APPENDIX I – BIOLOGICAL RESOURCES DESCRIPTIONS

CHAMBERS GROUP

Biological Resources Descriptions

Vegetation Communities

Agriculture

Agriculture consists of annual crops, vineyards, orchards, dairies, and stockyards (Gray and Bramlet 1992). Agriculture Irrigated and Dryland Field Crops are mainly used for growing non-native annual grasses and forbs harvested for livestock feed. Planted species include barley (*Hordeum* sp.), oats (*Avena* sp.), and clover or alfalfa (*Trifolium* sp.) species, among others.

Aspen Forest

Aspen Forest is characterized by dense groves of quaking aspen (*Populus tremuloides*) growing up to 65 feet in height. Scrubby thickets may occur at the edges of the groves in areas of relatively dry soil or at high altitudes. The understory is sparse in dense groves but includes a variety of small shrubs and herbaceous perennials in more open stands. The growing season of this community is from late spring or early summer through early fall. The trees are leafless from late October until late May or longer at high elevations. Flowering occurs in spring, before the leaves emerge. This community may occur away from streambanks near springs or in other areas with high soil moisture. Plant species observed on the Proposed Project ROW typical of this community include: aspen, wild rose, western choke-cherry (*Prunus virginiana*), and snowberry (*Symphoricarpos sp.).*

Big Sagebrush Scrub

Big Sagebrush Scrub is dominated by soft-woody shrubs mainly big sagebrush (*Artemisia tridentata*) between 1.5-6 feet in height with bare ground underneath and between the shrubs. Growth occurs mainly in late spring and early summer. This community occurs on a wide variety of soils and terrain; from rocky to well-drained slopes to fine-textured valley soils with a high water table. This community is often associated with Pinyon-Juniper Woodland (Holland 1986).

Blackbrush Scrub

Blackbrush Scrub is characterized by low, often intricately branched shrubs, 1 to 3 feet in height. The crowns of the shrubs typically do not touch and bare ground is found between plants. Growth and flowering occurs in late spring. Most Blackbrush Scrub plant species are dormant in winter due to cold temperatures and probably in summer and fall due to drought conditions. This community is typically located on sandy bottoms of wide canyons, incised arroyos of upper bajadas, and sandy, braided, shallow washes of the lower bajadas, usually below elevations of 5,000 feet amsl (Holland 1986). Plant species observed on the Proposed Project ROW typical of this community are dominated by four-wing

saltbush and Nevada ephedra (*Ephedra nevadensis*) or four-wing saltbush and goldenbush (*Ericameria* sp.). Other less abundant species within this community include: budsage, spiny saltbrush, allscale, rabbitbrush species, blackbrush (*Coleogyne ramosissima*), *and* winter fat (*Krascheninnikovia lanata*).

Desert Greasewood Scrub

Desert Greasewood Scrub is characterized by low, grayish, small-leaved shrubs, 1 to 3 feet in height. The total vegetative cover is often low, with bare ground between the widely spaced shrubs. Most species within this community are succulent or adapted to living in alkaline soils. Desert Greasewood Scrub is typically found on heavy, fine-textured, poorly drained soils with a high salinity level. The water table is often high in these areas, and the soil surface may also develop a salty crust. Plant species observed on the Proposed Project ROW typical of this community are dominated by desert greasewood (*Sarcobatus vermiculatus*), with budsage (*Artemisia spinescens*), spiny saltbrush (*Atriplex confertiflora*), rabbitbrush, and alkali sacaton (*Sporobolus airoides*) also present.

Desert Saltbush Scrub

Desert Saltbush Scrub (and Disturbed Desert Saltbush Scrub) is the most common vegetation community along the Proposed Project route in San Bernardino County. Desert Saltbush Scrub is typically characterized by low, grayish microphyllous shrubs 1 to 3 feet in height dominated by saltbush (*Atriplex* sp.) with some succulent species. Areal cover in this community is often low with much bare ground between the widely spaced shrubs. Microhabitat consists of fine-textured, poorly-drained soils with high alkalinity and/or salinity surrounding playas on slightly higher ground at elevations below 4,000 feet above mean sea level (amsl) (Holland 1986). Plant species observed on the Proposed Project ROW in San Bernardino County typical of this vegetation community include: four-wing saltbush (*Atriplex canescens*), allscale (*Atriplex polycarpa*), and annual grasses and forbs.

Desert Sink Scrub

Desert Sink Scrub is is typically characterized by low, grayish microphyllous shrubs 1 to 3 feet in height dominated by saltbush species (*Atriplex* spp.) widely spaced with many succulent cheopods. Areal cover in this community is often low with much bare ground between the widely spaced shrubs. Microhabitat consists of poorly drained sols with extremely high alkalinity and/or salt content usually with a high water table with salt crust at the surface (Holland 1986).

Developed

Developed areas are unvegetated areas that have been altered by humans and now display man-made structures such as houses, paved roads, buildings, parks, and other maintained areas (Gray and Bramlet 1992).

Great Basin Cottonwood-Willow Riparian Forest

Great Basin Cottonwood-Willow Riparian Forest is an open-canopied, broadleaved, winter-deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) and willow trees (*Salix* sp.) without much shrubby understory. This community is typically found along the larger streams at lower montane elevations, usually where streams empty into valleys (Holland 1986). Areas dominated by native willow trees growing adjacent to roadsides or near agricultural ditches have also been classified as Great Basin Cottonwood-Willow Riparian Forest habitat. Plant species observed on the Proposed Project ROW typical of this community include: Fremont cottonwood, red willow (*S. laevigata*), narrow-leaved willow (*S. exigua*), other willow species (*Salix* sp.), scattered rabbitbrush shrubs, wild rose (*Rosa* sp.), and creeping wildrye (*Elymus triticoides*) as well as other graminoids.

Great Basin Grassland

Great Basin Grassland (and Grazed Great Basin Grassland) is typically characterized by open, steppe-like vegetation of perennial bunch grasses, with flowering culms 1 to 3 feet in height. Most growth and flowering occurs during late spring and early summer. The plants are dormant in winter due to cold temperatures and mostly dormant in late summer and fall due to drought conditions. Great Basin Grassland is often found on fine-textured soils that can be damp or frozen at the surface in winter, moist in spring, and dry in summer and fall (Holland 1986). Plant species observed on the Proposed Project site typical of this community include: blue wildrye, fescue (*Festuca* sp.), needlegrass (*Nassella* sp.), and other brome (*Bromus* sp.) and bluegrass (*Poa* sp.) species.

Great Basin Juniper Woodland and Scrub

Great Basin Juniper Woodland is an open woodland community dominated by Utah juniper (*Juniperus osteosperma*), with scrub and herb components from adjacent non-forested stands of Great Basin Scrub. This community is found on dry, shallow, often stony soils. Great Basin Juniper Woodland and Scrub is a slightly colder and drier community than Great Basin Pinyon Woodland. Plant species observed on the Proposed Project ROW typical of this community include: Utah juniper, single-leaf pinyon pine (*Pinus monophylla*), big sagebrush, antelope bush, and rabbitbrush.

Great Basin Mixed Scrub

Great Basin Mixed Scrub (and Disturbed Great Basin Mixed Scrub) is characterized by a moderately tall, fairly open shrubland with several species contributing to the canopy. Dominant species usually include big sagebrush (*Artemisia tridentata*) and antelope bush (*Purshia tridentata*) with several perennial grasses between the shrubs. This community is typically found on deep, gravelly, well-drained sites, usually on alluvium landscapes derived primarily from granitic sources. This community also integrates on cooler or more shallow-soiled sites with; Subalpine Sagebrush Scrub, Great Basin Pinyon-Juniper Woodlands on residual upland sites, and; Big Sagebrush Scrub on slightly lower elevation, less fertile, or

overgrazed sites (Holland 1986). Plant species observed on the Proposed Project ROW typical of this community include: big sagebrush, antelope bush, yellow rabbitbrush, four-wing saltbush, and wildrye (*Elymus* sp.).

Great Basin Pinyon-Juniper Woodland

Great Basin Pinyon-Juniper Woodland is characterized by an open woodland dominated by western juniper (Juniperus occidentalis) and single-leaf pinyon (Pinus monophylla) as conspicuous canopy components. Shrub and herbaceous species in this community are typically seen in adjacent non-forested stand of great basin scrub communities. This community can be found on deep well-drained soils or shallow rocky, poorly drained soils.

Great Basin Pinyon Woodland

Great Basin Pinyon Woodland is a scrubby steppe dominated by single-leaf pinyon pine trees over an understory of big sagebrush and antelope bitterbrush (*Purshia tridentata*) up to 3 feet in height (shorter on cold, exposed windy ridges). This community is typically found on rocky soils, usually with low nutrient content and layers associated with soil profile development. Plant species observed on the Proposed Project ROW typical of this community include: big sagebrush, antelope bush, Great Basin wildrye, and abundant single-leaf pinyon pine trees.

Indigo Bush Scrub

Indigo Bush Scrub (and Disturbed Indigo Bush Scrub) is a low, open to dense shrubland dominated by Johnson's indigo bush (*Psorothamnus arborescens* ssp. *minutiflorus*). Plants are typically less than 3 feet in height. This community is found in desert mountains and canyons, or on talus, the rocks accumulating at the base of a mountain or cliff (Holland 1986). Plant species observed on the Proposed Project site typical of this community include: Johnson's indigo bush (*Psorothamnus arborescens* ssp. m*inutiflorus)*, four-wing saltbush, cryptantha (*Cryptantha* sp.), annual buckwheat (*Eriogonum* sp.), and occasional buckhorn cholla (*Opuntia acanthocarpa*) also present.

Jeffrey Pine Forest

The Jeffrey Pine Series consists of a tall, open forest dominated by Jeffrey pine (*Pinus jeffreyi*), with a sparse understory of montane chaparral or Big Sagebrush Scrub species. The Jeffrey Pine Series is usually found on dry, cold sites, especially on well-drained slopes, ridges, or cold air accumulation basins (Holland 1986). Elevations range from 6,500 to 9,000 feet above mean sea level (amsl). The understory within this community in the Proposed Project ROW is very minimal, mostly covered by a dense needle layer. The occasional shrub species scattered throughout this community on the Proposed Project ROW included rose (*Rosa* sp.), big sagebrush (*Artemisia tridentata*), antelope bush (*Purshia tridentata*), snowbrush (*Ceanothus velutinus*), and manzanita species (*Arctostaphylos* sp.).

Joshua Tree Woodland

Joshua Tree Woodland is an open woodland with Joshua trees (*Yucca brevifolia*) usually as the only arborescent species (up to 40 feet in height) and with numerous shrub species between 3 and 13 feet in height also present in the understory. Little or no herbaceous understory is present during most of the year. The main growing season for Joshua Tree Woodland communities is during spring, with growth limited by cold in winter and drought in the summer and fall. Many species of ephemeral herbs may germinate following sufficient late fall or winter rains and flower in mid-spring. This community is typically found on sandy, loamy, or gravelly, well-drained gentle alluvial slopes (Holland 1986).

Lodgepole Pine Forest

Lodgepole Pine Forest is characterized by dense forests of slender trees up to 130 feet in height, often in nearly pure stands of lodgepole pine (*Pinus contorta* var. *murrayana*). The trees in the moister, denser stands are relatively short-lived; and if the stand has not burned for a long time, fallen trees, branches, and needles cover the ground. The understory is normally sparse in dense stands, but low shrubs and perennial herbs may occur abundantly in forest openings. Flowering of most understory plants is concentrated in the early summer with growth of herbaceous species limited by drought in late summer. Most plants are dormant from fall through spring. Lodgepole Pine Forest typically occurs at elevations with long, snowy winters and cool, dry summers. This community apparently tolerates large variations in soil and moisture conditions but most commonly occurs on rocky, well-drained soils.

Mojave Creosote Bush Scrub

Mojave Creosote Bush Scrub is characterized by widely spaced shrubs growing 2 to 10 feet in height, typically with bare ground in between, and dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Growth in this community occurs in spring if rainfall is sufficient but is prevented by cold in the winter and limited by drought during other seasons. Ephemeral herbs flower in late March and April with sufficient rainfall, while other annual herbs appear after summer thunderstorms. Soils found on slopes, fans, and valleys in this community are typically well-drained secondary soils with very low available water holding capacity. Soils on more upland sites are thin,

residual soils that have high soil salinity. Mojave Creosote Bush Scrub is found at elevatins below 4,000 feet amsl. Winter temperatures are often below freezing (i.e., 32 degrees Fahrenheit) (Holland 1986). Plant species observed on the Proposed Project site typical of this vegetation community include: creosote bush, white bursage, cheesebush (*Hymenoclea salsola*), and annual and perennial grasses such as cheat grass (*Bromus tectorum*), Mediterranean grass (*Schismus barbatus*), and big galleta grass (*Pleuraphis rigida*).

Mojave Mixed Woody Scrub

Mojave Mixed Woody Scrub as described in Holland (1986), is a complex open scrub with very shallow overly drained often rolling to steep soils usually derived from granitic parent materials. This community is characterized as having soils with mild alkalinity and a low water-holding capacity. Mojave Mixed Woody Scrub integrates with Mojave Creosote Bush Scrub at warmer elevations or with Great Basin Scrubs and Blackbrush Scrub at cooler elevations. Species that dominate this community observed onsite consist of spiny senna (*Senna armata*), horsebrush (*Tetradymia* sp.), cheesebush, and boxthorn (*Lycium* sp.) with the occasional occurrence of species such as white bursage, Nevada ephedra, creosote bush, and buckhorn cholla.

Mojave Riparian Forest

Mojave Riparian Forest is characterized as a relatively open, broaadleafed, winter-deciduous streamside forest dominated by Fremont cottonwood, black willow, and red willow. The open canopy allows a dense shrubby understory of rabbitbrush, sandbar willow, and Wood's rose (*Rosa woodsii*) to prosper. This community can be found on flat, fine-grained, subirrigated alluvium along perennial desert rivers.

Montane Black Cottonwood Riparian Forest

Montane Black Cottonwood Riparian Forest is characterized by a fairly dense, mixed riparian forest dominated by deciduous black cottonwood (*Populus trichocarpa*) with emergent evergreen such as Jeffrey pine as tall as 150 feet in height. The shrub canopy is well developed, averaging around 25 percent cover. The herbaceous layer is high often times reaching 100 percent in cover. This community can be found on large flowrate streams, typically in areas constrained by steep canyon walls usually below 6,000 feet in elevation in the north and 8,500 feet in the south (Holland 1986).

Montane Freshwater Marsh

Montane Freshwater Marsh is characterized by emergent monocots between 13-16 feet in height forming completely closed canopies usually dominated by cattail (Typha sp.) and bulrush (Scirpus sp.). This habitat is permanently flooded by fresh water and short growing seasons due to cold winters.

Montane Riparian Forest

Montane Riparian Forest is typically characterized by open to dense, broadleaved, winter-deciduous, shrubby riparian thickets usually dominated by any of several willow species, and alder (*Alnus* sp.). This community is often found on relatively fine-textured alluvium landscapes along fairly low-gradient reaches of snowmelt-fed streams. Plant species observed on the Proposed Project site typical of this community include: quaking aspen, white alder (*Alnus rhombifolia*), and multiple willow species including red willow, narrow-leaved willow, and black willow (*Salix gooddingii*).

Open Water

Open water is characterized as bodies of water often with a number of phytoplankton species and filamentous blue-green algae. In the shallow waters, vascular species including horned pondweed (*Zannichellia palustris)*, water fern (*Azolla filiculoides)*, and duckweed (*Lemna* sp.) can be found floatin on the water surface.

Ornamental Landscaping/Turf Grass

Ornamental Landscaping consists of introduced trees, shrubs, flowers and turf grass. These communities occur in green belts, parks, housing developments, businesses, and other urban settings (Gray and Bramlet 1992).

Rabbitbrush Scrub

Rabbitbrush Scrub (and Disturbed Rabbitbrush Scrub) is dominated by rabbitbrush species (*Chrysothamnus* spp.), typically characterized by evenly spaced shrubs growing up to 3 feet in height. Shrubs flower in late summer or fall. Rabbitbrush Scrub is a disturbance-maintained community caused by fire, grazing, or tilling (Holland 1986). Plant species observed on the Proposed Project ROW typical of this vegetation community include rabbitbrush shrubs such as rubber rabbitbrush (*C. nauseosus*), yellow rabbitbrush (*C. viscidiflorus*), and black-stem rabbitbrush (*C. paniculatus*).

Ruderal/Disturbed

Areas classified as Ruderal are dominated by pioneering herbaceous species that readily colonize disturbed ground and are typically found in temporary, often frequently disturbed habitats (Barbour et al. 1999). The soils in Ruderal areas are characterized as heavily compacted or frequently disturbed. The vegetation in these areas is adapted to living in compact soils where water does not readily penetrate the soil. Disturbed areas are those areas that are either devoid of vegetation (cleared or graded), such as dirt roads, or those areas that are dominated by non-native weedy species.

Sierran Mixed Conifer Forest

Sierran Mixed Conifer Forest is characterized by an open, dense, forest of coniferous evergreens up to 250 feet in height with several dominant species. The understory is typically sparse, consisting of scattered broadleaved mesophytic shrubs and small trees. Most growth occurs in early summer, and the majority of plants are essentially dormant in winter. This community grows in areas with warm, dry summer and cool, moist winters with considerable snow accumulation at the higher elevations. Sierran Mixed Conifer Forest is typically found on north-facing slopes near its lower elevational margin. Soil is typically moist and covered by a thick leaf litter layer and dead branches and downed wood. Plant species observed on the Proposed Project site typical of this community include: lodgepole pine, sugar pine (*Pinus lambertiana*), single-leaf pinyon pine, and Utah juniper.

Stabilized and Partially Stabilized Desert Sand Fields

Stabilized and Partially Stabilized Desert Sand Fields are described in Holland (1986) as habitats of desert sand accumulation that are not obviously worked into dune landforms. Vegetation in this community varies from scant cover of widely scattered shrubs and herbs to nearly closed canopies. This community is similar and intergrades with Stabilized and Partially Stabilized Desert Sand Dunes with a much reduced sand dune microrelief. Stabilized and Partially Stabilized Desert Sand Fields can often be found at the toe of bajada slopes. Plant species that dominate this community observed onsite consist of mixed saltbush species *(Atriplex* sp.) and greasewood.

Subalpine Sagebrush Scrub

Subalpine Sagebrush Scrub is similar to Big Sagebrush Scrub, but is typically found at higher elevations and with colder temperatures. Often the plants are dwarfed, with crowns touching or more open. Growth in this community occurs primarily from early to mid-summer. Most of the species in this community flower during mid- to late summer and become dormant in the fall, winter, and early spring due to cold temperatures (Holland 1986). Plant species observed on the Proposed Project ROW characterized by this community include: yellow rabbitbrush, cherry (*Prunus* sp.), and Great Basin wildrye.

Tamarisk Scrub

Tamarisk Scrub is a weedy monoculture of any of several Tamarisk species (*Tamarix* spp.)usually outcompeting native vegetation following major disturbances. This community can be found on sandy or gravelly braided washes or intermittent streams, often in areas where high evaporation increases the stream's alkalinity. Tamarisk is a strong phreatophyte and prolific seeder which attributes to this species invasiveness in disturbed riparian corridors (Holland 1986).

Tobacco Brush Chaparral

Tobacco Brush Chaparral is an evergreen montane chaparral strongly dominated by tobacco brush (*Ceanothus velutinus*), sometimes referred to as snowbrush. This dense community is common on open, wooded slopes from 3,600 to 10,000 feet in elevation on coarse-textured, well-drained soils. This *Ceanothus* is adapted to fire by crown-sprouting, and the seeds require scarification to germinate. Stands of tobacco brush begin to deteriorate after 15 years. Plant species observed on the Proposed Project site typical of this community include: tobacco brush, cherry, cliffrose (*Purshia* sp.), and big sagebrush.

Transitional Great Basin Mixed Scrub

This community represents an ecotone that is transitional between Great Basin Mixed Scrub and an Eastside Jeffrey Pine Forest. Transitional Great Basin Mixed Scrub is characterized by a moderately tall, fairly open shrubland with several species contributing to the canopy (Holland 1986). Dominant species typically include big sagebrush and antelope bush with several perennial grasses comprising the herbaceous vegetation. Mature Jeffrey pine trees are found scattered among shrubs, and this community tends to occur at higher elevations than the Great Basin Mixed Scrub community. Plant species observed on the Proposed Project route typical of this community include: big sagebrush and other species characteristic of the Great Basin Mixed Scrub community, but with a presence of Jeffrey pine trees as well.

Transmontane Alkali Marsh

Transmontane Alkali Marsh is dominated by perennial, emergent, herbaceous monocots up to 6 feet in height. Plant species characteristic of this community grow mainly in the summer months and are typically dormant during the winter months when temperatures may drop to well below freezing (i.e., 32 degrees Fahrenheit). Transmontane Alkali Marsh occurs in lake beds, margins of springs, and river bottomlands with standing water. This habitat can also occur where soils are saturated for most or all of the year. High evaporation and low input of fresh water render these marshes salty, especially during the summer (Holland 1986).

This community is considered sensitive by the CDFG. It is State-ranked as very Threatened (S2.1) with between 2,000 and 10,000 acres remaining in California. Plant species observed on the Proposed Project site and typical of this vegetation community include: rusty molly (*Bassia* [*Kochia*] *californica*), salt grass (*Distichlis spicata*), and yerba mansa (*Anemopsis californica*) with scattered rabbitbrush (*Chrysothamnus* spp.) shrubs.

Wet Subalpine Meadow

Wet Subalpine Meadow (and Grazed Wet Subalpine Meadow) is an open area within the Subalpine Forest where a diverse flora of grasses, sedges, rushes, and forbs form low (typically less than 2 feet in

height), dense, often matted vegetation. Moisture in this community type remains high throughout the growing season, and the growing season is often limited by snow. Some meadows appear to be late successional communities, while others are maintained by streams that flow through the meadow (Holland 1986). Large depressions dominated by sedges and rushes within scrub communities on the Proposed Project ROW have also been classified as Wet Subalpine Meadow areas. Furthermore, much of the meadow habitat within the Proposed Project site correlates with "Freshwater Emergent Wetland," as identified by the National Wetland Inventory (NWI). Plant species observed on the Proposed Project site typical of this community include: rushes (*Juncus* spp.), sedges (*Carex* spp.), Kentucky bluegrass (*Poa pratensis*), and other grass species.

White Bursage Scrub

White Bursage Scrub is characterized as an open canopy of shrubs less than 3 feet in height dominated by white bursage. Herbaceous layer is open to intermittent with seasonal annual. This community can be found in a variety of different microhabitats including; older washes and river terraces, alluvial fans, bajadas, rocky hills, partially stabilized and stabilized sand fields, and upland slopes. Soils are sandy, clayrich, or calceareous and may have pavement surfaces (Sawyer and Keeler-Wolf 2008).

Plants

Adobe Parsley

Adobe parsley is a NNNPS Watch List and NNHP G2G3S2S3 ranked species. This perennial herb flowers between May and June. Adobe parsley occurs in dry and open fields in clay soils within Sagebrush Scrub habitats at elevations between 5,770 and 6,166 feet amsl. The known range of this species includes Humboldt and Washoe counties in Nevada. This species also occurs in Oregon.

Alkali Ivesia

Alkali ivesia is a CNPS List 2.2 and BLM Sensitive species. This perennial herb flowers between May and August. Alkali ivesia occurs in mesic, alkaline and clay soils of Great Basin Scrub, Playas, and Meadow and Seep habitats at elevations between 3,940 and 6,990 feet amsl. Known range of this species includes Inyo and Mono counties in California and Nevada and Utah. Possible threats include vehicles and grazing.

Alkali Tansy-Sage

Alkali tansy-sage is a CNPS List 2.2 species. This perennial herb flowers between June and July. This species usually occurs in alkaline soils of Playas and Meadow and Seep habitats at elevations between 6,890 and 7,875 feet amsl. Known range includes Mono County in California and Idaho and Nevada. Threats to alkali tansy-sage include grazing and vehicles.

Altered Andesite Buckwheat

Altered andesite buckwheat is a BLM Sensitive, NNNPS Watch List, USFS Sensitive, and NNHP G2G3QS2S3 ranked species. This semi-woody, perennial herb flowers between May and September. This species occurs in dry, shallow, acidic, gravely to clay soil on ridges, knolls, and steep slopes within Coniferous Woodlands at elevations between 4,410 and 7,325 feet amsl. The known range of this species includes Storey and Washoe counties.

Altered Andesite Popcornflower

Altered andesite popcornflower is a BLM Sensitive, NNNPS Watch, USFS Sensitive, and NNHP G2G3S2S3 ranked sensitive species. This annual herb flowers between June and July. This species occurs in dry, shallow, mostly acidic, gravelly clay soils on ridges, knolls, and steep slopes within Pinyon-Juniper Woodland, Sagebrush Scrub, and Montane Coniferous Forest habitats at elevations between 4,850 and 6,650 feet amsl. The known range in Nevada includes Storey and Washoe counties. Threats to altered andesite popcorn flower include urbanization.

American Manna Grass

American manna grass is a CNPS List 2.3 species. This perennial, rhizomatous herb flowers between June and August. This species occurs in moist soil near stream banks and lake margins within Marsh and Swamp, Meadow and Seep, and Bog and Fen habitats at elevations between 50 and 6,495 feet amsl. Known range includes El Dorado, Fresno, Humboldt, Mendocino, Mono, Placer, and Tulare counties in California.

Barstow Woolly Sunflower

Barstow woolly sunflower is a CNPS List 1B.2 and a BLM Sensitive species. This annual herb flowers between April and May. The species occurs in open sandy or silty areas of Chenopod Scrub, Mojavean Desert Scrub, and Playas at elevations between 1,600 and 3,200 feet amsl. The known range of the Barstow woolly sunflower includes Fresno, Kern, Los Angeles, and San Bernardino counties in California. This species is threatened by energy development, road improvements, vehicles, and grazing.

Blandow's Bog Moss

Blandow's bog moss is a CNPS List 2.3 and USFS Sensitve species. This moss has no flowering period. This species occurs in damp soil within Subalpine Coniferous Forest and Meadow and Seep habitats at elevations between 6,105 and 8,855 feet amsl. The known range includes Fresno, Mono, and Siskiyou counties in California. Possible threats to Blandow's bog moss include grazing.

Bodie Hills Cusickiella

Bodie Hills cusickiella is a CNPS List 1B.2, USFS Sensitive, and BLM Sensitive species. This perennial herb flowers between May and July. This species occurs in clay or rocky soils within Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 6,560 and 9,185 feet amsl. Known ranges include Mono County in California and Nevada. Threats to Bodie Hills cusickiella include mining, grazing, and vehicles; also, this species is not as common as previously thought.

Bodie Hills Draba

Bodie Hills draba is a NNNPS Watch, USFS Sensitive, BLM Sensitive, and NNHP G2S32 ranked species. This perennial herb flowers between June and September. This species occurs in rocky or clay soils of Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 6,200 and 8,500 feet amsl. Known range includes Douglas, Lyon, and Mineral counties in Nevada and California.

Bodie Hills Rock Cress

Bodie Hills rock cress is a CNPS List 1B.3 species. This perennial herb flowers between June and July. This species occurs in Great Basin Scrub, Subalpine Coniferous Forest, Alpine Boulder and Rock Field, and Pinyon-Juniper Woodland habitats at elevations between 8,640 and 11,580 feet amsl. Known ranges of this species include: Fresno, Inyo, Mono, and Tulare counties in California and Nevada.

Booth's Evening-Primrose

Booth's evening-primrose is a CNPS List 2.3 species. This annual herb flowers between April and September. This species occurs on sandy flats and steep, loose slopes in Joshua Tree Woodland and Pinyon and Juniper Woodland habitats at elevations between 3,000 and 8,000 feet amsl. The species is known to exist in Inyo, Mono, and San Bernardino counties of California and in Arizona, Nevada, and Washington. Mining is a potential threat to Booth's evening-primrose.

Booth's Hairy Evening-Primrose

Booth's hairy evening-primrose is a CNPS List 2.3 species. This annual herb flowers in June. This species occurs in sandy soils of Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 4,920 and 7,050 feet amsl. Known ranges include Inyo, Mono, and San Bernardino counties in California and Nevada. Mining is a possible threat to Booth's hairy evening-primrose.

Broad-Keeled Milk-Vetch

Broad-keeled milk-vetch is a CNPS List 2.2 species. This perennial herb flowers between June and September. This species occurs in rocky soils within Subalpine Coniferous Forest, Pinyon-Juniper Woodland, and Alpine Boulder and Rock Field habitats at elevations between 7,690 and 11,645 feet amsl. Known range includes Inyo and Mono counties in California and Idaho, Nevada, Oregon, and Utah. Trampling, grazing, and vehicles may be threats to broad-keeled milk-vetch.

Canescent Draba

Canescent draba is a CNPS List 2.3 species. This perennial herb flowers in July. Canescent draba occurs in meadow areas within Subalpine Coniferous Forest and Alpine Boulder and Rock Field habitats at elevations between 9,843 and 11,500 feet amsl. Known range includes Inyo and Mono counties in California and Washington.

Chaparral Sand-Verbena

Chaparral sand-verbena is a CNPS List 1B.1 species. This annual herb flowers between January and September. This species occurs on sandy soils in Chaparral, Coastal Scrub, and Desert Dune habitats at elevations between 260 and 5,250 feet amsl. The known range of chaparral sand-verbena includes: California, Arizona, and Baja California. Threats to this species include competition with non-native plant species, alteration of fire regimes, road maintenance, flood control activities, off-highway vehicles, and development.

Charlotte's Phacelia

Charlotte's phacelia is a CNPS List 1B.2 and a BLM Sensitive species. This annual herb flowers between March and June. This species occurs on granitic, sandy soils within Joshua Tree Woodlands, Mojavean Desert Scrub, and Pinyon-Juniper Woodland habitats at elevations between 1,970 and 7,220 feet amsl.

Its known range in California includes: Inyo, Kern, and Tulare counties. Threats to Charlotte's phacelia include grazing and mining.

Common Moonwort

Common moonwort is a CNPS List 2.3 and USFS Sensitive species. This perennial herb has sporangia that typically appear in August. This species occurs within Subalpine Coniferous Forest, Upper Montane Coniferous Forest, and Meadow and Seep habitats at elevations between 6,495 and 11,150 feet amsl. Known ranges include Mono, Modoc, Nevada, Tulare, and Tuolumne counties in California and Arizona, Idaho, New Mexico, Nevada, Oregon, Utah, and Washington. Possible threats to common moonwort include grazing.

Compact Daisy

Compact daisy is a CNPS List 2.3 species. This perennial herb flowers between May and July. This species occurs on rocky or gravelly, carbonate soil within Pinyon-Juniper Woodland habitat at elevations between 4,265 and 9,515 feet amsl. Known range includes Inyo and Mono counties in California and Nevada, Utah, and Wyoming.

Coyote Gilia

Coyote gilia is a CNPS List 2.2 species. This annual herb flowers between April and June. This species occurs in sandy soils of Great Basin Scrub and Pinyon- Juniper Woodland habitats at elevations between 2,000 and 5,580 feet amsl. Known ranges in the United States include Inyo, Mono, and San Bernardino counties in Calfornia and Arizona, Colorado, Nevada, New Mexico, and Utah.

Creamy Blazing Star

Creamy blazing star is a CNPS List 1B.3 species. This annual herb flowers between March and May. This species occurs on rocky, gravelly, and sandy soils within Mojave Desert Scrub at elevations between 2,300 and 3,800 feet amsl. The known range of this species includes Imperial, Inyo, Kern, Riverside, San Bernardino, and San Diego counties in California. Threats to this species include off-highway vehicles, mining, and grazing.

Crosby Buckwheat

Crosby buckwheat is a NNNPS Watch, BLM Sensitive, and NNHP G3S3 ranked species. This perennial herb flowers between June and October. Crosby buckwheat occurs in shallow, sandy to clay soils on gentle slopes of scrub habitats at elevations between 4,600 and 7,000 feet amsl. The known range includes Humboldt and Washoe counties and Oregon. Threats to Crosby buckwheat include off-highway vehicles and development.

Cushion Townsendia

Cushion townsendia is a CNPS List 2.3 species. This perennial herb flowers between July and August. This species occurs in gravelly soils of Subalpine Coniferous Forest and Alpine Boulder and Rock Field habitats at elevations between 9,400 and 12,055 feet amsl. The known range includes Mono County in California and Idaho, Utah, and Wyoming.

Cut-Leaf Checkerbloom

Cut-leaf checkerbloom is a CNPS List 2.3 species. This perennial herb flowers between May and September. This species occurs within Great Basin Scrub, Lower Montane Coniferous Forest, Meadow and Seep, and Pinyon-Juniper Woodland habitats at elevations between 5,740 and 9,185 feet amsl. The known range for this species includes Alpine, Inyo, Mono, and Tulare counties in California and Nevada and Oregon.

DeDecker's Clover

DeDecker's clover is a CNPS List 1B.3, USFS Sensitve, and BLM Sensitive species. This perennial and annual herb flowers between May and July. This species occurs on granitic or rocky soils of Upper Montane Coniferous Forest, Pinyon-Juniper Woodland, Subalpine Coniferous Forest, and Lower Montane Coniferous Forest habitats at elevations between 6,890 and 11,480 feet amsl. Known range includes Inyo, Kern, Mono, and Tulare counties in California. Possible threats to DeDecker's clover include mining and grazing.

Desert Cymopterus

Desert cymopterus is a CNPS List 1B.2 and a BLM Sensitive species. This perennial herb flowers between March and May. The species occurs on fine to coarse, well-drained, sandy soils within Joshua Tree Woodland and Mojave Desert Scrub habitats at elevations between 2,130 and 4,920 feet amsl. The known range of desert cymopterus includes Kern, Los Angeles, and San Bernardino counties. Military activities, sheep grazing, vehicles, utility constructions, and urbanization are threats to desert cymopterus.

Dwarf Monolepis

Dwarf monolepis is a CNPS List 2.3 species. This annual herb flowers between May and August. This species occurs in alkaline soils of open areas within Great Basin Scrub habitat at elevations between 4,920 and 7,875 feet amsl. Known range includes Lassen, Mono, Modoc, and Riverside counties in California and Colorado, Idaho, Nevada, Oregon, Utah, and Wyoming.

Emory's Crucifixion-Thorn

Emory's crucifixion-thorn is a CNPS List 2.3 species. This perennial, deciduous shrub flowers between April and July. The species occurs on gravelly soils within Mojave Desert Scrub and Sonoran Desert Scrub habitats at elevations between 300 and 2,200 feet amsl. The known range of this species within the United States includes Imperial, Inyo, Riverside, and San Bernardino counties in California and Arizona.

Falcate Saltbush

Falcate saltbush is a CNPS List 2.2 species. This perennial herb flowers between May and August. Falcate saltbush is commonly found in fine-textured, alkaline or saline soils of Great Basin Scrub and Chenopod Scrub habitats at elevations between 3,940 and 5,580 feet amsl. Known ranges for this species include: Inyo, Lassen, and Modoc counties in California and Idaho, Nevada, Oregon, Utah, Washington, and Wyoming. Pipeline construction and grazing are some threats to falcate saltbush.

Father Crowley's Lupine

Father Crowley's lupine is a state-listed Rare species, a CNPS List 1B.2, and USFS Sensitve species. This perennial herb flowers between July and August. This species occurs in decomposed granitic soils of Riparian Scrub, Riparian Woodland, Great Basin Scrub, and Upper Montane Coniferous Forest habitats at elevations between 7,220 and 13,125 feet amsl. Known range of Father Crowley's lupine includes Inyo, Mono, and Tulare counties in California. Possible threats to Father Crowley's lupine include limited distribution; this species is known from fewer than 20 occurrences.

Fell-Fields Claytonia

Fell-fields claytonia is a CNPS List 2.3 species. This perennial herb flowers between July and September. This species occurs in rocky or gravelly soils of Subalpine Coniferous Forest and Alpine Boulder and Rock Field habitats at elevations between 8,530 and 11,585 feet amsl. Known ranges of fell-fields claytonia include Alpine, Fresno, Mono, Modoc, Mariposa, Nevada, and Tuolumne counties in California and Oregon. Foot traffic is a threat to fell-fields claytonia.

Fish Slough Milk-Vetch

Fish Slough milk-vetch is a Federal-listed Threatened, BLM Sensitive, and CNPS List 1B.1 species. This perennial herb flowers between June and July. This species occurs on poorly drained saline soils of Playas at elevations between 3,710 and 4,265 feet amsl. The known range of this species includes Inyo and Mono counties in California. Hydrological alteration, fishery developments, agriculture, grazing and trampling, off-highway vehicles, and competition with non-native species are some threats to Fish Slough milk-vetch.

Foxtail Thelypodium

Foxtail thelypodium is a CNPS List 2.2 species. This perennial/annual herb flowers between June and October. This species occurs in alkaline or subalkaline, mesic soils within Great Basin Scrub and Meadow and Seep habitats at elevations between 3,610 and 8,200 feet amsl. Known range includes Inyo, Lassen, and Mono counties in California and Nevada, Oregon, and Utah. Threats to foxtail thelypodium include grazing and hydrological alteration.

Frog's-Bit Buttercup

Frog's-bit buttercup is a CNPS List 2.1 species. This perennial herb flowers between June and September. This species occurs in soils of Freshwater Marsh and Swamp habitat at elevations between 3,610 and 8,860 feet amsl. Known range includes Inyo and Mono counties in California and Arizona, New Mexico, Baja California, and Sonora, Mexico. Threats to frog's-bit buttercup include hydrological alterations.

Galena Creek Rock Cress

Galena Creek rock cress is a FSC, NNNPS Watch List, USFS Sensitive, and NNHP G3T2QS2 ranked species. This perennial herb flowers in August. This species occurs in rocky soil of Broadleaf Upland Forest and Upper Montane Coniferous Forest habitats at elevations between 7,340 and 8,400 feet amsl. The known ranges include Washoe County and the Carson Range. Threats to this species include logging.

Geyer's Milk-Vetch

Geyer's milk-vetch is a CNPS List 2.2 and BLM Sensitive species. This annual herb flowers between May and August. This species occurs in fine-textured to sandy, alkaline, and saline soils of Chenopod Scrub and Great Basin Scrub habitats at elevations between 3,805 and 6,495 feet amsl. Known range of Geyer's milk-vetch includes Inyo, Lassen, and Mono counties in California; and it is also found in Arizona, Idaho, Nevada, Oregon, Utah, and Washington. Grazing and pipeline construction are possible threats to Geyer's milk-vetch.

Globose Cymopterus

Globose cymopterus is a CNPS List 2.2 species. This perennial herb flowers between March and June. This species occurs on sandy, open flats within Great Basin Scrub habitat at elevations between 3,935 and 7,005 feet amsl. The known range of globose cymopterus includes Mono and Plumas counties in California and Nevada and Utah. Known in California from fewer than five occurrences, this species is threatened by limited distribution and grazing.

Golden Violet

Golden violet is a CNPS List 2.2 species. This perennial herb flowers between April and June and is found on sandy soils within Great Basin Scrub and Pinyon and Juniper Woodland habitats at elevations between 3,280 and 6,700 feet amsl. The known range of the golden violet includes Kern, Lassen, Los

Angeles, Mono, San Bernardino, San Diego, and Sierra counties in California. Threats to this species include: development, grazing, and off-highway vehicles.

Great Basin Onion

Great Basin onion is a CNPS List 2.3 species. This perennial, bulbiferous herb flowers between May and June. Great Basin onion occurs in rocky or sandy soils of Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 3,940 and 7,595 feet amsl. Known ranges include: Lassen, Mono, and San Bernardino counties in California and Arizona, Nevada, and Oregon. Known in California for fewer than 10 occurrences, Great Basin onion is threatened by limited distribution.

Hall's Meadow Hawksbeard

Hall's meadow hawksbeard is a CNPS List 2.1 species. This perennial herb flowers between May and July. Hall's meadow hawksbeard occurs in mesic, alkaline soils within Mojavean Desert Scrub and Pinyon-Juniper Woodland habitats at elevations between 4,100 and 6,490 feet amsl. Known range includes Alpine, Inyo, Lassen, and Mono counties in California and Nevada. Grazing, off-highway vehicles, and groundwater drawdown are among the threats to Hall's meadow hawksbeard.

Hillman's Silverscale

Hillman's silverscale is a CNPS List 2.2 species. This annual herb flowers between June and September. This species occurs in dry or moist silt, clay, and alkaline soils mainly in valley bottoms of Great Basin Scrub and Meadow and Seep habitats at elevations between 3,940 and 5,580 feet amsl. Its known ranges include Inyo, Lassen, Modoc, and Plumas counties in California and Nevada and Oregon.

Hillside Wheat Grass

Hillside wheat grass is a CNPS List 2.3 species. This perennial rhizomatous herb flowers between May and June. This species occurs in rocky soils of Pinyon-Juniper Woodland habitat at elevations between 4,430 and 7,005 feet amsl. Known range of hillside wheat grass includes Inyo and San Bernardino counties in California and Arizona, Idaho, and Wyoming.

Horn's Milk-Vetch

Horn's milk-vetch is a CNPS List 1B.1 species. This annual herb flowers between May and October. This species occurs along lake margins in poorly drained, alkaline soils of Meadow and Seep and Playas habitats at elevations between 195 to 2,790 feet amsl. Known ranges include Inyo, Kern, and San Bernardino counties in California and Nevada. Poisonous to sheep, it was subject to eradication by farmers in the early 1900s; current threats to Horn's milk-vetch include habitat alterations.

Hot Springs Fimbristylis

Hot springs fimbristylis is a CNPS List 2.2 species. This perennial, rhizomatous herb flowers between July and September. Hot springs fimrbistylis occurs on alkaline soil near hot springs within Meadow and Seep habitat at elevations between 360 and 4,400 feet amsl. Known range includes Inyo, Kern, Los Angeles, Mono, and San Bernardino counties in California and Arizona and Nevada.

Intermountain Milkwort

Intermountain milkwort is a CNPS List 2.3 species. This perennial shrub flowers between June and July. This species occurs within Pinyon-Juniper Woodland habitat at elevations between 6,595 and 10,105 feet amsl. Known range for this species includes Mono County in California and Arizona, Nevada, and Utah.

Inyo County Star-Tulip

Inyo County star-tulip is a CNPS List 1B.1, USFS Sensitive, and BLM Sensitive species. This perennial, bulbiferous herb flowers between April and July. Inyo County star-tulip occurs in alkaline soils of Great Basin Scrub and Meadow and Seep habitats at elevations between 3,770 and 6,560 feet amsl. Known ranges for this species include Inyo and Mono counties in California. Threats to this species include groundwater pumping, development, competition from non-native plants, grazing, and road maintenance.

Inyo Hulsea

Inyo hulsea is a CNPS List 2.2 species. This perennial herb flowers between April and June. Inyo hulsea occurs in rocky soil of Chenopod scrub, Great Basin Scrub, and Pinyon-Juniper Woodland habitats at elevations between 5,395 and 9,840 feet amsl. Known range includes Inyo and Mono counties in California and Nevada. Threats to this species include type locality degrading by grading and talus removal.

Inyo Phacelia

Inyo phacelia is a CNPS List 1B.2 and USFS Sensitve species. This annual herb flowers between April and August. This species occurs on alkaline soils of Meadow and Seep habitat at elevations between 3,000 and 10,500 feet amsl. Known range includes Inyo and Mono counties in California. Vehicles, trampling, and grazing are some threats to the Inyo phacelia.

July Gold

July gold is a CNPS List 1B.3, USFS Sensitve, and BLM Sensitive species. This perennial, deciduous shrub flowers between May and August. This species occurs on carbonate soil in Mojavean Desert Scrub habitats at elevations between 4,000 and 7,020 feet amsl. The known range of this species includes Inyo

and Mono counties in California. The extremely limited reproductive capabilities of July gold are a threat to this species; no juvenile plants or seedlings are currently known.

Kern Canyon Clarkia

Kern Canyon clarkia is a CNPS List 4.2 species. This annual herb flowers between May and June. Kern Canyon clarkia occurs on sandy, rocky slopes and sometimes along roadsides. This species is found in Chaparral, Cismontane Woodland, Great Basin Scrub, and Valley and Foothill Grassland habitats at elevations between 2,300 and 11,880 feet amsl. Known range includes Inyo, Kern, Los Angeles, and Tulare counties in California. Road construction is the main threat to Kern Canyon clarkia.

Kern Plateau Bird's-Beak

Kern Plateau bird’s-beak is a CNPS List 1B.3, USFS Sensitive, and a BLM Sensitive species. This hemiparisitic annual herb flowers between July and September. This species occurs on Great Basin Scrub, Joshua Tree Woodland, Pinyon and Juniper Woodland, and Upper Montane Coniferous Forest habitats at elevations between 5,500 and 9,850 feet amsl. The known range for Kern Plateau bird’s beak includes Inyo, Mono, and Kern counties.

King’s Eyelash Grass

King’s eyelash grass is a CNPS List 2.3 species. This perennial herb flowers in May. This species typically occurs in carbonate soils of Great Basin Scrub habitats at elevations between 3,595 and 7,005 feet amsl. Known ranges include Inyo, Mono, and San Bernardino counties in California and Colorado, Idaho, and Nevada.

Lahontan Milk-Vetch

Lahontan milk-vetch is a NNHP G3?S3? ranked species. This perennial herb flowers between May and June. This species occurs in open, alkaline soil of sandy to gravelly washes or gullies within Knoll and Playa habitats at elevations between 4,020 and 5,200 feet amsl. Known range includes Churchill, Humboldt, Lyon, Pershing, and Washoe counties in Nevada.

Lavin’s Milk-Vetch

Lavin’s milk-vetch is a CNPS List 1B.2 and USFS Sensitve species. This perennial herb flowers in June. This species occurs within Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 8,035 and 10,005 feet amsl. Known ranges of this species include Mono County in California and Nevada. Known in California only within Bodie Hills, Lavin’s milk-vetch is threatened by limited distribution.

Lemmon Buckwheat

Lemmon buckwheat is a NNHP G3?S3? ranked species. This perennial herb flowers between May and June. This species occurs in silty, sandy to clay soils on Open Bluff and Badland habitats at elevations between 4,200 and 5,400 feet amsl. Known range includes Churchill, Lyon, Pershing, Storey, and Washoe counties in Nevada.

Lemmon's Milk-Vetch

Lemmon's milk-vetch is a CNPS List 1B.2 species and BLM Sensitive species. This perennial herb flowers between May and August. Lemmon's milk-vetch occurs within Great Basin Scrub, Meadow and Seep, and Marsh and Swamp habitats, usually near lake shores at elevations between 3,300 and 7,215 feet amsl. Known ranges include: Inyo, Lassen, Modoc, Mono, Plumas, Shasta, and Sierra counties in California and Nevada and Oregon. Land conversion and pipeline construction are some threats to Lemmon's milk-vetch.

Letterman's Blue Grass

Letterman's blue grass is a CNPS List 2.3 species. This perennial herb flowers between July and August. This species occurs in sandy or rocky soils of Alpine Boulder and Rock Field habitat at elevations between 11,480 and 13,990 feet amsl. Known range for Letterman's blue grass includes Fresno, Inyo, Mono, and Tulare counties in California and Idaho, Nevada, Oregon, Utah, Washington, and Wyoming.

Little Bulrush

Little bulrush is a CNPS List 2.2 species. This perennial, rhizomatous herb flowers in August. Little bulrush occurs along riverbanks in carbonate soils within Riparian Scrub, Bog and Fen, and Marsh and Swamp habitats at elevations between 9,430 and 10,660 feet amsl. The known range includes Mono County. Known from only three occurrences in California near Convict Creek and Cottonwood Creek drainages, little bulrush may be threatened by limited distribution.

Little Cutleaf

Little cutleaf is a CNPS List 2.2 species. This perennial herb flowers between May and September. This species occurs in carbonate substrates of Subalpine Coniferous Forest and Pinyon-Juniper Woodland habitats at elevations between 4,920 and 10,005 feet amsl. The known range of this species includes Inyo and Mono counties in California and Arizona, Nevada, Oregon, and Utah.

Long Valley Milk-Vetch

Long Valley milk-vetch is a CNPS List 1B.2, USFS Sensitve, and BLM Sensitive species. This perennial herb flowers between June and August. This species occurs in sandy loam, usually in swales, in the vicinity of former or present hot springs within Great Basin Scrub habitat at elevations between 6,690 and 8,300

feet amsl. The known range of this species includes Mono County in California and Nevada. Threats to Long Valley milk-vetch include grazing, mining, and vehicles.

Many-Flowered Thelypodium

Many-flowered thelypodium is a CNPS List 2.2 species. This perennial herb flowers between April and June. This species occurs in sandy soils of Great Basin Scrub and Chenopod Scrub habitats at elevations between 4,000 and 8,200 feet amsl. Known range includes Lassen, Mono, Modoc, and Plumas counties in California and Idaho, Nevada, Oregon, Utah, and Washington. Threatened by agriculture and sand mining, many-flowered thelypodium may also be threatened by pipeline construction and grazing.

Margaret Rushy Milk-Vetch

Margaret rushy milk-vetch is a NNHP G5T2S2 ranked species. This perennial herb flowers between May and June. This species occurs on rocky slopes and flats within Pinyon-Juniper Woodland and Sage Scrub habitats at elevations between 4,700 and 7,800 feet amsl. Known range includes Carson City, Douglas, Lyon, and Storey counties in Nevada.

Marsh's Bluegrass

Marsh's bluegrass is a CNPS 2.3 and USFS Sensitive species. This perennial herb flowers in June and occurs in alpine boulder and rock field at elevations above 10,000 ft amsl. The known range for Marsh's bluegrass includes Mono County, California, Nevada and Idaho. This species is known in California from only one occurrence above Perry Aiken Creek in the White Mountains.

Masonic Mountain Jewel-Flower

Masonic Mountain jewel-flower is a CNPS List 1B.2, USFS Sensitve, and BLM Sensitive species. This perennial herb flowers between June and July. This species occurs in volcanic or granitic, rocky soils within Pinyon-Juniper Woodland habitat at elevations between 6,495 and 10,005 feet amsl. Known range of this species includes Inyo, Mono, and Tuolumne counties in California and Nevada. Masonic Mountain jewel-flower is threatened by mining, grazing, and vehicles.

Masonic Rock Cress

Masonic rock cress is a CNPS List 2.3 and BLM Sensitive species. This perennial herb flowers between June and July. This species occurs in sandy soil of Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 4,510 and 10,200 feet amsl. Known ranges of Masonic rock cress include Modoc and Mono counties in California and Nevada, and Oregon. Possible threats include development.

Mojave Monkeyflower

The Mojave monkeyflower is a CNPS List 1B.2 and a BLM Sensitive species and is a California endemic. This annual herb flowers between April and June and is found in dry, sandy, and gravelly areas, washes,

and between or against rocks. Habitat includes Mojavean Scrub and Joshua Tree Woodland at elevations between 2,000 and 4,000 feet amsl. The known range of this species is San Bernardino County, California. This species is threatened by development, mining, off-highway vehicles, and competition with non-native plants.

Mono County Phacelia

Mono County phacelia is a CNPS List 1B.1, USFS Sensitive, and BLM Sensitive species. This annual herb flowers between May and June. This species occurs in clay soils, often along roadsides, within Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 6,230 and 9,515 feet amsl. The known range includes Inyo and Mono counties in California and Nevada. Threats to Mono County phacelia include vehicles, trampling, and grazing.

Mono Lake Lupine

Mono Lake lupine is a CNPS List 1B.2, USFS Sensitve, and BLM Sensitive species. This perennial herb flowers between May and August. This species occurs on volcanic pumice, gravelly substrates within Subalpine Coniferous Forest, Great Basin Scrub, and Upper Montane Coniferous Forest habitats at elevations between 6,560 and 9,840 feet amsl. The known ranges include Inyo and Mono counties in California. Off-highway vehicles are threats to Mono Lake lupine.

Mono Milk-Vetch

Mono milk-vetch is a state-listed Rare, CNPS List 1B.1, USFS Sensitve, and BLM Sensitive species. This perennial herb flowers between June and August. This species occurs in pumice, sandy or gravelly soils within Great Basin Scrub and Upper Montane Coniferous Forest habitats at elevations between 6,920 and 11,005 feet amsl. The known range of this species includes Inyo and Mono counties in California. Threats to Mono milk-vetch include road maintenance, sheep grazing, and off-highway vehicles.

Moosewort

Moosewort is a FSS, G2G3S1, NNNPS-W

Mountain Bent Grass

Mountain bent grass is a CNPS List 2.3 species. This perennial herb flowers between July and September. This species occurs in Subalpine Coniferous Forest, Meadow and Seep, and Alpine Boulder and Rock Field habitats at elevations between 8,760 and 10,500 feet amsl. Known ranges in the United States include: Alpine, Madera, Mono, Mariposa, and Tuolumne counties in California and Nevada, Oregon, and Washington. Possible threats to mountain bent grass include foot traffic, trampling, vehicles and grazing.

Mount Patterson Senecio (Mono ragwort)

Mount Patterson senecio is a CNPS List 1B.3 and USFS Sensitve species. This perennial, rhizomatous herb flowers between July and August. This species occurs within Alpine Boulder and Rock Field habitat at elevations between 9,515 and 12,205 feet amsl. Known range includes Mono County in California and Nevada.

Naked Catchfly

Naked catchfly is on the NNNPS Watch list and a NNHP G4G5T1T2QS1S2 ranked species. This perennial herb flowers between June and September. This species occurs in sagebrush scrub and yellow pine forest communities at elevations between 4,000 and 6,000 feet amsl. The known range of this species is California and Nevada.

Naked-Stemmed Phacelia

Naked-stemmed phacelia is a CNPS List 2.3 species. This annual herb flowers between April and August. This species occurs in gravelly or clay soils within Chenopod Scrub, Great Basin Scrub, and Pinyon-Juniper Woodland habitats at elevations between 4,000 and 8,200 feet amsl. The known range includes Lassen and Mono counties in California and Nevada and Oregon.

Nevada Oryctes

Nevada oryctes is a CNPS List 2.1 species. This annual herb flowers between July and September. This species occurs on sandy soils of Chenopod Scrub and Mojavean Desert habitats at elevations between 3,610 and 8,320 feet amsl. Known range includes Inyo County in California and Nevada. Serious threats to Nevada oryctes are off-highway vehicles, grazing, and trampling.

Nine Mile Canyon Phacelia

Nine Mile Canyon phacelia is a CNPS List 1B.2, USFS Sensitve, and BLM Sensitive species. This annual herb flowers between February and June. Nine Mile Canyon phacelia occurs on sandy or gravelly soils of Broadleafed Upland Forest, Cismontane Woodland, Upper Montane Coniferous Forest, and Pinyon-Juniper Woodland habitats at elevations between 5,400 and 8,660 feet amsl. Known range includes Inyo, Kern, and Tulare counties in California. Grazing and recreational activities are some threats to Nine Mile Canyon phacelia.

Olancha Peak Buckwheat

Olancha Peak buckwheat is a CNPS List 2.3 and USFS Sensitve species. This perennial herb flowers between May and July. This species occurs on rocky or gravelly, carbonate soil within Pinyon-Juniper Woodland habitat at elevations between 4,265 and 9,515 feet amsl. Known range includes Inyo and Mono counties in California and Nevada, Utah, and Wyoming. Known from only two occurrences on Olancha Peak, Olancha Peak buckwheat may be threatened by its limited distribution.

Oregon Campion

Oregon campion is a CNPS List 2.3 species. This perennial herb flowers between July and September. This species occurs within Great Basin Scrub and Subalpine Coniferous habitats at elevations between 4,920 and 8,200 feet amsl. The known range includes Lassen, Mono, and Modoc counties in California and Idaho, Nevada, Oregon, Utah, Washington, and Wyoming.

Oryctes

Oryctes is a NNHP G2G3S2S2 ranked species and a BLM Sensitive species. This annual herb flowers between May and June. This species occurs in deep, loose sand of dunes, washes, and valley flats, appearing only in years with optimal rainfall and temperatures, at elevations between 3,900 and 5,960 feet amsl. The known range of oryctes includes Churchill, Humboldt, Mineral, Pershing, and Washoe counties in Nevada. This species also occurs in Arizona.

Owens Valley Checkerbloom

Owens Valley checkerbloom is a CNPS List 1B.1 and BLM Sensitive species. This perennial herb flowers between April and June. This species is found in alkaline and mesic soils of Chenopod Scrub and Meadow and Seep habitats at elevations between 3,590 and 4,640 feet amsl. Known range includes Inyo and Imperial counties in California. Non-native plants, meadow succession, grazing, and lowering water tables are some threats to Owens Valley checkerbloom.

Parish's Phacelia

Parish’s phacelia is a CNPS List 1B.1 and a BLM Sensitive species. This annual herb flowers between April and July and is found on flats, slopes, and dry lake margins in clay or alkaline soils. Habitat includes Mojave Desert Scrub and Playas at elevations between 1,800 and 3,900 feet amsl. The known range of this species exists in San Bernardino County, California, and in Arizona and Nevada. This species is threatened by military activities.

Parish’s Popcorn-Flower

Parish’s popcorn-flower is a CNPS List 1B.1 species. This annual herb flowers between March and November. This species occurs on alkaline and mesic soils within Great Basin Scrub and Joshua Tree Woodland habitats at elevations between 2,460 and 4,595 feet amsl. Known range for this species includes: Inyo, Los Angeles, Mono, and San Bernardino counties in California. Threats to Parish’s popcorn flower include groundwater pumping.

Pine Nut Mountains Ivesia

Pine Nut Mountains ivesia is a Federal Species of Concern, NNNPS Watch, BLM Sensitive, and NNHP G2S2 ranked species. This perennial herb flowers between July and August. This species occurs in moist to dry granitic soils or sod on slopes of meadow margins and areas associated with springs, ephemeral

ponds, and moist drainage habitat at elevations between 6,990 and 8,550 feet amsl. The known range includes Douglas County. Threats to Pine Nut Mountains ivesia include development, hydrological alterations, competition from non-native plants, grazing, trampling, road maintenance, off-highway vehicles, mineral exploration, and recreational activities.

Pinyon Rock-Cress

Pinyon rock-cress is a CNPS List 2.3 species. This perennial herb flowers between April and May. Pinyon rock-cress occurs on granitic and gravelly soils within Creosote Bush Scrub, Joshua Tree Woodland, and Pinyon-Juniper Woodland at elevations between 3,940 and 7,880 feet amsl. Known ranges include Inyo, Mono, and San Bernardino counties in California and Nevada. Non-native plants, mining, recreational activities, road construction, and vehicles are some threats to pinyon rock-cress.

Playa Phacelia

Playa phacelia is a NNNPS Watch, NNHP G2S2 ranked, USFS Sensitive, and BLM Sensitive species. This annual herb flowers between June and August. This species occurs in clay soils within alkali playas, wetland, or aquatic habitats at elevations between 5,030 and 5,640 feet amsl. The known range includes Humboldt and Washoe counties in Nevada. This species also occurs in California and Oregon.

Prairie Wedge Grass

Prairie wedge grass is a CNPS List 2.2 species. This perennial herb flowers between April and July. This species occurs in mesic soils of Cismontane Woodland and Meadow and Seep habitats at elevations between 985 and 6,560 feet amsl. Known range of prairie wedge grass includes Amador, Fresno, Inyo, Mono, Riverside, San Diego, Stanislaus, and Tulare counties in California.

Prostrate Buckwheat

Prostrate buckwheat is a NNNPS Watch List and NNHP G3S1 ranked species. This perennial herb flowers between May and July. This species occurs in basalt flows and occasionally on barren volcanic tuff, forming low mats of leaves at elevations between 6,800 and 7,150 feet amsl. Known range includes Washoe County in Nevada and California and Oregon.

Pulsifer's Milk-Vetch

Pulsifer's milk-vetch is a USFS Sensitive, NNHP G4T2S1 ranked, and NNNPS Watch List species. This perennial herb flowers between May and June. This species occurs in sandy, rocky, or granitic substrates within Great Basin Scrub, Lower Montane Coniferous Forest, and Pinyon-Juniper Woodland habitats at elevations between 4,625 and 5,200 feet amsl. The known ranges include California and Washoe County, Nevada.

Ram's Horn Spring Milk-Vetch

Ram's Horn Spring milk-vetch is a NNNPS Watch list, USFS Sensitive, and NNHP G3T2?S1 ranked species. This perennial herb flowers between May and July. This species occurs in sandy, gravelly or volcanic substrates within Great Basin Scrub, Lower Montane Coniferous Forest, and Pinyon-Juniper Woodland habitats at elevations between 4,410 and 6,200 feet amsl. The known range includes California and Washoe County, Nevada. Threats to this species include grazing, development, and timber harvesting.

Recurved Larkspur

Recurved larkspur is a CNPS List 1B.2 and a BLM Sensitive species. This perennial herb flowers between March and June. This species occurs on alkaline soils in Chenopod Scrub, Cismontane Woodland, and Valley and Foothill Grassland habitats at elevations between 10 and 2,500 feet amsl. The known range of this species in California includes Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Madera, Merced, Monterey, San Joaquin, San Luis Obispo, and Solano counties. Threats to recurved larkspur include agricultural and grazing.

Red Rock Poppy

Red Rock poppy is a CNPS List 1B.2 and a BLM Sensitive species. This annual herb flowers between March and May and occurs on sandy soils and steep, loose slopes. The typical preferred habitat of this species is Joshua Tree Woodlands and Pinyon and Juniper Woodland at elevations between 2,230 and 4,040 feet amsl. The known range for this species includes the Rand and El Paso mountains within Kern and San Bernardino counties in California. Off-highway vehicle use is a primary threat to this species.

Rim Lichen

Rim lichen is a NNHP G3S1 ranked species. This lichen has no flowering period. This species occurs in soils with high pH within slight depressions where water collects among low-growing shrubs at elevations recorded at 6,290 feet amsl. Known range in the United States includes Elko, Humboldt, and Washoe counties in Nevada and Colorado, Idaho, Montana, Oregon, Utah, Wyoming, and Washington. Outside the United States this species occurs in Asia and Africa. Threats to rim lichen include sensitivity to grazing and ground disturbance.

Rosette Cushion Cryptantha

Rosette cushion cryptantha is a CNPS List 1B.2 species. This annual herb flowers between July and August. This species occurs in coarse gravel, granitic soil within Subalpine Coniferous forest and Alpine Boulder and Rock Field habitats at elevations between 9,680 and 12,010 feet amsl. Known range includes Inyo and Tulare counties in California. Threats to rosette cushion cryptantha include foot traffic and trampling.

Sagebrush Loeflingia

Sagebrush loeflingia is a CNPS List 2.2 and a BLM Sensitive species. This is an annual herb that flowers between April and May and occurs on the sandy soils of desert dunes within Great Basin Scrub and Sonoran Desert Scrub habitats. It is known to occur at elevations between 2,300 and 5,400 feet amsl. The known range for this species includes Inyo, Kern, Lassen, Los Angeles, Plumas, and San Bernardino counties in California and also Nevada, Oregon, and Wyoming. Threats to this species include grazing and off-highway vehicles.

Sand Cholla

Sand cholla is a NNPH G4S2S3 ranked and State Harvest Regulated species. This shrub flowers between May and June. This species is dependent on deep sand or sand dunes within Creosote Bush Scrub and Sagebrush Scrub and is found near dry-lake borders, river bottoms, valleys, and plains in desert habitat at elevations between 3,950 and 6,300 feet amsl. The known range includes Churchill, Douglas, Esmeralda, Lander, Lincoln, Mineral, Nye, Pershing, and Washoe counties in Nevada and Arizona, California, and Utah.

Sand Dune Cryptantha

Sand dune cryptantha is a CNPS List 2.3 species. This annual herb flowers between June and July. This species occurs within Great Basin Scrub habitat at elevations between 6,395 and 7,250 feet amsl. The known range includes: Inyo and Mono counties in California and Arizona, Colorado, Idaho, New Mexico, Nevada, Oregon, Washington, and Wyoming.

Sanicle Cymopterus

Sanicle cymopterus is a CNPS List 1B.2 and BLM Sensitive species. This perennial herb flowers between April and June. This species is found in sandy, gravelly, carbonate soil within Mojavean Desert Scrub and Joshua Tree Woodland habitats at elevations between 3,280 and 5,450 feet amsl. The known range of sanicle cymopterus includes Inyo County in California and Nevada. Off-highway vehicles, mining, and cattle grazing are threats to this species.

Scalloped-Leaved Lousewort

Scalloped-leaved lousewort is a CNPS List 2.2 species. This perennial herb flowers between June and July. This species occurs in mesic soil of Meadow and Seep habitat at elevations between 6,890 and 7,545 feet amsl. The known range includes Mono County in California and Nevada and Wyoming. This species is threatened by hydrological alterations.

Scalloped Moonwort

Scalloped moonwort is a CNPS List 2.2 and USFS Sensitve species. Scalloped moonwort is a perennial herb with sporangia appearing between June and September. This species occurs within Lower Montane Coniferous Forest, Upper Montane Coniferous Forest, Meadow and Seep, Bogs and Fens, and Fresh Water Marsh and Swamp habitats at elevations between 4,160 and 10,760 feet amsl. Known range

includes Butte, Colusa, Lake, Lassen, Los Angeles, Mono, Modoc, Placer, Plumas, San Bernardino, Shasta, Tehama, and Tulare counties in California and Arizona, Idaho, Nevada, Oregon, Utah, Washington, and Wyoming. Scalloped moonwort is threatened by foot traffic, grazing, trampling, road deconstruction, and recreational activities.

Schoolcraft Catseye

Schoolcraft catseye is a NNNPS Watch List, BLM Sensitive, and NNHP G3QS3 ranked species. This perennial herb flowers between June and August. This species occurs in deep, clay soils on gentle to steep slopes of east, south, and west facing aspects of Sagebrush Scrub habitat at elevations between 4,880 and 5,760 feet amsl. Known range of Schoolcraft catseye includes California and Humboldt and Washoe counties in Nevada.

Schoolcraft Wild Buckwheat

Schoolcraft wild buckwheat is a NNHP G5T2S1 ranked species. This shrub flowers between July and September. This species occurs in rocky to sandy soils of Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 4,265 and 5,740 feet amsl. The known range includes California and Washoe County, Nevada. Possible threats to Schoolcraft wild buckwheat include competition from non-native plants, habitat conversion, and development.

Scribner's Wheat Grass

Scribner's wheat grass is a CNPS List 2.3 species. This perennial herb flowers between July and August. This species occurs within Alpine Boulder and Rock Field habitat at elevations between 9,515 and 13,780 feet amsl. Known ranges include Mono and Tuolumne counties in California and Arizona and Nevada.

Seep Kobresia

Seep kobresia is a CNPS List 2.3 species. This perennial herb flowers in August. This species occurs in mesic, carbonate soils of Subalpine Coniferous Forest, Meadow and Seep, and Alpine Boulder and Rock Field habitats at elevations between 9,695 and 10,595 feet amsl. The known ranges include Mono County in California and Idaho, and Oregon. Known in California from one occurrence, seep kobresia is threatened by limited distribution and recreational activity.

Shevock's Bristle Moss (Shevock rockmoss)

Shevock's bristle moss is a CNPS List 1B.3 and BLM Sensitive species. This moss has no flowering period. This species occurs on granitic, rocky substrates of Joshua Tree Woodland and Pinyon-Juniper Woodland habitats at elevations between 2,460 and 6,890 feet amsl. The known range includes Kern and Mono counties in California.

Shockley's Milk-vetch

Shockley's milk-vetch is a CNPS List 2.2 and USFS Sensitve species. This perennial herb flowers between May and July. Shockley's milk-vetch occurs in alkaline, granitic alluvium soils of Chenopod Scrub, Great Basin Scrub, and Pinyon-Juniper Woodland habitats at elevations between 4,920 and 7,380 feet amsl. Known ranges include Inyo and Mono counties in California and Nevada.

Shockley's Rock-cress

Shockley's rock-cress is a CNPS List 2.2 and USFS Sensitive species. This perennial herb flowers between May and June. This species occurs on carbonate or quartzite, rocky or gravelly soils in Pinyon-Juniper Woodland habitat at elevations between 3,280 and 6,565 feet amsl. Known ranges of this species include Inyo and San Bernardino counties in California. Threats to Shockley's rock-cress include mining and vehicles.

Short-Fruited Willow

Short-fruited willow is a CNPS List 2.3 species. This perennial deciduous shrub flowers between June and July. This species occurs in carbonate soils of Alpine Dwarf Scrub, Subalpine Coniferous Forest, and Meadow and Seep habitats at elevations between 9,840 and 11,480 feet amsl. The known range includes Mono County in California and Idaho, New Mexico, Oregon, and Washington.

Sierra Valley Ivesia

Sierra Valley ivesia is a FSC, NNNPS Threatened, BLM Sensitive, and NNHP G2T2S1 ranked species. This perennial herb flowers between late-May and mid-August. This species occurs in shallow, slowly draining, sandy to rocky clay soils on benches and flats in Meadow and Seep and Sagebrush habitats at elevations between 6,460 and 7,300 feet amsl. The known range of Sierra Valley ivesia includes California and Storey and Washoe counties in Nevada. Water diversion, road maintenance and development, off-highway vehicle use, fire suppression, and competition from non-native plants are threats to Sierra Valley ivesia.

Silver-Leaved Milk-Vetch

Silver-leaved milk-vetch is a CNPS List 2.2 species. This perennial herb flowers between May and July. This species occurs in poorly drained, alkaline or saline soils of Meadow and Seep and Playas habitats at elevations between 4,070 and 7,710 feet amsl. Known ranges of this species include: Inyo, Lassen, and Mono counties in California and Arizona, Idaho, Nevada, and Utah. Grazing and trampling are some of the threats to silver-leaved milk-vetch.

Slender-Leaved Pond Weed

Slender-leaved pond weed is a CNPS List 2.2 species. This perennial, rhizomatous herb flowers between May and July. This species occurs in shallow freshwater of Marsh and Swamp habitat at elevations

between 985 and 7,050 feet amsl. The known range includes Alameda, Butte, Contra Costa, El Dorado, Lassen, Merced, Mono, Modoc, Mariposa, Placer, Santa Clara, Shasta, Sierra, San Mateo, Solano, and Sonoma counties in California and Arizona, Nevada, Oregon, and Washington.

Slender Moonwort

Slender moonwort is a CNPS 1B.3 and USFS Sensitive species. This perennial herb occurs in Upper Montane Coniferous Forest, often in disturbed areas. Slender moonwort occurs in Alaska, Colorado, Idaho, Montana, Minnesota, Oregon, South Dakota, Washington, and Wyoming. This species is known in California from one occurrence near Piute Pass in Inyo County. Threats to slender moonwort include fire suppression, grazing, mining, non-native plants, urbanization, logging, and habitat disturbance.

Slender Townsendia

Slender townsendia is a CNPS List 2.3 species. This perennial herb flowers between July and August. This species occurs within Alpine Boulder and Rock Field habitat at elevations between 11,005 and 12,500 feet amsl. Known range includes Mono County in California and Arizona, Idaho, New Mexico, Nevada, Utah, and Wyoming. Limited distribution may be a threat to slender townsendia; this species is known only from the White and Inyo mountains.

Small-Flowered Fescue

Small-flowered fescue is a CNPS List 2.3 species. This perennial herb flowers in July. This species occurs within Alpine Boulder and Rock Field habitat at elevations between 10,495 and 13,285 feet amsl. The known range of this species includes Mono and Tuolumne counties in California.

Small-Flowered Grass-of-Parnassus

Small-flowered grass-of-Parnassus is a CNPS List 2.2 species. This perennial herb flowers between August and September. This species occurs in mesic soil of Meadow and Seep habitat at elevations between 6,560 and 9,185 feet amsl. Known ranges include: Inyo and Mono counties in California, Idaho, Nevada, and Wyoming. Small-flowered grass-of-Parnassus is threatened by grazing and limited distribution, as it is known in California from approximately five occurrences.

Smooth Saltbush

Smooth saltbush is a CNPS List 2 species. This annual herb flowers between June and September. Smooth saltbush occurs in alkali soils within Great Basin Scrub and near hot springs in Meadow and Seep habitats at elevations between 4,265 and 6,560 feet amsl. Known range includes: Lassen, Mono, and Siskiyou counties in California and Idaho, Nevada, and Oregon.

Snow Willow

Snow willow is a CNPS List 2.3 species. This perennial, deciduous shrub flowers between July and August. Snow willow occurs within Alpine Dwarf Scrub habitat at elevations between 10,170 and 11,480 feet amsl. The known range includes Inyo, Mono, and Tuolumne counties in California. Snow willow may be threatened by recreational vehicles.

Spanish Needle Onion

Spanish needle onion is a CNPS List 1B.3 and a BLM Sensitive species. This perennial, bulbous herb flowers between May and June. This species occurs on rocky soils in Pinyon and Juniper Woodland and Upper Montane Coniferous Forest habitats at elevations between 2,600 and 8,200 feet (amsl). The Spanish needle onion is known to occur only in Kern County, California.

Spear-Fruited Draba

Spear-fruited draba is a CNPS List 2.3 species. This perennial herb flowers between June and July. This species occurs in carbonate, scree substrates within Alpine Boulder and Rock Field habitat at elevations between 9,840 and 10,810 feet amsl. The known range of spear-fruited draba includes Mono County in California and Idaho, Nevada, Oregon, Utah, Washington, and Wyoming.

Spikerush Sedge

Spikerush sedge is a CNPS List 2.3 species. This perennial, rhizomatous herb flowers between July and August. Spikerush sedge can be found in Great Basin Scrub and Subalpine Coniferous Forest habitats at elevations between 11,480 and 13,450 feet amsl. The known range includes Mono County in Califonia and Idaho, Nevada, Oregon, and Washington.

Spiny Milkwort

Spiny milkwort is a CNPS List 2.2 species. This perennial herb flowers between May and August. This species occurs in rocky or gravelly substrates within Great Basin Scrub and Pinyon-Juniper Woodland habitats at elevations between 4,360 and 5,590 feet amsl. Known range for this species includes Lassen, Mono, and Santa Cruz counties in California and Arizona, New Mexico, Nevada, and Utah. Spiny milkwort is possibly threatened by pipeline construction.

Spjut’s Bristle Moss

Spjut’s bristle moss is a CNPS List 1B.3 and USFS Sensitve species. This moss has no flowering period. This species occurs on granitic, rocky substrates of Pinyon-Juniper Woodland, Subalpine Coniferous Forest, Lower Montane Coniferous Forest, and Upper Montane Coniferous Forest habitats at elevations between 6,890 and 7,875 feet amsl. The known range includes Kern, Mono, and Tulare counties in California.

Steamboat Buckwheat

Steamboat buckwheat is a FE, SFP, NNNPS Endangered, and NNHP G5T2S1 ranked species. This semi-woody perennial herb flowers between May and July. This species occurs in shallow, poorly-developed, dry soils near spring flows and disturbed soils within Wetland habitats at elevations between 4,565 and 4,720 feet amsl. The known range includes Washoe County. Threats to Steamboat buckwheat include geothermic exploration, development, erosion, competition from non-native plants, ground-water pumping, and water diversions.

Steamboat Monkeyflower

Steamboat monkeyflower is a State Recommended for listing, NNNPS Threatened, NNHP G1G3Q S1S3 ranked species. This annual herb flowers between April and July. This species occurs in dry to moist, often barren, loose, sandy to gravelly slopes and sometimes along roadsides or washes within Pinyon-Juniper Woodland and Sagebrush habitats at elevations between 4,050 and 5,250 feet amsl. The known range includes Carson City, Douglas, and Washoe counties in Nevada.

Succor Creek Parsley

Succor Creek parsley is a NNNPS Watch and NNHP G2?S1? ranked species. This perennial herb flowers in June. This species occurs in dry, open, rocky and clay soils within Sagebrush Scrub habitats at elevations between 4,400 and 7,600 feet amsl. The known range of this species includes Humboldt and Washoe counties and Idaho and Oregon. No direct threats to this species have been identified; however, Succor Creek parsley may be vulnerable to mineral exploration and development, trampling, and off-highway vehicles.

Sweet Smelling Monardella

Sweet smelling monardella is a CNPS List 1B.3, USFS Sensitve, and BLM Sensitive species. This perennial, rhizomatous herb flowers between July and September. This species occurs in granitic soils of Upper Montane Coniferous Forest, Alpine Boulder and Rock Field, and Subalpine Coniferous Forest habitats at elevations between 8,200 and 11,480 feet amsl. Known range includes Inyo, Kern, and Tulare counties in California. Sweet smelling monardella is known from fewer than 10 occurrences on the eastern Sierran crest; limited distribution is a threat to this species.

Sweetwater Mountains Draba

Sweetwater Mountains draba is a CNPS List 1B.3 species. This perennial, stoloniferous herb flowers between July and August. This species occurs in rhyolitic talus substrate within Alpine Boulder and Rock Field habitat at elevations between 8,200 and 13,005 feet amsl. The known ranges include Fresno and Mono counties in California.

Tahoe Draba

Tahoe draba is a CNPS List 1B.2 and USFS Sensitve species. This perennial herb flowers between July and September. This species occurs within Subalpine Coniferous Forest and Alpine Boulder and Rock Field habitats at elevations between 8,200 and 11,500 feet amsl. The known range includes Alpine, El Dorado, Mono, and Tuolumne counties in California and Nevada. Threats to Tahoe draba include development and recreational activities.

Tahoe Yellow Cress

Tahoe yellow cress is a Federal Candidate for listing, State Critically Endangered, NNNPS Threatened, USFS Sensitive, NNPH G2S1S2 ranked sensitive species. This perennial, rhizomatous herb flowers between May and September. This species occurs on decomposed granitic benches within Lower Montane Coniferous Forest and Meadow and Seep habitats at elevations between 577 and 579 feet amsl. The known range of this species is the Lake Tahoe area of Nevada and California. Tahoe yellow cress is seriously threatened by trampling, development, recreational activities, and inundation.

Tall Draba

Tall draba is a CNPS List 2.3 species. This perennial herb flowers between July and August. Tall draba occurs in mesic soils of Meadow and Seep habitat at elevations between 8,200 and 11,200 feet amsl. The known range includes Fresno, Inyo, Mono, and Tuolumne counties in California and Nevada, Oregon, Washington, and Wyoming.

Three-Ranked Humpmoss

Three-ranked humpmoss is a USFS Sensitive and NNHP G5S1 ranked species. This moss has no flowering period. This species occurs in mesic soil of Upper Montane Coniferous Forest, Subalpine Coniferous Forest, Meadow and Seep, and Bog and Fen habitats at elevations between 4,265 and 9,688 feet amsl. The known range includes Ophir Creek drainage and United States Forest Service Unit Tahoe Basin Management in Washoe County. Off-highway vehicles, off-trail hiking, intensive grazing, trampling, timber management, and altered hydrology are possible threats to three-ranked humpmoss.

Tiehm Milk-Vetch

Tiehm milk-vetch is a NNHP G4T2S1 ranked, BLM Sensitive, USFS Sensitive, and NNNPS Watch List species. This perennial herb flowers between June and August. This species is found on deep, clay soils on gentle slopes at elevations between 5,280 and 5,750 feet amsl. Known range of this species includes Humboldt and Washoe counties.

Tiehm's Rock Cress

Tiehm's rock cress is a CNPS List 1B.3 and USFS Sensitve species. This perennial herb flowers between July and August. Tiehm's rock cress occurs in granitic soil within Alpine Boulder and Rock Field habitat at

elevations between 9,745 and 12,960 feet amsl. Known range includes Mono County in California and Nevada. Threats to Tiehm's rock cress include limited distribution; it is known from approximately 10 occurrences near Tioga Crest.

Tioga Pass Sedge

Tioga Pass sedge is a CNPS 1B.3 and USFS Sensitive species. This perennial herb flowers between July and August. This species occurs in meadows and seeps, at elevations between 10,170 and 10,826 feet amsl. This species is known from four small occurrences in Mono County. Threats to Tioga Pass sedge include recreational activity and foot traffic.

Torrey's Blazing Star

Torrey's blazing star is a CNPS List 2.2 species. This perennial herb flowers between June and August. This species occurs in sandy or rocky, alkaline, usually volcanic soils of Mojavean Scrub, Great Basin Scrub, and Pinyon-Juniper Woodland habitats at elevations between 3,840 and 9,300 feet amsl. Known range includes Inyo and Mono counties in California and Idaho, Nevada, and Oregon. Vehicles, grazing, and trampling are some of the threats to Torrey's blazing star.

Upswept Moonwort

Upswept moonwort is a CNPS List 2.3 and USFS Sensitve species. Upswept moonwort is a perennial herb with sporangia appearing between July and August. This species occurs in mesic soils of Lower Montane Coniferous Forest and Meadow and Seep habitats at elevations between 4,920 and 7,495 feet amsl. Known range includes: Butte, El Dorado, Lassen, Mono, Modoc, Plumas, Shasta, Tehama, and Tulare counties in California and Idaho, Nevada, Oregon, Washington, and Wyoming. Possible threats to upswept moonwort include logging and foot traffic.

Utah Monkeyflower

Utah monkeyflower is a CNPS List 2.1 species. This perennial herb flowers in April. This species occurs within Meadow and Seep and Pinyon-Juniper Woodland habitats at elevations between 2,000 and 6,560 feet amsl. The known range includes Inyo and Mono counties in California and Nevada. Threats to Utah monkeyflower include dewatering of Mono Lake and limited distribution; it is known in California from fewer than five occurrences.

Washoe Pine

Washoe pine is a NNNPS Watch, NNHP G3QS1 ranked, BLM Sensitive, and State Harvest Regulated species. This evergreen tree has no flowering period. Washoe pine occurs on mountain slopes at elevations between 6,240 and 8,500 feet amsl. The known range includes Washoe County in Nevada. This species also occurs in California and Oregon.

Washoe Tall Rock Cress

Washoe tall rock cress is a USFS Sensitive, Northern Nevada Native Plant Society (NNNPS) Threatened, and Nevada Natural Heritage Program (NNPH) G4G5T1QS1 ranked species. This perennial herb flowers between June and July. This species occurs in dry, sandy, granitic or andesitic soils on mostly gentle slopes within Coniferous Forest habitat at elevations between 6,035 and 7,350 feet amsl. Known range of this species includes Carson City, Douglas, and Washoe counties in Nevada. Threats to Washoe tall rock cress include recreational disturbance, fire suppression and lack of forest succession, timber harvest, and hybridization with *Arabis holboellii*.

Wassuk Beardtongue

Wassuk beardtongue is a NNHP G2G3S2S3 ranked and USFS Sensitive species. This perennial herb flowers between May and September. Wassuk beardtongue occurs in open, rocky to gravelly soils on granitic slopes, areas of disturbance, roadsides, and drainage bottoms within Pinyon-Juniper Woodland, Sagebrush Scrub, and Upper-Mixed Scrub and Shadscale zone habitats at elevations between 4,200 and 6,850 feet amsl. The known range includes Douglas, Esmeralda, and Mineral counties in Nevada.

Webber Ivesia

Webber ivesia is a Federal Species of Concern, State Critically Endangered, NNNPS Threatened, USFS Sensitive, BLM Sensitive, and NNHP G2S1 ranked sensitive species. This perennial herb flowers between April and September. Webber ivesia occurs in clay and gravelly soils of bedrock substrate in sod on mid-elevation Benches and Flats habitat at elevations between 4,000 and 5,950 feet amsl. The known range includes California and Douglas and Washoe counties in Nevada. Threats to this species include road development and maintenance, residential development, fire suppression activities, trampling, competition from non-native plants, and off-highway vehicles.

Western Sedge

Western sedge is a CNPS List 2.3 species. This perennial rhizomatous herb flowers between June and August. This species occurs in open, wet places of Meadow and Seep and Lower Montane Coniferous Forest habitats at elevations between 5,395 and 10,285 feet amsl. Known range includes Los Angeles, Mono, Riverside, and San Bernardino counties in California and Arizona, Idaho, New Mexico, Nevada, Utah, and Wyoming. Limited distribution is a possible threat to western sedge; this species is known only from the San Bernardino, San Jacinto, and White mountains.

Western Single-spiked Sedge

Western single-spiked sedge is a CNPS List 2.2 species. This perennial, rhizomatous herb flowers between July and September. This species occurs on mesic, often carbonate, soils of Meadow and Seep, rocky areas of Subalpine Coniferous Forest, and Alpine Boulder and Rock Field habitats at elevations between 10,495 and 12,140 feet amsl. Known range includes Alpine, Inyo, Mono, and Tuolumne

counties in California and Idaho, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming. Grazing is a possible threat to western single-spiked sedge.

Western Valley Sedge

Western valley sedge is a CNPS List 2.3 species. This perennial, rhizomatous herb flowers between July and August. This species occurs on mesic soils of Meadow and Seep and Great Basin Scrub habitats at elevations between 5,000 and 9,200 feet amsl. The known range of this species includes Alpine, Mono, Lassen, and Modoc counties in California and Arizona, Idaho, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming.

Wheeler's Dune-Broom

Wheeler's dune-broom is a CNPS List 2.2 species. This perennial, rhizomatous herb flowers between April and September. This species occurs in sandy soils of desert dunes, Mojavean Desert Scrub, and Great Basin Scrub habitats at elevations between 2,785 and 6,230 feet amsl. Known range includes: Inyo, Mono, and Lassen counties in California and Nevada and Oregon. Wheeler's dune-broom is threatened by vehicles.

Whitebark Pine

Whitebark pine is a Candidate for Federal Listing and USFS Sensitive species. This subalpine tree species occurs in Subalpine Forest habitat at elevations between 7,000 to 12,000 feet above mean sea level (amsl). Threats to the whitebark pine include habitat loss and mortality from white pine blister rust, mountain pine beetle, catastrophic fire and fire suppression.

White Mountain Sky Pilot

White Mountain skypilot is a CNPS 1B.3 and USFS Sensitive species. This perennial herb flowers between June and August. This species occurs in Subalpine Coniferous Forest and Alpine Boulder and Rock Field habitats at elevations between 5,000 and 14,000 feet amsl. The known range includes Inyo, Mono, Siskiyou, and Trinity counties in California and Nevada.

White Pygmy-Poppy

White pygmy-poppy is a CNPS List 4.2 and a BLM Sensitive species. This annual herb flowers between March and June. This species occurs on gravelly, sandy, or granitic soils within Joshua Tree Woodland, Mojave Desert Scrub, and Pinyon-Juniper Woodland habitats at elevations between 600 and 4,800 feet amsl. The known range of the white pygmy-poppy includes Inyo, Kern, Los Angeles, and San Bernardino counties in California. This species is threatened by development, off-highway vehicles, grazing, mining, and competition from non-native plants.

Williams Combleaf

Williams combleaf is a Federal Species of Concern, State Critically Endangered, NNNPS Threatened, USFS Sensitive, and NNHP G2QS2 ranked sensitive species. This perennial herb flowers between March and July. This species occurs in open/barren, sandy to sandy-clay substrates of mud margins and bottoms of seasonal lakes, on granitic slopes, areas of disturbance, roadsides, and drainage bottoms within Pinyon-Juniper Woodland, Sagebrush Scrub, and Mountain Sagebrush habitats at elevations between 5,670 and 8,930 feet amsl. The known range includes Douglas, Lyon, Mineral, Nye, and Washoe counties in Nevada and California and Oregon. Trampling by livestock, off-highway vehicles, and water diversion and developments are threats to Williams combleaf.

Wildlife

Alkaline Sandhill Skipper

The alkaline sandhill skipper is a NNHP G5T3T4SNR ranked species. It is known to occur in agricultural habitats, urban-suburban areas, and the San Rafael Swell. Host plants include *Poa pratensis*, *Distichlis spicata*, and *Bouteloua gracilis*. Larvae construct their nests at the base of bunch grasses or below the surface of the ground. Flight periods are in late May and August or September.

American Badger

The American badger is a California Species of Special Concern. This carnivorous species ranges over most of the western U.S and upper midwestern U.S. and south into central Mexico. In California, the badger may occupy a variety of habitats, especially grasslands, savannas, montane meadows, sparse scrublands, and deserts. It prefers friable soils for burrowing and relatively open, uncultivated ground. Females give birth to two to five young anywhere from February to May, depending on altitude and latitude. Threats to this species include habitat loss to agriculture, housing, and other land conversions, and illegal hunting.

American Marten

The American marten is a Nevada state Fully Protected Species and NNHP G5S2S3 ranked species. The range of this species includes much of Canada from Newfoundland and Nova Scotia, west to Alaska, and south into parts of the Rocky Mountain range and California. American martens are long and slender with large eyes and ears like a cat. The body is light brown with a gray head. The legs and tail are dark brown or black. The claws are sharp and curved. American martens are residents of northern coniferous forests and mixed hardwood forests. They make their dens in hollow trees, crevices in rocks, or abandoned burrows. The main food source for this species includes small mammals such as squirrels and mice, but they will also feeds on insects, fruit, seeds, birds, and carrion. American martens breed in late March or early April. One to five young (called kits) are born. (Scott Sylva 2003).

Apache Silverspot Butterfly

The Apache silverspot butterfly is a NNHP G3T2S2 ranked species. It is found in mesic areas of Great Basin scrub where its larval host plant, *Viola nephrophylla,* and adult nectar source, *Cirsium* sp., both occur. Adults fly from July to mid-September.

Bald Eagle

Although the bald eagle remains a California state-listed Endangered species, California Fully Protected Species, USFS Sensitive, and a BLM Sensitive species, it was delisted by the U.S. Fish and Wildlife Service on August 8, 2007. Breeding populations are found mostly in Canada, Alaska, Pacific northwestern states

of the U.S., around the Great Lakes, the Rocky Mountains, and further south into Louisiana (Buehler 2000). This species typically breeds in forested areas adjacent to large bodies of water (usually within 1 mile). It nests primarily in large trees and platforms and rarely on cliff faces or the ground in treeless areas. Bald eagles roost communally in winter. Hunting, trapping, poisoning, and toxicity effects from DDT use caused significant impacts to the species over the last century. Organophosphorus and carbamate pesticides, heavy metals, and other environmental contaminants continue to pose threats to survival and reproduction (Buehler 2000).

Bank Swallow

The bank swallow is a California state-listed Threatened and BLM Sensitive species. This globally cosmopolitan passerine nests in colonies across much of North America. Unlike many other swallows, which nest on or inside man-made structures, the bank swallow mostly nests inside tunnels that it builds in steep sand or gravel banks or cliffs (river banks or quarries) near water. This species inhabits open and partly open situations, frequently near flowing water. Flood and erosion control projects in California have eliminated much of the historic habitat of this species (Garrison et al. 1987, Garrison 1999).

Black Tern

The black tern is a USFS Sensitive, BLM Sensitive, Nevada State Fully Protected, and NNHP G4S2S3B ranked species.. This species is a medium-sized tern, averaging 9 to 10 inches in size. Its breeding plumage is a solid black head and underparts with grey under wings and grey forking in the tail; while its winter plumage shows a white head and underparts with smoky smudges around the eyes and back of the neck (Audubon 2010). Black terns range from British Columbia east to New Brunswick and New York and south to central California. In Nevada summering populations occur near Carson City and Washoe counties. In winter they migrate south to the Pacific coast along southern Mexico down to Ecuador and east to the coasts of French Guyana (Audubon 2010). They can be found near freshwater marshes and lakes during summer and on sandy coasts during migration and winter. They nest in small groups or colonies in shallow water with floating nests made of marsh vegetation. Threats to the black tern include disturbance by recreational activities and pollution to wintering areas.

Burrowing Owl

The burrowing owl is a California Species of Special Concern and a BLM Sensitive species. It breeds in open plains from western Canada and the western United States, Mexico through Central America, and into South America to Argentina (Klute et al. 2003). This species inhabits dry, open, native or non-native grasslands, deserts, and other arid environments with low-growing and low-density vegetation (Ehrlich et al. 1988). It may occupy golf courses, cemeteries, road rights-of way, airstrips, abandoned buildings, irrigation ditches, and vacant lots with holes or cracks suitable for use as burrows (TLMA 2006). It occupies mammal burrows, such as badger, prairie dog, and ground squirrel, for subterranean shelter and nesting (Trulio 1997). When burrows are scarce, the burrowing owl may use man-made structures such as openings beneath cement or asphalt pavement, pipes, culverts, and nest boxes (TLMA 2006). One burrow is typically selected for use as the nest; however, satellite burrows are usually found in the

immediate vicinity of the nest burrow within the defended territory of the owl. Burrowing owls are active day and night, with peak times at dawn and dusk (Klute et al. 2003). Breeding typically occurs from March through August, with peak periods in May and July. Threats to burrowing owl populations include the loss of and destruction of habitat from agriculture and urban development, the destruction of burrows, and indirect poisoning via rodent eradication efforts (Klute et al. 2003).

California Floater

The California floater is a freshwater mussel that is a USFS Sensitve species. California floaters prefer standing water or backwater areas of flowing water in low elevations and can be found in lakes and lake-like streams. Their historical distribution may have occurred in the Pacific Drainage from British Columbia and into Mexico. Currently, their range includes California, Nevada, Utah, and Arizona. In 2003, empty shells were collected at the northwest edge of Woodruff Narrows Reservoir (Bear River drainage) in Uinta County, Wyoming. Threats to the species include pollution, diversion of rivers, elimination of natural fish hosts, and eutropification due to agricultural water systems and urbanization.

California Myotis

The California myotis is a Federal Species of Concern, BLM Sensitive, and NNHP G5S3B ranked species. The range of this species extends from the southeastern portion of Alaska and western half of British Columbia south through Idaho and Utah, along the western edge of Colorado, New Mexico, into central Mexico, west into Baja California, and throughout the Pacific states of California, Oregon, and Washington. The California myotis can be found in a variety of habitats from forest to desert conditions. This species is primarily found from seacoasts to deserts, at elevations up to about 5,500 feet amsl, in oak and juniper woodlands, canyons, riparian woodlands, desert scrub, and grasslands. Summer roosts include crevices in rocky hillsides, rocky outcrops, buildings, trees with exfoliating bark, and cavities in snags. California myotis feed on small insects including moths, beetles, and flies. Mating takes place during the fall, except in California, where it may occur during the spring.

California Spotted Owl

The California spotted owl is a USFS Sensitive Species, Nevada State Fully Protected Species, and a NNHP G3T3S1N ranked species. The California spotted owl is a Nevada State Fully Protected Species, USFS Sensitive, and NNHP G3T3S1N ranked species. This subspecies of spotted owl inhabits the Sierra Nevada and southern California mountain ranges from sea level to 7,000 feet in elevation. This species breeds and roosts in forests and woodlands with dense multiple canopy layers, large trees, and downed woody debris. In the Sierra Nevada, this species uses mixed-conifer forests. Small to medium-sized mammals, primarily rodents, are this owl's main foods. The primary threat to the California spotted owl is habitat loss and degradation from logging, mining, agriculture, water development, and urban development (Gutiérrez et al. 1995).

California Wolverine

The California wolverine is a California state-listed Threatened and a USFS Sensitve species. This species is found in the Sierra Nevada Mountains as well as in the North Coast mountains of the state. Most sightings of the California wolverine have been between 1,600 and 4,800 feet in altitude. Habitat for the species includes mixed conifer, red fir, and lodgepole habitats; and it may also use subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats. California wolverines prefer areas with low human disturbance; and although largely nocturnal, they may be active at any point in the day. The species frequently travels long distances, with an approximate yearly range of 140 miles (Johnson 1999a). With low population densities, the species is uncommonly found in California. Threats to the species include trapping, human disturbance, and grazing of the Sierra Nevada meadows.

Carson Valley Sandhill Skipper

The Carson Valley sandhill skipper is a NNHP G5T3T4S1 ranked species. This species occurs in alkali grasslands, moist meadows, lawns, salt marshes, sand dunes, sagebrush flats, and alpine fell-fields. Caterpillar host plants for this species include: Bermuda grass (*Cynodon dactylon*), bluegrass (*Poa pratensis*), desert salt grass (*Distichlis spicata* var. *stricta*), sand lovegrass (*Eragrostis trichodes*), rough bentgrass (*Agrostis scabra*), Idaho fescue (*Festuca idahoensis*), and alpine fescue (*Festuca brachyphylla*). This species has one flight from June to August at high elevations and several flights from March to October in the south and at low elevations.

Carson Valley Silverspot

The Carson Valley silverspot is under Federal review for listing, NNHP G3T1S1 ranked species, and a BLM Sensitive species. The silverspot inhabits agricultural seeps, isolated springs, and riparian meadows in northwestern Nevada and eastern California in elevations of 4,400 to 8,900 feet amsl. Threats to this species include habitat loss and degredation by livestock grazing and water diversion (Sanford 2010).

Carson Valley Wood Nymph

The Carson Valley wood nymph is under review for Federal listing but is currently a NNHP G5T2S2 ranked species and a BLM Sensitive species. This species occurs in California and Nevada. The Carson Valley wood nymph is found in meadow and seep and sagebrush-steppe habitats in Carson Valley at the base of the Carson Range in Nevada (Austin 1992). This species was recorded in Washoe County, Carson Valley, and Alpine County at the California border; but it may be extirpated from Washoe County (NatureServe 2010b). The host plant of this species is unknown, and adults fly from early July to early September (Austin 1992). Threats to the Carson Valley wood nymph include grazing and trampling of host plants, non-native plant competition, ground water pumping, residential development, and habitat fragmentation and degradation.

Carson Wandering Skipper

The Carson wandering skipper is a Federal-listed as Endangered and NNHP G3G4T1S1 ranked species. The adult flight season for this species occurs primarily from June to mid-July. In Nevada and California, the Carson wandering skipper is typically found on alkaline substrates in grassland habitats. Suitable habitat for this species has the following characteristics: located east of the Sierra Nevada at elevations less than 5,000 feet amsl and the presence of salt grass near open areas with springs or other water bodies with grass near nectar sources. Salt grass is the larval food plant for this species. The Carson wandering skipper is threatened by a variety of factors including habitat destruction, degradation, and fragmentation due to urban and residential development, wetland habitat modification, non-native plant invasion, agricultural practices such as excessive livestock grazing and trampling, water exportation projects, and naturally occurring stochastic events (USFWS 2010).

Common Loon

The common loon is a Nevada state Fully Protected Species, USFS Sensitive, and a NNHP G5S2S3B ranked species. The common loon is a thick-bodied loon ranging in size from 28 to 36 inches, with a thick, pointed bill that is black to dark-grey in color and held horizontally. Breeding plumage shows black head, neck, and back with white bands on neck and white spots on back. Winter plumage shows crown, hind neck, and upper parts that are dark-grayish with white throat and underparts (Audubon 2010). This species breeds across central and southern Canada and Alaska and winters south along the Pacific and Atlantic coasts, the Gulf Coast, and the Great Lakes and migrates across most of the continental United States. Northward migration occurs from April to May. Southward migration begins in August and lasts until September or until freezing temperatures occur (NatureServe 2010a). The common loon nests on forested lakes and rivers, preferring lakes with islands, and winters on coastal bays and oceans (Audubon 2010). Nests are built along the water’s edge and are composed of aquatic and terrestrial vegetation, moss, bare soil, sand, or rock and old muskrat dens (NatureServe 2010a). Threats to the common loon include habitat loss and degradation, disturbance at nesting sites by recreational activity, hunting, and environmental pollutants of nesting and wintering sites (NatureServe 2010a).

Cooper’s Hawk

The Cooper’s hawk is a USFS Sensitive species. This species occurs as a migrant and/or resident over most of the U.S. from southern Canada to northern Mexico. Favored habitats include open woodlands, mature forests, woodland edges, and river groves. More recently, Cooper's hawk has been known to breed in suburban and urban areas with tree structure similar to native habitats. Historic population losses resulted from the widespread use of DDT. Other threats include habitat loss and illegal hunting (Remsen 1978).

Cowhead Lake Tui Chub

The Cowhead Lake tui chub is a NNHP G4T1S1 ranked species. This species occurs in the Cowhead Slough and associated drainages in the historic Cowhead Lake, with potential occurrences in springs in the Cowhead Lake Basin (USFWS 1998).

Cui-ui

The cui-ui is a Federal and Nevada State-listed Endangered and a Nevada State Fully Protected species. It is also a NNHP G1S1 ranked species. This species occurs only in Pyramid Lake in western Nevada and may occupy the Truckee River during spawning season. It is a benthic fish, and most can be found at depths less than 75 feet. Threats to this species include physical barriers that inhibit spawning migrations and the lack of deep pools required by adults.

Desert Tortoise

The desert tortoise is a federal- and California state-listed Threatened and a BLM Sensitive species. Its range extends from central Nevada and extreme southwestern Utah south through southeastern California and southwestern Arizona into northern Mexico (Berry et al. 2002). In California, the historic range of this species includes northeastern Los Angeles, eastern Kern, eastern San Diego, and southeastern Inyo counties, as well as most of San Bernardino, Riverside, and Imperial counties. The desert tortoise inhabits river washes, rocky hillsides, slopes, and flat deserts with sandy or gravelly soils. Soil conditions must be friable for burrow and nest construction. Creosote bush, white bursage, saltbush, Joshua tree, Mojave yucca, and cacti are often present in the habitat along with other shrubs, grasses, and wildflowers. It is entirely herbivorous and forages on a variety of plants, including cactus species and annual vegetation. Desert tortoise populations are declining due to habitat destruction/loss, predation, illegal collecting, grazing, and off-highway vehicle use (Berry 1997).

Dune Honey Ant

The dune honey ant is a NNHP G2?S2? ranked species. It inhabits areas of fine, unstable sand in northwestern Nevada. According to the NNHP occurrence status (OCC) for this species, known or presumed to be present occurrences currently and historically are documented in Washoe County (Snelliing 1982).

Endemic Ant

The endemic ant is a NNHP G1?S1 ranked species. The Bibliographic Atlas of the Ant Species of the World (2008) documents that this species occurs in northwestern Nevada. According to the NNHP occurrence status (OCC) for this species, it is endemic to Washoe County and is known worldwide currently and historically to occur only in this county.

Ferruginous Hawk

The ferruginous hawk is a Nevada State Fully Protected Species, BLM Sensitive, USFS Sensitive, and a NNHP G4S3 ranked species. The range of this species extends from southern Canada to California and as far west as Nebraska, Kansas, and Oklahoma. This species occurs in arid prairie, open areas, sagebrush scrub, and desert-steppe with low growing vegetation. It winters in Baja California and Mexico. The ferruginous hawk primarily hunts small to medium-sized mammals but will also take birds, reptiles, and some insects. Ferruginous hawks nest on cliff ledges, rocky outcroppings, dirt piles, isolated trees, haystacks, and man-made structures like power poles, buildings, and windmills. This species will reuse nests year after year. The nesting period for this species typically occurs between April and June (Sibley 2001).

Flammulated Owl

The flammulated owl is a Nevada State Fully Protected, BLM Sensitive, USFS Sensitive, and NNHP G4 S4?B ranked species. The flammulated owl is one of the smallest North American owls. The range for this species within North America extends from British Columbia south to Mexico, Guatemala, and El Salvador. This species occupies open coniferous mountain forests, quite often mixed with oak or aspen. Habitats generally characterized by brushy undergrowth at elevations ranging from 1,200 to 3,000 feet amsl. Flammulated owls prey mainly on beetles, moths, grasshoppers, and crickets, but also on caterpillars, other insects, centipedes, and spiders. A tree cavity, usually one produced by a woodpecker, is used for a nest. They also accept nestboxes.

Fly Ranch Pyrg

The Fly Ranch pyrg is a NNHP G1S1 ranked and BLM Sensitive species. It is known to occur in the Great Basin in Nevada, but only in the Fly Ranch Hot Springs, which is the largest spring zone in northwest Nevada. This species is endemic to flowing thermal waters, and its isolation from other *Pyrgulopsis* species may be due to seclusion of spring habitats after the final recession of Lake Lahontan.

Fringed Myotis

The fringed myotis is is a USFS Sensitive and BLM Sensitive species. This species occurs over much of the western U.S. but has localized distributions. Its range extends throughout California except for the Central Valley and the Mojave and Colorado deserts. This species occupies a wide variety of habitats from sea level to over 9,000 feet amsl; but optimal habitats include pinyon-juniper, valley foothill hardwood, hardwood-conifer, and mature riparian areas. It roosts in mines, caves, buildings, and crevices and forages in open areas near water (California Dept. of Fish and Game, 2005b).

Golden Eagle

The golden eagle is a BLM Sensitive species. This species is found mostly in western North America, from Alaska south to central Mexico. Fewer are found in eastern Canada, as well as a few isolated pairs in the eastern U.S. The golden eagle prefers mountainous or hilly terrain, hunting over open country for small mammals, snakes, birds, or carrion. The golden eagle nests on cliff faces, walled canyons, or in tall trees. In central California, the golden eagle nests primarily in open grasslands and oak savannas. Direct or indirect human activities (e.g. collisions with vehicles, power lines, or other structures; electrocution, gunshot, and poisoning) have been estimated to cause up to 70 percent of recorded golden eagle deaths. Populations are also threatened by habitat degradation and nest disturbance (Kochert et al. 2002).

Greater Sage-Grouse

The greater sage-grouse is a federal Candidate for listing under the Federal Endangered Species Act, a California Species of Special Concern, USFS Sensitive, and BLM Sensitive species. The species is found in the western United States and the western provinces of Canada. Greater sage-grouse are usually found in sagebrush habitat at elevations ranging from 4,000 to 9,000 feet. Female greater sage-grouse build nests under the cover of sagebrush. The hen uses grass and forbs between patches of sagebrush for additional cover. Threats to the species include habitat fragmentation and habitat destruction, contributing to significant population decline.

Great Gray Owl

The great gray owl is a California state-listed Endangered species. The species is found from Alaska, across Canada, and into the northern Rocky Mountains and eastern Sierra Nevada. The species habitat in northern Canada and Alaska is generally comprised of taiga interspersed with open spaces. In the southern parts of its range, the great gray owl inhabits deciduous or coniferous forests adjacent to meadows and similar open spaces up to approximately 9,000 feet in elevation. Threats to this species include habitat and prey loss by clearcut timber harvesting and grazing (Bull and Duncan 1993).

Inyo Mountains Slender Salamander

The Inyo Mountains slender salamander is a California Species of Special Concern, USFS Sensitive, and BLM Sensitive species. This species is nocturnal, and its seasonal activity is from March/April to November, with some observations through January. This species is endemic to California and is confined to about 16 canyons and springs along a 40-km section of the Inyo Mountains in Inyo County. It inhabits very dry mountain ranges with elevations from 1,800 to 8,600 feet in the immediate vicinity of springs, seeps, and their associated riparian vegetation. Threats to this species include habitat loss due to mining, water diversion, and grazing activities.

Kern Plateau Salamander

The Kern Plateau salamander is a USFS Sensitive species. This species is endemic to California and occurs on the Kern Plateau of the southeastern Sierra Nevada in Kern County (elevations 5,580 to 9,200 feet amsl), on the eastern slopes of the Sierra Nevada draining into the Owens Valley and Indian Wells Valley in Inyo County (elevations 4,690 to 8,000 feet), and the Scodie Mountains in Kern County (elevations 6,500 to 6,640 feet). Suitable habitat includes moist habitats of pine and fir forest and pinyon pine, sagebrush, and oaks in drier habitats.

Lahontan Cutthroat Trout

The Lahontan cutthroat trout is a federal-listed as Threatened Species. Historically, this species occurred in alkaline lakes, mountain streams and tributaries, and rivers of the Lahontan Basin in northern Nevada, eastern California, and southern Oregon. Currently, Lahontan cutthroat trout are found in rivers in the Truckee, Carson, and Walker basins of northern Nevada (USFWS 2009). They require clear, cold water and are tolerant of high alkalinity and high total dissolved solid levels found in some lake environments. Lahontan cutthroat trout are obligate stream spawners and spawn in early spring, sometimes migrating to find suitable spawning sites. Competition with non-native species, habitat fragmentation and isolation, localized recreational harvest, degraded habitat, drought, and fire are threats to the Lahontan cutthroat trout (USFWS 2009).

Least Bell’s Vireo

The least Bell’s vireo is a federal- and California state-listed Endangered and BLM Sensitive subspecies of the Bell’s vireo. The breeding range of the species extends from North Dakota to Indiana, south through Arkansas and Texas, and west to southern New Mexico, Arizona, California, and northern Mexico; however, the least Bell's vireo subspecies is restricted to coastal California and Baja California, Mexico, and a few inland populations. Its winter range extends along the Pacific coast from northern Mexico south to northern Nicaragua. This species prefers to nest in low, dense, scrubby vegetation in early successional areas and is particularly dependent on corridors of habitat along rivers and streams. Habitats may include willow woodlands and dense mule fat, scrub oak, coastal chaparral, and mesquite patches with dense early successional understories. The two major factors in the decline of least Bell’s vireo populations are loss of habitat and nest parasitism by the brown headed-cowbird. Habitat loss and degradation, especially along streams and rivers due to development, agriculture, flood-control projects, logging operations, and intensive cattle grazing practices, are the greatest threats to the continued existence of the least Bell's vireo. Despite historic population losses, recent trends indicate that populations are on the rise and that the least Bell’s vireo is returning to parts of its former range as well as colonizing some new areas (Brown 1993, UFWS 1998).

Least Bittern

The least bittern is a California Species of Special Concern. This species breeds locally from southern Oregon south through Baja California and the Mexican coastline to South America. In the eastern U.S., it breeds in greater numbers from the U.S./Canada border into South America. It winters from the southern U.S. into South America. It inhabits freshwater and brackish marshes with dense, tall growths of aquatic or semi-aquatic vegetation interspersed with clumps of woody vegetation and open water. This species is also occasionally found in salt marshes (Udvardy 1977). Populations have declined from marsh drainage, human disturbance, and pesticides (Granholm 2005).

Le Conte's Thrasher

The Le Conte's thrasher is a California Species of Special Concern. It occurs in deserts of the southwest U.S., southwestern Utah, southern Arizona, and northwestern Mexico (Weigand and Fitton 2008). Le Conte's thrasher is a medium-sized songbird with a long, dark tail; black, decurved bill; and a plain, grayish or sandy-colored body. Habitat includes open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; and Joshua tree habitat with scattered shrubs. In some parts of its range, this thrasher has lost extensive habitat to development; irrigated lawns, groves, and fields have been created over valuable xeric habitat. Development, wild burros, off-road vehicle recreation, and invasive plant species threaten this species (Weigand and Fitton 2008).

Little Brown Myotis

The little brown myotis is a BLM Sensitive and NNHP G5S1S2 ranked species. This bat is abundant throughout forested areas of the U.S. as far north as Alaska. The range of this species extends from Alaska to Labrador and Newfoundland in Canada, south to southern California, northern Arizona, and northern New Mexico. In the west it is found mainly in mountainous and riparian areas in a wide variety of forest habitats; from tree-lined xeric-scrub to aspen meadows and Pacific Northwest coniferous rain forests. This species is especially associated with humans, often forming nursery colonies containing hundreds, sometimes thousands, of individuals in buildings, attics, and other man-made structures. Little brown myotis typically forage over water. Their diet consists mainly of aquatic insects including: midges, mosquitoes, mayflies, and caddisflies. They also feed over forest trails, cliff faces, meadows, and farmland, where they consume a wide variety of insects, from moths and beetles to crane flies.

Loggerhead Shrike

The loggerhead shrike (nesting) is a California Species of Concern. Its range includes most of the U.S. from southern Canada to southern Mexico. The U.S. population is largely resident to the south and migratory to the north, but migrants and residents frequently overlap throughout its range. Habitats may include oak savannas, open chaparral, desert washes, juniper woodlands, Joshua tree woodlands, and other semi-open areas. It can occupy a variety of semi-open habitats with scattered trees, large shrubs, utility poles, and other structures that serve as lookout posts for potential prey. It is a

carnivorous species that preys primarily upon insects, but also takes lizards, mice, birds, carrion and other opportunistic items. The loggerhead shrike has a habit of caching its food for later consumption by impaling its prey on thorns, sharp twigs, or barbed wire; hence the term "butcher bird". It is recognized by its black facial mask, overall gray, black, and white color pattern, relatively big head, and hook-tipped bill not unlike that of a small raptor. Habitat loss and pesticides are the two dominant factors in the decline of this species (Ehrlich et al. 1988, Scott 1990).

Long-Eared Myotis

The long-eared myotis is a BLM Sensitive species. It is found across much of western North America, from British Colombia to southern California and New Mexico. This species is found predominantly in coniferous forests, typically in higher elevations in southern areas (7,000 to 9,600 feet), but is also known to occur at sea level. This species often roosts in tree cavities and beneath exfoliating bark in both living trees as well as in dead snags. It is one of only two western bats to also roost at ground level in fallen trees, tree stumps, and rock crevices.

Long-Eared owl

The long-eared owl (nesting) is a California Species of Special Concern. This species breeds from western Canada to the Maritime Provinces, southward to Baja California, southern Arizona and New Mexico, and the Great Lakes region. It also breeds widely across Eurasia from the United Kingdom to Manchuria and Japan. It migrates out of the northernmost portions of its North American breeding range and winters elsewhere within its breeding range and occasionally elsewhere in United States, southward to Mexico and the Middle Atlantic states (Marks et al. 1994). The long-eared owl frequents dense, riparian groves consisting of willow and cottonwood trees and live oak thickets near meadow edges and nearby woodland and forest habitats. It is also found in dense conifer stands at higher elevations. The biggest threat to this species is destruction of lowland riparian woodland. Other factors for its decline may include collisions with high-speed cars and vandalism of nests by humans (Shuford and Gardali 2008).

Mojave Fringe-Toed Lizard

The Mojave fringe-toed lizard is a California Species of Concern and a BLM Sensitive Species. With the exception of a small area along the Colorado River in Arizona, its range is entirely within California. It extends from extreme southern Inyo County through most of San Bernardino County, just into the northeast corner of Los Angeles County, then southward and eastward through the eastern half of Riverside County to the vicinity of Blythe (Jennings et al. 1994). This species is a habitat specialist found in habitats with windblown (aeolian) sand. Its primary habitat is sparse creosote bush scrub, but it may be found in other desert habitats with suitable sand deposits and low vegetative cover. Aeolian sand where this species occurs has a grain size typically no coarser than 0.375 mm in diameter (averages 0.205 mm in diameter). The Mojave fringe-toed lizard is a moderate-sized (69.0-112.0 mm SVL), pale-colored lizard with a dorsal reticulum of black-bordered spots with red centers (ocelli). Ocelli are irregularly arranged over the back. The undersurface is whitish except for a crescent-shaped dark

marking on the throat, dark bars on the tail, and a single, prominent dark spot on each side of the belly. During the breeding season, a yellow-green ventral wash develops that becomes pink on the side of the body. The iris is black. The primary threats to this species include loss of habitat to development, agriculture, sand mining, and off-road vehicle use.

Mohave Ground Squirrel

The Mohave ground squirrel is a California state-listed Threatened species. The Mohave ground squirrel is endemic to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo counties (Johnson 1990). The species range is from Palmdale in the southwest to Lucerne Valley in the southeast, from Olancha in the northwest to Avawatz Mountains in the northeast (Laabs 1989). Mohave ground squirrels inhabit open desert scrub, alkali desert scrub, and Joshua tree communities with sandy to gravelly soils. They will also feed in annual grasslands (Johnson 1990). Mohave ground squirrels feed on green vegetation, seeds, and fruits. A study showed that most of their diet includes seeds from winter fat (*Krascheninnikovia lanata*), spiny hopsage (*Grayia spinosa*), and saltbush (*Atriplex* sp.) (Laabs 1989). Mohave ground squirrels are active in spring and early summer (March to June) and take cover in burrows under large shrubs. Threats to this species include loss of habitat due to urbanization and agriculture and off-road vehicle use (Johnson 1990).

Mohave Tui Chub

The Mohave tui chub is a federal- and state-listed Endangered and BLM Sensitive species. The Mohave tui chub is the only fish endemic to the Mojave River basin and is adapted to alkaline, mineralized waters. The only surviving natural population of the Mohave tui chub occurs in Soda Spring near Zzyzx, California, but populations have been introduced to other areas within and outside of its known historic range. It requires deep pools, ponds, or slough-like areas as well as vegetation for spawning. Hybridization with introduced arroyo chubs (*Gila orcutti*) during the 1930s has virtually eliminated all pure strains of Mohave tui chub (Lovich). Current threats to the population include predation and competition from exotic fish species, loss of habitat due to exotic vegetation, and reduction in water quality.

Mono Basin Mountain Beaver

The Mono Basin mountain beaver is a California Species of Special Concern. This species typically occurs in the Sierra Nevada, Cascade, and Klamath mountains. The primary food source for this species includes thimbleberry, salmonberry, blackberry, dogwood, ferns, lupines, willows, and grasses. This species is found in dense riparian-deciduous and open, brushy stages of forests and dense thickets near streams or other water bodies. The species is sedentary and non-migratory, with a relatively small home range of 4,400 to 21,800 square feet and with most activity occurring within 80 feet of the nest. Mountain beavers breed from December through March (peak in February). The young are born February to June (peak March through May).

Mono Checkerspot Butterfly

The Mono checkerspot butterfly is a Federal Species of Concern, BLM Sensitive, and NNHP G5T2T3S1 ranked sensitive species. The range of this species includes California to Schneider Meadow in Carson City, Washoe Valley in Washoe County, Pine Nut Mountains of Douglas County, and Sweetwater Mountains in Lyon County in Nevada. It is found in pinyon-juniper woodland, meadows, and mountain slope habitats. The host plant of adults and larvae may be small-flowered collinsia (*Collinsia parvifloria*). Threats to this species include disturbance from recreational activity and limited range (NatureServe 2009).

Mountain Quail

The mountain quail is a Nevada State Fully Protected Species, USFS Sensitive, BLM Sensitive, and NNHP G5S3 ranked species. This ground-dwelling bird is found in dense cover with scattered open areas on slopes in foothills and mountains. It uses the dense thickets resulting from fires or clear cuts and is seldom found far from this cover. The diet of this species varies with the season but consists primarily of seeds, bulbs, leaves, berries, and some insects. Insect and other animal matter are a minor source of food, comprising less than 5 percent of the diet overall. Mountain quail nest on the ground in dense cover, usually sheltered by a shrub, log, or clumps of grass. Like other quail, its nests are shallow depressions lined with grass, needles, leaves, and feathers. Threats to this species include habitat loss or degradation due to grazing and urban development (Gutiérrez and Delehanty 1999).

Mountain Yellow-Legged Frog

The mountain yellow-legged frog populations north of the Tehachapi Mountains are Federal-listed Endangered and Candidate for listing, USFS Sensitive, and a NNHP G2G3SH ranked species. The mountain yellow-legged frog is relatively small in size, ranging from 2 to 3 inches in length. This species is typically found on gently sloping banks with rocks and/or vegetation up to the edge of the water (Stebbins 1985) and is almost always found within several meters of water, including streams, ponds, lakes, reservoirs, and riparian woodlands at moderate to high elevations (Mullally and Cunningham 1956b). Microhabitats include gently sloping shorelines of riverbanks, meadow pools, stream edges, isolated pools, and lake borders in the Sierra Nevada range and rocky stream courses of southern California. In Nevada, this species is most abundant in high-elevation lakes and slow-moving portions of streams. Although seldom found away from water, it may cross upland areas between summer and winter habitats (Matthews and Pope 1999). Its edgewater microhabitats are important for breeding activities, including mating, egg deposition, and the growth and metamorphosis of larvae and postmetamorphs; tadpoles may require up to two years to complete aquatic development. Additionally, if predatory fish occur in deeper pools, this kind of shoreline configuration may provide a refuge from predation. Steep population declines have been attributed to many factors, including habitat loss, pollution, cattle grazing, ozone depletion, mining activities and tailings pollution, off-road vehicle disturbance, public dumping, chytrid fungus outbreaks, fires, excessive flooding, and non-native species

predation. Predators include non-native bullfrogs, turtles, trout, and other fish; it seems to be most successful where predatory fish are absent (Bradford 1989, Bradford et al. 1993, in press).

Mount Lyell Salamander

The Mount Lyell salamander is a California Species of Special Concern. Endemic to California, this species has a fairly continuous range from the Sonoran Pass to the Franklin Pass area along the Sierra Nevada crest (Calherps 2010). Isolated populations have been found in Sierra, El Dorado, and Placer counties. This species is associated with open granitic talus fields downslope from snowfields, within caves, boulders, rocky fissures and stream margins, and seepages from snow melt at elevations between 4,000 and 12,000 feet amsl. Mount Lyell salamanders are nocturnally active, with activity occurring on the ground surface between late-April to early-September and moving below ground during winter.

Mount Lyell Shrew

The Mount Lyell shrew is a California Species of Special Concern and is found in the narrow region in the vicinity of Mount Lyell within or near Yosemite National Park. Habitat for the species includes moist areas in grass near streams or under willows.

Mule Deer

Mule and black-tail deer (collectively known as mule deer) occur throughout western North America from coastal islands of Alaska, along the Pacific Coast of California to Baja Mexico, and from the extreme northern portion of Mexico's Zacatecas state northward through the Great Plains into the Canadian provinces of Saskatchewan, Alberta, British Columbia, and the southern Yukon Territory (CDFG, 2004). Due to their broad distribution, this species occurs in a wide variety of habitats including coastal rainforests, mountains, prairie grasslands, river valleys, and deserts. Among many possible reasons for mule deer population declines are: habitat loss to development, droughts, severe winters, competition with other ungulates, predation, disease, poaching, and increased hunting mortality (CDFG 2004).

Nelson's Bighorn Sheep

Nelson's bighorn sheep, also known as desert bighorn sheep, is a USFS Sensitive species and a BLM Sensitive species. They range throughout the southwest, including southern Nevada, southeast California, Arizona, Colorado, New Mexico, Utah, Texas, and Mexico (NDOW 2010b). Habitat for Nelson's bighorn sheep includes rocky, steep, and broken-up canyons and washes; in the summer they require access to freestanding water at elevations between 3,000 and 10,065 feet amsl. Breeding, or rutting, season runs from July through September, with females giving birth to one lamb approximately six months later. Excessive hunting, competition and disease from domestic livestock, habitat change, and usurpation of water has resulted in dramatic population decline. While populations appear to be increasing, this species may still be threatened by these same problems.

Nevada Viceroy

The Nevada viceroy is a NNHP G5T1T2S1S2 ranked species. It can be found in valley lakes and rivers, wetlands, and occasionally in mountain canyons. Host plants for this species are *Salix amygdaloides, S.exigua, S. fragilis, Populus angustifoila,* and *P. tremuloides* (Raising Butterflies.org 2010).

North American River Otter

The North American river otter is a Nevada State Fully Protected Species, NNHP G5S2 ranked species, USFS Sensitive, and a BLM Sensitive Species. This species can live in a wide range of habitats, anywhere with sufficient food and suitable den sites, but most commonly occurs in fresh, brackish, or marine water environments. Its current range includes Florida to the Gulf of Mexico, north to Alaska, and from eastern Newfoundland throughout Canada to the Aleutian Islands (Smithsonian 2010). North American river otters are primarily nocturnal but are active in the early morning and late afternoon. Threats to this species include harvesting for fur, coastal development resulting in habitat loss, and pollution.

Northern Goshawk

The northern goshawk is a California Species of Special Concern, USFS Sensitve, and BLM Sensitive species. The northern goshawk is found across North America and Eurasia. It can occur in habitats at elevations from sea level to alpine and feeds on large birds, squirrels, rabbits, and hares. This species nests in most forest types found throughout its geographic range. In the southwestern United States, the northern goshawk typically nests in pine and aspen trees. The breeding season for this species typically occurs from April through August. Threats to this species include timber practices, disturbance from human activities near nests during the incubation and nestling periods, fire suppression and insect and tree disease outbreaks, and predation on adults and nestlings by great horned owl (The National Audobon Society 2010).

