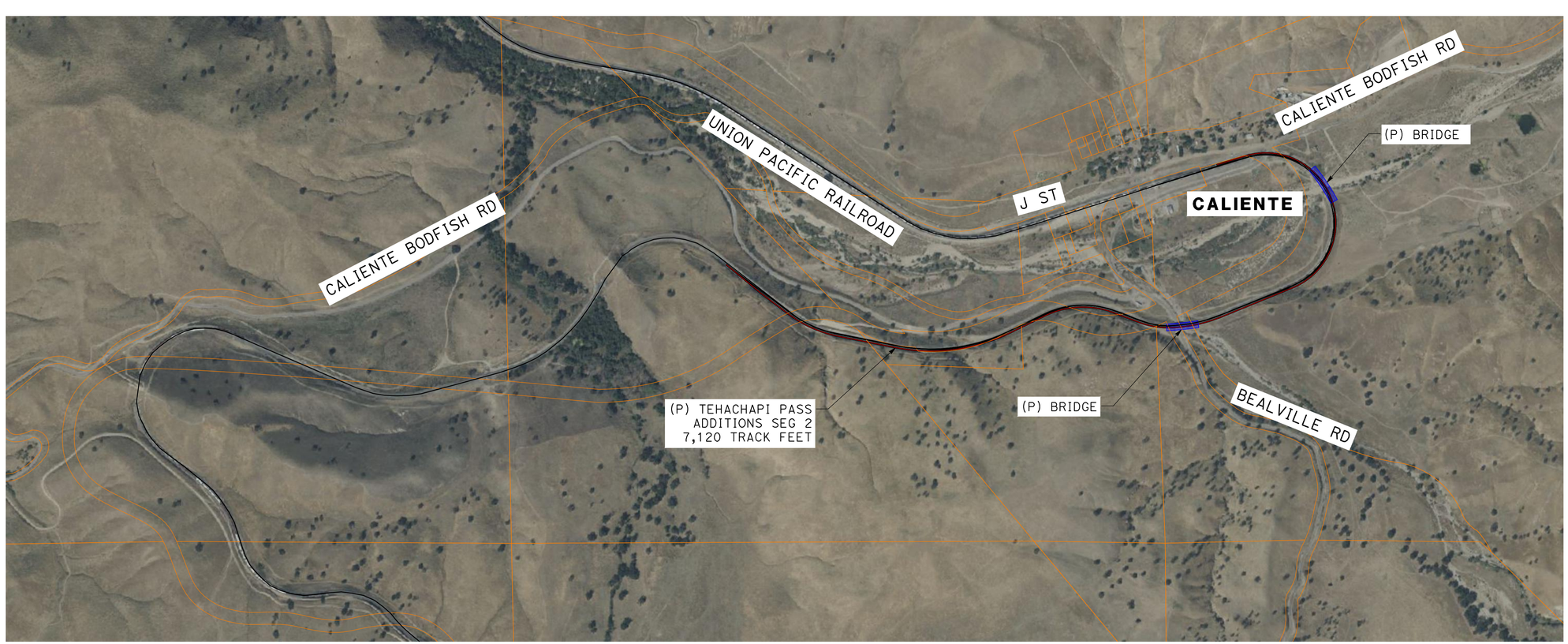
UP TEHACHAPI PASS ADDITIONS SEG 1

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.7 UP Tehachapi Pass Additions Exhibit.dwg

LEGEND:

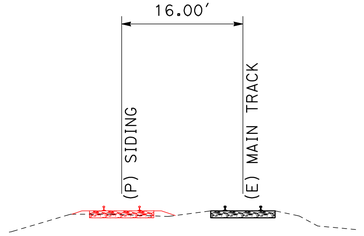
TRACK ADDITION

BRIDGE



SUMMARY TABLE

TOTAL LENGTH	01.35 MILE
R/W REQUIREMENTS	01.00 ACRE, 3 PARCELS



TYPICAL SECTION

SCALE: 1':500"

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

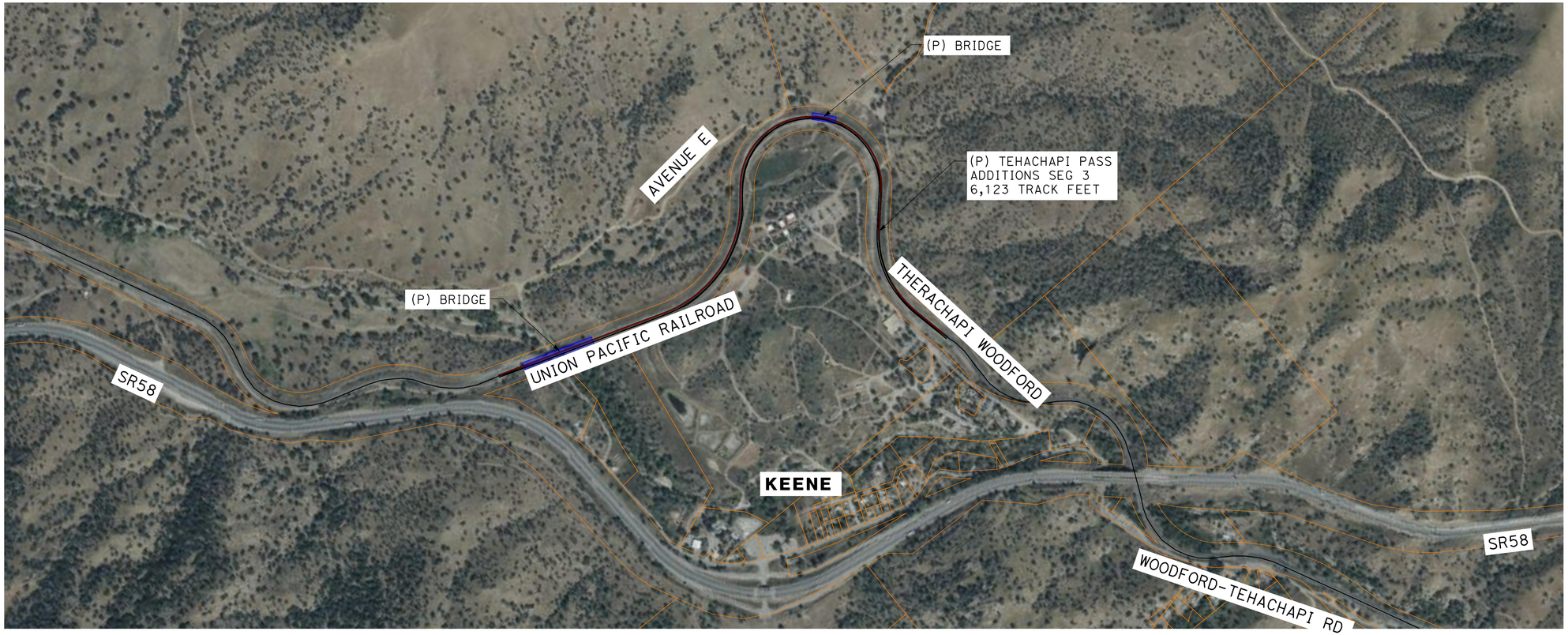
30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.7 UP Tehachapi Pass Additions Exhibit.dwg

LEGEND:

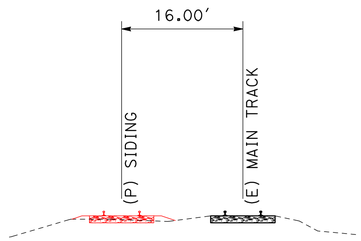
TRACK ADDITION

BRIDGE



SUMMARY TABLE

TOTAL LENGTH	01.16 MILE
R/W REQUIREMENTS	00.00 ACRE, 0 PARCELS



TYPICAL SECTION

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1':500"

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.73

UP TEHACHAPI PASS ADDITIONS SEG 3

J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.7 UP Tehachapi Pass Additions Exhibit.dwg

LEGEND:

RETAINING WALL

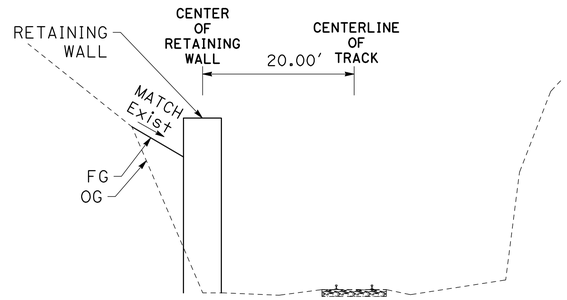
PARCEL LINE

— — —C— CUT LINE



SUMMARY TABLE

TOTAL LENGTH	00.12 MILE
R/W REQUIREMENTS	00.00 ACRE, 0 PARCELS



SECTION A-A

SCALE: 1"=10'

SCALE: 1':100"

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 2

SR-58 TEHACHAPI GRADE IMPROVEMENTS

2.8

UP TEHACHAPI PASS IMPROVEMENTS

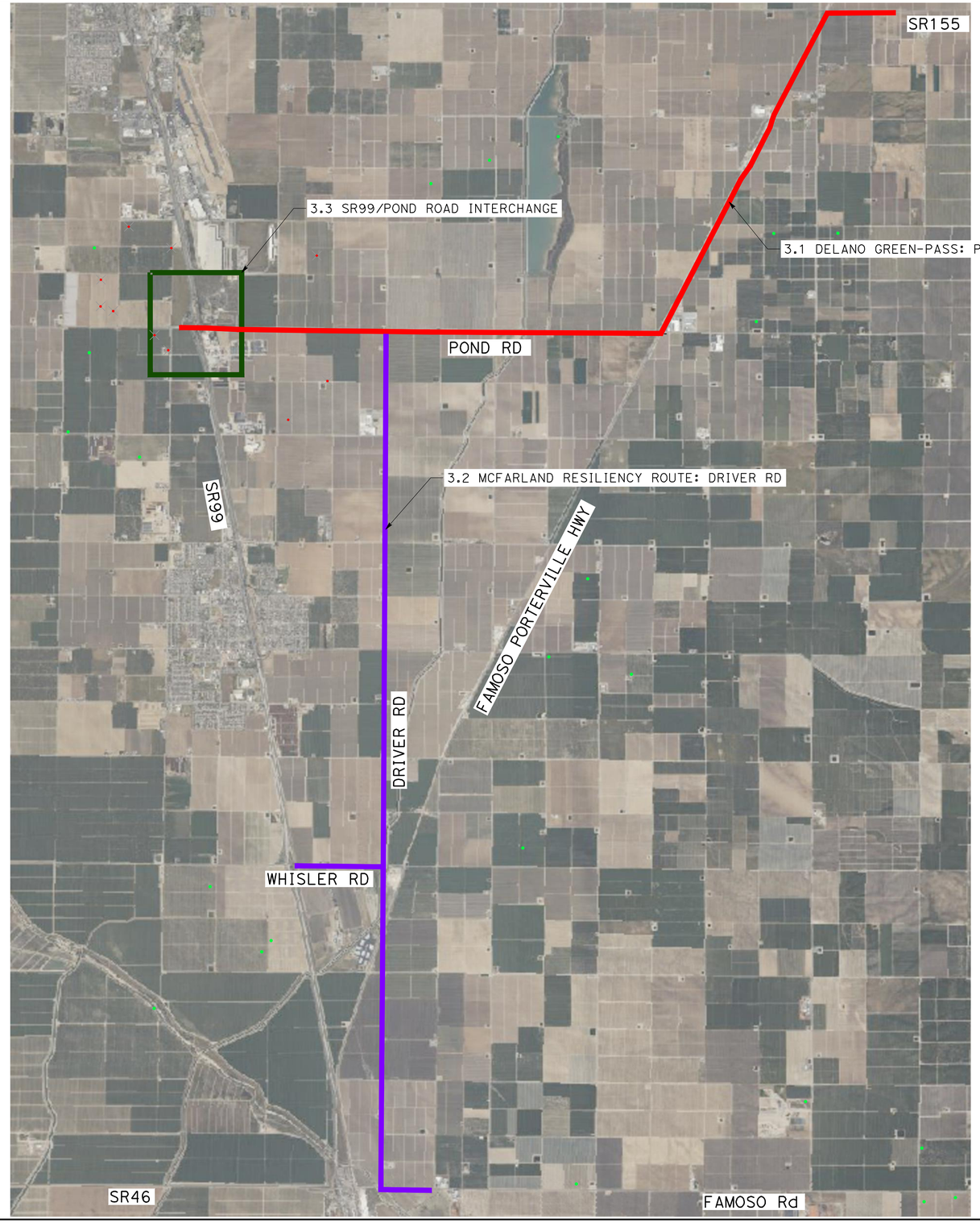
J:\Kern COG-24-00050- KARGO CCAMS\CADD\2 - SR 58 Tehachapi Grade Improvements\Plans\2.8 UP Tehachapi Pass Improvements Exhibit.dwg

LEGEND:

- 3.1 DELANO GREEN-PASS: POND ROAD
- 3.2 MCFARLAND RESILIENCY ROUTE: DRIVER ROAD
- 3.3 SR99/POND ROAD INTERCHANGE
- WATER QUALITY WELL
- OIL WELL

PROJECT PHASING TABLE

PHASE 1: REROUTE OF 16SR155 AROUND DELANO
PHASE 2: DRIVER ROAD IMPROVEMENTS
PHASE 3: SR 99/POND ROAD INTERCHANGE
FUTURE PHASES: FULL BUILDOUT PER TCR



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DATE: 1/13/26

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 3

DELANO/MCFARLAND GREENPASS NETWORK

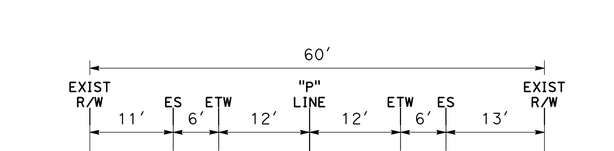
J:\Kern COG-24-00050- KARGO CCAMS\CADD\3 - Delano McFarland Greenpass Network\Plan\Delano Green-pass Pond Road_3.0.dwg

LEGEND:

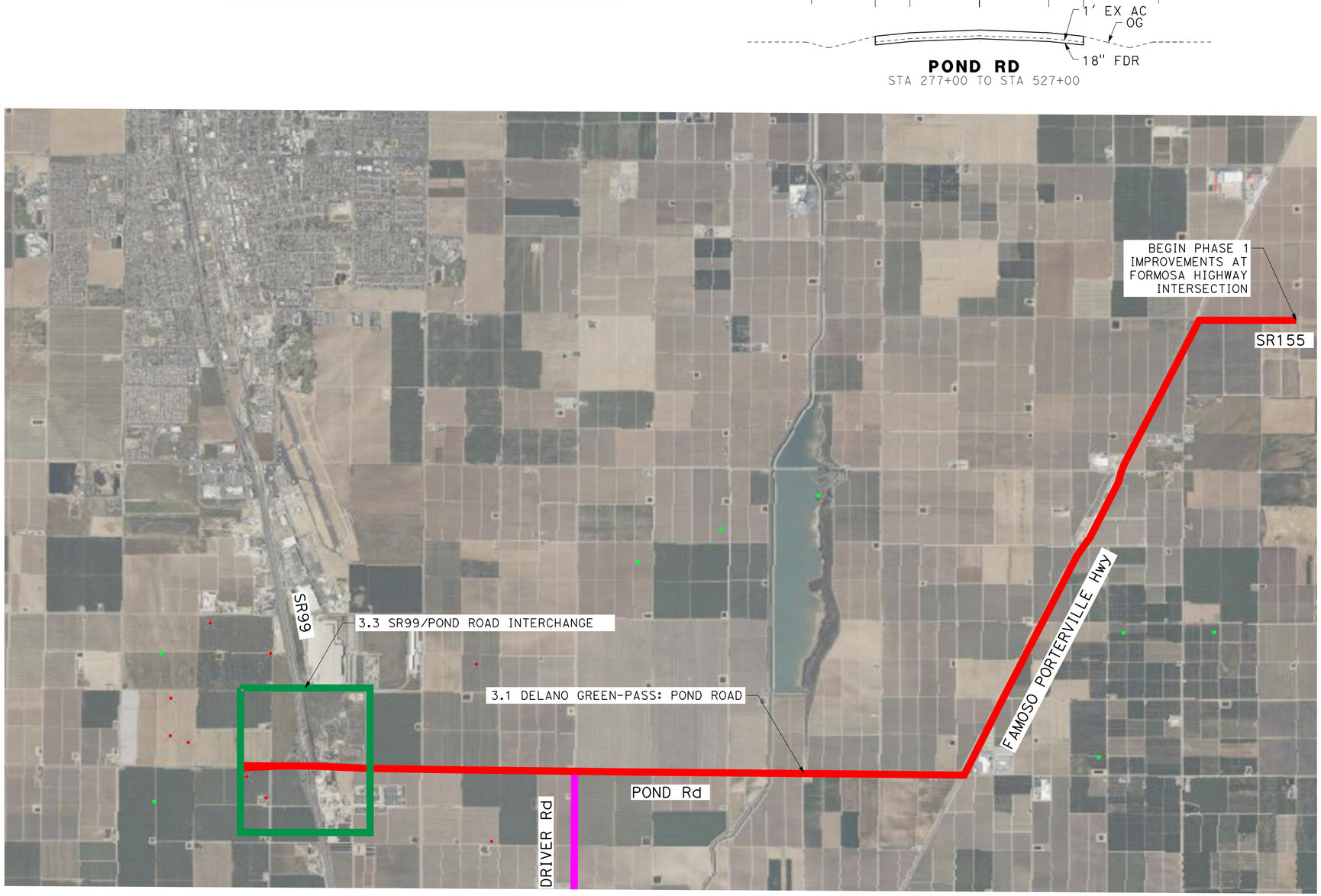
- 3.1 DELANO GREEN-PASS: POND ROAD
- 3.2 MCFARLAND RESILIENCY ROUTE: DRIVER ROAD
- 3.3 SR99/POND ROAD INTERCHANGE
- WATER QUALITY WELL
- OIL WELL

SUMMARY TABLE

TOTAL LENGTH	8.7 MILE
ROW REQUIREMENTS	0.18 ACRE, 5 PARCELS



POND RD
STA 277+00 TO STA 527+00



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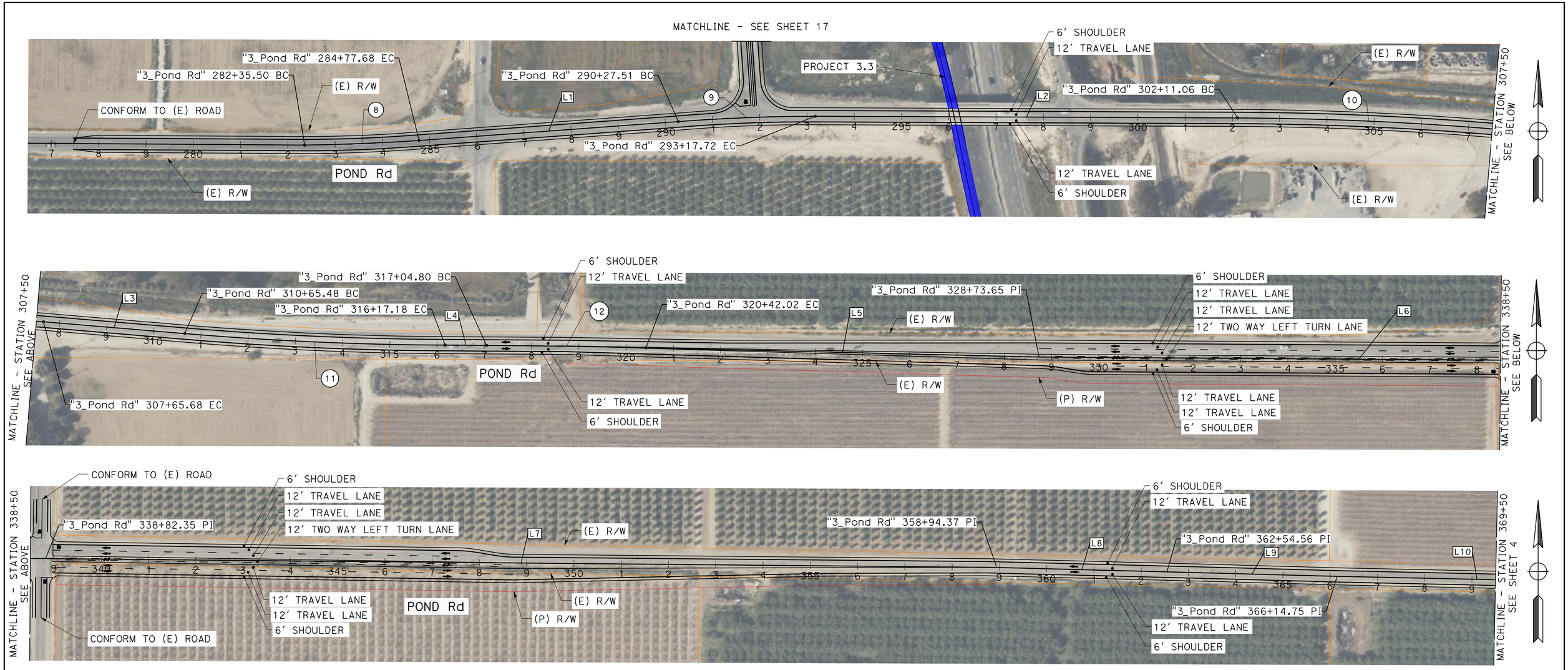
DATE: 1/13/26

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 3
DELANO/MCFARLAND GREENPASS NETWORK

3.1
DELANO GREEN-PASS: POND ROAD



ALIGNMENT LINE TABLE		
No. X	L	D
L1	549.82'	N85°49'51"E
L2	893.35'	S89°45'56"E
L3	299.81'	S85°12'26"E
L4	87.62'	S89°37'13"E
L5	831.63'	S88°39'15"E
L6	1008.70'	S89°37'08"E
L7	2012.02'	S89°27'55"E
L8	360.19'	S88°30'36"E
L9	360.19'	S88°30'36"E
L10	591.65'	S88°46'02"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
8	5000.00'	002°46'31"	121.11'	242.18'
9	4000.00'	004°09'25"	145.17'	290.21'
10	7000.00'	004°32'22"	277.45'	554.61'
11	7000.00'	004°30'56"	275.99'	551.69'
12	20000.00'	000°57'58"	168.62'	337.22'

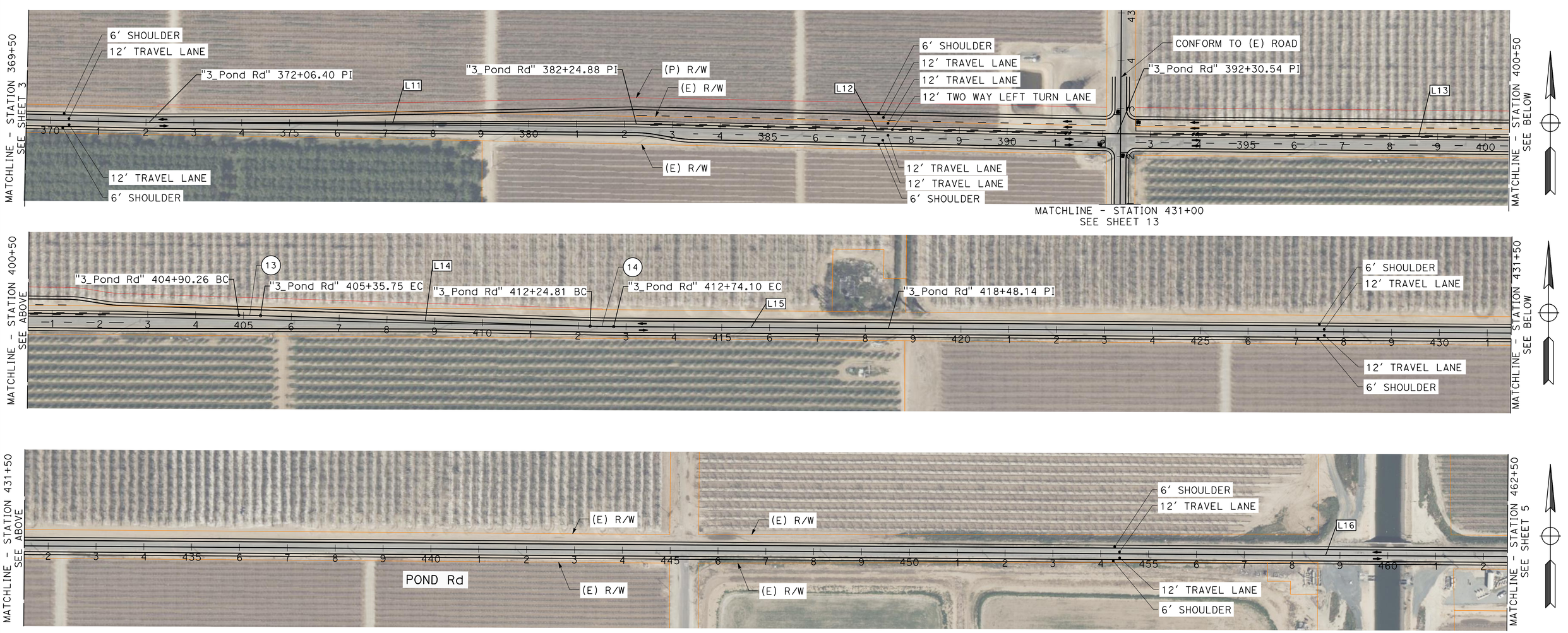
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 3 OF 15

30% CONCEPTUAL DESIGN



30% CONCEPTUAL DESIGN

ALIGNMENT LINE TABLE		
No. X	L	D
L11	1018.48'	S89°48'09"E
L12	1005.66'	S88°51'17"E
L13	1259.72'	S89°28'16"E
L14	689.06'	S88°10'05"E
L15	574.04'	S89°36'01"E
L16	8043.69'	S89°35'01"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
13	2000.00'	001°18'11"	22.74'	45.49'
14	2000.00'	001°24'43"	24.64'	49.29'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 4 OF 15

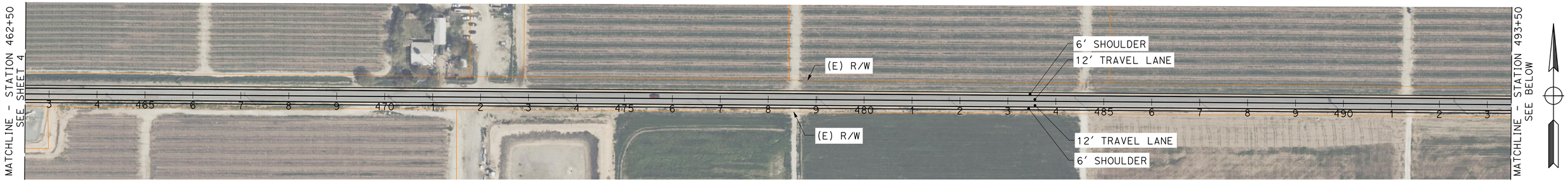
MARK THOMAS

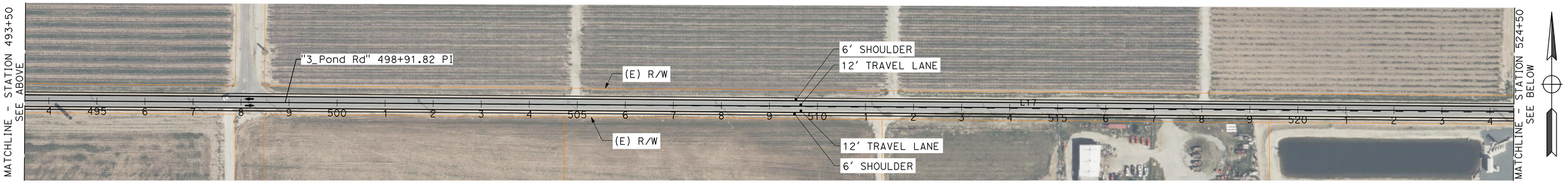
KARGO CCAMS - PROJECT 3

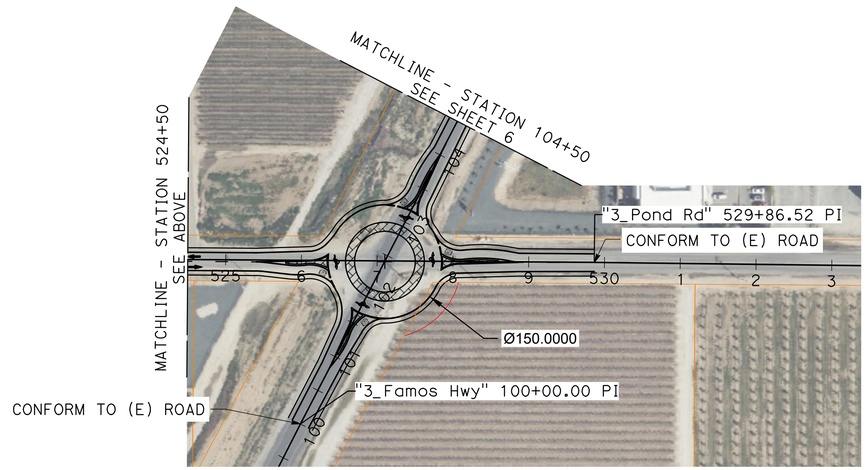
DELANO/MCFARLAND GREENPASS NETWORK

3.1

DELANO GREEN-PASS: POND ROAD







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DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

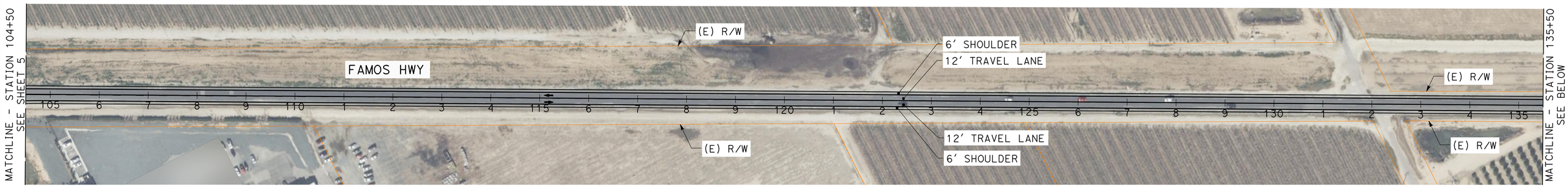
MARK THOMAS

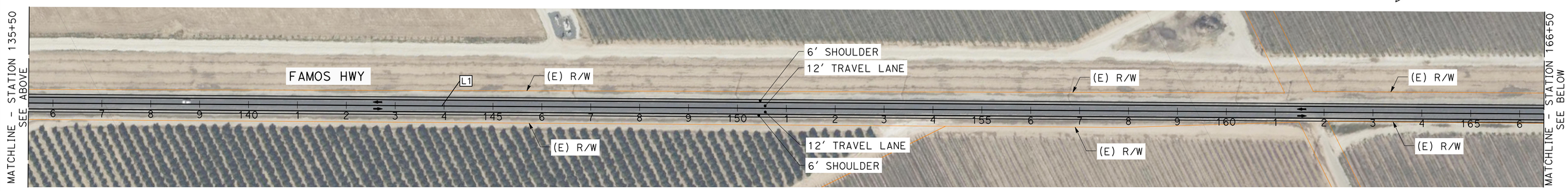
KARGO CCAMS - PROJECT 3

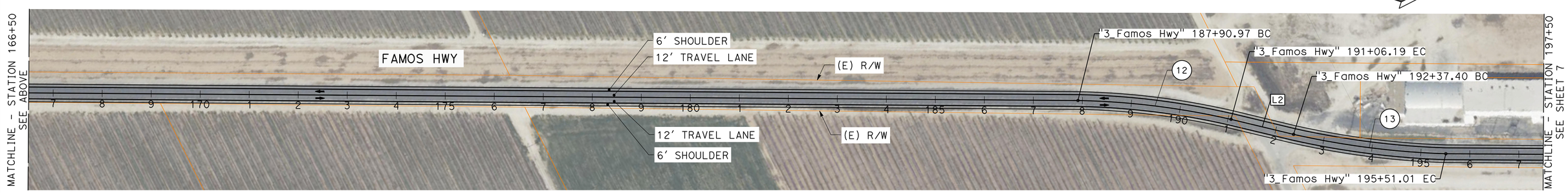
DELANO/MCFARLAND GREENPASS NETWORK

3.1

DELANO GREEN-PASS: POND ROAD







ALIGNMENT LINE TABLE		
No. X	L	D
L1	8790.97'	N27°23'41"E
L2	131.21'	N40°26'23"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
12	1513.96'	011°55'46"	158.18'	315.22'
13	1658.16'	010°50'10"	157.27'	313.60'

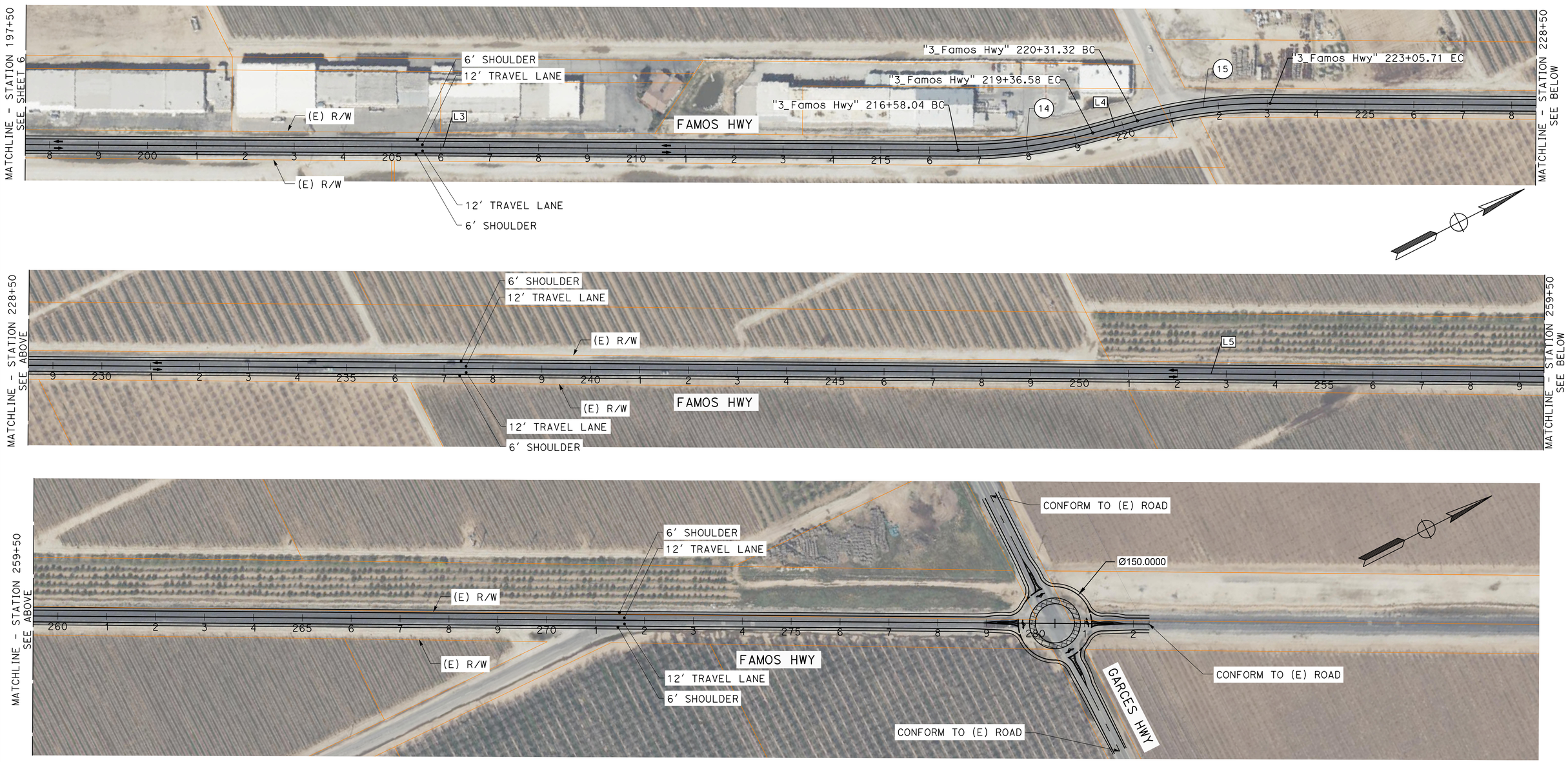
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 6 OF 15

30% CONCEPTUAL DESIGN



ALIGNMENT LINE TABLE		
No. X	L	D
L3	2107.04'	N27°19'27"E
L4	94.74'	N11°40'22"E
L5	5926.37'	N27°23'38"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
14	1000.00'	015°57'32"	140.18'	278.54'
15	1000.00'	015°43'16"	138.06'	274.39'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 7 OF 15

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 3

DELANO/MCFARLAND GREENPASS NETWORK

3.1

DELANO GREEN-PASS: POND ROAD

LEGEND:

PHASE 3.1 DELANO GREEN-PASS: POND ROAD

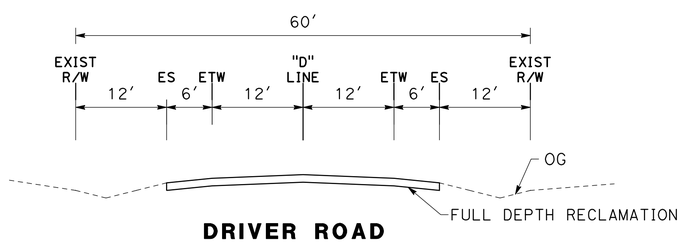
PHASE 3.2 MCFARLAND RESILIENCY ROUTE: DRIVER ROAD

SUMMARY TABLE

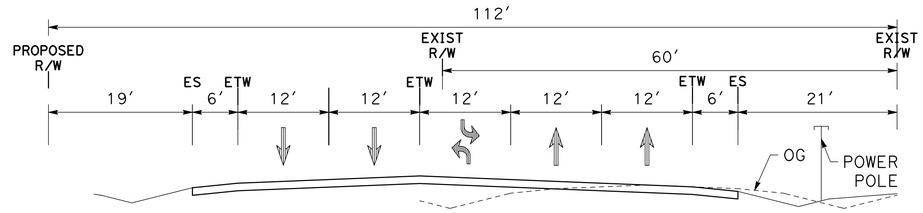
TOTAL LENGTH	8.4 MILE
ROW REQUIREMENTS	0.16 ACRE, 5 PARCELS



DRIVER ROAD/SR-46 INTERSECTION



DRIVER ROAD
STA 11+00 TO STA 435+00

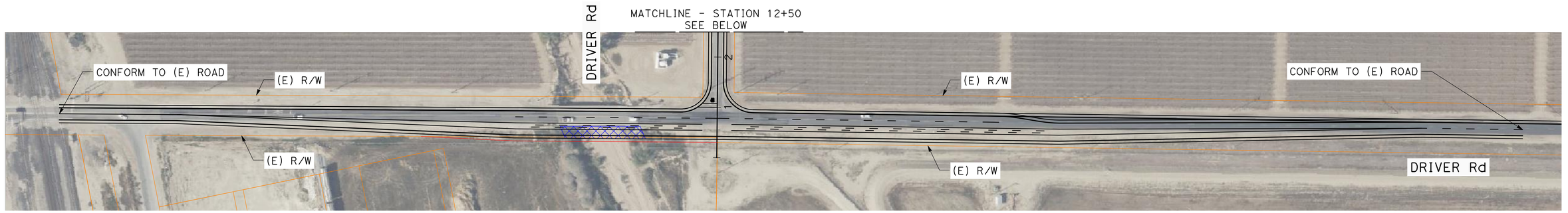


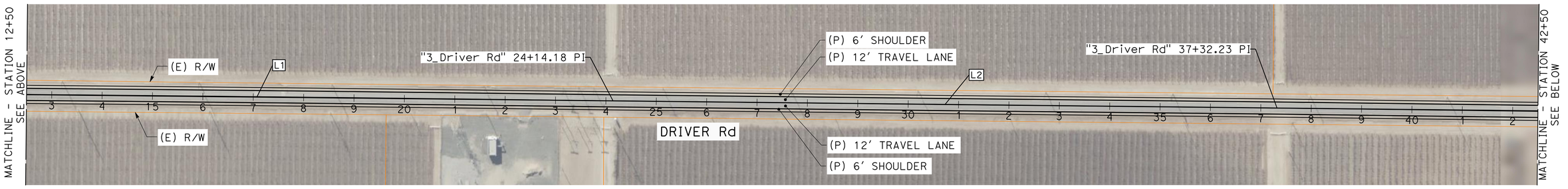
DRIVER ROAD
STA 265+00 TO STA 311+00

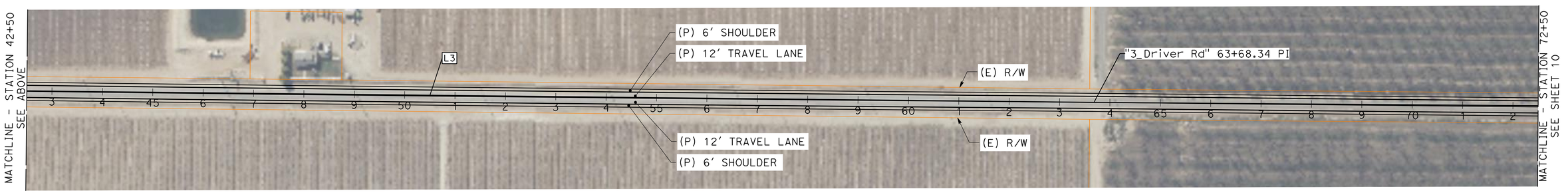
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN







ALIGNMENT LINE TABLE		
No. X	L	D
L1	1414.18'	N0°36'23"E
L2	1318.05'	N0°37'04"E
L3	2636.10'	N0°37'04"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: NTS

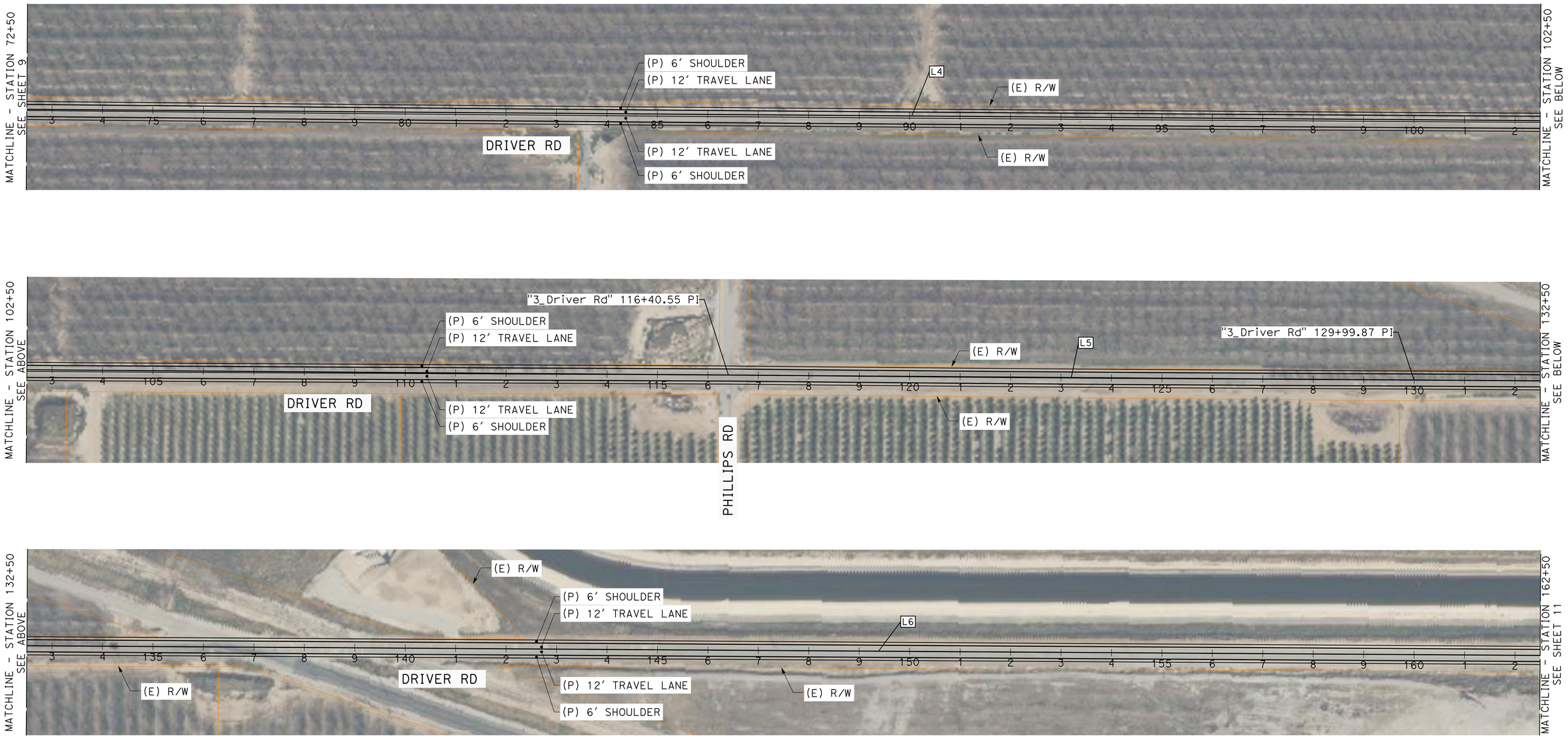
MARK THOMAS

KARGO CCAMS - PROJECT 3

DELANO/MCFARLAND GREENPASS NETWORK

3.2

MCFARLAND RESILIENCY ROUTE: DRIVER ROAD



ALIGNMENT LINE TABLE		
No. X	L	D
L4	5272.21'	N0°25'52"E
L5	1359.32'	N0°25'01"E
L6	3876.85'	N0°22'00"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: NTS

SHEET 10 OF 15

30% CONCEPTUAL DESIGN

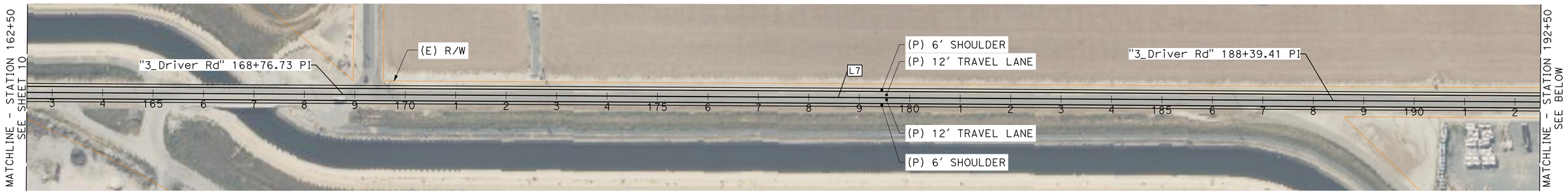
MARK THOMAS

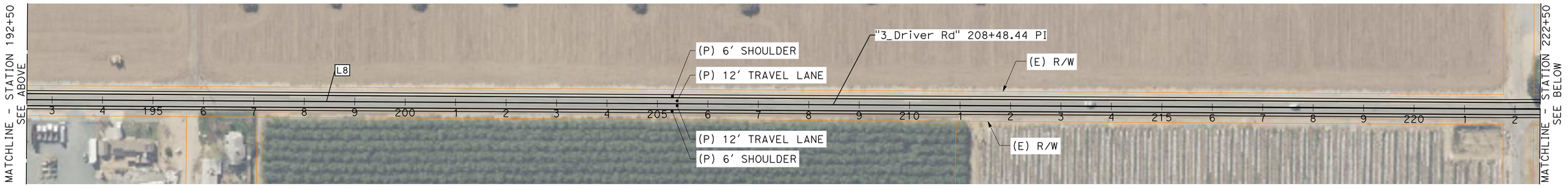
KARGO CCAMS - PROJECT 3

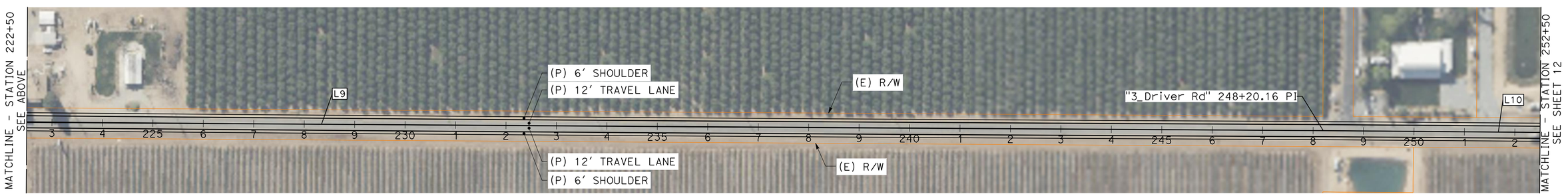
DELANO/MCFARLAND GREENPASS NETWORK

3.2

MCFARLAND RESILIENCY ROUTE: DRIVER ROAD







ALIGNMENT LINE TABLE		
No. X	L	D
L7	1962.69'	N0°21'36"E
L8	2009.03'	N0°21'49"E
L9	3971.72'	N0°21'56"E
L10	694.10'	N0°28'15"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: NTS

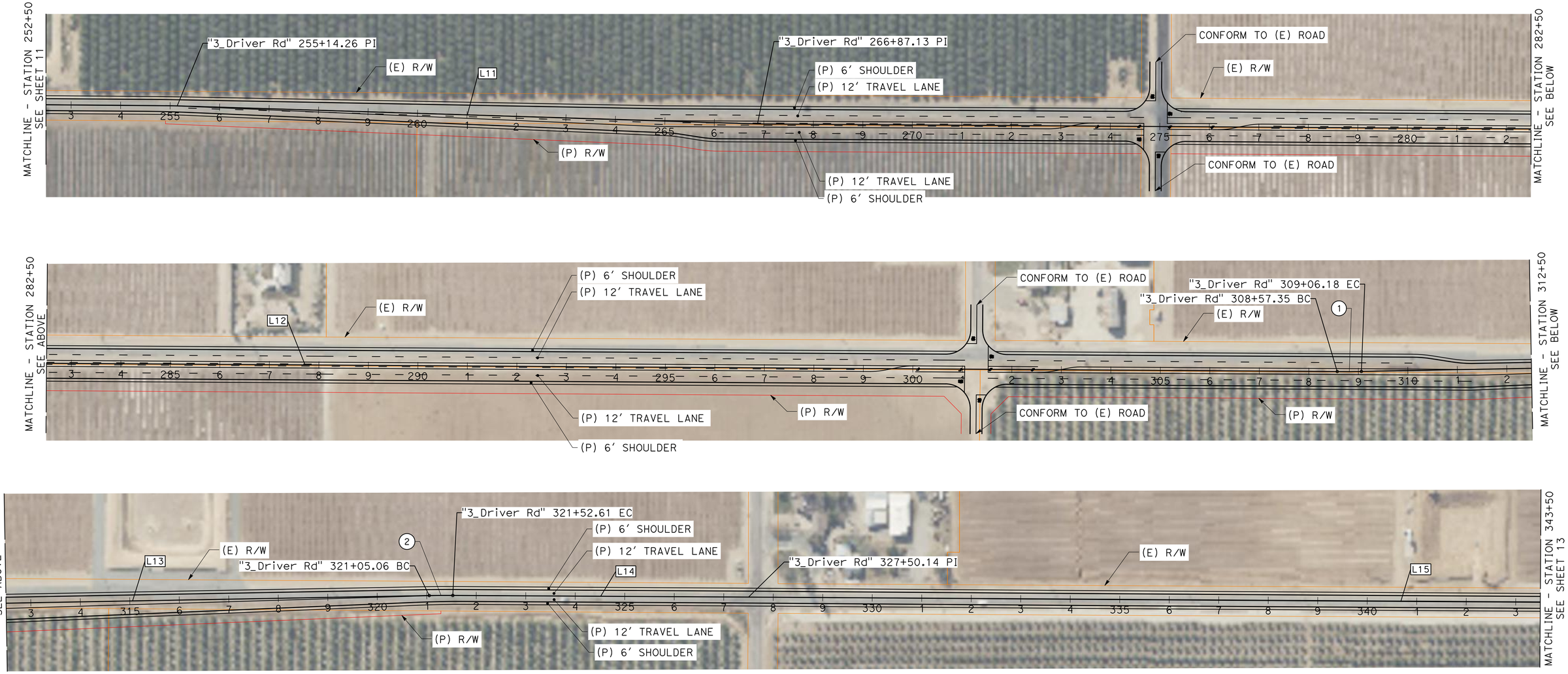
MARK THOMAS

KARGO CCAMS - PROJECT 3

DELANO/MCFARLAND GREENPASS NETWORK

3.2

MCFARLAND RESILIENCY ROUTE: DRIVER ROAD



ALIGNMENT LINE TABLE		
No. X	L	D
L11	1172.88'	N1°47'02"E
L12	4170.21'	N0°22'00"E
L13	1198.88'	N1°01'57"W
L14	597.53'	N0°19'21"E
L15	2635.81'	N0°21'19"E

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DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: NTS

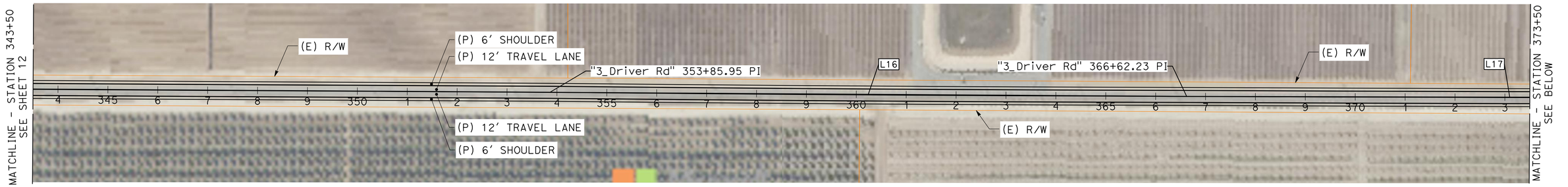
MARK THOMAS

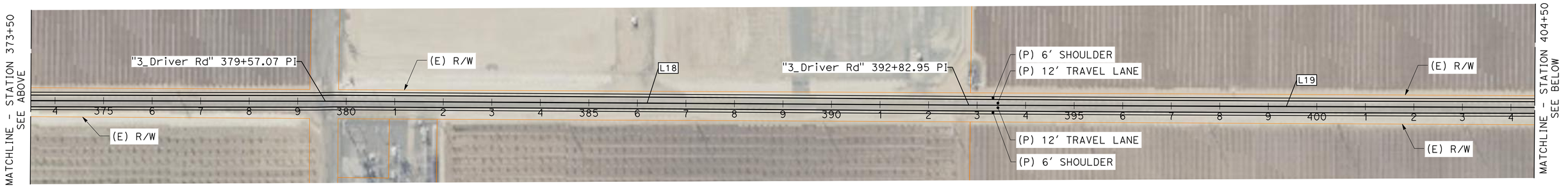
KARGO CCAMS - PROJECT 3

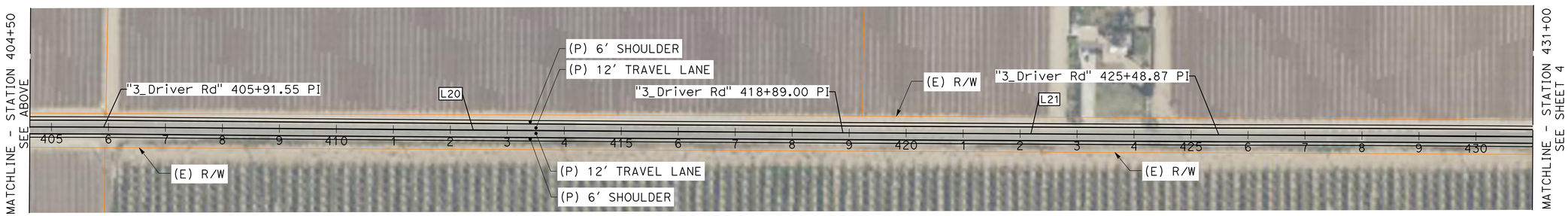
DELANO/MCFARLAND GREENPASS NETWORK

3.2

MCFARLAND RESILIENCY ROUTE: DRIVER ROAD







ALIGNMENT LINE TABLE		
No. X	L	D
L16	1276.28'	N0°22'25"E
L17	1294.84'	N0°07'59"E
L18	1325.88'	N0°20'48"E
L19	1308.60'	N0°13'43"E
L20	1297.44'	N0°26'17"E
L21	659.87'	N0°19'00"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: NTS

MARK THOMAS

KARGO CCAMS - PROJECT 3

DELANO/MCFARLAND GREENPASS NETWORK

3.2

MCFARLAND RESILIENCY ROUTE: DRIVER ROAD

30% CONCEPTUAL DESIGN



LEGEND:

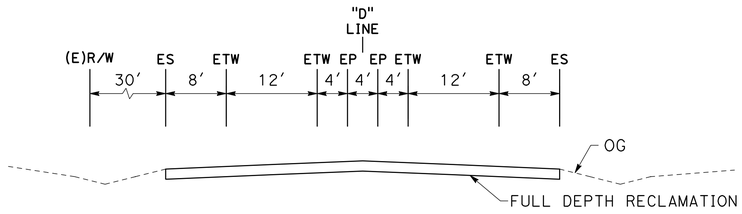
- PHASE 1
- PHASE 3
- PARCEL LINE
- WATER QUALITY WELL
- OIL WELL

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SUMMARY TABLE

TOTAL LENGTH	0.7 MILE
ROW REQUIREMENTS	0 ACRE, 0 PARCELS



SCALE: NTS

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 3

DELANO/MCFARLAND GREENPASS NETWORK

3.3

SR-99/POND ROAD INTERCHANGE



30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1":100'

MARK THOMAS

KARGO CCAMS - PROJECT 3

DELANO/MCFARLAND GREENPASS NETWORK

3.3

SR-99/POND ROAD INTERCHANGE

LEGEND:

4.1 I-5 SOUTHBOUND WEIGHT STATION ($67M)

4.2 I-5 TRUCK SAFETY PASSING LANES ($195M)

PROJECT PHASING TABLE

PHASE 4.1: I-5 SOUTHBOUND WEIGHT STATION
PHASE 4.2: I-5 TRUCK SAFETY PASSING LANES



THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=3500'

SHEET 1 OF 10

30% CONCEPTUAL DESIGN

LEGEND:

4.1 I-5 SOUTHBOUND WEIGHT STATION

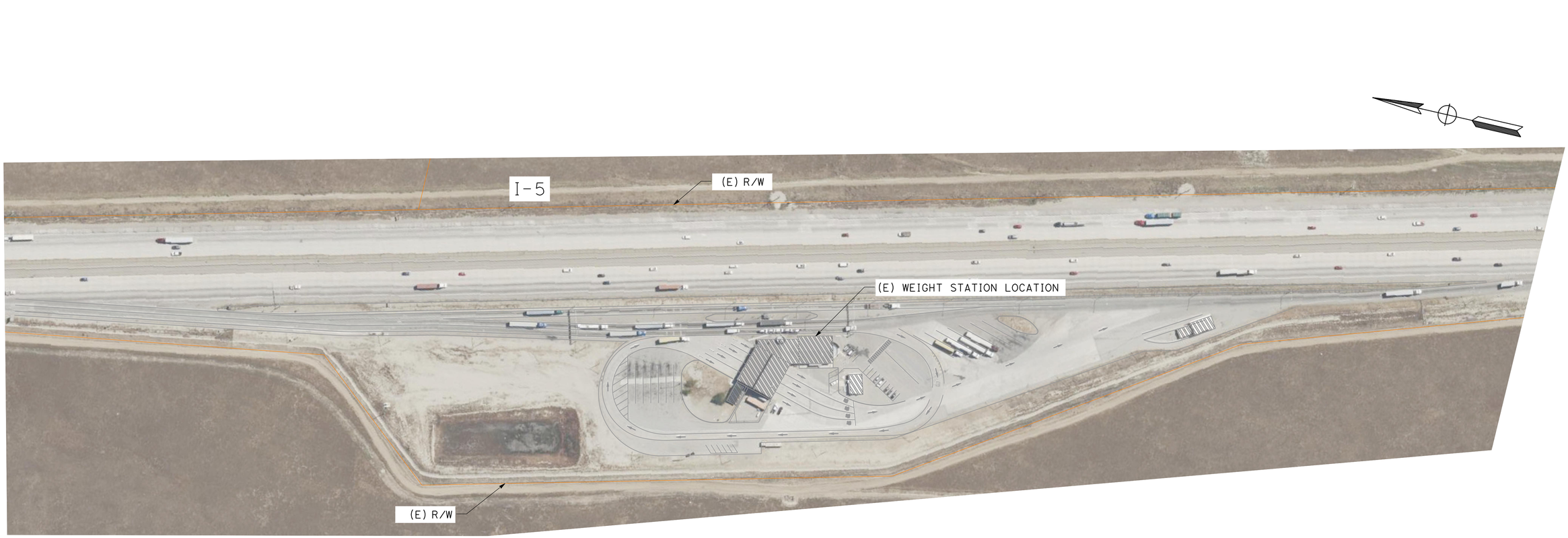
4.2 I-5 TRUCK SAFETY PASSING LANES



THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=3500'



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DATE: 1/13/26

SCALE: 1"=100'

30% CONCEPTUAL DESIGN

MARK THOMAS

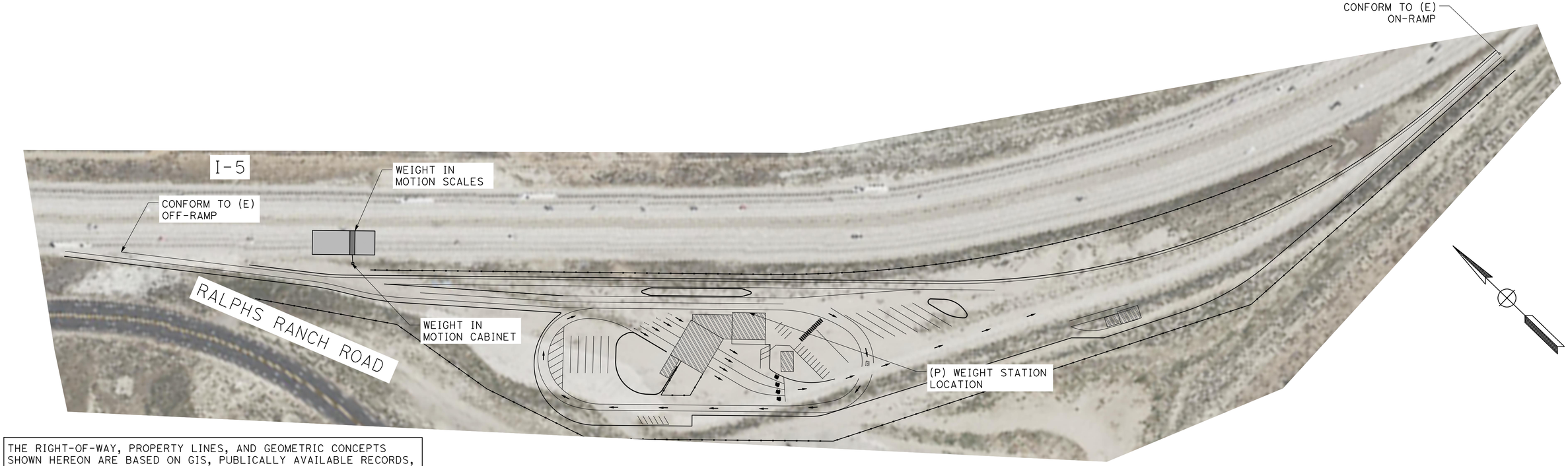
KARGO CCAMS - PROJECT 4

I-5 GRAPEVINE IMPROVEMENTS

4.1

I-5 SOUTHBOUND WEIGHT STATION





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DATE: 1/13/26

SCALE: 1"=100'

SHEET 4 OF 10

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 4

I-5 GRAPEVINE IMPROVEMENTS

4.1

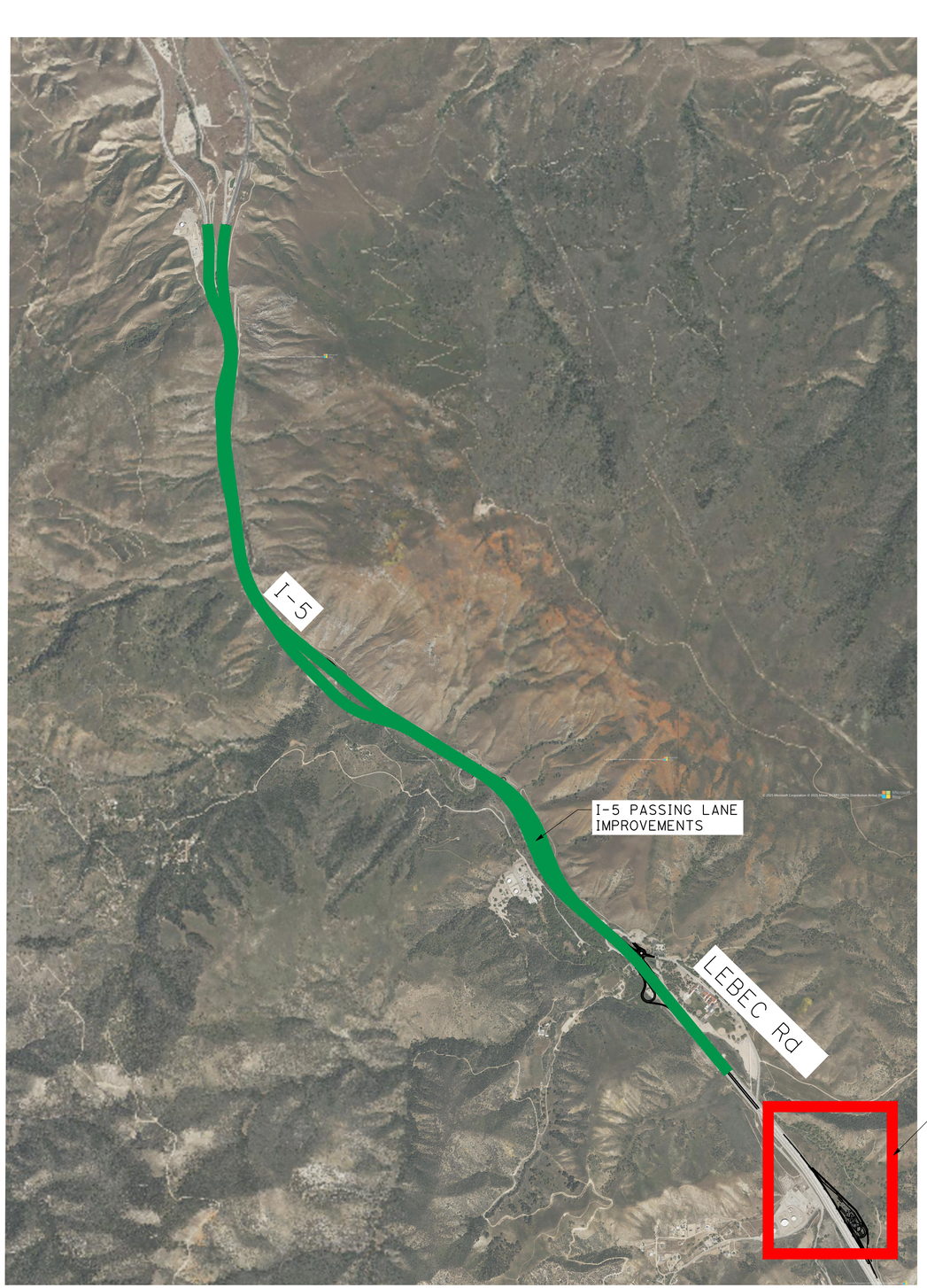
I-5 SOUTHBOUND WEIGHT STATION

LEGEND:

4.2 I-5 TRUCK SAFETY PASSING LANES

SUMMARY TABLE

TOTAL LENGTH	4.72 MILE
ROW REQUIREMENTS	6 ACRES, 1 PARCEL



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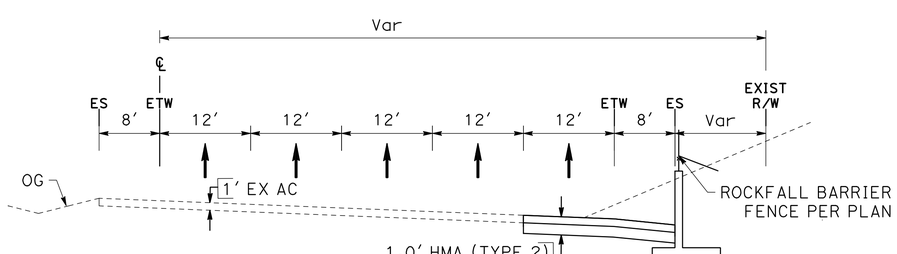
DATE: 1/13/26

SCALE: 1"=1500'

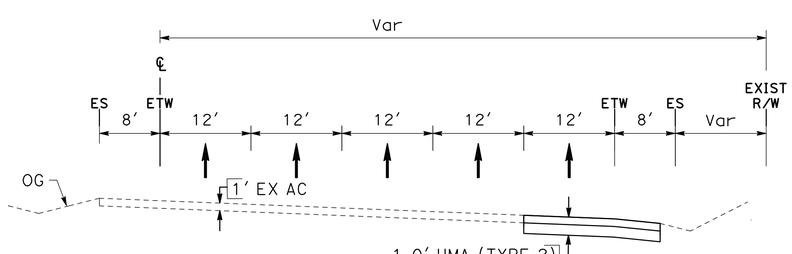
SHEET 5 OF 10

30% CONCEPTUAL DESIGN



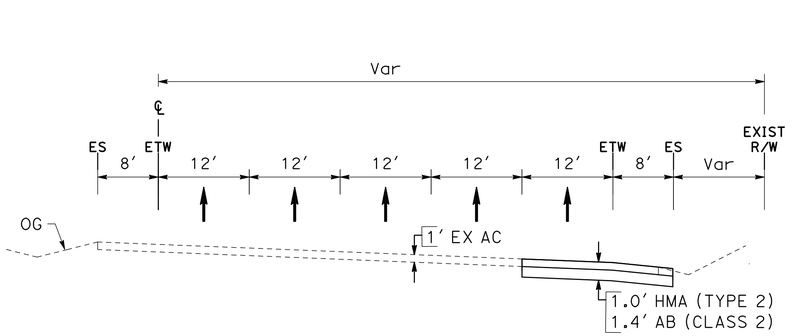
NORTHBOUND I-5

"I5 NB" Sta 137+10 TO 144+80
"I5 NB" Sta 147+90 TO 163+90
"I5 NB" Sta 192+40 TO 200+70
"I5 NB" Sta 212+50 TO 222+00



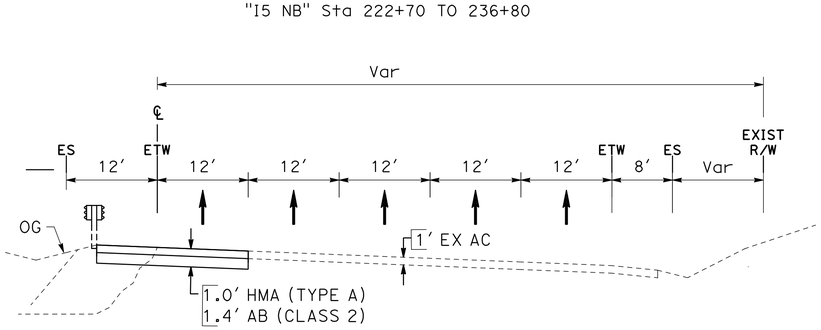
NORTHBOUND I-5

"I5 NB" Sta 102+60 TO 124+50
"I5 NB" Sta 126+30 TO 137+10
"I5 NB" Sta 144+80 TO 147+90
"I5 NB" Sta 163+90 TO 192+40
"I5 NB" Sta 200+70 TO 212+50
"I5 NB" Sta 222+70 TO 236+80



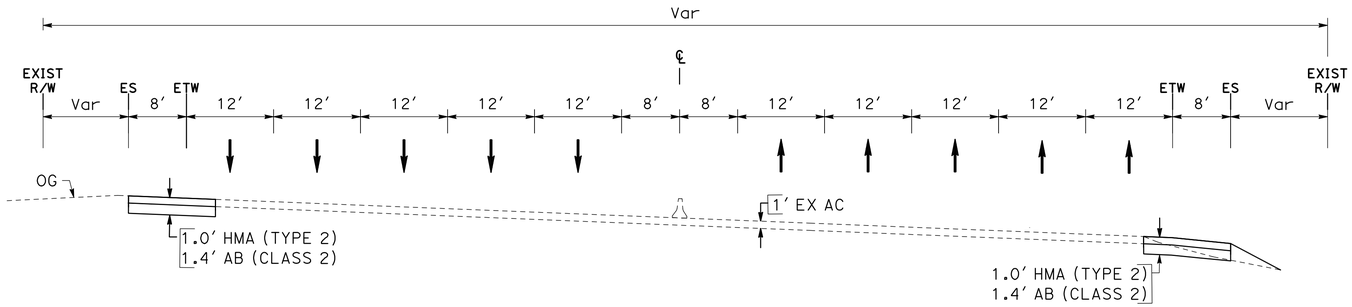
SOUTHBOUND I-5

"I5 SB" Sta 223+50 TO 248+60
"I5 SB" Sta 250+70 TO 265+30
"I5 SB" Sta 265+60 TO 260+70



SOUTHBOUND I-5

"I5 SB" Sta 185+20 TO 186+40
"I5 SB" Sta 190+30 TO 205+40
"I5 SB" Sta 211+80 TO 224+10



NORTHBOUND I-5

"I5 NB" Sta 289+50 TO 316+50

SOUTHBOUND I-5

"I5 SB" Sta 291+60 TO 330+60

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=10′

30% CONCEPTUAL DESIGN

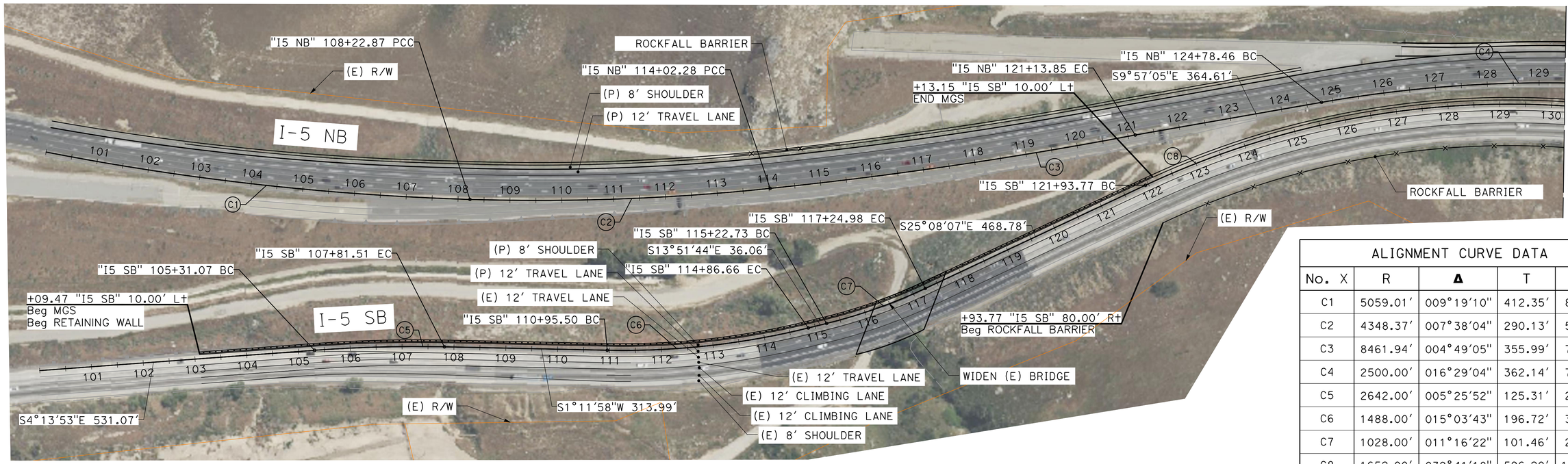
MARK THOMAS

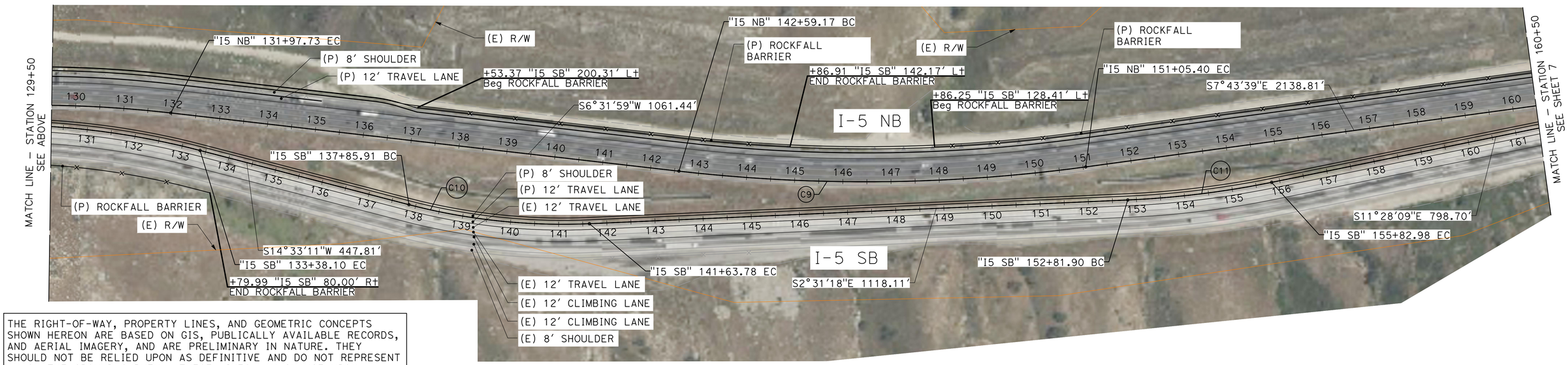
KARGO CCAMS - PROJECT 4

I-5 GRAPEVINE IMPROVEMENTS

4.4

I-5 TRUCK SAFETY PASSING LANES





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C1	5059.01′	009°19′10"	412.35′	822.87′
C2	4348.37′	007°38′04"	290.13′	579.41′
C3	8461.94′	004°49′05"	355.99′	711.57′
C4	2500.00′	016°29′04"	362.14′	719.27′
C5	2642.00′	005°25′52"	125.31′	250.43′
C6	1488.00′	015°03′43"	196.72′	391.16′
C7	1028.00′	011°16′22"	101.46′	202.26′
C8	1652.00′	039°41′18"	596.20′	1144.33′
C9	3400.00′	014°15′37"	425.31′	846.23′
C10	1268.00′	017°04′29"	190.35′	377.88′
C11	1928.00′	008°56′51"	150.85′	301.09′

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DATE: 1/13/26

SCALE: 1"=100'

SHEET 7 OF 10

30% CONCEPTUAL DESIGN

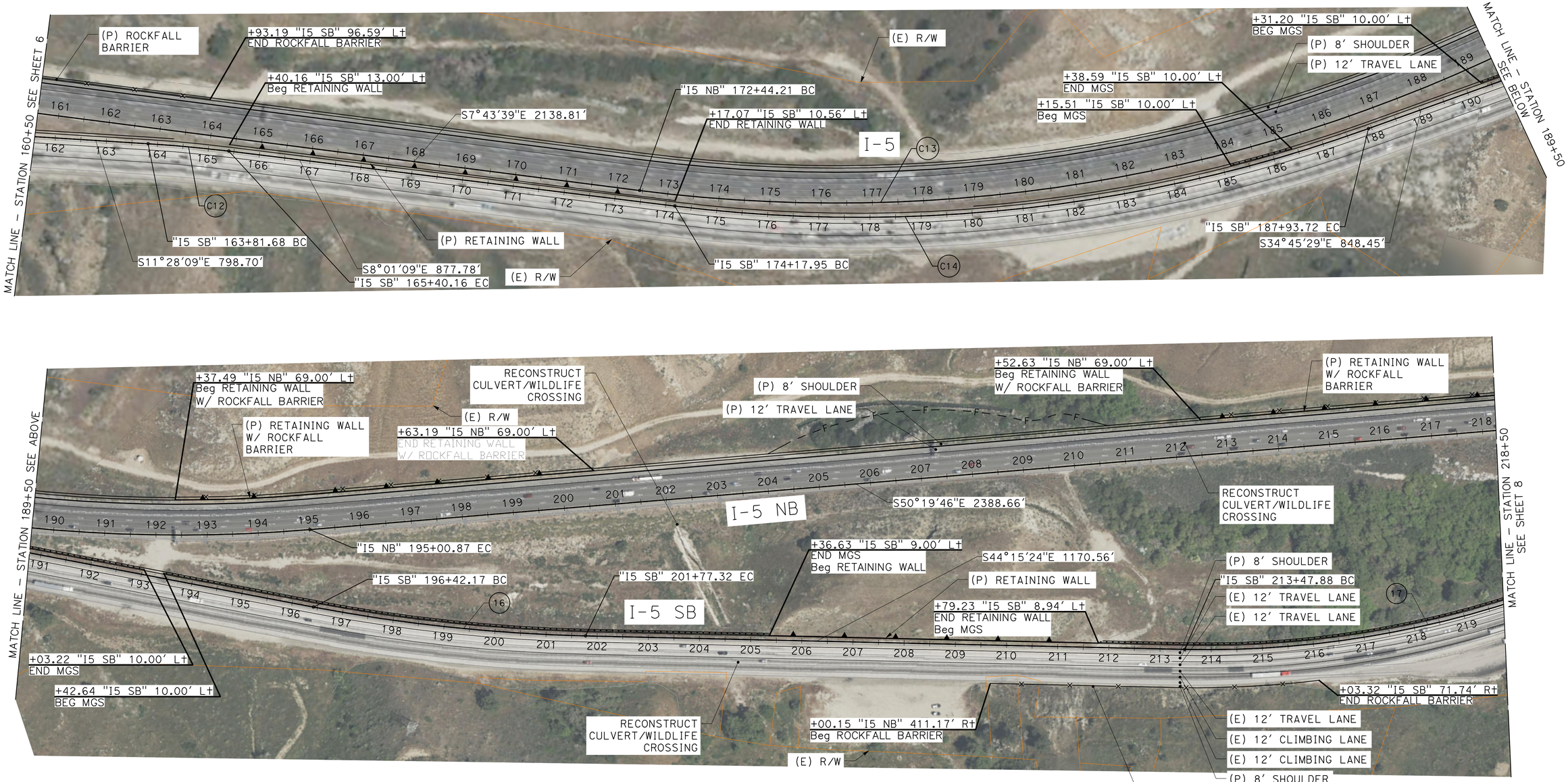
MARK THOMAS

KARGO CCAMS - PROJECT 4

I-5 GRAPEVINE IMPROVEMENTS

4.2

I-5 TRUCK SAFETY PASSING LANES



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
16	3228.00'	009°29'55"	268.19'	535.15'
17	1948.00'	030°12'45"	525.84'	1027.20'
C12	2632.00'	003°27'00"	79.26'	158.48'
C13	3035.00'	042°36'07"	1183.36'	2256.66'
C14	2948.00'	026°44'20"	700.65'	1375.77'

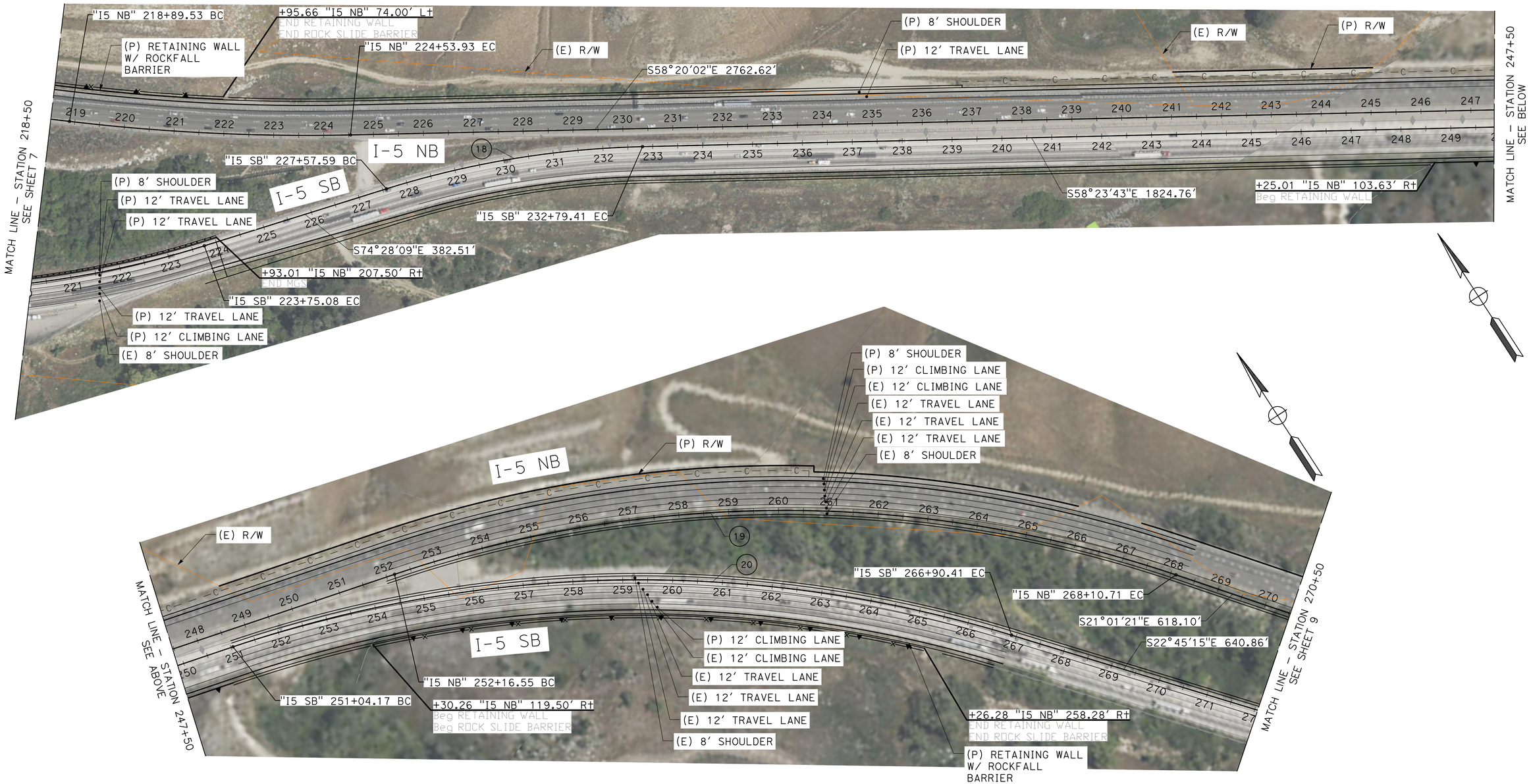
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 8 OF 10

30% CONCEPTUAL DESIGN



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
18	1860.00'	016°04'26"	262.63'	521.81'
19	2448.00'	037°18'41"	826.49'	1594.16'
20	2550.00'	035°38'28"	819.73'	1586.24'

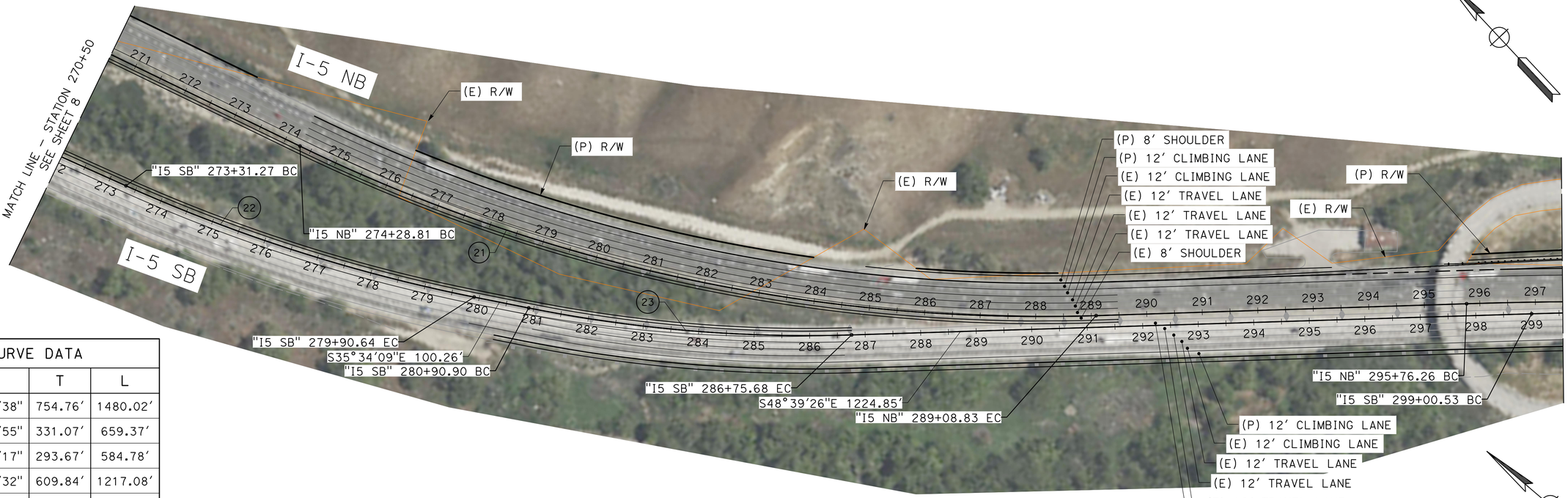
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

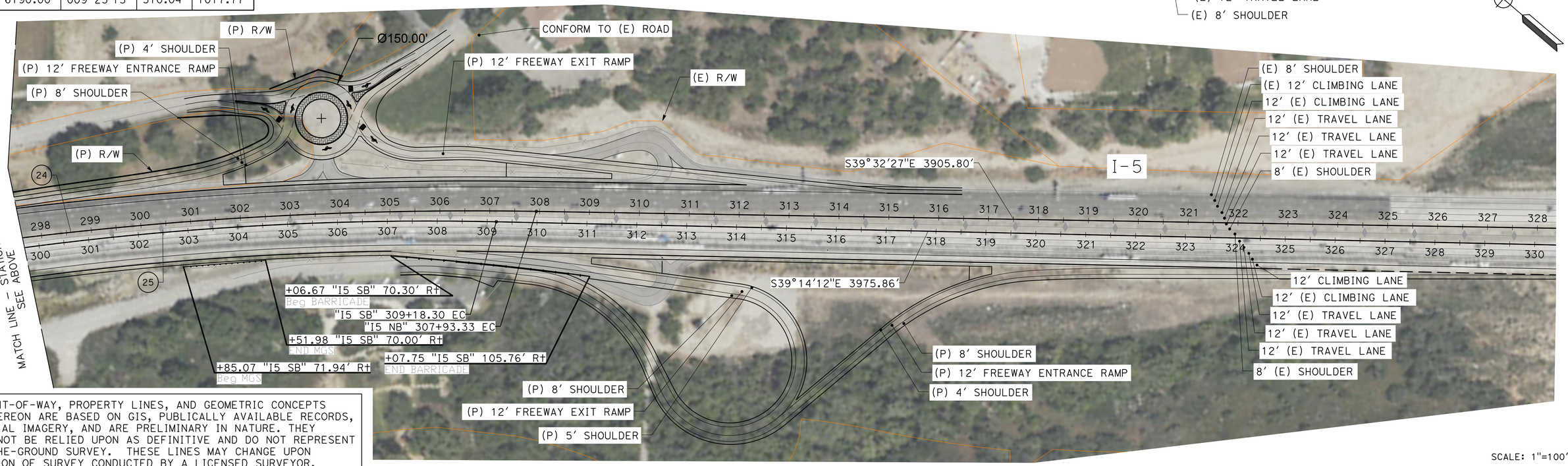
SCALE: 1"=100'

LEGEND:

REMOVE EXISTING PAVEMENT



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
21	3062.00′	027°41′38"	754.76′	1480.02′
22	2948.00′	012°48′55"	331.07′	659.37′
23	2560.00′	013°05′17"	293.67′	584.78′
24	7600.00′	009°10′32"	609.84′	1217.08′
25	6190.00′	009°25′15"	510.04′	1017.77′



THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 4

I-5 GRAPEVINE IMPROVEMENTS

4.8

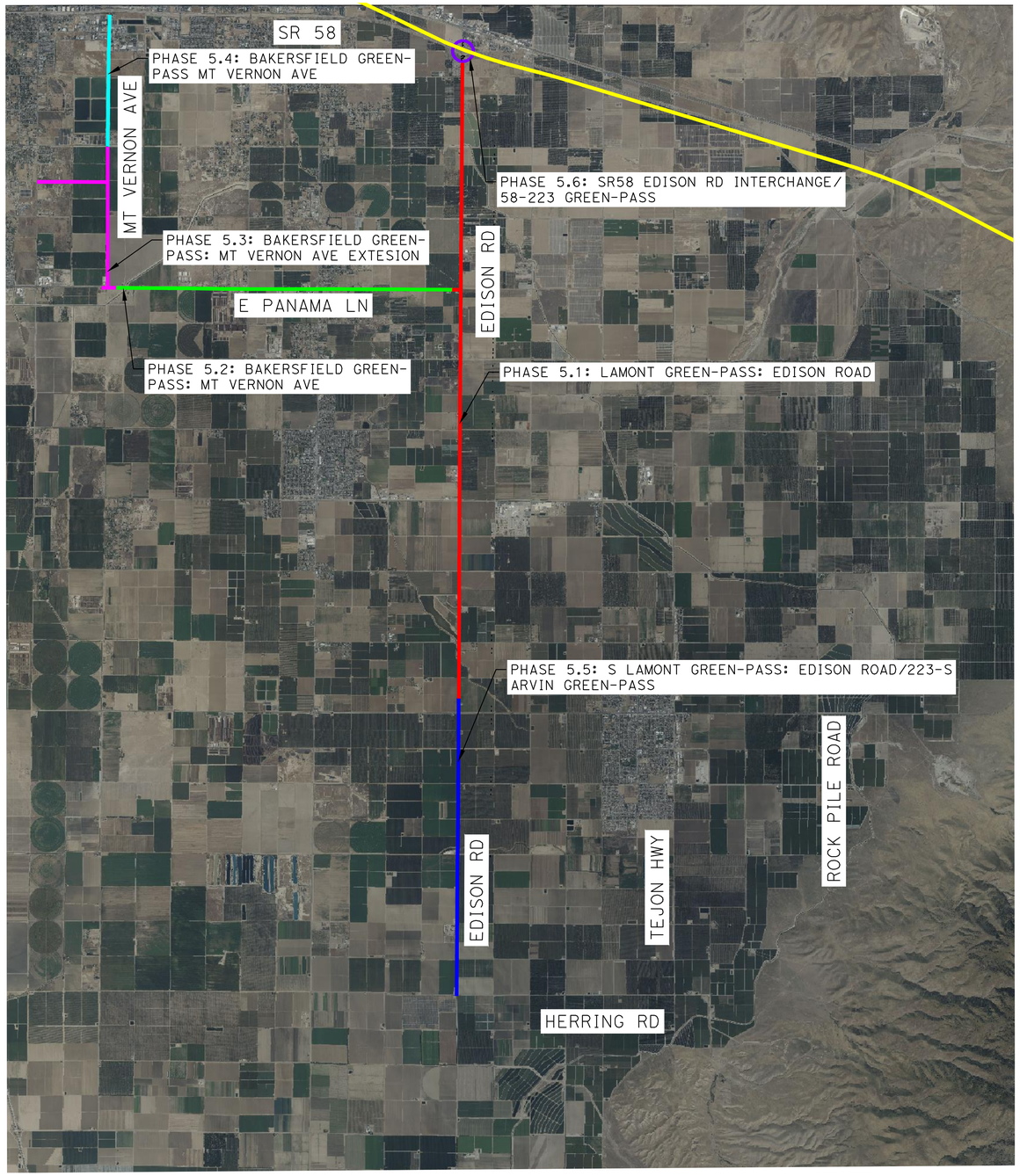
I-5 TRUCK SAFETY PASSING LANES

LEGEND:

- PHASE 5.1 LAMONT GREEN-PASS: EDISON ROAD
- PHASE 5.2 PANAMA LN GREEN-PASS/MT VERNON-EDISON ROAD
- PHASE 5.3 BAKERSFIELD GREEN-PASS: MT VERNON AVE EXTENSION
- PHASE 5.4 BAKERSFIELD GREEN-PASS: MT VERNON AVE
- PHASE 5.5 S LAMONT GREEN-PASS: EDISON ROAD/223-S ARVIN GREEN-PASS
- PHASE 5.6 SR PHASE 58 EDISON RD INTERCHANGE/PHASE 58-223 GREEN-PASS
- ADJACENT PROJECT
- HIGH SPEED RAIL
- WATER QUALITY WELL
- OIL WELL

PROJECT PHASING TABLE

PHASE 5.1: LAMONT GREEN-PASS: EDISON ROAD
PHASE 5.2: PANAMA LN GREEN-PASS/MT VERNON-EDISON ROAD
PHASE 5.3: BAKERSFIELD GREEN-PASS: MT VERNON AVE EXTENSION
PHASE 5.4: BAKERSFIELD GREEN-PASS: MT VERNON AVE
PHASE 5.5: S LAMONT GREEN-PASS: EDISON ROAD/223-S ARVIN GREEN-PASS
PHASE 5.6: SR58 EDISON RD INTERCHANGE/58-223 GREEN-PASS



THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=5000'

MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

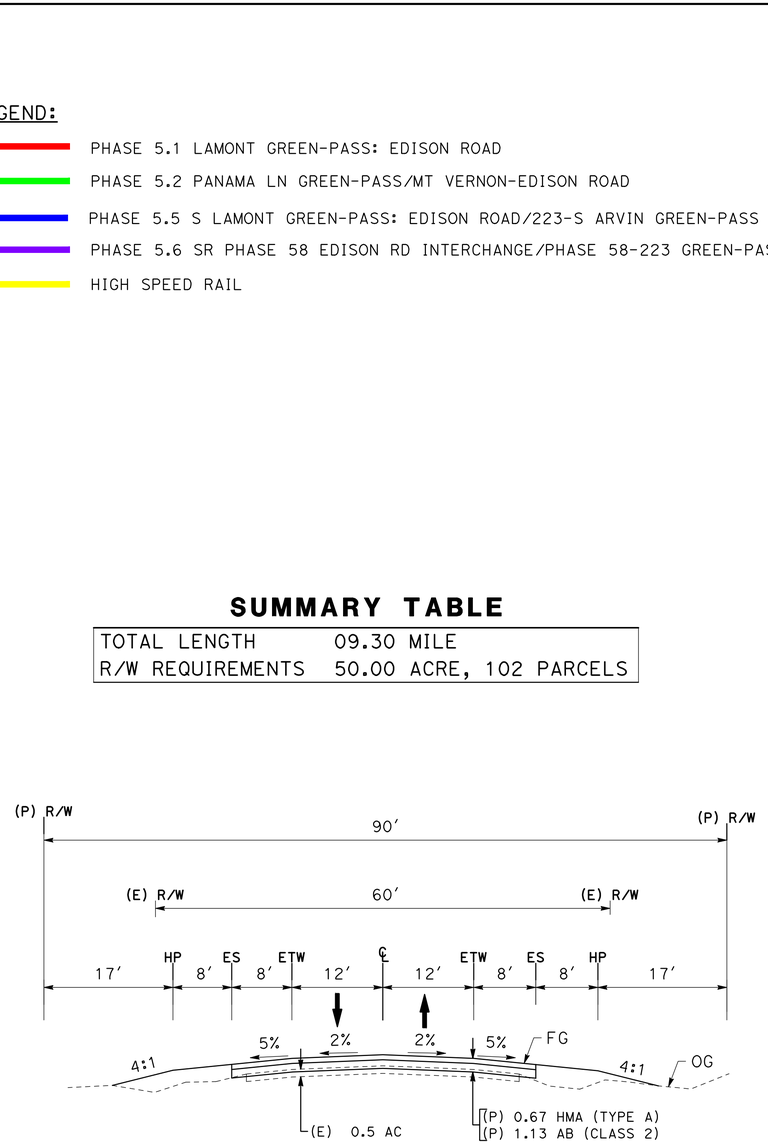
30% CONCEPTUAL DESIGN

LEGEND:

- PHASE 5.1 LAMONT GREEN-PASS: EDISON ROAD
- PHASE 5.2 PANAMA LN GREEN-PASS/MT VERNON-EDISON ROAD
- PHASE 5.5 S LAMONT GREEN-PASS: EDISON ROAD/223-S ARVIN GREEN-PASS
- PHASE 5.6 SR PHASE 58 EDISON RD INTERCHANGE/PHASE 58-223 GREEN-PASS
- HIGH SPEED RAIL

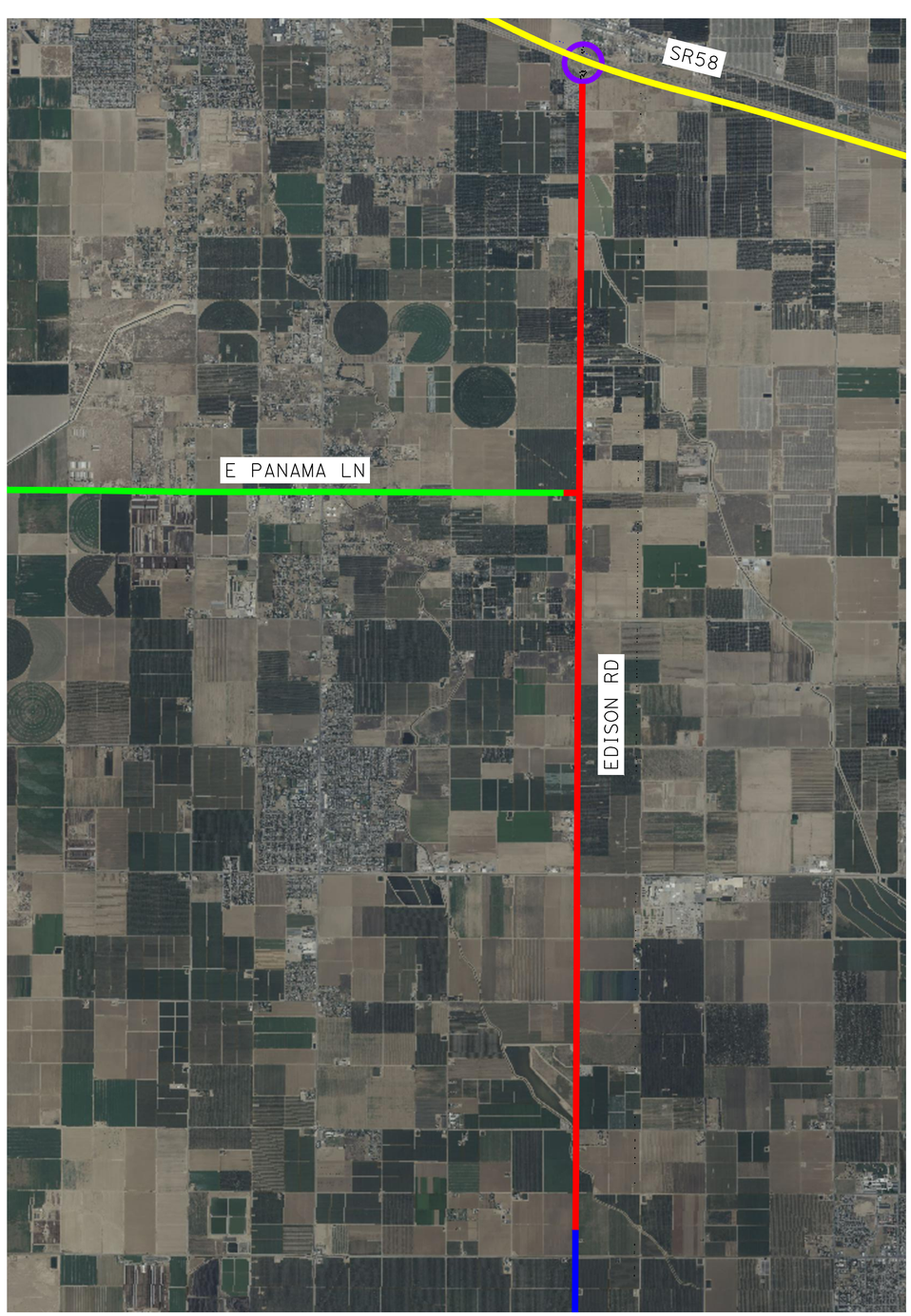
SUMMARY TABLE

TOTAL LENGTH	09.30 MILE
R/W REQUIREMENTS	50.00 ACRE, 102 PARCELS



EDISON RD

STA 223+50 TO STA 704+50



5.1 LAMONT GREEN-PASS:EDISON ROAD

SCALE: 1"=3000'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

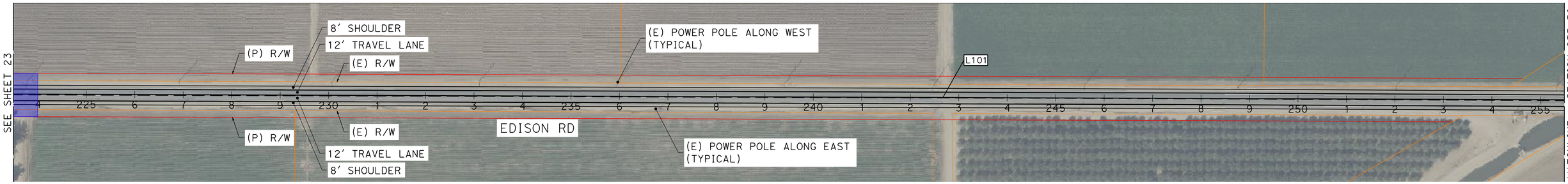
DATE: 1/13/26

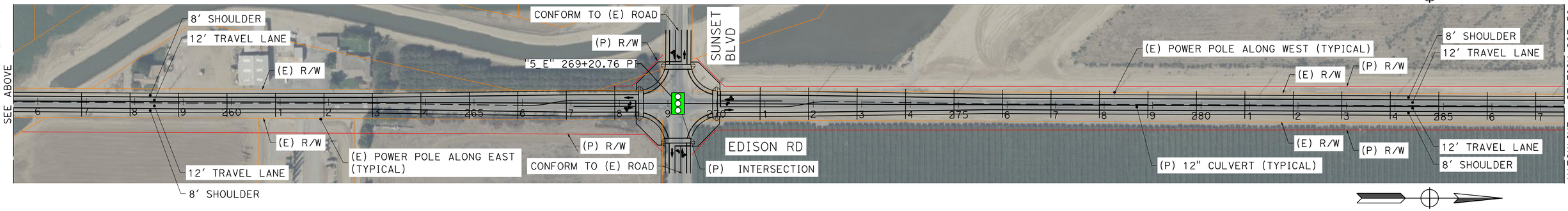
30% CONCEPTUAL DESIGN

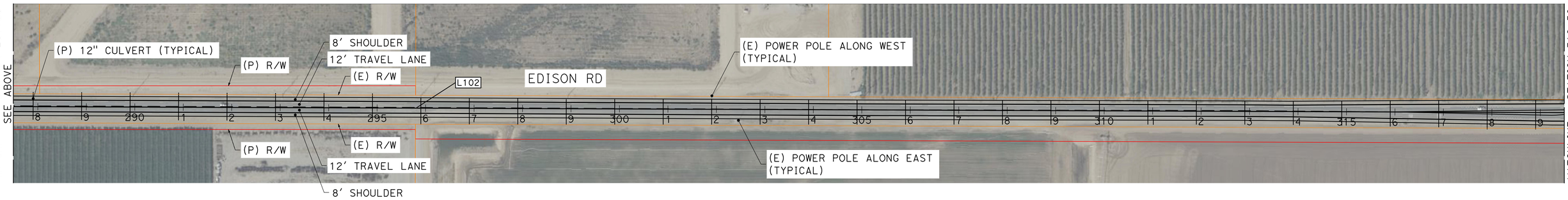
LEGEND:

PHASE 5.5 S LAMONT GREEN-PASS: EDISON ROAD/223-S ARVIN GREEN-PASS

(P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)







ALIGNMENT LINE TABLE		
No. X	L	D
L101	5306.90'	N0°12'45"E
L102	5318.81'	N0°13'27"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

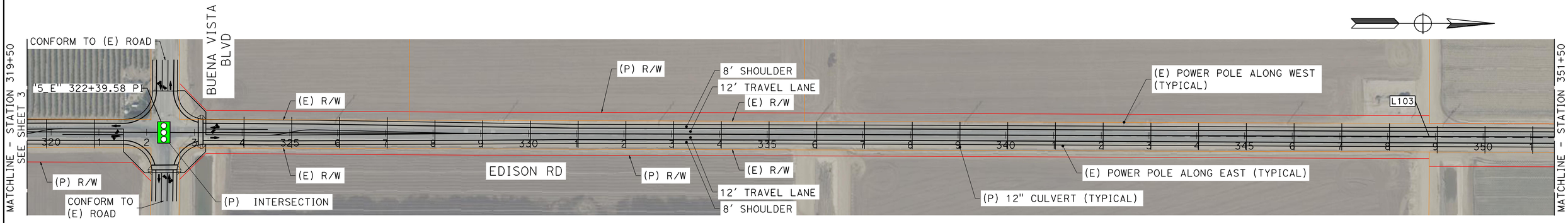
5.1

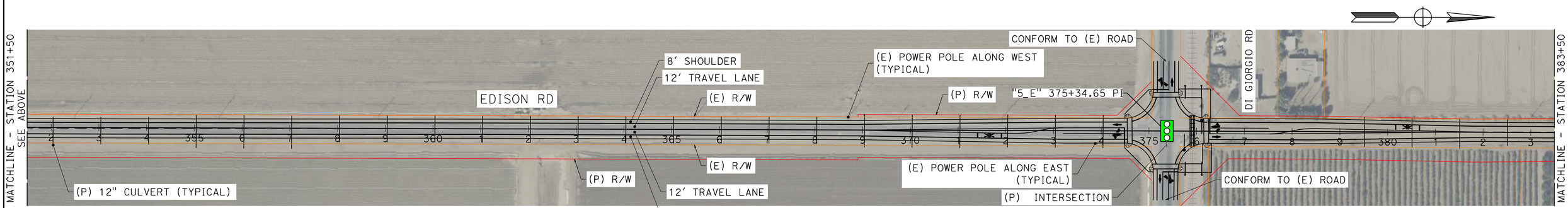
LAMONT GREEN-PASS: EDISON ROAD

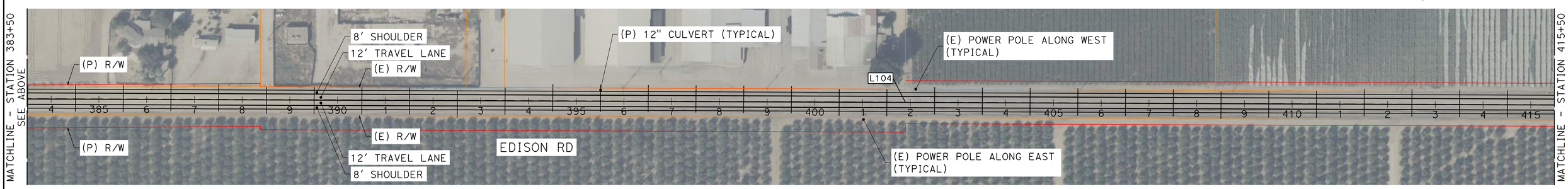
LEGEND:

SIGNALIZED INTERSECTION MODIFICATION

(P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)







ALIGNMENT LINE TABLE		
No. X	L	D
L103	5295.07'	N0°11'13"E
L104	5310.42'	N0°13'38"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 5

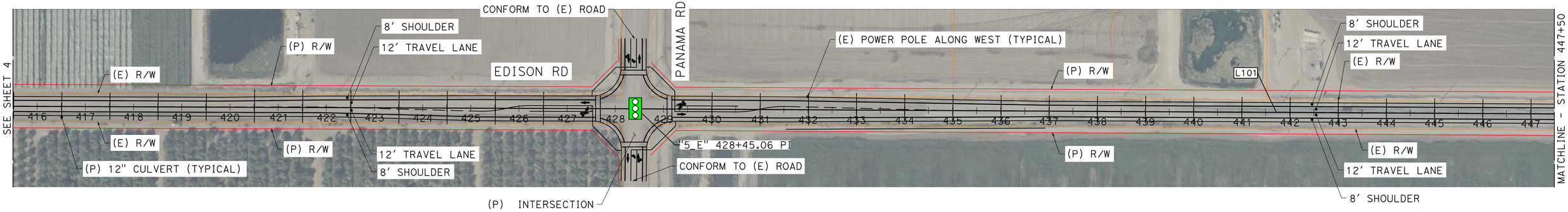
LAMONT/SE BAKERSFIELD GREENPASS NETWORK

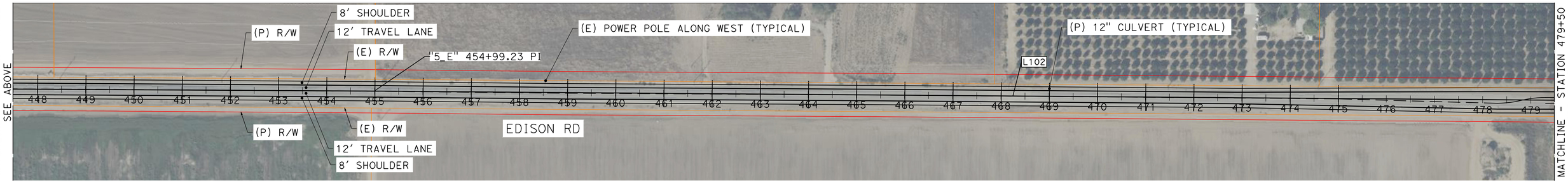
5.1

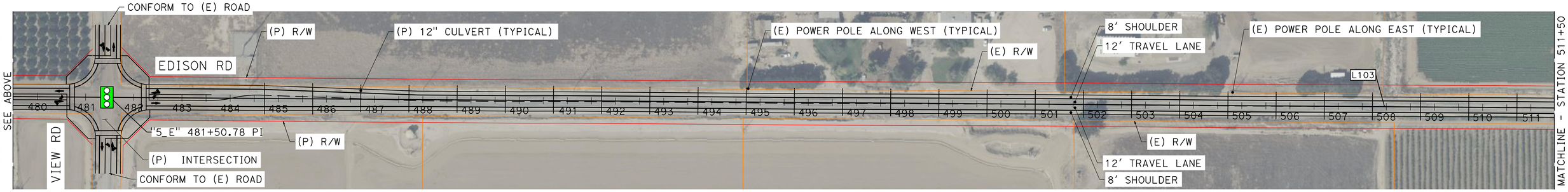
LAMONT GREEN-PASS: EDISON ROAD

LEGEND:

——— (P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)







ALIGNMENT LINE TABLE		
No. X	L	D
L101	2654.16'	N0°19'14"E
L102	2651.55'	N0°26'34"E
L103	5290.89'	N0°25'17"E

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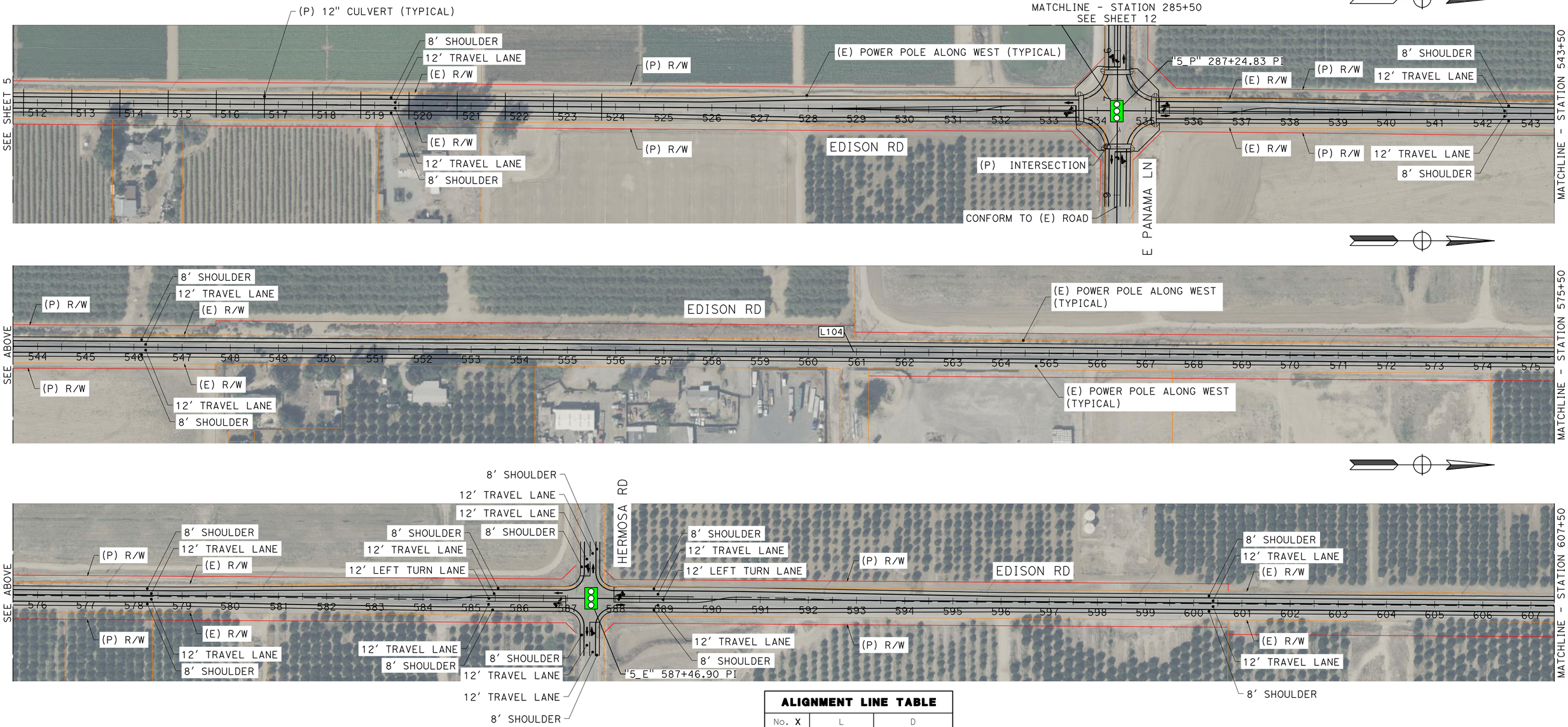
DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

LEGEND:

——— (P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)



ALIGNMENT LINE TABLE		
No. X	L	D
L104	5305.22'	N0°23'01"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 6 OF 25

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 5

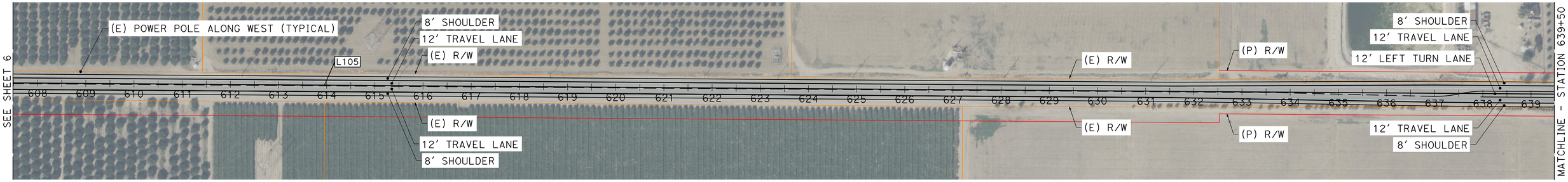
LAMONT/SE BAKERSFIELD GREENPASS NETWORK

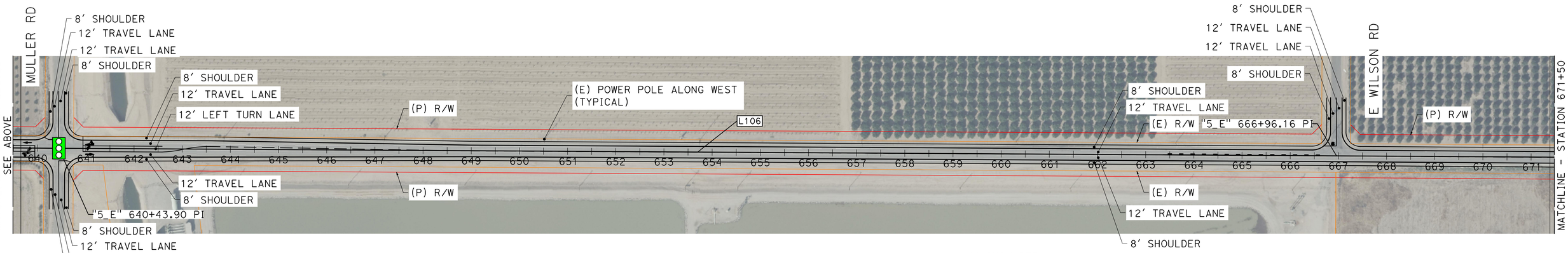
5.1

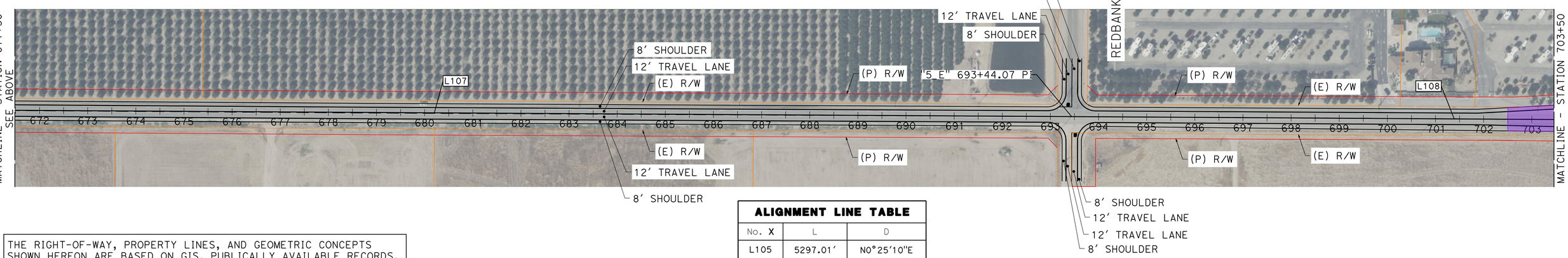
LAMONT GREEN-PASS: EDISON ROAD

LEGEND:

PHASE 5.6 SR PHASE 58 EDISON RD INTERCHANGE/PHASE 58-223 GREEN-PASS







ALIGNMENT LINE TABLE		
No. X	L	D
L105	5297.01'	N0°25'10"E
L106	2652.26'	N0°20'26"E
L107	2647.91'	N0°20'28"E

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DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 5

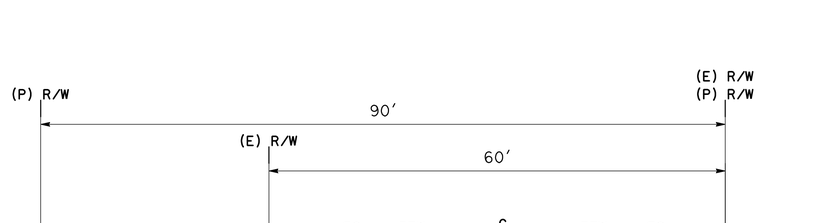
LAMONT/SE BAKERSFIELD GREENPASS NETWORK

5.1

LAMONT GREEN-PASS: EDISON ROAD

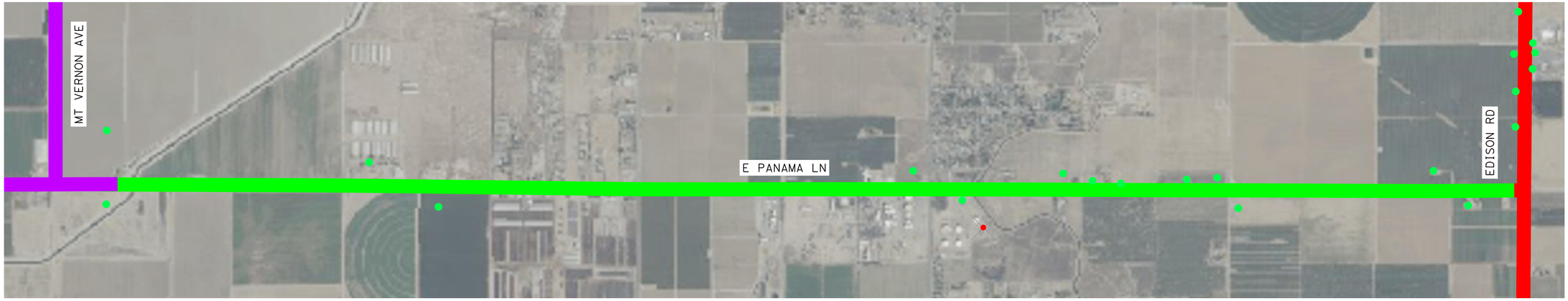
LEGEND:

- PHASE 5.1 LAMONT GREEN-PASS: EDISON ROAD
- PHASE 5.2 PANAMA LN GREEN-PASS/MT VERNON-EDISON ROAD
- PHASE 5.3 BAKERSFIELD GREEN-PASS: MT VERNON AVE EXTENSION
- WATER QUALITY WELL
- OIL WELL



SUMMARY TABLE

TOTAL LENGTH	04.75 MILE
R/W REQUIREMENTS	16.25 ACRE, 48 PARCELS



PHASE 5.2 PANAMA LN GREEN-PASS/MT VERNON-EDISON ROAD

SCALE: 1"=1000'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

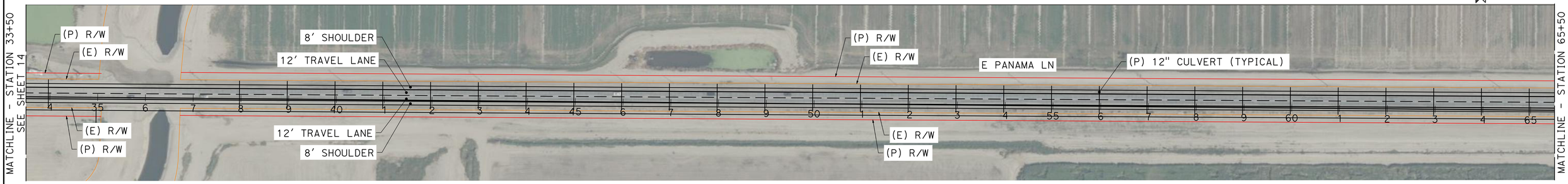
DATE: 1/13/26

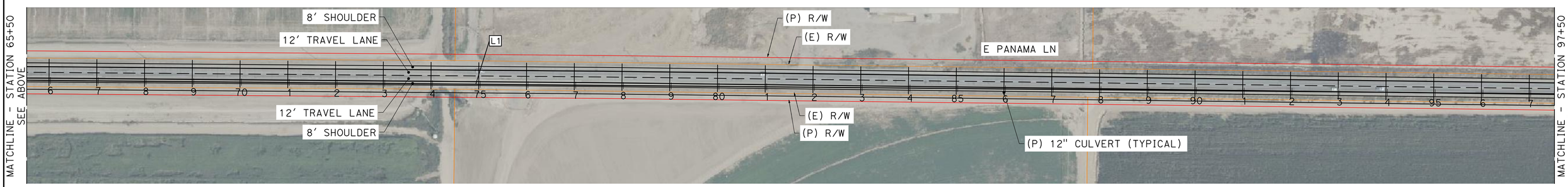
30% CONCEPTUAL DESIGN

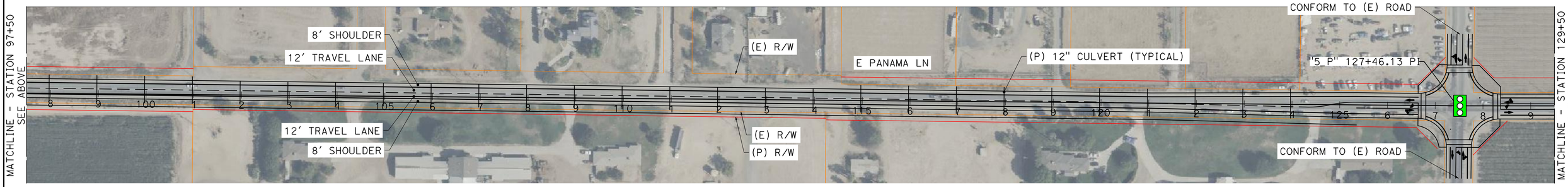
LEGEND:

SIGNALIZED INTERSECTION MODIFICATION

(P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)







ALIGNMENT LINE TABLE		
No. X	L	D
L1	10511.08'	S89°29'35"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 9 OF 25

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 5

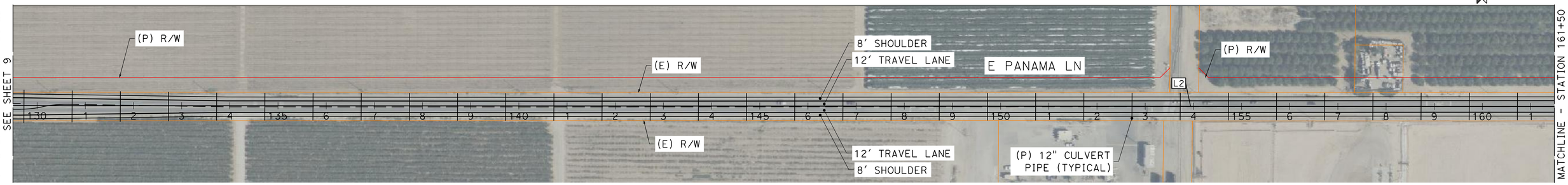
LAMONT/SE BAKERSFIELD GREENPASS NETWORK

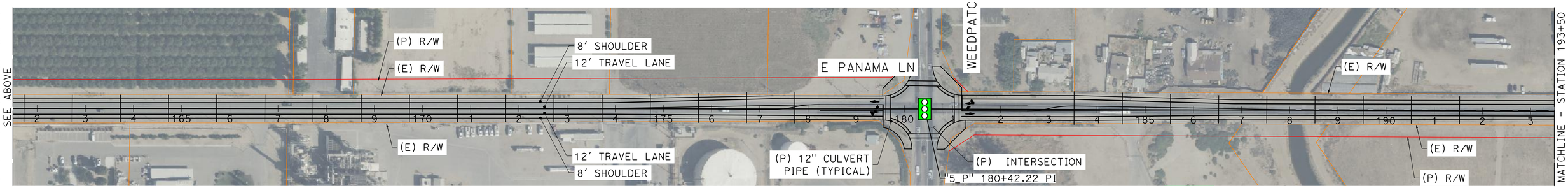
5.2

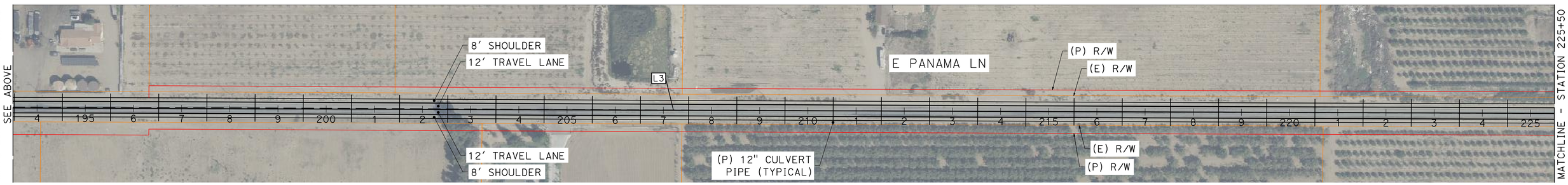
PANAMA LN GREEN-PASS/MT VERNON-EDISON RD

LEGEND:

——— (P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)







ALIGNMENT LINE TABLE		
No. X	L	D
L2	5296.09'	S89°58'11"E
L3	5357.35'	S89°47'56"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 10 OF 25

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

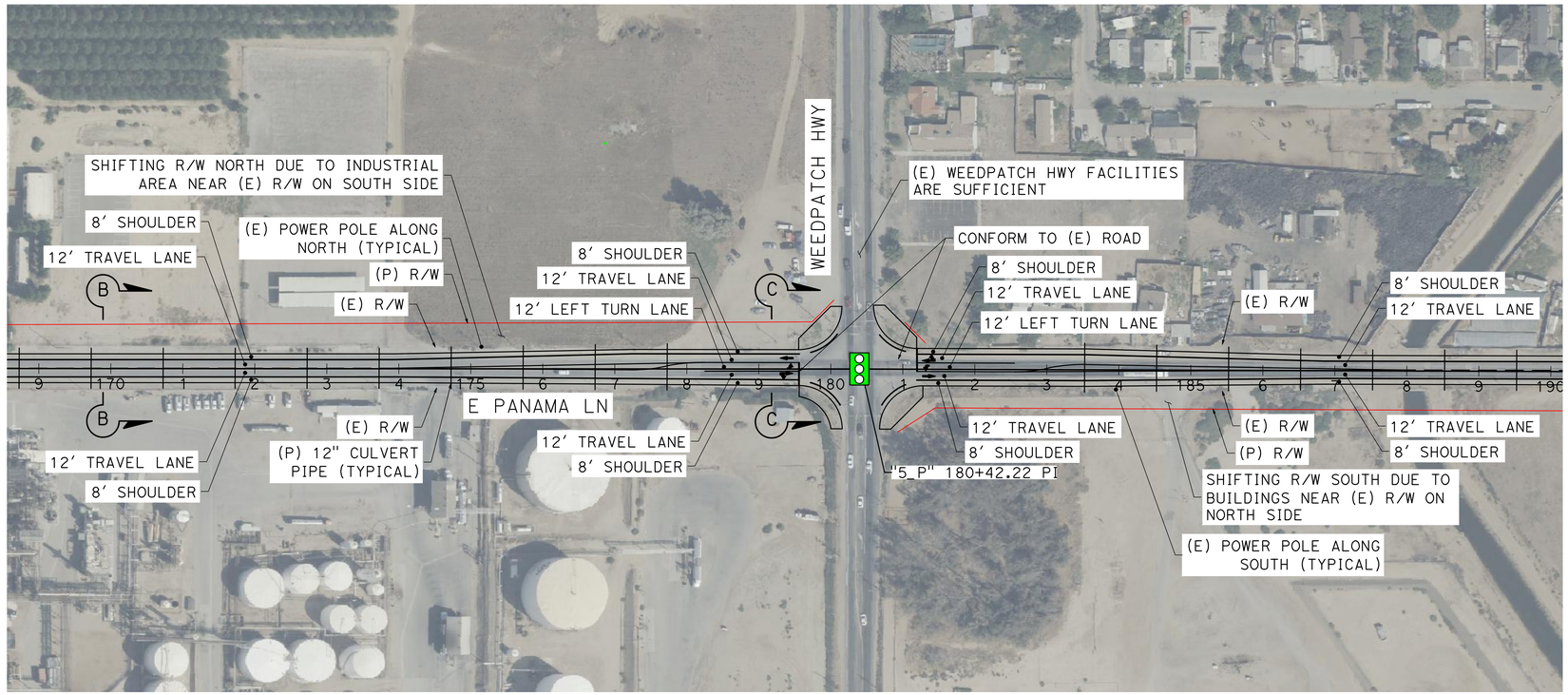
5.2

PANAMA LN GREEN-PASS/MT VERNON-EDISON RD

LEGEND:

SIGNALIZED INTERSECTION MODIFICATION

(P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)



E PANAMA LN AND WEEDPATCH HYW INTERSECTION IMPROVEMENTS

SCALE: 1"=100'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

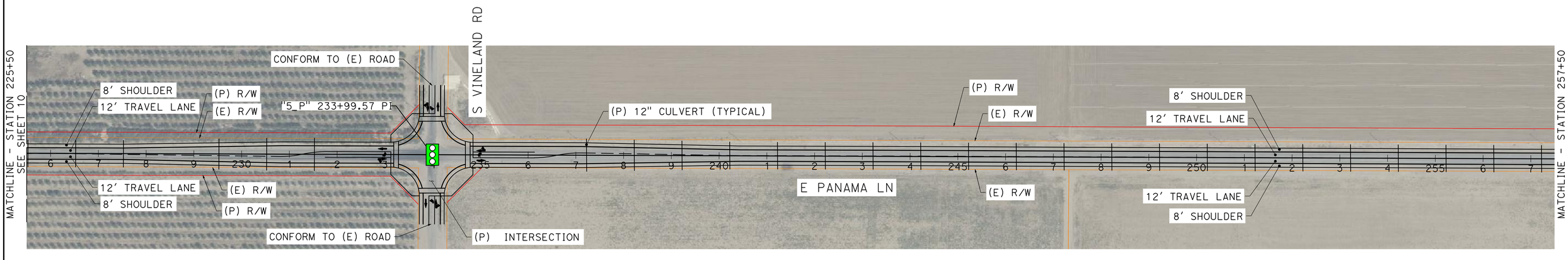
30% CONCEPTUAL DESIGN

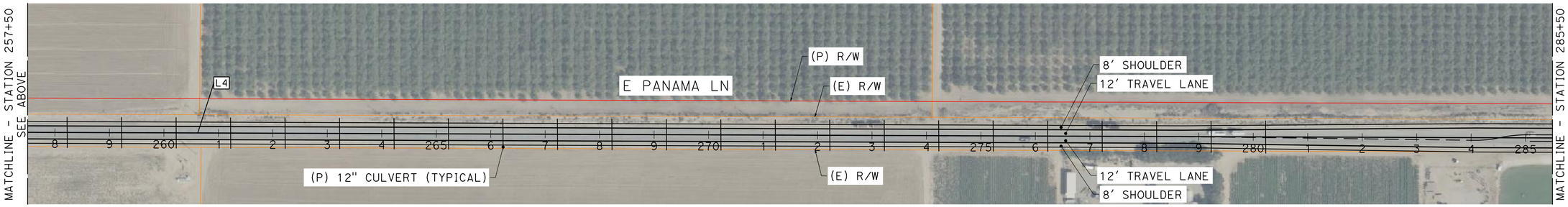
SCALE: 1"=100'

LEGEND:

PHASE 5.1 LAMONT GREEN-PASS: EDISON ROAD

(P) 12" CULVERT PIPE (EVERY 100' WITHIN 500 YEAR FLOOD ZONE)





ALIGNMENT LINE TABLE		
No. X	L	D
L4	5325.26'	S89°47'18"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

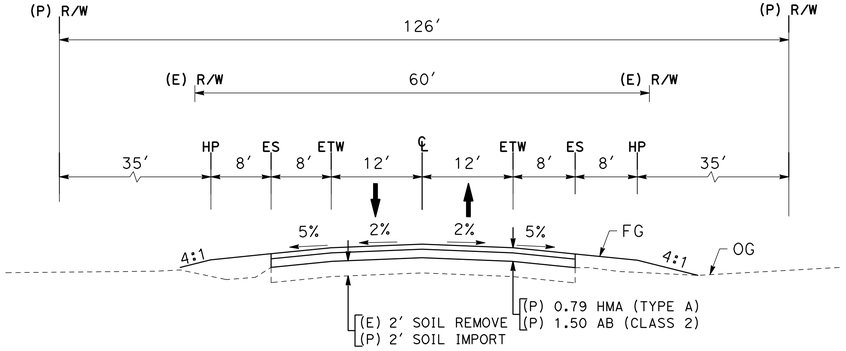
30% CONCEPTUAL DESIGN

LEGEND:

- PHASE 5.2 PANAMA LN GREEN-PASS/MT VERNON-EDISON ROAD
- PHASE 5.3 BAKERSFIELD GREEN-PASS: MT VERNON AVE EXTENSION
- PHASE 5.4 BAKERSFIELD GREEN-PASS: MT VERNON AVE
- WATER QUALITY WELL
- OIL WELL

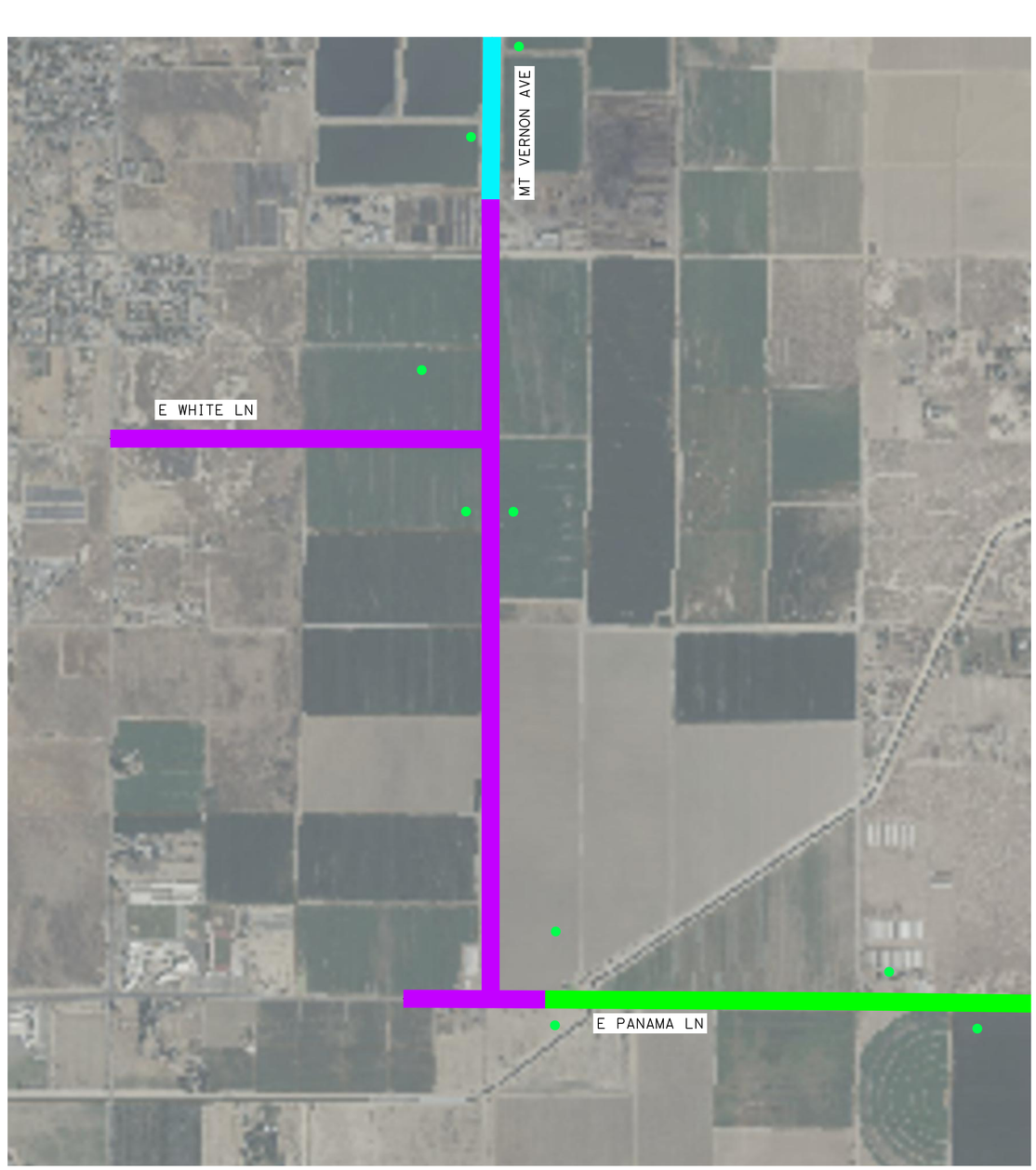
SUMMARY TABLE

TOTAL LENGTH	03.50 MILE
R/W REQUIREMENTS	27.85 ACRE, 9 PARCELS



MT VERNON

STA 10+00 TO STA 123+50



PHASE 5.3 BAKERSFIELD GREEN-PASS: MT VERNON AVE EXTENSION

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=1000'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

5.3

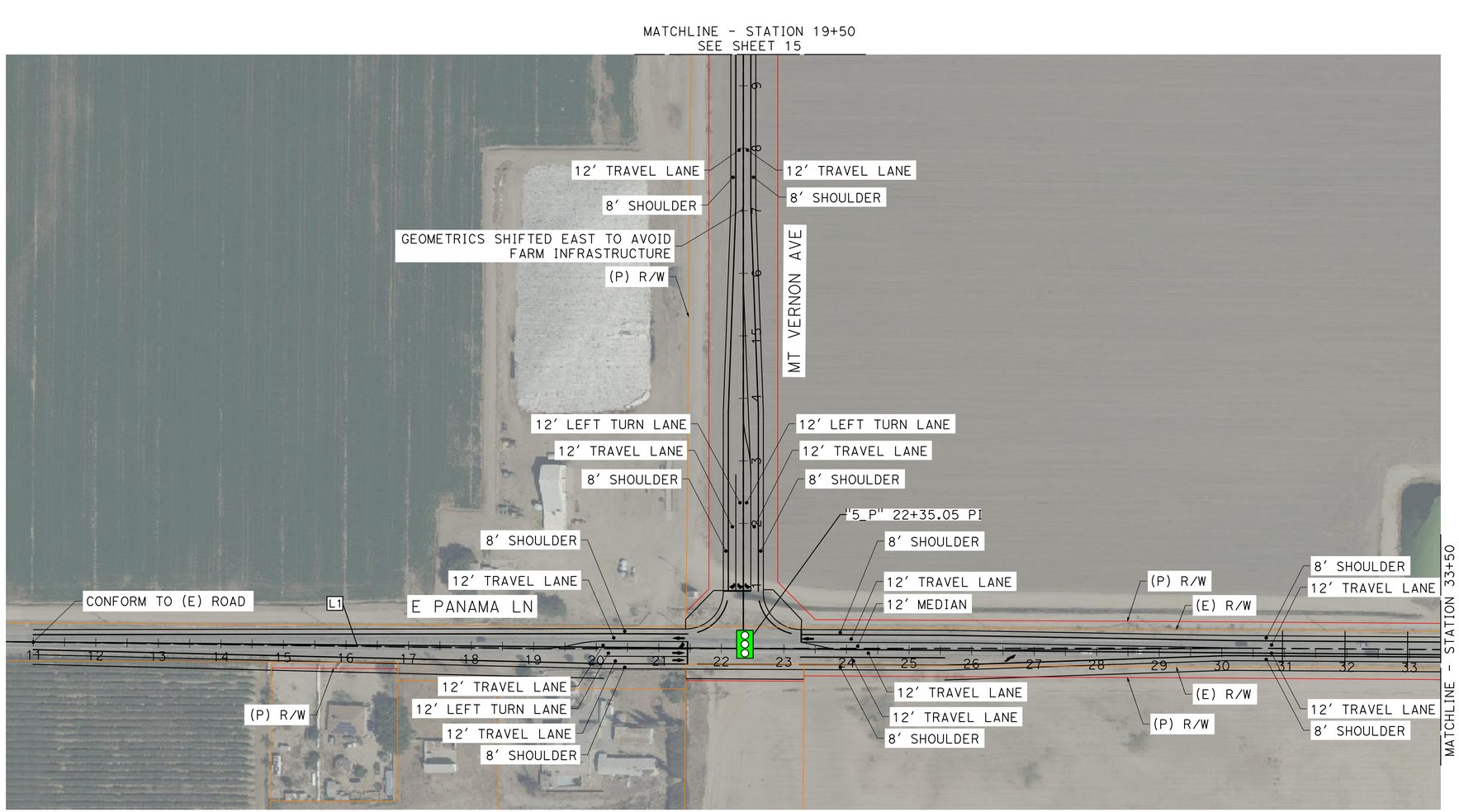
BAKERSFIELD GREEN-PASS: MT VERNONAVE EXTENSION

LEGEND:

PHASE 5.2 PANAMA LN GREEN-PASS/MT VERNON-EDISON RD

(P) SIGNALIZED INTERSECTION

(P) 12" CULVERT PIPE



MT VERNON AND E PANAMA LN T-INTERSECTION IMPLEMENTATION

ALIGNMENT LINE TABLE		
No. X	L	D
L1	1235.05'	S89°27'58"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

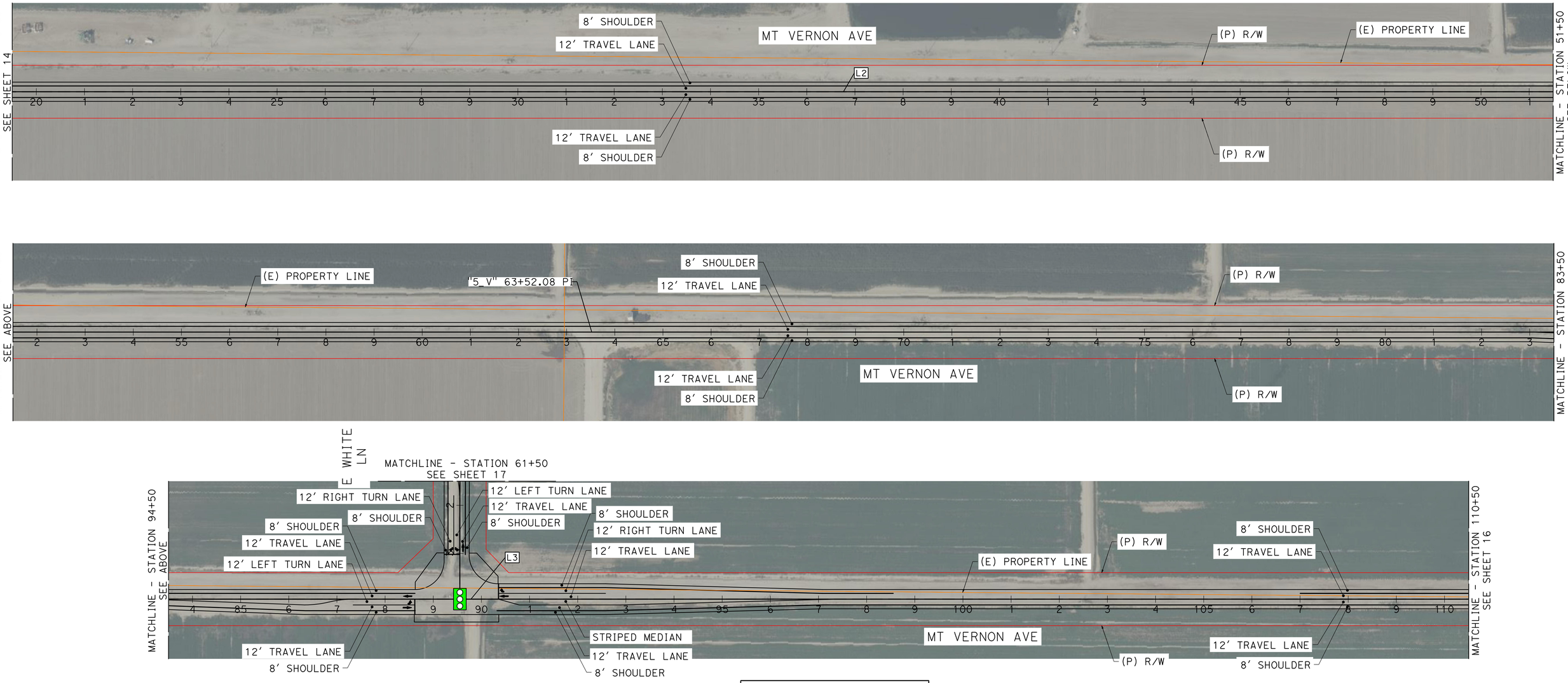
MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

5.3

BAKERSFIELD GREEN-PASS: MT VERNONAVE EXTENSION



ALIGNMENT LINE TABLE		
No. X	L	D
L2	5352.08'	N0°00'00"E
L3	5252.35'	N0°00'00"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SHEET 15 OF 25

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

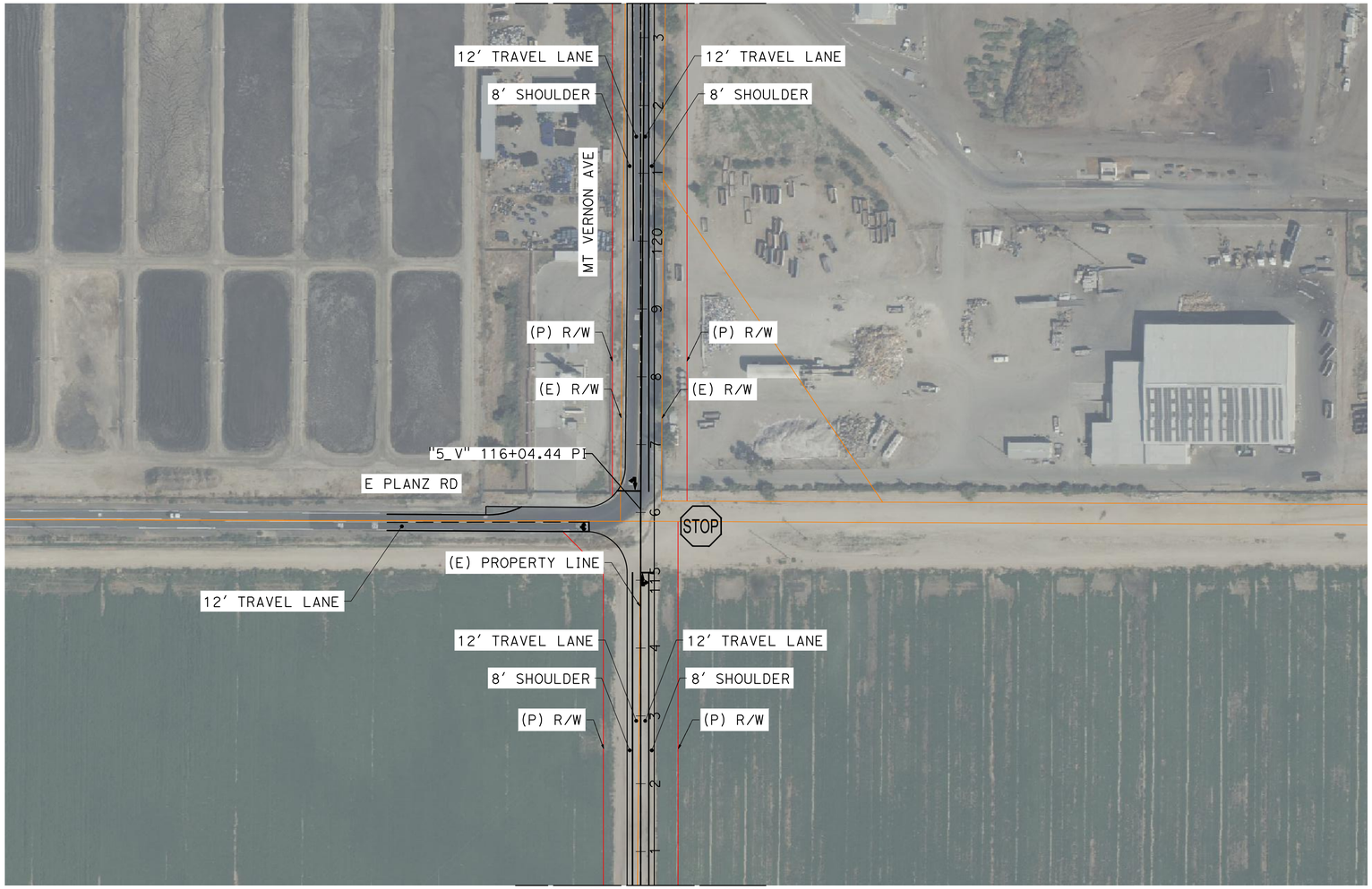
5.3

BAKERSFIELD GREEN-PASS: MT VERNONAVE EXTENSION

LEGEND:

STOP (P) STOP SIGN

MATCHLINE - STATION 123+50
SEE SHEET 19

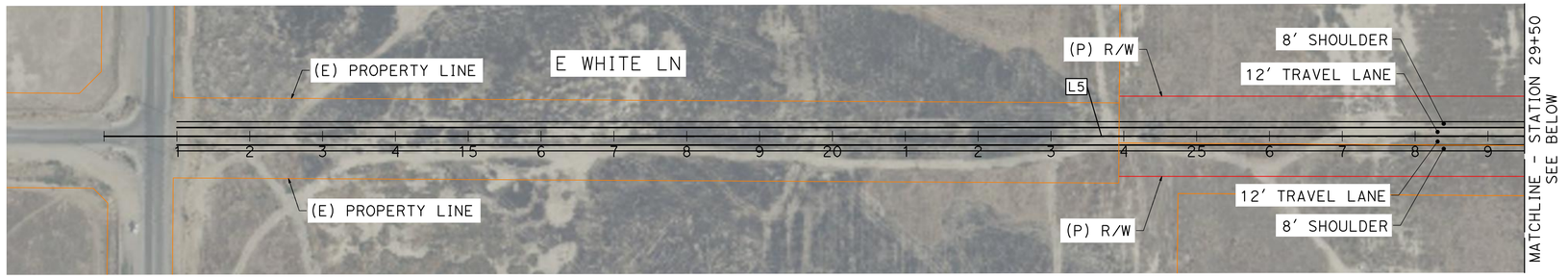


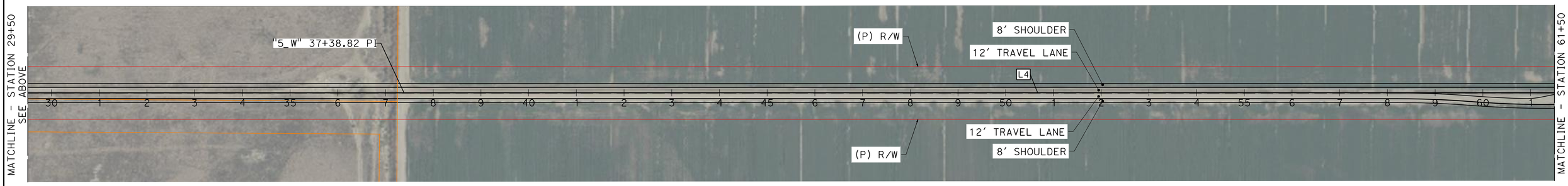
MATCHLINE - STATION 110+50
SEE SHEET 15

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'