Northern Harrier

The northern harrier is a California Species of Special Concern. This species includes almost all of North America within its range and extends into South America. True to its nickname, the “marsh hawk,” habitats include wetlands, marshy meadows, boglands, pasturelands, wet grasslands, old fields, tundra, open riparian woodlands, and freshwater and brackish marshes. It also occurs on dry uplands, including upland prairies, mesic grasslands, drained marshlands, croplands, and cold desert shrub-steppe, especially where these occur next to water bodies. Population declines are attributed to widespread habitat loss and chemical poisoning (MacWhirter and Bildstein 1996).

Northern Leopard Frog

The northern leopard frog is a California Species of Special Concern. It is native to northern California, but it has also been introduced in California (and throughout the west) in the past 100 years. Historical

populations in California existed in scattered locations below 6,500 feet in the far northeastern part of the state, in Siskiyou and Modoc counties, in the northern Owens Valley, and possibly near Lake Tahoe. Habitats in addition to streambanks may include hay fields and grassy woodlands as long as there is sufficient vegetative cover for concealment. Threats to the continued existence of the northern leopard frog, especially in the Modoc and Owens Valley regions, include agriculture and grazing and introduced predators such as bullfrogs, crayfish, and exotic fishes (CaliforniaHerps 2010h).

Northern Sagebrush Lizard

The northern sagebrush lizard is a BLM Sensitive species. It is found in the Great Basin desert east of the Sierra Nevada, in the northeast corner of California. The species also has a range across much of the western United States. Habitat includes sagebrush and other shrublands. The northern sagebrush lizard is diurnal and has a diet of small invertebrates.

Northern Sierra Endemic Ant

The northern Sierra endemic ant is a NNHP G2?S1 ranked species. This species is a ground nesting species, that constructs small crater nests in the soil, and are generalist foragers (Hedlund 2006). Species in the *Formica* genus are most commonly found in montane habitats but can occur in drier lower elevations (Enyclopedia of Life 2010).

Oasis Juga

The oasis juga is a NNHP GUS1 ranked species. This genus of freshwater snail grazes on rock surfaces and deciduous leaf litter for periphyton, with seasonal migrations both upstream and downstream (Frest et al 1995).

Owens Pupfish

The Owens pupfish is a federal-listed Endangered, California state-listed Endangered, and BLM Sensitive species. The Owens pupfish historically occupied the Owens River system from Lone Pine to Fish Slough, California. Its range is now restricted to Warm Springs, near Lone Pine, and a few springs near Fish Slough. Historically it occupied a variety of clear and warm shallow water habitats including spring pools, sloughs, irrigation ditches, marshes, and flooded pastures along the Owens River (Moyle 1976). The species is now found in large, clear pools with shallow areas, as well as holes up to six feet deep (Moyle 1976). Habitat degradation and loss due to water diversion activities by the City of Los Angeles and predation and competition by non-native species have impacted this species.

Owens Speckled Dace

The Owens speckled dace is a California Species of Special Concern and BLM Sensitive subspecies that is found at only a few sites in the Owens River drainage. Non-native species have contributed to its decline through competition for food and habitat.

Owens Sucker

The Owens sucker is a California Species of Special Concern. Owens suckers are native to the Owens River watershed but have been introduced into the Mono Lake Basin and Santa Clara River Basin. They are primarily found in long stretches of soft-bottomed runs in cool-water streams. They likely spawn from late May through early July, probably in gravel substrate, like other suckers. Their populations appear to be relatively stable despite water diversion activities by the City of Los Angeles (Moyle 1976).

Owens Tui Chub

The Owens tui chub is a federal- and state-listed as Endangered and a BLM Sensitive species. This species is found in the Owens River watershed, in habitats with low current, muddy bottoms, and dense aquatic vegetation that provides adequate cover and food supply. Important components of the habitat include high quality, cool water with adequate cover in the form of rocks, undercut banks, or aquatic vegetation and a sufficient insect food base. Habitat degradation and loss due to water diversion activities and predation and competition by non-native species have impacted this species.

Owens Valley Springsnail

The Owens Valley springsnail is a USFS Sensitve species. Its shell is near-globose to ovate-conic, small to medium sized, squat, and umbilicate. Its coloration is light to moderate grey with cephalic tentacles brown-black. This species can be found in the Owens River drainage in Owens Valley, Mono County. It can be found in small springs and spring runs, typically in water cress (in California and Nevada). (Hershler 1994; Frest 1999; Furnish et al.1997).

Owens Valley Vole

The Owens Valley vole is a California Species of Special Concern and BLM Sensitive species. The species is nocturnal and short-tailed. Owens Valley vole habitat includes groundwater-dependent meadows in the Owens Valley floor. The species is threatened by habitat degradation due to groundwater pumping and grazing.

Owens Valley Web-Toed Salamander (AKA Oak Creek Salamander)

The Owens Valley web-toed salamander is a California Species of Special Concern. The species is nocturnal and cold tolerant, with surface activity occurring from late April to early September. Habitat is

generally downslope of snowfields and may include caves, granite boulders, rock fissures, rocky stream edges, and seepages.

Pacific Fisher

The Pacific fisher is a Candidate for listing under the Federal Endangered Species Act, a California Species of Special Concern, USFS Sensitive, and BLM Sensitive species. This species is found in the Sierra Nevada range and into northern California. Its breeding season lasts from late February to mid-April. The Pacific fisher has specific resting and denning habitat requirements, including moderate canopy cover and conditions associated with late-successional forests. The species home range can be anywhere between 1,200 and 6,800 acres, with males having a larger home range. Ongoing habitat loss, low reproductive capacity, and the isolation of the population are all threats to the species.

Pallid Bat

The pallid bat is listed as a California Species of Special Concern, USFS Sensitive, and BLM Sensitive species. Its range extends from southern British Columbia along the Pacific coast south to central Mexico and east to central Kansas and Oklahoma. It occurs in a variety of habitats, including arid desert scrub, oak woodlands, juniper woodlands, grasslands, coniferous forests, and water-associated habitats. It may be more common throughout its range where rocky outcrops provide roost sites. Population dynamics are not fully understood, but one contributing factor in the decline of this species includes roost disturbance; it is highly susceptible to disturbance and may vacate a roost for years afterwards. Other factors include the razing of abandoned buildings, mining operations, pesticide-induced poisoning, and loss of foraging habitats.

Panamint Alligator Lizard

The Panamint alligator lizard is a California Species of Special Concern and a USFS Sensitve species. This species is endemic to California and can be found in Inyo and Mono counties in desert mountain ranges at elevations from 2,500 to 7,513 feet. They inhabit riparian areas in the desert, rocky canyon bottoms near water, areas with creosote bush and sagebrush, and the lower edge of pinyon-juniper vegetation. Threats to this species include habitat loss and degradation due to mining, grazing, and off-road vehicle use.

Peavine Blue Butterfly

The peavine blue butterfly is a NNHP G5T1S1 ranked species. The range of the Pacific blue butterfly species (*Euphilotes enoptes*) occurs throughout the western United States, from Washington south through Pacific coast states to northern Baja California. The range of the Peavine blue subspecies (*E. e. aridorum*) occurs in northwestern Nevada. Larval host plants include various *Eriogonum* species. Adults retain territories around their host plants. Threats to this subspecies may include invasion of exotic

cheatgrass and the eventual fires that often result from such invasion (Butterflies and Moths of North America 2010).

Peregrine Falcon

The peregrine falcon is a Nevada Fully Protected Species, BLM Sensitive, and NNHP G4S2 ranked sensitive species. Peregrine falcons occur on every continent except Antarctica. Their North American range is from western Alaska south into Mexico, including tropical, desert, aquatic, and tundra habitats from sea level to 12,000ft feet amsl. This species breeds in North America and overwinters as far south as South America. This species nests on open cliff ledges or shallow caves; they do not build nests but instead make scrapes, shallow bowls in the ledge substrate, or use unused nests built by other birds (Luensmann 2010). Peregrine falcons lay between 3 to 4 eggs, which are incubated for 34 days. Young falcons fledge five to six weeks after hatching (Peregrine Fund 2010). Its populations were threatened with extinction in North America from the use of DDT between the 1950s and 1970s, but peregrine falcons have made a good comeback after reintroduction by the US Fish and Wildlife Service (Kaufman 2000). Current threats to the peregrine falcon include destruction of wetlands, poaching, removal of eggs or nestlings from nests, disturbance from recreational activities, and construction of roads or other man-made structures (Luensmann 2010).

Prairie Falcon

The prairie falcon was formally a California Species of Concern. It is a year-round resident of the American West, with additional breeding grounds in southern Canada and additional wintering grounds in eastern Texas and Mexico. This species prefers open grasslands, shrub-steppe desert, and mixed shrub grasslands at all elevations up to 3,350 m; it usually requires cliffs or rock outcroppings for nest sites. It is a large falcon with a brown back, and a white chest with brownish bars and spots. Its head has white and brown markings, including a dark mustache mark and ear patch. Although the prairie falcon was not as affected by DDT poisoning as other species, pesticide residues, the robbing of eyries by falconers, shooting, and human activity near nest sites have all negatively affected prairie falcon populations, resulting in a very isolated and vulnerable population within California (Steenhof 1998).

Preble's Shrew

The Preble’s shrew is a BLM Sensitive and NNHP G4S1S2 ranked species. It is known in isolated localities in the northwestern United States and north of New Mexico. This species occurs in arid or semiarid shrub and grass-associated habitats, coniferous forest openings with sagebrush, stream banks, marshes, and wet meadows.

Pygmy Rabbit

The pygmy rabbit is a California Species of Special Concern, USFS Sensitive, and BLM Sensitive species. It is found throughout most of the Great Basin area and in some areas of the western United States,

including eastern California and northern Nevada. Habitat for this species consists primarily of sagebrush, with secondary habitat in communities dominated by rabbitbrush. Pygmy rabbits dig their burrows in deep, loose soil. Their main food source is sagebrush, but their diet also can include grass or other foliage. Threats to this species include habitat loss and fragmentation caused by conversion of sagebrush rangeland to agriculture, development, and wildfire frequency in some areas (USFWS 2010). Suitable sagebrush and rabbitbrush scrub was found within the Proposed Project route, and an occurrence of the pygmy rabbit within 1 mile of the Proposed Project route has been recorded. The pygmy rabbit has a high potential to occur within the Proposed Project route in Mono County.

Pyramid Lake Pebblesnail

The Pyramid Lake pebblesnail is a NNHP G1SNR ranked species. This species is endemic to Pyramid Lake and has been known to occur in a spring just west of Thunderbolt Bay in Washoe County (Hershler et al. 2007).

Sheldon Tui Chub

The Sheldon tui chub is a Federal Species of Concern, Nevada State Fully Protected, and NNHP G4T1S1 ranked species. It is known to occur in Fish Creek in Washoe County and has isolated populations in the arid Guano Basin of southeastern Oregon and northwestern Nevada. Suitable habitat is characterized by small, turbid desert streams with abundant aquatic and riparian vegetation. During drought periods, this species can be found in isolated pools within alternating streams. Threats to this species may include loss of habitat due to grazing and water diversion (Quigley et al. 1997).

Sierra Alligator Lizard

The Sierra alligator lizard is a Nevada State Fully Protected, BLM Sensitive, and NNHP G5T3T4S2S3 ranked Species. Sierra alligator lizards range from the Sierra Nevada Mountains as far south as the Paiute Mountains and Breckenridge Mountain; isolated populations occur in northwestern Nevada. This species can be found at elevations from sea level to 10,500 feet amsl under surface cover like rocks, bark, logs, and boards but may also be seen in open clearings of grassland, coniferous forest, and woodland habitats (Calherps 2010). Active during the day, this species is inactive during cold weather in winter. Limited distribution in Nevada is a threat to this species.

Sierra Nevada Bighorn Sheep

The Sierra Nevada bighorn sheep is a federal- and state-listed Endangered and BLM Sensitive species. This species occurs on the eastern slopes of the Sierra Nevada mountain range from alpine habitat to Great Basin Scrub habitat. Sierra Nevada bighorn sheep require open, rocky, and precipitous slopes at elevations of 14,000 feet in summer to detect and evade predators and varying lower elevations dependent upon winter storm severity. This species occurs in five distinct geographic areas in California: Lee Vining Canyon, Mono County (reintroduced); Wheeler Ridge, Inyo County (reintroduced); Mount

Baxter, Inyo County (native); Mount Williamson, Inyo County (native); and Mount Langely, Inyo County (reintroduced). Causes of decline in this species are uncertain but may include changes of habitat use, predation, accidental death, and severe winters.

Sierra Nevada Red Fox

The Sierra Nevada red fox is a California state-listed as Threatened and Forest Service Sensitive species found in conifer forests and the alpine landscape of the Sierra Nevada and Cascade ranges at elevations between 4,000 and 12,000 feet. Habitat for the species includes red fir and lodgepole pine forests, with hunting occurring in forest openings, meadows, and barren rocky areas. While hunting was a threat in the past, current threats include declines in prey populations and disturbances from logging and recreational activities.

Sierra Nevada Yellow-Legged Frog

The Sierra Nevada yellow-legged frog is a federal Candidate for listing and a California Species of Special Concern. The species is found in lakes, ponds, streams, and isolated pools at high elevations in the Sierra Nevada Mountains. The habitat extends from Inyo County at the south to Washoe County in Nevada at the north. Factors that impact the species include the introduction of non-native trout, airborne pollution, and climate change.

Silvery Legless Lizard

The silvery legless lizard is a California Species of Special Concern. Its range extends from the San Francisco Bay in California to northwestern Baja California, Mexico, and it can also be found on a few offshore islands of California. This species is found in chaparral, pine-oak woodlands, riparian woodlands, and also on beaches from sea level to around 5,100 feet amsl. It occurs less commonly in desert scrub. Within these habitats, it prefers loose soils or sand for burrowing, moisture, warmth, and plant cover (Stebbins 2003). The primary threats to the continued existence of this species include habitat loss due to agriculture and urban sprawl, overabundant non-native vegetation (i.e. iceplant on sand dunes), sand mining operations, off-road vehicle use, and other anthropogenic disturbances, including trampling and over-collecting for the pet trade.

Smooth Juga

The smooth juga is a NNHP G1S1 ranked species. This genus of freshwater snail grazes on rock surfaces and deciduous leaf litter for periphyton, with seasonal migrations both upstream and downstream (Frest et al 1995).

Southwestern Willow Flycatcher

The southwestern willow flycatcher is a federal-listed Endangered and BLM Sensitive subspecies of willow flycatcher. Its summer breeding range includes southern California (from the Santa Ynez River south), Arizona, New Mexico, extreme southern portions of Nevada and Utah, extreme southwest Colorado, and western Texas (USFWS 1995). Records of probable breeding southwestern willow flycatchers in Mexico are rare and restricted to extreme northern Baja California del Norte and Sonora (USGS 2007). The largest California populations occur along the Santa Margarita, San Luis Rey, and South Fork Kern river systems. Southwestern willow flycatcher is known to breed in a variety of riparian habitats with multi-tiered canopies and surface water and/or saturated soils, whether along streams in broad valleys, in canyon bottoms, around mountain-side seepages, or at the margins of ponds and lakes (Grinnell and Miller 1944). Where willow species dominate, high foliage-volume willow cover is preferred but with willow clumps separated by openings (Harris et al. 1988). Habitat types may include a variety of willows, cottonwood (*Populus* spp.), coast live oak (*Quercus agrifolia*), alder, and tamarisk woodlands. This species is in decline primarily due to extensive habitat loss and brood parasitism by the brown-headed cowbird (*Molothrus ater*).

Spotted Bat

The spotted bat is a California Species of Special Concern, USFS Sensitive, and BLM Sensitive species. The range of this species includes the western U.S. from central Idaho south into Mexico, west to the Pacific Ocean, and east to western Wyoming, Colorado, and New Mexico. Habitats for this species include arid deserts, grasslands, and mixed conifer forests. The spotted bat prefers to roost in rock crevices but will also use caves and buildings. This solitary species mates in autumn, birth occurs before mid-June, and lactation continues until August. This species is vulnerable to roost disturbances and habitat loss. The naturally widespread and low population densities, when combined with the poorly understood nature of this species as a whole, further highlight the importance of minimizing threats to the spotted bat.

Summer Tanager

The summer tanager is a California Species of Special Concern. This species breeds in the southern U.S. from southwest California to the Atlantic coast as far north as New Jersey and throughout the southeast U.S. It winters from central Mexico to Brazil. It is an uncommon summer resident in riparian habitat along the lower Colorado River and in riparian areas of southern California deserts and semi-arid lands. It is also a rare migrant in Los Angeles County, and some occurrences exist in northern California as well. In California, it breeds in riparian habitat dominated by tall willows and mature cottonwoods. In the rest of its breeding range, it is more associated with oaks. This species arrives in California in April to breed and leaves in September. The breeding season takes place from May to August, with a clutch size of three to five eggs. Nests are built 10 to 40 feet above the ground on branches of willows, cottonwoods, or other riparian trees. Local population declines for this species are primarily due to the loss and fragmentation of mature willow and cottonwood stands, especially along the Colorado River. Another contributing factor to decline includes brood parasitism by the brown-headed cowbird.

Swainson's Hawk

The Swainson's hawk is a California state-listed Threatened, USFS Sensitve, and BLM Sensitive species. This species breeds locally from southwest Canada through the western U.S. to northern Mexico, with isolated populations in northern Illinois and the Sacramento and San Joaquin valleys of California. It winters to South America. Swainson's hawk forages in open stands of grass-dominated vegetation, sparse shrublands, and small open woodlands. It typically nests in scattered trees within these grassland, shrubland, or agricultural landscapes. Swainson's hawk feeds largely on insects, and thus is affected by pesticide use, particularly DDT and organophosphate pesticides currently used in South America (England et al. 1997).

Tahoe Benthic Stonefly

The Tahoe benthic stonefly is a Federal Species of Concern and NNHP G1S1 ranked species. Tahoe benthic stoneflies are endemic to Lake Tahoe and occur in McKinney Bay. This species occurs in deep-water plant beds at average depths of 200 to 360 feet but has been reported as deep as 899 feet and spends its entire life cycle at these depths (dfg.ca 2010). Possible threats to the Tahoe benthic stonefly include the introduction of opossum shrimp (*Mysis relicta*), decreasing water clarity, which negatively impacts the deep-water plant beds this species relies on, and competition with non-native invertebrates (dfg.ca 2010).

Townsend's Big-eared Bat

Townsend's big-eared bat is a USFS Sensitive species, a BLM Sensitive species, and a California Species of Special Concern. This species ranges over most of the western U.S., north to southwest Canada, south into central Mexico, and east along a smaller range through the middle of the U.S. to Pennsylvania. This species is found in all habitat types with the exception of alpine. Roosts occur in caves, buildings, tunnels, mines, and other human-made structures. This species hibernates singly or in groups from October to April and undergoes short migrations to hibernation roosts. Females form maternity colonies, but males are solitary in the spring and summer. Mating occurs from November to February, and sperm is stored during hibernation months until ovulation takes place in the spring. Births of one young to each litter take place in May and June; the young are independent after six weeks. This species has high site fidelity, but it is sensitive to disturbance of roosting sites. One visit to a roosting site can cause abandonment. This species is also sensitive to wing injuries due to banding.

Virginia Mountains Pebblesnail

The Virginia Mountains pebblesnail is a NNHP G1S1 ranked species. It is endemic to a spring in the Virginia Mountains above Pyramid Lake. Known occurrences are also in the Hardscrabble Creek in Washoe County.

Wall Canyon Sucker

The Wall Canyon sucker is a USFS Sensitive, BLM Sensitive, and NNHP G1S1 ranked species. The Wall Canyon sucker is an undescribed catostomid (sucker) known only from Wall Canyon Creek, Washoe County, Nevada. A recent invasion of non-native brown trout (*Samo trutta*) was followed by a decline in Wall Canyon Creek's native fish populations. The extent of these declines is presently unknown (USGS 2010).

Warner Sucker

The Warner sucker is a Federal Threatened, Nevada State Fully Protected, and NNHP G1S1 ranked species. It is endemic to the Warner Basin. Low to moderate gradient streams are considered the most cruicial condition for spawning and rearing young and is critical habitat for this species. Designated habitat includes low-gradient sections of Twelve mile, Twenty mile, Snyder, and Honey creeks and part of the spillway canal north of Hart Lake. Threats include introductions of piscivorous game fish and stream habitat modifications (Kennedy 2003).

Warner Valley Redband Trout

The Warner Valley redband trout is a USFS Sensitive and a NNHP G4T2QS1 ranked species (Williams et al. 1990). It is known to occur in interior drainages associated with Goose Lake, upper McCloud River, and Warner Valley. Suitable habitat is found in lakes and riverine systems of northern California. This species can tolerate temperatures above 80 degrees Fahrenheit. It has been majorly displaced due to introduced trout (CDFG 2010).

Western Burrowing Owl

The western burrowing owl is a Nevada State Fully Protected Species, BLM Sensitive, and a NNHP G4TUS3B ranked species. It breeds in open plains from western Canada and the western United States, Mexico through Central America, and into South America to Argentina (Klute et al. 2003). This species inhabits dry, open, native or non-native grasslands, deserts, and other arid environments with low-growing and low-density vegetation (Ehrlich et al. 1988). It may occupy golf courses, cemeteries, road rights-of way, airstrips, abandoned buildings, irrigation ditches, and vacant lots with holes or cracks suitable for use as burrows (TLMA 2006). It occupies mammal burrows, such as badger, prairie dog, and ground squirrel, for subterranean shelter and nesting (Trulio 1997). When burrows are scarce, the burrowing owl may use man-made structures such as openings beneath cement or asphalt pavement, pipes, culverts, and nest boxes (TLMA 2006). Breeding typically occurs from March through August, with peak periods in May and July. Threats to burrowing owl populations include the loss of and destruction of habitat from agriculture and urban development, the destruction of burrows, and indirect poisoning via rodent eradication efforts (Klute et al. 2003).

Western Lahontan Springsnail

The western Lahontan springsnail is a NNHP G2G3S2S3 ranked species. Species in the genus *Pyrgulopsis* occur in fresh water and brackish water. Its ranges include the western and southwestern United States. According to the NNHP occurrence status (OCC) for this species, occurrences are known or presumed to be present currently and historically in Washoe County, Nevada.

Western Mastiff Bat

The western mastiff bat is listed as a California Species of Special Concern and a USFS Sensitve species. It is a permanent resident throughout its range in southern California, southern Arizona, Texas, and south to South America. It roosts in small colonies or singly in primarily natural substrates such as cliff faces, large boulders, and exfoliating rock surfaces. It is less commonly found in artificial structures such as buildings and roof tiles. It is found in a wide variety of habitats, including desert scrub, chaparral, woodlands, floodplains, and grasslands. Reasons for observed population declines are unknown.

Western Red Bat

The western red bat is a Federal Species of Concern, USFS Sensitive, and Nevada State Fully Protected Species. It is also a NNHP G5S1 ranked species. Western red bats can be found in riparian habitat with cottonwoods at elevations below 6,500 feet and are known to roosts in orchards, especially in the Sacramento Valley in California. These bats are solitary and typically feed at forest edges, small clearings, or around street lights. It is assumed that they burrow in leaf litter or dense grasses (Bat Conservation International 2010).

Western Small-Footed Myotis

The western small-footed myotis is a BLM Sensitive species. It occurs over much of the western U.S into southern Canada and Mexico from sea level to over 9,500 feet in elevation. It is found in a wide ecological range, from rock outcrops on open grasslands, to canyons in the foothills, to lower mountains with yellow pine woodlands. Day roosts are variable but include cracks and crevices in cliffs, beneath tree bark, in mines and caves, and occasionally in dwellings of humans. Night roosts are under a variety of natural and human-induced structures. Hibernacula include caves, mines, and tunnels, where individuals usually hang singly, often exposed. Reasons for observed population declines are not entirely known at this time.

Western Snowy Plover

The western snowy plover (coastal populations) is a federal-listed Threatened, California Species of Special Concern, and USFS Sensitve species. The Pacific coastal population breeds primarily on beaches from southern Washington to southern Baja California, Mexico. Interior populations can be found in the Central Valley of California and Oregon, Nevada, and other western states. The western snowy plover

nests on barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitats, levees and flats at salt-evaporation ponds, and river bars. In California, most breeding occurs on dune-backed beaches, barrier beaches, and salt-evaporation ponds, and infrequently on bluff-backed beaches (USFWS 2010). Habitat alteration and recreational beach use have led to a serious decline in nesting habitat and populations over the last 40 years (USFWS 2010, Page et al. 1995).

Western White-Tailed Jackrabbit

The western white-tailed jackrabbit is a California Species of Special Concern. This species inhabits sagebrush, varying successional stages of conifer forest, juniper, alpine dwarf-shrub, and perennial grassland. This species feeds on grasses and herbaceous plants and consumes bark and twigs in the winter months. Its breeding season occurs from February through July. Serious population decline of this species may be due to grazing, agriculture, and development.

Western Yellow-Billed Cuckoo

The western yellow-billed cuckoo is a Federal Species of Concern, California state-listed Endangered, USFS Sensitive, and BLM Sensitive species. The yellow-billed cuckoo is found primarily in the eastern United States, but this subspecies is an extremely rare and localized summer resident of the southwestern U.S. Historically, it was found commonly throughout the Central Valley and California coastline until the early twentieth century. This subspecies primarily inhabits mature, open riparian woodlands along the broad, lower flood-bottoms of larger river systems. Habitat features usually include some relatively open patches and intermixed low, dense, scrubby vegetation typical of these watercourses. In the southwestern U.S., the western yellow-billed cuckoo also occupies desert riparian woodlands composed of willows, Fremont cottonwoods, and dense mesquite (*Prosopis* spp.). It typically nests in willows and forages among the cottonwoods and other trees. Populations of the western yellow-billed cuckoo in California were decimated before the mid-twentieth century by the extensive loss of riparian habitat to agriculture and development as well as by heavy pesticide use, and numbers have not rebounded since that time.

White-Faced Ibis

The white-faced ibis is a Federal Species of Concern and a Nevada State Fully Protected Species. It is also a NNHP G5S3B ranked species. Its range includes the western United States, Mexico, southeastern Brazil, southeastern Bolivia, central Argentina, and the coast of central Chile. Northern populations migrate to ranges from California to Louisiana southward during the winter months. Suitable habitats include salt and fresh marshes in the west and coastal marshes and bushy islands in Louisiana and Texas. Its diet consists of insects, seeds, berries, and nuts. This species breeds in large colonies in wetland habitats and places its nests on the ground. Draining of wetland habitat and heavy pesticide use threaten this species.

White-Headed Woodpecker

The white-headed woodpecker is a Nevada State Fully Protected, USFS Sensitive, and NNHP G4S3? ranked species. It can be found in montane coniferous forests that are dominated by pines, such as Jeffrey pines, at elevations from 2,000 to 5,000 feet. Its range includes Washington south to southern California. It usually nests in the cavities of dead trees and feeds on conifer seeds and insects.

Willow Flycatcher

The willow flycatcher is a California state-listed Endangered and a USFS Sensitve species. With the exception of the southern and southeastern U.S., all subspecies breed coast to coast from southern Canada to northern Mexico and winter south of the U.S. The three recognized subspecies that breed in California (*E.t. brewsteri, E.t. adastus,* and *E.t. extimus*) are all considered state-endangered on their breeding grounds. This species is a widespread migrant and localized breeder in California that breeds in willow thickets and other dense riparian growth, often with a high percentage of canopy cover. It is generally found along permanent or nearly permanent streams but also occurs where soils are merely saturated without the presence of surface water. It prefers multi-storied canopies in combination with open patches to forage over. This species is in decline primarily due to extensive habitat loss and brood parasitism by the brown-headed cowbird.

Wong's Springsnail

Wong's springsnail is a Federal Species of Concern and a USFS Sensitve species. Its shell is globose to low-conical, small to medium sized, and umbilicate. Coloration ranges from pale to moderate grey-black (cephalic tentacles) and pale to dark grey-black (snout and neck). Wong's springsnail is a freshwater snail found in the Owens River drainage as well as in various basins to the north, south, and east of the Owens Valley basin. It occurs in Pine Creek, Birchim Canyon, Owens Valley, and Inyo County in California and in Nevada. Suitable habitat includes perennial seeps and small to moderate-sized springs and spring runs with flowing water.

Yellow-Breasted Chat

The yellow-breasted chat is a California Species of Special Concern. The breeding range of this species includes most of the U.S., south-central Canada, and northern Mexico. It winters from the southern U.S. to Panama. This species is a summer resident along coastal and cismontane California and in the foothills of the Sierra Nevada Range. Migrants and breeders arrive in California in April and return to their wintering grounds in September. Habitats include swamplands, riparian willow thickets, and other dense brush, often near watercourses. It breeds from May to August with a clutch of three to six eggs. Incubation lasts for 11 to 15 days, and chicks fledge at 8 to 11 days. Both parents take care of young till they fledge. Nests are located 2 to8 feet from the ground. Population declines are due to the loss and degradation of riparian habitats rangewide. The decline is also due to parasitism by brown-headed cowbirds.

Yellow-Headed Blackbird

The yellow-headed blackbird is a California Species of Special Concern. This species breeds commonly east of the Cascade Range and Sierra Nevadas, in the Imperial and Colorado river valleys, and fairly commonly in the Central Valley. This species nests in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Yellow-headed blackbirds forage in emergent wetland and moist, open areas, especially cropland and muddy shores of lacustrine habitat. Breeding season lasts from mid-April to late July (Willson 1966). Brood parasitism by brown-headed cowbird occurs occasionally (Friedmann 1963).

Yellow Warbler

The yellow warbler is a California Species of Special Concern. Its breeding range includes most of North America from northern Alaska and northern Canada to the southern U.S. and Mexico. Wintering birds occur from Mexico to Peru. Breeding habitats include wet areas such as riparian woodlands, orchards, gardens, swamp edges, and willow thickets. Most breeding habitats generally contain medium to high-density tree and shrub species with ample early successional understories. In migration, yellow warblers may occur in other habitats, including early seral riparian habitats. Populations are in decline in California due to habitat loss, grazing of riparian understories, and brood parasitism by the brown-headed cowbird.

Yosemite Toad

The Yosemite toad is a federal Candidate for listing and a California Species of Special Concern. In addition, it is a USFS Sensitive Species. This species' activity period is from April to July and can extend to early October. During the winter, they utilize rodent burrows, willow thickets, forest edges adjoining meadows, and clumps of vegetation near water. They are endemic to California and occupy high ranges (elevations 4,800 to 12,000 feet amsl) of the Sierra Nevada Mountains. Suitable habitats include wet mountain meadows, willow thickets, and forest edges, usually near permanent water.

Yuma Myotis

The Yuma myotis is a BLM Sensitive species. This species is found from British Columbia south through Washington, Oregon, California, Arizona, New Mexico, parts of the surrounding states, and into Mexico. It is a colonial bat species that roosts in crevices in a variety of both natural and artificial substrates. Thousands of individuals may be found in roost sites, clinging together to conserve body heat. Like most bat species, the Yuma myotis can be found in a wide variety of habitats, including desert and woodland. This species is correlated with open water more than any other North American bat species (Keller 2000).

FINAL

BIOLOGICAL ASSESSMENT FOR THE CALIFORNIA BROADBAND COOPERATIVE DIGITAL 395 MIDDLE MILE PROJECT

Lead Agencies:

NATIONAL TELECOMMUNICATION AND INFORMATION ADMINISTRATION
Broadband Technology Opportunities Program
1401 Constitution Avenue NW
Washington, DC 20230
Contact: Genevieve Walker, 202-482-2345

Prepared for:

CALIFORNIA BROADBAND COOPERATIVE, INC.
1101 Nimitz Avenue
Vallejo, California 94592
Contact: Michael Ort

Prepared by:

CHAMBERS GROUP, INC.
5 Hutton Centre Drive, Suite 750
Santa Ana, CA 92707
(949) 261-5414

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Appendix A – Project Route Maps

Appendix B – Project Route In Desert Tortoise Habitat

ACRONYMS

APM	Applicant Proposed Measures
ARRA	American Recovery and Reinvestment Act of 2007
BA	Biological Assessment
BLM	Bureau of Land Management
BNSF	Burlington Northern Santa Fe Railway Company
BO	Biological Opinion
BTOP	Broadband Technology Opportunities Program
CA	California
Caltrans	California Department of Transportation
CASF	California Advanced Services Fund
CBC	California Broadband Cooperative, Inc.
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CSLC	California State Lands Commission
CSC	State Species of Special Concern
EA	Environmental Assessment
FE	Federally listed; Endangered
FOC	Fiber Optic Cables
FSC	Federal Species of Concern
FT	Federally listed; Threatened
HASB	High Air Speed Blowing
HDD	Horizontal Directional Drilling
IS	Initial Study
IUCN	International Union for Conservation of Nature
LA	Los Angeles
LADWP	Los Angeles Department of Water and Power
MMRP	Mitigation Monitoring and Reporting Plan
MND	Mitigated Negative Declaration
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NNHP	Nevada Natural Heritage Program
NTIA	National Telecommunications and Information Administration
O&M	Operations and Maintenance
PCE	Primary Constituent Element
ROW	Right-of-way
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
UPRR	Union Pacific Railroad
US 395	U.S. Highway 395
USFWS	U.S. Fish and Wildlife Service

SECTION 1.0 – INTRODUCTION

1.1. PURPOSE OF THE BIOLOGICAL ASSESSMENT

The purpose of this Biological Assessment (BA) is to provide the necessary information to the U.S. Fish and Wildlife Service (USFWS) to issue a Biological Opinion (BO) to the National Telecommunication and Information Administration (NTIA) on the effects that the California Broadband Cooperative Digital 395 Middle Mile Project (Proposed Project) may have on federally listed biological resources. Following the literature review and biological reconnaissance-level survey conducted by Chambers Group (2010), it was determined that 11 federally listed endangered (FE) or threatened (FT) or candidate species have the potential to occur within or adjacent to the Proposed Project route, including 2 plant species, Fish Slough milk-vetch (*Astragalus lentiginosus* var. *piscinensis*) and Steamboat buckwheat *(Eriogonum ovalifolium* var. *williamsiae*), and 9 wildlife species, Owens pupfish (*Cyprinodon radiosus*), southwestern willow flycatcher (*Empidonax traillii extimus*), Owens tui chub (*Gila bicolor snyderi*), desert tortoise (*Gopherus agassizii*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), Sierra Nevada big-horn sheep (*Ovis canadensis sierrae*), Carson's wandering skipper (*Pseudocopaeodes eunus obscurus*), mountain yellow-legged frog (*Rana muscosa*), and least Bell's vireo (*Vireo bellii pusillus*). The Proposed Project route also may affect USFWS designated critical habitats for desert tortoise and Owens tui chub. No other federally listed species or habitats are known to occur within the Proposed Project corridor.

This BA was prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1536 [c]).

1.2. PROPOSED ACTION

The California Broadband Cooperative, Inc. (CBC), as a grant recipient of the Broadband Technology Opportunities Program (BTOP) funded by the American Recovery and Reinvestment Act of 2009 (ARRA) and the California Public Utility Commission's (CPUC) California Advanced Services Fund (CASF) grants program, proposes the installation of the Digital 395 Project, approximately 593 miles of middle-mile fiber-optic network and infrastructure, providing broadband service to unserved and underserved areas in the Eastern Sierra. The middle-mile network is the segment of a telecommunications network that provides broadband service from one or more centralized facilities to the local network plant; these facilities provide relatively fast, large-capacity connections between the network backbone and last-mile connection. The Department of Commerce, National Telecommunications and Information Administration (NTIA) is the Federal lead agency responsible for compliance with the National Environmental Policy Act (NEPA) and the CPUC is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA).

The Proposed Project is to install approximately 593 miles of middle-mile fiber-optic cable and associated infrastructure that will provide broadband service in unserved and underserved areas of the Eastern Sierra, with a proposed service area encompassing 36 communities, 7 counties, 7 Native American reservations, and 2 military bases. In addition to internet services, high-capacity "dark" fiber also will be made available to the region's last-mile providers, government agencies, and cellular and long-distance carriers. The purpose is to improve local internet services, provide diverse routing between northern and southern California and southern Nevada, and enhance public safety. The proposed action involves the installation of underground fiber optical cables (FOC) within the California Department of Transportation (Caltrans) right-of-way (ROW)/easements, county-maintained dirt roads, Los Angeles Department of Water and Power (LADWP) ROW/easements, or Nevada Department of

Transportation (NDOT) ROW/easements. Buildings to be constructed are proposed within existing land use types zoned for utilities. The Proposed Project would not change land use or zoning types. For purposes of this document, the term "Proposed Project ROW" includes the footprint or area of direct placement/disturbance of the Proposed Project features (e.g., conduit, nodes, towers), as well as the construction footprint related to those features (e.g., boring, plowing, drilling, staging areas, pathway of construction related equipment).

The Proposed Project features include:

- construction of a new, approximately 479-mile backbone FOC route;
- construction of approximately 62 miles of new distribution lines;
- placement of approximately 52 miles of FOC in existing utility conduit; and
- construction of 17 nodes or prefabricated buildings to support wireless systems.

Maps of the Proposed Project route are presented in Appendix A.

SECTION 2.0 – PROJECT DESCRIPTION

2.1. PROJECT LOCATION

The Digital 395 Middle Mile Project will be located between Barstow, California, and Reno, Nevada, providing broadband services to the area commonly referred to as the Eastern Sierra (Figure 1). The Proposed Project route maps are included as Appendix A. The route mainly follows State Route 58 and U.S. Highway 395 (US 395), a major transportation corridor between southern California and northern Nevada. The Proposed Project route crosses through San Bernardino, Kern, Inyo, and Mono counties in California and Douglas, Carson City, and Washoe counties in Nevada. The service area contains 36 communities, 7 counties, and 7 Native American reservations. In addition to these civilian areas, the region is host to two military bases: Naval Air Weapons Station China Lake and the United States Marine Corps Mountain Warfare Training Center. The Proposed Project route consists of a main backbone and various spurs that lead away from the main backbone. The various spurs along the Proposed Project route branch from the main backbone to connect to nodes within communities along the route.

2.2. CONSTRUCTION METHODS

Project construction methods currently are detailed in the following subsections for the Proposed Project route. Applicant Proposed Measures (APMs) to avoid and minimize construction impacts to sensitive resources will be conducted to the extent practicable and are based on data from surveys for biological and cultural resources as well as through coordination with the various jurisdictional agencies. APMs that will be implemented during construction of the Proposed Project are presented in the Joint Environmental Assessment/Initial Study/ Mitigated Negative Declaration (Joint EA/IS/MND).

2.2.1 <u>Conduit Construction Strategy</u>

Two types of conduit are included in this Proposed Project: FOC backbone and distribution lines. The FOC backbone would consist of three 1.25-inch ducts, where one cable would initially be installed. The distribution line would consist of one 1.25-inch duct, where between two and seven microducts will be installed.

Three methods of conduit construction would be used to account for variations in geology, route accessibility, terrain, or environmental issues. Most of the southern portions of the route traverse plowable desert soil; however, northern portions of the route contain mountainous terrain, narrow road embankments, volcanic rock, and areas that may be environmentally sensitive.

The three construction methods include cable plowing, horizontal directional drilling, and trenching with either a trencher or track-hoe. Approximately 46 percent of the Proposed Project route would be constructed by cable plowing. Approximately 27 percent would require trenching, and the remaining 27 percent would be performed by horizontal directional drilling (HDD). About 10 percent of the HDD would be performed in solid rock. Trenching and plowing methods would likely result in a greater footprint; therefore, this footprint was used for the purposes of assessing potential impacts of the Proposed Project.

Figure 1: Project Vicinity Map

2.2.2 Cable Plowing

Plows have been used for many decades as a trenchless method for installing underground pipeline and utility facilities. The process of cable/duct plowing involves a vibrating blade to split the ground and cut a narrow slit to insert a bundle of conduit. A typical plowing blade, which is not more than 2 to 3 inches in width, acts like a knife during plowing and creates minimal, temporary disruption to the soil. Soil disturbance from the plow blade is anticipated to occur within a 4- to 6-inch width but may be up to 12 inches in width. As the ground is cut, the conduit is installed at the desired depth by feeding it down a chute located on the back of the blade. As the tractor passes the insertion point, the ground is then packed, restoring it to its original condition.

If pre-treatment is required, disturbance to soils from the pre-treatment activity may increase to six feet, not including the wheels/tracks of the equipment. Pre-treatment may include the following two actions: pre-ripping and/or clearing/grubbing. Pre-treatment is applicable only to plowing. For many sections of the US 395 route, two tractors would be used. A Caterpillar D8 would be used for pre-ripping hard soil and removing obstacles in advance of the plow. Clearing would involve the removal of boulders or vegetation that cannot be avoided (e.g., there is no path around vegetation). Clearing and grubbing of vegetation is not anticipated for the Proposed Project, however, USFWS and any other appropriate agency will be contacted prior to vegetation clearing/grubbing, if clearing/grubbing is necessary. Where soil conditions allow, the Proposed Project would use the smaller DitchWitch vibratory plows to deploy the conduit. The plows would be configured to install a total of three 1.25-inch conduits to a depth of up to 42 inches, allowing for at least 36 inches of cover.

Plowing would mainly occur within existing dirt roads, as well as areas adjacent to paved roads. Compared to trenching, minimal disturbance to vegetation would occur from the utilization of the plow. Typically, crushed vegetation may occur along portions of shoulder vegetation from the tractor pulling the plow. After the conduits are installed, the furrow is compacted back in place by the back end of the plow or a following compaction vehicle. This method typically is used in open areas with suitable terrain. Most of the work in the Proposed Project is planned in existing dirt road or utility ROWs/easements and conditions are mostly amenable to plow installation. The disturbed soil surface would be returned to the pre-construction conditions.

2.2.3 Trenching

Locations inaccessible to plowing or characterized by excessive rockiness or fracture rock would be constructed using trenching machines, excavators, or back-hoes. The trenches are opened and then backfilled after the conduit is installed in the trench. Soil disturbance from trenching is anticipated to occur within a 6-foot width, based on the terrain type and to account for side-cast. The typical size bucket on a back-hoe used for trenching will be 24 inches, up to a maximum of 36 inches.

The trench typically would be refilled and compacted following conduit installation. Erosion and dust control measures also would be implemented. Occasions may arise when short sections of a trench would remain open until the next workday. These are likely to be located at access box locations or short sections still open at the end of a workday. Appropriate safety measures, such as barricades and trench covers, would be implemented. Trenches would not be left open overnight unless covered for safety. In areas identified as sensitive habitat areas, trenches to be covered would be inspected prior to covering and filling to identify and protect desert tortoise and other wildlife.

2.2.4 Horizontal Directional Drilling

HDD is a steerable, trenchless method of installing underground conduits and cables along a prescribed bore path by using a surface drilling rig, making minimal impact only at the entrance and exit pits of the bore. A HDD bore may extend from about 50 feet to over 2,500 feet, depending on the need and the substrate. HDD would be used to avoid open trenches and where plowing is not practical. HDD minimizes environmental disruption and would be used for consolidated substrate and/or solid rock conditions and for locations where roadways or rivers must be crossed, and/or where environmentally sensitive areas must be avoided.

Guiding the HDD is a very important part of the drilling operation, as the drilling head is under the ground and is not visible from the ground surface. In most cases, a transmitter (called a sonde) that registers angle, rotation, direction, and temperature data would be located on the bore head. This information is encoded into an electro-magnetic signal and transmitted through the ground to the surface, where it is picked up by a hand-held receiver. When boring solid rock, a wireline system may be used. In this instance, information is transmitted through a cable fitted within the drill string. The bore head direction can be guided using this system.

Once the initial bore is complete, the small bore head is refitted with a reamer to enlarge the bore hole, and the process is reversed. While the reamer head is being retracted, conduits would be pulled back to the point of origin. At both ends, the boring pits allow for the construction of the bore; boring pits are open pit areas that would be approximately 3 feet wide by 10 feet long to allow for the entrance and exit of the bore. The bore itself would extend beyond the length of the element being avoided (e.g., stream, railroad).

Directional drilling uses a bentonite/water mixture that is pumped down the drill stem to cool the drill head, lubricate the drill pipe, maintain the bore hole opening, and remove bore cuttings. Bentonite is a fine clay that, when mixed with water, provides the necessary lubricant and operating fluid for the drilling process. Directional bores may be employed to circumvent obstacles in the ground and other points that will occur intermittently in conjunction with construction of various phases. The minimum depth of the bore would be in compliance with the requirements of the regulatory agencies. HDD activities would be contained within the ROW and within existing roads, in which impacts would be less than the installation of cable by plowing or trenching. CBC will implement a HDD Contingency and Resource Protection Plan. The bentonite will be removed from each bore site and properly disposed offsite. CBC will coordinate with the counties for these locations, which most likely will be county disposal sites.

2.2.5 Fiber-Optic Cable in Existing Conduit

Two primary methods are used to install the FOC into existing conduit: cable pulling and cable blowing. The two methods may be combined to improve the FOC installation for a greater distance.

2.2.5.1 Conduit Proving

Prior to installing the FOC, the conduit must be proved. During the process of installing fiber-optic cable into the existing conduit, blockages, snags, or other blockage may occur. To remedy this problem requires locating the area of blockage and excavating that area. Once the conduit is exposed, the area of blockage would be cut out and replaced with new conduit. The process of proving involves pulling a

mandrel (small rod of wood or metal) through the conduit on a line to ensure clear passage for the fiber-optic cable. Conduit for the new construction would be "proved" as soon as conduit installation is complete and the pull boxes and splice boxes have been set but before the fiber-optic cable is pulled. Once the conduit is proved, a pull and splice crew would pull in the fiber-optic cable from the access vaults and splice vaults. Activities would be contained within the ROW and existing access roads. Disturbance to habitat as a result of FOC installation is not anticipated along the segments with existing conduit, as the utilization of existing conduit in the ground allows maintenance/repair access without additional ground disturbance.

2.2.5.2 Cable Pulling

Traditionally, the most common method of installing fiber-optic cable into a conduit is through a method called "cable pulling." The cable installation process is initiated by accessing the conduit system through opening existing buried vaults or manholes. Generally, a cable-pulling crew opens only the vaults or manholes needed to install a predetermined length of cable. These vaults or manholes are then closed or plated at the end of each day to ensure safety. Pulling fiber-optic cable would occur within the ROW and within existing access roads.

The cable reels are attached to a flatbed truck or trailer hitched to a tractor. Cable lengths vary based on design characteristics; a typical length is 16,000 feet. The cable pulling process begins by moving the reel of cable and cable placing equipment to an open access point for a section of conduit in which the cable is to be installed. Placement methods may include unidirectional or "bi-directional" pulling, wherein a mid-point vault is selected to which the cable is pulled in both directions. Since cable pulling tension increases with distance, bi-directional pulling reduces the total distance a cable is pulled. This method allows almost twice as much cable to be installed (both ways from a central point) while avoiding a mid-point splice. The placement technique that is selected for a fiber-optic cable pulling operation is dependent upon site-specific variables relating to the section of conduit to be installed. Cable installation experts make the decision regarding which technique to use at the time of cable placement. To aid in the speed and length that a cable can be pulled, lubricants are manually placed into the conduit during the threading of pull rope and applied to the cable itself during cable pulling. Although the lubricants are composed of non-toxic materials, proper spill containment materials to isolate potential spills will be utilized. A construction Spill Prevention and Control Plan will be prepared.

2.2.5.3 Cable Blowing

As with cable pulling, the cable blowing process is initiated by accessing the conduit system through opening existing buried vaults or manholes. Also like cable pulling, the installation crew begins the cable blowing process by moving the reel of cable and cable blowing equipment (consisting of a trailer-based compressor and a 3-foot by 2-foot "blowing machine" that channels the cable and compressed air from the air compressor along a tube and into the conduit) at an access point at either the beginning or middle of the segment to be installed. Using either the unidirectional or bidirectional placement technique, the cable is then blown through the conduit using a method such as the high air speed blowing (HASB) or the piston (push/pull) method. The placement technique and blowing method that is selected for a fiber-optic cable blowing operation is dependent upon site-specific variables relating to the segment of conduit to be installed. Cable installation experts decide at the time of cable placement which technique and method to use. Activities, including the staging of equipment during pulling/blowing, will occur within the ROW and be contained within existing road ROWs.

To aid in the speed and length that a cable can be blown, lubricants may be applied to the FOC as it enters the conduit or applied to the insides of the conduit walls by blowing a lubricant-soaked sponge through the conduit; the amount of lubricant used for cable blowing typically is less than with cable pulling. As with cable pulling lubricants, modern cable blowing lubricants are comprised of non-toxic, water-based polymer materials. Although the lubricants are composed of non-toxic materials, proper spill containment materials to isolate potential spills will be utilized.

2.2.6 Bridge Crossings

Although horizontal directional boring is proposed at river crossings, attachments may be used if (1) authorizing agencies prohibit boring alternatives and (2) boring is not feasible and conduit within the bridge structure is not available. If existing attached conduit is available, the Project will utilize this existing conduit. Eight bridge locations in California have been identified along the route; these eight crossings in California will be bored. The FOC backbone also will cross Long Valley Dam and will be surface-mounted or located on the dam face along a maintenance road, depending on the preferences of LADWP.

Table 1: Proposed Bridge Crossings and Attachments

Location	County / GPS Location	Bridge Number	Length (meters)	Method
Five Mile Canyon	Inyo County, 35.871454, -117.882822	480046R	51.8	bore
LA Aqueduct /US 395	Inyo County, 36.094239, -117.963187	480015R	12.8	bore
LA Aqueduct /US 395	Inyo County, 36.104850, -117.967853	480064R	11.6	bore
LA Aqueduct /US 395	Inyo County, 36.236509, -117.984058	48 0010	14.6	bore
LA Aqueduct /US 395	Mono County, 37.861675, -119.085956	470057R	14.9	bore
Rush Creek	Mono County, 37.891604, -119.091588	47 0059R	36.0	bore
Eastside Lane / Walker River	Mono County, 38.51629, -119.457572	NF	26.0	bore
Larson Lane / West Fork Walker River	Mono County, 38.545669, -119.494938	NF	6.0	bore

2.3. RAILROAD CROSSINGS

Four railroad crossings occur in the Proposed Project route, all of which are in either Kern or San Bernardino counties and operated by Burlington Northern Santa Fe Railroad (BNSF) and Union Pacific Railroad (UPRR). In each case, these crossings will be constructed below grade by HDD or jack and bore methods at least 10 feet below grade.

Table 2: Railroad Crossings

Location	GPS Location	RR Owner	Length (meters)
BNSF / Boron Ave, Boron	34.998767, -117.64975	BNSF	20

BNSF / Hwy 58, 2.6 miles west of Kramer Junction	34.99534, -117.58756	BNSF	20
BNSF / US 395, 200 ft, north of Hwy 58, Kramer Junction	34.992773, -117.541695	BNSF	20
UPRR/ dirt road 1 mile north of Searles Station Road	35.498651, -117.637981	UPRR	20

2.4. CONSTRUCTION EQUIPMENT

Because of the variety of equipment that may be employed to accomplish installation of the FOC in both newly constructed and existing conduit segments, and because each contractor has a slightly different equipment inventory, equipment may include D8 Caterpillar, backhoe, 10-wheeler truck, semi-trailer truck, ¾-ton pickup truck, excavator, trencher, dozer/plow, loader, cable reel trailer, air blower device, air compressor, mechanical pusher/puller, and water truck. Equipment will stay within the confines of the Proposed Project ROW or access road to the ROW identified for the Proposed Project.

Based on the Proposed Project schedule required to complete the Project, multiple crews likely will be working concurrently along the route. See Construction Timeline, for further discussion of Project schedule and deployment of construction crews. Table 3 identifies the potential number of crews conducting each type of construction method and the equipment typically associated with that activity.

Table 3: Typical Crew and Equipment List per Construction Method

Crew Type	Peak # Crews	Crew Composition	Equipment Type	Motor Vehicles*
Plowing	5	Foreman (1) Equip Operator (4) Laborers (6)	D8 Caterpillar (2) Backhoe (2) Conduit Reel Trailer (2) Trench Roller (1) Equip. Trailer (4)	F350 Flat Bed (1) F550 (1) F750 (4) F250 4x4 Pick-up (1)
Trenching	5	Foreman Equip Operator (2) Laborers (4)	Conduit Reel Trailer Trencher Trench Roller Backhoe Equip. Trailer (2)	F350 Flat Bed (1) F550 (1) F750 (2) F650 2K-gal. Water Truck (shared)
Boring	12	Foreman Equip Operator (2) Laborers (4)	Cable Reel Trailer FX60 Suction Excavator (1) Backhoe (1) JT922 Borer (1) Slurry Pump (1)	F750 (3) F550 (1) F350 Flatbed (1) F650 2K-gal. Water Truck (shared)
Vault Placing	4	Equip Operator Laborer (1)	Backhoe (1) FX30 Suction Excavator (1) Equipment Trailer (1)	F550 (1) F750 6-ton Dump Truck

Table 3: Typical Crew and Equipment List per Construction Method

Crew Type	Peak # Crews	Crew Composition	Equipment Type	Motor Vehicles*
Cable Placing	2	Foreman (1) Lineman (2) Laborers (3)	Cable Reel Trailer Cable Blower equipment (1) Air Compressor (1)	F350 Utility F250 4x4 Pick-up (3)
Cable Splicing	2	Sr. Splicer Asst. Splicer	Splicing Truck or Van	F250 4x4 Pick-up F150 4x4 Pick-up
Node Site Prep	2	Foreman Laborers (3)	Backhoe / Tractor	F250 Pick-up (2) F450 Utility

*Motor vehicles may be an equivalent sized vehicle.

2.5. OTHER PROJECT COMPONENTS

2.5.1 Project Facilities

In order to support wireless systems, 16 new prefabricated buildings (or nodes) will be placed at the end of distribution lines as points of interconnection on the Proposed Project route. These buildings are being installed to allow regeneration of transport signals along long fiber routes as well as provide tie-ins to providers servicing the communities referenced above. The prefabricated buildings will have a concrete or steel exterior. These buildings will be manufactured offsite and will not require construction of the building onsite. The building will be secured to a concrete slab, which may require grading prior to installation to create a level surface. These buildings are planned to be placed within existing industrial parks and commercial areas and will be either 11 feet by 26 feet or 11 feet by 40 feet in size, depending on location. These buildings will be transported via trailer and installed at the proposed locations identified in Table 4. At the Benton, June Lake, and Crowley Lake locations, a 4-foot by 4-foot by 7-foot building (or "cabinet") may be placed instead of the above-mentioned node building if it is determined services will not be affected. A cabinet provides fewer services, is not a central node, and is not a regeneration station.

Table 4: New Nodes per County

State	County	Community	Address	Total
California	San Bernardino	Barstow	Main St. & Sand Stone, Barstow	
		Boron/Kramer	N/A, US 395 and Kramer Junction	
	San Bernardino Total			**2**
	Kern	Ridgecrest	1514 N. Inyo Rd., Ridgecrest	
	Kern Total			**1**
	Inyo	Big Pine	Hall St. & Dewey, Big Pine	
		Central Bishop	601 Airport Rd., Bishop	

		Independence	750 Clay St., Independence	
		Olancha/Coso	95 Shop Street, Olancha or Gill Station Road (1200 feet east of US 395)	
		Lone Pine	Narrow Gauge Rd. (cell site)	
	Inyo Total			**5**
	Mono	Antelope Valley (FD)	1166 Larson Ln., Coleville	
		Benton	25574 Hwy 6, Benton	
		Bridgeport	221 Twin Lakes Rd., Bridgeport	
		Crowley Lake	58 Pierce Rd., Crowley Lake	
		Lee Vining	129 Mattly Rd., Lee Vining	
		Mammoth Lakes	Hwy 203 & Sierra Park Rd.	
	Mono Total			**6**
California Total				**14**
Nevada	Carson City	Carson City	2271 Arrowhead Dr., Carson City	
	Carson City Total			**1**
	Washoe	Reno	220 Gardner St., Reno	
	Washoe Total			**1**
Nevada Total				**2**
Grand Total				**16**

The building systems require electrical service, which will be provided primarily by local, existing electrical service. Each building's power system will be backed up by battery (eight-hour capacity) and generator (Generac Modular Power System®). These buildings also may be supported by solar power, and buildings will have an air conditioning system, similar to large, window-mounted type units.

These buildings will not be manned and will have no permanent occupancy. The buildings can accommodate one to two persons who would work on equipment. It is likely that these buildings will be visited on a monthly basis to check on equipment, exercise the generator, and service replacement parts, as needed. On such visits, parking will be in city streets in areas normally designated for vehicle parking. The vehicles used for such visits will be one of the following types: passenger car, pick-up truck, or ½-ton service van.

2.5.2 Access Vaults

Underground components include buried access or splice vaults. Within the new construction portions of the route only, vaults will be placed approximately every 4,500 feet to enable access to the underground conduits. Approximately 1,180 vaults are proposed for installation. The buried access vaults measure 48 inches in diameter and are 48 inches deep. In areas where feasible (e.g., paved roads), access vaults will be buried with the surface opening (metal manhole lids) flush with ground with the remaining body of the round, prefabricated structure not visible from the surface. The vaults will be installed with backhoes, using excavation methods. They will be located within the existing road ROWs and a minimum of 20 to 30 feet from the edge of pavement (depending on type of highway), or nearest

appropriate/accessible location, as stipulated by the recently (December 30, 2010) issued guidelines from Caltrans.

2.5.3 Subsurface Warning Tape and Cable Locating Technology

Where methods permit, a continuous ribbon of Buried Cable Warning Tape will be placed above, and parallel with, the new conduit within the ground. The warning tape will be imprinted with a message as a final warning to excavators that fiber-optic cable is buried below. The tape will be impervious to soil acid, alkali, and/or other natural soil agents. Installation of the tape will occur simultaneously with the installation of the conduit. The subsurface tape may be magnetic, which will allow engineers to scan the road for the fiber cable location without having to resort to ground-disturbing activities, such as potholing, to locate the cable line. A "tracer" wire will be installed as part of the plastic ducts. This tracer wire allows a tone to be induced on the wire so that the exact location of the conduit can be located with electronic equipment. This method is used by standard underground cable locating procedures prior to future digging in the area (Underground Service Alert).

2.5.4 Marker Posts

Above-ground warning marker posts will be placed along the entire cable route at intervals of approximately 700 feet. An estimated 2,500 new marker posts will be installed. The posts will be contained within the ROW directly above or offset as required of the conduit/cable. Mechanical equipment consisting of a tractor with a power auger extension arm may be required for post installation. Ground disturbance during the installation of marker posts is typically limited to a relatively small disturbance of earth as wide as 12 by 12 inches. This area of disturbance lies within the area of disturbance for installation of fiber-optic cable and conduit. These metal, poly-vinyl, or fiberglass posts are installed to provide visible evidence of the presence of buried cable, identify the owner of the cable, and provide a telephone number for emergency notifications. The location of the marker post may be adjusted to accommodate sensitive environments (e.g., sensitive vegetation communities) or physical limitations (e.g., rocks) present at the edge of the ROW. Marker posts will be installed, as much as possible, in areas that lack vegetation.

2.5.5 Staging and Laydown Areas

Staging areas will be established outside the Proposed Project footprint, mainly in commercial property areas, to provide the locations to store material and large equipment for intermittent periods of time and to conduct fueling and maintenance work. Laydown areas are areas identified for vehicle parking and/or short-term placement of equipment, conduit, and cable. The general size of staging/laydown areas is approximately 100 feet wide by 100 feet long to 400 feet wide by 400 feet long; the exact size will be dependent upon the individual locations. Temporary parking of vehicles (overnight) will occur within areas of the ROW or in laydown areas. The laydown areas generally are composed of previously disturbed areas that may contain sparsely scattered and disturbed vegetation, if any. In sensitive areas, the construction contractor will have laydown areas marked, and the areas will be cleared (surveyed) by the Project biologists prior to parking equipment and prior to moving equipment. A detailed list of potential staging/laydown areas is provided in Appendix D of the Joint EA/IS/MND. It is expected that more staging/laydown areas are identified than will actually be needed. Additional locations were identified to allow for options, should the staging/laydown areas prove to be inadequate.

The number of potential staging and laydown areas that have been identified for the Proposed Project per county is presented below in Table 5.

Table 5: Potential Staging and Laydown Areas Per County

State	County	Total
California	San Bernardino	23
	Kern	27
	Inyo	86
	Mono	29
California Total		**165**
Nevada	Douglas	6
	Carson City	1
Nevada Total		**7**
Grand Total		**172**

2.5.6 Construction Schedule

The total duration of construction activity of the approximately 593-mile network is estimated at up to 20 months. Proposed Project construction is estimated to begin in late 2011/early 2012. Construction crews generally would work eight 10-hour days, five days a week during daylight hours. Saturday work may be required in some areas, as needed; and the appropriate approval from the proper agency would be obtained prior to construction on weekends. No work is anticipated to occur on major holidays.

Based on the Proposed Project schedule required to complete the Proposed Project, multiple crews will likely be working concurrently along the route. During this period, various aspects of construction will be occurring simultaneously, including the following: conduit plowing, trenching, cable pulling, splicing, marker post installation, and final restoration of the roads and access roads. As it takes longer to install the conduit, the cable installation crews will not start work until the conduit installation has made sufficient progress. This will facilitate keeping the cable installation crews from catching up too soon to the conduit installation crews and will create greater lag time between the cable and conduit crews at the beginning of construction. This lag time will likely shorten over the course of the construction period. Due to the use of multiple crews, it is possible that some of the laydown and staging areas will be used for more than one period of time.

Although habitat for sensitive species may be found in various areas along the Proposed Project route, due to the Proposed Project schedule, construction activities will occur during the breeding/nesting seasons of sensitive species with the avoidance, minimization, and mitigation measures identified in this biological assessment and based on coordination with the resource agencies.

2.6. CONSERVATION MEASURES

This section addresses conservation measures to avoid and/or minimize impacts to federally listed species with a potential to occur on the Proposed Project.

2.6.1 Project Biologist and Biological Monitors

A Project Biologist will be retained to oversee aspects of construction monitoring that pertain to protecting biological resources and to ensure compliance with avoidance and minimization measures. The Project Biologist will be responsible for the biological resources portion of the contractor education program, described below, and will monitor construction activities in areas supporting listed and/or proposed species and critical habitats. The Project Biologist will be responsible for scheduling and/or implementing pre-construction surveys and will have the authority to stop construction activities that threaten significant biological resources for which no avoidance, minimization, or compensation procedures have been established in this document. Biological Monitors familiar with the identification of listed and/or proposed species and critical habitats shall be present in areas requiring conservation measures.

As identified in the Mitigation Monitoring and Reporting Plan (MMRP), the Applicant shall designate one or more Project Biologists. Project Biologist refers to the qualified, authorized, or approved person assigned to monitor measures identified in the MMRP and to document compliance with these measures. The biologist must be qualified in the respective field of biology and must be acceptable to the appropriate jurisdictional Agency. The Project Biologist also will oversee other biologists, including biological monitors.

Within the range of the desert tortoise, at least one designated Project Biologist shall meet the current United States Fish and Wildlife Service Authorized Biologist qualifications criteria, demonstrate familiarity with protocols and guidelines for the desert tortoise, be approved by the United States Fish and Wildlife Service, obtain training such as that offered through the Desert Tortoise Conservation Center in Las Vegas; and possess a California Endangered Species Act Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.

2.6.2 Contractor Education Program

A biologist (either Project Biologist or Biological Monitor) will conduct an environmental awareness training for biological resources for CBC staff and contractors, which will include information on protected species that are known to occur or that have a potential to occur in and around the Proposed Project route. The training will also include additional required environmental protection measures. The training will focus on distribution, behavior, ecology, sensitivity to humans, legal protection, penalties for violation of state and federal laws, reporting requirements on listed species, conservation measures, and Project-specific mitigation measures identified in the MMRP. The Project Biologist will provide a course outline and supplementary materials for the CBC staff and contractors and a class roster to certify to the CBC which persons completed the training. Follow-up tailgate trainings for each listed species will be conducted in the field by a biologist (either Project Biologist or Biological Monitor) immediately prior to construction activities within that species habitat.

2.6.3 General Conservation Measures (Pre-Construction and Construction Activities)

The following general conservation measures are provided to minimize indirect impacts to listed species and their habitat.

1. Impacts to perennial waterways and wetlands will be avoided by using bridge attachments, boring under, or using existing conduit.

2. Ephemeral drainages will be trenched when dry and returned to preconstruction conditions.

3. Proper spill containment materials to isolate potential spills shall be carried by each construction crew.

4. Laydown areas shall be located at least 100 feet away from drainages. No refueling, equipment repair, lubrication, or staging activities shall be allowed within 100 feet of the drainages. Laydown areas in desert tortoise habitat will utilize temporary exclusionary fencing.

5. To the extent possible, surface-disturbing components of the Proposed Project shall be located in previously disturbed areas, immediately adjacent to previously disturbed areas, or where habitat quality is poor; disturbance of vegetation and soils will be minimized to the extent practicable.

6. No ground clearing or grading of vegetation shall be conducted within the Proposed Project where the Project activities will occur in an existing road. Disturbing the vegetation outside the road, but within the construction ROW, will be limited to crushing vegetation, where practicable, to minimize root damage to vegetation.

7. If it is not feasible to avoid vegetation communities identified by USFWS to be sensitive (i.e., identified desert tortoise habitat and critical habitat), CBC will return temporarily impacted areas to pre-construction conditions following construction.

8. If unforeseen circumstances require disturbing vegetation beyond the final Proposed Project route, CBC shall notify the appropriate agencies immediately.

9. In order to minimize the spread of noxious weeds, a noxious weed plan shall be prepared and implemented for each county that the Proposed Project crosses.

10. Surface stabilization and reclamation within and along the boundaries of the Proposed Project ROW shall be accomplished by removing construction debris from the Project area and returning the soil to its original grade.

2.6.4 Conservation Measures for Listed Species (Pre-Construction and Construction)

2.6.4.1 California

Desert Tortoise (FT)

A federal-listed as threatened species, desert tortoise has a high potential to occur within the Proposed Project route in San Bernardino, Kern, and Inyo counties. Conservation measures for this species are listed below.

1. A qualified biologist (Biological Monitor) will be present with each construction team during construction activities within desert tortoise habitat without existing exclusionary fencing. Vehicles and construction equipment shall be monitored by desert tortoise biological monitors walking ahead of equipment. Only a Project Biologist authorized (Authorized Biologist) by the California Department of Fish and Game and U.S. Fish and Wildlife Service may handle desert tortoises. The Biological Monitor will contact the Authorized Biologist in situations requiring a desert tortoise to be moved. In these situations, Proposed Project activities will be halted until the Authorized Biologist moves the desert tortoise. When a listed species is moved, the Authorized Biologist shall be responsible for taking appropriate measures to ensure that the animal is not exposed to temperature extremes. At least one Authorized Biologist shall be present during construction activities within desert tortoise habitat. No construction activities shall begin until Authorized Biologists and desert tortoise biological monitors are approved. The names and qualifications of individuals that will work as Authorized Biologists and biological monitors on the Proposed Project within desert tortoise habitat will be sent to USFWS for approval.

2. In areas where desert tortoise may be present, the tailgate contractor education program will include a tri-fold brochure with important information for workers that will be handed out during the training. Only workers who have successfully completed the education program shall be allowed to enter the construction site. Desert tortoise education shall at a minimum include information on the biology and distribution of the desert tortoise, general behavior and ecology of the desert tortoise, its legal status and occurrence in the Proposed Project area, the definition of “take” and associated penalties for violations of Federal and State laws, the measures designed to minimize the effects of construction activities, and reporting procedures to be used in the event that a desert tortoise is encountered.

3. Pre-construction clearance surveys for desert tortoise shall be conducted within the Proposed Project ROW and the required buffer areas. USFWS-approved Authorized Biologists and desert tortoise biological monitors shall walk parallel, 30-foot wide linear transects covering 100 percent of the site and within a 50-foot buffer. Surveys are not required in areas with existing desert tortoise exclusionary fencing. If a breach in the fence is identified, biologists will perform a clearance survey within a 200-foot radius of the hole.

4. Special habitat features, such as burrows/pallets, identified during pre-construction surveys shall be marked and recorded; pallets will be avoided to the extent possible. Burrows that are found shall be checked for desert tortoises and eggs by an Authorized Biologist. All burrows, occupied or not, shall be flagged so that equipment operators and drivers shall clearly see the flagging and avoid the burrows.

5. Encounters with desert tortoises shall be immediately reported to an Authorized Biologist. The Authorized Biologist shall maintain a record of desert tortoises encountered during Project activities. Information recorded for each desert tortoise shall include: the location (narrative, vegetation type, and maps); date of observation; general condition of health, including apparent injuries and state of healing; whether the desert tortoise voided its bladder; if moved, location moved from and location moved to; digital photographs of each handled tortoise; and diagnostic markings (i.e., identification numbers or marked lateral scutes).

6. If a desert tortoise must be moved from harm's way during Project activities, the Authorized Biologist will follow the "Guidelines for Handling Desert Tortoises During Construction Projects" (Desert Tortoise Council 1999), and shall implement the following procedures:

   (a) The Authorized Biologist shall handle a desert tortoise only when necessary. New latex gloves shall be used when handling each desert tortoise to avoid transfers of infectious diseases between animals.

   (b) Desert tortoises shall be moved the minimum distance possible within appropriate habitat to ensure their safety. Desert tortoises shall not be moved in excess of 1,000 feet for adults or 300 feet for juveniles and hatchlings.

   (c) A desert tortoise found aboveground that needs to be moved from harm's way shall be placed in the shade of a shrub, facing the same direction that it was facing prior to moving it.

   (d) The Authorized Biologist shall have the authority to halt non-emergency Project activity should danger to a desert tortoise or other species arise. Work shall proceed only after hazards to the listed species are cleared or removed, the species is no longer at risk, or the species has been moved from harm's way by the Authorized Biologist.

7. Upon locating a dead or injured desert tortoise, CBC shall notify USFWS immediately. Written notification shall be made within 72 hours of the date and time of the finding or incident (if known) and shall include location of the carcass, a photograph, cause of death (if known), and other pertinent information. Desert tortoise remains shall be left in place (or just outside the construction footprint or fenced area). Desert tortoises injured through CBC activities shall be transported to a veterinarian for treatment at the expense of CBC. If an injured animal recovers, the USFWS shall be contacted for final disposition of the animal.

8. Desert tortoise biological monitors shall be individuals who would monitor Proposed Project activities within desert tortoise habitat, ensure proper implementation of protective measures, and record and report desert tortoise and sign observations in accordance with approved protocol; they would also report incidents of noncompliance with the BO and other permit stipulations to an Authorized Biologist. Desert tortoise monitors shall assist Authorized Biologists during surveys but would not be authorized to conduct clearance surveys unless supervised by an Authorized Biologist.

9. Construction areas shall be inspected for desert tortoises within desert tortoise habitat areas during pre-construction surveys as well as during construction monitoring. Holes or trenches resulting from construction activities shall be inspected for desert tortoises prior to being

closed. Trenches to be covered overnight or over a weekend shall be ramped at an angle so that animals are able to escape or covered to prevent desert tortoises from entering.

10. Contractors, crewmembers, engineering inspectors, and biological monitors shall inspect for desert tortoises resting in the shade under vehicles and equipment prior to moving equipment. If a desert tortoise is observed underneath the vehicle, an Authorized Biologist shall be contacted. If possible, the desert tortoise should be left to move on its own; otherwise, the desert tortoise shall be removed and relocated by the Authorized Biologist.

11. Existing desert tortoise fencing is present along portions of the Proposed Project (Appendix B). The risk level for a desert tortoise to encounter a breach in the fence is greatest in the spring and fall, during and following precipitation events. Desert tortoise fence located along the Proposed Project will be inspected by the biological monitor on a daily basis in construction areas where activities are occurring to maintain an effective barrier to tortoise movement. Inspections shall be documented in writing and include observations of any entrapped animals; repairs needed; number of tortoises, tortoise burrows, and tortoise carcasses; and recommendations for supplies and equipment needed to complete repairs and maintenance.

12. Project-related damage to existing desert tortoise fencing shall be repaired by the contractor, under the supervision of the project Biologist or Biological Monitor immediately following construction in that area so that tortoises do not travel through damaged sections and into the highway. A biological monitor will be present during construction in these damaged fencing areas.

13. Project vehicles, equipment, and activities shall be confined to the Proposed Project ROW and approved access roads and laydown areas. Off-road or cross-country travel shall be prohibited except in emergency situations. No additional dirt or paved roads shall be created off the Proposed Project ROW.

14. Vehicles shall not exceed speeds of 20 miles per hour while traveling on unpaved access roads in desert tortoise habitat during construction activities.

15. Firearms and domestic dogs shall be prohibited from work areas.

16. Trash and food items shall be disposed of promptly in predator-proof containers with re-sealable lids. Trash containers shall be inspected at the end of each workday. These containers shall be regularly removed from the Proposed Project route to reduce the attractiveness of the area to common ravens and other desert tortoise predators.

17. Material that leaks, spills, or is otherwise released into habitat of the desert tortoise shall be removed immediately. The biological monitor shall observe that appropriate measures, including those proposed by CBC and the BO terms and conditions, are implemented during the removal of the hazardous materials.

18. No later than 90 days after completion of construction, the Authorized Biologist shall prepare a report for USFWS, which will be submitted by CBC. If the Proposed Project will take place over the course of two or more years, these reports shall be submitted annually. The report shall document the effectiveness and practicality of the conservation and mitigation measures, the

number of desert tortoises excavated from burrows, the number of desert tortoises moved from the site, the number of desert tortoises killed or injured, and the specific information for each desert tortoise. The report shall provide an estimate of the actual acreage disturbed by various aspects of the constuction and shall note deviations from the approved disturbance footprint, if any.

2.6.5 Conservation Measures for Critical Habitat (Pre-Construction and Construction Activities)

2.6.5.1 Desert Tortoise (FT)

Desert tortoise critical habitat occurs within the Proposed Project route from Barstow to Johannesburg in San Bernardino County, California. Desert tortoise critical habitat within the Proposed Project route is presented in Figure 2, located in Section 4.2 of this report. Conservation measures for desert tortoise critical habitat are listed below.

1. Provide restoration/compensation for impacted vegetation communities within desert tortoise critical habitat. Compensation required by CDFG has not yet been determined. Discussions with CDFG are on-going and results will be coordinated with USFWS once complete.

2. If sensitive plant species, such as Joshua trees, cacti, and succulents are within an impact area, the restoration specialist shall remove and temporarily relocate the species ahead of construction, to a “nursery area” until safe to return to the immediate area where the sensitive vegetation was originally found.

3. Surface stabilization and reclamation within and along the boundaries of the Proposed Project ROW shall be accomplished by removing construction debris from the Project area and returning the soil to its original grade.

4. In an effort to mitigate impacts to the desert tortoise, CBC proposes to install new or repair existing desert tortoise exclusionary fencing in locations along the Proposed Project route. New installation and/or repair of existing fencing will be conducted in accordance with the recommended specifications for desert tortoise exclusionary fencing set forth by USFWS (USFWS 2009a). For new fencing, 6-foot steel T-posts will be driven 24 inches into the ground, 10 feet apart. Livestock wire shall be stretched between the T-posts 18-24 inches above the ground. Durable (16+ gauge) 1-inch by 2-inch galvanized welded wire will then be attached to the livestock wire. CBC has set aside $300,000 for this mitigation to cover the cost of the fence and installation. If repairs are not necessary along the existing fence, new fencing will be installed. The funds set aside would, depending on terrain, cover the costs for approximately 4 miles of new desert tortoise fence. The exact length, location, and responsibility of maintenance of this new exclusionary fencing will be determined in a collaborative effort with the CBC, NTIA, USFWS, California Department of Fish and Game (CDFG), and Caltrans based on experience, expertise, and available funding. Existing fencing may require temporary removal and replacement as part of the repair process. If temporary fence removal is required the landowner shall be notified.

5. As an alternative to #4 (above), CBC will provide funding to the Fish and Wildlife Service Foundation and/or the Desert Tortoise Preservation Committee to take such actions as they deem appropriate to protect and/or mitigate impacts to the endangered Desert Tortoise. Exact

amounts and how they will be distributed will be determined through consultations with the Fish and Wildlife Service.

2.6.5.2 Owens Tui Chub (FE)

Owens tui chub critical habitat occurs in two locations along the Proposed Project route. Both locations are near Crowley Lake, which is approximately 14 miles north of the town of Mammoth Lakes. The Proposed Project will avoid the critical habitat. Conservation measures for Owens tui chub critical habitat are listed below.

1. To avoid impacts to Owens tui chub critical habitat, construction techniques would be limited to existing conduit east of Crowley Lake. No HDD, trenching or vegetation removal will occur in the critical habitat. Construction activities utilizing existing conduit are not expected to result in direct or indirect impacts to aquatic resources because of the short duration and minimal disturbance of the proposed activities. NTIA has made the determination of no effect to Owens tui chub critical habitat due to the Proposed Project location in relation to designated habitat and the implementation of impact avoidance measures. This is further discussed in detail in the federally listed species section, Section 4.2.1.2, below.

2.6.6 <u>Conservation Measures (Operations and Maintenance Activities)</u>

Operations and Maintenance (O&M) activities will be implemented along the Proposed Project footprint, consisting of county roads or Caltrans highways, over the life of the Proposed Project which is expected to be 10 years until the Proposed Project is subject to permit renewal. No new access roads will be constructed for O&M activities. Surveyors may drive along the existing roads to inspect the line after rainstorm events and may stop and open the hatches to ground vaults and manholes. Ground-disturbing activities associated with ongoing O&M procedures are normally minor, if any. These activities will result mainly for repair of erosion control devices or cable conduits in the event of storm damage, landslides, or other emergencies. In most emergency situations, review of damaged areas will be accomplished via public roads, nearby adjacent transmission roads, and route access roads. No new habitat will be affected by maintenance activities, and maintenance activities will occur only within the Proposed Project ROW. The appropriate agencies will be contacted if maintenance activities outside previously authorized areas are required.

1. O&M activities, vehicles, and equipment shall be confined to the Proposed Project ROW. No additional dirt or paved roads shall be created off the Proposed Project ROW during O&M activities. If unforeseen circumstances require disturbance beyond the Proposed Project ROW, the Project Biologist will notify CBC and CBC will notify USFWS immediately.

2. If disturbance will occur within habitat of a federally listed species (i.e., desert tortoise), a biological monitor shall be present.

3. For emergency maintenance involving surface disturbance in desert tortoise habitat, CBC shall notify USFWS immediately. If desert tortoises must be handled, an Authorized Biologist shall conduct these activities.

4. Upon locating a dead or injured desert tortoise, CBC shall notify the Bureau of Land Management (BLM) and USFWS immediately. Written notification shall be made within 72 hours

of the date and time of the finding or incident (if known), and shall include location of the carcass, a photograph, cause of death (if known), and other pertinent information. Desert tortoises injured through CBC activities shall be transported to a veterinarian for treatment at the expense of CBC.

5. If O&M activities require laydown and/or staging areas, only laydown areas previously approved for the Proposed Project shall be used and only within staging areas devoid of vegetation. Leftover excavated material shall not be left in place but shall be disposed of in approved areas.

6. Leaks, spills, or releases of fuel or other hazardous materials along access roads to the Project site within desert tortoise habitat shall be reported immediately to BLM. Material that leaks, spills, or is otherwise released into habitat of the desert tortoise shall be removed immediately. CBC shall adhere to appropriate measures of the BO terms and conditions during the removal of the hazardous materials.

7. Vehicles shall not exceed speeds of 20 miles per hour while traveling on unpaved access roads in desert tortoise habitat during O&M activities.

8. Firearms and domestic dogs shall be prohibited from the Project ROW.

9. Trash and food items shall be disposed of promptly in predator-proof containers with re-sealable lids. Trash containers shall be removed at the end of each workday.

SECTION 3.0 – ACTION AREA

The Proposed Project route mainly follows US 395. Construction will take place in or adjacent to existing county roads or Caltrans highways. The area surrounding the Project site is comprised of open space with 36 different types of vegetation communities, 36 residential communities, 7 counties, 7 Native American reservations, and 2 military bases: Naval Air Weapons Station China Lake and the United States Marine Corps Mountain Warfare Training Center. Maps of the Proposed Project ROW are presented in Appendix A.

3.1. DEFINITION OF ACTION AREA

The Action Area for the Proposed Project is defined as the Proposed Project ROW, which includes the 20-foot (6 meters) width surrounding the FOC installation, associated access roads, nodes, and staging/laydown areas.

3.2. VEGETATION COMMUNITIES WITHIN THE ACTION AREA

Habitats within and adjacent to the Action Area have been mapped according to Holland (1986). These habitat types have been categorized into Desert Habitats, Riparian and Wetland Habitats, Grassland Habitats, Scrub and Chaparral Habitats, Woodland and Forest Habitats, and Other Habitats. A list of the vegetation communities by habitat type and acreages within the Action Area within the Proposed Project ROW assuming a 20 ft width along the route, not including areas where cable will be installed into leased conduit, is presented in Table 6.

Table 6: Vegetation Communities by Habitat Type and Acreage within the Action Area

Vegetation Communities by Habitat Type	Acre
Desert Habitats	
Mojave Creosote Bush Scrub	136.88
Desert Saltbush Scrub	176.80
Desert Sink Scrub	0.22
Joshua Tree Woodland	4.13
Desert Greasewood Scrub	137.26
Riparian and Wetland Habitats	
Transmontane Alkali Marsh	2.93
Wet Subalpine Meadow	14.22
Great Basin Cottonwood-Willow Riparian Forest	19.97
Montane Black Cottonwood Riparian Forest	0.019
Montane Riparian Forest	1.35
Grassland Habitats	
Great Basin Grassland	2.36
Scrub and Chaparral Habitats	
Rabbitbrush Scrub	29.84

Table 6: Vegetation Communities by Habitat Type and Acreage within the Action Area

Vegetation Communities by Habitat Type	Acre
Tamarisk Scrub	0.298
Big Sagebrush Scrub	0.05
Great Basin Mixed Scrub	124.18
Transitional Great Basin Mixed Scrub	23.35
Subalpine Sagebrush Scrub	6.28
Tobacco Brush Chaparral	0.82
Indigo Bush Scrub	15.76
Blackbush Scrub	10.43
Woodland and Forest Habitats	
Mojave Riparian Forest	0.423
Aspen Forest	1.01
Lodgepole Pine Forest	1.70
Sierran Mixed Conifer Forest	0.086
Great Basin Pinyon-Juniper Woodland	30.35
Great Basin Pinyon Woodland	6.04
Great Basin Juniper Woodland and Scrub	6.59
Eastside Ponderosa Pine Forest	27.02
Other Habitats	
Ruderal/Disturbed	60.82
Ornamental Landscaping	4.23
Turf Grass	4.01
Developed	108.36
Open Water	0.30
Agriculture	5.40

3.2.1 California

3.2.1.1 San Bernardino County

Eleven vegetation communities were mapped along the Action Area in San Bernardino County. Four communities were dominant in the Proposed Project ROW. These communities are Desert Saltbush Scrub, Mojave Creosote Bush Scrub, Developed, and Ruderal/Disturbed. Each of the dominant habitats is described below.

Desert Saltbush Scrub

Desert Saltbush Scrub (and Disturbed Desert Saltbush Scrub) is the most common vegetation community along the Proposed Project route in San Bernardino County. Desert Saltbush Scrub is typically

characterized by low, grayish microphyllous shrubs 1 to 3 feet in height dominated by saltbush (*Atriplex* sp.) with some succulent species. Cover in this community is often low with much bare ground between the widely spaced shrubs. Microhabitat consists of fine-textured, poorly-drained soils with high alkalinity and/or salinity surrounding playas on slightly higher ground at elevations below 4,000 feet above mean sea level (amsl) (Holland 1986). Plant species typical of this vegetation community found on the Project site in San Bernardino County include: four-wing saltbush (*Atriplex canescens*), allscale (*Atriplex polycarpa*), and annual grasses and forbs.

Mojave Creosote Bush Scrub

Mojave Creosote Bush Scrub is the second most common vegetation type along the Proposed Project route in San Bernardino County. Mojave Creosote Bush Scrub is characterized by widely spaced shrubs growing 2 to 10 feet in height, typically with bare ground in between, and dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Growth in this community occurs in spring if rainfall is sufficient but is prevented by cold in the winter and limited by drought during other seasons. Ephemeral herbs flower in late March and April with sufficient rainfall, while other annual herbs appear after summer thunderstorms. Soils found on slopes, fans, and valleys in this community are typically well-drained secondary soils with very low available water-holding capacity. Soils on more upland sites are thin, residual soils that have high soil salinity. Mojave Creosote Bush Scrub is found below 3,000 or 4,000 feet amsl. Winter temperatures are often below freezing (Holland 1986). Plant species typical of this vegetation community found on the Project site include: creosote bush, white bursage, cheesebush (*Hymenoclea salsola*), and annual and perennial grasses such as cheat grass (*Bromus tectorum*), Mediterranean grass (*Schismus barbatus*), and big galleta grass (*Pleuraphis rigida*).

Developed

Developed areas are unvegetated areas that have been altered by humans and now display man-made structures such as houses, paved roads, buildings, parks, and other maintained areas.

Ruderal/Disturbed

Areas classified as Ruderal tend to be dominated by pioneering herbaceous species that readily colonize disturbed ground and that are typically found in temporary, often frequently disturbed, habitats (Barbour et al. 1999). The soils in Ruderal areas are often characterized as heavily compacted or frequently disturbed. The vegetation in these areas is adapted to living in compact soils where water does not readily penetrate the soil. Disturbed areas are those areas that are either devoid of vegetation (cleared or graded), such as dirt roads, or those areas that are dominated by non-native weedy species.

3.2.1.2 Kern County

Eleven vegetation communities were identified along the Action Area in Kern County. The dominant communities in the Proposed Project ROW in Kern County were Mojave Creosote Bush Scrub, Desert Saltbush Scrub, Developed, and Ruderal/Disturbed. In Kern County, Mojave Creosote Bush Scrub is more common than Desert Saltbush Scrub, the dominant habitat in San Bernardino County. These habitats are discussed above under San Bernardino County.

3.2.1.3 Inyo County

The Proposed Project route in Inyo County passes through a diverse array of habitats; 21 vegetation communities were identified along the route. Of these, 15 communities dominated the habitat types in the Proposed Project route. The most abundant community in Inyo County is Desert Saltbush Scrub, which was described above for San Bernardino County. Mojave Creosote Bush Scrub, Developed land, and Ruderal/ Disturbed land also were described for San Bernardino County. The other 11 habitats that have significant acreages along the Proposed Project route in Inyo County are described below.

Transmontane Alkali Marsh

Transmontane Alkali Marsh is dominated by perennial, emergent, herbaceous monocots up to 6 feet in height. Plant species characteristic of this community grow mainly in the summer months and are typically dormant during the winter months, when temperatures may drop to well below freezing. Transmontane Alkali Marsh occurs in lake beds, margins of springs, and river bottomlands with standing water, or in saturated soil present during most or all of the year. High evaporation and low input of fresh water render these marshes somewhat salty, especially during the summer (Holland 1986).

Plant species typical of this vegetation community found in the Project area include: rusty molly (*Bassia* [*Kochia*] *californica*), salt grass (*Distichlis spicata*), and yerba mansa (*Anemopsis californica*), with scattered rabbitbrush (*Chrysothamnus* spp.) shrubs.

Rabbitbrush Scrub

Rabbitbrush Scrub is dominated by rabbitbrush species (*Chrysothamnus* spp.), typically characterized by fairly evenly spaced shrubs growing up to 3 feet in height. Shrubs flower in late summer or fall. Rabbitbrush Scrub is a disturbance-maintained community caused by fire, grazing, or tilling (Holland 1986). Plant species typical of this vegetation community found on the Proposed Project route include rabbitbrush shrubs such as rubber rabbitbrush (*C. nauseosus*), yellow rabbitbrush (*C. viscidiflorus*), and black-stem rabbitbrush (*C. paniculatus*).

Desert Greasewood Scrub

Desert Greasewood Scrub is characterized by low, grayish, small-leaved shrubs, 1 to 3 feet in height. The total vegetative cover is often low, with much bare ground between the widely spaced shrubs. Most species within this community are succulent or adapted to living in alkaline soils. Desert Greasewood Scrub is typically found on heavy, fine-textured, poorly drained soils with a high salinity level. The water table is often high for these areas, and the soil surface may also develop a salty crust. Plant species typical of this community found on the Project route are dominated by desert greasewood (*Sarcobatus vermiculatus*), with budsage (*Artemisia spinescens*), spiny saltbrush (*Atriplex confertiflora*), rabbitbrush, and alkali sacaton (*Sporobolus airoides*) also present.

Great Basin Cottonwood-Willow Riparian Forest

Great Basin Cottonwood-Willow Riparian Forest is an open-canopied, broadleaved, winter-deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*) and willow trees (*Salix* sp.) without much shrubby understory. This community is typically found along the larger streams at lower montane elevations, usually where streams empty into valleys (Holland 1986). Areas dominated by

native willow trees growing adjacent to roadsides or near agricultural ditches have also been classified as Great Basin Cottonwood-Willow Riparian Forest habitat. Plant species typical of this community found on the Proposed Project route include: Fremont cottonwood, red willow (*S. laevigata*), narrow-leaved willow (*S. exigua*), other willow species (*Salix* sp.), scattered rabbitbrush shrubs, wild rose (*Rosa* sp.), and creeping wildrye (*Elymus triticoides*), as well as other graminoids.

Great Basin Mixed Scrub

Great Basin Mixed Scrub is characterized by a moderately tall, fairly open shrubland with several species contributing to the canopy. Dominant species usually include big sagebrush (*Artemisia tridentata*) and antelope bush (*Purshia tridentata*) with several perennial grasses between the shrubs. This community is typically found on deep, gravelly, well-drained sites, usually on alluvium derived primarily from granitic sources. This community also integrates on cooler or more shallow-soiled sites with Subalpine Sagebrush Scrub, with Great Basin Pinyon-Juniper Woodlands on residual upland sites, and with Big Sagebrush Scrub on slightly lower elevation, less fertile, or overgrazed sites (Holland 1986). Plant species typical of this community found on the Proposed Project route include: big sagebrush, antelope bush, yellow rabbitbrush, four-wing saltbush, and blue wildrye (*Elymus glaucus*).

Indigo Bush Scrub

Indigo Bush Scrub is a low, open to dense shrubland dominated by Johnson's indigo bush (*Psorothamnus arborescens* ssp. *minutiflorus*). Plants are typically less than 3 feet in height. This community is found in desert mountains and canyons or on talus, the rocks accumulating at the base of a mountain or cliff. Plant species typical of this community found along the Proposed Project route include: Johnson's indigo bush (*Psorothamnus arborescens* ssp. m*inutiflorus)*, four-wing saltbush, cryptantha (*Cryptantha* sp.), annual buckwheat (*Eriogonum* sp.); and occasionally buckhorn cholla (*Opuntia acanthocarpa*) is also present.

Blackbush Scrub

Blackbush Scrub is characterized by low, often intricately branched shrubs, 1 to 3 feet in height, with crowns usually not touching and with bare ground between plants. Most growth and flowering occurs in late spring. Most plant species are dormant in winter (from cold) and probably in summer and fall (from drought). This community is typically found on sandy bottoms of wide canyons; incised arroyos of upper bajadas; and sandy, braided, shallow washes of the lower bajadas, usually below 5,000 feet. Plant species typical of this community found on the Proposed Project route are dominated by four-wing saltbush and Nevada ephedra (*Ephedra nevadensis*) or four-wing saltbush and goldenbush (*Ericameria* sp.). Other less abundant species within this community include: budsage, spiny saltbrush, allscale, rabbitbrush species, blackbush (*Coleogyne ramosissima*), and winter fat (*Krascheninnikovia lanata*).

Wet Subalpine Meadow

Wet Subalpine Meadow is an open area within the Subalpine Forest where a rich flora of grasses, sedges, rushes, and forbs form low (typically less than 2 feet in height), dense, often matted vegetation. This community remains saturated throughout the growing season, which is often limited by snow. Some meadows appear to be late successional communities, while other meadows are maintained by streams that flow through the meadow (Holland 1986). Large depressions dominated by sedges and rushes within scrub communities on the Proposed Project route have also been classified as Wet

Subalpine Meadow areas. Furthermore, much of the meadow habitat along the Proposed Project route correlates with "Freshwater Emergent Wetland," as identified by the National Wetland Inventory. Plant species typical of this community found on the Proposed Project route include: rushes (*Juncus* spp.), sedges (*Carex* spp.), Kentucky bluegrass (*Poa pratensis*), and other grass species.

Joshua Tree Woodland

Joshua Tree Woodland is an open woodland with Joshua tree (*Yucca brevifolia*) usually as the only arborescent species (up to 40 feet in height) and with numerous shrub species between 3 and 13 feet in height also present. Little or no herbaceous understory is present during most of the year. The main growing season for Joshua Tree Woodland communities is during spring, with growth limited by cold in winter and drought in the summer and fall. Many species of ephemeral herbs may germinate following sufficient late fall or winter rains and flower in mid-spring. This community is typically found on sandy, loamy, or gravelly, well-drained gentle alluvial slopes (Holland 1986).

Great Basin Grassland

Great Basin Grassland is typically characterized by open, steppe-like vegetation of perennial bunch grasses with flowering culms 1 to 3 feet in height. Most growth and flowering occur during late spring and early summer. The plants are dormant in winter (from cold) and mostly dormant in late summer and fall (from drought). Great Basin Grassland is often found on fine-textured soils that can be damp or frozen at the surface in winter, moist in spring, and dry in summer and fall.

Great Basin Grassland is present along the Proposed Project route in Inyo and Mono counties in California as well as in Douglas and Washoe counties in Nevada. Plant species typical of this community found along the Proposed Project route include: blue wildrye, fescue (*Festuca* sp.), needlegrass (*Nassella* sp.) and other brome (*Bromus* sp.), and bluegrass (*Poa* sp.) species.

Agriculture

Agriculture consists of annual crops, vineyards, orchards, dairies, and stockyards (Gray and Bramlet 1992). Agriculture Irrigated and Dryland Field Crops are mainly used for growing non-native annual grasses and forbs harvested for livestock feed. Planted species include barley (*Hordeum* sp.), oats (*Avena* sp.), and clover or alfalfa (*Trifolium* sp.) species, among others.

3.2.1.4 Mono County

The Proposed Project route crosses 30 different vegetation communities in Mono County; 21 of these habitats are dominant in the Proposed Project ROW. Of these 21 vegetation communities, 11 (Great Basin Mixed Scrub, Desert Greasewood Scrub, Developed, Blackbush Scrub, Ruderal/Disturbed, Great Basin Cottonwood-Willow Riparian Forest, West Subalpine Meadow, Rabbitbrush Scrub, Agriculture, Indigo Bush Scrub, Great Basin Grassland) were described above. The remaining 10 vegetation types with significant area within the Proposed Project ROW are discussed below. In addition to these 21 communities, the Proposed Project ROW in Mono County contains about 19 acres of the sensitive habitat Transmontane Alkali Marsh.

Eastside Ponderosa Pine Forest

Eastside Ponderosa Pine Forest is an open, park-like forest of coniferous evergreens, dominated by Ponderosa pine (*Pinus ponderosa*) trees. The understory within this community along the Proposed Project route is very minimal, mainly covered by a dense needle layer. Ponderosa pine on the east side of the Sierra-Cascade crest is characterized by shorter, thicker needles; smaller, denser cones; and greater cold tolerance than trees on the west side of the crest. The growth period is probably shorter than that within a Westside Ponderosa Pine Forest because of longer, colder winters. Eastside Ponderosa Pine Forest is often found in areas with warm, dry summers and cool, moist winters with considerable snow accumulation at the higher elevations, with coarse, well-drained basaltic soils.

Great Basin Juniper Woodland and Scrub

Great Basin Juniper Woodland is an open woodland community dominated by Utah juniper (*Juniperus osteosperma*), with scrub and herb components from adjacent non-forested stands of Great Basin Scrub. This community is found on dry, shallow, often stony soils. Great Basin Juniper Woodland and Scrub tends to be a slightly colder and drier community than Great Basin Pinyon Woodland. Plant species typical of this community found along the Proposed Project route include: Utah juniper, single-leaf pinyon pine (*Pinus monophylla*), big sagebrush, antelope bush, and rabbitbrush.

Transitional Great Basin Mixed Scrub

This community represents an ecotone that is transitional between Great Basin Mixed Scrub and an Eastside Ponderosa Pine Forest. Transitional Great Basin Mixed Scrub is characterized by a moderately tall, fairly open shrubland with several species contributing to the canopy (Holland 1986). Dominant species usually include big sagebrush and antelope bush with several perennial grasses between the shrubs. Mature Ponderosa pine trees are found scattered among the shrubs, and this community tends to occur at higher elevations than the Great Basin Mixed Scrub community. Plant species typical of this community found on the Proposed Project route include big sagebrush and other species characteristic of the Great Basin Mixed Scrub community, but with a presence of Ponderosa pine trees as well.

Subalpine Sagebrush Scrub

Subalpine Sagebrush Scrub is similar to Big Sagebrush Scrub but is typically found at higher elevations and with colder temperatures. Often the plants are dwarfed, with crowns touching or more open. Growth in this community occurs mainly from early to mid-summer. Most of the species in this community flower during mid to late summer and become dormant in the fall, winter, and early spring due to cold (Holland 1986). Plant species characterized by this community found along the Proposed Project route include: yellow rabbitbrush, cherry (*Prunus* sp.), and blue wildrye.

Great Basin Pinyon Woodland

Great Basin Pinyon Woodland is a scrubby steppe dominated by single-leaf pinyon pine trees over an understory of big sagebrush and antelope bush up to 3 feet in height (shorter on cold, exposed, windy ridges). This community is typically found on rocky soils, usually with low nutrient content and layers associated with soil profile development. Plant species typical of this community found along the Proposed Project route include: big sagebrush, antelope bush, blue wildrye, and abundant single-leaf pinyon pine trees.

Aspen Forest

Aspen Forest is typically characterized by dense groves of quaking aspen (*Populus tremuloides*) growing up to 65 feet in height. Scrubby thickets may occur at the edges of the groves in areas of relatively dry soil or at high altitudes. The understory is sparse in dense groves but includes a variety of small shrubs and herbaceous perennials in more open stands. The growing season of this community is from late spring or early summer through early fall. The brilliant yellow and orange colors of the leaves in October are notable for California. The trees are leafless from late October until late May, or longer at high elevations. Flowering occurs in spring, before the leaves emerge. This community may occur away from streambanks near springs or in other areas with high soil moisture. Plant species typical of this community found along the Proposed Project route include: aspen, wild rose, western choke-cherry (*Prunus virginiana*), and creeping snowberry (*Symphoricarpos mollis*).

Lodgepole Pine Forest

Lodgepole Pine Forest is typically characterized by dense forests of slender trees up to 130 feet in height, often in nearly pure stands of lodgepole pine (*Pinus contorta* var. *murrayana*). The trees in the moister, denser stands are relatively short-lived; and if the stand has not burned for a long time, fallen trees, branches, and needles cover the ground. The understory is normally sparse in these dense stands, but low shrubs and perennial herbs may occur abundantly in forest openings. Flowering of most understory plants is concentrated in the early summer, with growth of herbaceous species limited by drought in late summer. Most plants are dormant from fall through spring. Lodgepole Pine Forest typically occurs at elevations with long, snowy winters and cool, dry summers. This community apparently tolerates large variations in soil and moisture factors but most commonly occurs on rocky, well-drained soils. Plant species typical of this community found along the Proposed Project route include: lodgepole pine and scattered quaking aspen. Understory species were uncommon throughout the Proposed Project ROW and mainly characterized by annual grasses, if present at all.

Tobacco Brush Chaparral

Tobacco Brush Chaparral is an evergreen montane chaparral strongly dominated by tobacco brush, sometimes referred to as snowbrush (*Ceanothus velutinus*). This dense community is common on open, wooded slopes from 3,600 to 10,000 feet in elevation on coarse-textured, well-drained soils. This *Ceanothus* is adapted to fire by crown-sprouting, and the seeds require scarification to germinate. Stands of tobacco brush begin to deteriorate after 15 years. Plant species typical of this community found along the Proposed Project route include: tobacco brush, cherry, cliffrose (*Purshia* sp.), and big sagebrush.

Sierran Mixed Conifer Forest

Sierran Mixed Conifer Forest is an open, dense, and park-like forest of coniferous evergreens up to 250 feet in height with several dominant species. Fir (*Abies* sp.), douglas fir (*Pseudotsuga menziesii*), and dogwood (*Cornus* sp.) are more common on moist sites; pine (*Pinus* sp.) and buckthorn (*Ceanothus* sp.) are more common on dry sites. The understory typically is sparse, consisting of scattered broadleaved mesophytic shrubs and small trees. Growth occurs mostly in early summer, and plants are essentially dormant in winter. This community grows in areas with warm, dry summer and cool, moist winters with considerable snow accumulation at the higher elevations. It is usually found on north-facing slopes near its lower elevational margin. Soil is usually moist, covered by a thick leaf litter layer and dead branches

and downed wood, which tend to accumulate with time. Plant species typical of this community found along the Proposed Project route include: lodgepole pine, sugar pine (*Pinus lambertiana*), single-leaf pinyon pine, and Utah juniper.

Montane Riparian Forest

Montane Riparian Forest is typically characterized by open to dense, broadleaved, winter-deciduous, shrubby riparian thickets usually dominated by any of several willow (*Salix* sp.) species, alder (*Alnus* sp.), or dogwood. This community is often found on relatively fine-textured alluvium along fairly low-gradient reaches of snowmelt-fed streams. Plant species typical of this community found along the Proposed Project route include: quaking aspen, white alder (*Alnus rhombifolia*), and multiple willow species including red willow, narrow-leaved willow, and black willow (*Salix gooddingii*).

3.2.2 Nevada

3.2.2.1 Douglas County

The Proposed Project ROW crosses 14 vegetation communities in Douglas County. Of these, 11 habitats are dominant along the Proposed Project route. The most abundant habitats along the Project route in Douglas County are Agriculture, Great Basin Pinyon-Juniper Woodland, Great Basin Juniper Woodland and Scrub, Great Basin Mixed Scrub, Developed land and Ruderal/Disturbed land. The other habitats that occupy substantial acreage along the Proposed Project route in Douglas County are Wet Subalpine Meadow, Great Basin Cottonwood-Willow Riparian Forest, Ornamental Landscaping, Rabbitbrush Scrub, and Great Basin Grassland.

3.2.2.2 Carson City

The Proposed Project route crosses 12 vegetation communities in Carson City. Of these, eight communities are dominant along the Proposed Project route. The most abundant habitats are Great Basin Mixed Scrub and Developed land. Other habitats that occupy substantial area within the Proposed Project route in Carson City are Ruderal/Disturbed, Wet Subalpine Meadow, Turf Grass, Great Basin Cottonwood-Willow Riparian Forest, Ornamental Landscaping, and Big Sagebrush Scrub.

3.2.2.3 Washoe County

The Proposed Project route crosses 13 vegetation communities in Washoe County. Of these, 10 communities are dominant along the Proposed Project route. The most abundant habitats are Developed land and Great Basin Mixed Scrub. Other habitats that account for notable acreage along the Proposed Project route are Rabbitbrush Scrub, Ruderal/Disturbed, Turf Grass, Great Basin Cottonwood-Willow Riparian Forest, Wet Subalpine Meadow, Ornamental Landscaping, Agriculture, and Great Basin Grassland.

SECTION 4.0 – SPECIES/CRITICAL HABITAT ADDRESSED

4.1. OVERVIEW

A literature review and a field reconnaissance survey were conducted to identify biological resources along the Proposed Project route. The results are described in detail in the Draft Biological Technical Report for the California Broadband Cooperative Digital 395 Middle Mile Project (Chambers Group 2010) and are summarized in this section.

Prior to performing the California biological field surveys, existing documentation relevant to the Survey Area was reviewed. The most recent records of the California Natural Diversity Database managed by the CDFG (CDFG 2010) and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2010) were reviewed for the quadrangle containing and surrounding the Proposed Project route. These databases contain records of reported occurrences of federal- and/or state-listed as endangered or threatened species, proposed endangered or threatened species, former Federal Species of Concern (FSC), California Species of Special Concern (CSC), or otherwise sensitive species or habitat that may occur within or in the immediate vicinity of the Proposed Project route. In addition, the BLM lists of special status plant and wildlife species known to occur within the providence controlled by the Barstow, Ridgecrest, and Bishop field offices also were reviewed (BLM 2009, 2010). These databases contain records of reported occurrences of federal- or state-listed as endangered or threatened species, proposed endangered or threatened species, former FSC, CSC, or otherwise sensitive species or habitat that may occur within or in the immediate vicinity of the Proposed Project route. United States Forest Service (USFS 2005) sensitive species lists for the Inyo and Humboldt-Toiyabe national forests were also reviewed. In addition, the USFWS Critical Habitat Portal was searched to identify if the Proposed Project route crosses through designated critical habitat for federally-listed species.

Prior to performing the Nevada biological field surveys, existing documentation relevant to the Survey Area was reviewed, including the most recent records of Nevada Department of Wildlife (NDOW) (NDOW 2010) and the Nevada Natural Heritage Program (NNHP) (NNHP 2004) for sensitive species known to occur within Douglas, Carson City, and Washoe counties, Nevada. These databases contain records of reported occurrences of federal- or state-listed as endangered or threatened species, proposed endangered or threatened species, former FSC, Nevada Species of Special Concern, or otherwise sensitive species or habitats that may occur within or in the immediate vicinity of the Proposed Project route. In addition, the BLM list of special status plant and wildlife species known to occur within the providence controlled by the Carson City Field office was also reviewed (BLM 2010).

Biological reconnaissance- level surveys were conducted along the Survey Area in order to identify potential for occurrence (PFO) of sensitive species, vegetation communities, or habitats to support sensitive species. The survey was conducted by car and on foot between 0700 and 1700 hours from October 15, 2010, through December 2, 2010.

Following the literature review and biological reconnaissance-level survey conducted by Chambers Group (2010), it was determined that 11 federally listed endangered (FE) or threatened (FT) or candidate species have the potential to occur within the Proposed Project vicinity, including 2 plant species, Fish Slough milk-vetch and Steamboat buckwheat, and 9 wildlife species, Owens pupfish, southwestern willow flycatcher, Owens tui chub, desert tortoise, Lahontan cutthroat trout, Sierra Nevada big-horn sheep, Carson's wandering skipper, mountain yellow-legged frog, and least Bell's vireo.

The Proposed Project route also crosses USFWS designated critical habitats for desert tortoise and is in close proximity to critical habitat for Owens tui chub.

Based on a review of species habitat criteria and documented environmental conditions in the Proposed Project footprint, it was determined that the following species would not be affected by the Proposed Project and will not be discussed further in this biological assessment: Fish Slough milk-vetch, Steamboat buckwheat, Owens pupfish, southwestern willow flycatcher, Lahontan cutthroat trout, Sierra Nevada big-horn sheep, Carson's wandering skipper, mountain yellow-legged frog, and least Bell's vireo.

4.2. FEDERALLY LISTED SPECIES

Data obtained from the literature search and reconnaissance-level surveys were analyzed to determine the potential for federally listed species to occur within the Proposed Project route.

4.2.1.1 Desert Tortoise

The Proposed Project crosses through desert tortoise critical habitat for most of the corridor from Barstow to Johannesburg, in San Bernardino County, California (Figure 2). Detailed maps of the Proposed Project route within desert tortoise critical habitat and potential habitat outside of critical habitat are provided in Appendix B.

4.2.1.2 Owens Tui Chub

The Proposed Project is located within close proximity to Owens tui chub critical habitat at two locations (Figure 3). Both locations are near Crowley Lake, which is located approximately 14 miles from the town of Mammoth Lakes in Mono County. One critical habitat location is to the east of Crowley Lake north of US 395 (Figure 4). The second location is west of Crowley Lake on the north side of US 395 (Figure 5). Although the Proposed Project is located within 200 feet of Owens tui chub critical habitat, based on the location of the Proposed Project activities in relation to the critical habitat, the Proposed Project will not affect the critical habitat or species and, therefore, will not be discussed further in this document.

Figure 2: Desert Tortoise Designated Critical Habitat

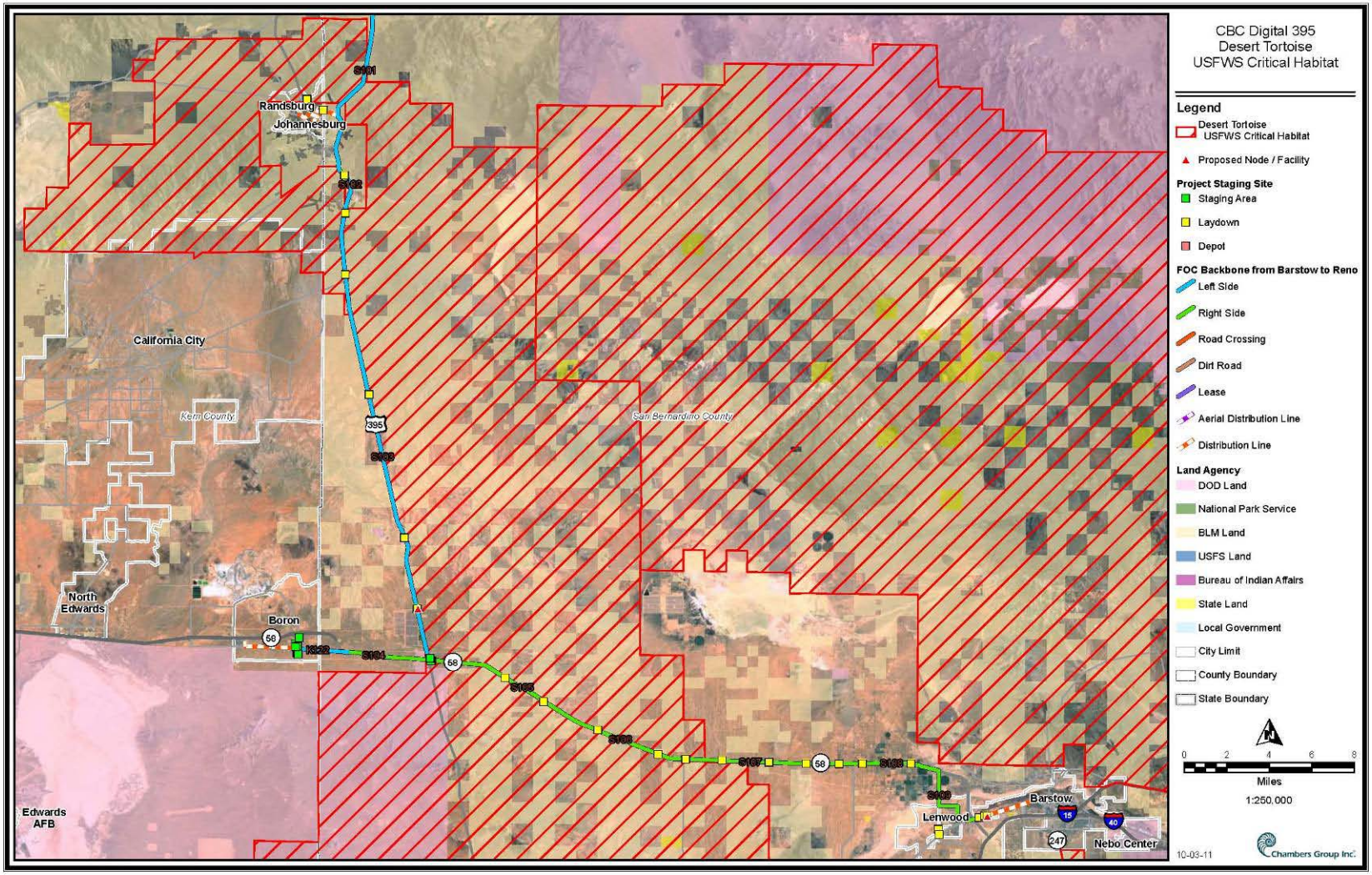

Figure 3: Owens Tui Chub Designated Critical Habitat

Figure 4: Owens Tui Chub Designated Critical Habitat East of Crowley Lake

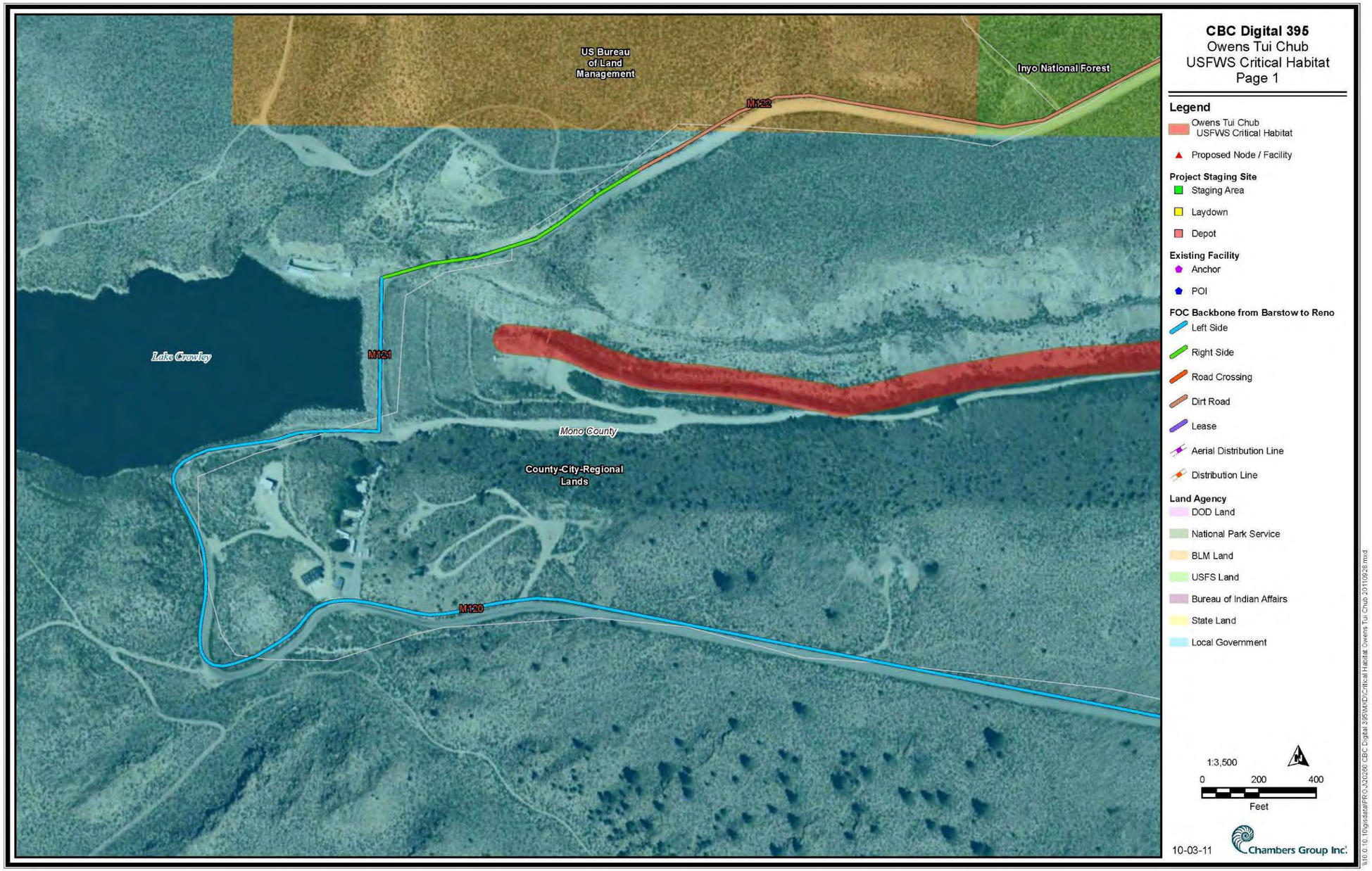

Figure 5: Owens Tui Chub Designated Critical Habitat West of Crowley Lake

4.3. CURRENT CONDITIONS OF FEDERALLY LISTED SPECIES AND EFFECTS DETERMINATIONS

The Proposed Project crosses through a variety of habitat types important to many wildlife species, including federally listed species. The Proposed Project has been designed to meet CBC's needs while avoiding and minimizing impacts to sensitive resources. Alteration of sensitive resource areas is being avoided or minimized by selecting a route through previously disturbed habitats and existing roads, utilizing installed underground conduit, installing bridge attachments, or implementing HDD techniques under perennial waterways when feasible. Direct and indirect impacts to biological resources would be minimized based on the implementation of the avoidance and minimization measures.

In addition to avoidance and minimization measures, pre-construction surveys would be performed directly ahead of construction areas to determine the presence of listed species. Furthermore, biological monitors shall be present during construction activities in biologically sensitive areas, regardless of the results of pre-construction surveys. Site-specific focused surveys have not been conducted for the species listed in this report for the Proposed Project.

O&M activities will be implemented along the Proposed Project route over the life of the Proposed Project. No new access roads will be constructed for O&M activities. Surveyors may drive along the existing roads to inspect the line after rainstorm events and may stop and open the hatches to ground vaults and manholes. Ground-disturbing activities associated with ongoing O&M procedures are normally minor, if any. These activities will occur mainly for repair of erosion control devices or cable conduits in the event of storm damage, landslides, or other emergencies. In most emergency situations, review of damaged areas will be accomplished via public roads, private transmission access roads, and route access roads. No new habitat will be affected by maintenance activities, and maintenance activities will occur only within the Proposed Project ROW. The appropriate agencies will be contacted if maintenance activities outside previously authorized areas are required.

4.3.1 Desert Tortoise

The desert tortoise is a federal-listed threatened species. Its range extends from central Nevada and extreme southwestern Utah south through southeastern California and southwestern Arizona into northern Mexico (Berry et al. 2002). In California, the historic range of this species includes northeastern Los Angeles, eastern Kern, eastern San Diego, and southeastern Inyo counties, as well as most of San Bernardino, Riverside, and Imperial counties. Besides range, a composite of characteristics often is necessary to distinguish the desert tortoise from other species of gopher tortoise, but its most unique feature is its very large hind feet. The desert tortoise is a medium-sized tortoise with an adult carapace length of about 8 to 14 inches. Males, on average, are larger than females and are distinguished by a more concave plastron, longer gular horns, larger chin glands on each side of the lower jaw, and longer tails. Carapace color varies from light yellow-brown (horn color) to dark grey-brown.

The desert tortoise inhabits river washes, rocky hillsides, slopes, and flat deserts with sandy or gravelly soils. Soil conditions must be friable for burrow and nest construction. Creosote bush, white bursage, saltbush, Joshua tree, Mojave yucca, and cacti are often present in the habitat along with other shrubs, grasses, and wildflowers. It is entirely herbivorous and forages on a variety of plants, including cactus species and annual vegetation. Desert tortoise populations are declining due to habitat destruction/loss, predation, illegal collecting, grazing, and off-highway vehicle use (Berry 1997).

On February 8, 1994, the USFWS designated approximately 6.45 million acres of critical habitat for the Mojave population of the desert tortoise. On June 28, 1994, the Service approved the final Desert Tortoise (Mojave Population) Recovery Plan. The Recovery Plan identified primary constituent elements (PCE) for the desert tortoise as the attributes that are necessary for the long-term survival of the species. These elements include: sufficient space to support viable populations; sufficient space for movement, dispersal, and gene flow; and suitable habitat for burrowing, nesting, and overwintering.

Habitat for this species exists along the Proposed Project route from Barstow to Olancha in California. The Proposed Project route is linear and mainly follows SR 58 and US 395, which would be expected to have lower numbers of desert tortoises because of the proximity to roads. In addition, because the majority of the project is linear, it would be difficult to obtain accurate estimates of desert tortoises through focused surveys because the desert tortoise would move in and out of the area, which would provide little information on desert tortoise densities (E. Nordin, personal communication, May 2011). Larger areas of disturbance, such as underground vaults and staging areas, would cover a greater area and could overlap with the home range of desert tortoises; however, siting underground vaults and staging areas in previously disturbed areas would decrease the likelihood of desert tortoises being in the area (E. Nordin, personal communication, May 2011). For those areas where desert tortoises are likely to occur, the appropriate protective measures to reduce the likelihood of take were developed.

Conclusion and Effect Determination

Vehicular travel on the Proposed Project route could result in injury or death to desert tortoises. Depending upon the time of year, hatchlings are more at risk because they are more difficult to spot from moving vehicles. Desert tortoise eggs could be damaged, and nearby burrows could be collapsed by vibration from construction equipment. Moving desert tortoises from the road or from underneath parked vehicles could result in injury or mortality (especially if bladder is voided by the moved tortoise).

The Proposed Project may affect and is likely to adversely affect desert tortoise.

4.4. CRTITCAL HABITAT

The Proposed Project route crosses through critical habitat for the desert tortoise.

4.4.1 Desert Tortoise

Assuming a 20 foot wide Proposed Project ROW, the Proposed Project crosses 31.34 acres of critical habitat that does not have desert tortoise fencing and 26 acres of critical habitat with desert tortoise fencing (at least one side of the road), and 370 acres of suitable desert tortoise habitat from Barstow to Olancha; this calculation is a conservative estimate and is expected to be greater than the actual area containing PCEs. Laydown and staging areas were located in areas that did not contain PCEs and, therefore, these areas were not included in calculations of impact area to critical habitat. Where feasible, the Proposed Project was designed to minimize impacts to the PCEs of the desert tortoise habitat. Segments of the Proposed Project route are located in existing dirt roads and the disturbed portions of county roads or previously disturbed access roads, which will be promptly restored to their pre-project condition. In the areas where trenching may be used within desert tortoise habitat, the trench will be backfilled immediately after the conduits are installed. The native material excavated during installation will be placed back in the trench as backfill and compacted to its pre-construction

condition. The Proposed Project is likely to temporarily affect USFWS designated critical habitat for the desert tortoise.

Effect Determination

The Proposed Project may affect and is likely to adversely affect desert tortoise USFWS designated critical habitat.

4.5. CUMULATIVE EFFECTS OF THE ACTION

The regulations implementing NEPA require that the cumulative impacts of a proposed action be assessed (40 CFR Parts 1500-1508). A cumulative impact is an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7).

The area from which potential cumulative projects were drawn includes all lands in the vicinity of the Proposed Project route. In light of the short-term and temporary potential impacts associated with the Proposed Project, the reasonably foreseeable time frame for this cumulative analysis is approximately ten years. The majority of the effects from the Proposed Project will be limited to construction activities. Long-term maintenance activities associated with the Proposed Project are expected to be nominal at best, possibly requiring inspections and emergency repair in the event of rarely occurring major storm events.

4.5.1 Past, Other Current, and Reasonably Foreseeable Future Projects

For both plant and wildlife species, the cumulative effects analysis considers the Proposed Project's direct and indirect effects when added with the direct and indirect effects resulting from past, present, and reasonably foreseeable projects likely to occur over the next ten years. The present and reasonably foreseeable projects were selected from the following sources that are currently available:

1. List of cumulative projects identified in the 2011 Public Review Draft EA/IS;

2. USFS (Inyo, Humboldt-Toiyabe) Schedule of Proposed Action (SOPA) projects for July 2011 to September 2011; and

3. BLM (Barstow, Bishop, Ridgecrest, Carson City/Sierra Front Office) list of projects.

Only cumulative projects that provided enough information to determine potential environmental effects were considered. As a result, any projects that appeared idle for one year or more were removed from the analysis as they are no longer considered reasonably foreseeable. Any projects that are partially or wholly complete (i.e., ground disturbing activities completed) were included in the baseline conditions for the cumulative analysis. The remaining list includes projects that are presently being planned or constructed, as well as those where the initial scoping process has not yet been completed.

For the wildlife species and wildlife species critical habitat discussed below, the cumulative effects analysis considers the dispersal and home ranges of each wildlife species; thus, the analysis area for each species varies.

The cumulative projects considered for both wildlife species are identified in the individual discussions. If cumulative projects provided limited project information beyond project location, general project location information was used in the cumulative analysis.