ALIGNMENT LINE TABLE		
No. X	L	D
L4	2656.14'	S89°57'00"E
L5	2738.82'	S89°57'00"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

LEGEND:

PHASE 5.3 BAKERSFIELD GREEN-PASS: MT VERNON AVE EXTENSION

PHASE 5.4 BAKERSFIELD GREEN-PASS: MT VERNON AVE

WATER QUALITY WELL

OIL WELL

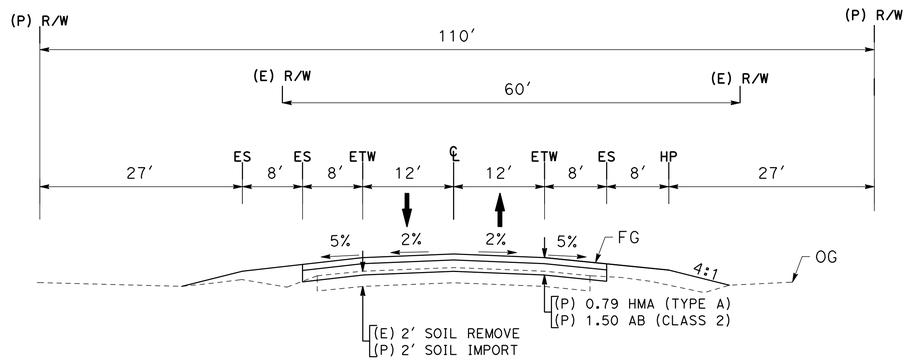
SUMMARY TABLE

TOTAL LENGTH	01.30 MILE
ROW REQUIREMENTS	05.80 ACRE, 5 PARCELS



PHASE 5.4: BAKERSFIELD GREEN-PASS: MT VERNON AVE

SCALE: 1"=500'



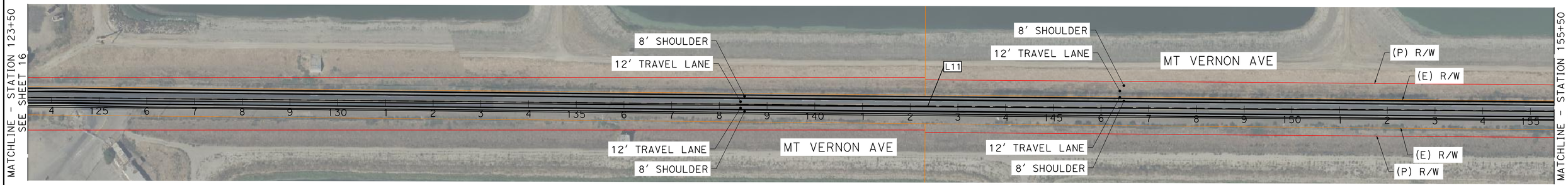
MT VERNON AVE

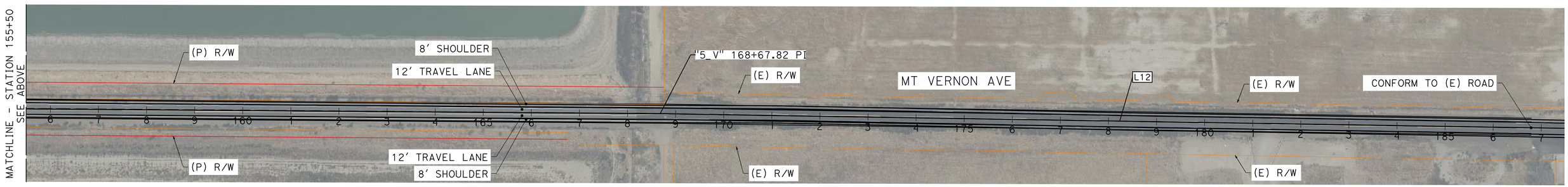
STA 123+50 TO STA 187+00

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN





30% CONCEPTUAL DESIGN

ALIGNMENT LINE TABLE		
No. X	L	D
L11	5263.38'	N0°25'35"E
L12	1911.14'	N0°56'01"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

SUMMARY TABLE

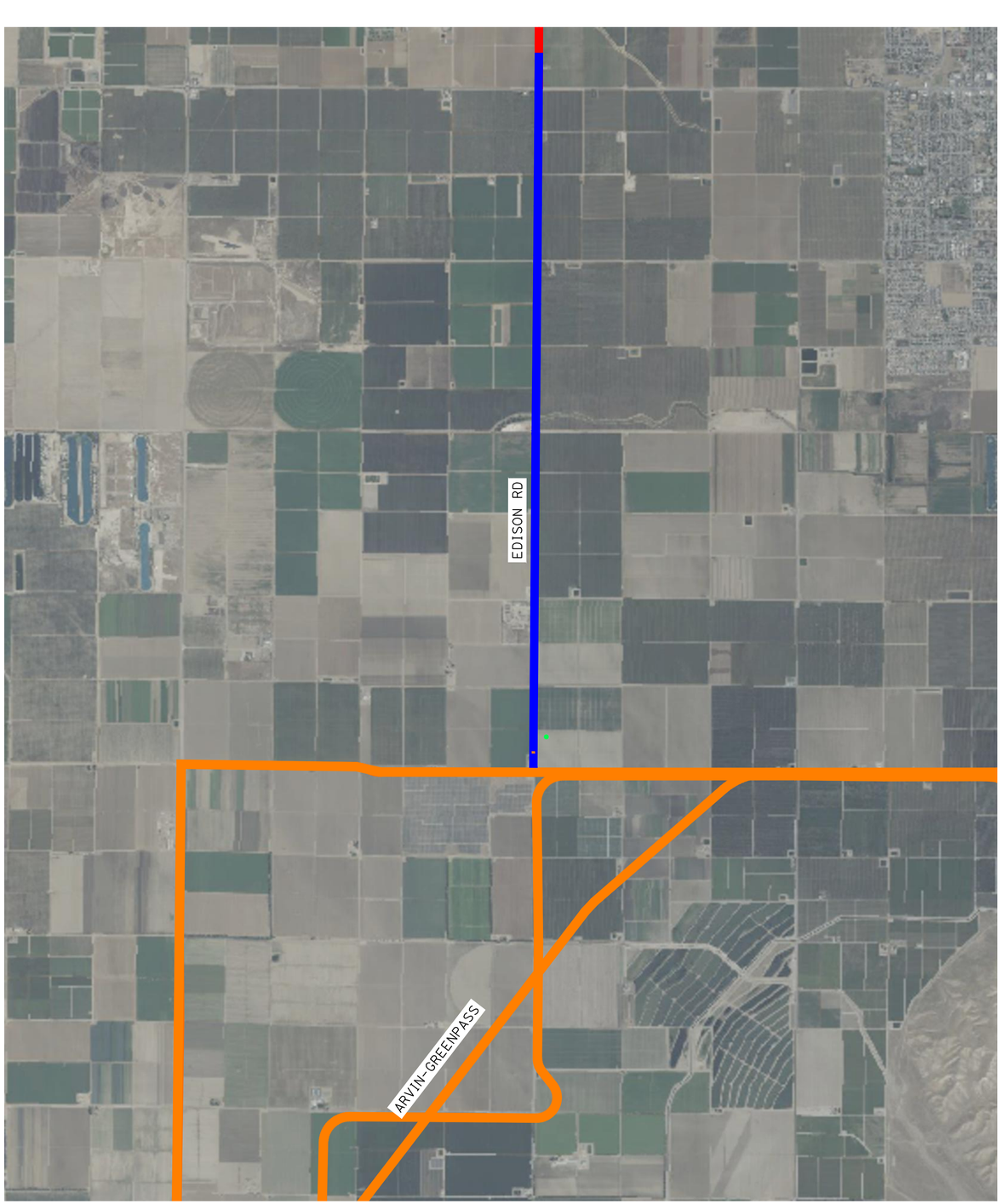
TOTAL LENGTH	06.00 MILE
R/W REQUIREMENTS	31.75 ACRE, 30 PARCELS

LEGEND:

- PHASE 5.1 LAMONT GREEN-PASS: EDISON ROAD
- PHASE 5.5 S LAMONT GREEN-PASS: EDISON ROAD/223-S ARVIN GREEN-PASS
- ADJACENT PROJECT

EDISON RD

STA 10+00 TO STA 223+50



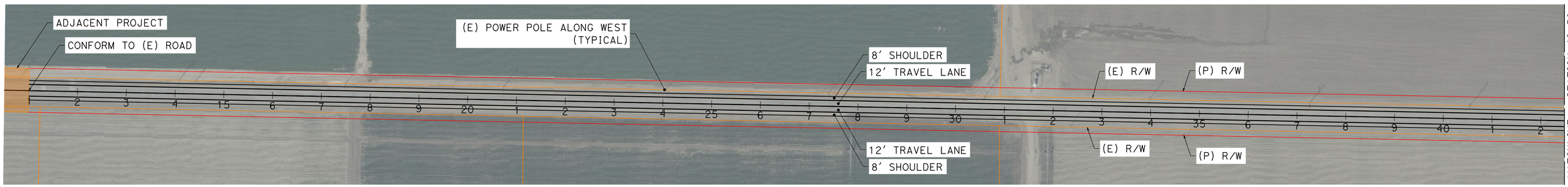
5.5 S LAMONT GREEN-PASS: EDISON ROAD/223-S ARVIN GREEN-PASS

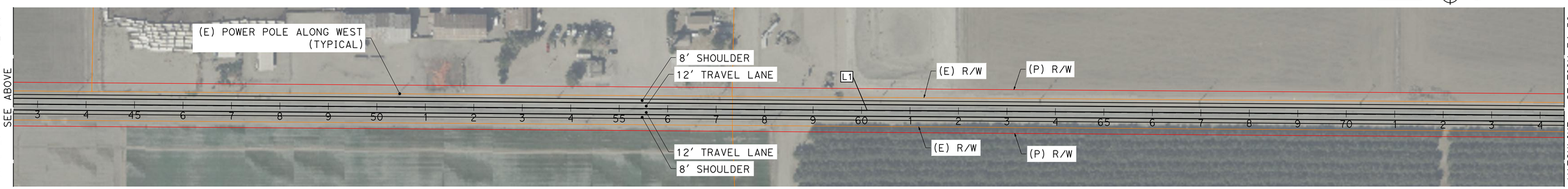
SCALE: 1"=2000'

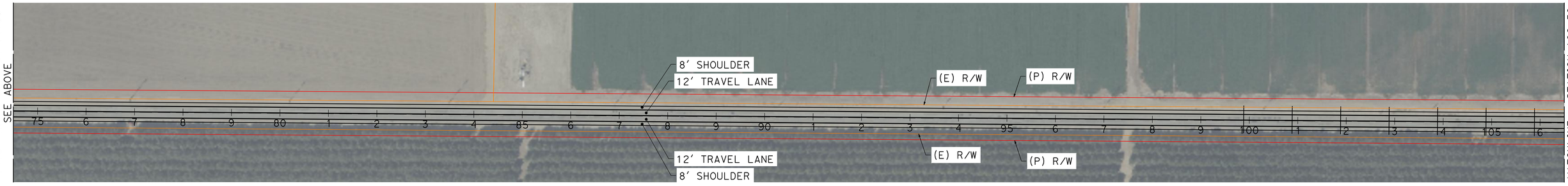
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN







THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

ALIGNMENT LINE TABLE

No. X	L	D
L1	10023.18'	N0°25'17"E

SCALE: 1"=100'

SHEET 21 OF 25

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

5.5

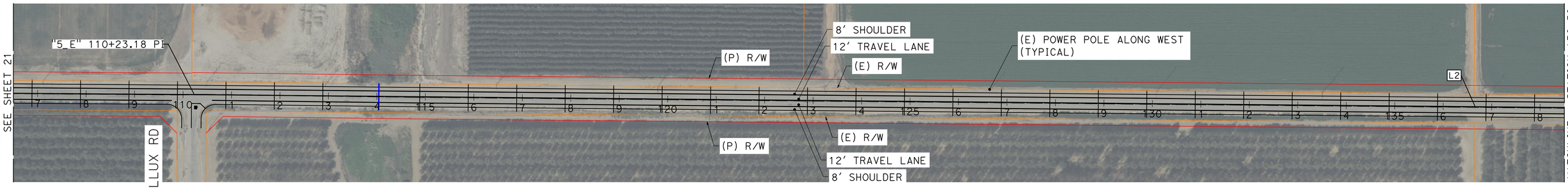
LAMONT GREEN-PASS: EDISON ROAD

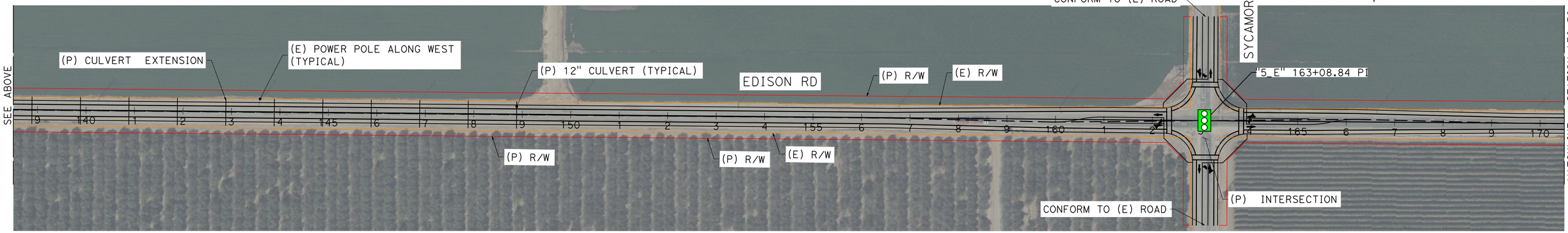
LEGEND:

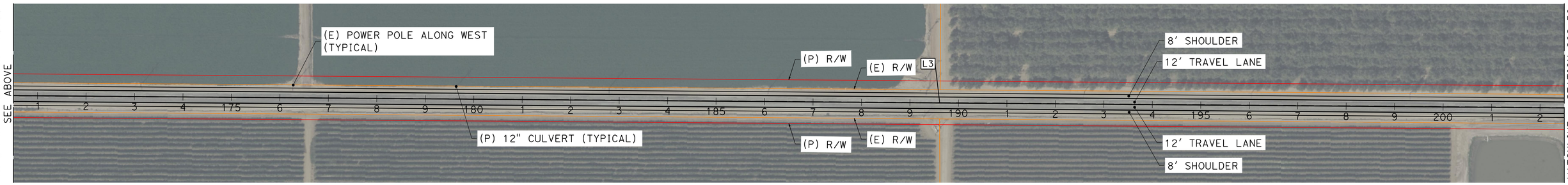
(P) CULVERT EXTENSION

(P) 12" CULVERT PIPE

(P) SIGNALIZED INTERSECTION







ALIGNMENT LINE TABLE		
No. X	L	D
L2	5285.65'	N0°32'18"E
L3	5305.03'	N0°27'11"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 5

LAMONT/SE BAKERSFIELD GREENPASS NETWORK

5.5

LAMONT GREEN-PASS: EDISON ROAD

LEGEND:

PHASE 5.1 LAMONT GREEN-PASS: EDISON ROAD

(P) SIGNALIZED INTERSECTION



30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

EDISON RD AND SYCAMORE RD SIGNALIZED INTERSECTION IMPROVEMENTS

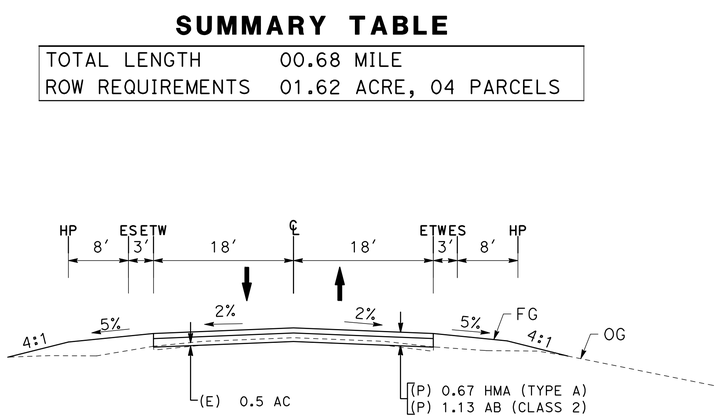
SCALE: 1"=2000'

LEGEND:

- PHASE 5.1 LAMONT GREEN-PASS: EDISON ROAD
- PHASE 5.6 SR PHASE 58 EDISON RD INTERCHANGE/PHASE 58-223 GREEN-PASS
- HIGH SPEED RAIL
- WATER QUALITY WELL
- OIL WELL

SUMMARY TABLE

TOTAL LENGTH	00.68 MILE
ROW REQUIREMENTS	01.62 ACRE, 04 PARCELS



EDISON RD INTERCHANGE

STA 703+50 TO STA 723+50



PHASE 5.6: SR 58 EDISON RD INTERCHANGE/ 58-223 GREEN-PASS

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

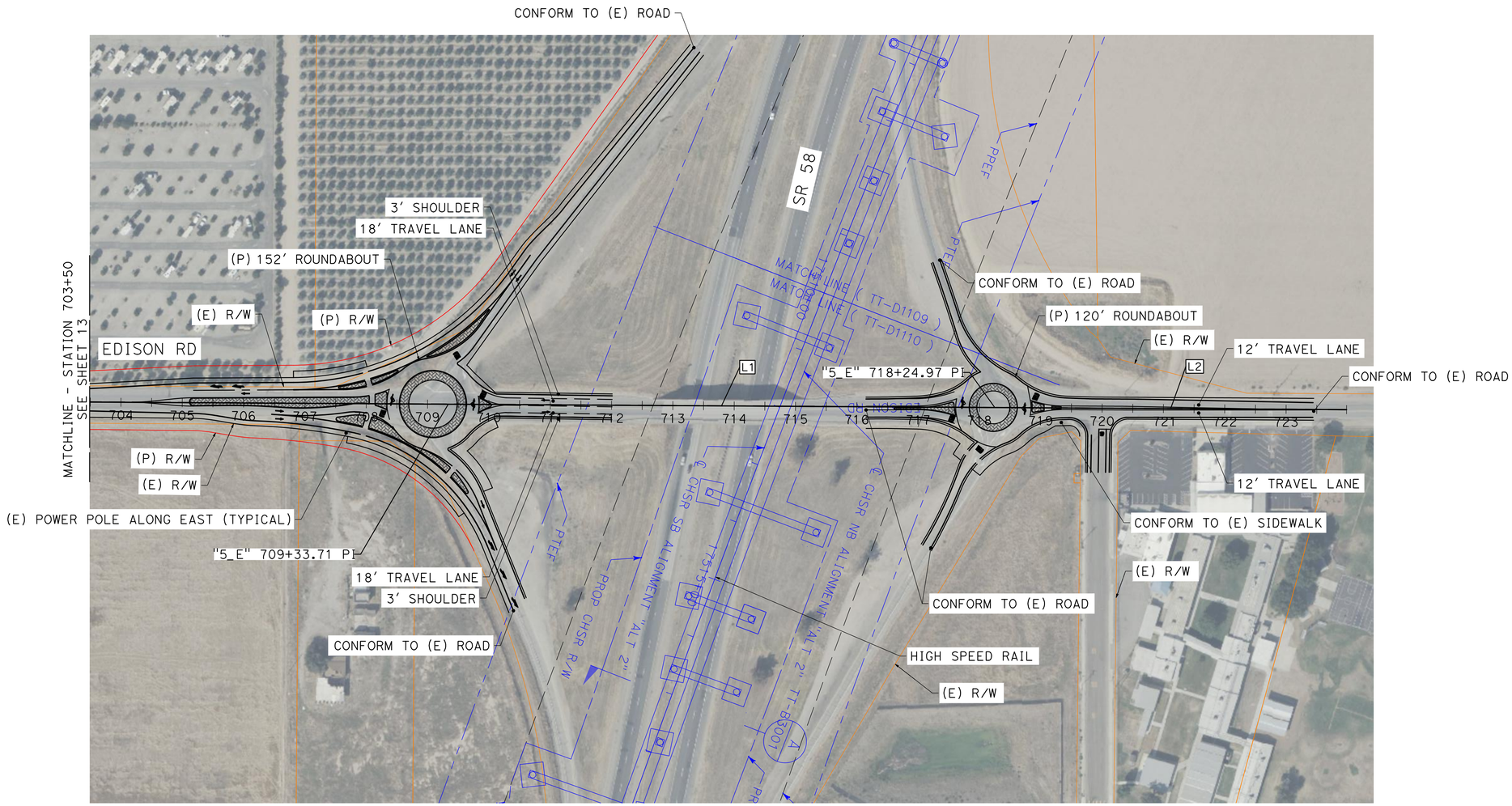
DATE: 1/13/26

SCALE: 1"=5000'

30% CONCEPTUAL DESIGN

LEGEND:

HIGH SPEED RAIL



SR 58 AND EDISON RD ROUNDABOUT IMPLEMENTATION

ALIGNMENT LINE TABLE		
No. X	L	D
L1	891.26'	N0°20'46"E
L2	573.60'	N0°20'46"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

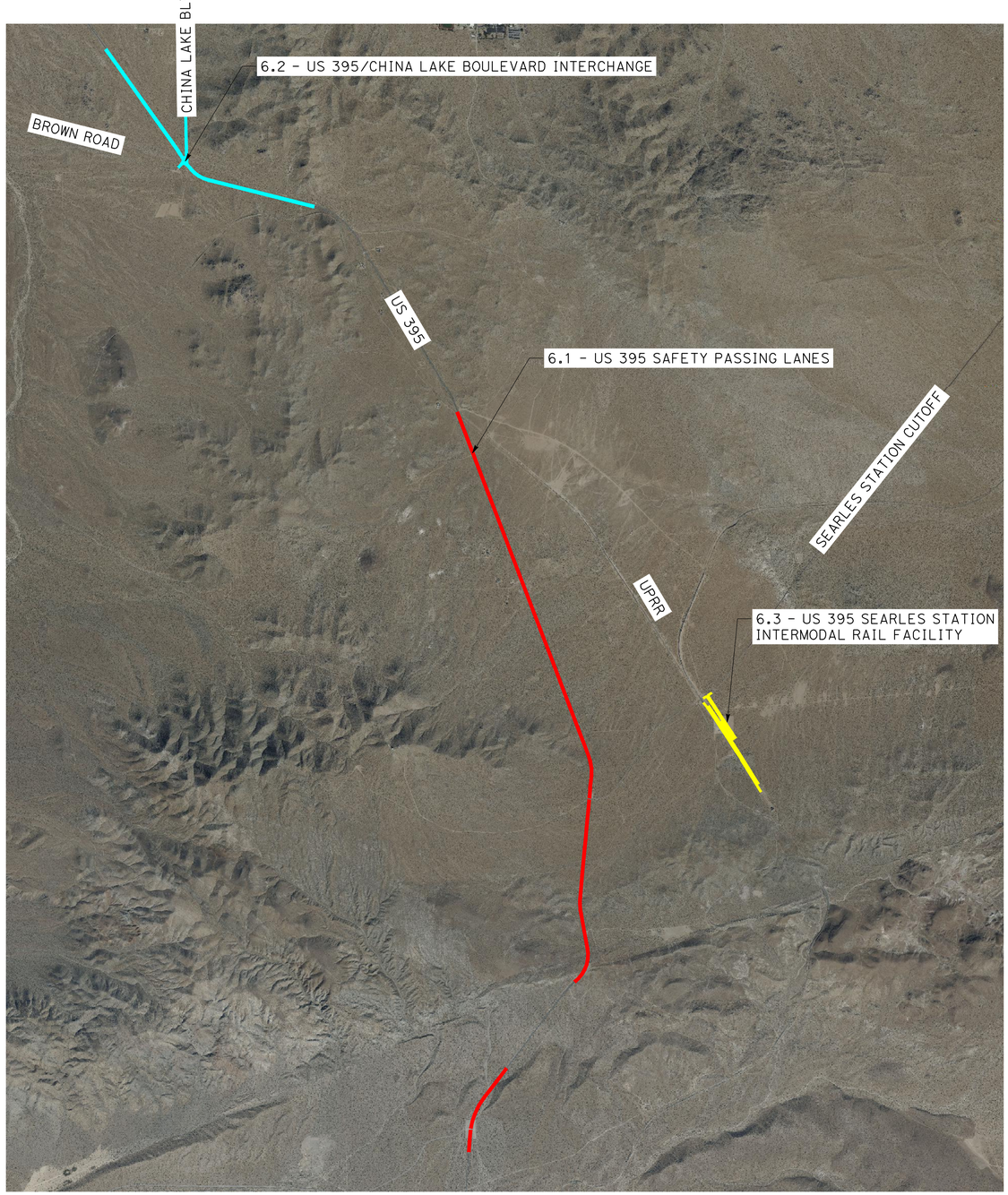
DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

LEGEND:

- 6.1 - US 395 SAFETY PASSING LANES
- 6.2 - US 395/CHINA LAKE BOULEVARD INTERCHANGE
- 6.3 - US 395 SEARLES STATION INTERMODAL RAIL FACILITY



PROJECT PHASING TABLE

PHASE 6.1: US 395 SAFETY PASSING LANES
PHASE 6.2: US 395/CHINA LAKE BOULEVARD INTERCHANGE
PHASE 6.3: US 395 SEARLES STATION INTERMODAL RAIL FACILITY

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/20/25

30% CONCEPTUAL DESIGN

SCALE: 1" = 3000'

MARK THOMAS

KARGO CCAMS - PROJECT 6

US 395 GOODS MOVEMENT/SAFETY IMPROVEMENTS

LEGEND:

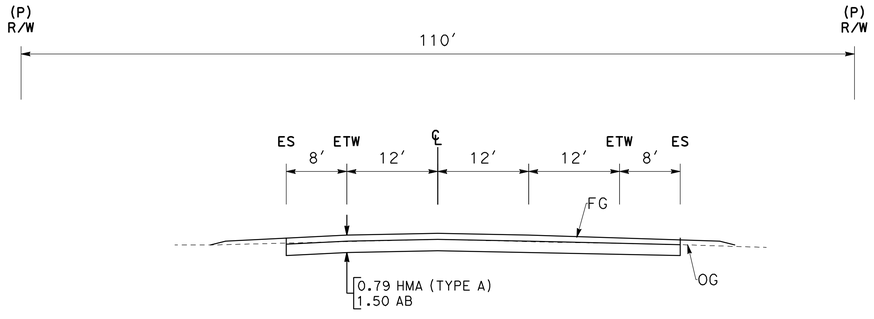
6.1 - US 395 SAFETY PASSING LANES

NOTE:

1. GEOMETRIC CONCEPT CREATED FOLLOWING THE AERIAL. ROW DOES NOT LINEUP WITH THE AERIAL AT THIS LOCATION.

SUMMARY TABLE

TOTAL ROAD LENGTH	5.79 MILE



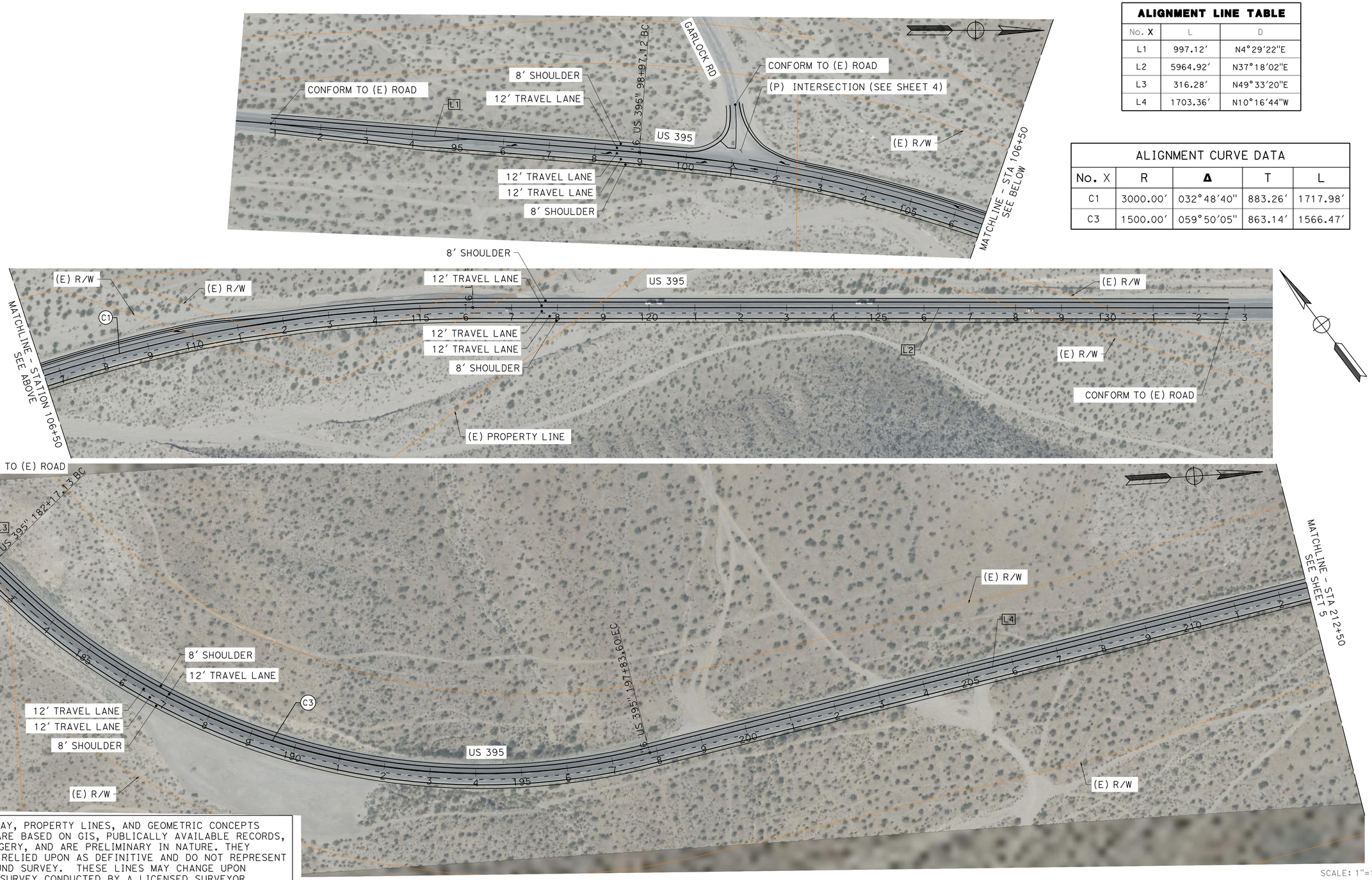
SECTION A-A



30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/22/25



ALIGNMENT LINE TABLE		
No. X	L	D
L1	997.12'	N4°29'22"E
L2	5964.92'	N37°18'02"E
L3	316.28'	N49°33'20"E
L4	1703.36'	N10°16'44"W

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C1	3000.00'	032°48'40"	883.26'	1717.98'
C3	1500.00'	059°50'05"	863.14'	1566.47'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/22/25

SCALE: 1"=100'

SHEET 3 OF 14

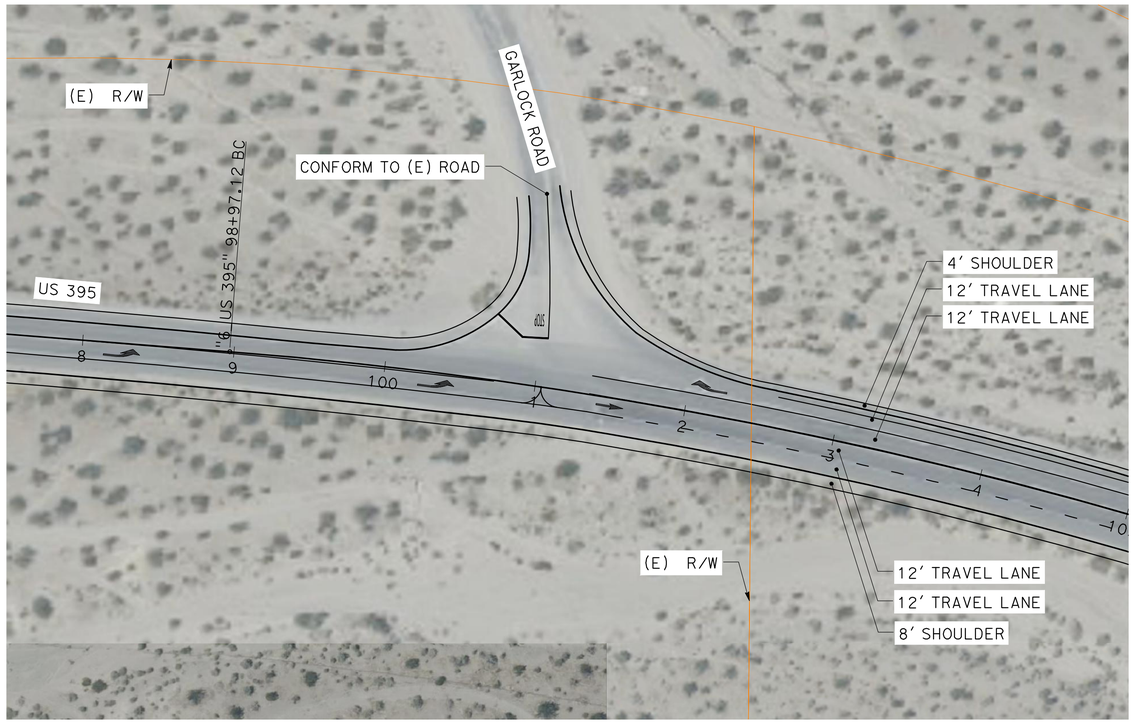
30% CONCEPTUAL DESIGN

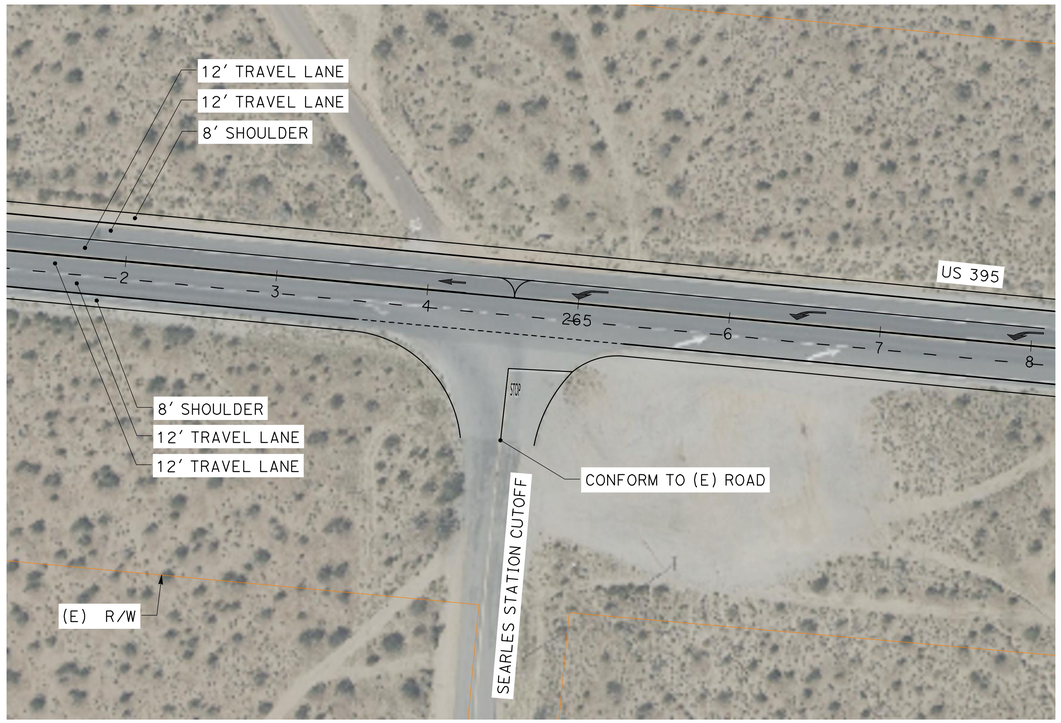
NOTE:

1. GEOMETRIC CONCEPT CREATED FOLLOWING THE AERIAL. ROW DOES NOT LINEUP WITH THE AERIAL AT THIS LOCATION.

SUMMARY TABLE

TOTAL ROAD LENGTH	5.79 MILE



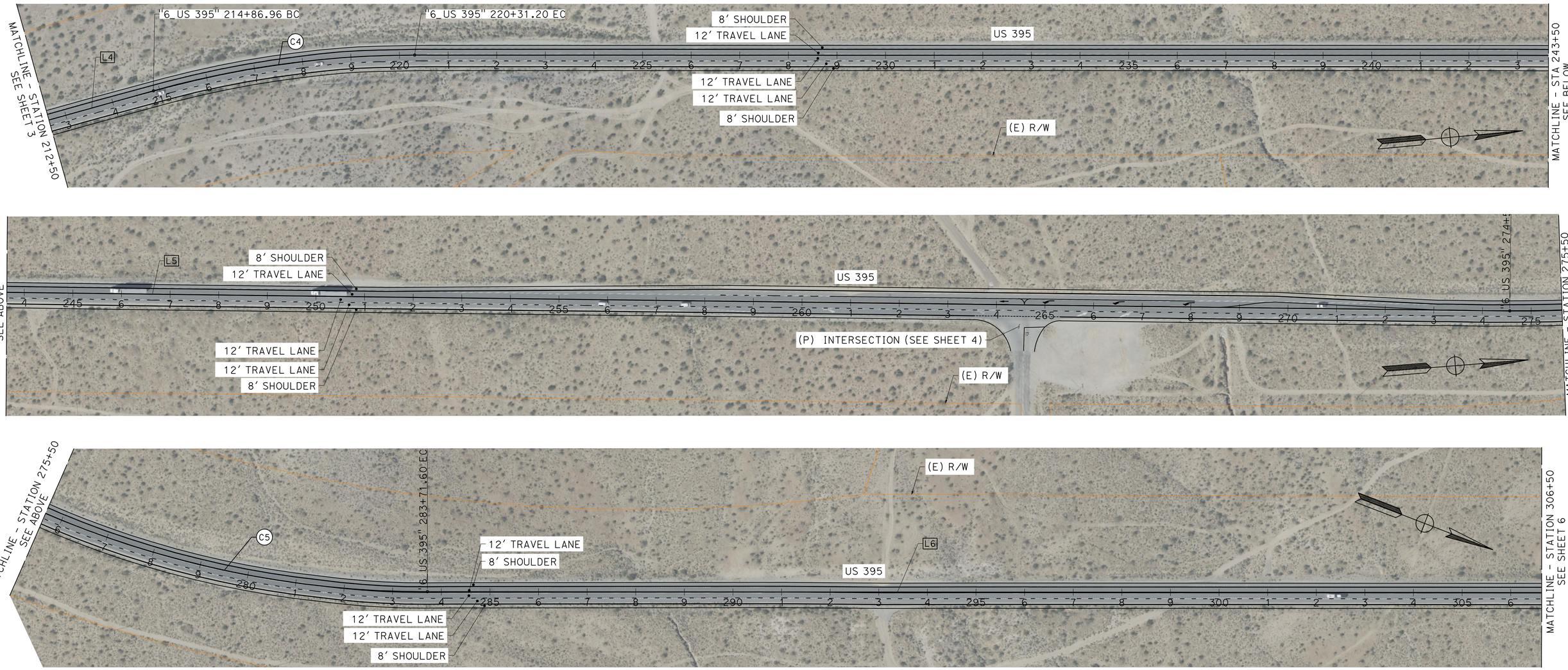


30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/22/25

SCALE: 1"=50'



ALIGNMENT LINE TABLE		
No. X	L	D
L4	1703.36'	N10°16'44"W
L5	5424.94'	N5°18'44"E
L6	16610.60'	N20°54'49"W

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C4	2000.00'	015°35'29"	273.81'	544.24'
C5	2000.00'	026°13'33"	465.89'	915.46'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/22/25

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

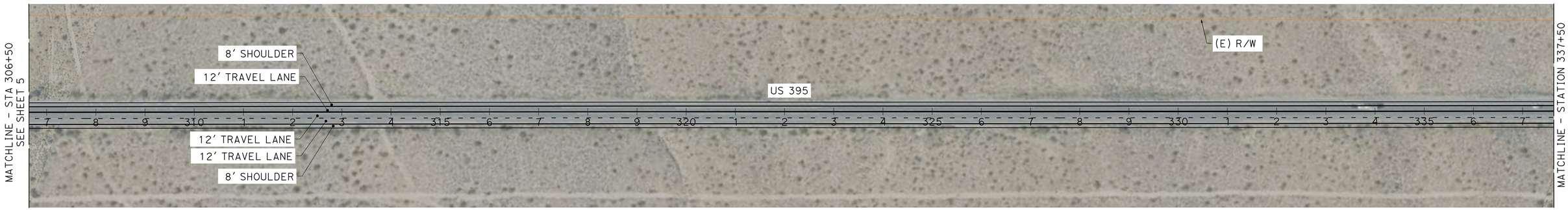
MARK THOMAS

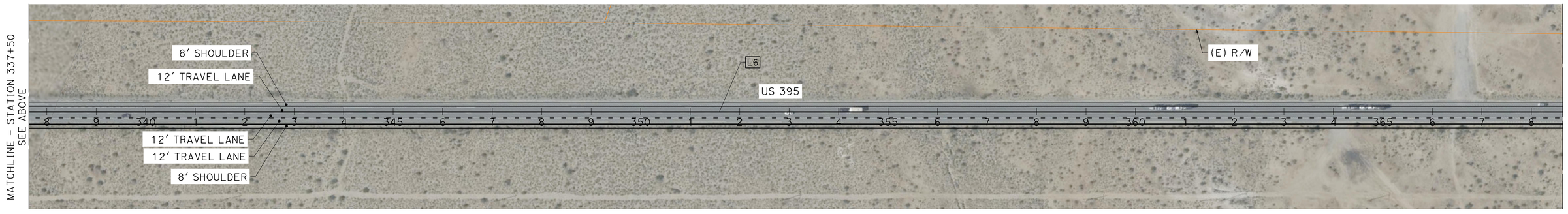
KARGO CCAMS - PROJECT 6

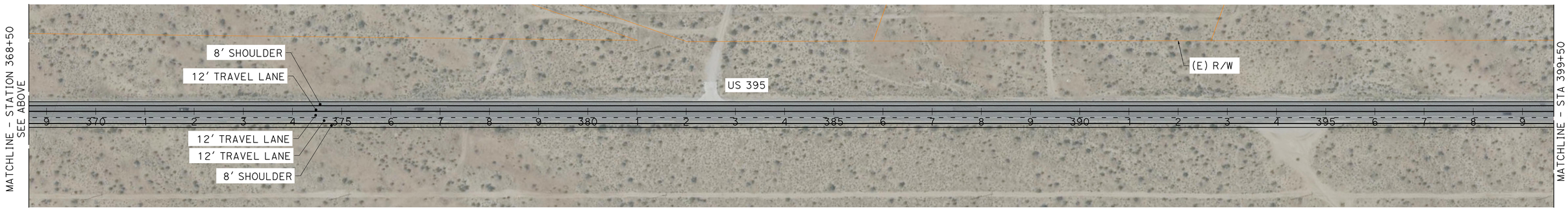
US 395 GOODS MOVEMENT/SAFETY IMPROVEMENTS

6.1

US-395 SAFETY PASSING LANES







THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/24/25

ALIGNMENT LINE TABLE

No. X	L	D
L6	16610.60′	N20°54′49"W

SCALE: 1"=100′

SHEET 6 OF 15

30% CONCEPTUAL DESIGN

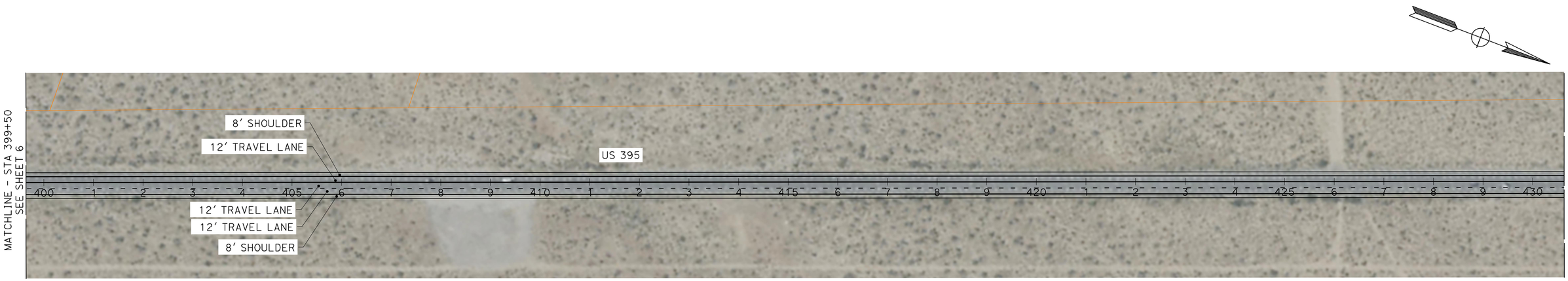
MARK THOMAS

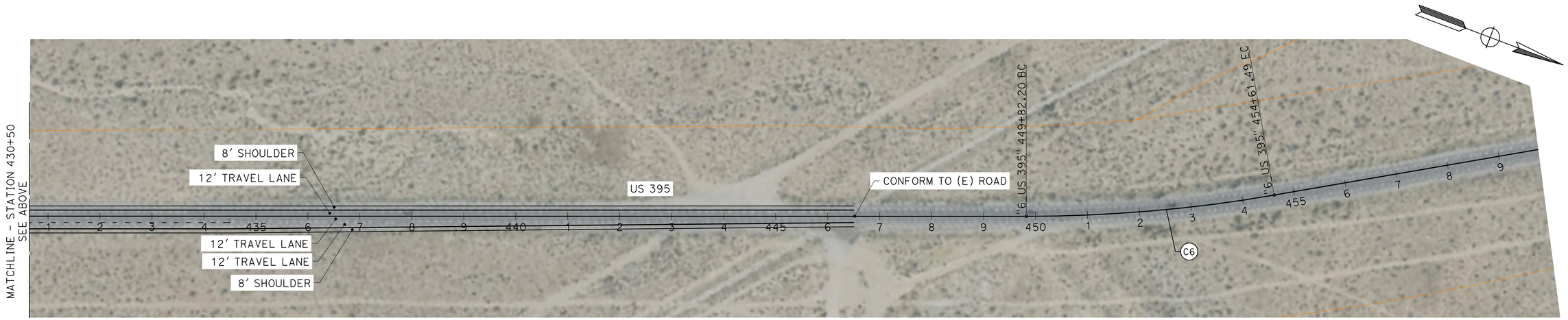
KARGO CCAMS - PROJECT 6

US 395 GOODS MOVEMENT/SAFETY IMPROVEMENTS

6.1

US-395 SAFETY PASSING LANES





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C6	2800.00'	009°48'28"	240.23'	479.29'

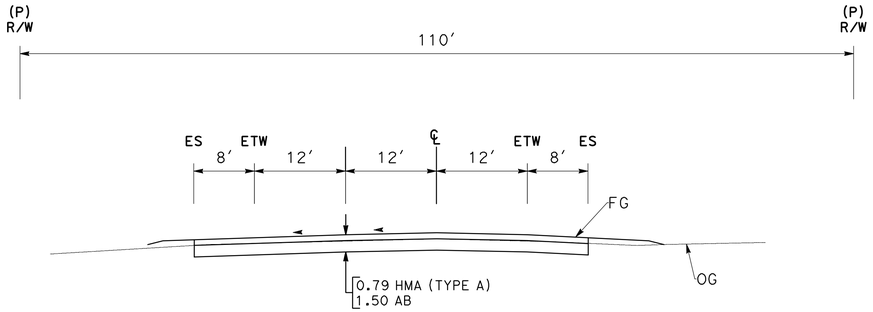
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/27/25

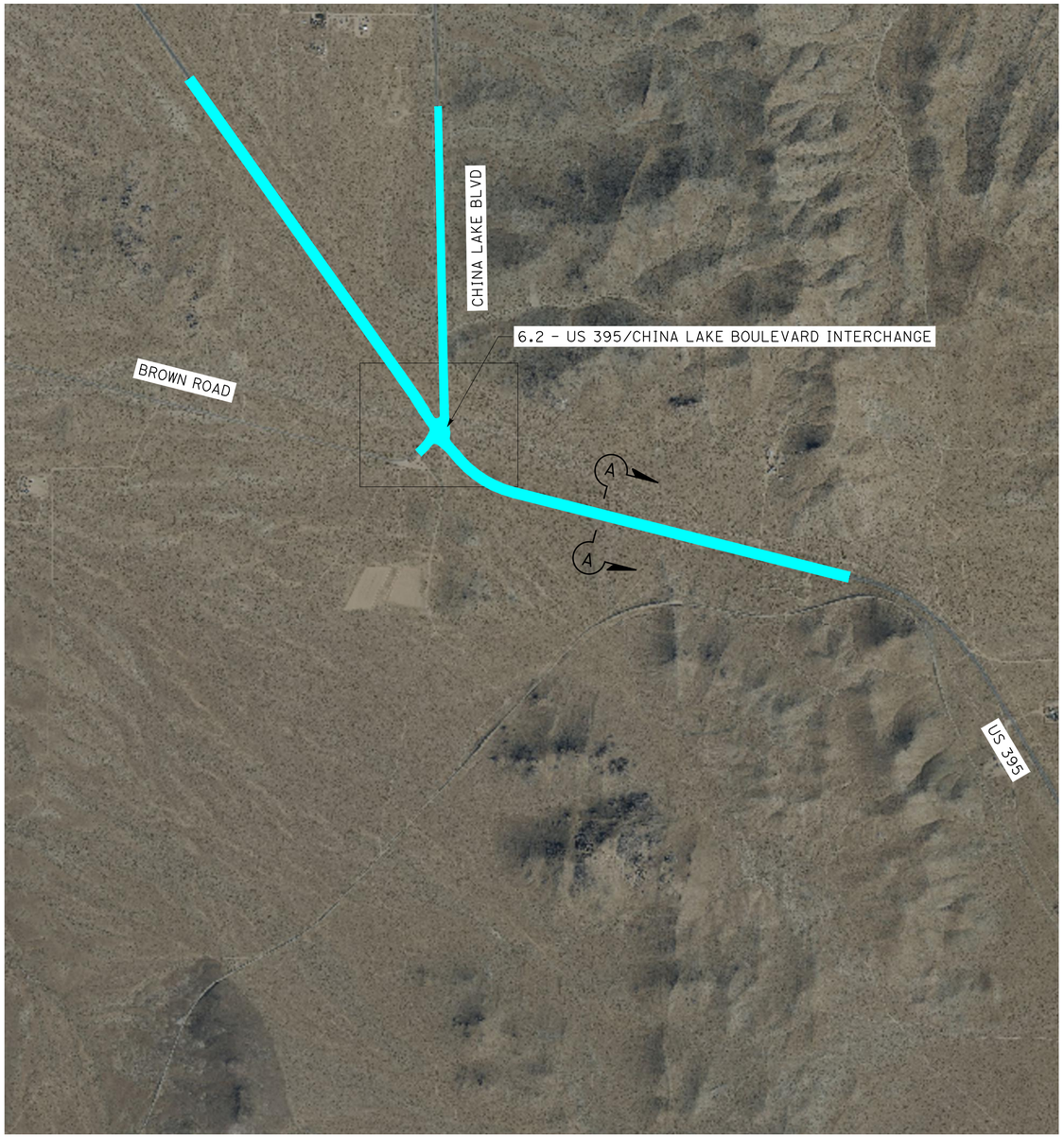
30% CONCEPTUAL DESIGN

LEGEND:

6.2 - US 395/CHINA LAKE BOULEVARD INTERCHANGE



SECTION A-A



PROJECT PHASING TABLE

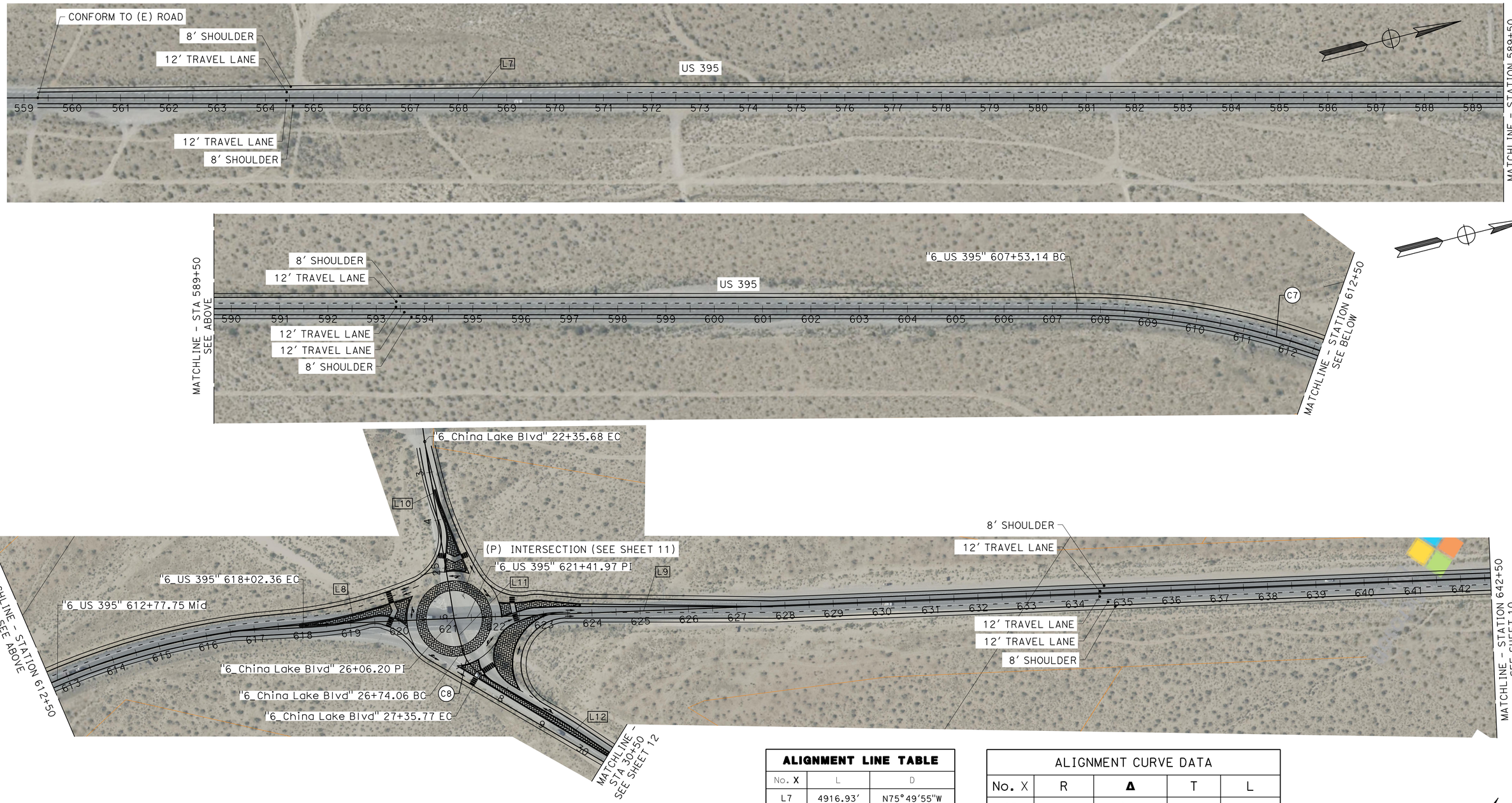
PHASE 6.2: US 395/CHINA LAKE BOULEVARD INTERCHANGE

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/24/25

30% CONCEPTUAL DESIGN

SCALE: 1" = 3000′



ALIGNMENT LINE TABLE

No. X	L	D
L7	4916.93'	N75°49'55"W
L8	339.61'	N35°45'17"W
L9	6233.29'	N35°24'24"W
L10	370.52'	N47°23'15"E
L11	67.86'	N41°36'35"E
L12	383.41'	N0°59'14"W

ALIGNMENT CURVE DATA

No. X	R	Δ	T	L
C7	1500.00'	040°04'39"	547.10'	1049.22'
C8	83.00'	042°35'49"	32.36'	61.71'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/27/25

30% CONCEPTUAL DESIGN

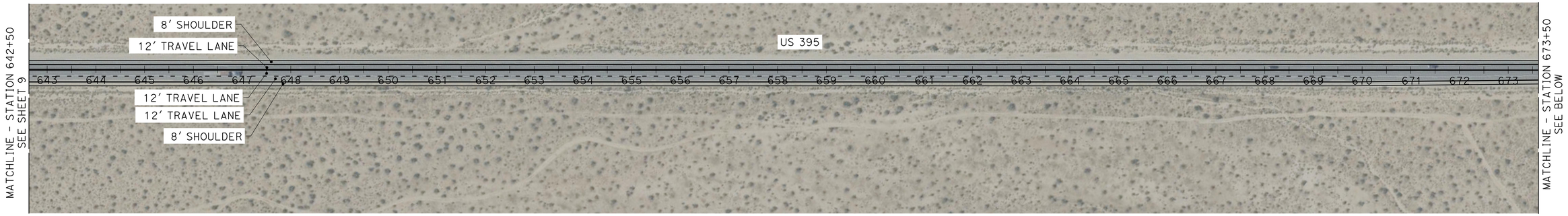
MARK THOMAS

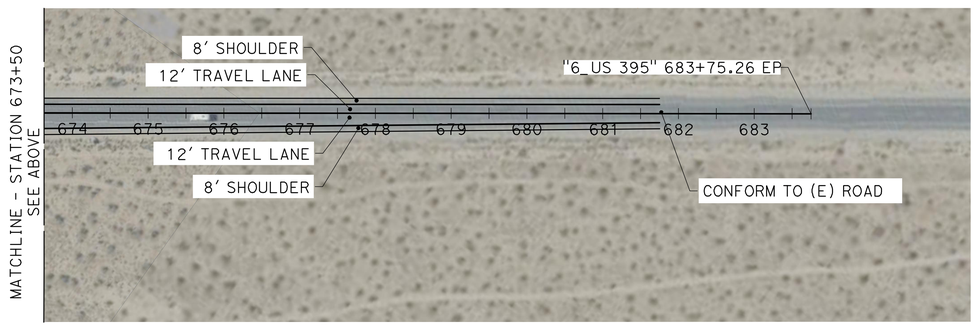
KARGO CCAMS - PROJECT 6

US 395 GOODS MOVEMENT/SAFETY IMPROVEMENTS

6.2

US 395 SEARLESS STATION INTERMODAL RAIL FACILITY





THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/27/25

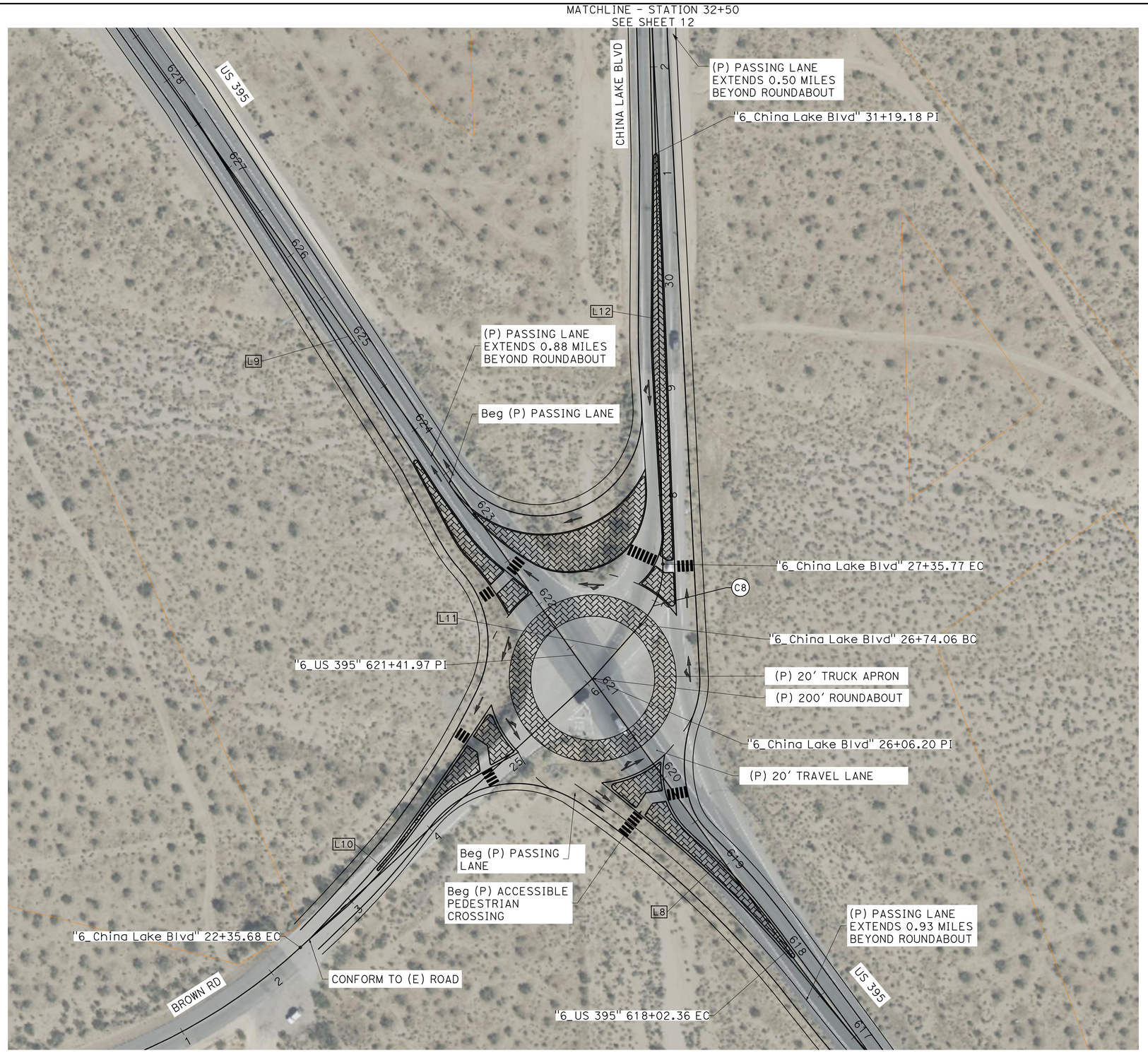
30% CONCEPTUAL DESIGN

SUMMARY TABLE

TOTAL ROAD LENGTH	2.46 MILE

ALIGNMENT LINE TABLE		
No. X	L	D
L8	339.61′	N35°45′17"W
L9	6233.29′	N35°24′24"W
L10	370.52′	N47°23′15"E
L11	67.86′	N41°36′35"E
L12	383.41′	N0°59′14"W

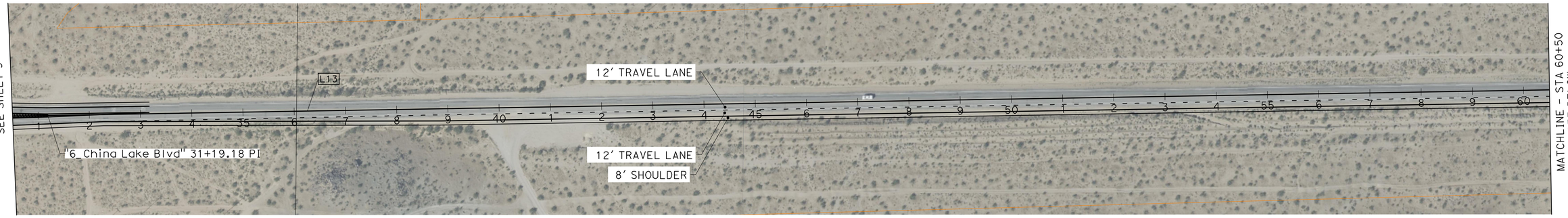
ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C8	83.00′	042°35′49"	32.36′	61.71′



THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/28/25

30% CONCEPTUAL DESIGN





ALIGNMENT LINE TABLE		
No. X	L	D
L13	4088.03'	N1°30'39"W

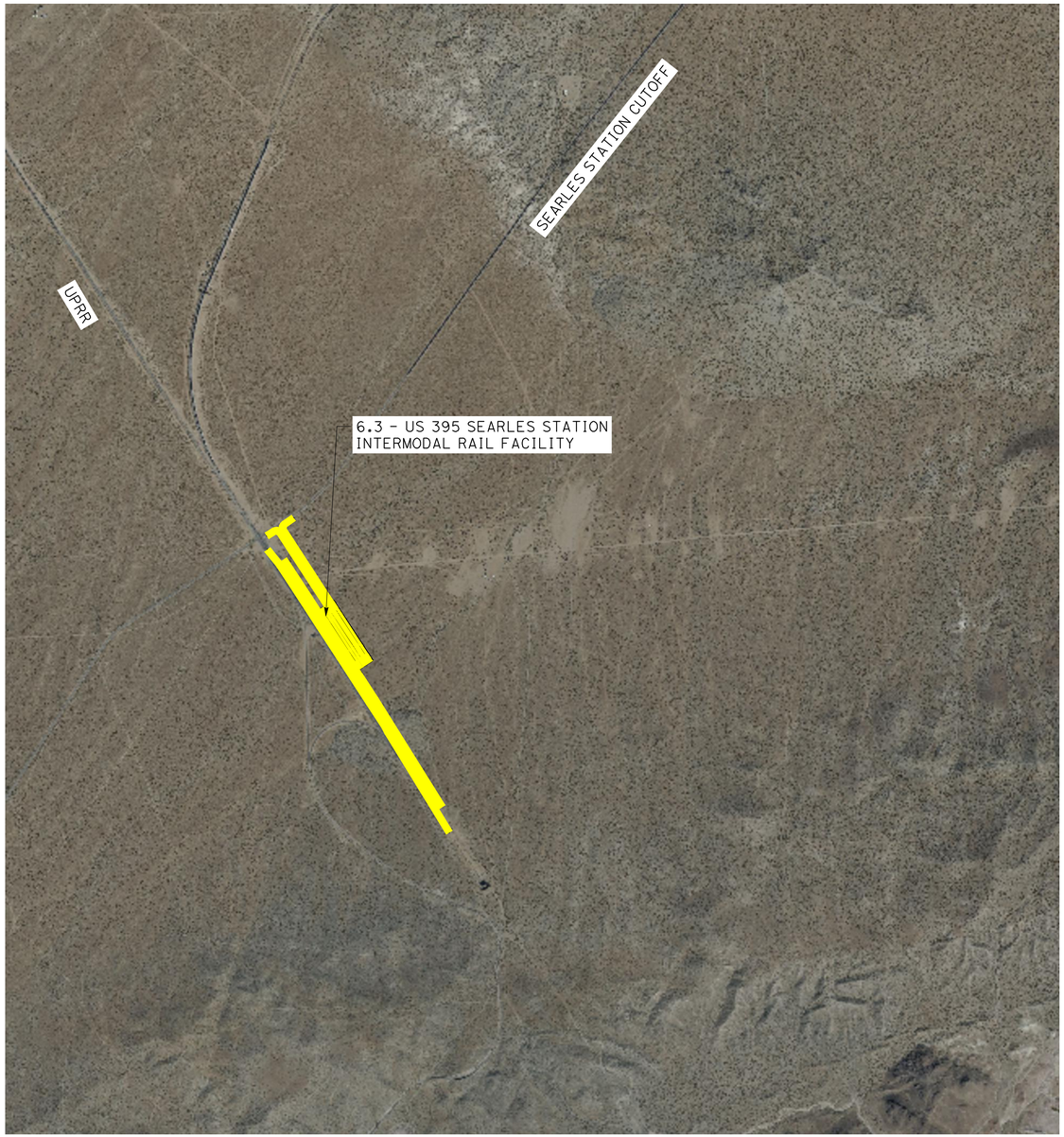
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/28/25

30% CONCEPTUAL DESIGN

LEGEND:

6.3 - US 395 SEARLES STATION INTERMODAL RAIL FACILITY



PROJECT PHASING TABLE

PHASE 6.3: US 395 SEARLES STATION INTERMODAL RAIL FACILITY

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/28/25

30% CONCEPTUAL DESIGN

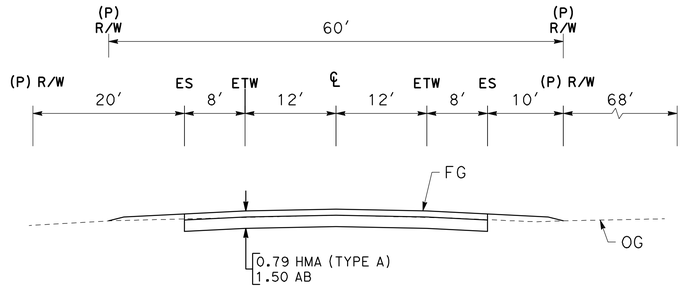
SCALE: 1" = 3000'

NOTE:

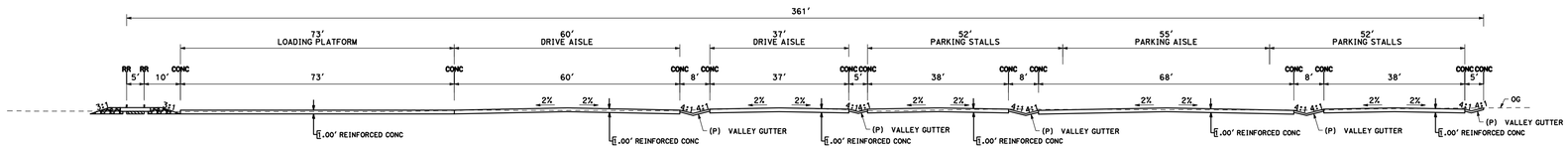
1. PARKING STALLS - 100
2. ASSUMED 5 FORKLIFTS REQUIRED.

ABBREVIATIONS:

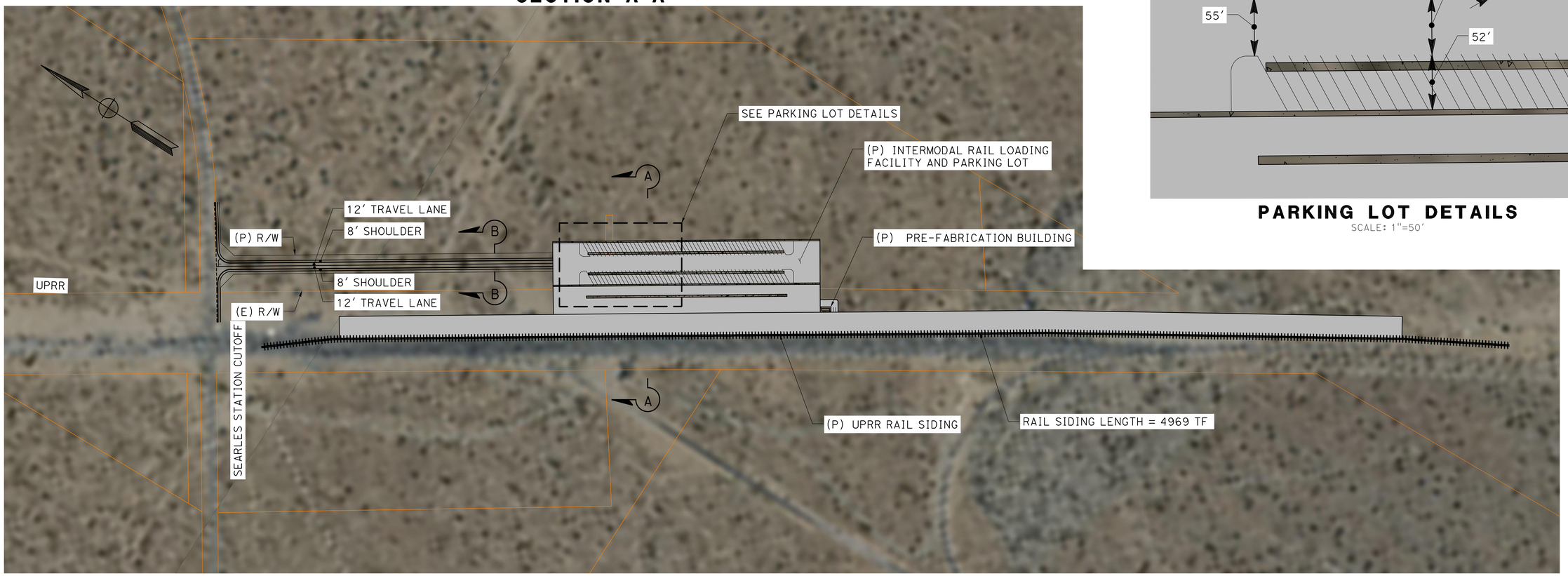
CONC - CONCRETE



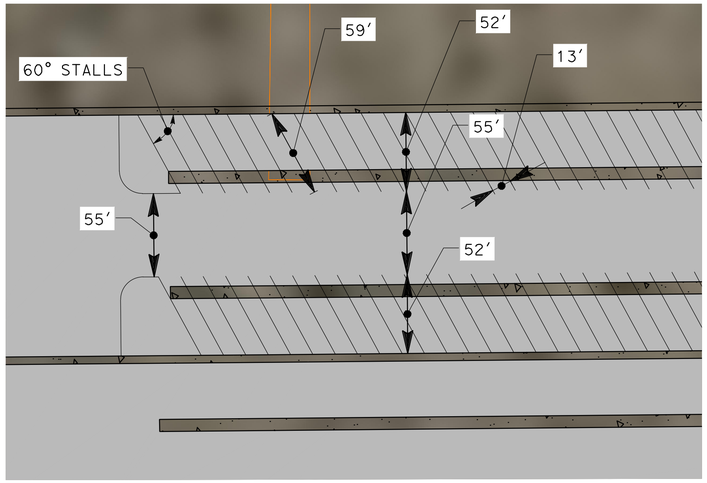
SECTION B-B



SECTION A-A



* ACCESS ROAD TO ACCOMMODATE LARGE CAPACITY TRUCKS. ASSUME TRAFFIC INDEX OF 11.



PARKING LOT DETAILS

SCALE: 1"=50'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/28/25

SUMMARY TABLE

TOTAL ROAD LENGTH	0.24 MILE
TOTAL TRACK LENGTH	0.89 MILE
ROW REQUIREMENTS	8.67 ACRES, 2 PARCELS

SCALE: 1"=200'

SHEET 14 OF 14

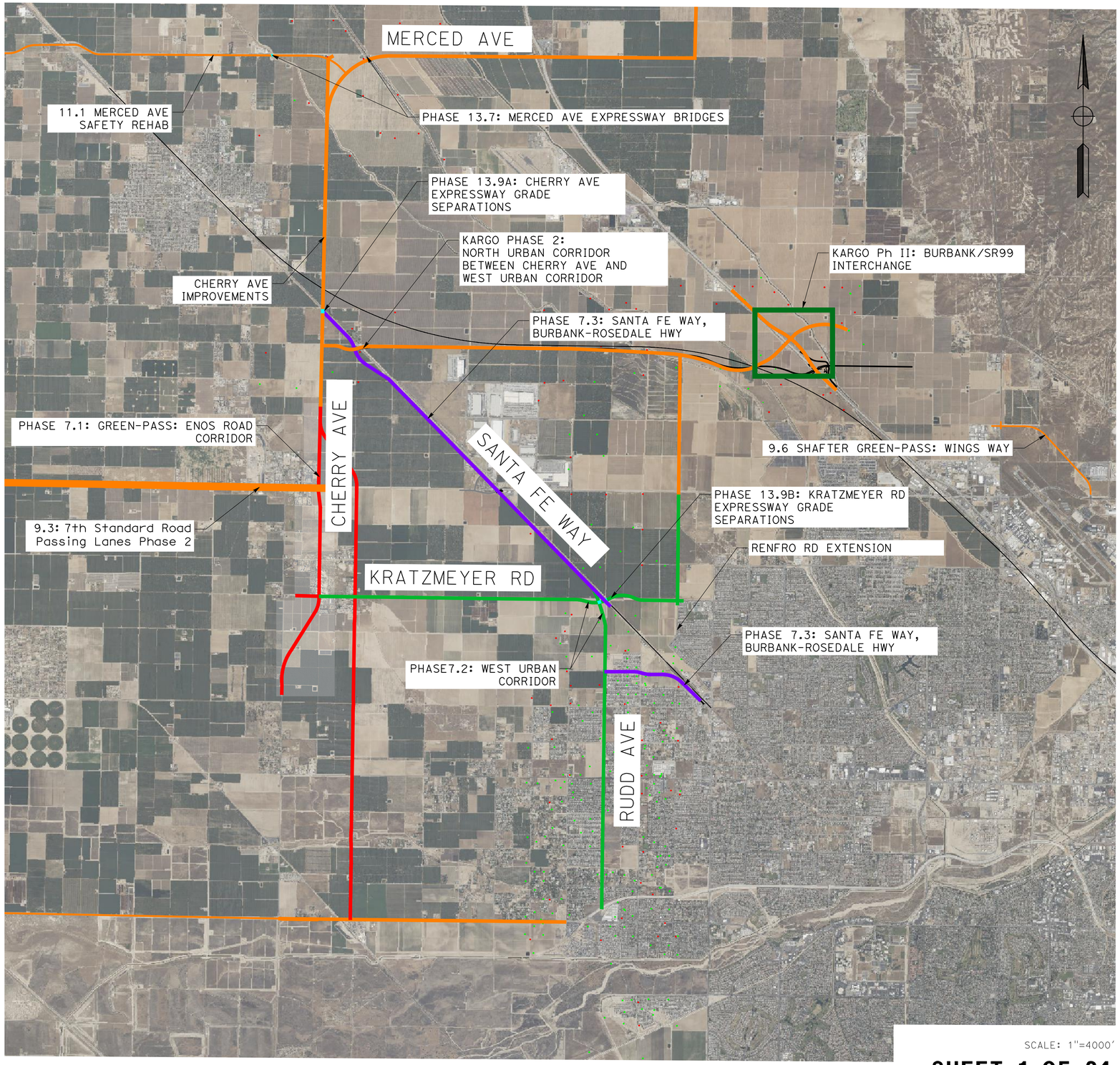
30% CONCEPTUAL DESIGN

LEGEND:

- PHASE 7.1: GREEN PASS: ENOS ROAD CORRIDOR
- PHASE 7.2: WEST URBAN CORRIDOR
- PHASE 7.3: SANTA FE WAY, BURBANK-ROSEDALE HWY
- PHASE 13.7: MERCED AVE EXPRESSWAY BRIDGES
- PHASE 13.9A: CHERRY AVE EXPRESSWAY GRADE SEPARATIONS
- PHASE 13.9B: KRATZMEYER RD EXPRESSWAY GRADE SEPARATIONS
- ADJACENT PROJECTS
- WATER QUALITY WELL
- OIL WELL

PROJECT PHASING TABLE

7.1: GREEN-PASS: ENOS ROAD CORRIDOR
7.2: WEST URBAN CORRIDOR
7.3: SANTA FE WAY, BURBANK-ROSEDALE HWY
13.7: MERCED AVE EXPRESSWAY BRIDGES
13.9A: CHERRY AVE EXPRESSWAY GRADE SEPARATIONS
13.9B: KRATZMEYER RD EXPRESSWAY GRADE SEPARATIONS



30% CONCEPTUAL DESIGN

SCALE: 1"=4000'

DATE: 5/15/26

MARK THOMAS

KARGO CCAMS - PROJECT 7

NW BAKERSFIELD GREENPASS NETWORK

7.1

GREEN-PASS: ENOS ROAD CORRIDOR

LEGEND:

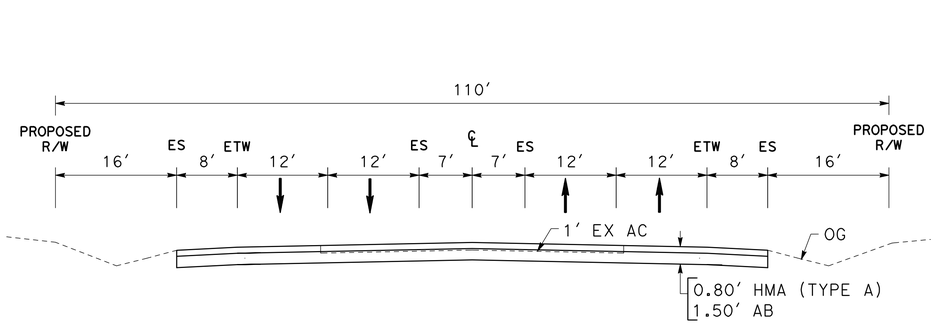
PHASE 7.1: GREEN-PASS: ENOS ROAD CORRIDOR

PHASE 7.2: WEST URBAN CORRIDOR

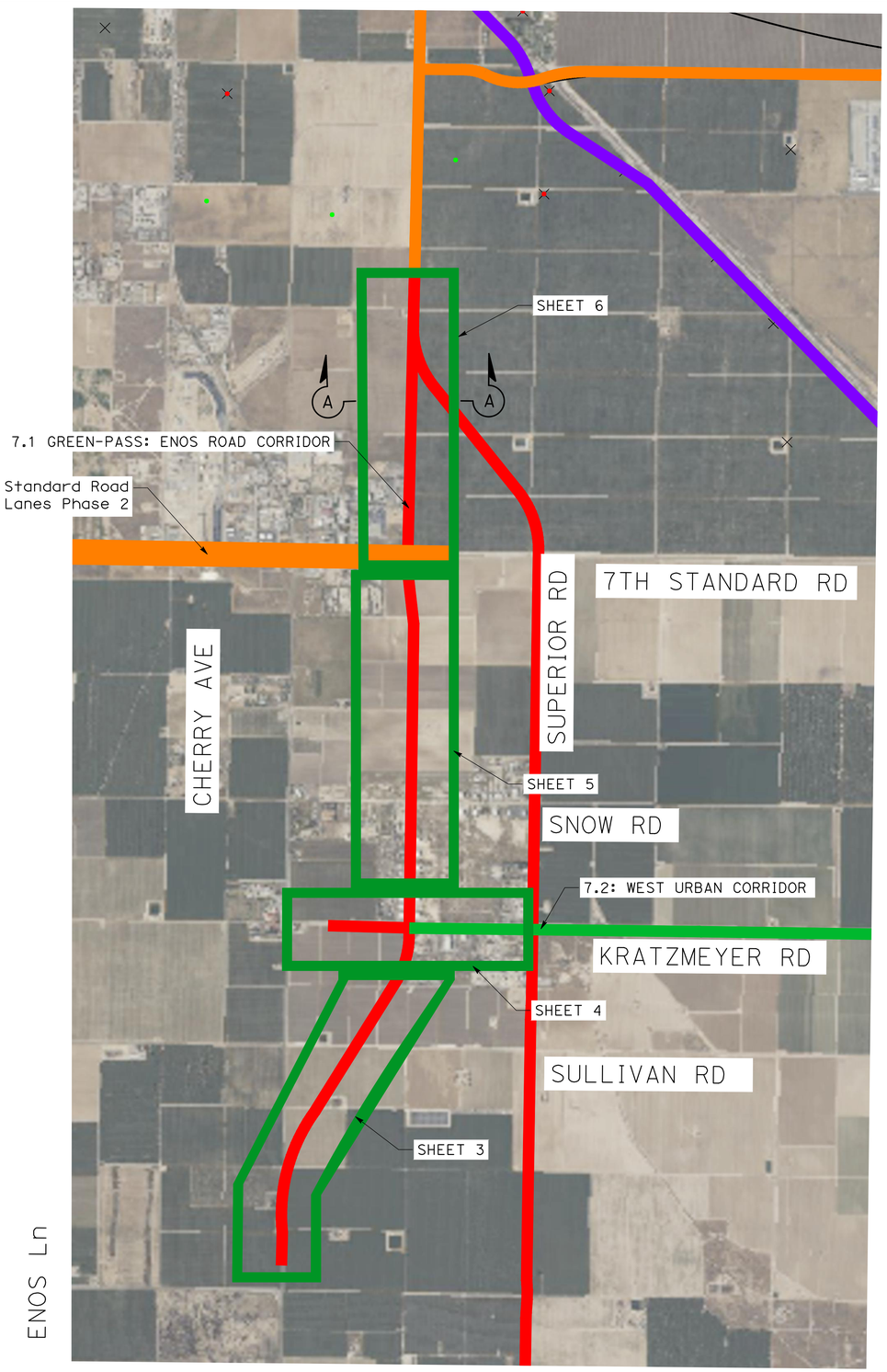
(P) SIGNALIZED INTERSECTION

SUMMARY TABLE

TOTAL LENGTH	3.8 MILE
R/W REQUIREMENTS	37 ACRE, 35 PARCELS



SECTION A-A



30% CONCEPTUAL DESIGN

SCALE: 1"=1500′

DATE: 5/15/26

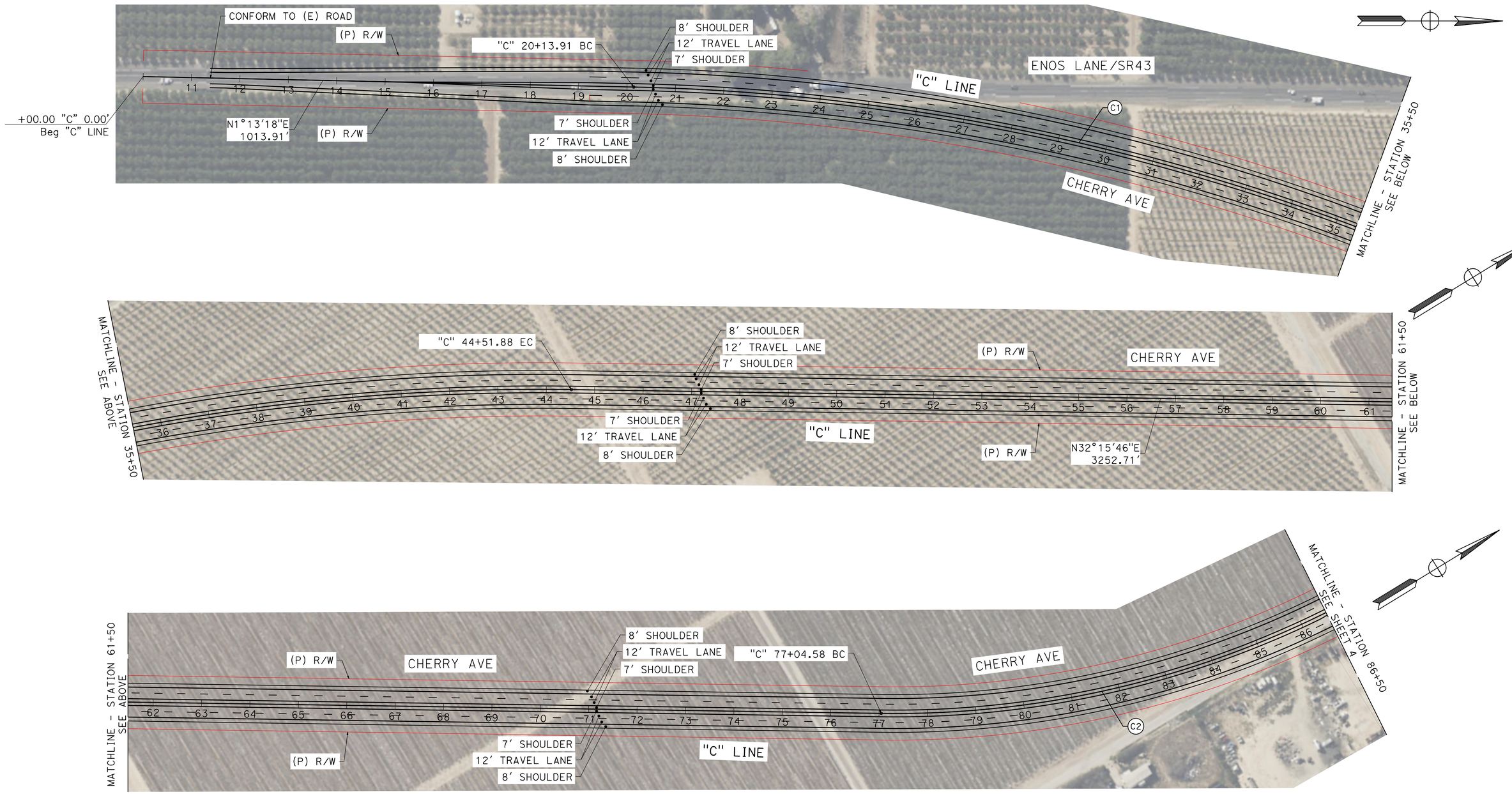
MARK THOMAS

KARGO CCAMS - PROJECT 7

NW BAKERSFIELD GREENPASS NETWORK

7.1

GREEN-PASS: ENOS ROAD CORRIDOR



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C1	4500.00'	031°02'28"	1249.70'	2437.96'
C2	2000.00'	031°25'05"	562.51'	1096.70'

30% CONCEPTUAL DESIGN

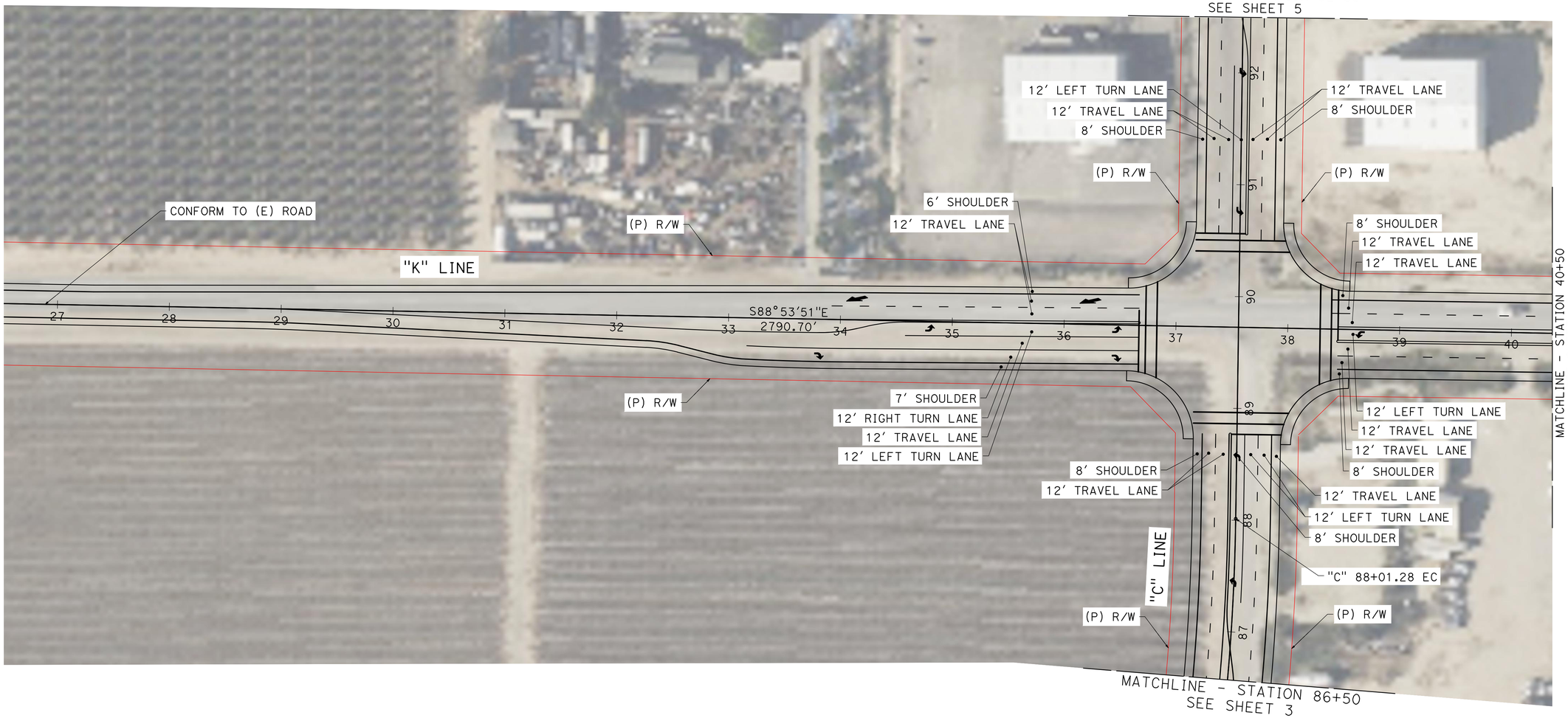
SCALE: 1" = 100'

DATE: 5/15/26

MARK THOMAS

KARGO CCAMS - PROJECT 7
NW BAKERSFIELD GREENPASS NETWORK

7.1
GREEN-PASS: ENOS ROAD CORRIDOR



30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

DATE: 5/15/26

SHEET 4 OF 24

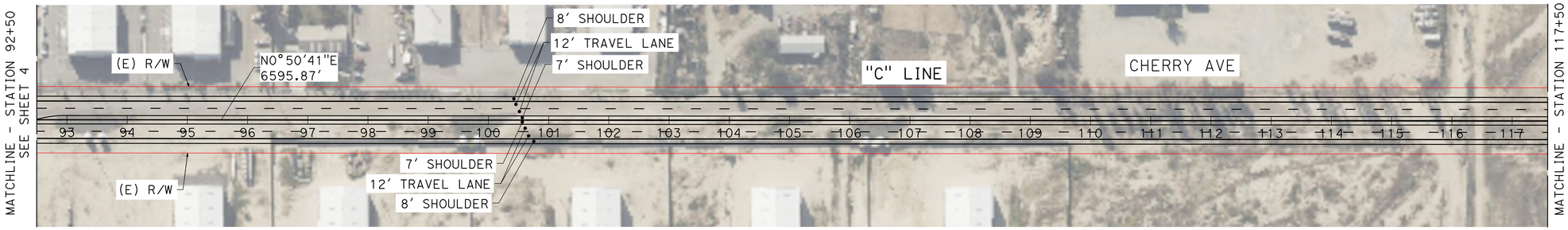
MARK THOMAS

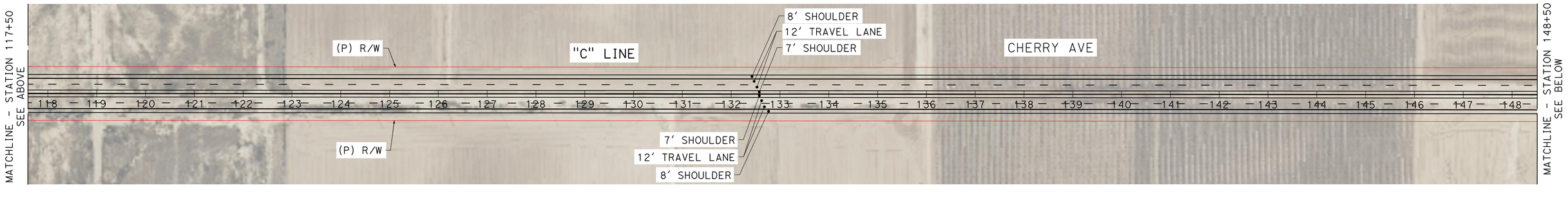
KARGO CCAMS - PROJECT 7

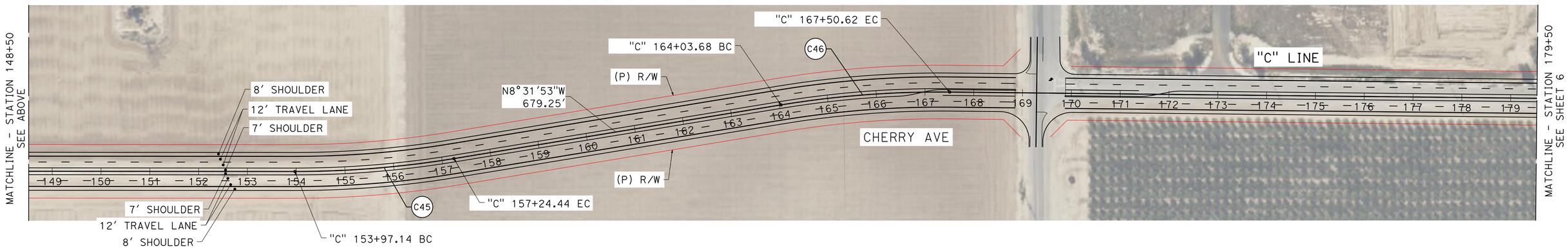
NW BAKERSFIELD GREENPASS NETWORK

7.1

GREEN-PASS: ENOS ROAD CORRIDOR







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C45	2000.00'	009°22'34"	164.01'	327.29'
C46	2000.00'	009°56'21"	173.91'	346.94'

30% CONCEPTUAL DESIGN

DATE: 5/15/26

SCALE: 1" = 100'

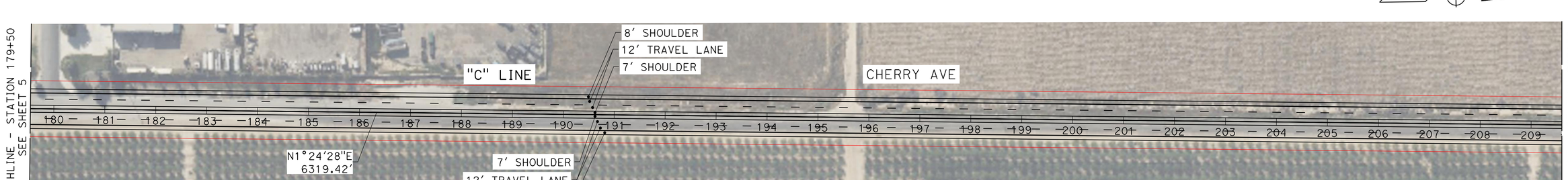
MARK THOMAS

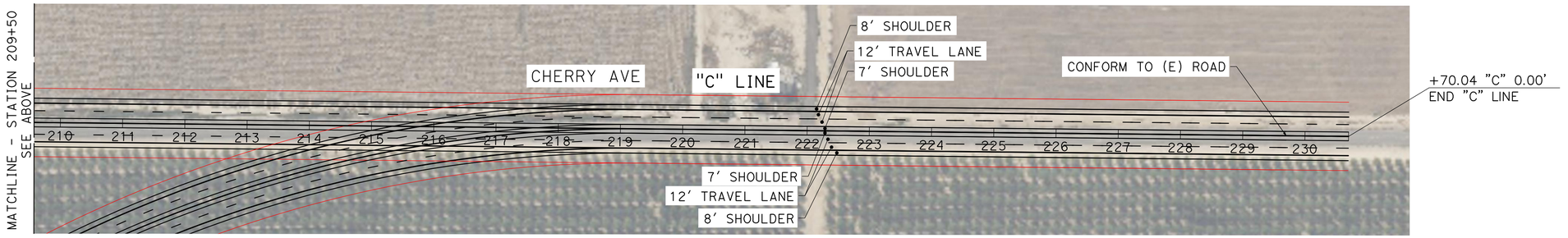
KARGO CCAMS - PROJECT 7

NW BAKERSFIELD GREENPASS NETWORK

7.1

GREEN-PASS: ENOS ROAD CORRIDOR





30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

DATE: 5/15/26

MARK THOMAS

KARGO CCAMS - PROJECT 7

NW BAKERSFIELD GREENPASS NETWORK

7.1

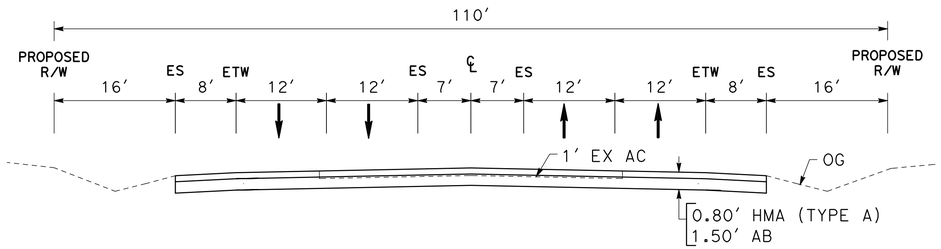
GREEN-PASS: ENOS ROAD CORRIDOR

LEGEND:

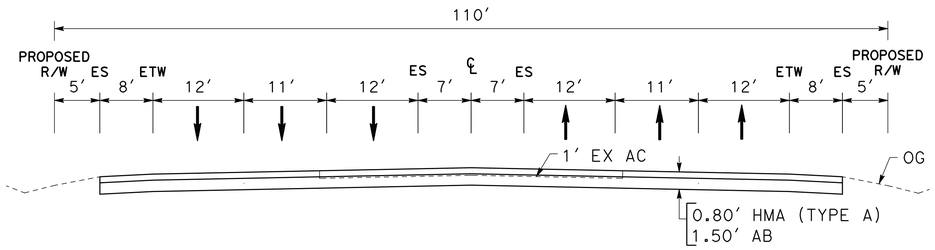
- PHASE 7.1: GREEN-PASS: ENOS ROAD CORRIDOR
- PHASE 7.2: WEST URBAN CORRIDOR
- PHASE 7.3: SANTA FE WAY, BURBANK-ROSEDALE HWY
- PHASE 13.9: CHERRY AVE EXPRESSWAY GRADE SEPARATIONS
- ADJACENT PROJECTS
- (P) SIGNALIZED INTERSECTION
- WATER QUALITY WELL
- OIL WELL

SUMMARY TABLE

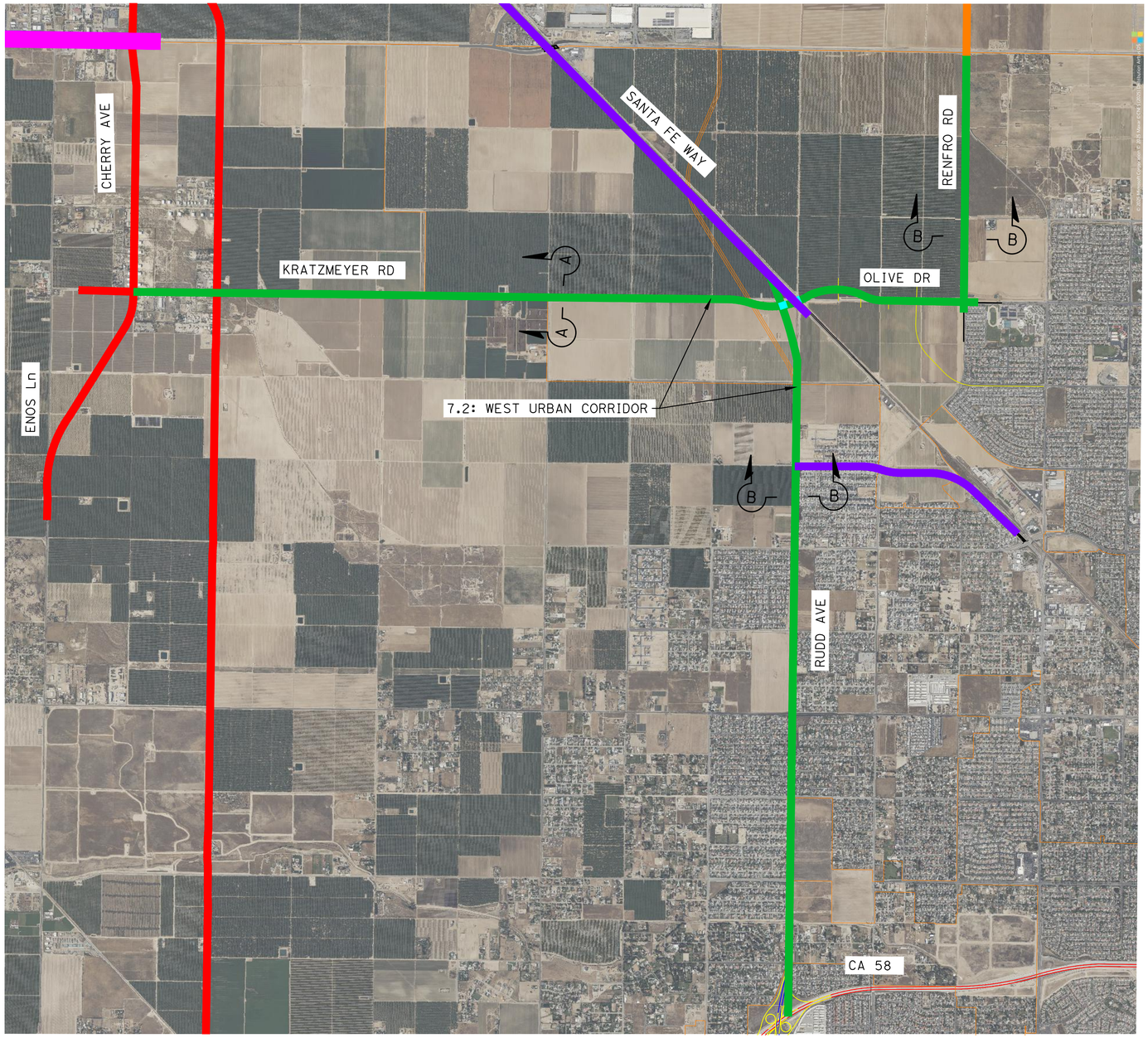
TOTAL LENGTH	11 MILE
R/W REQUIREMENTS	64 ACRE, 76 PARCELS



SECTION A-A



SECTION B-B



30% CONCEPTUAL DESIGN

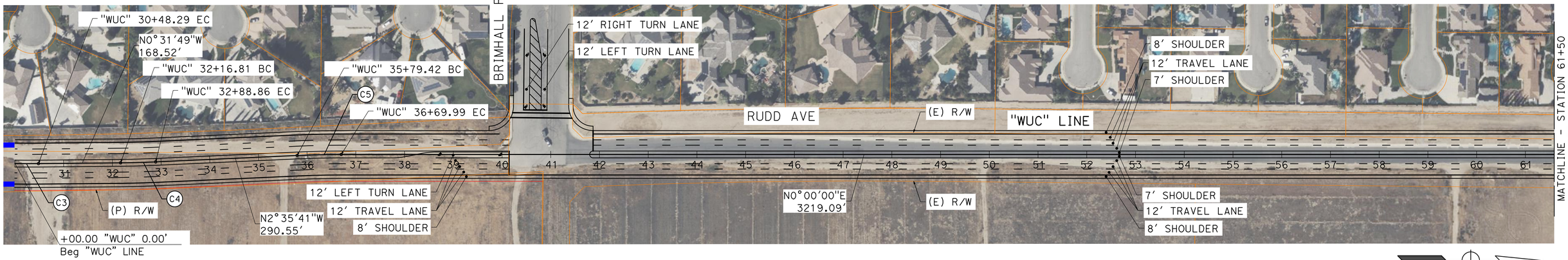
DATE: 5/15/26

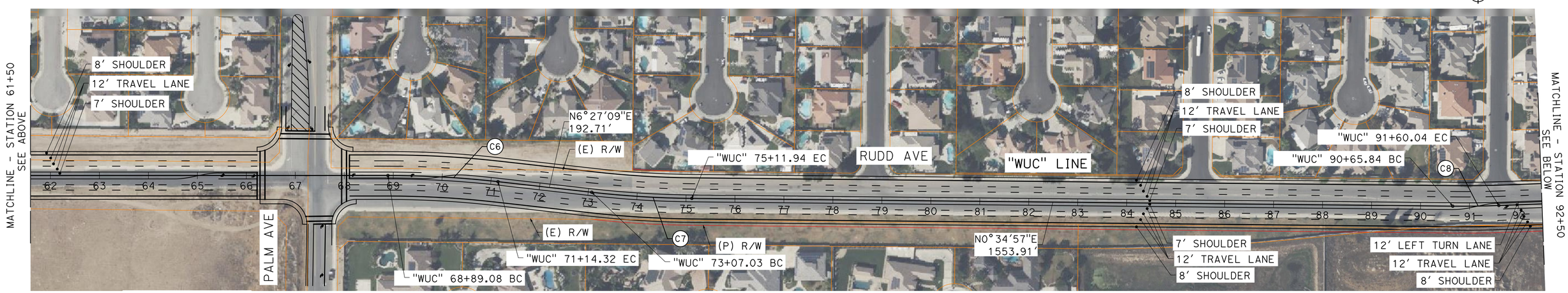
SCALE: 1"=2000′

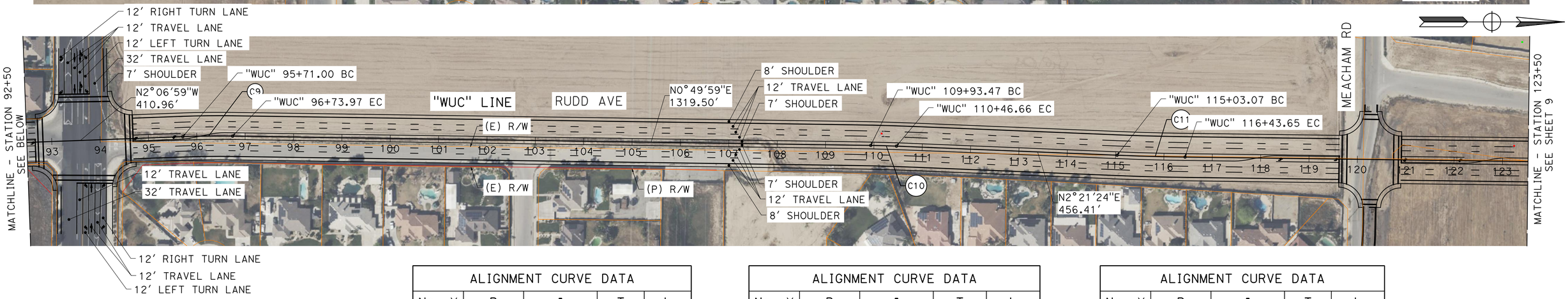
MARK THOMAS

KARGO CCAMS - PROJECT 7
NW BAKERSFIELD GREENPASS NETWORK

7.2
WEST URBAN CORRIDOR







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C3	2000.00'	001°23'00"	24.14'	48.29'
C4	2000.00'	002°03'51"	36.03'	72.06'
C5	2000.00'	002°35'41"	45.29'	90.57'

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C6	2000.00'	006°27'09"	112.74'	225.24'
C7	2000.00'	005°52'13"	102.54'	204.91'
C8	2000.00'	002°41'55"	47.11'	94.20'

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C9	2000.42'	002°56'58"	51.50'	102.97'
C10	2000.00'	001°31'25"	26.59'	53.18'
C11	5000.00'	001°36'40"	70.30'	140.58'

30% CONCEPTUAL DESIGN

DATE: 5/15/26

SCALE: 1"=100'

SHEET 8 OF 24

MARK THOMAS

KARGO CCAMS - PROJECT 7

NW BAKERSFIELD GREENPASS NETWORK

7.2

WEST URBAN CORRIDOR



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C12	2000.00'	003°44'03"	65.20'	130.35'
C13	2000.00'	007°15'17"	126.79'	253.23'
C14	2000.00'	003°31'14"	61.46'	122.89'

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C15	2000.00'	003°14'17"	56.53'	113.03'
C16	2000.00'	003°14'17"	56.53'	113.03'
C17	5500.00'	045°02'12"	2280.24'	4323.21'

30% CONCEPTUAL DESIGN

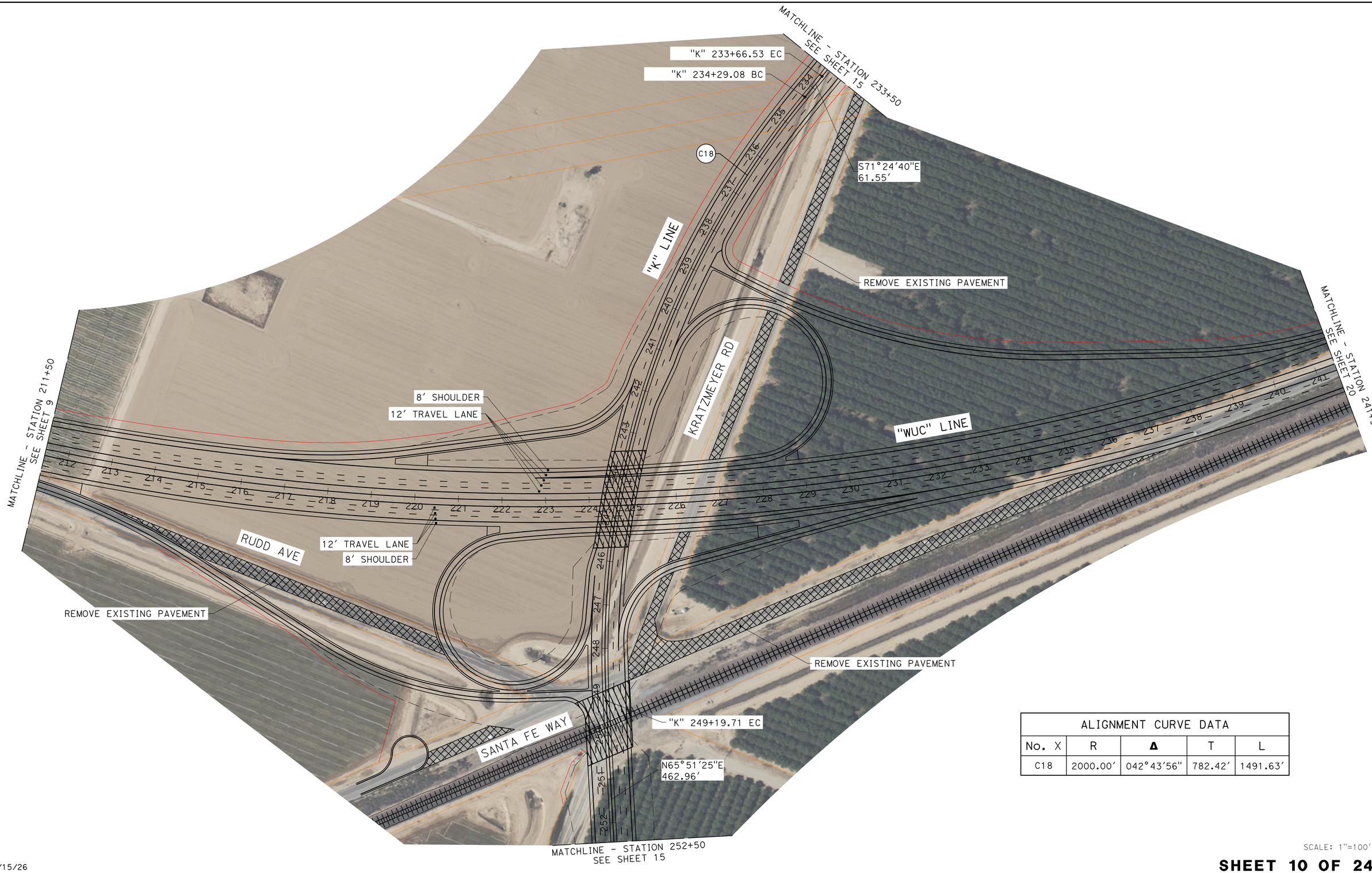
SCALE: 1"=100'

DATE: 5/15/26

MARK THOMAS

KARGO CCAMS - PROJECT 7
NW BAKERSFIELD GREENPASS NETWORK

7.2
WEST URBAN CORRIDOR



ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C18	2000.00'	042°43'56"	782.42'	1491.63'

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

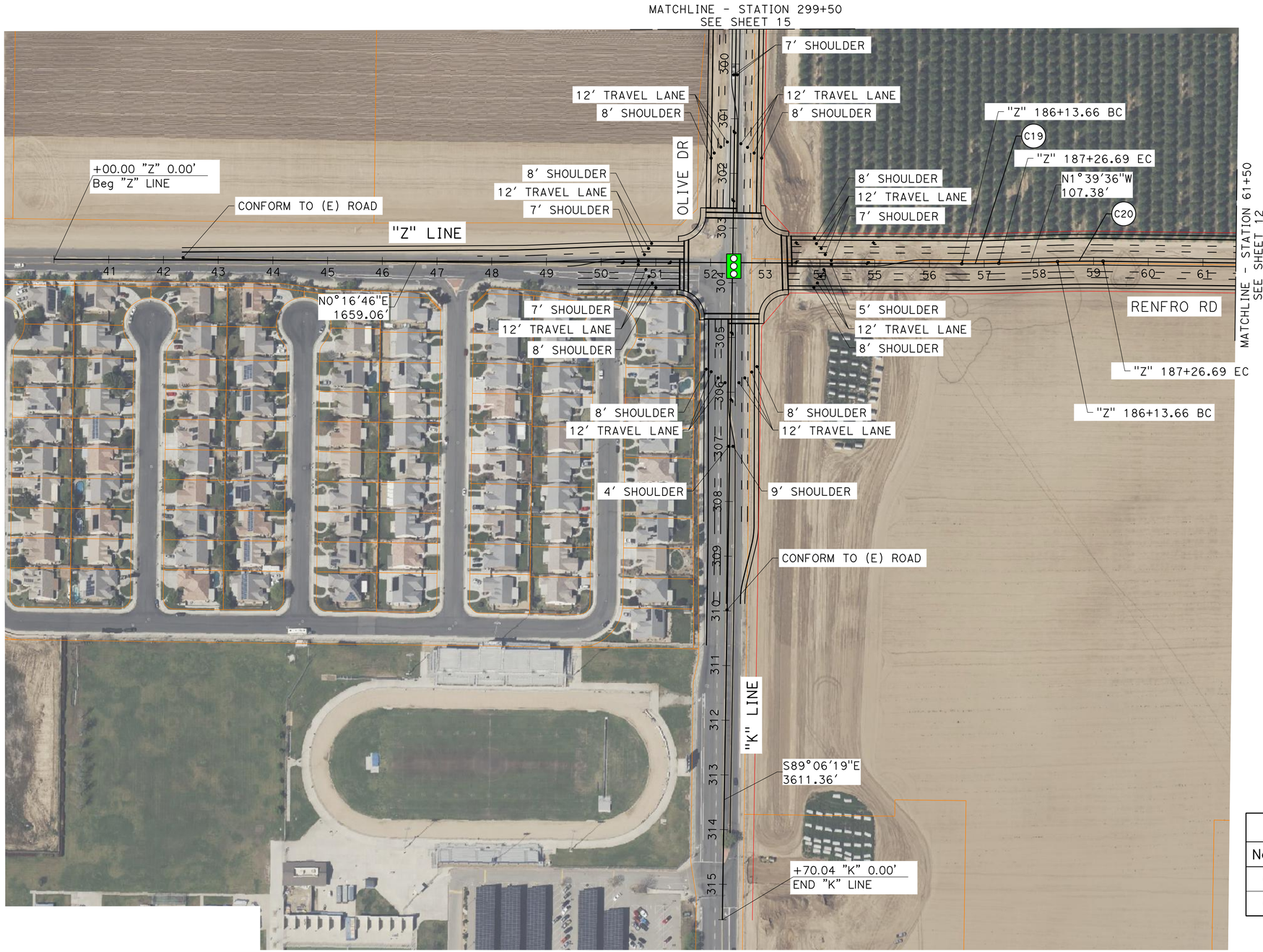
DATE: 5/15/26

SHEET 10 OF 24

MARK THOMAS

KARGO CCAMS - PROJECT 7
NW BAKERSFIELD GREENPASS NETWORK

7.2
WEST URBAN CORRIDOR

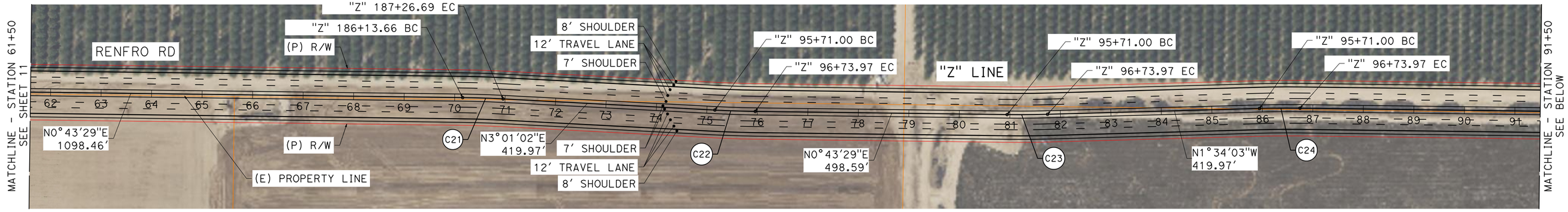


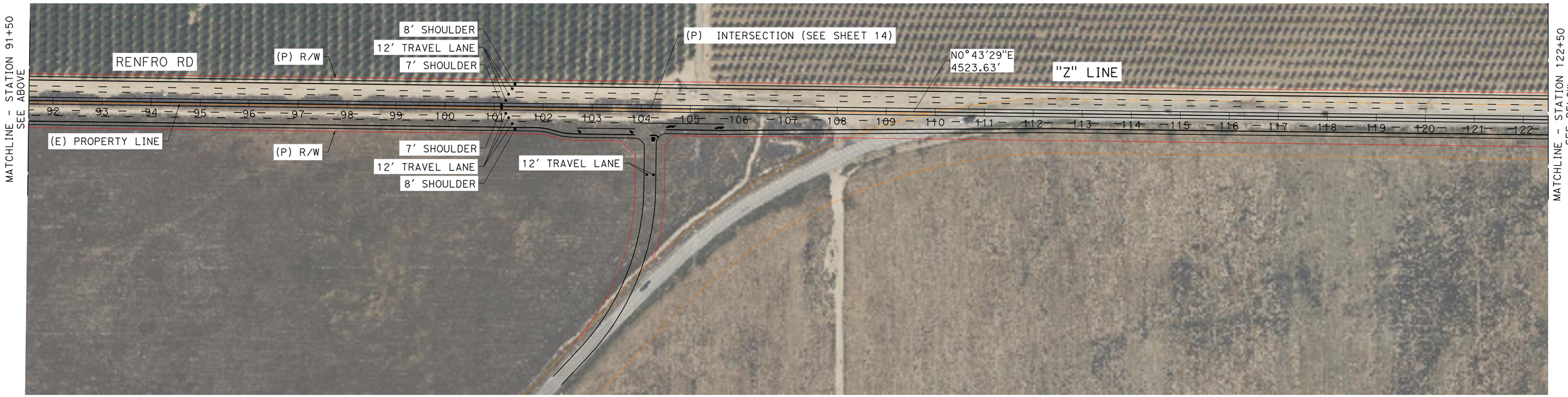
ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C19	2000.00'	001°56'22"	33.85'	67.70'
C20	2000.00'	002°23'06"	41.63'	83.25'

OLIVE DR AND RENFRO RD SIGNALIZED INTERSECTION IMPROVEMENTS

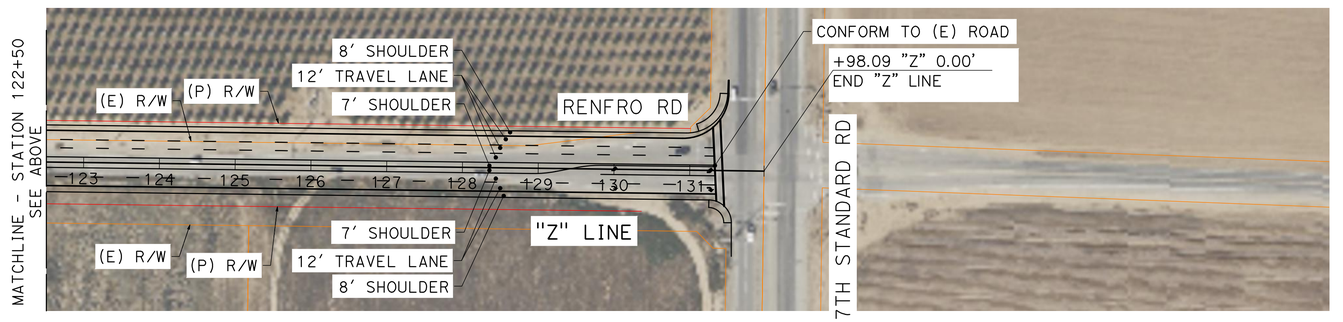
SCALE: 1"=100'

DATE: 5/15/26





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C21	2000.00'	002°17'33"	40.02'	80.02'
C22	2000.00'	002°17'33"	40.02'	80.02'
C23	2000.00'	002°17'33"	40.02'	80.02'
C24	2000.00'	002°17'33"	40.02'	80.02'



30% CONCEPTUAL DESIGN

SCALE: 1"=100'

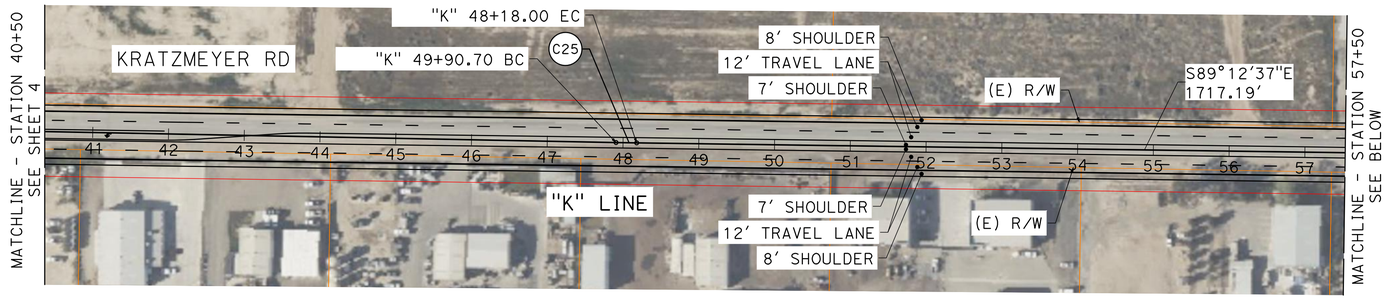
DATE: 5/15/26

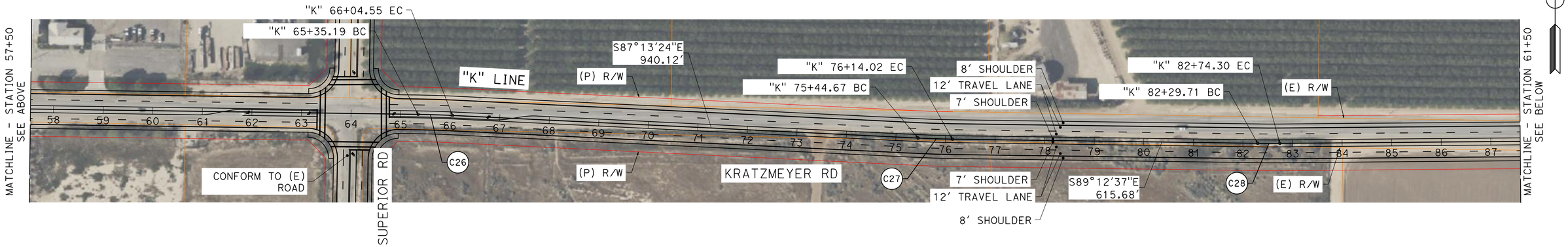
MARK THOMAS

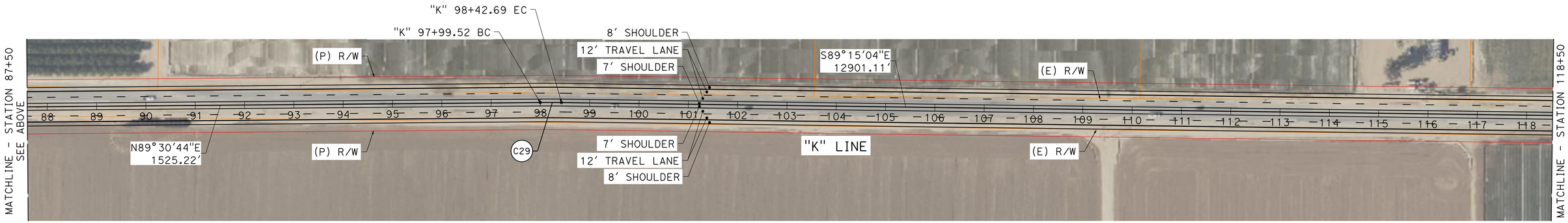
KARGO CCAMS - PROJECT 7
NW BAKERSFIELD GREENPASS NETWORK

7.2
WEST URBAN CORRIDOR

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C25	5000.00′	000°18′46"	13.65′	27.30′
C26	2000.00′	001°59′13"	34.68′	69.36′
C27	2000.00′	001°59′13"	34.68′	69.36′
C28	2000.00′	001°16′39"	22.30′	44.59′
C29	2000.00′	001°14′12"	21.59′	43.17′







30% CONCEPTUAL DESIGN

SCALE: 1"=100′

DATE: 5/15/26

SHEET 13 OF 24

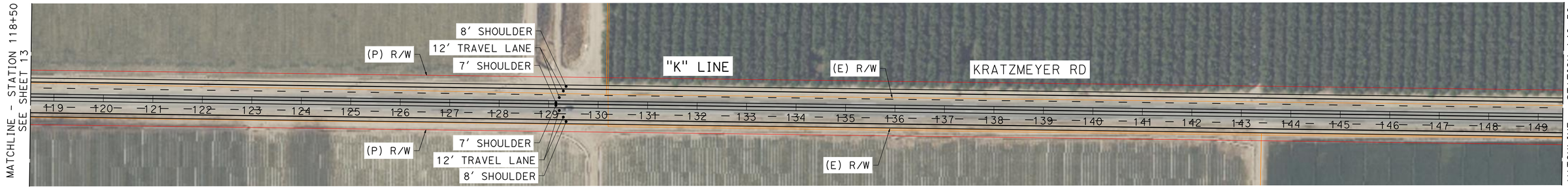
MARK THOMAS

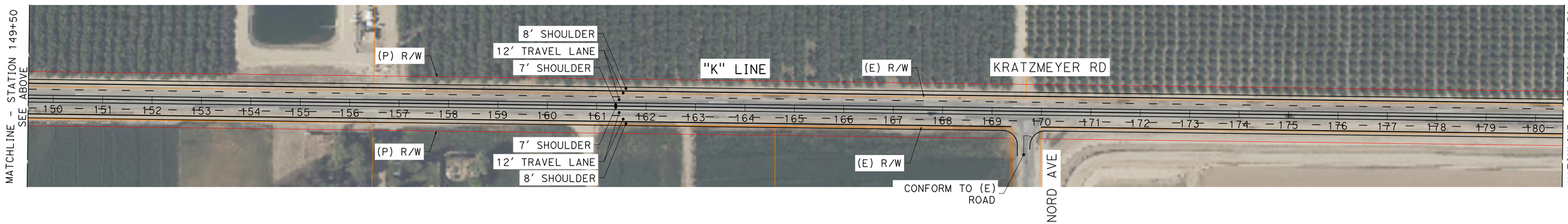
KARGO CCAMS - PROJECT 7

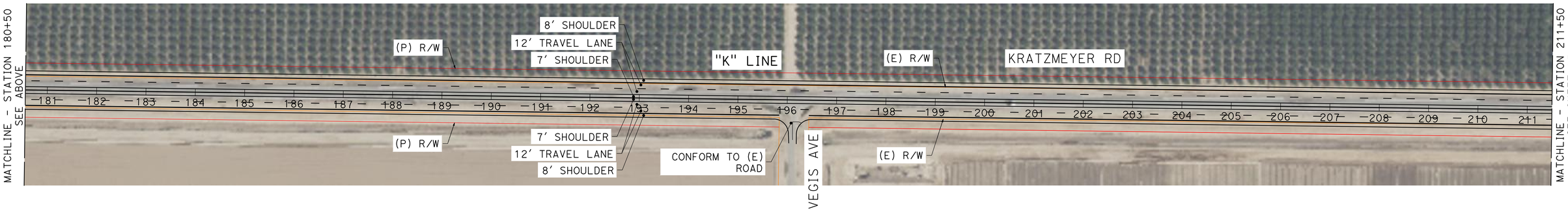
NW BAKERSFIELD GREENPASS NETWORK

7.2

WEST URBAN CORRIDOR







30% CONCEPTUAL DESIGN

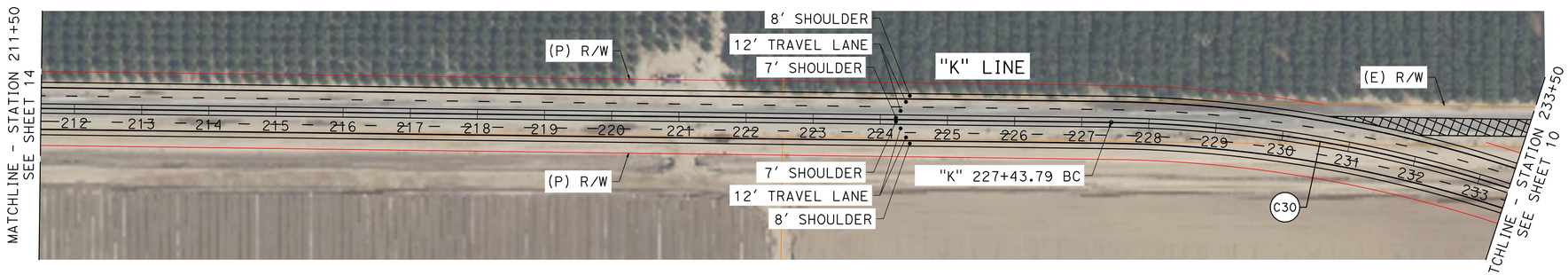
SCALE: 1"=100'

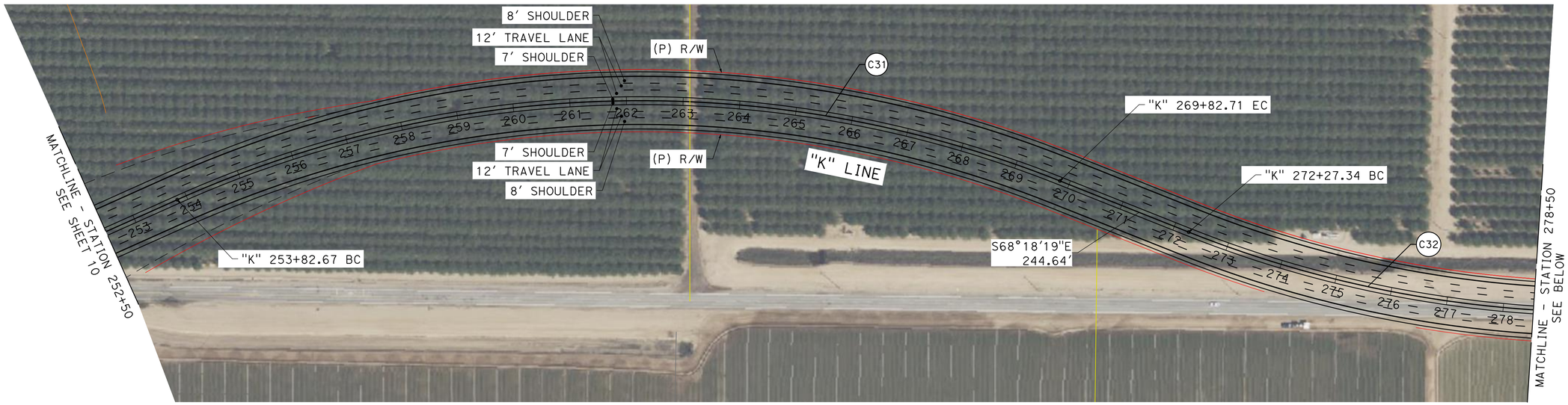
DATE: 5/15/26

MARK THOMAS

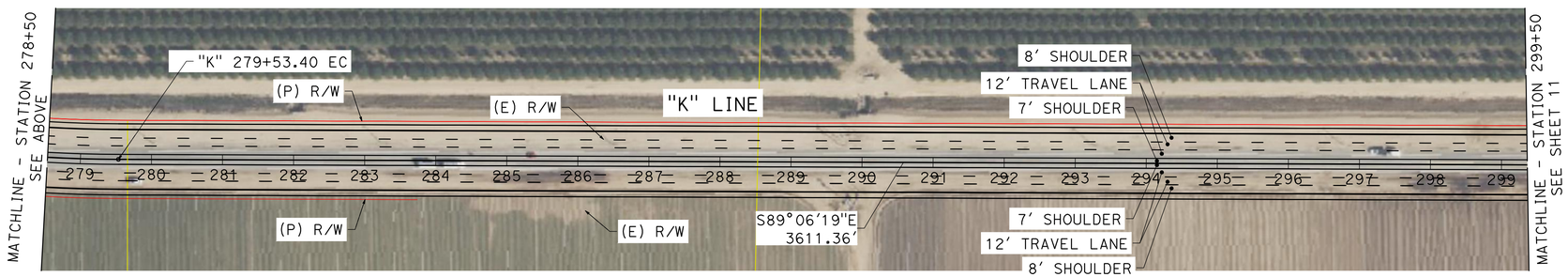
KARGO CCAMS - PROJECT 7
NW BAKERSFIELD GREENPASS NETWORK

7.2
WEST URBAN CORRIDOR





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C30	2000.00'	017°50'24"	313.91'	622.73'
C31	2000.00'	045°50'16"	845.61'	1600.04'
C32	2000.00'	020°48'00"	367.07'	726.06'



30% CONCEPTUAL DESIGN

SCALE: 1"=100'

DATE: 5/15/26

SHEET 15 OF 24

MARK THOMAS

KARGO CCAMS - PROJECT 7

NW BAKERSFIELD GREENPASS NETWORK

7.2

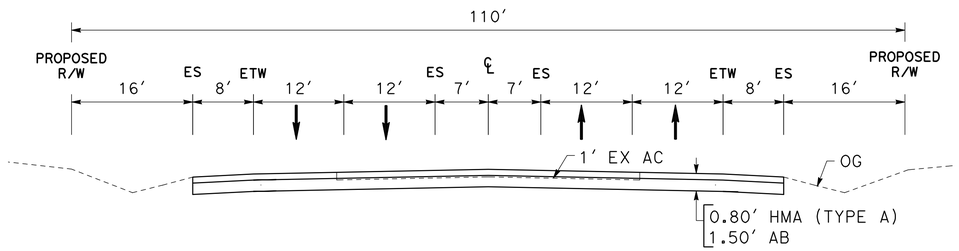
WEST URBAN CORRIDOR

LEGEND:

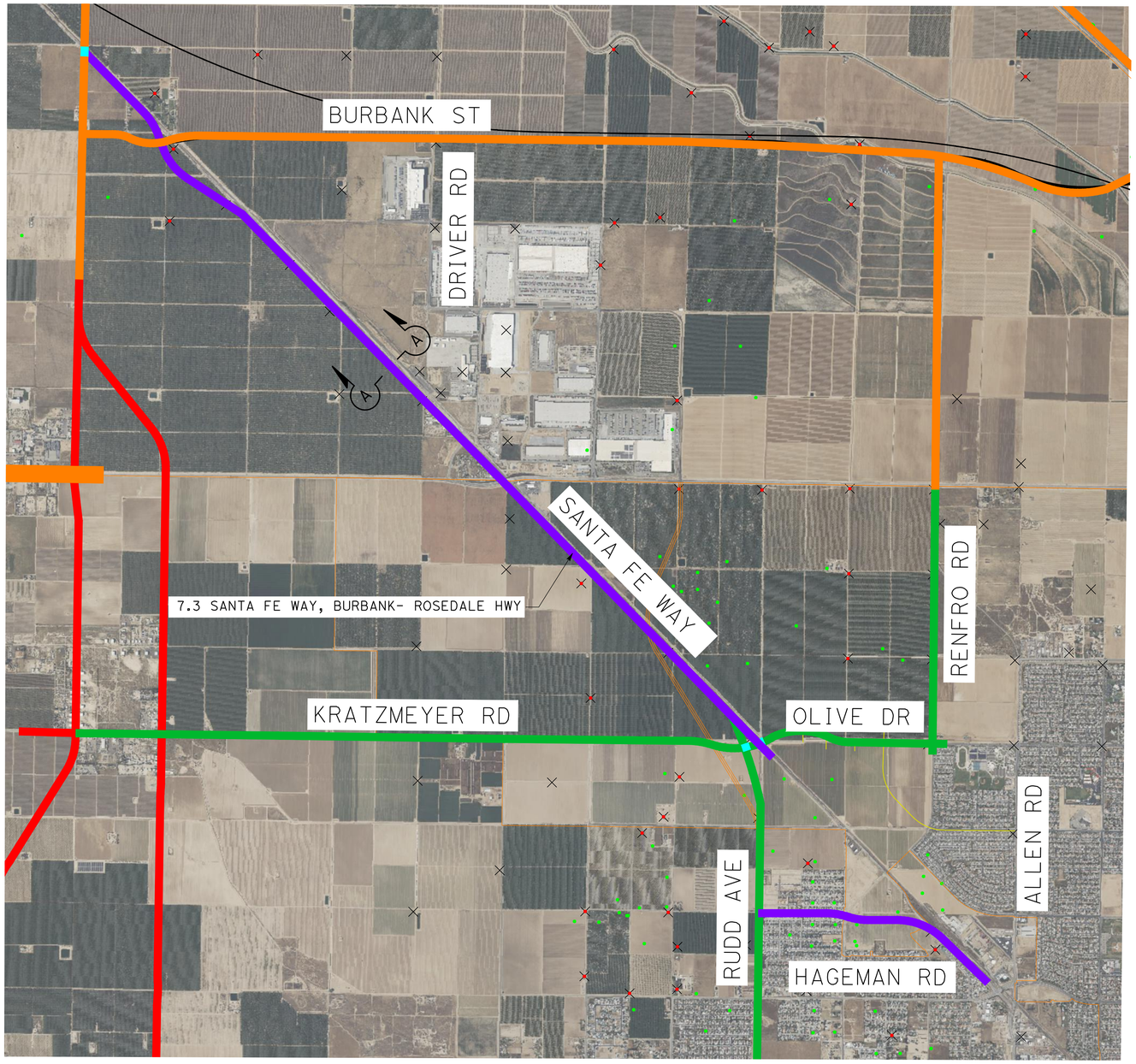
- PHASE 7.2: WEST URBAN CORRIDOR
- PHASE 7.3: SANTA FE WAY, BURBANK-ROSEDALE HWY
- PHASE 13.9: CHERRY AVE EXPRESSWAY GRADE SEPARATIONS
- ADJACENT PROJECTS
- (P) SIGNALIZED INTERSECTION
- WATER QUALITY WELL
- OIL WELL
- (P) RAILROAD CROSSING

SUMMARY TABLE

TOTAL LENGTH	7 MILE
R/W REQUIREMENTS	21 ACRE, 30 PARCELS



SECTION A-A



30% CONCEPTUAL DESIGN

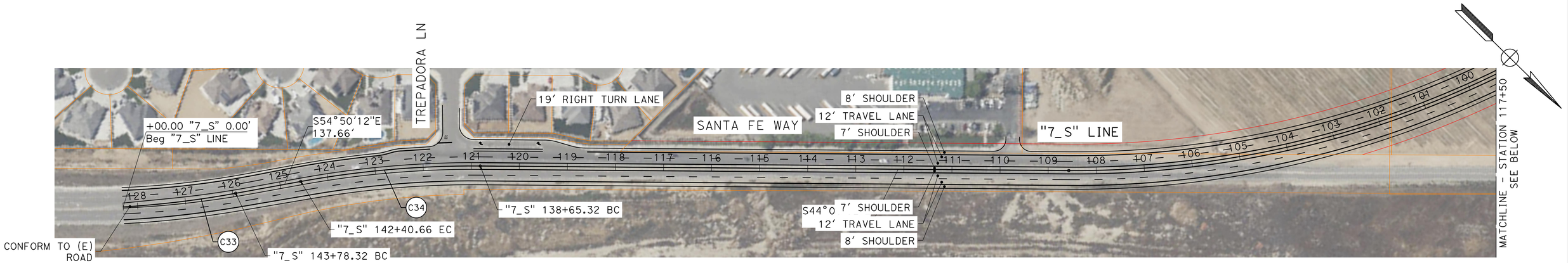
SCALE: 1"=2000′

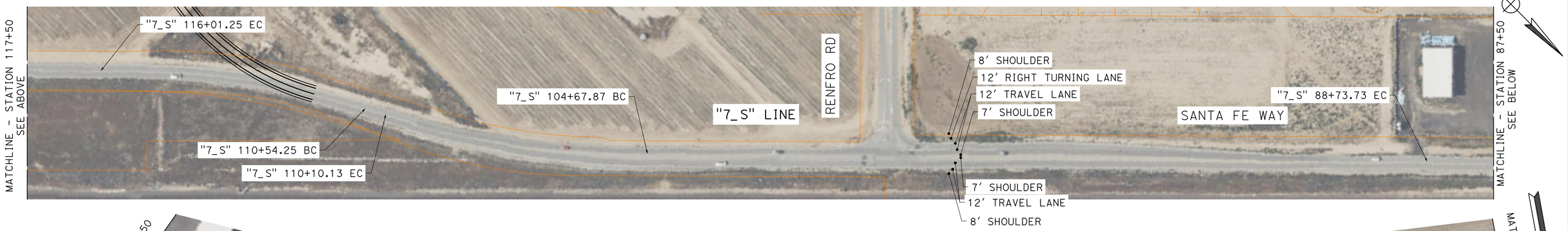
DATE: 5/15/26

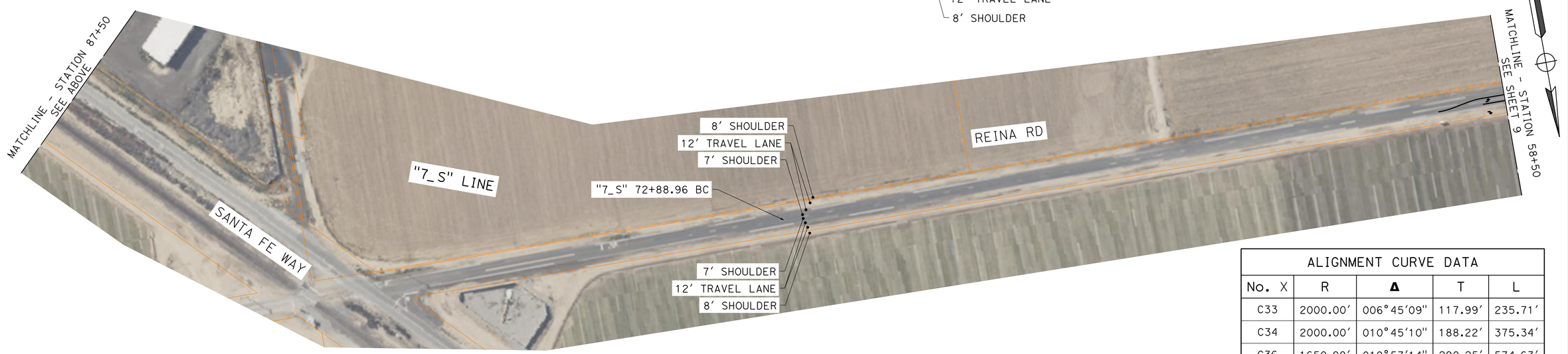
MARK THOMAS

KARGO CCAMS - PROJECT 7
NW BAKERSFIELD GREENPASS NETWORK

7.3
SANTA FE WAY, BURBANK-ROSEDALE HWY







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C33	2000.00'	006°45'09"	117.99'	235.71'
C34	2000.00'	010°45'10"	188.22'	375.34'
C36	1650.00'	019°57'14"	290.25'	574.63'

30% CONCEPTUAL DESIGN

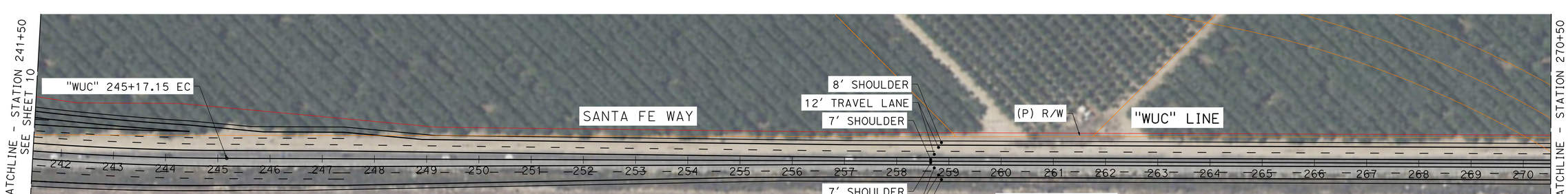
SCALE: 1"=100'

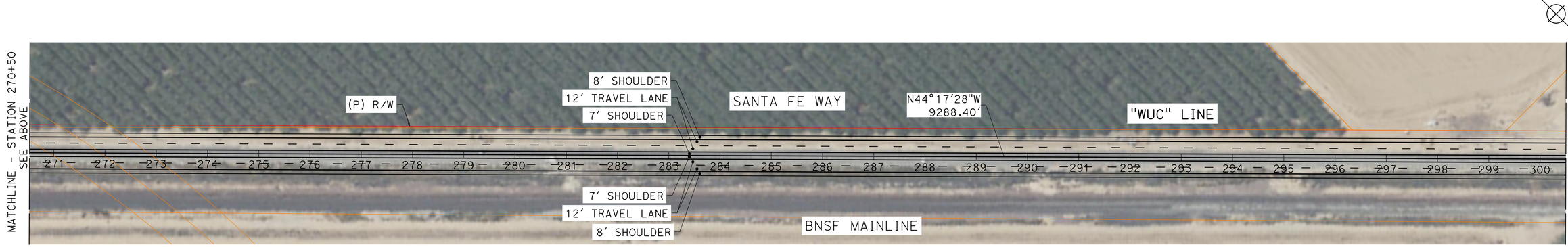
DATE: 5/15/26

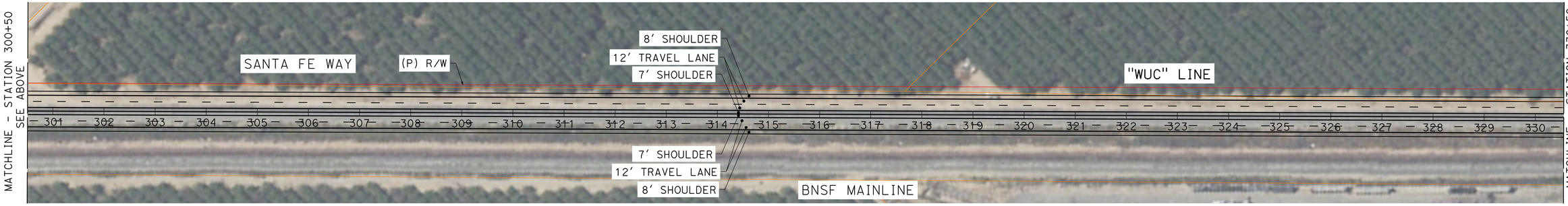
MARK THOMAS

KARGO CCAMS - PROJECT 13
NW BAKERSFIELD GREENPASS NETWORK

13.7
MERCED AVE EXPRESSWAY BRIDGES







30% CONCEPTUAL DESIGN

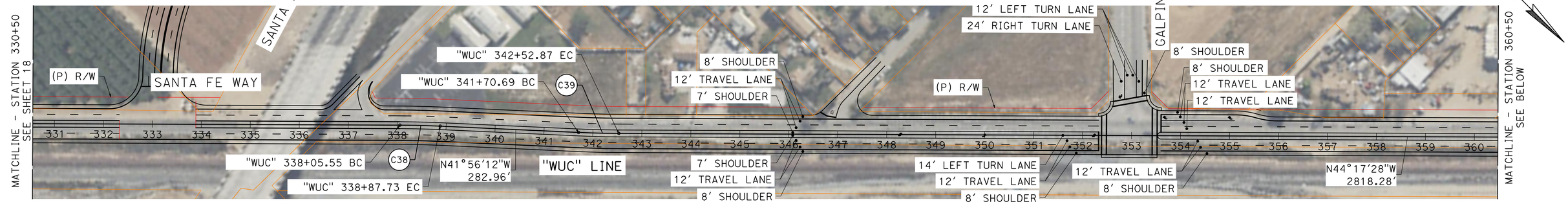
SCALE: 1"=100'

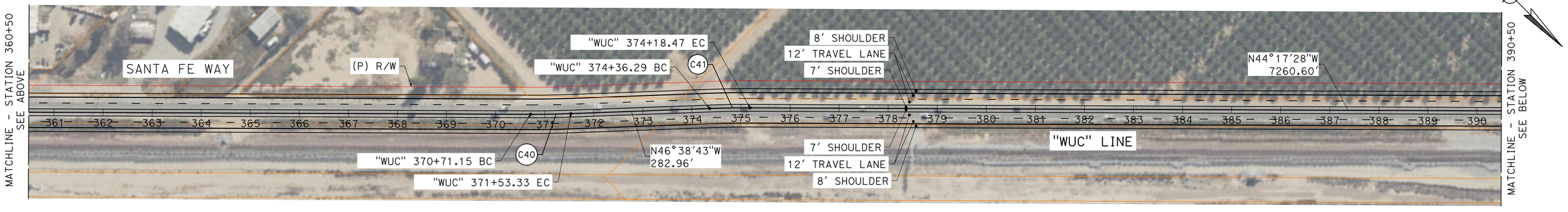
DATE: 5/15/26

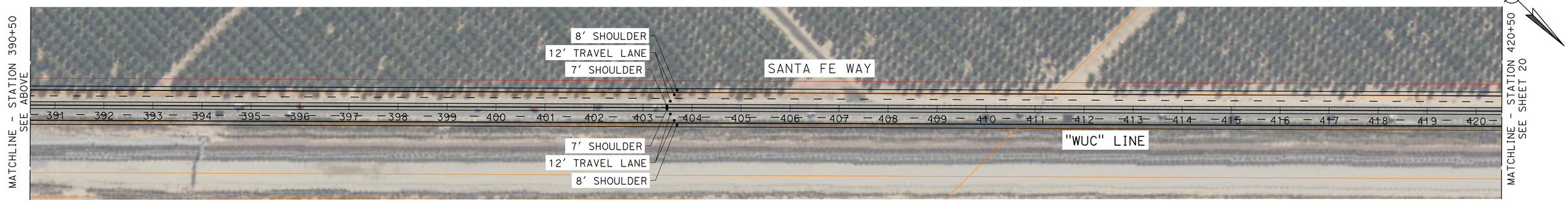
MARK THOMAS

KARGO CCAMS - PROJECT 13
NW BAKERSFIELD GREENPASS NETWORK

13.7
MERCED AVE EXPRESSWAY BRIDGES







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C38	2000.00'	002°21'16"	41.10'	82.18'
C39	2000.00'	002°21'16"	41.10'	82.18'
C40	2000.00'	002°21'16"	41.10'	82.18'
C41	2000.00'	002°21'16"	41.10'	82.18'

30% CONCEPTUAL DESIGN

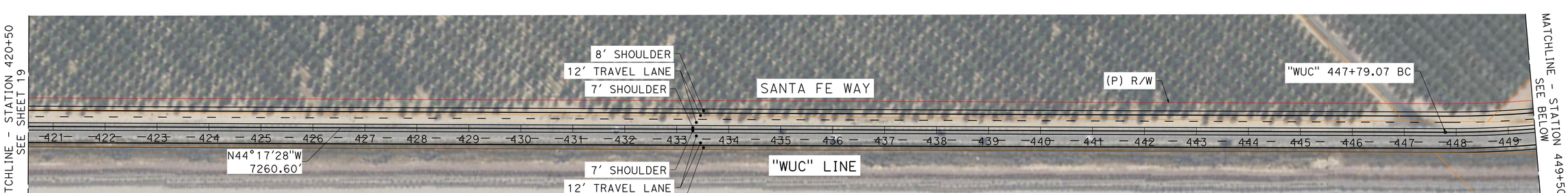
SCALE: 1"=100'