4.5.2 Desert Tortoise / Critical Habitat for Desert Tortoise

Potential threats to desert tortoise include vehicular activity on the Proposed Project route. Vehicular travel associated with the Proposed Project can result in injury or death to desert tortoises and vibrations from road maintenance equipment can collapse burrows and damaged desert tortoise eggs. Injury or death can also occur when moving desert tortoises from the road or from underneath parked vehicles. Potential threats to desert tortoise habitat include temporarily disturbance to USFWS designated critical habitat for the desert tortoise.

Cumulative projects identified that may affect the species involve predominantly roadway improvements. These cumulative projects would be expected to avoid impacts to desert tortoise and USFWS designated critical habitat for the desert tortoise; potential impacts of these cumulative projects would therefore be limited.

Based on several known occurrences of desert tortoise in or near the Proposed Project route identified in the CNDDB, and present suitable habitat near the Proposed Project ROW, species presence within the Project ROW is anticipated to be high for most of the corridor from Barstow to Johannesburg, in San Bernardino County, California. Indirect effects to habitat may be adverse, but the area of effect would be limited based on the Proposed Project design and minimization measures. Therefore, the proposed Project may contribute some cumulative effect on desert tortoise and USFWS designated critical habitat for the desert tortoise, given that the Project may have some direct or indirect effects. However, the Project's contribution to cumulative impacts has been minimized by Proposed Project desert tortoise Applicant Proposed Measures (APM) and Mitigation Measures (MM) which include: speed limits for construction vehicles; pre-construction surveys for desert tortoise within the Proposed Project ROW and buffer areas; covering or fencing open trenches and holes shall be covered at the end of each work day; and daily surveys for desert tortoise during construction. Based on the above assessment, the Project is not expected to have a substantial incremental cumulative effect, and the overall effects are not expected to cause a decline in the population of this species.

Table 7: Current and Planned Future Projects

Project Name	Location	Description
San Bernardino County		
SR-58 via Hinkley	State Route 58 from Hidden River Road to Lenwood Road	Construct a 4-lane divided freeway/expressway to reduce traffic congestion, improve pavement, improve safety features, and meet future traffic demands.
Proposed Old Highway 58 Land Sale	Immediately south of Old Highway 58, approximately 5 miles west of the city of Barstow	Sale of land
Kramer Junction Solar Energy Center	West side of US 395, approximately 2.5 miles north of Highway 58	Construct and operate a 20-megawatt photovoltaic solar energy facility on 191-acre lot
Kern County		
Boron SRRA Rehab	Route 58, Mile Post R139.0	Construct New Buildings
Airport Road Rubberized Overlay	Route 58, Mile Post R118.0 to R143	Rubberized Hot Mix Asphalt Overlay
Kern 58 RAC Overlay	Route 58, Mile Post 77.3 to 107.6	Rubberized Hot Mix Asphalt Overlay
Cache Creek Median Barrier	Route 58, Mile Post R106.7 to R107	Install Concrete Median Barrier
Mojave Windscreen	Route 58 at exit SR 165 near Mohave	Install windscreen
Kenwater Overhead Revegetation	Route 58, Mile Post R111.8	Revegetation to restore ecological area
58/14 Separation Revegetation	Route 58, Mile Post R114.6	Install erosion control and fencing
Mojave East Material Site (#252)	Route 58, Mile Post 125.2	Material Site Reclamation
Searles Valley CAPM	US 395, Mile Post 8.7 to 14.8	AC Overlay
Ridgecrest to China Lake Slurry Seal	Route 178, Mile Post 57.1 to 88.2	Slurry Seal
Inyokern 4-lane	US 395, Mile Post 13.9 to 30.6	Convert to 4-lane Expressway
Ridgecrest Recycling and Sanitary Landfill Permit Revision Project	Approximately 2 miles west of the City of Ridgecrest, and approximately 2 miles southeast of the town of Inyokern	Increase permitted lifespan and capacity of current landfill

Table 7: Current and Planned Future Projects

Project Name	Location	Description
Inyo County		
Olancha/Cartago 4-Lane	US 395, Mile Post 30.8 to 41.8	Upgrade existing 2-lane highway to a 4-lane expressway
Ed Powers Rehab	US 395, Mile Post 117.9 to 122.4	Rehabilitate roadway, widen shoulders, and construct sidewalk
South Sherwin Summit Rehab	US 395, Mile Post R128.8/R129.5 ten miles north of Bishop to Mile Post R10.3 at Tom's Place	Rehabilitate roadway and widen shoulders
Coso Safety Roadside Rest Area Rehab	US 395, Mile Post 17.9, 17 miles south of SR-190	Upgrade and repair existing safety roadside rest area making it ADA compliant
North Little Lake Rehab	US 395, Mile Post R8.6 to R11.8	Rehabilitate roadway, widen shoulders, and realign curve
Lone Pine CAPM	US 395, Mile Post 57.0 to 57.9	Pavement rehabilitation
Caltrans Road Rehabilitation Project	US 395 near Little Lake, approximately 8.5 miles south of Little Lake Road	Road rehabilitation work on US 395
T37-1 Highway 395 Access Road approach widening	Owens Lake Westside, 2 miles north of Bartlett	Widening on an access road approaching US 395
Mono County		
High Point Curve Realignment	US 395, Mile Post 117.9 to 119.4	Realign curves
South Sherwin Summit Rehab	US 395, Mile Post R128.8/R129.5 ten miles north of Bishop to Mile Post R10.3 at Tom's Place	Rehabilitate roadway and widen shoulders
Casa Diablo IV Geothermal Development Project	Near the intersection of US 395 and SR 203, approximately 3 miles east of Mammoth Lakes	Construction of a 33-megawatt geothermal power plant and associated well field, internal access roads, pipelines, and a transmission line.
June Lake Hazardous Fuels Reduction	US 395 and June Lake Loop	Hazardous fuels reduction work on 4,578 acres within threat zones in June Lake Loop.
Crestview Safety Roadside Rest Area Rehab	US 395, Mile Post 32.4, six miles north of the junction of US 395 and SR 203	Upgrade and repair existing safety roadside rest area making it ADA compliant

Table 7: Current and Planned Future Projects

Project Name	Location	Description
Sonora Wildlife Crossing	US 395, Mile Post 91.7 to 96.8, near the junction of US 395 and SR 108	Construct deer fencing with undercrossings
Pickel Meadows CAPM	Route 108, Mile Post 9.8 to 15.1, west of US 395	Pavement rehabilitation
Mammoth Creek Bridge Deck and Rail Upgrade	US 395, Mile Post 23.6 to 27.1	Bridge deck rehabilitation and rail upgrade
Nevada		
Mt. Rose Tracts Hazardous Fuels Reduction Project	Carson Ranger District, 33 National Forest parcels on both sides of Mt. Rose Highway (State Route 431)	Fuels reduction on approximately 800 acres using mechanical equipment and chainsaws to thin small trees and shrubs to modify wildfire hazard near residences and other developments. Wet season prescribed burning is also being considered.
Arrowhawk Hazardous Fuels Reduction Project	Areas adjacent to south and west Reno, Nevada	Reduce wildfire hazard and restore open stands within Reno's Wildland Urban Interface, using equipment, crews, burns, vegetation removal, and livestock grazing

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Ridge, Little Lake, Lone Pine, Lundy, Manzanar, Mojave, Mount Dana, Mount Jackson, Nebo, Nine Mile Canyon, North Edwards, Olancha, Old Mammoth, Pearsonville, PickleMeadow, Poleta Canyon, Red Mountain, Ridgecrest North, Ridgecrest South, Risue Canyon, Rovana, Saddleback Mountain, Sanborn, Stoddard Well, Tinemaha Reservoir, Toms Lake, Topaz Lake, Tweleve Gauge Lake, Union Wash, Vermillion Canyon and *Whitmore Hot Springs* California, USGS 7.5-minute quadrangle. Wildlife and Habitat Data Analysis Branch. Version Dated September 2010. http://www.dfg.ca.gov/wildlife/hunting/deer/docs/SW_MD_Habitat_Guidelines.pdf. Accessed January 2010.

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SECTION 6.0 – LIST OF CONTACTS AND PREPARERS

CONTACTS

Erin Nordin
Pacific Southwest Region (Region 8)
Fish & Wildlife Biologist
E-mail: Erin_Nordin@fws.gov

Brian Croft
Pacific Southwest Region (Region 8)
Fish & Wildlife Biologist

Contact Information:
U.S. Fish & Wildlife Service
602 South Tippecanoe Avenue
San Bernardino, CA 92408

LIST OF PREPARERS

Saraiah Skidmore
Chambers Group, Inc.
Staff Biologist / Botanist
E-mail: sskidmore@chambersgroupinc.com

Contact Information:
302 Brookside Ave.
Redlands, CA 92373

Lisa Louie
Chambers Group, Inc.
Senior Project Manager

Mike McEntee
Chambers Group, Inc.
Vice President, Biology

Contact Information:
5 Hutton Centre Drive, Suite 750
Santa Ana, CA 92707

APPENDIX A – PROJECT MAPS

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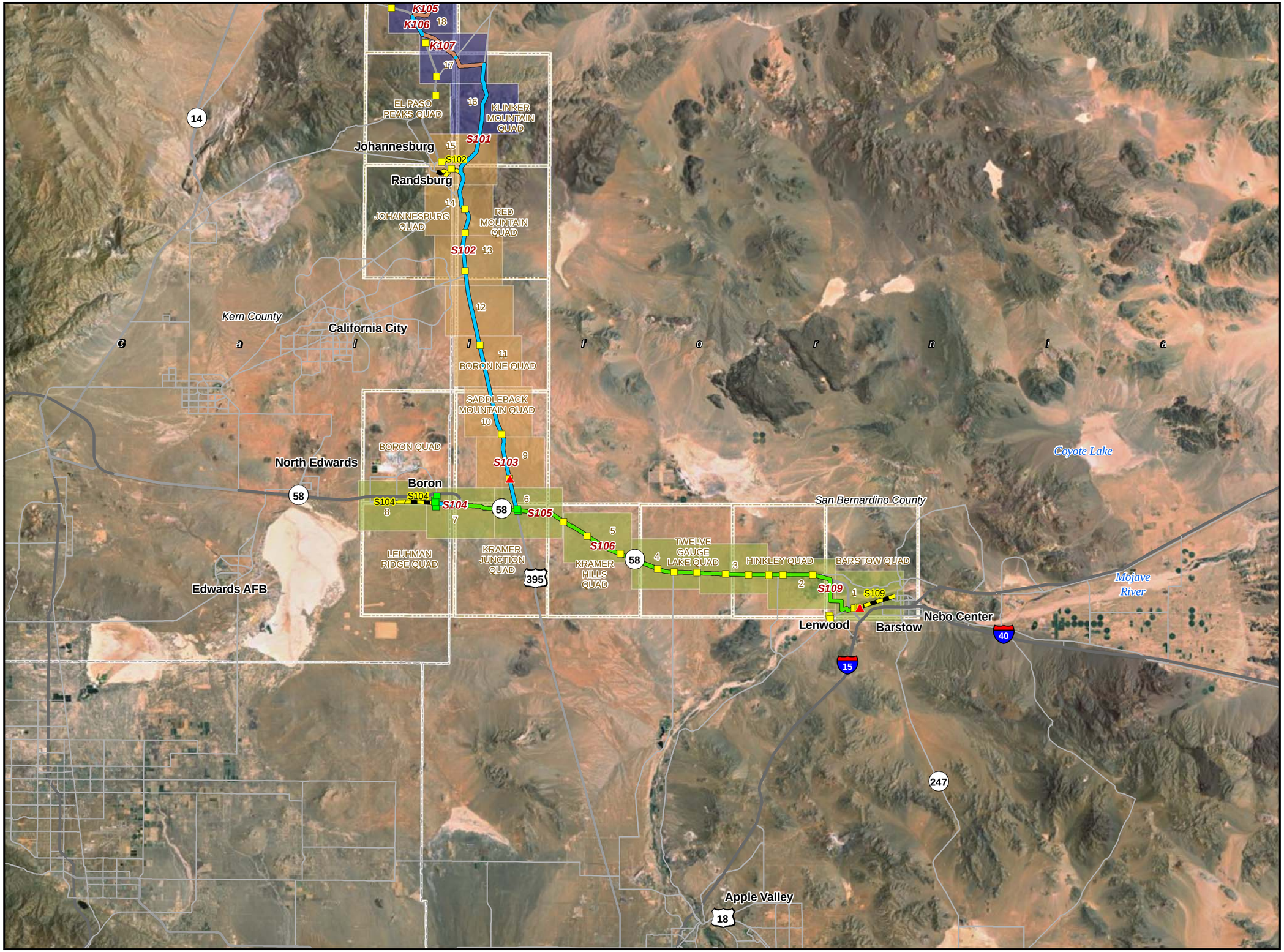

CBC Digital 395

Barstow - Ridgecrest

Overview-1

Legend

REGION

- Barstow to Boron
- Boron to Johannesburg
- Johannesburg to Inyokern
- Inyokern to Olancha
- Olancha to Independence
- Independence to Bishop
- Bishop to Benton
- Bishop to Mammoth Lakes
- Mammoth Lakes to Topaz Lake
- Topaz Lake to Reno
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad

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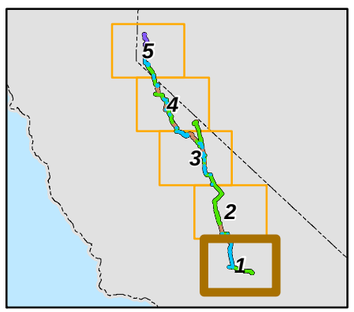
Miles



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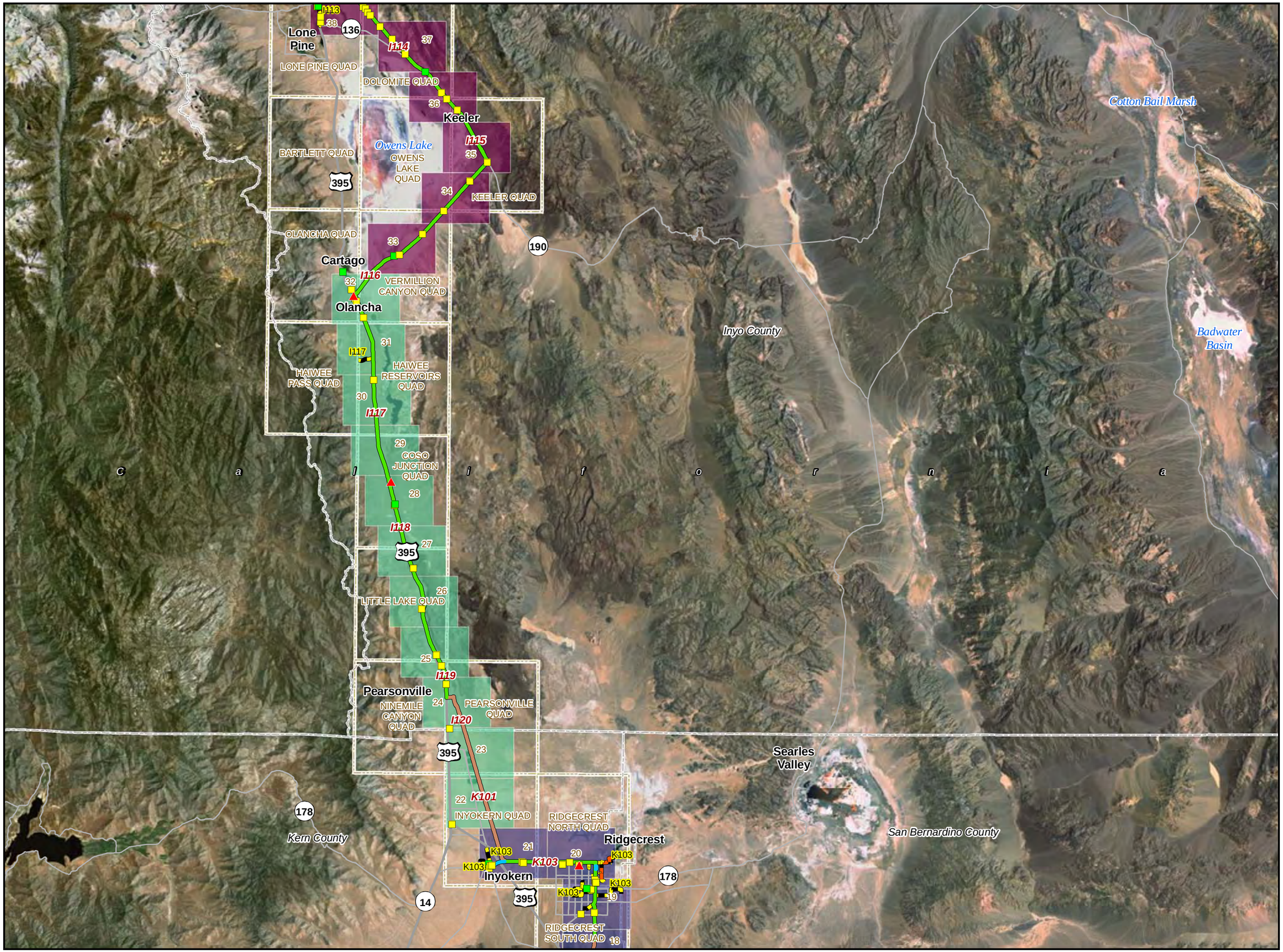

CBC Digital 395

Ridgecrest - Lone Pine
Overview-2

Legend

REGION

- Barstow to Boron
- Boron to Johannesburg
- Johannesburg to Inyokern
- Inyokern to Olancha
- Olancha to Independence
- Independence to Bishop
- Bishop to Benton
- Bishop to Mammoth Lakes
- Mammoth Lakes to Topaz Lake
- Topaz Lake to Reno
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad

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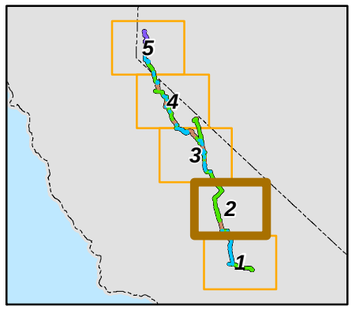
Miles



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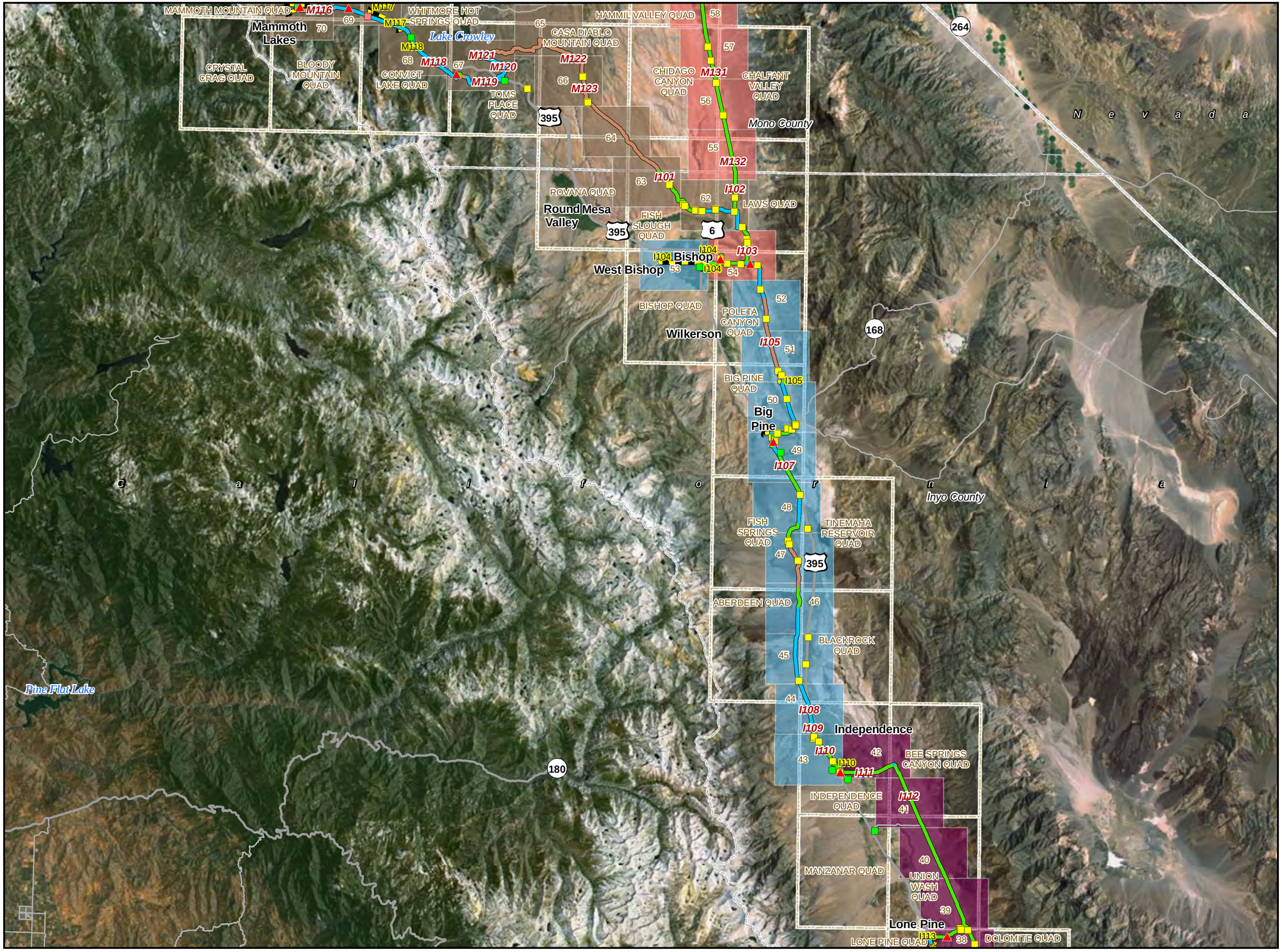


CBC Digital 395

Lone Pine - Mammoth Lakes

Overview-3

Legend

REGION

- Barstow to Boron
- Boron to Johannesburg
- Johannesburg to Inyokern
- Inyokern to Olancha
- Olancha to Independence
- Independence to Bishop
- Bishop to Benton
- Bishop to Mammoth Lakes
- Mammoth Lakes to Topaz Lake
- Topaz Lake to Reno
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

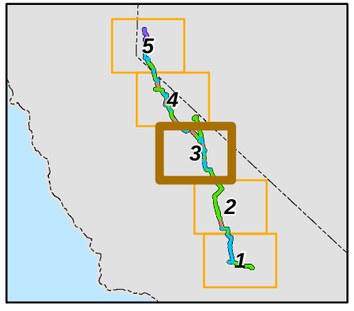
FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad

1:450,000

0 2 4 8 12

Miles



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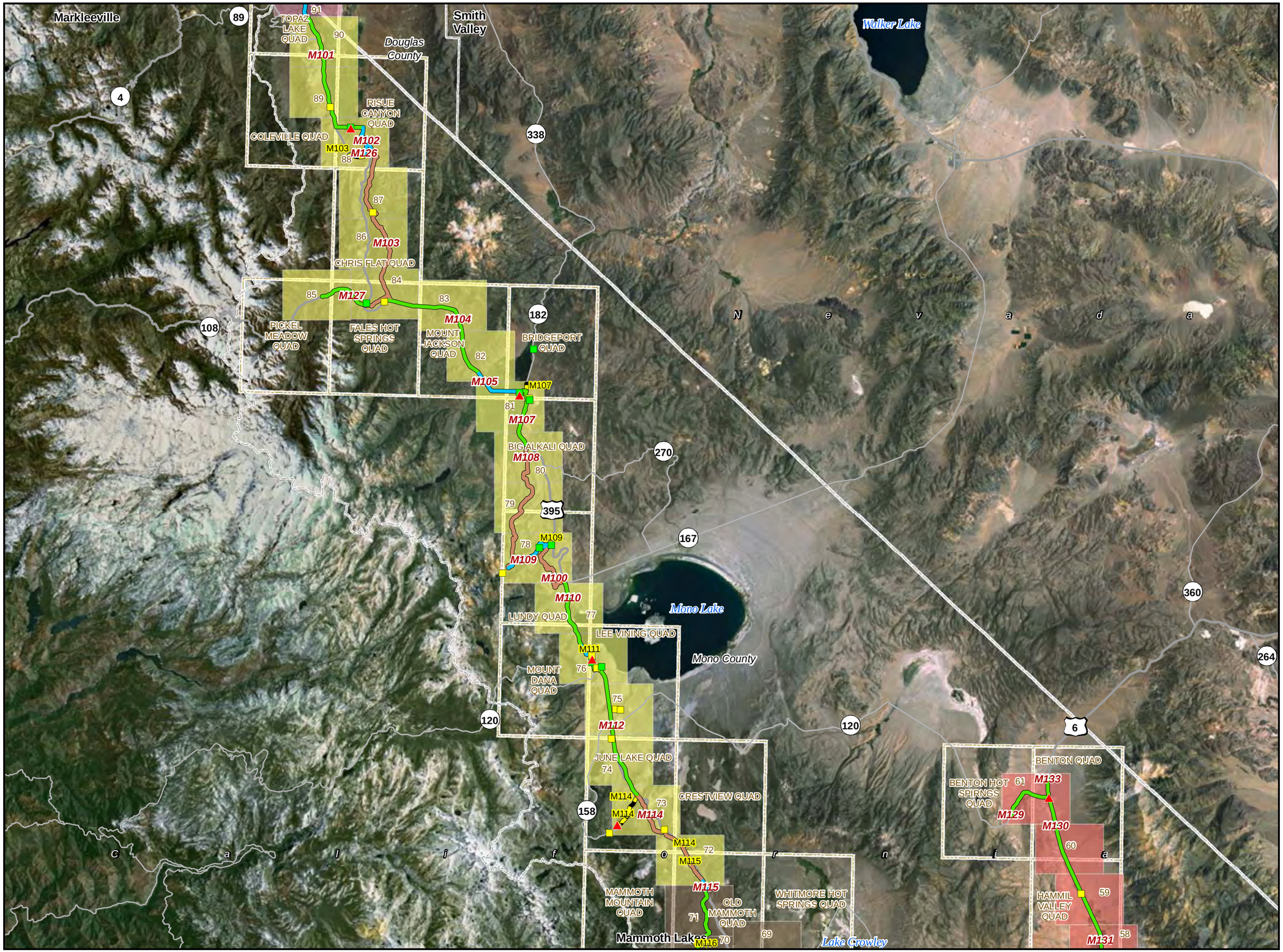


CBC Digital 395

Mammoth Lakes - Coleville

Overview-4

Legend

REGION

- Barstow to Boron
- Boron to Johannesburg
- Johannesburg to Inyokern
- Inyokern to Olancha
- Olancha to Independence
- Independence to Bishop
- Bishop to Benton
- Bishop to Mammoth Lakes
- Mammoth Lakes to Topaz Lake
- Topaz Lake to Reno
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

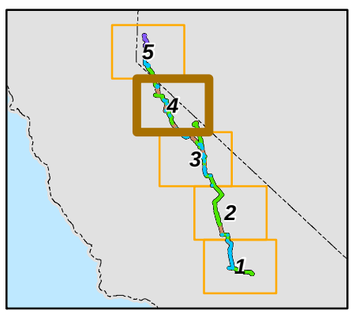
FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad

1:450,000

0 2 4 8 12

Miles



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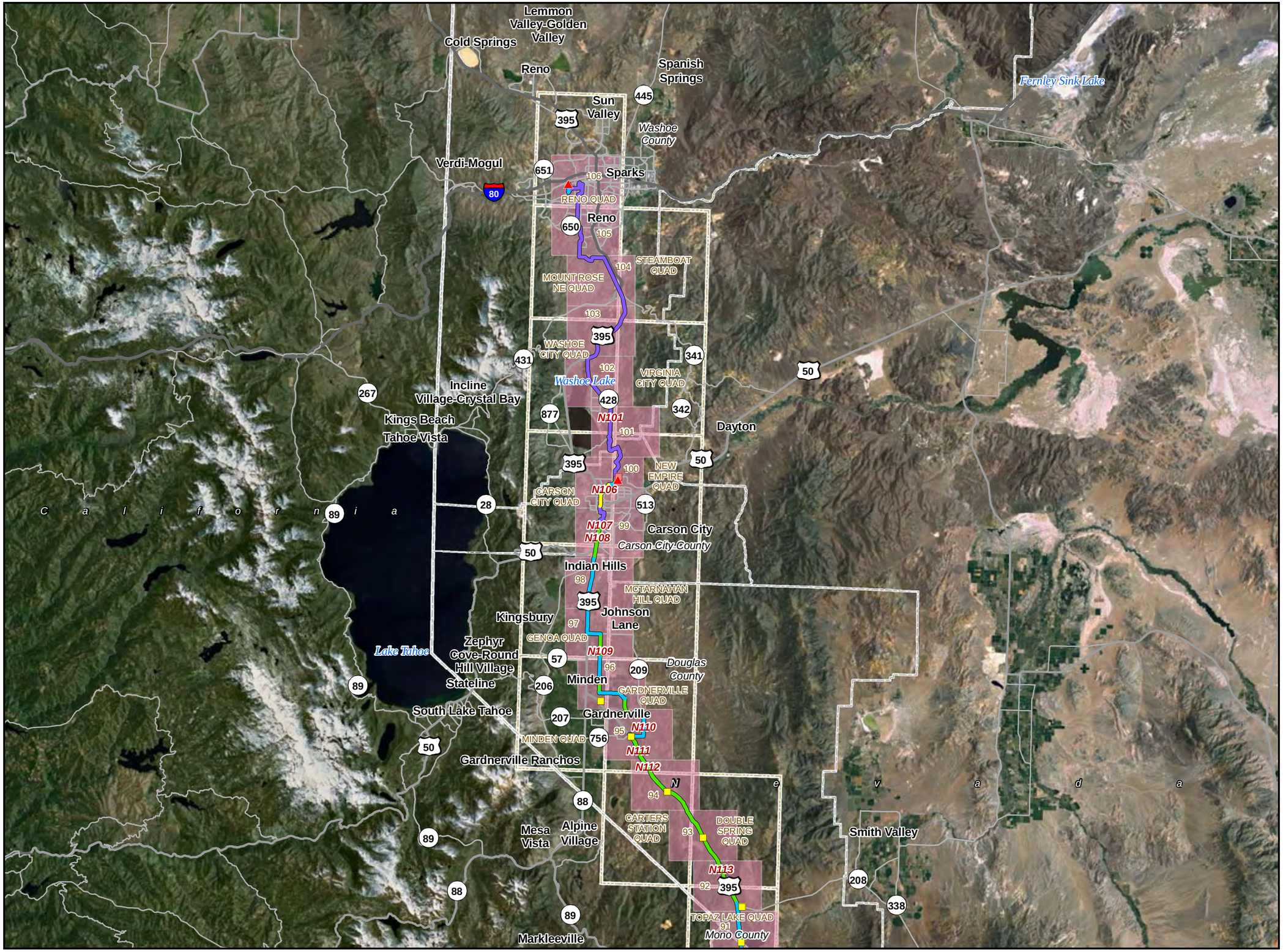


CBC Digital 395

Coleville - Reno

Overview-5

Legend

REGION

- Barstow to Boron
- Boron to Johannesburg
- Johannesburg to Inyokern
- Inyokern to Olancha
- Olancha to Independence
- Independence to Bishop
- Bishop to Benton
- Bishop to Mammoth Lakes
- Mammoth Lakes to Topaz Lake
- Topaz Lake to Reno
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

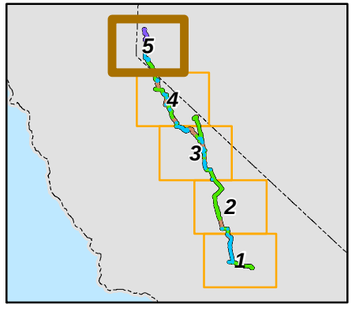
FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad

1:450,000

0 2 4 8 12

Miles



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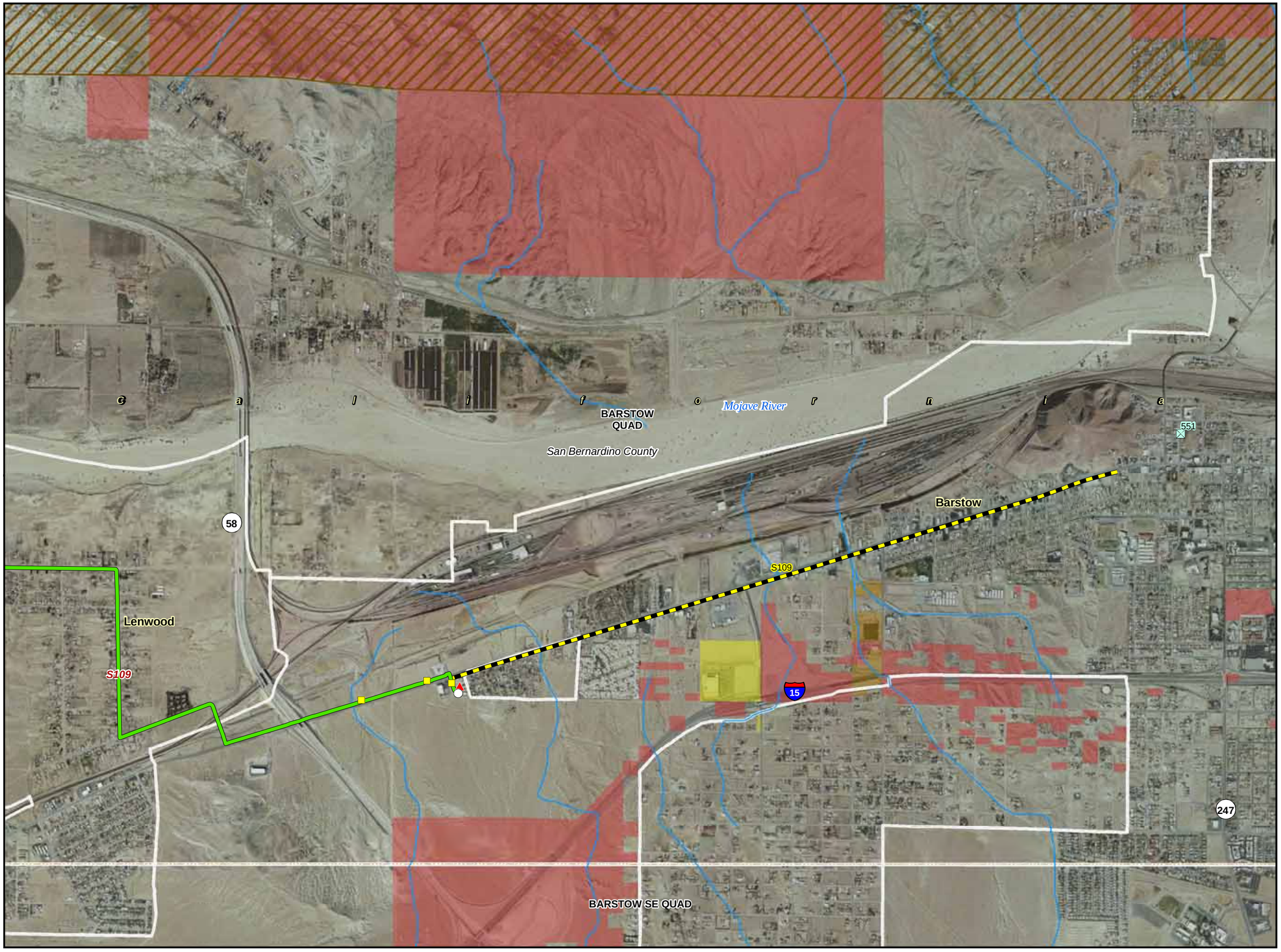


CBC Digital 395

R01-Barstow to Boron-001

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

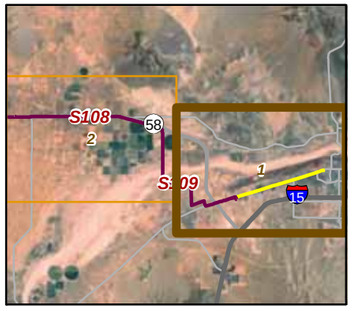
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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01-26-11

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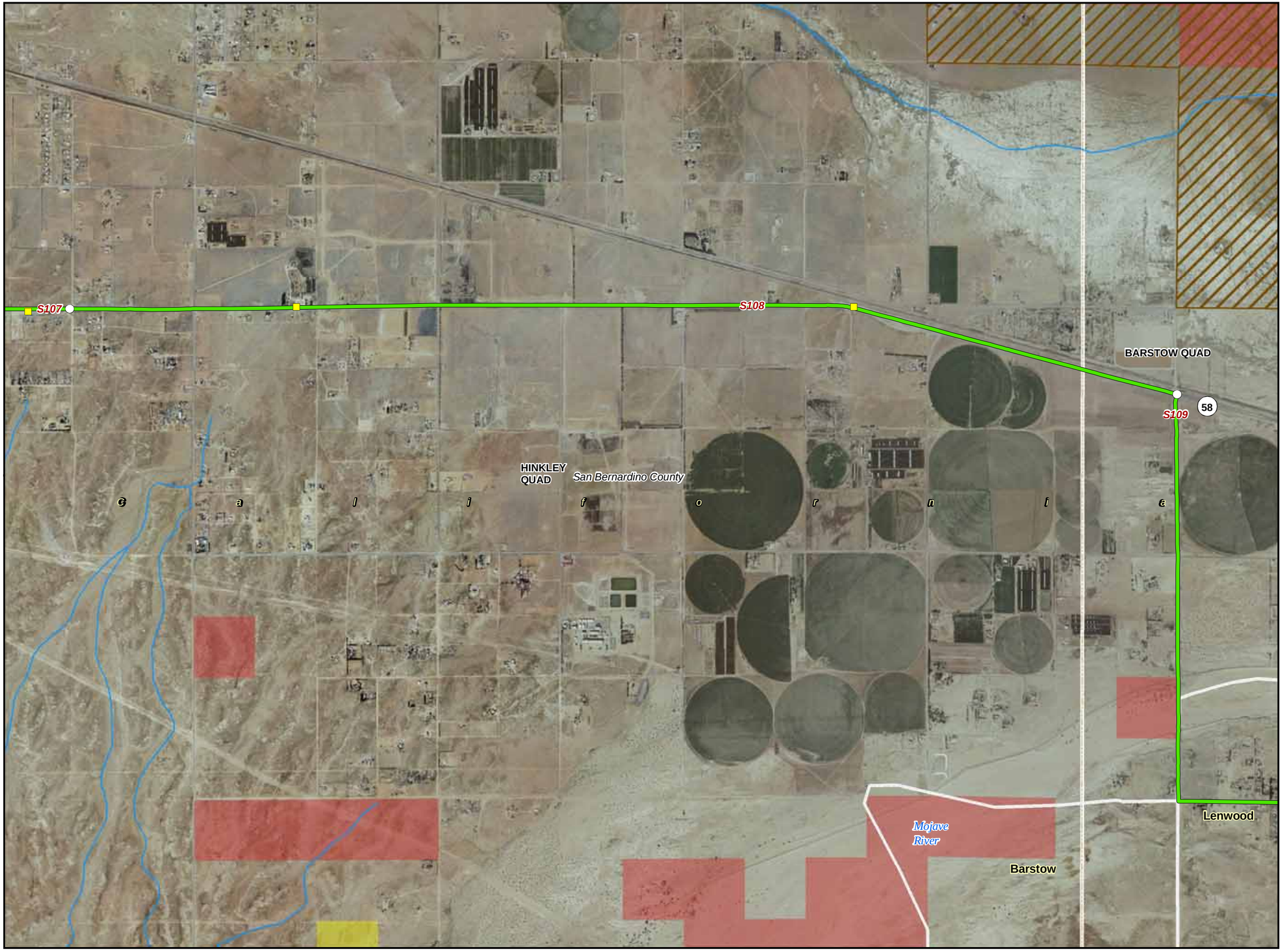
CBC Digital 395

R01-Barstow to Boron-002



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

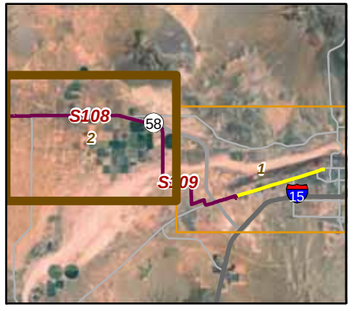
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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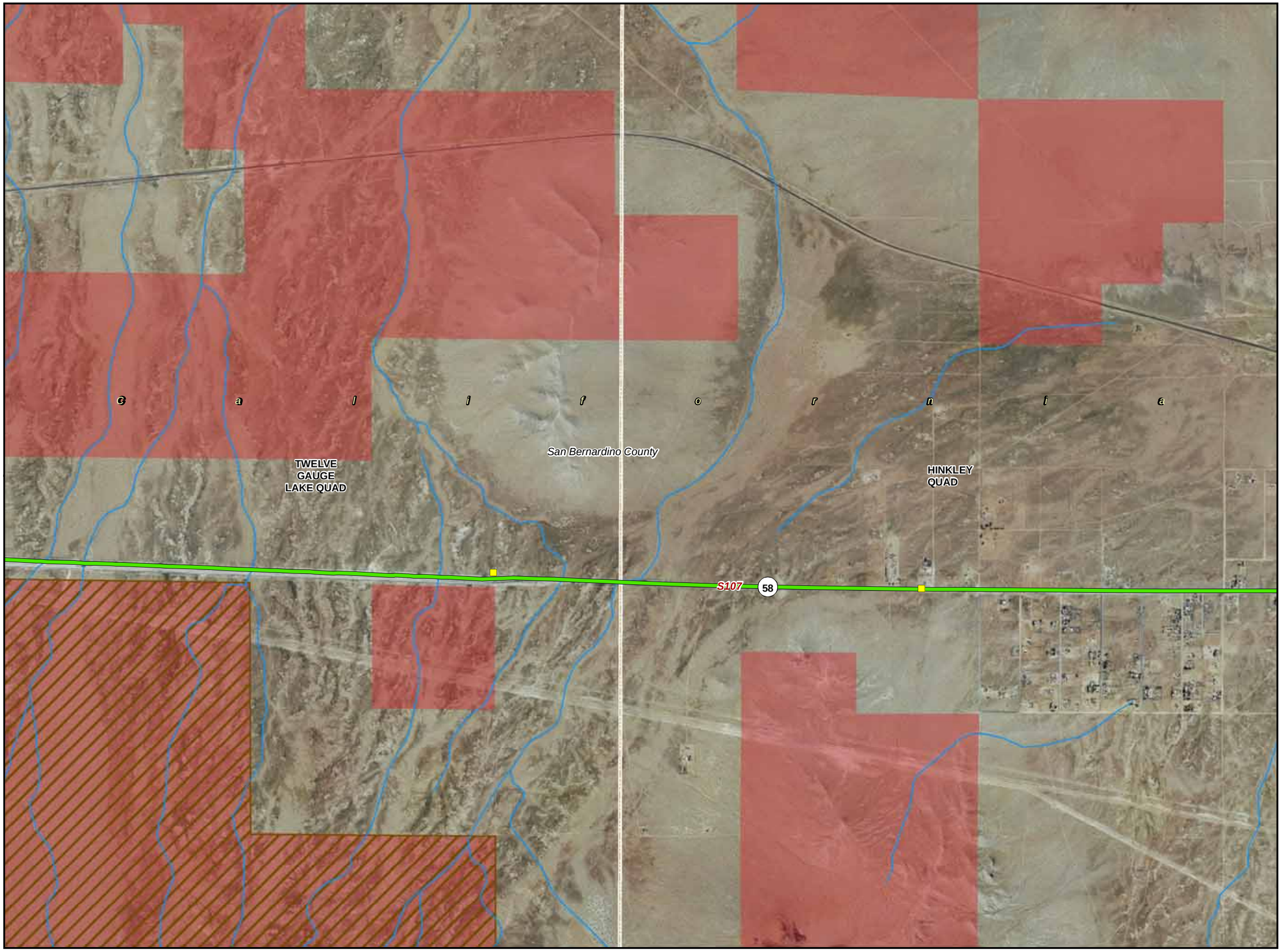
Chambers Group Inc.



CBC Digital 395

R01-Barstow to Boron-003

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

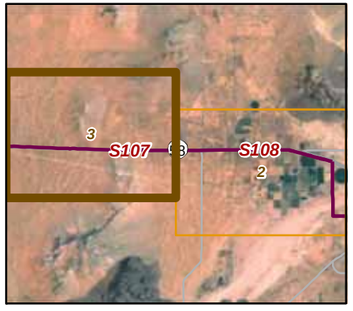
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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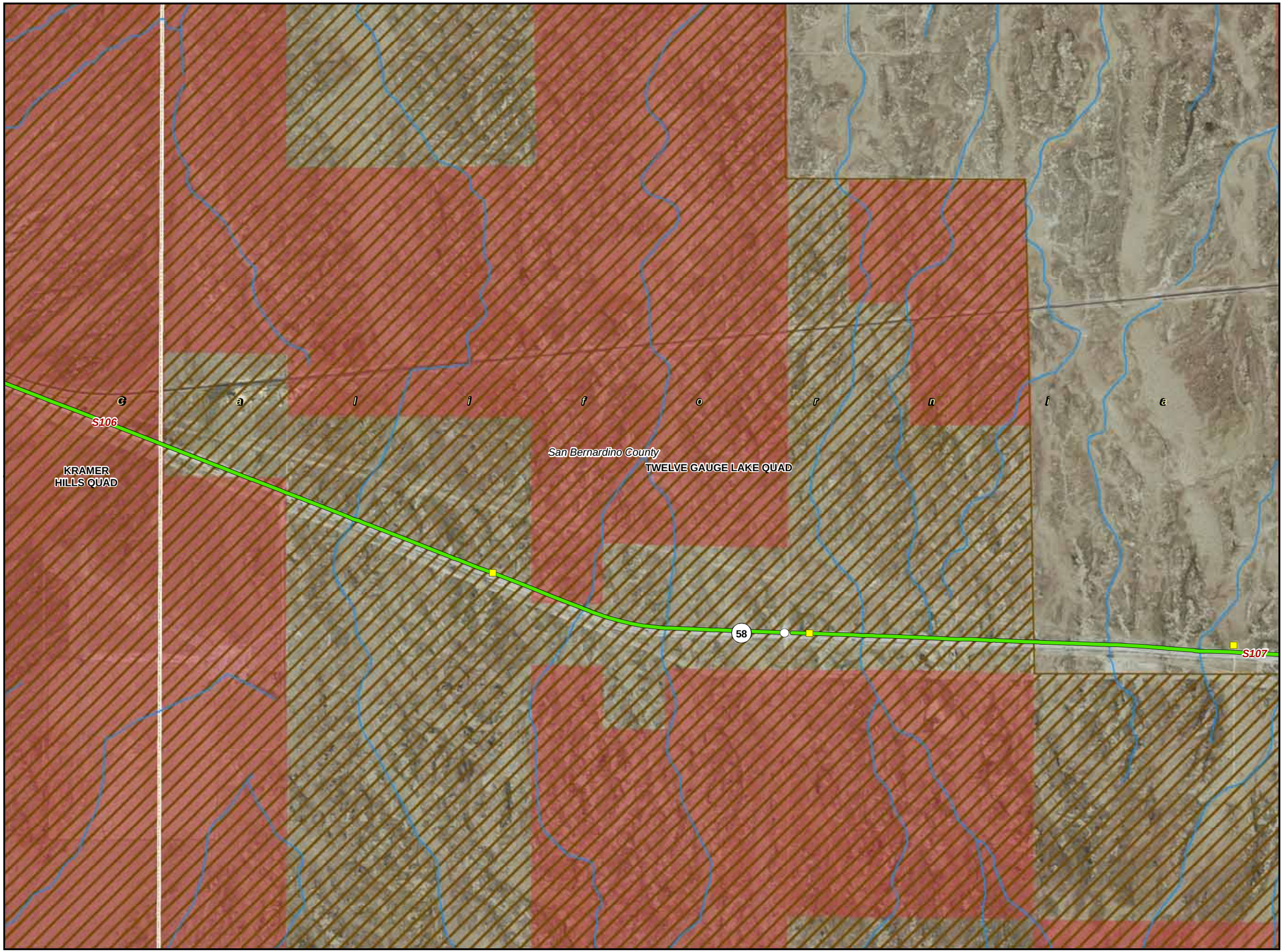


CBC Digital 395

R01-Barstow to Boron-004

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

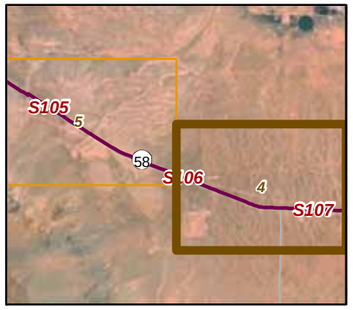
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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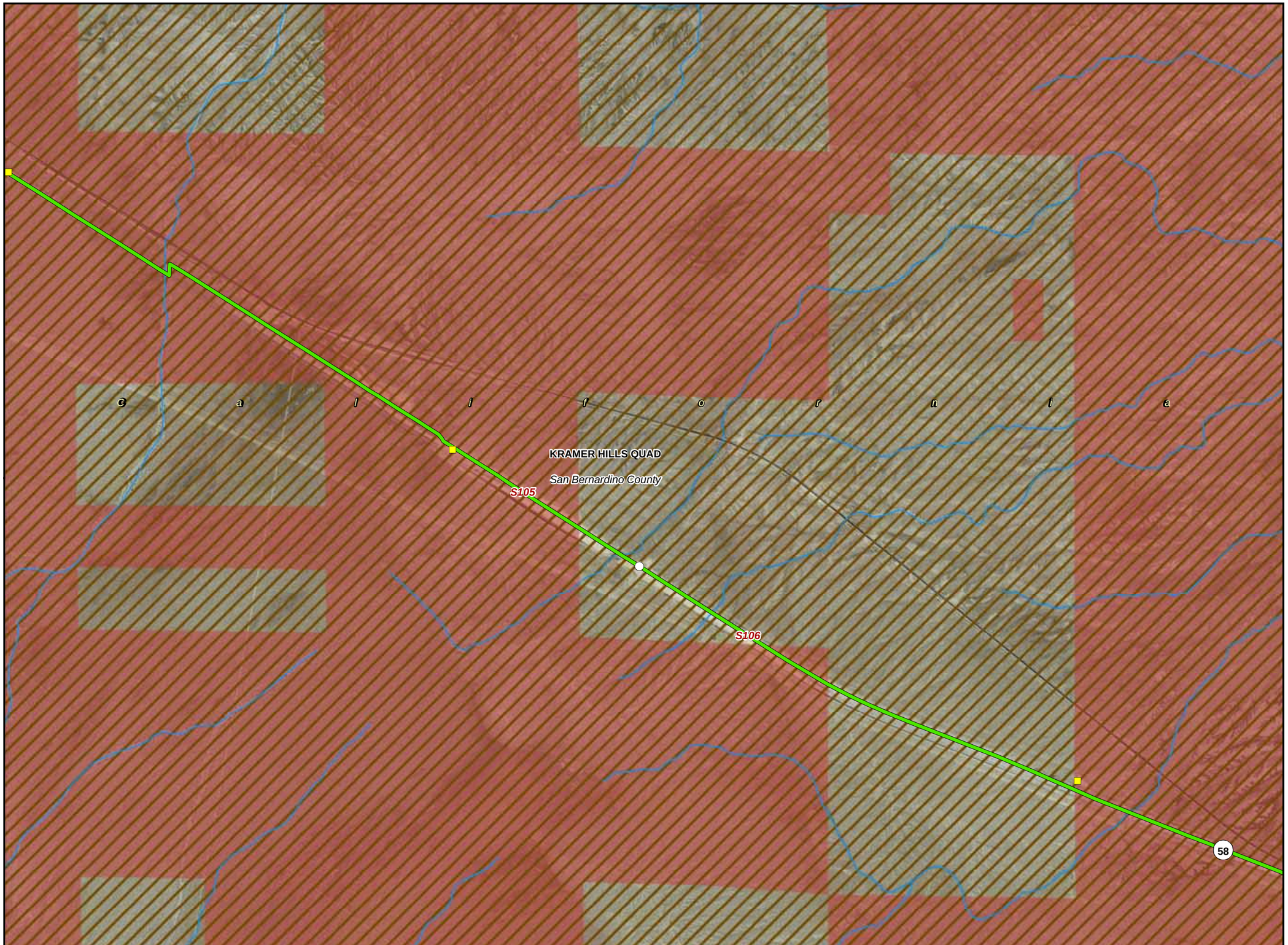


CBC Digital 395

R01-Barstow to Boron-005

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

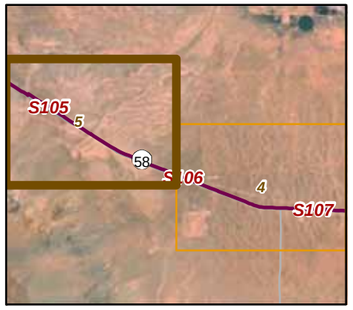
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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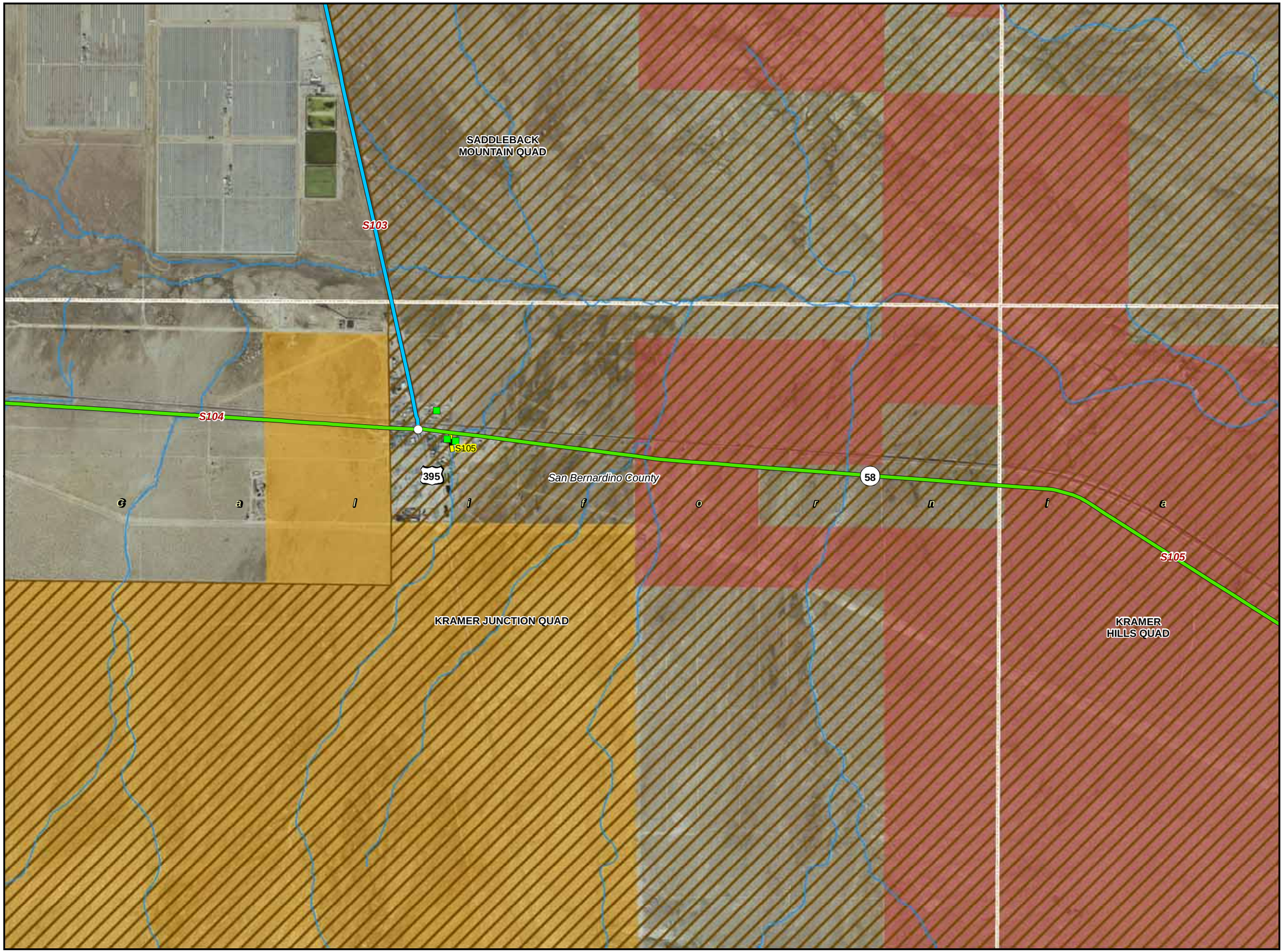

CBC Digital 395

R01-Barstow to Boron-006

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet
1:24,000

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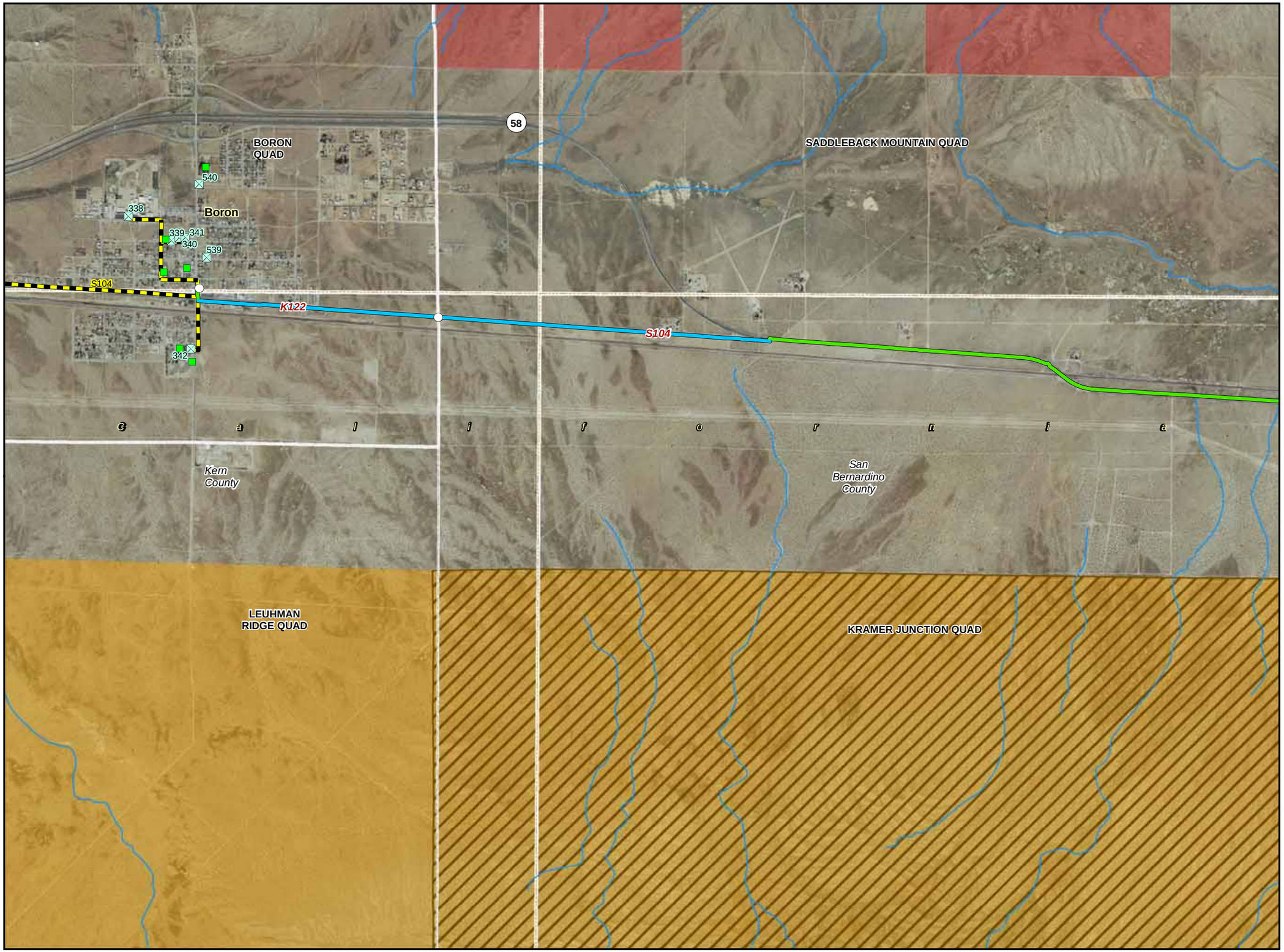
01-26-11

Chambers Group Inc.



CBC Digital 395

R01-Barstow to Boron-007

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

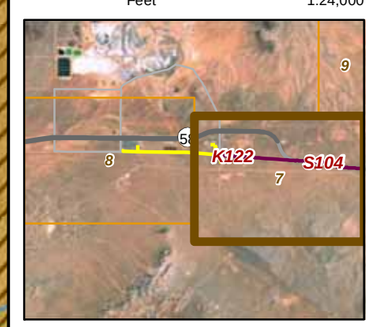
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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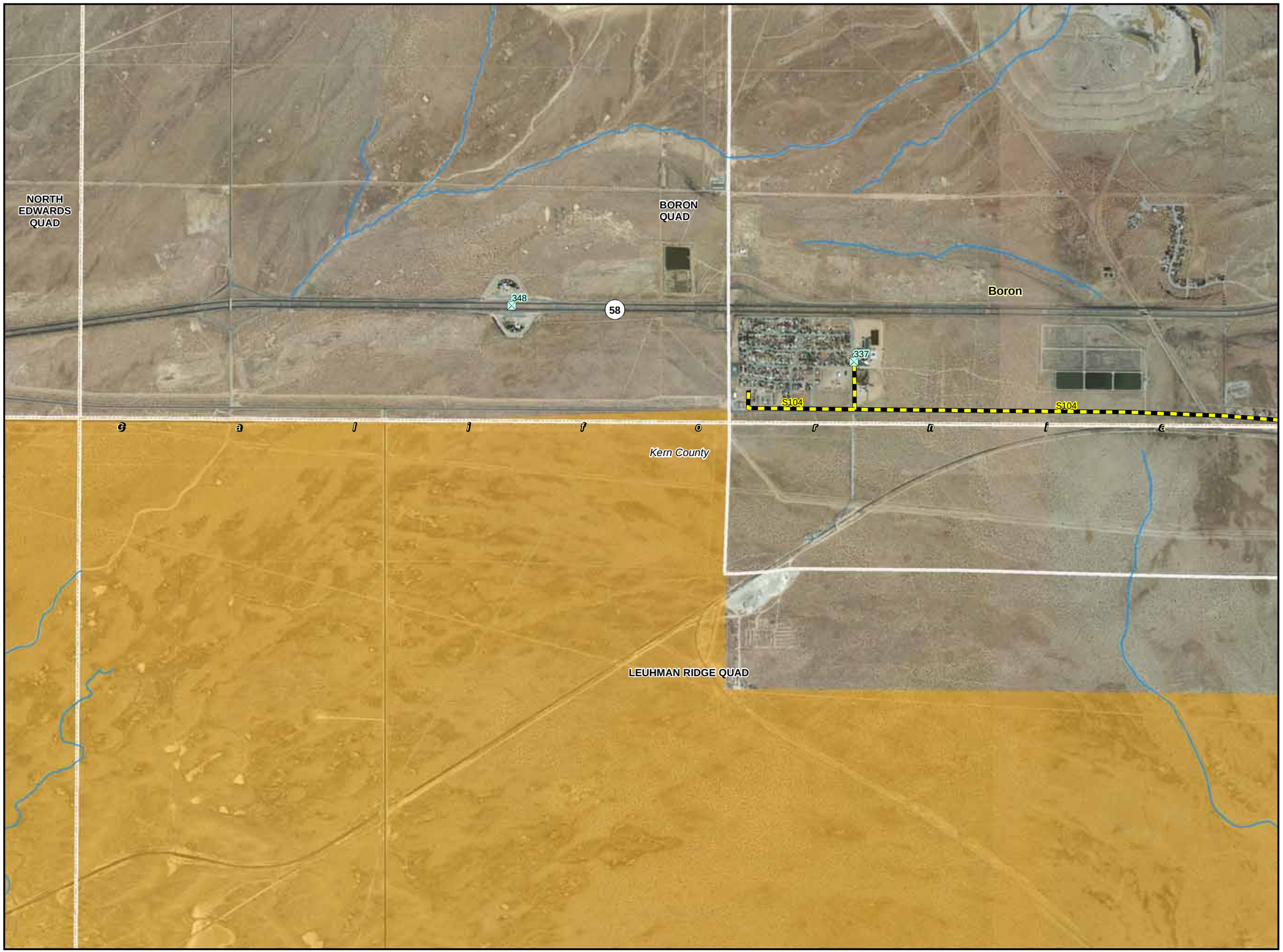

CBC Digital 395

R01-Barstow to Boron-008

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000

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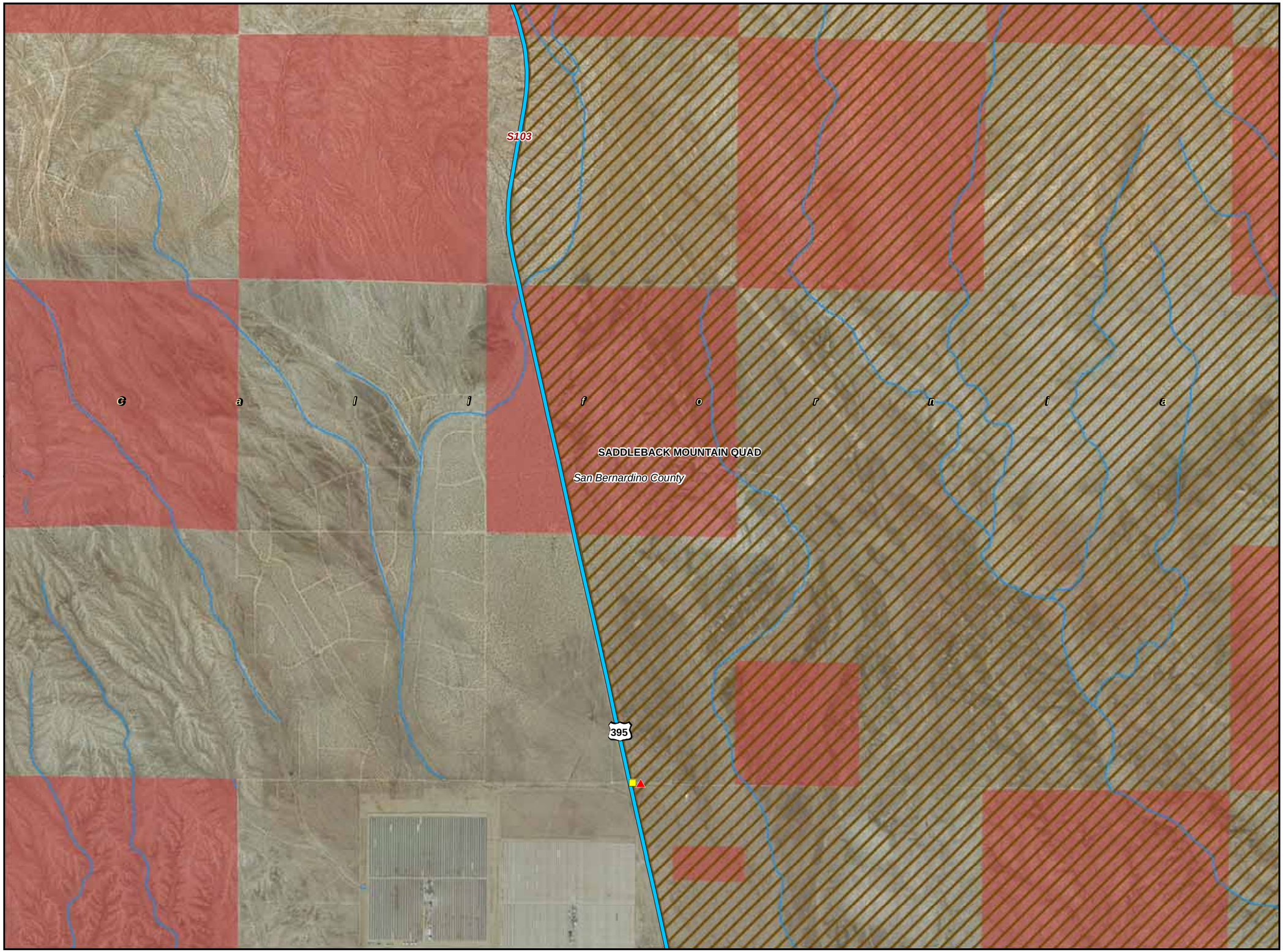
01-26-11

Chambers Group Inc.



CBC Digital 395

R02-Boron to Johannesburg-009

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

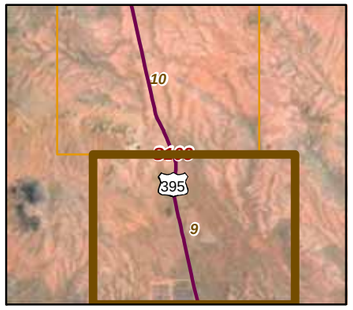
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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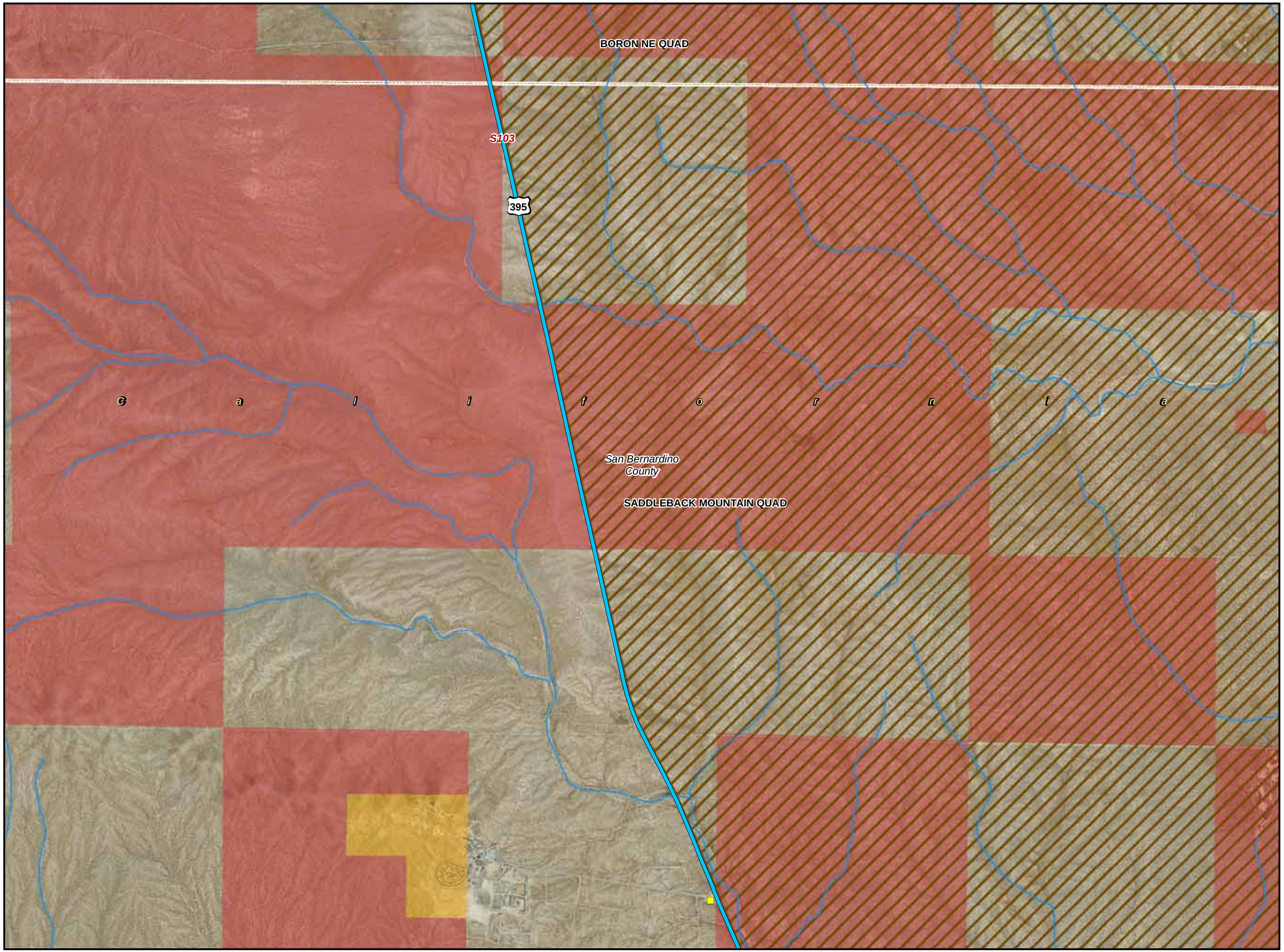


CBC Digital 395

R02-Boron to Johannesburg-010

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

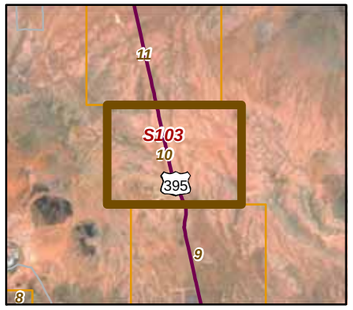
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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01-26-11

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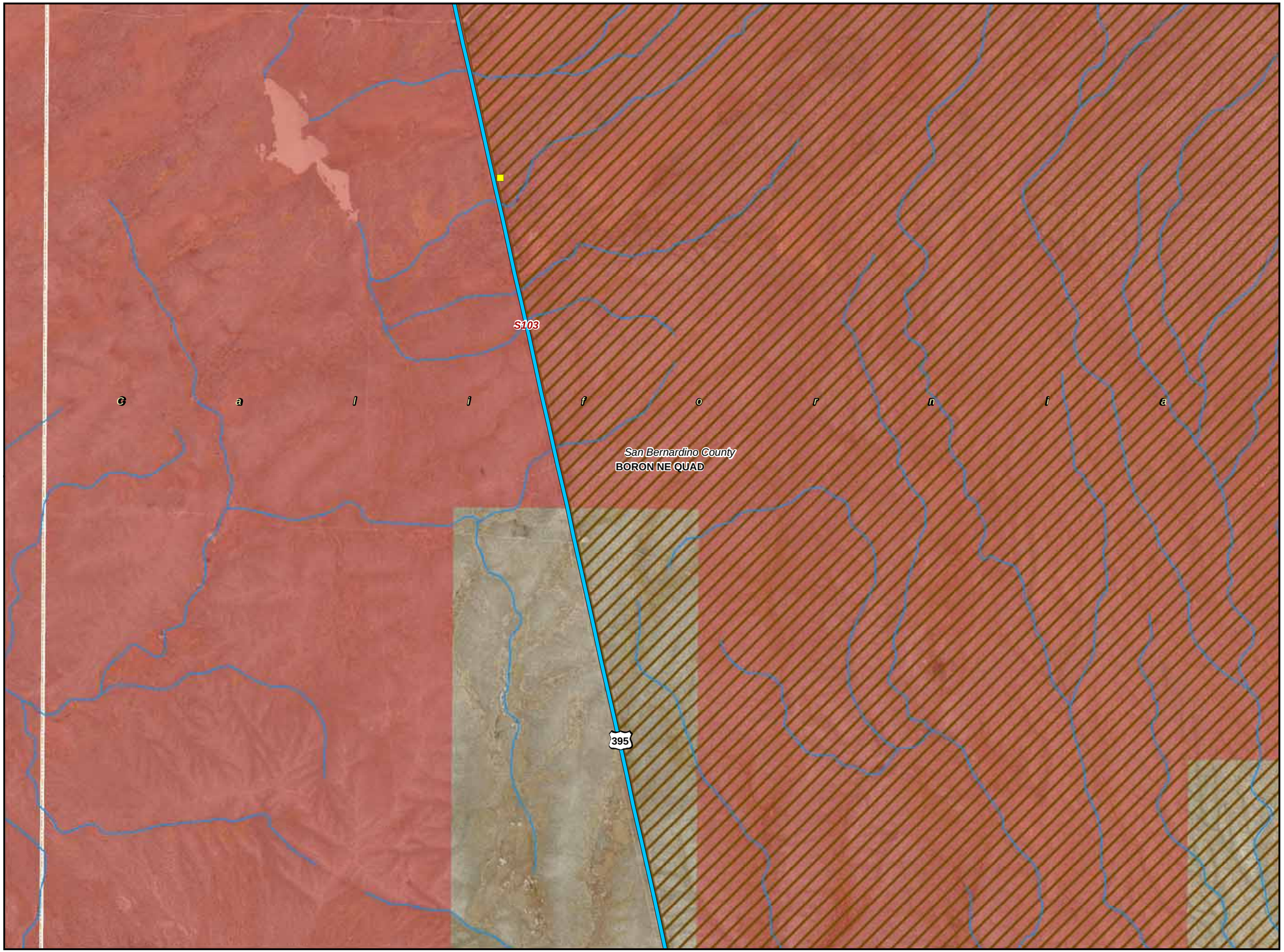


CBC Digital 395

R02-Boron to Johannesburg-011

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

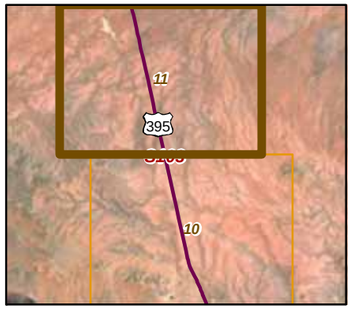
FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet
1:24,000



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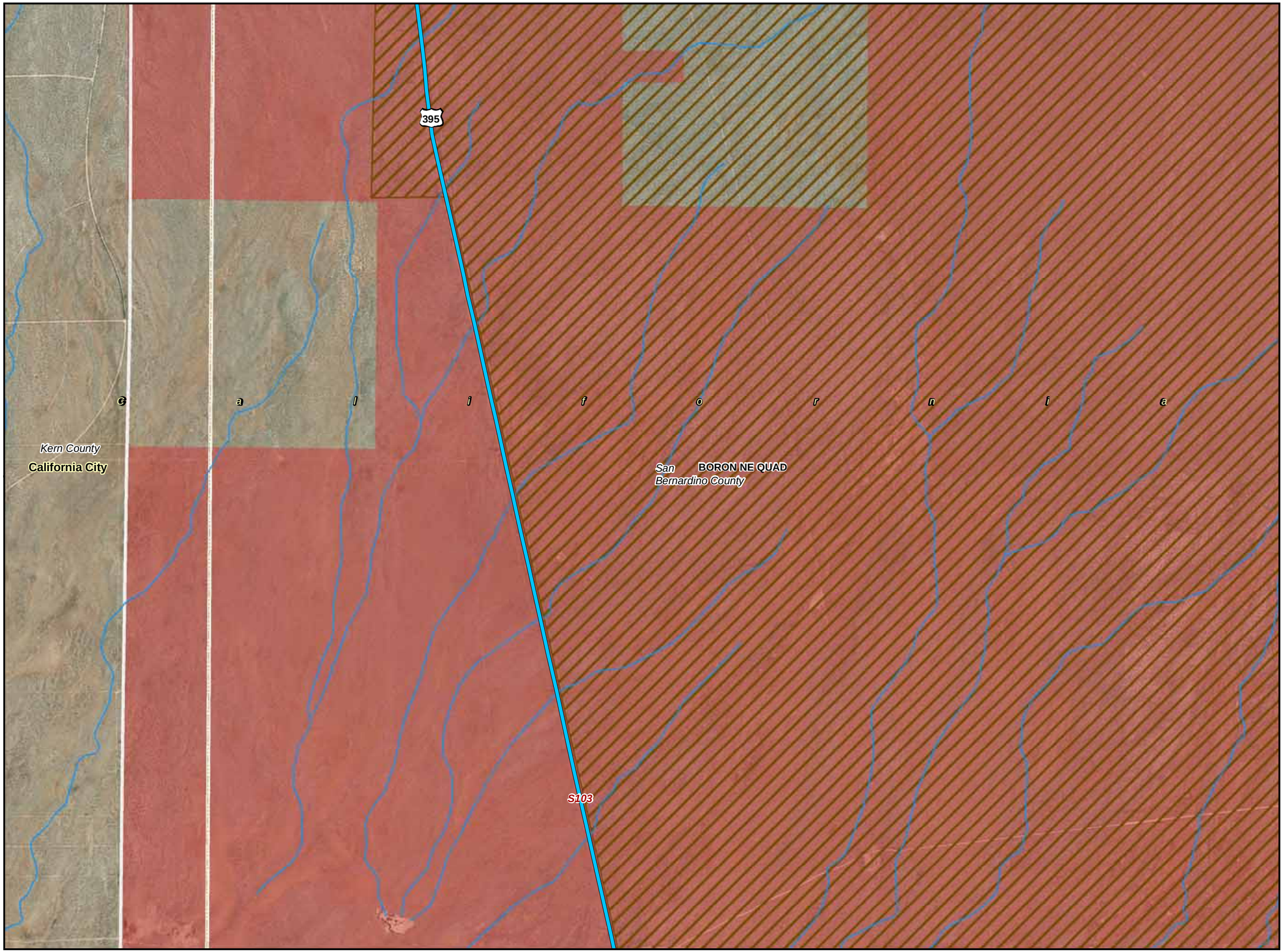


CBC Digital 395

R02-Boron to Johannesburg-012

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

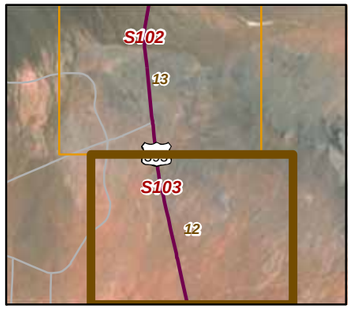
FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet
1:24,000



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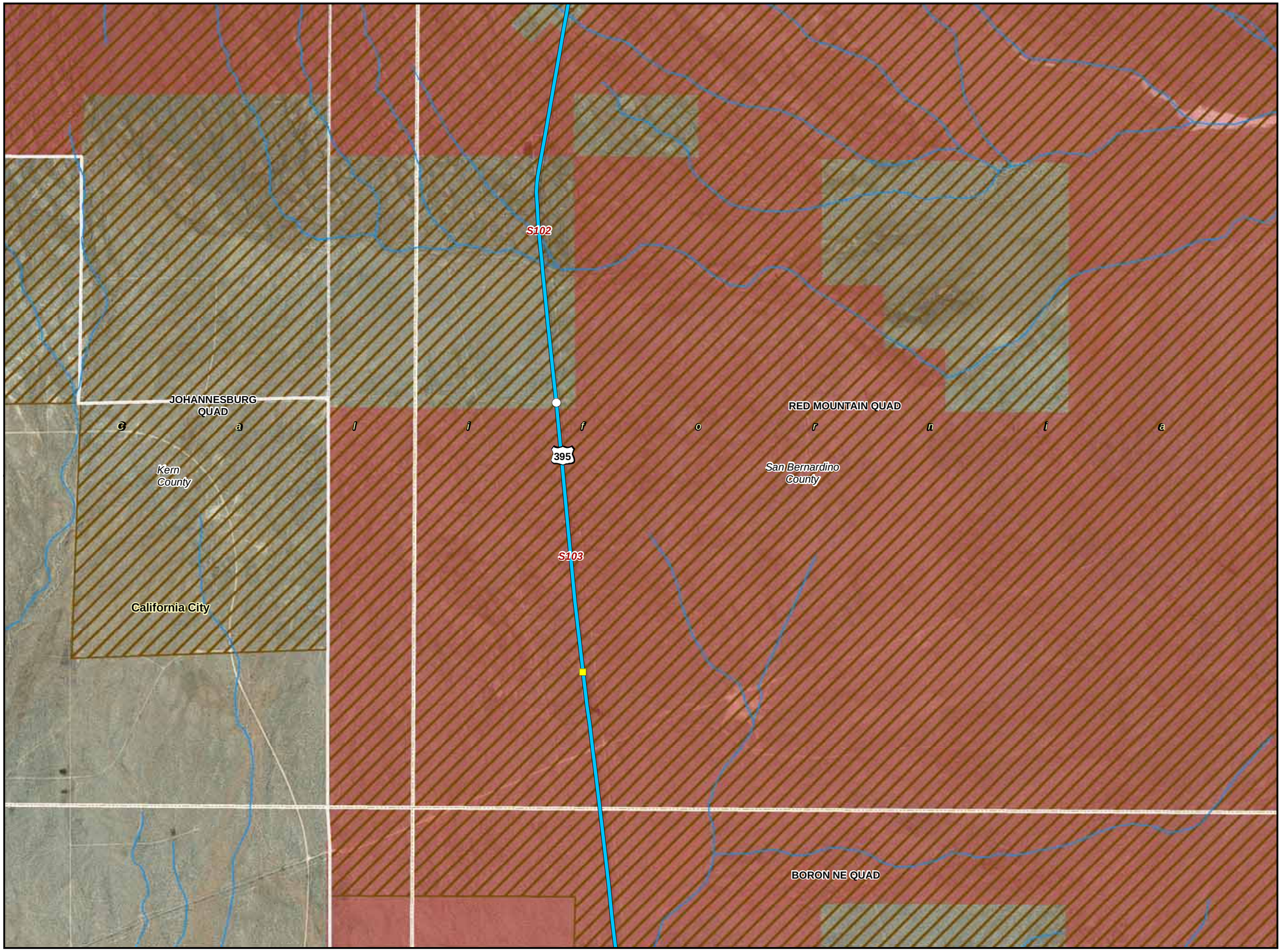


CBC Digital 395

R02-Boron to Johannesburg-013

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

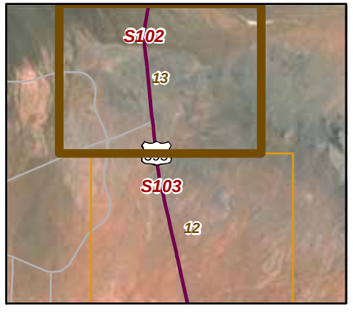
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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01-26-11

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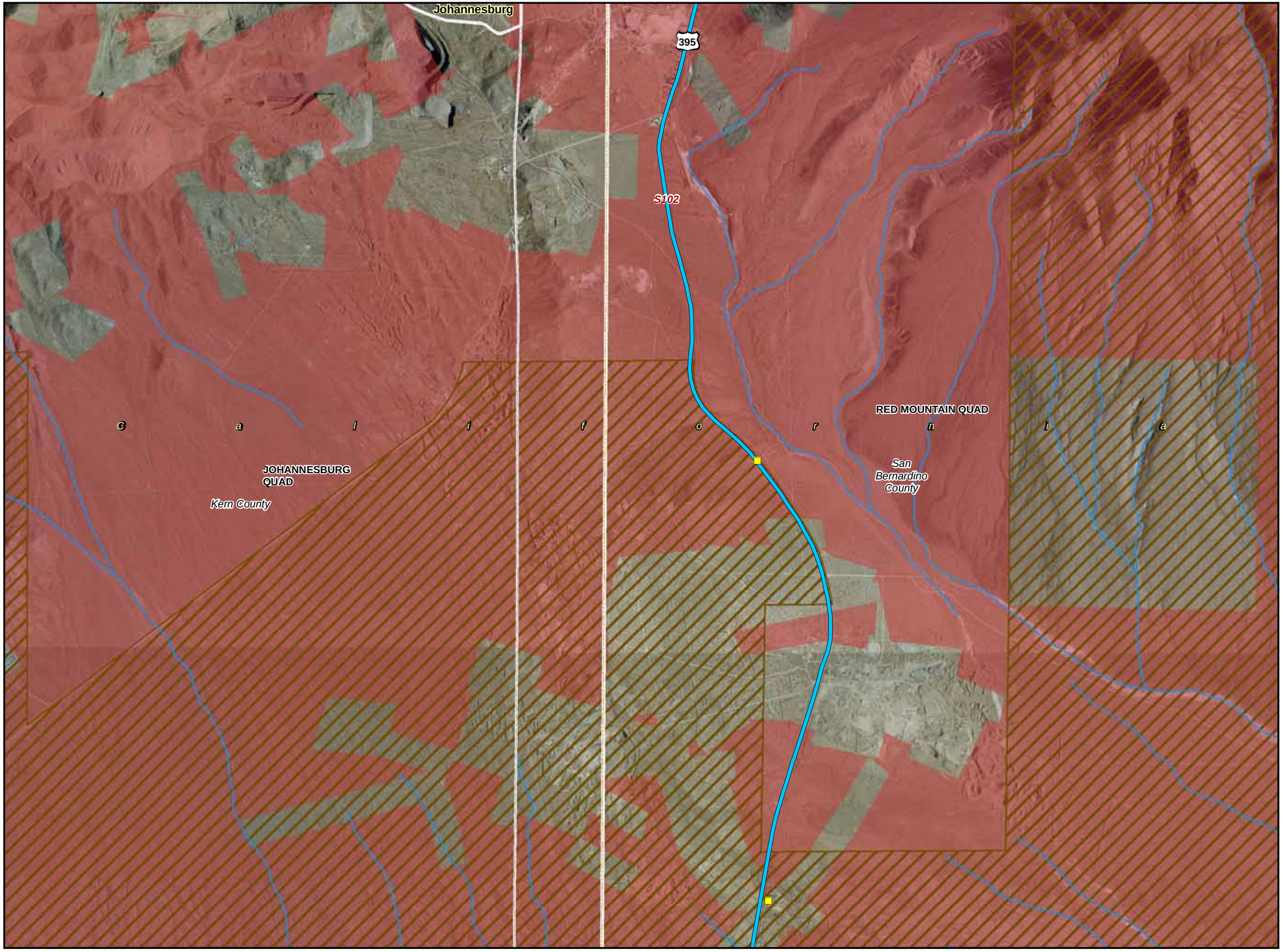


CBC Digital 395

R02-Boron to Johannesburg-014

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

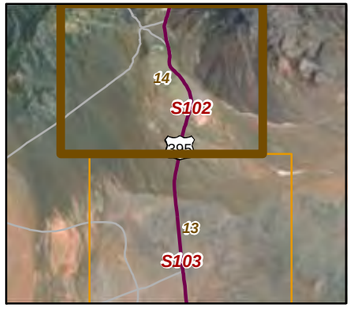
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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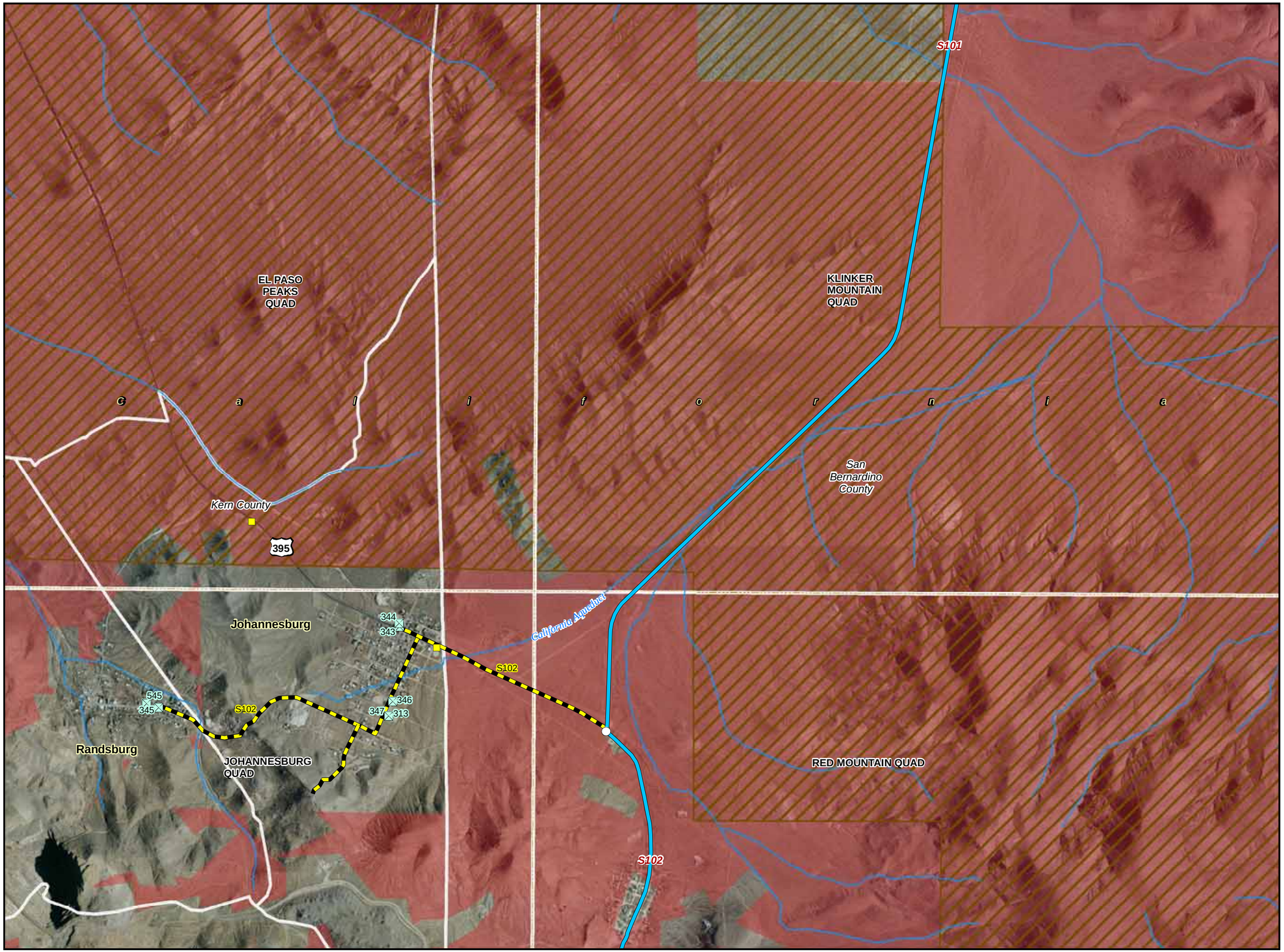
01-26-11

Chambers Group Inc.



CBC Digital 395

R02-Boron to Johannesburg-015

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

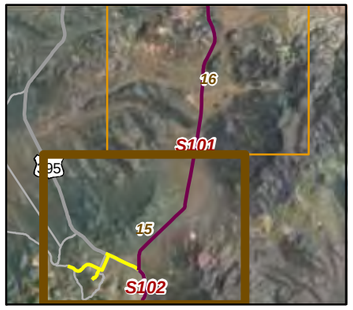
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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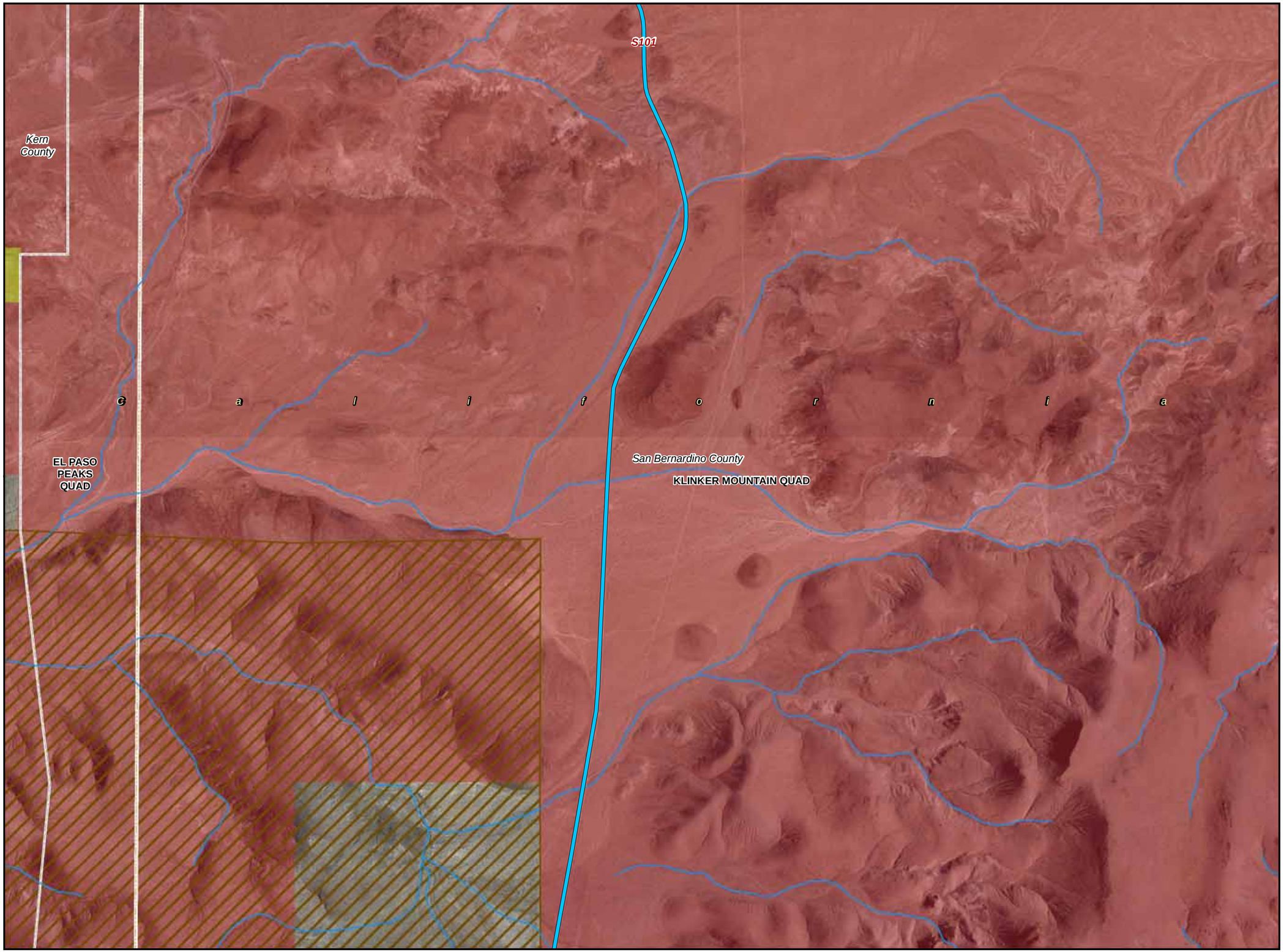
01-26-11

Chambers Group Inc.



CBC Digital 395

R03-Johannesburg to Inyokern-016

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

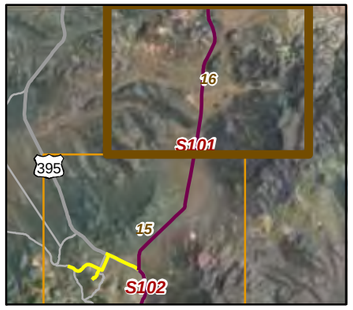
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial
- USGS 7.5' Quad
- City Limit
- Desert Tortoise Critical Habitat

LandOwnership

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government

0 1,000 2,000 3,000
Feet

1:24,000



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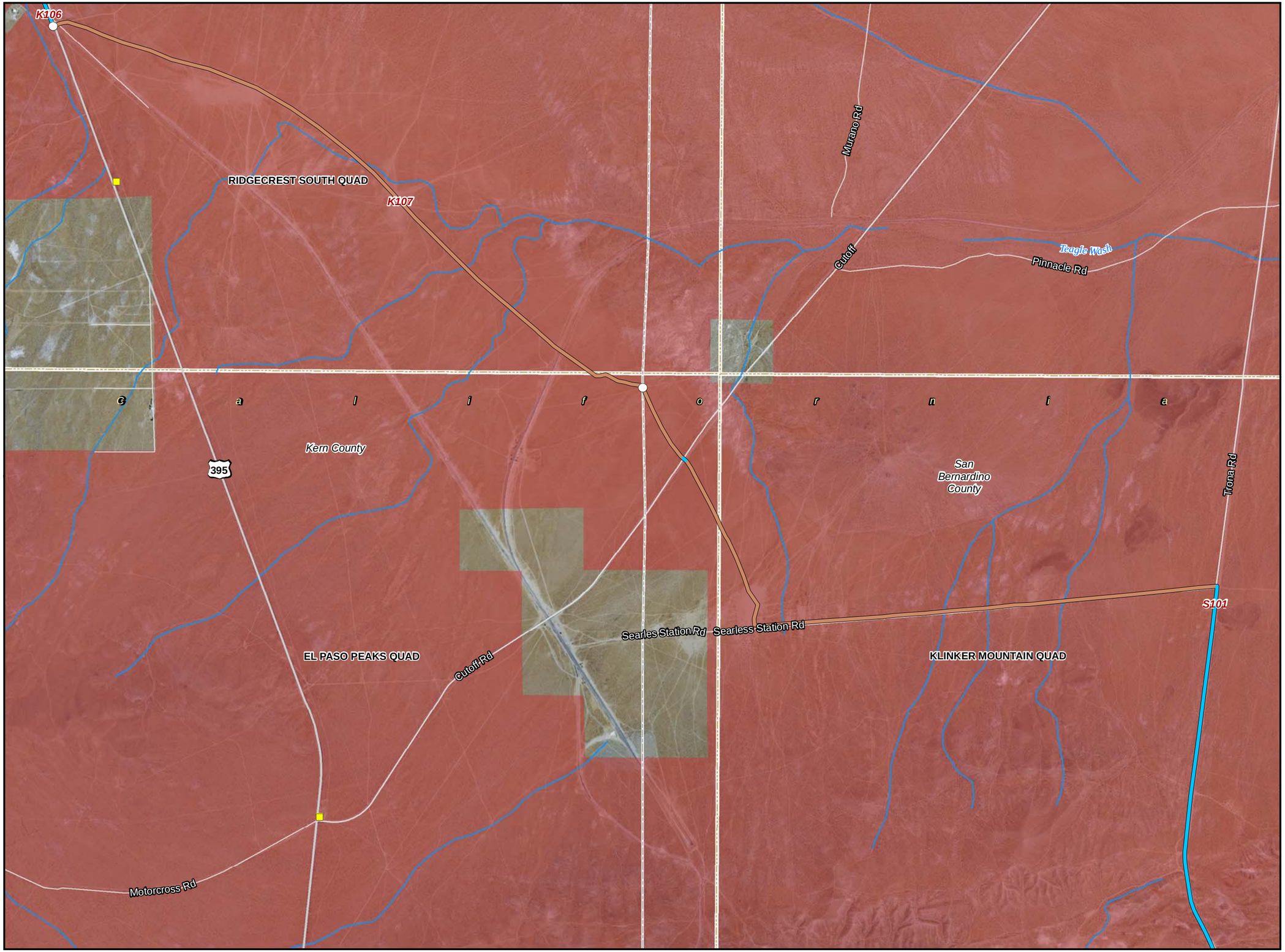
Chambers Group Inc.



CBC Digital 395

R03-Johannesburg to Inyokern-017

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

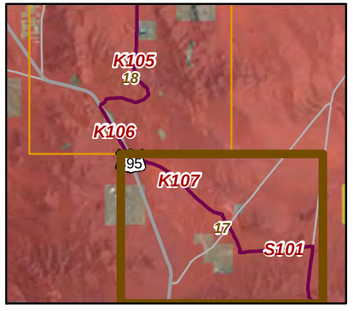
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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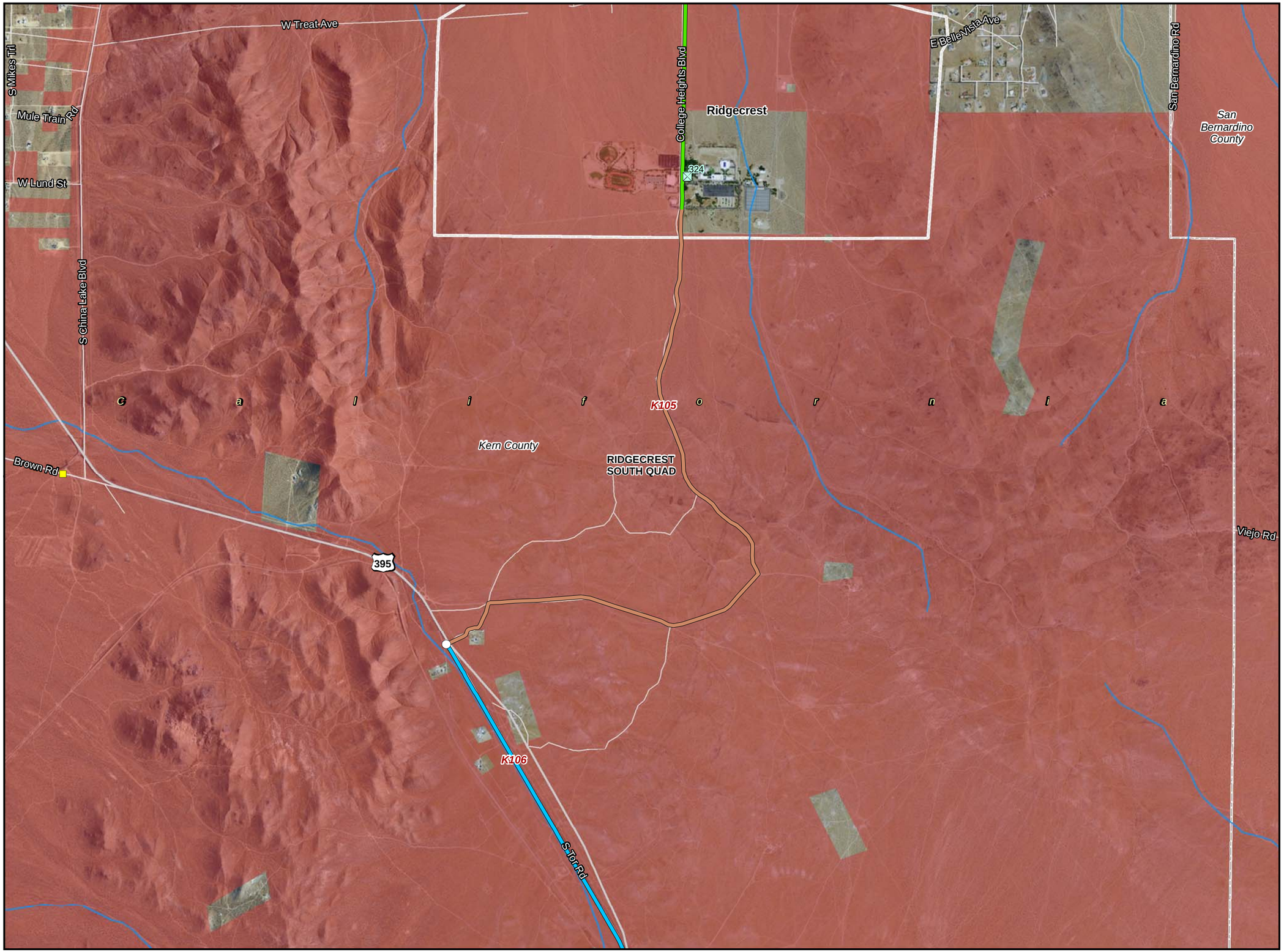
01-17-11

Chambers Group Inc.



CBC Digital 395

R03-Johannesburg to Inyokern-018

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

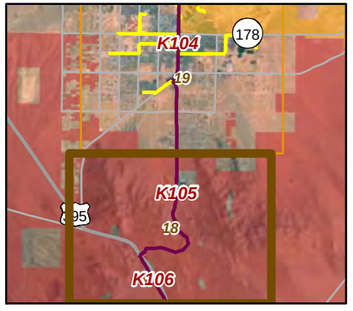
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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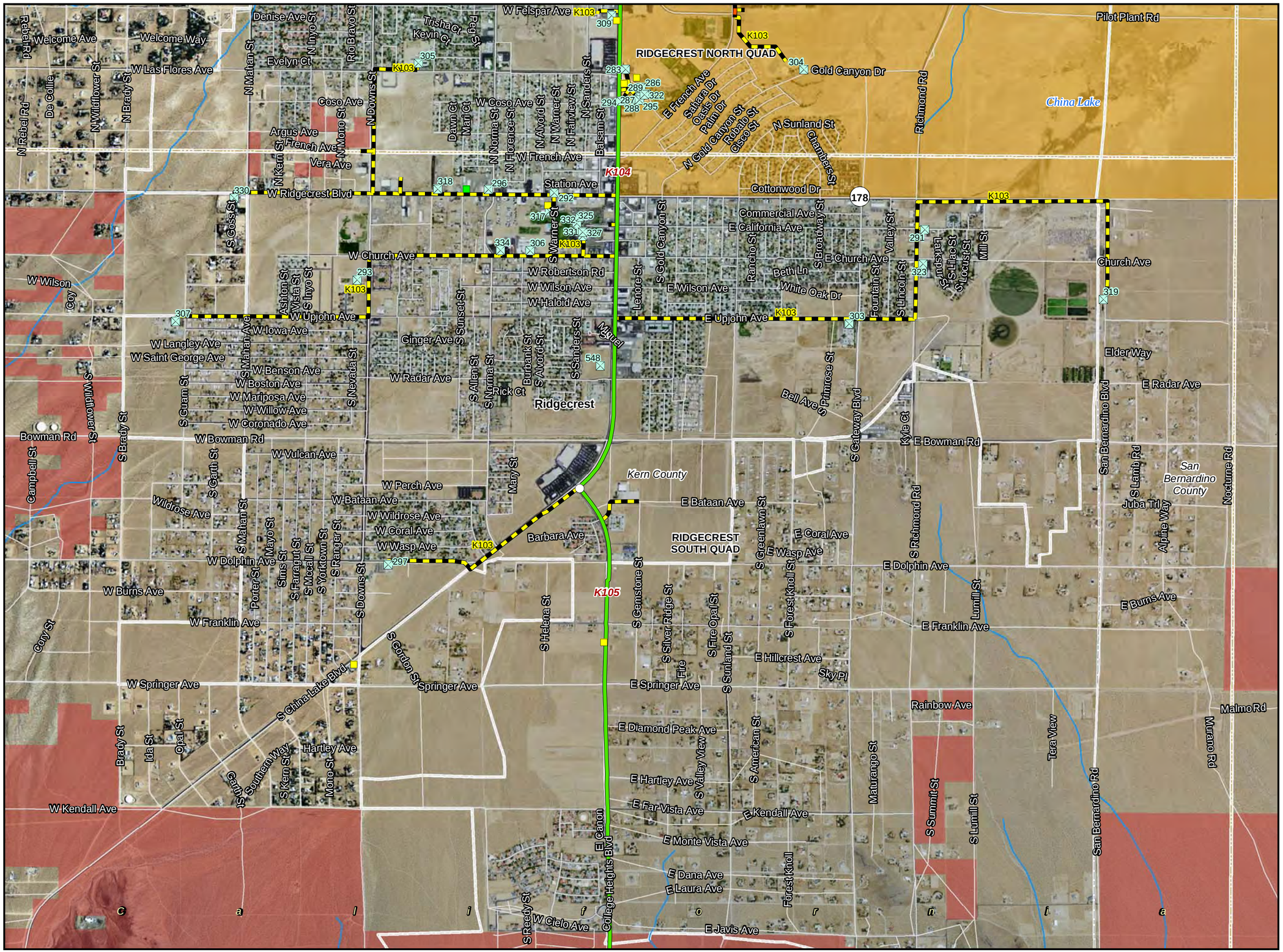
01-17-11

Chambers Group Inc.

CBC Digital 395

R03-Johannesburg to Inyokern-019



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

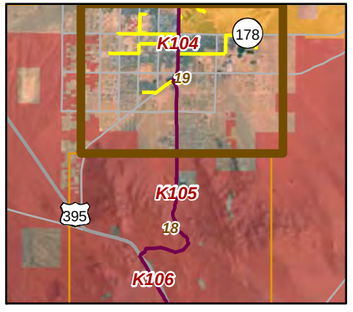
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000 Feet

1:24,000



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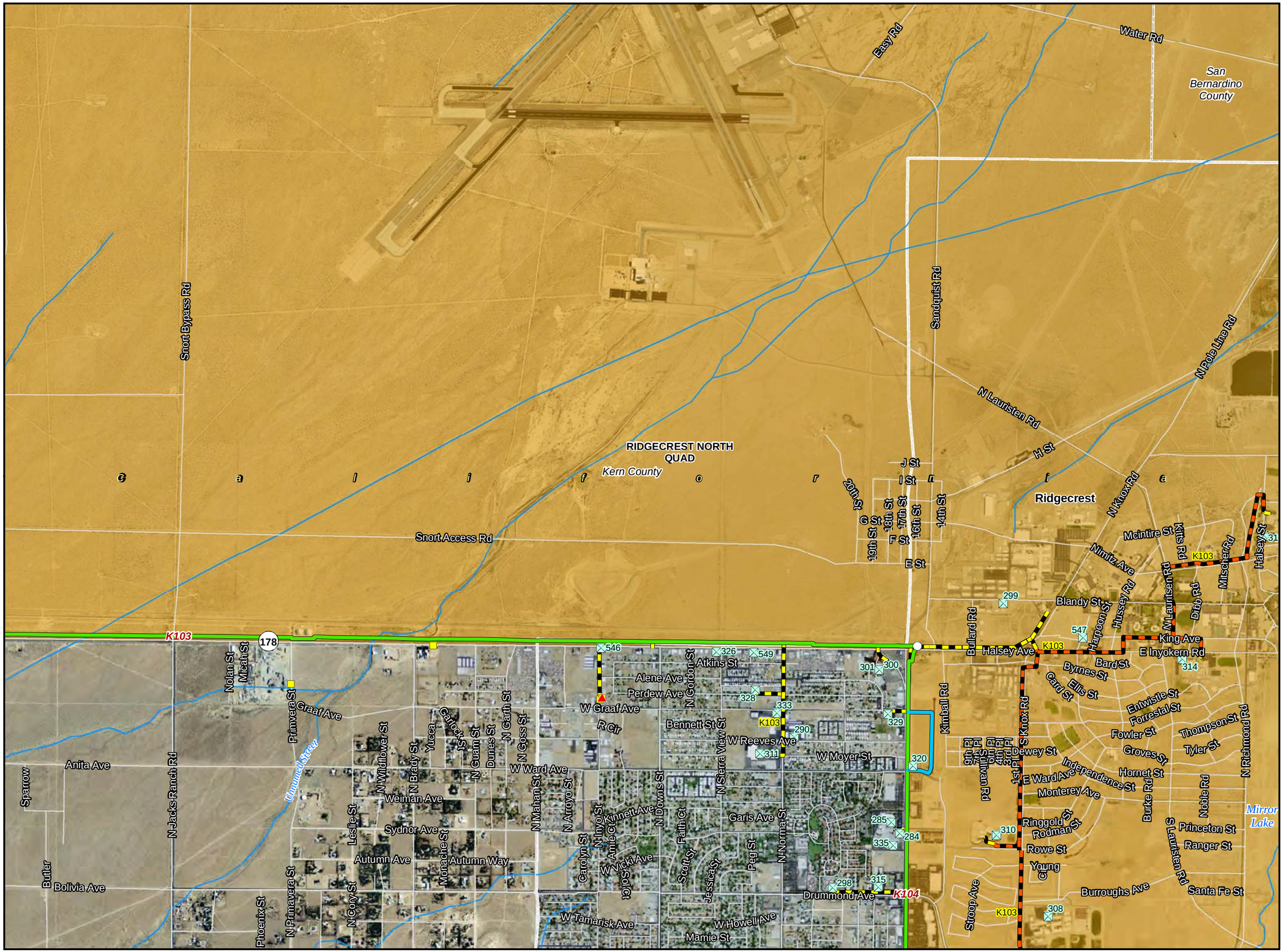
01-17-11

Chambers Group Inc.

CBC Digital 395

R03-Johannesburg to Inyokern-020



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

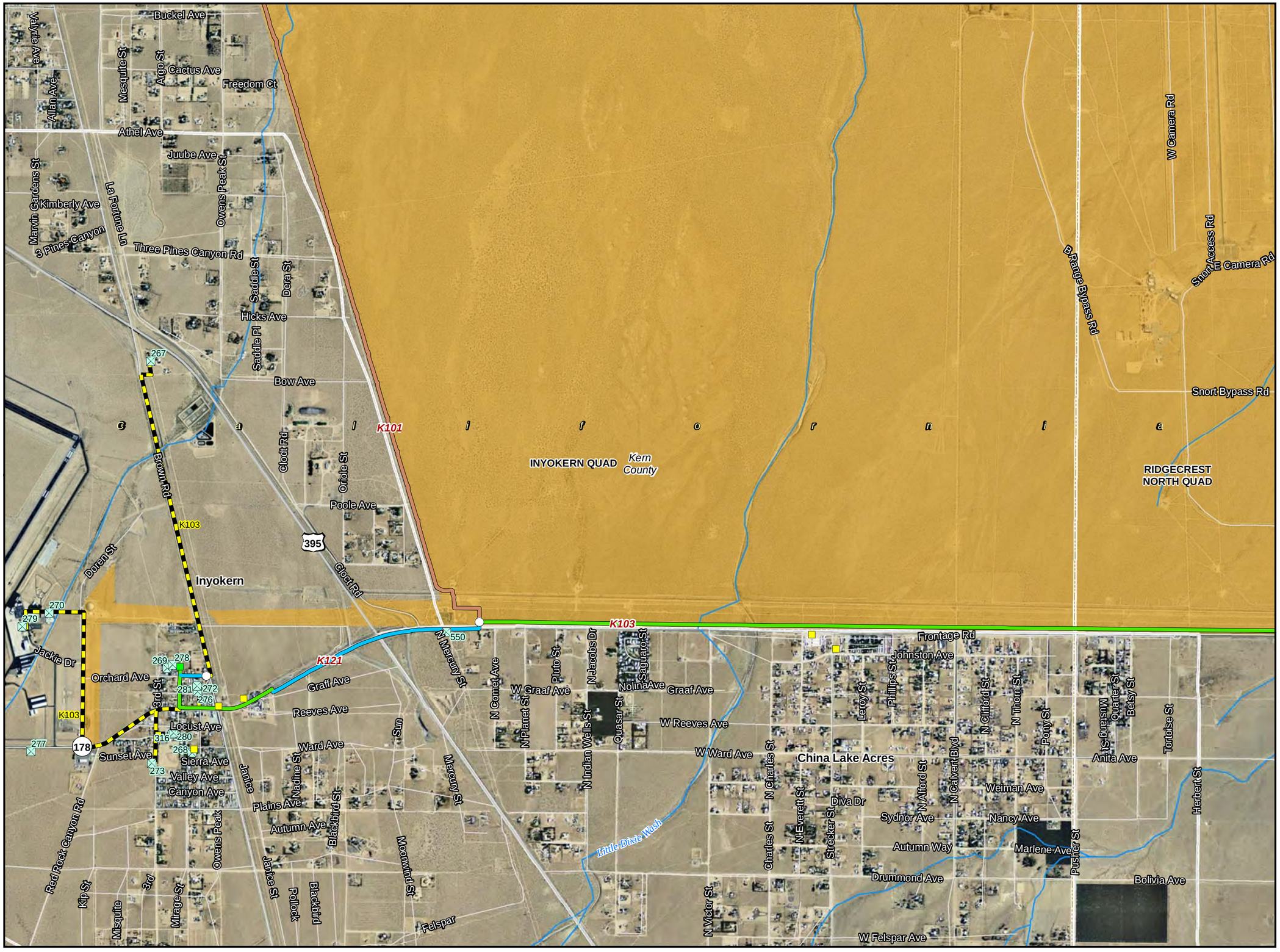
20260

01-17-11

Chambers Group Inc.

CBC Digital 395

R03-Johannesburg to Inyokern-021



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

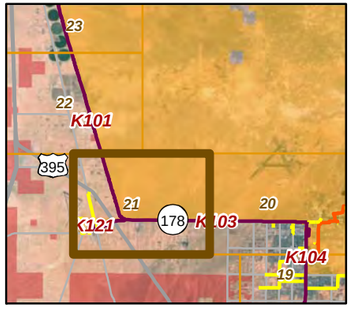
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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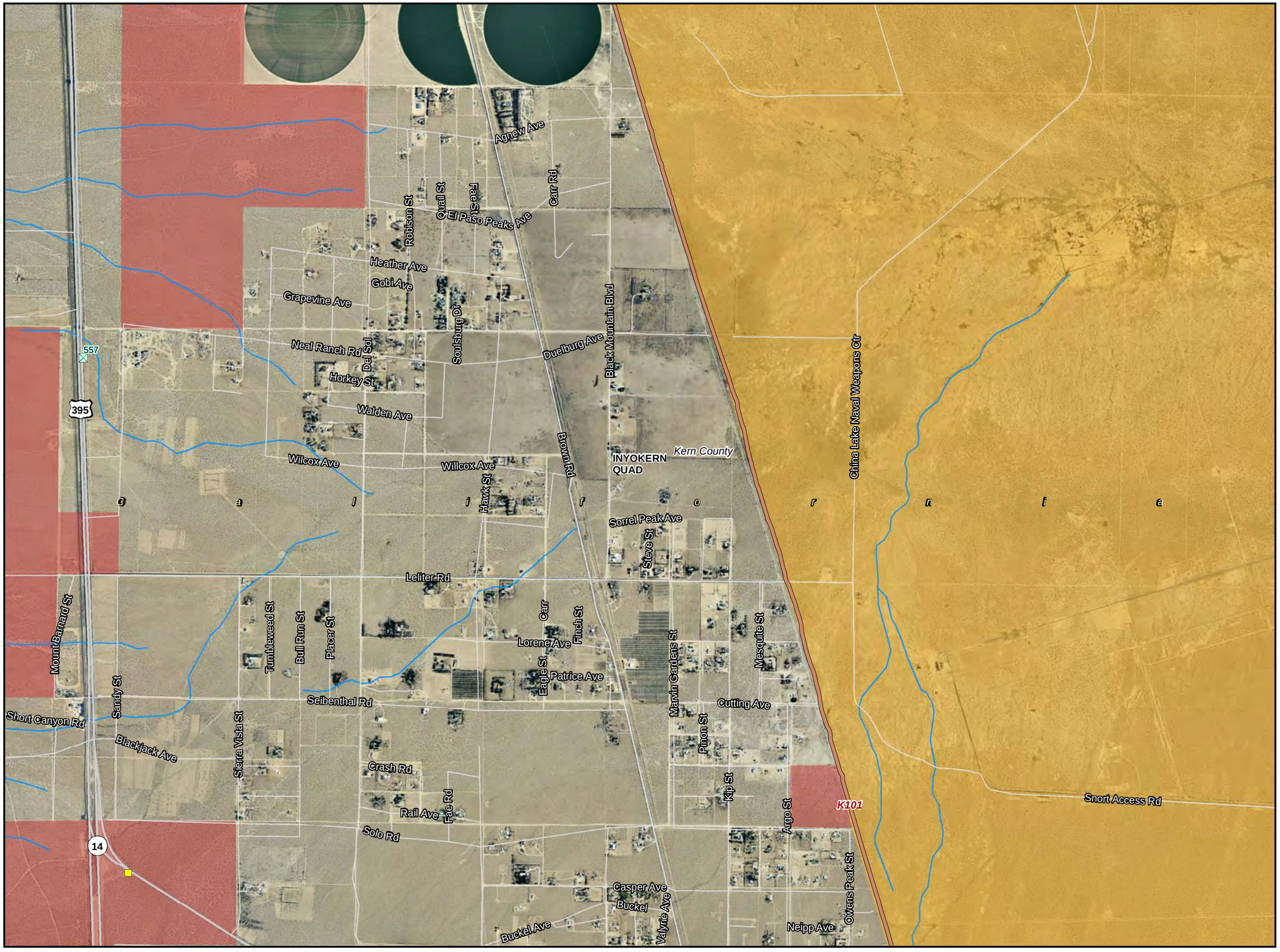
Chambers Group Inc.