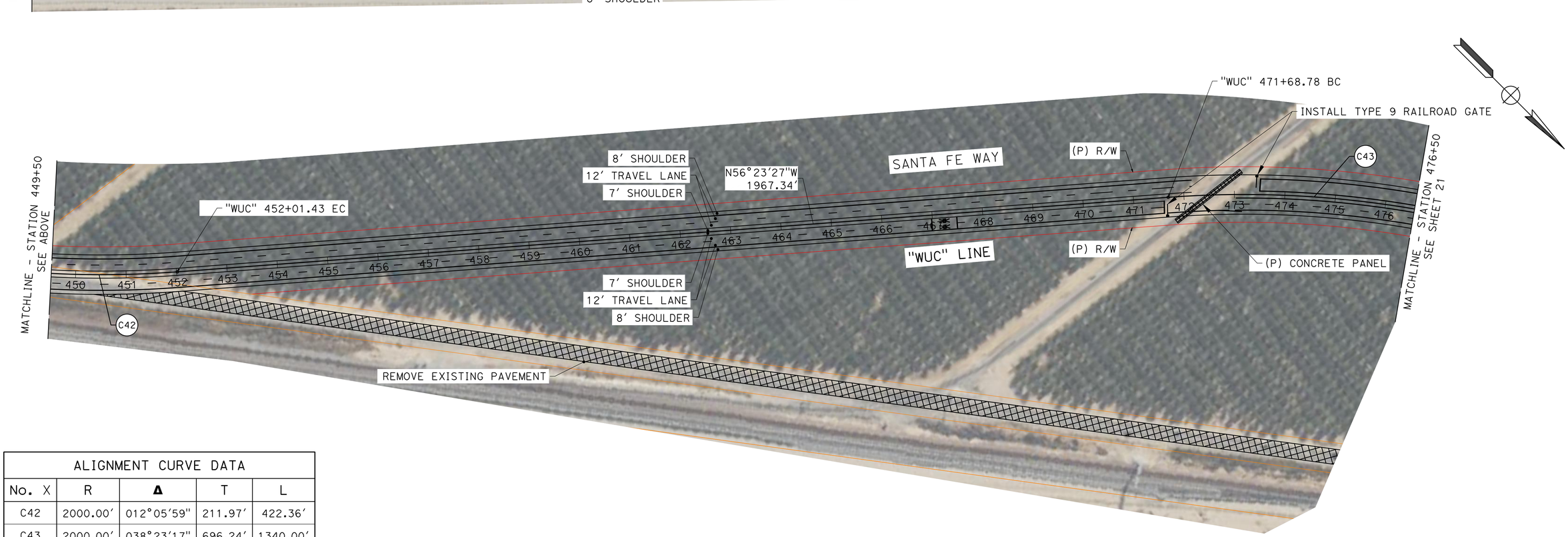
DATE: 5/15/26

MARK THOMAS

KARGO CCAMS - PROJECT 13
NW BAKERSFIELD GREENPASS NETWORK

13.7
MERCED AVE EXPRESSWAY BRIDGES





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C42	2000.00'	012°05'59"	211.97'	422.36'
C43	2000.00'	038°23'17"	696.24'	1340.00'

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

DATE: 5/15/26

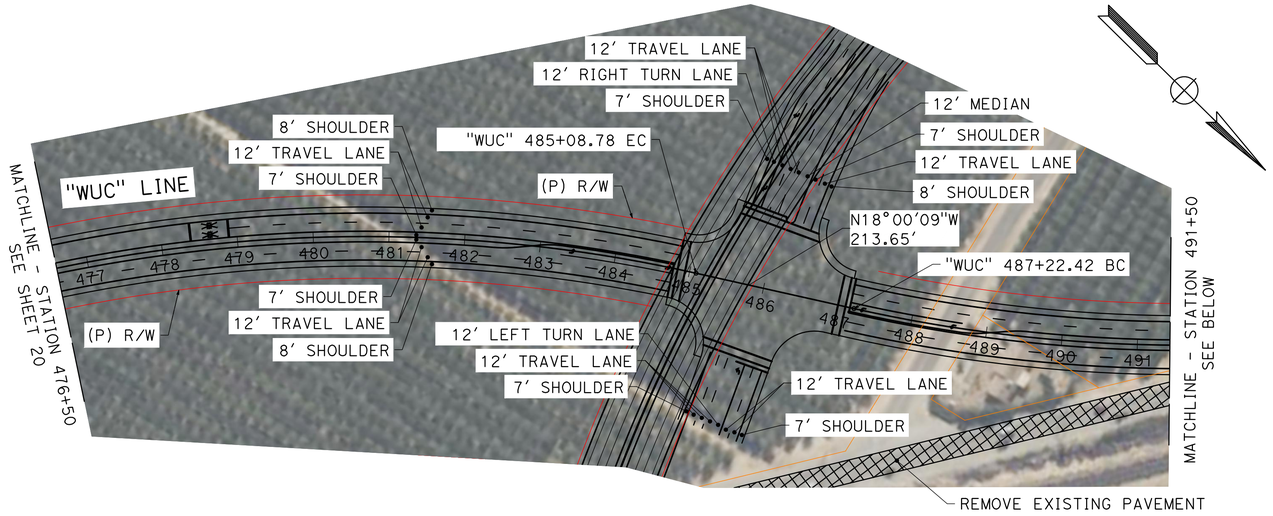
MARK THOMAS

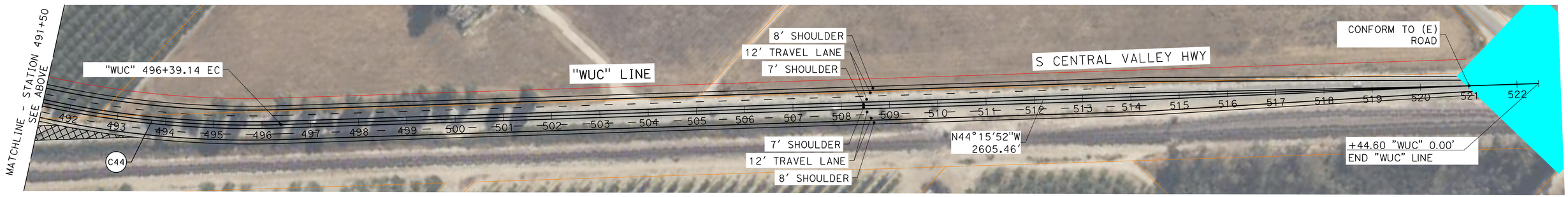
KARGO CCAMS - PROJECT 13

NW BAKERSFIELD GREENPASS NETWORK

13.7

MERCED AVE EXPRESSWAY BRIDGES





ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C44	2000.00'	026°15'43"	466.55'	916.71'

30% CONCEPTUAL DESIGN

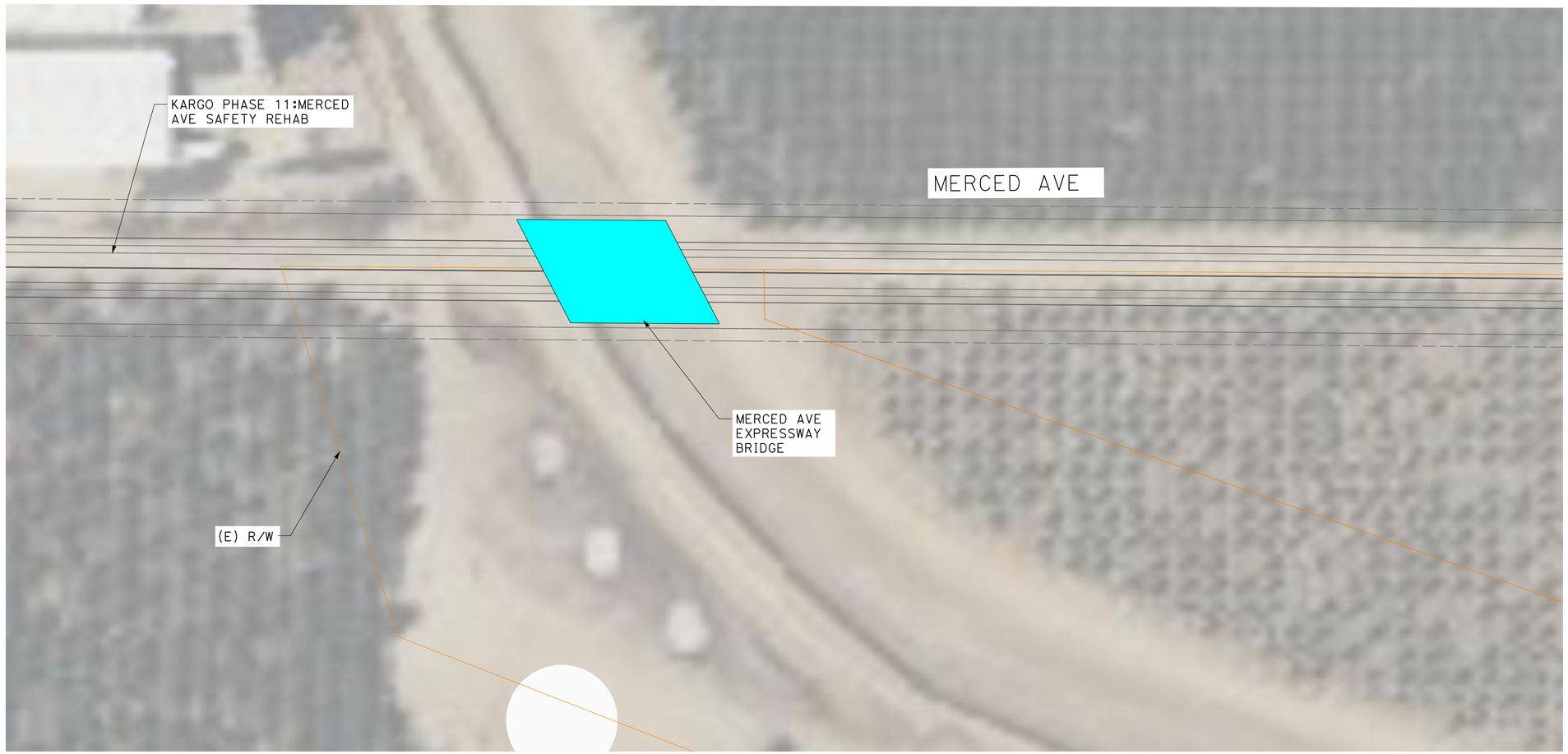
SCALE: 1"=100'

DATE: 5/15/26

MARK THOMAS

KARGO CCAMS - PROJECT 13
NW BAKERSFIELD GREENPASS NETWORK

13.7
MERCED AVE EXPRESSWAY BRIDGES



30% CONCEPTUAL DESIGN

SCALE: 1"=50'

DATE: 5/15/26

SHEET 22 OF 24

MARK THOMAS

KARGO CCAMS - PROJECT 13

NW BAKERSFIELD GREENPASS NETWORK

13.7

MERCED AVE EXPRESSWAY BRIDGES



30% CONCEPTUAL DESIGN

SCALE: 1"= 50'

DATE: 5/15/26

SHEET 23 OF 24

MARK THOMAS

KARGO CCAMS - PROJECT 13

NW BAKERSFIELD GREENPASS NETWORK

13.9A

CHERRY AVE EXPRESSWAY GRADE SEPARATIONS

KRATZMEYER RD

OLIVE DR

"WUC" LINE

"K" LINE

(E) R/W

(E) R/W

(E) R/W

(E) R/W

(E) R/W

CHERRY AVE EXPRESSWAY BRIDGE

13.9B: KRATZMEYER RD EXPRESSWAY GRADE SEPARATIONS

PHASE7.2: WEST URBAN CORRIDOR

SANTA FEY WAY

229 228 227 226 225 224 223 222

239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254

30% CONCEPTUAL DESIGN

SCALE: 1"= 50'

DATE: 5/15/26

MARK THOMAS

KARGO CCAMS - PROJECT 13

NW BAKERSFIELD GREENPASS NETWORK

13.9B

KRATZMEYER RD EXPRESSWAY GRADE SEPARATIONS

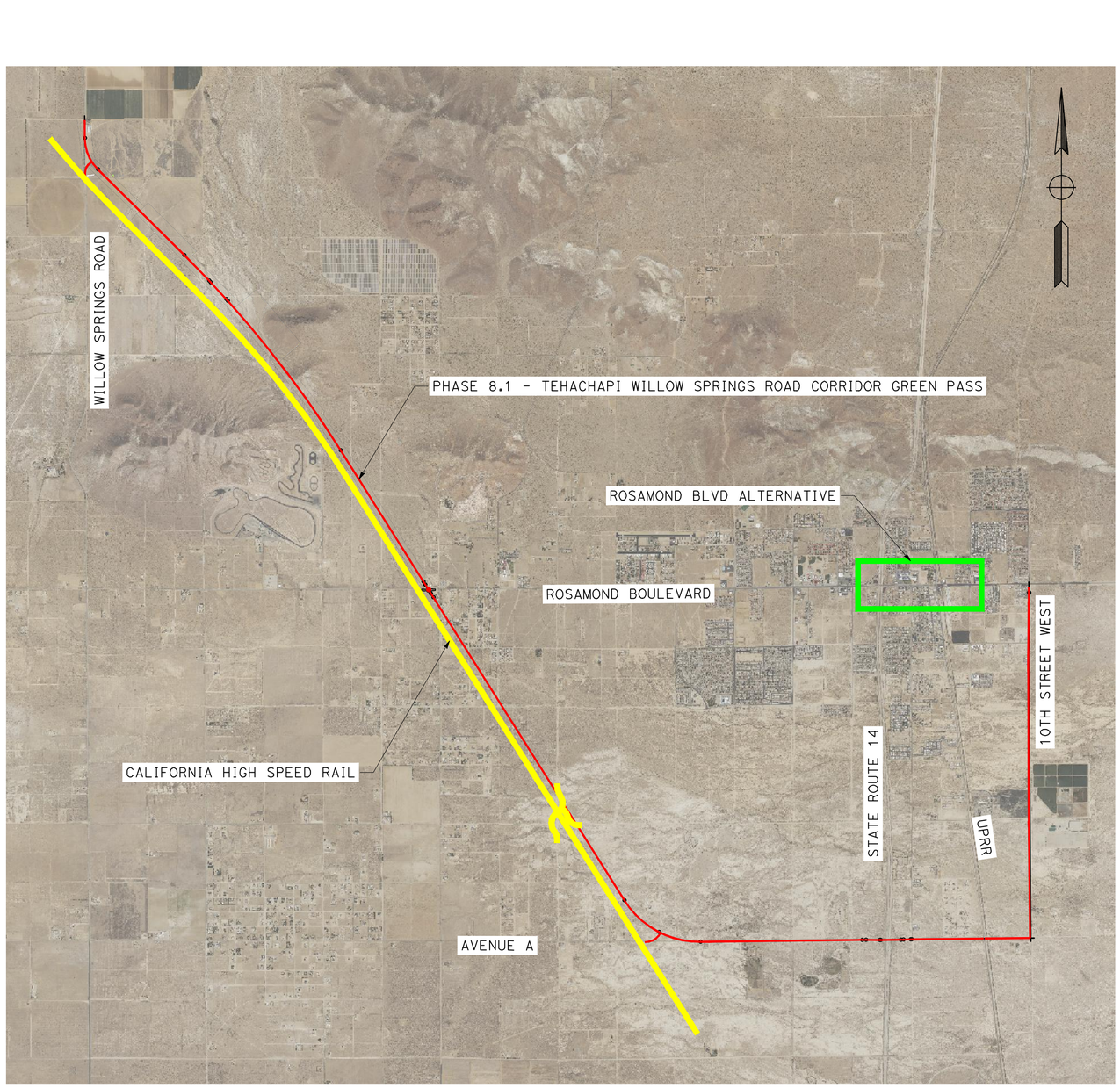
LEGEND:

PHASE 8.1 - TEHACHAPI WILLOW SPRINGS ROAD CORRIDOR GREEN PASS

PHASE 8.2 - ROSAMOND BLVD INTERCHANGE

PROJECT PHASING TABLE

PHASE 8.1 - TEHACHAPI-WILLOW SPRINGS ROAD CORRIDOR GREEN PASS
PHASE 8.2 - ROSAMOND BOULEVARD INTERCHANGE



30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 3000'

MARK THOMAS

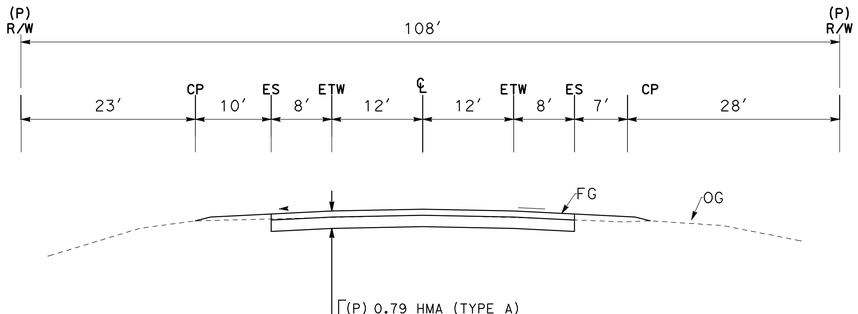
KARGO CCAMS - PROJECT 8

ROSAMOND GREENPASS NETWORK

LEGEND:

PHASE 8.1 - TEHACHAPI WILLOW SPRINGS ROAD CORRIDOR GREEN PASS

PHASE 8.2 - ROSAMOND BLVD INTERCHANGE



TEHACHAPI WILLOW SPRINGS ROAD

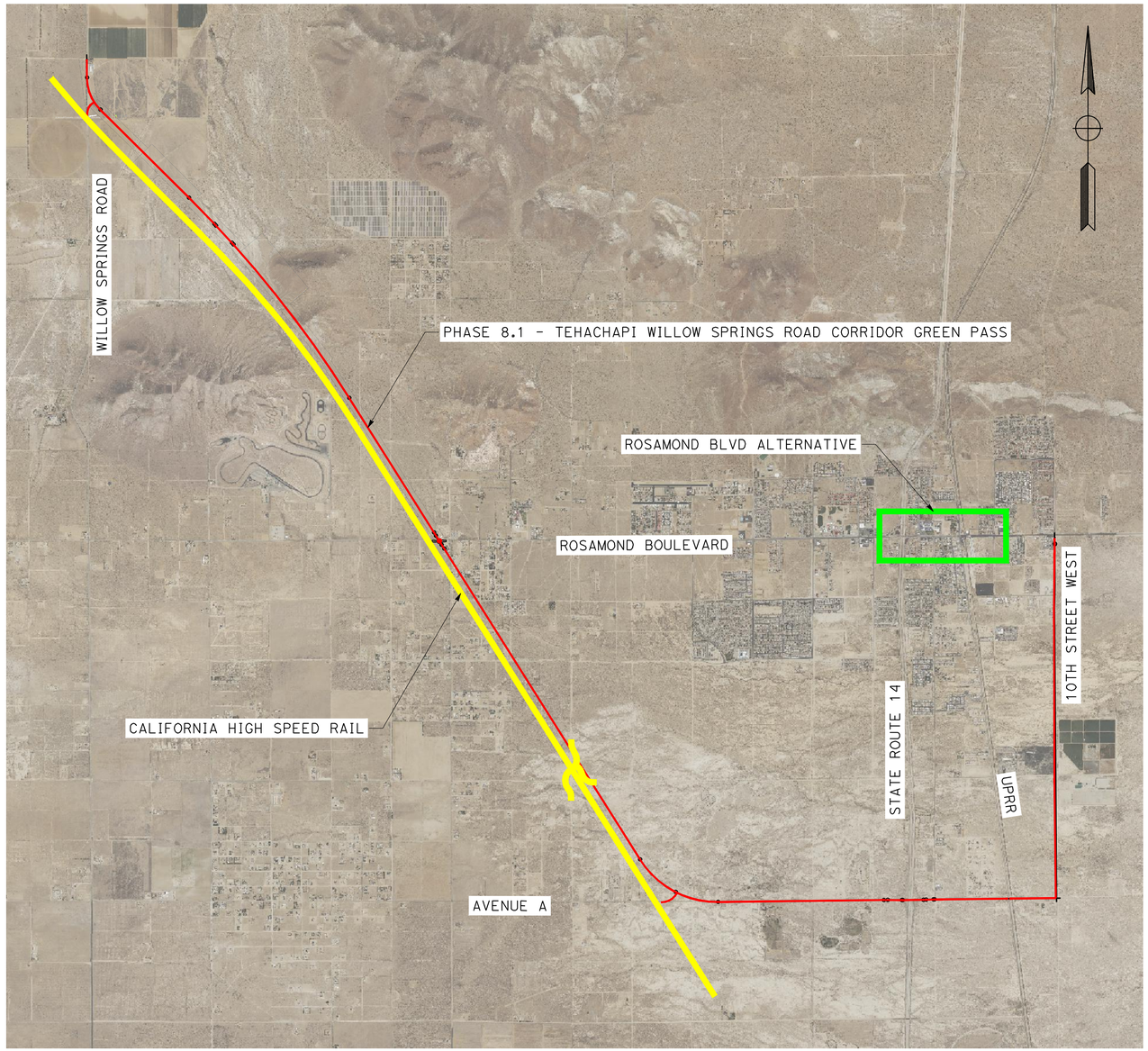
STA 12+50 TO STA 632+50

SUMMARY TABLE

TOTAL LENGTH	15.1 MILE
ROW REQUIREMENTS	440 ACRES, 179 PARCELS

PROJECT PHASING TABLE

PHASE 8.1 - TEHACHAPI-WILLOW SPRINGS ROAD CORRIDOR GREEN PASS
PHASE 8.2 - ROSAMOND BOULEVARD INTERCHANGE



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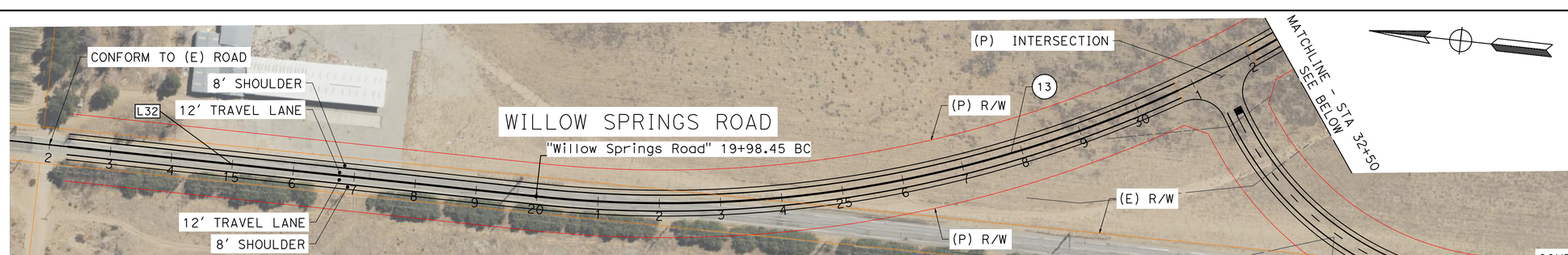
DATE: 1/14/26

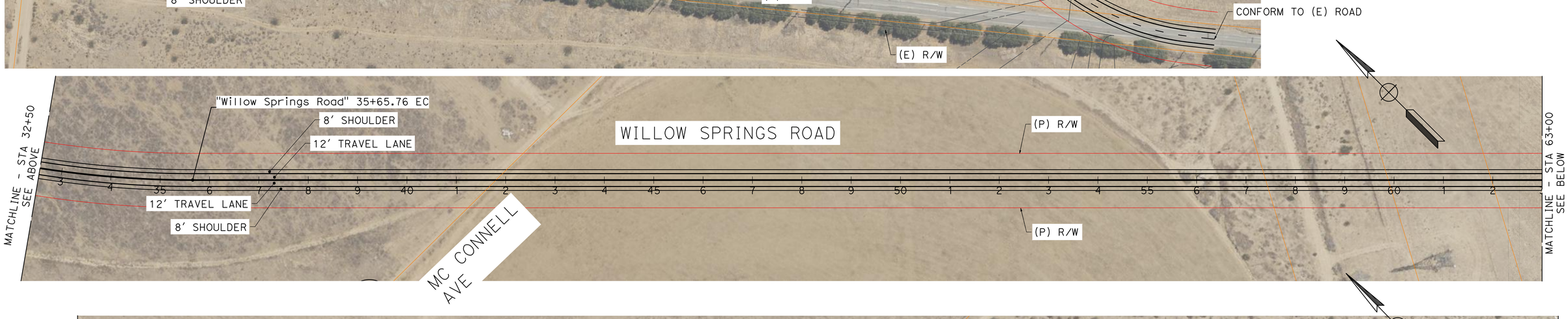
SCALE: 1" = 3000'

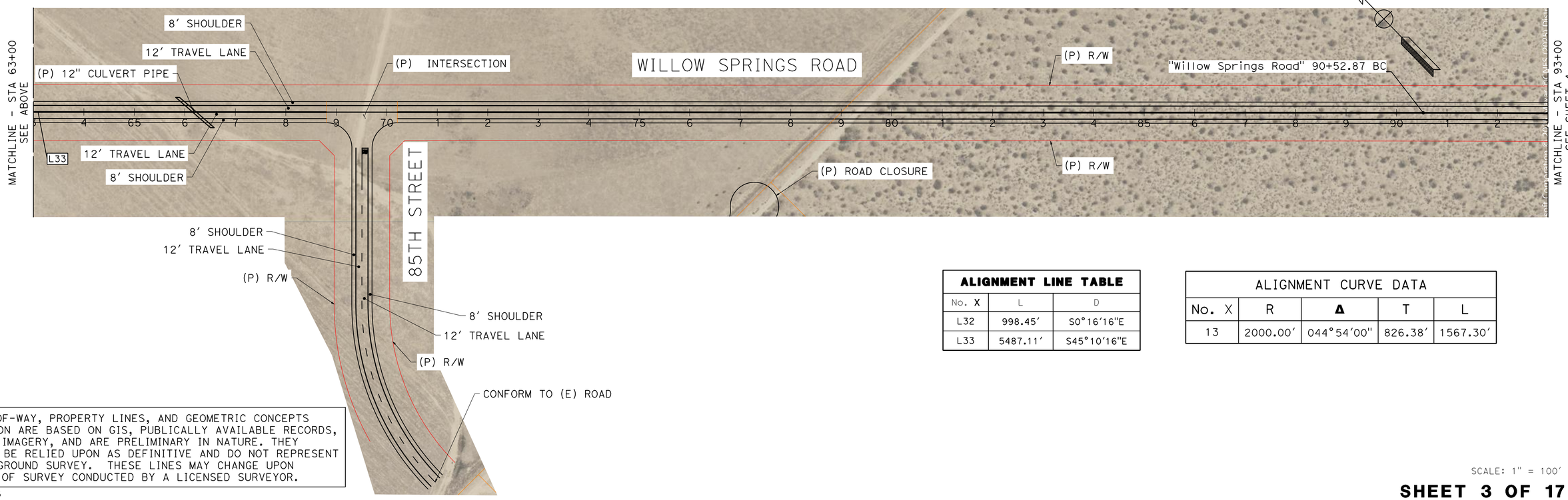
MARK THOMAS

KARGO CCAMS - PROJECT 8

ROSAMOND GREENPASS NETWORK







ALIGNMENT LINE TABLE		
No. X	L	D
L32	998.45'	S0°16'16"E
L33	5487.11'	S45°10'16"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
13	2000.00'	044°54'00"	826.38'	1567.30'

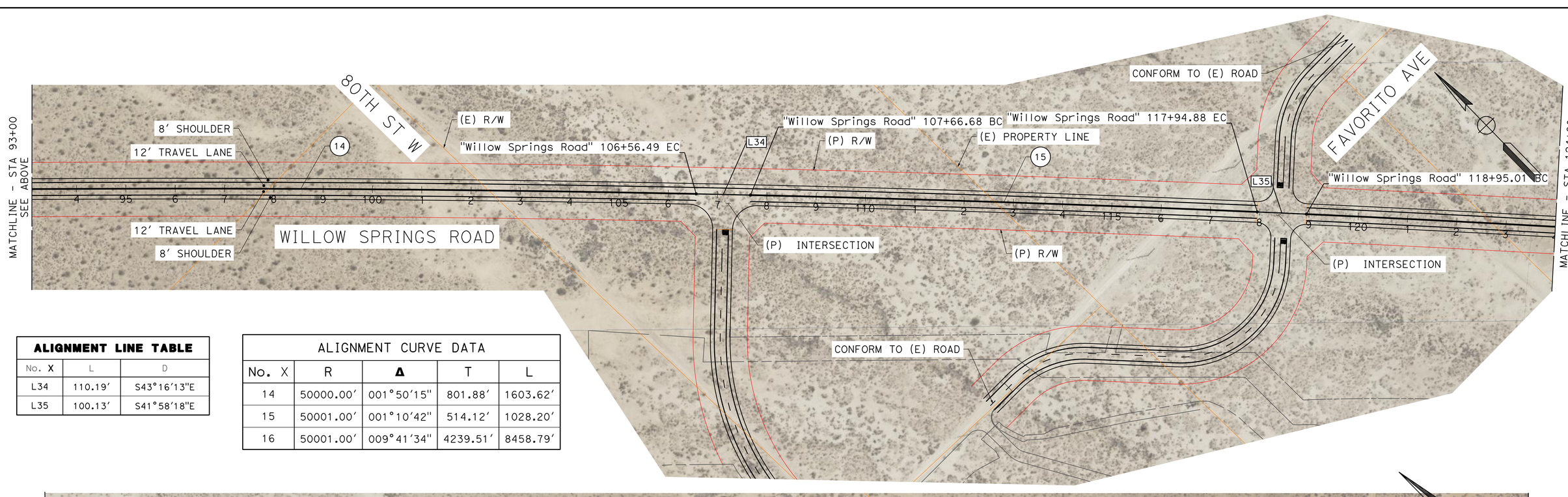
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1" = 100'

SHEET 3 OF 17

30% CONCEPTUAL DESIGN



ALIGNMENT LINE TABLE

No. X	L	D
L34	110.19'	S43°16'13"E
L35	100.13'	S41°58'18"E

ALIGNMENT CURVE DATA

No. X	R	Δ	T	L
14	50000.00'	001°50'15"	801.88'	1603.62'
15	50001.00'	001°10'42"	514.12'	1028.20'
16	50001.00'	009°41'34"	4239.51'	8458.79'

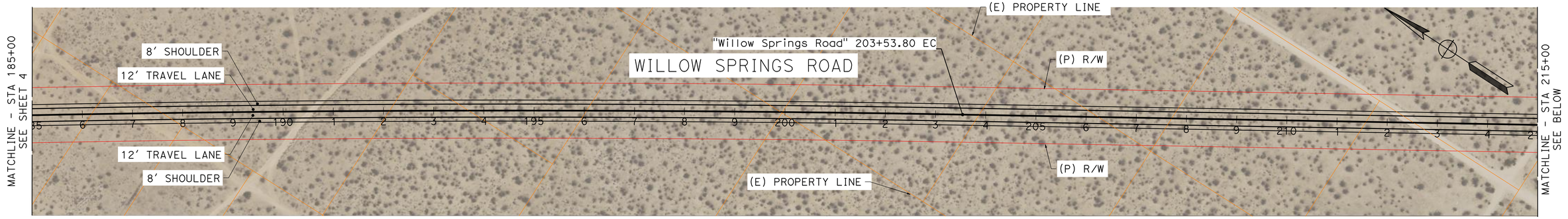
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

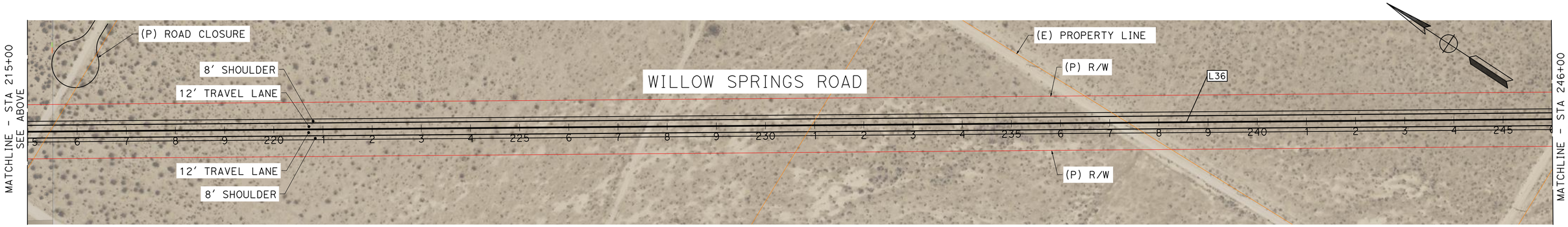
DATE: 1/13/26

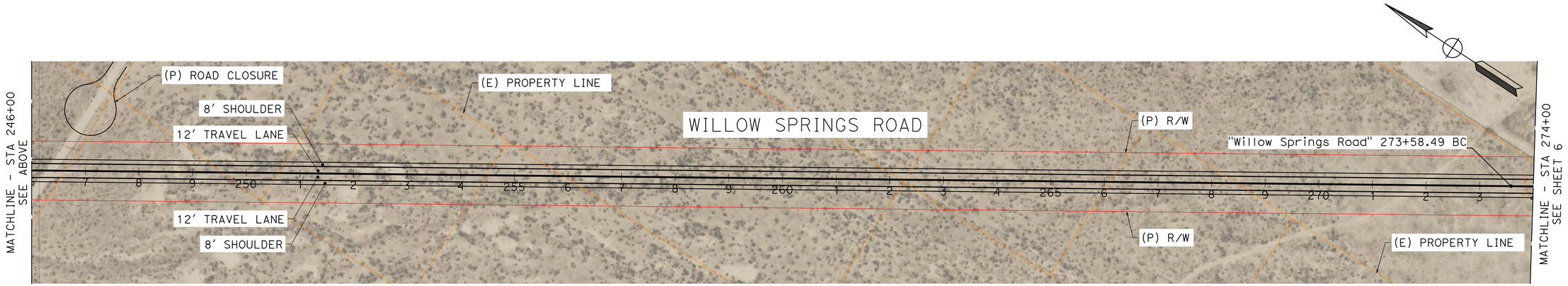
SCALE: 1" = 100'

SHEET 4 OF 17

30% CONCEPTUAL DESIGN







ALIGNMENT LINE TABLE		
No. X	L	D
L36	7004.69'	S32°13'17"E
L37	286.70'	S27°36'48"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
17	2000.00'	004°36'29"	80.47'	160.85'

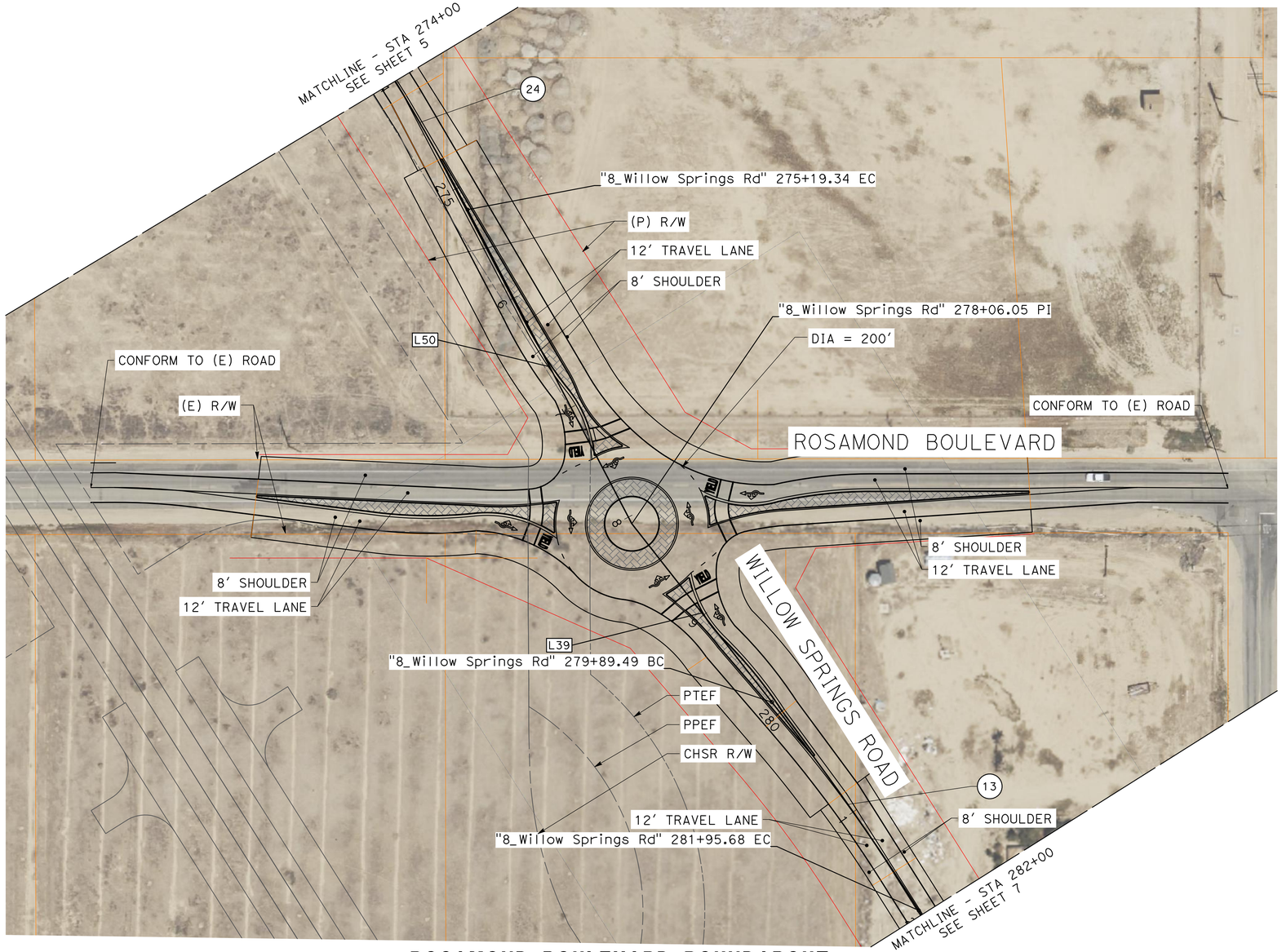
THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1" = 100'

SHEET 5 OF 17

30% CONCEPTUAL DESIGN



ROSAMOND BOULEVARD ROUNDABOUT

SCALE: 1" = 50'

ALIGNMENT LINE TABLE		
No. X	L	D
L39	183.44'	S38°07'42"E
L50	286.70'	S27°36'48"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
13	2000.00'	005°54'25"	103.19'	206.19'
24	2000.00'	004°36'29"	80.47'	160.85'

30% CONCEPTUAL DESIGN

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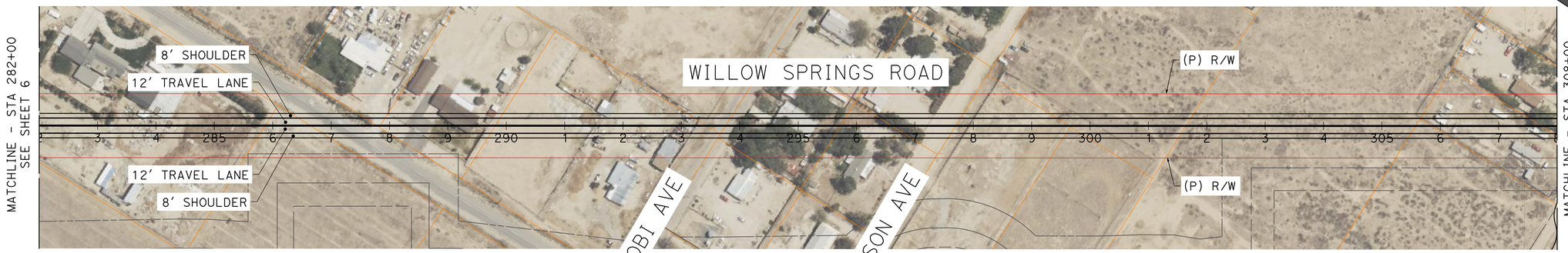
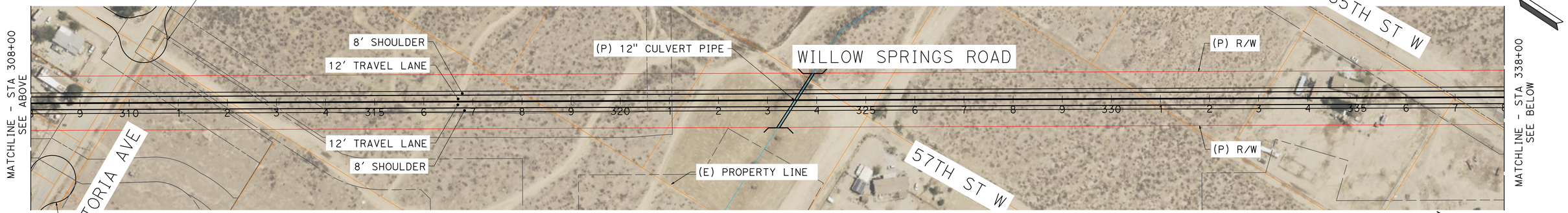
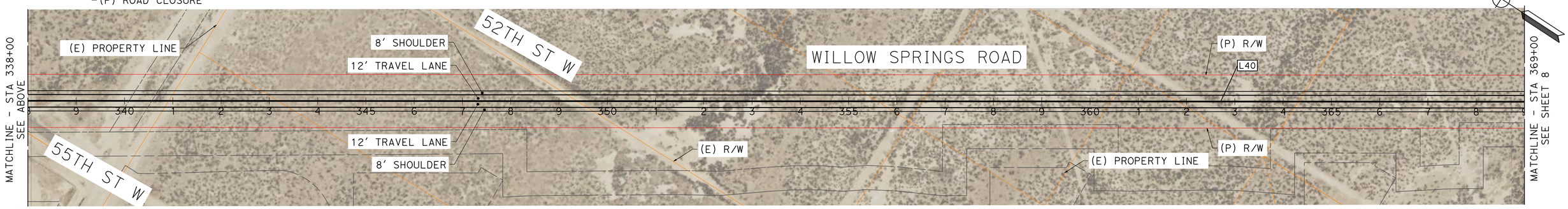
DATE: 1/13/26







ALIGNMENT LINE TABLE		
No. X	L	D
L39	183.44'	S38°07'42"E
L40	16150.34'	S32°13'17"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
13	2000.00'	005°54'25"	103.19'	206.19'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

SHEET 7 OF 17

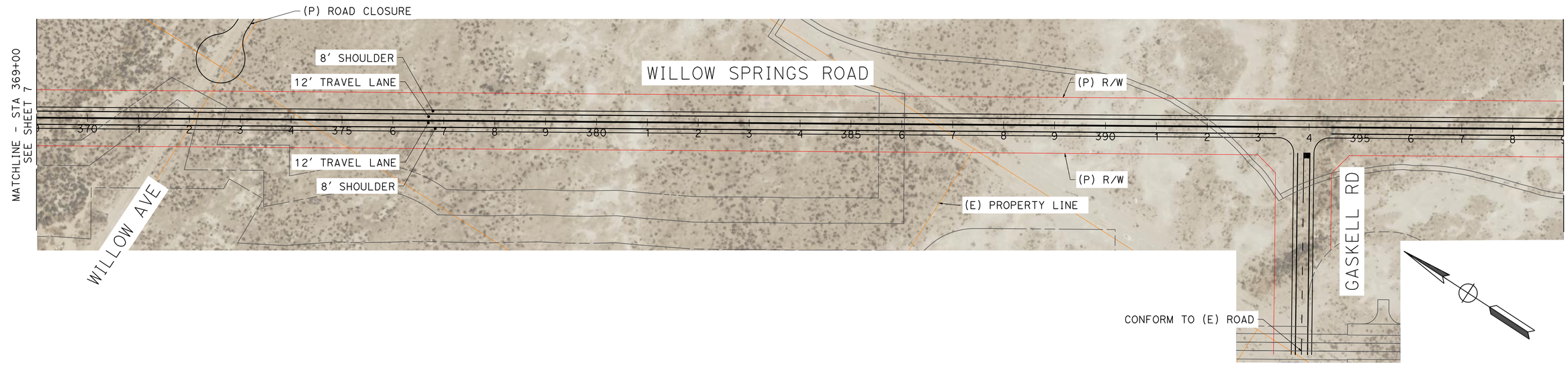
MARK THOMAS

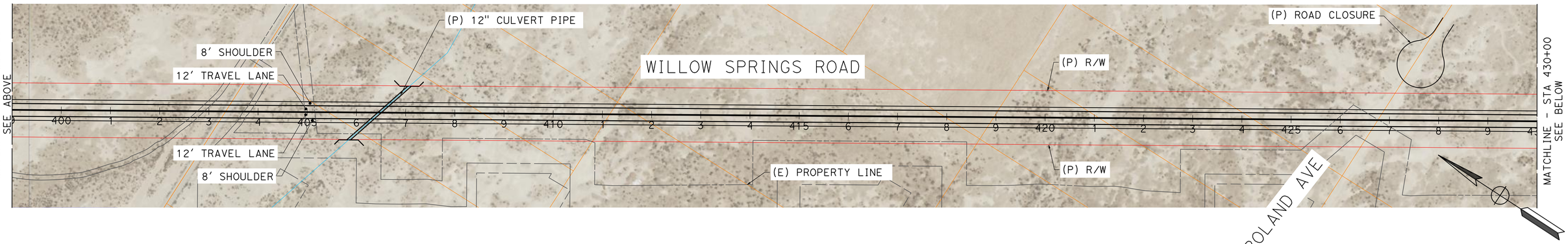
KARGO CCAMS - PROJECT 8

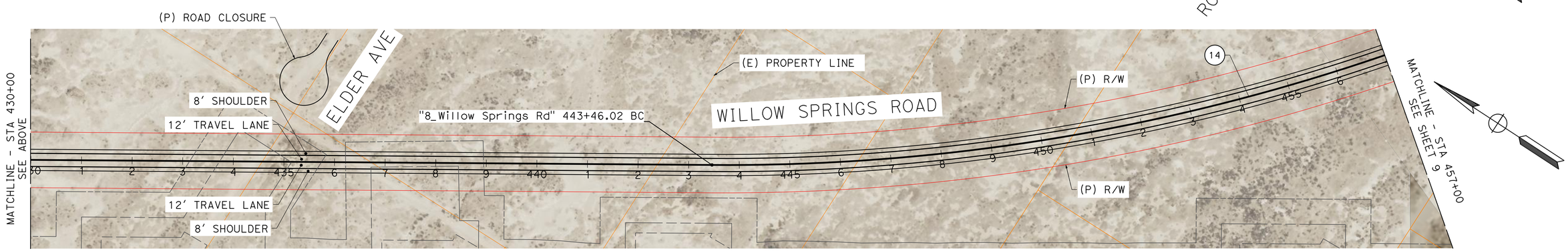
ROSAMOND GREENPASS NETWORK

8.1

TEHACHAPI - WILLOW SPRINGS ROAD CORRIDOR GREEN PASS







ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
14	3999.00'	030°44'51"	1099.54'	2146.04'

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DATE: 1/13/26

SCALE: 1" = 100'

SHEET 8 OF 17

30% CONCEPTUAL DESIGN

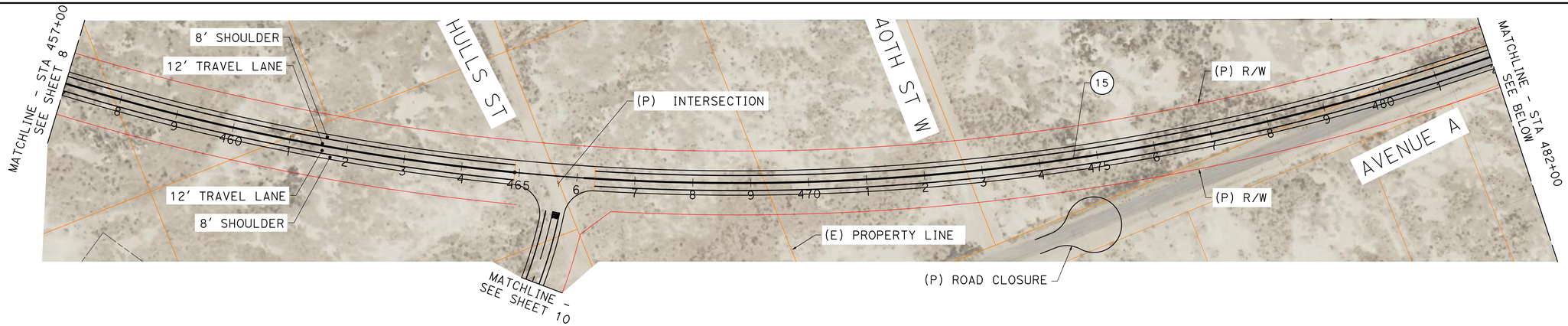
MARK THOMAS

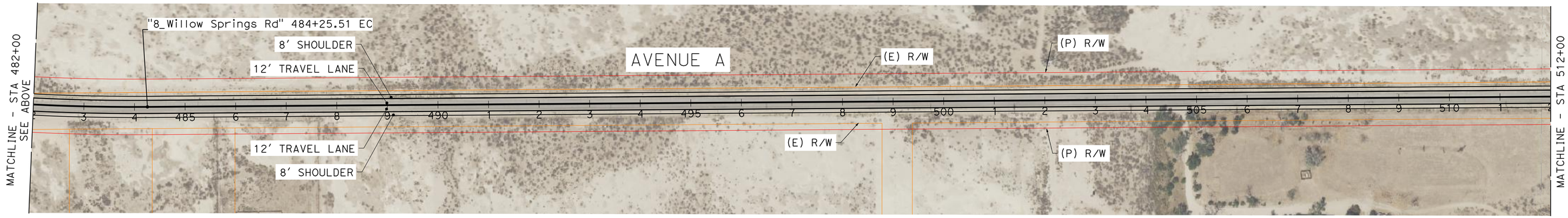
KARGO CCAMS - PROJECT 8

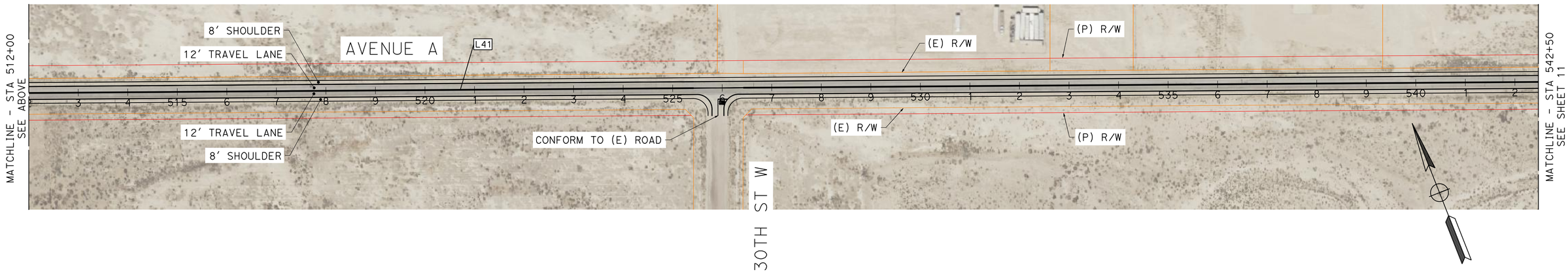
ROSAMOND GREENPASS NETWORK

8.1

TEHACHAPI - WILLOW SPRINGS ROAD CORRIDOR GREEN PASS







ALIGNMENT LINE TABLE		
No. X	L	D
L41	7291.43'	N89°19'47"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
15	3999.00'	027°42'06"	986.01'	1933.45'

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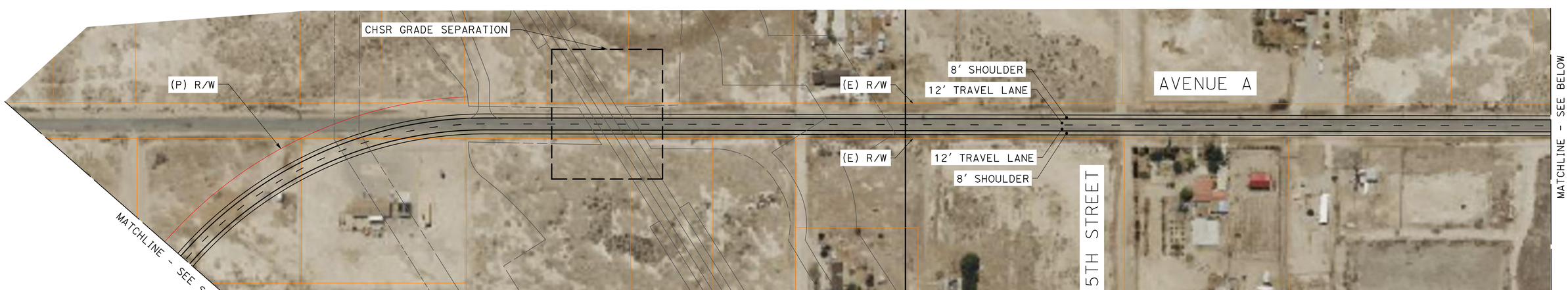
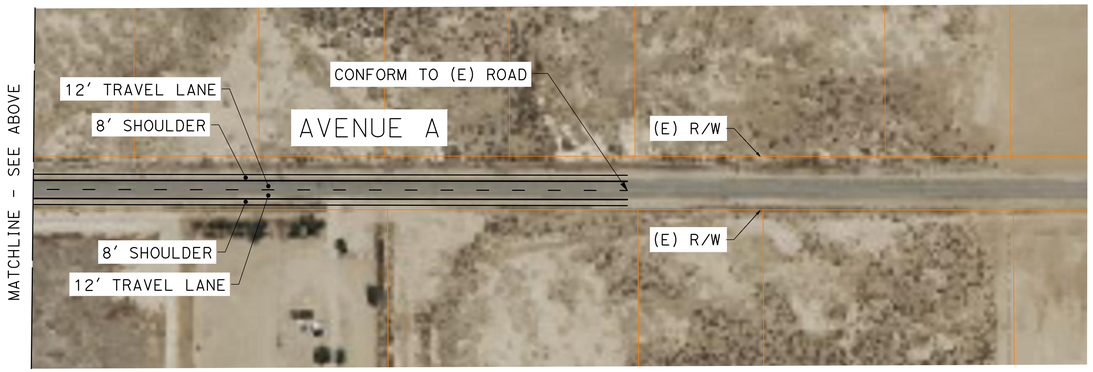
DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'





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DATE: 1/13/26

AVENUE A STOP-CONTROLLED REALIGNMENT

SCALE: 1" = 100'

SCALE: 1" = 100'

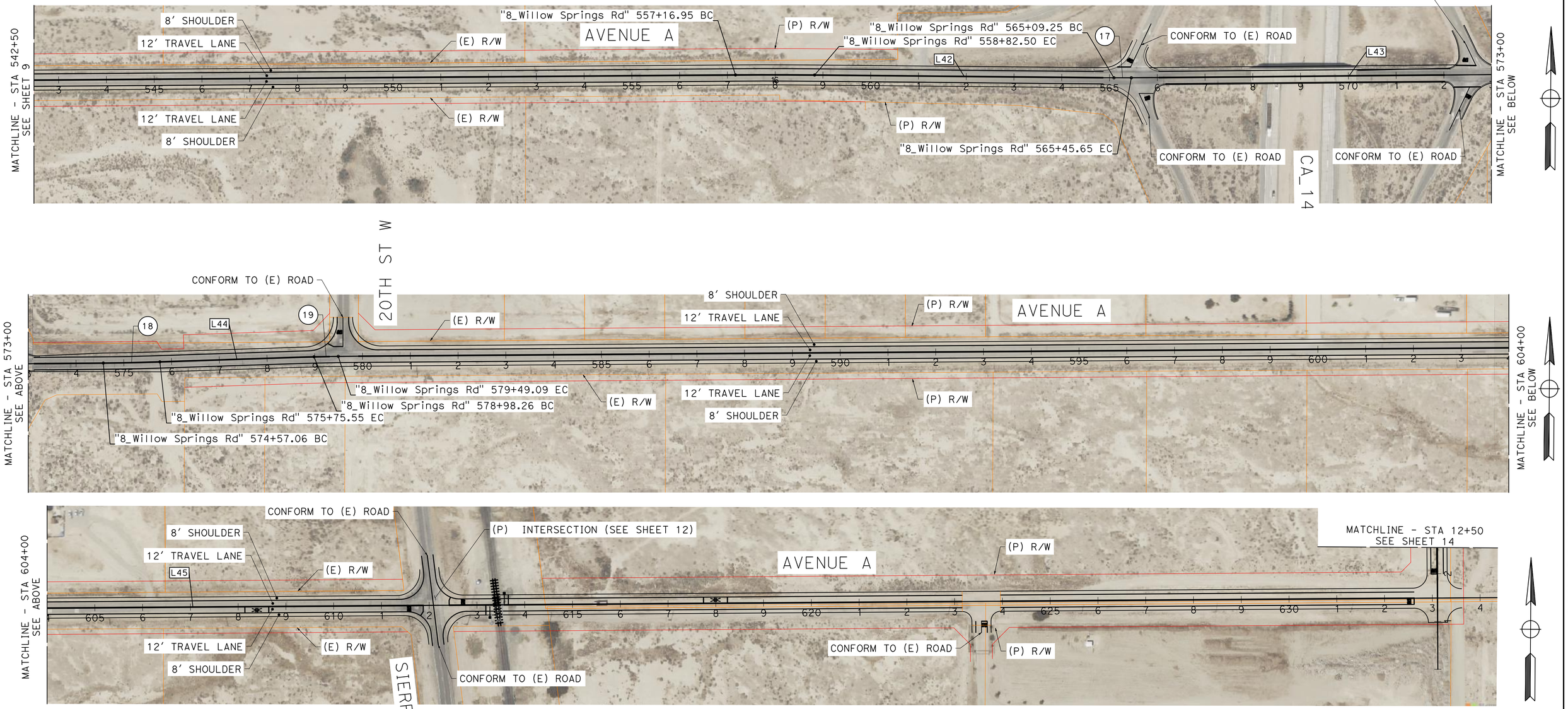
MARK THOMAS

KARGO CCAMS - PROJECT 8

ROSAMOND GREENPASS NETWORK

8.1

TEHACHAPI - WILLOW SPRINGS ROAD CORRIDOR GREEN PASS



ALIGNMENT LINE TABLE

No. X	L	D
L42	626.75'	S89°43'19"E
L43	911.41'	N89°14'07"E
L44	322.71'	N87°52'38"E
L45	5512.33'	N89°20'01"E

ALIGNMENT CURVE DATA

No. X	R	Δ	T	L
17	2000.00'	001°02'34"	18.20'	36.40'
18	4999.00'	001°21'29"	59.25'	118.49'
19	2000.00'	001°27'23"	25.42'	50.84'

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DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

MARK THOMAS

KARGO CCAMS - PROJECT 8

ROSAMOND GREENPASS NETWORK

8.1

TEHACHAPI - WILLOW SPRINGS ROAD CORRIDOR GREEN PASS

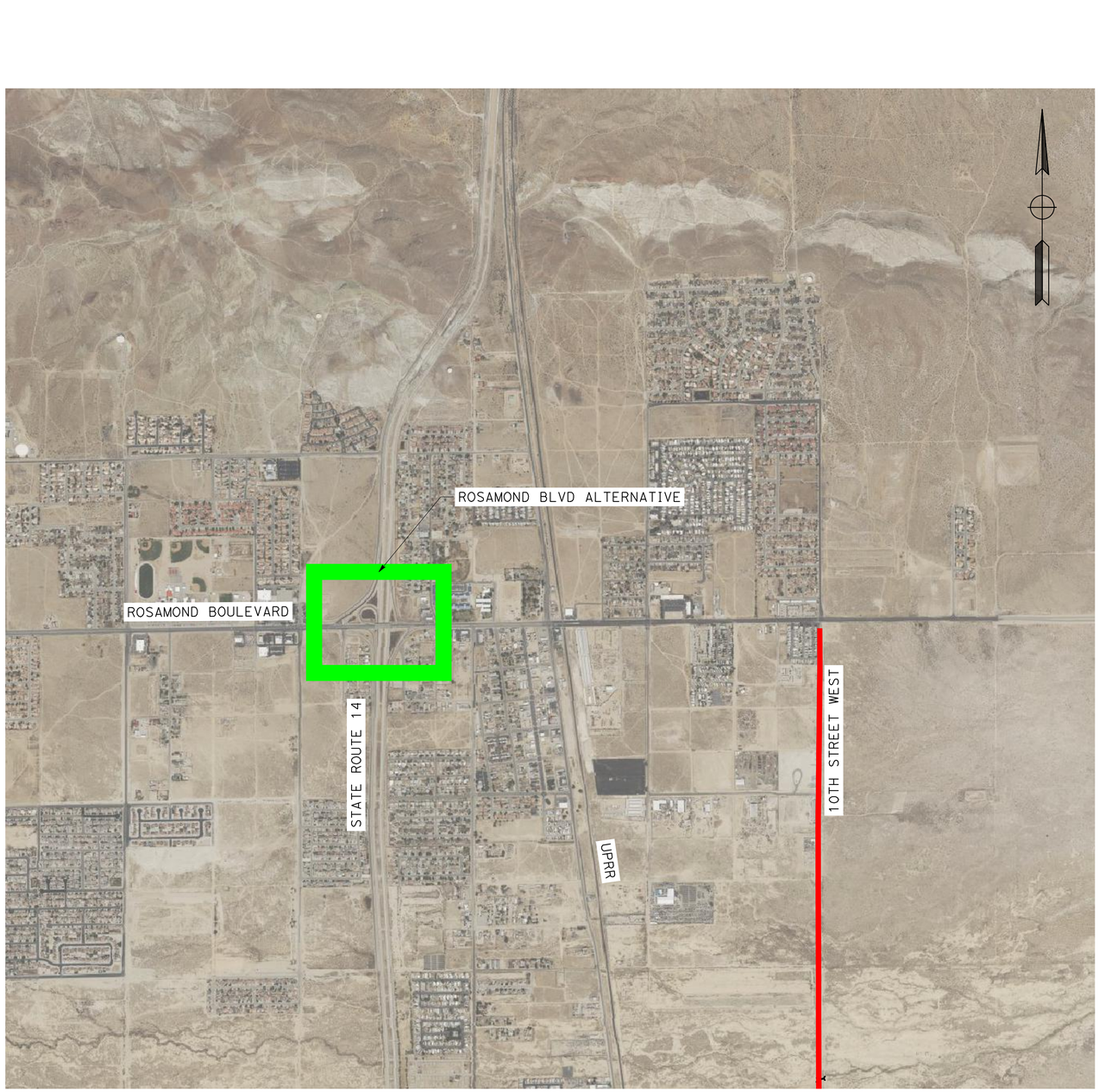
LEGEND:

PHASE 8.1 - TEHACHAPI WILLOW SPRINGS ROAD CORRIDOR GREEN PASS

PHASE 8.2 - ROSAMOND BLVD INTERCHANGE

SUMMARY TABLE

TOTAL LENGTH	1.7 MILES
ROW REQUIREMENTS	0.17 ACRES, 30 PARCELS



30% CONCEPTUAL DESIGN

DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

KARGO CCAMS - PROJECT 8

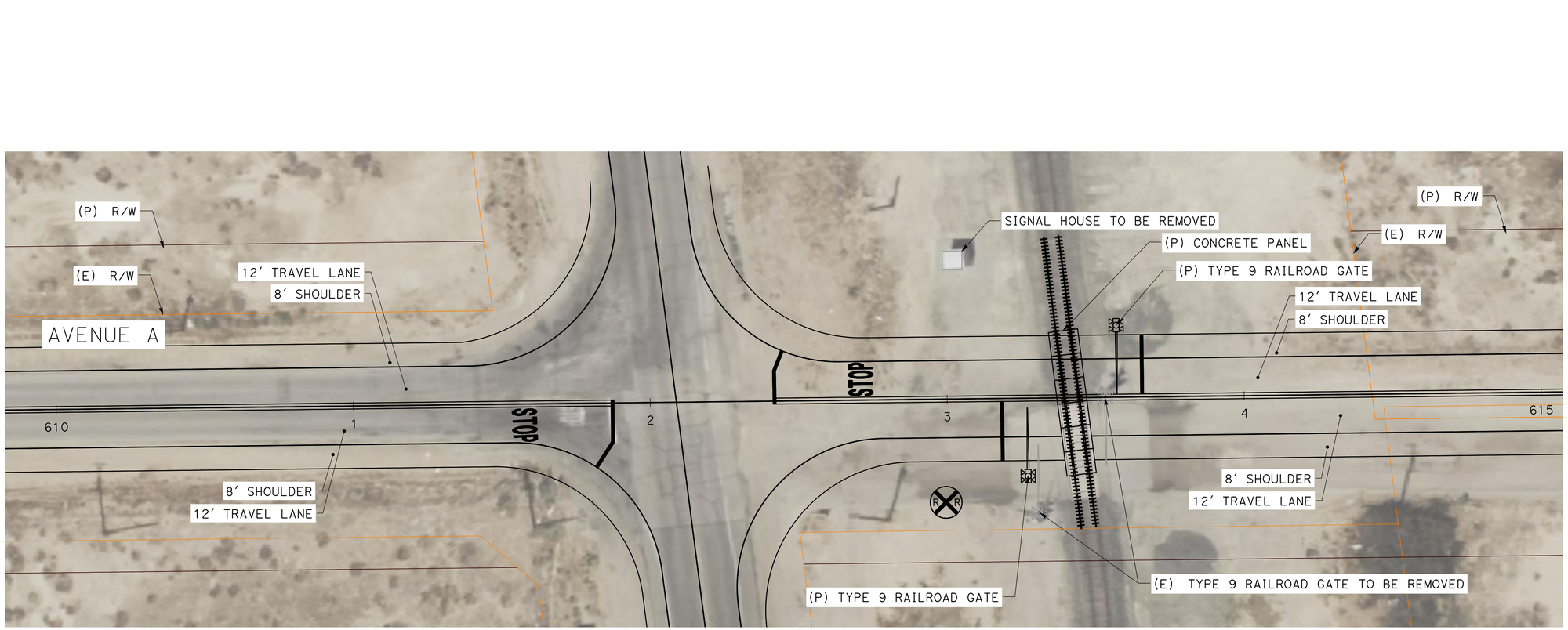
ROSAMOND GREENPASS NETWORK

8.2

ROSAMOND & SIERRA INTERSECTION

LEGEND:

(P) RAILROAD CROSSING



AVENUE A/UPRR AT-GRADE CROSSING

SCALE: 1" = 50'

30% CONCEPTUAL DESIGN

DATE: 1/13/26

MARK THOMAS

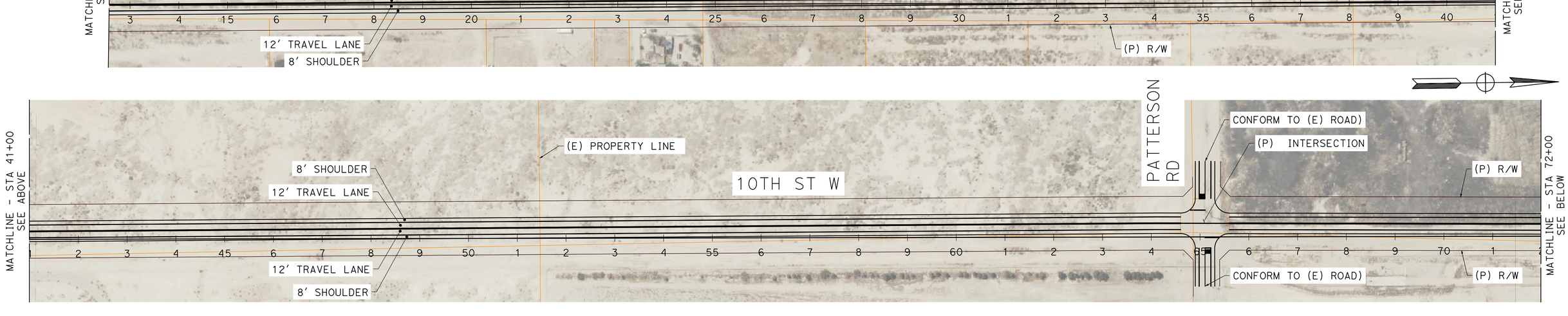
KARGO CCAMS - PROJECT 8

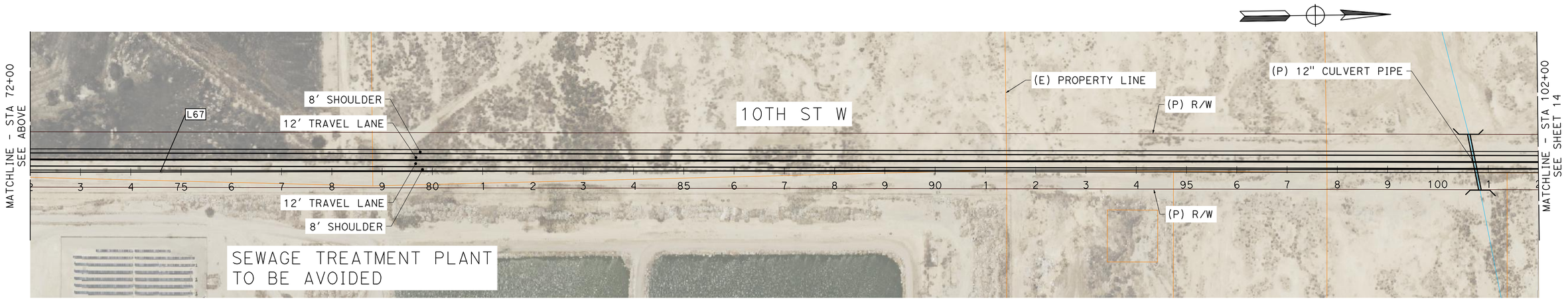
ROSAMOND GREENPASS NETWORK

8.1

TEHACHAPI - WILLOW SPRINGS ROAD CORRIDOR GREEN PASS







ALIGNMENT LINE TABLE		
No. X	L	D
L67	12917.56'	N0°22'00"W

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

DATE: 1/13/26

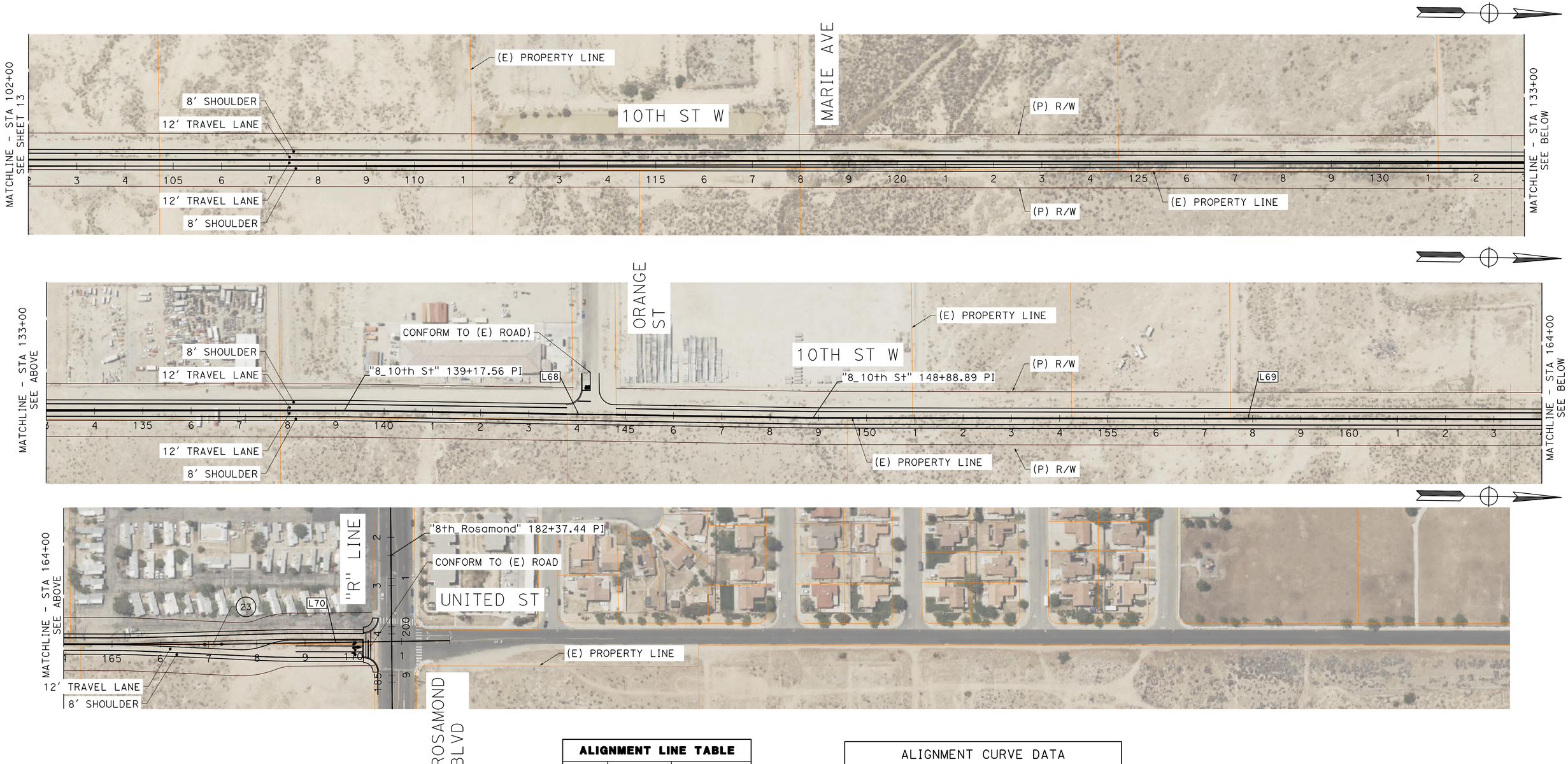
MARK THOMAS

KARGO CCAMS - PROJECT 8

ROSAMOND GREENPASS NETWORK

8.1

TEHACHAPI - WILLOW SPRINGS ROAD CORRIDOR GREEN PASS



ALIGNMENT LINE TABLE		
No. X	L	D
L68	971.34'	N0°39'04"E
L69	1802.77'	N0°09'03"W
L70	472.91'	N1°09'43"W

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
23	2000.00'	001°00'40"	17.65'	35.29'

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

DATE: 1/14/26

SHEET 14 OF 17

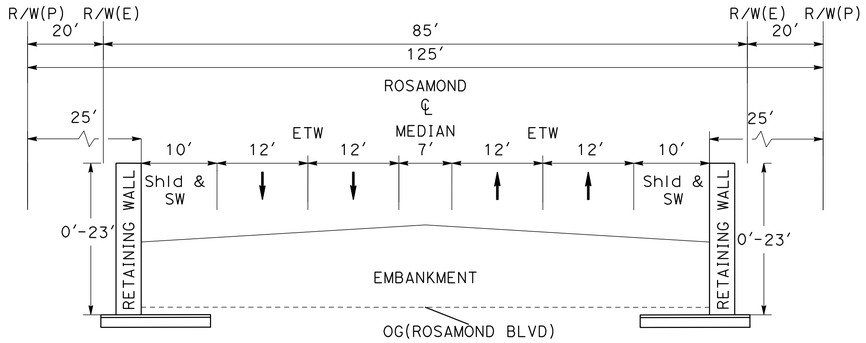
MARK THOMAS

KARGO CCAMS - PROJECT 8

ROSAMOND GREENPASS NETWORK

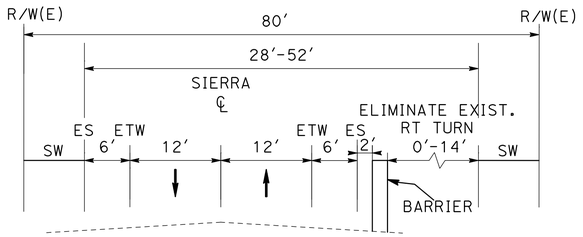
8.1

TEHACHAPI - WILLOW SPRINGS ROAD CORRIDOR GREEN PASS

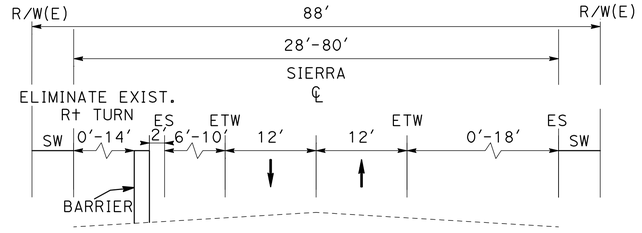


Sta 136+00 TO Sta 152+00 "ROSAMOND" **Sta 136+00 TO Sta 152+00 "ROSAMOND"**

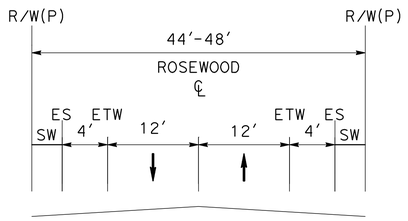
ROSAMOND BLVD
Sta 125+00 TO Sta 152+00



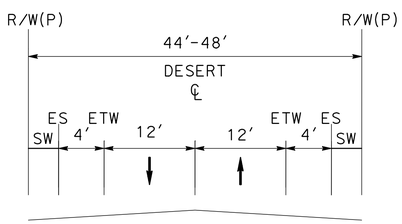
SIERRA SOUTH
Sta 104+00 TO Sta 108+00



SIERRA NORTH
Sta 106+00 TO Sta 123+00



ROSEWOOD AVE
Sta 106+00 TO Sta 117+00



DESERT ST
Sta 100+00 TO Sta 114+00

30% CONCEPTUAL DESIGN

DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

KARGO CCAMS - PROJECT 8
ROSAMOND GREENPASS NETWORK

8.2
ROSAMOND & SIERRA INTERSECTION

ALIGNMENT LINE TABLE		
No. X	L	D
L84	1726.05′	N89°32′49"E
L85	677.67′	N7°10′18"W
L86	581.09′	N0°00′00"E
L87	824.44′	N8°03′48"W
L88	603.75′	N89°03′35"E
L89	1138.15′	N89°07′37"E
L90	513.75′	N0°00′00"E
L91	107.52′	S89°40′27"W
L92	491.13′	N0°48′38"W

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
16	1000.00′	008°03′48"	70.48′	140.73′
17	1000.00′	007°10′18"	62.67′	125.17′
20	100.00′	090°19′33"	100.57′	157.65′
21	100.00′	089°30′56"	99.16′	156.23′

30% CONCEPTUAL DESIGN

DATE: 1/14/26

SCALE: 1" = 100′

SHEET 17 OF 17

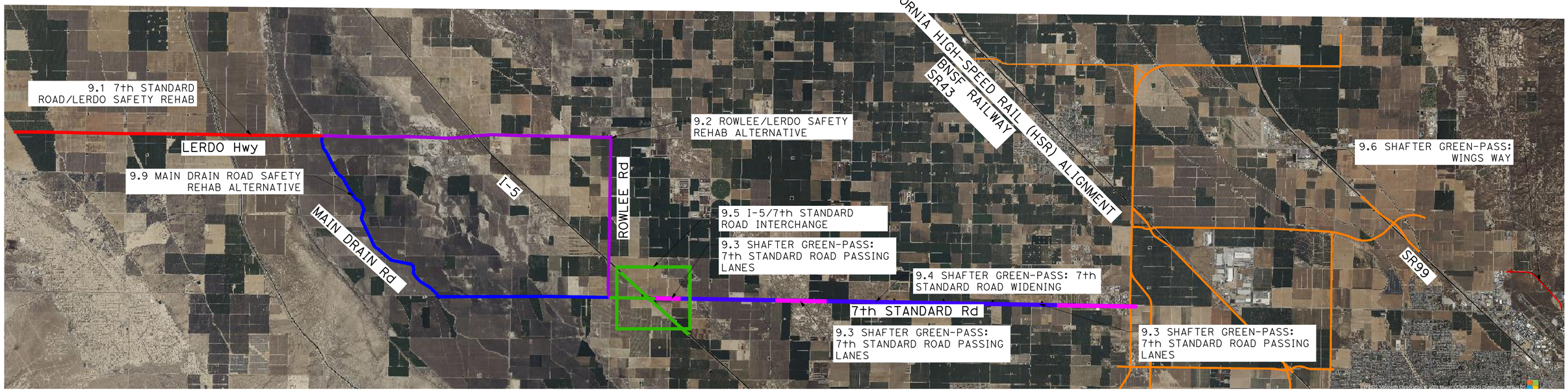
MARK THOMAS

KARGO CCAMS - PROJECT 8

ROSAMOND GREENPASS NETWORK

8.2

ROSAMOND & SIERRA INTERSECTION



LEGEND:

- 9.1 7th STANDARD ROAD/LERDO SAFETY REHAB
- 9.2 ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
- 9.3 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES
- 9.4 SHAFTER GREEN-PASS: 7th STANDARD ROAD WIDENING
- 9.5 I-5/7th STANDARD ROAD INTERCHANGE
- 9.6 SHAFTER GREEN-PASS: WINGS WAY
- 9.9 MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE
- ADJACENT PROJECTS

PROJECT PHASING TABLE

PHASE 9.1: 7th STANDARD ROAD/LERDO SAFETY REHAB
PHASE 9.2: ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
PHASE 9.3: SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES
PHASE 9.4: SHAFTER GREEN-PASS: 7th STANDARD ROAD WIDENING
PHASE 9.5: I-5/7th STANDARD ROAD INTERCHANGE
PHASE 9.6: SHAFTER GREEN-PASS: WINGS WAY
PHASE 9.9: MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 6500'

MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.1 7TH STANDARD ROAD/LERDO SAFETY REHAB

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 1.dwg

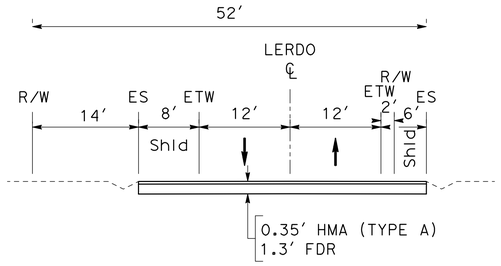


LEGEND:

- 9.1 7th STANDARD ROAD/LERDO SAFETY REHAB
- 9.2 ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
- 9.9 MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE
- ADJACENT PROJECTS

SUMMARY TABLE

TOTAL LENGTH	7.67 MILES
R/W REQUIREMENTS	0 ACRE, 0 PARCELS



LERDO HWY

Sta 10+00 TO Sta 415+00

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 6500′

MARK THOMAS

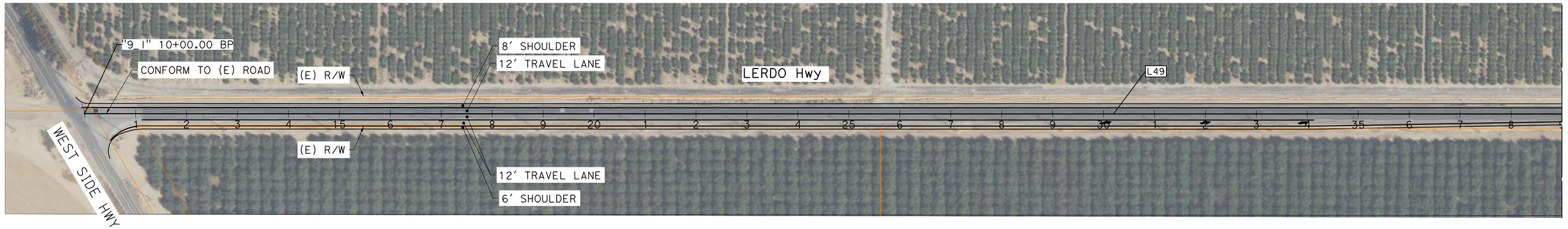
KARGO CCAMS - PROJECT 9

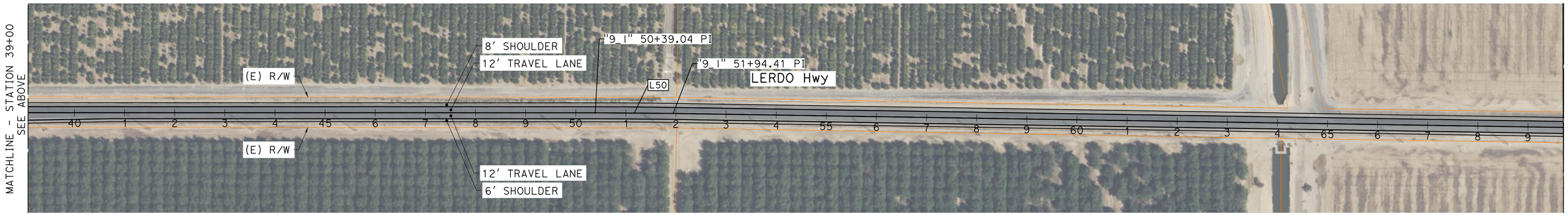
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

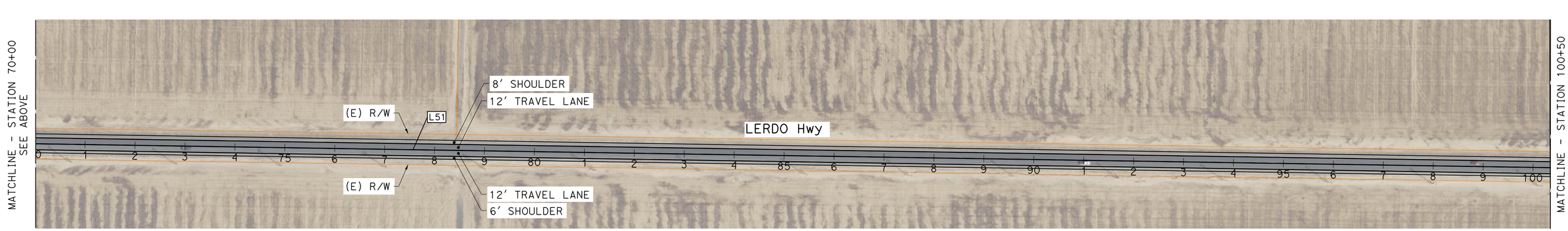
9.1 7TH STANDARD ROAD/LERDO SAFETY REHAB

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 1.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L49	4039.04'	S89°42'34"E
L50	155.36'	S89°15'51"E
L51	5124.49'	S88°49'07"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

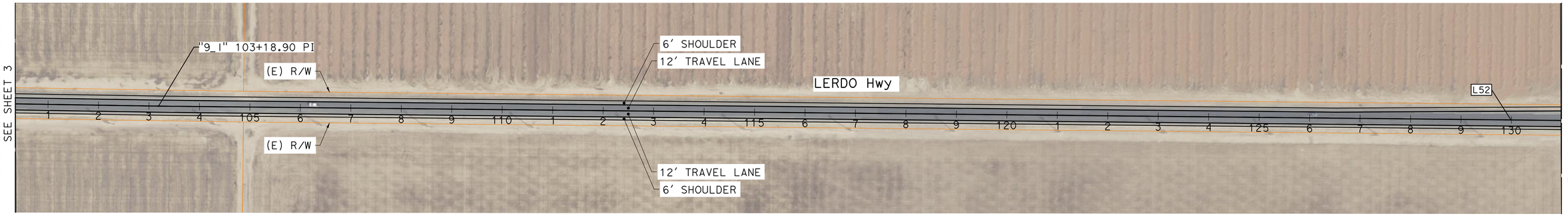
MARK THOMAS

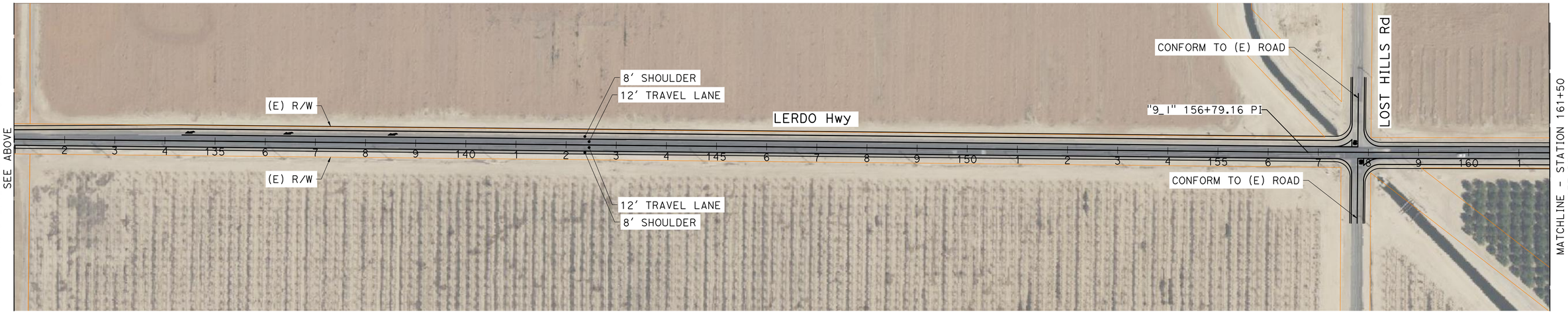
KARGO CCAMS - PROJECT 9

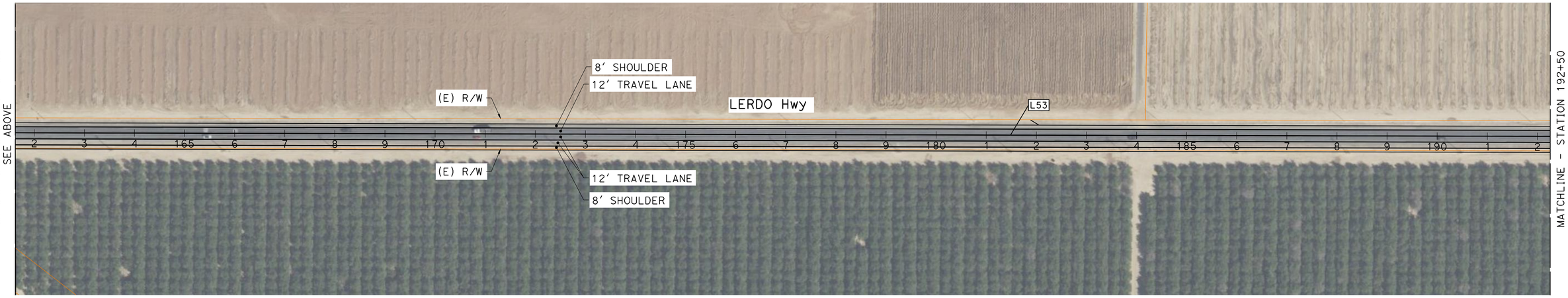
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.1 7TH STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 1.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L52	5360.26'	S89°08'25"E
L53	4938.44'	S89°35'23"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

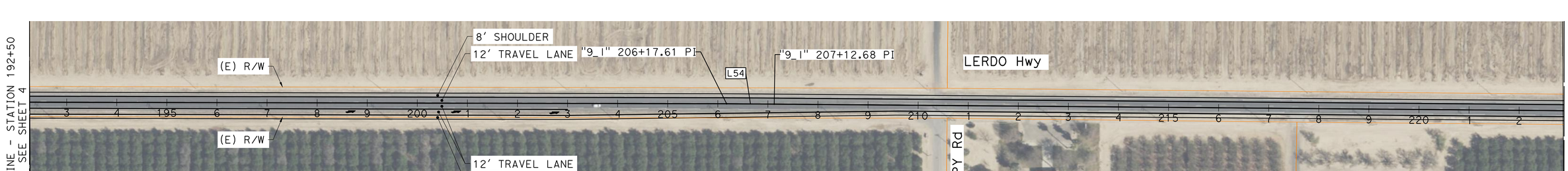
MARK THOMAS

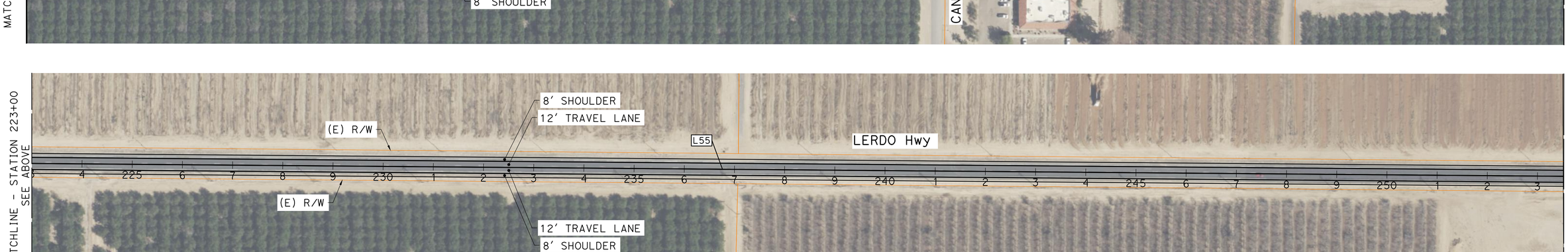
KARGO CCAMS - PROJECT 9

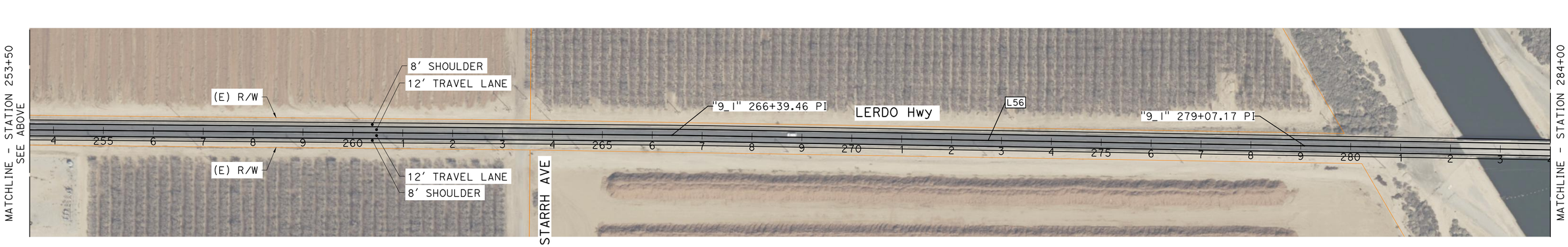
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.1 7TH STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 1.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L54	95.07'	S89°21'12"E
L55	5926.78'	S89°14'35"E
L56	1267.71'	S88°46'25"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

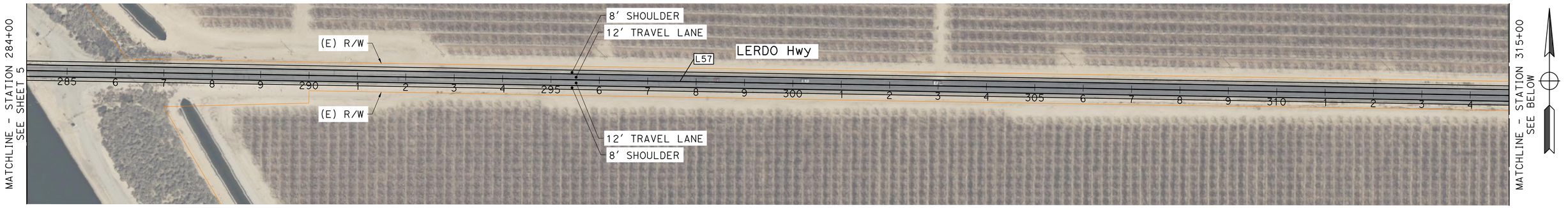
KARGO CCAMS - PROJECT 9

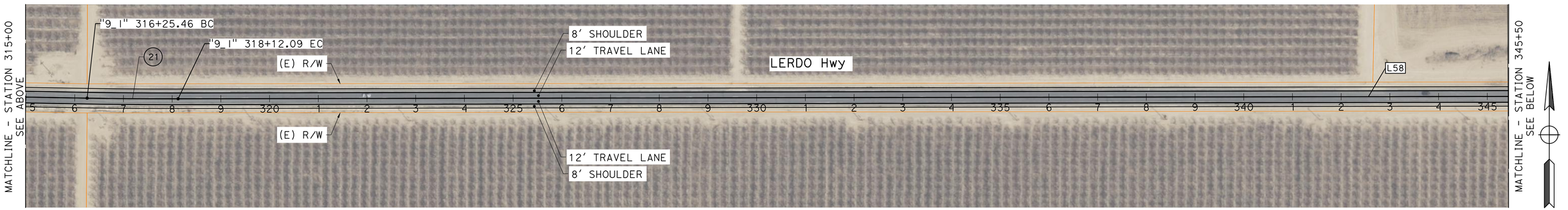
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

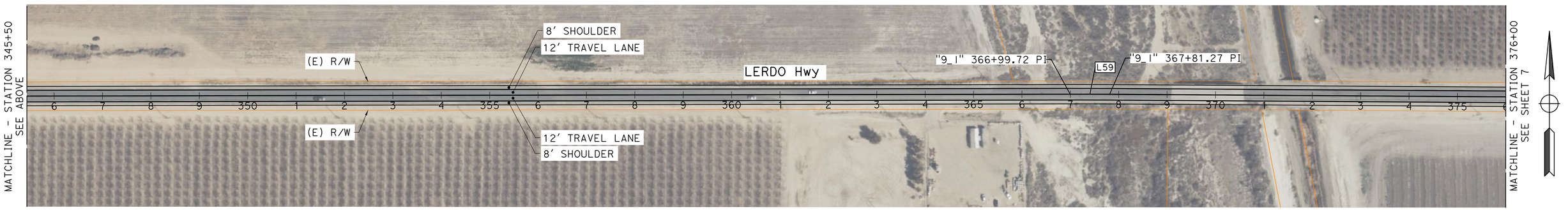
9.1 7TH STANDARD ROAD/LERDO SAFETY REHAB

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 1.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L57	3718.29'	S88°45'26"E
L58	4887.63'	S89°49'36"E
L59	81.55'	S89°35'34"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
21	10000.00'	001°04'10"	93.32'	186.63'

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DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

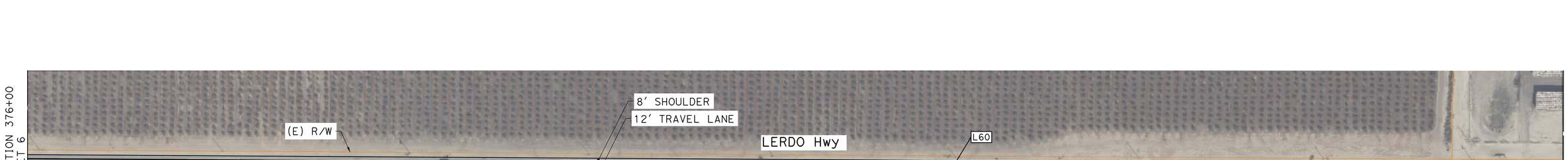
KARGO CCAMS - PROJECT 9

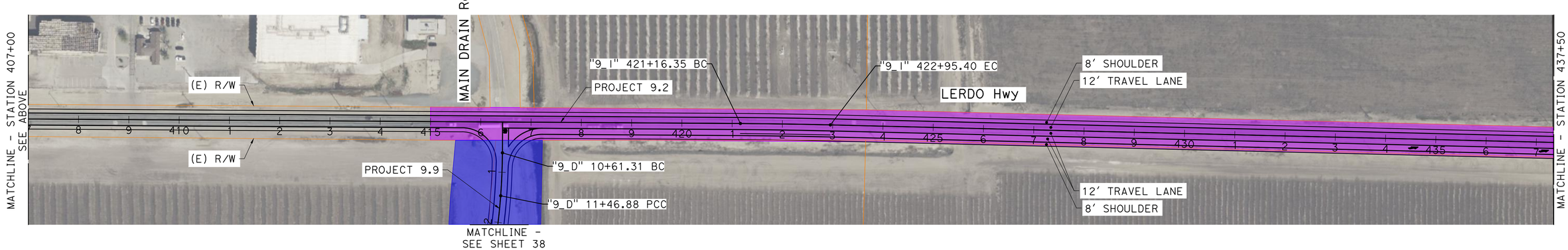
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.1 7TH STANDARD ROAD/LERDO SAFETY REHAB

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 1.dwg





ALIGNMENT LINE TABLE

No. X	L	D
L60	5335.08'	S89°21'33"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

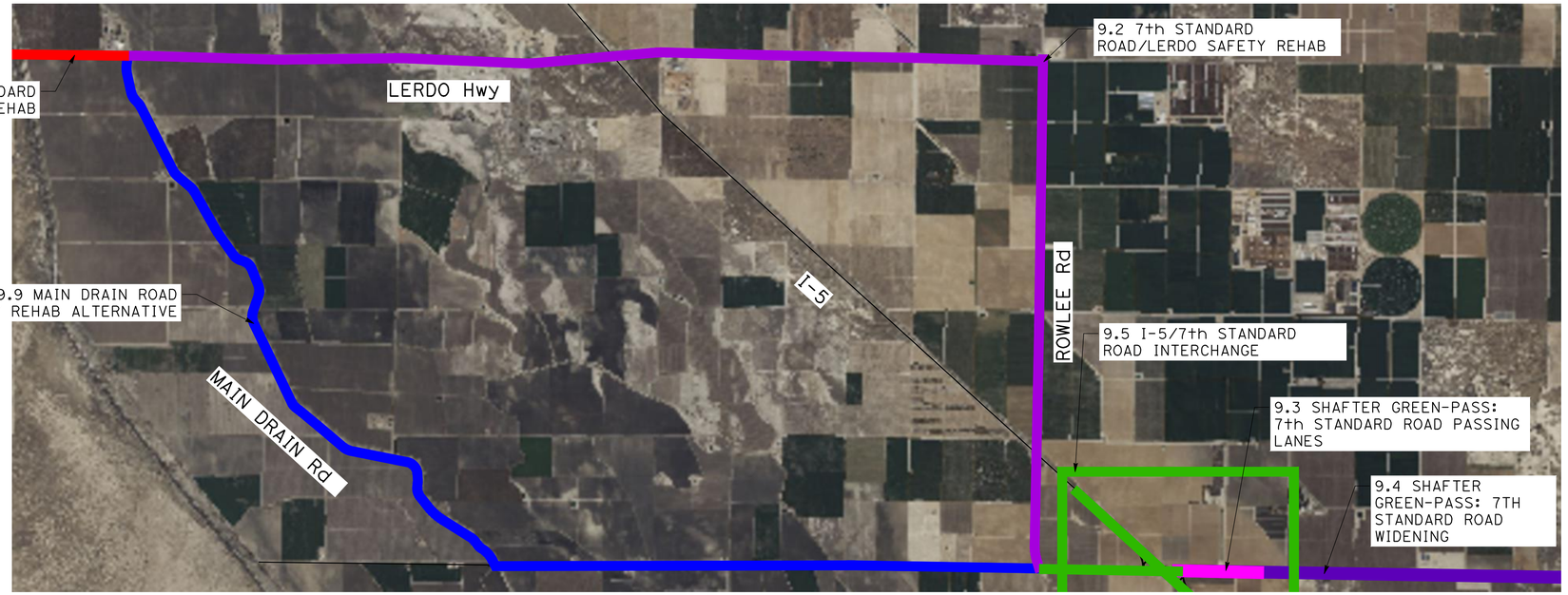
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.1 7TH STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 1.dwg

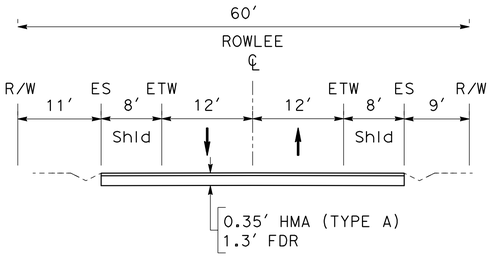


LEGEND:

- 9.1 7th STANDARD ROAD/LERDO SAFETY REHAB
- 9.2 ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
- 9.3 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES
- 9.4 SHAFTER GREEN-PASS: 7th STANDARD WIDENING
- 9.5 I-5/7th STANDARD ROAD INTERCHANGE
- 9.9 MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE

SUMMARY TABLE

TOTAL LENGTH	7.25 MILES
R/W REQUIREMENTS	0 ACRES, 0 PARCELS



ROWLEE RD

STA 10+00 TO STA 225+00

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 3000′

MARK THOMAS

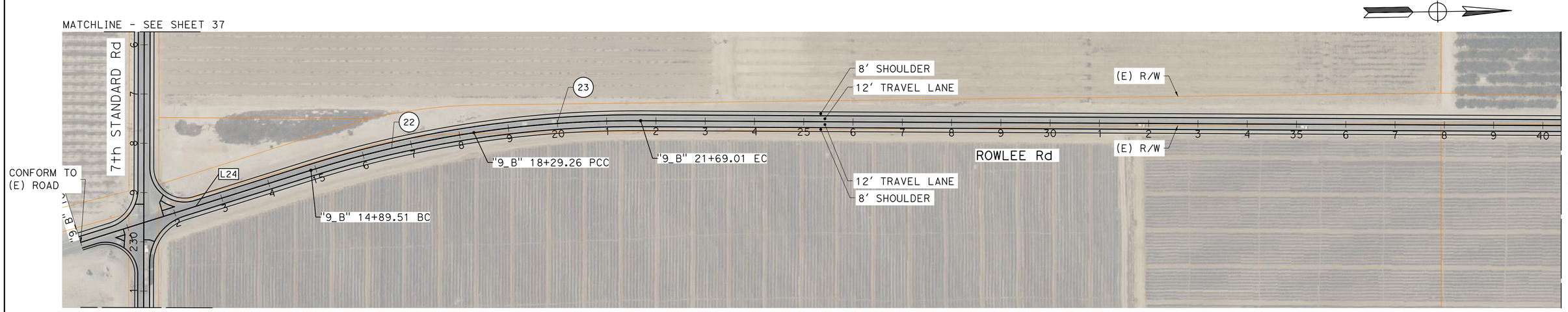
KARGO CCAMS - PROJECT 9

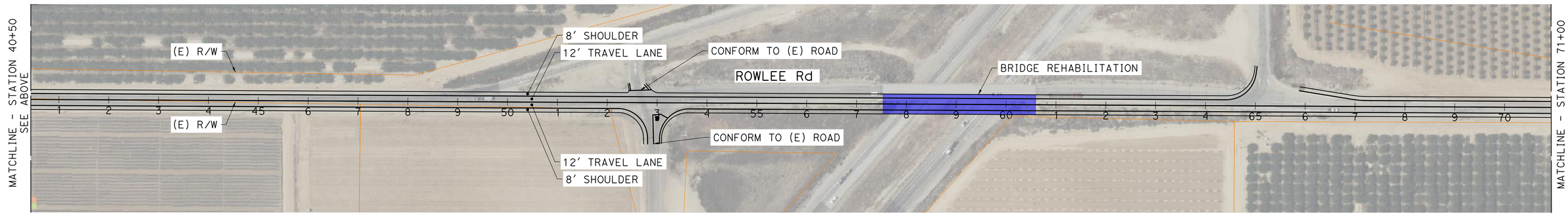
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

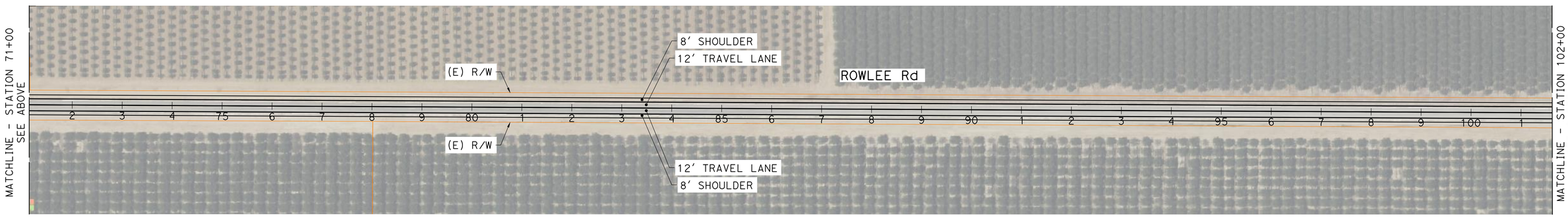
9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L24	489.51'	N16°31'27"W

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
22	2200.00'	008°50'54"	170.21'	339.75'
23	2200.00'	008°50'54"	170.21'	339.75'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

30% CONCEPTUAL DESIGN

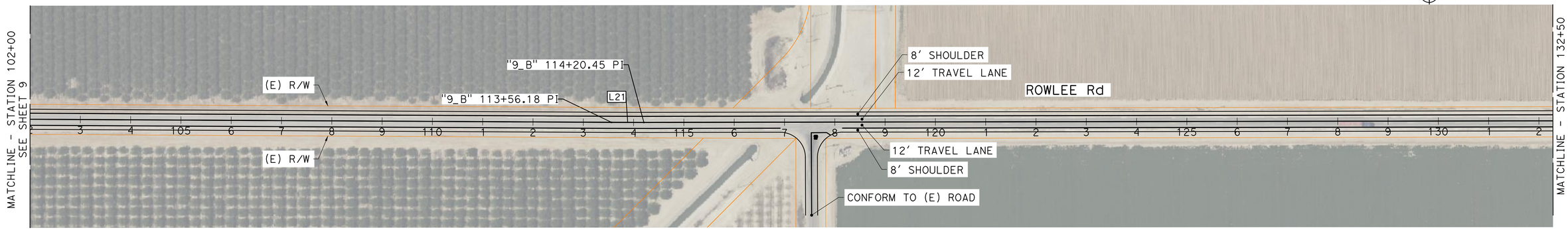
MARK THOMAS

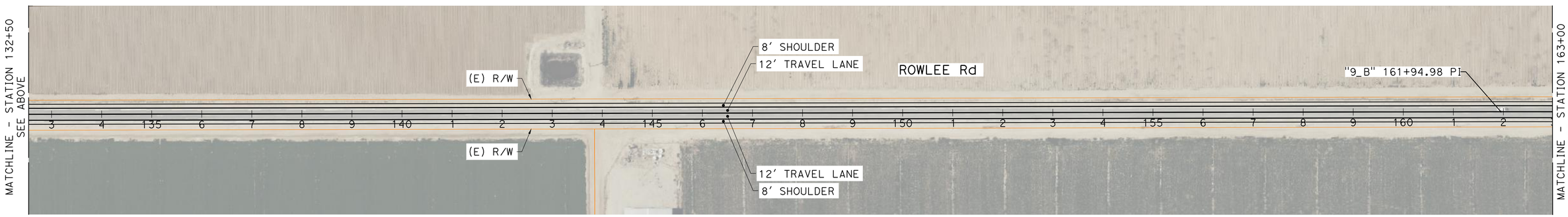
KARGO CCAMS - PROJECT 9

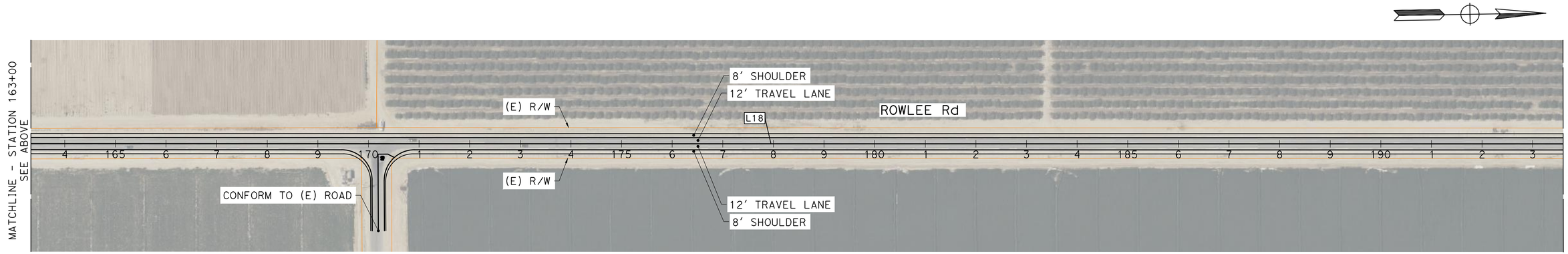
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L18	3200.23'	N0°52'42"E
L21	64.28'	N0°59'17"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

30% CONCEPTUAL DESIGN

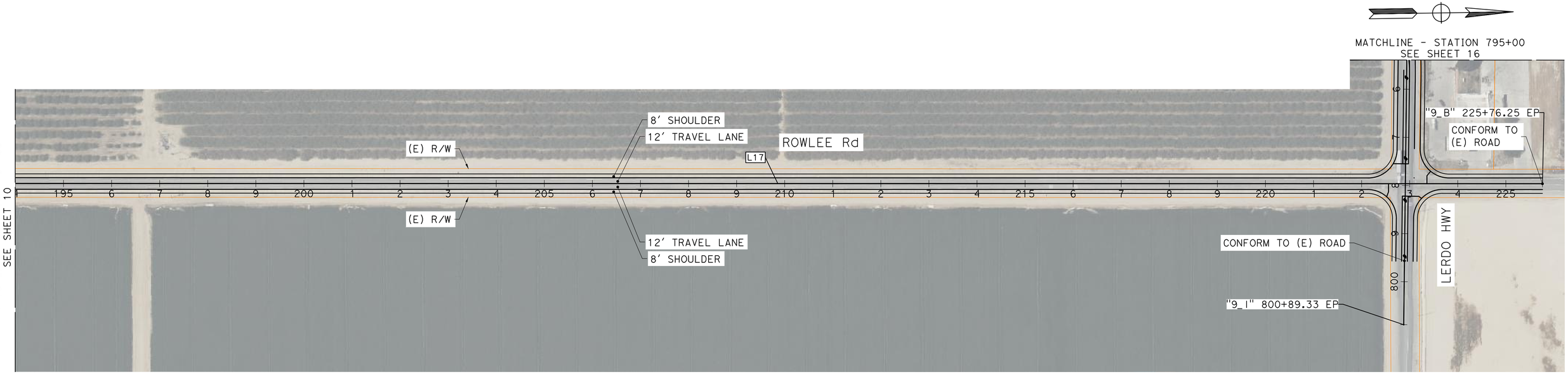
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L17	3181.04'	N0°52'43"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

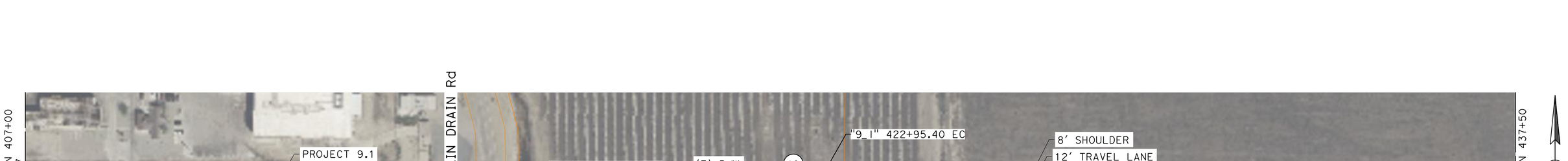
KARGO CCAMS - PROJECT 9

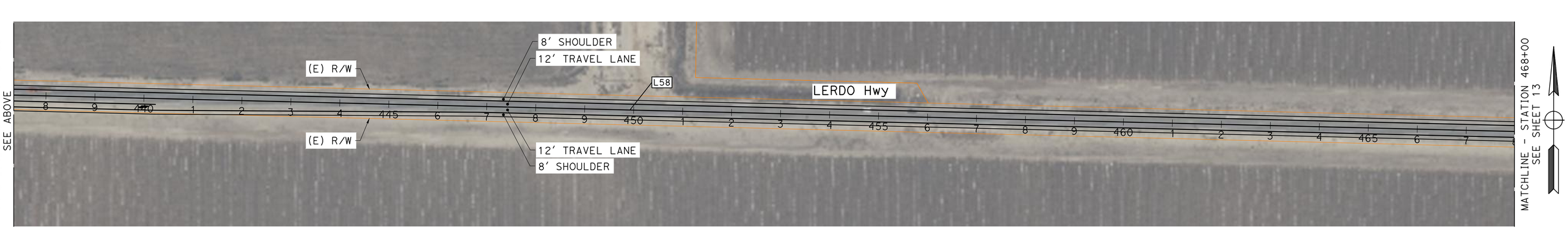
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L58	5393.86′	S88°20′00"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
12	10000.00′	001°01′33"	89.53′	179.05′

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100′

MARK THOMAS

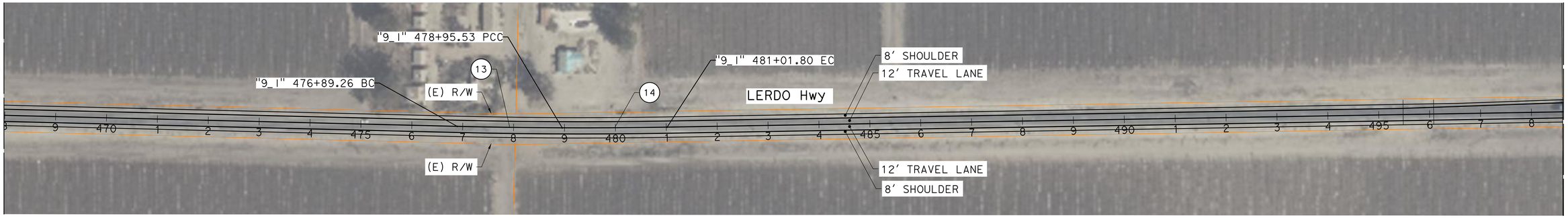
KARGO CCAMS - PROJECT 9

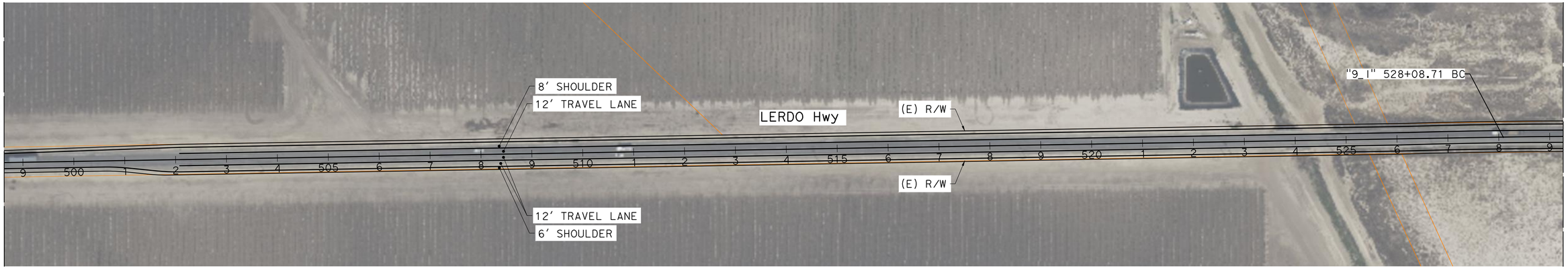
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

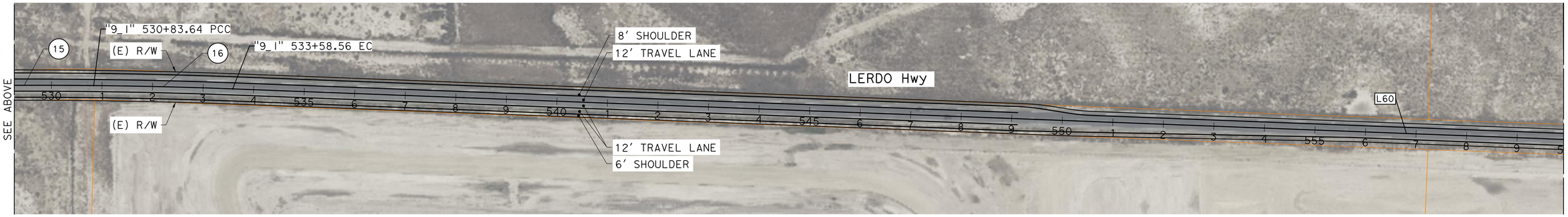
9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L60	4644.75′	S87°32′47"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
13	10000.00′	001°10′55"	103.14′	206.27′
14	10000.00′	001°10′55"	103.14′	206.27′
15	10000.00′	001°34′31"	137.47′	274.92′
16	10000.00′	001°34′31"	137.47′	274.92′

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100′

30% CONCEPTUAL DESIGN

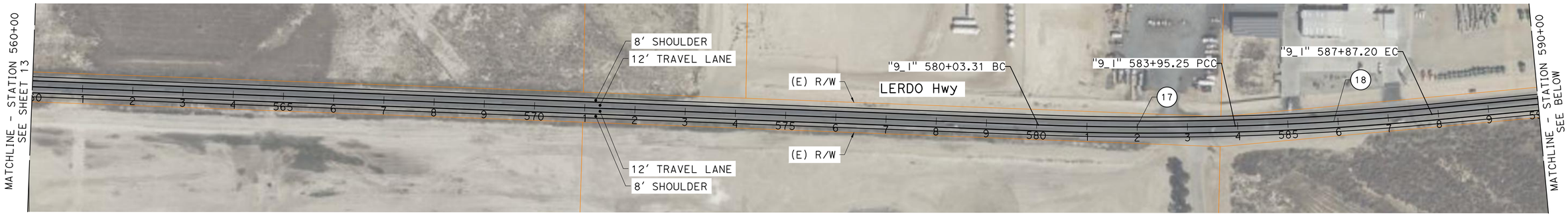
MARK THOMAS

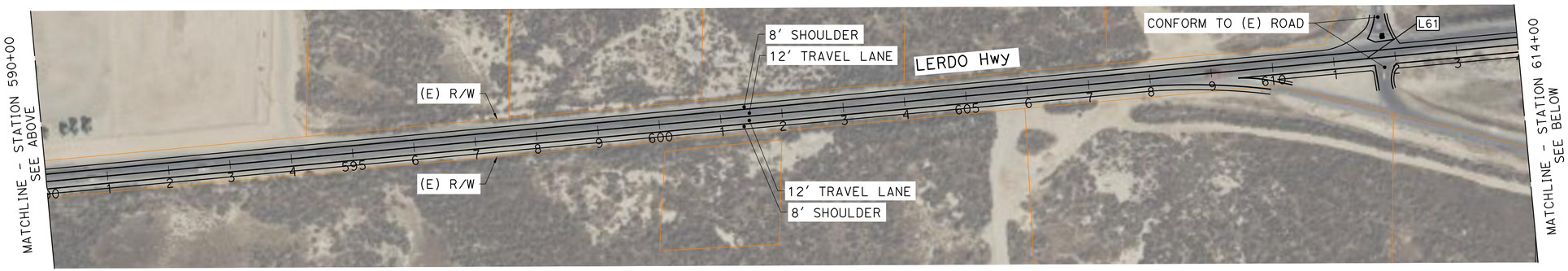
KARGO CCAMS - PROJECT 9

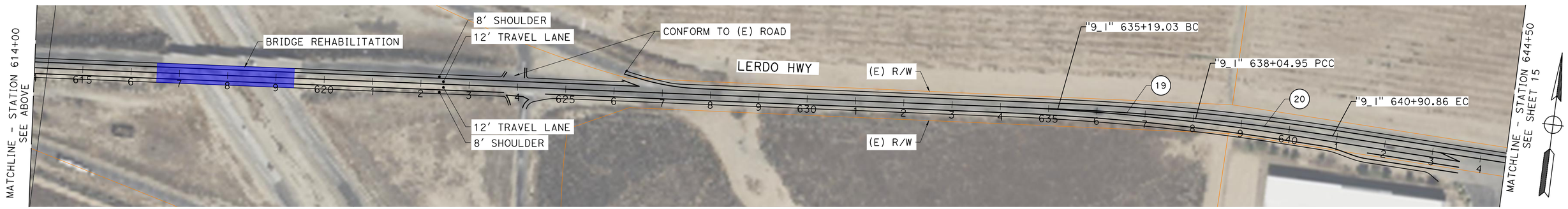
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L61	4731.83'	N84°58'04"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
17	6000.00'	003°44'34"	196.04'	391.95'
18	6000.00'	003°44'34"	196.04'	391.95'
19	5000.00'	003°16'35"	143.00'	285.92'
20	5000.00'	003°16'35"	143.00'	285.92'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L62	4897.43'	S88°28'46"E
L63	5420.94'	S88°58'21"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

SHEET 15 OF 44

30% CONCEPTUAL DESIGN

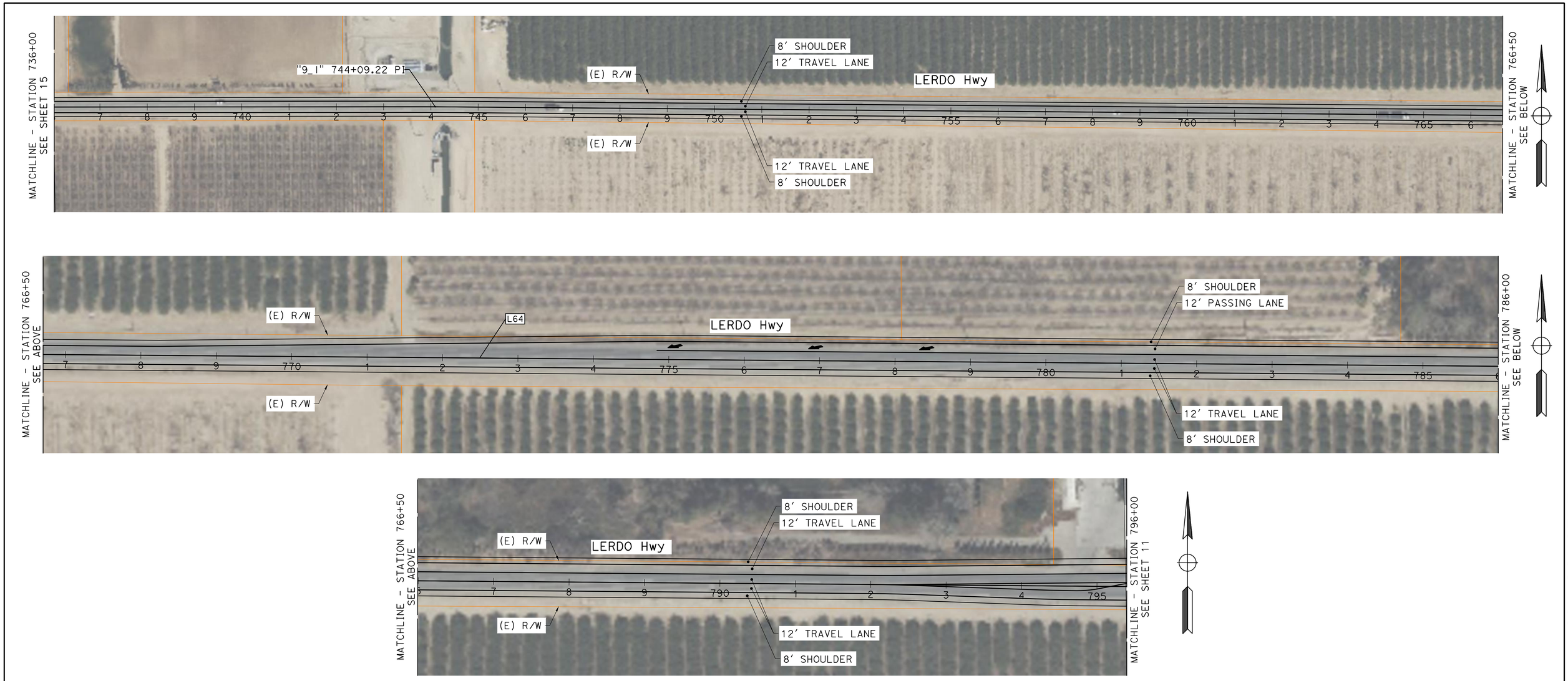
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg



ALIGNMENT LINE TABLE

No. X	L	D
L64	5680.11'	S88°27'45"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.2 7th STANDARD ROAD/LERDO SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 2.dwg

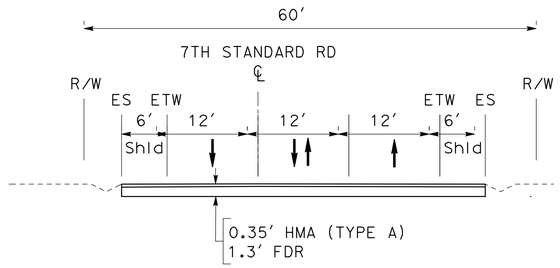


LEGEND:

- 9.2 ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
- 9.3 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES
- 9.4 SHAFTER GREEN-PASS: 7th STANDARD ROAD WIDENING
- 9.5 I-5/7th STANDARD ROAD INTERCHANGE
- 9.9 MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE
- ADJACENT PROJECTS

SUMMARY TABLE

TOTAL LENGTH	12.1 MILES
R/W REQUIREMENTS	0 ACRES, 0 PARCELS



7TH STANDARD RD

STA 297+00 TO STA 323+00
STA 449+75 TO STA 515+75
STA 857+50 TO STA 888+25

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 3000′

30% CONCEPTUAL DESIGN

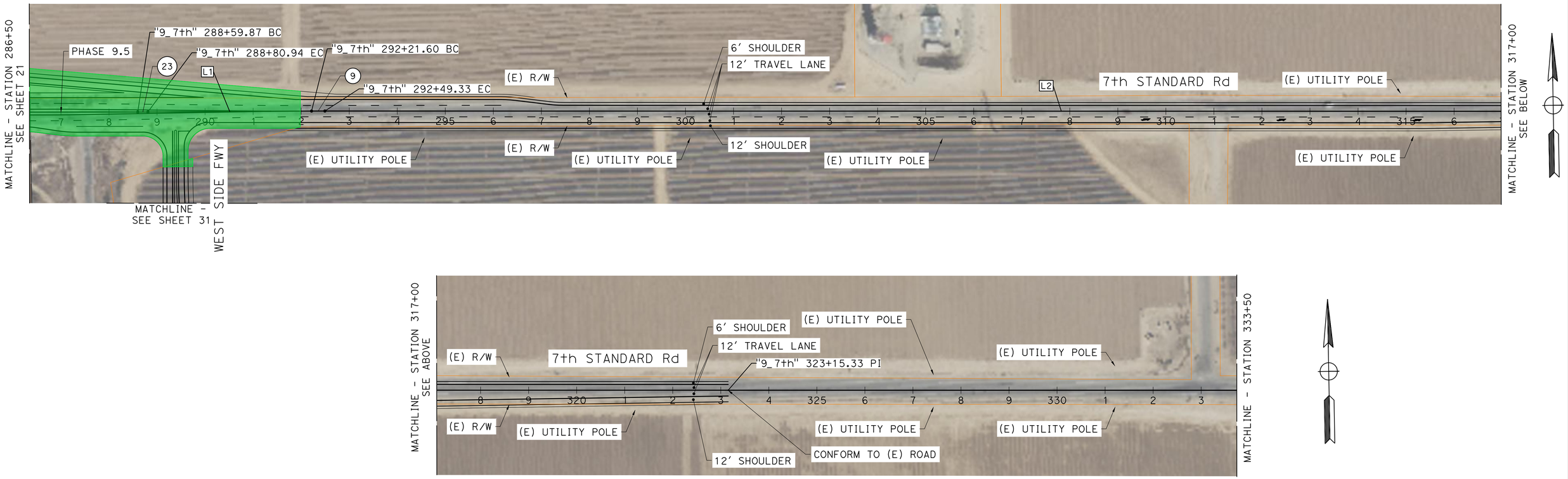
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.3 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L1	340.66'	S89°17'38"E
L2	3065.99'	S88°58'34"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
9	5000.00'	000°19'04"	13.87'	27.74'
23	5000.00'	000°14'29"	10.54'	21.07'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

30% CONCEPTUAL DESIGN

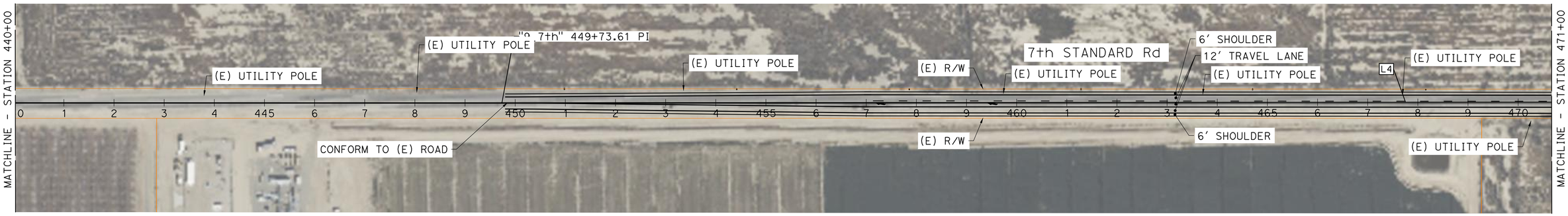
MARK THOMAS

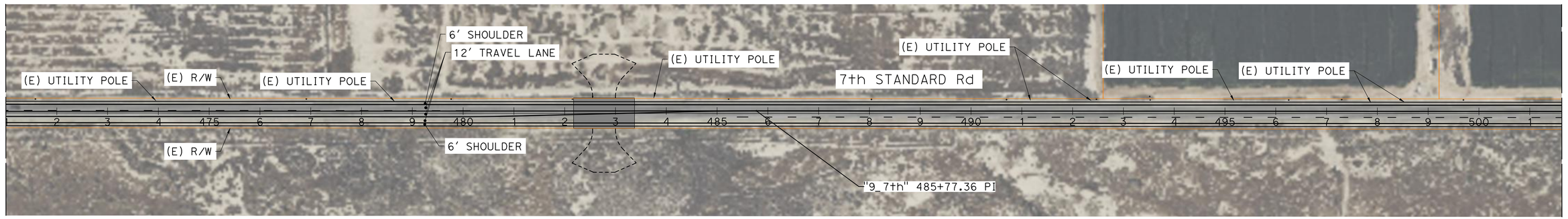
KARGO CCAMS - PROJECT 9

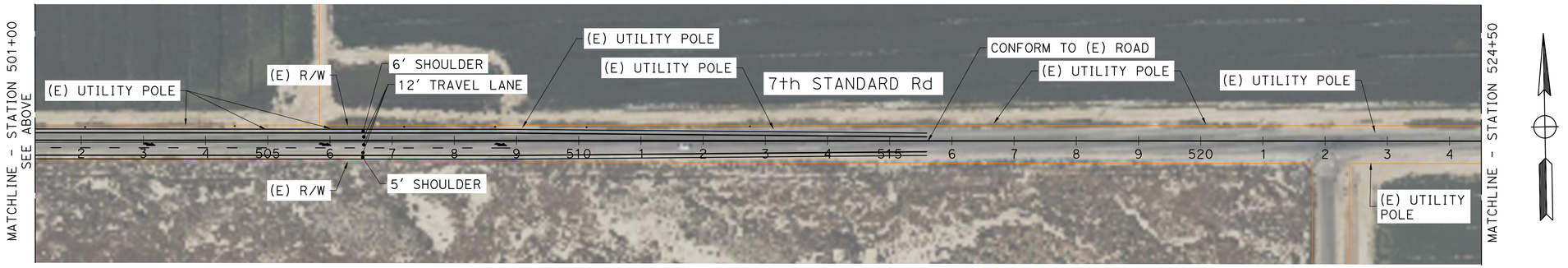
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.3 SHAFTER GREEN-PASS (PHASE 1): 7th STANDARD ROAD PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L4	3603.75'	S89°01'19"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

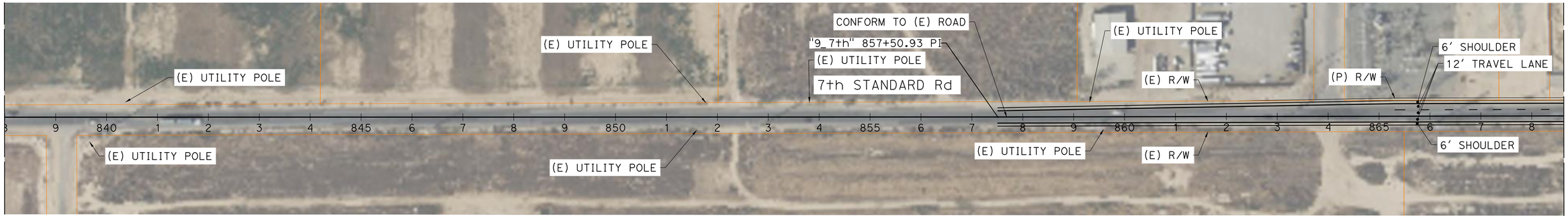
MARK THOMAS

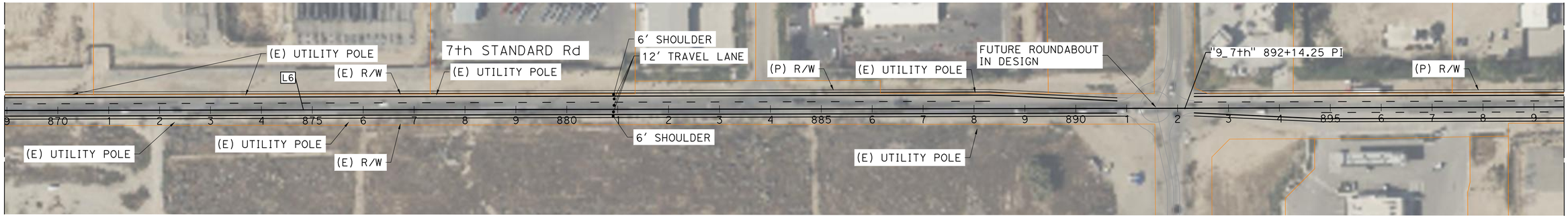
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.3 SHAFTER GREEN-PASS (PHASE 1): 7th STANDARD ROAD PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L6	3463.32'	S89°05'45"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

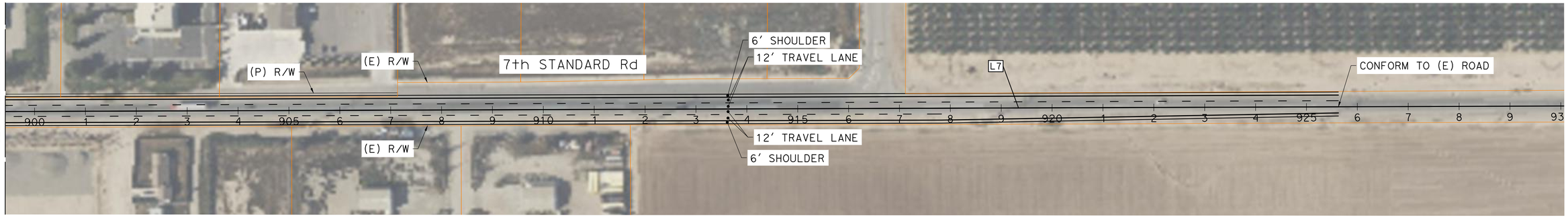
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.3 SHAFTER GREEN-PASS (PHASE 1): 7th STANDARD ROAD PASSING LANES

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L7	5439.44'	S89°11'28"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

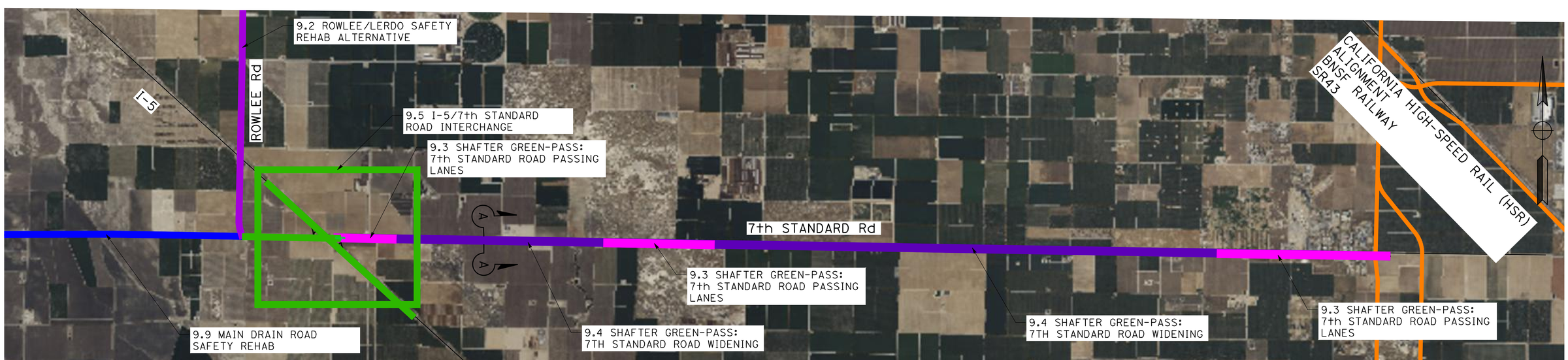
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.3 SHAFTER GREEN-PASS (PHASE 1): 7th STANDARD ROAD PASSING LANES

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg

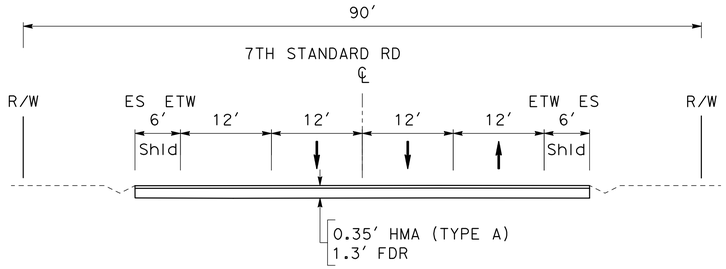


LEGEND:

- 9.2 ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
- 9.3 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES
- 9.4 SHAFTER GREEN-PASS: 7th STANDARD ROAD WIDENING
- 9.5 I-5/7th STANDARD ROAD INTERCHANGE
- 9.9 MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE
- ADJACENT PROJECTS

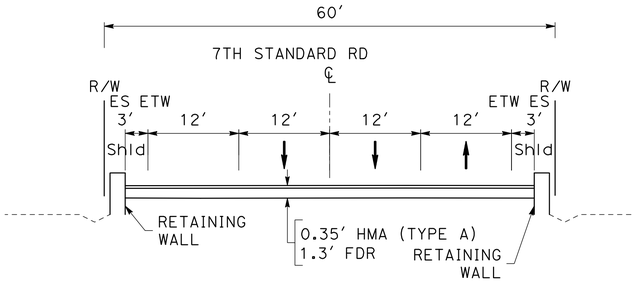
SUMMARY TABLE

TOTAL LENGTH	3.98 MILES
R/W REQUIREMENTS	0 ACRES, 0 PARCELS



7TH STANDARD RD

STA 290+00 TO STA 890+00



7TH STANDARD RD

STA 436+75 TO STA 520+80

30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 3000′

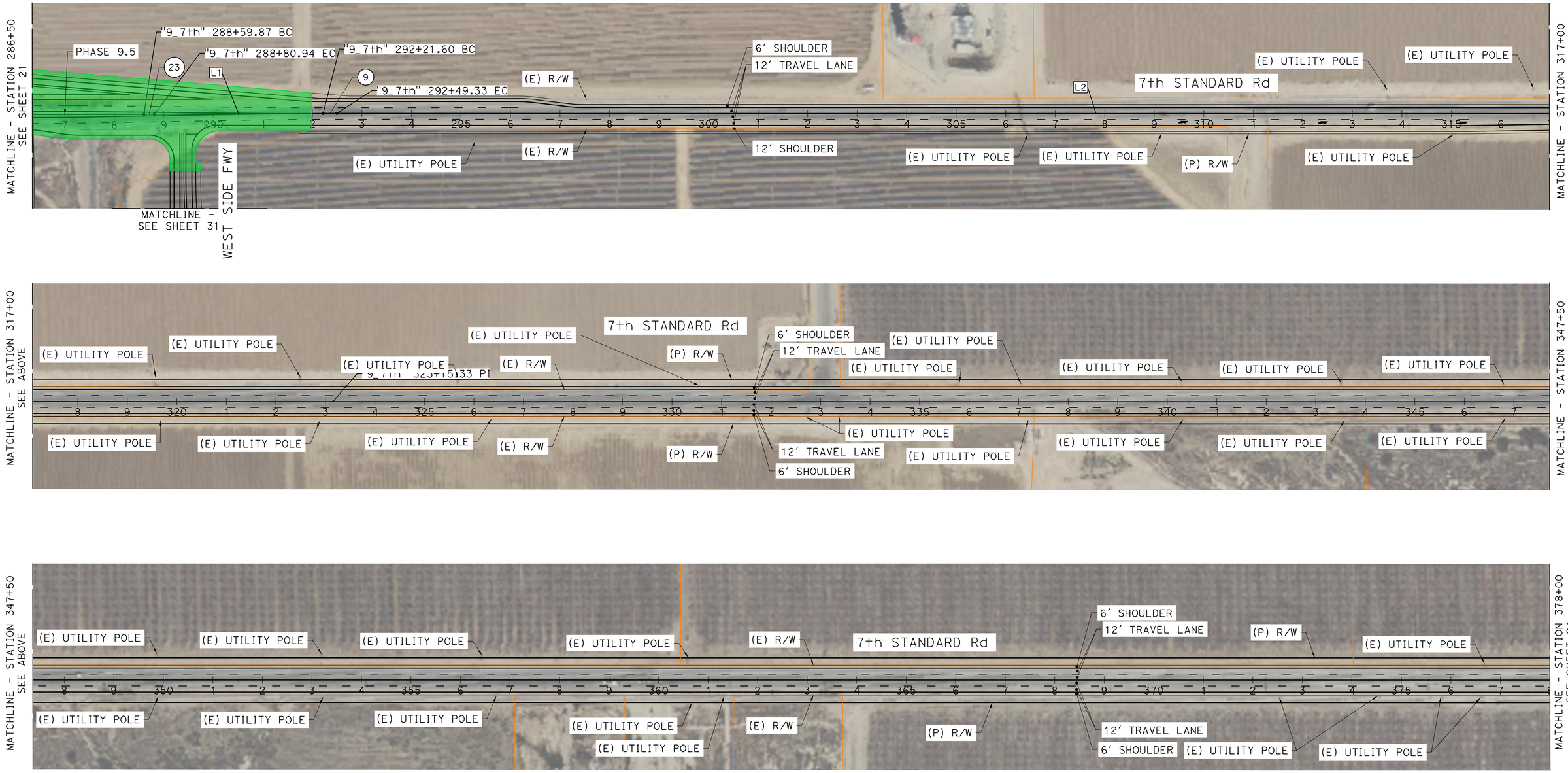
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg



30% CONCEPTUAL DESIGN

ALIGNMENT LINE TABLE		
No. X	L	D
L1	340.66'	S89°17'38"E
L2	3065.99'	S88°58'34"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
9	5000.00'	000°19'04"	13.87'	27.74'
23	5000.00'	000°14'29"	10.54'	21.07'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

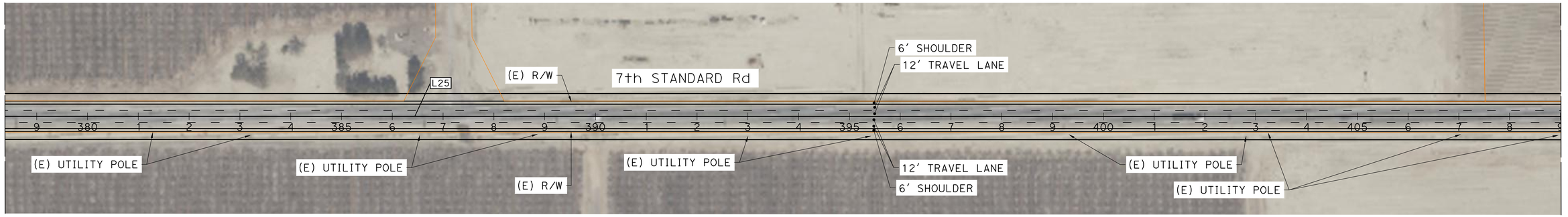
MARK THOMAS

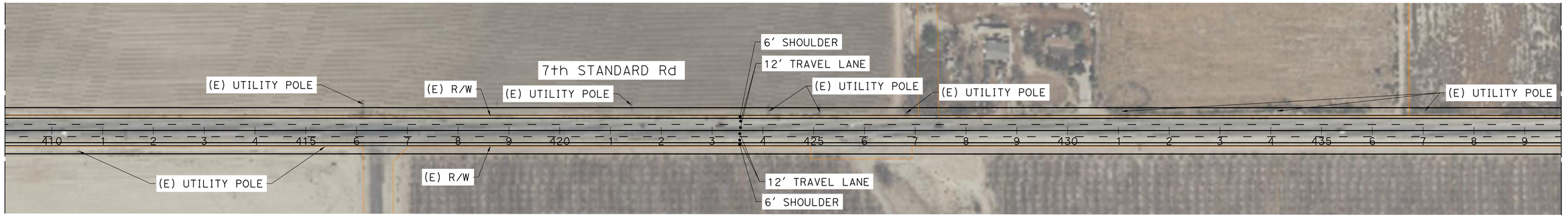
KARGO CCAMS - PROJECT 9

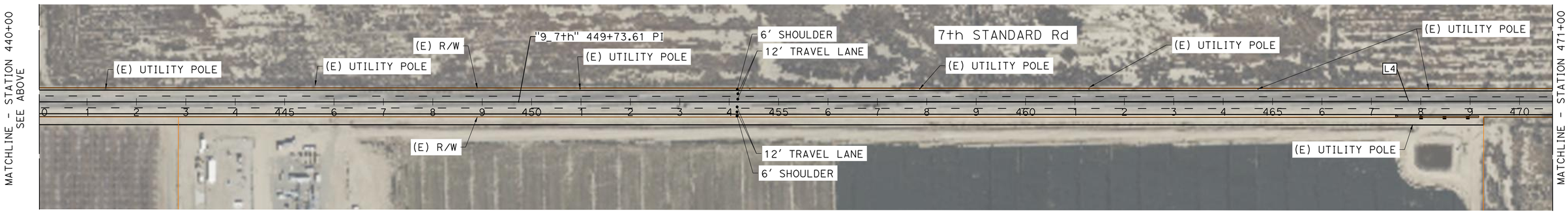
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L4	3603.75'	S89°01'19"E
L25	12658.29'	S88°59'02"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

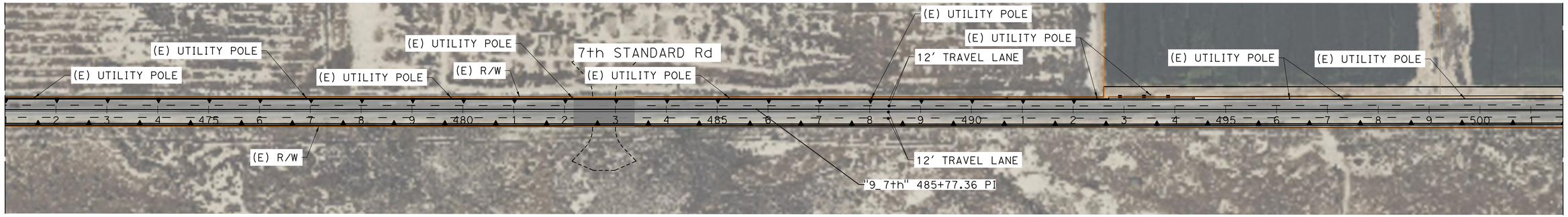
MARK THOMAS

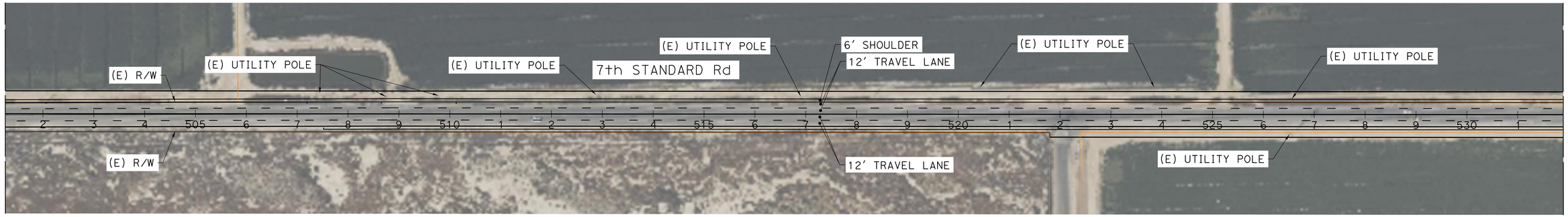
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L26	9518.76'	S88°57'04"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

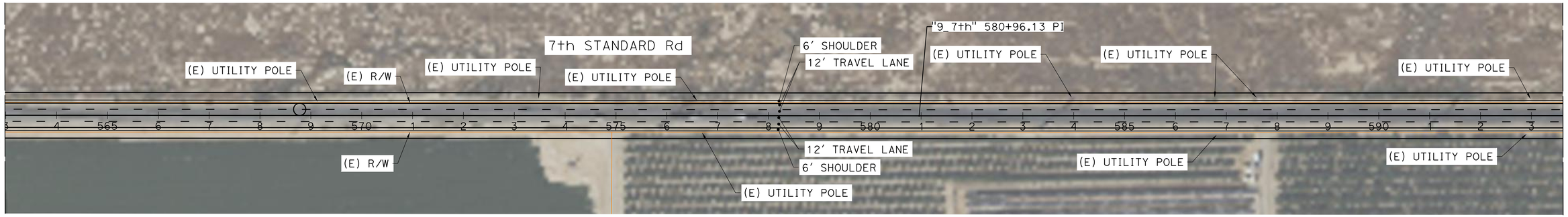
MARK THOMAS

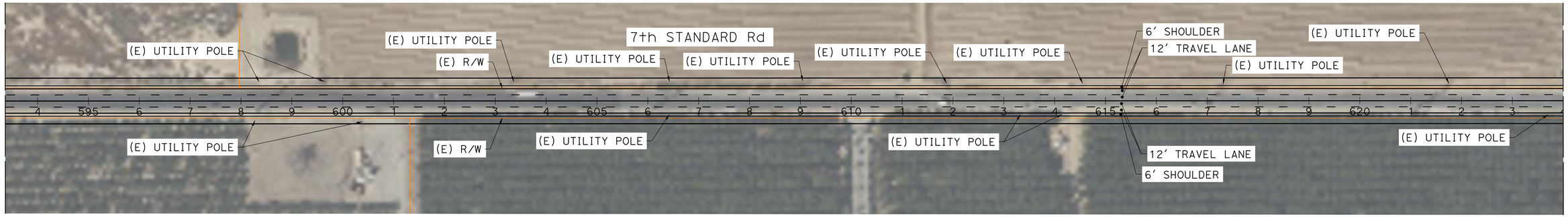
KARGO CCAMS - PROJECT 9

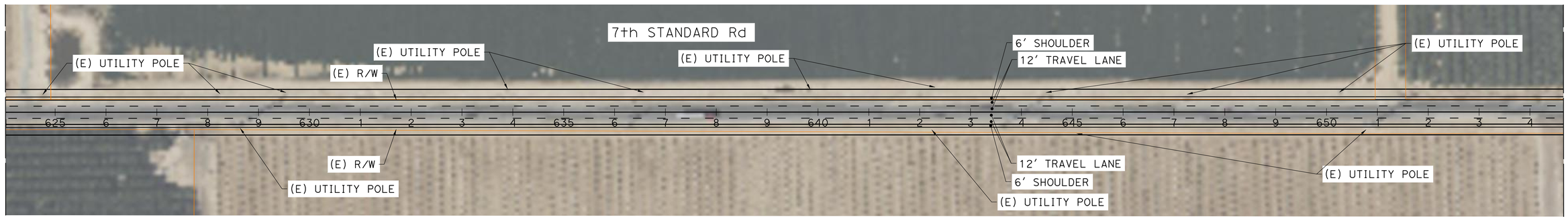
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg







30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

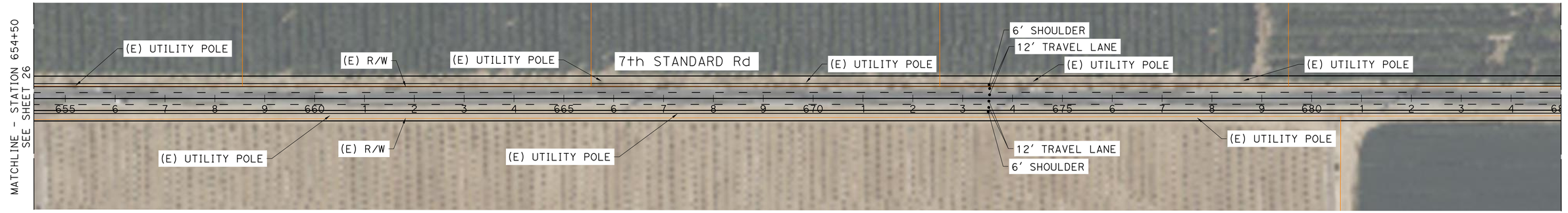
MARK THOMAS

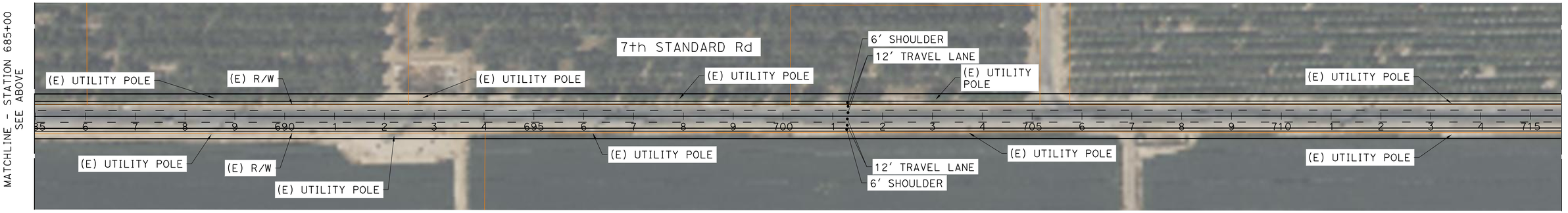
KARGO CCAMS - PROJECT 9

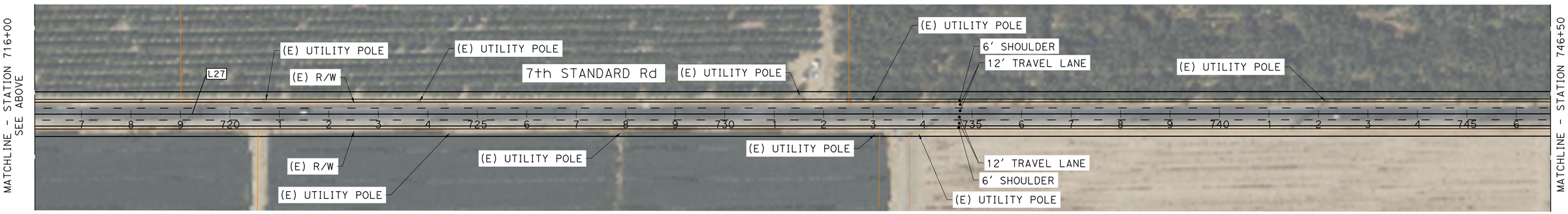
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L27	27654.80'	S89°00'02"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