CBC Digital 395

R04-Inyokern to Olancha-022



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

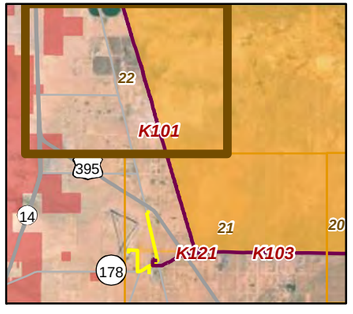
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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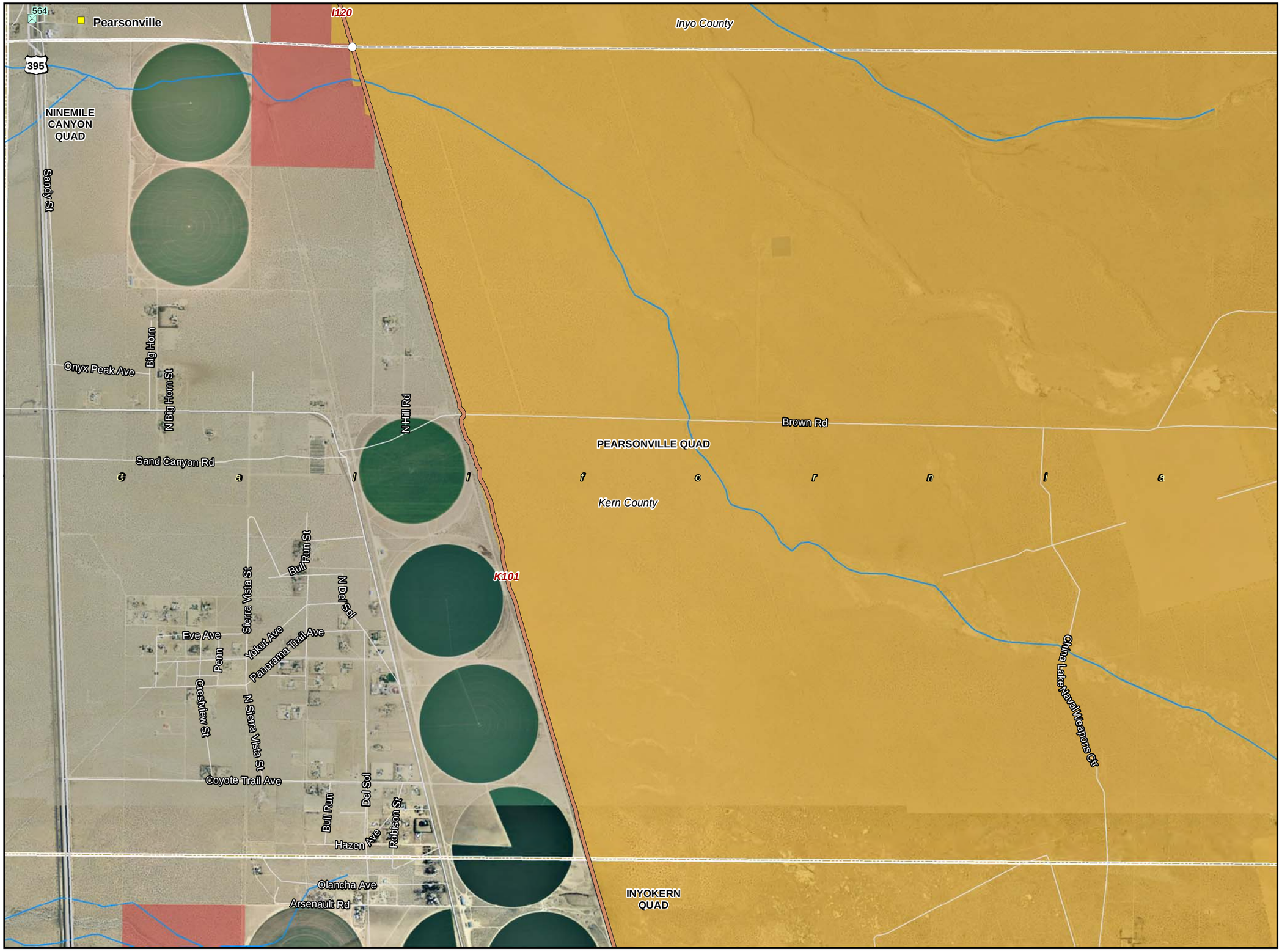
01-17-11

Chambers Group Inc.



CBC Digital 395

R04-Inyokern to Olancha-023

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

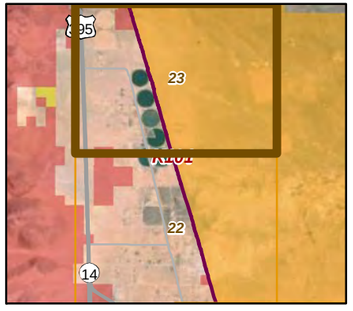
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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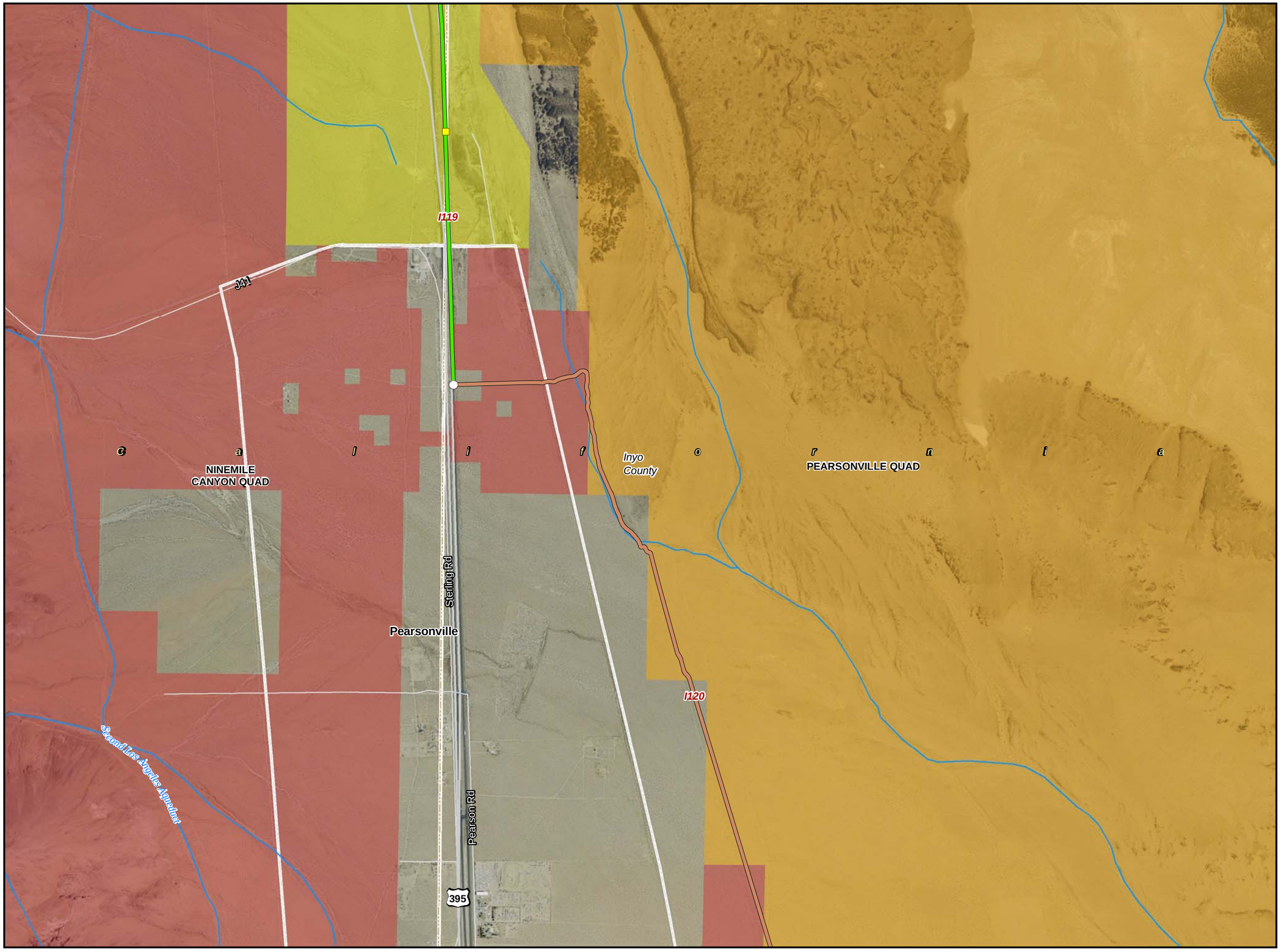
01-17-11

Chambers Group Inc.

CBC Digital 395

R04-Inyokern to Olancha-024



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

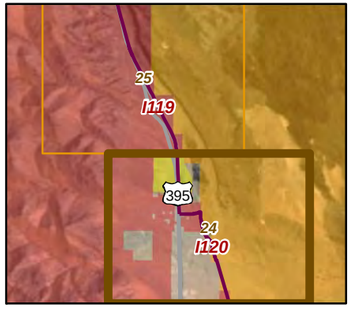
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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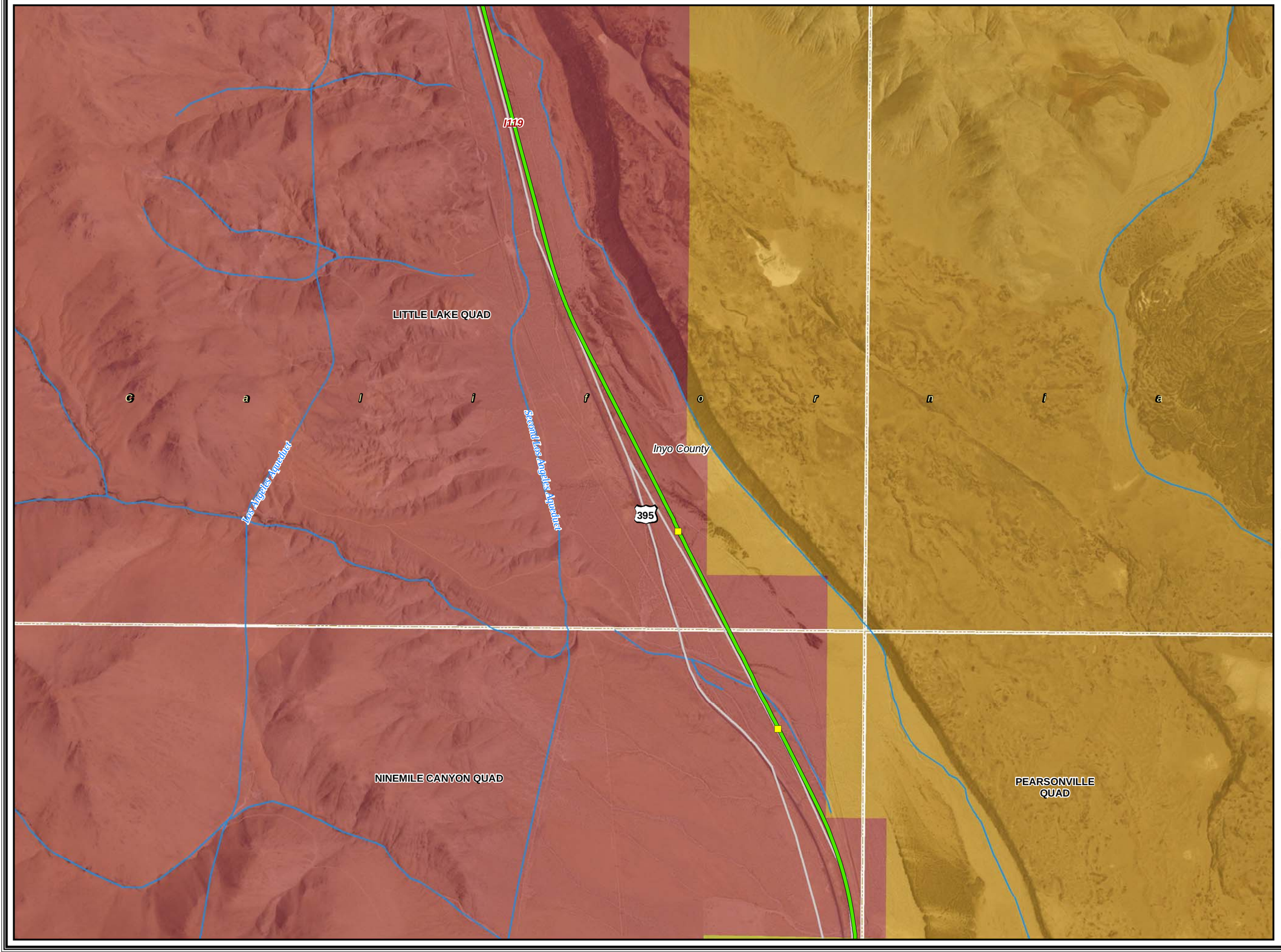
01-17-11

Chambers Group Inc.

CBC Digital 395

R04-Inyokern to Olancha-025



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

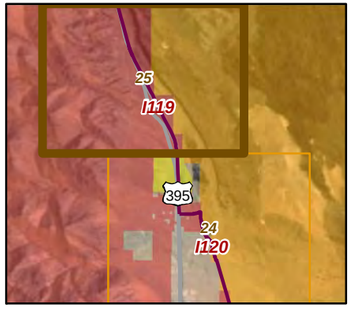
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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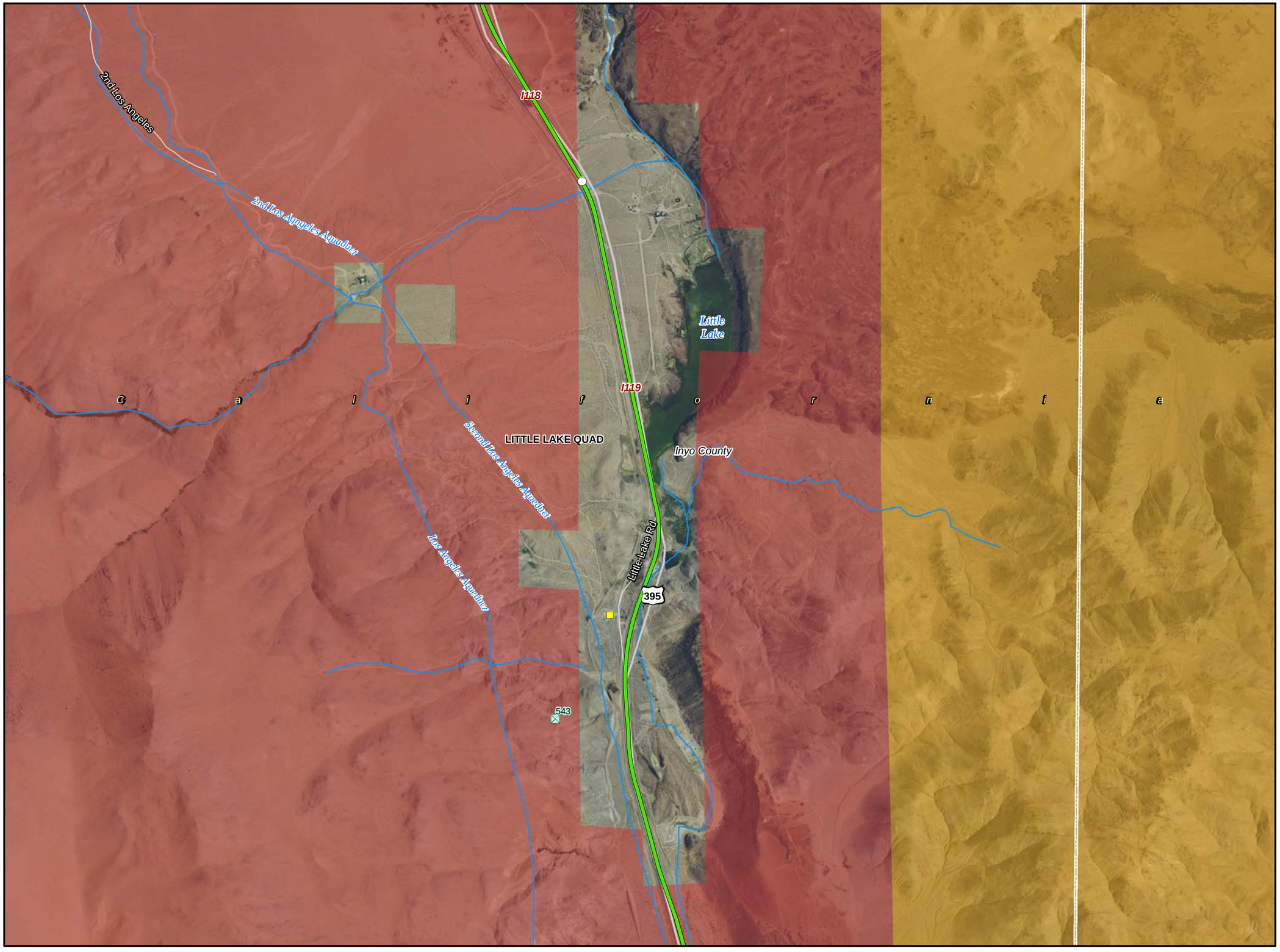
01-17-11

Chambers Group Inc.

CBC Digital 395

R04-Inyokern to Olancha-026



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

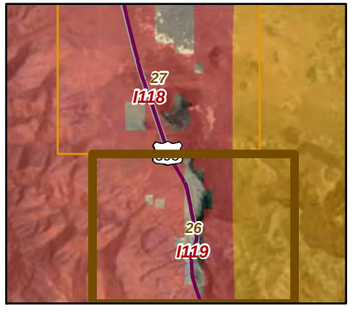
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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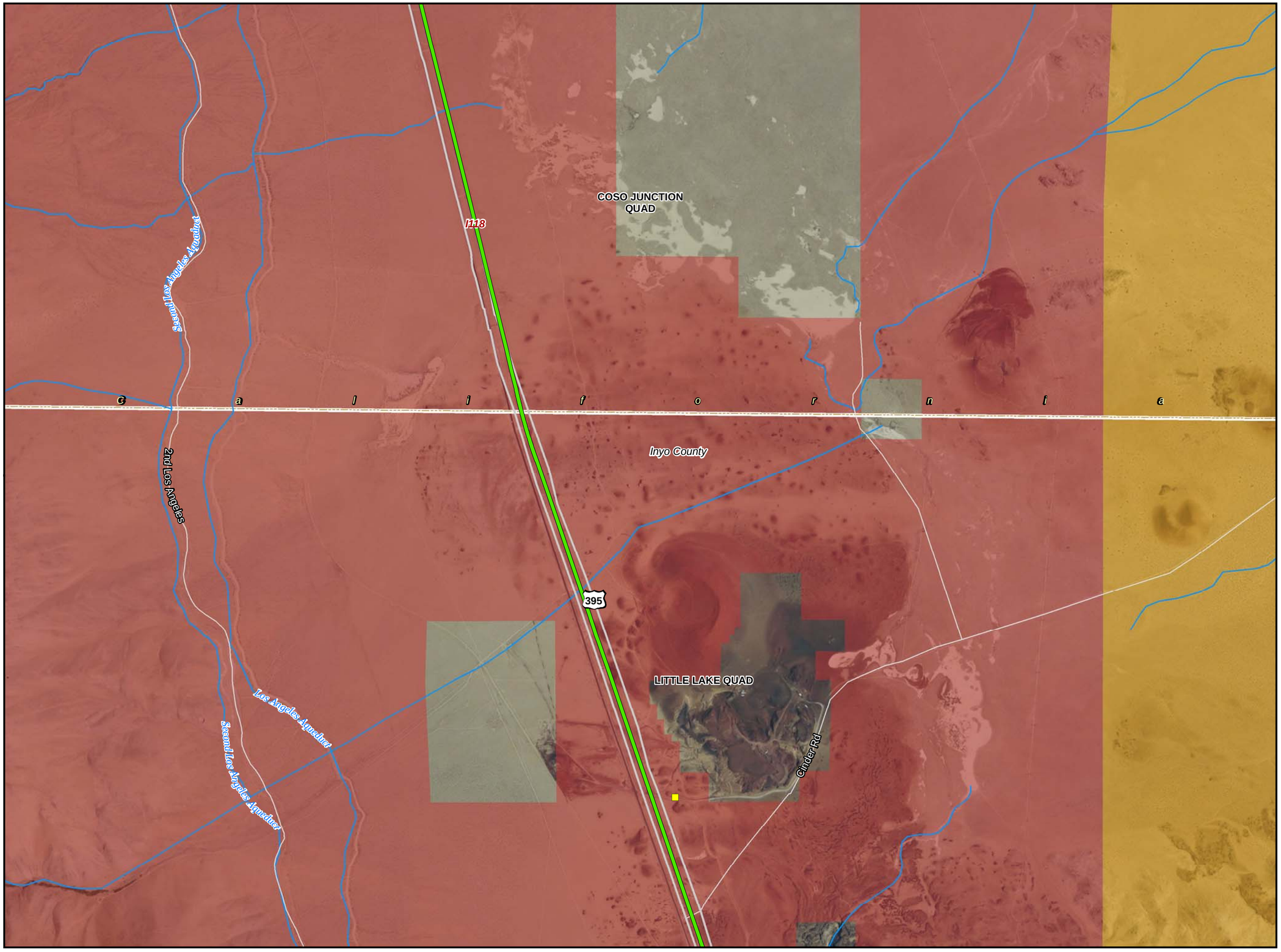
01-17-11

Chambers Group Inc.

CBC Digital 395

R04-Inyokern to Olancha-027



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

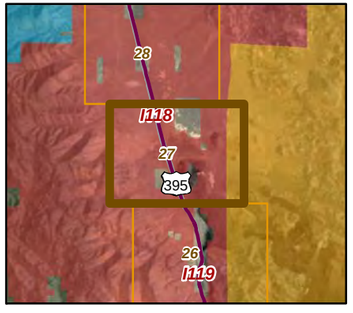
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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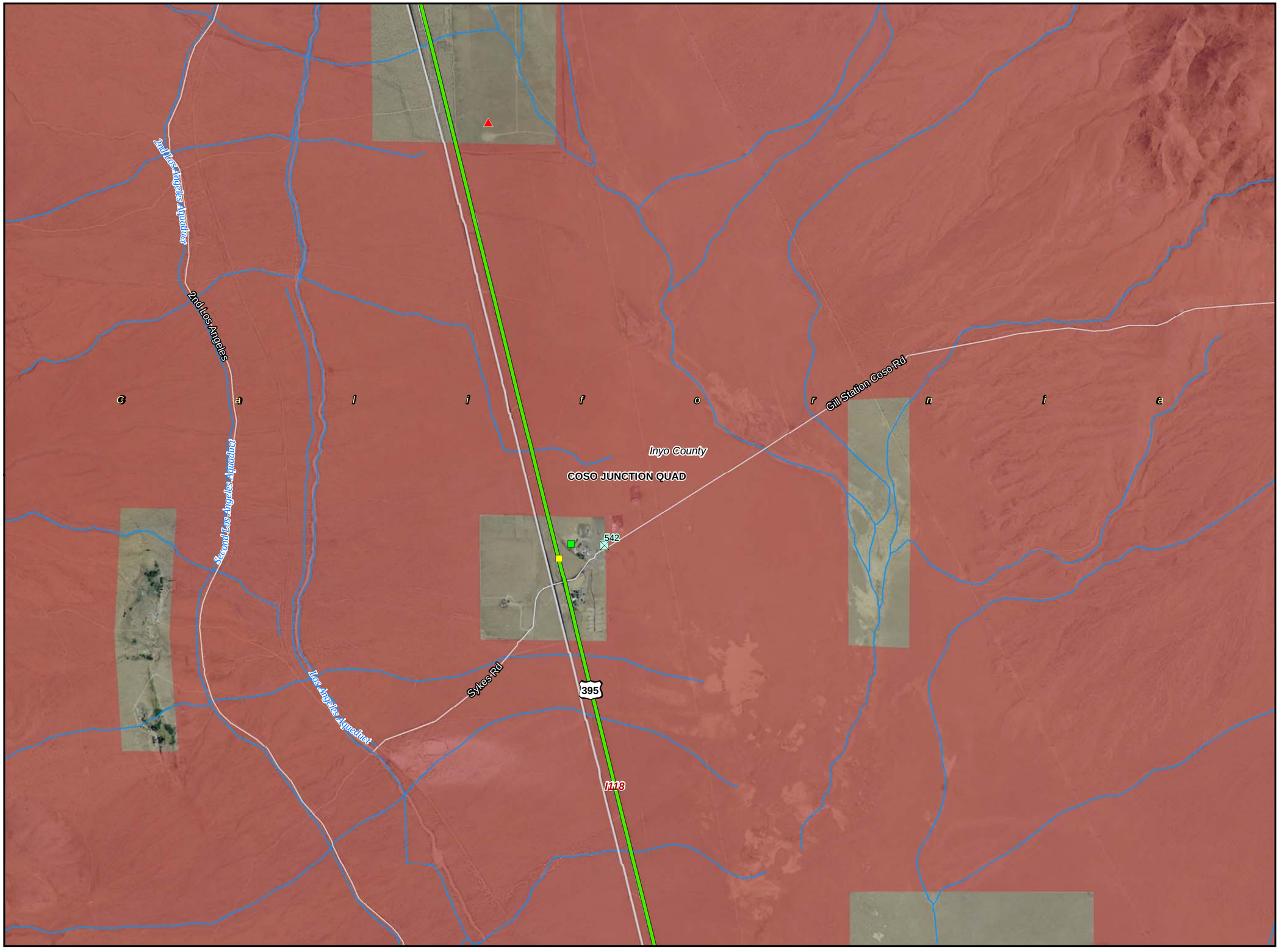
01-17-11

Chambers Group Inc.



CBC Digital 395

R04-Inyokern to Olancha-028

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

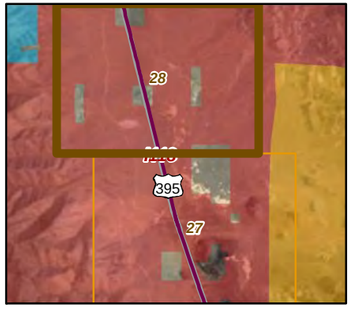
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

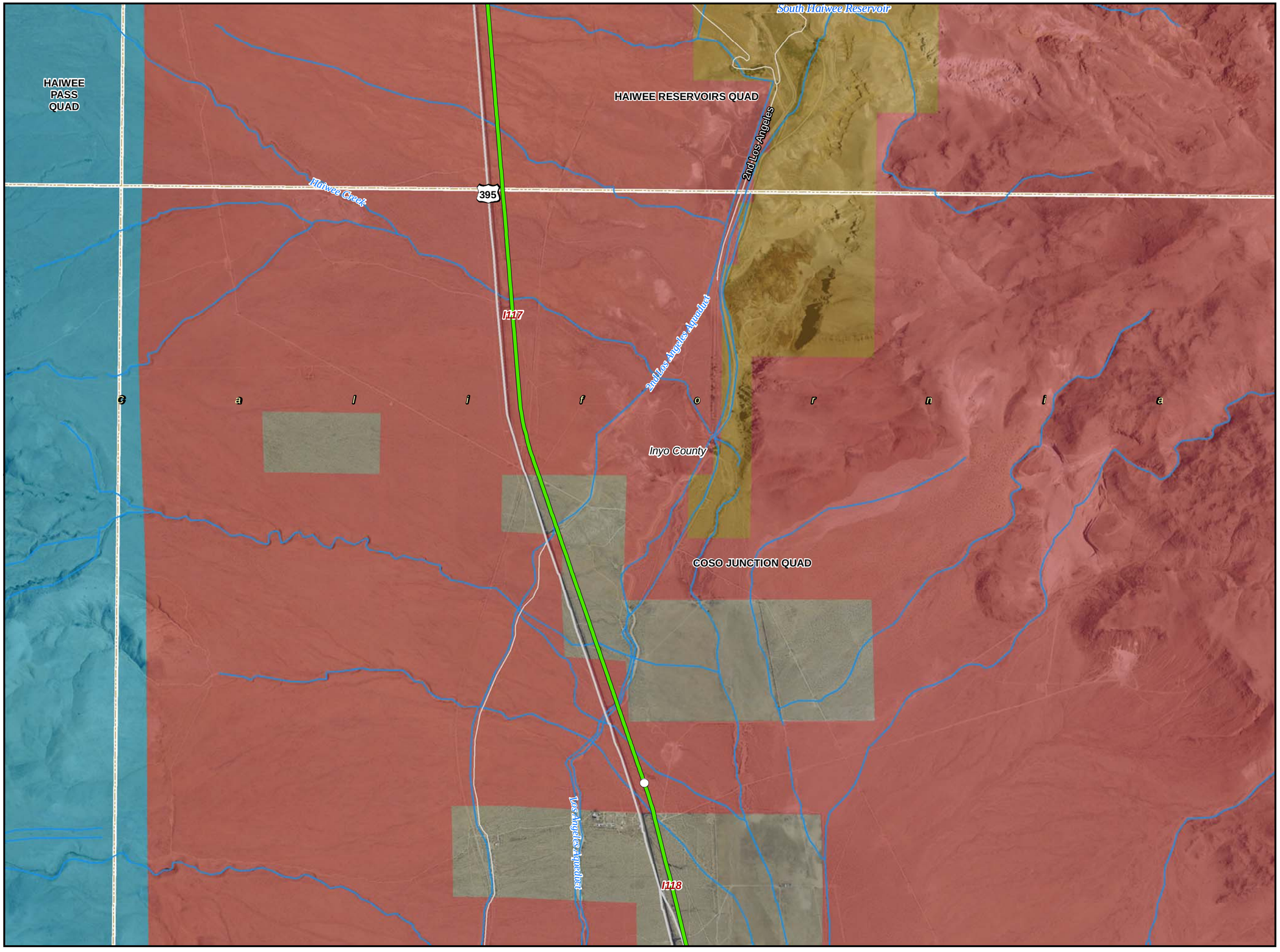
1:24,000



20260

01-17-11

Chambers Group Inc.



CBC Digital 395

R04-Inyokern to Olancha-029

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

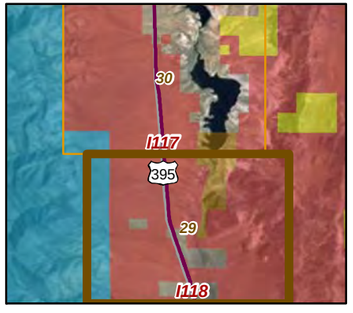
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



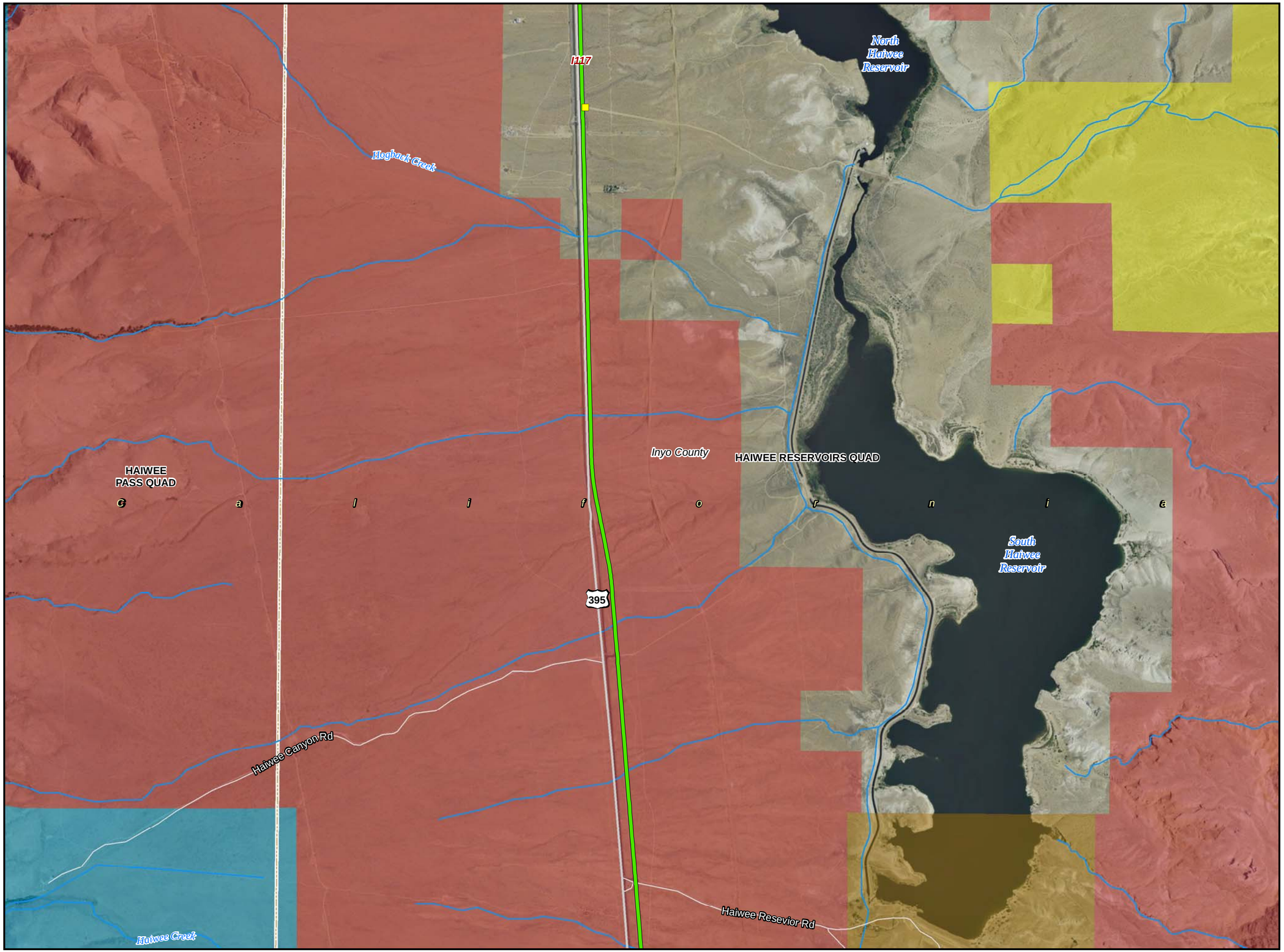
20260

01-17-11

Chambers Group Inc.

CBC Digital 395

R04-Inyokern to Olancha-030



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

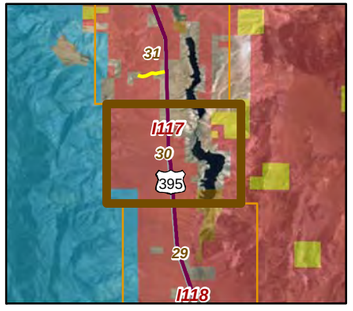
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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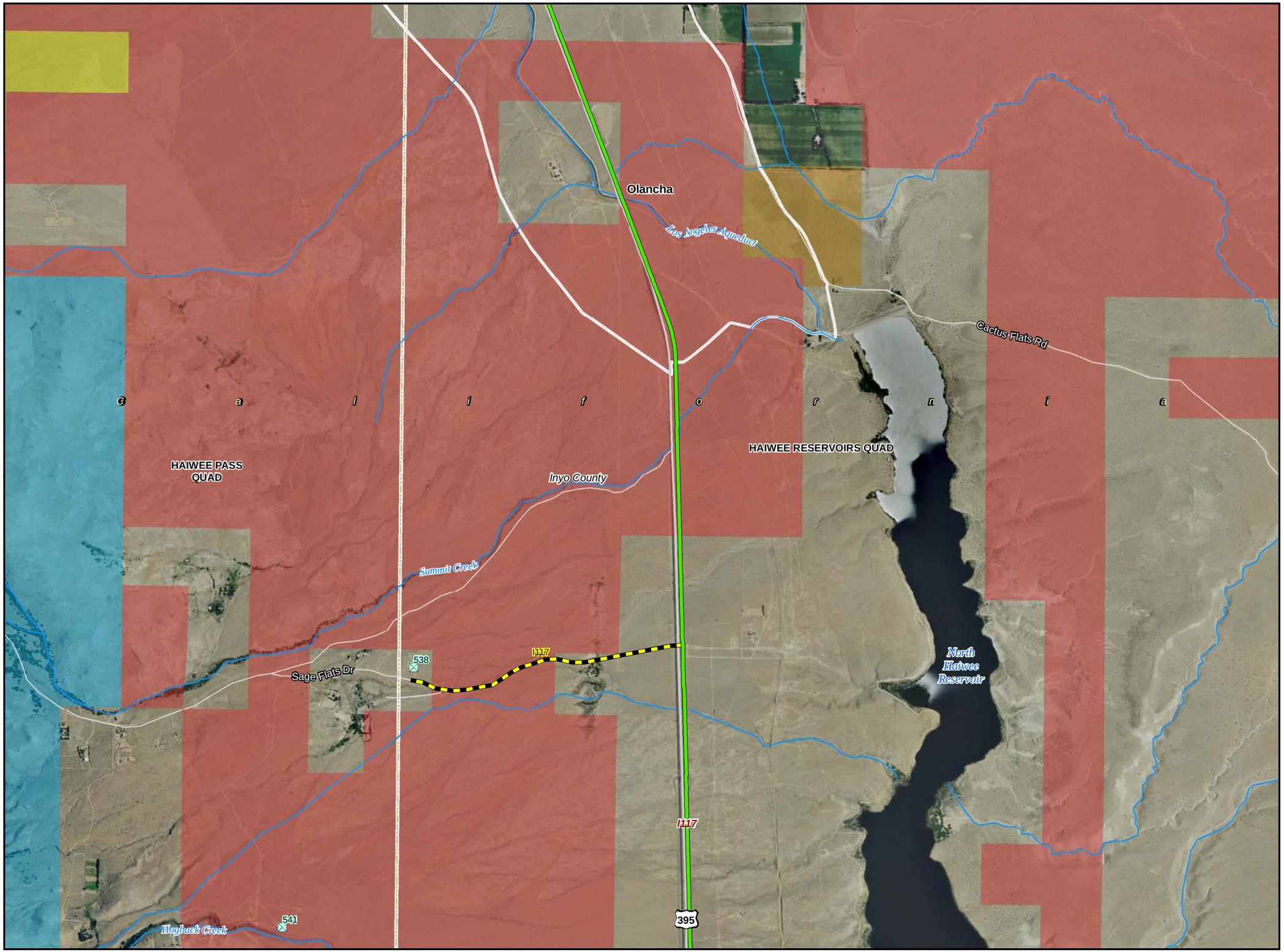
01-17-11

Chambers Group Inc.



CBC Digital 395

R04-Inyokern to Olancha-031

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

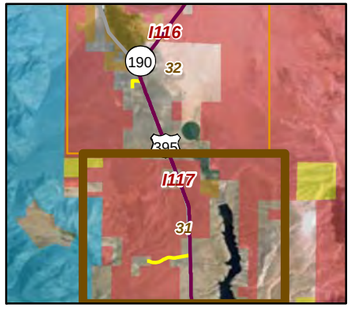
FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet
1:24,000



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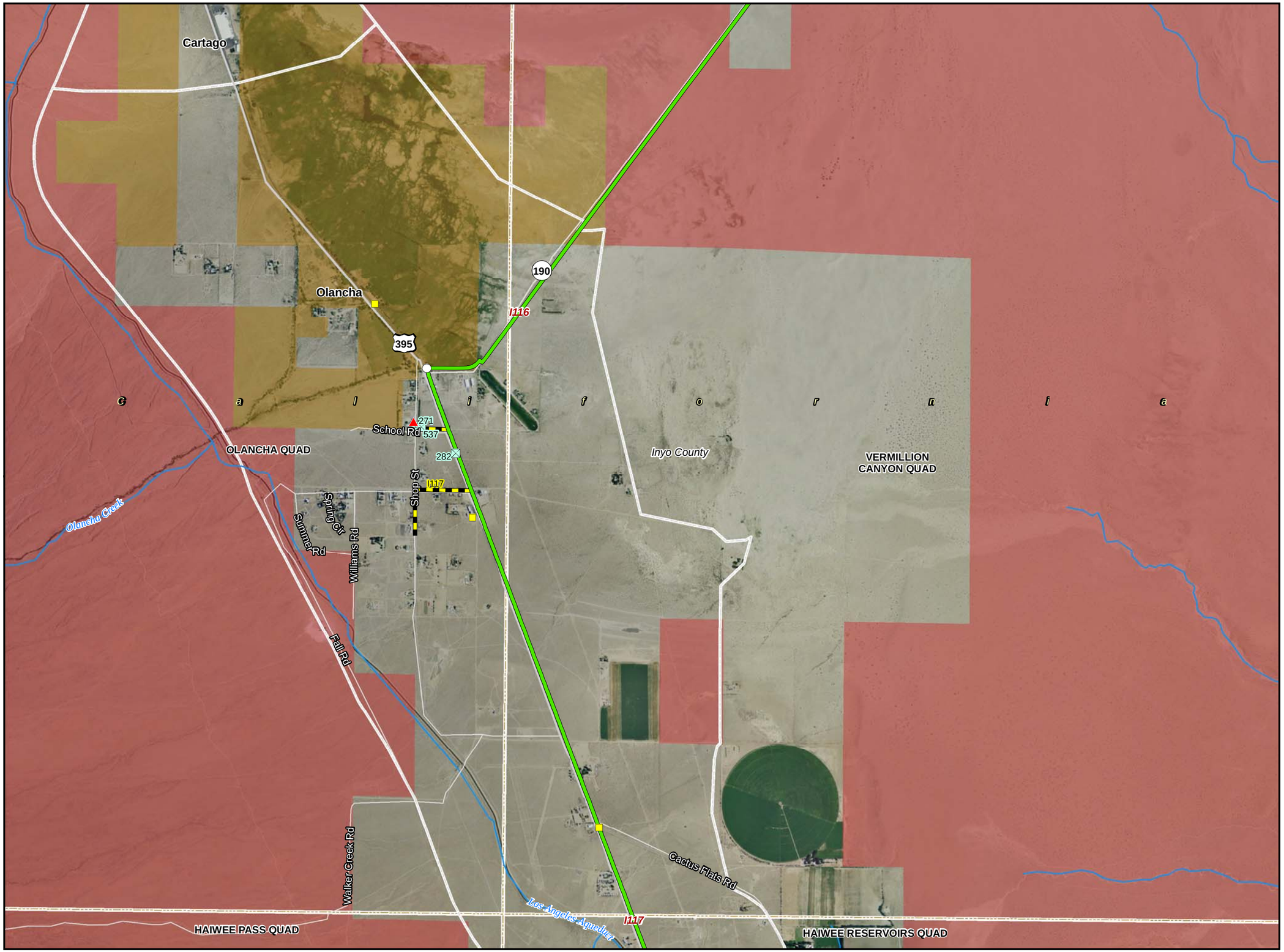
01-17-11

Chambers Group Inc.

CBC Digital 395

R04-Inyokern to Olancha-032



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

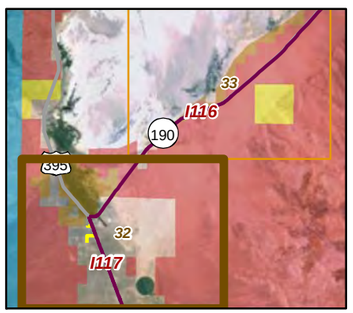
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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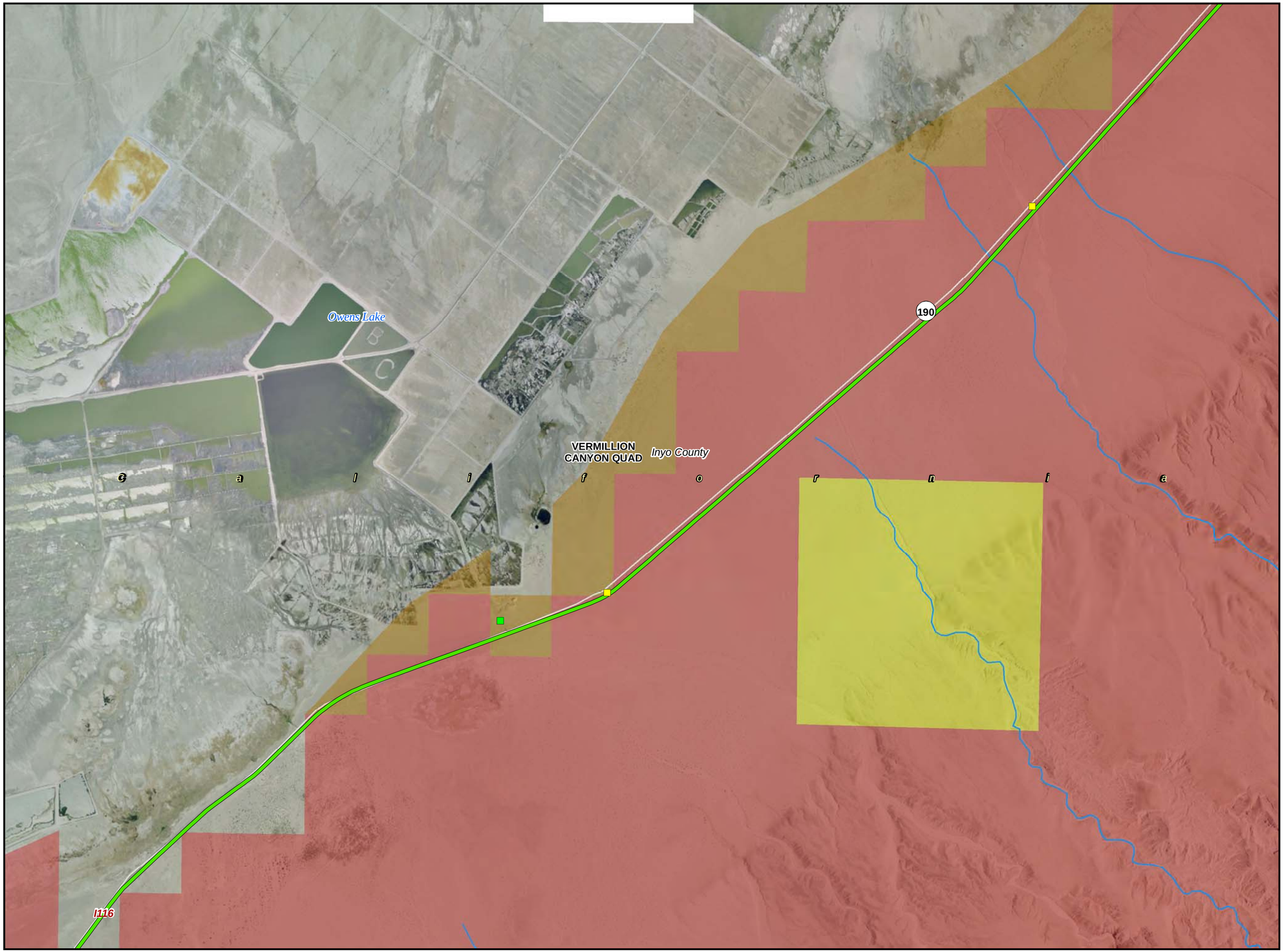
01-17-11

Chambers Group Inc.



CBC Digital 395

R05-Olancha to Independence-033

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

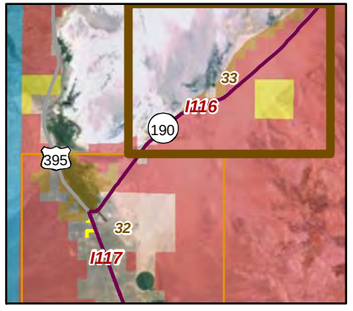
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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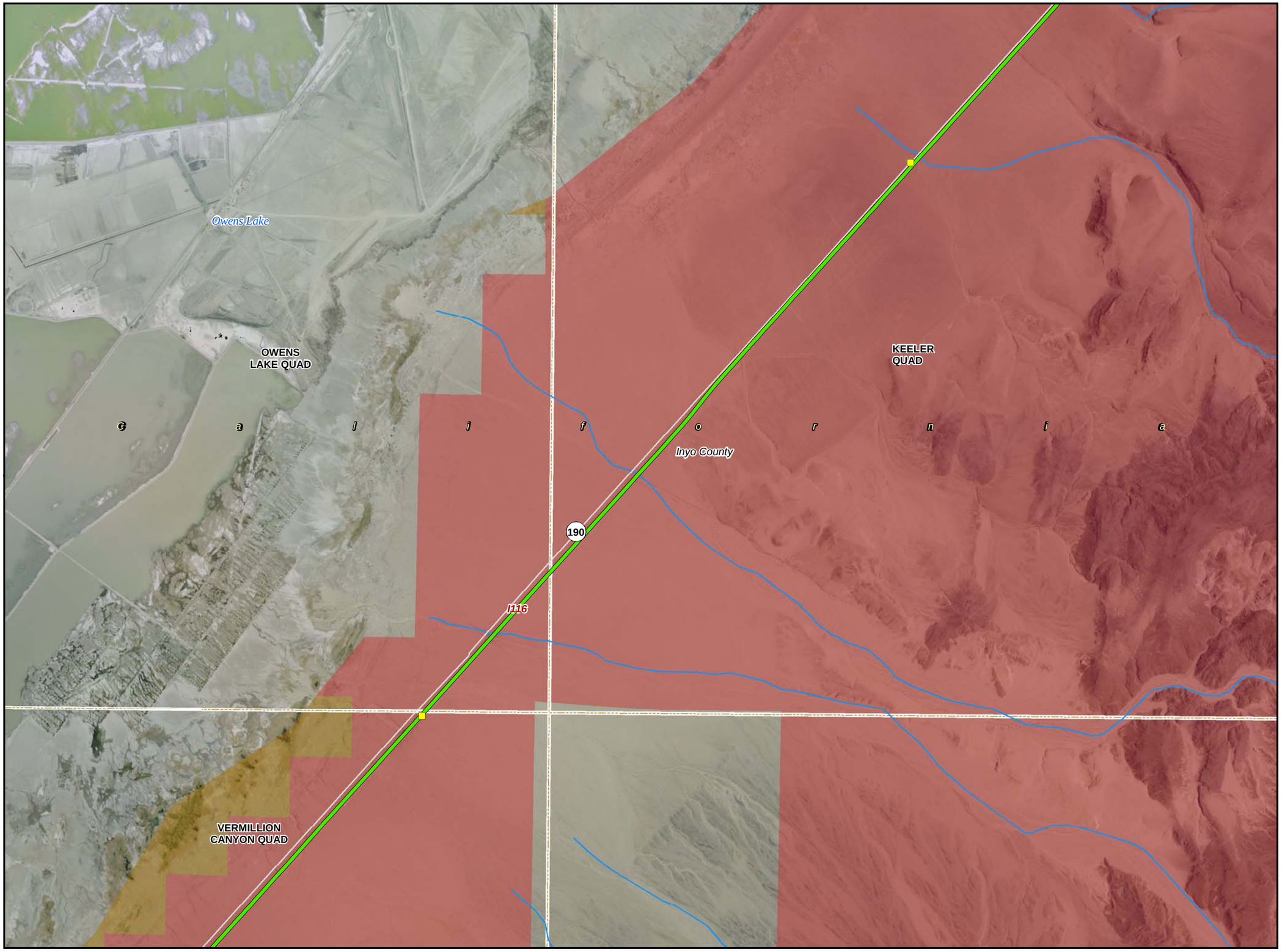
01-17-11

Chambers Group Inc.

CBC Digital 395

R05-Olancha to Independence-034



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

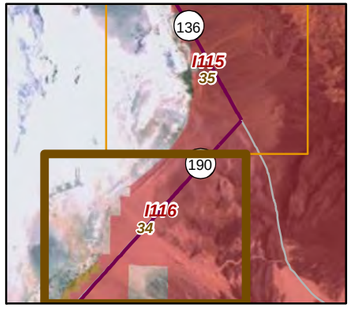
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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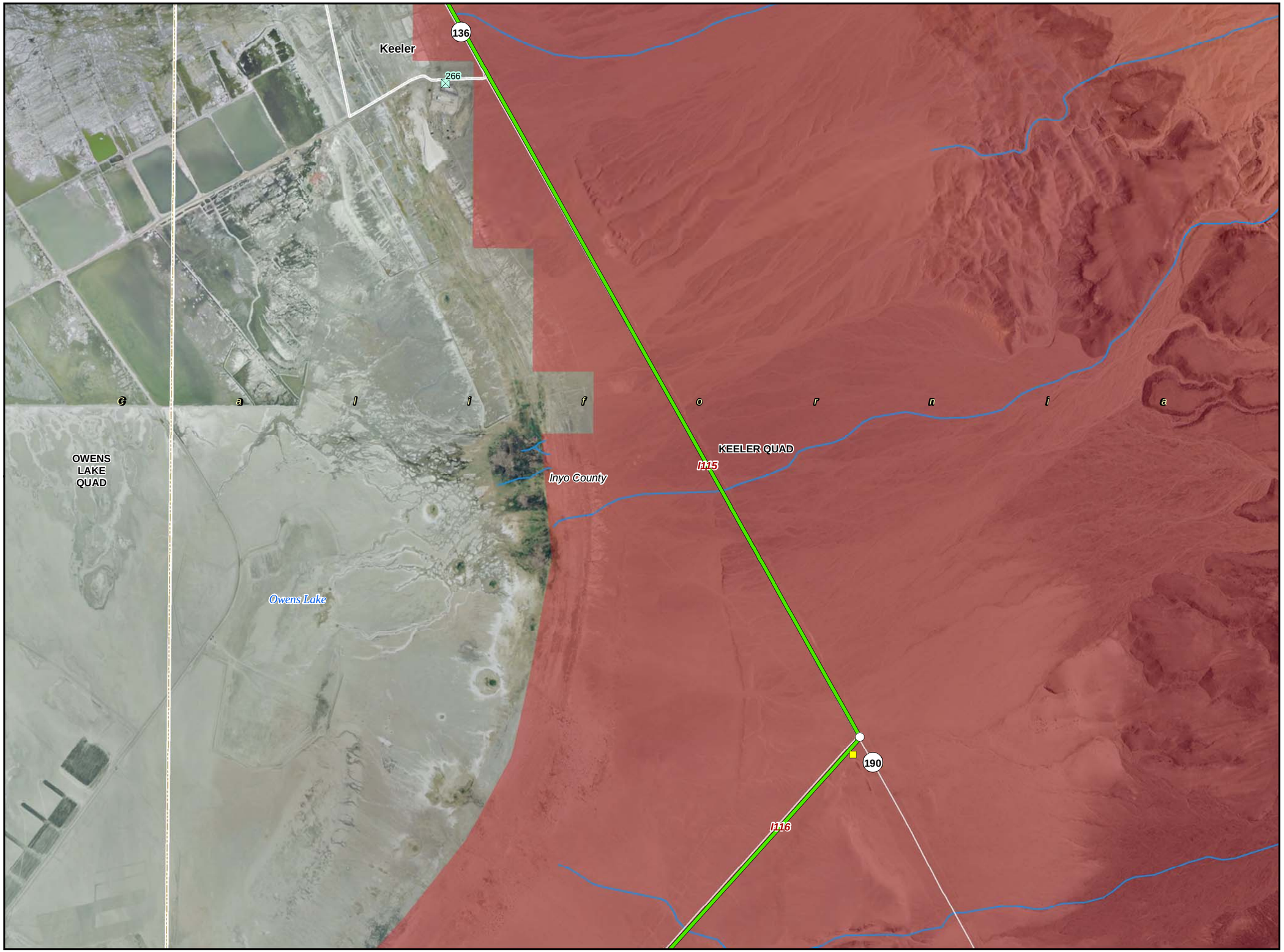
01-17-11

Chambers Group Inc.

CBC Digital 395

R05-Olancha to Independence-035



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

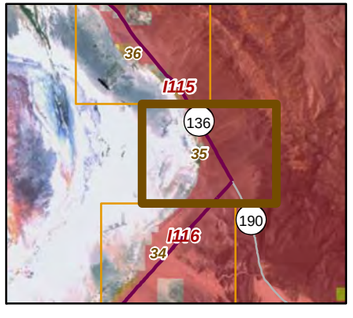
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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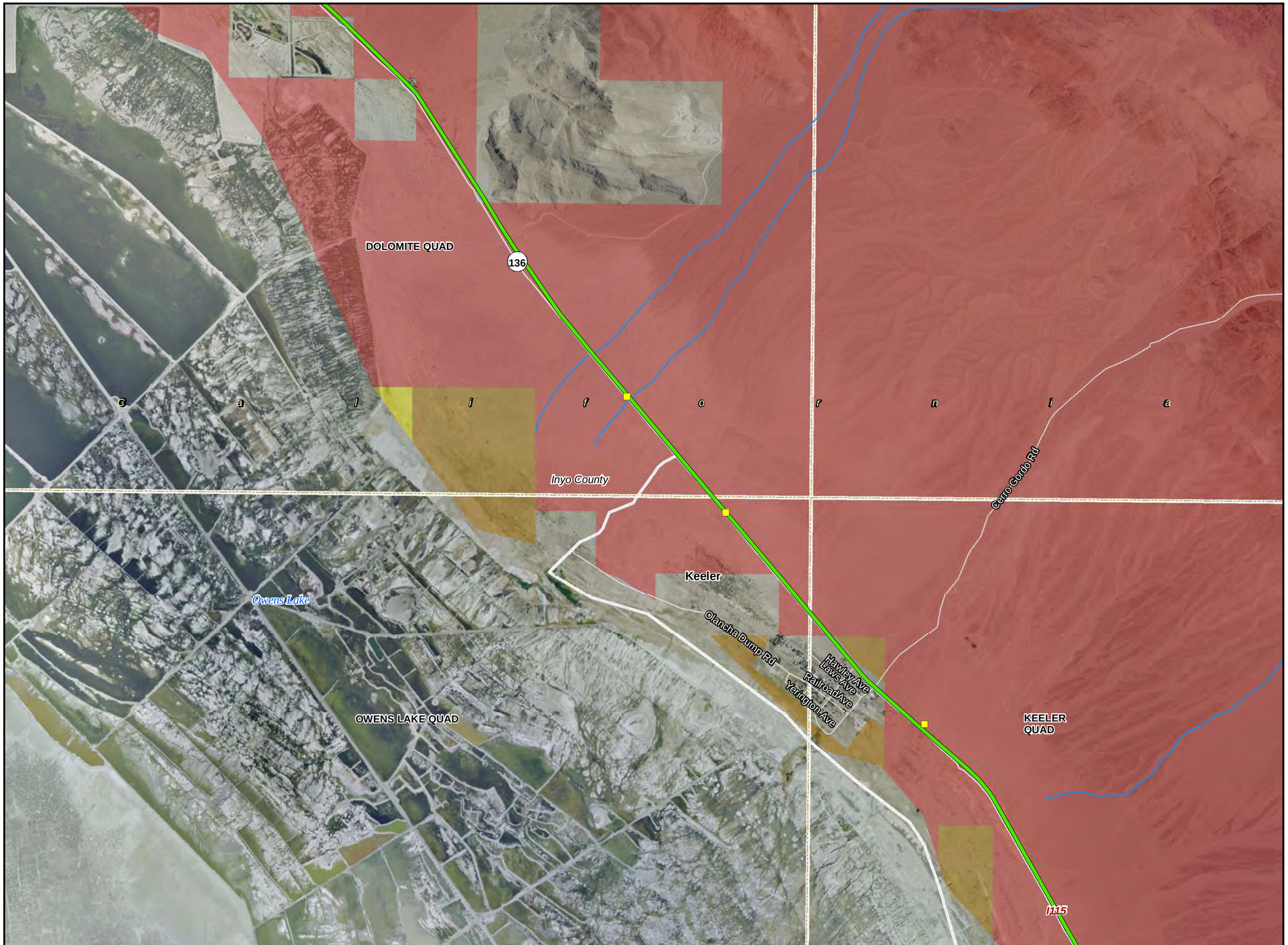
01-17-11

Chambers Group Inc.



CBC Digital 395

R05-Olancha to Independence-036

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

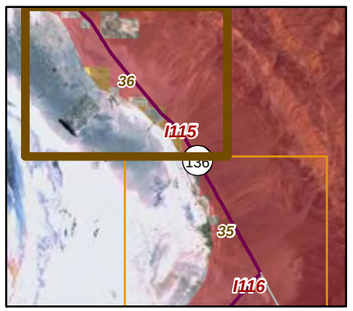
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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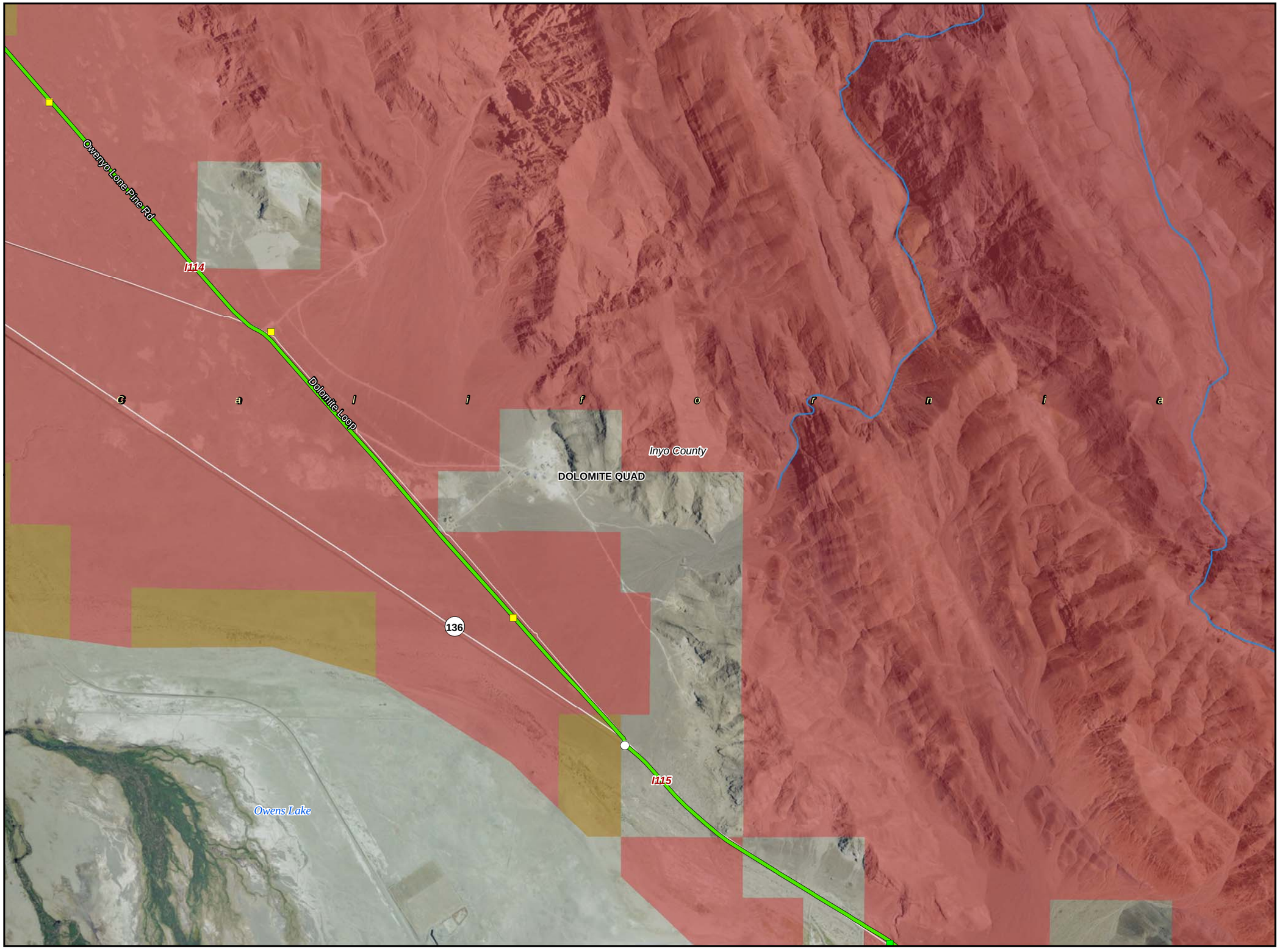
01-17-11

Chambers Group Inc.

CBC Digital 395

R05-Olancha to Independence-037



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

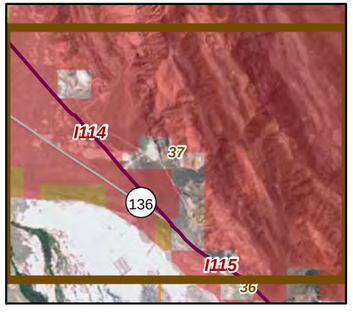
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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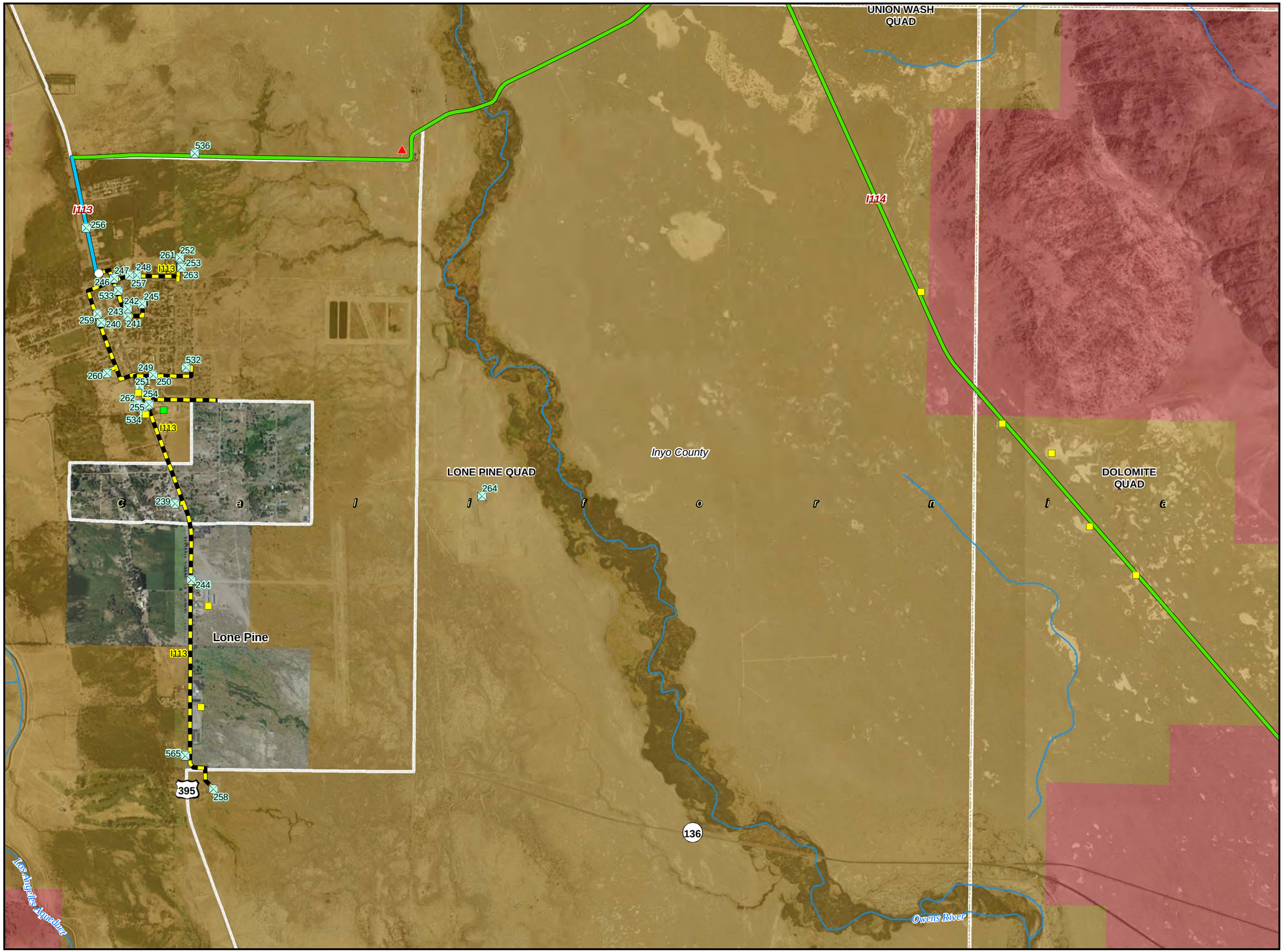
01-17-11

Chambers Group Inc.

CBC Digital 395

R05-Olancha to Independence-038



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

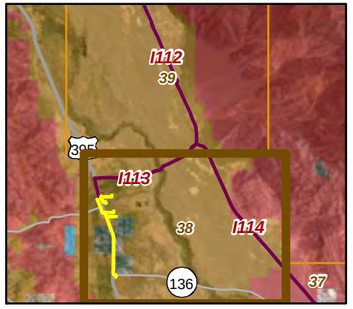
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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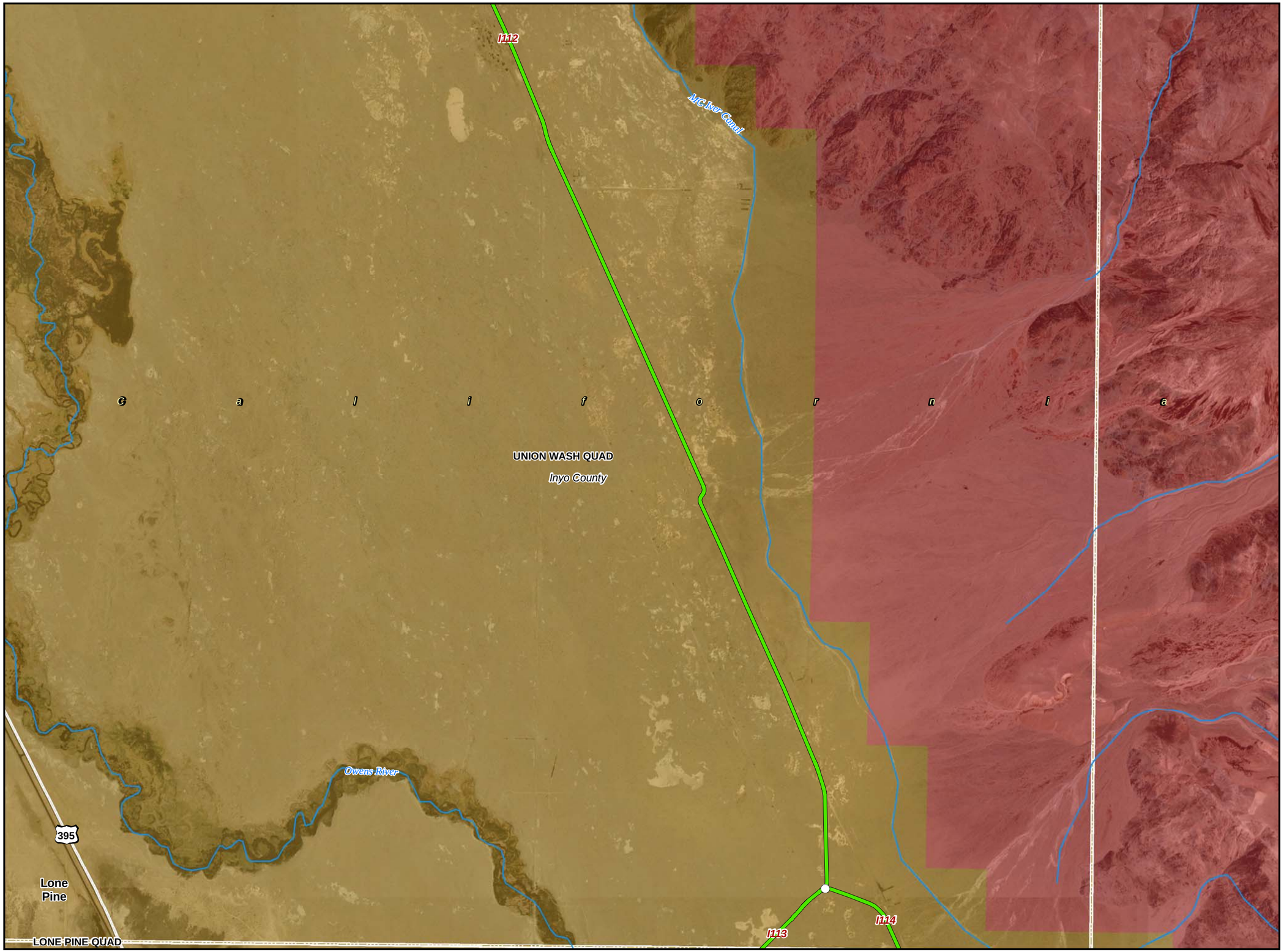


CBC Digital 395

R05-Olancha to Independence-039

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

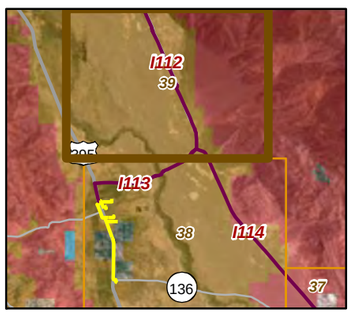
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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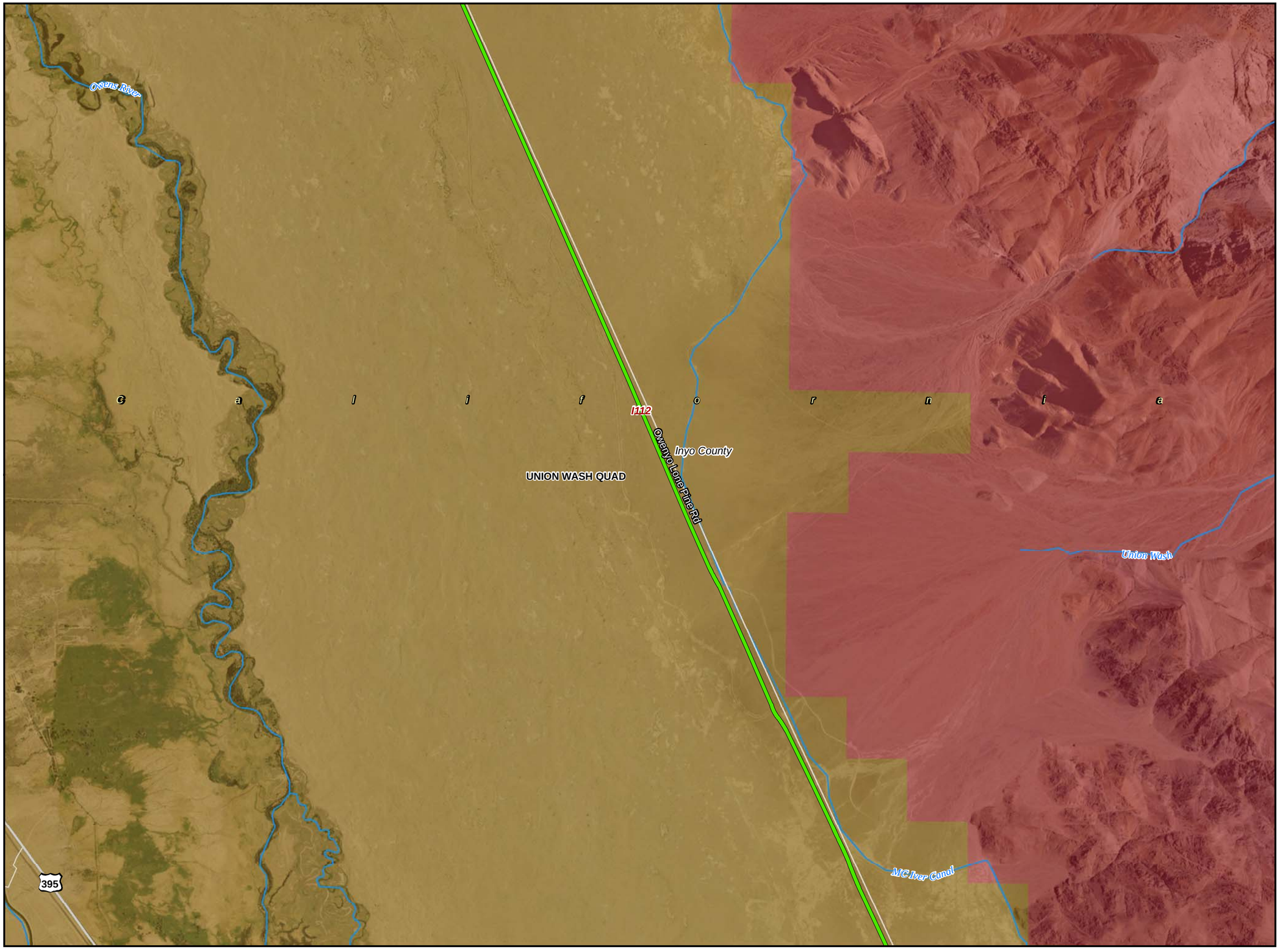
CBC Digital 395

R05-Olancha to Independence-040



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

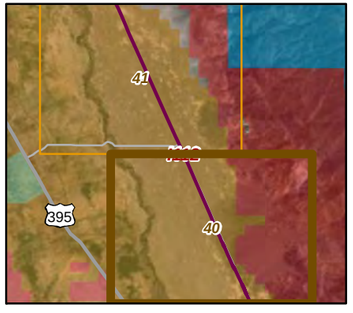
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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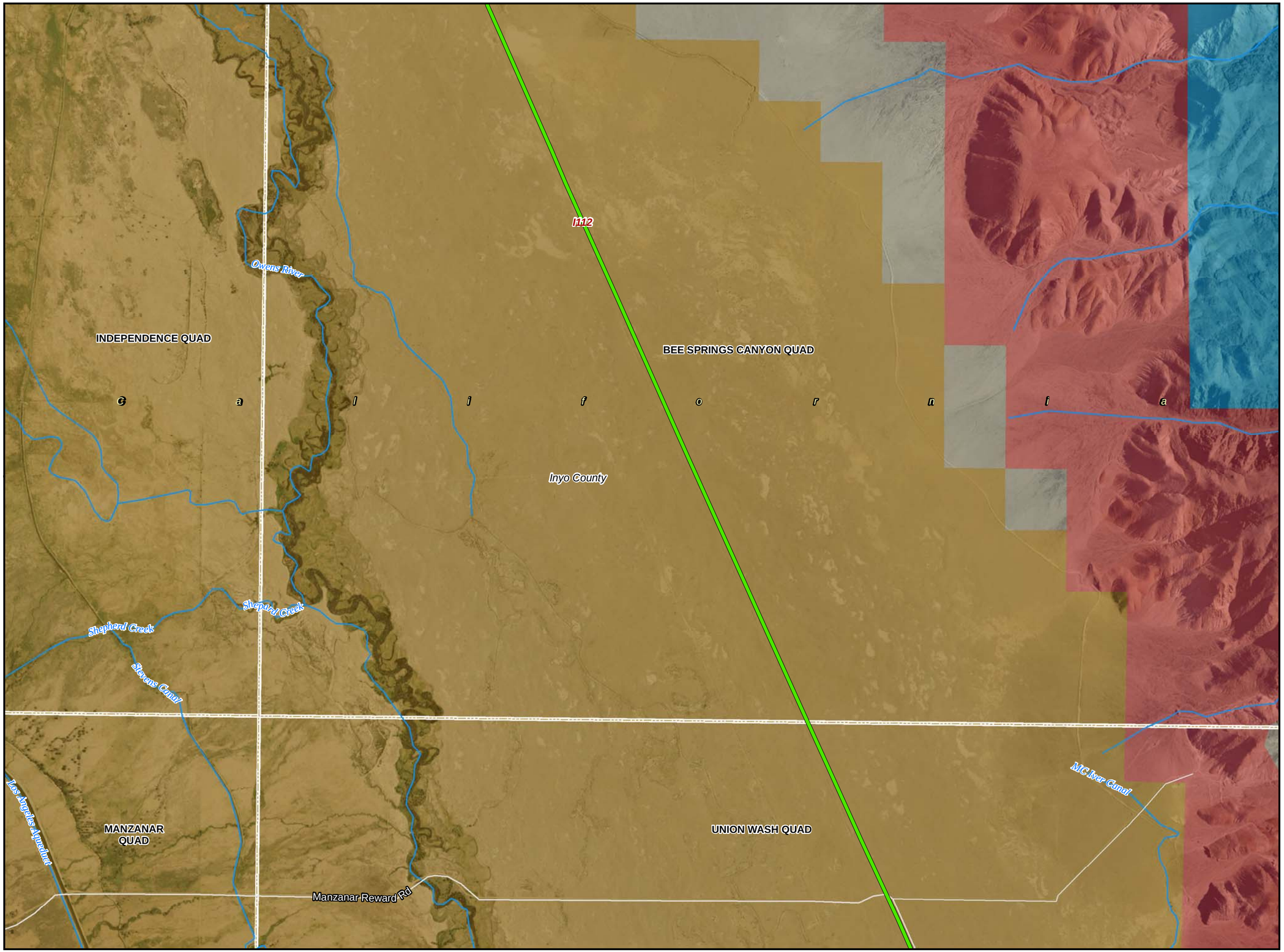
Chambers Group Inc.

CBC Digital 395

R05-Olancha to Independence-041



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

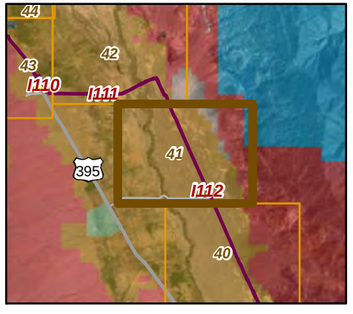
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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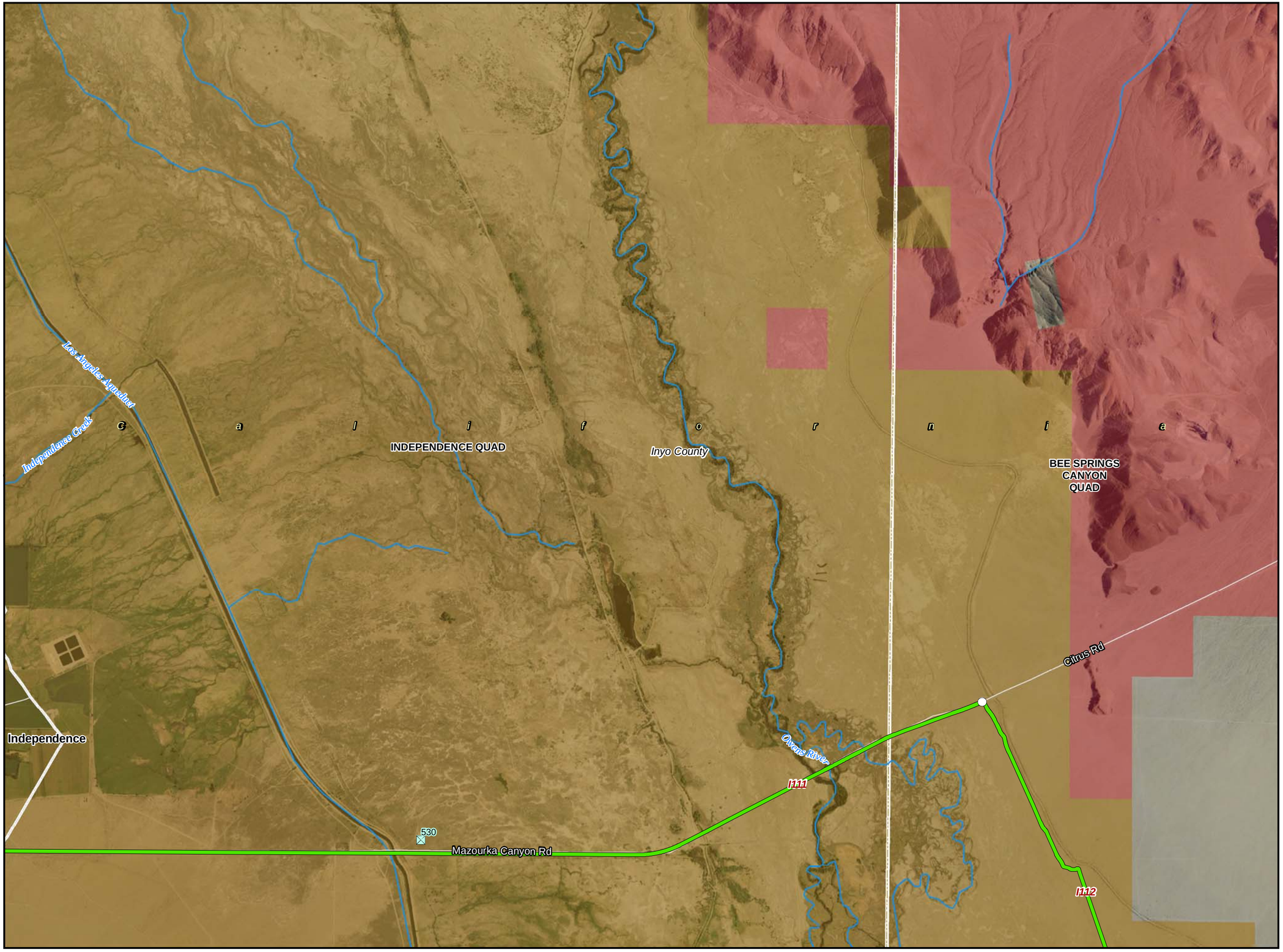
01-17-11

Chambers Group Inc.

CBC Digital 395

R05-Olancha to Independence-042



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

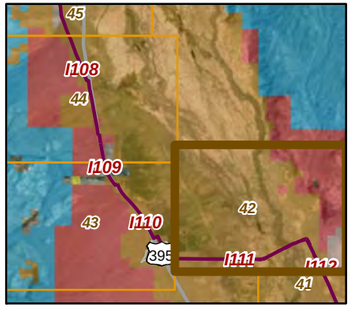
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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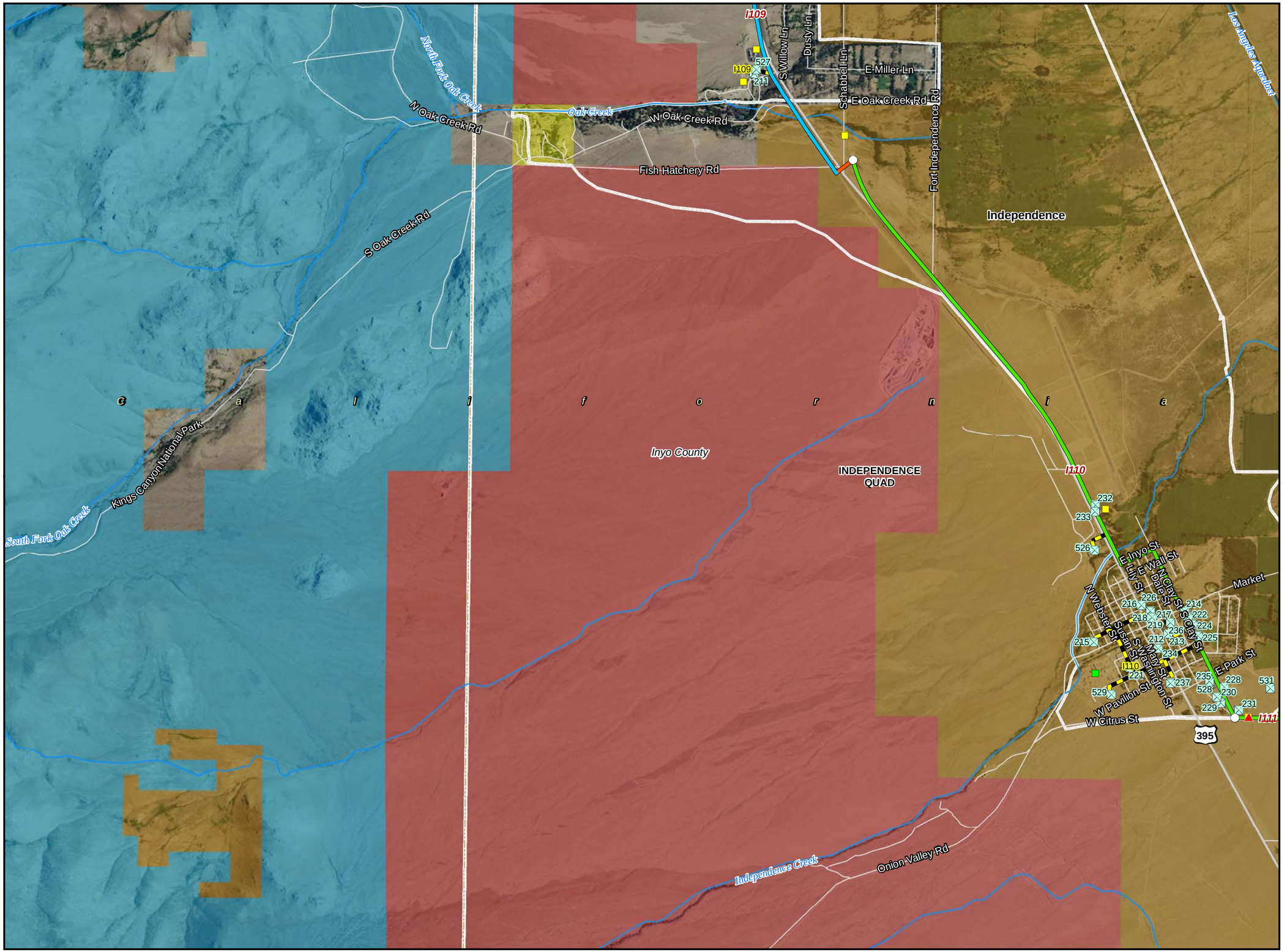
01-17-11

Chambers Group Inc.

CBC Digital 395

R06-Independence to Bishop-043



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

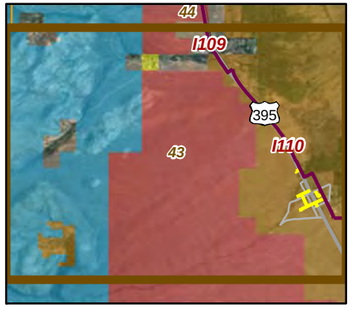
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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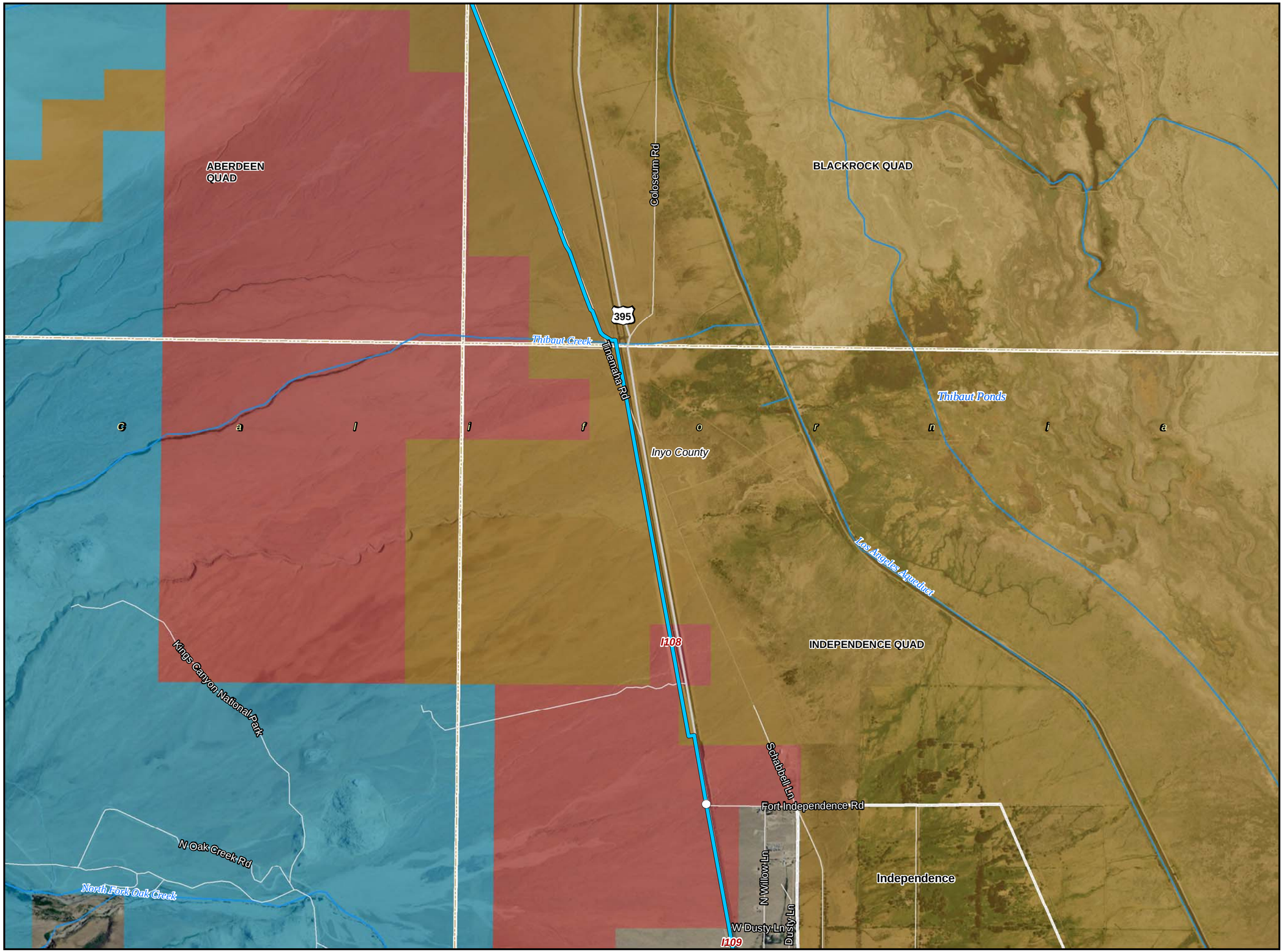
01-17-11

Chambers Group Inc.

CBC Digital 395

R06-Independence to Bishop-044



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
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- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
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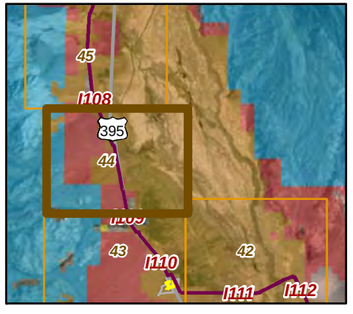
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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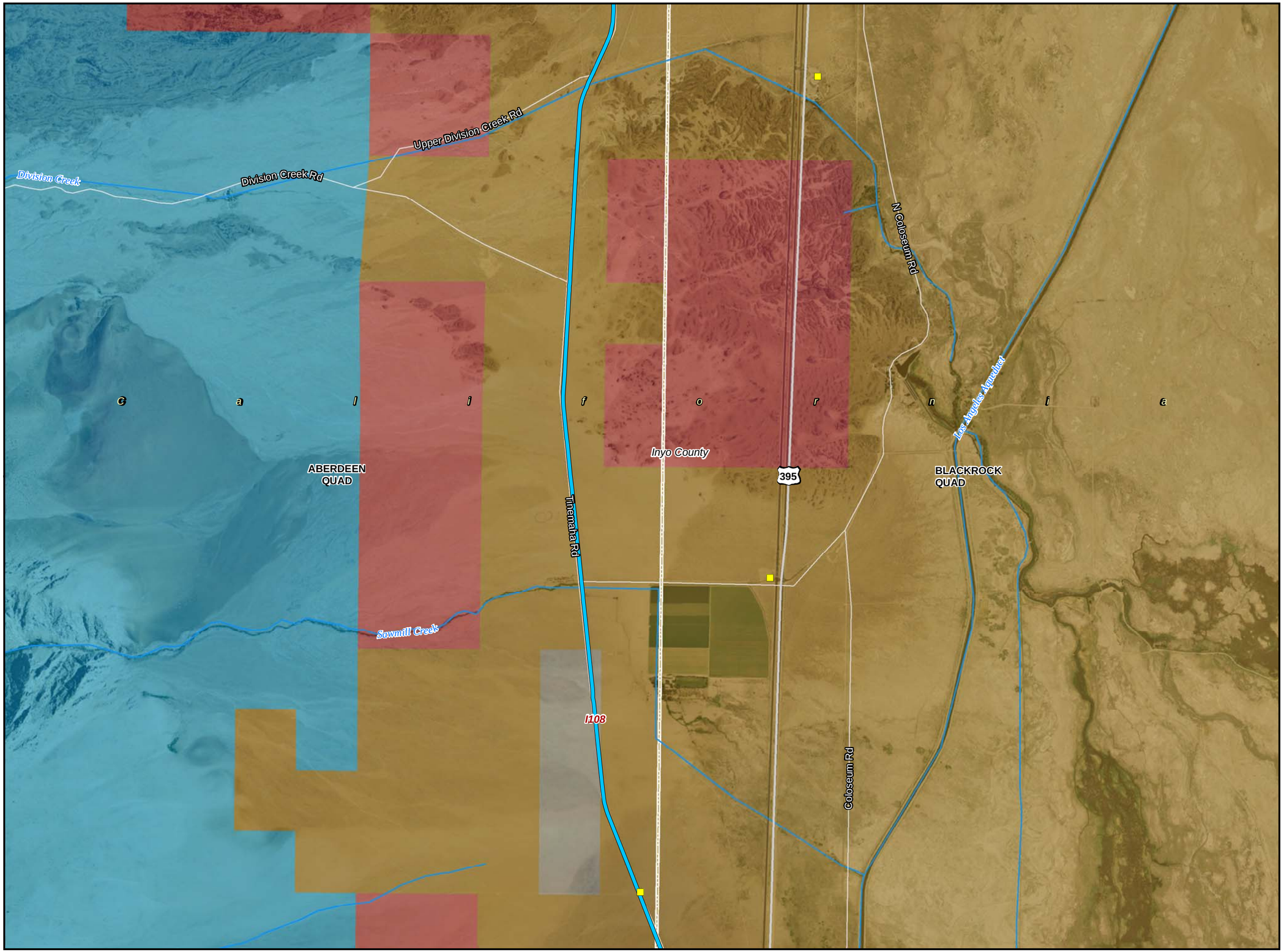
01-17-11

Chambers Group Inc.

CBC Digital 395

R06-Independence to Bishop-045



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
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- Distribution Line
- Distribution Line - Aerial

Land Agency

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- BLM Land
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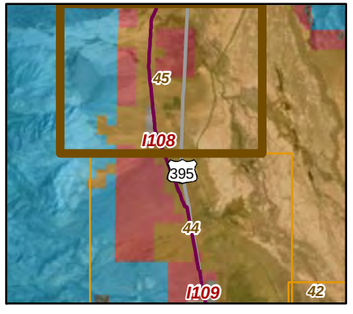
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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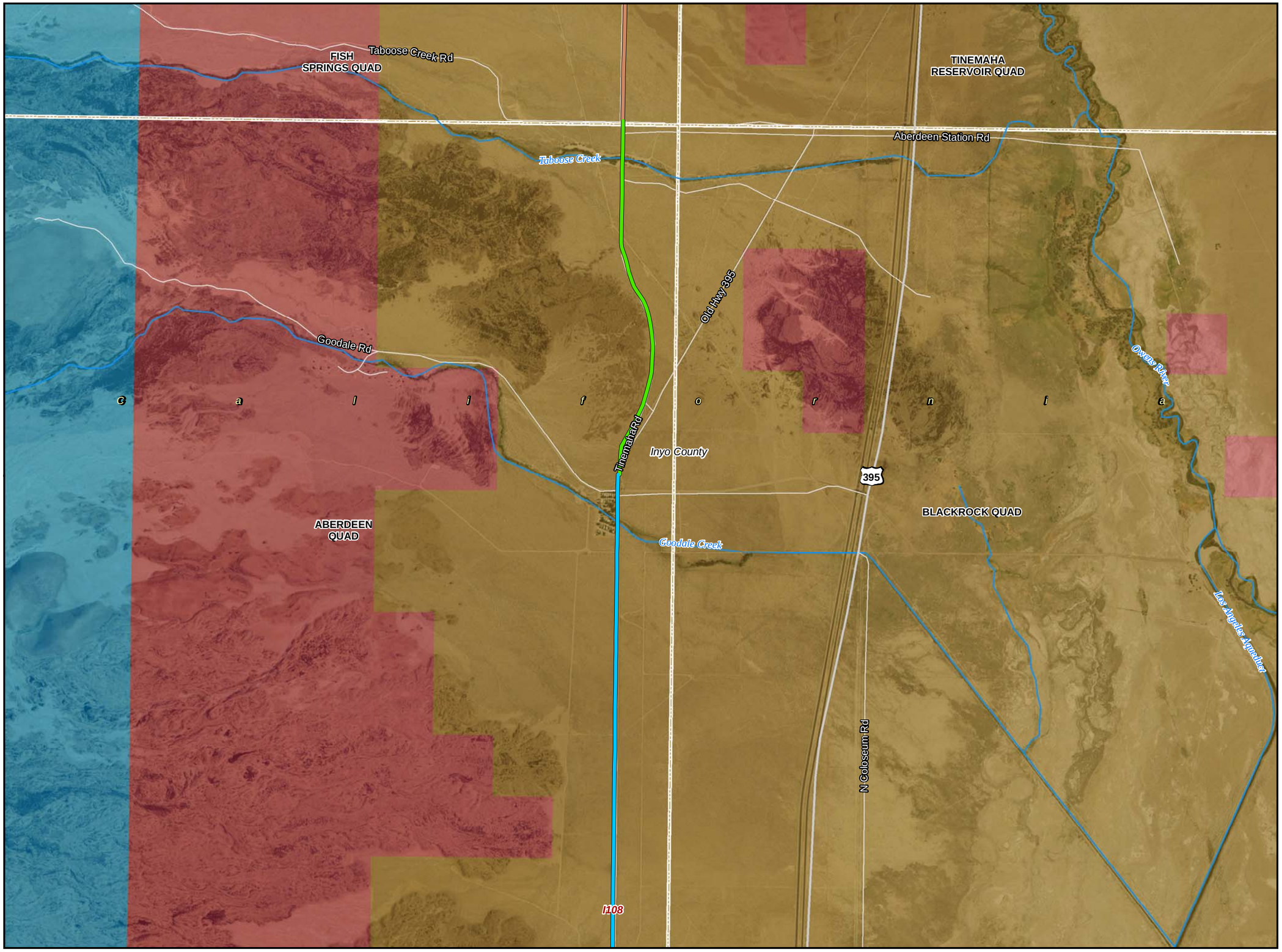
01-17-11

Chambers Group Inc.

CBC Digital 395

R06-Independence to Bishop-046



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

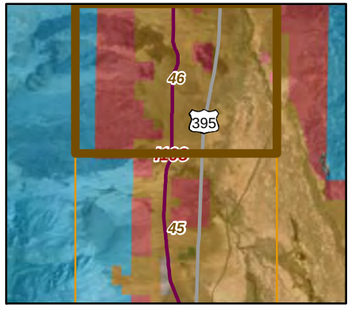
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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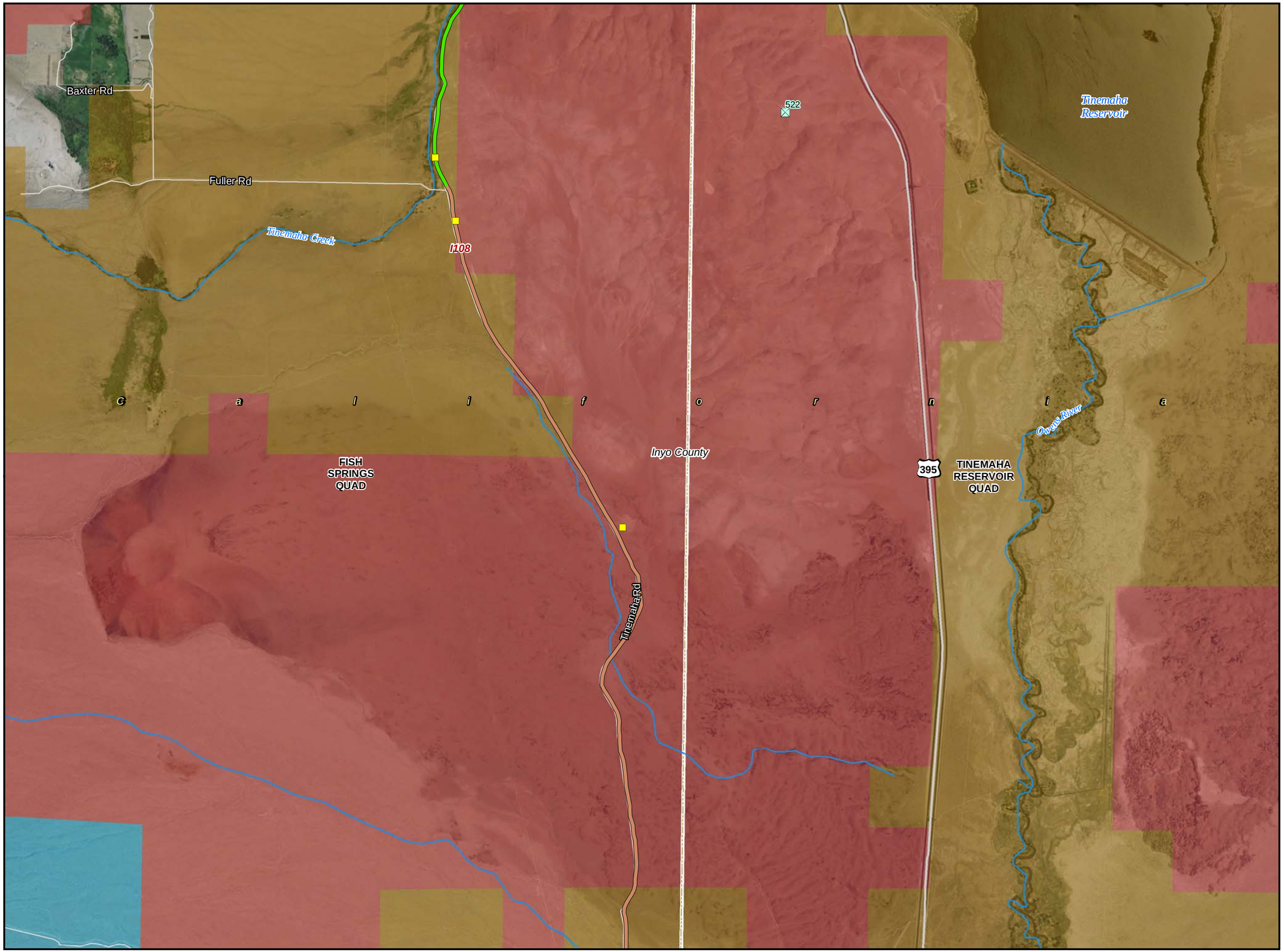
01-17-11

Chambers Group Inc.

CBC Digital 395

R06-Independence to Bishop-047



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
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- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

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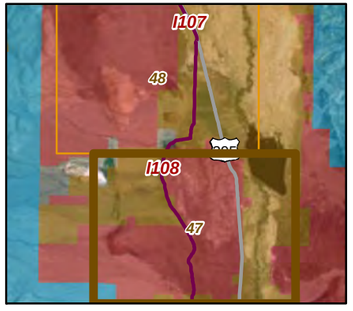
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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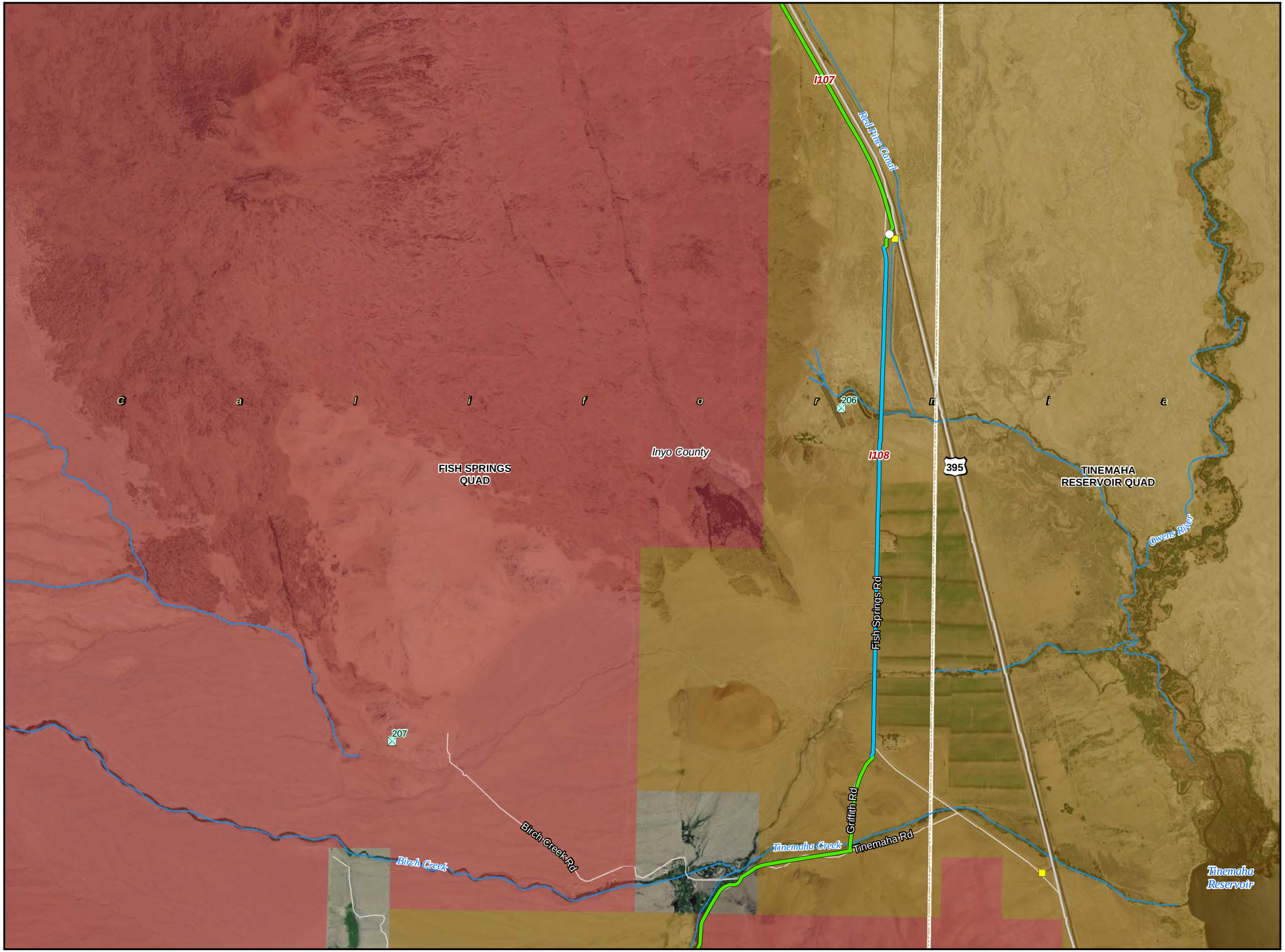
01-17-11

Chambers Group Inc.



CBC Digital 395

R06-Independence to Bishop-048

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

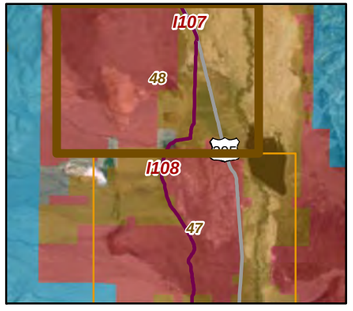
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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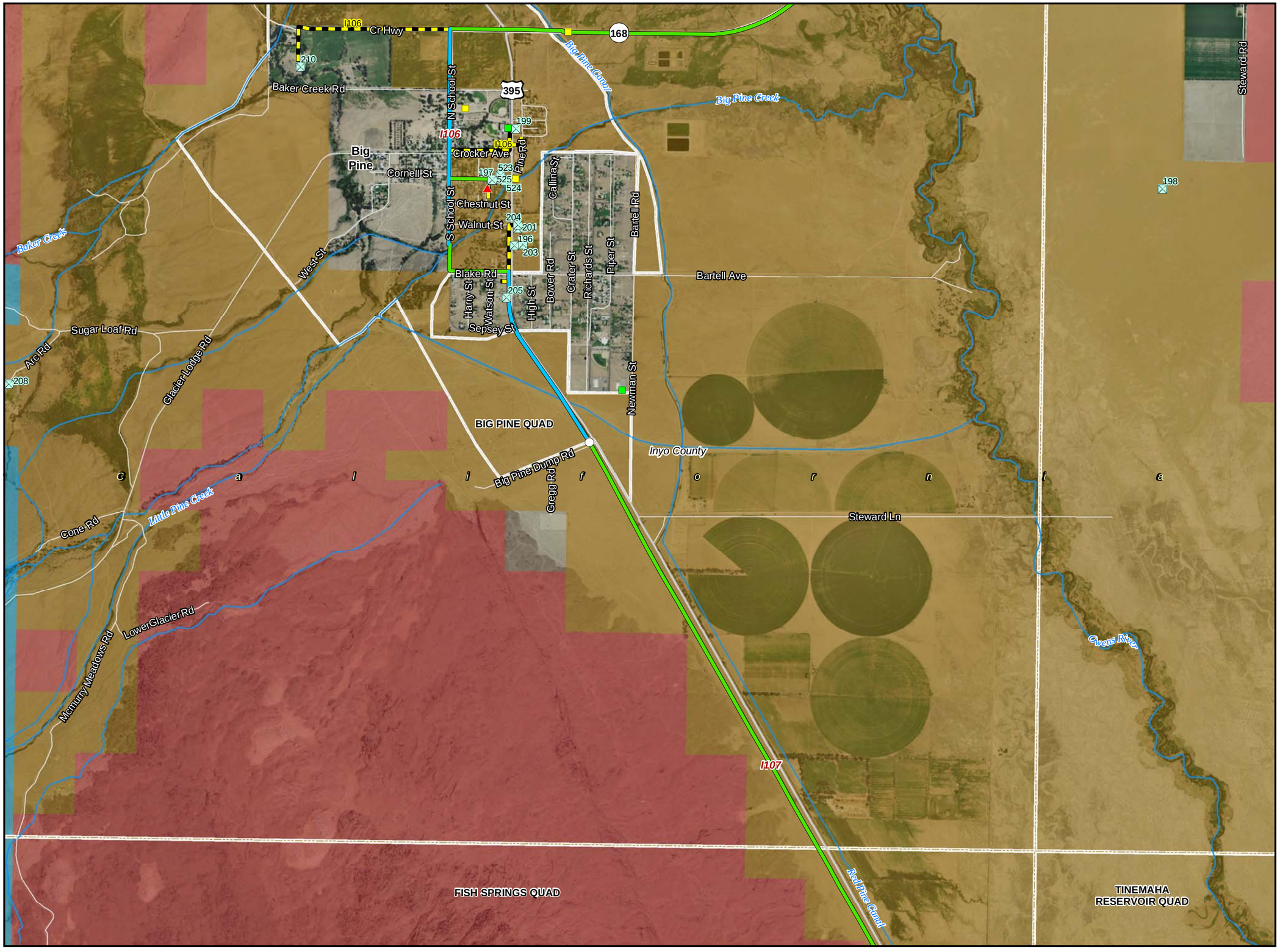
CBC Digital 395

R06-Independence to Bishop-049



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

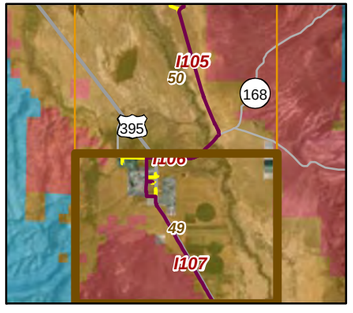
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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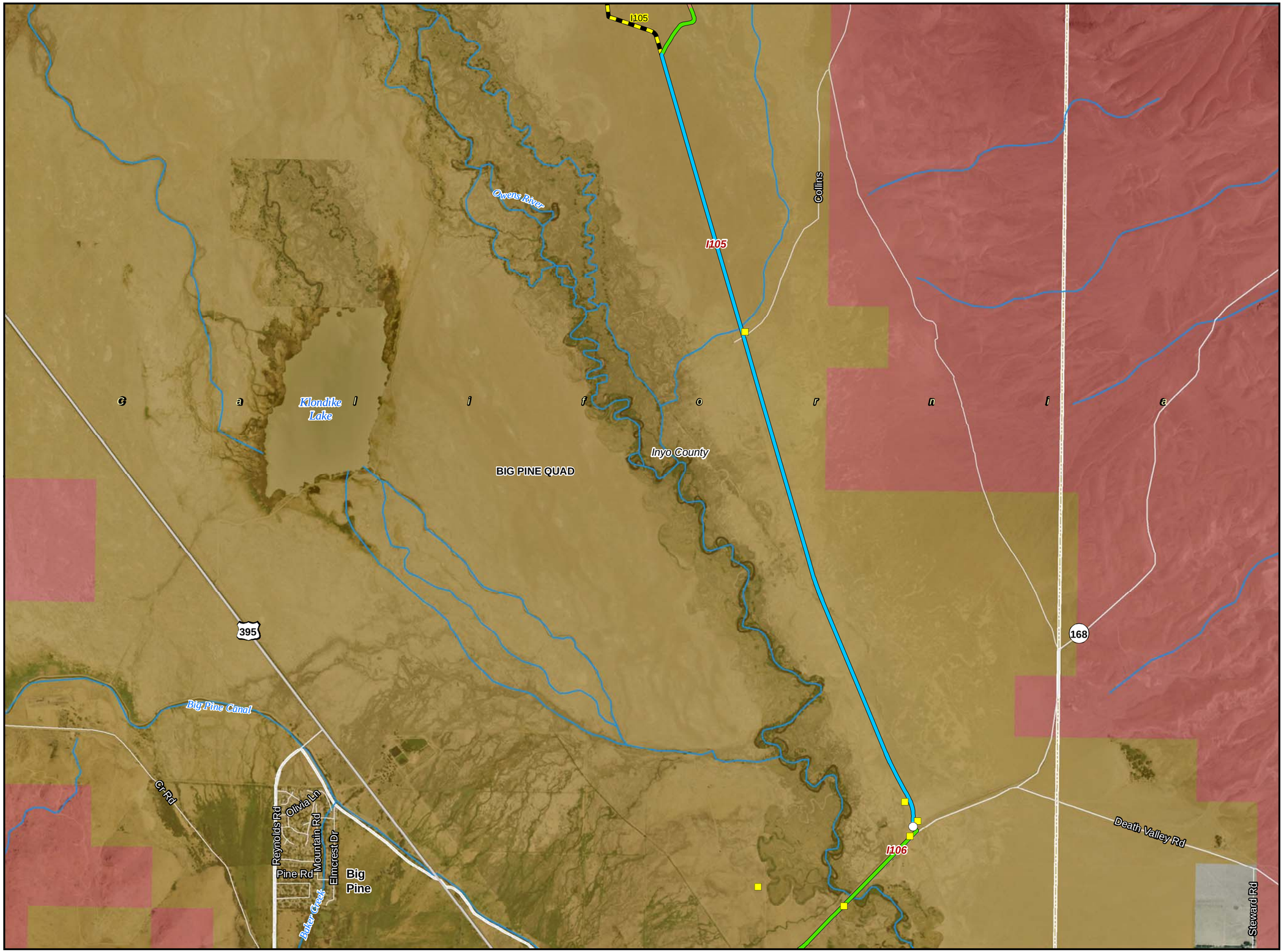
CBC Digital 395

R06-Independence to Bishop-050



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
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- Road Crossing
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- Distribution Line - Aerial

Land Agency

- DOD Land
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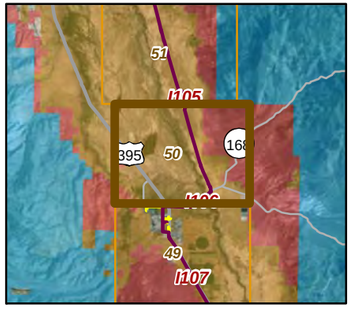
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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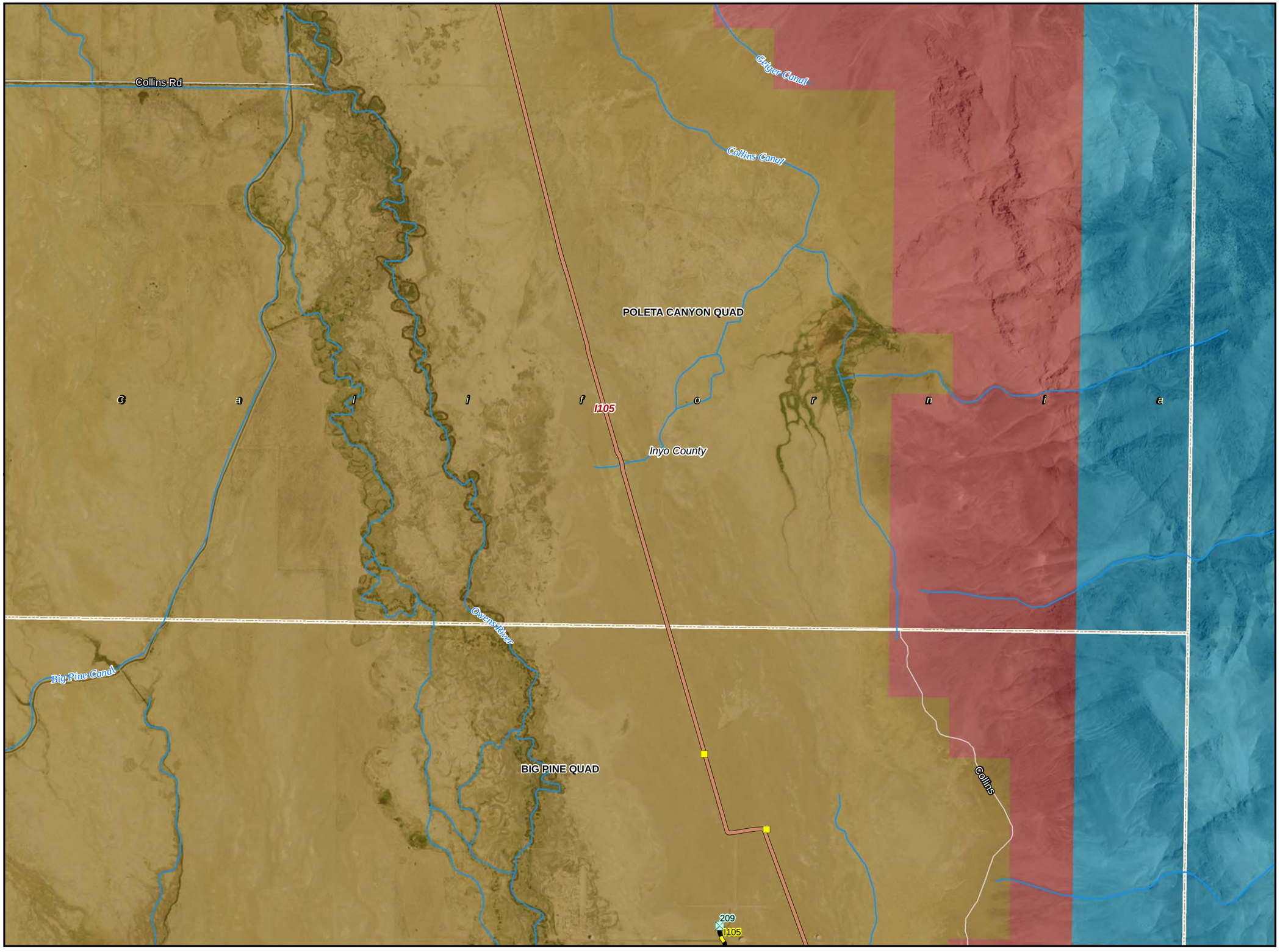
Chambers Group Inc.

CBC Digital 395

R06-Independence to Bishop-051



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
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- Lease
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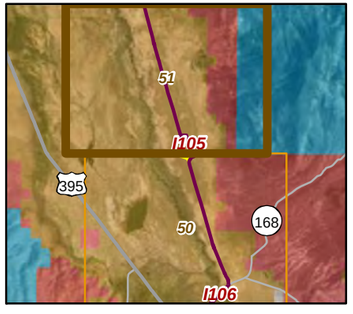
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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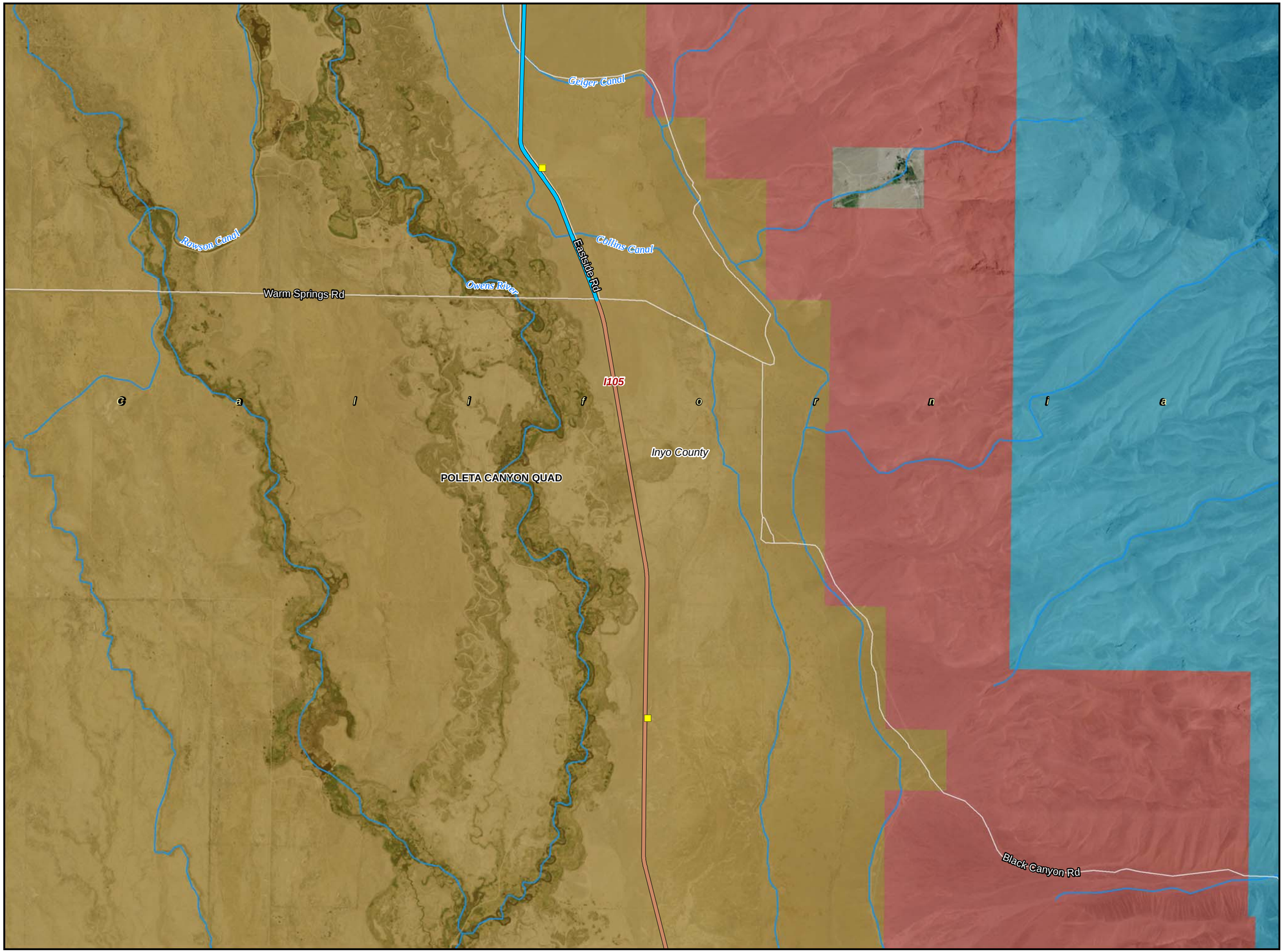
CBC Digital 395

R06-Independence to Bishop-052



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

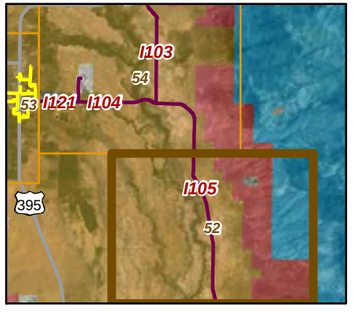
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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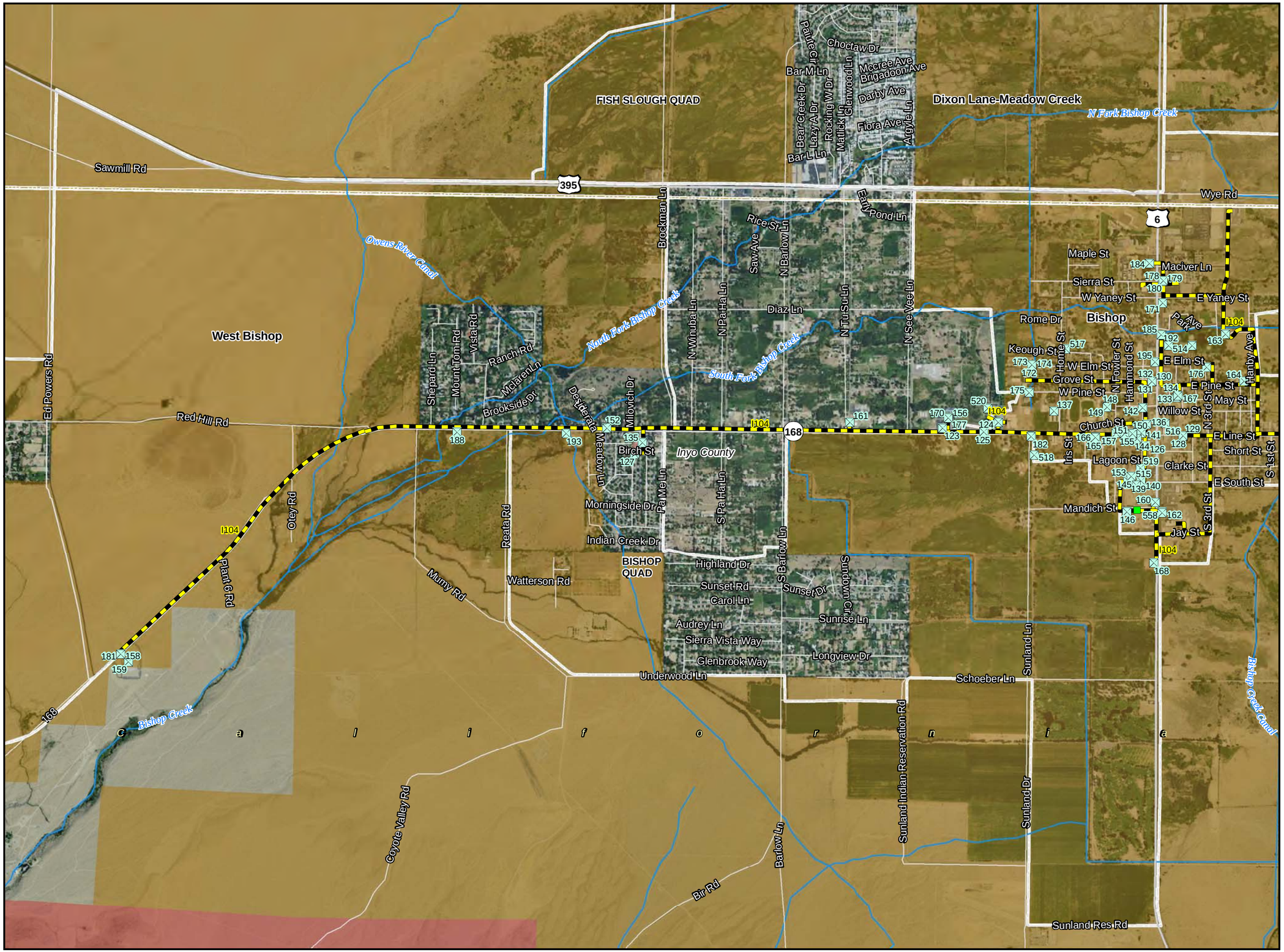
CBC Digital 395

R06-Independence to Bishop-053



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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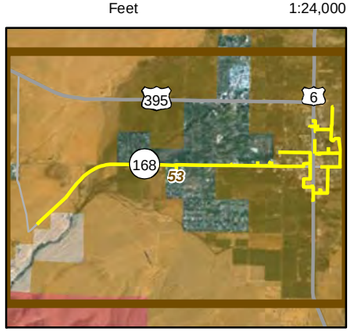
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit



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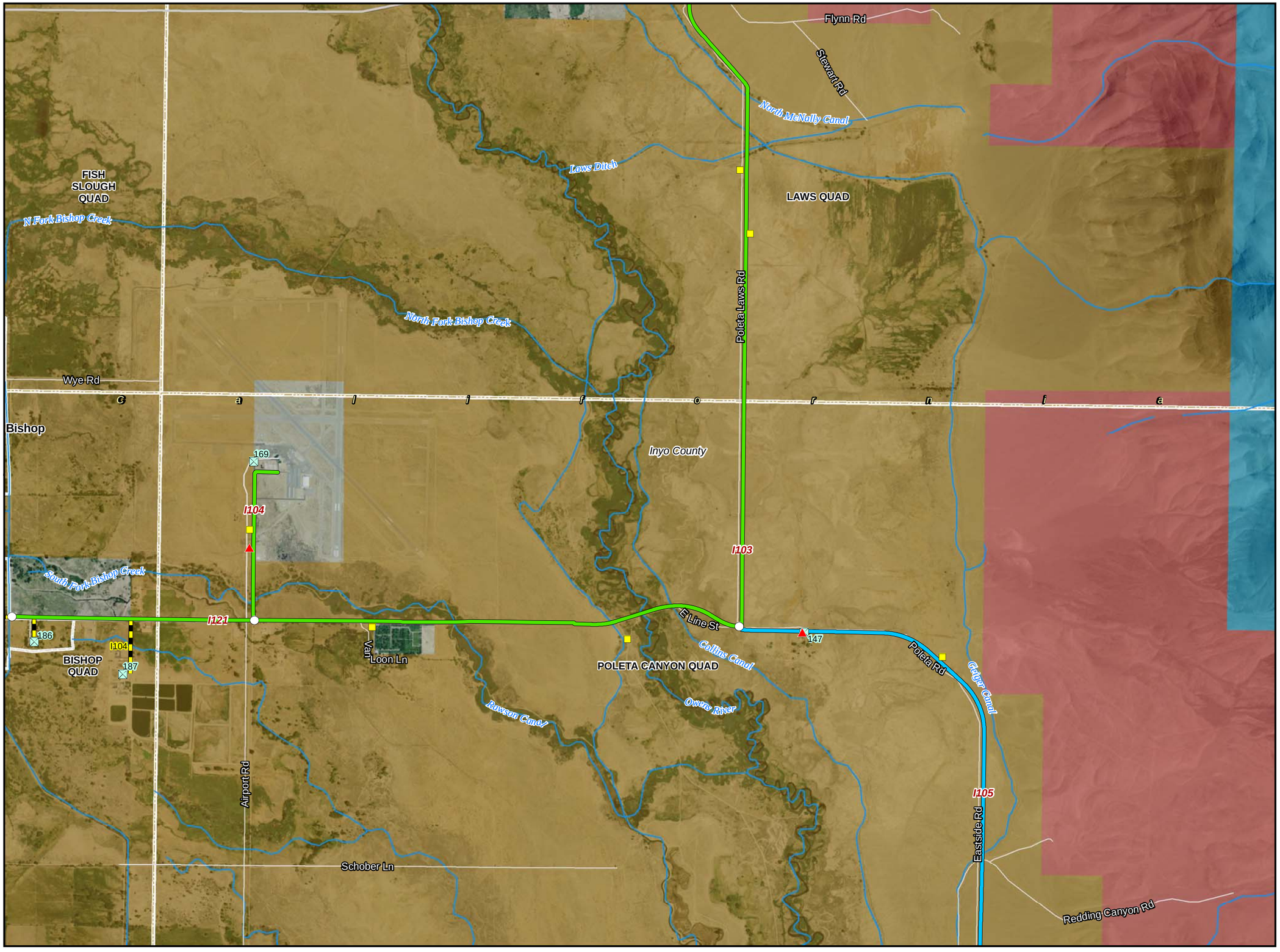
CBC Digital 395

R07-Bishop to Benton-054



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
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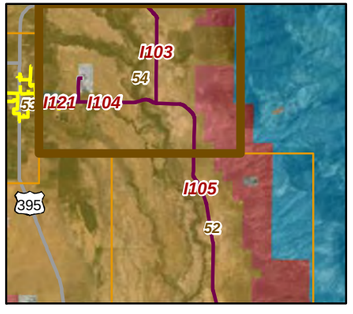
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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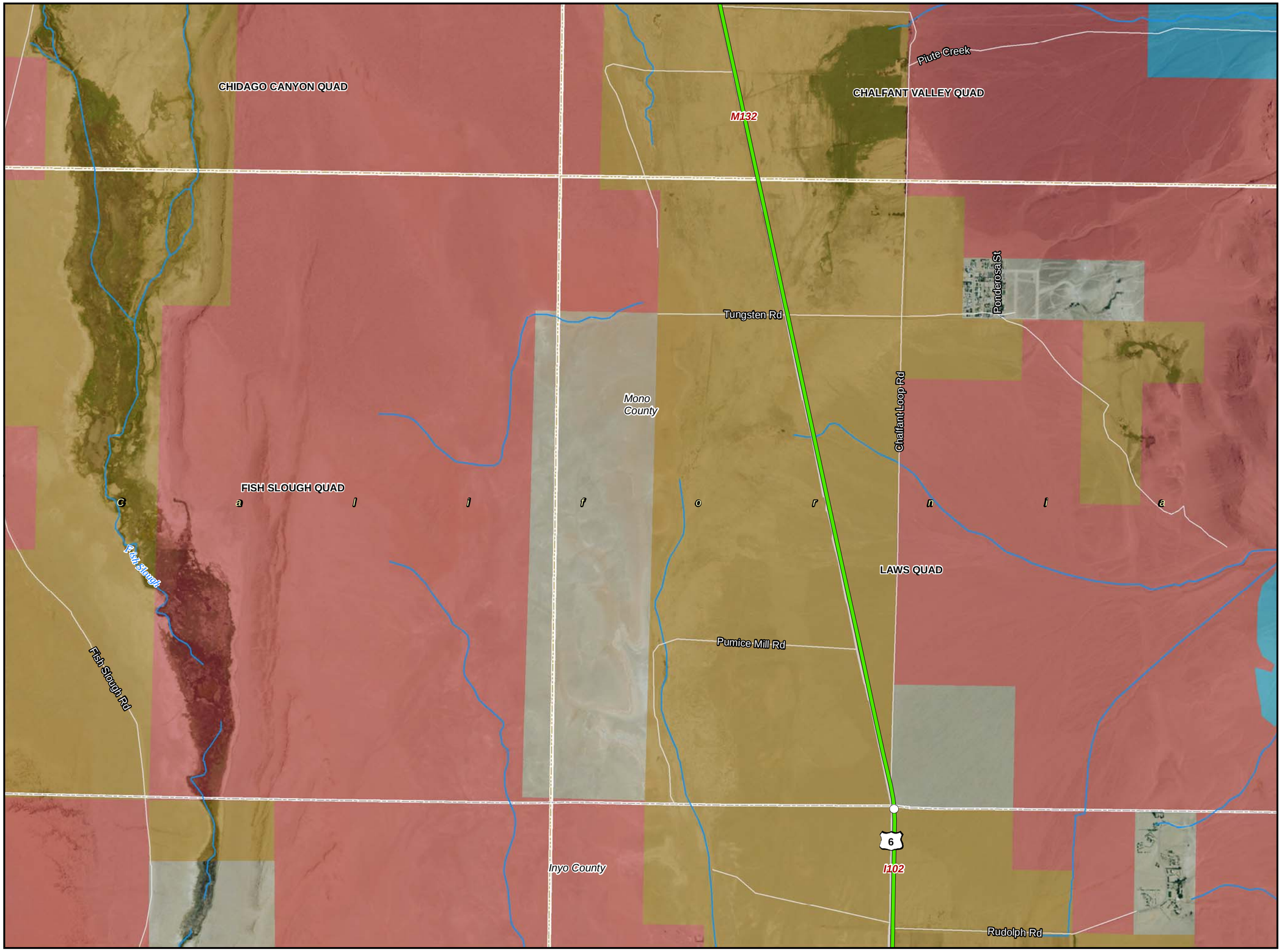
CBC Digital 395

R07-Bishop to Benton-055



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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Land Agency

- DOD Land
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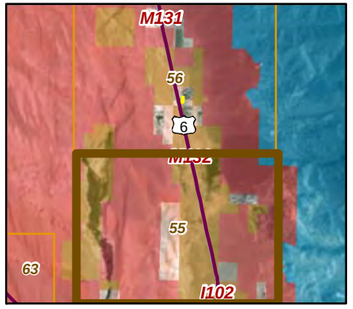
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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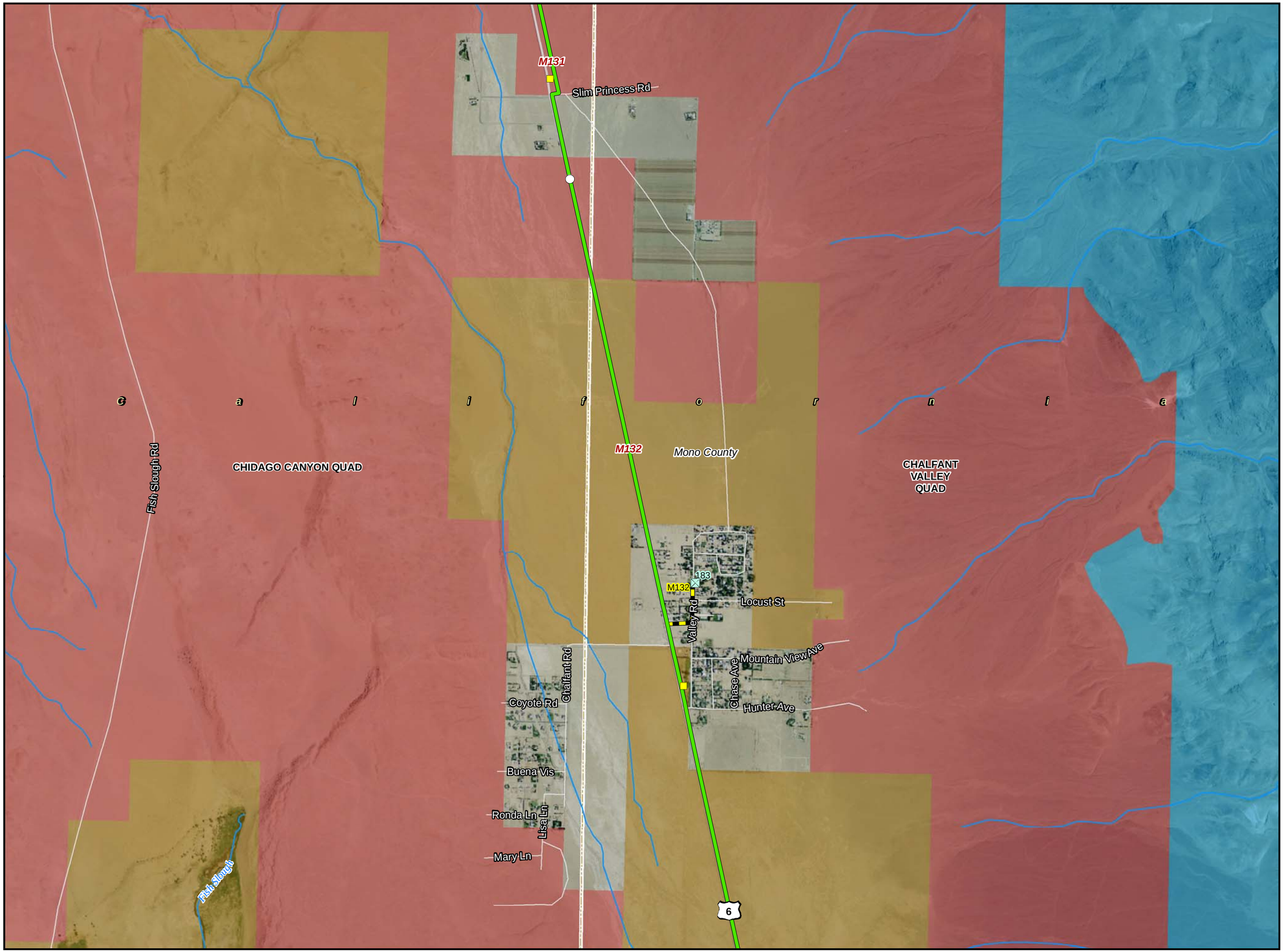
CBC Digital 395

R07-Bishop to Benton-056



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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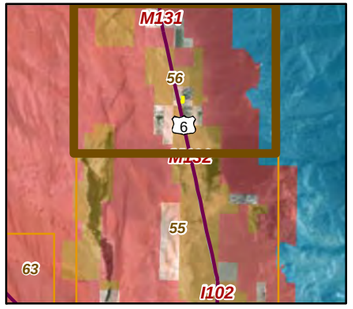
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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CBC Digital 395

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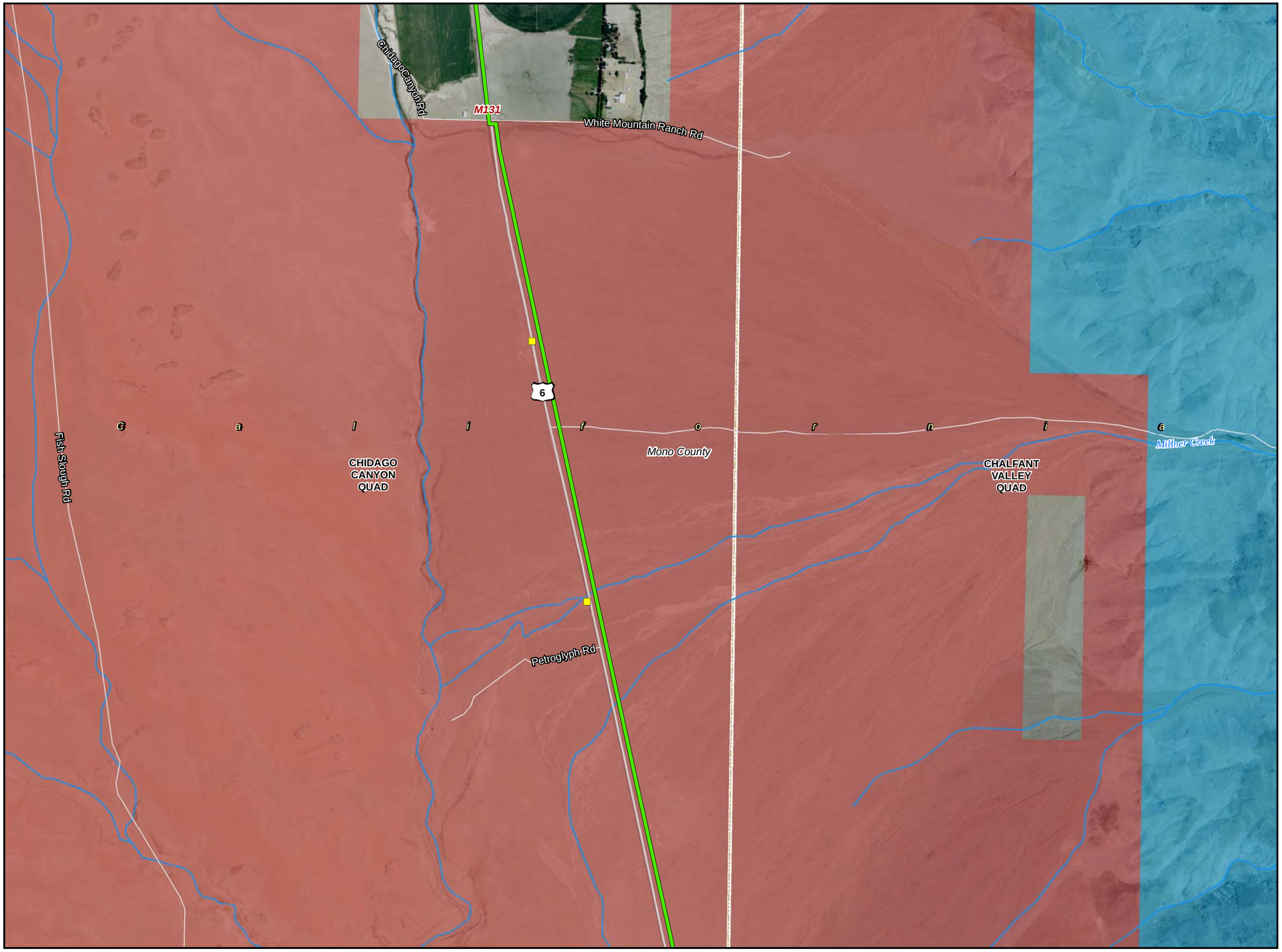

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
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- Lease
- Distribution Line
- Distribution Line - Aerial

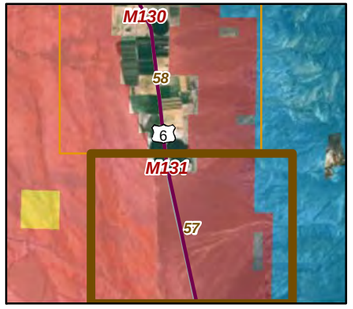
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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CBC Digital 395

R07-Bishop to Benton-058

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

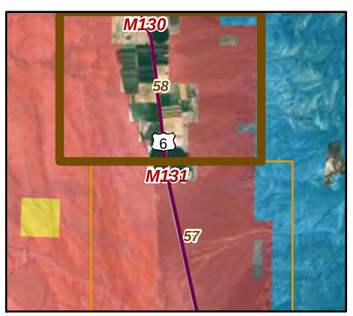
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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CBC Digital 395

R07-Bishop to Benton-059

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
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- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

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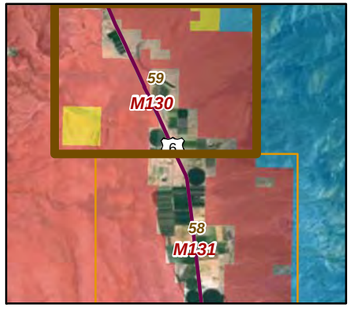
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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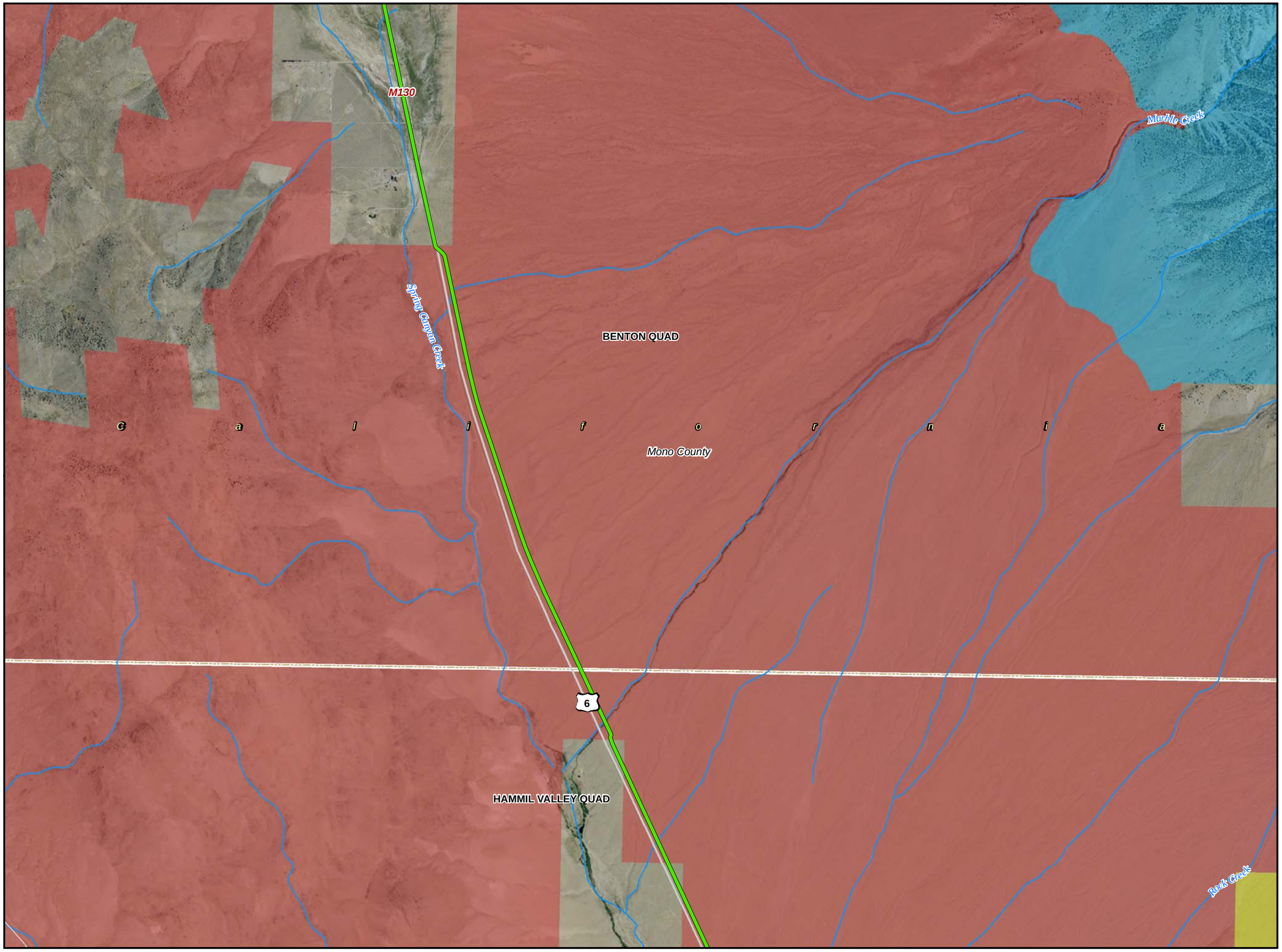
CBC Digital 395

R07-Bishop to Benton-060



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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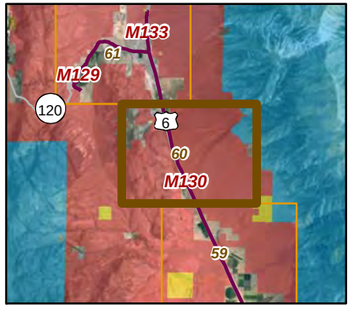
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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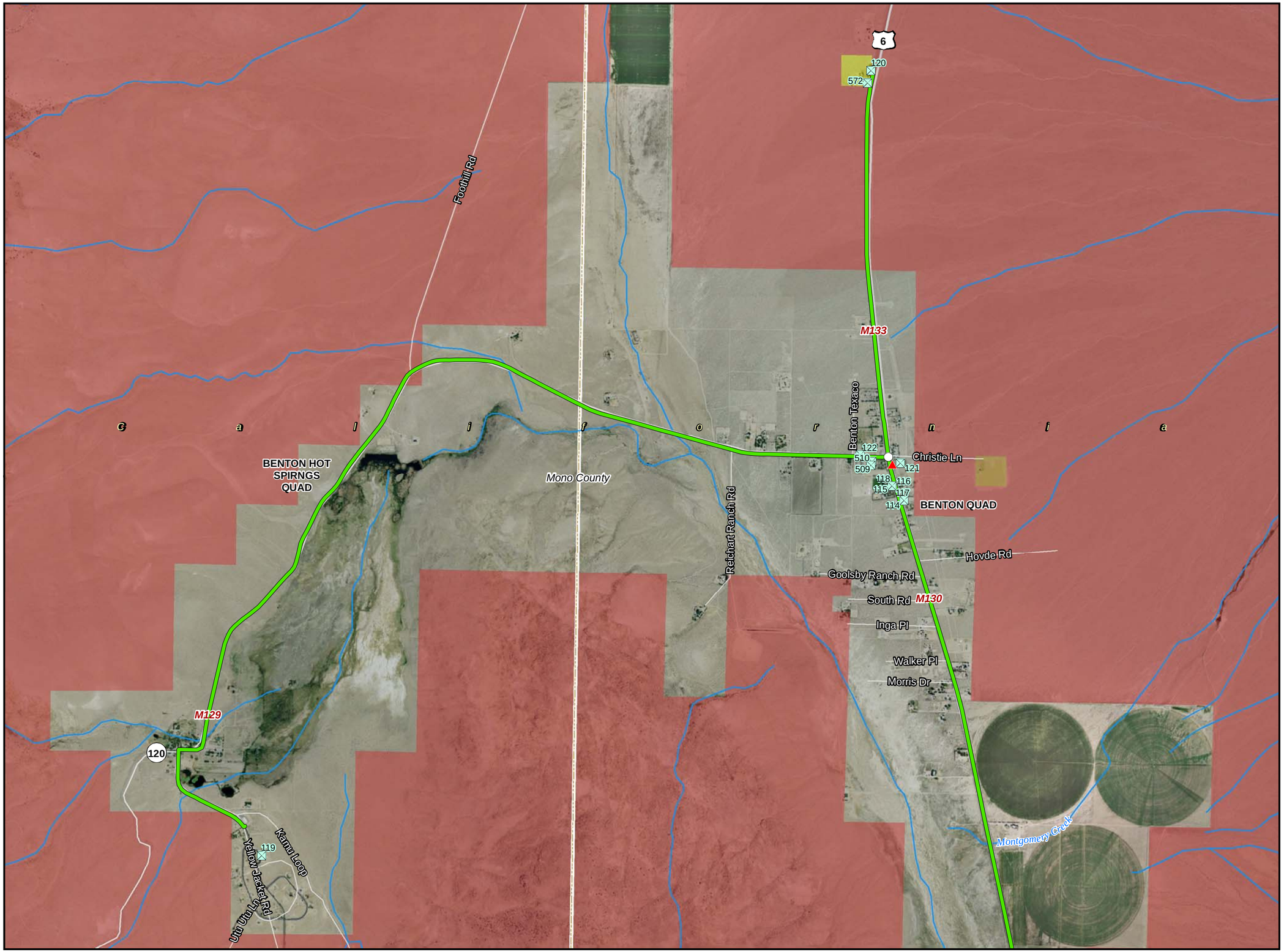
Chambers Group Inc.

CBC Digital 395

R07-Bishop to Benton-061



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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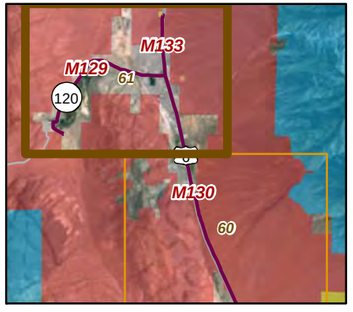
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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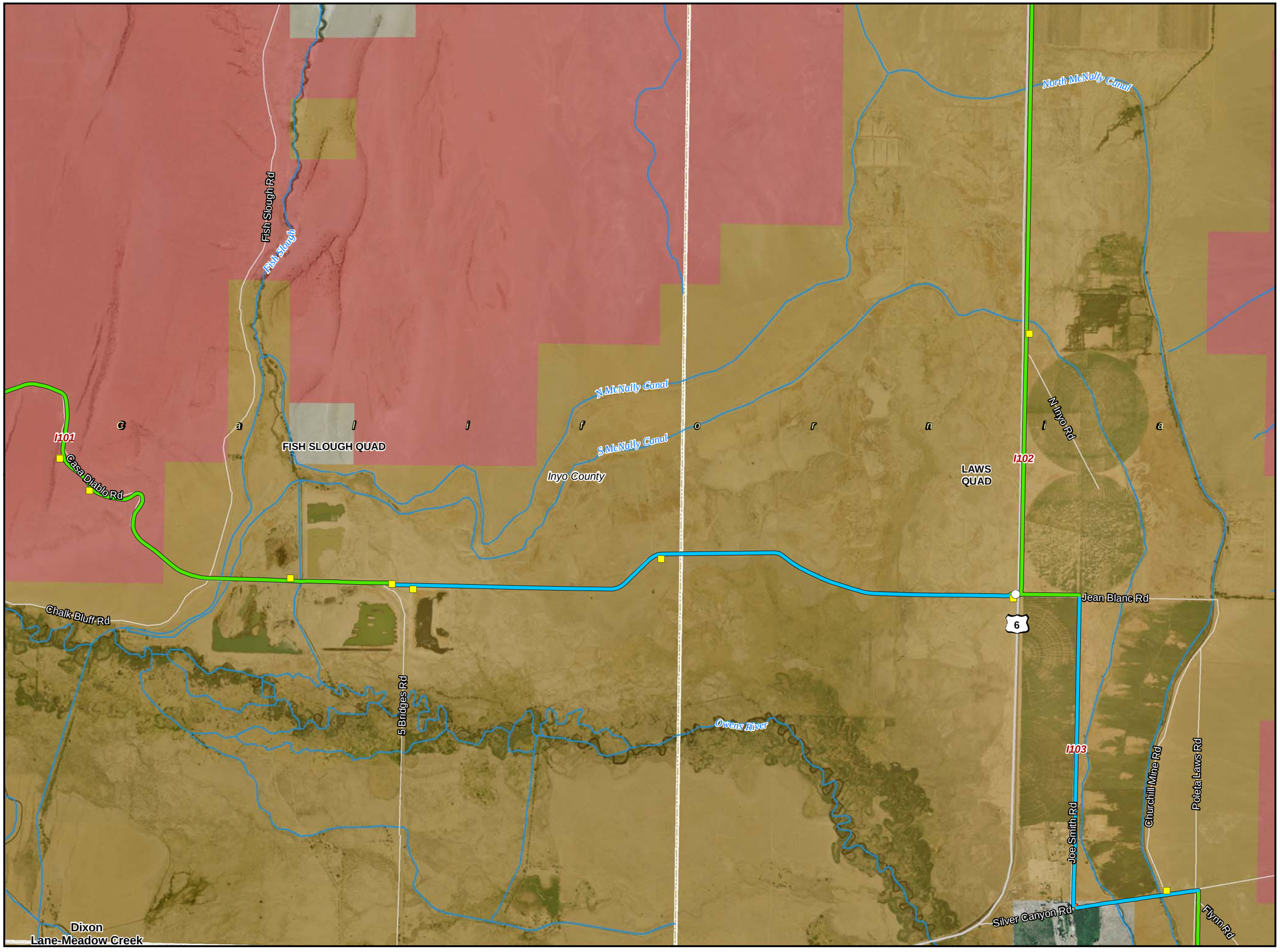
Chambers Group Inc.

CBC Digital 395

R08-Bishop to Mammoth Lakes-062



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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Land Agency

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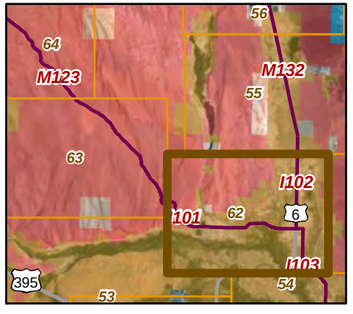
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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CBC Digital 395

R08-Bishop to Mammoth Lakes-063

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
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- State Land
- Local Government
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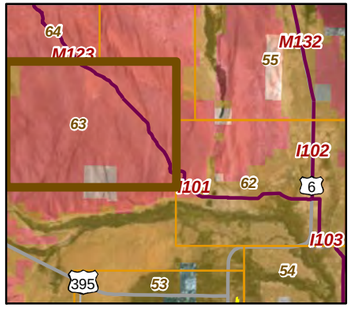
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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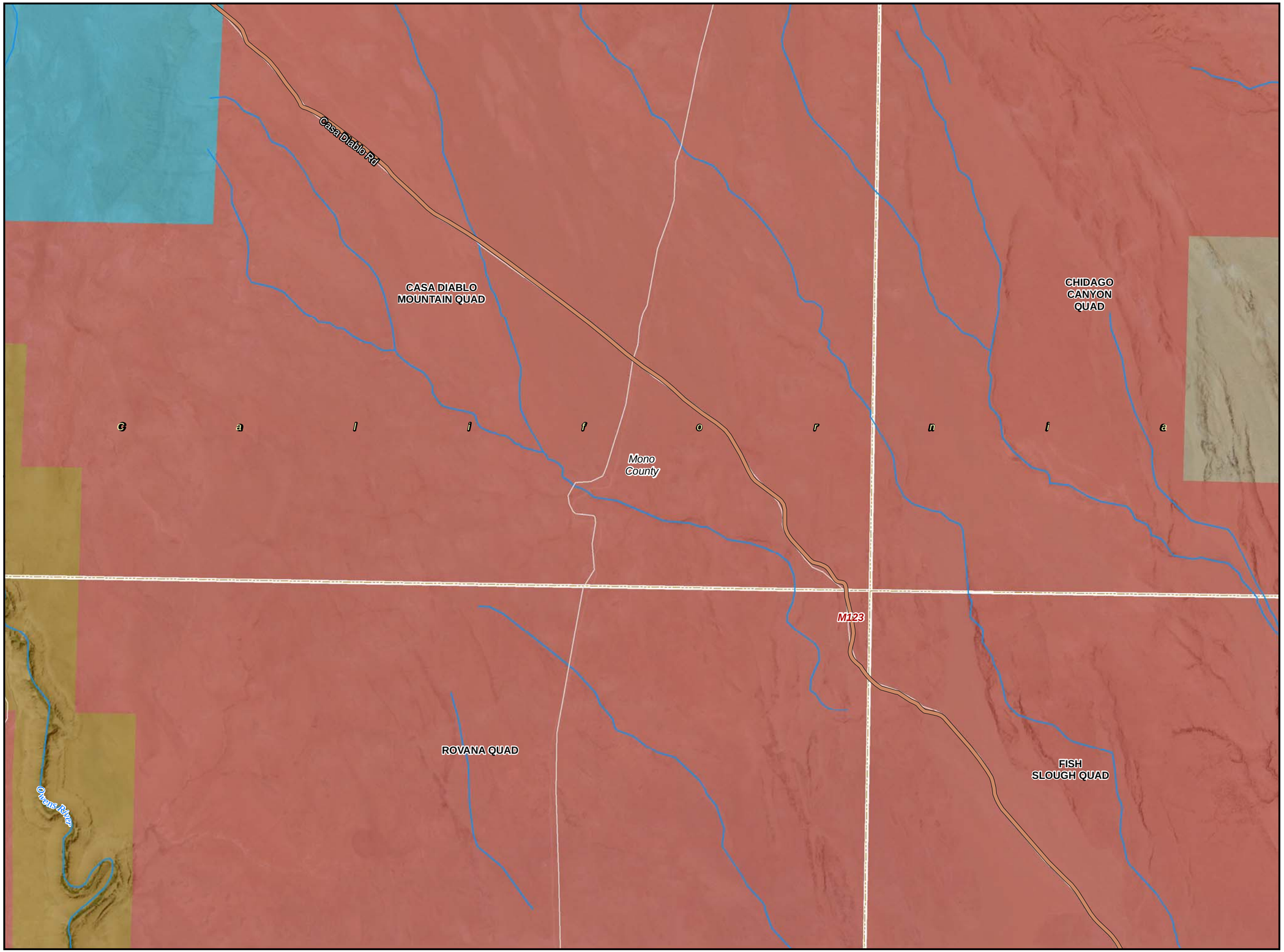
Chambers Group Inc.



CBC Digital 395

R08-Bishop to Mammoth Lakes-064

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
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- Distribution Line - Aerial

Land Agency

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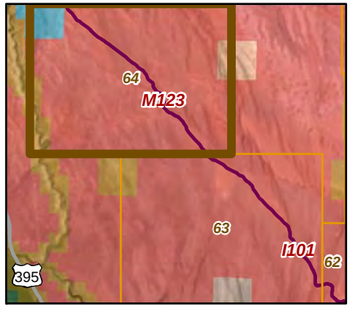
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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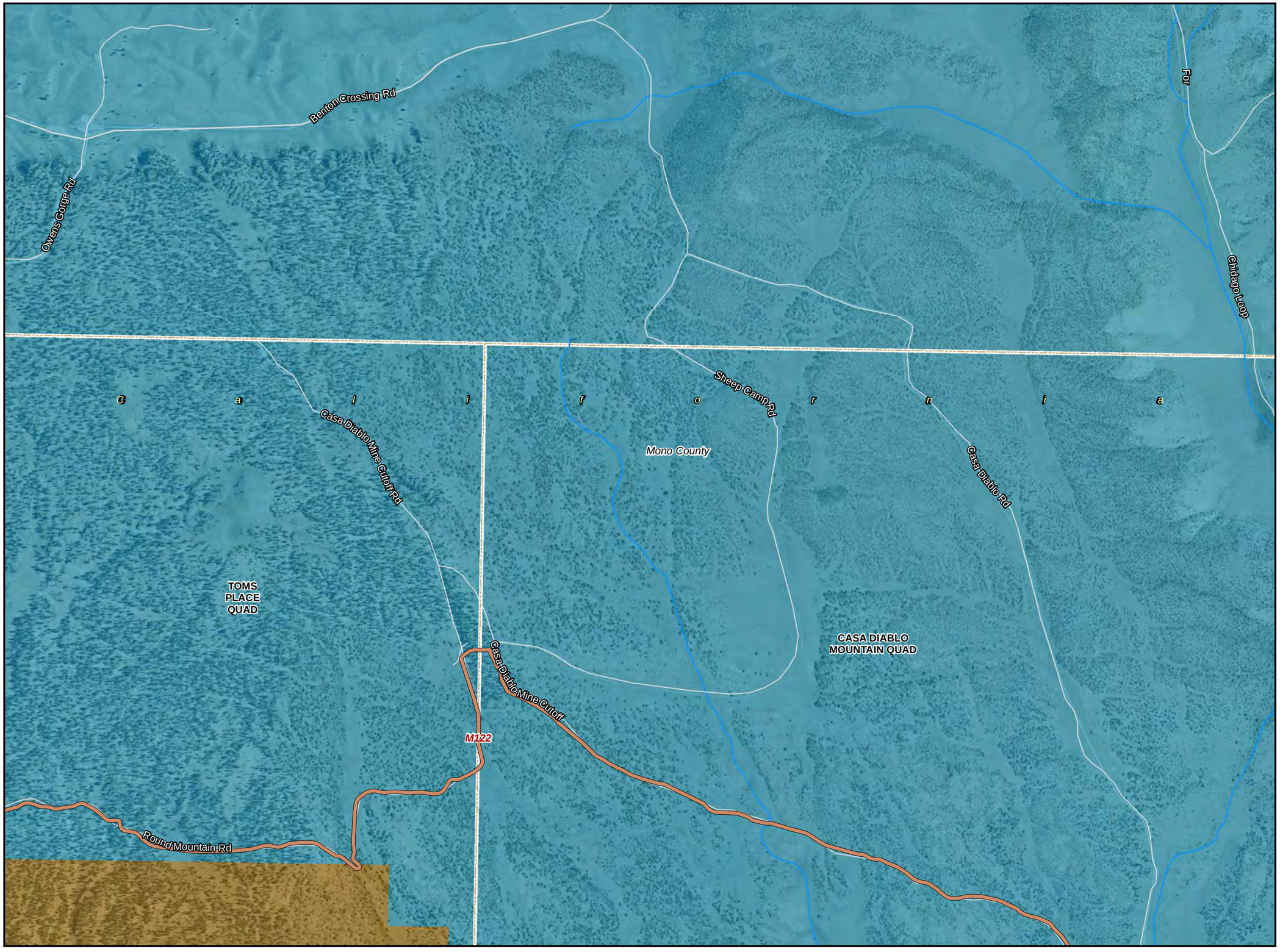
Chambers Group Inc.

CBC Digital 395

R08-Bishop to Mammoth Lakes-065



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
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- State Land
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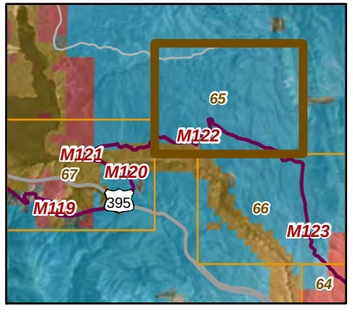
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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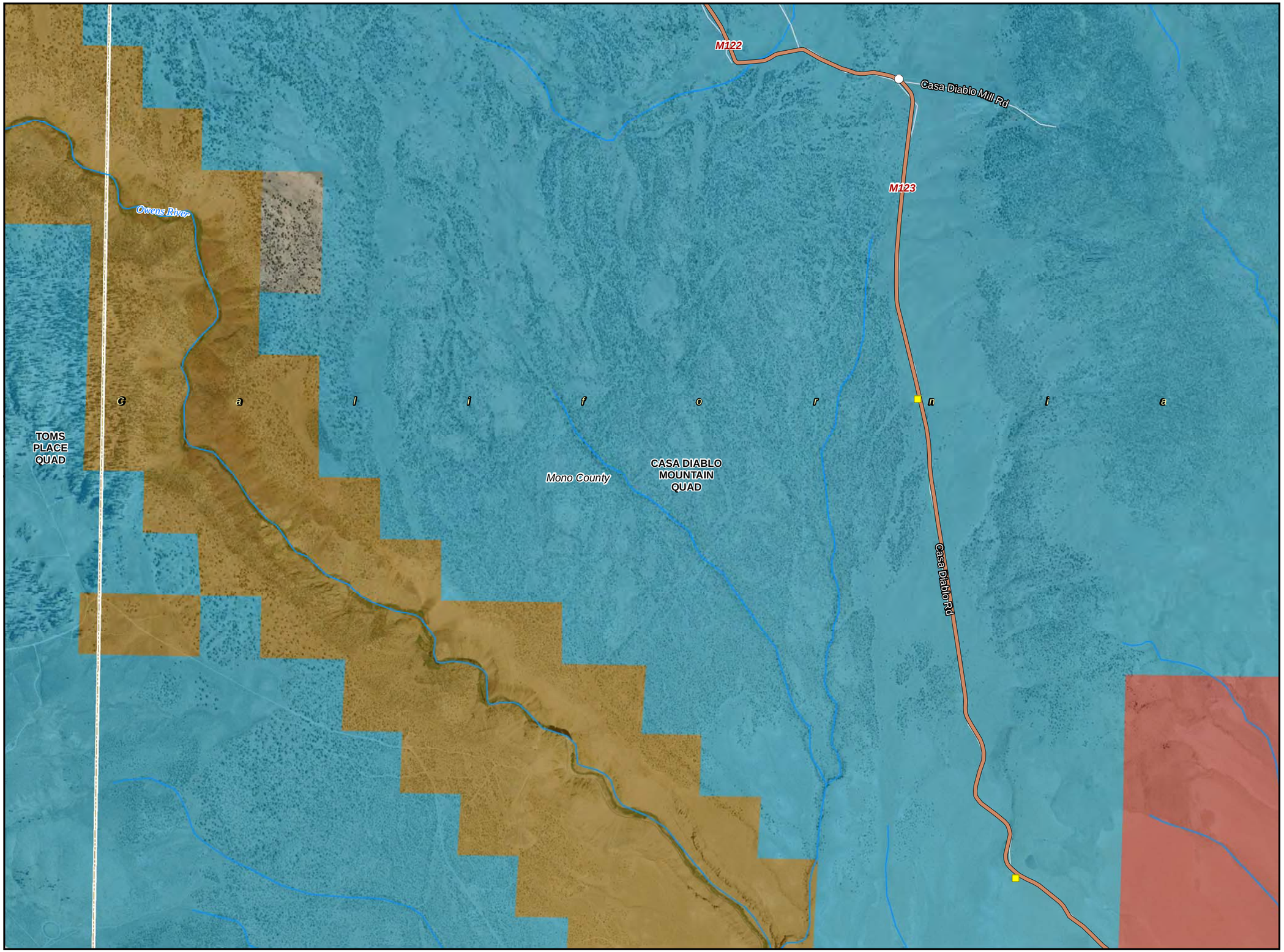
CBC Digital 395

R08-Bishop to Mammoth Lakes-066



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

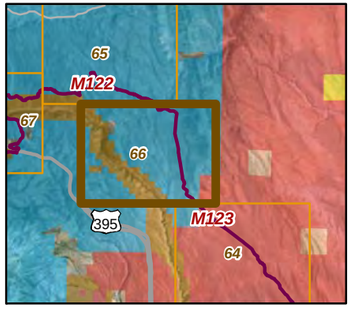
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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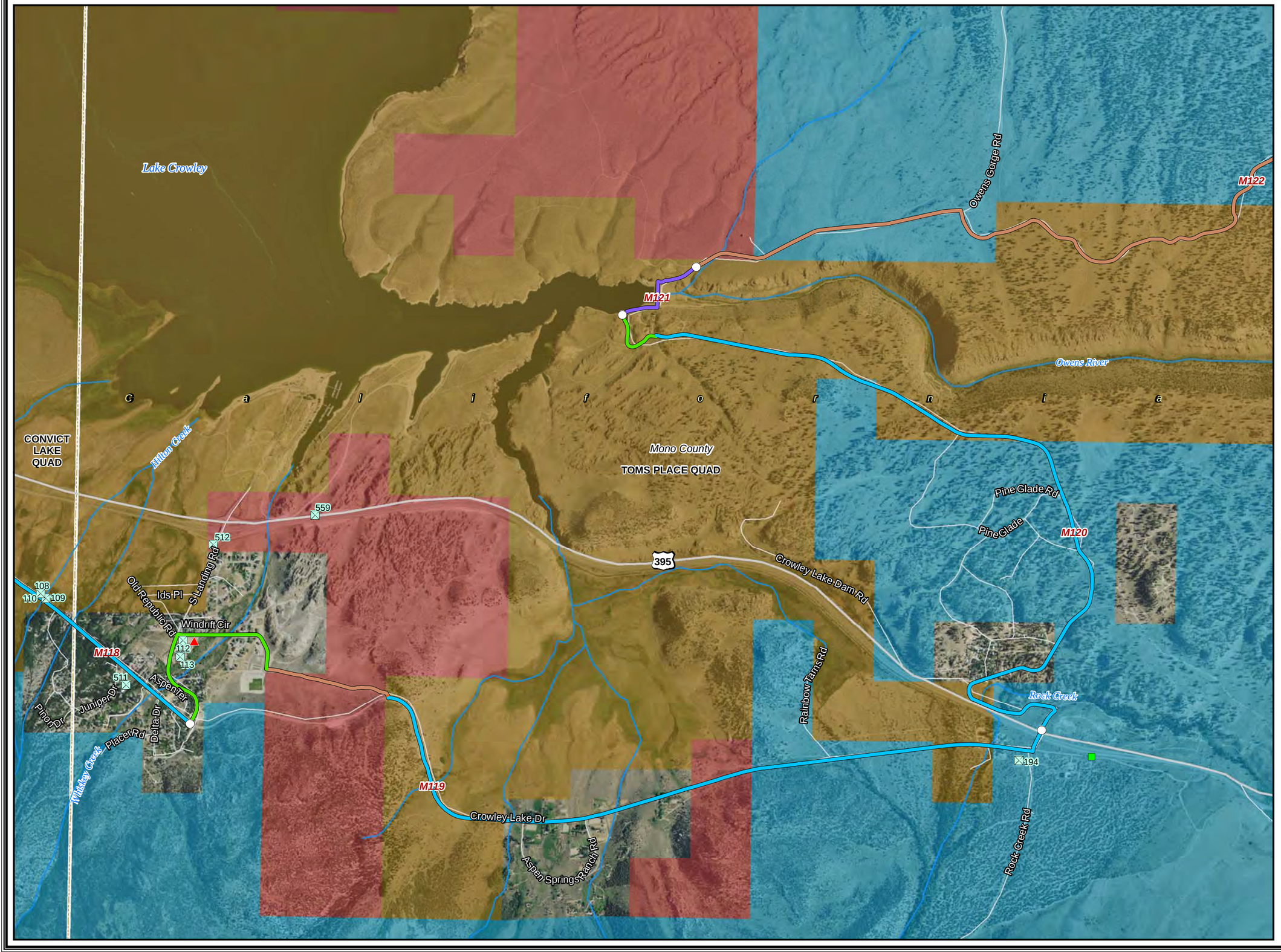
CBC Digital 395

R08-Bishop to Mammoth Lakes-067



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
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Land Agency

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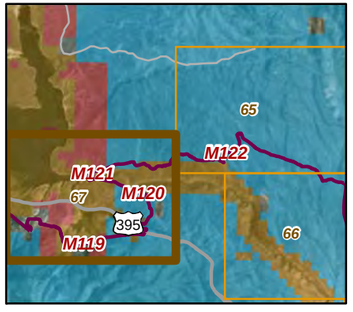
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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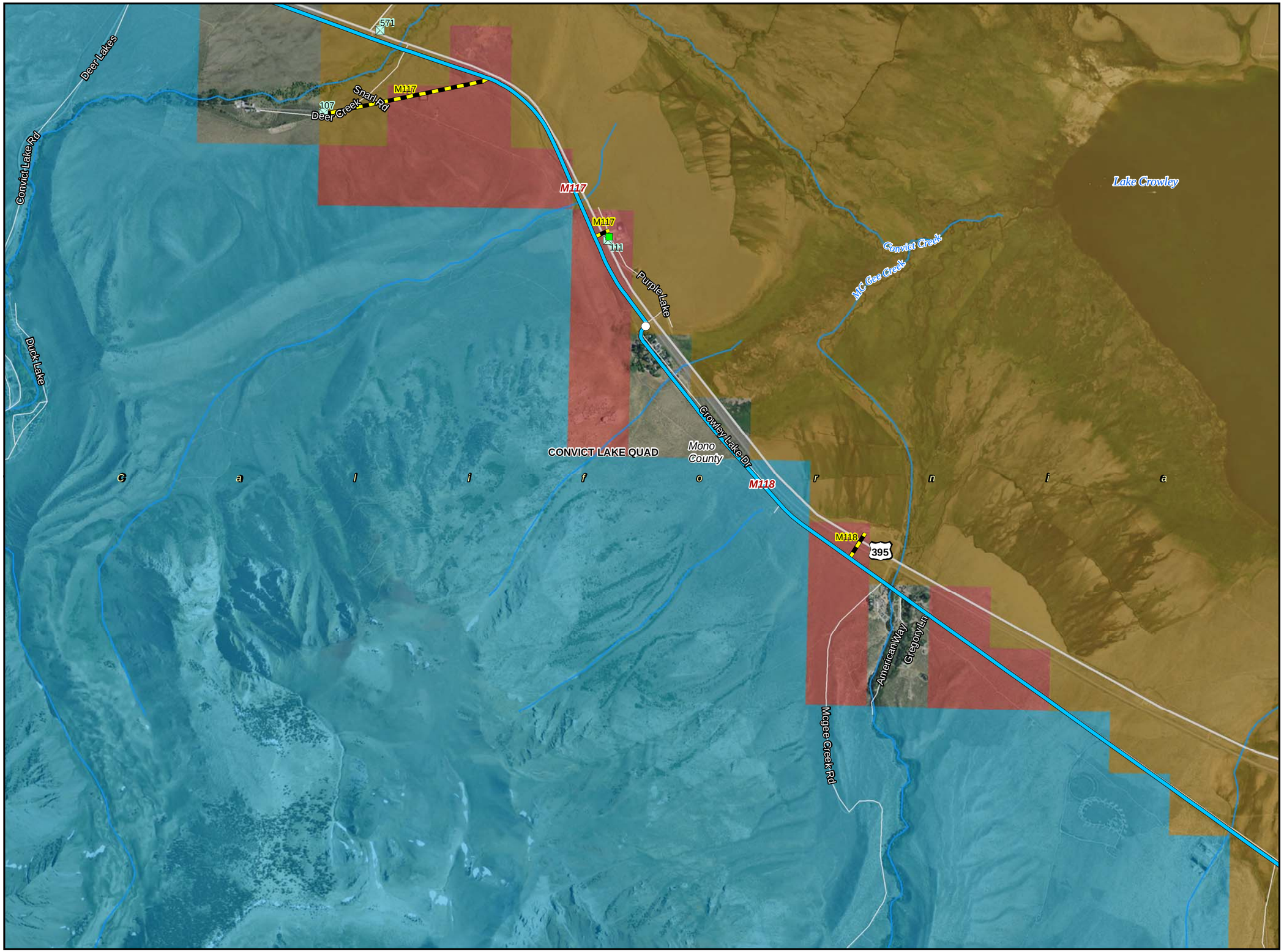
CBC Digital 395

R08-Bishop to Mammoth Lakes-068



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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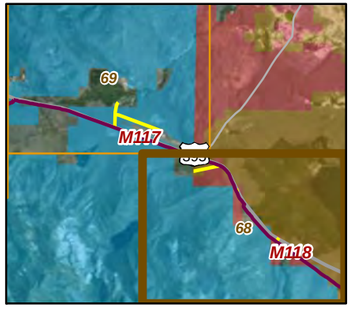
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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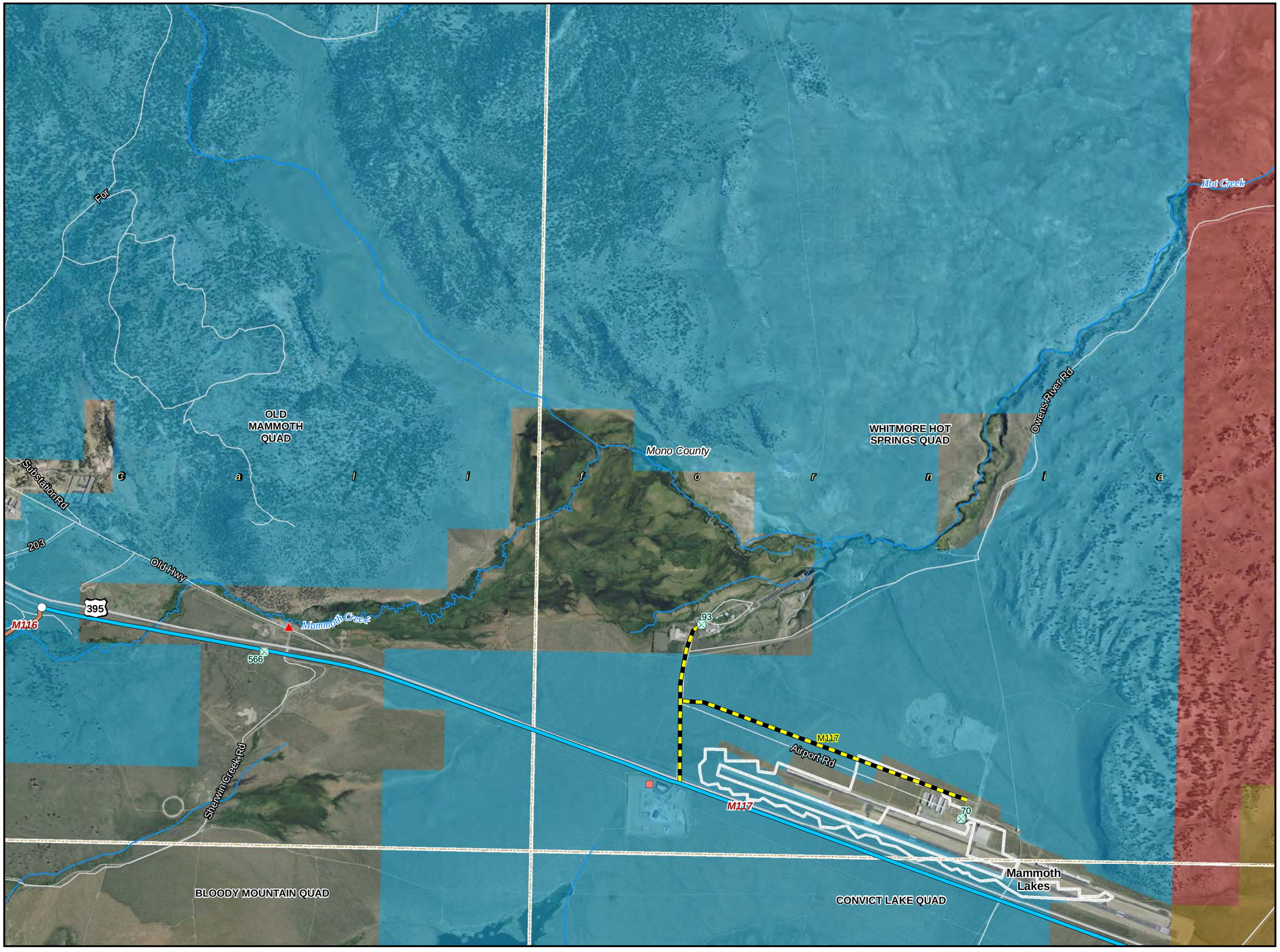
CBC Digital 395

R08-Bishop to Mammoth Lakes-069



Legend

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- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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- Local Government
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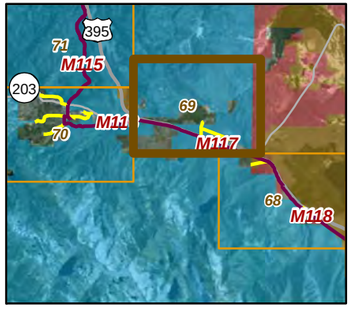
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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CBC Digital 395

R08-Bishop to Mammoth Lakes-070

Legend

- Segment Start and End Marker
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Project Staging Site

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- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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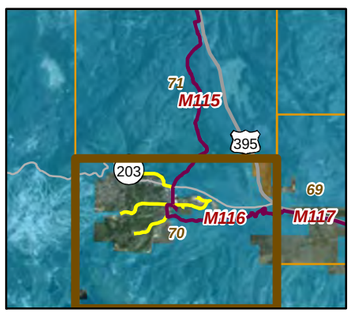
- City Limit

0 1,000 2,000 3,000 Feet

1:24,000



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CBC Digital 395

R08-Bishop to Mammoth Lakes-071

Legend

- Segment Start and End Marker
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Project Staging Site

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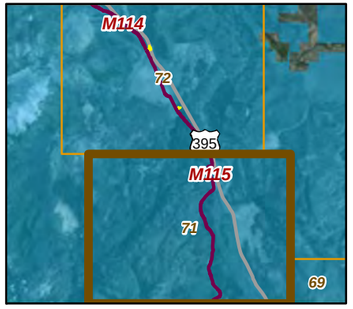
Feet

1:24,000



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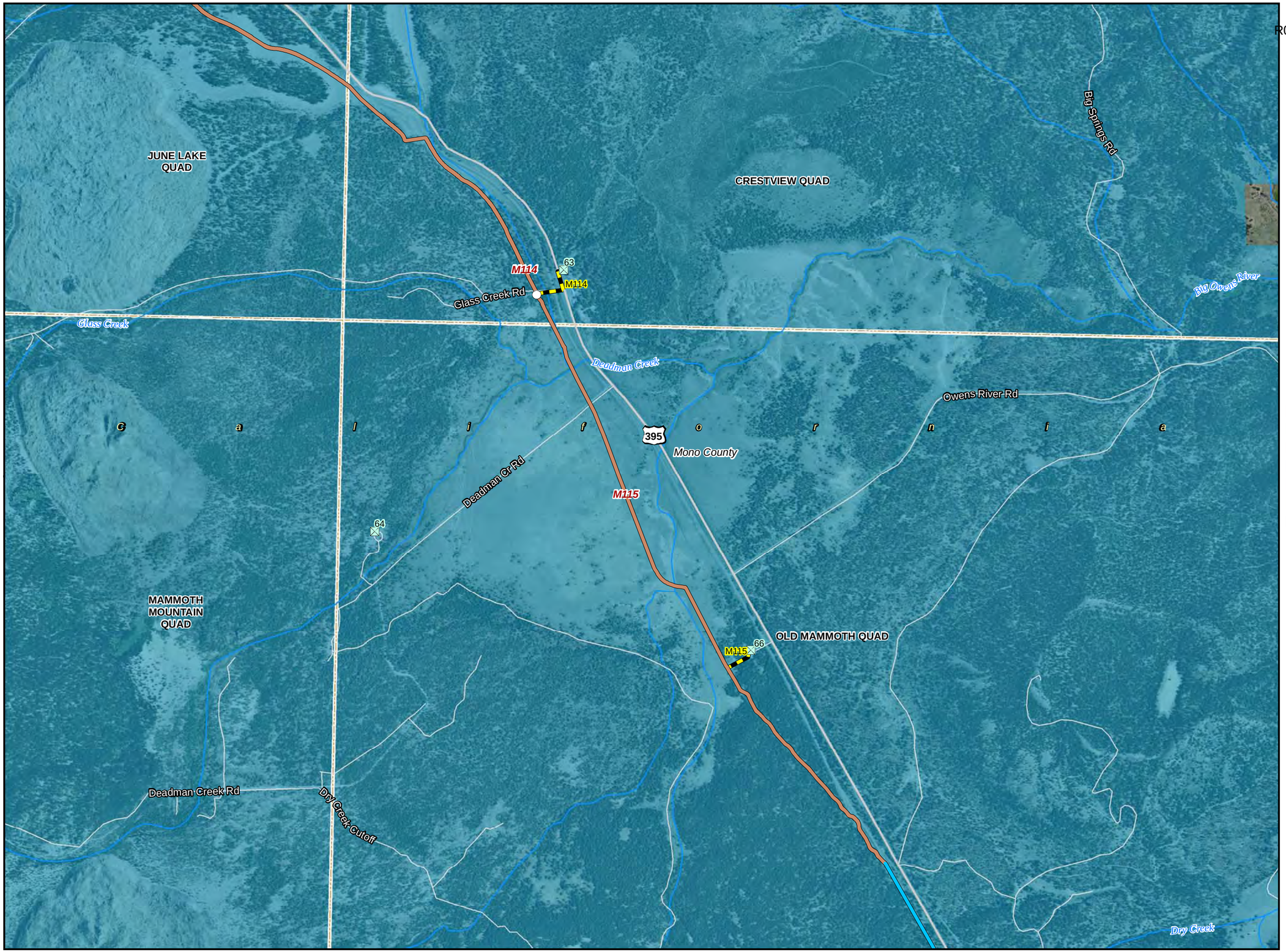
CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-072



Legend

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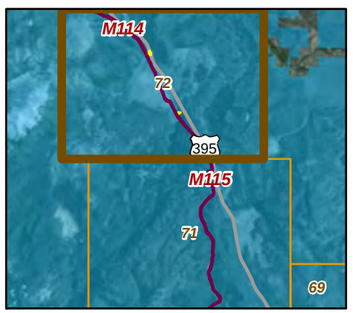
Feet

1:24,000



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CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-073

Legend

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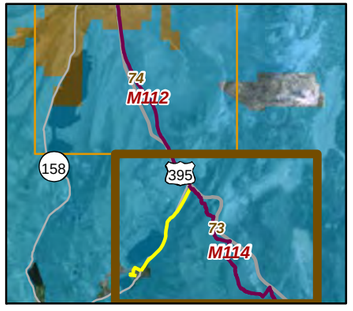

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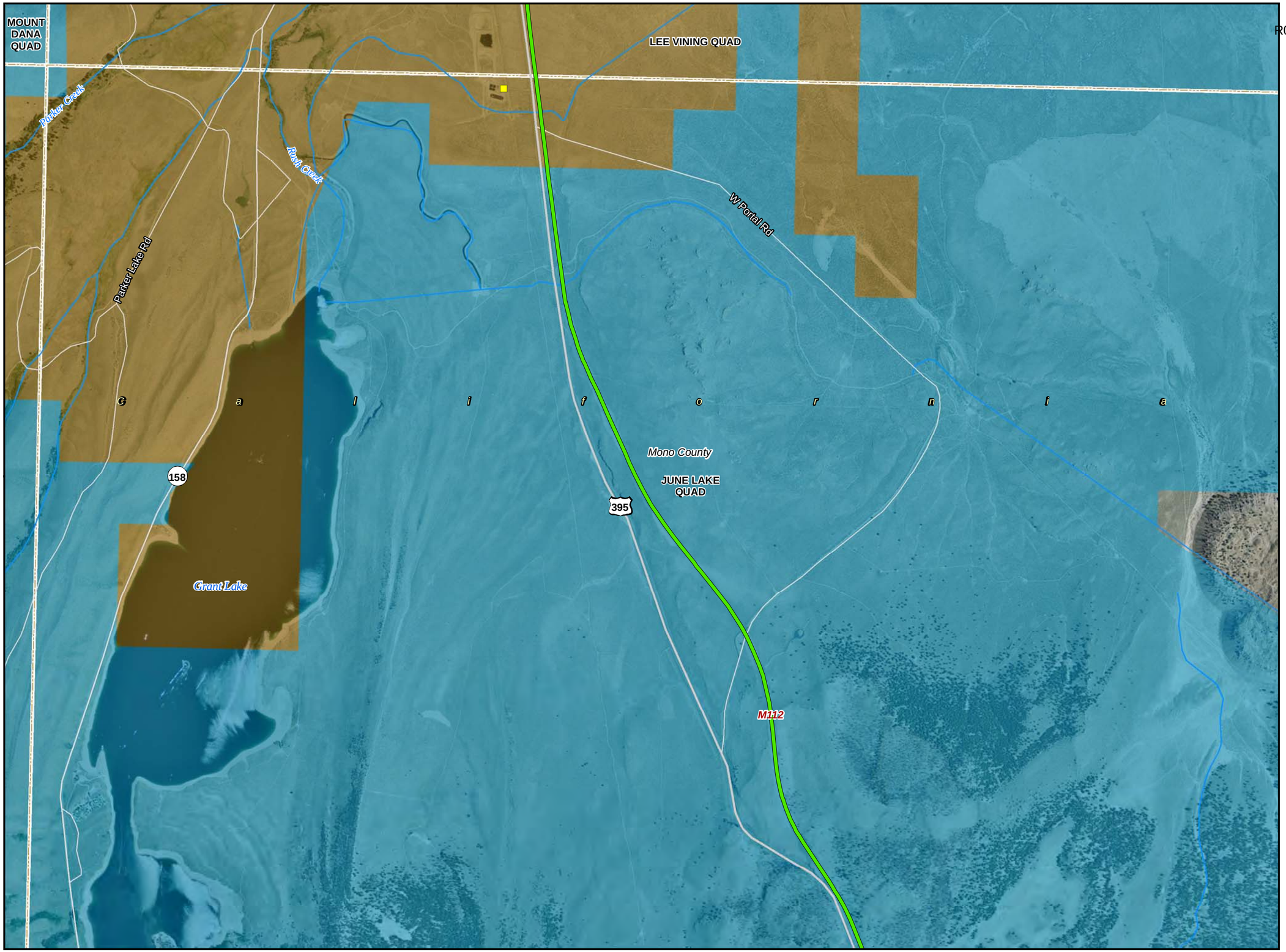
CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-074



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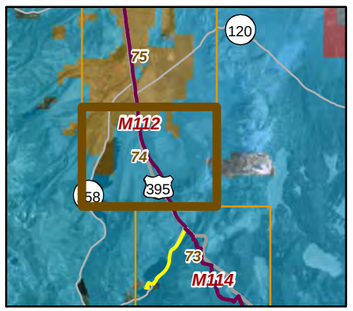
Feet

1:24,000



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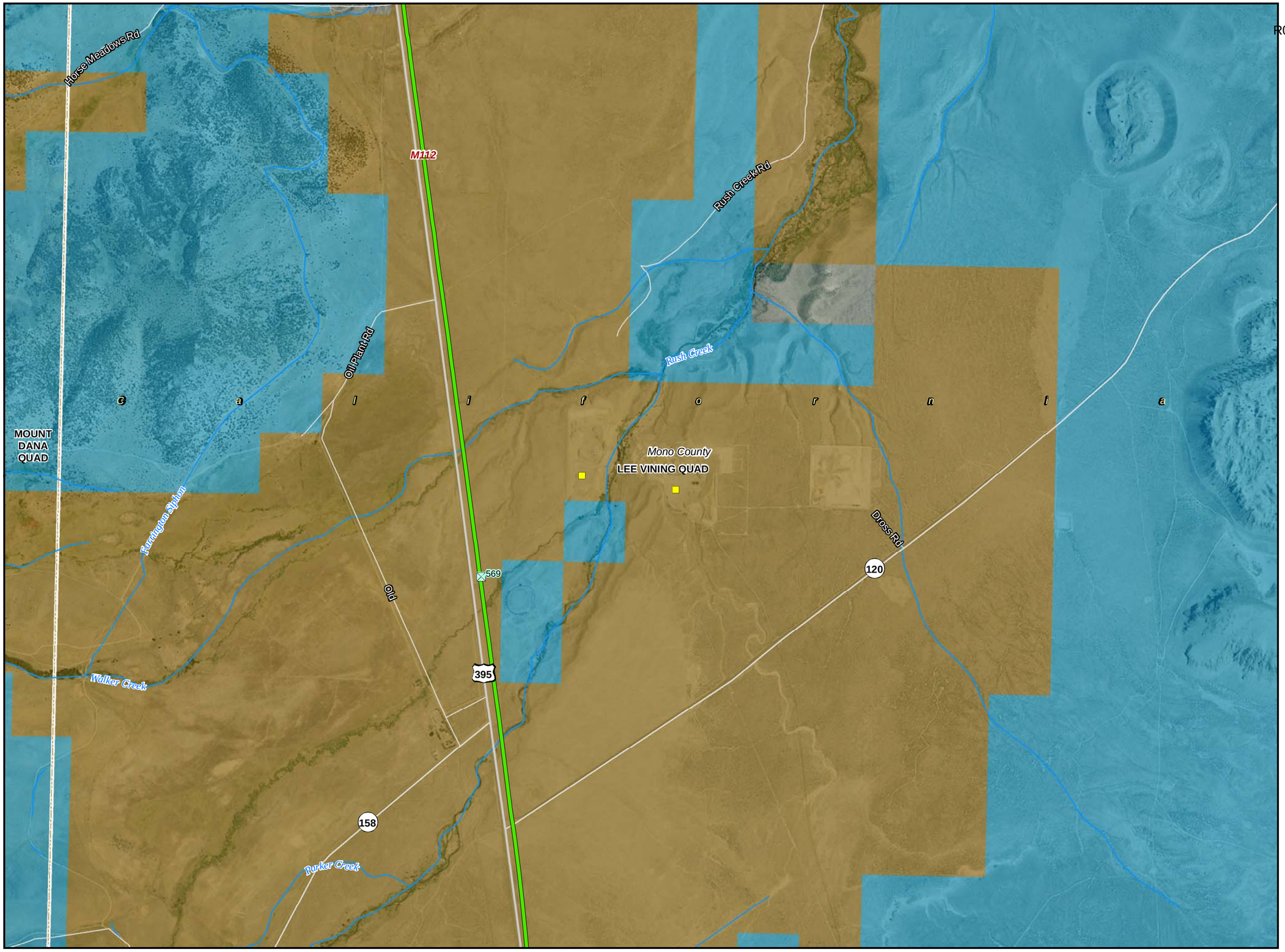
CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-075



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

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FOC Backbone from Barstow to Reno

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- State Land
- Local Government
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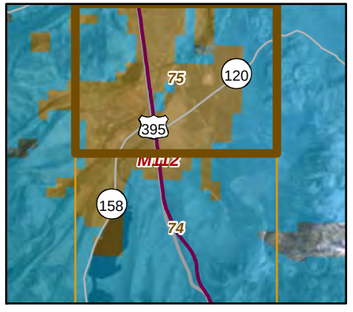
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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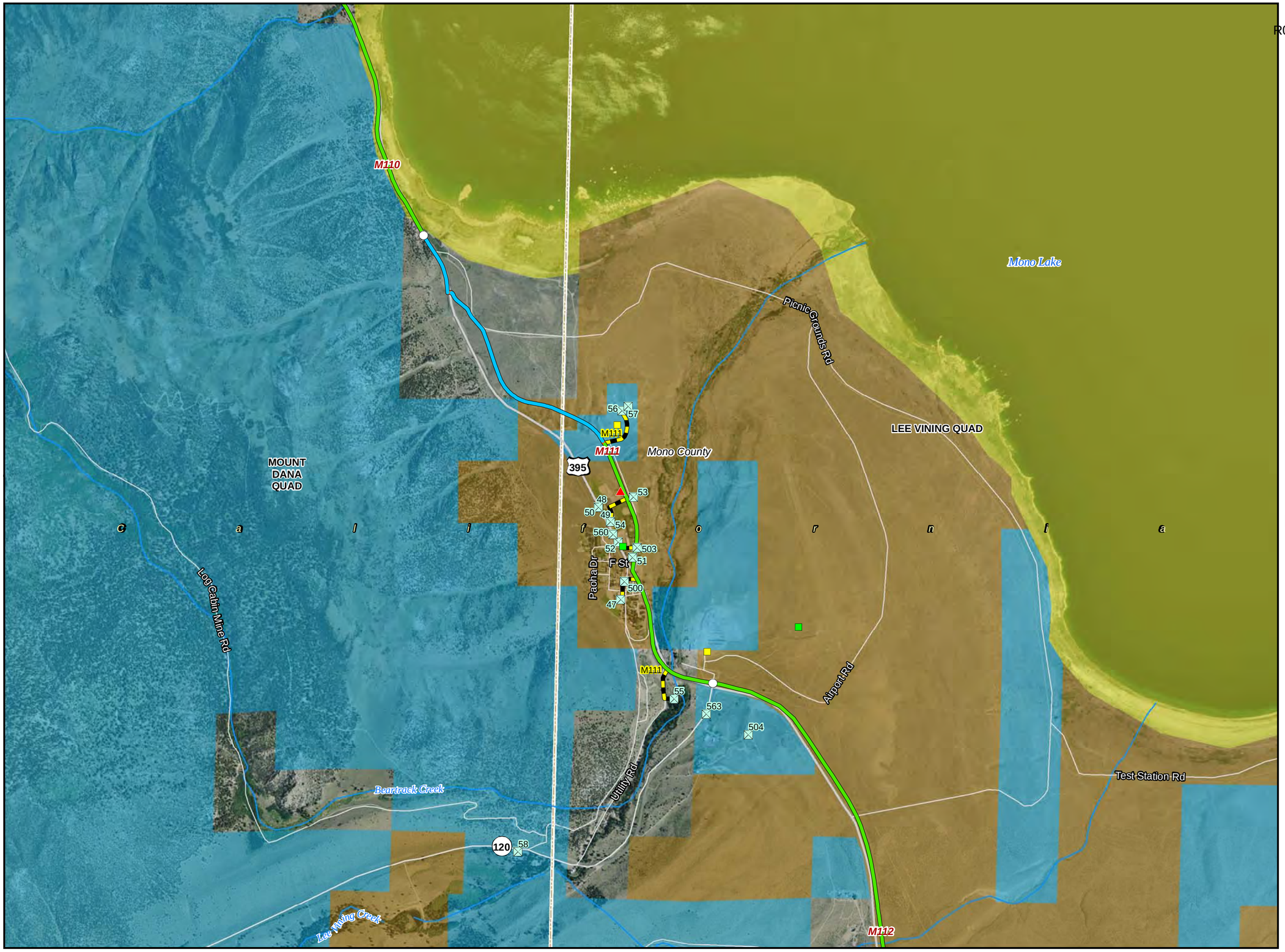
CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-076



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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- Distribution Line - Aerial

Land Agency

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- State Land
- Local Government
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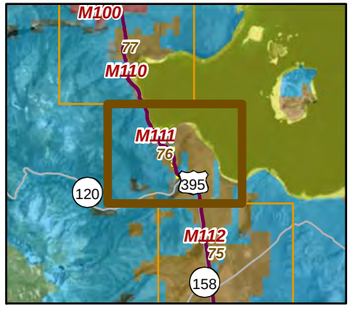
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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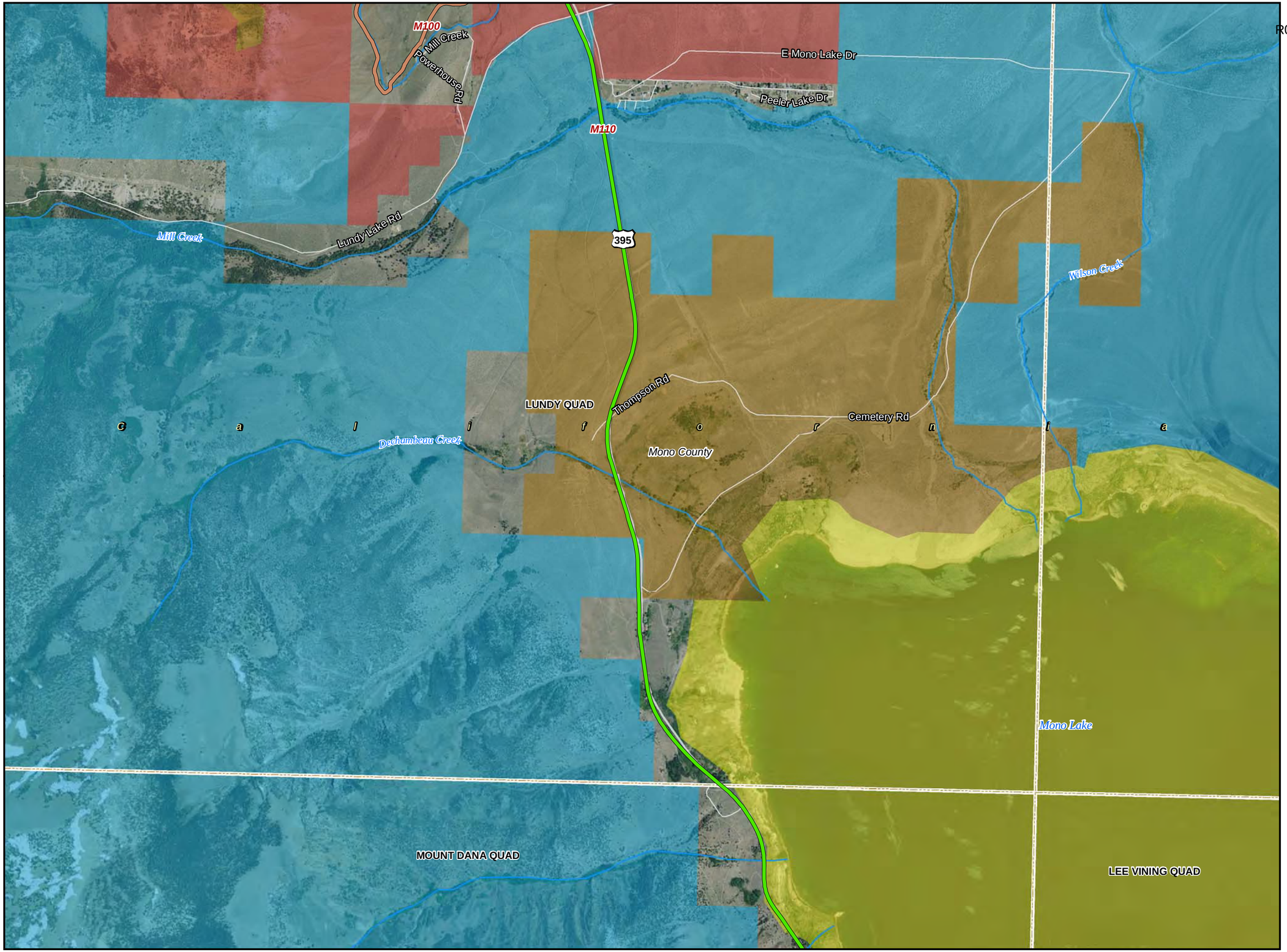
R09-Mammoth Lakes to Topaz Lake-077



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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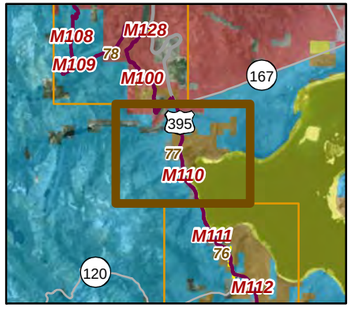
0 1,000 2,000 3,000
Feet

1:24,000



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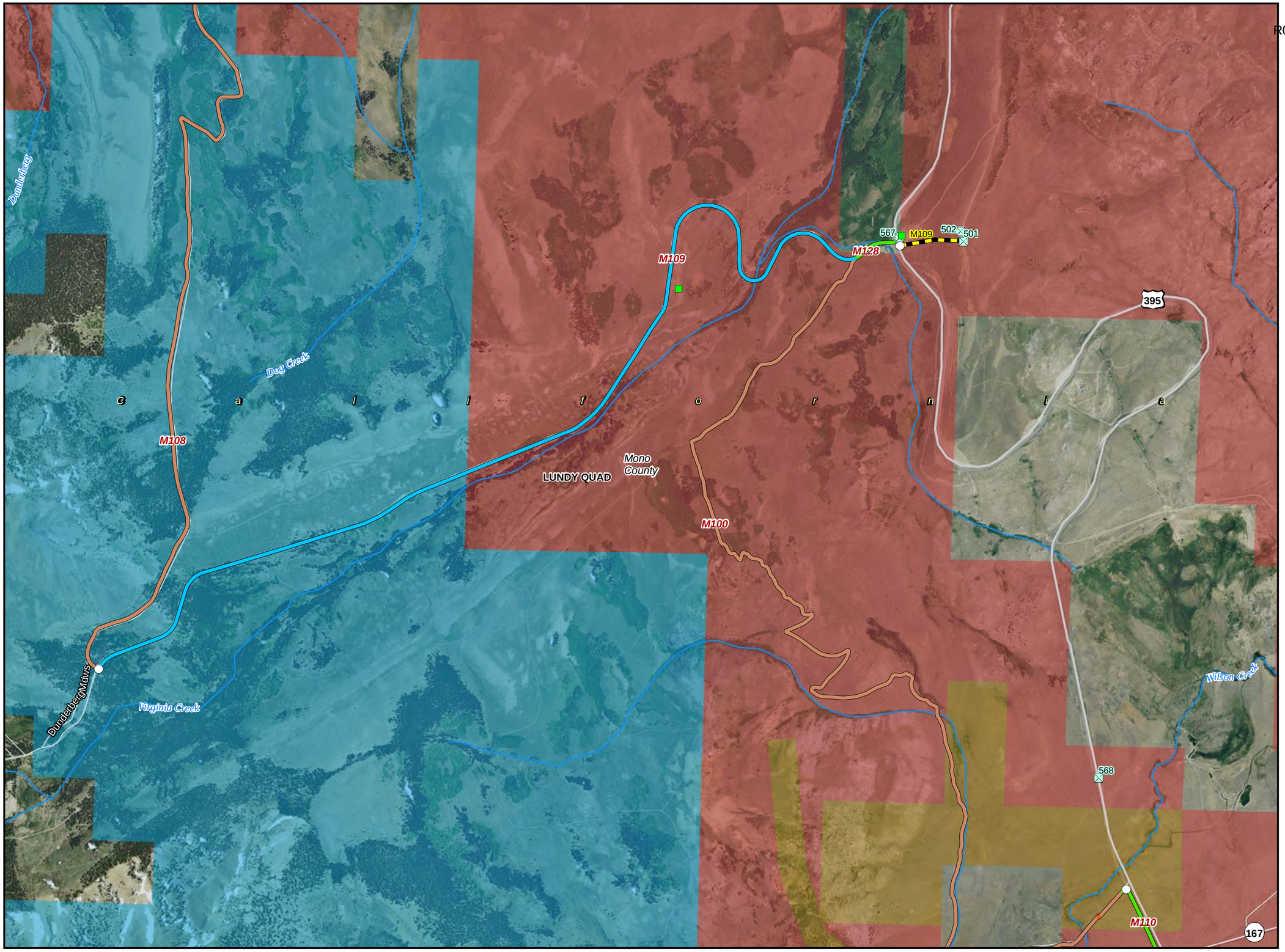
Chambers Group Inc.

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-078



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

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FOC Backbone from Barstow to Reno

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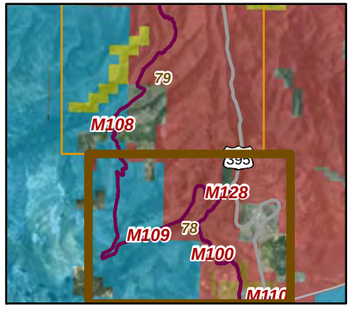
0 1,000 2,000 3,000
Feet

1:24,000



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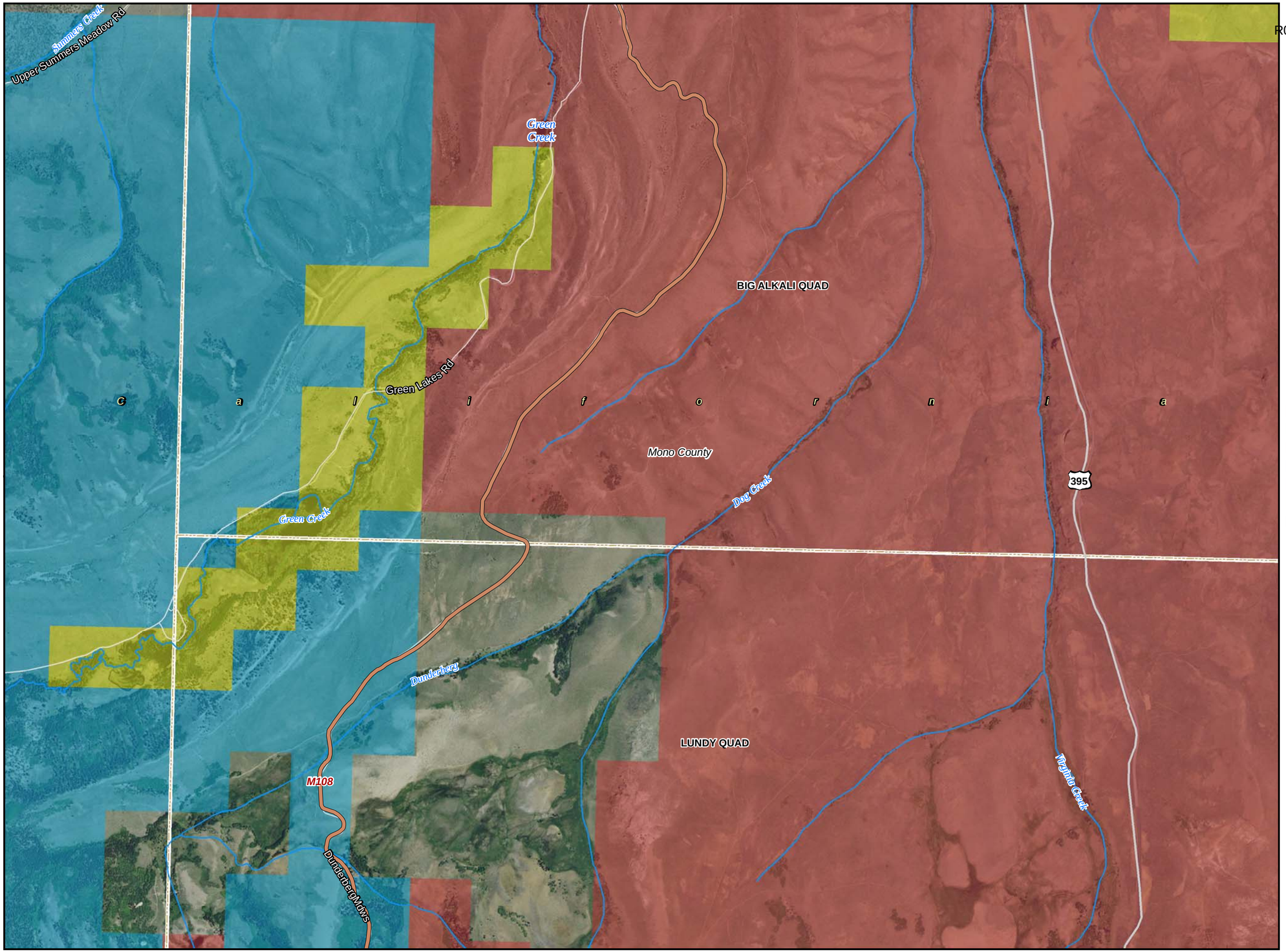

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-079

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
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FOC Backbone from Barstow to Reno

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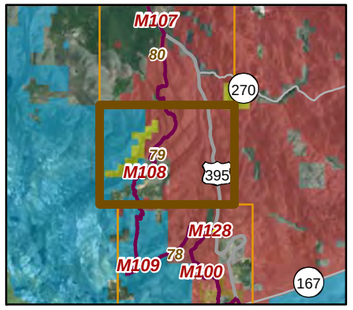

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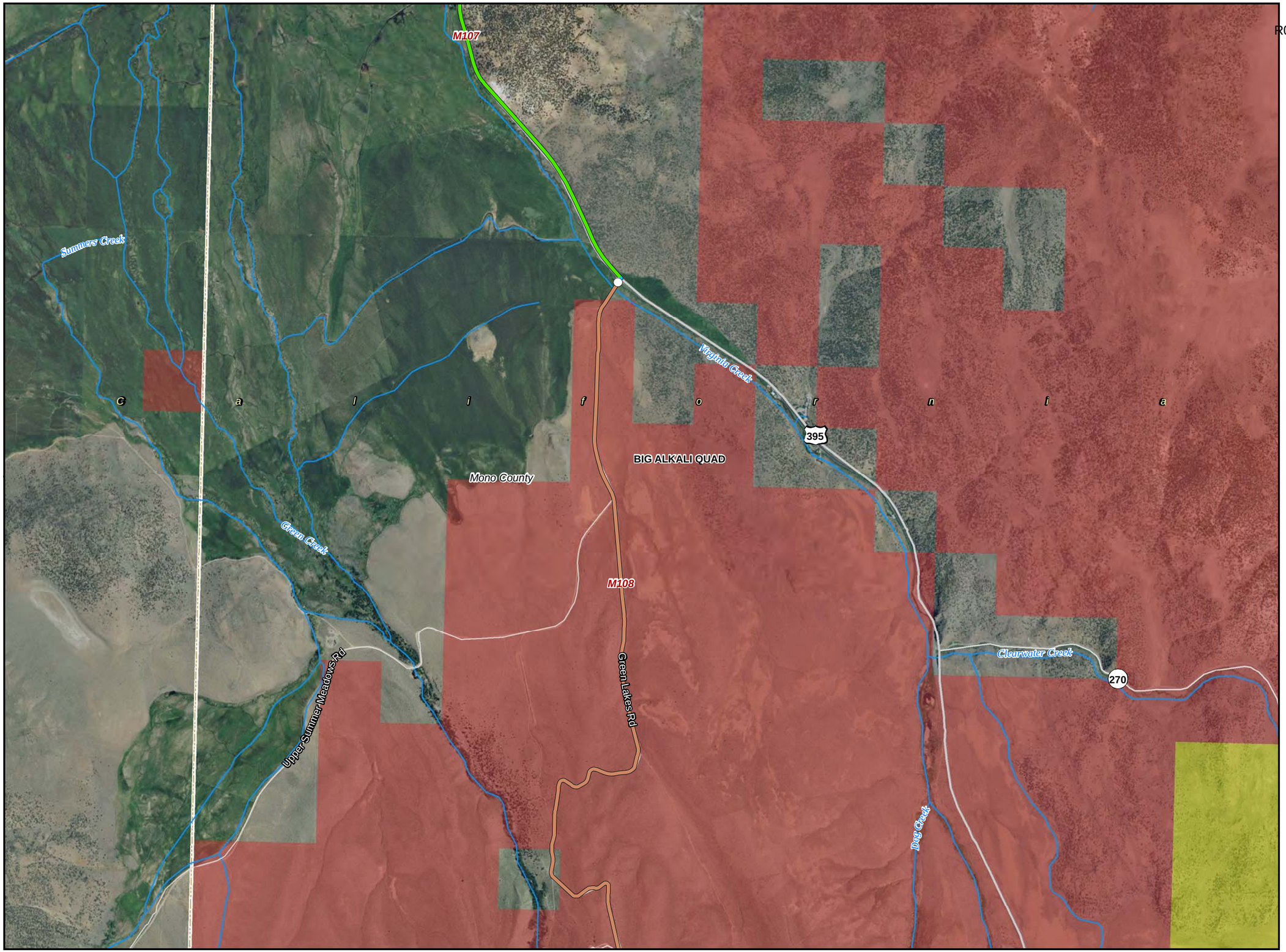
Chambers Group Inc.

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-080



Legend

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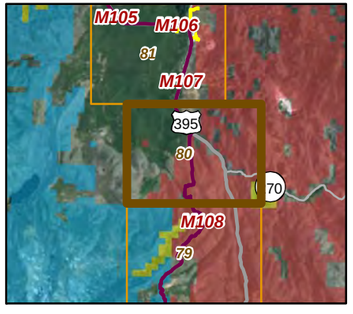

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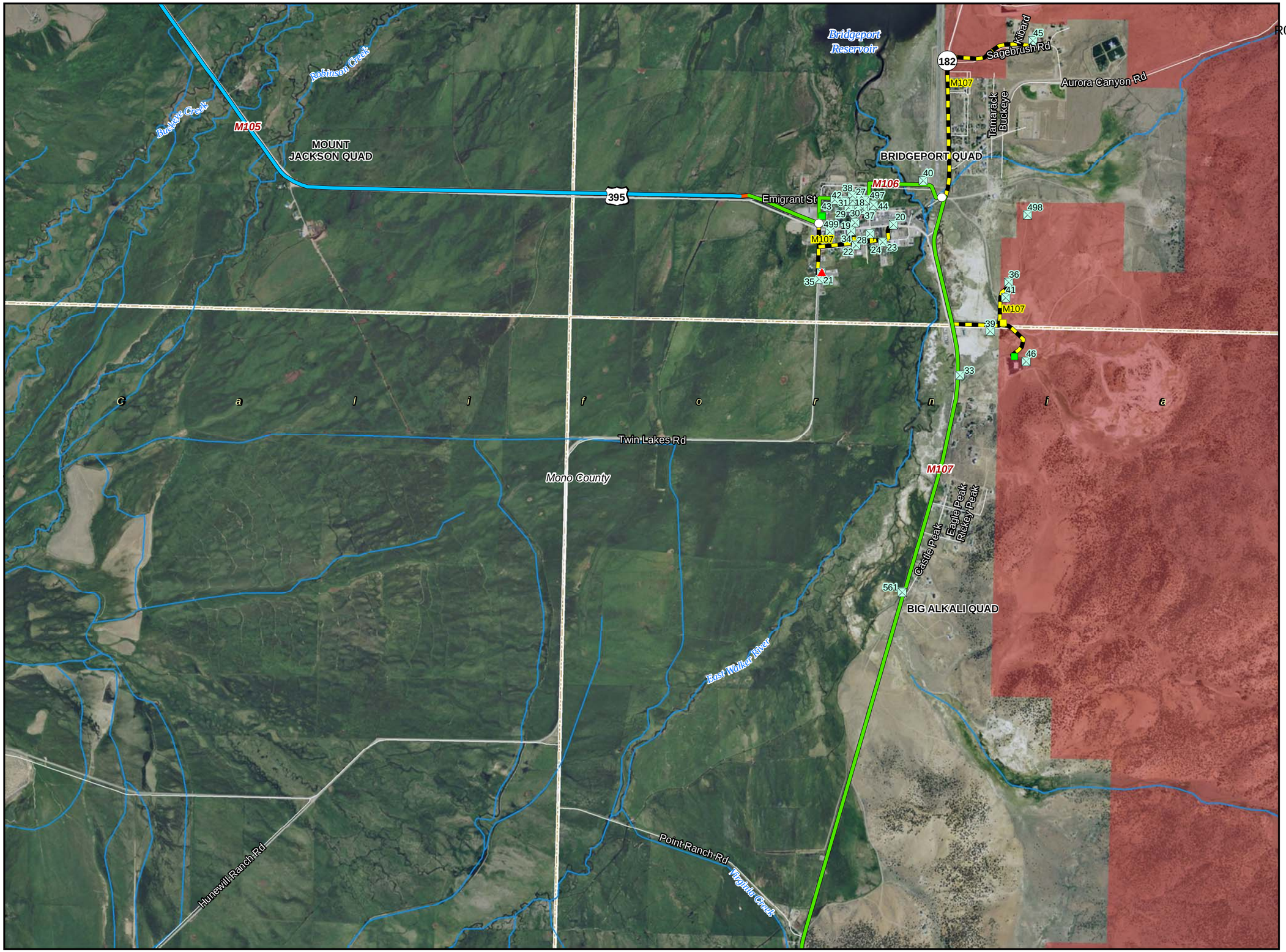
CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-081



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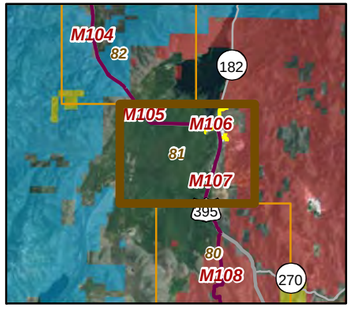

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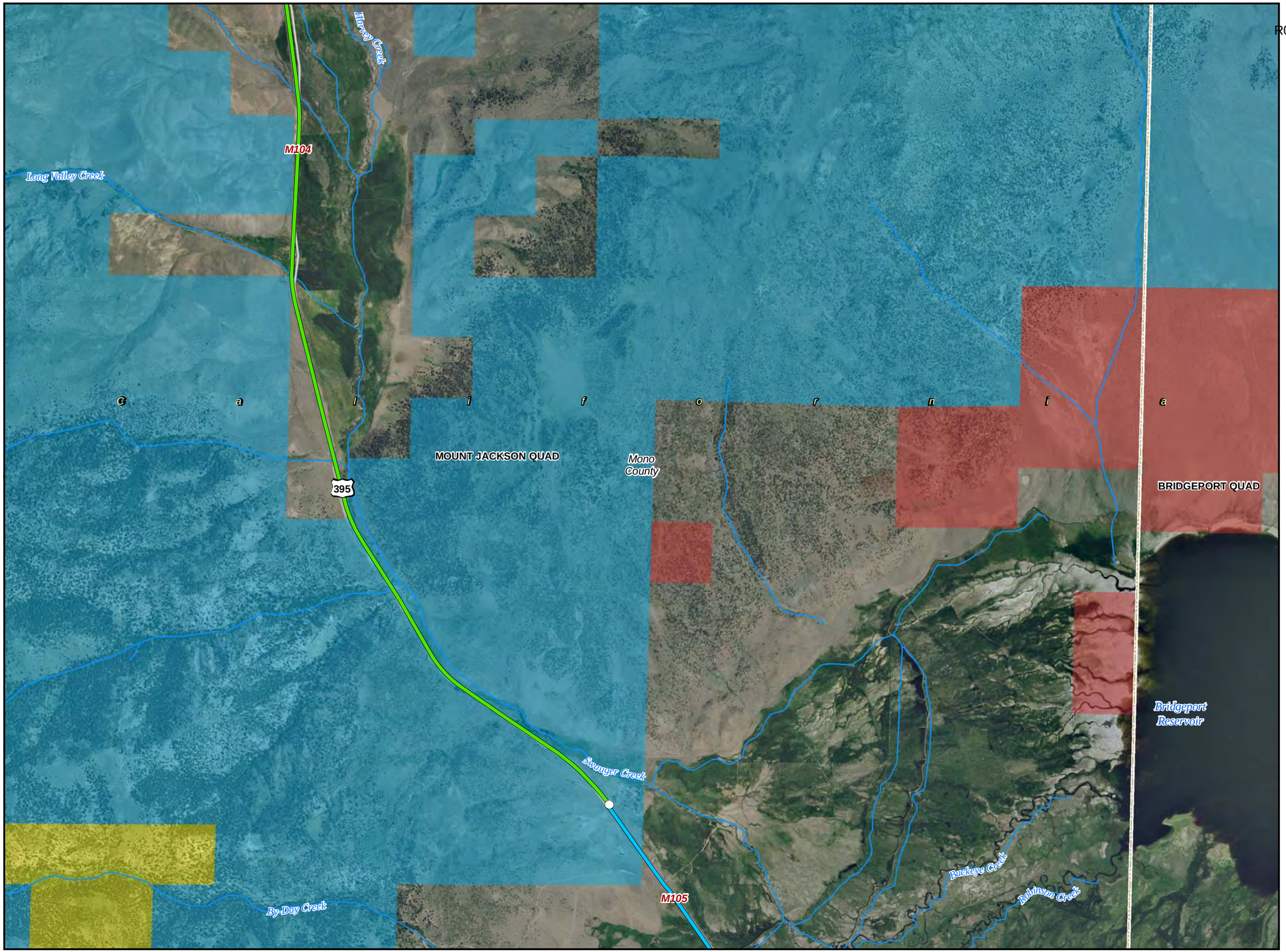
Chambers Group Inc.

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-082



Legend

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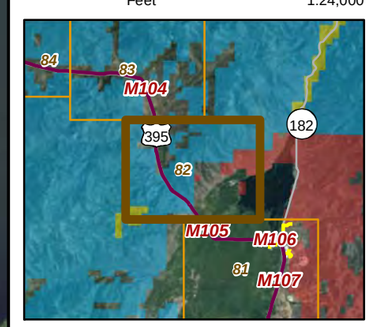

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CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-083

Legend

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Feet

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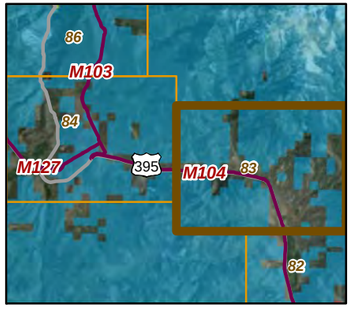

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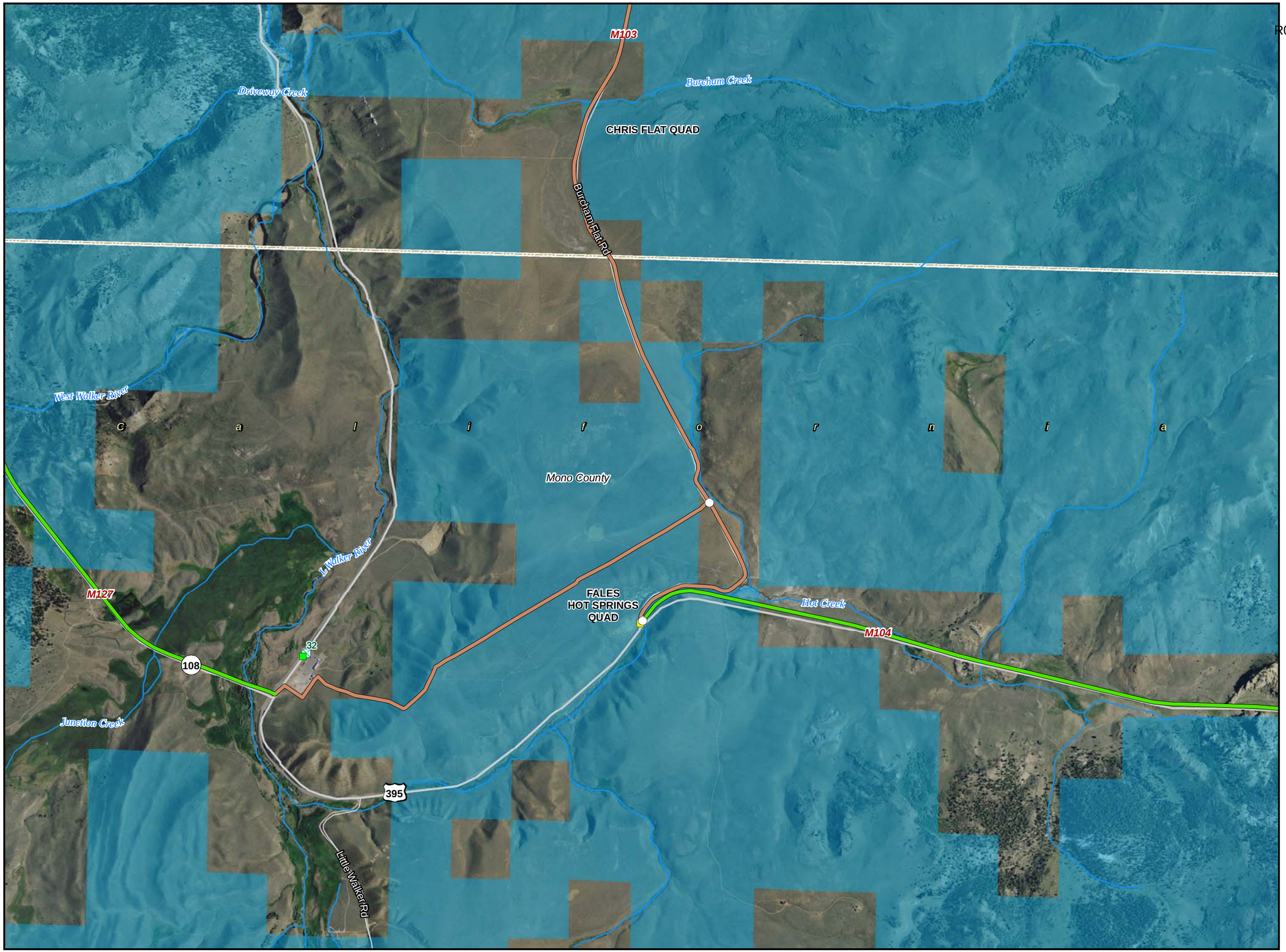
CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-084



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

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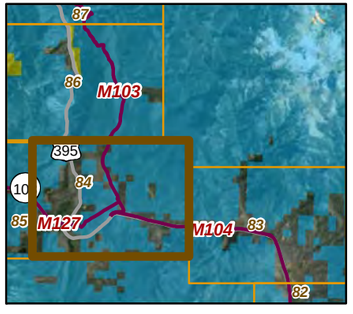

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Chambers Group Inc.

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-085

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

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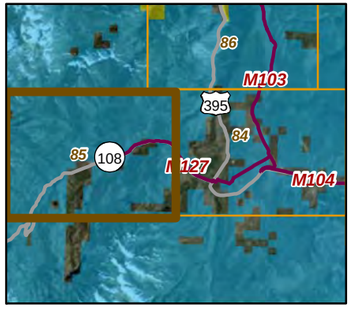
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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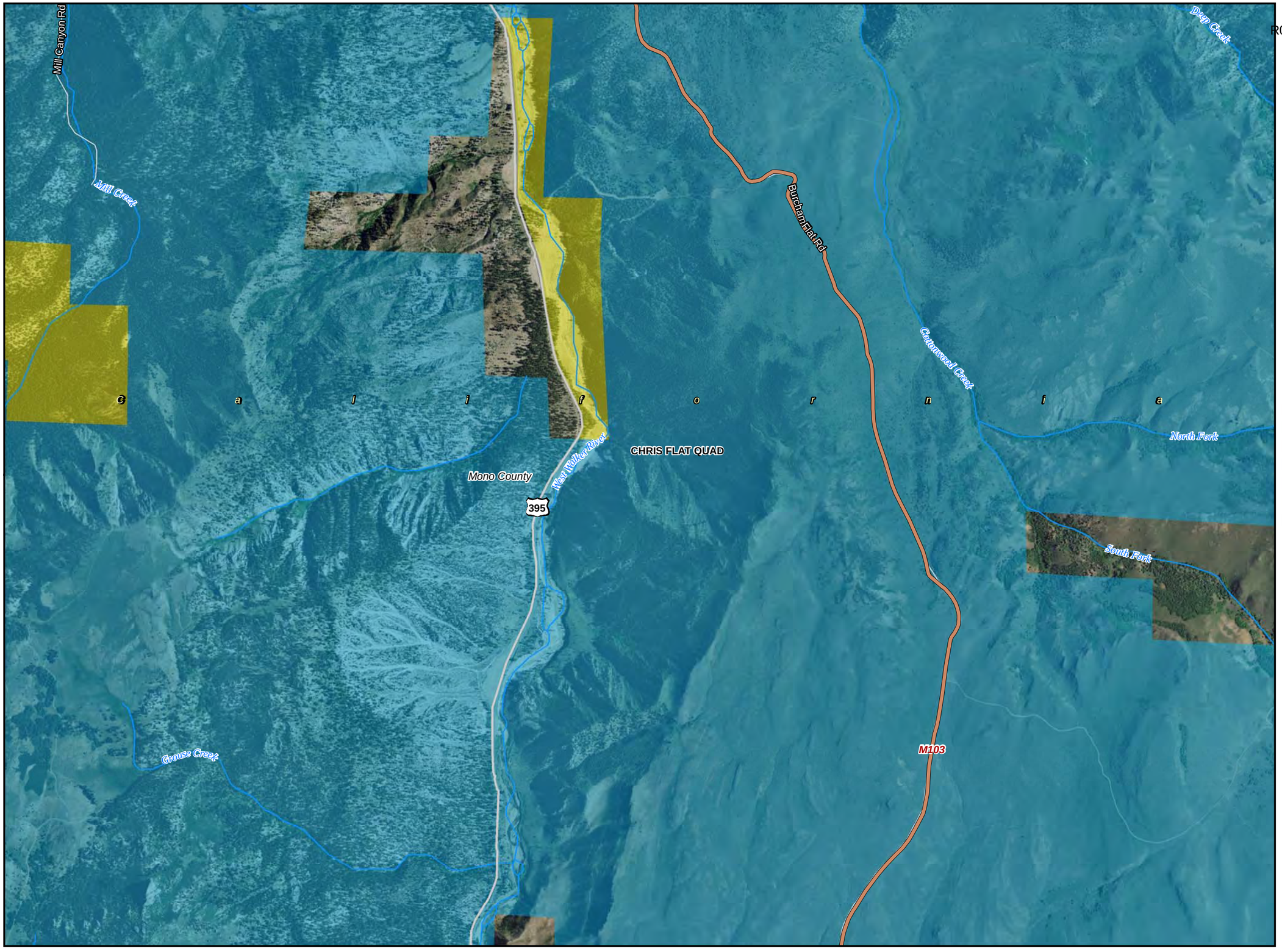
Chambers Group Inc.



CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-086

Legend

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- Proposed Node / Facility

Project Staging Site

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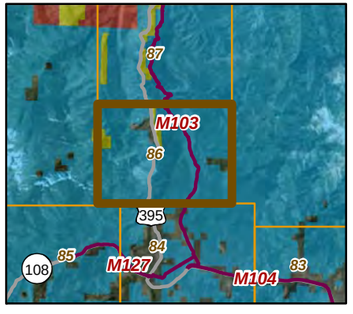
0 1,000 2,000 3,000
Feet

1:24,000



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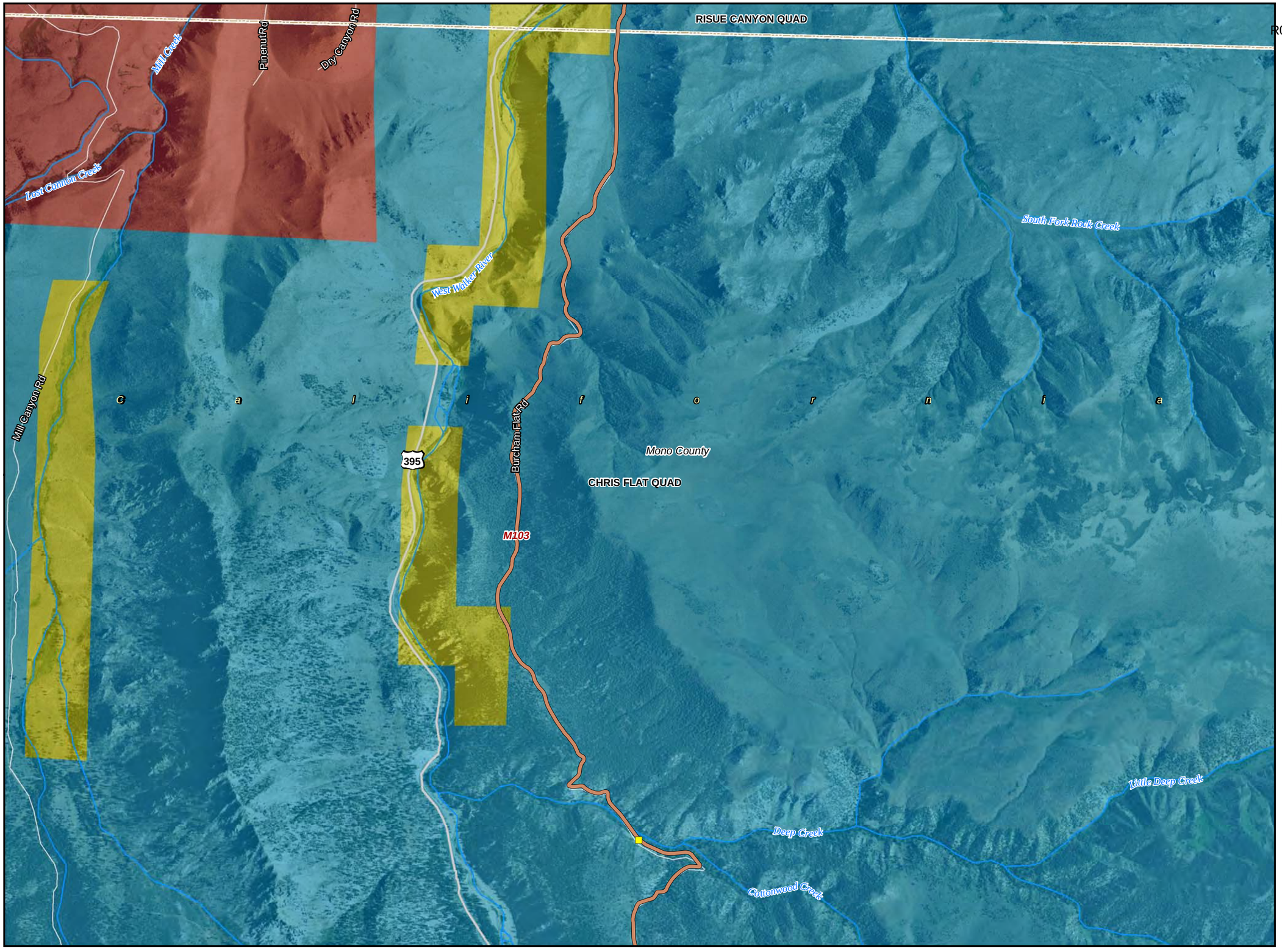
Chambers Group Inc.