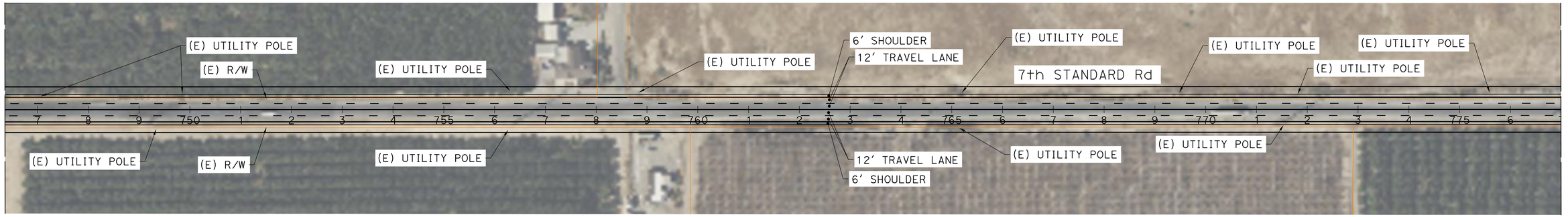
MARK THOMAS

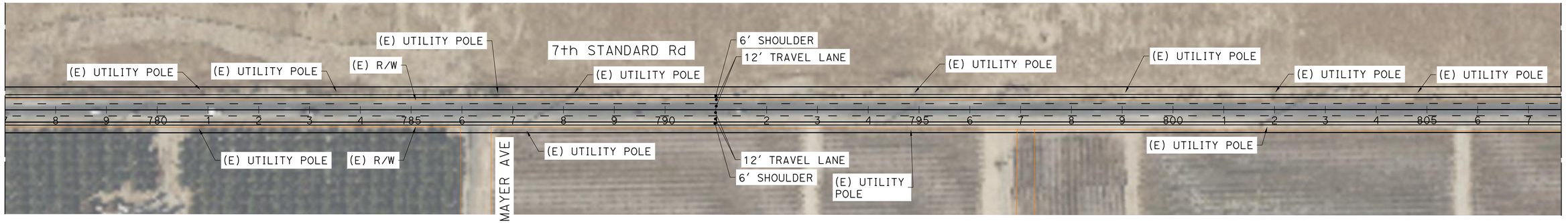
KARGO CCAMS - PROJECT 9

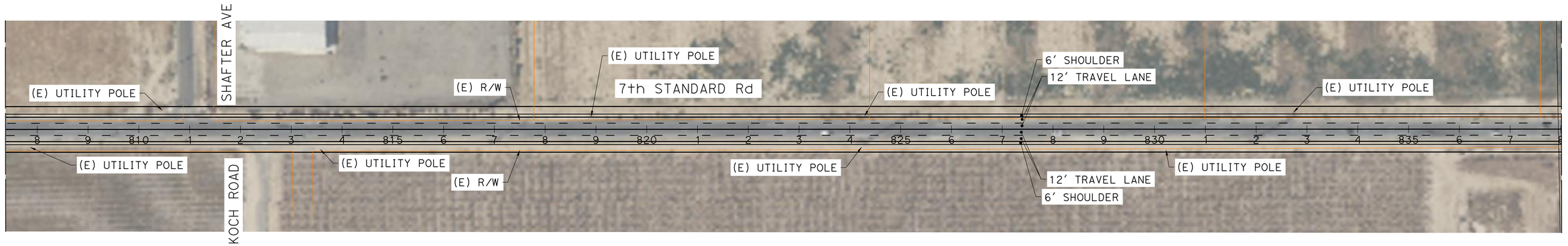
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg







30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

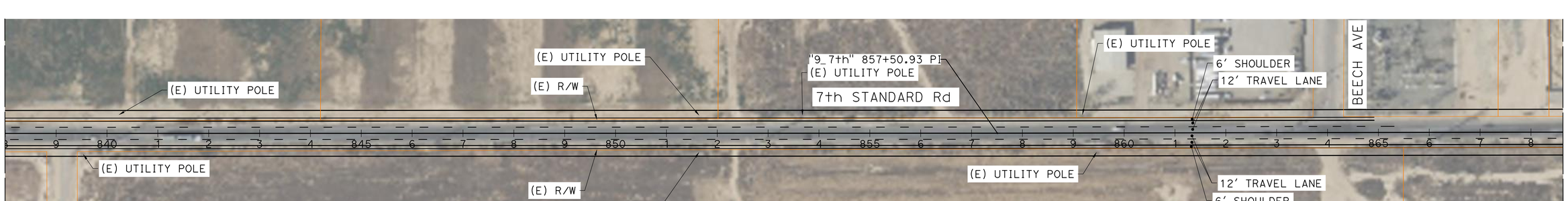
MARK THOMAS

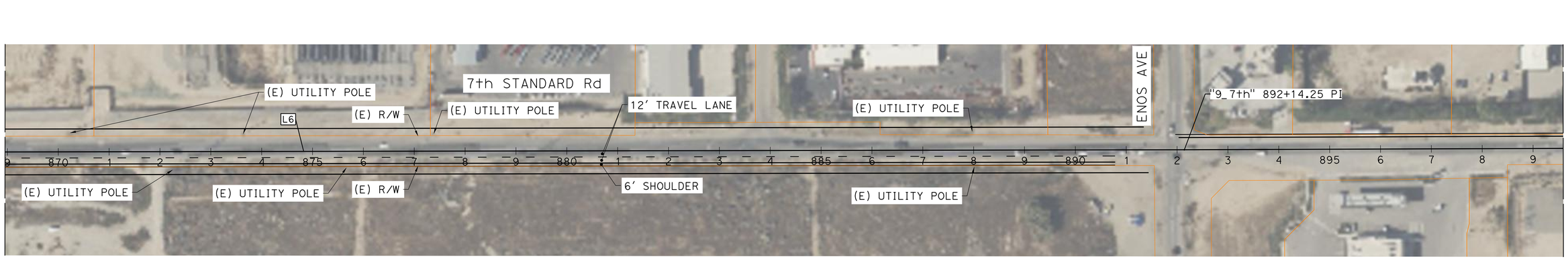
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L6	3463.32'	S89°05'45"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.4 SHAFTER GREEN-PASS: 7TH STANDARD ROAD WIDENING

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 3 & 4.dwg



LEGEND:

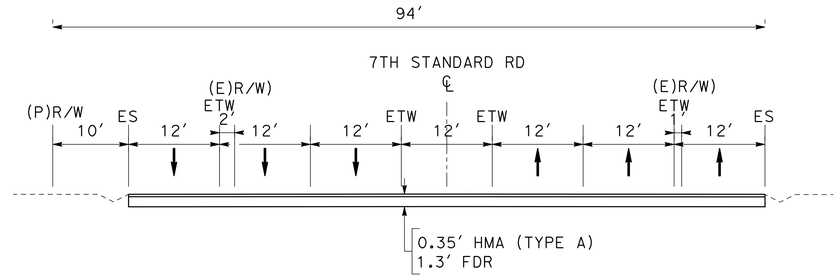
	9.2 ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE	$48M
	9.3 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES	$28M
	9.4 SHAFTER GREEN-PASS: 7th STANDARD ROAD WIDENING	$34M
	9.5 I-5/7th STANDARD ROAD INTERCHANGE	$70M
	9.6 SHAFTER GREEN-PASS: WINGS WAY	$23M
	9.9 MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE	$61M

PROJECT PHASING TABLE

PHASE 9.2: ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
PHASE 9.3: SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES
PHASE 9.4: SHAFTER GREEN-PASS: 7th STANDARD ROAD WIDENING
PHASE 9.5: I-5/7th STANDARD ROAD INTERCHANGE
PHASE 9.6: SHAFTER GREEN-PASS: WINGS WAY
PHASE 9.9: MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE

SUMMARY TABLE

TOTAL LENGTH	3.4 MILES
R/W REQUIREMENTS	0 ACRE, 0 PARCELS



7TH STANDARD RD

STA 237+50 TO STA 276+00

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 6500′

MARK THOMAS

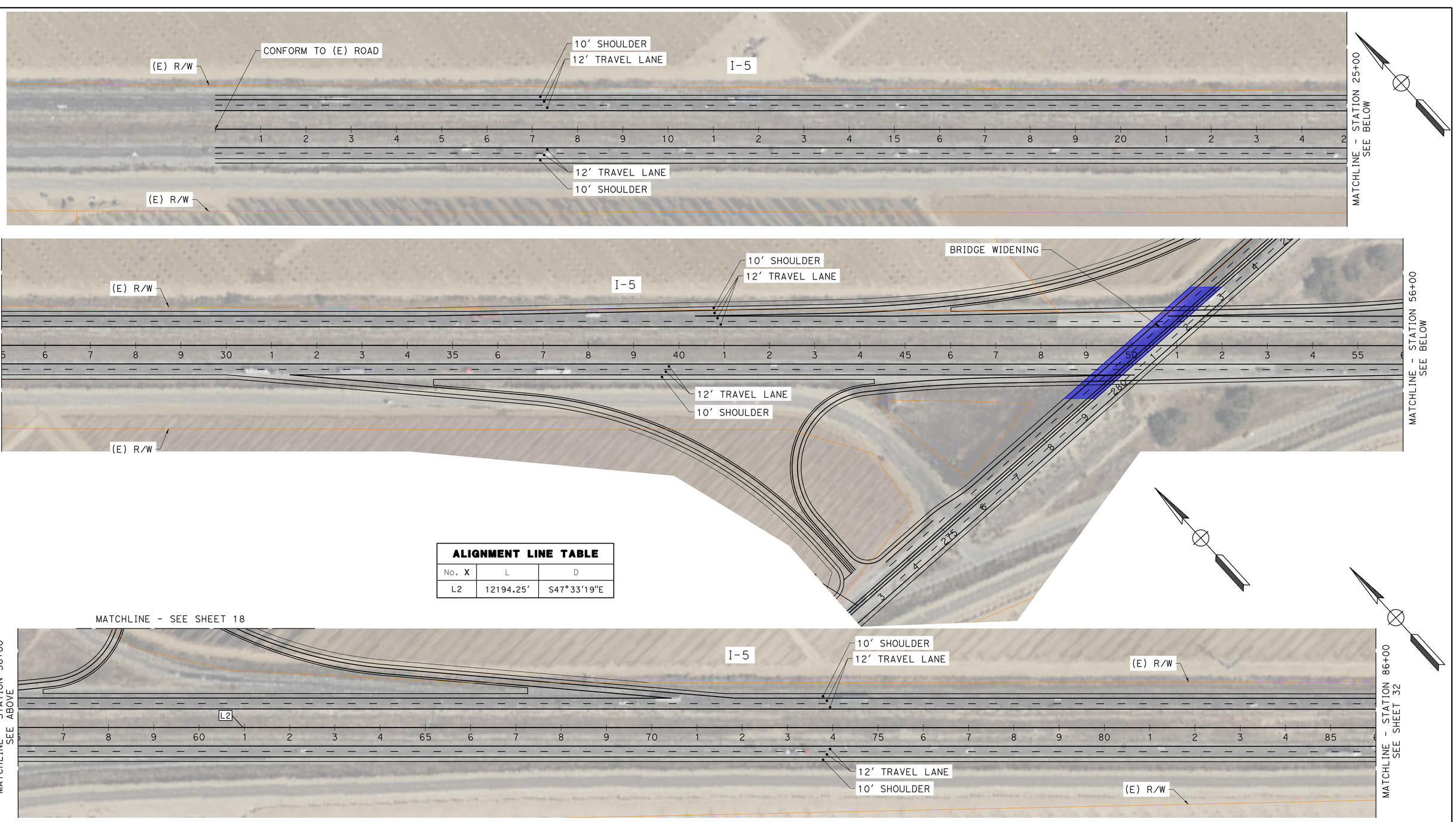
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.5 I-5/7th STANDARD ROAD INTERCHANGE

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 5 & 6.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L2	12194.25'	S47°33'19"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

SHEET 31 OF 44

30% CONCEPTUAL DESIGN

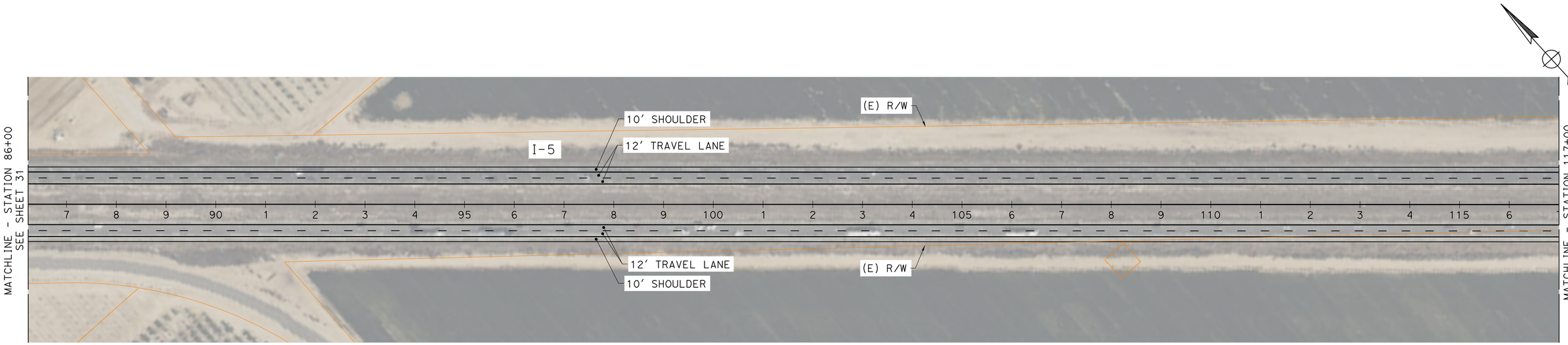
MARK THOMAS

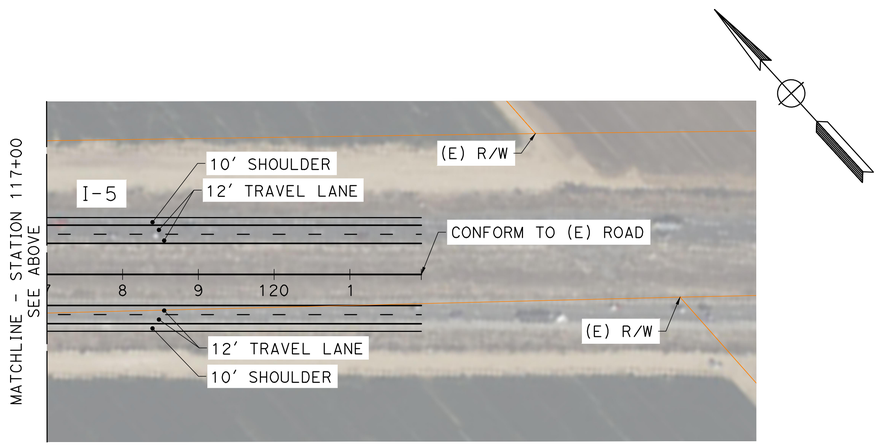
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.5 I-5/7th STANDARD ROAD INTERCHANGE

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 5 & 6.dwg





30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

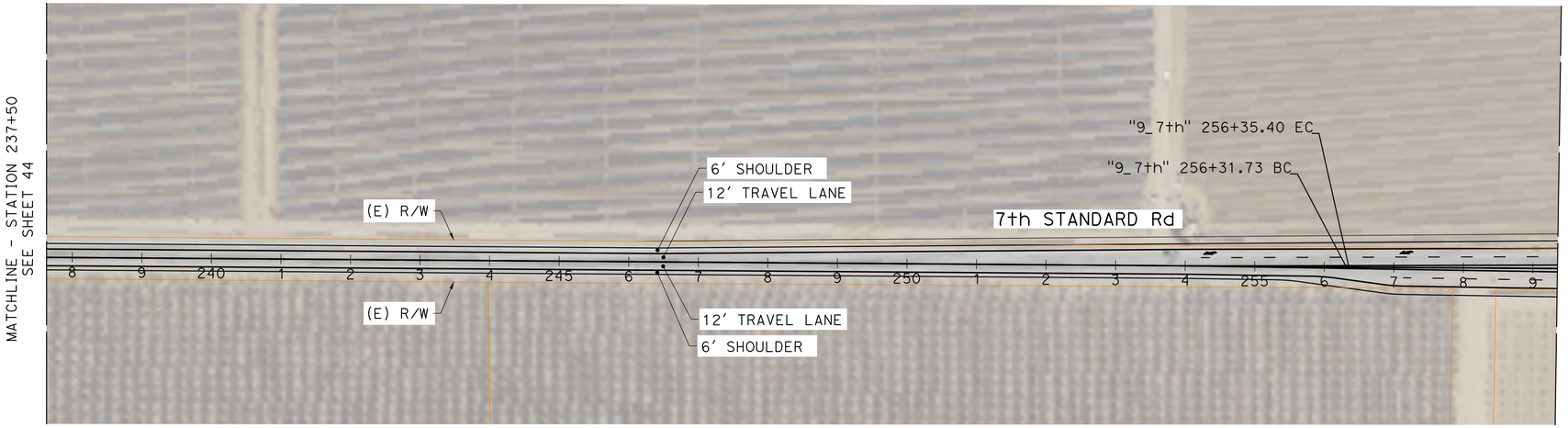
MARK THOMAS

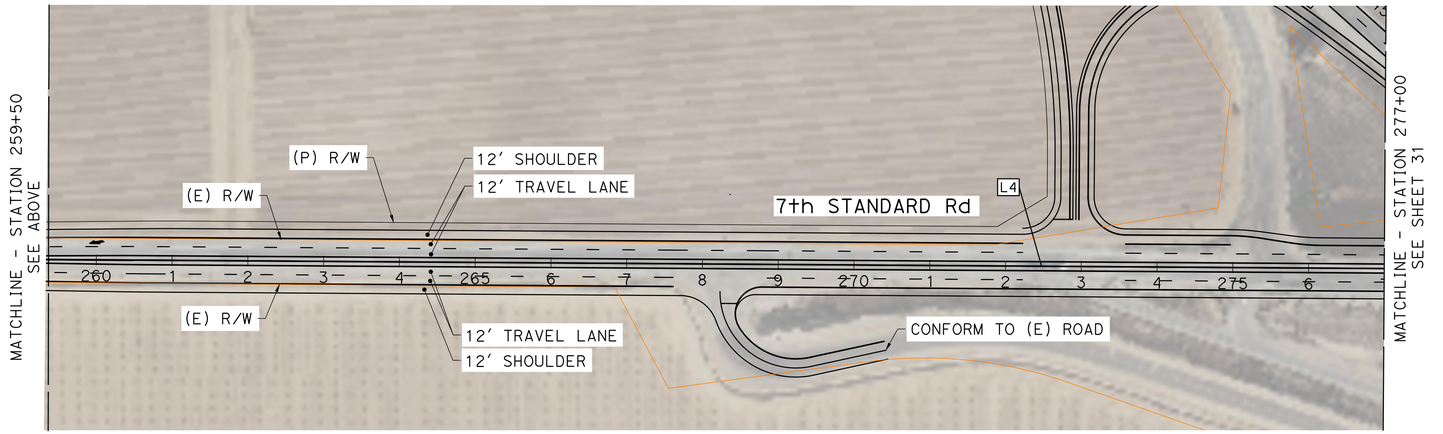
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.5 I-5/7th STANDARD ROAD INTERCHANGE

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 5 & 6.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L4	3224.47'	S89°03'09"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

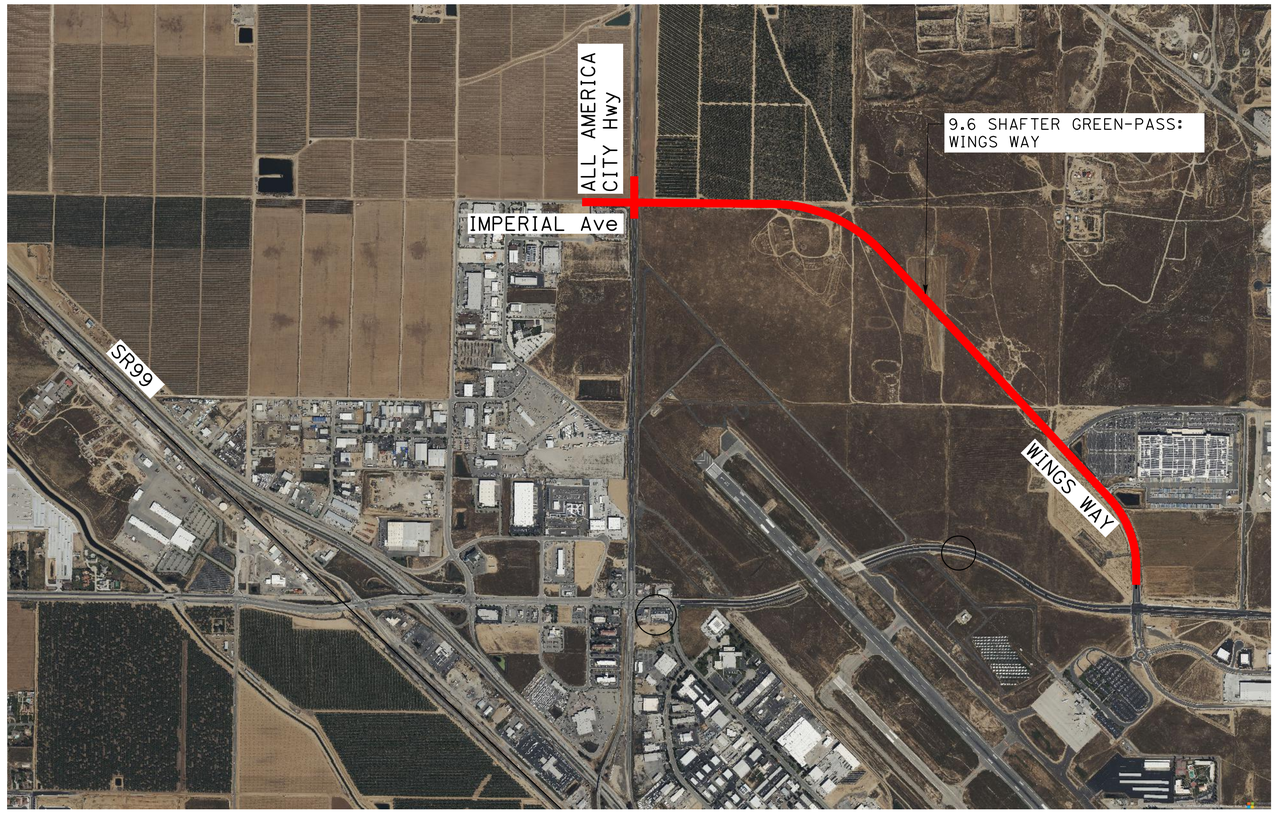
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.5 I-5/7th STANDARD ROAD INTERCHANGE

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 5 & 6.dwg



LEGEND:

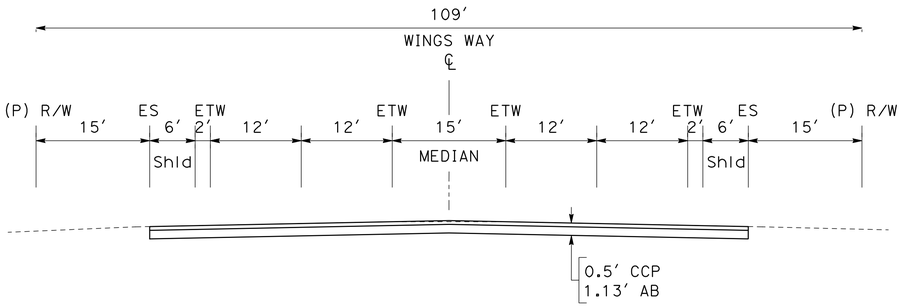
9.6 SHAFTER GREEN-PASS: WINGS WAY $23M

SUMMARY TABLE

TOTAL LENGTH	1.96 MILES
R/W REQUIREMENTS	0.22 ACRES, 16 PARCELS

PROJECT PHASING TABLE

PHASE 9.9: MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE



WINGS WAY

STA 10+00 TO STA 106+00

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 1000′

MARK THOMAS

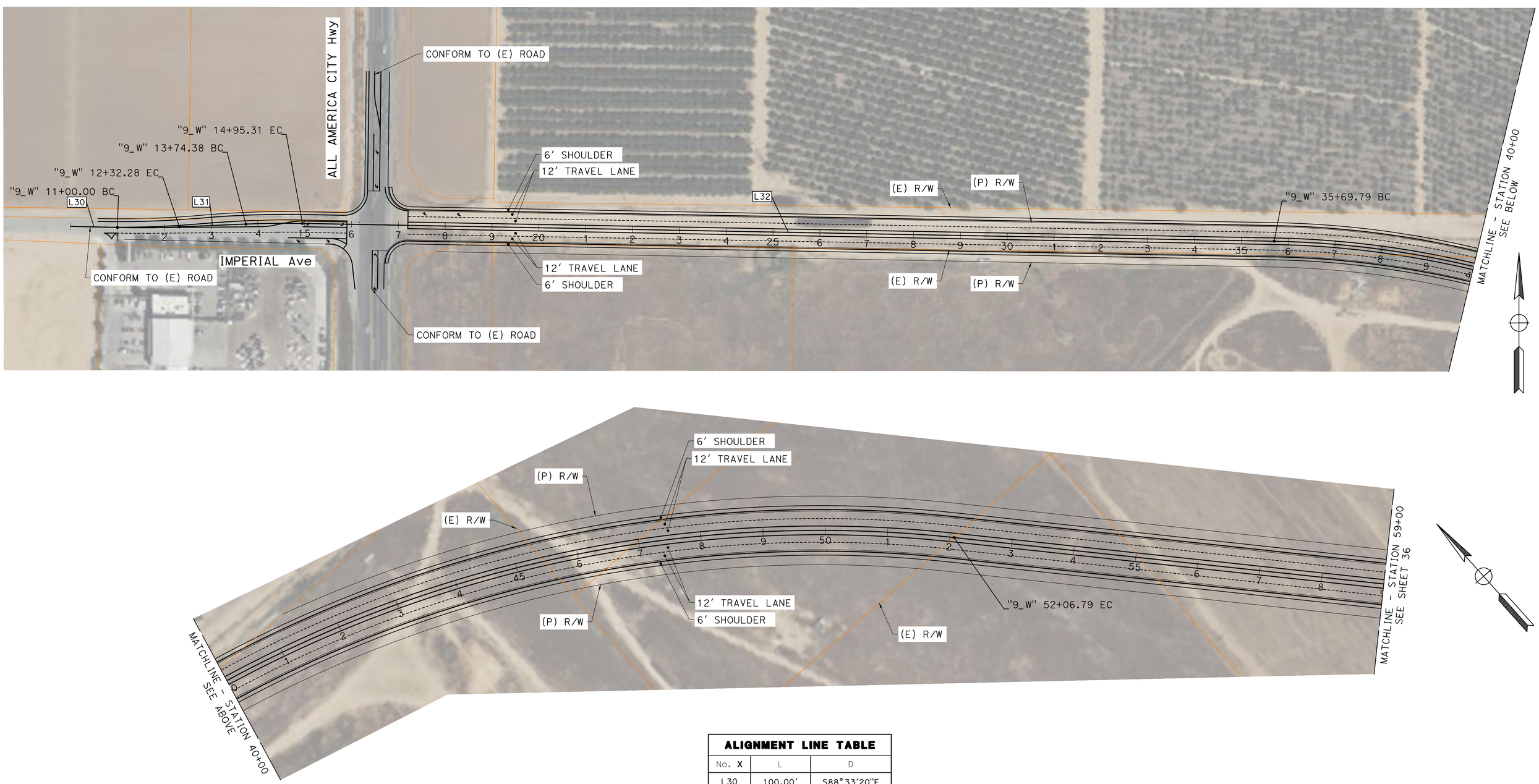
KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.6 SHAFTER GREEN-PASS: WINGS WAY

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 5 & 6.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L30	100.00'	S88°33'20"E
L31	142.10'	N87°39'18"E
L32	2074.47'	S88°52'49"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100'

MARK THOMAS

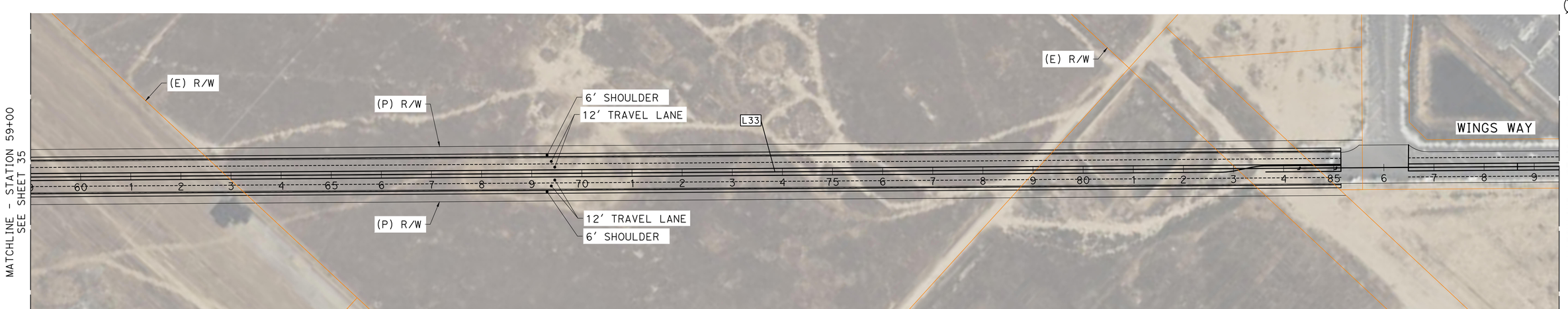
KARGO CCAMS - PROJECT 9

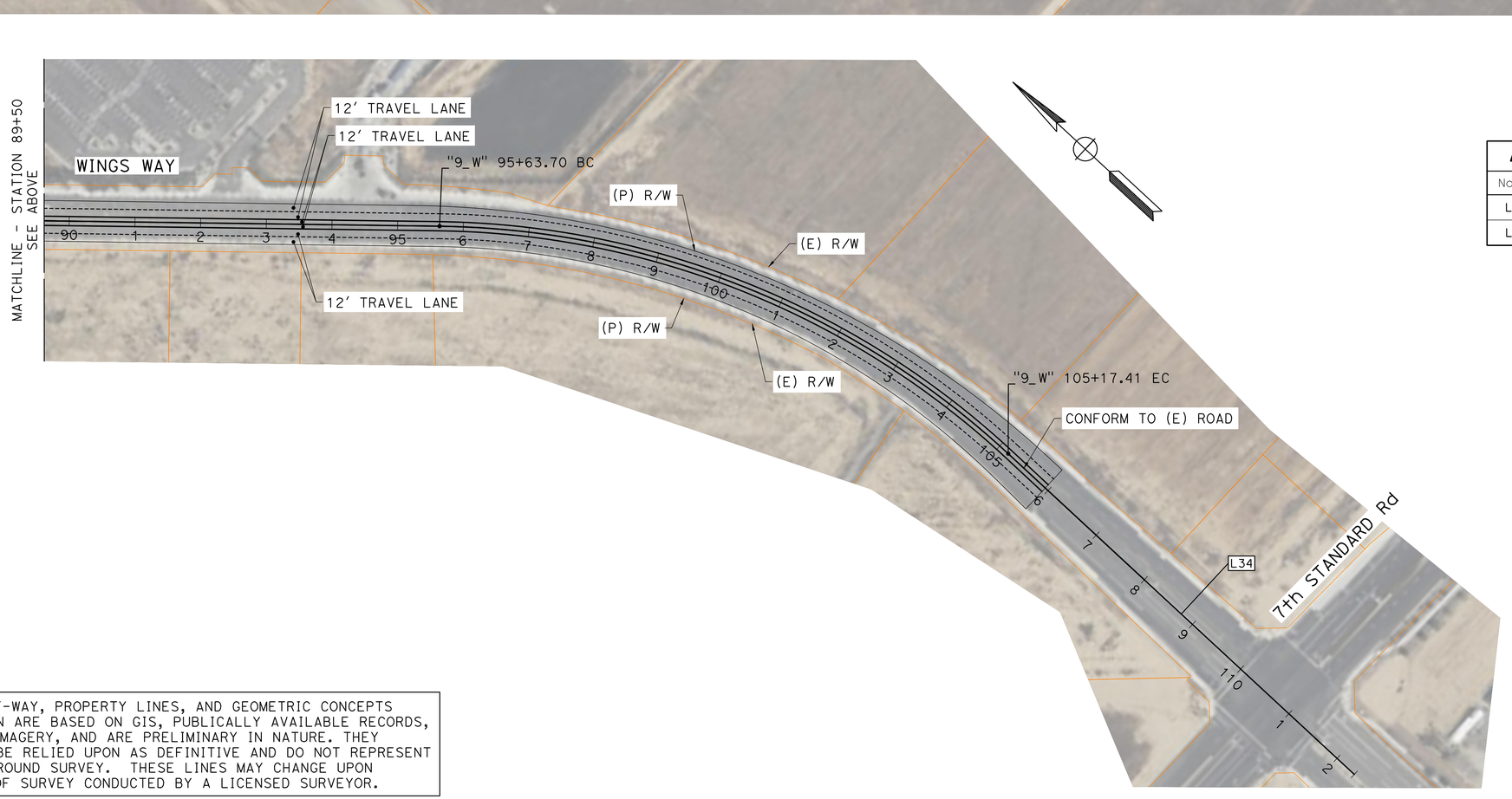
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.6 SHAFTER GREEN-PASS: WINGS WAY

30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 5 & 6.dwg





ALIGNMENT LINE TABLE		
No. X	L	D
L33	4356.90'	S41°59'01"E
L34	718.48'	S0°03'00"W

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

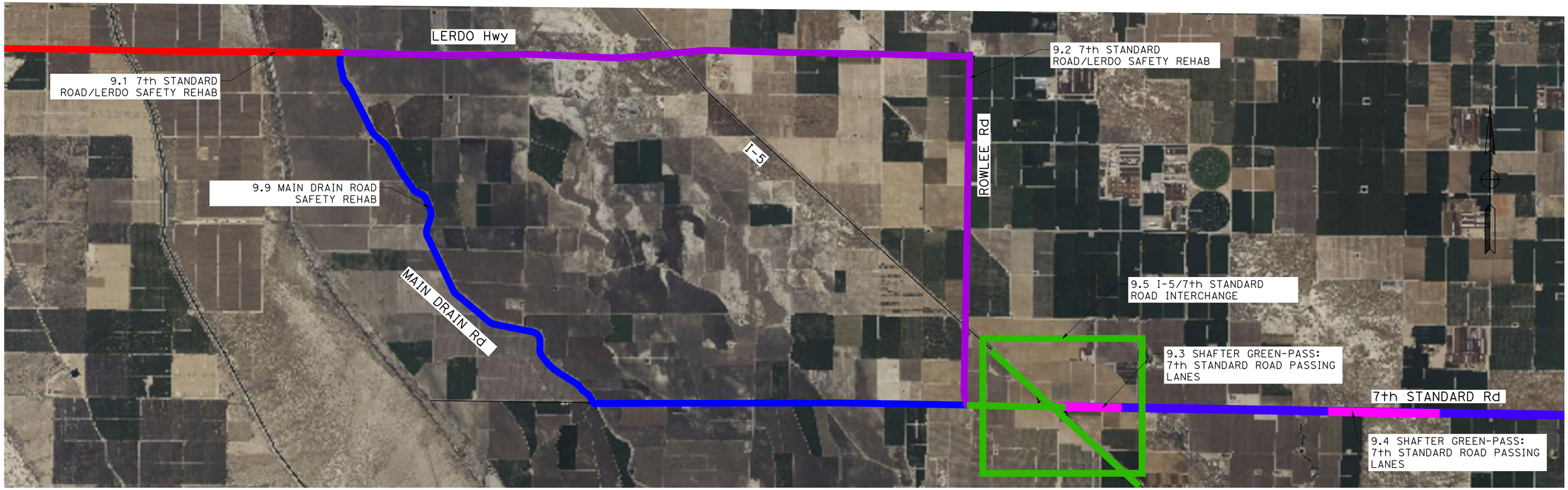
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.6 SHAFTER GREEN-PASS: WINGS WAY

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 5 & 6.dwg



LEGEND:

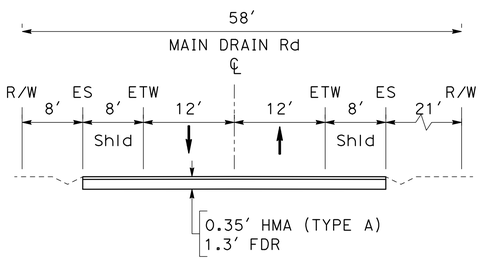
	9.1 7th STANDARD ROAD/LERDO SAFETY REHAB	$162M
	9.2 7th STANDARD ROAD/LERDO SAFETY REHAB	$48M
	9.3 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES	$28M
	9.4 SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES	$34M
	9.5 I-5/7th STANDARD ROAD INTERCHANGE	$70M
	9.9 MAIN DRAIN ROAD SAFETY REHAB	$61M

PROJECT PHASING TABLE

PHASE 9.1: 7th STANDARD ROAD/LERDO SAFETY REHAB
PHASE 9.2: ROWLEE ROAD/LERDO SAFETY REHAB ALTERNATIVE
PHASE 9.3: SHAFTER GREEN-PASS: 7th STANDARD ROAD PASSING LANES
PHASE 9.4: SHAFTER GREEN-PASS: 7th STANDARD ROAD WIDENING
PHASE 9.5: I-5/7th STANDARD ROAD INTERCHANGE
PHASE 9.9: MAIN DRAIN ROAD SAFETY REHAB ALTERNATIVE

SUMMARY TABLE

TOTAL LENGTH	9.6 MILES
R/W REQUIREMENTS	0 ACRES, 0 PARCELS



MAIN DRAIN RD

Sta. 10+00 TO Sta. 295+00

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 6500′

MARK THOMAS

KARGO CCAMS - PROJECT 9

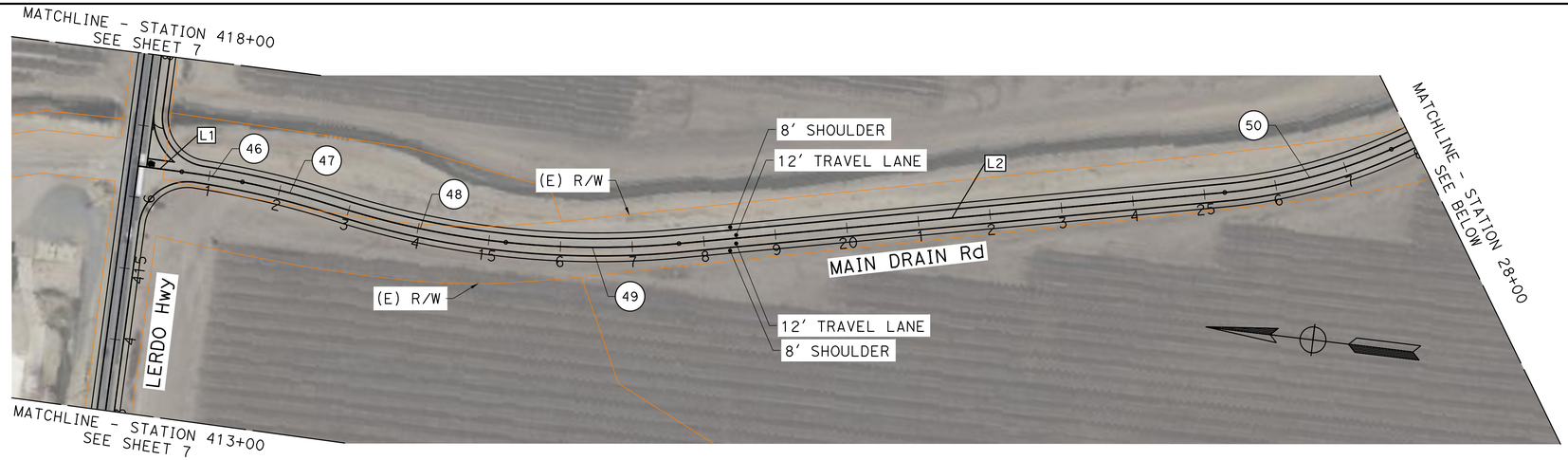
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.9 MAIN DRAIN ROAD SAFETY REHAB

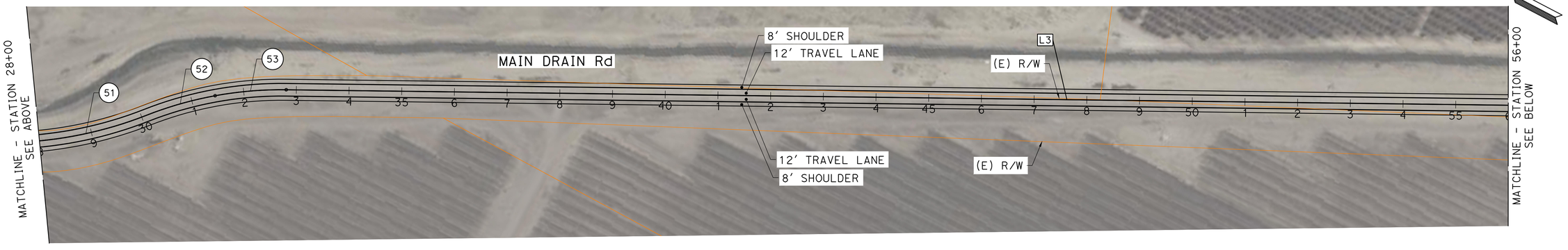
30% CONCEPTUAL DESIGN

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 9 pt. 1.dwg

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
46	1250.00′	003°55′19"	42.80′	85.57′
47	1250.00′	006°12′18"	67.75′	135.37′
48	1200.00′	011°31′42"	121.13′	241.45′
49	1200.00′	011°31′42"	121.13′	241.45′
50	750.00′	018°23′02"	121.36′	240.64′
51	750.00′	018°23′02"	121.36′	240.64′
52	700.00′	011°05′53"	68.01′	135.59′
53	700.00′	011°05′53"	68.01′	135.59′
54	800.00′	011°22′36"	79.69′	158.85′
55	800.00′	011°22′36"	79.69′	158.85′
56	800.00′	020°03′17"	141.46′	280.02′



ALIGNMENT LINE TABLE		
No. X	L	D
L1	61.31′	S0°38′27"W
L2	763.12′	S12°17′21"E
L3	2962.82′	S26°51′38"E
L4	695.19′	S49°36′49"E
L5	1681.45′	S29°33′32"E





THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1" = 100′

30% CONCEPTUAL DESIGN

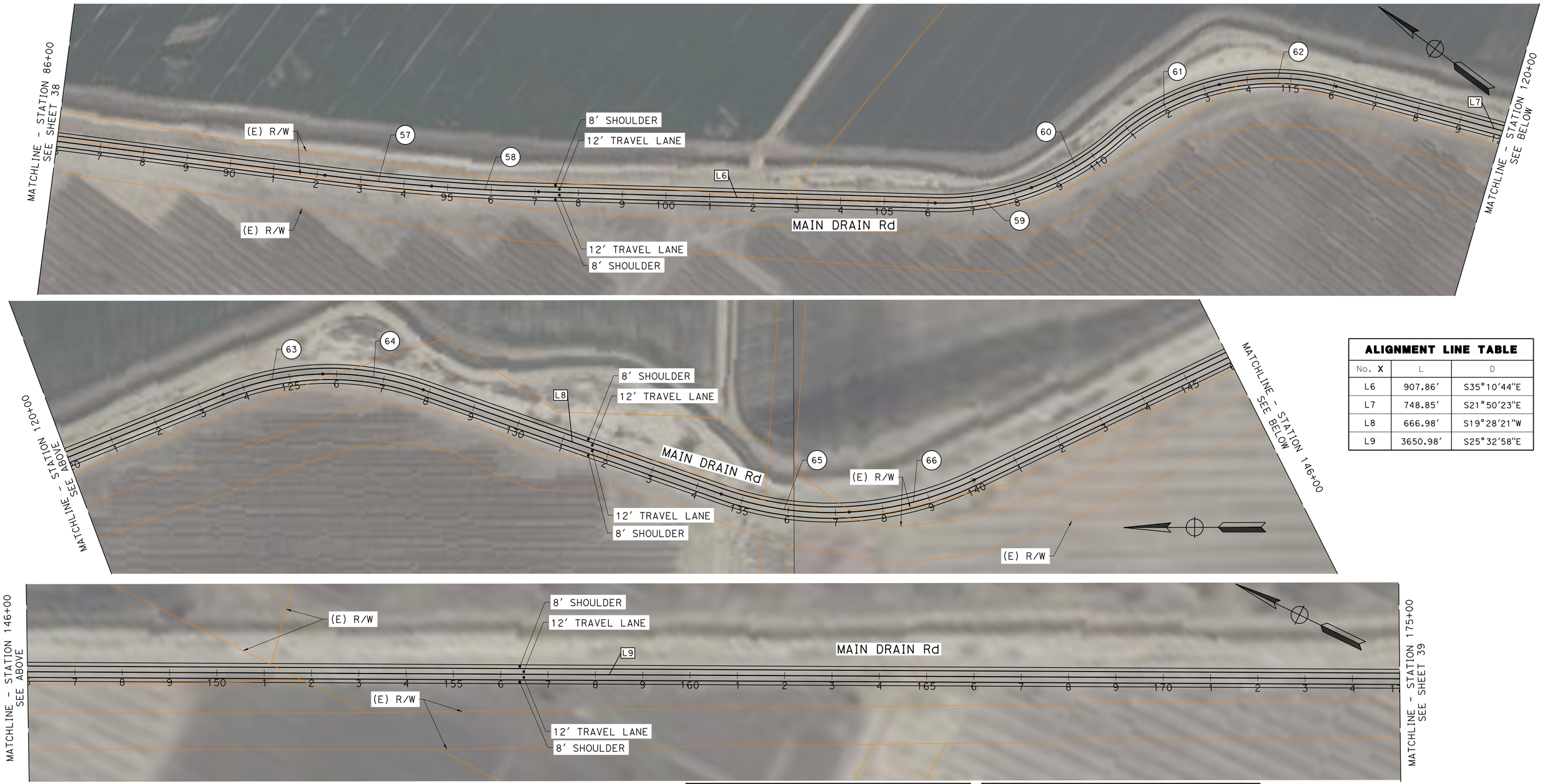
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.9 MAIN DRAIN ROAD SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 9 pt. 1.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L6	907.86′	S35°10′44"E
L7	748.85′	S21°50′23"E
L8	666.98′	S19°28′21"W
L9	3650.98′	S25°32′58"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
57	5000.00′	002°48′36"	122.63′	245.22′
58	5000.00′	002°48′36"	122.63′	245.22′
59	600.00′	021°27′06"	113.65′	224.64′
60	600.00′	021°27′06"	113.65′	224.64′
61	550.00′	028°07′16"	137.75′	269.94′

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
62	550.00′	028°07′16"	137.75′	269.94′
63	600.00′	020°39′22"	109.34′	216.31′
64	600.00′	020°39′22"	109.34′	216.31′
65	699.99′	022°30′41"	139.31′	275.02′
66	699.99′	022°30′41"	139.31′	275.02′

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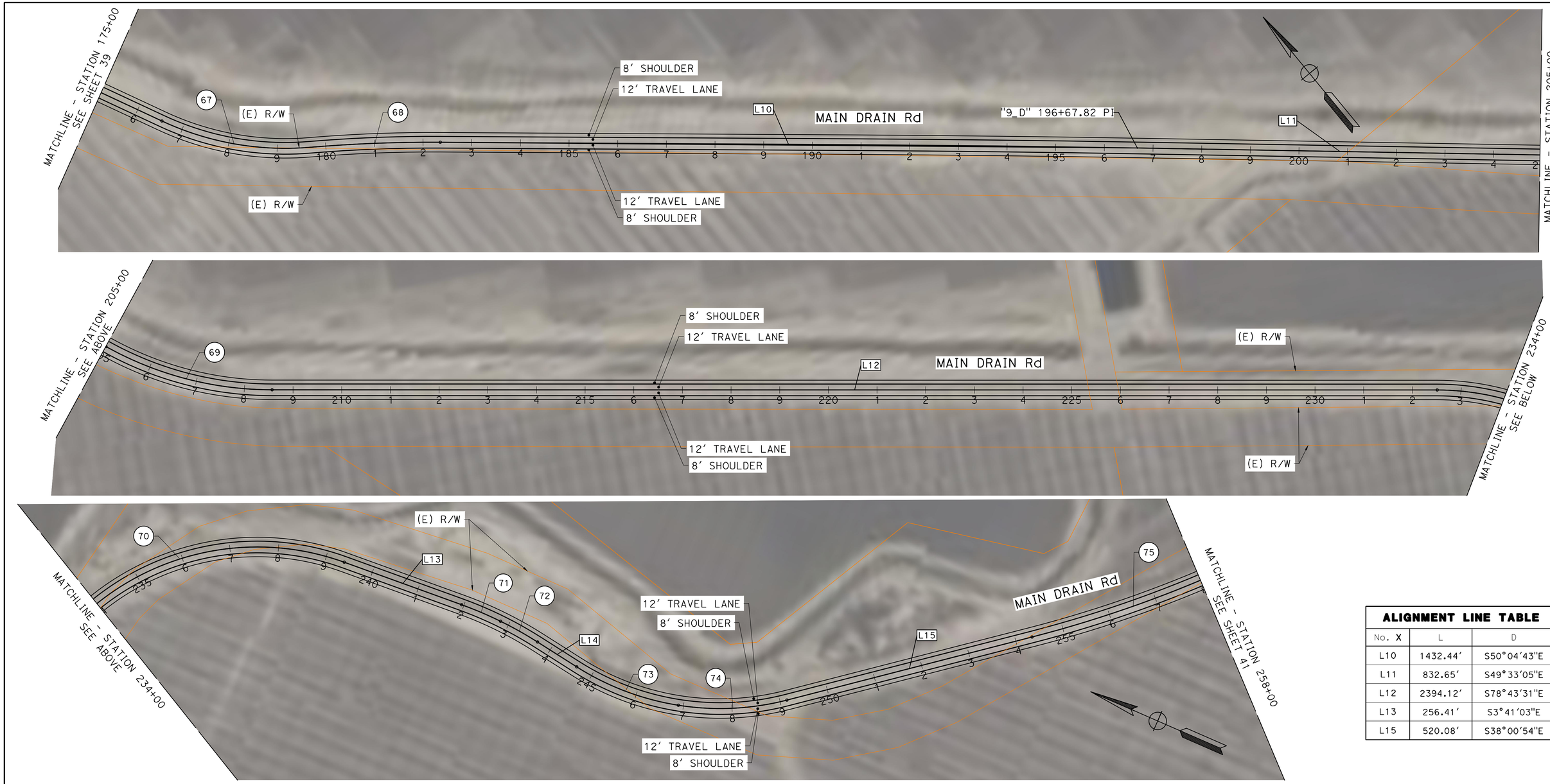
DATE: 1/14/26

SCALE: 1" = 100′

30% CONCEPTUAL DESIGN



ALIGNMENT LINE TABLE		
No. X	L	D
L10	1432.44'	S50°04'43"E
L11	832.65'	S49°33'05"E
L12	2394.12'	S78°43'31"E
L13	256.41'	S3°41'03"E
L15	520.08'	S38°00'54"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
67	600.00'	029°47'28"	159.60'	311.97'
68	3000.00'	005°07'45"	134.37'	268.56'
69	700.00'	029°10'26"	182.17'	356.43'
70	525.00'	075°02'28"	403.15'	687.60'
71	800.06'	006°13'37"	43.52'	86.95'

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
72	800.00'	006°15'22"	43.72'	87.35'
73	550.00'	023°25'17"	114.01'	224.83'
74	550.00'	023°25'17"	114.01'	224.83'
75	2500.00'	009°58'17"	218.09'	435.09'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

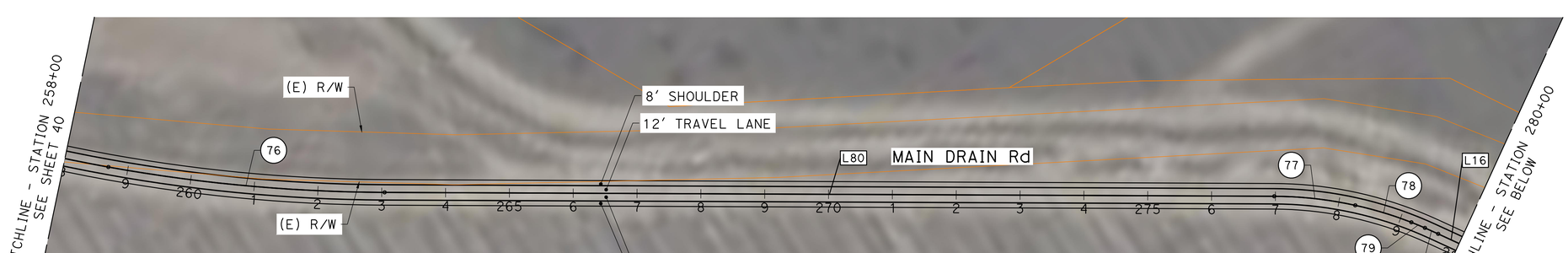
MARK THOMAS

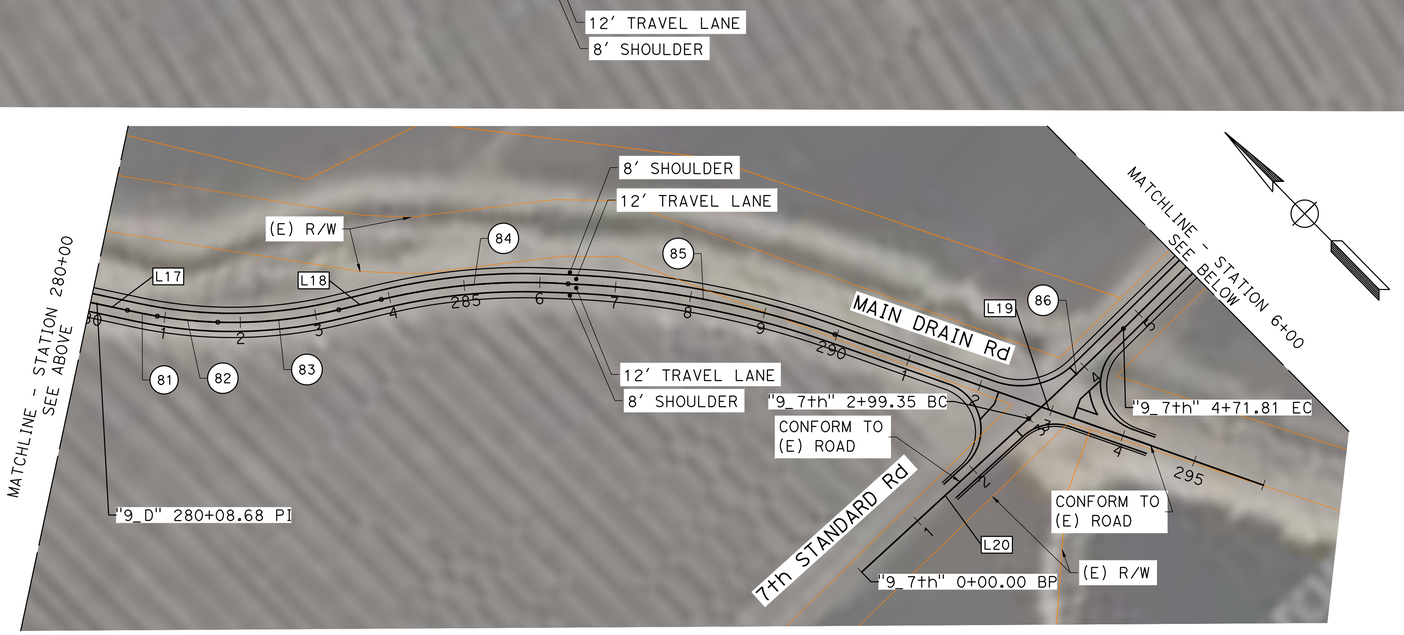
KARGO CCAMS - PROJECT 9

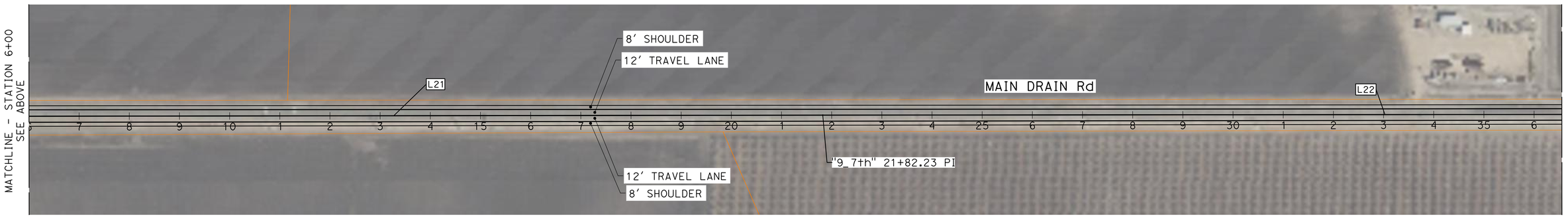
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.9 MAIN DRAIN ROAD SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 9 pt. 1.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L16	44.90'	S33°31'50"E
L17	40.94'	S33°31'50"E
L18	57.73'	S59°06'30"E
L19	599.50'	S26°10'46"E
L20	299.35'	S88°06'08"E
L21	1710.42'	N89°55'18"E
L22	2241.29'	N89°56'44"E
L80	1393.67'	S57°57'28"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
76	2500.00'	009°58'17"	218.09'	435.09'
77	600.00'	012°12'49"	64.19'	127.90'
78	600.00'	008°46'57"	46.07'	91.97'
79	600.00'	002°11'33"	11.48'	22.96'

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
81	781.10'	002°57'23"	20.16'	40.30'
82	600.00'	007°40'06"	40.21'	80.30'
83	600.00'	015°22'23"	80.98'	160.99'
84	822.93'	017°17'19"	125.11'	248.31'

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
86	5000.00'	001°58'34"	86.24'	172.46'

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

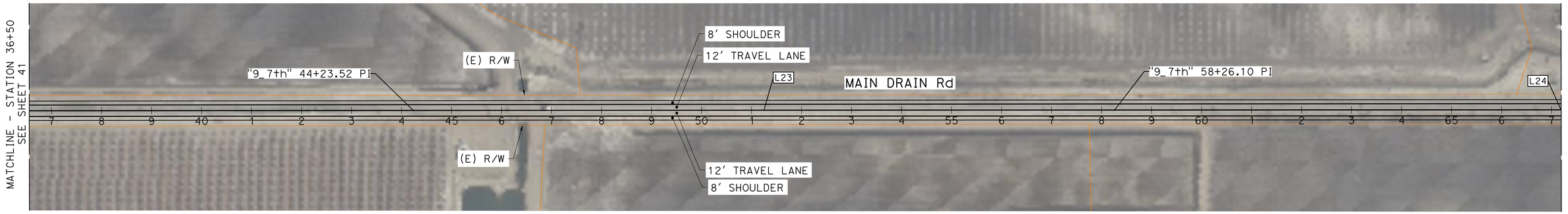
MARK THOMAS

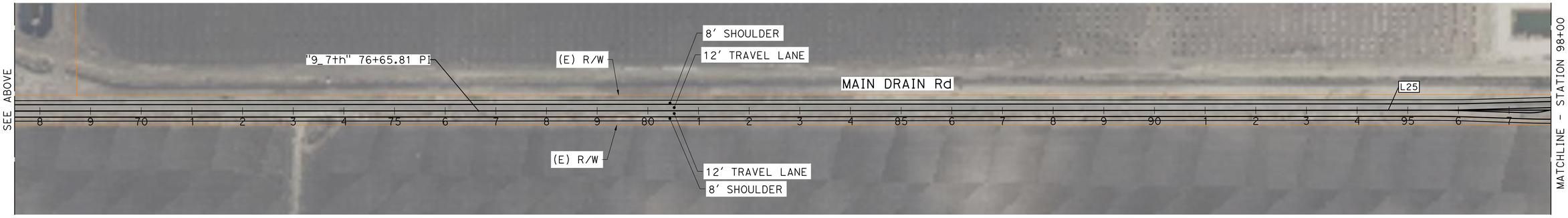
KARGO CCAMS - PROJECT 9

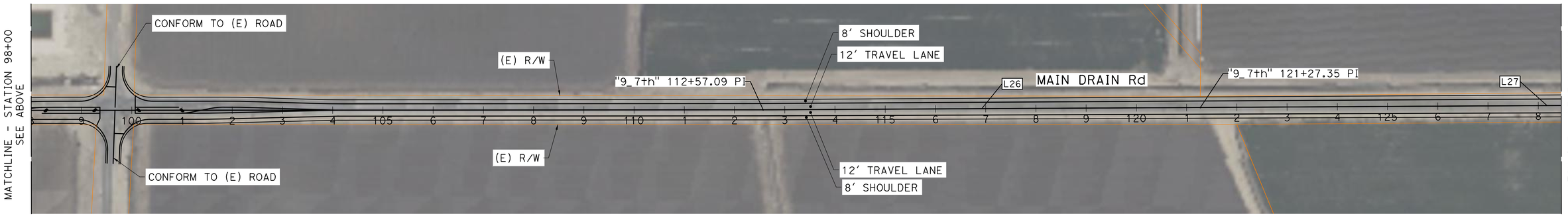
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.9 MAIN DRAIN ROAD SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 9 pt. 1.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L23	1402.58'	N89°57'50"E
L24	1839.71'	N89°58'59"E
L25	3591.28'	N89°57'33"E
L26	870.26'	N89°41'33"E
L27	1380.37'	N89°40'52"E

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

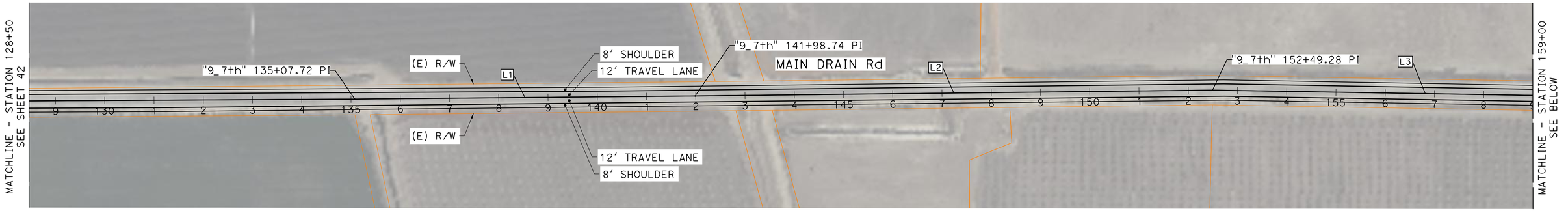
MARK THOMAS

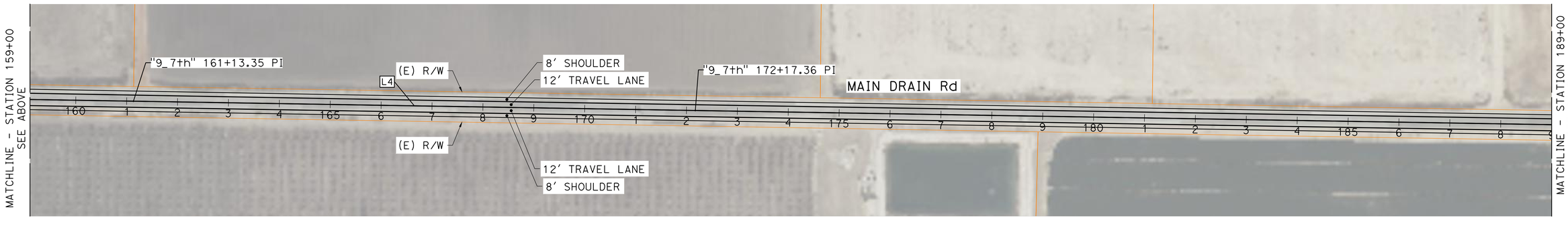
KARGO CCAMS - PROJECT 9

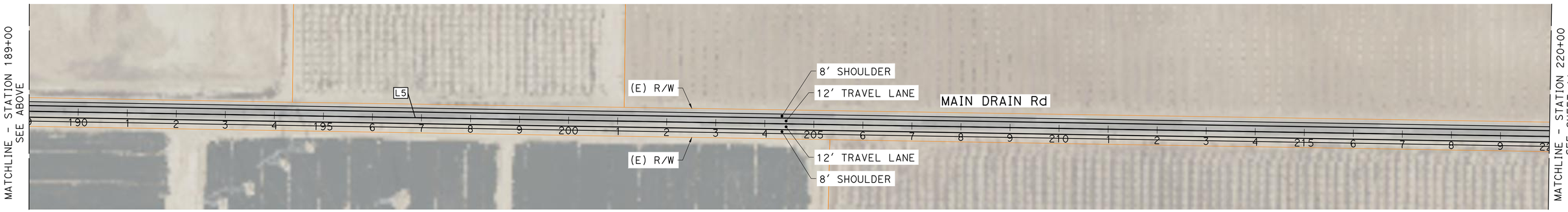
SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.9 MAIN DRAIN ROAD SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 9 pt. 1.dwg







ALIGNMENT LINE TABLE		
No. X	L	D
L1	691.03'	N89°28'45"E
L2	1050.54'	N89°21'17"E
L3	864.07'	S89°03'44"E
L4	1104.01'	S89°03'06"E
L5	4939.86'	S89°02'56"E

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DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1" = 100'

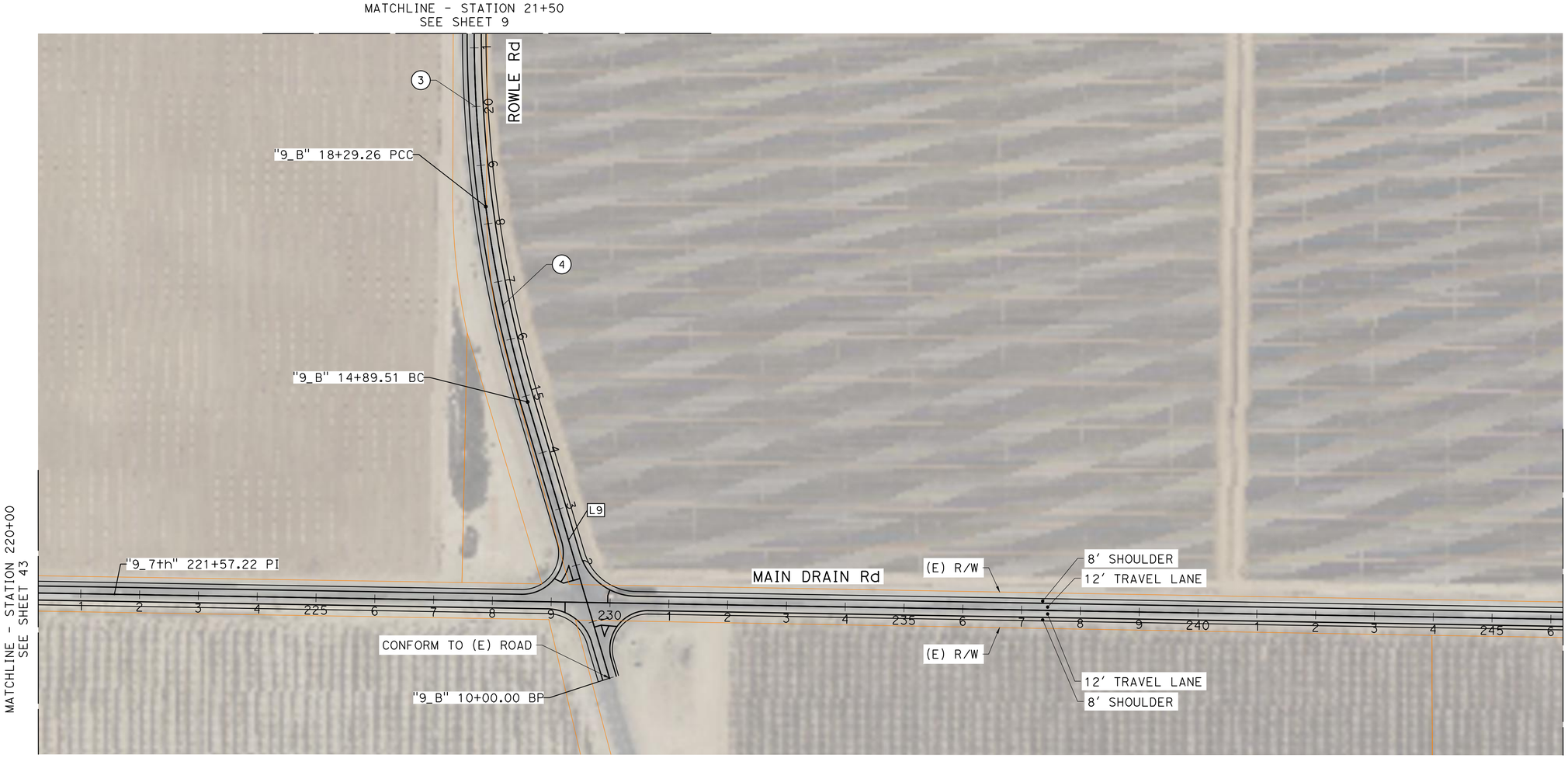
MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.9 MAIN DRAIN ROAD SAFETY REHAB

J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 9 pt. 2.dwg



ALIGNMENT LINE TABLE		
No. X	L	D
L9	489.51'	N16°31'27"W

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
3	2200.00'	008°50'54"	170.21'	339.75'
4	2200.00'	008°50'54"	170.21'	339.75'

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DATE: 1/14/26

SCALE: 1" = 100'

SHEET 44 OF 44

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 9

SR-33/7th STANDARD ROAD SAFETY CORRIDOR IMPROVEMENTS

9.9 MAIN DRAIN ROAD SAFETY REHAB

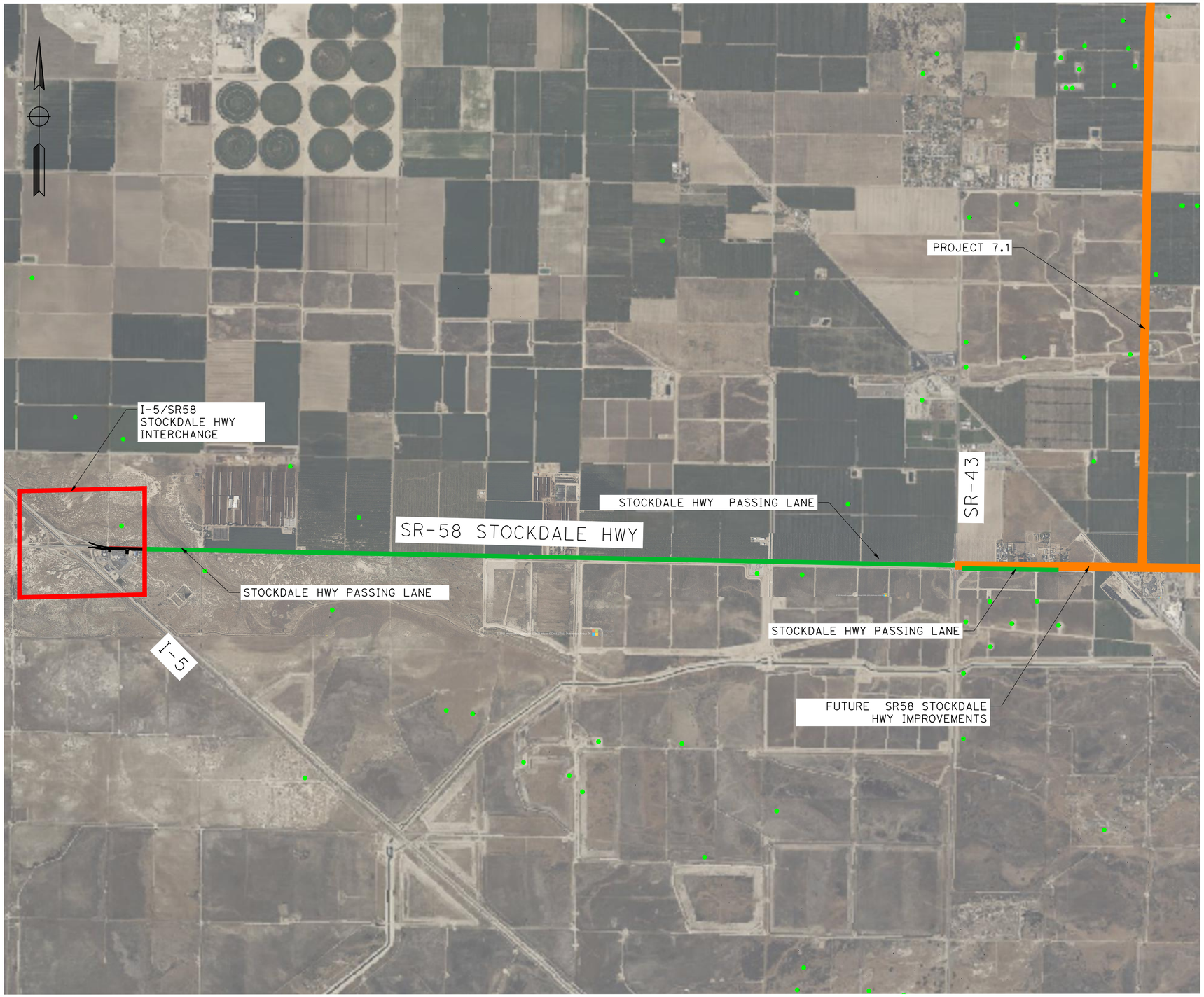
J:\Kern COG-24-00050- KARGO CCAMS\CADD\9 - SR 33 7th Standard Rd Safety Corridor Impr\Plans\Plans - Phase 9 pt. 2.dwg

LEGEND:

- 10.2 I-5/SR58 STOCKDALE HWY INTERCHANGE
- 10.3 STOCKDALE HWY PASSING LANES
- ADJACENT PROJECTS
- OIL WELL

PROJECT PHASING TABLE

PHASE 10.2: I-5/SR58 STOCKDALE HWY INTERCHANGE
PHASE 10.3: SR58 STOCKDALE HWY SAFETY PASSING LANES



30% CONCEPTUAL DESIGN

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DATE: 1/13/26

SCALE: 1"=1500'

MARK THOMAS

KARGO CCAMS - PROJECT 10

SR/58/STOCKDALE HWY CONNECTION TO I-5 CORRIDOR SAFETY IMPROVEMENTS

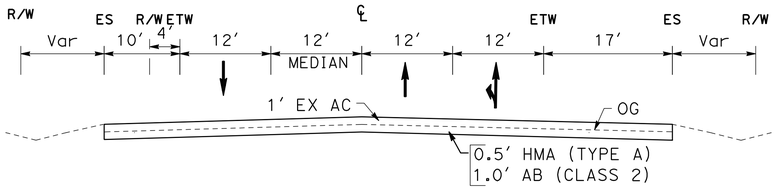
SR58 STOCKDALE HWY SAFETY PASSING LANES

LEGEND:

- 10.2 I-5/SR58 STOCKDALE HWY INTERCHANGE
- 10.3 STOCKDALE HWY PASSING LANES
- ADJACENT PROJECTS
- OIL WELL

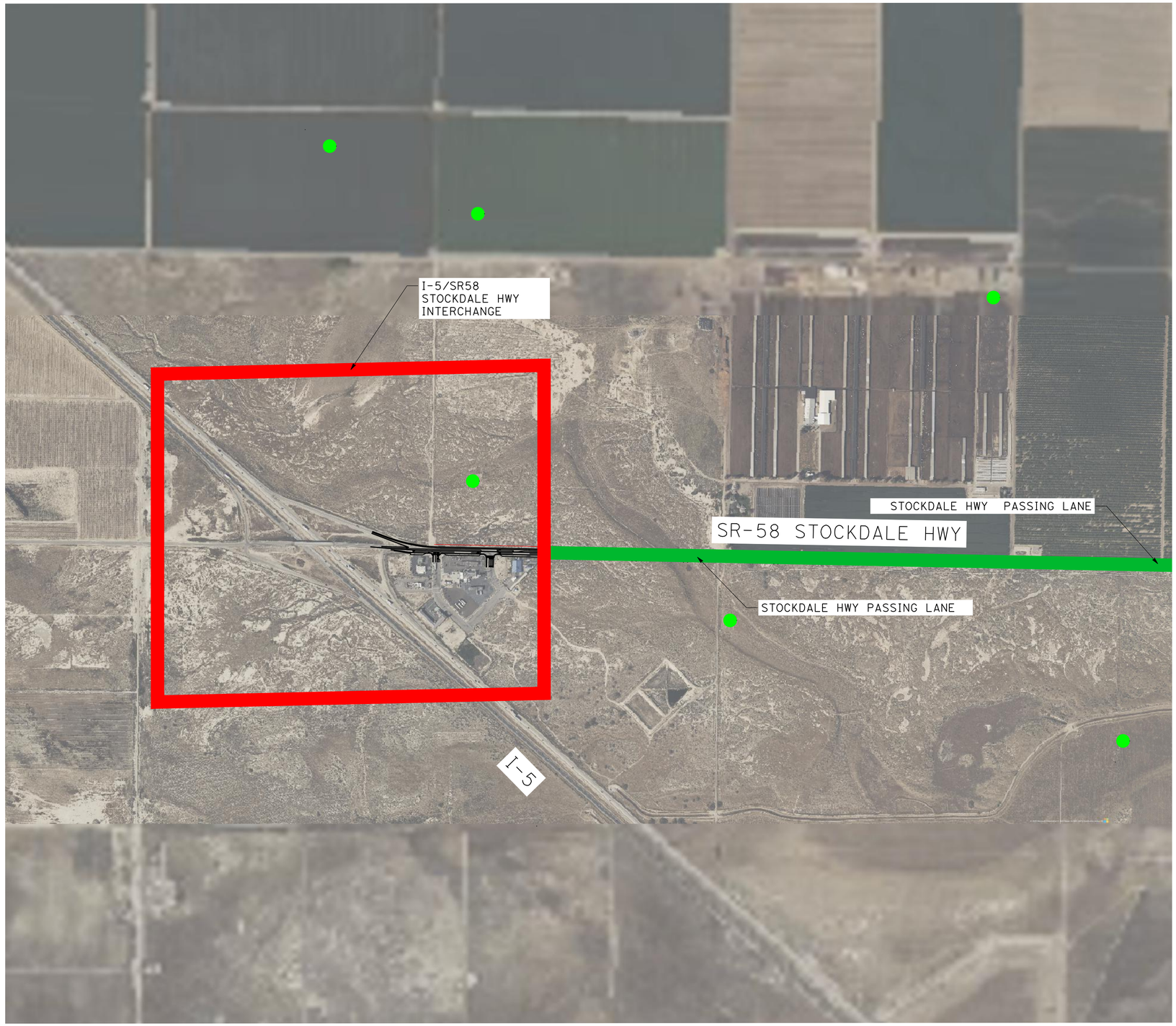
PROJECT PHASING TABLE

PHASE 10.2: I-5/SR58 STOCKDALE HWY INTERCHANGE
PHASE 10.3: SR58 STOCKDALE HWY SAFETY PASSING LANES



SR-58 STOCKDALE HIGHWAY

STA 102+00 TO STA 115+00



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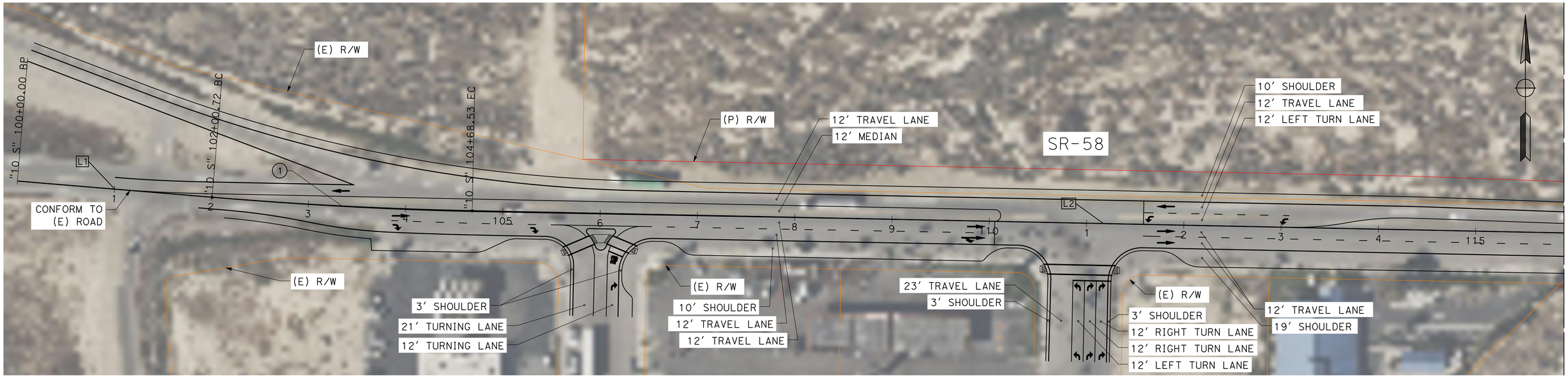
DATE: 1/13/26