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-087



Legend

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- Proposed Node / Facility

Project Staging Site

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FOC Backbone from Barstow to Reno

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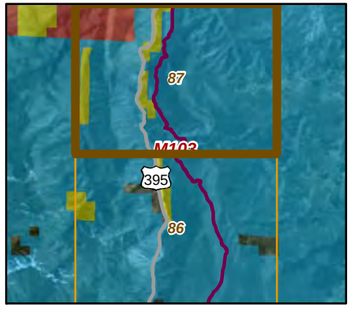
0 1,000 2,000 3,000
Feet

1:24,000



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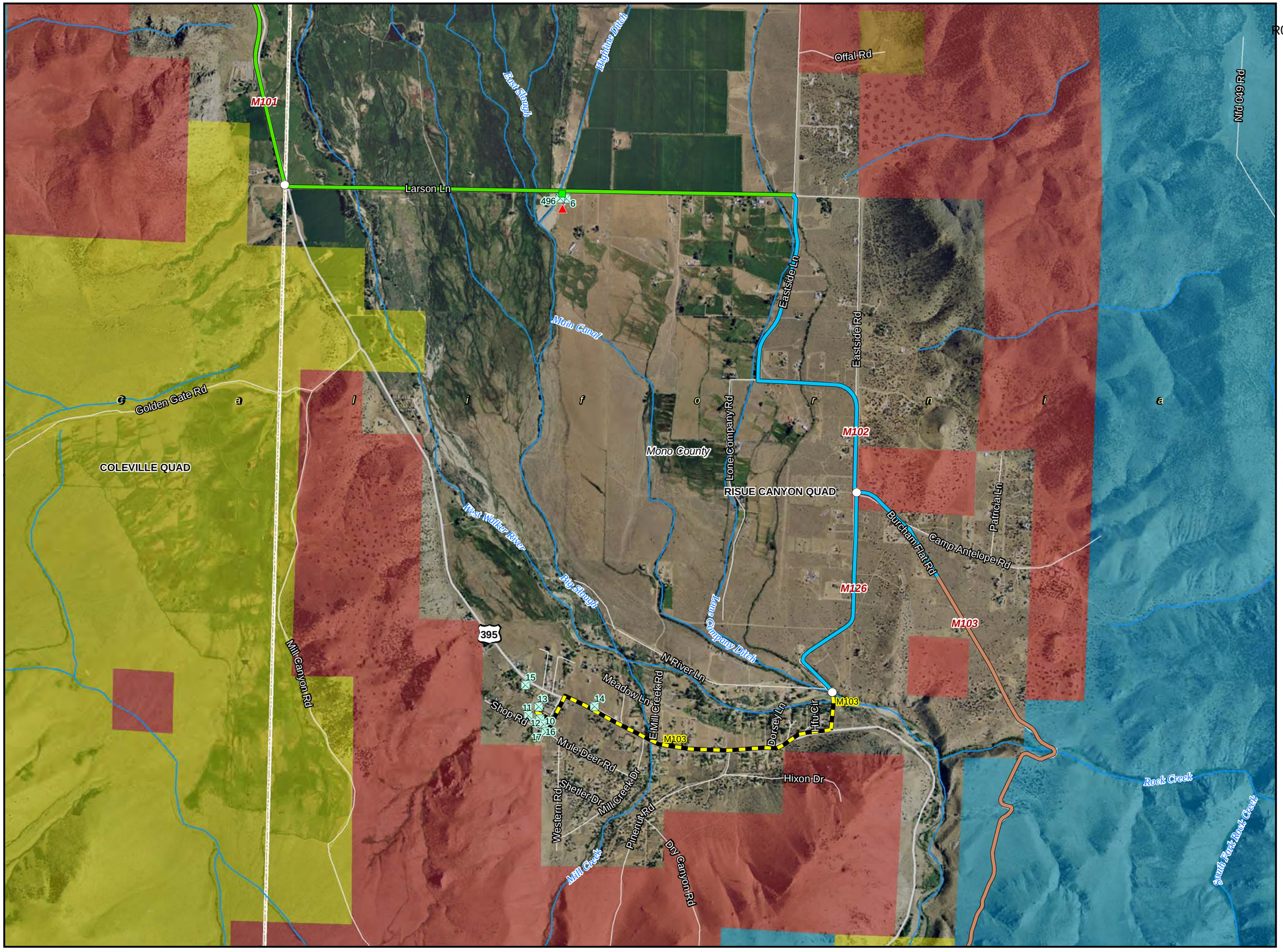
Chambers Group Inc.

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-088



Legend

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Project Staging Site

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FOC Backbone from Barstow to Reno

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- State Land
- Local Government
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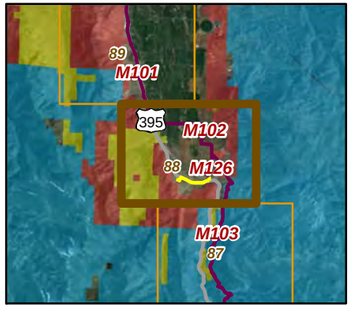
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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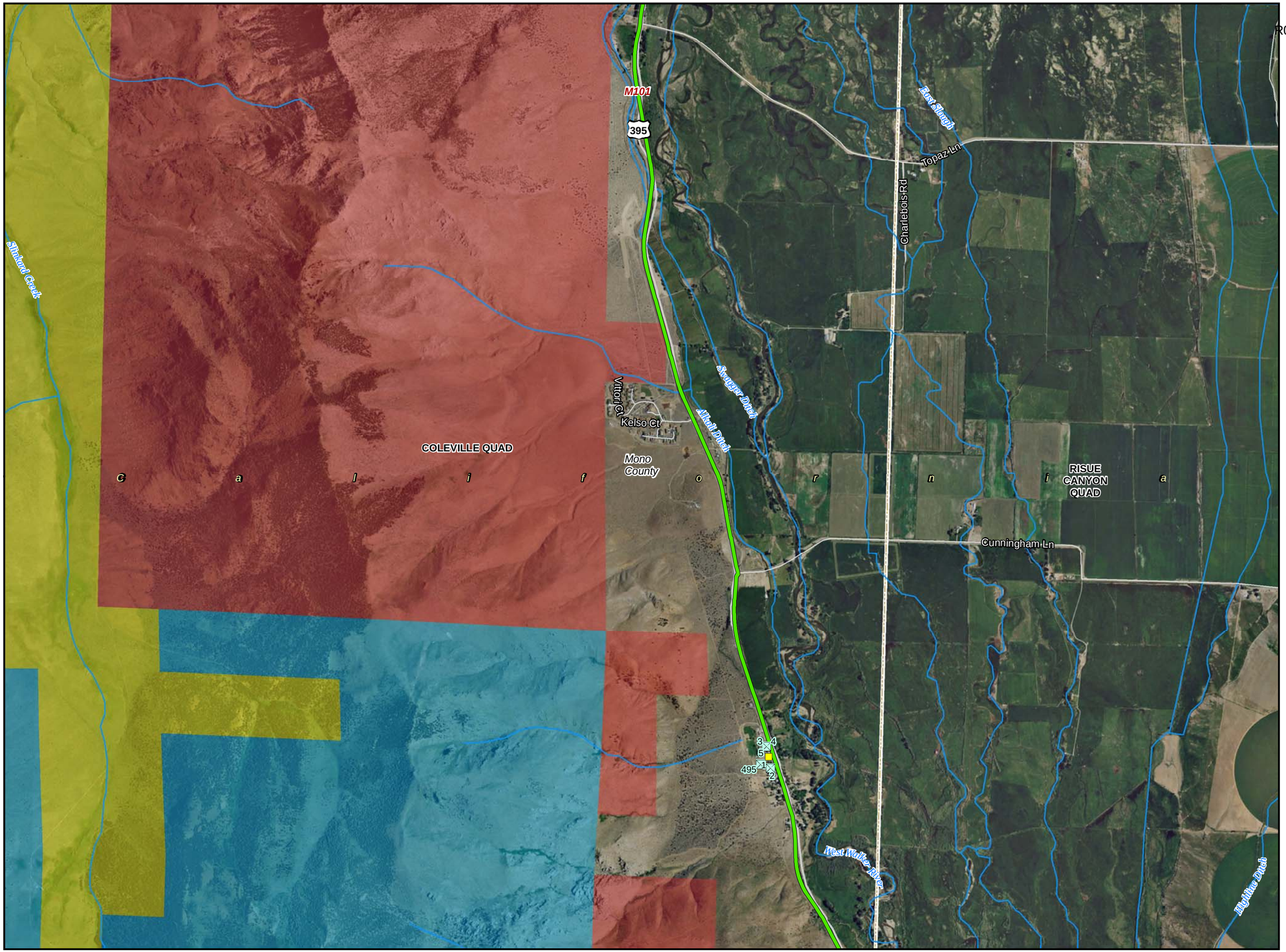
Chambers Group Inc.

CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-089



Legend

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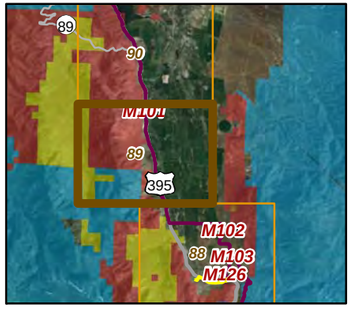
0 1,000 2,000 3,000
Feet

1:24,000



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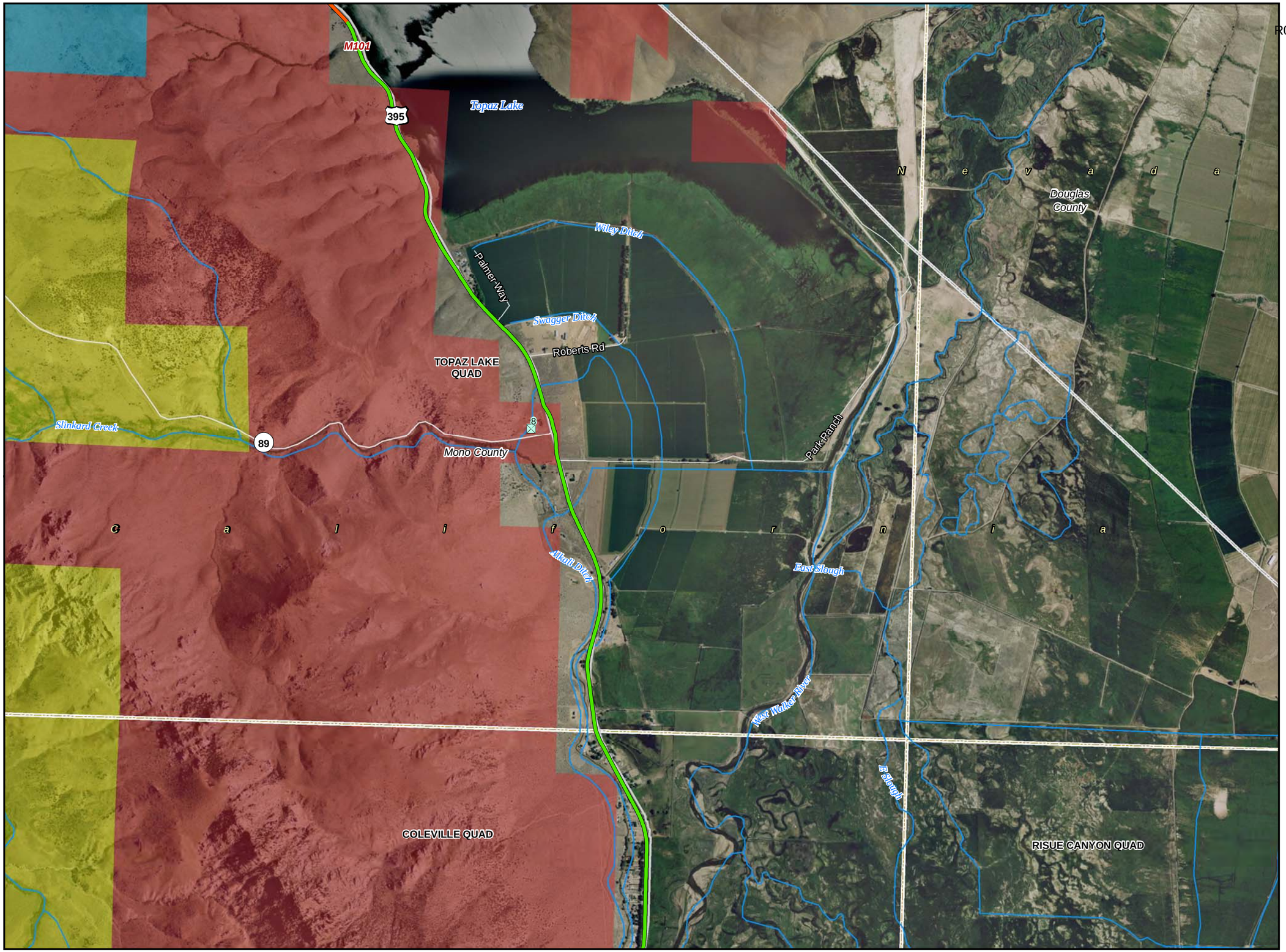
CBC Digital 395

R09-Mammoth Lakes to Topaz Lake-090



Legend

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- Proposed Node / Facility

Project Staging Site

- Staging Area
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FOC Backbone from Barstow to Reno

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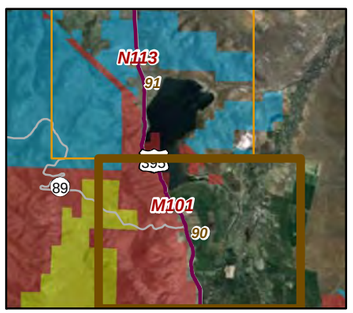
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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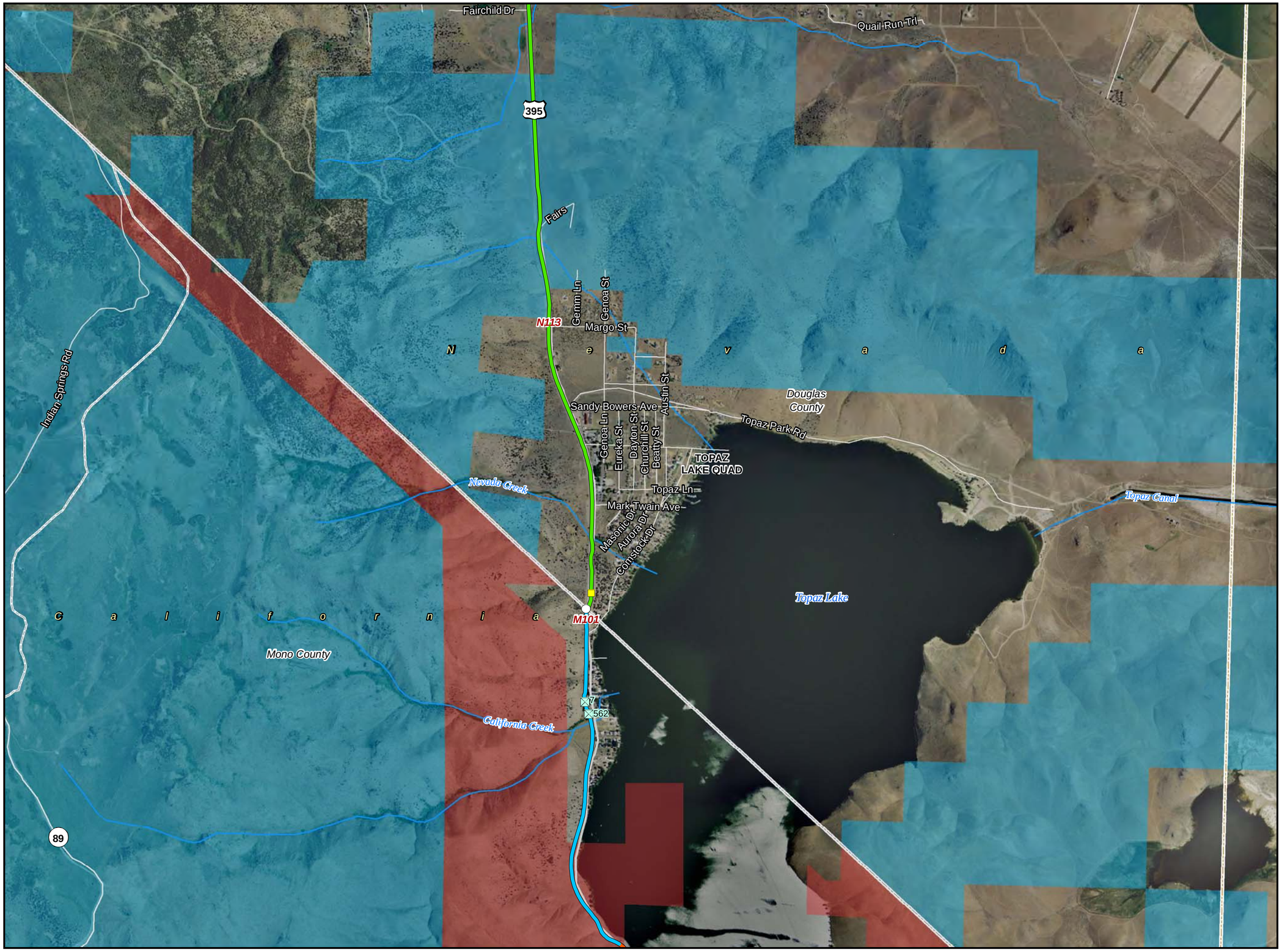
Chambers Group Inc.

CBC Digital 395

R10-Topaz Lake to Reno-091



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

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FOC Backbone from Barstow to Reno

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- Local Government
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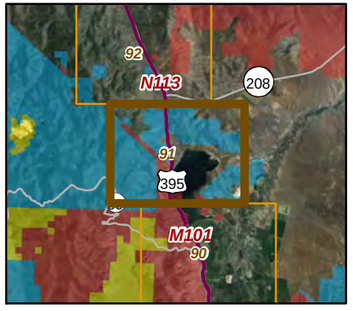
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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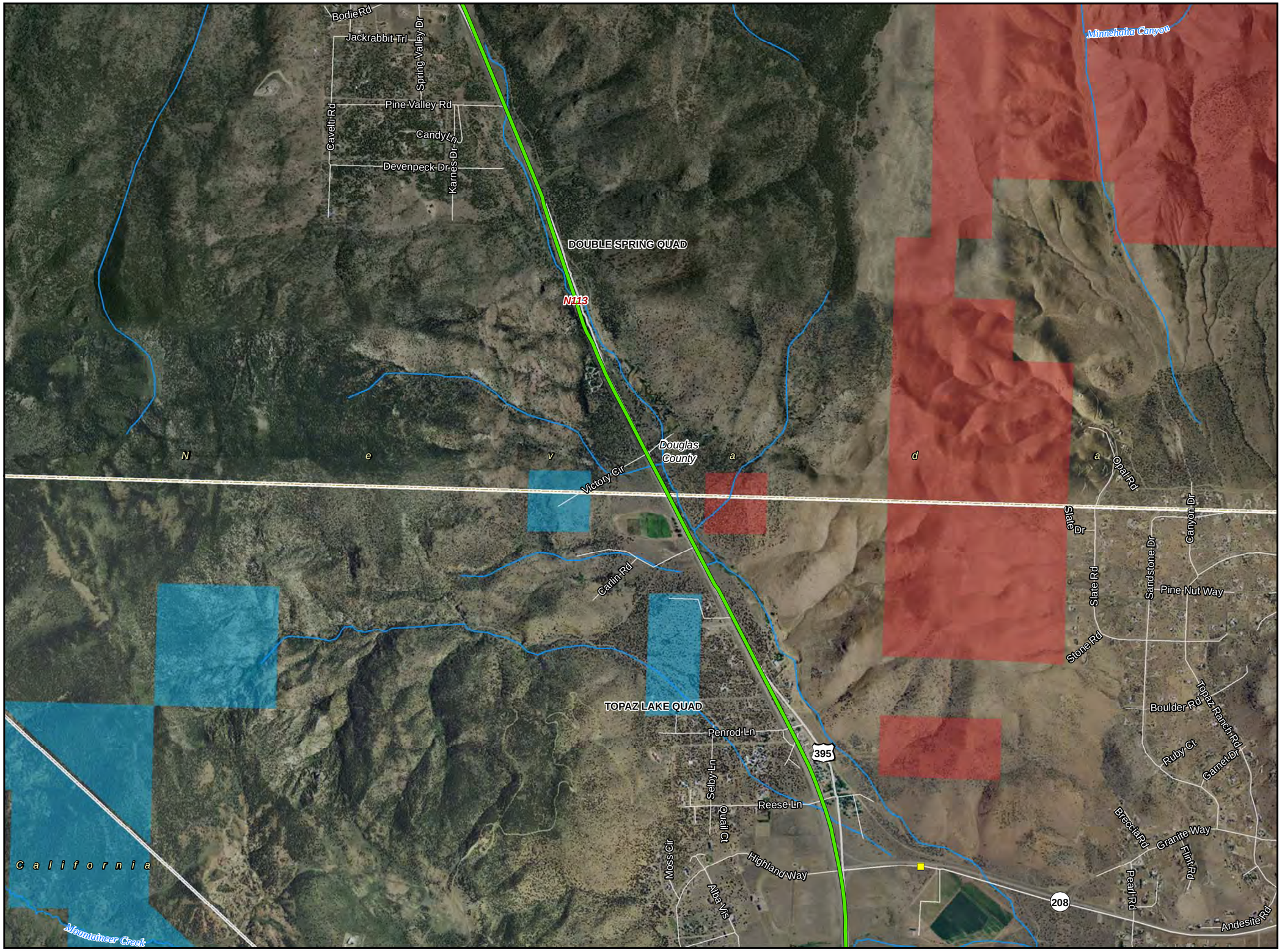
Chambers Group Inc.



CBC Digital 395

R10-Topaz Lake to Reno-092

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
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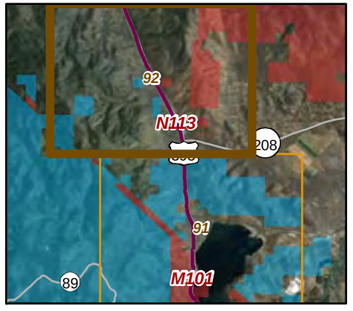
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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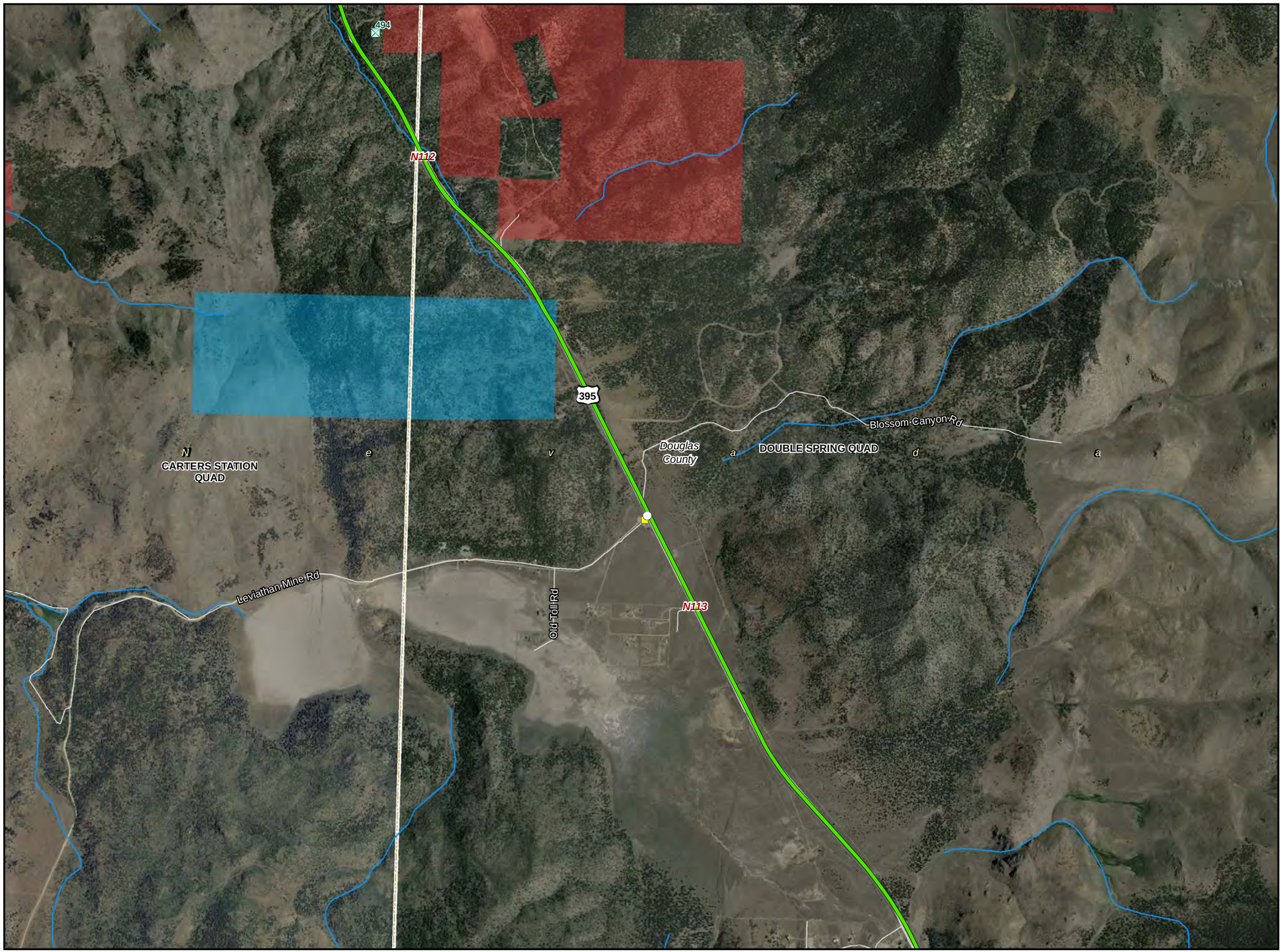

CBC Digital 395

R10-Topaz Lake to Reno-093

Legend

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Project Staging Site

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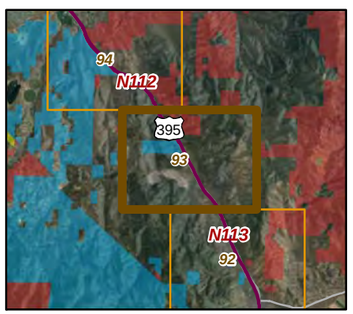
0 1,000 2,000 3,000
Feet

1:24,000



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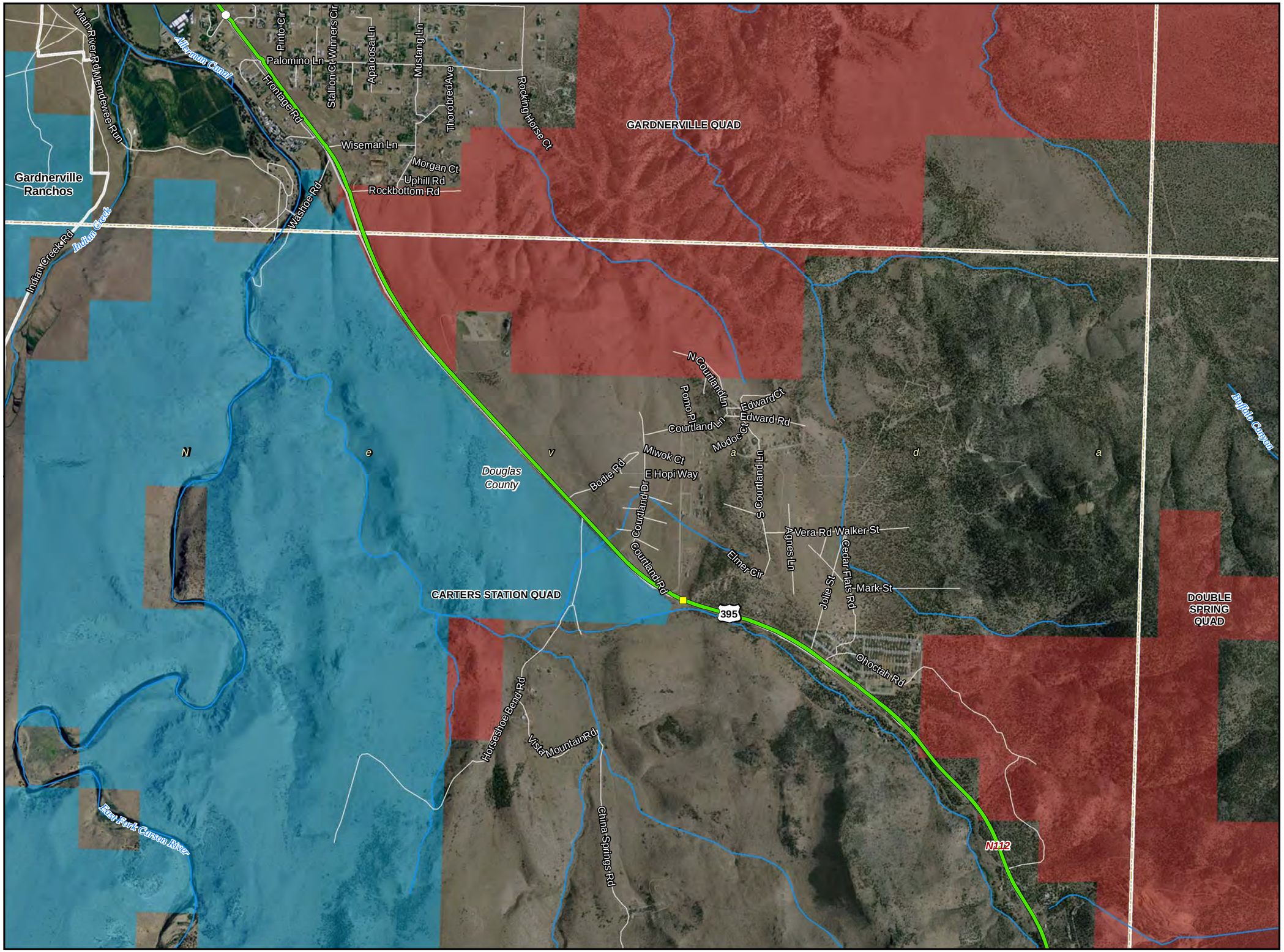
Chambers Group Inc.

CBC Digital 395

R10-Topaz Lake to Reno-094



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

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Feet

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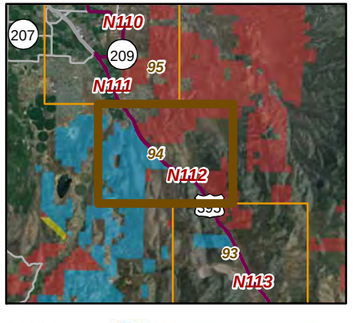

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01-17-11

Chambers Group Inc.

CBC Digital 395

R10-Topaz Lake to Reno-095

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0 1,000 2,000 3,000

Feet

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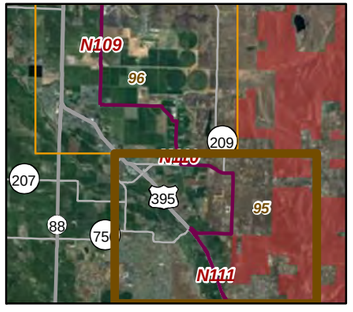

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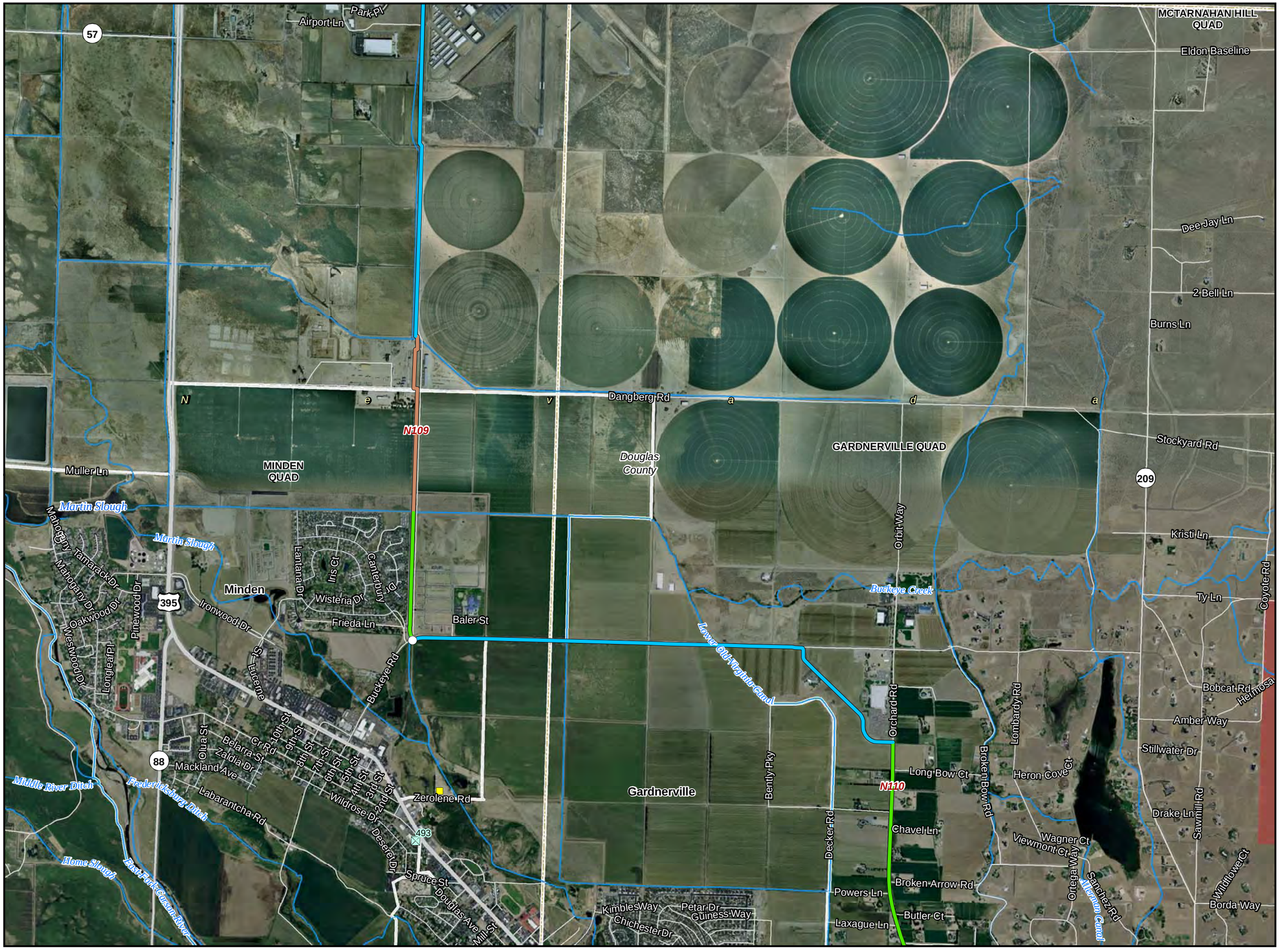
01-17-11

Chambers Group Inc.



CBC Digital 395

R10-Topaz Lake to Reno-096

Legend

- Segment Start and End Marker
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Project Staging Site

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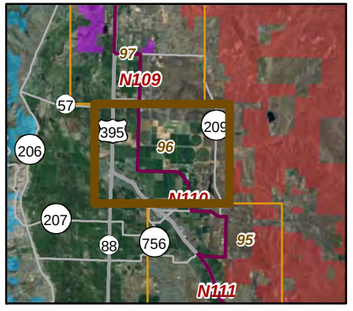

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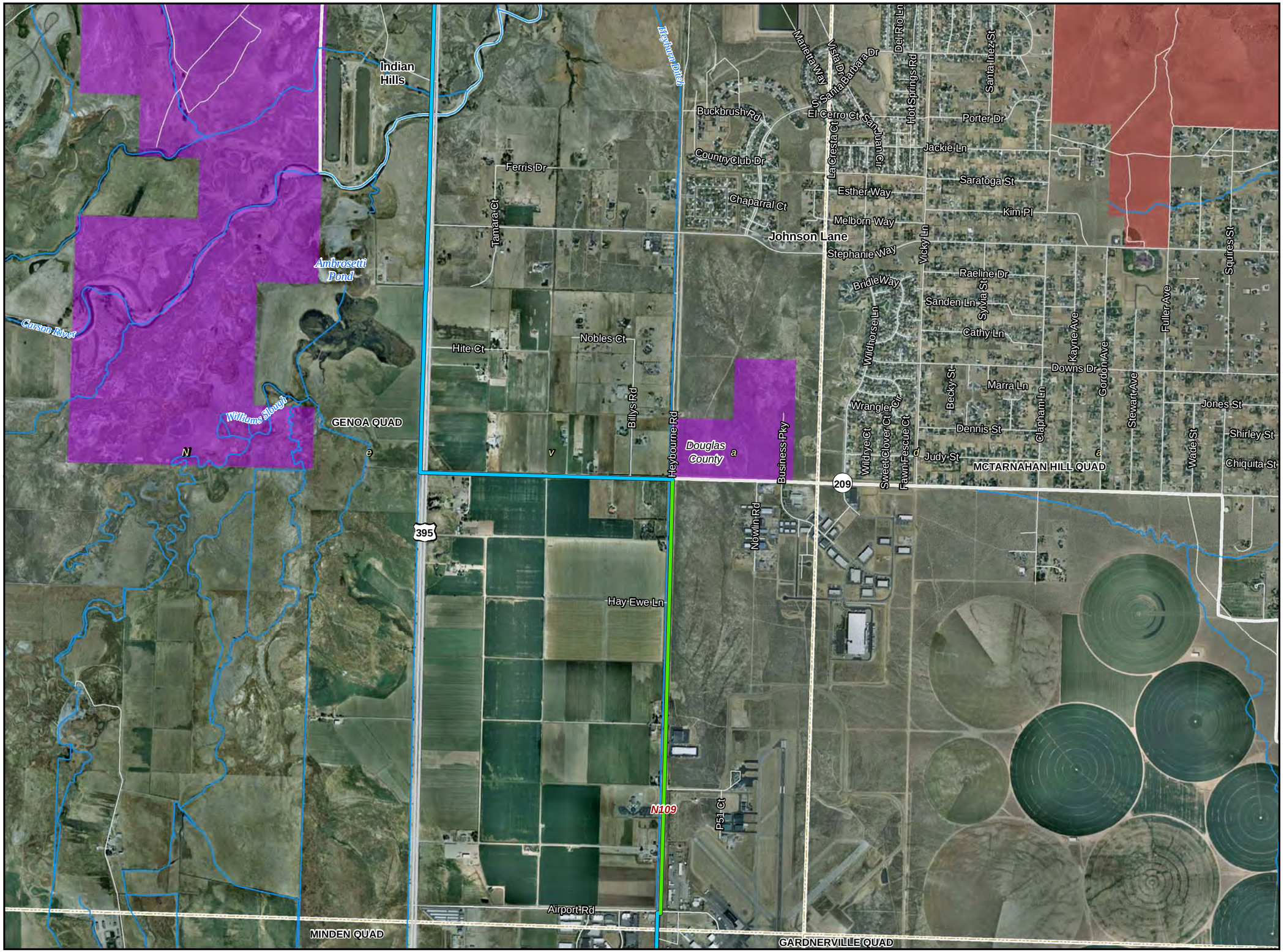

CBC Digital 395

R10-Topaz Lake to Reno-097

Legend

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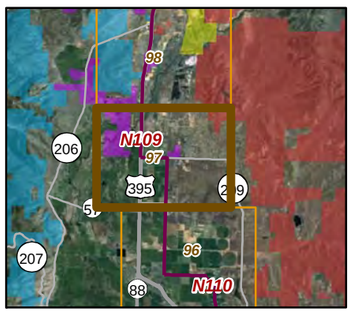

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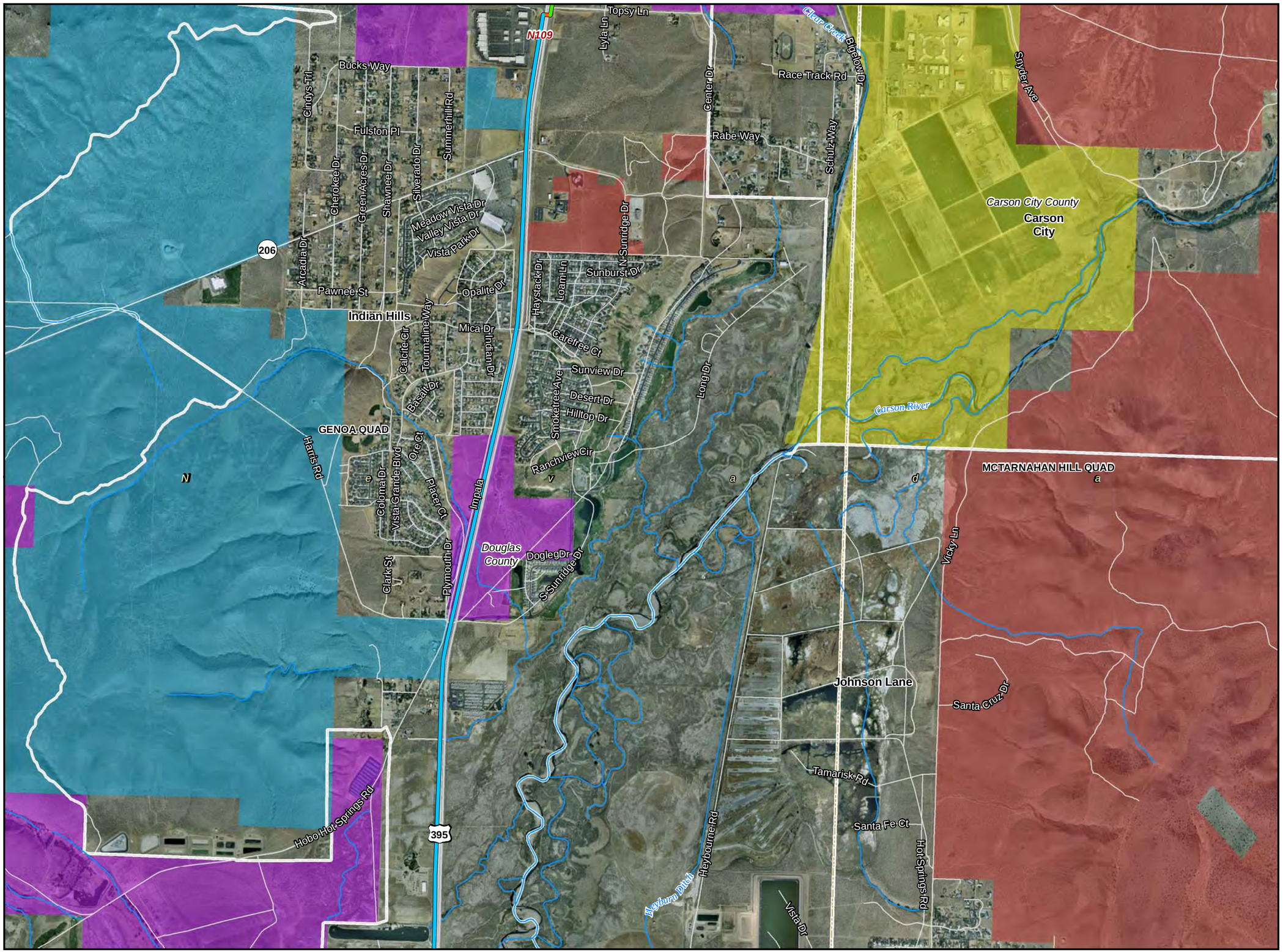
CBC Digital 395

R10-Topaz Lake to Reno-098



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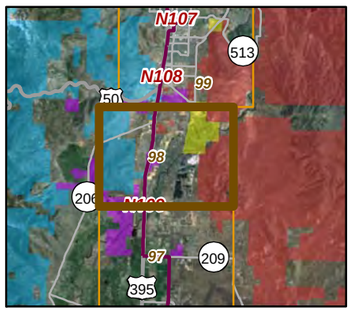

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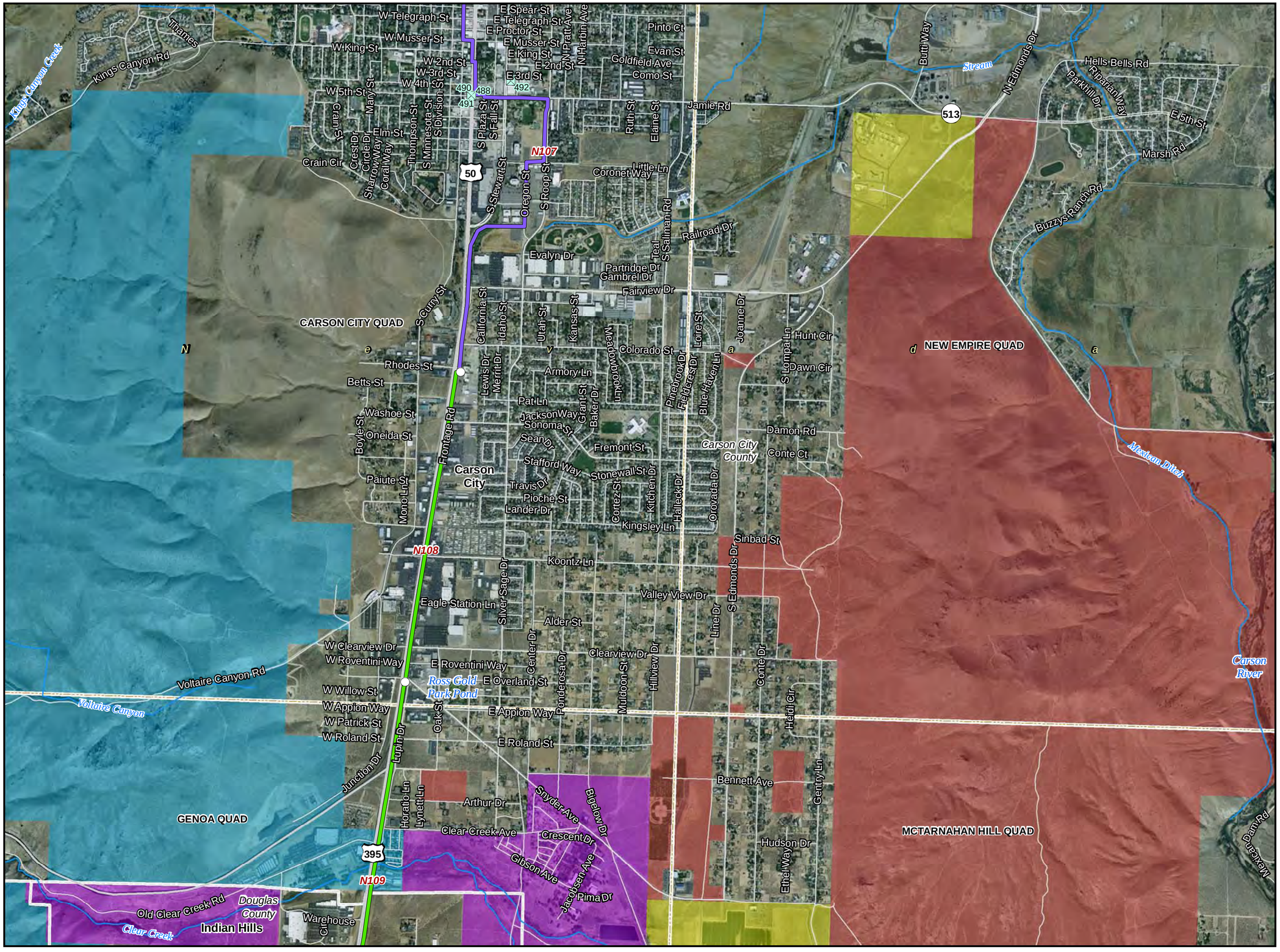
01-17-11

Chambers Group Inc.

CBC Digital 395

R10-Topaz Lake to Reno-099



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Feet

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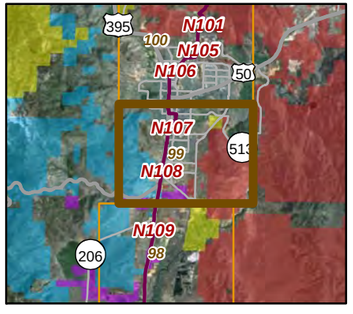

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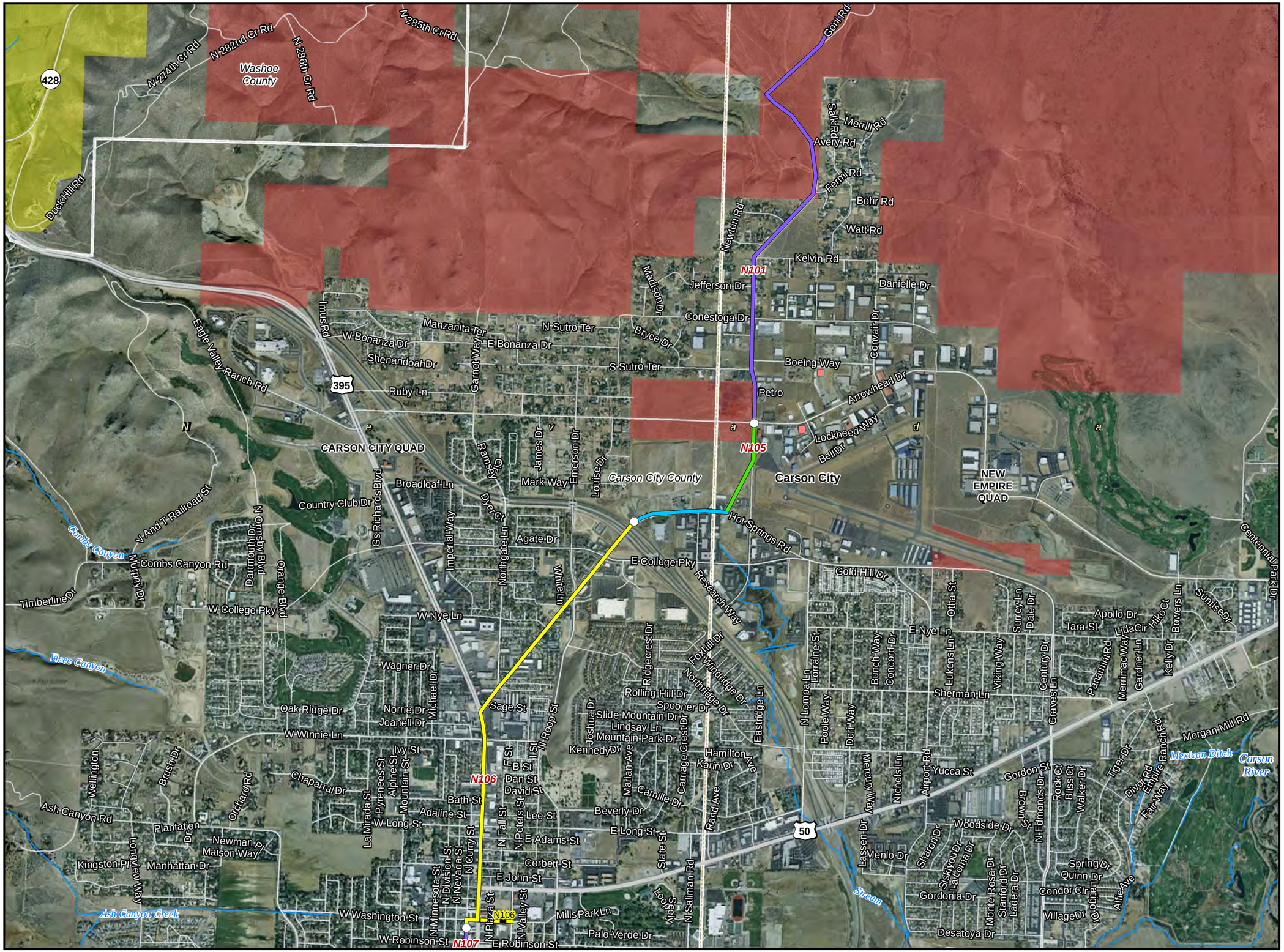
Chambers Group Inc.



CBC Digital 395

R10-Topaz Lake to Reno-100

Legend

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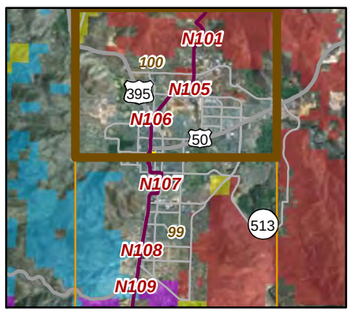
- USGS 7.5' Quad
- City Limit



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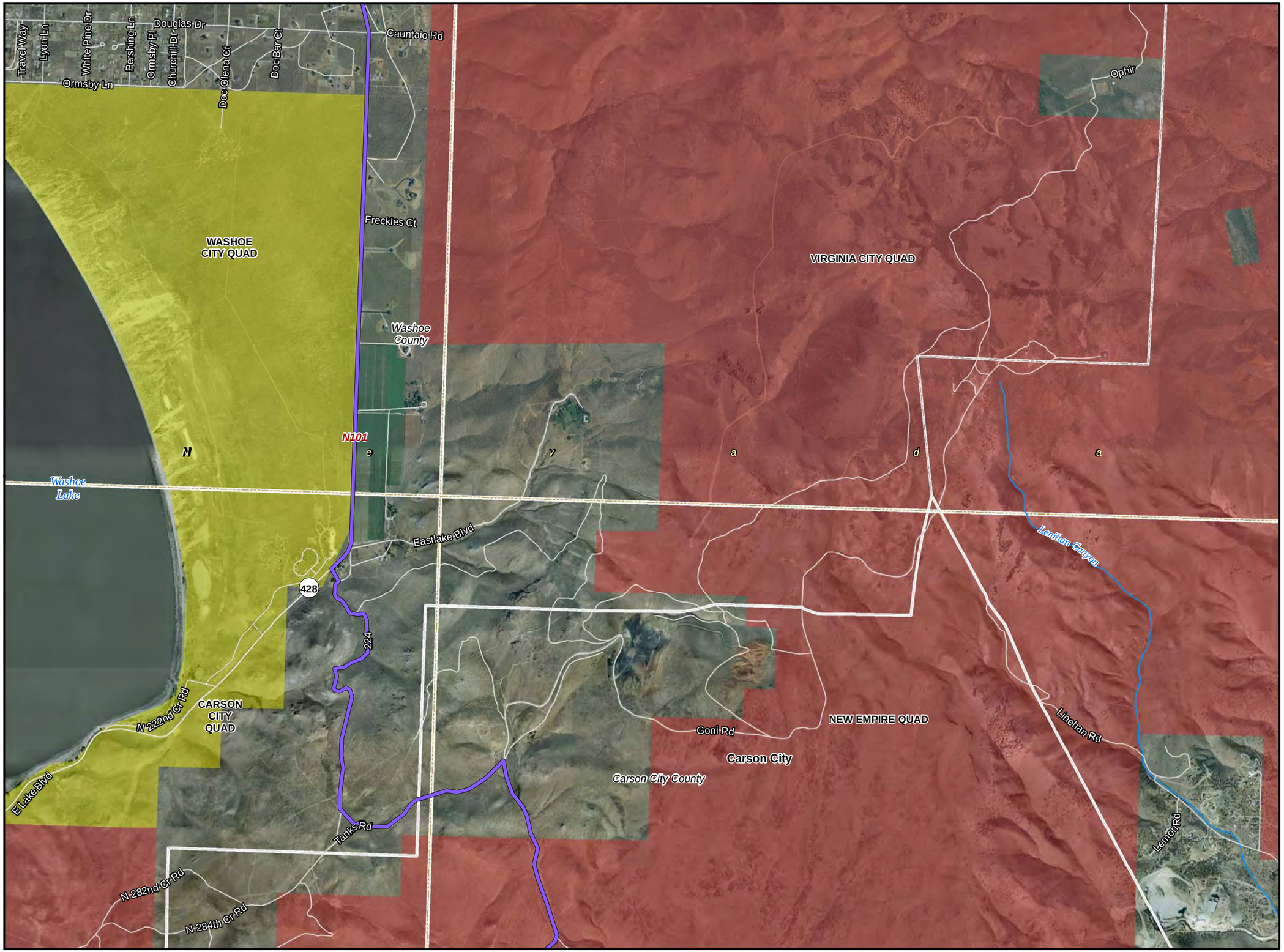
CBC Digital 395

R10-Topaz Lake to Reno-101



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

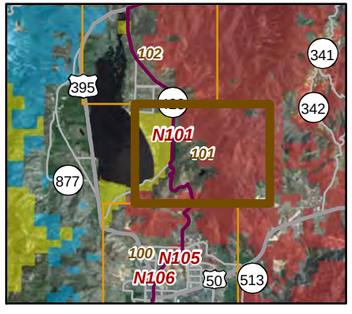
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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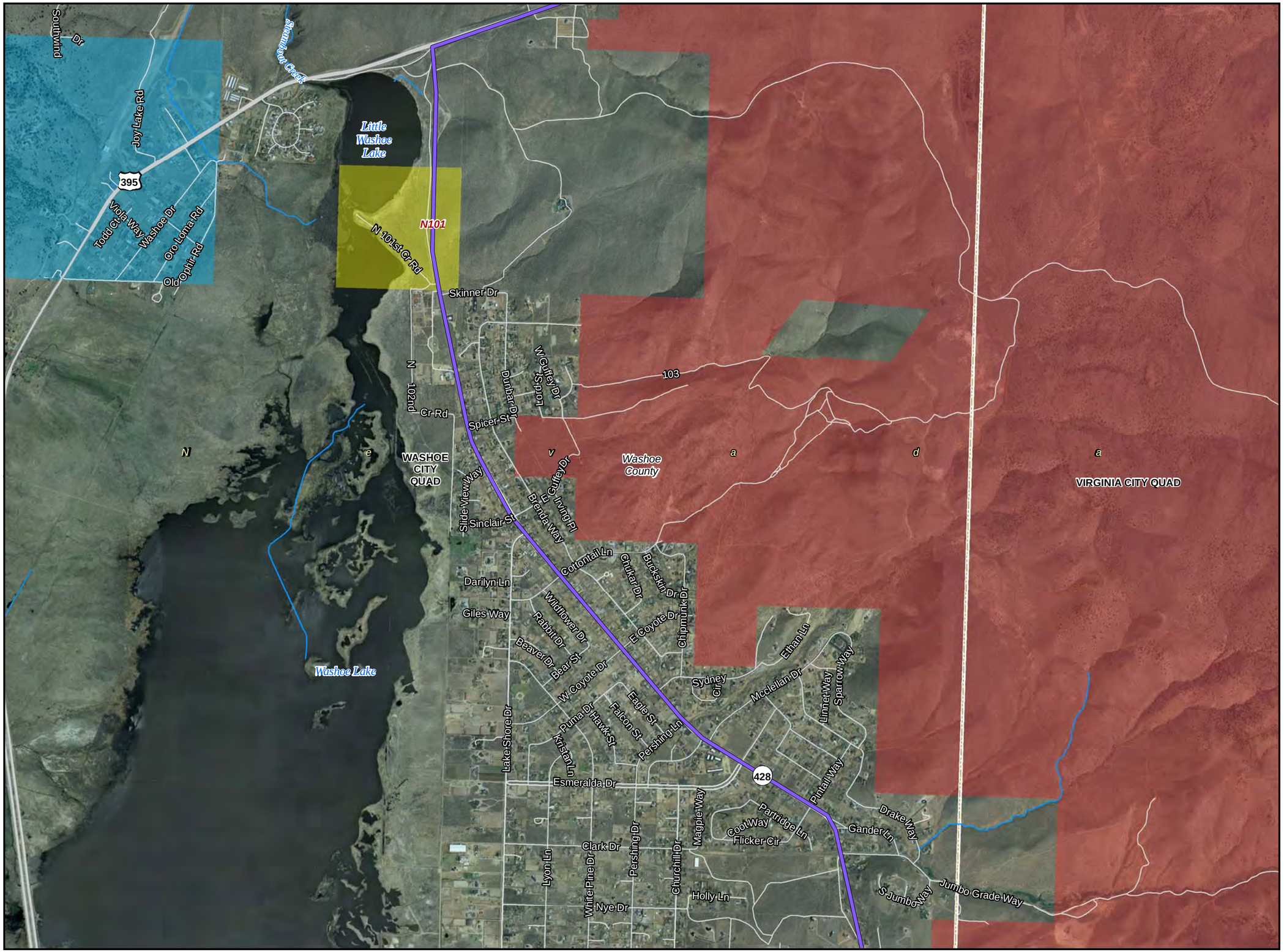


CBC Digital 395

R10-Topaz Lake to Reno-102

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

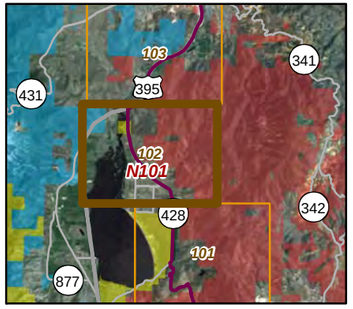
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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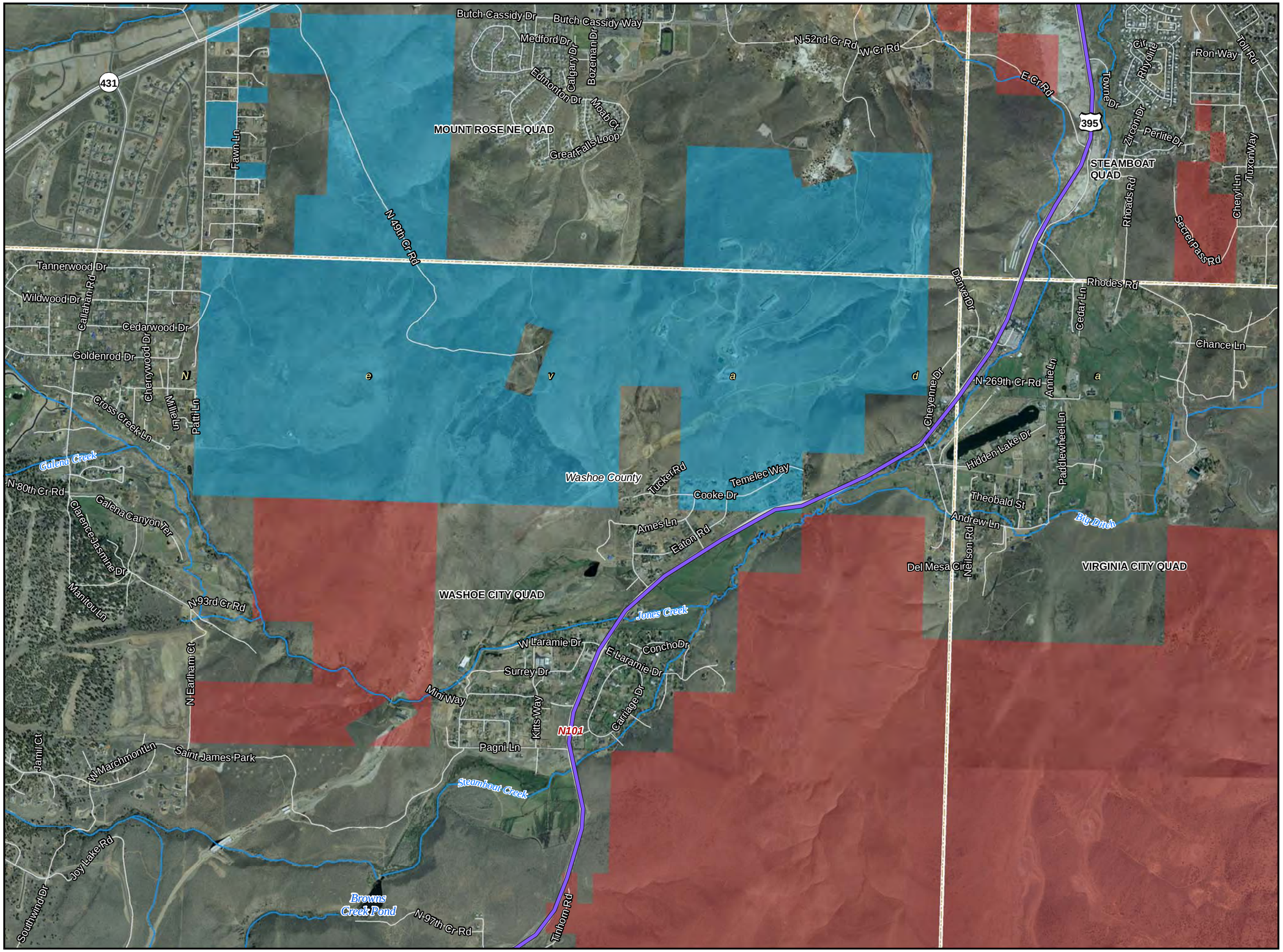
Chambers Group Inc.



CBC Digital 395

R10-Topaz Lake to Reno-103

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

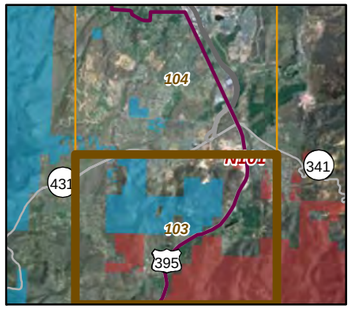
- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000



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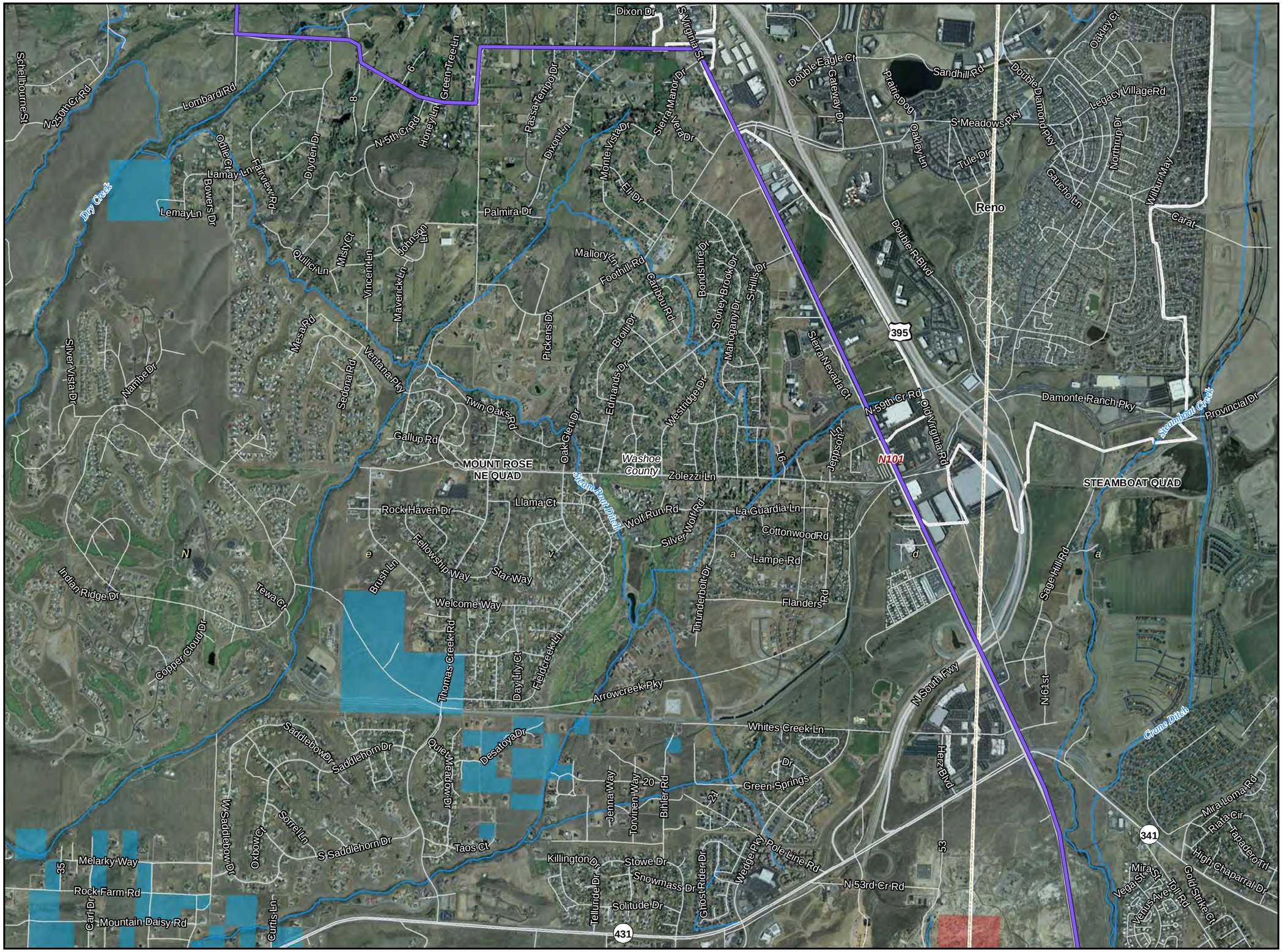
Chambers Group Inc.

CBC Digital 395

R10-Topaz Lake to Reno-104



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

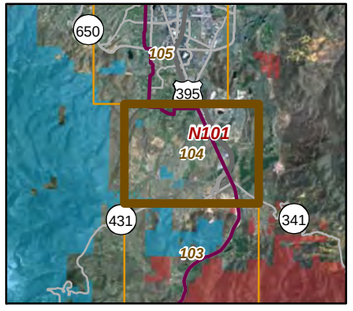
Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000

Feet

1:24,000



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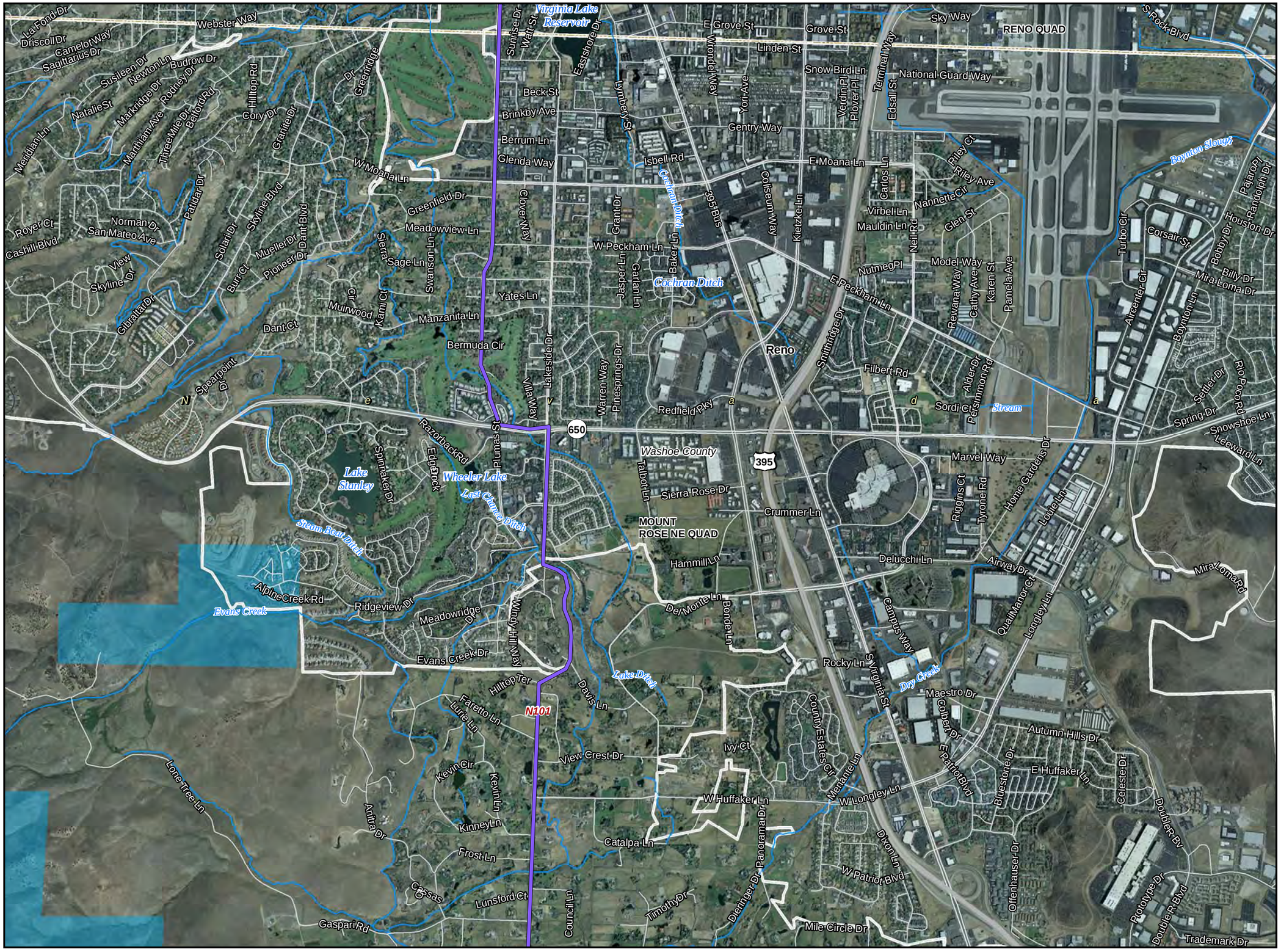
Chambers Group Inc.



CBC Digital 395

R10-Topaz Lake to Reno-105

Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000

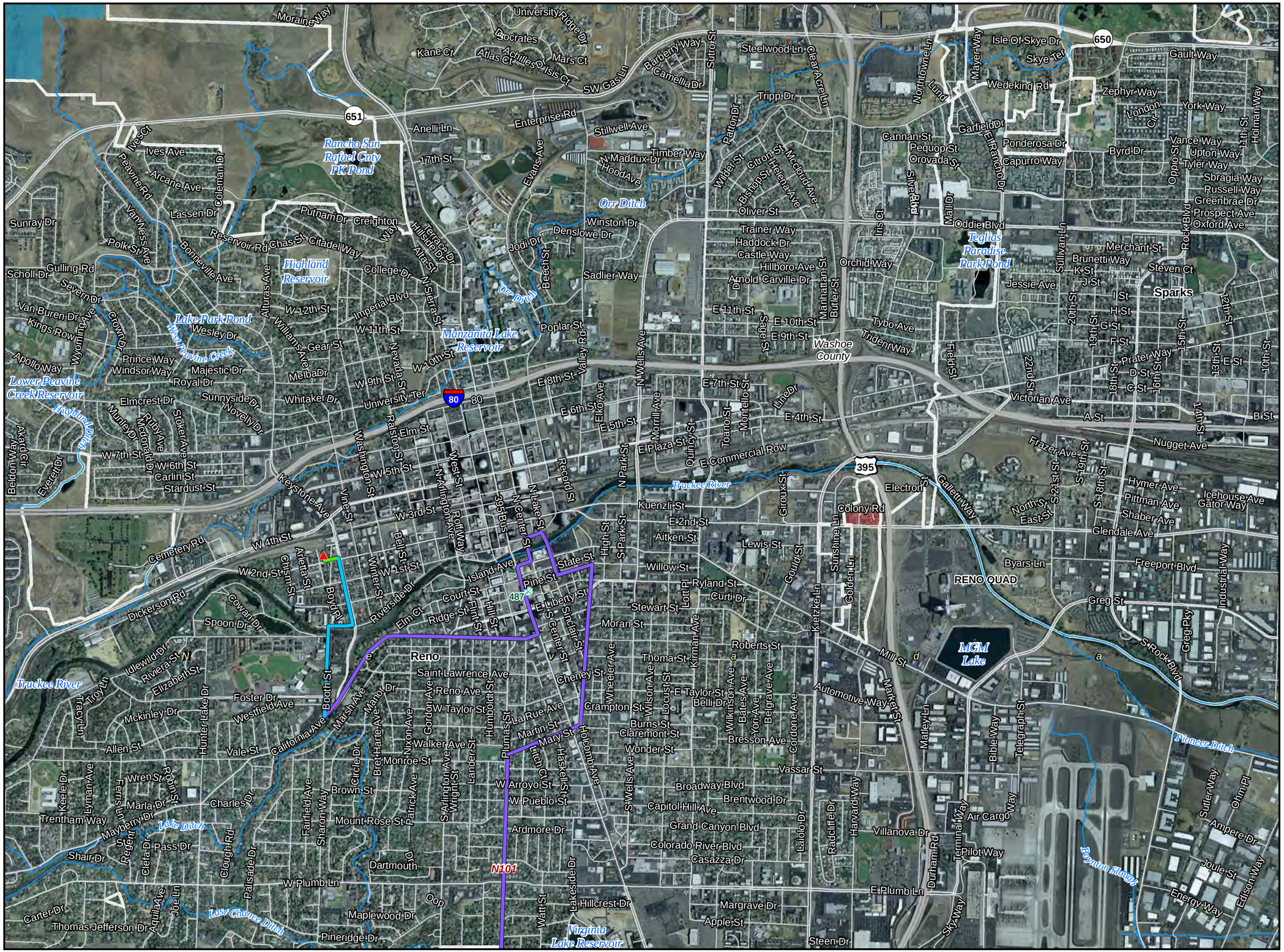
20260

01-17-11

Chambers Group Inc.

CBC Digital 395

R10-Topaz Lake to Reno-106



Legend

- Segment Start and End Marker
- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot
- Existing - Anchor / POI

FOC Backbone from Barstow to Reno

- Left Side
- Right Side
- Center
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Distribution Line - Aerial

Land Agency

- DOD Land
- National Park Service
- BLM Land
- USFS Land
- Bureau of Indian Affairs
- State Land
- Local Government
- USGS 7.5' Quad
- City Limit

0 1,000 2,000 3,000
Feet

1:24,000

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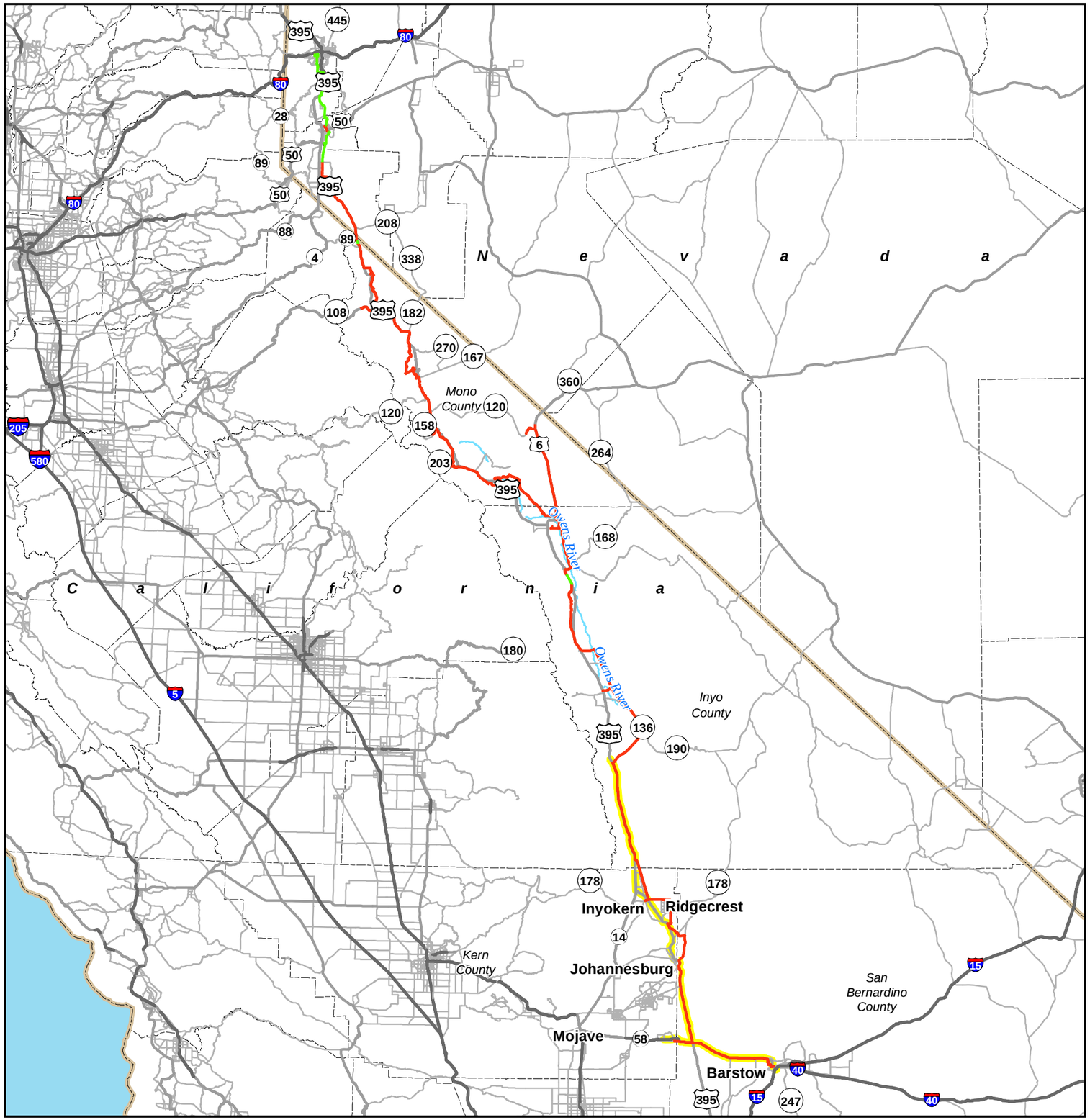
APPENDIX B - PROJECT ROUTE IN DESERT TORTOISE HABITAT

CHAMBERS GROUP



Legend

Community

- 01 Mojave Creosote Bush Scrub
- 03 Developed
- 04 Desert Saltbush Scrub
- 05 Desert Sink Scrub
- 06 Transmontane Alkali Marsh
- 07 Rabbitbrush Scrub
- 08 Tamarisk Scrub
- 10 Open Water
- 11 Rabbitbrush Scrub
- 12 Big Sagebrush Scrub
- 13 Joshua Tree Woodland
- 14 Ornamental Landscaping
- 15 Mojave Riparian Forest
- 17 Great Basin Cottonwood - Willow Riparian Forest
- 18 Great Basin Mixed Scrub
- 19 Wet Subalpine Meadow
- 20 Subalpine Sagebrush Scrub
- 21 Aspen Forest
- 22 Tobacco Brush Chaparral
- 23 Great Basin Grassland
- 24 Lodgepole Pine Forest
- 25 Sierran Mixed Conifer Forest
- 26 Great Basin Pinyon-Juniper Woodland
- 27 Great Basin Pinyon Woodland
- 28 Great Basin Juniper Woodland and Scrub
- 31 Agriculture
- 32 Montane Riparian Forest
- 32 Montane Riparian Forrest
- 33 Eastside Ponderosa Pine Forest
- 34 Great Basin Pinyon-Juniper Woodland
- 35 Montane Black Cottonwood Riparian Forest
- 36 Ruderal/Disturbed
- 37 Turf grass
- 38 Montane Freshwater Marsh
- 39 Transitional Great Basin Mixed Scrub
- 40 Blackbush Scrub
- 41 Indigo Bush Scrub
- 42 Desert Greasewood Scrub
- 43 Mojave Mixed Woody Scrub
- 44 Burro Bush Scrub
- 45 Stabilized and Partially Stabilized Desert Sand Field
- 46 Rose Thicket
- 47 Great Basin Saltbush Scrub
- D01 Disturbed Mojave Cresote Bush Scrub
- D04 Disturbed Desert Saltbush Scrub
- D07 Disturbed Rabbitbrush Scrub
- D12 Big Sagebrush Scrub
- D17 Disturbed Great Basin Cottonwood - Willow Ripa
- D18 Disturbed Great Basin Mixed Scrub
- D19 Disturbed Wet Subalpine Meadow
- D20 Disturbed Subalpine Sagebrush Scrub
- D23 Disturbed Great Basin Grassland
- D26 Disturbed Great Basin Pinyon-Juniper Woodland
- D36 Disturbed Ruderal/Disturbed
- D40 Disturbed Blackbush Scrub
- D41 Disturbed Indigo Bush Scrub
- D42 Disturbed Desert Greasewood Scrub
- G19 Grazed Wet Subalpine Meadow
- G23 Grazed Great Basin Grassland

Proposed Route

- Backbone
- Leased Conduit - Existing/Proposed
- Desert Tortoise Fence Survey Area

Major Roads

- Primary Limited Access
- Primary US & State Highways
- Secondary State & County

- Waterway
- State Boundary
- County Boundary

CBC Digital 395

1:2,200,000

0 10 20 40 60
Miles

11-03-11

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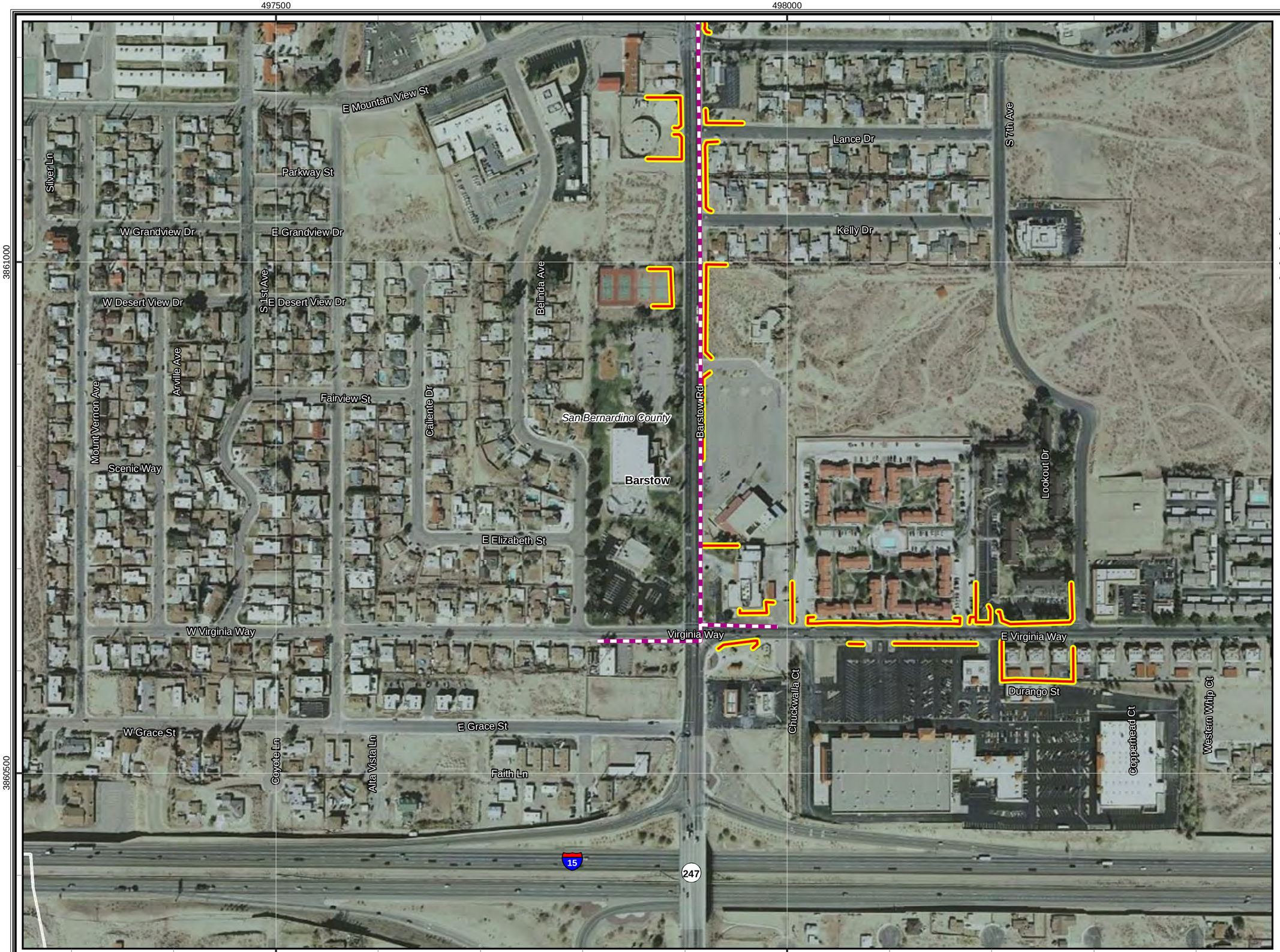


CBC Digital 395

R1-Barstow to Boron-001

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

20260

11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-002

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

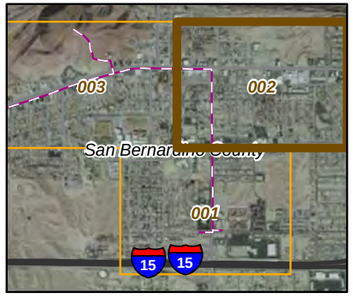
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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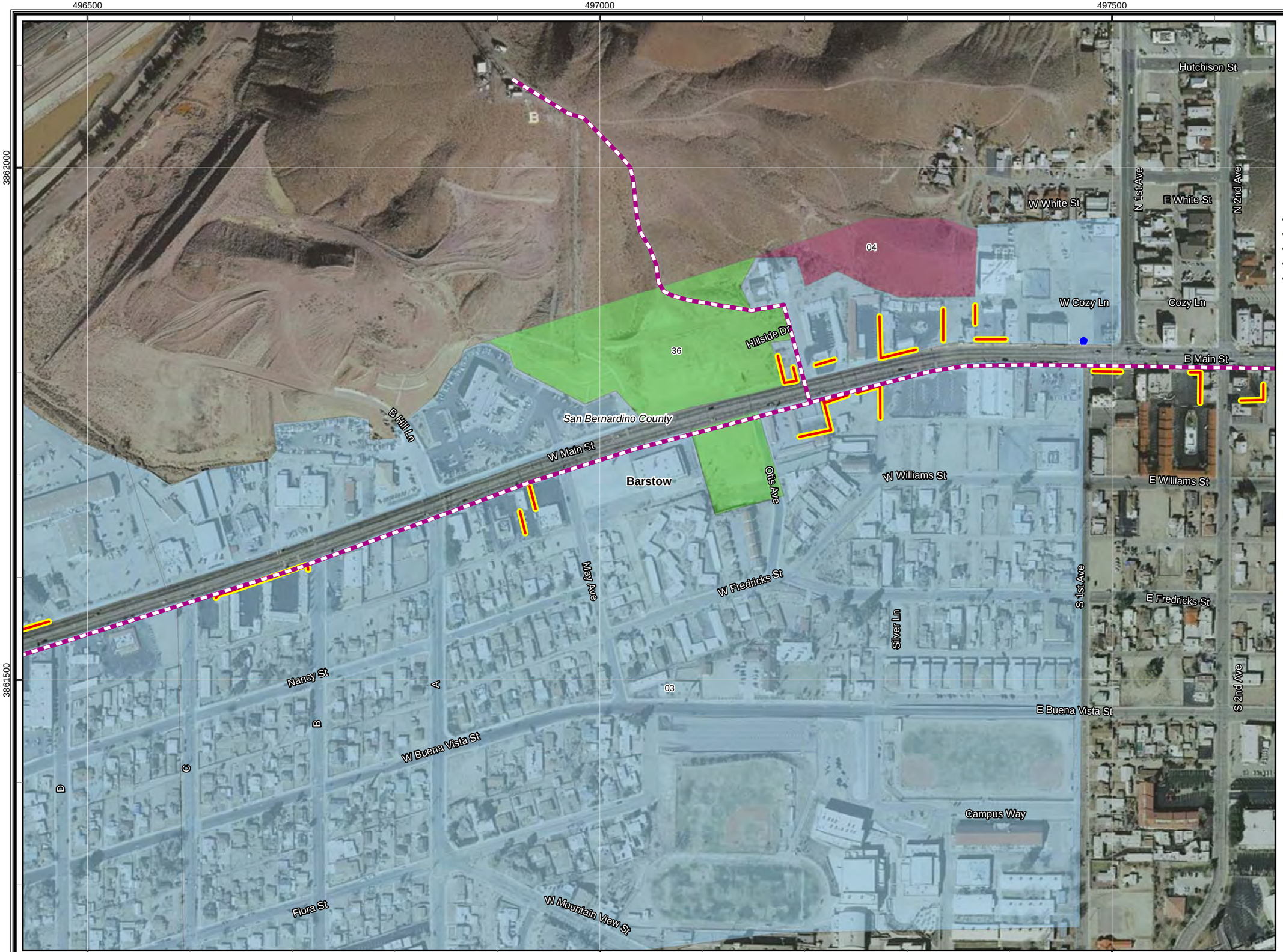
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-003

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

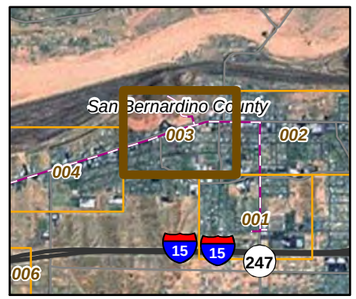
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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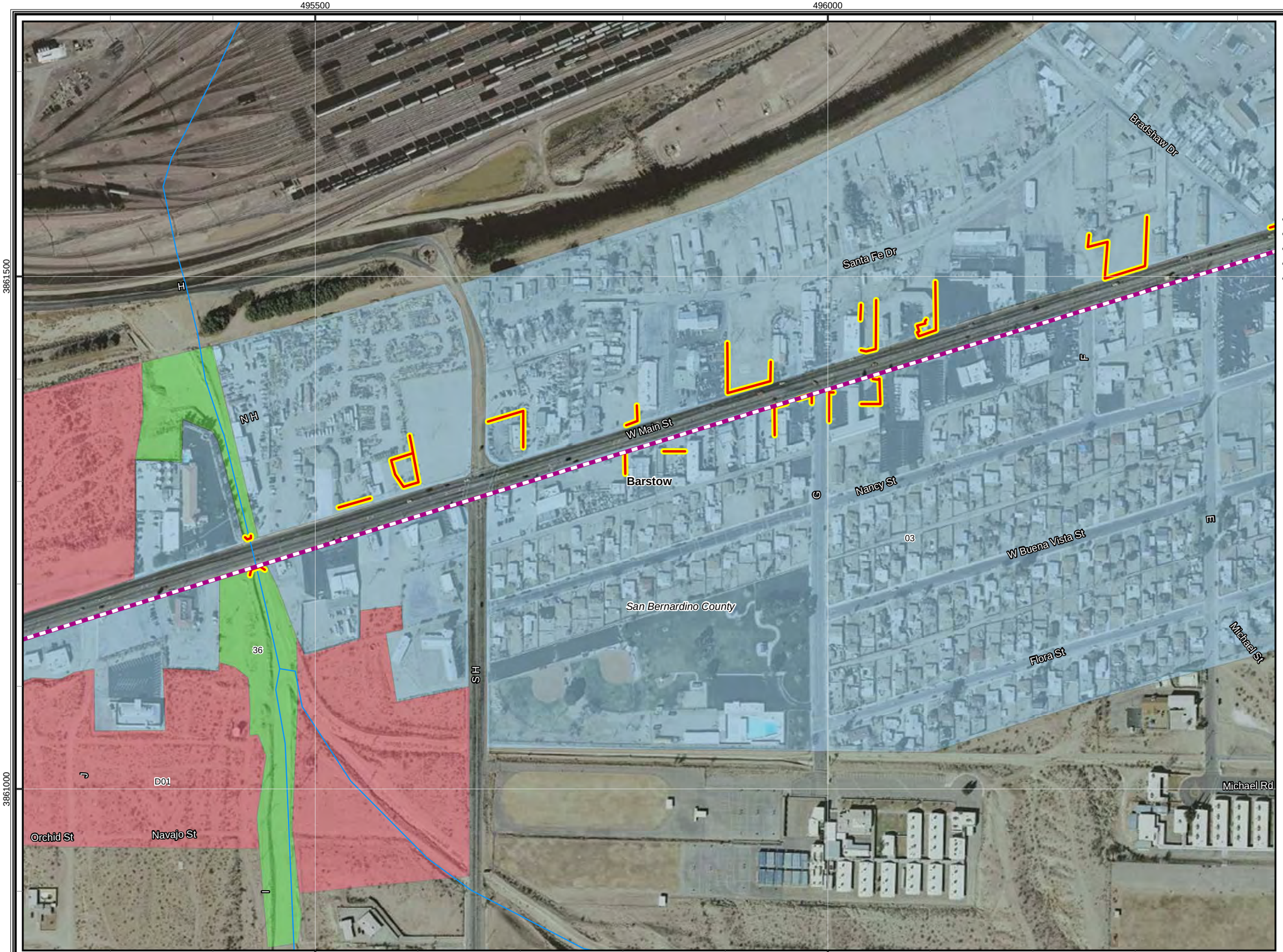
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-004

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

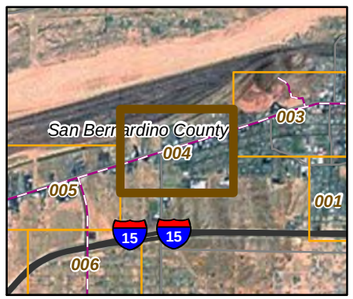
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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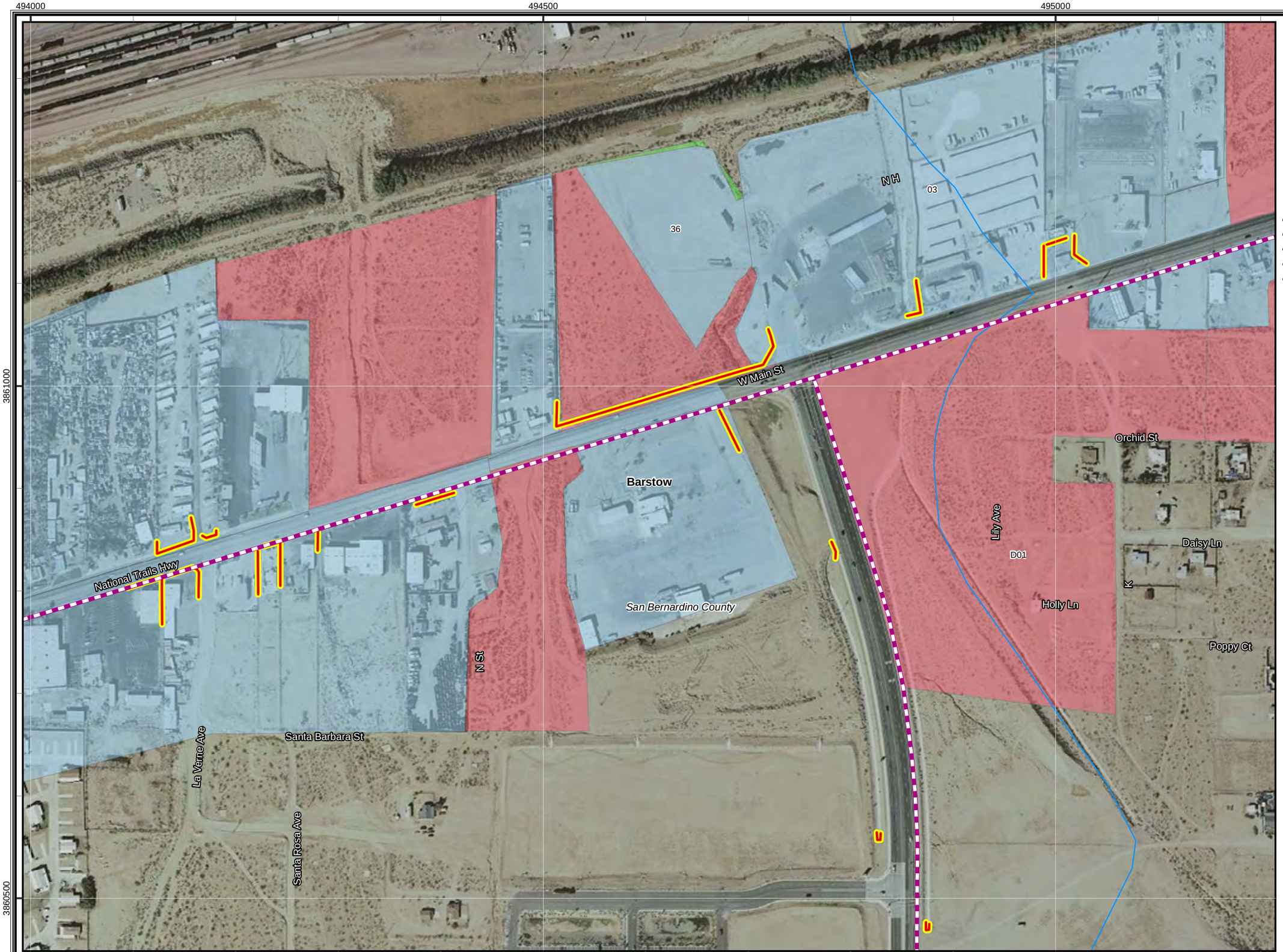


CBC Digital 395

R1-Barstow to Boron-005

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

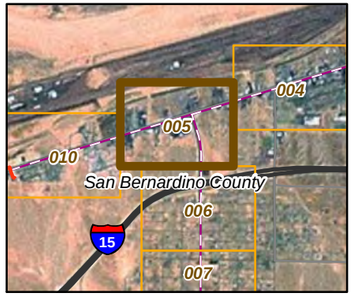
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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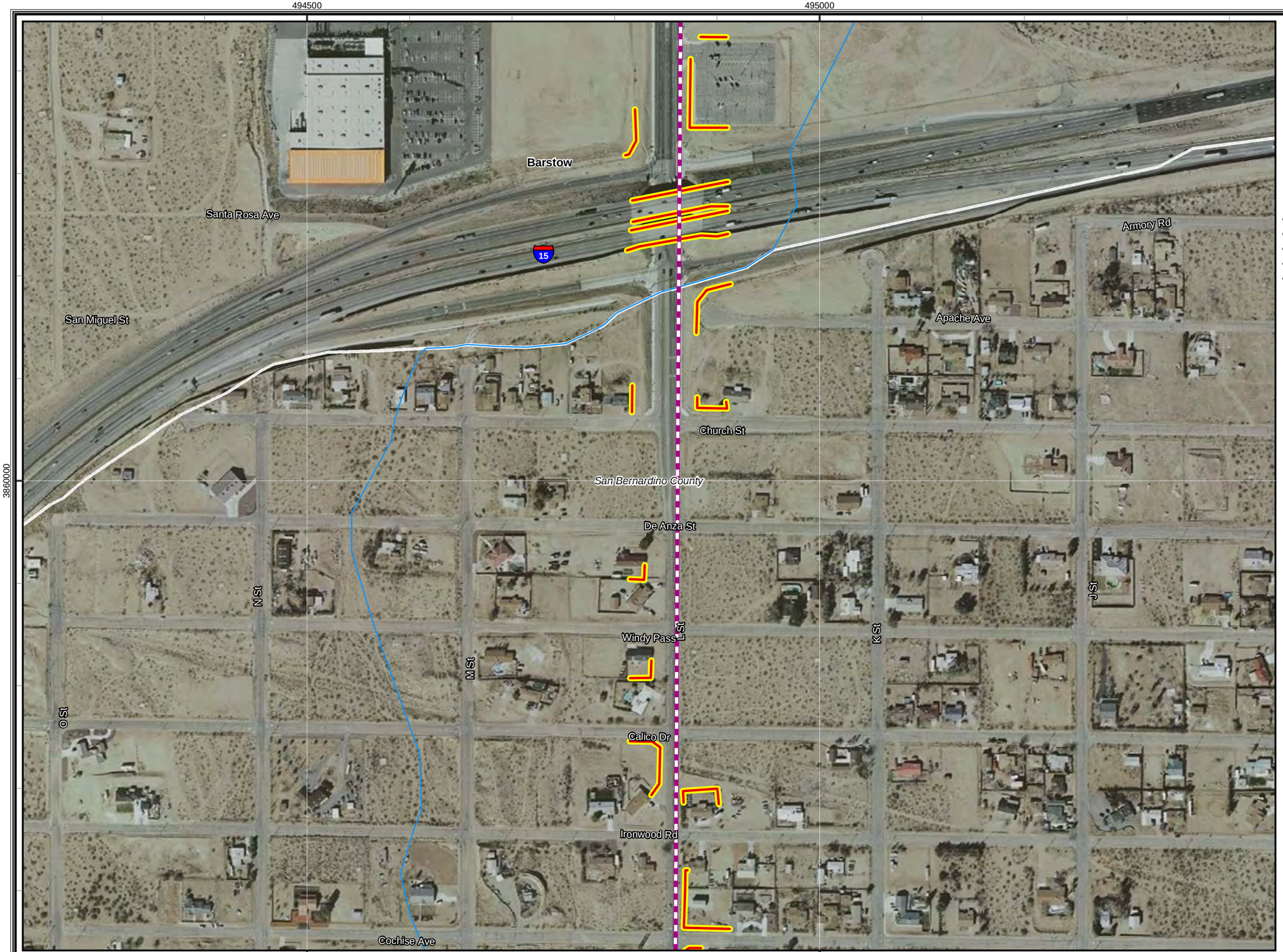


CBC Digital 395

R1-Barstow to Boron-006

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

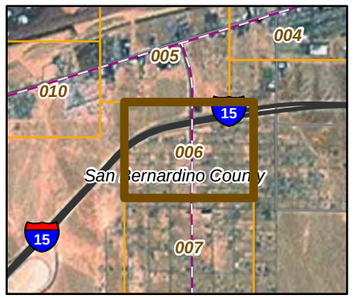
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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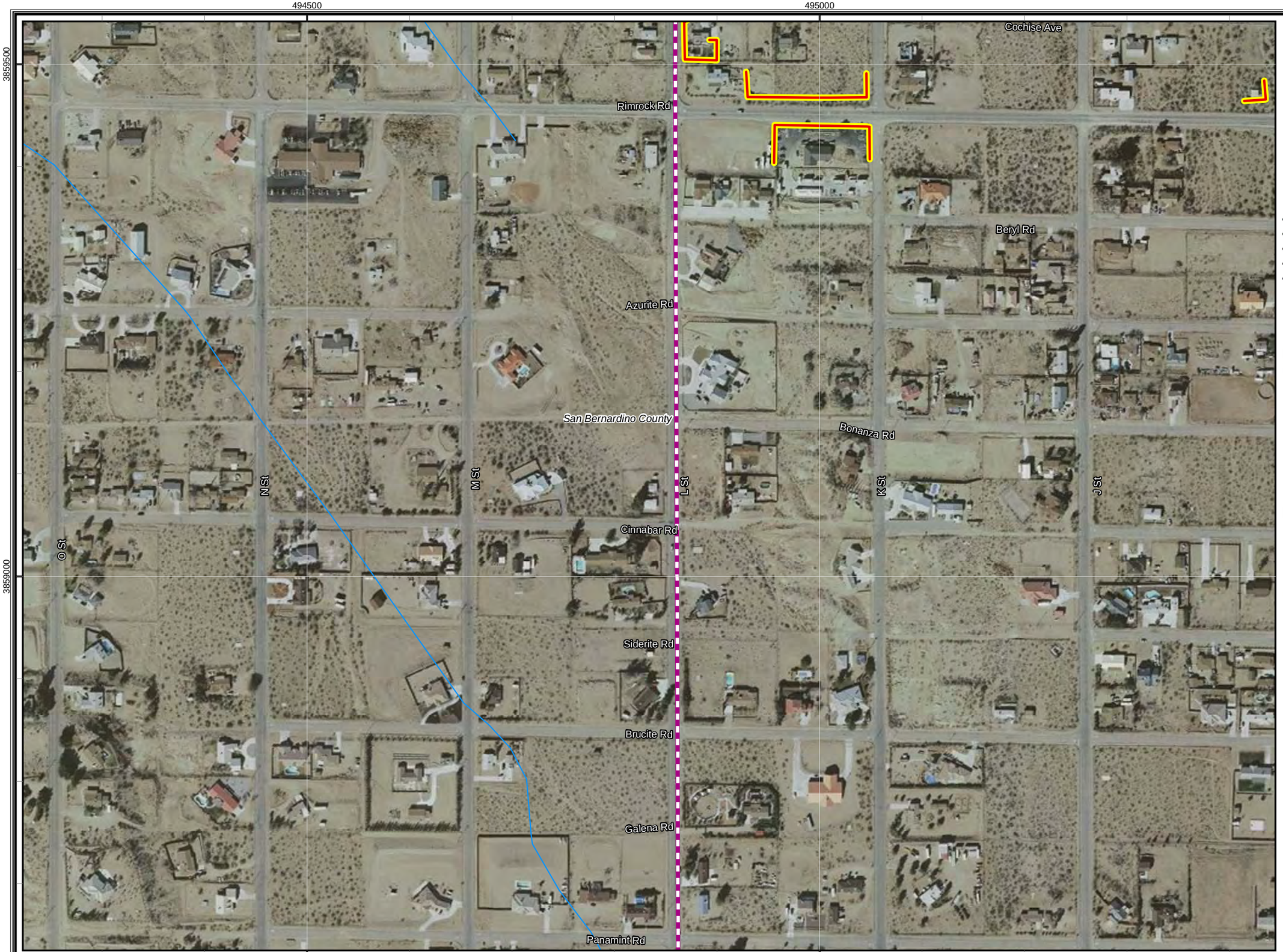
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-007

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

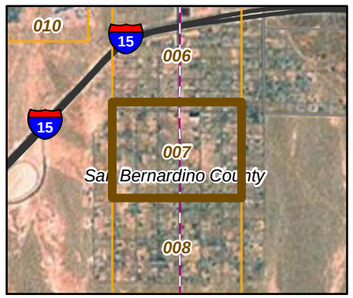
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-008

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

20260

11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-009

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

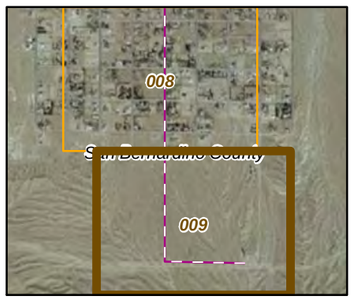
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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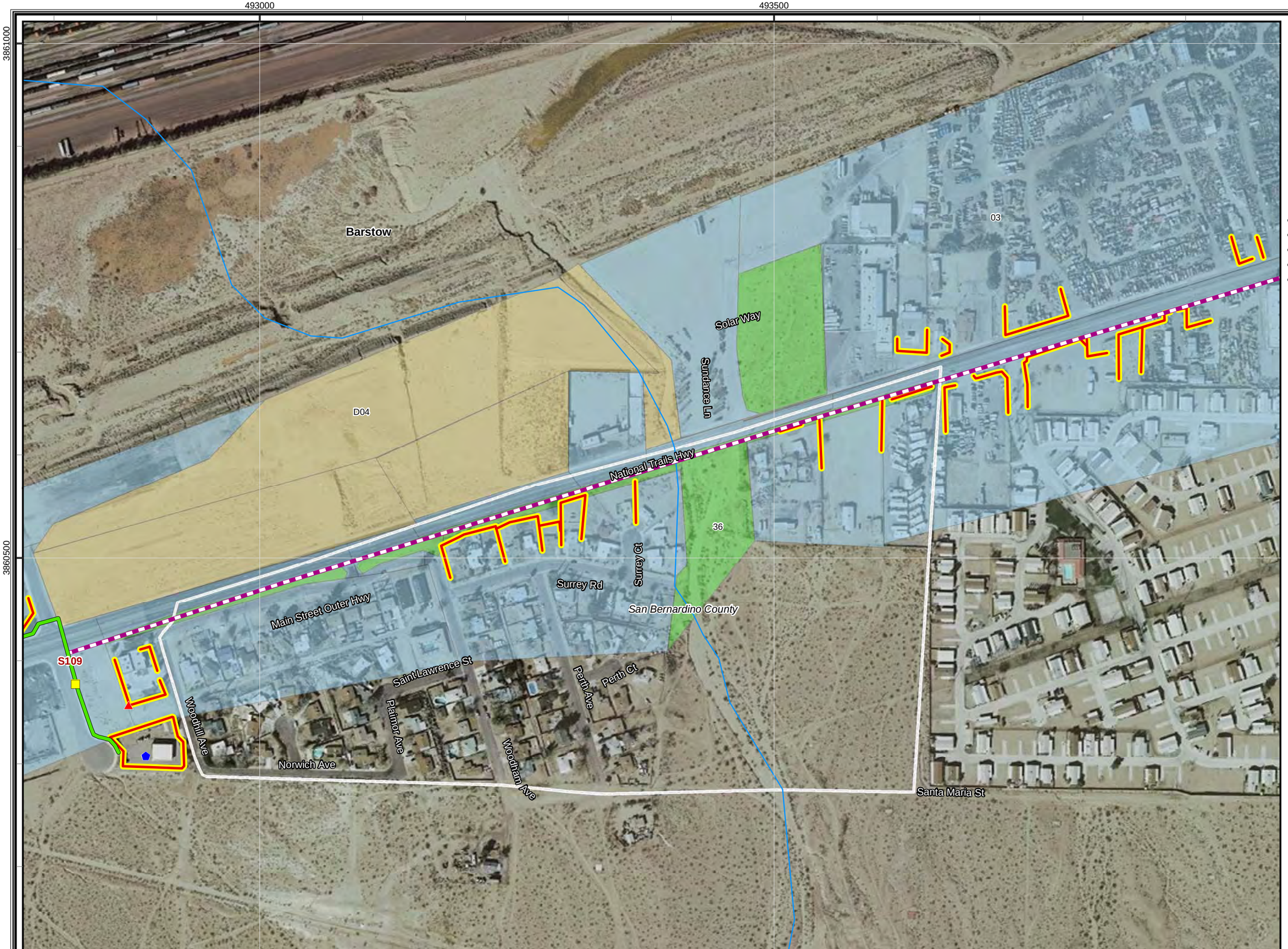
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-010

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

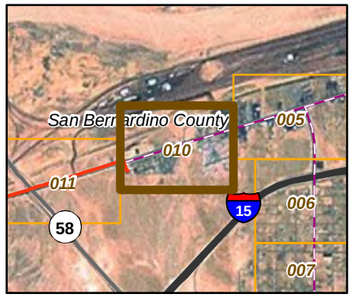
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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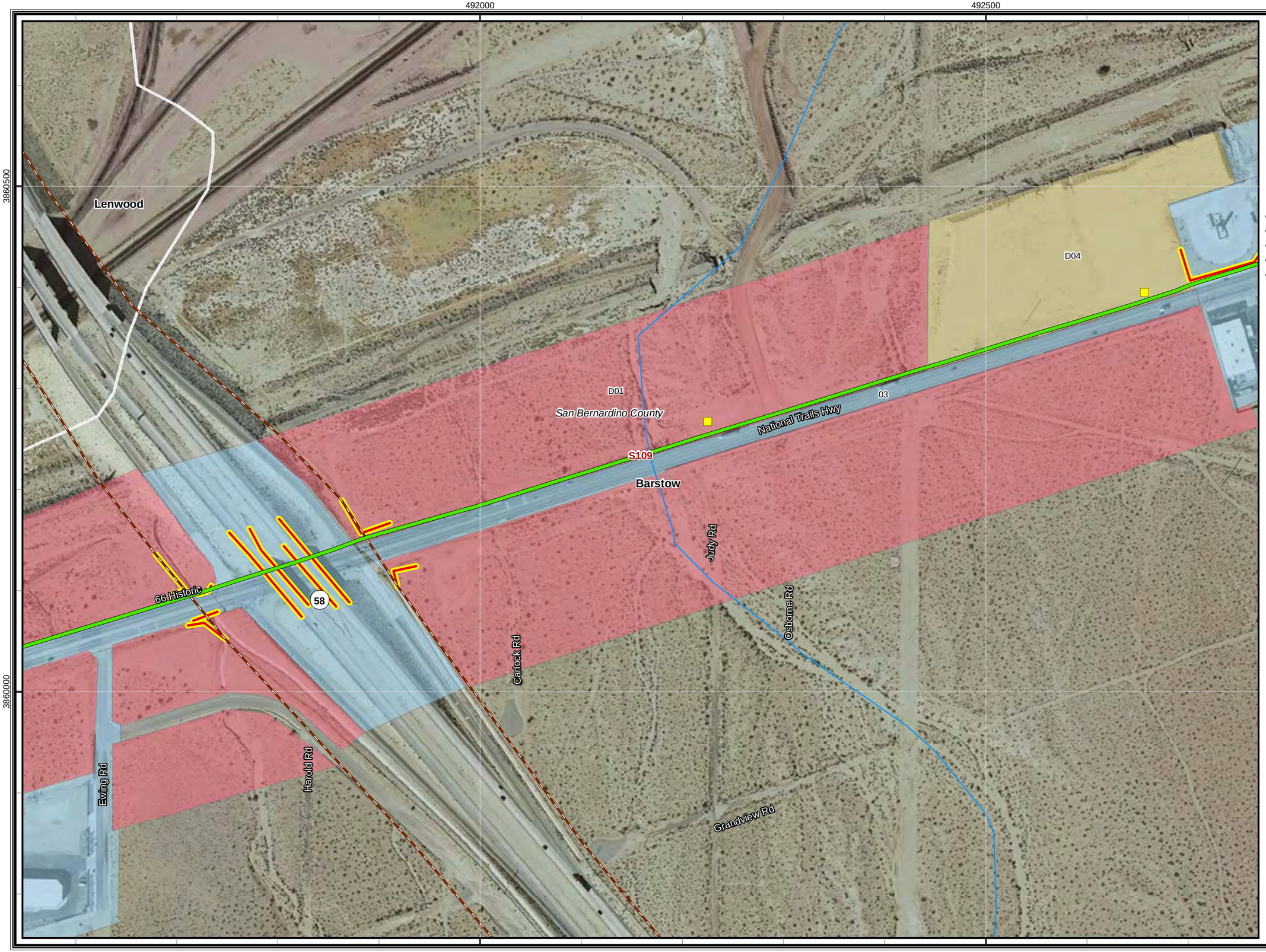


CBC Digital 395

R1-Barstow to Boron-011

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

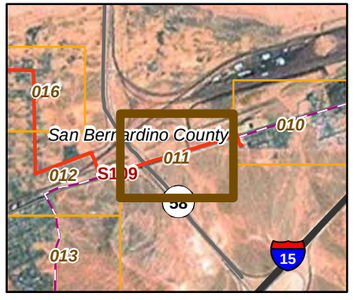
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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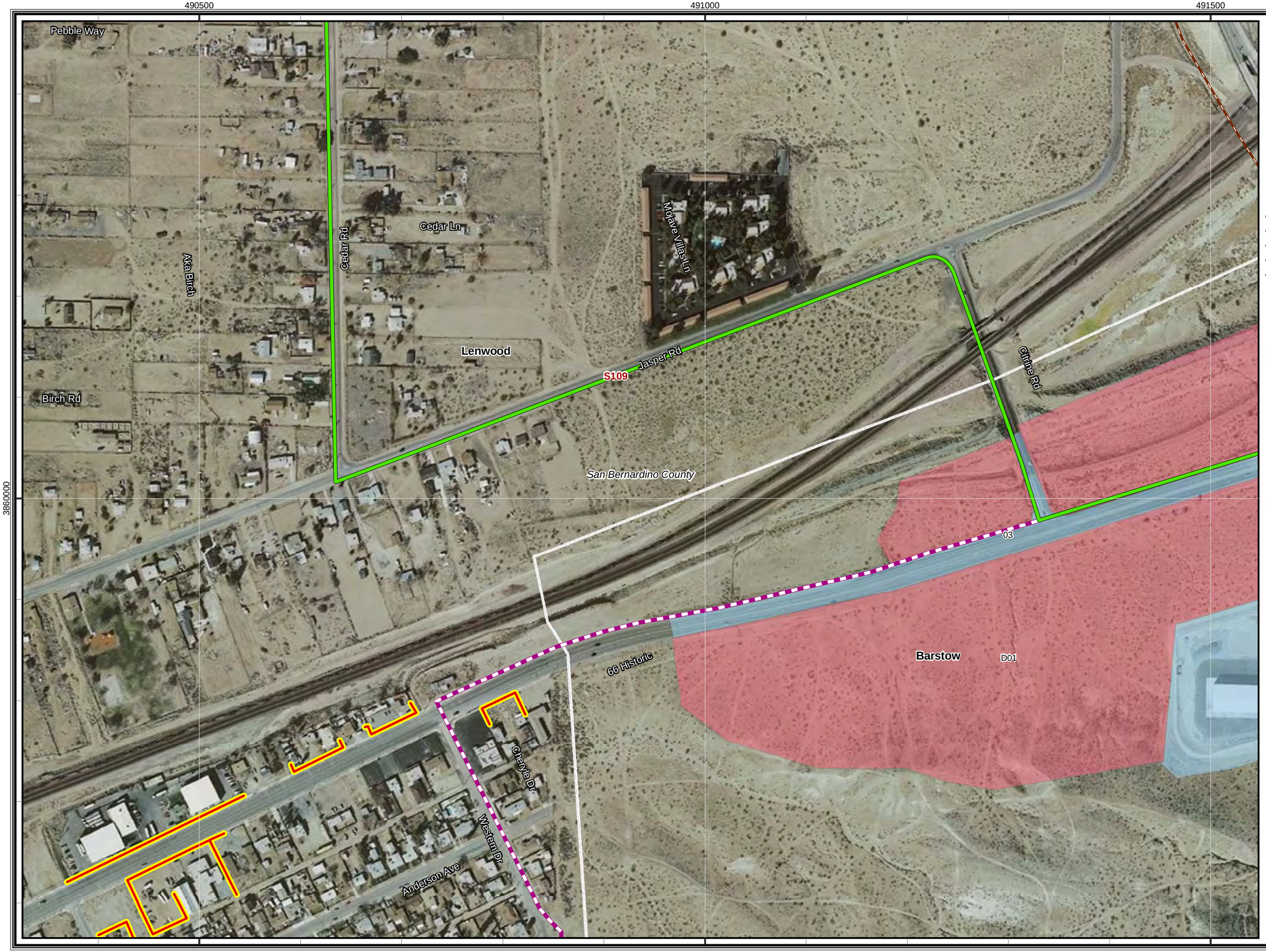


CBC Digital 395

R1-Barstow to Boron-012

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

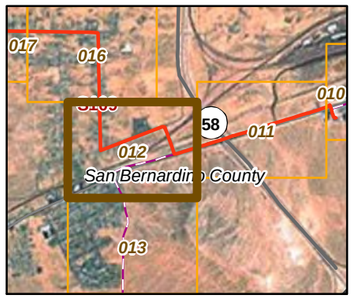
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R1-Barstow to Boron-013

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

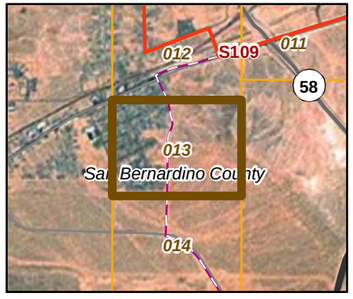
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-014

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

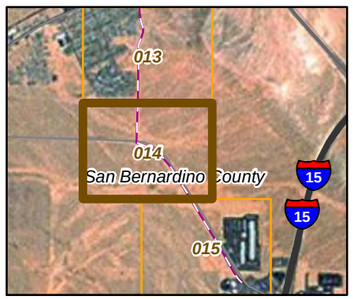
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-015

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

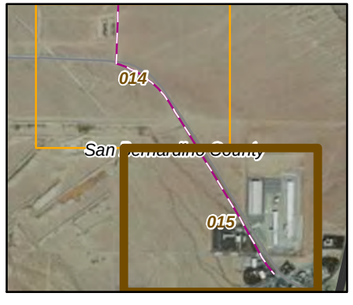
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-016

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

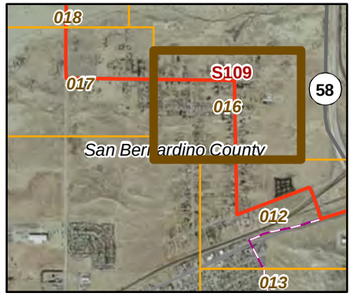
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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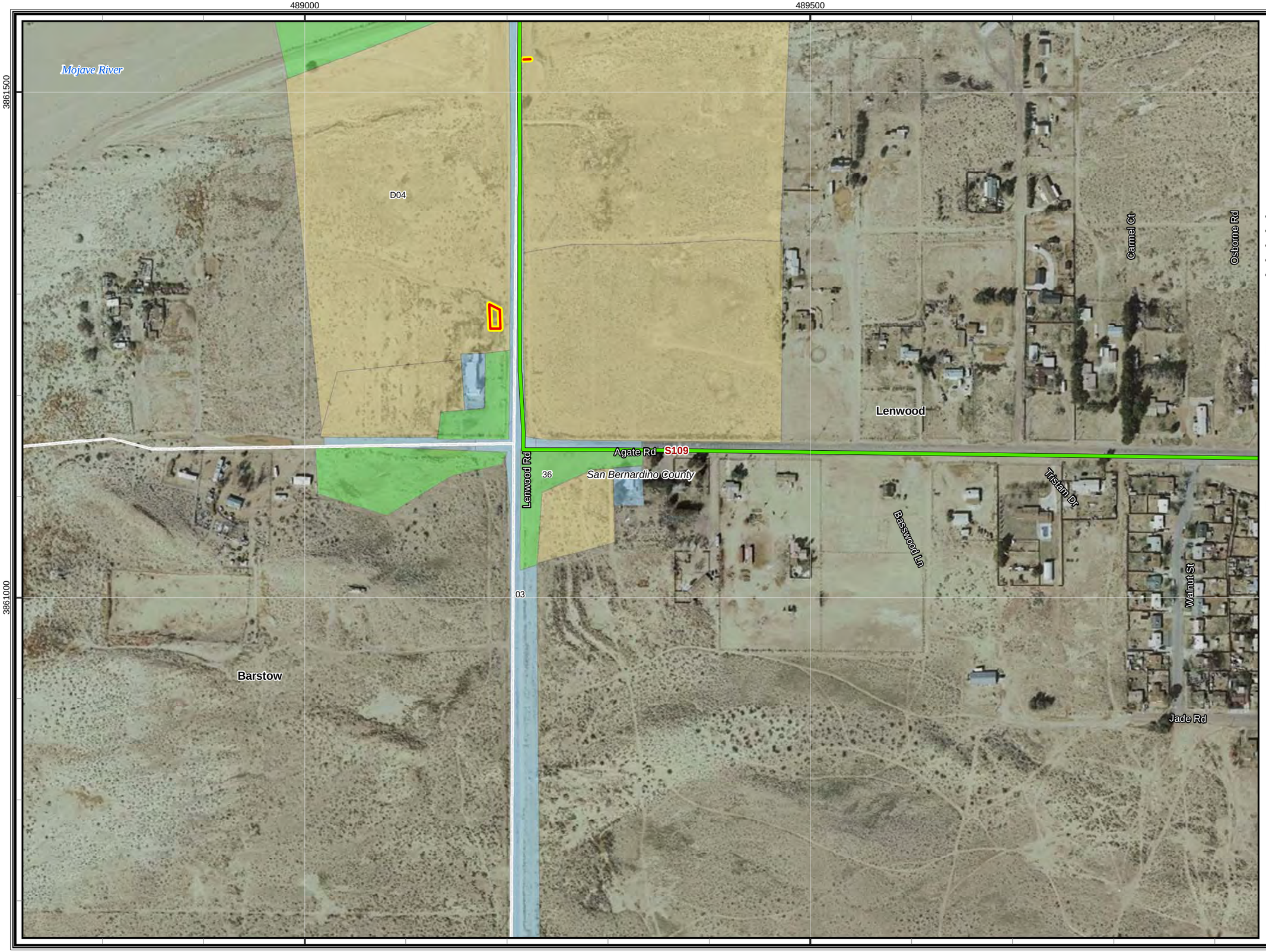


CBC Digital 395

R1-Barstow to Boron-017

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

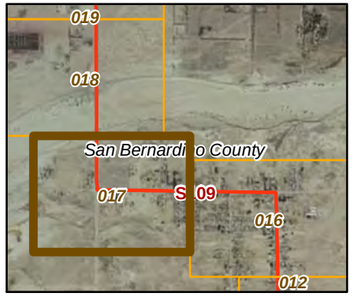
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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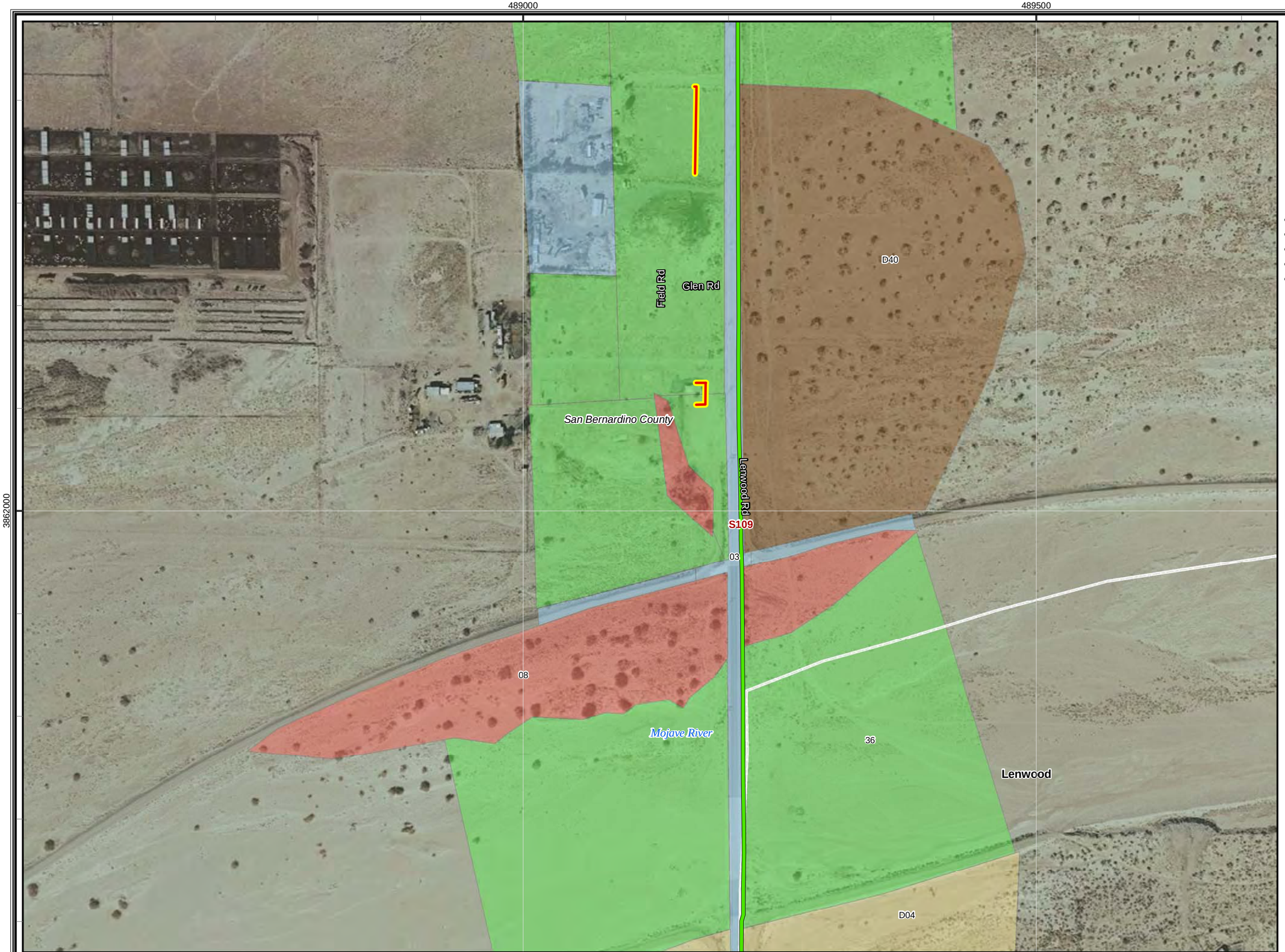


CBC Digital 395

R1-Barstow to Boron-018

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

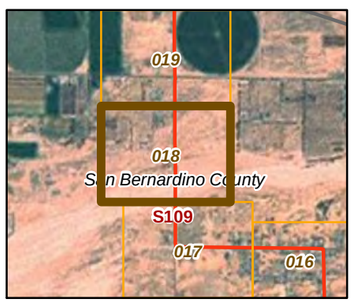
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R1-Barstow to Boron-019

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

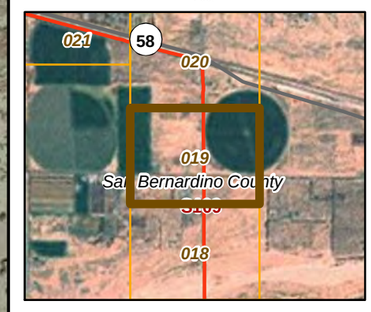
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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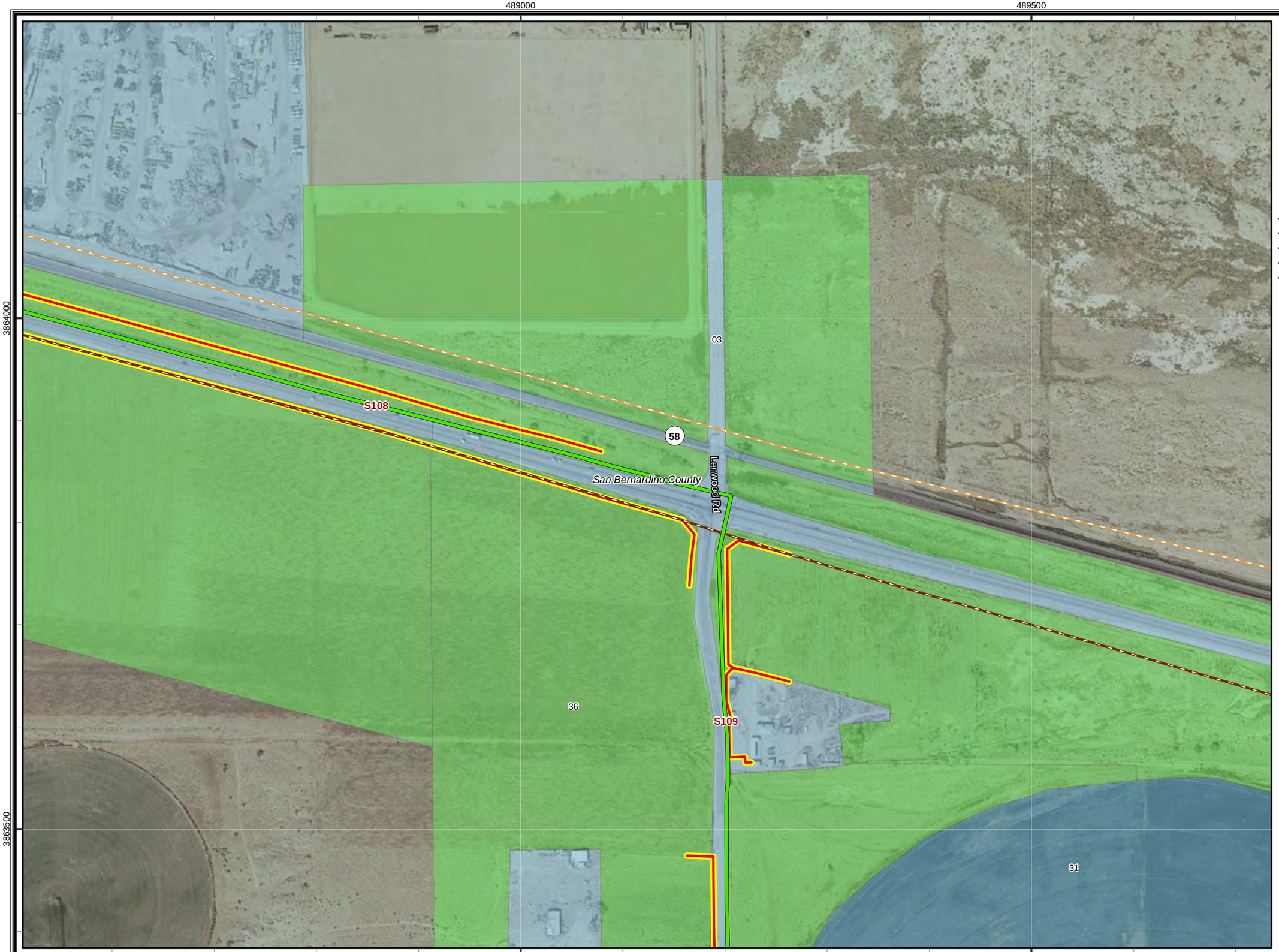


CBC Digital 395

R1-Barstow to Boron-020

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

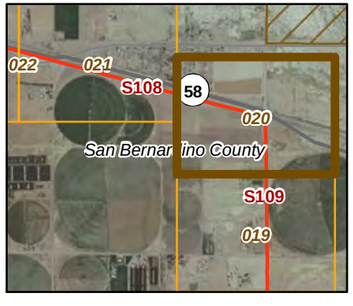
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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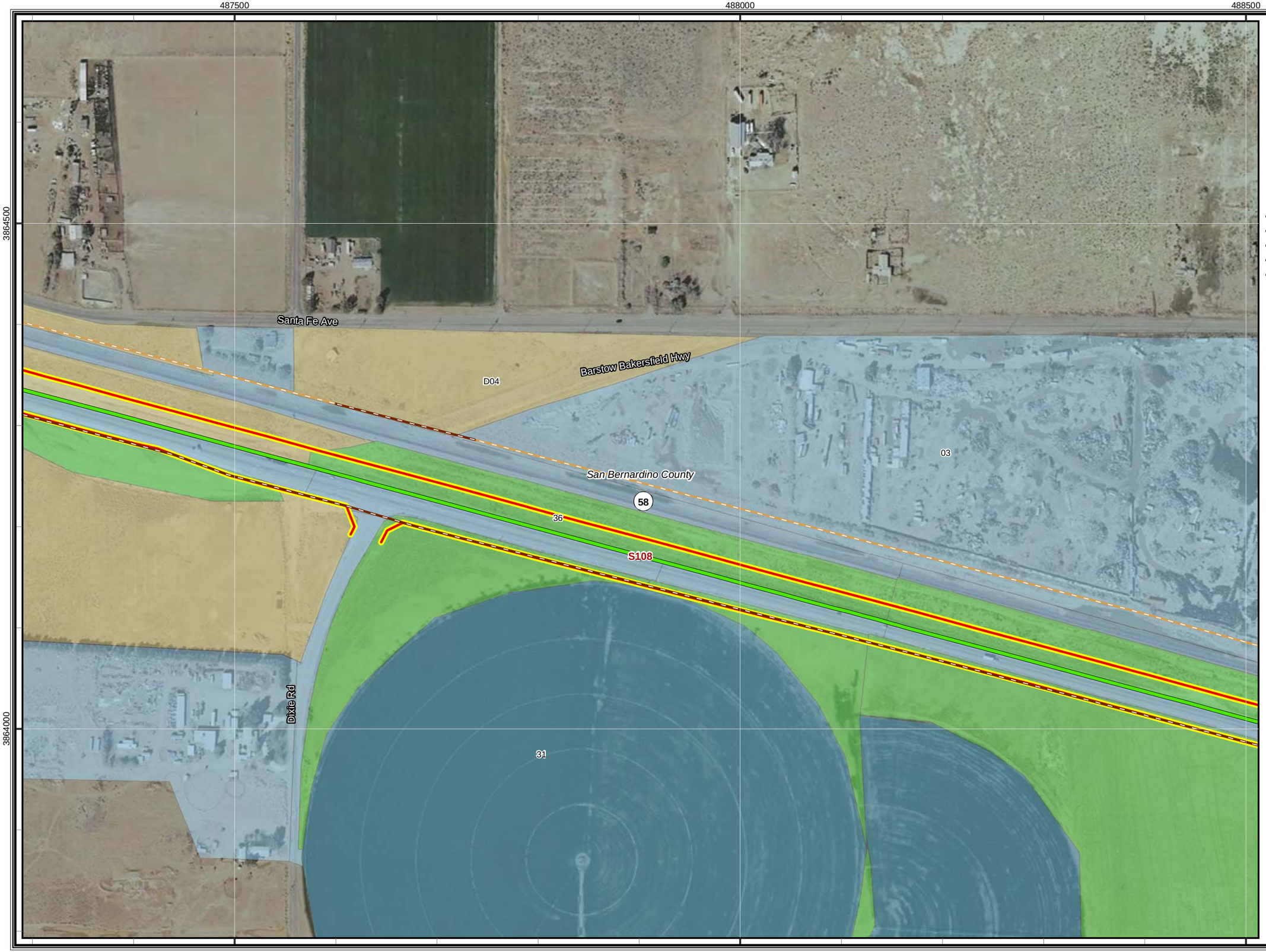


CBC Digital 395

R1-Barstow to Boron-021

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

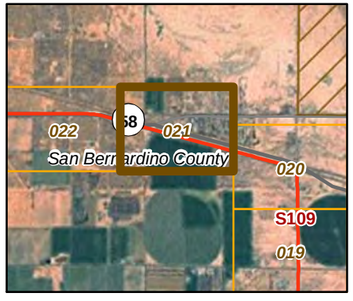
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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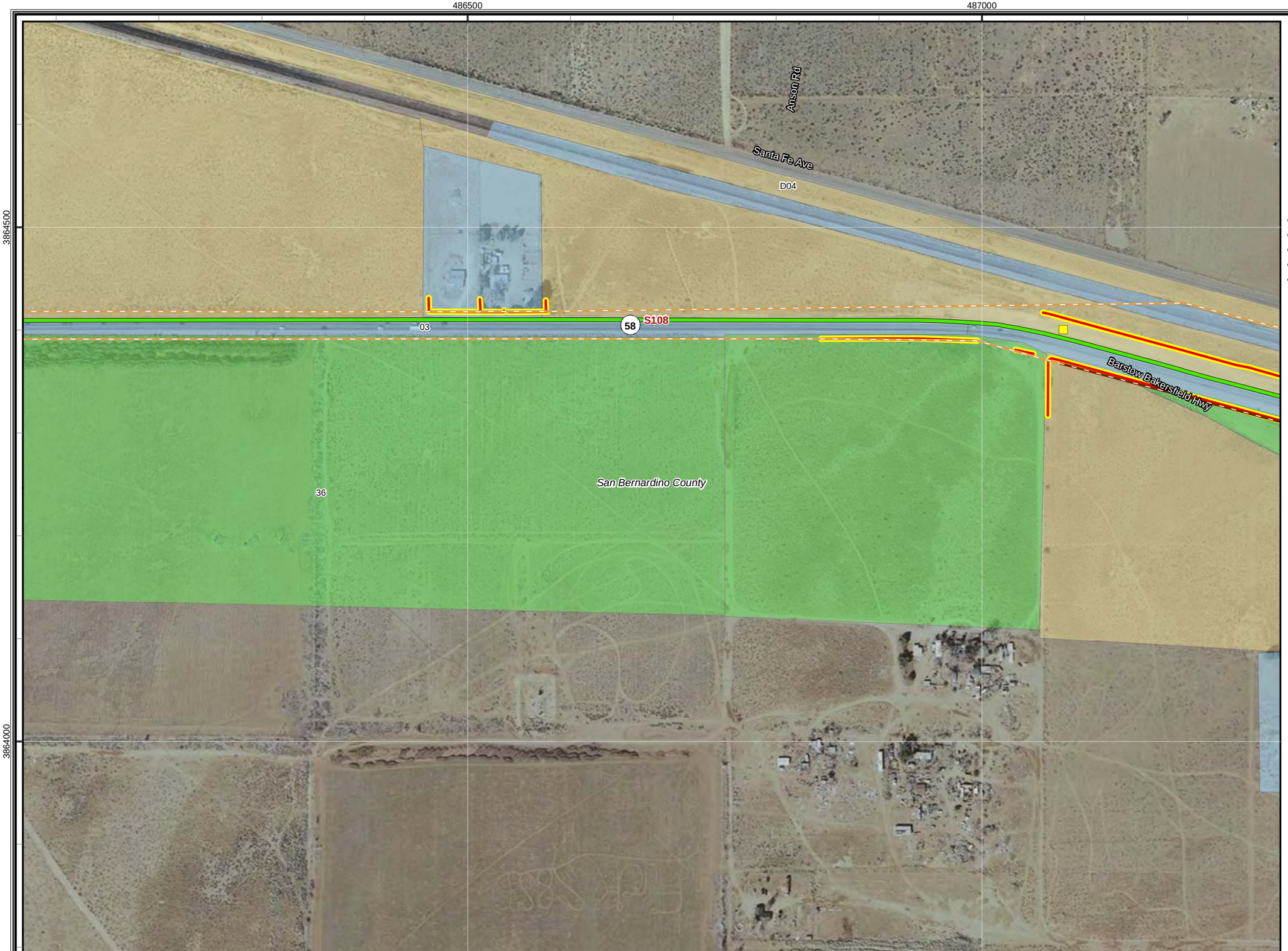
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-022

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

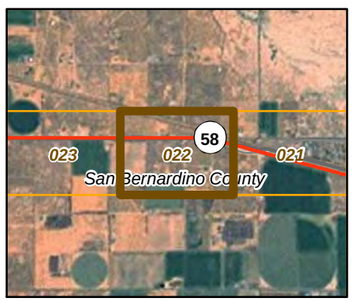
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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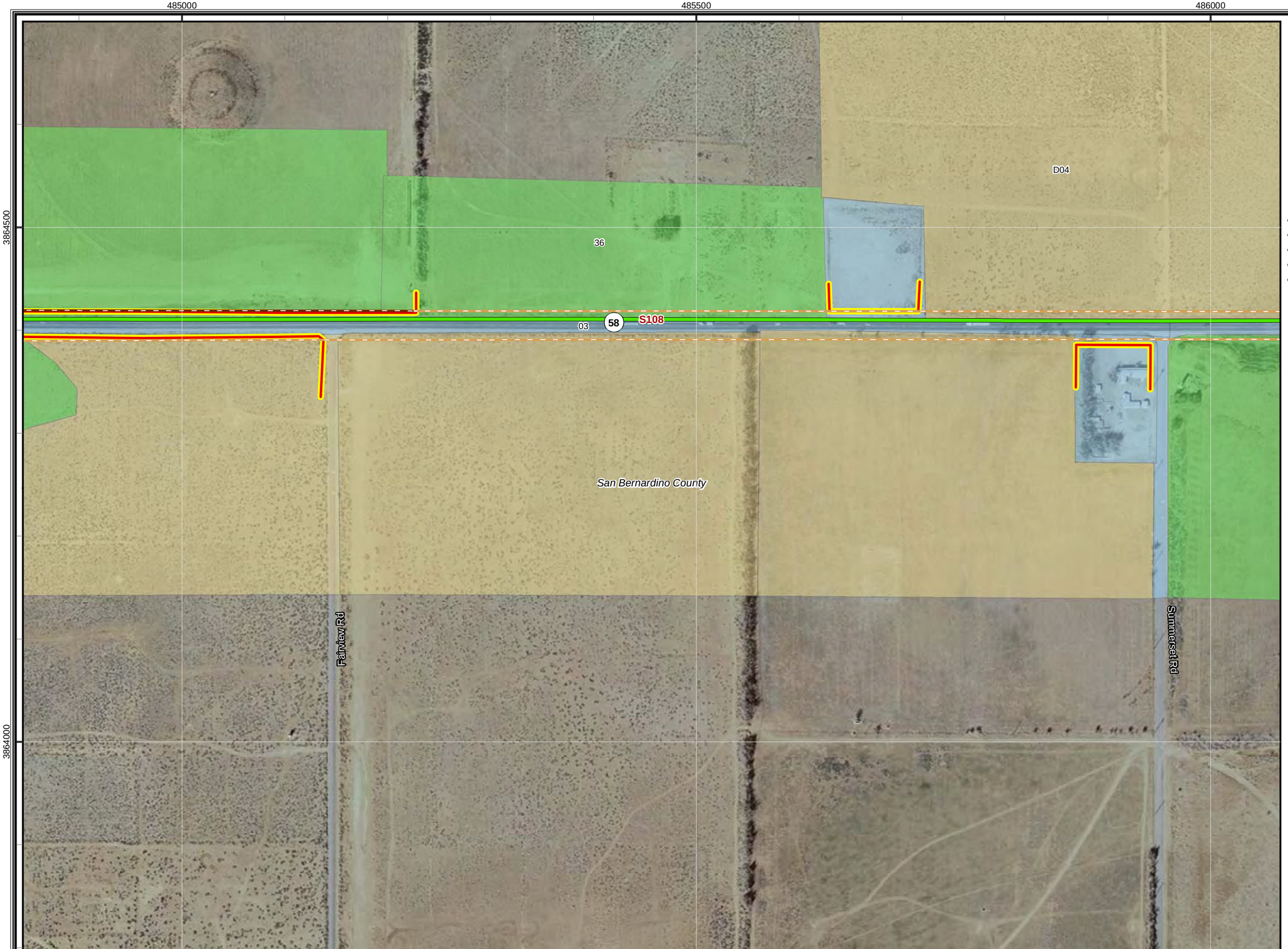
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-023

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

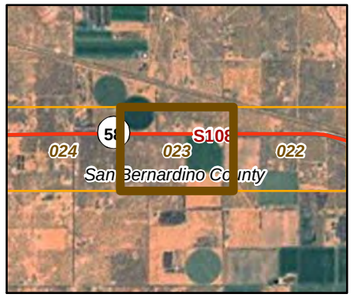
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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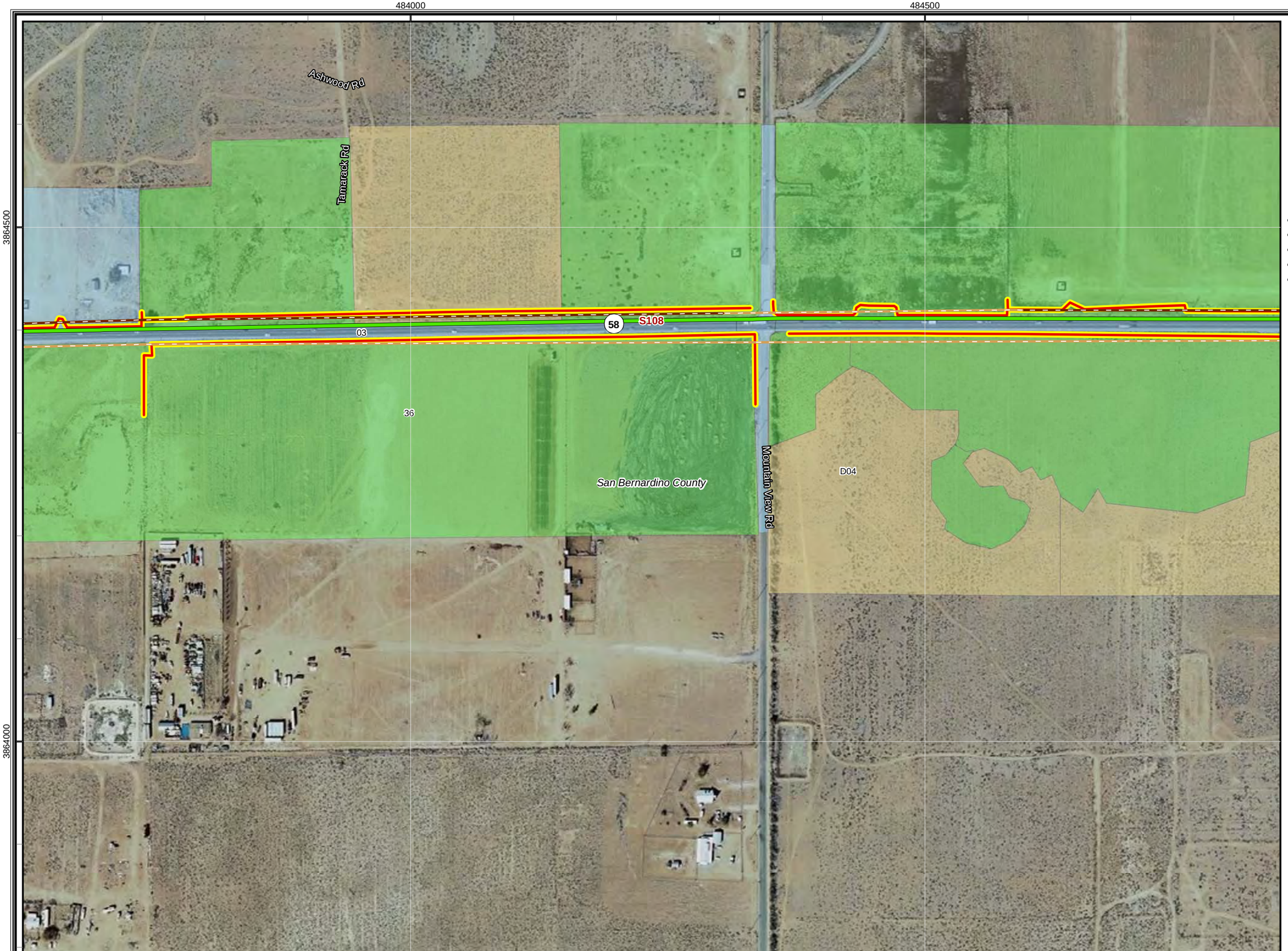
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-024

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

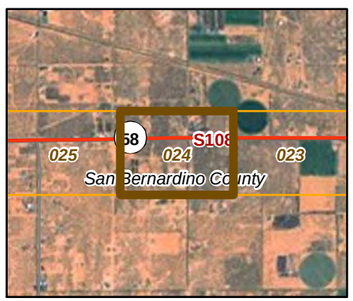
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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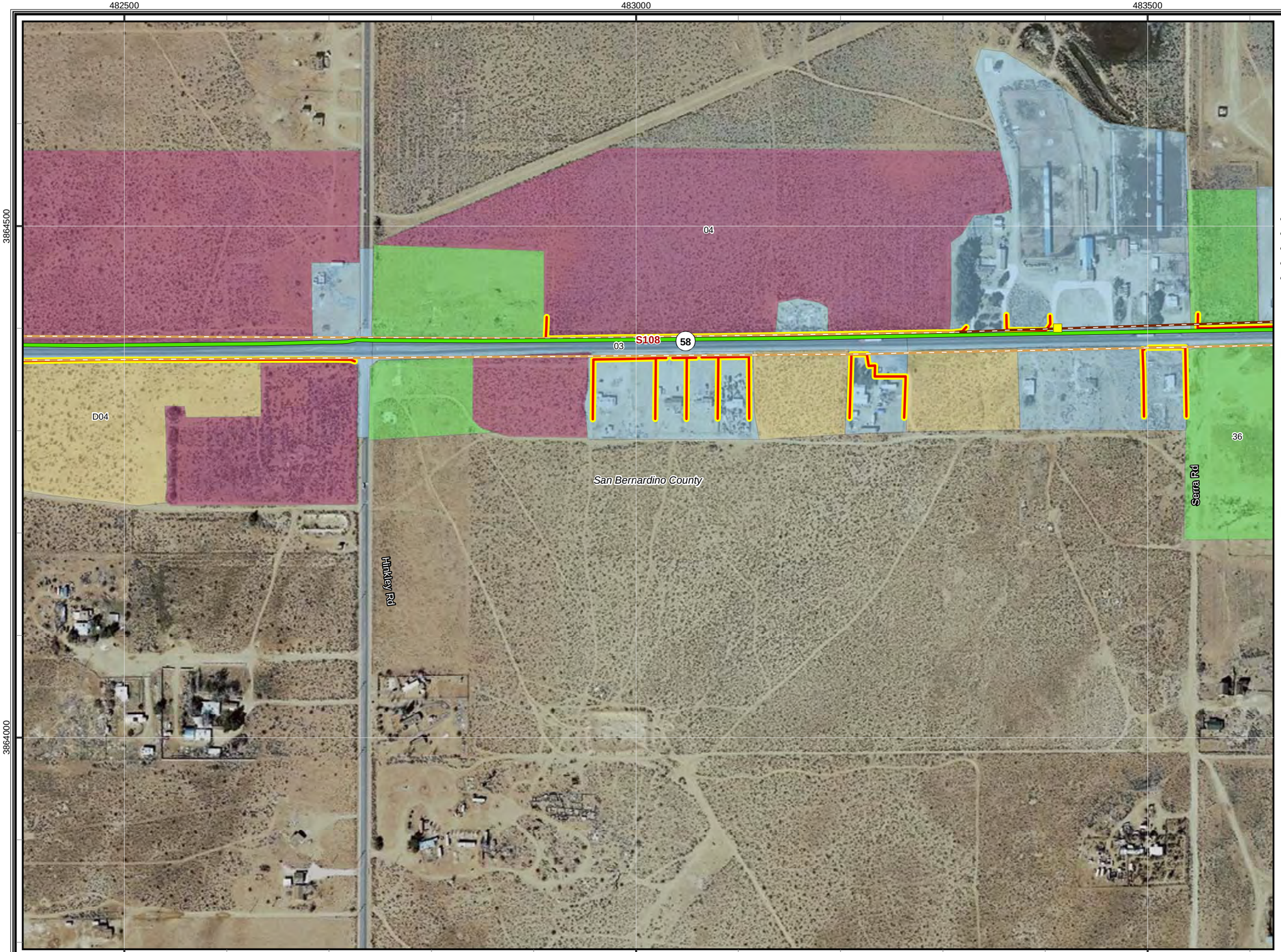
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-025

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

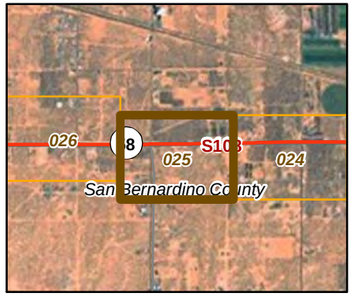
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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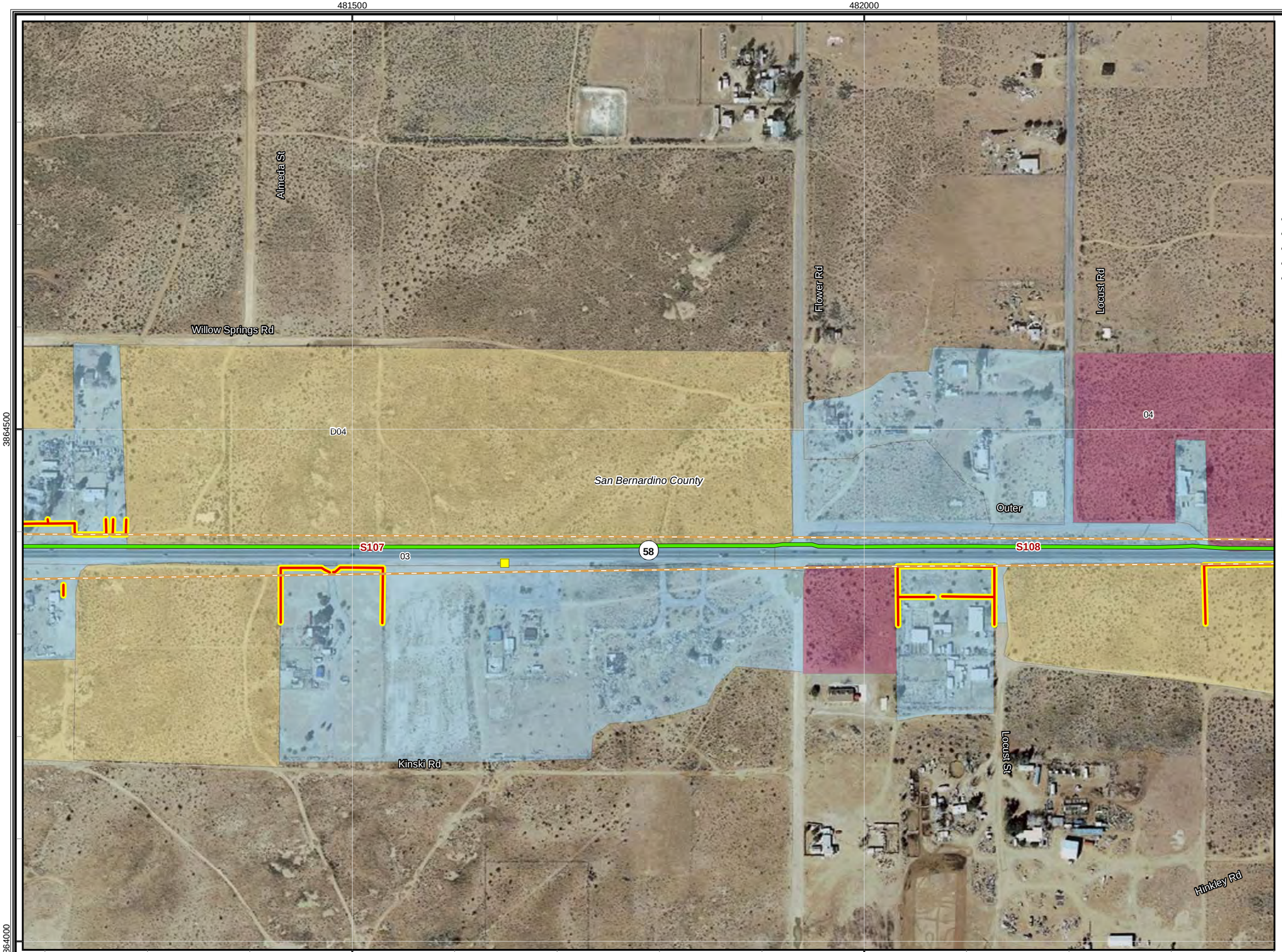


CBC Digital 395

R1-Barstow to Boron-026

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

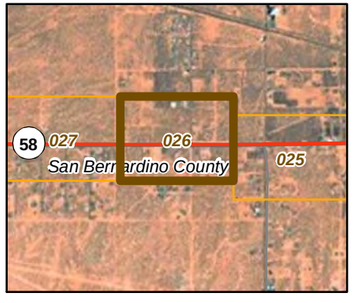
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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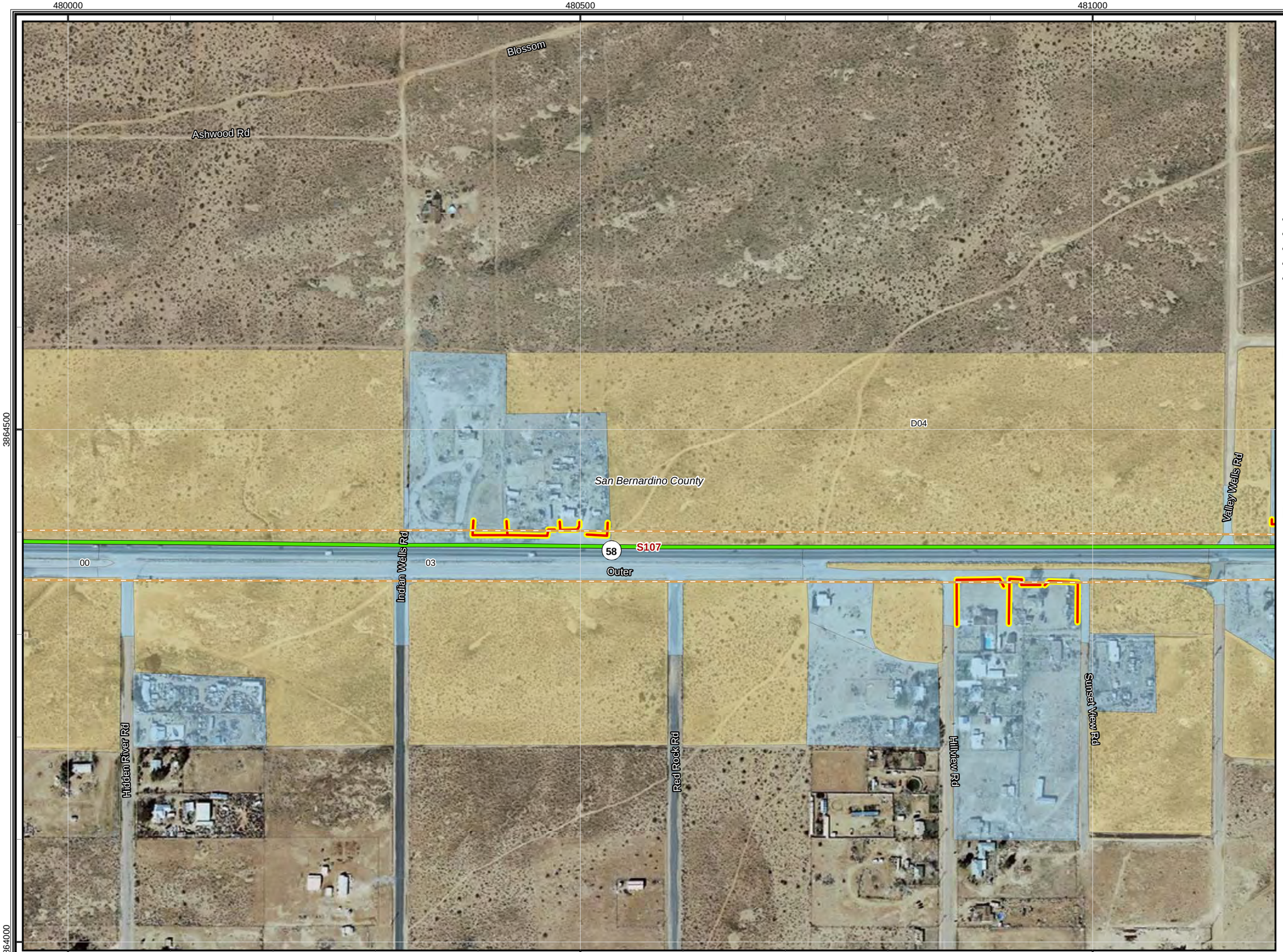


CBC Digital 395

R1-Barstow to Boron-027

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

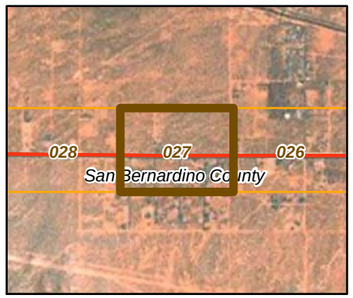
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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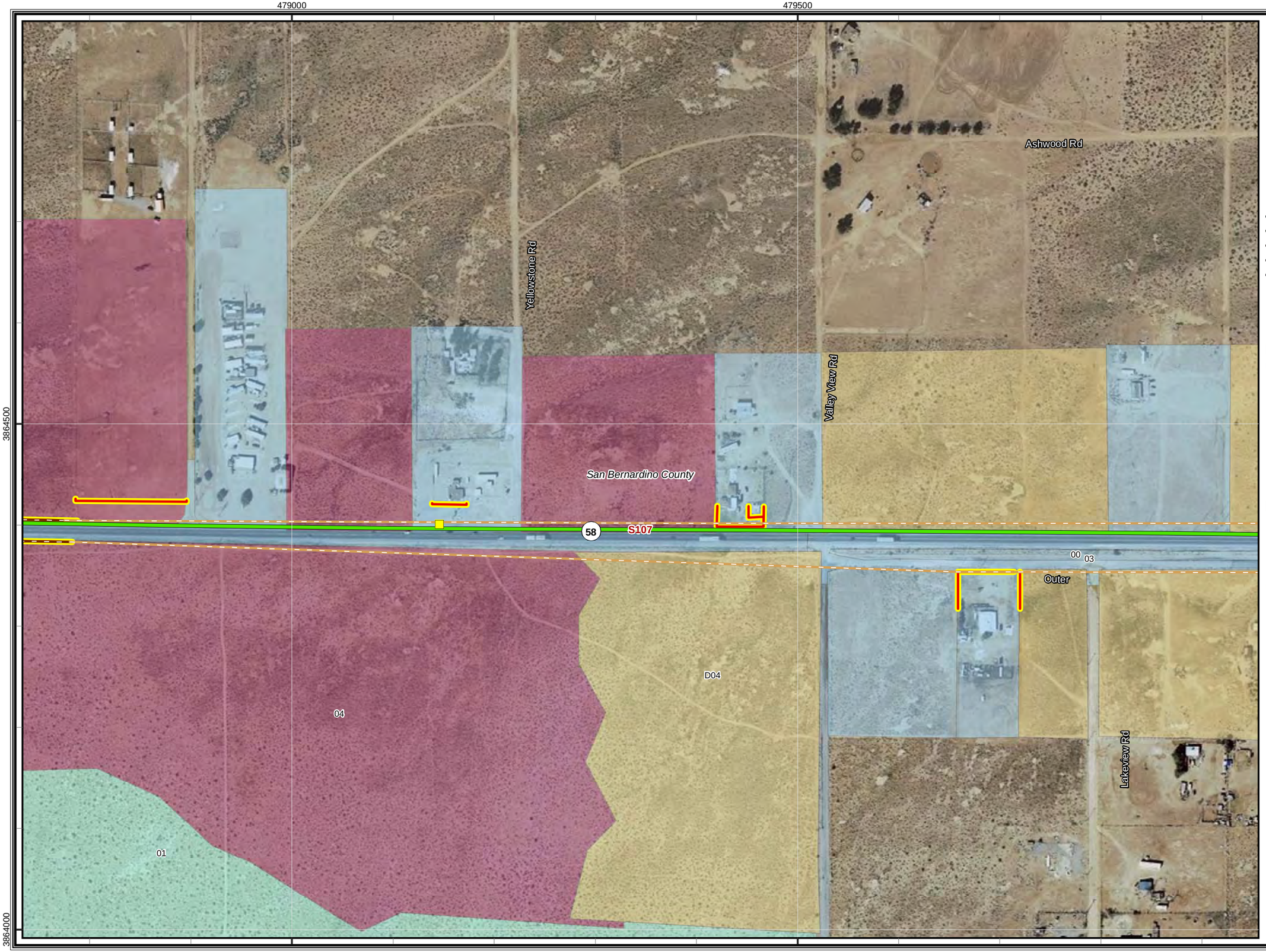


CBC Digital 395

R1-Barstow to Boron-028

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

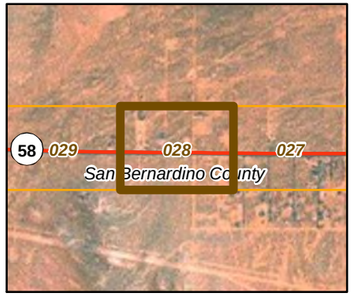
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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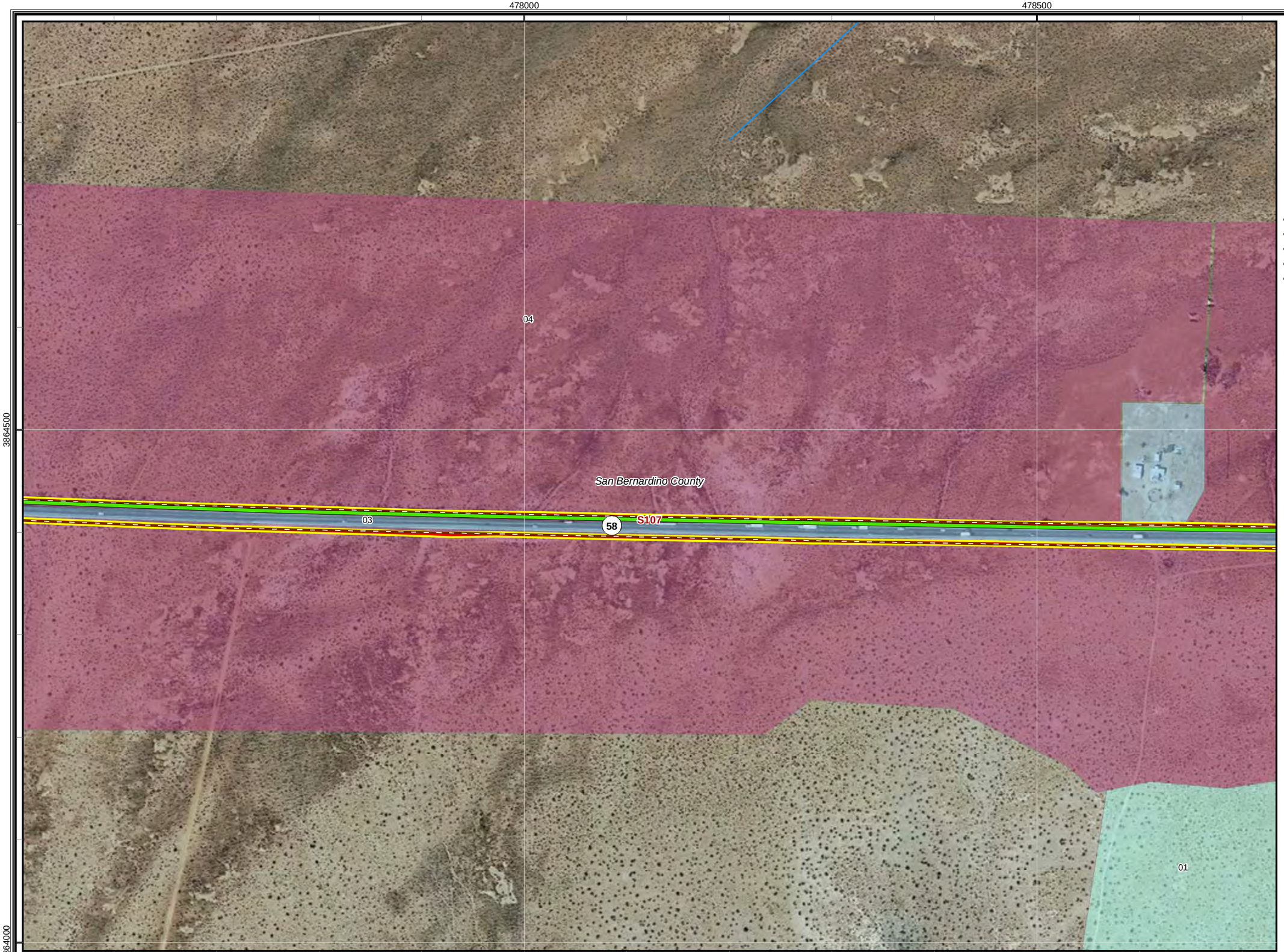


CBC Digital 395

R1-Barstow to Boron-029

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

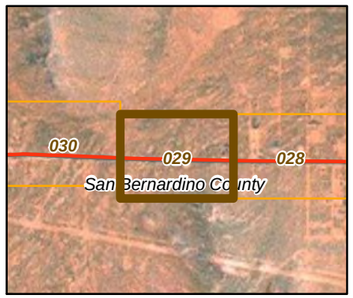
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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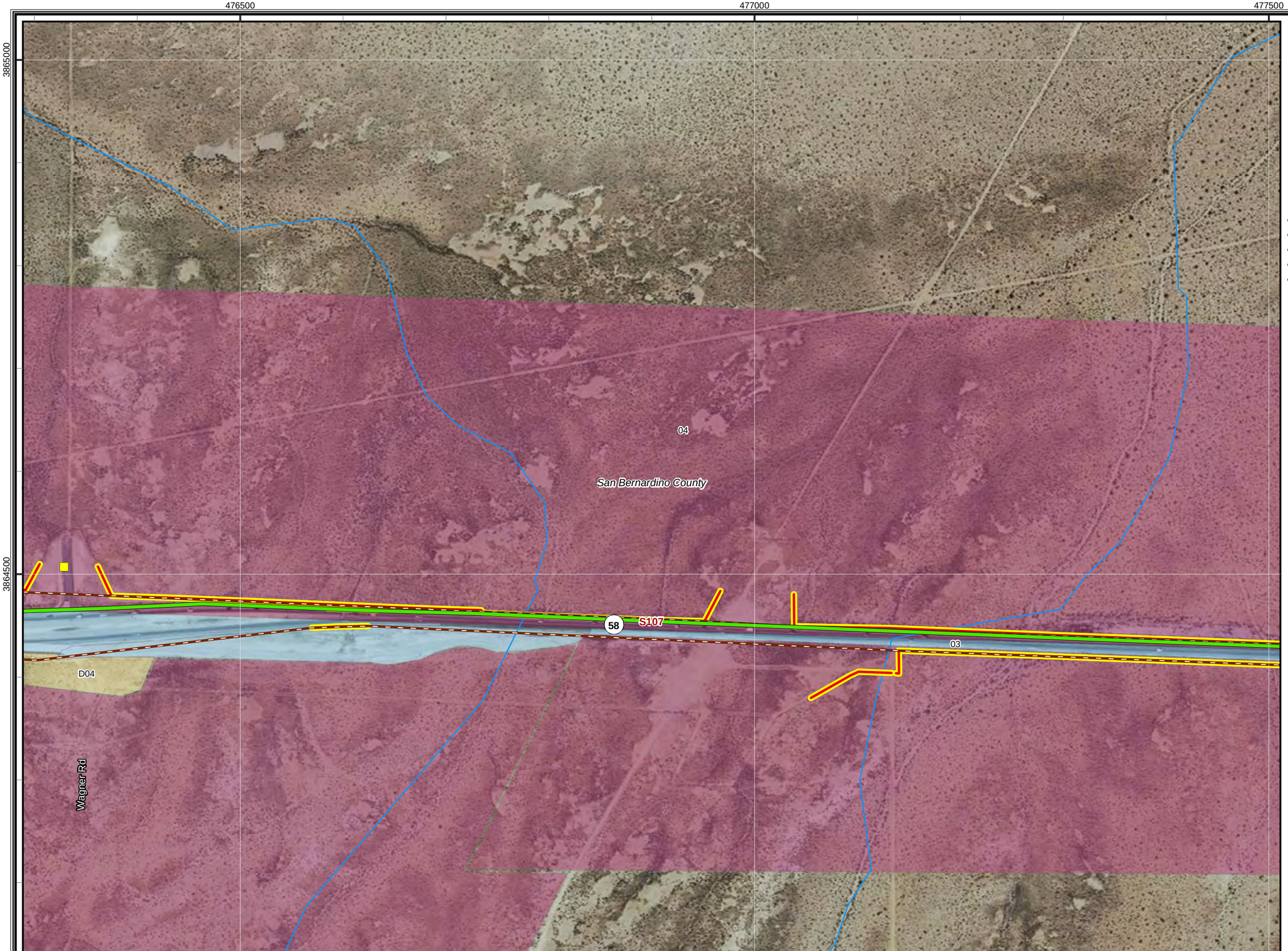
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-030

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

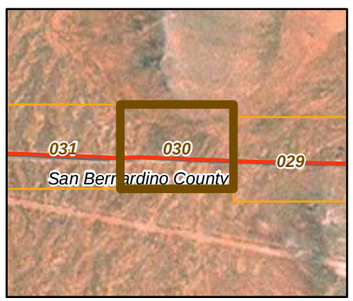
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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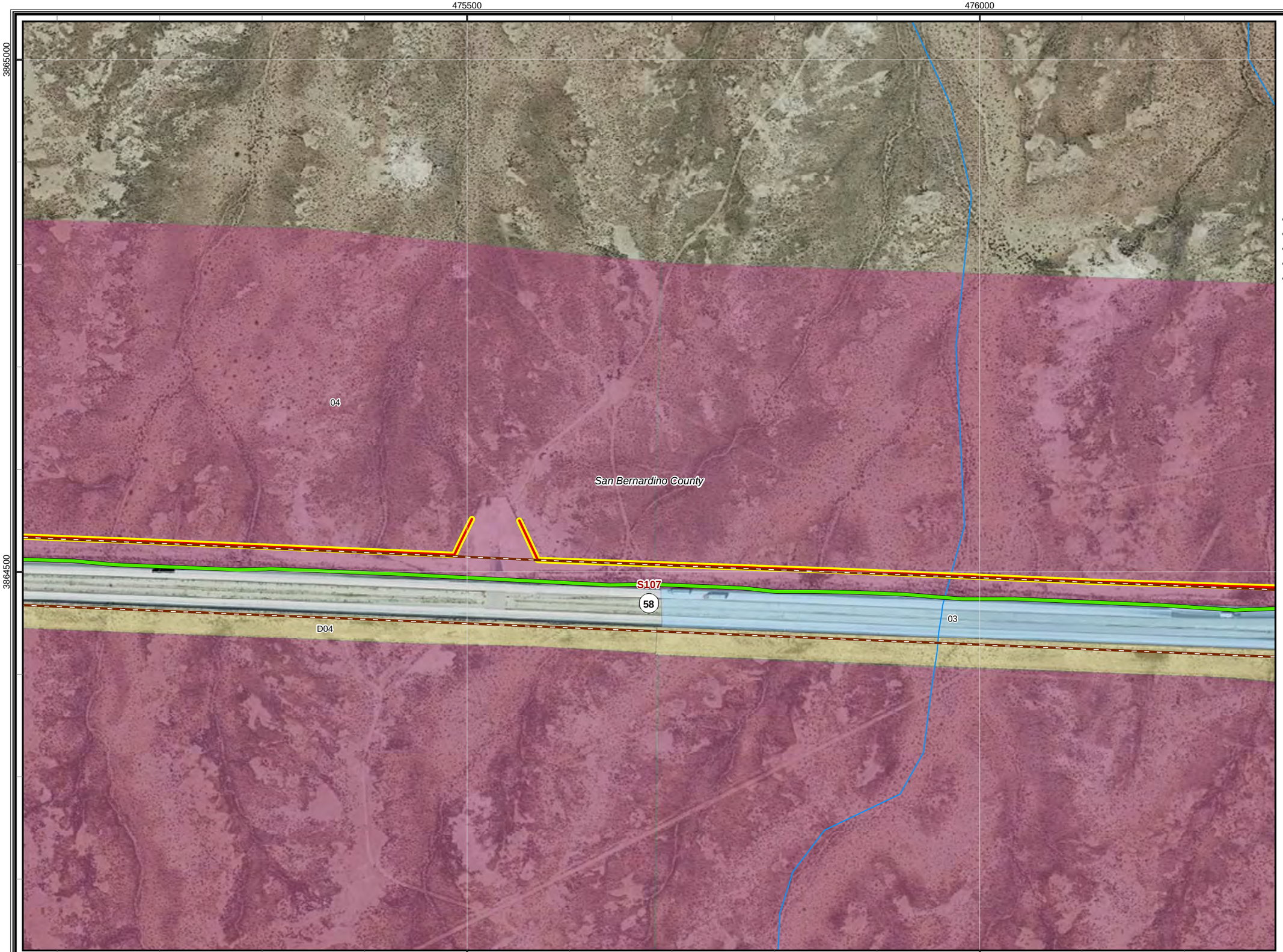
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-031

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

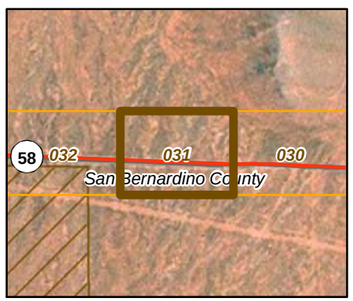
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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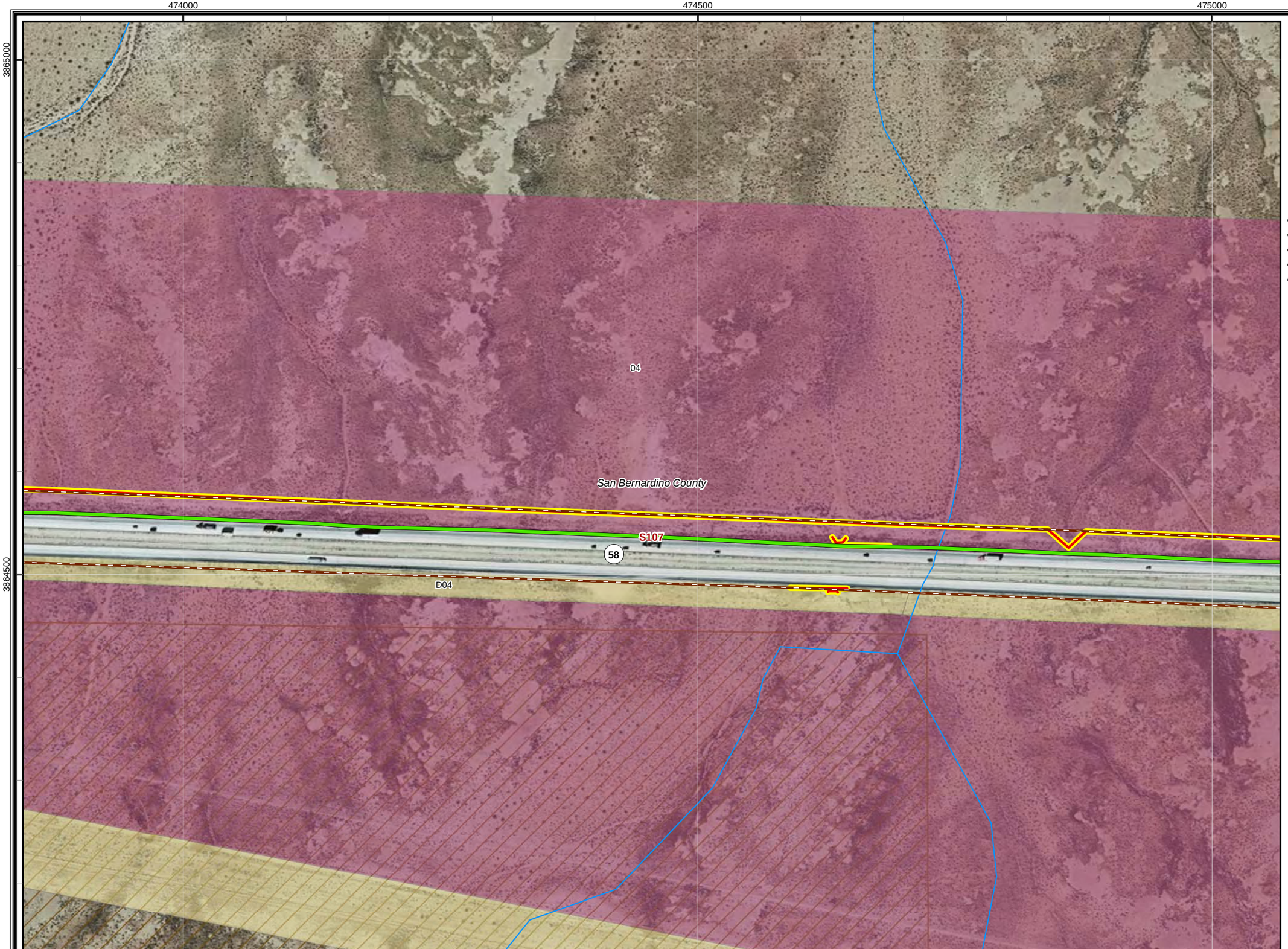
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-032

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

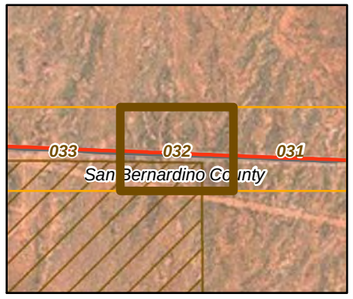
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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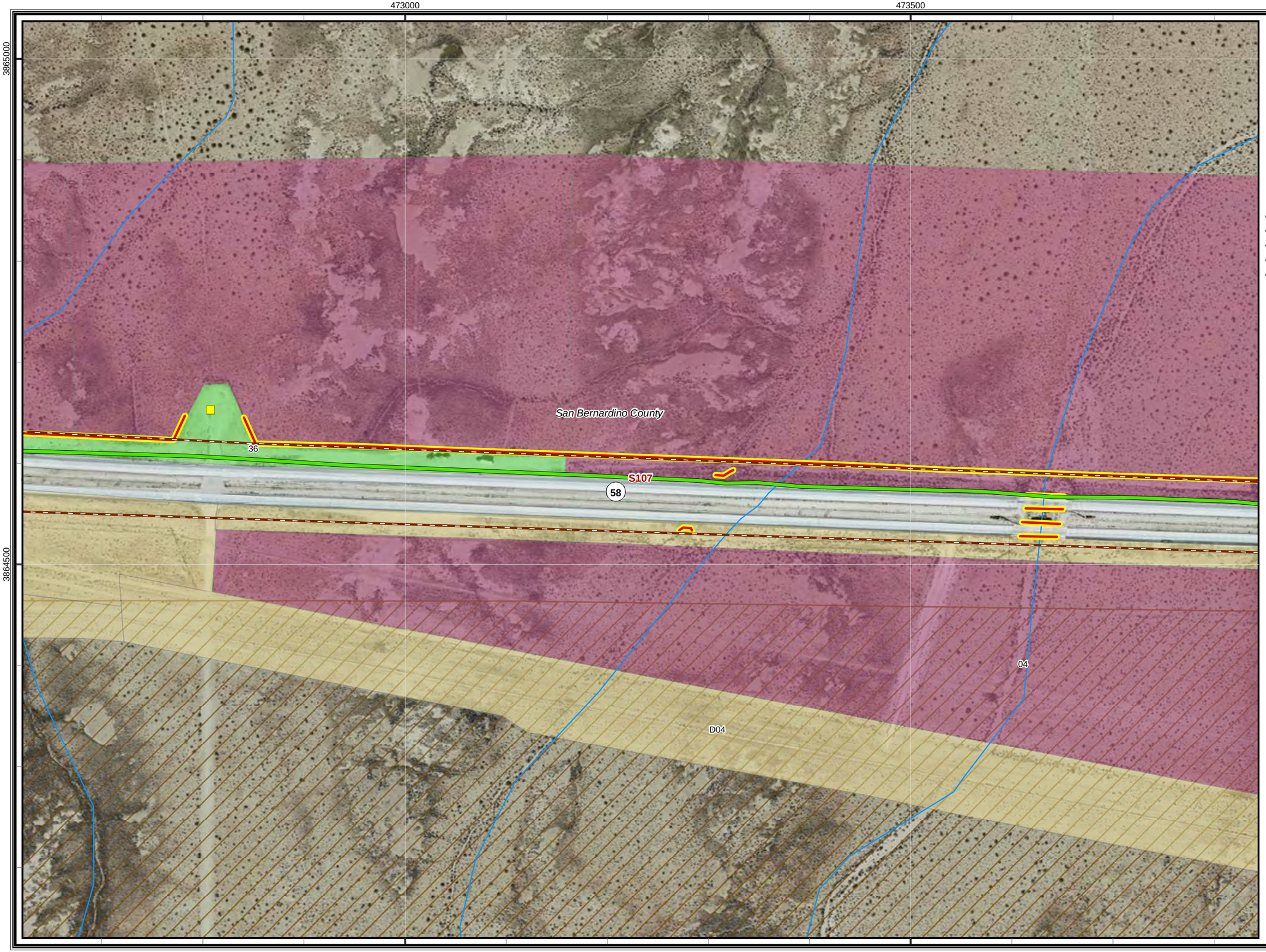
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-033

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

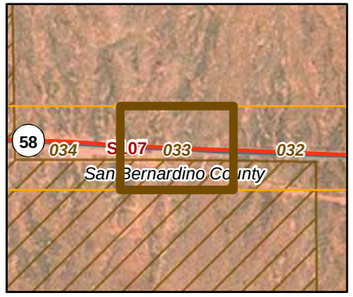
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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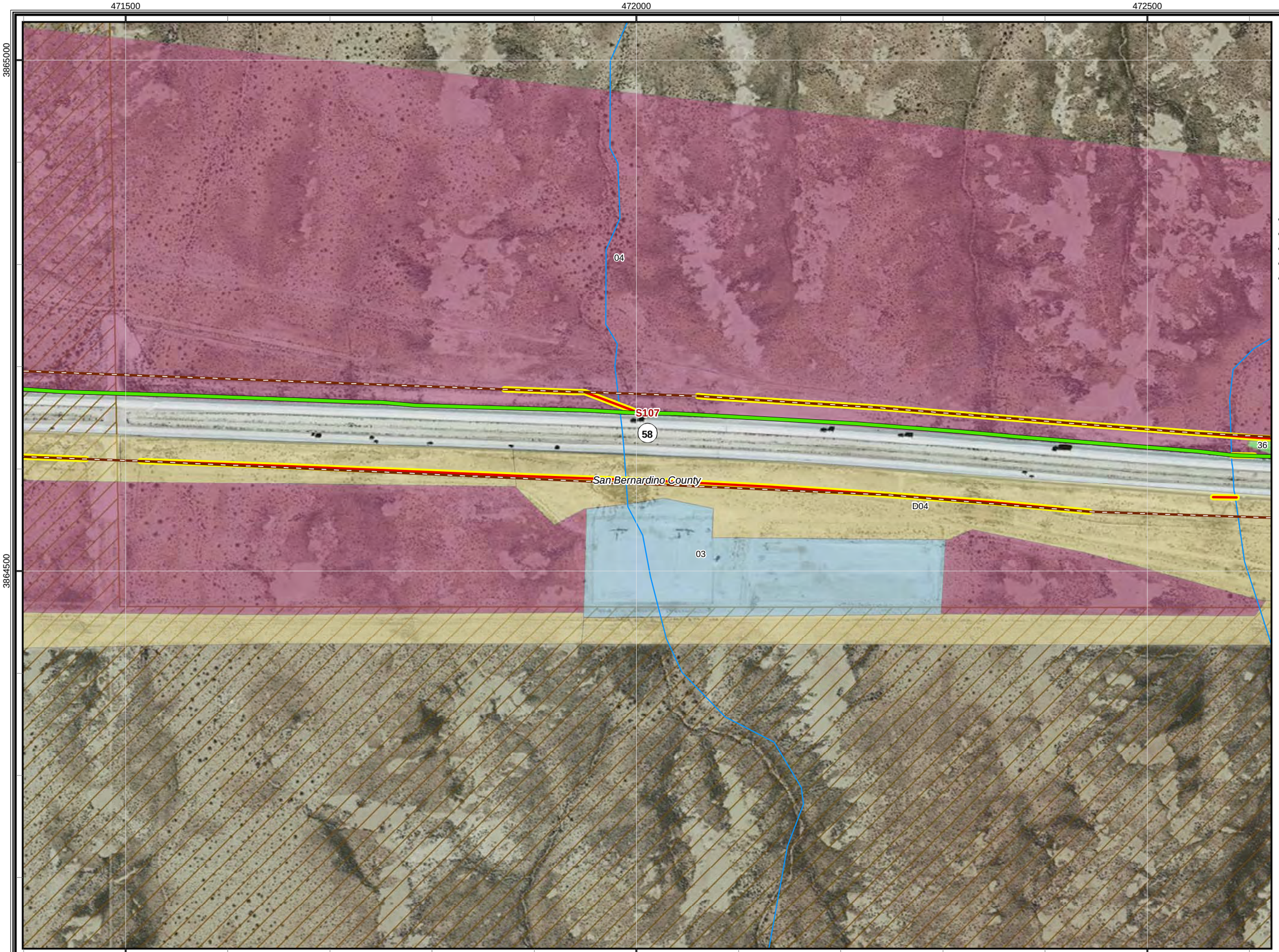
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-034

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

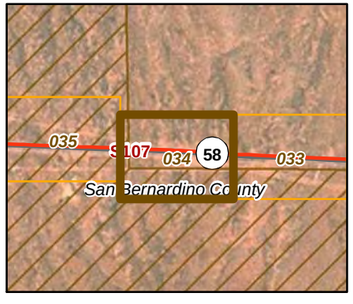
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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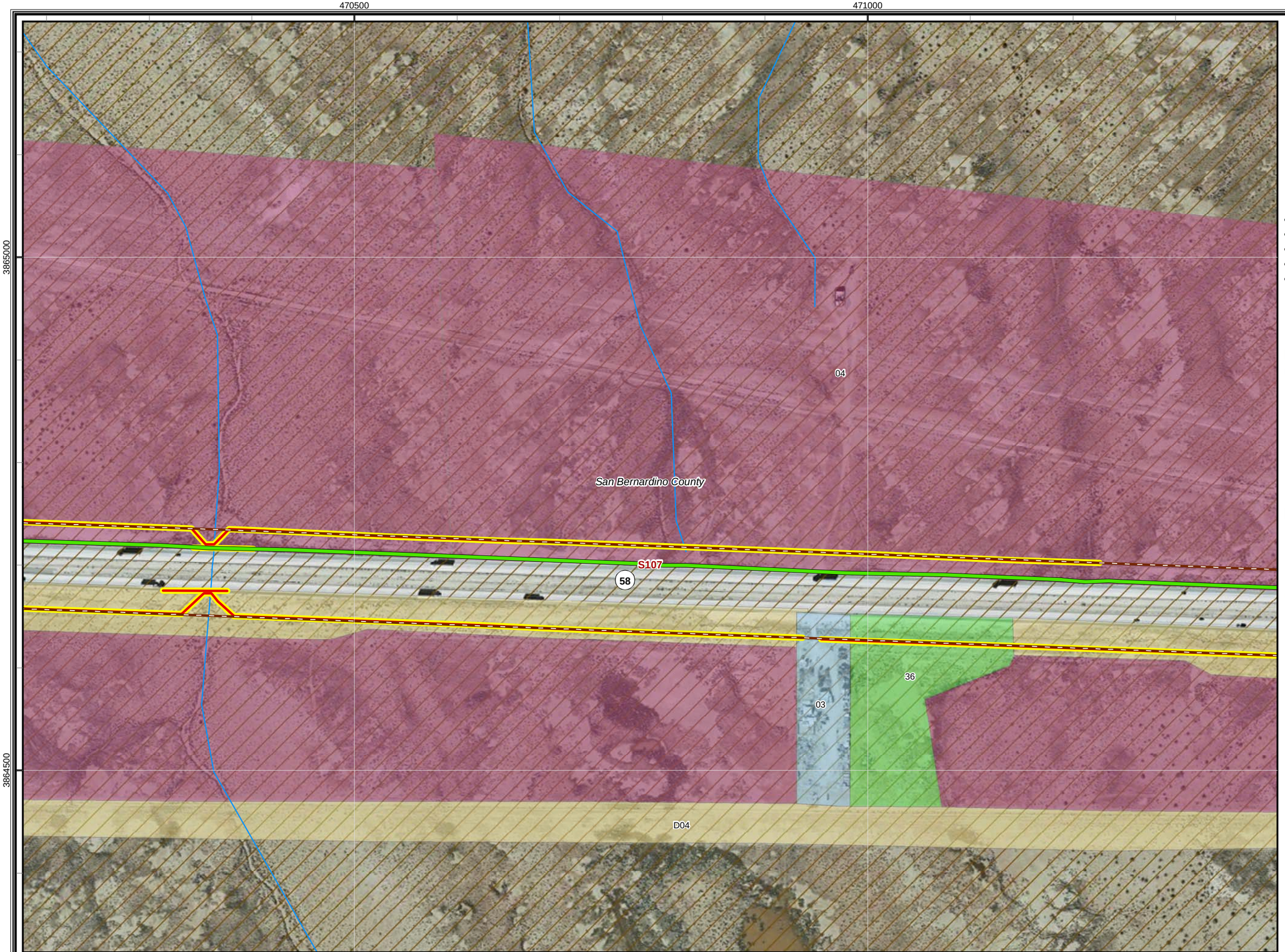
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-035

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

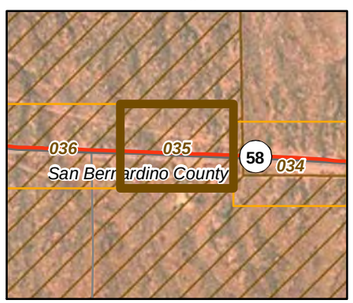
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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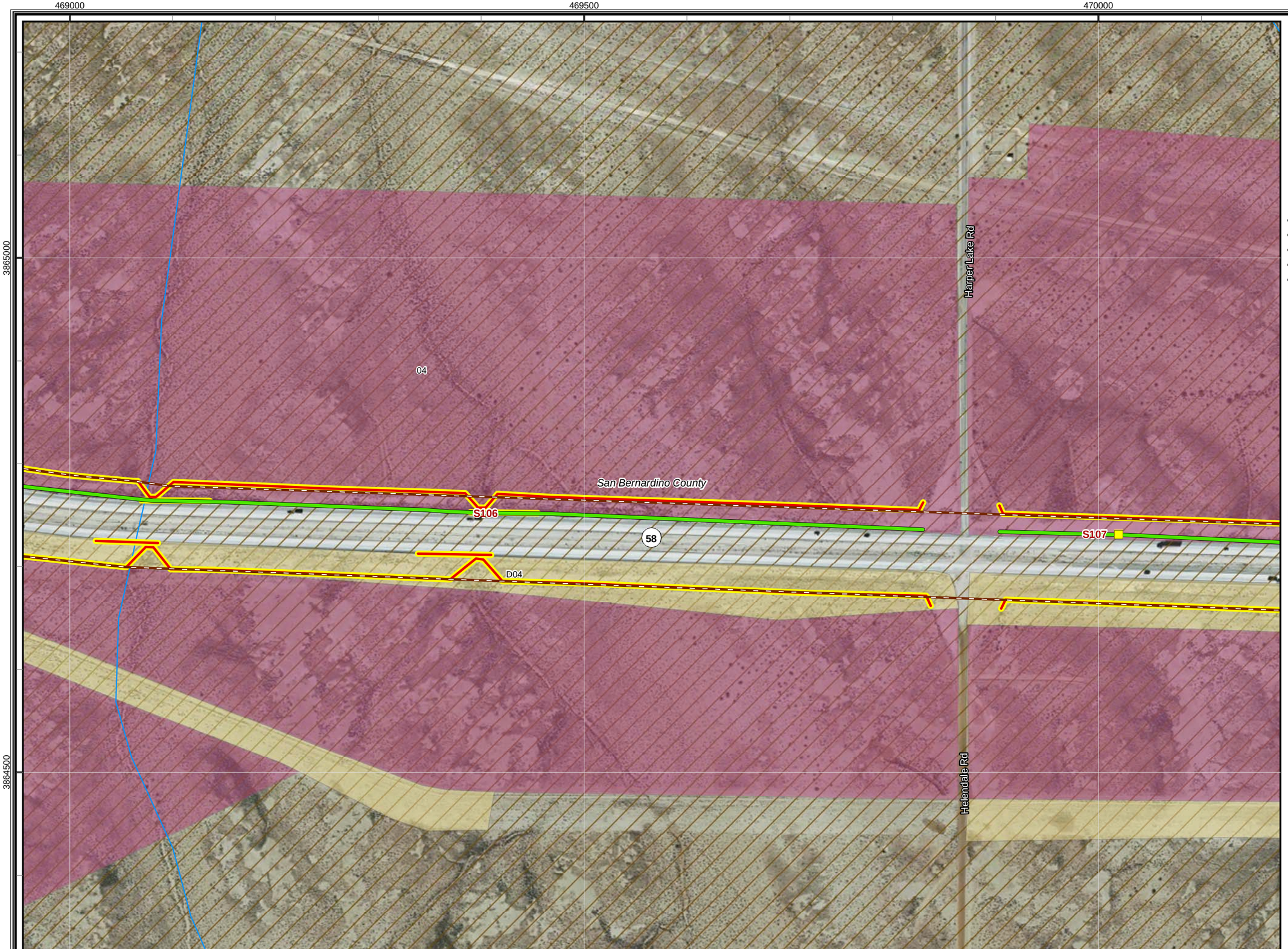
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-036

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

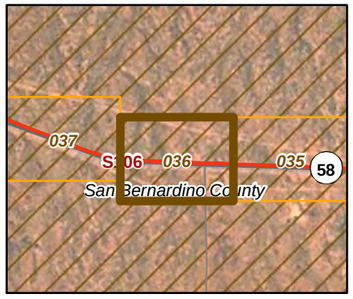
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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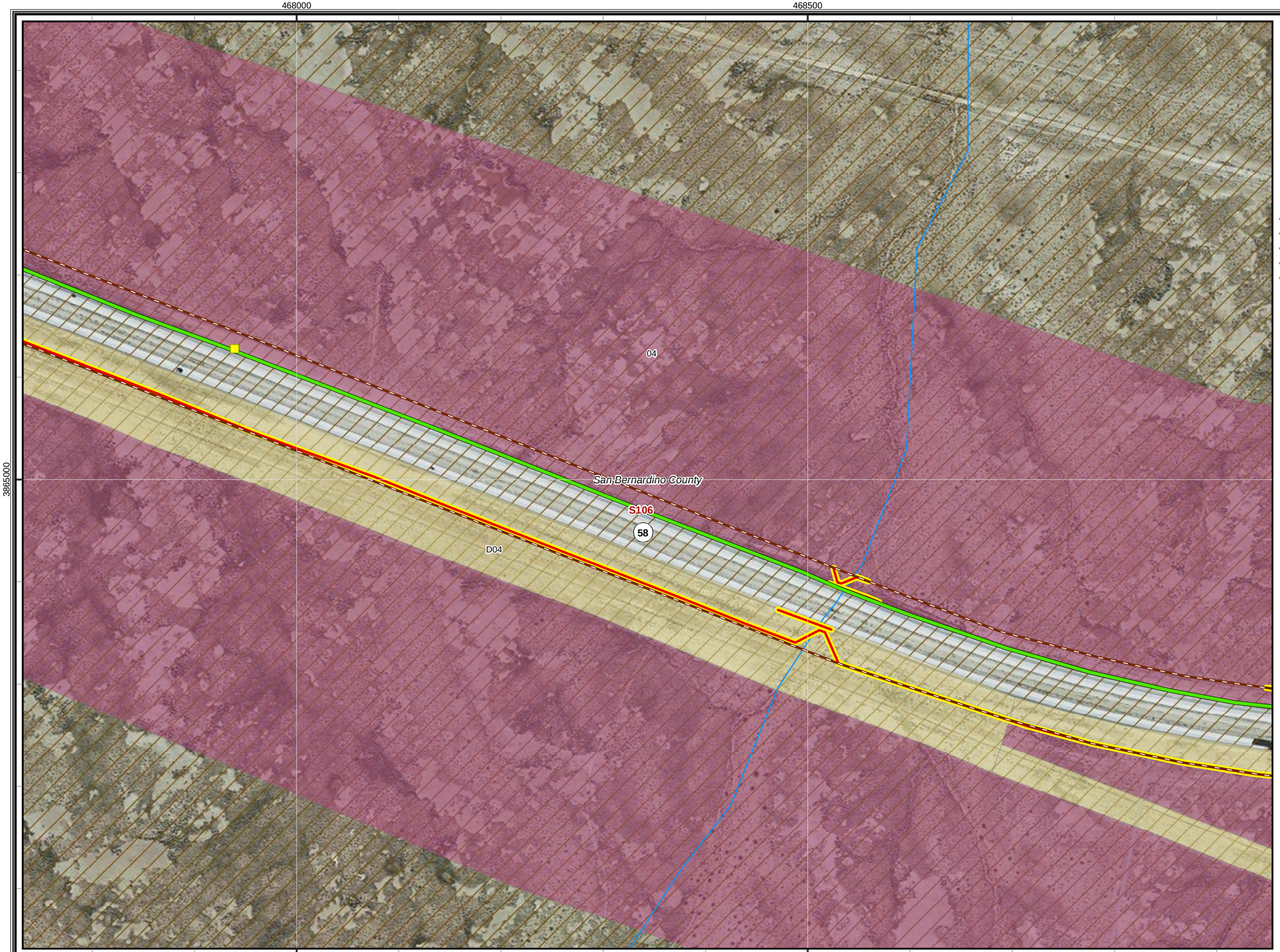
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-037

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

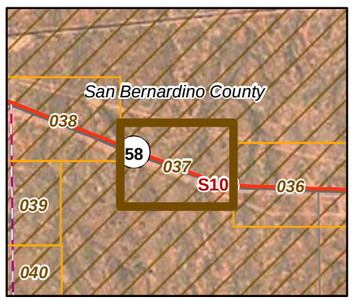
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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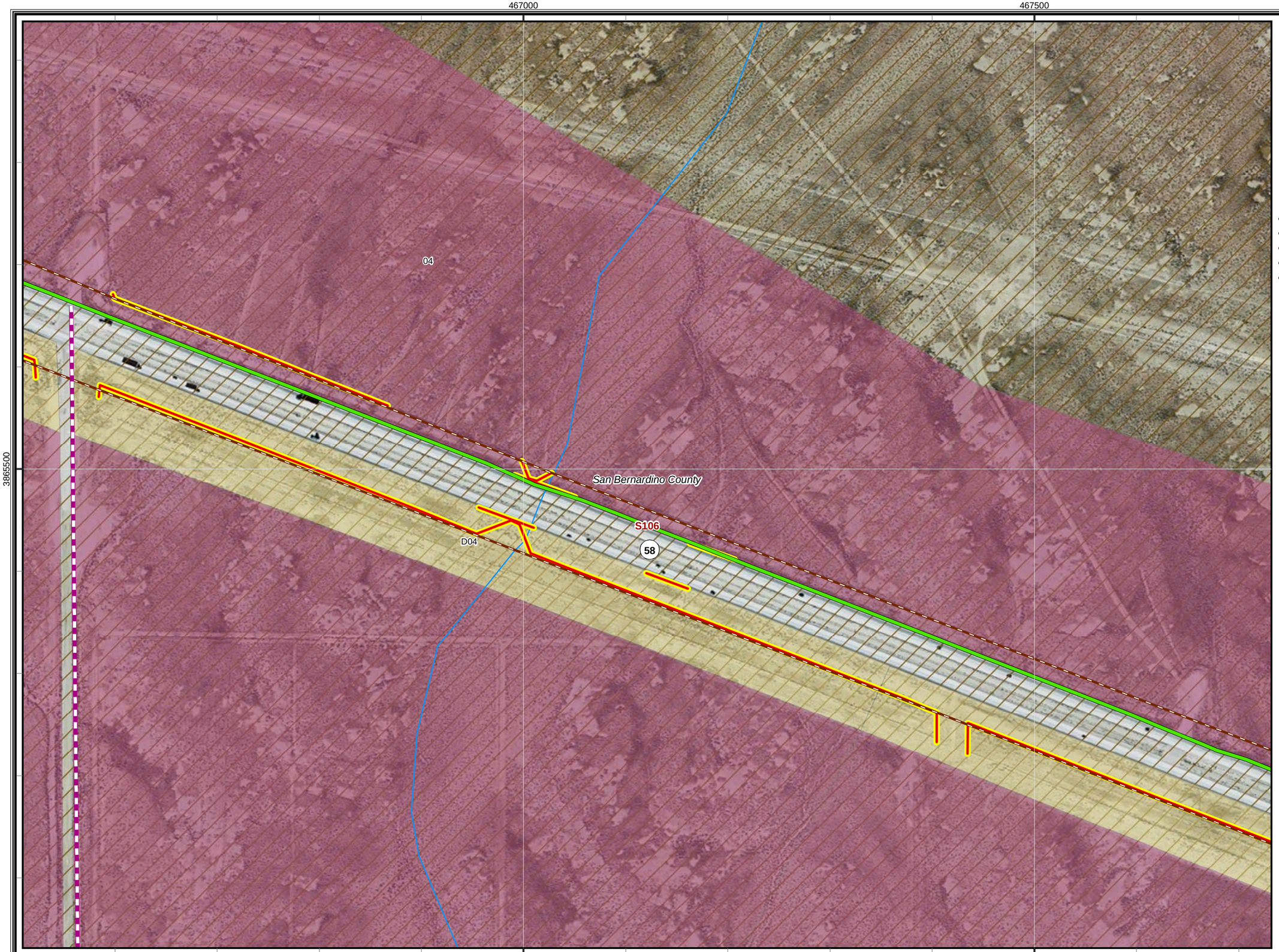
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-038

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

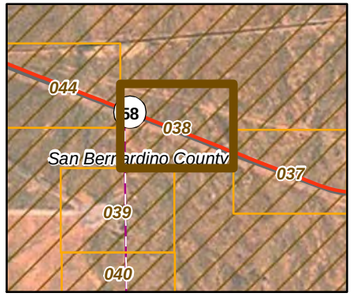
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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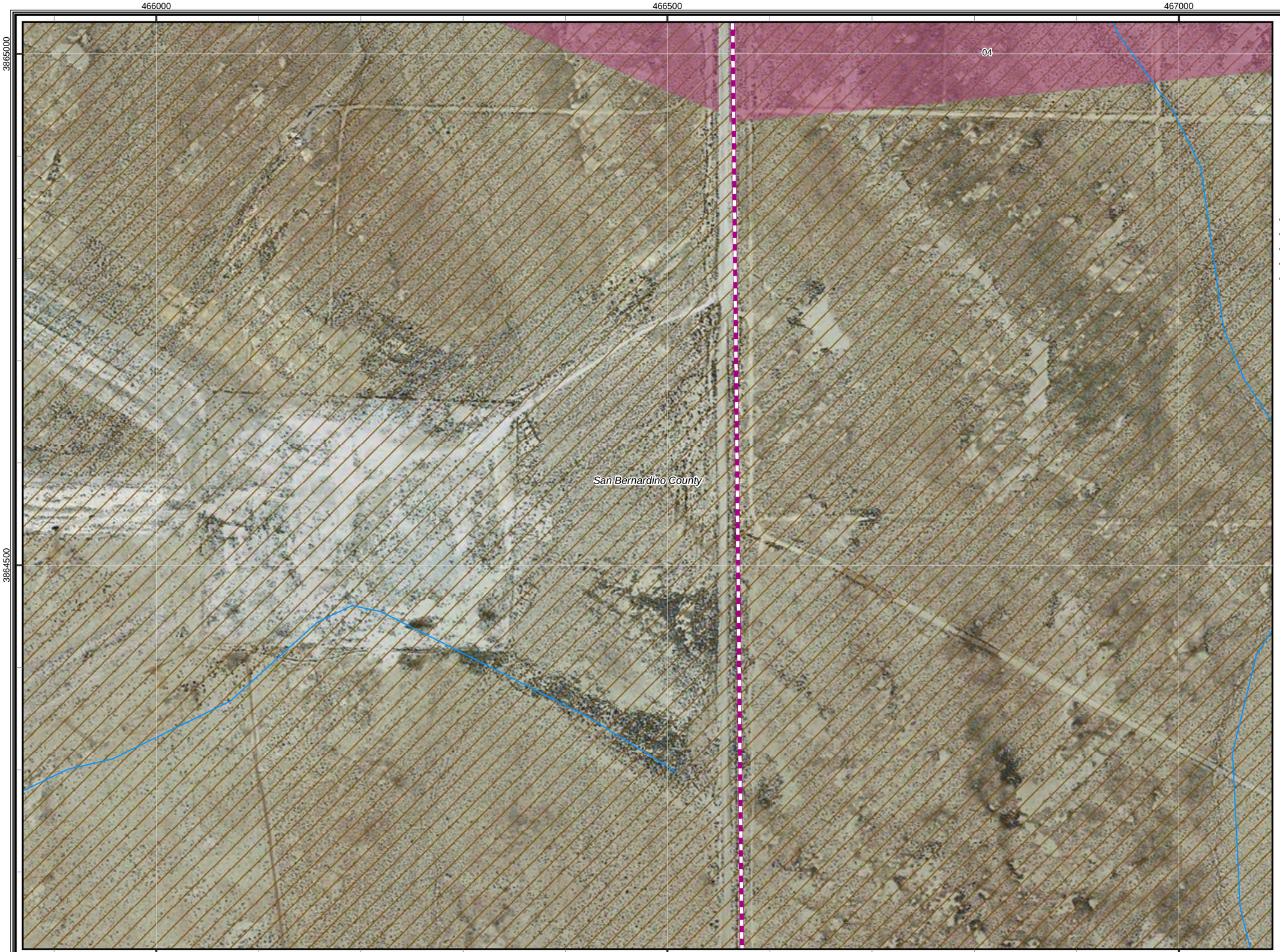
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-039

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

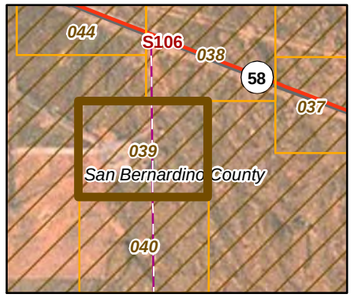
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-040

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

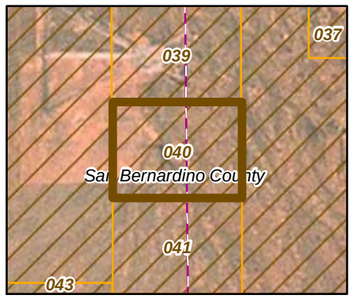
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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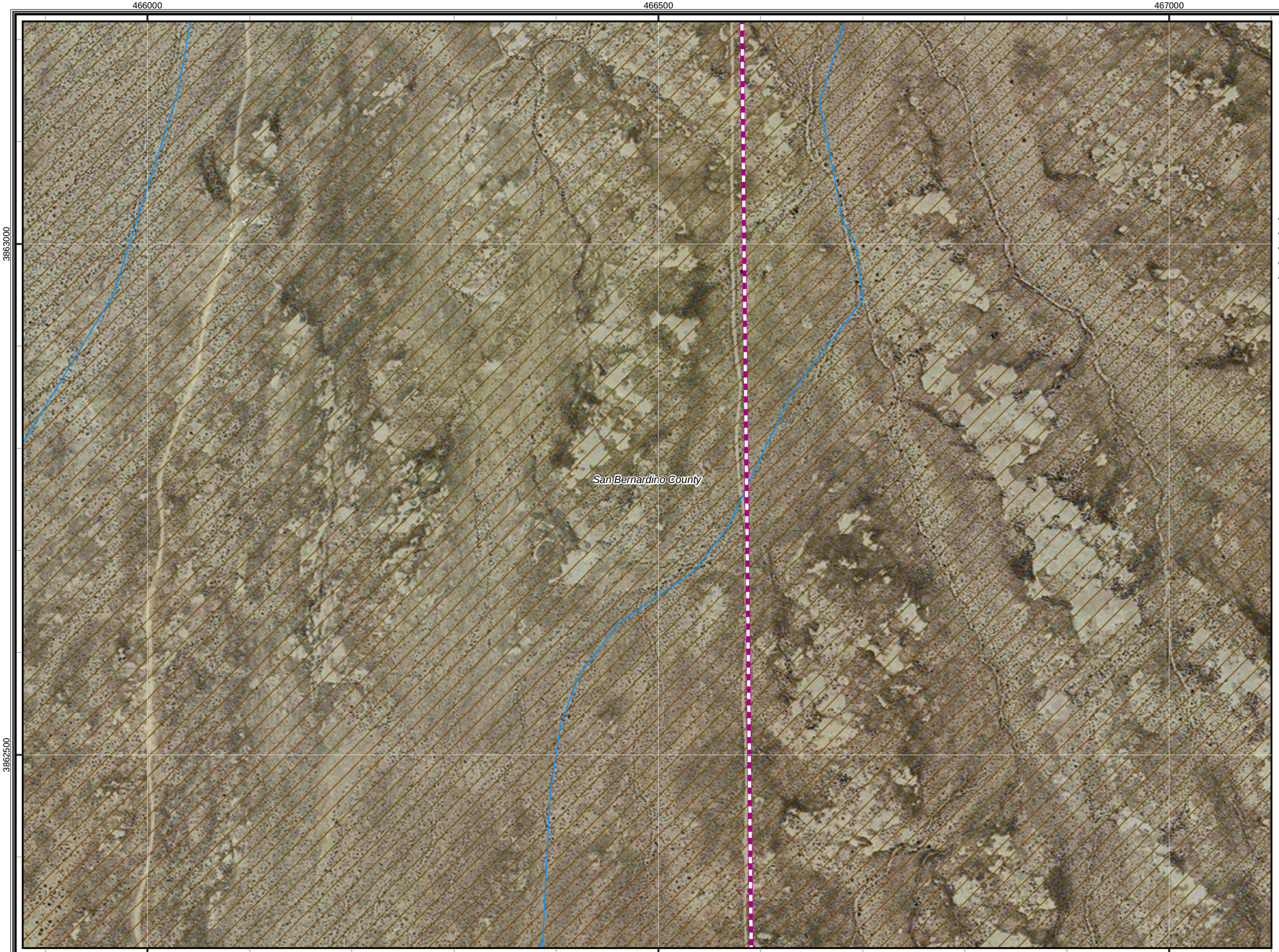


CBC Digital 395

R1-Barstow to Boron-041

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

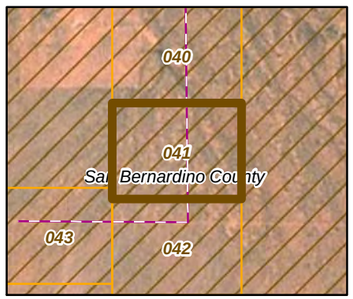
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R1-Barstow to Boron-042

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

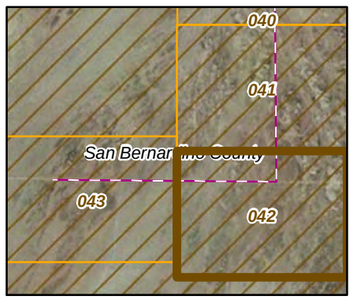
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R1-Barstow to Boron-043

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

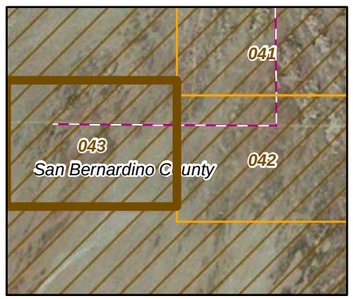
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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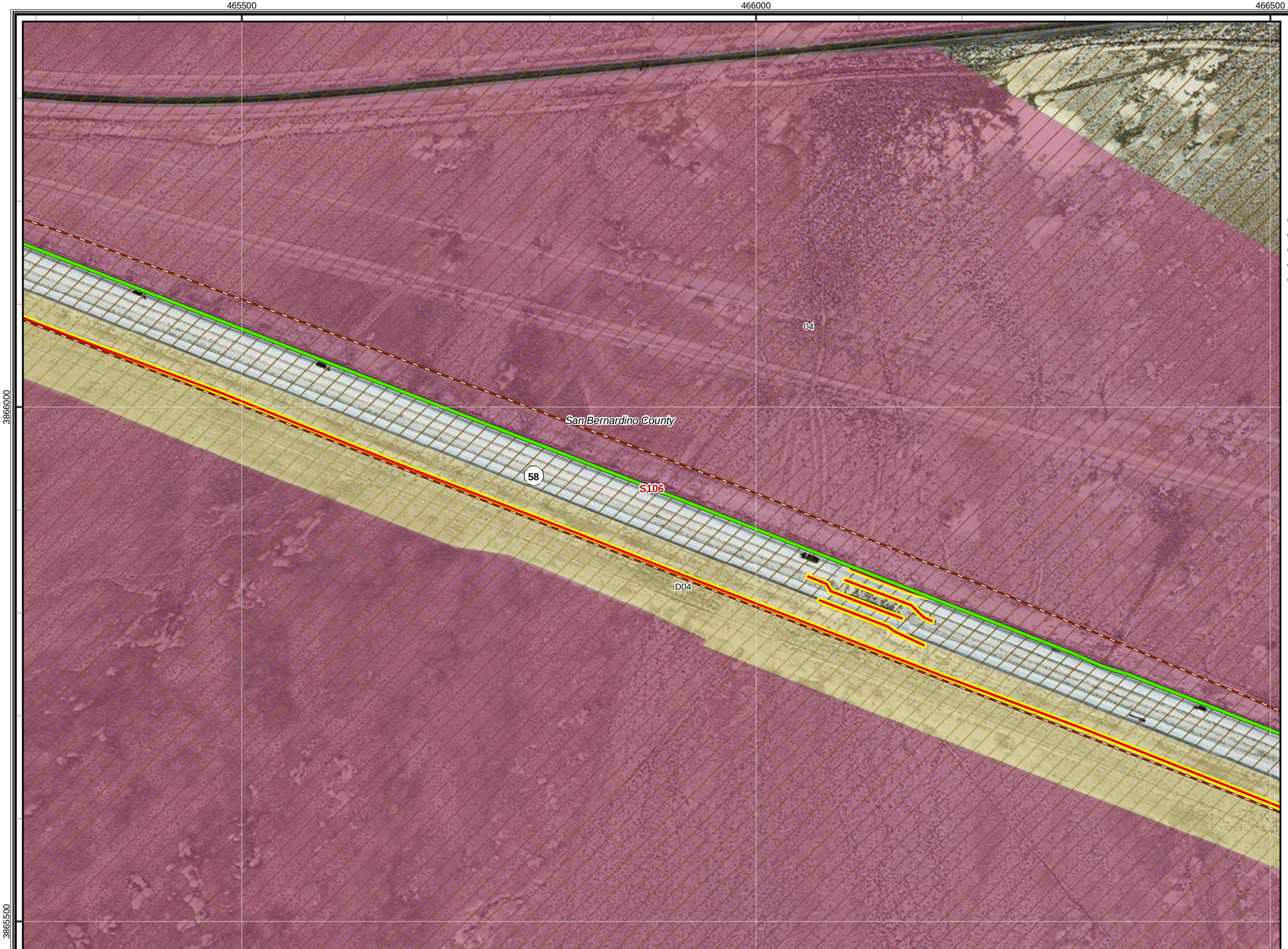


CBC Digital 395

R1-Barstow to Boron-044

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

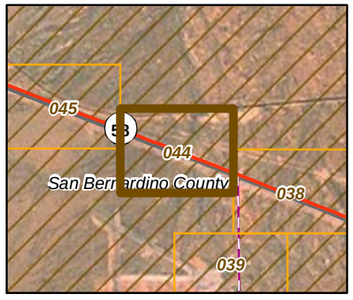
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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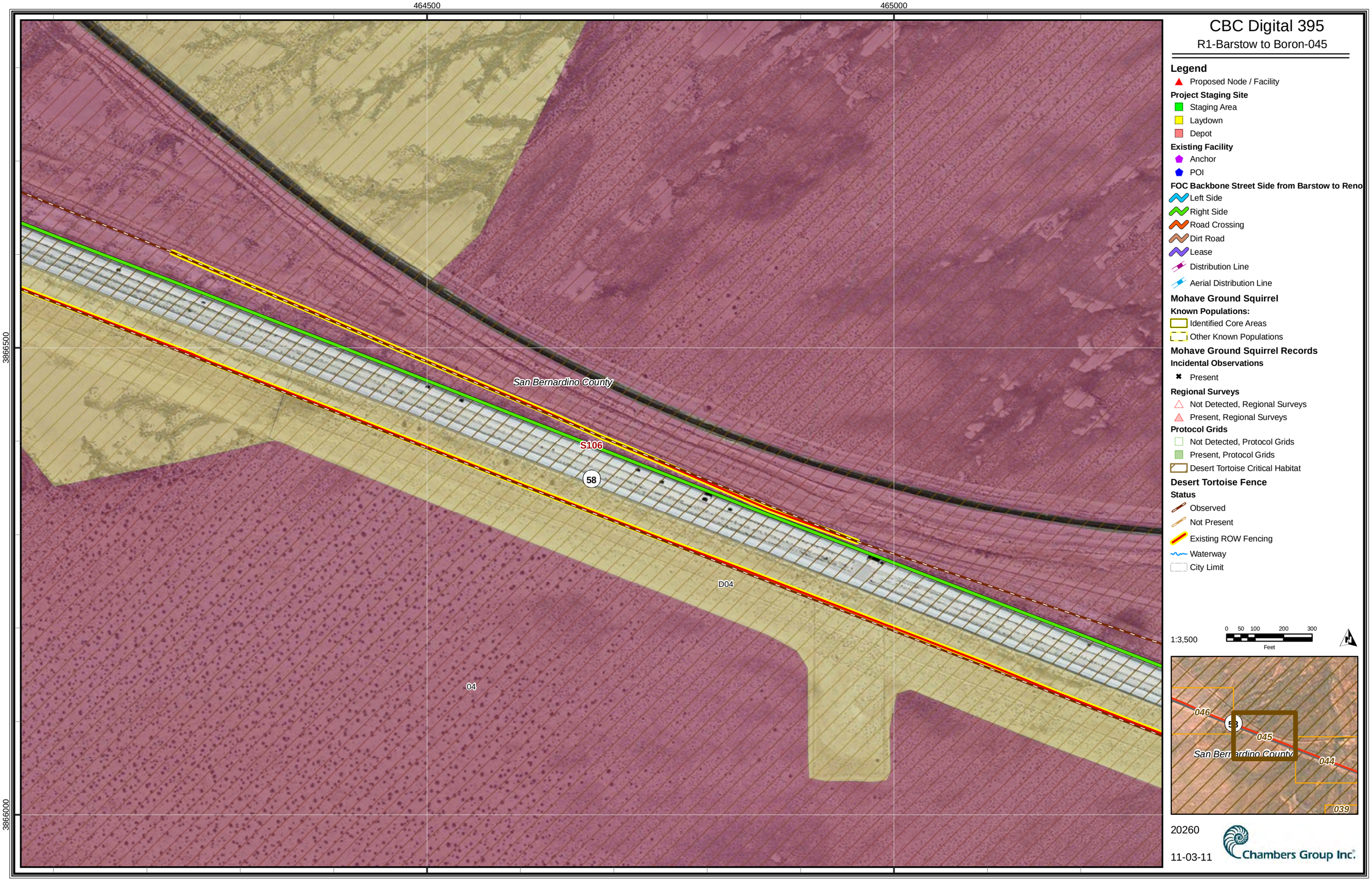
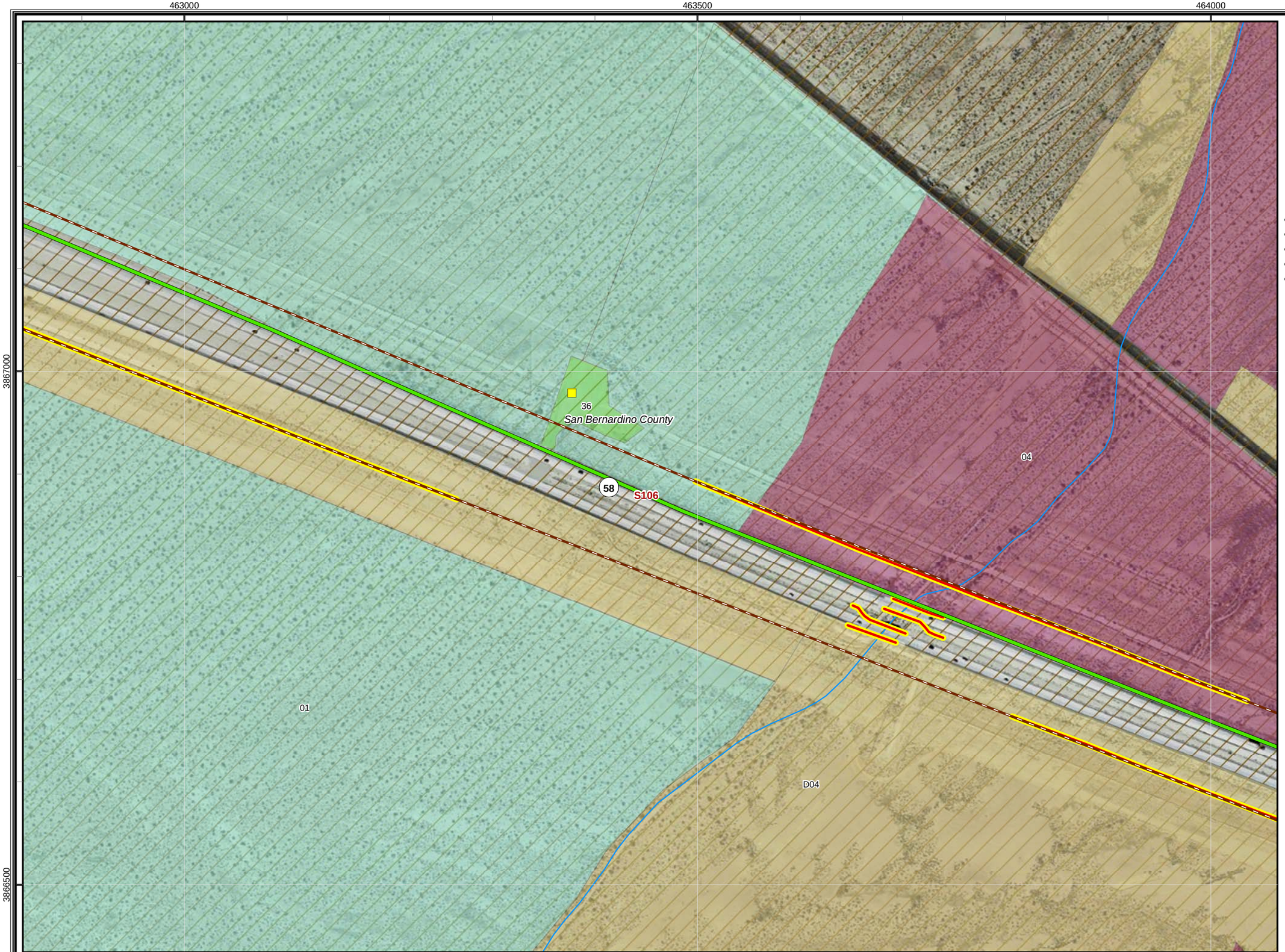

464500
465000
3866500
3866000
San Bernardino County
S106
58
D04
04
CBC Digital 395
R1-Barstow to Boron-045
Legend
Proposed Node / Facility
Project Staging Site
Staging Area
Laydown
Depot
Existing Facility
Anchor
POI
FOC Backbone Street Side from Barstow to Reno
Left Side
Right Side
Road Crossing
Dirt Road
Lease
Distribution Line
Aerial Distribution Line
Mohave Ground Squirrel
Known Populations:
Identified Core Areas
Other Known Populations
Mohave Ground Squirrel Records
Incidental Observations
Present
Regional Surveys
Not Detected, Regional Surveys
Present, Regional Surveys
Protocol Grids
Not Detected, Protocol Grids
Present, Protocol Grids
Desert Tortoise Critical Habitat
Desert Tortoise Fence
Status
Observed
Not Present
Existing ROW Fencing
Waterway
City Limit
1:3,500
0 50 100 200 300
Feet
N
046
58
045
San Bernardino County
044
039
20260
11-03-11
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-046

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

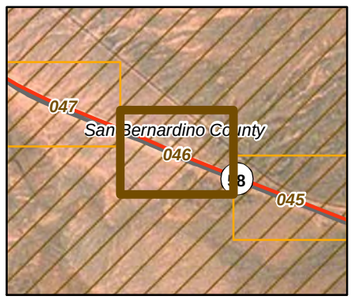
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R1-Barstow to Boron-047

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

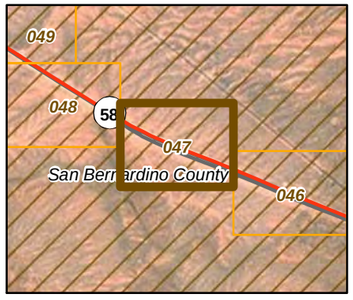
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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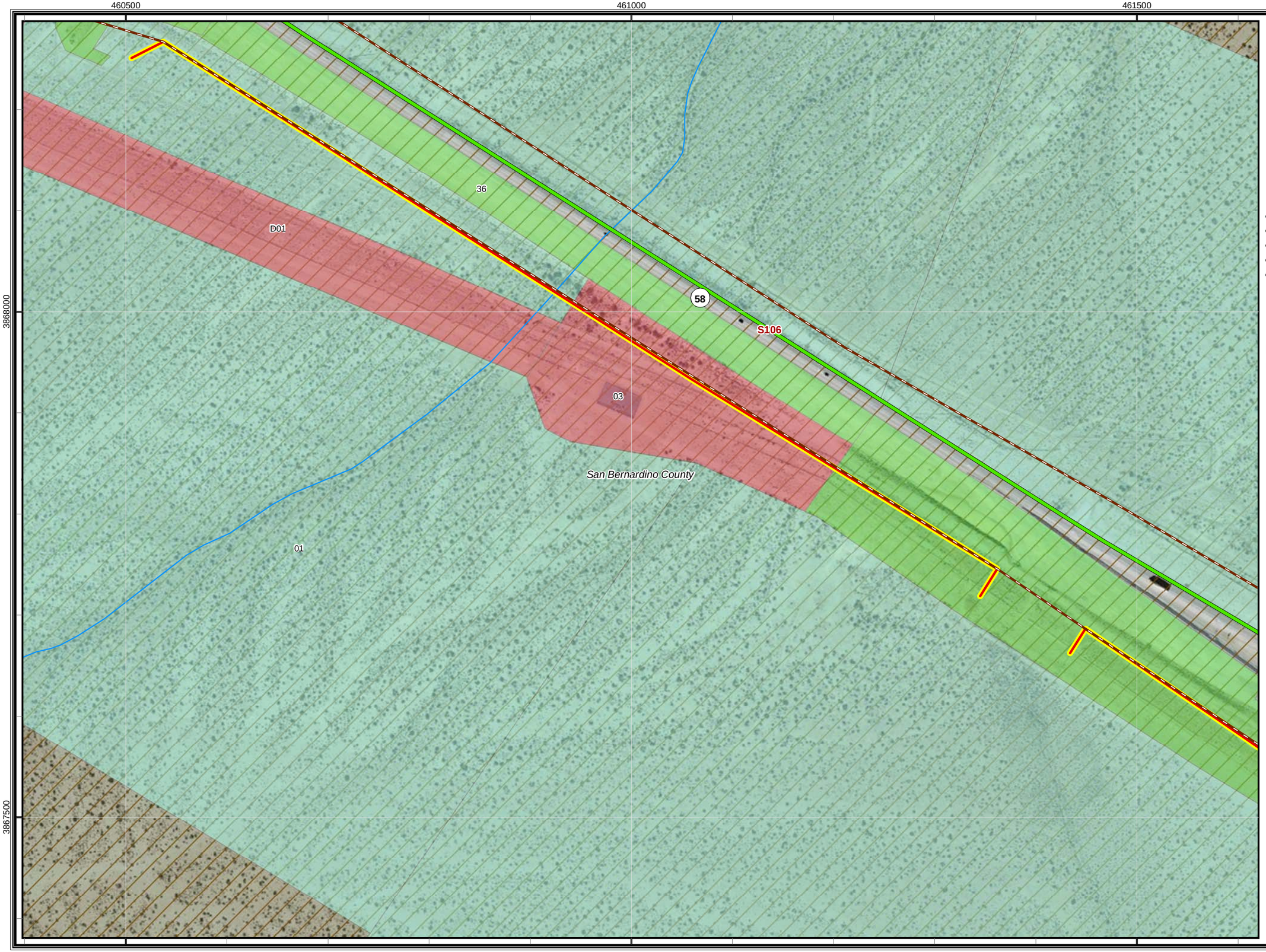


CBC Digital 395

R1-Barstow to Boron-048

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

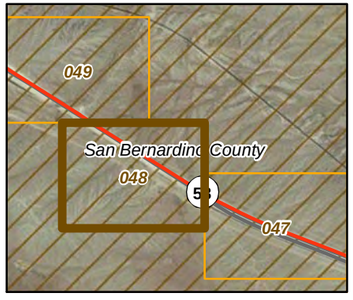
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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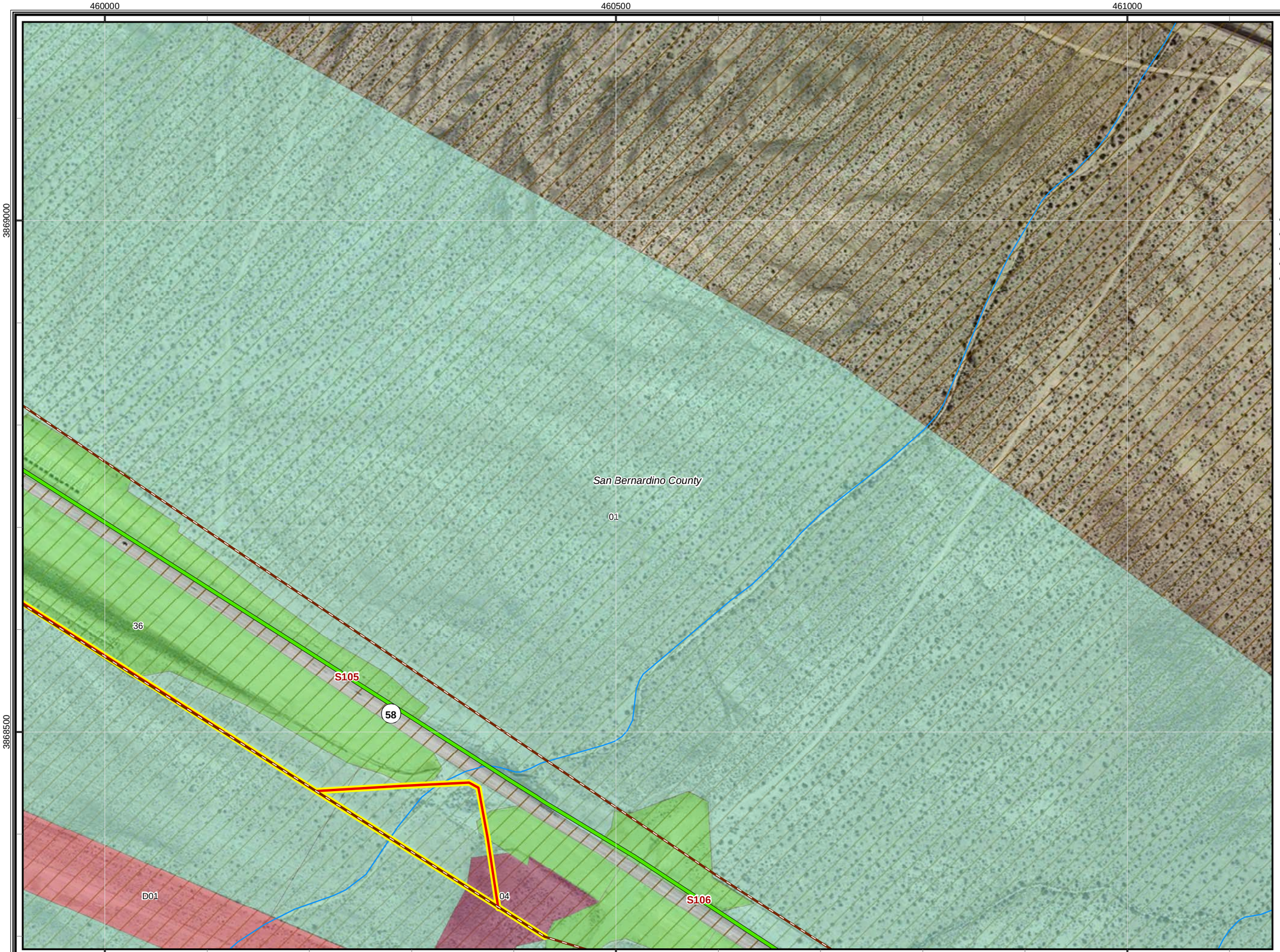


CBC Digital 395

R1-Barstow to Boron-049

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

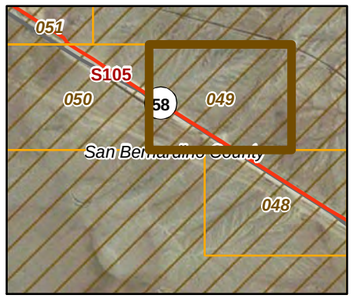
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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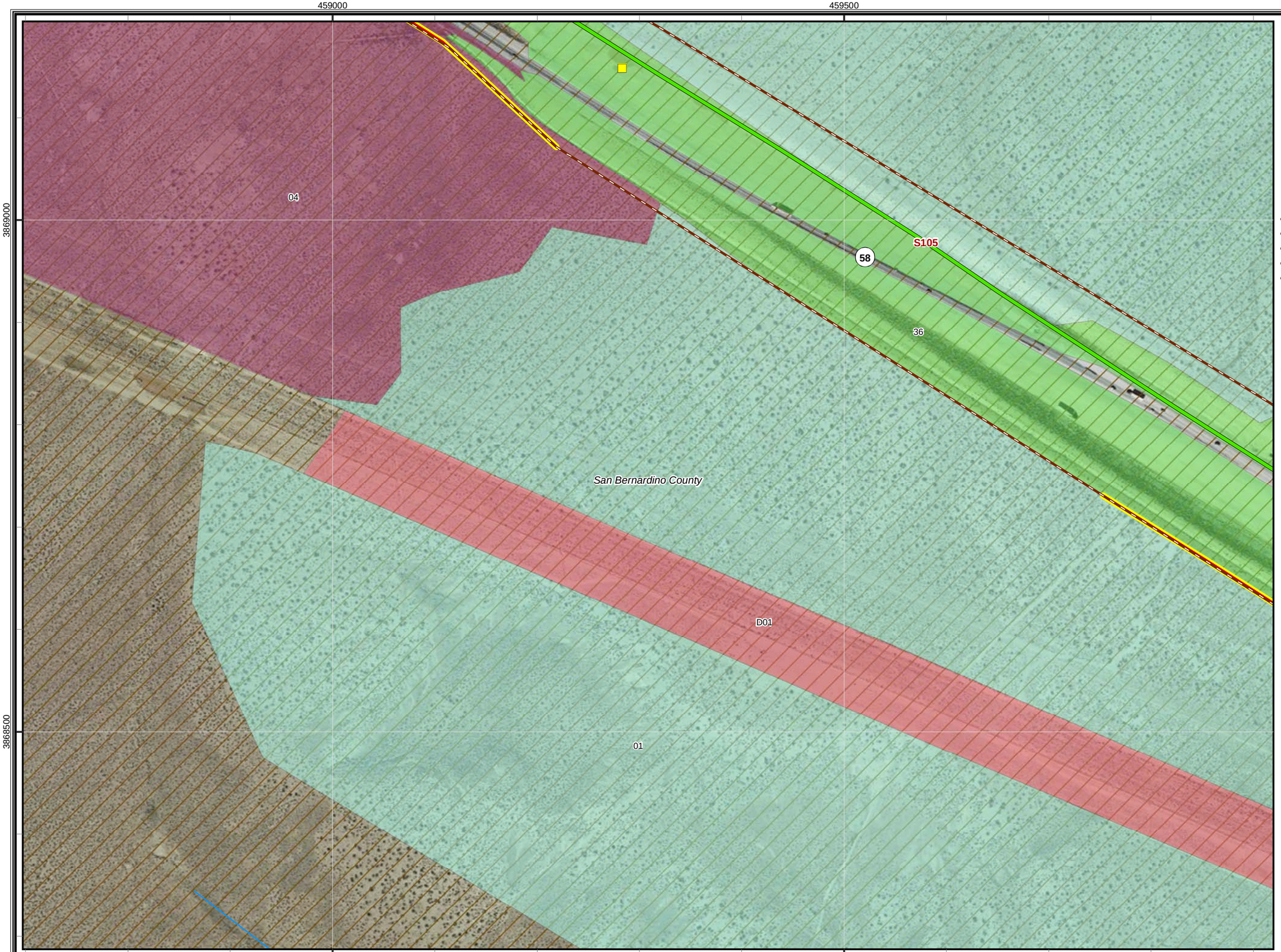


CBC Digital 395

R1-Barstow to Boron-050

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

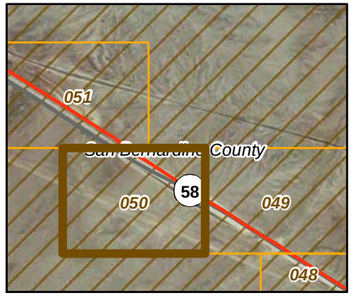
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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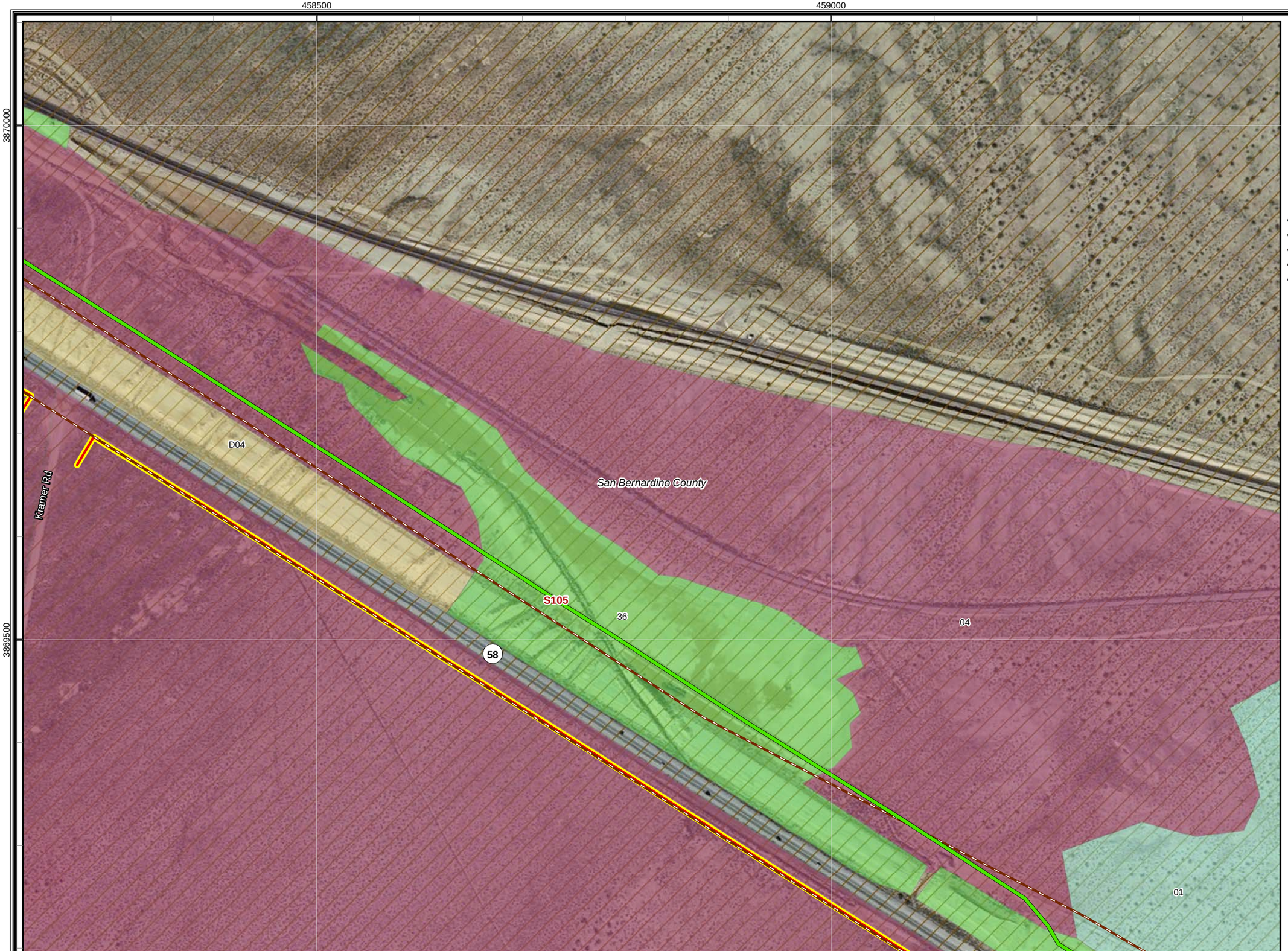