SCALE: 1"=1500′

30% CONCEPTUAL DESIGN



30% CONCEPTUAL DESIGN

ALIGNMENT LINE TABLE		
No. X	L	D
L1	200.72'	S85°14'40"E
L2	23540.97'	S88°50'08"E

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
1	4273.00'	003°35'28"	133.95'	267.82'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

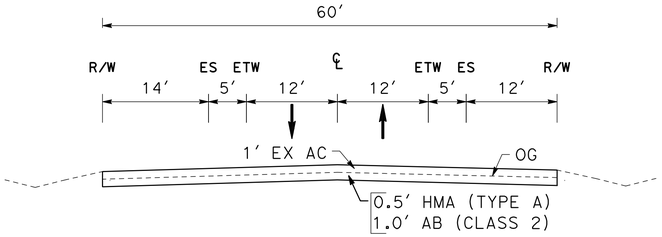
SCALE: 1"=100'

LEGEND:

- 10.2 I-5/SR58 STOCKDALE HWY INTERCHANGE
- 10.3 STOCKDALE HWY PASSING LANES
- ADJACENT PROJECTS
- OIL WELL

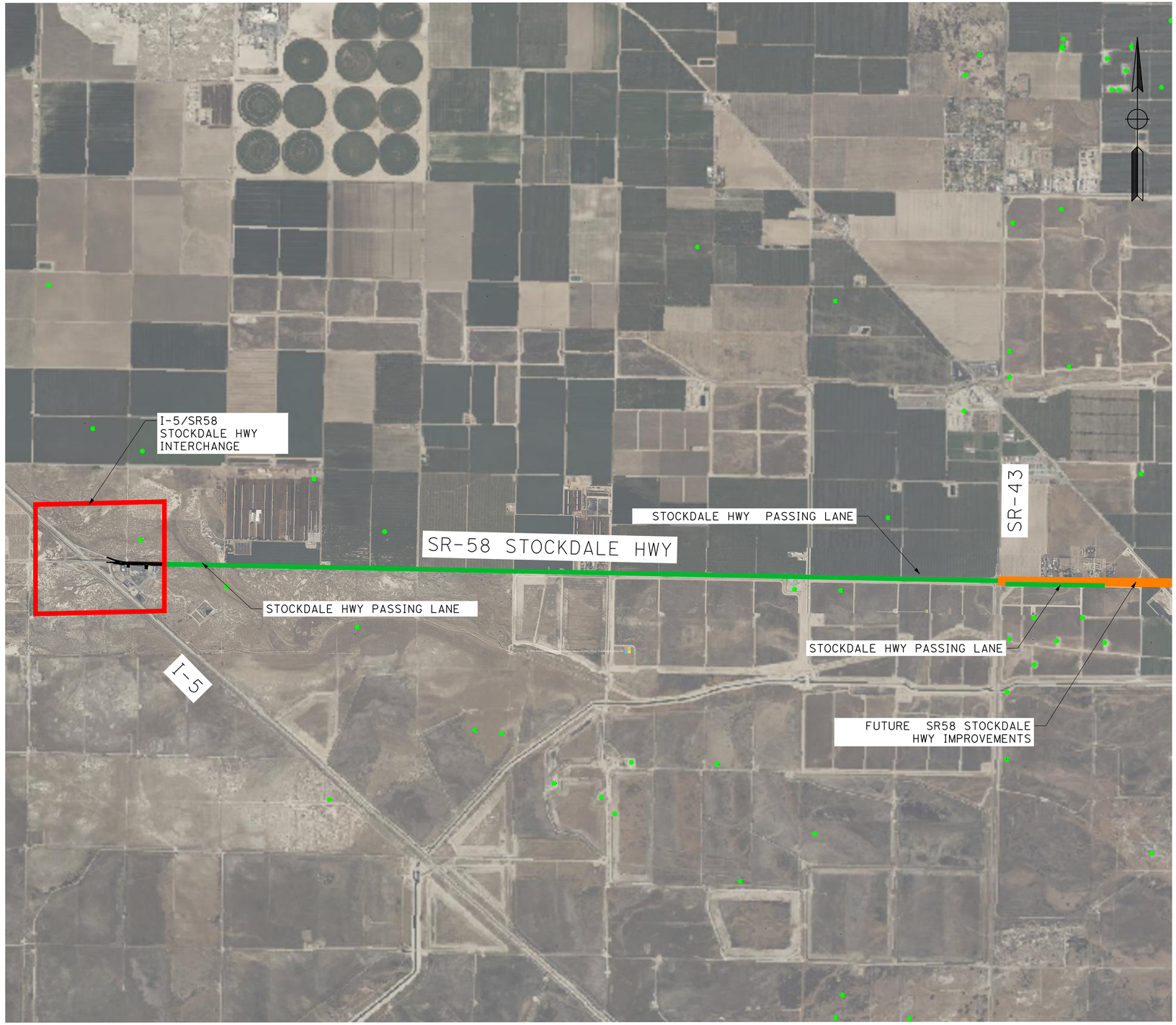
PROJECT PHASING TABLE

PHASE 10.2: I-5/SR58 STOCKDALE HWY INTERCHANGE
PHASE 10.3: SR58 STOCKDALE HWY SAFETY PASSING LANES



SR-58 STOCKDALE HIGHWAY

STA 115+00 TO STA 382+00



30% CONCEPTUAL DESIGN

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DATE: 1/13/26

SCALE: 1"=1500′

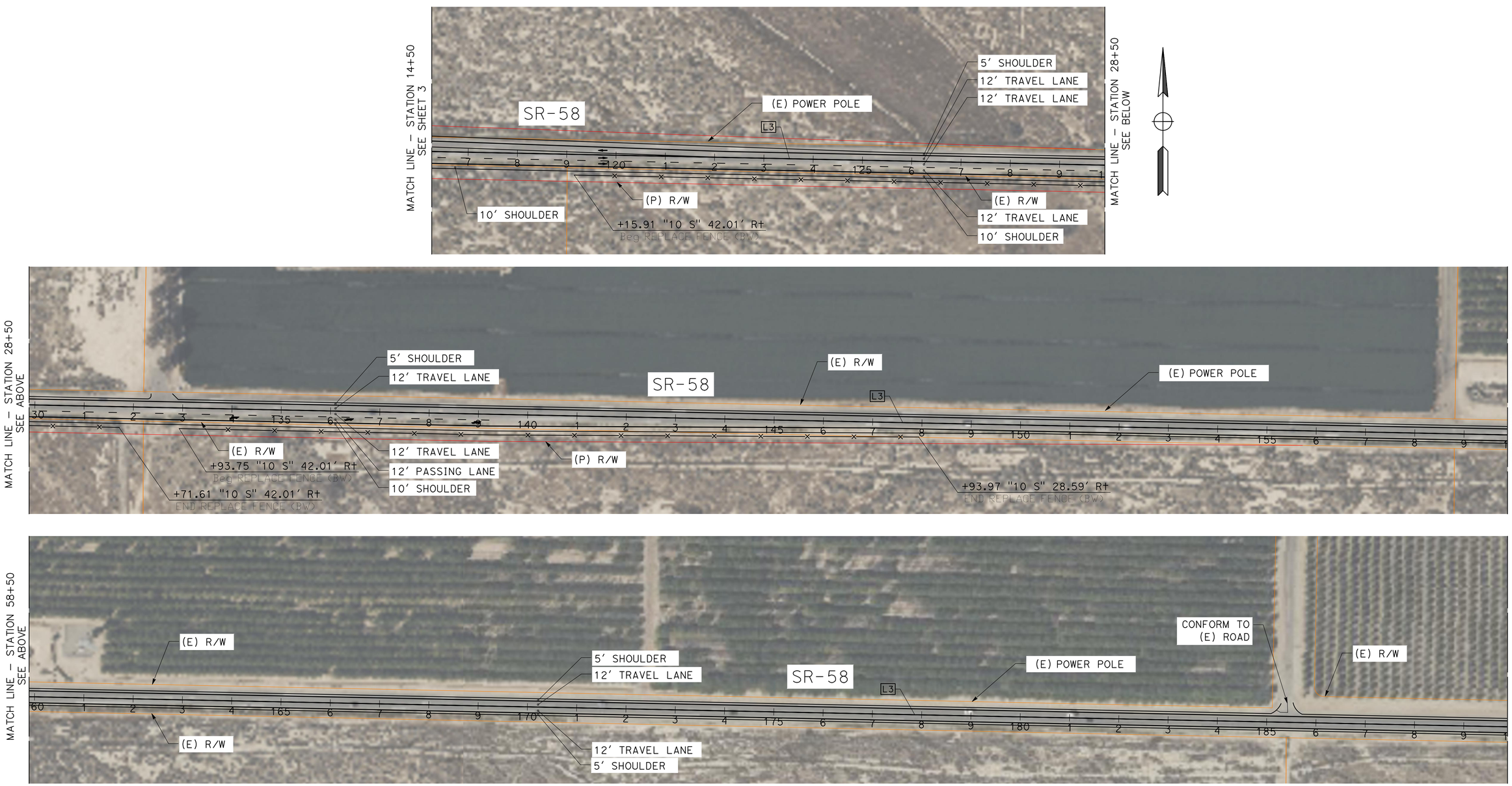
MARK THOMAS

KARGO CCAMS - PROJECT 10

SR/58/STOCKDALE HWY CONNECTION TO I-5 CORRIDOR SAFETY IMPROVEMENTS

10.3

SR58 STOCKDALE HWY SAFETY PASSING LANES



ALIGNMENT LINE TABLE		
No. X	L	D
L3	23540.97′	S88°50′08"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100′

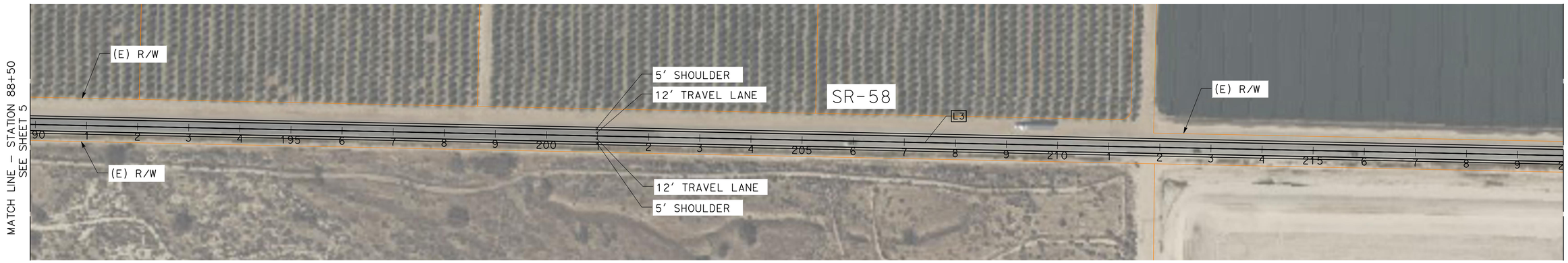
MARK THOMAS

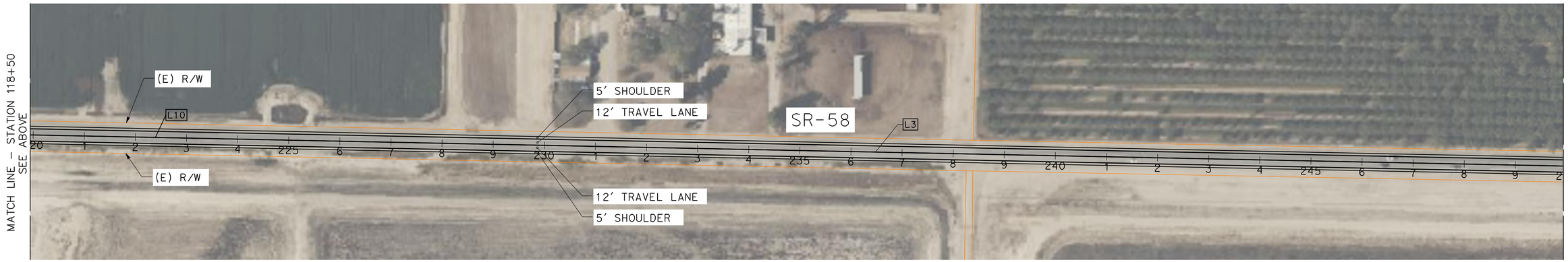
KARGO CCAMS - PROJECT 10

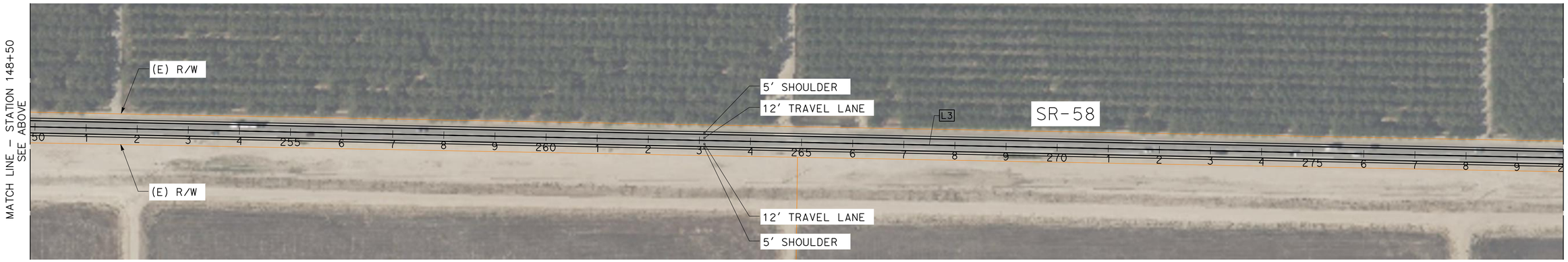
SR/58/STOCKDALE HWY CONNECTION TO I-5 CORRIDOR SAFETY IMPROVEMENTS

10.3

SR58 STOCKDALE HWY SAFETY PASSING LANES







ALIGNMENT LINE TABLE		
No. X	L	D
L3	23540.97'	S88°50'08"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

SHEET 6 OF 8

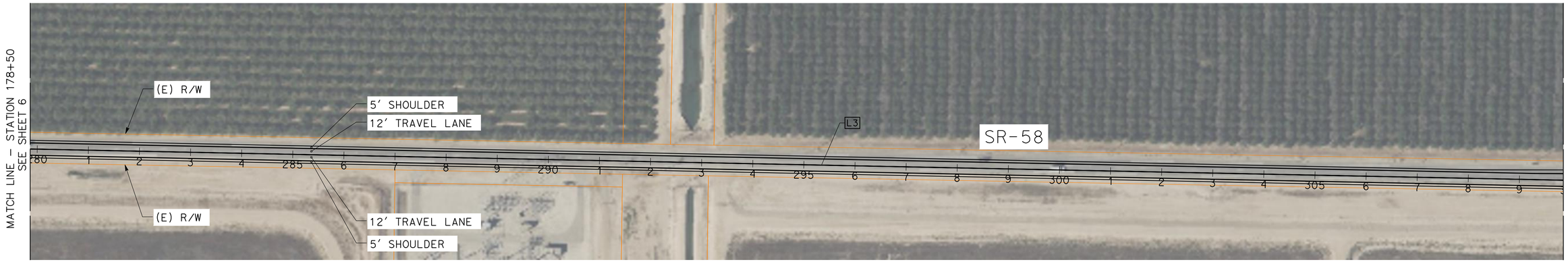
MARK THOMAS

KARGO CCAMS - PROJECT 10

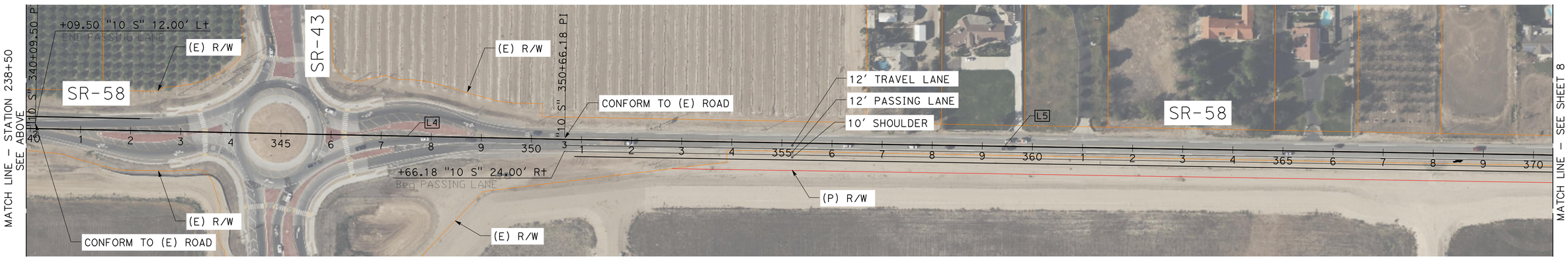
SR/58/STOCKDALE HWY CONNECTION TO I-5 CORRIDOR SAFETY IMPROVEMENTS

10.3

SR58 STOCKDALE HWY SAFETY PASSING LANES







ALIGNMENT LINE TABLE		
No. X	L	D
L3	23540.97'	S88°50'08"E
L4	1056.68'	S88°50'26"E
L5	4933.82'	S89°05'28"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 10

SR/58/STOCKDALE HWY CONNECTION TO I-5 CORRIDOR SAFETY IMPROVEMENTS

10.3

SR58 STOCKDALE HWY SAFETY PASSING LANES



ALIGNMENT LINE TABLE		
No. X	L	D
L5	4933.82'	S89°05'28"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/13/26

SCALE: 1"=100'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 10

SR/58/STOCKDALE HWY CONNECTION TO I-5 CORRIDOR SAFETY IMPROVEMENTS

10.3

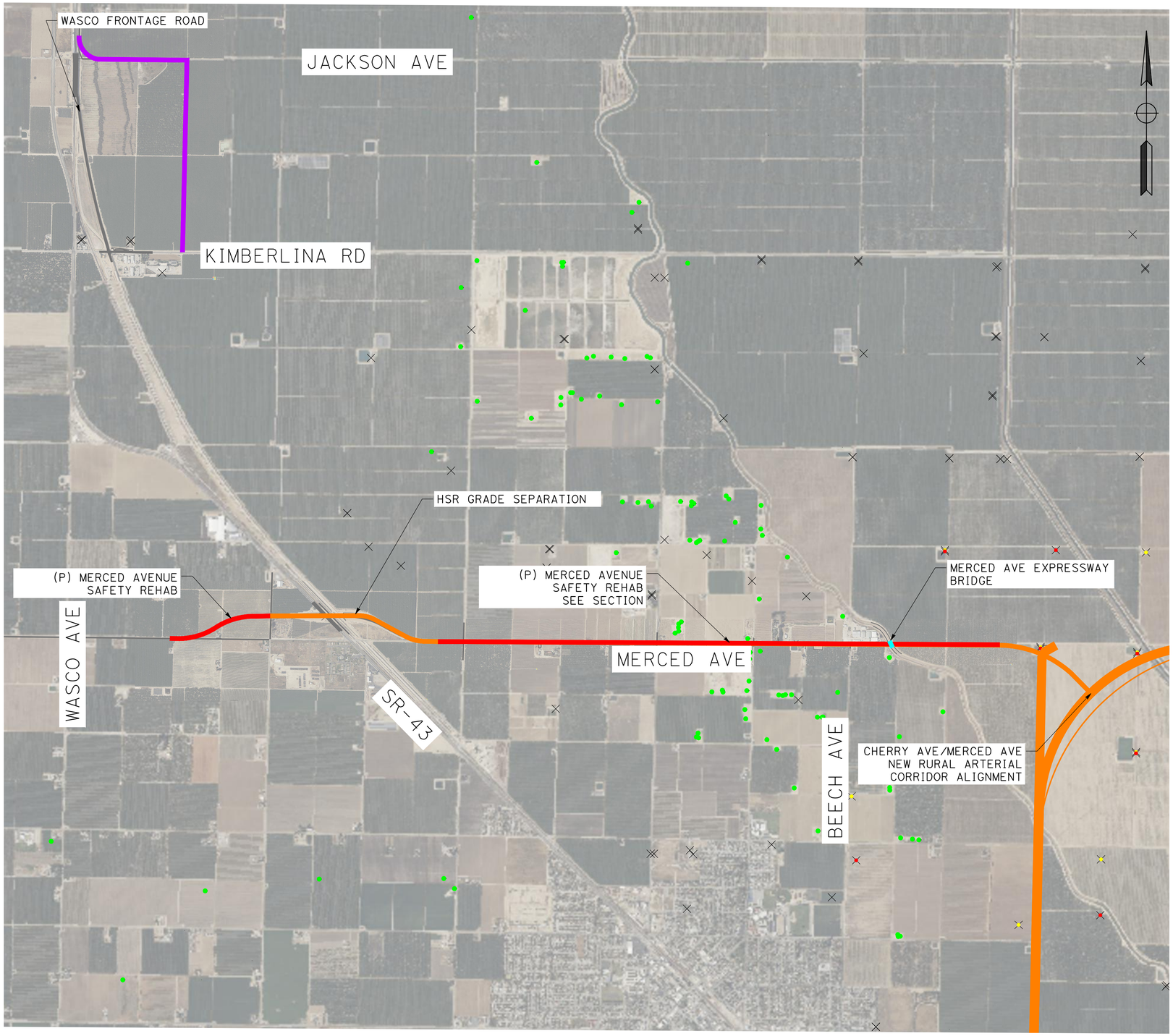
SR58 STOCKDALE HWY SAFETY PASSING LANES

LEGEND:

- 11.1 MERCED AVE SAFETY REHAB
- 11.2 WASCO AVE FRONTAGE ROAD TO HSR KIMBERLINA-JACKSON
- ADJACENT PROJECTS
- WATER QUALITY WELL
- GROUNDWATER WELL
- OIL WELL

PROJECT PHASING TABLE

PHASE 11.1: MERCED AVE SAFETY REHAB
PHASE 11.2: WASCO AVE FRONTAGE ROAD TO HSR KIMBERLINA-JACKSON



THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=1500'

SHEET 1 OF 7

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 11

WASCO AV/HSR FRONTAGE ROAD

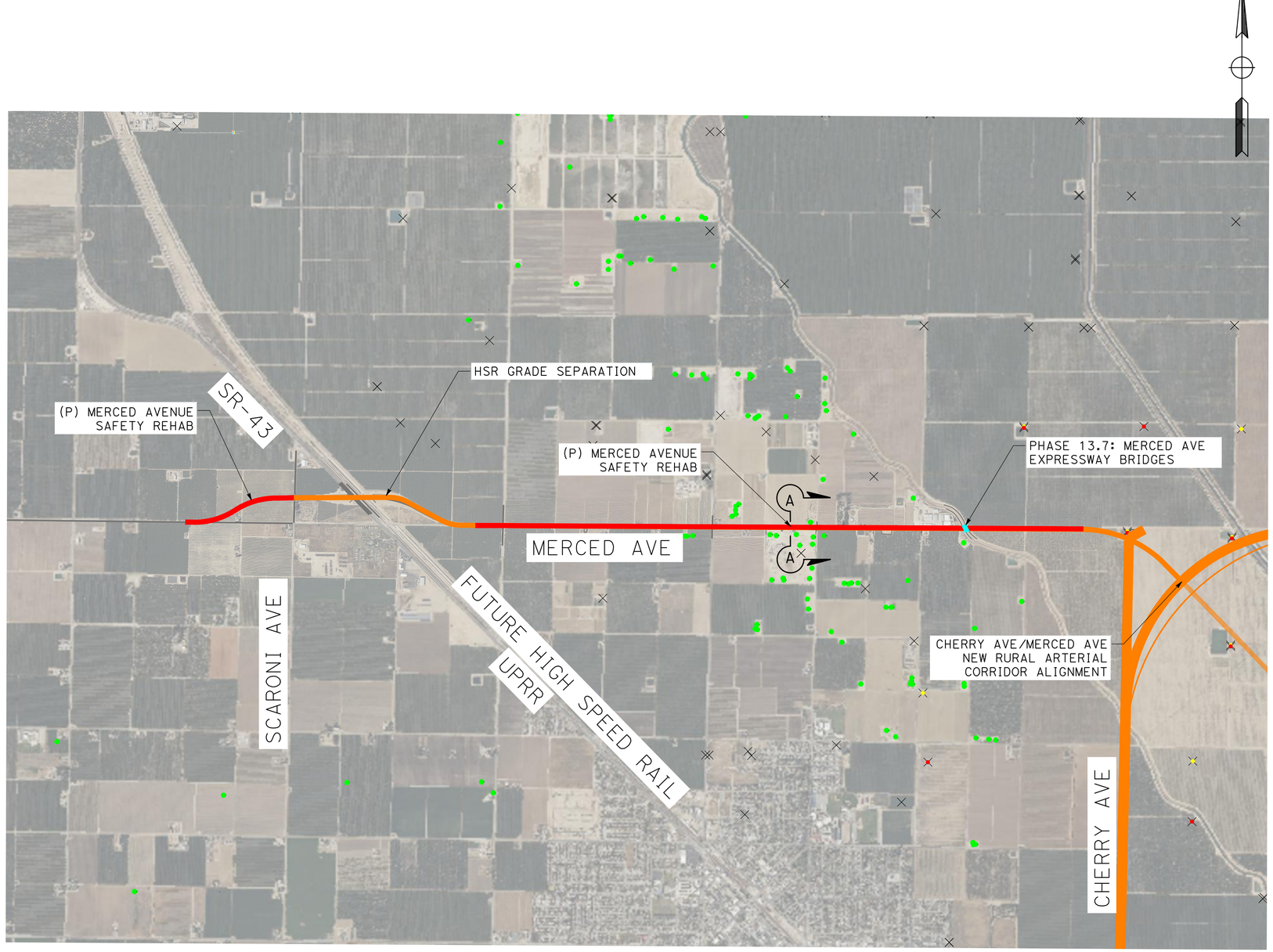
MERCED AVE SAFETY REHAB

LEGEND:

- PHASE 1
- ADJACENT PROJECTS
- WATER QUALITY WELL
- GROUNDWATER WELL
- OIL WELL

SUMMARY TABLE

TOTAL LENGTH	12.39 MILE
R/W REQUIREMENTS	16.4 ACRE, 14 PARCELS



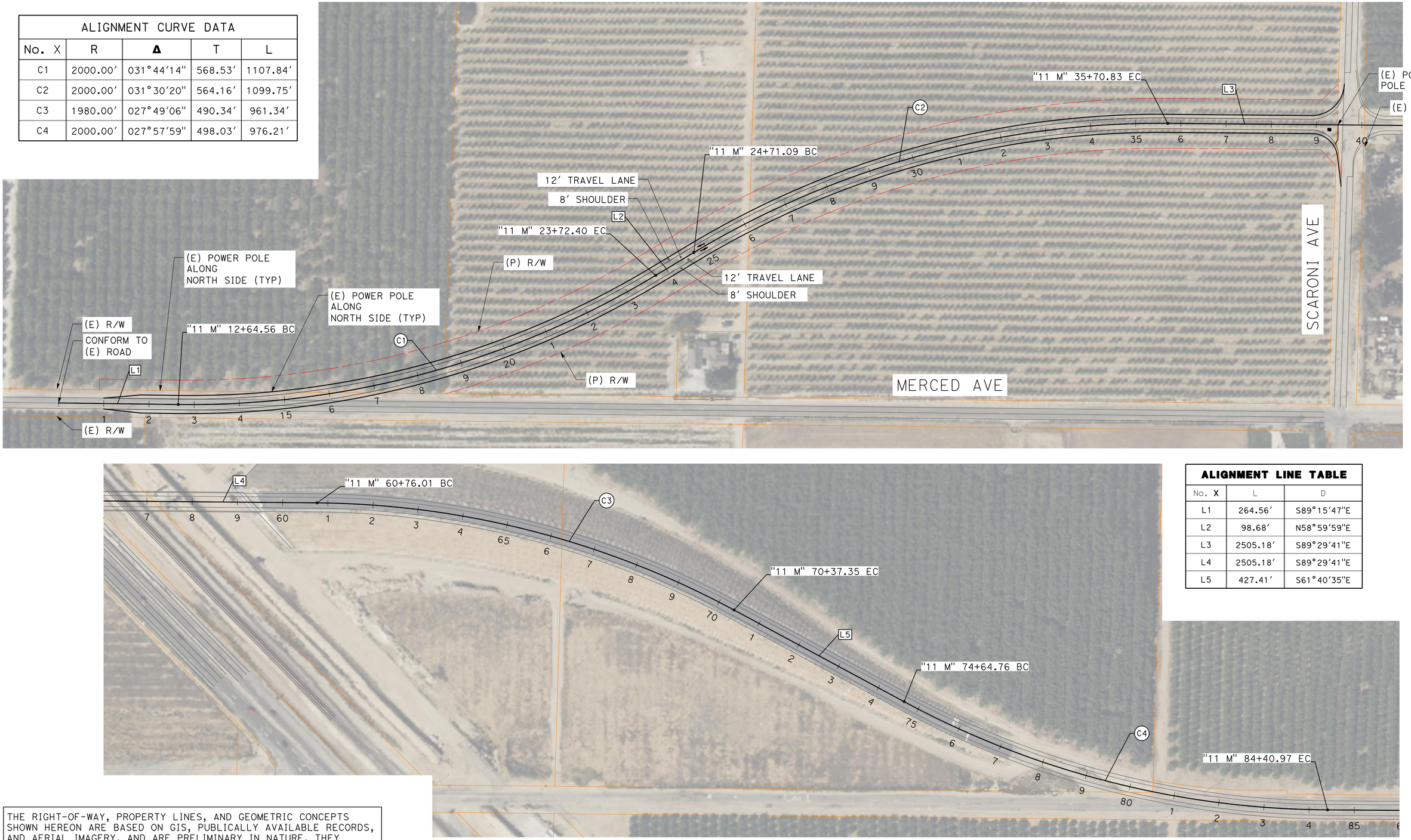
30% CONCEPTUAL DESIGN

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=100'

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C1	2000.00′	031°44′14"	568.53′	1107.84′
C2	2000.00′	031°30′20"	564.16′	1099.75′
C3	1980.00′	027°49′06"	490.34′	961.34′
C4	2000.00′	027°57′59"	498.03′	976.21′



ALIGNMENT LINE TABLE		
No. X	L	D
L1	264.56′	S89°15′47"E
L2	98.68′	N58°59′59"E
L3	2505.18′	S89°29′41"E
L4	2505.18′	S89°29′41"E
L5	427.41′	S61°40′35"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=100′

30% CONCEPTUAL DESIGN

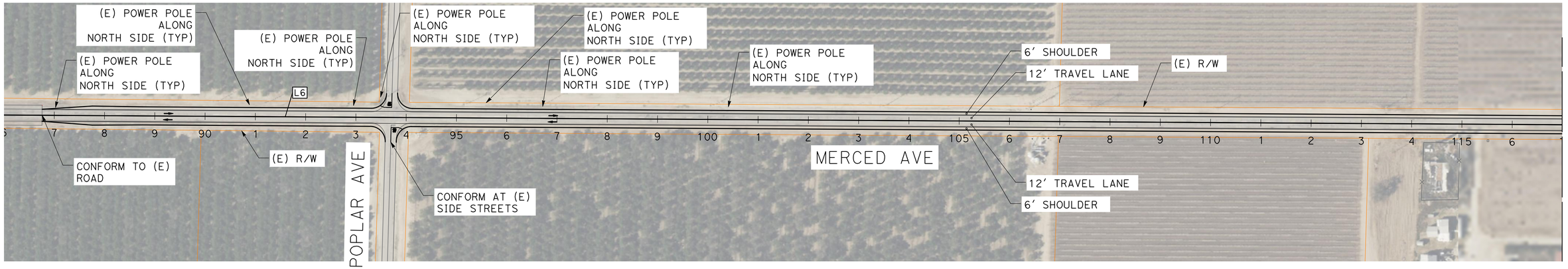
MARK THOMAS

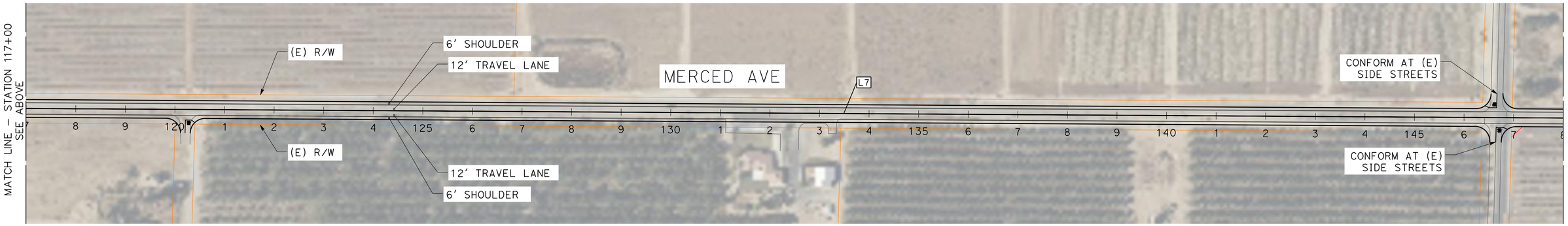
KARGO CCAMS - PROJECT 11

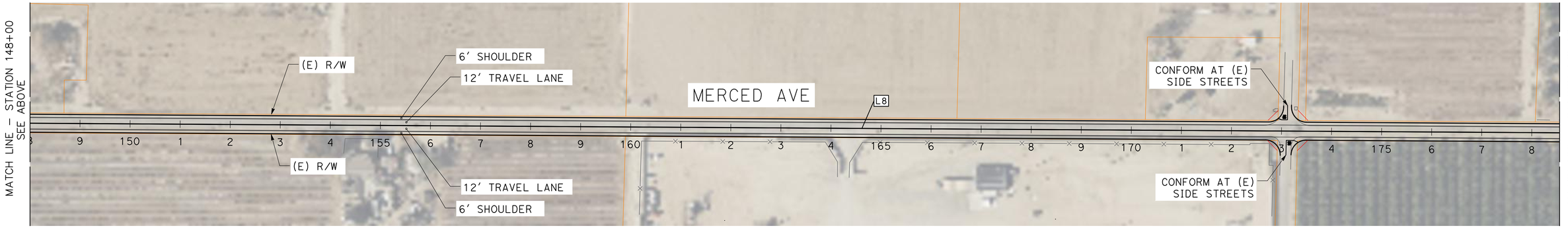
WASCO AV/HSR FRONTAGE ROAD

11.1

MERCED AVE SAFETY REHAB







30% CONCEPTUAL DESIGN

ALIGNMENT LINE TABLE		
No. X	L	D
L6	12019.58'	S89°38'34"E
L7	12019.58'	S89°38'34"E
L8	12019.58'	S89°38'34"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

SCALE: 1"=100'

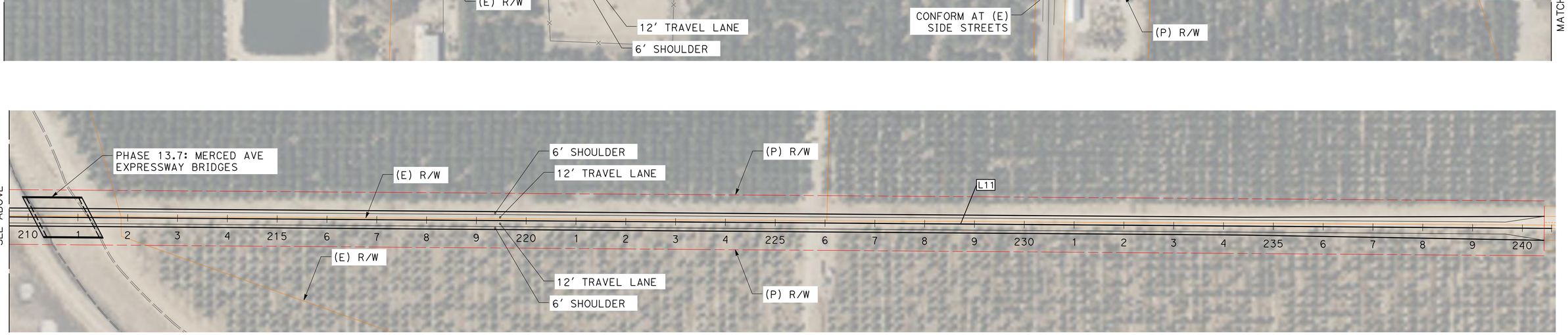
MARK THOMAS

KARGO CCAMS - PROJECT 11

WASCO AV/HSR FRONTAGE ROAD

11.1

MERCED AVE SAFETY REHAB



ALIGNMENT LINE TABLE		
No. X	L	D
L9	12019.58'	S89°38'34"E
L10	3598.17'	S89°34'29"E
L11	3598.17'	S89°34'29"E

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

MARK THOMAS

KARGO CCAMS - PROJECT 11

WASCO AV/HSR FRONTAGE ROAD

11.1

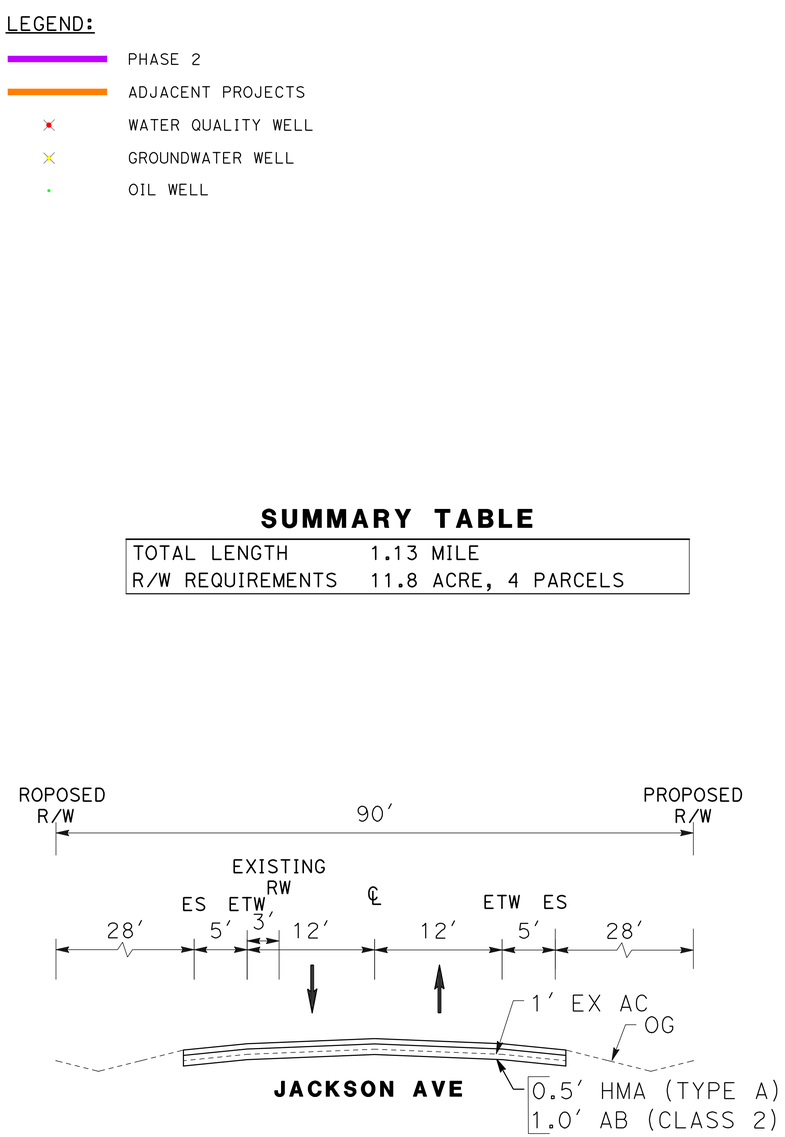
MERCED AVE SAFETY REHAB

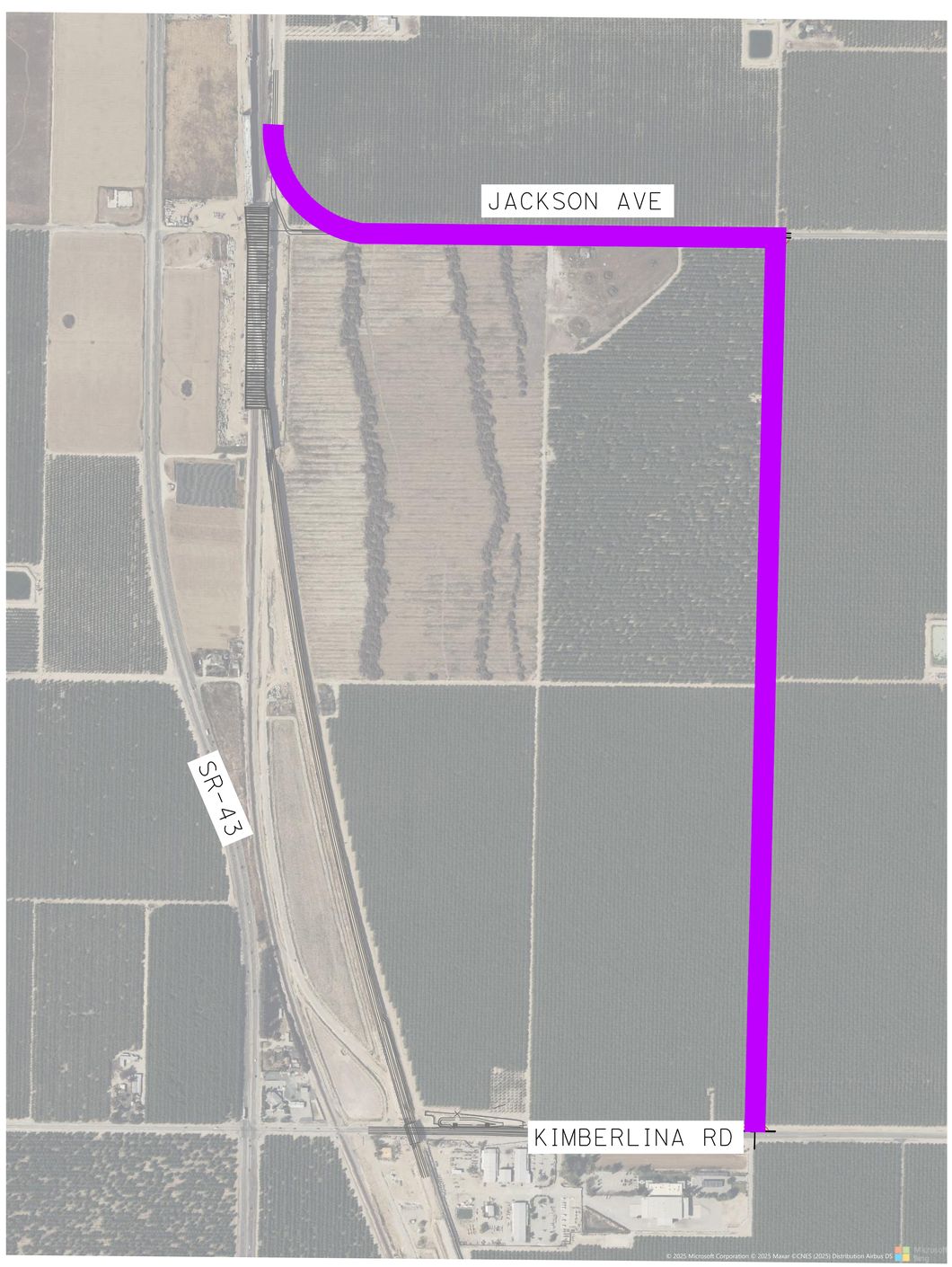
LEGEND:

- PHASE 2
- ADJACENT PROJECTS
- WATER QUALITY WELL
- GROUNDWATER WELL
- OIL WELL

SUMMARY TABLE

TOTAL LENGTH	1.13 MILE
R/W REQUIREMENTS	11.8 ACRE, 4 PARCELS





THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=400′

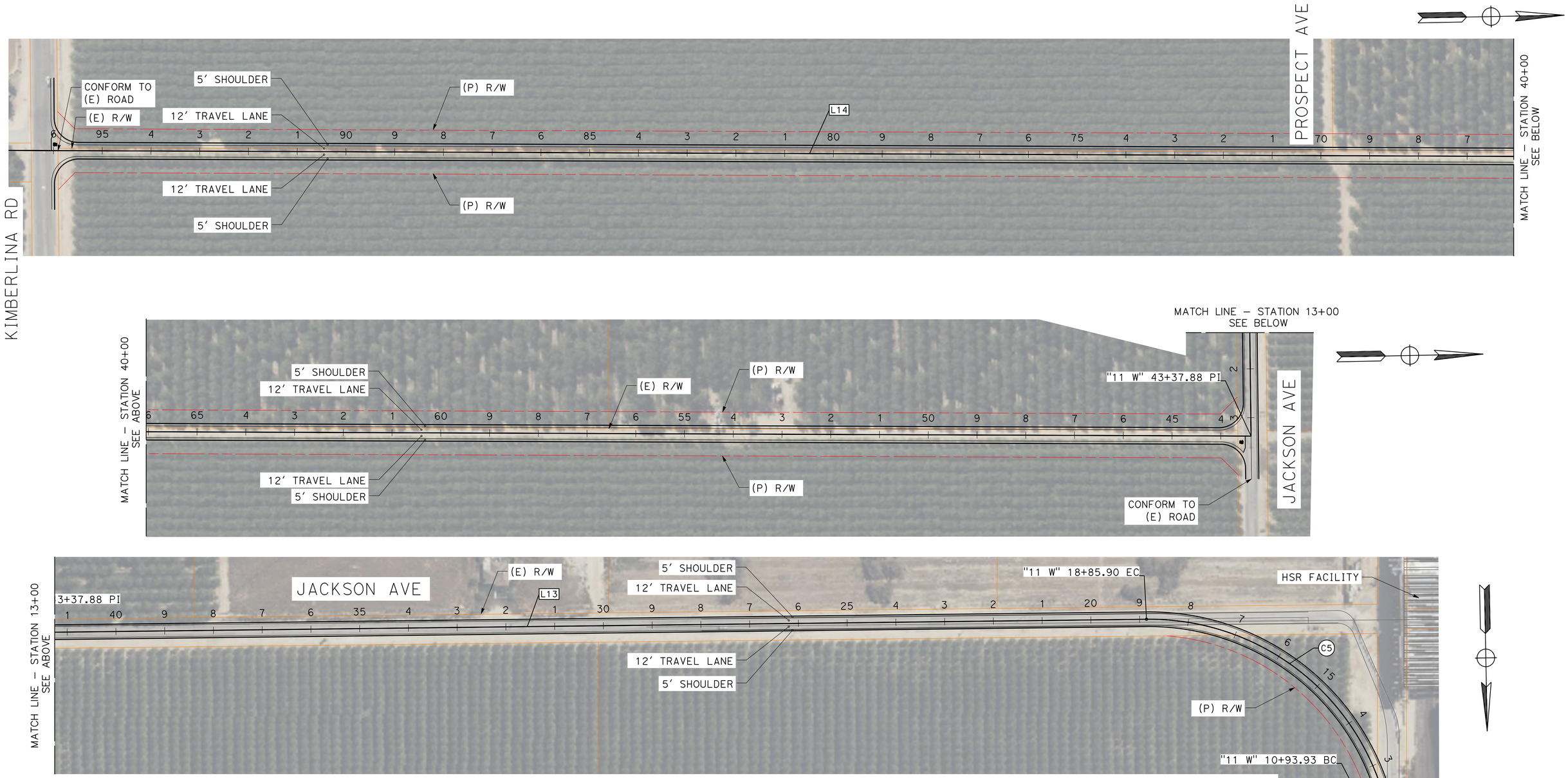
MARK THOMAS

KARGO CCAMS - PROJECT 11

WASCO AV/HSR FRONTAGE ROAD

11.2

WASCO AVE FRONTAGE ROAD TO HSR KIMBERLINA-JACKSON



ALIGNMENT LINE TABLE		
No. X	L	D
L12	93.93'	S1°11'07"W
L13	2451.98'	S89°34'06"E
L14	5366.53'	S1°20'16"W

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
C5	500.00'	090°45'12"	506.62'	791.97'

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 1/14/26

30% CONCEPTUAL DESIGN

SCALE: 1"=100'

SHEET 7 OF 7

MARK THOMAS

KARGO CCAMS - PROJECT 11

WASCO AV/HSR FRONTAGE ROAD

11.1

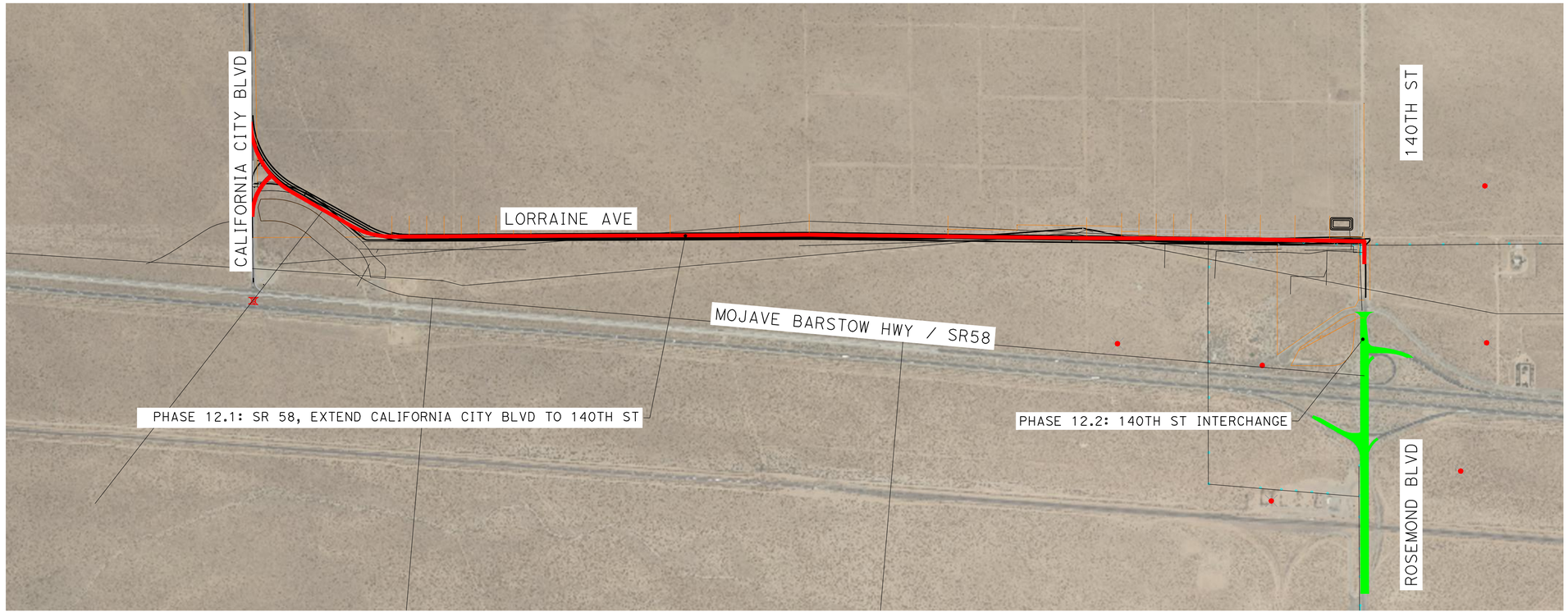
MERCED AVE SAFETY REHAB

LEGEND:

- PHASE 12.1 SR 58, EXTEND CALIFORNIA CITY BLVD TO 140TH ST
- PHASE 12.2 140TH STREET INTERCHANGE
- GAS (E) 34" GAS PIPE IN APPROXIMATE 100' EASEMENT
- E(OH) (E) ELECTRIC (OH)
- (E) ELECTRIC (OH) POLES
- WATER QUALITY WELL

PROJECT PHASING TABLE

PHASE 12.1: SR 58, EXTEND CALIFORNIA CITY BLVD TO 140TH ST
PHASE 12.2: 140TH ST INTERCHANGE



CALIFORNIA CITY BLVD EXTENSION TO EAFB NORTH GATE SAFETY CORRIDOR

30% CONCEPTUAL DESIGN

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DATE: 1/13/26

SCALE: 1"=600'

MARK THOMAS

KARGO CCAMS - PROJECT 12

CALIFORNIA CITY BLVD EXTENSION TO EAFB NORTH GATE SAFETY CORRIDOR

CALIFORNIA CITY BLVD EXTENSION

LEGEND:

PHASE 12.1 SR 58, EXTEND CALIFORNIA CITY BLVD TO 140TH ST

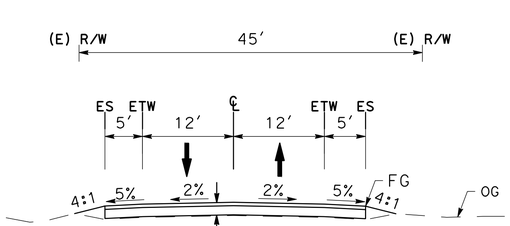
E(OH) (E) ELECTRIC (OH)

(E) ELECTRIC (OH) POLES

WATER QUALITY WELL

SUMMARY TABLE

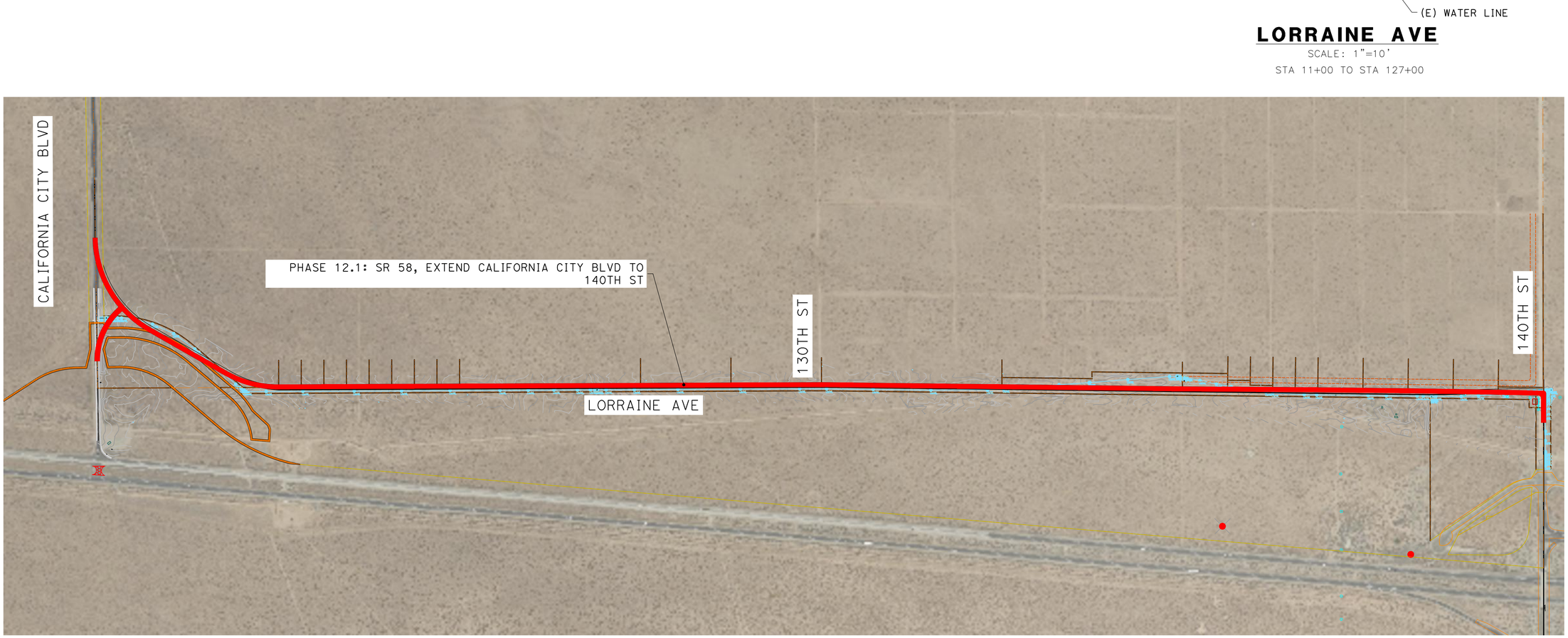
TOTAL LENGTH	02.26 MILES
R/W REQUIREMENTS	09.05 ACRE, 7 PARCELS



LORRAINE AVE

SCALE: 1"=10'

STA 11+00 TO STA 127+00



PHASE 12.1 SR 58, EXTEND CALIFORNIA CITY BLVD TO 140TH ST

THE RIGHT-OF-WAY, PROPERTY LINES, AND GEOMETRIC CONCEPTS SHOWN HEREON ARE BASED ON GIS, PUBLICALLY AVAILABLE RECORDS, AND AERIAL IMAGERY, AND ARE PRELIMINARY IN NATURE. THEY SHOULD NOT BE RELIED UPON AS DEFINITIVE AND DO NOT REPRESENT AN ON-THE-GROUND SURVEY. THESE LINES MAY CHANGE UPON COMPLETION OF SURVEY CONDUCTED BY A LICENSED SURVEYOR.

DATE: 10/10/25

SCALE: 1"=400'

30% CONCEPTUAL DESIGN

MARK THOMAS

KARGO CCAMS - PROJECT 12

CALIFORNIA CITY BLVD EXTENSION TO EAFB NORTH GATE SAFETY CORRIDOR

SR 58 EXTEND CAL CITY BLVD TO 140TH ST

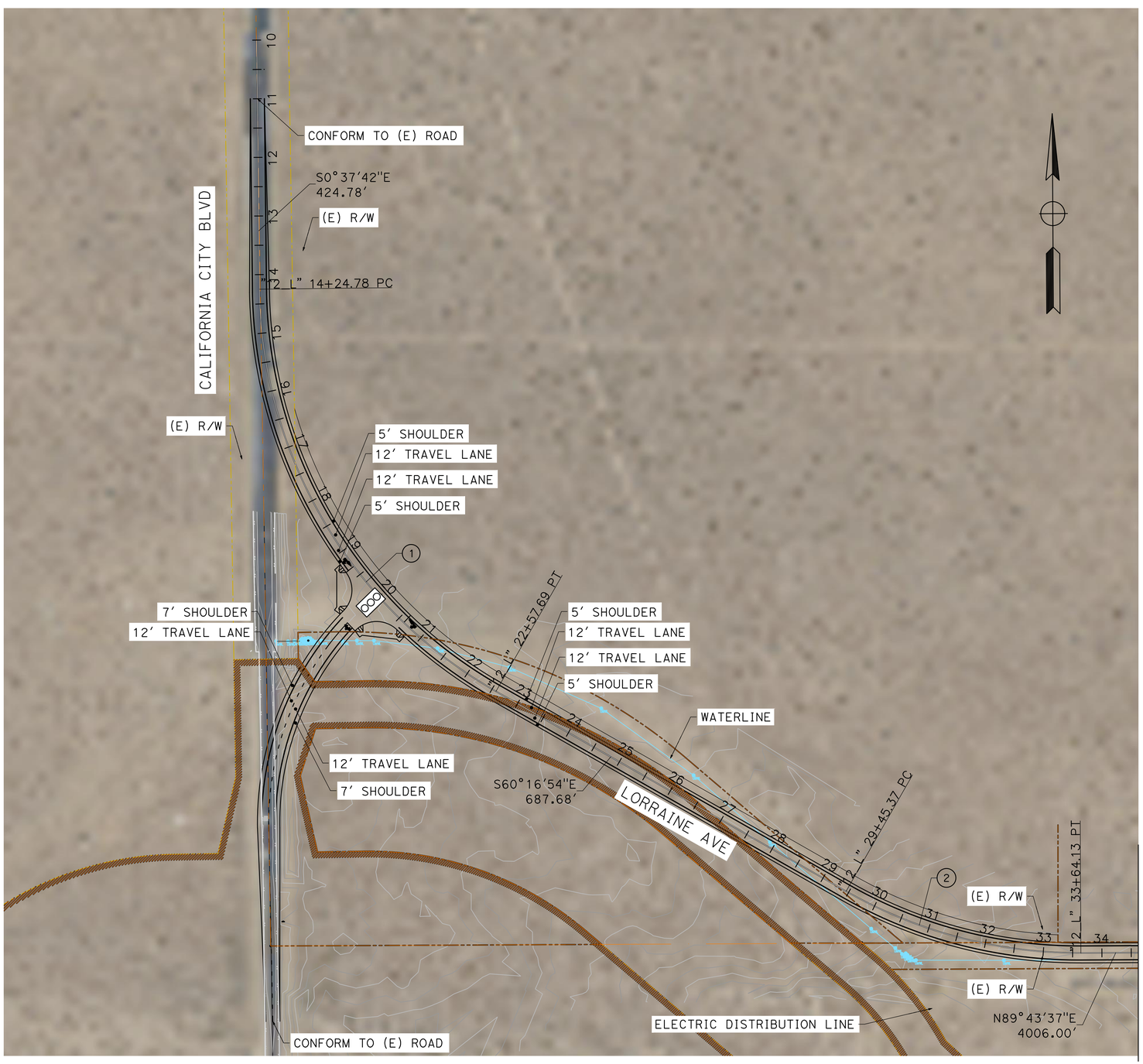
LEGEND:

REMOVE MEDIAN ACCESS

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
1	800.00′	059°39′11"	458.66′	832.92′
2	800.00′	029°59′29"	214.30′	418.76′



CALIFORNIA CITY BLVD MEDIAN ACCESS



CALIFORNIA CITY BLVD T-INTERSECTION

30% CONCEPTUAL DESIGN

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DATE: 10/10/25

SCALE: 1"= 100'

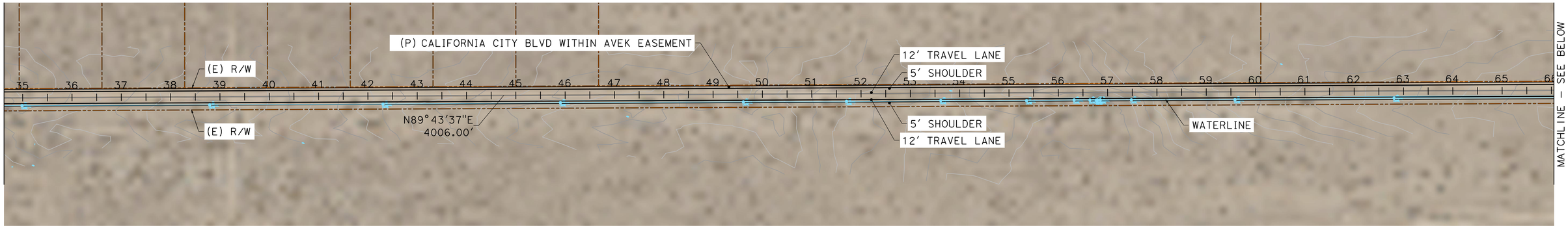
MARK THOMAS

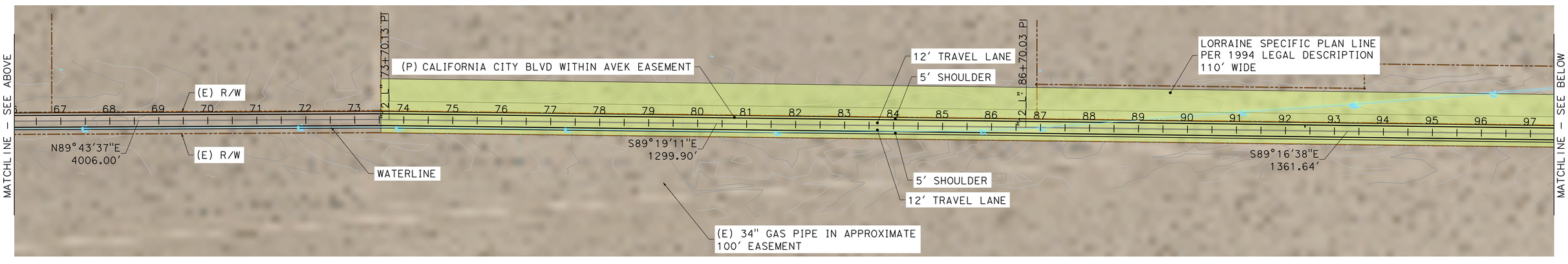
KARGO CCAMS - PROJECT 12

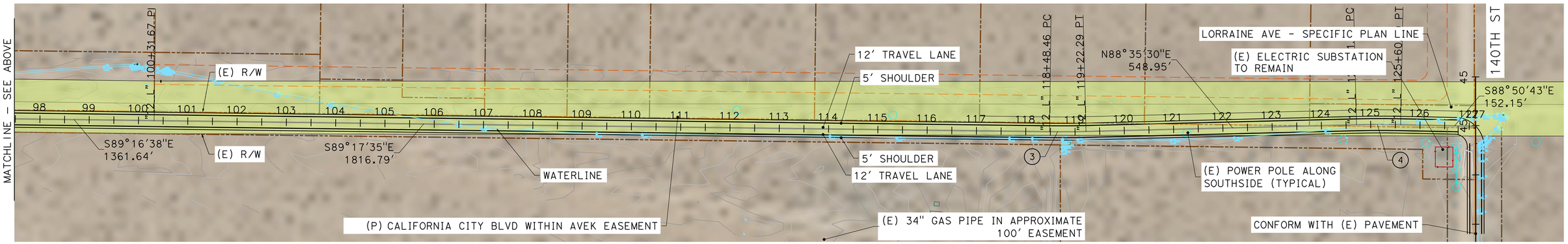
CALIFORNIA CITY BLVD EXTENSION TO EAFB NORTH GATE SAFETY CORRIDOR

12.1

SR 58 EXTEND CAL CITY BLVD TO 140TH ST







LEGEND:

- LORRAINE AVE SPECIFIC PLAN LINE
- LORRAINE SPECIFIC PLAN LINE PER 1994 LEGAL DESCRIPTION 110' WIDE
- (E) 34" GAS PIPE IN APPROXIMATE 100' EASEMENT
- (E) ELECTRIC (OH)
- (E) ELECTRIC (OH) POLES

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DATE: 10/10/25

ALIGNMENT CURVE DATA				
No. X	R	Δ	T	L
3	2000.00'	002°06'54"	36.92'	73.83'
4	2000.00'	002°33'46"	44.74'	89.46'

30% CONCEPTUAL DESIGN

SCALE: 1"= 100'

MARK THOMAS

KARGO CCAMS - PROJECT 12

CALIFORNIA CITY BLVD EXTENSION TO EAFB NORTH GATE SAFETY CORRIDOR

12.1

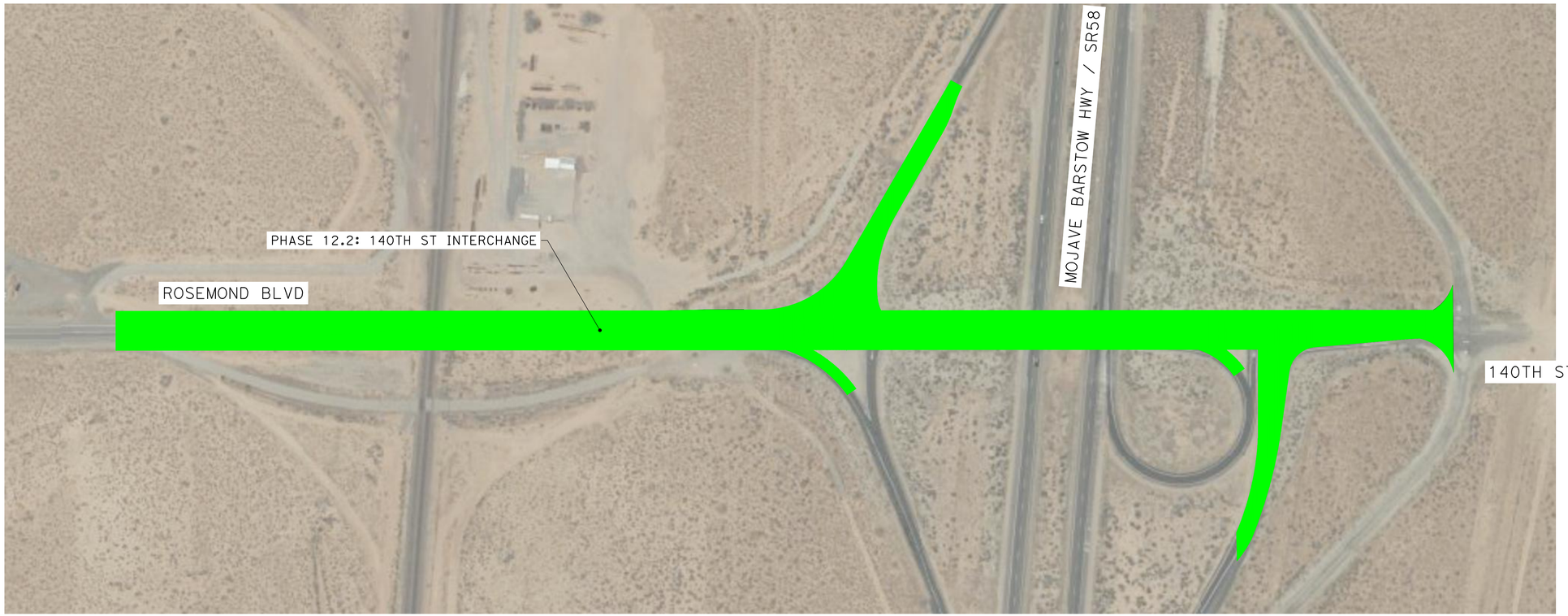
SR 58 EXTEND CAL CITY BLVD TO 140TH ST

LEGEND:

PHASE 12.2 140TH STREET INTERCHANGE

SUMMARY TABLE

TOTAL LENGTH	01.00 MILE
R/W REQUIREMENTS	00.05 ACRE, 1 PARCEL



30% CONCEPTUAL DESIGN

SCALE: 1"=125'

DATE: 10/10/25

MARK THOMAS

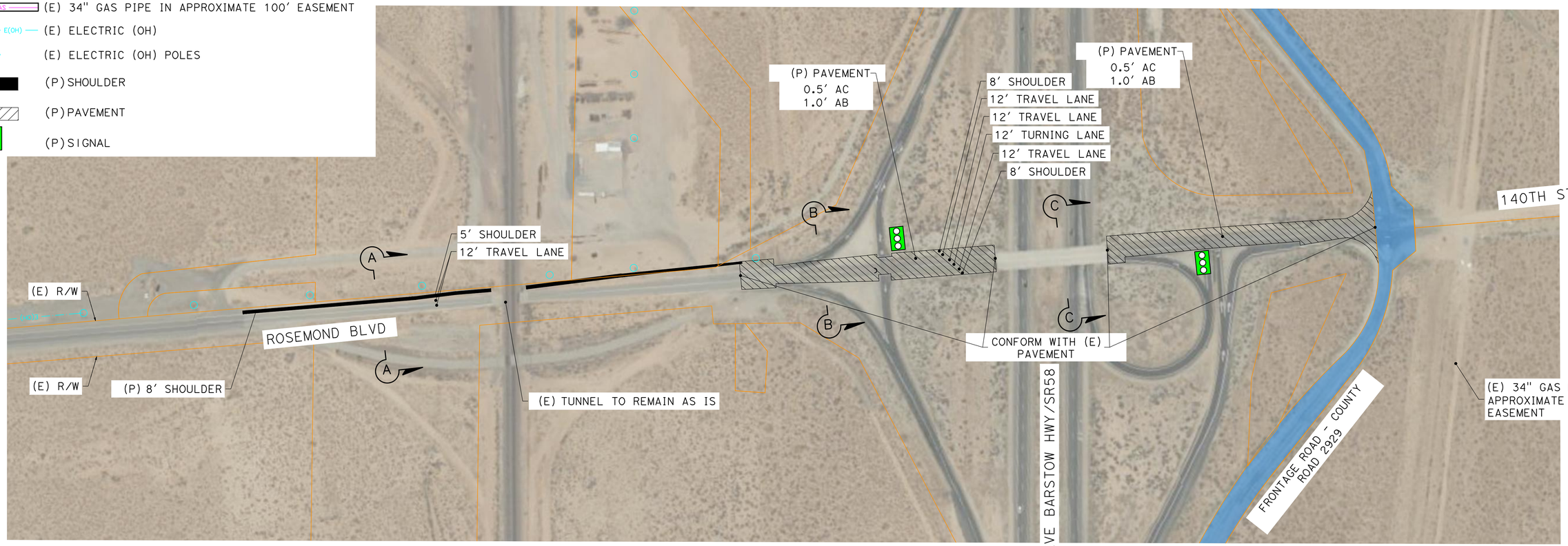
KARGO CCAMS - PROJECT 12

CALIFORNIA CITY BLVD EXTENSION TO EAFB NORTH GATE SAFETY CORRIDOR

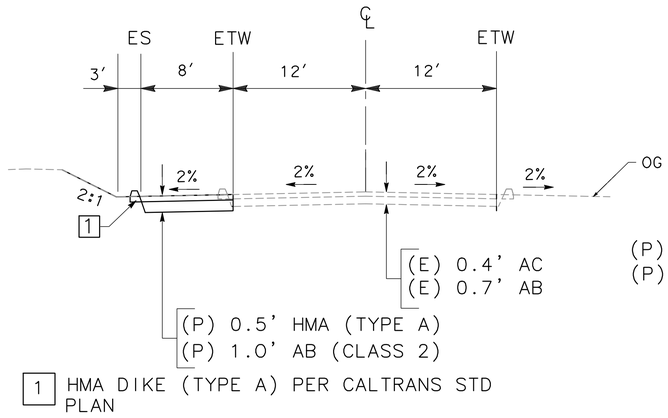
12.2
140TH STREET INTERCHANGE

LEGEND:

- FRONTAGE ROAD - COUNTY ROAD 2929
- (E) 34" GAS PIPE IN APPROXIMATE 100' EASEMENT
- (E) ELECTRIC (OH)
- (E) ELECTRIC (OH) POLES
- (P) SHOULDER
- (P) PAVEMENT
- (P) SIGNAL

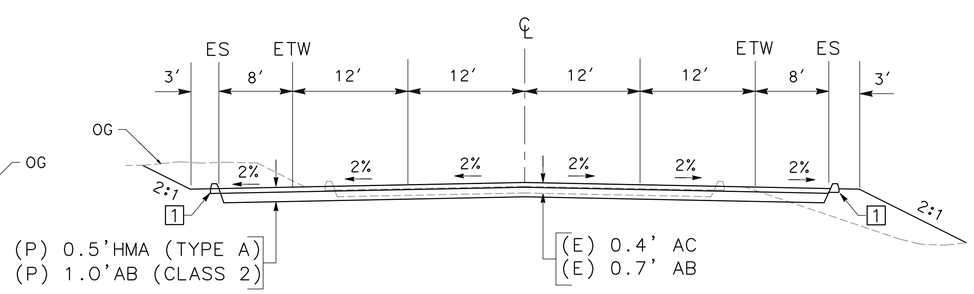


140TH ST INTERCHANGE

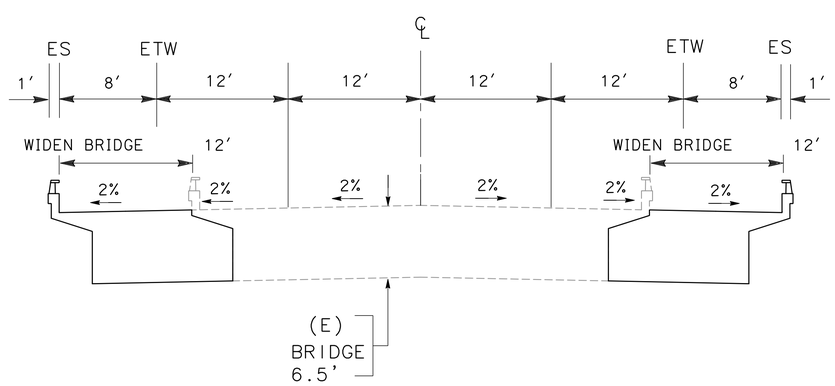


1 HMA DIKE (TYPE A) PER CALTRANS STD PLAN

140TH STREET: A-A
SCALE: 1"=10'



140TH STREET: B-B
SCALE: 1"=10'



ECWARCS OVERCROSSING: C-C
SCALE: 1"=10'

SCALE: 1"=125'

DATE: 10/10/25

SHEET 6 OF 6

30% CONCEPTUAL DESIGN

MARK THOMAS

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