CBC Digital 395

R1-Barstow to Boron-051

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

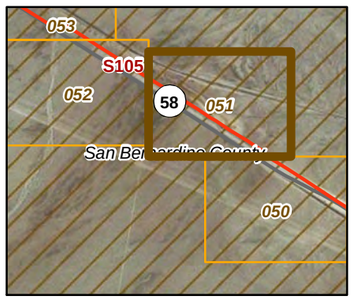
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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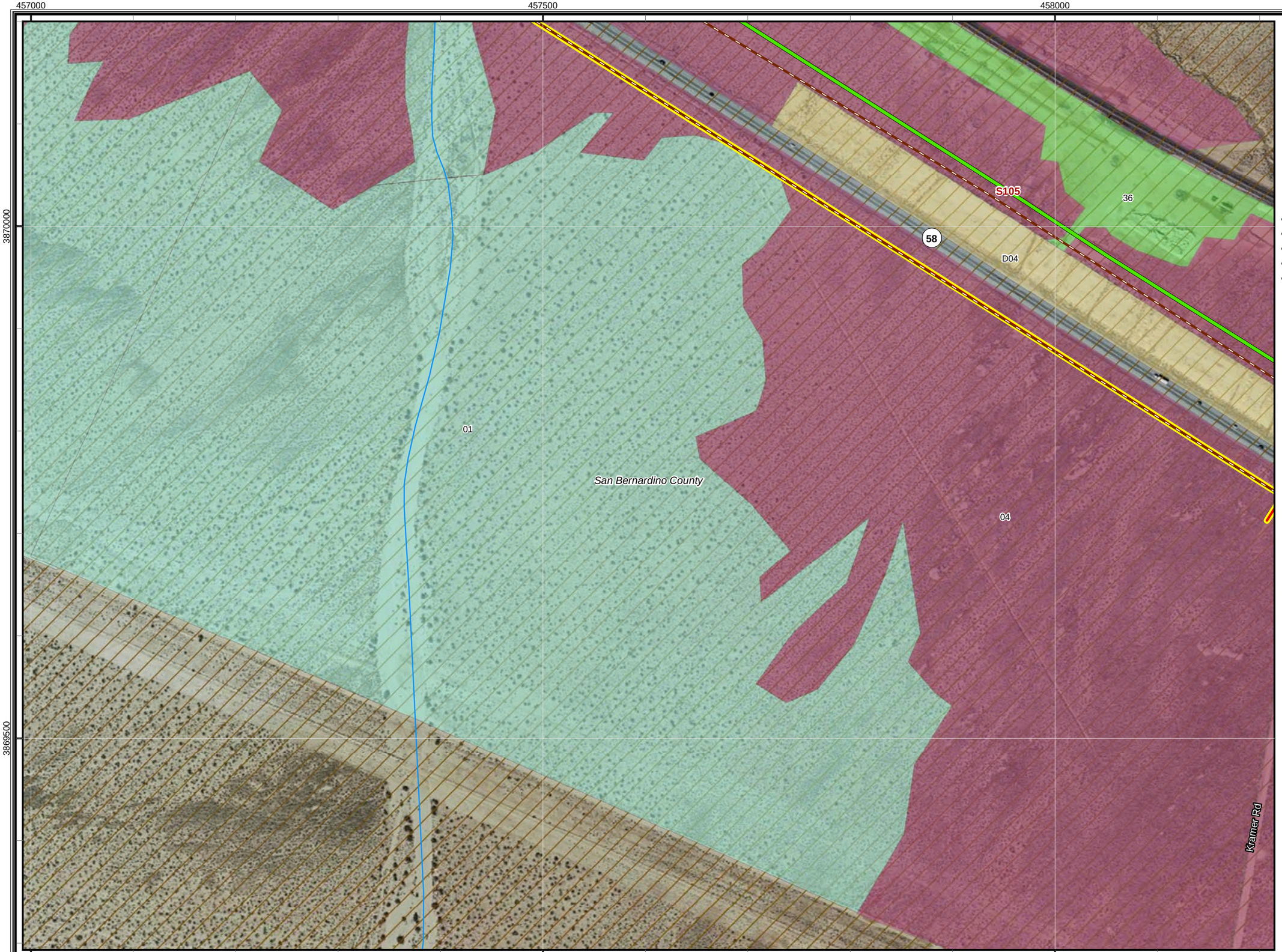
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-052

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

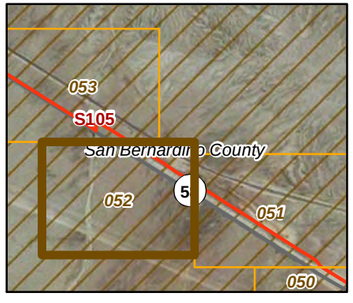
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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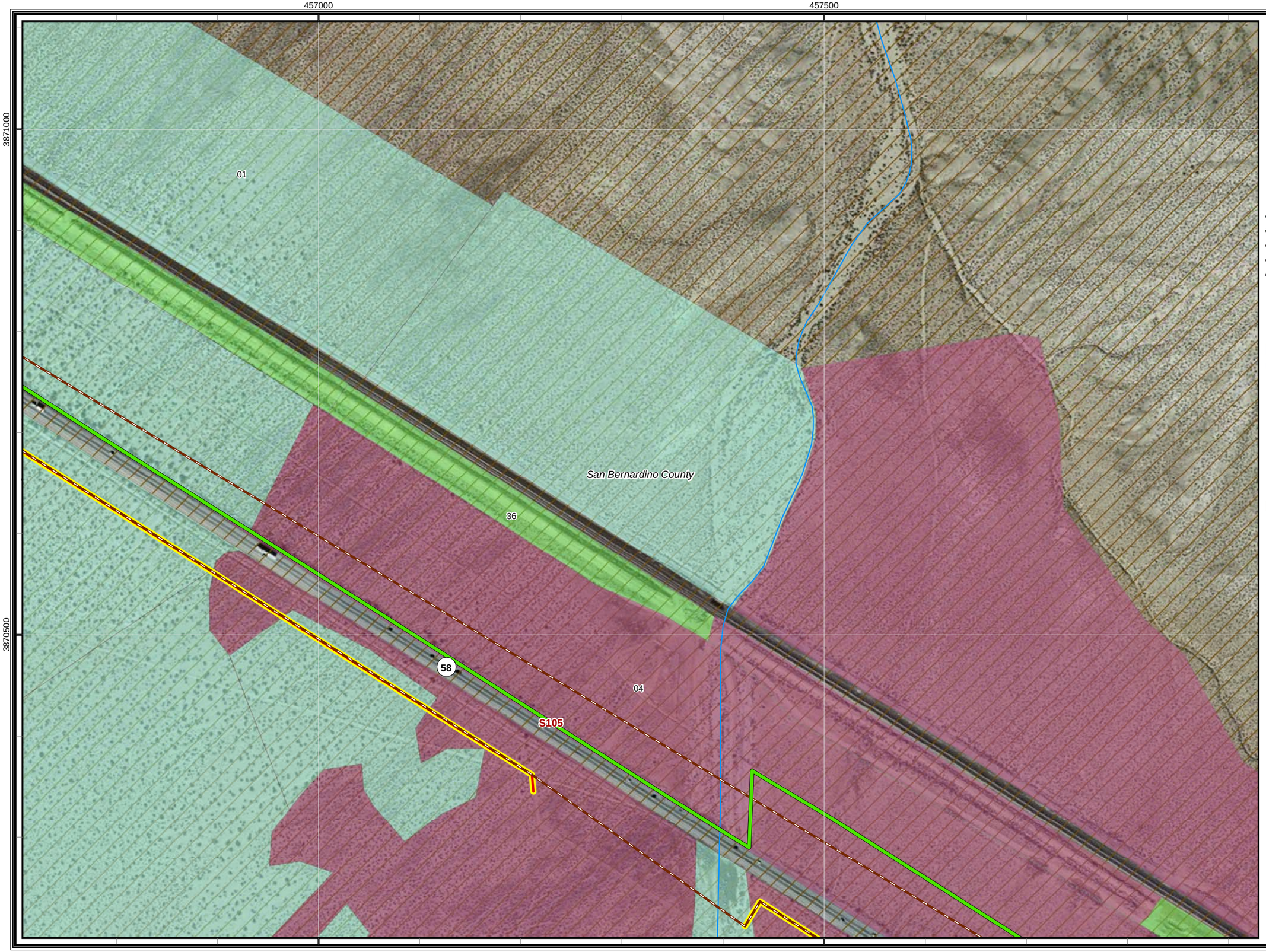


CBC Digital 395

R1-Barstow to Boron-053

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

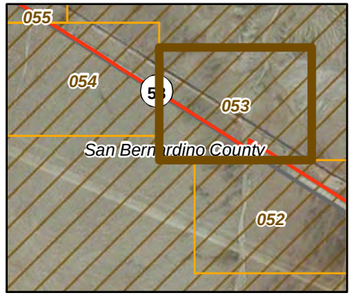
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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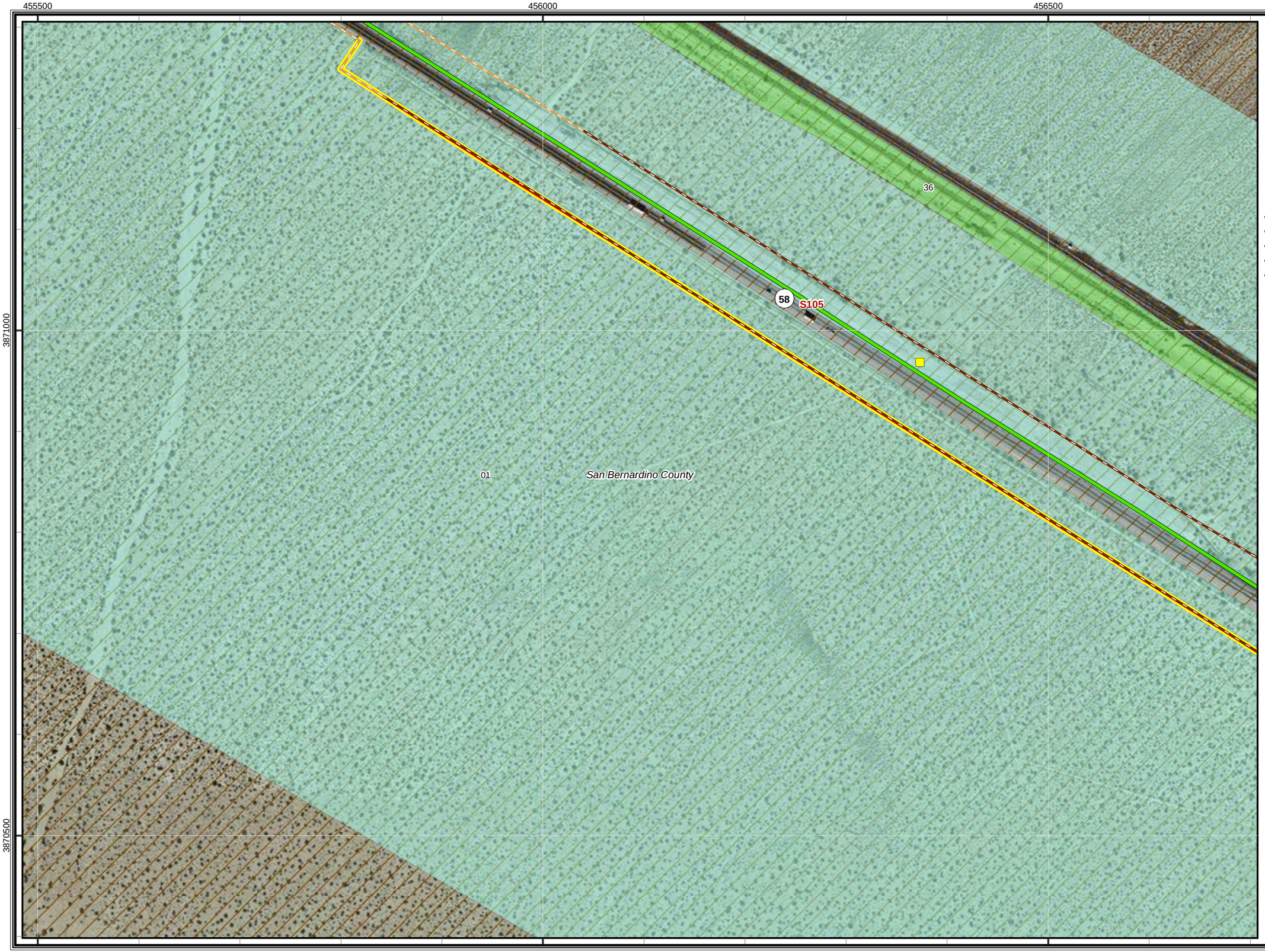
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-054

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

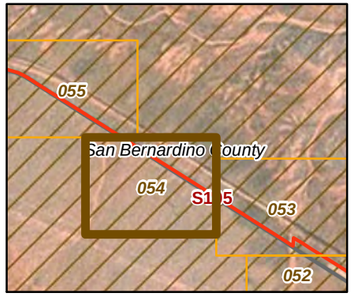
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-055

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

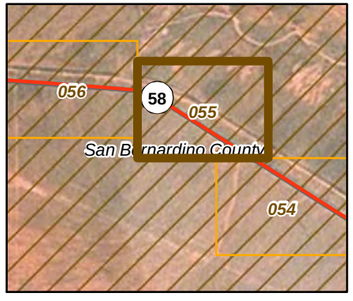
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-056

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

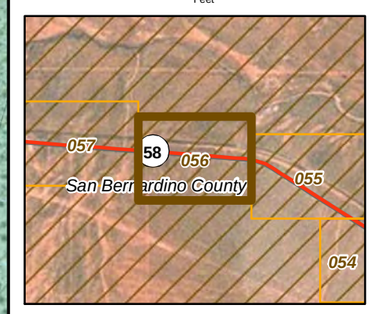
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-057

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

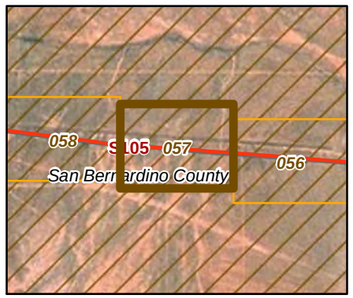
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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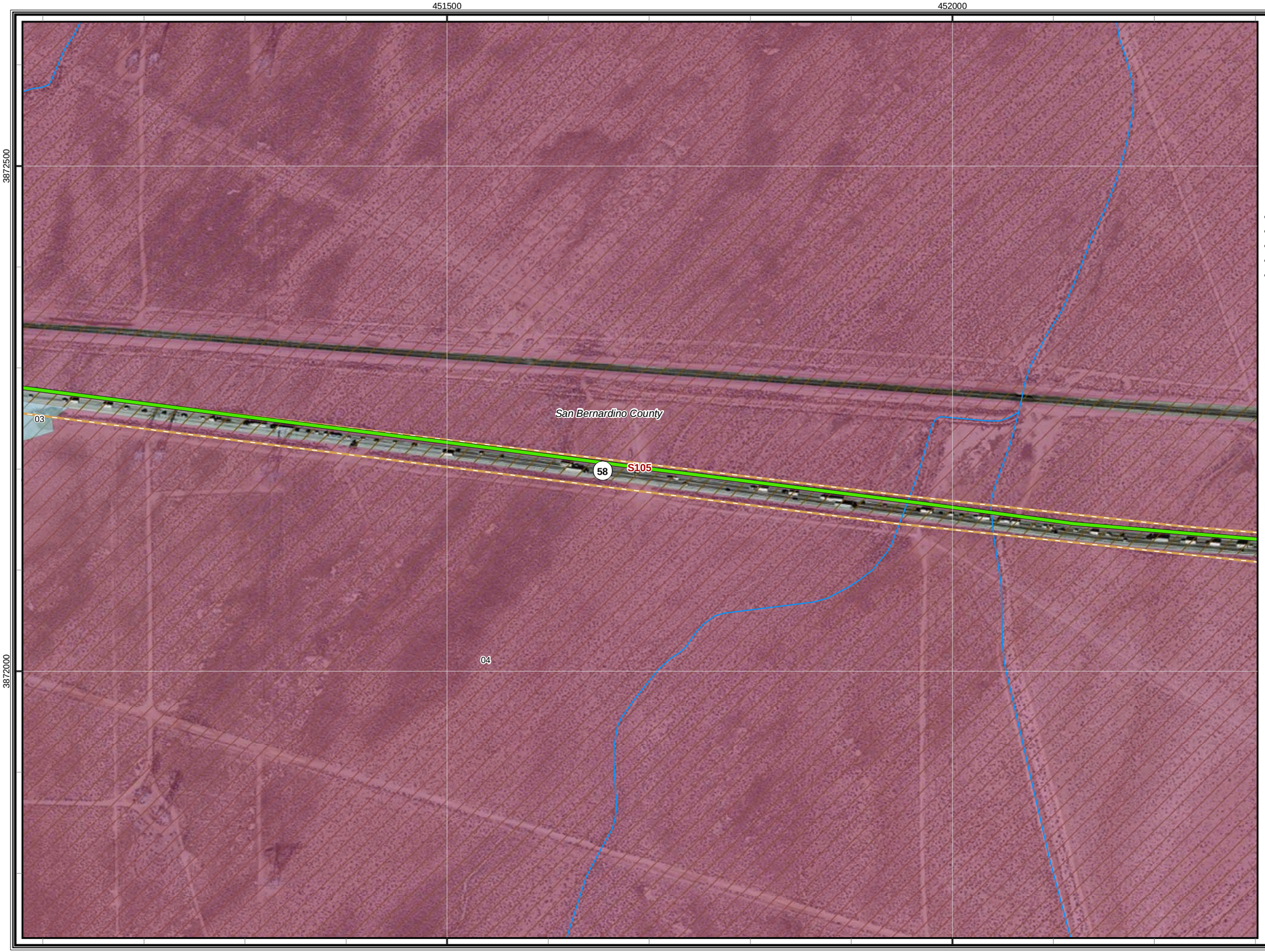
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-058

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

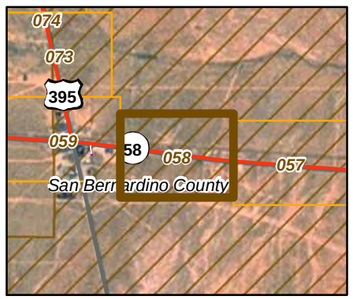
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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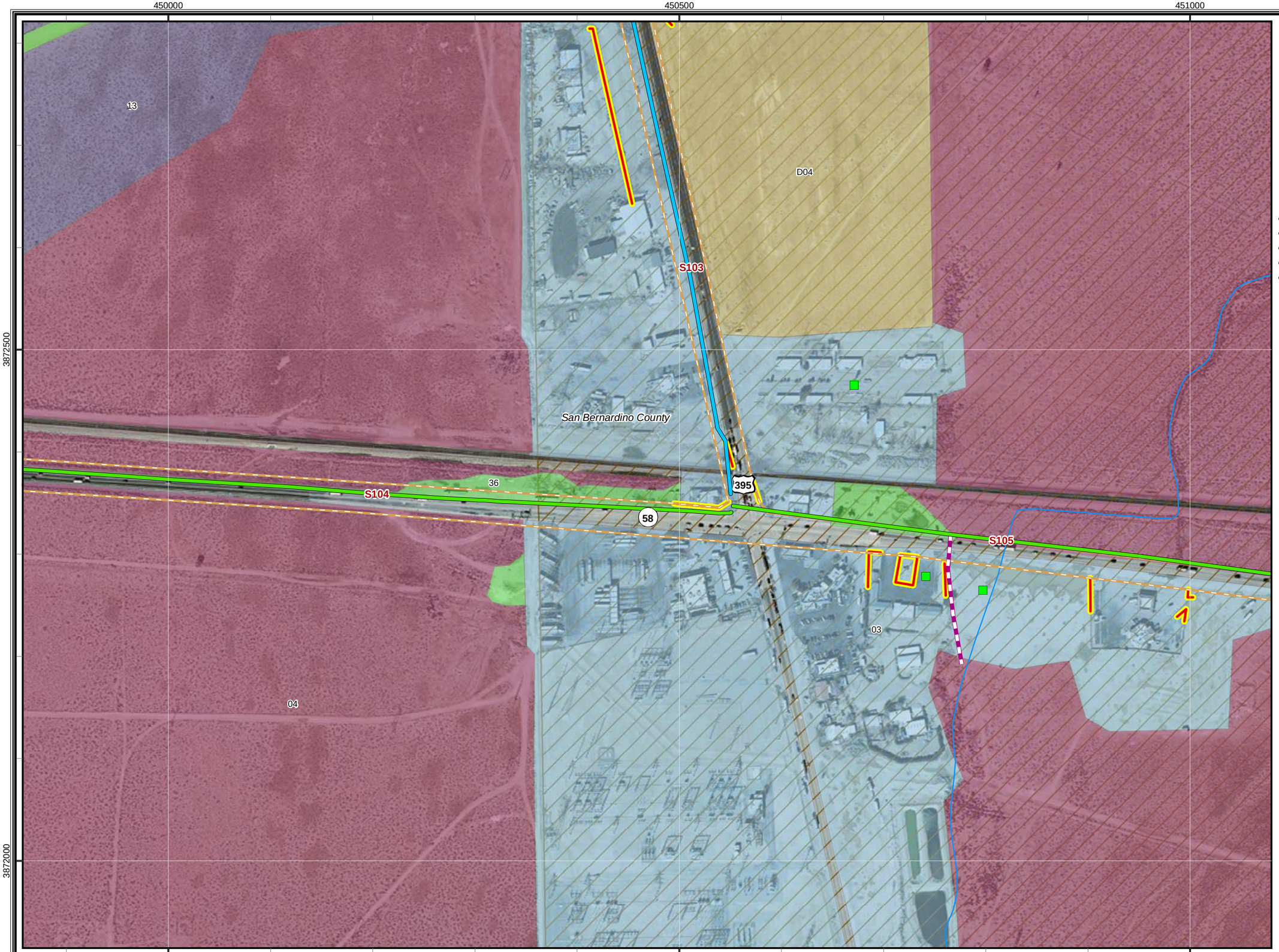
Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-059

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

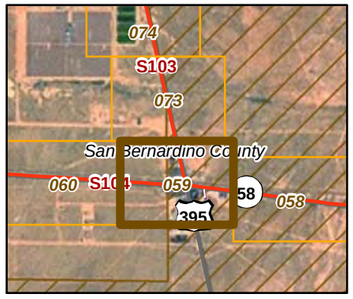
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-060

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

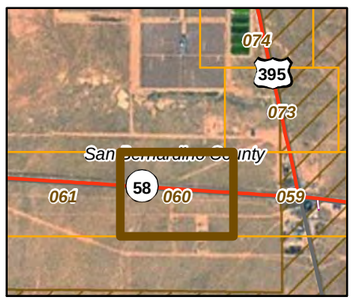
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-061

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

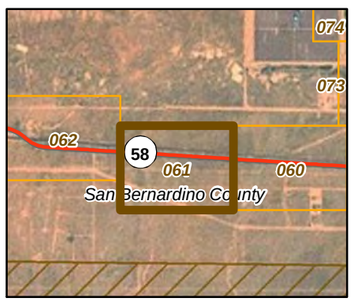
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-062

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

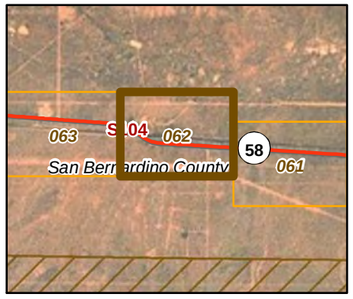
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-063

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

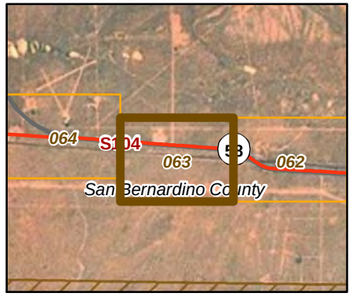
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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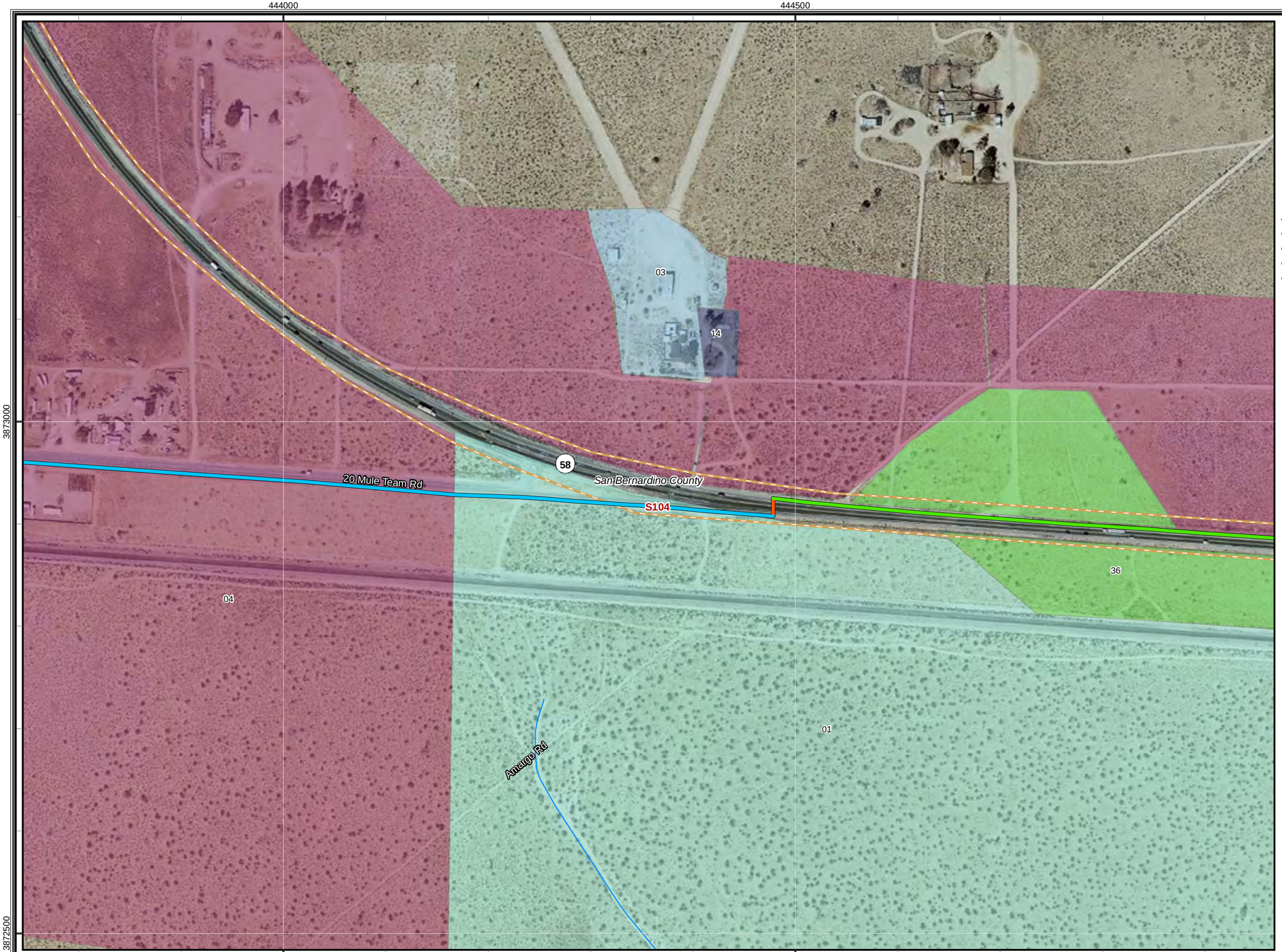
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-064

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

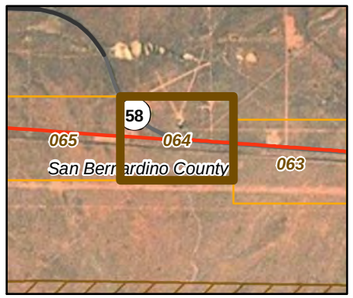
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-065

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

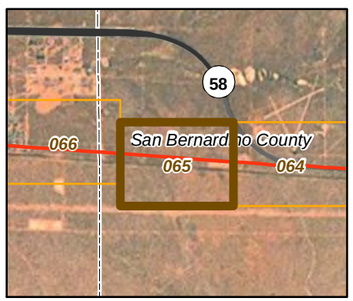
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-066

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

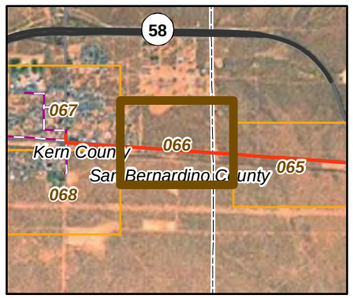
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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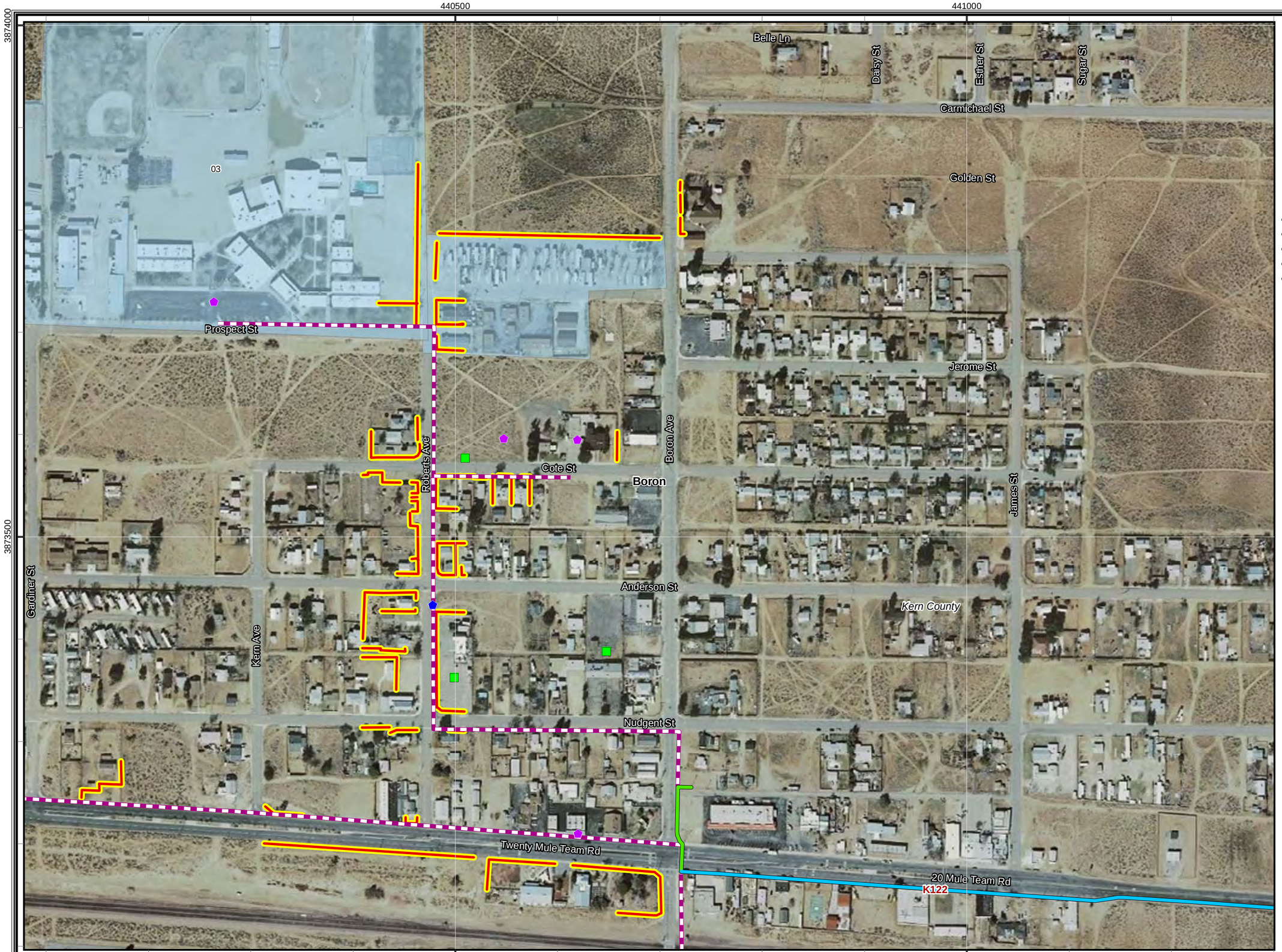
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-067

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

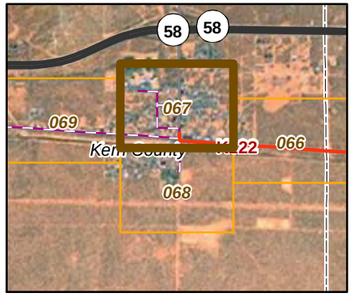
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-068

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

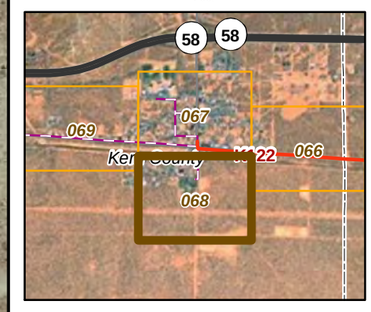
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-069

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

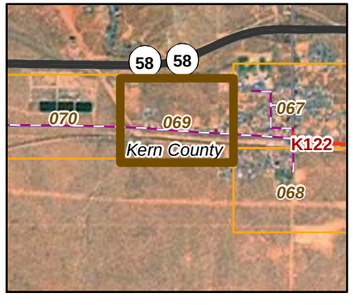
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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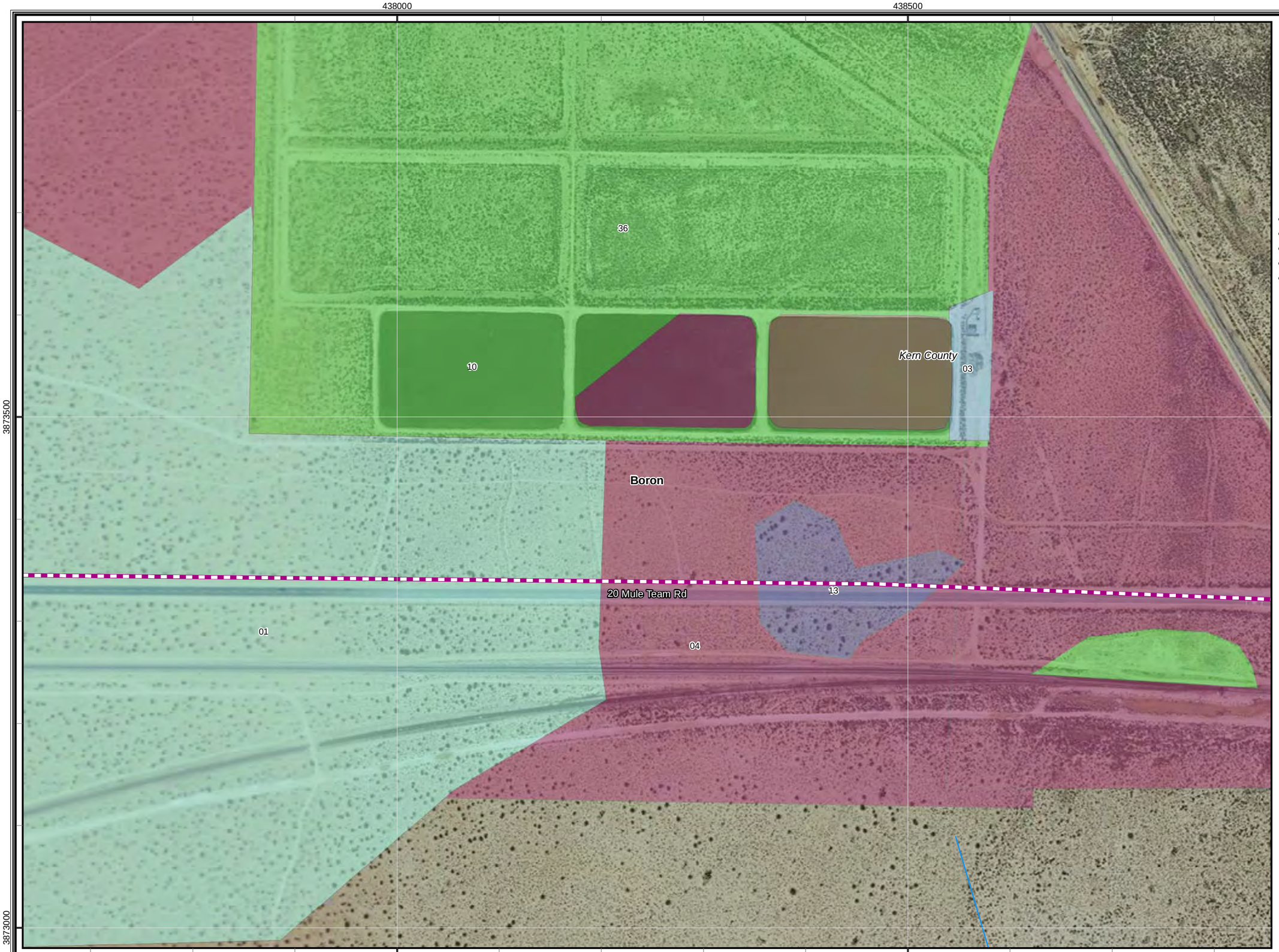
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-070

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

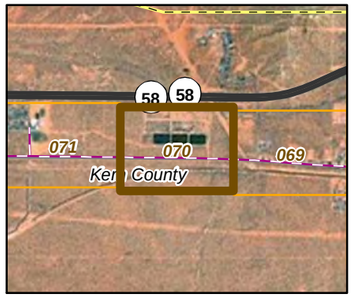
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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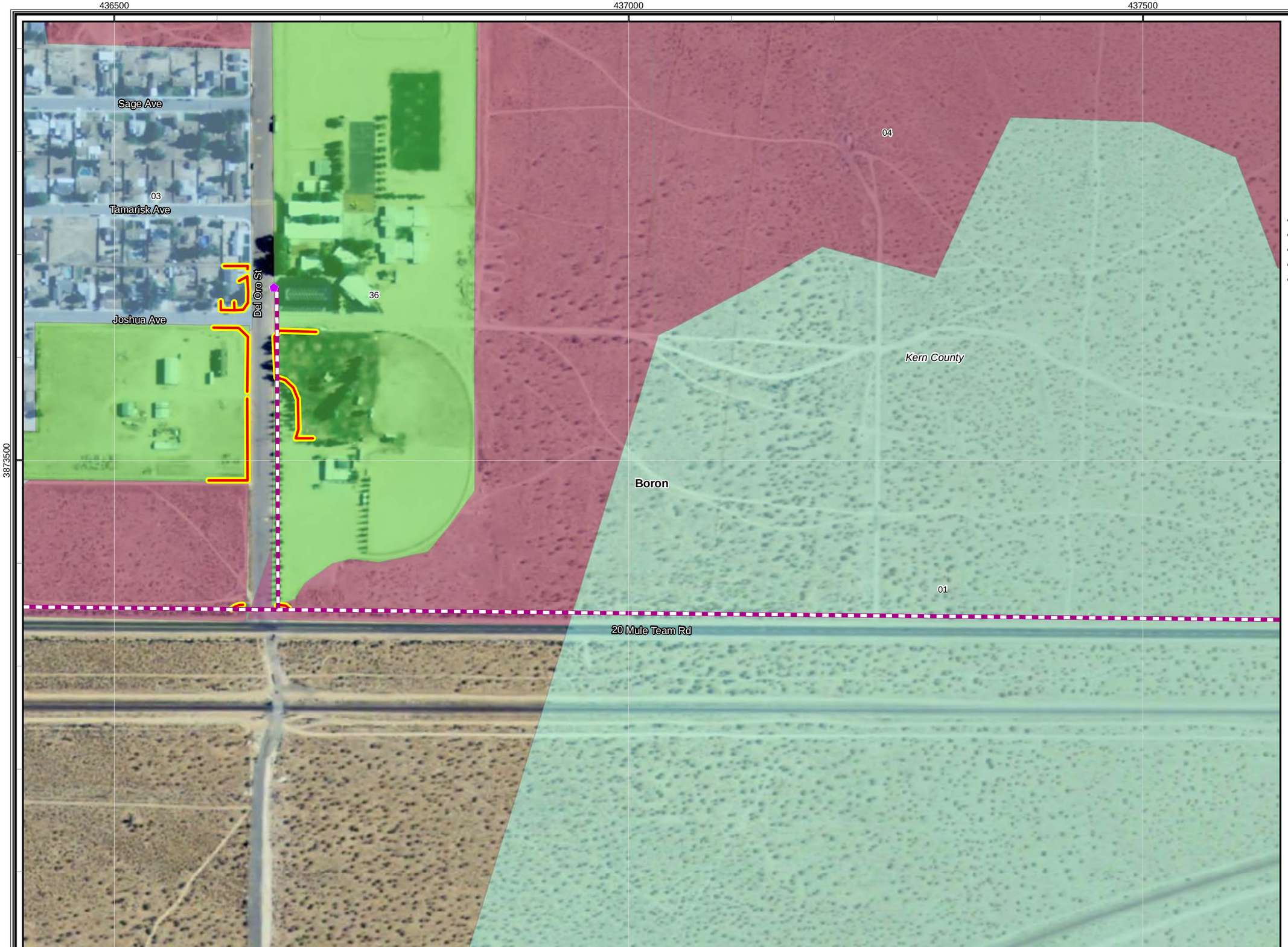
11-03-11

Chambers Group Inc.



CBC Digital 395

R1-Barstow to Boron-071

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

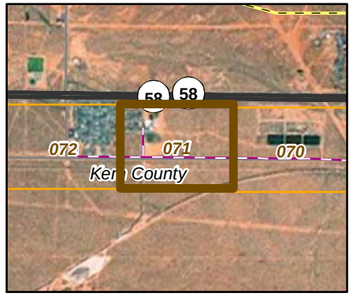
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



20260

11-03-11

Chambers Group Inc.

CBC Digital 395

R1-Barstow to Boron-072

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

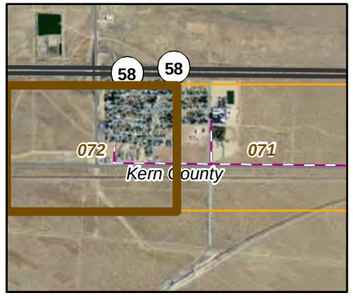
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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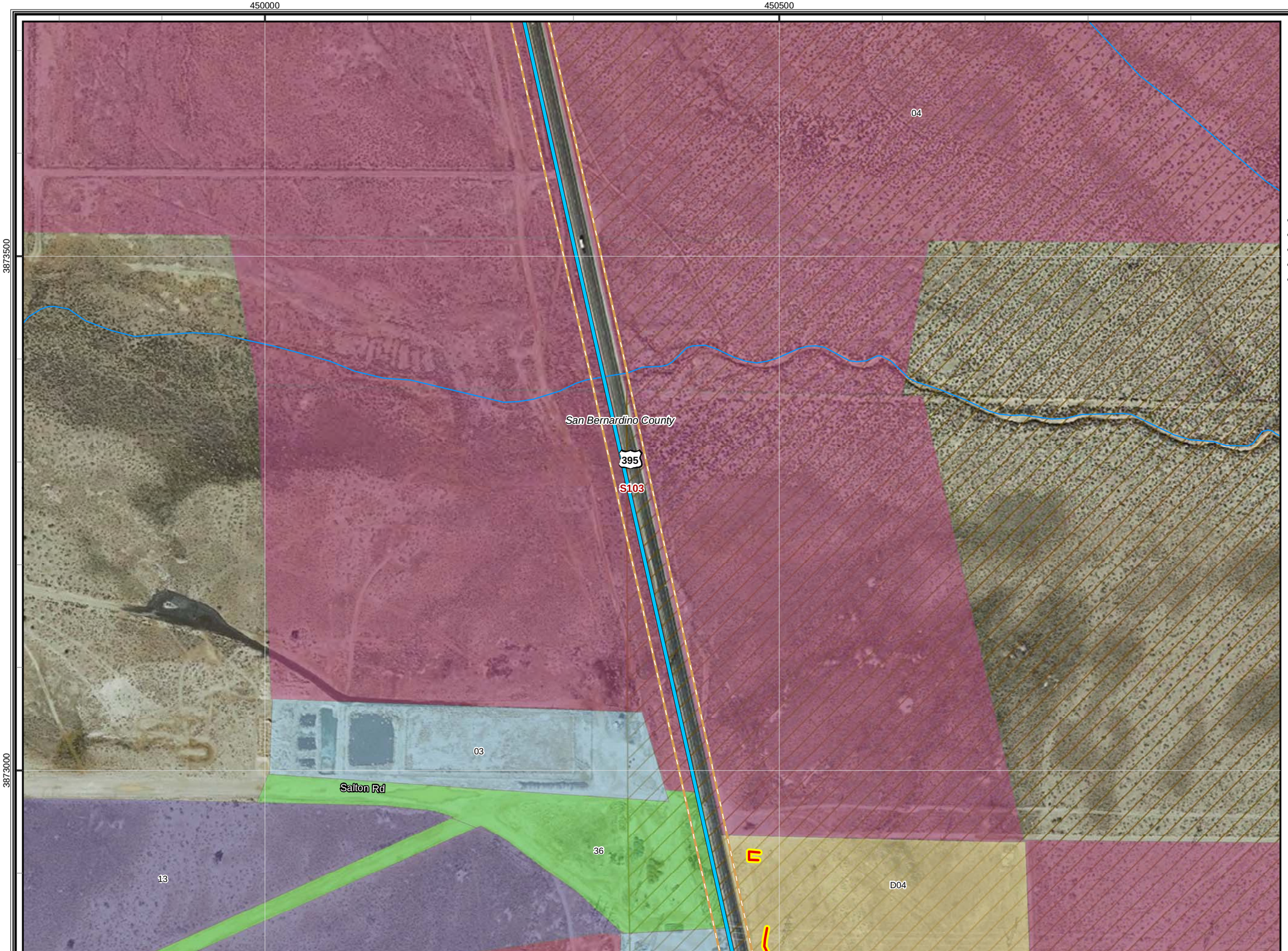
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-073

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

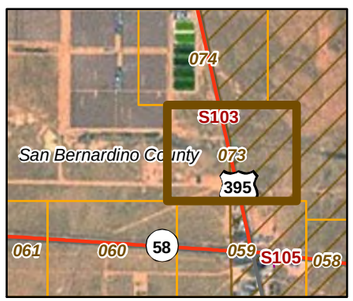
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-074

Legend

Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

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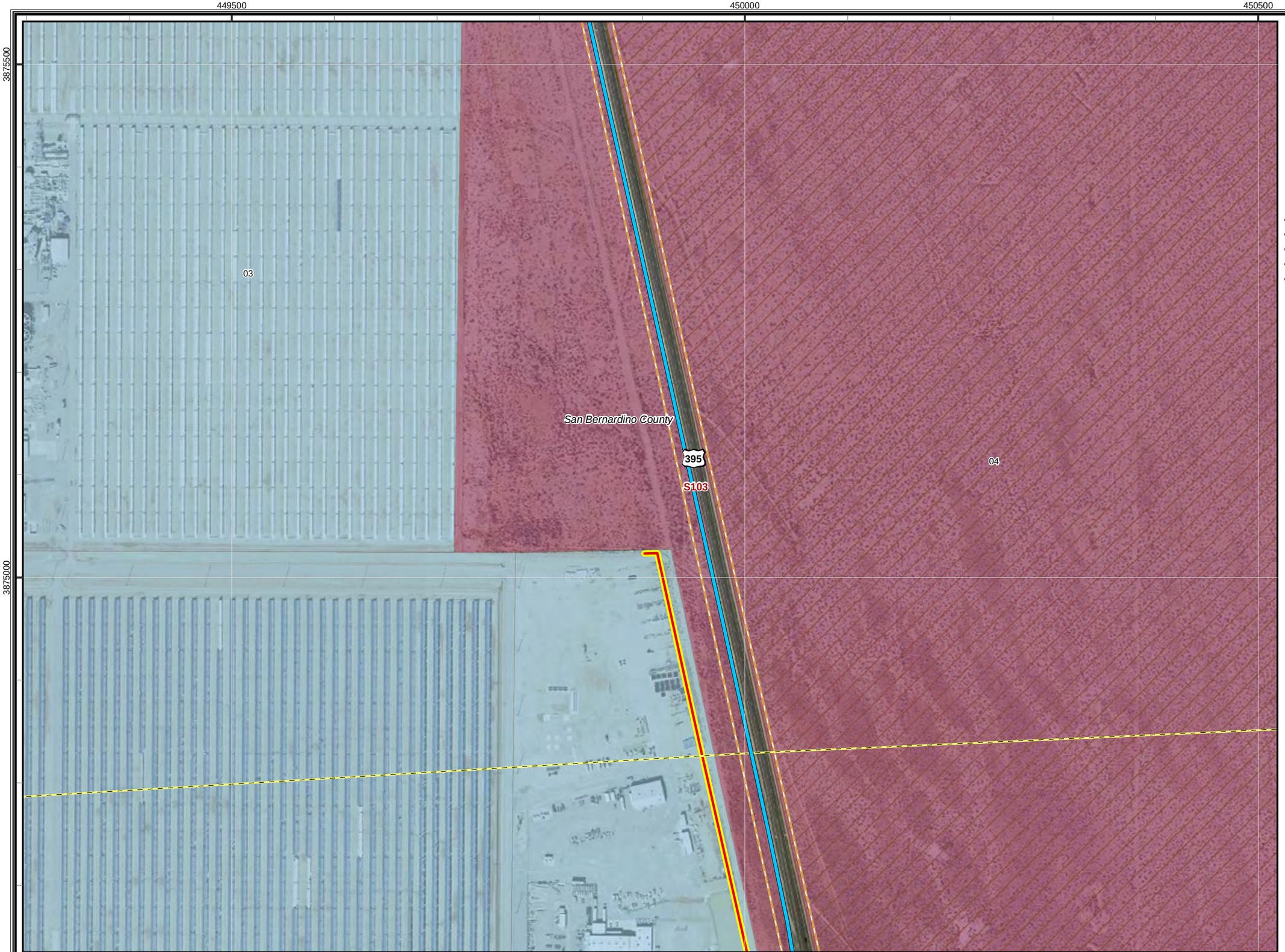
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-075

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

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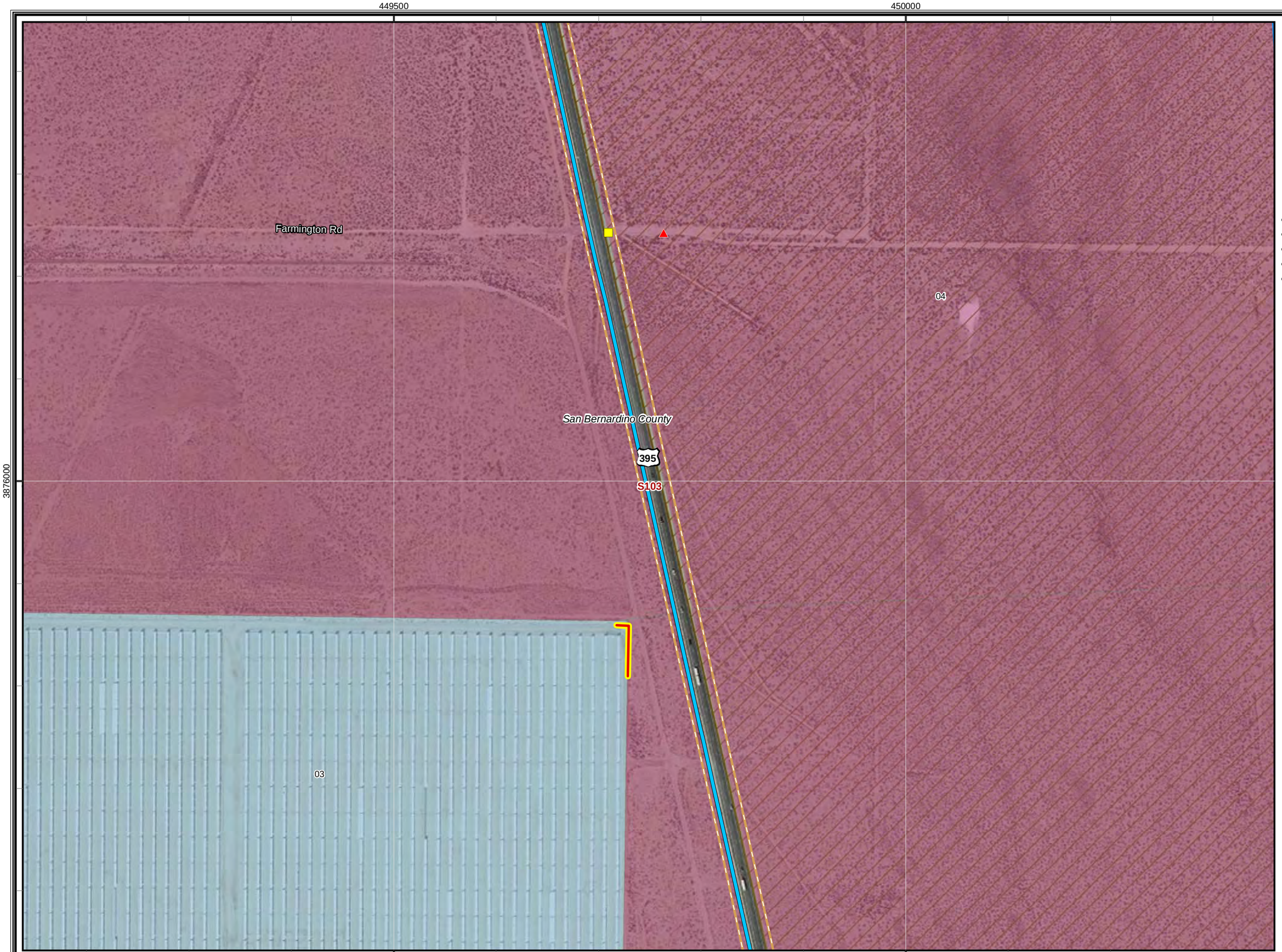
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-076

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

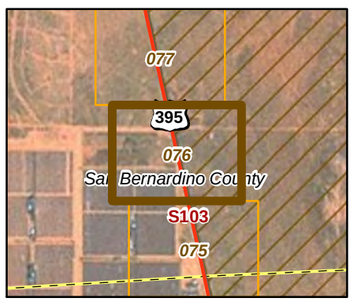
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-077

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

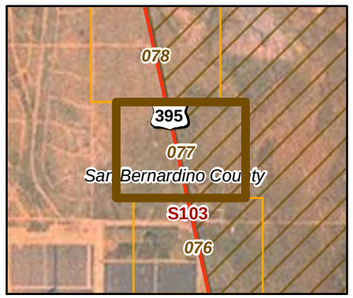
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-078

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

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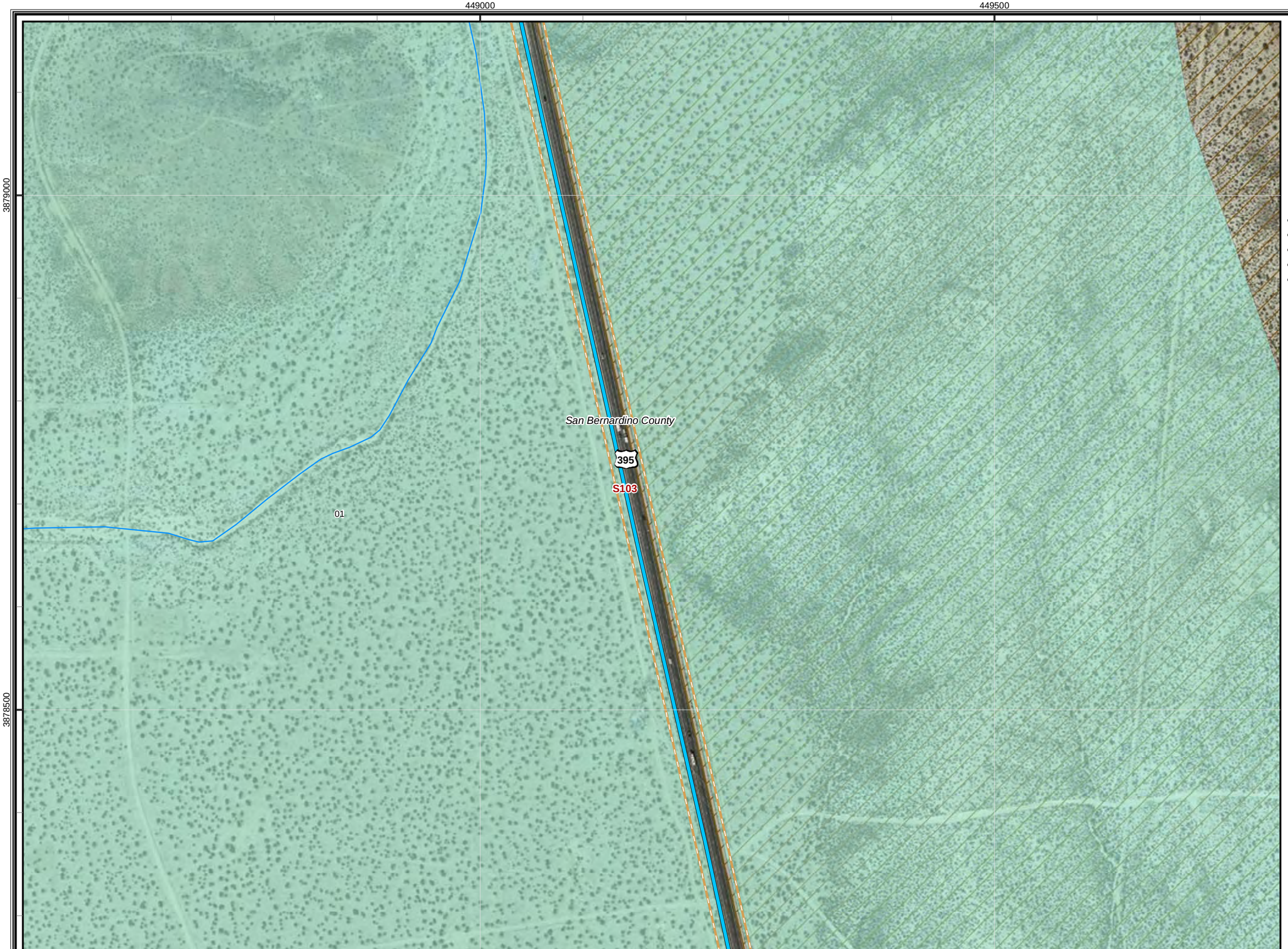
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-079

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

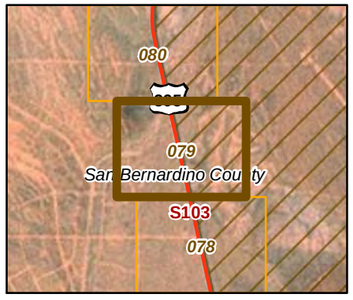
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-080

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

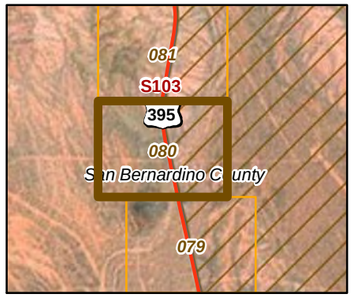
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-081

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

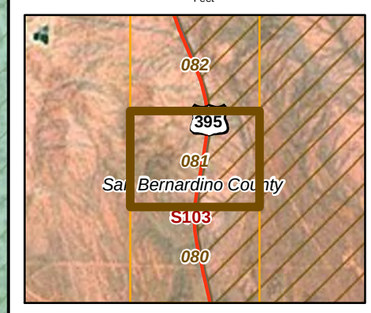
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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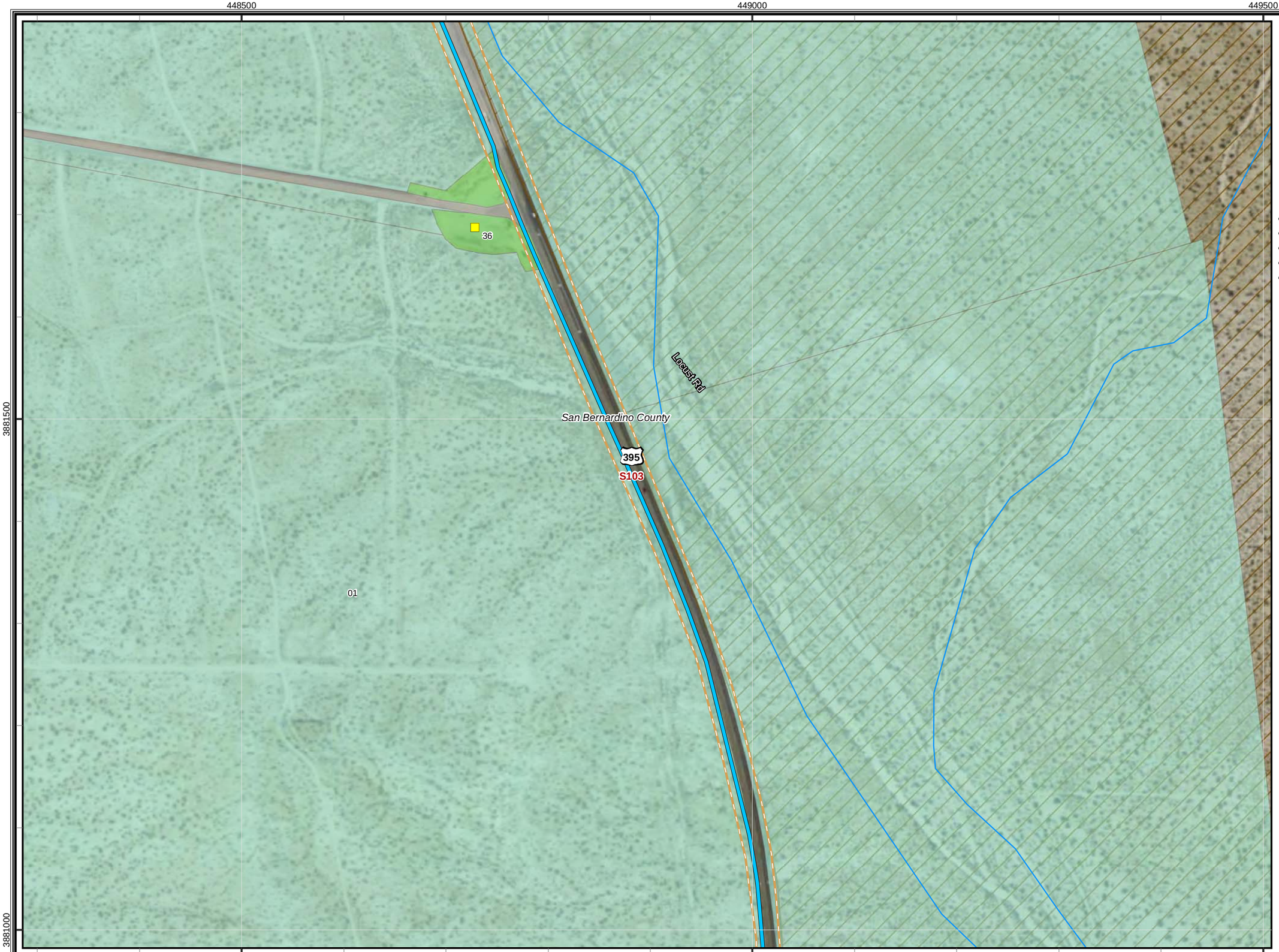
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-082

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

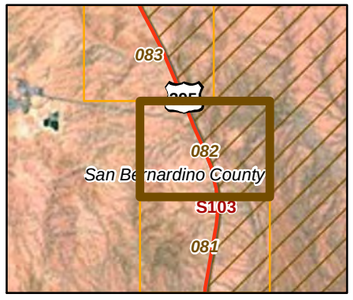
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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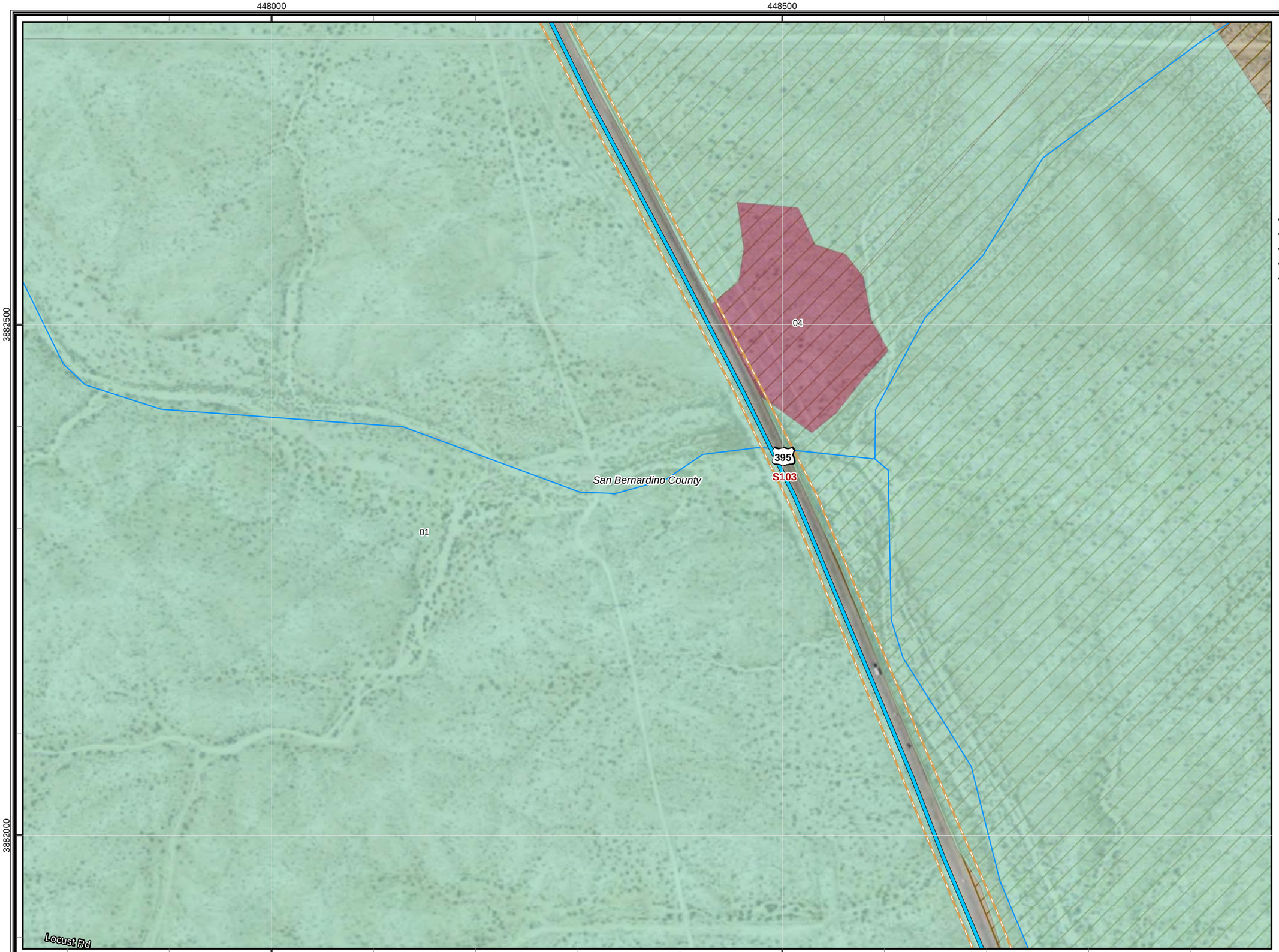
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-083

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

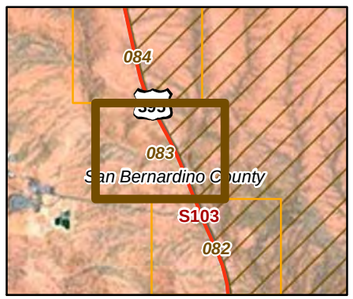
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-084

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

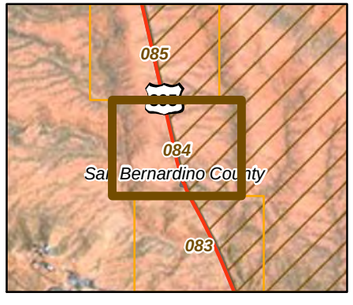
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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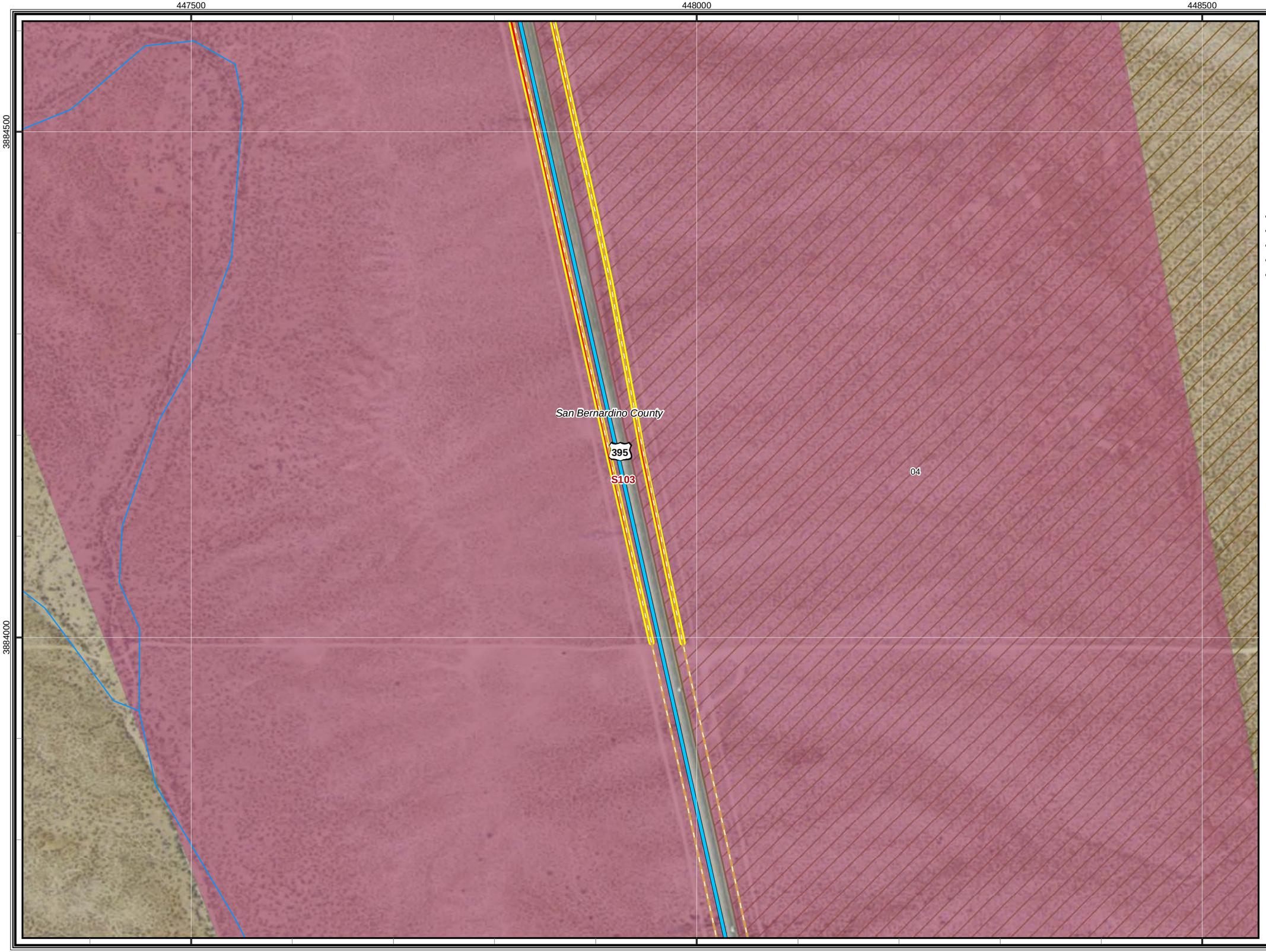
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-085

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

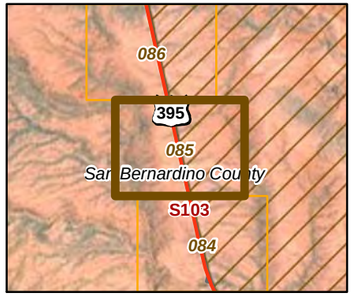
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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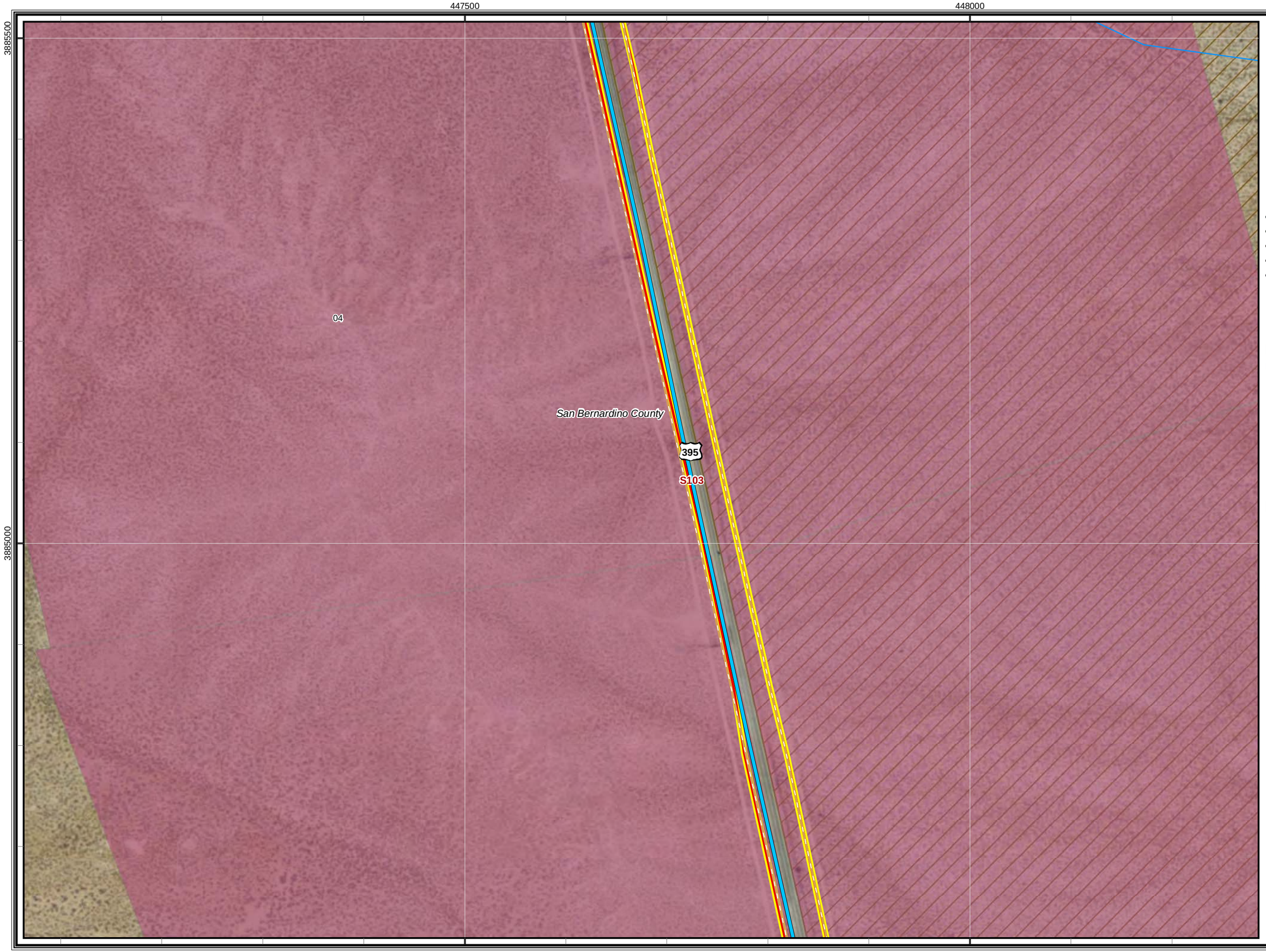
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-086

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

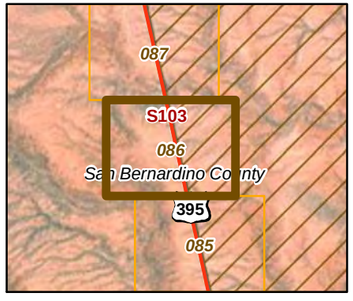
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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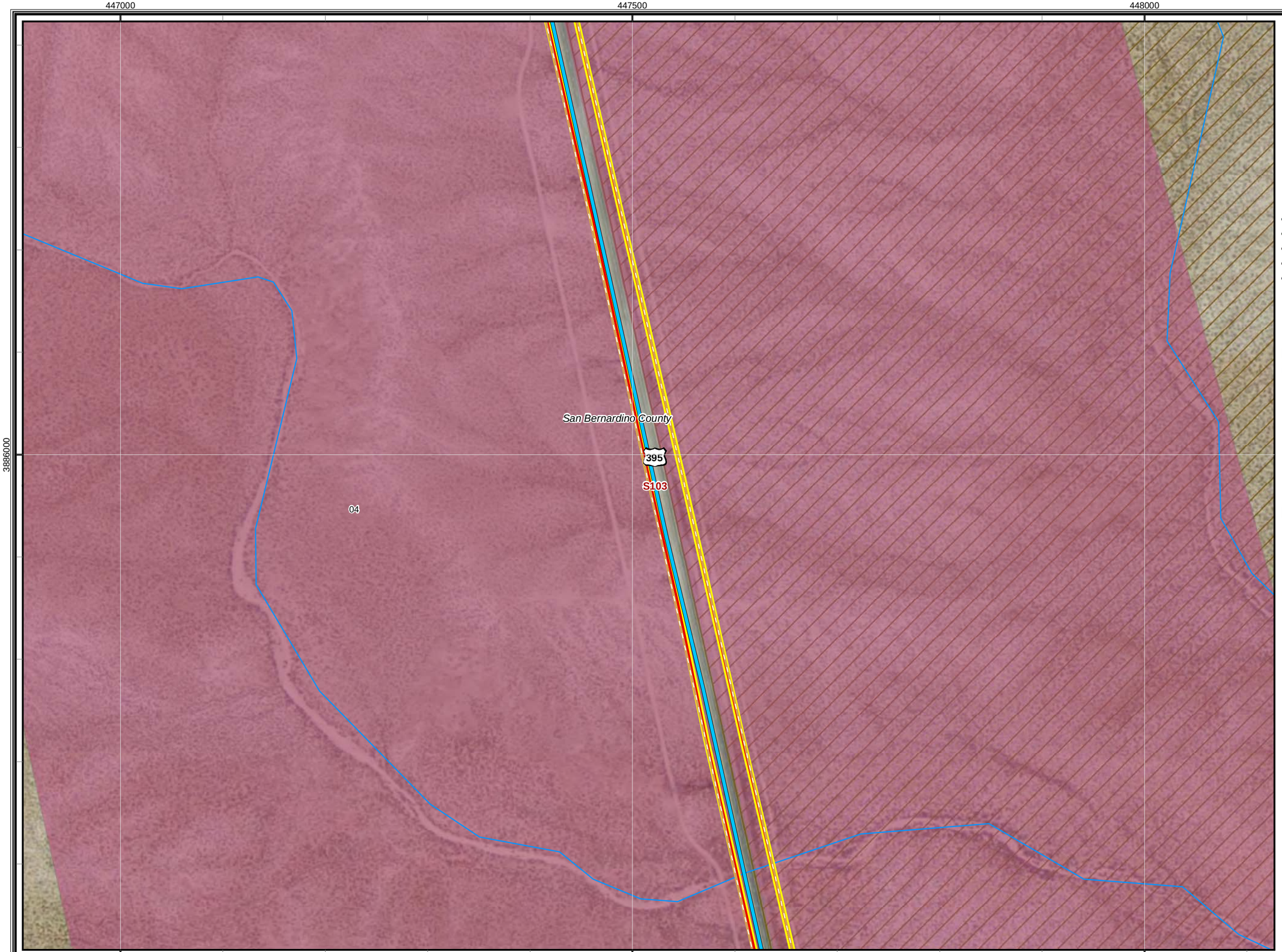
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-087

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

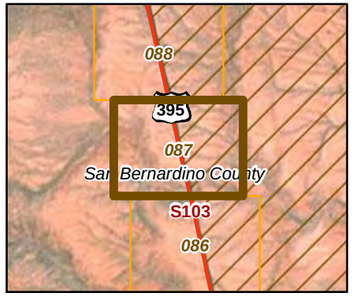
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-088

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

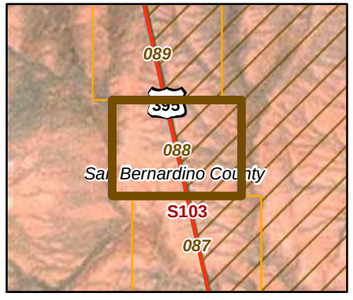
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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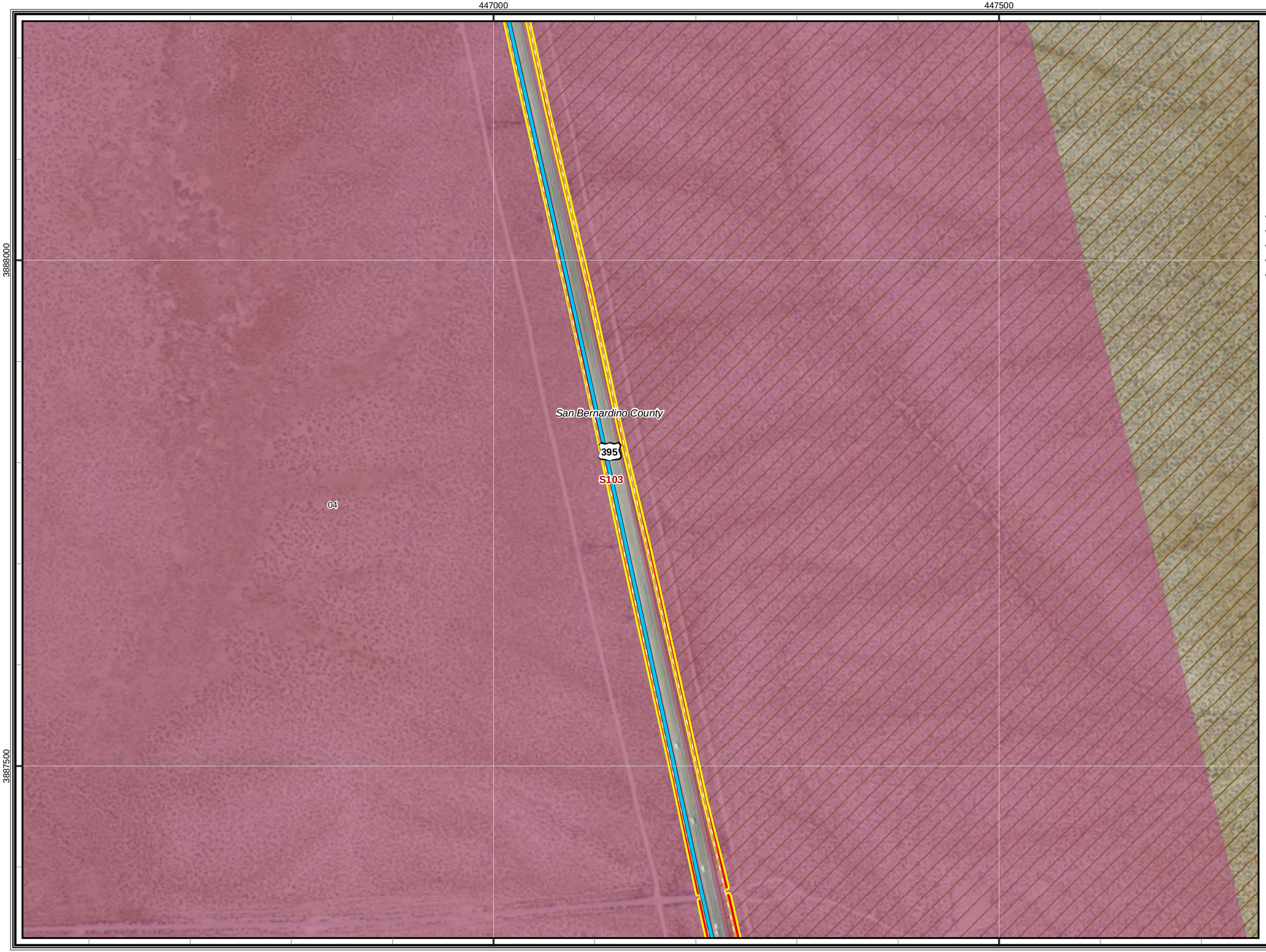
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-089

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

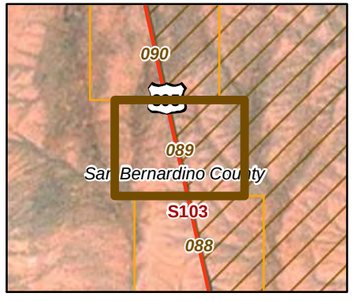
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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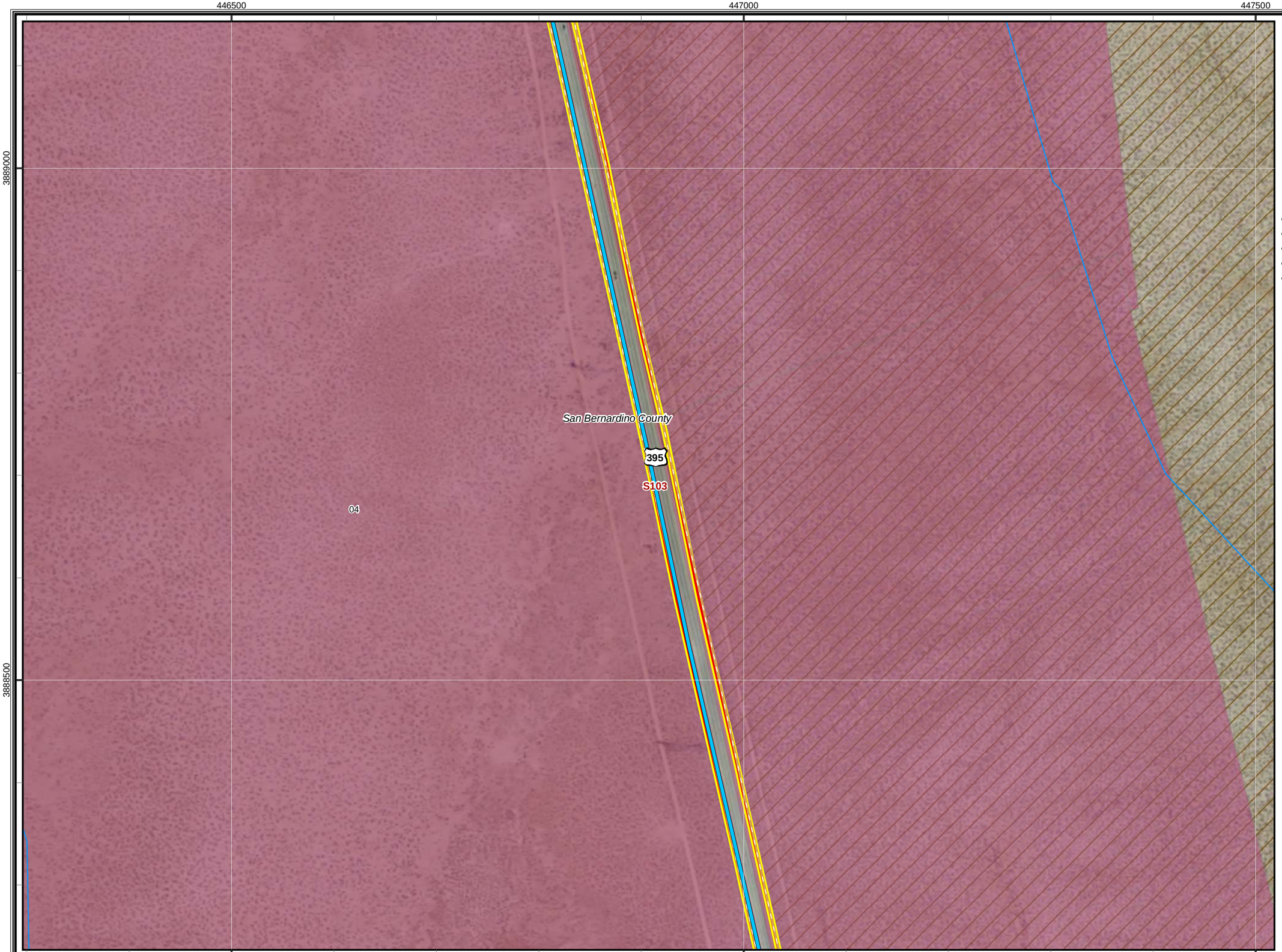
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-090

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

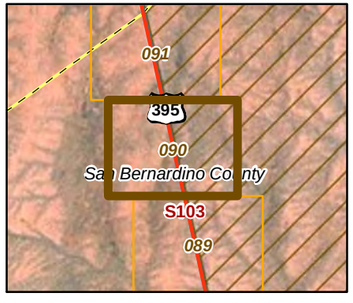
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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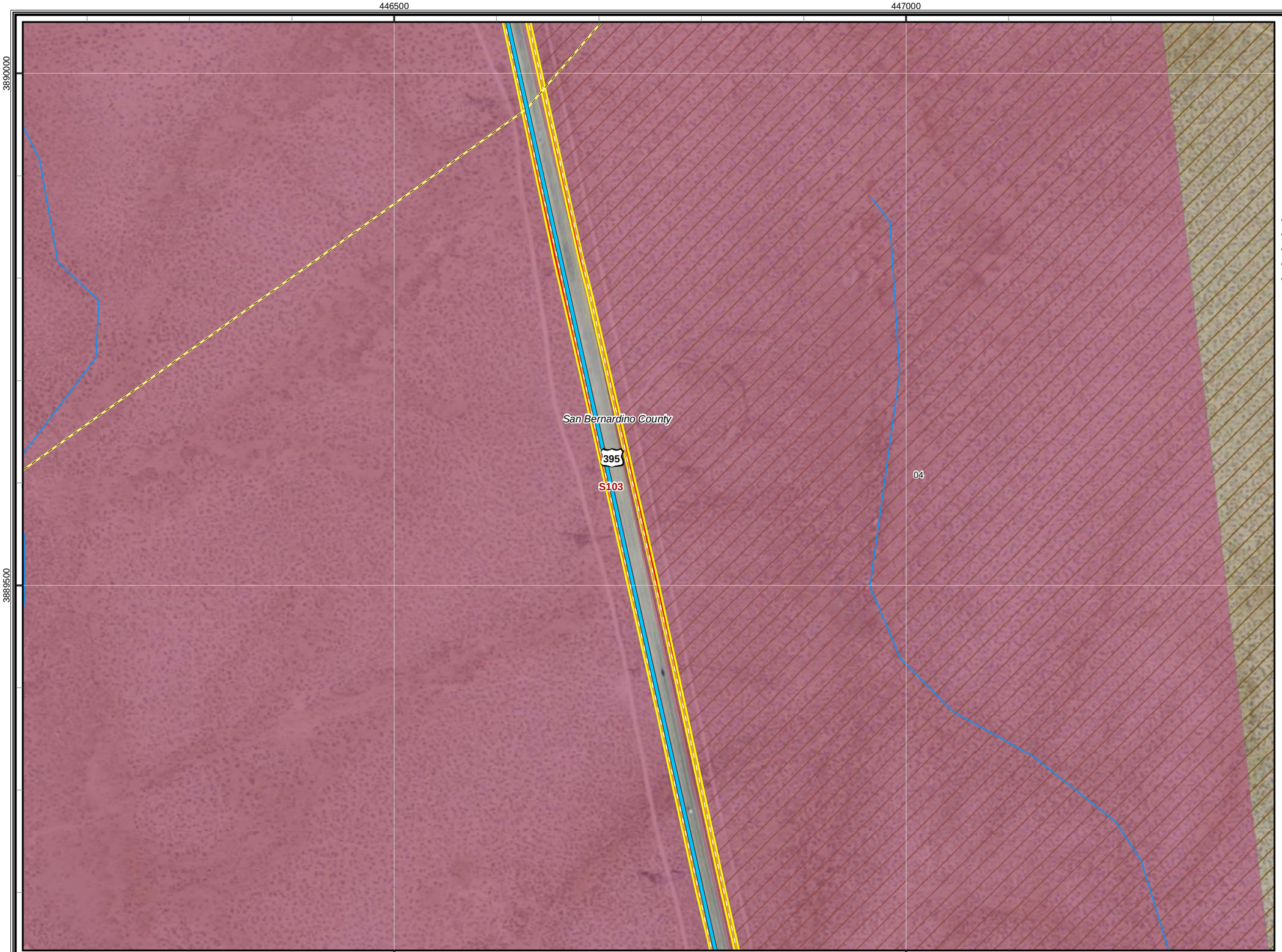


CBC Digital 395

R2-Kramer to Johannesburg-091

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

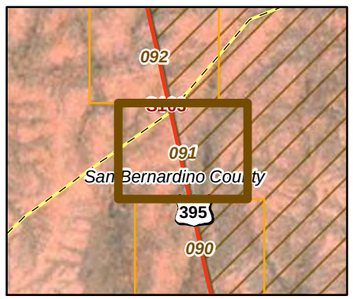
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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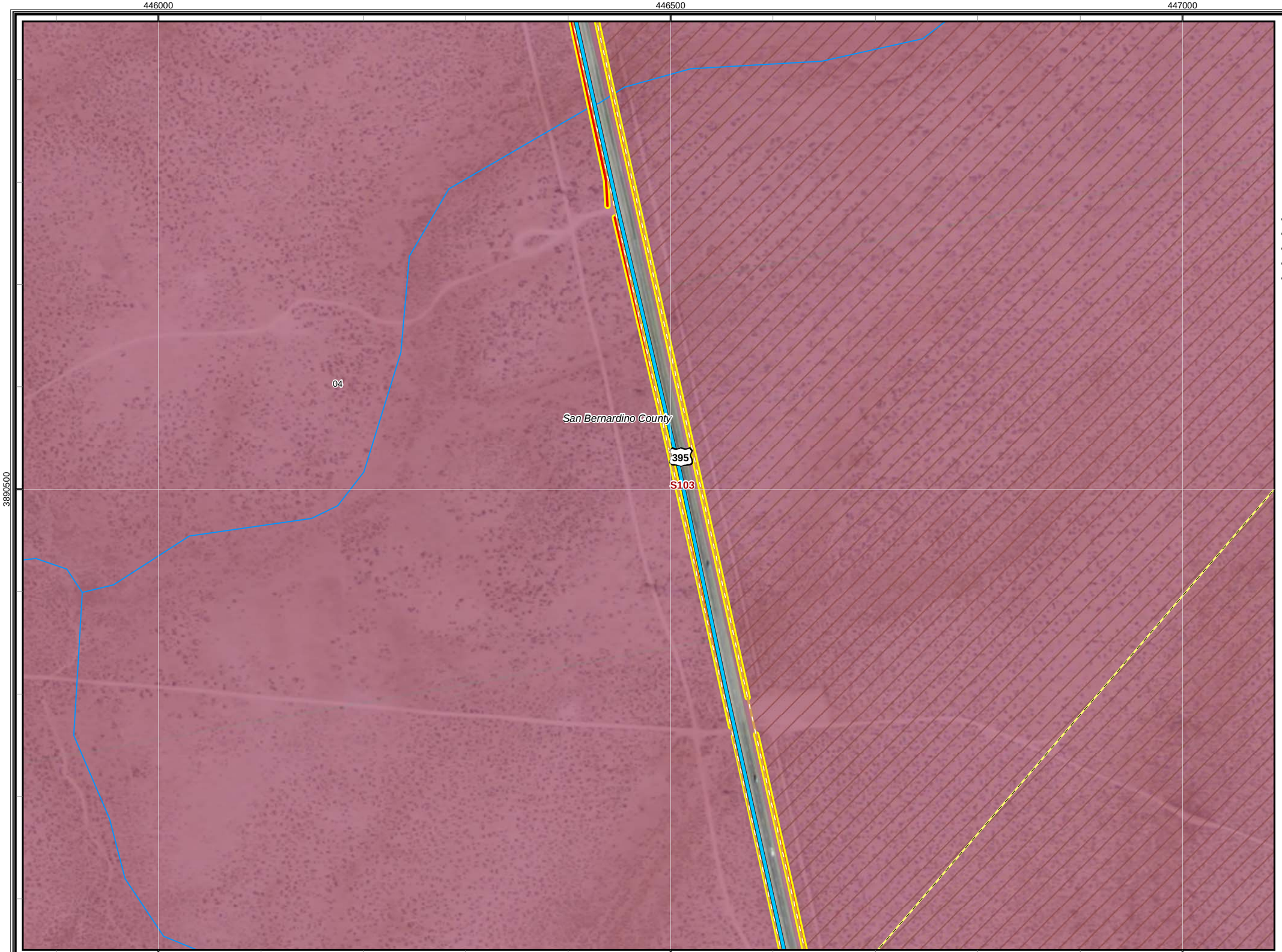
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-092

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

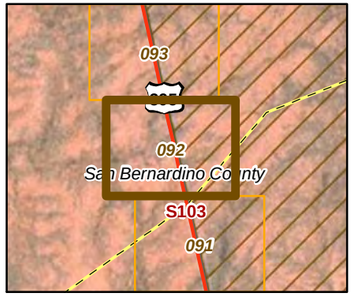
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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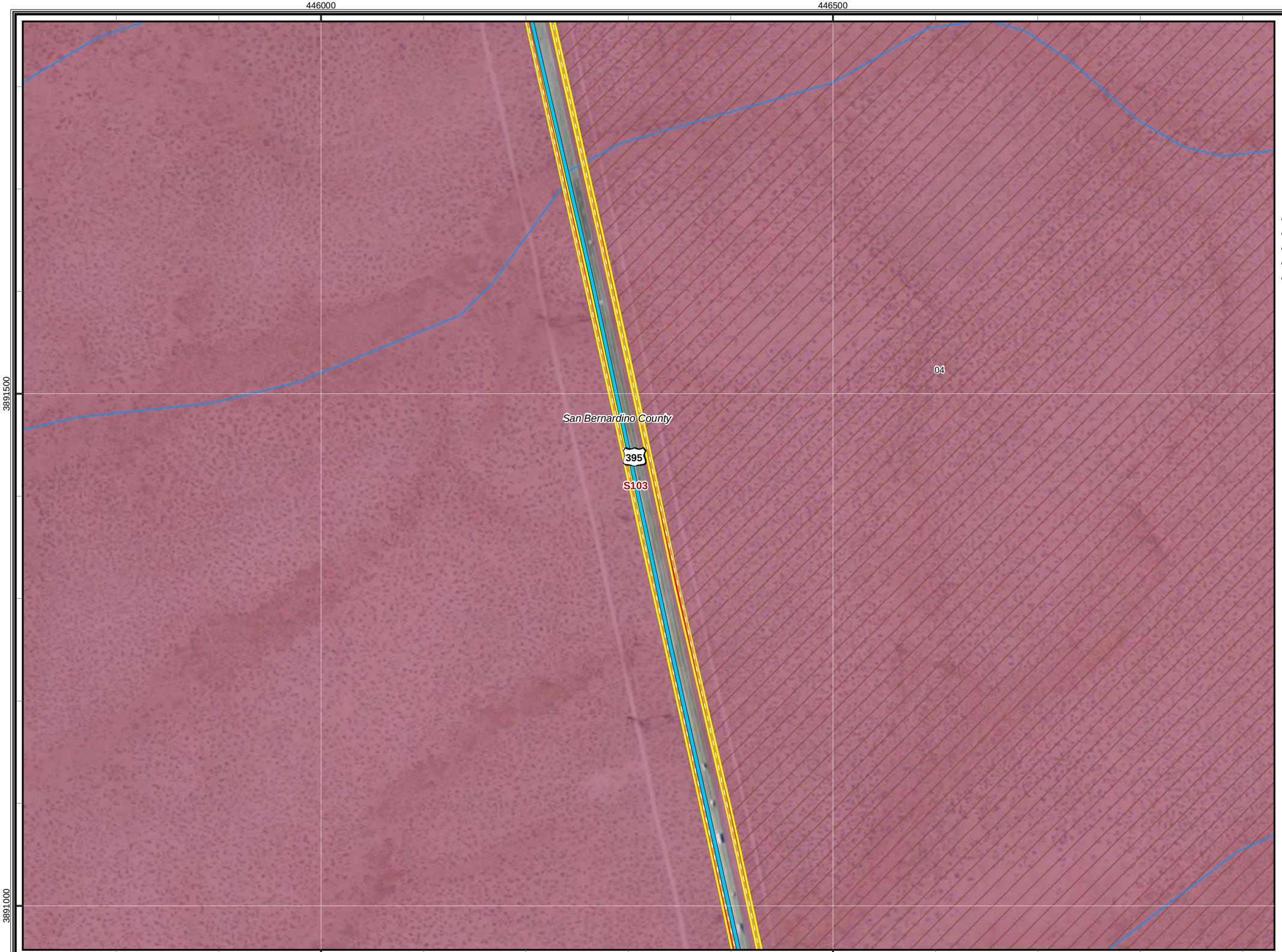
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-093

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

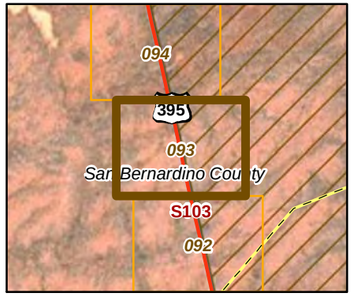
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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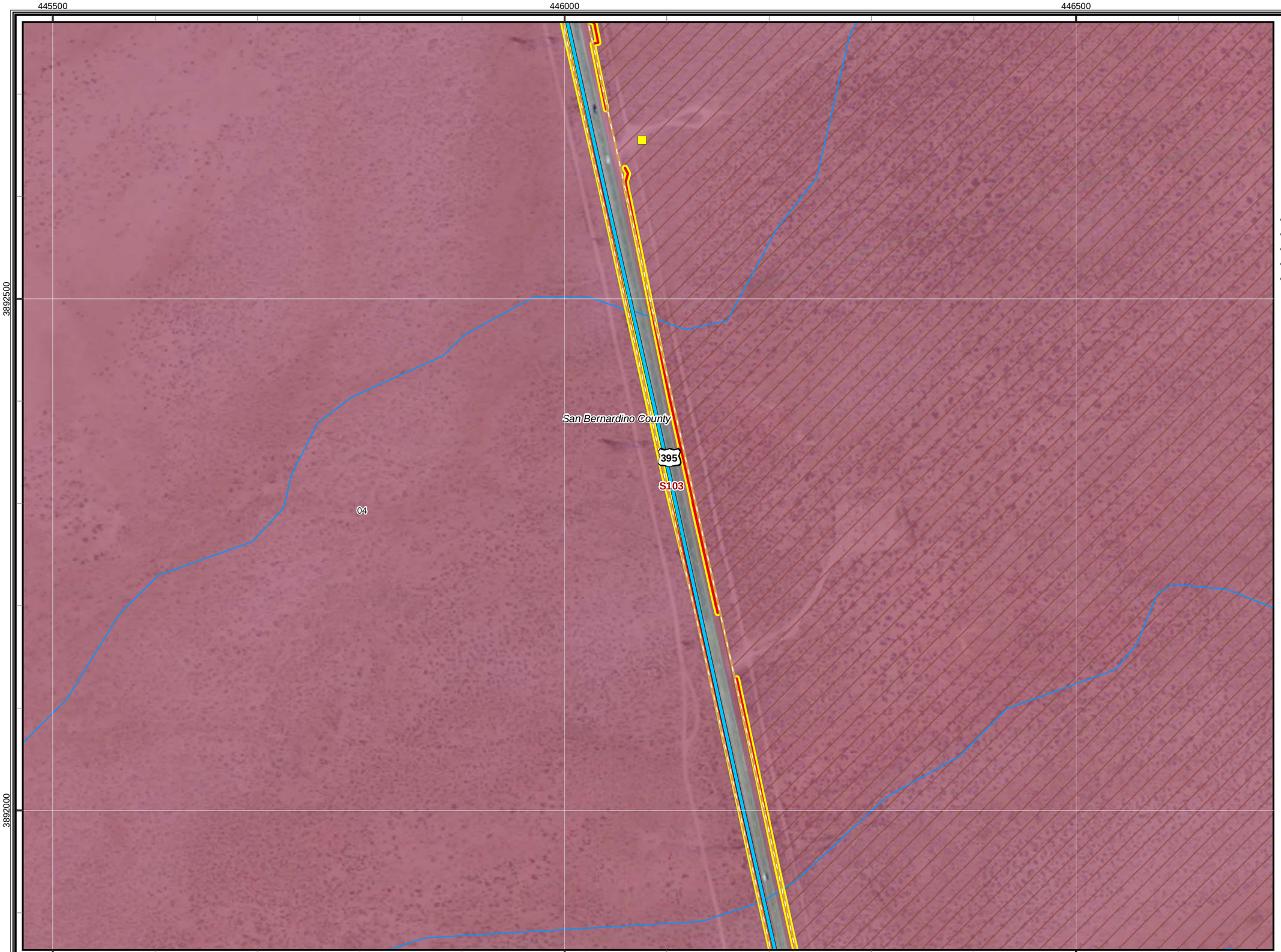
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-094

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

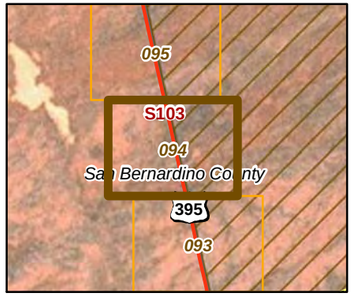
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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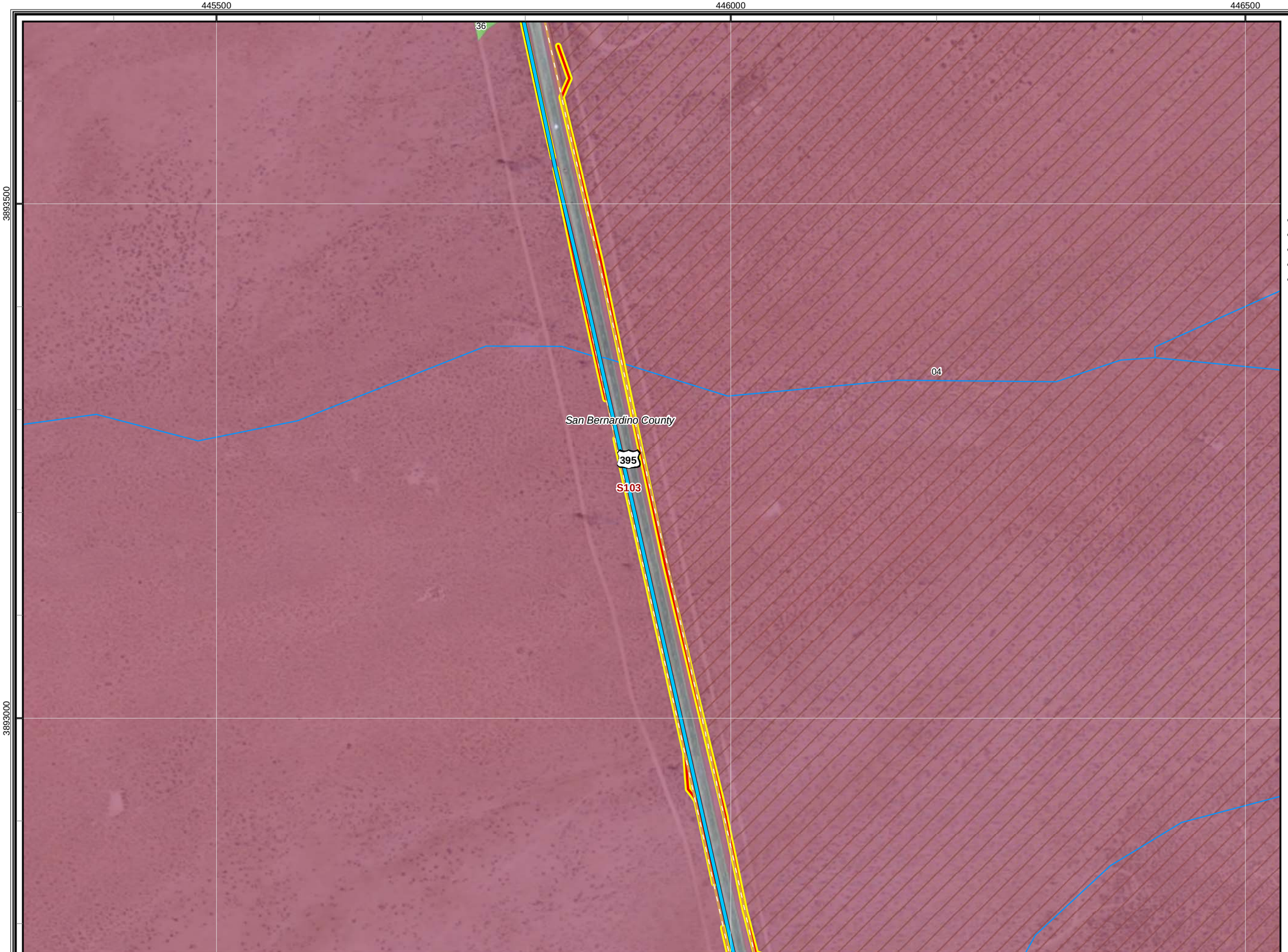
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-095

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

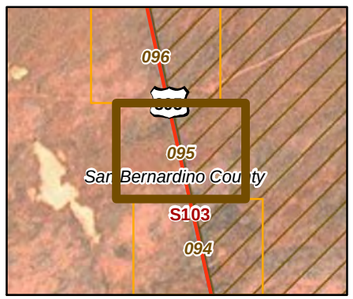
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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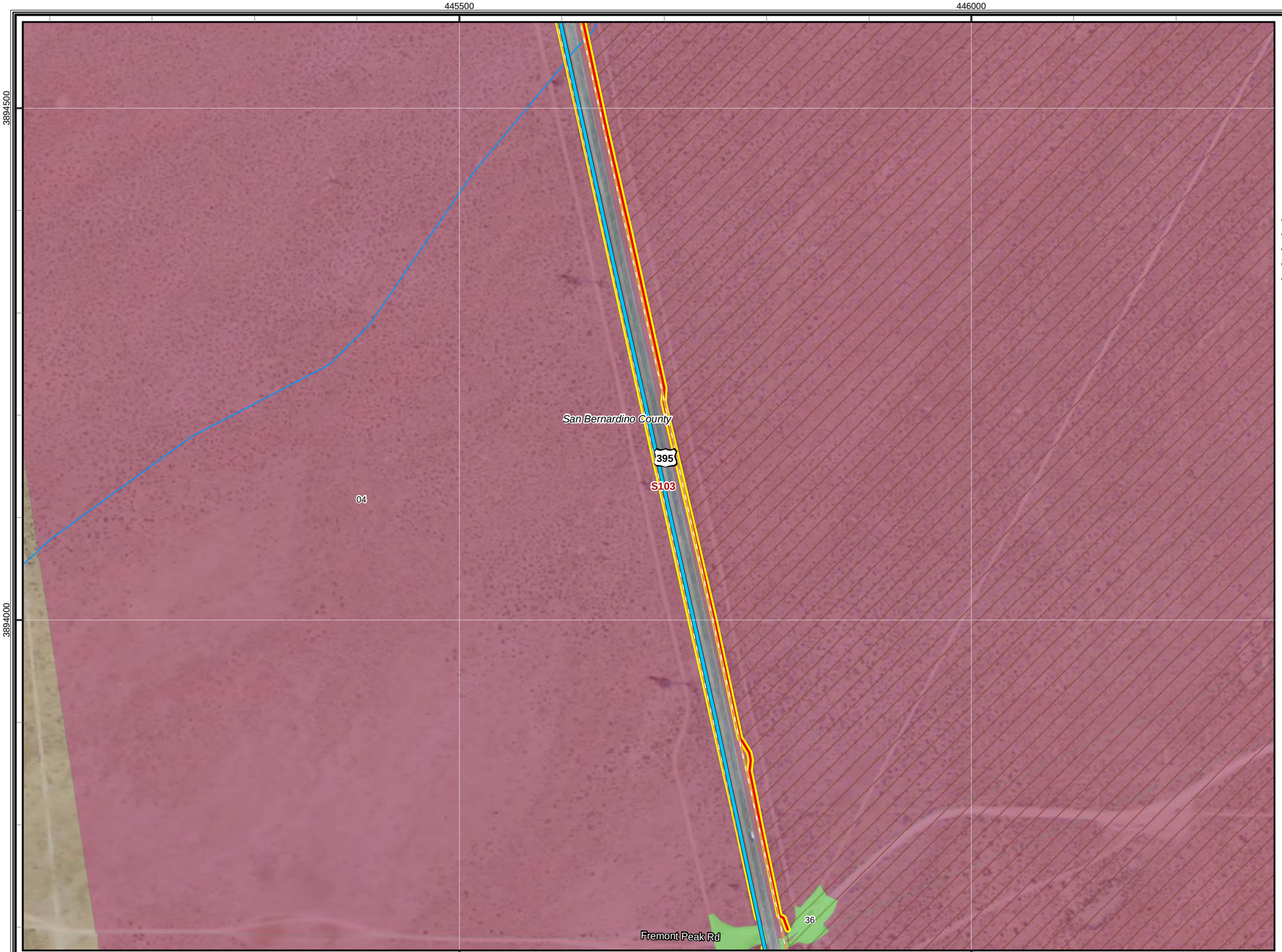
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-096

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

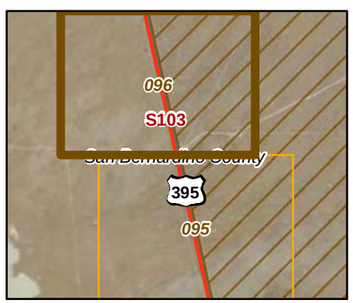
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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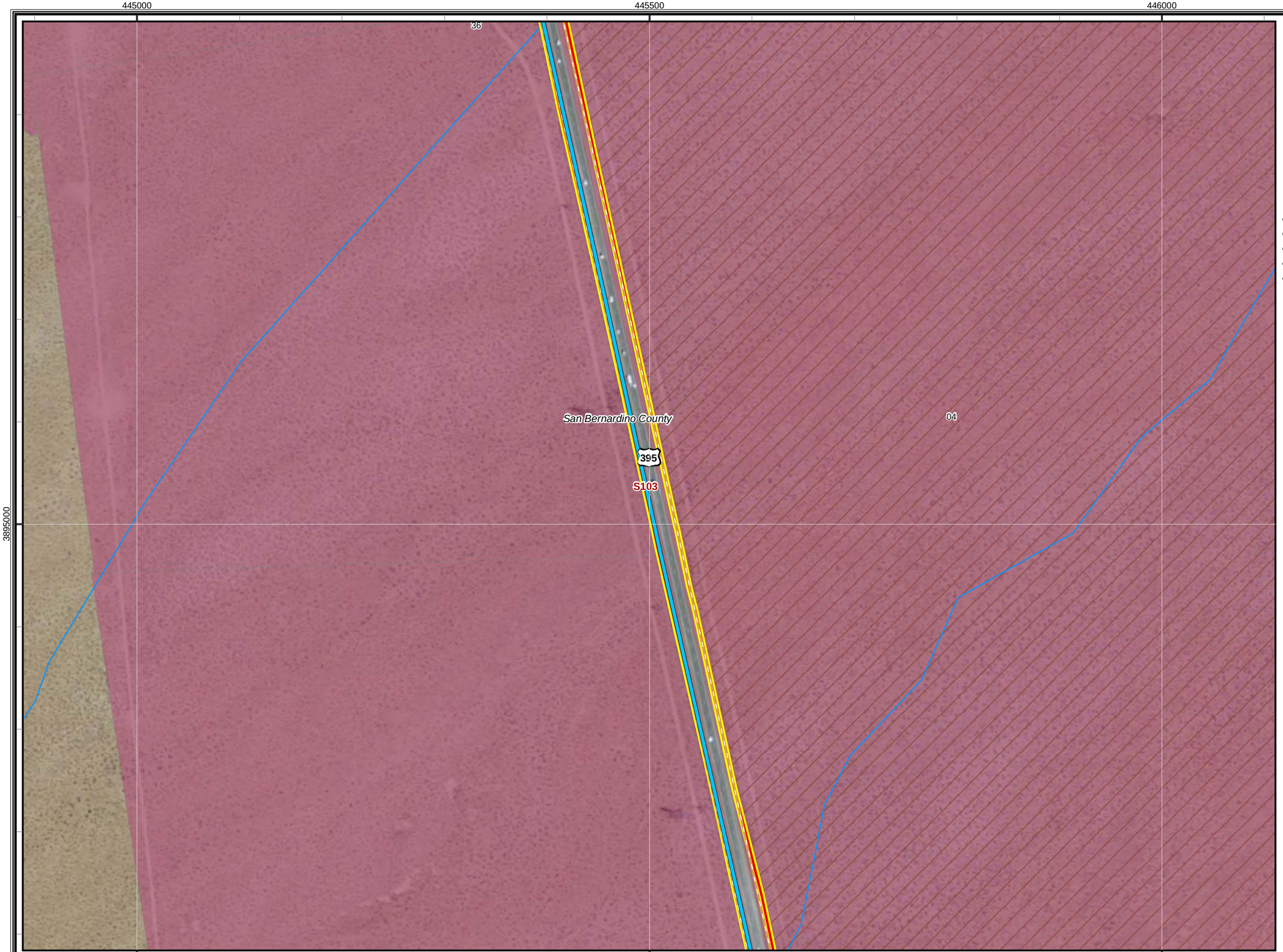

CBC Digital 395

R2-Kramer to Johannesburg-097

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

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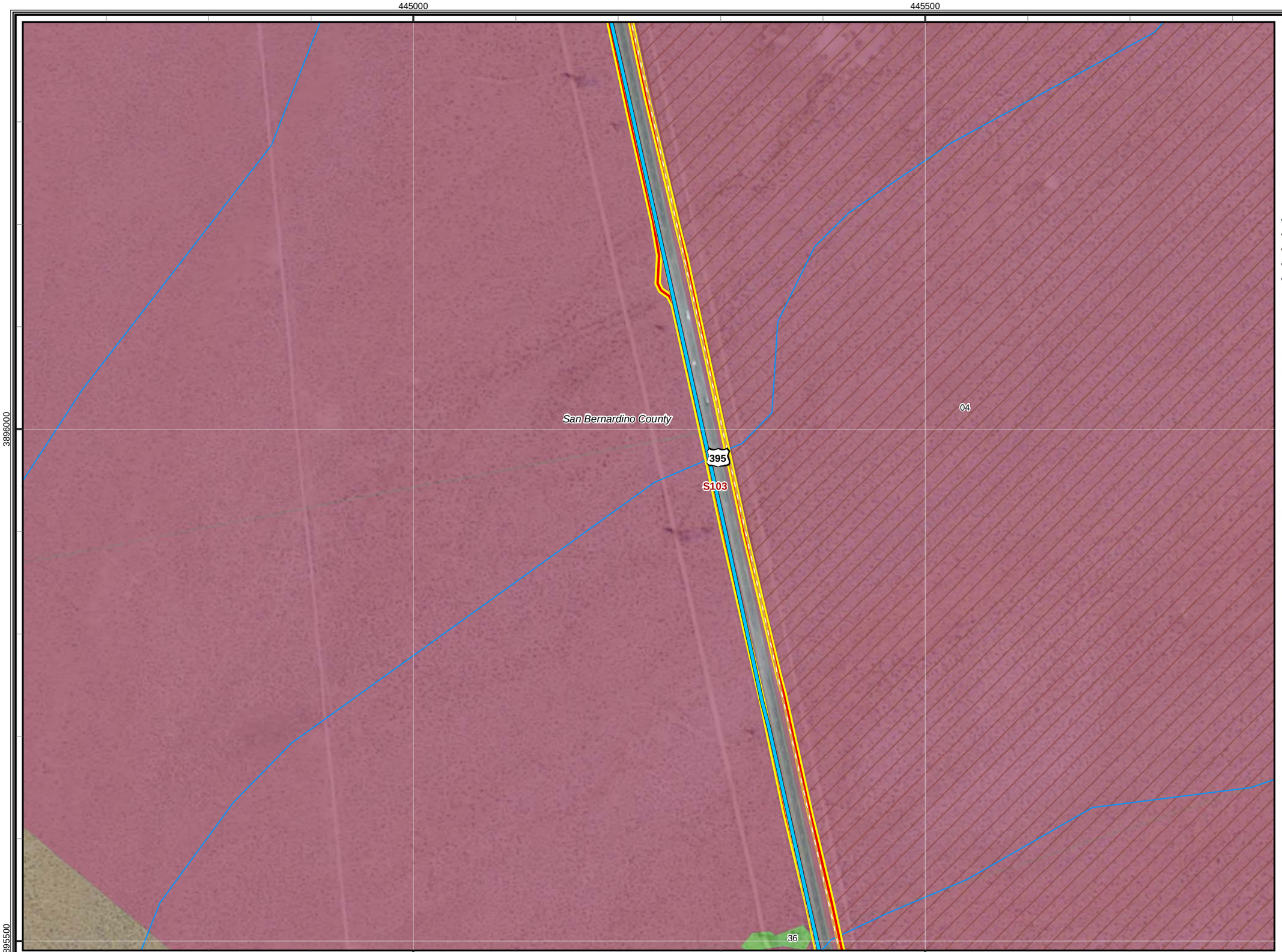
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-098

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

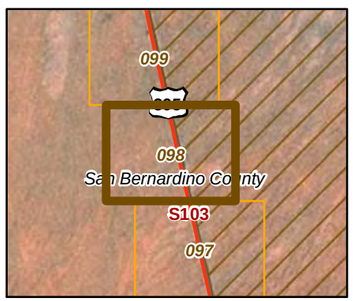
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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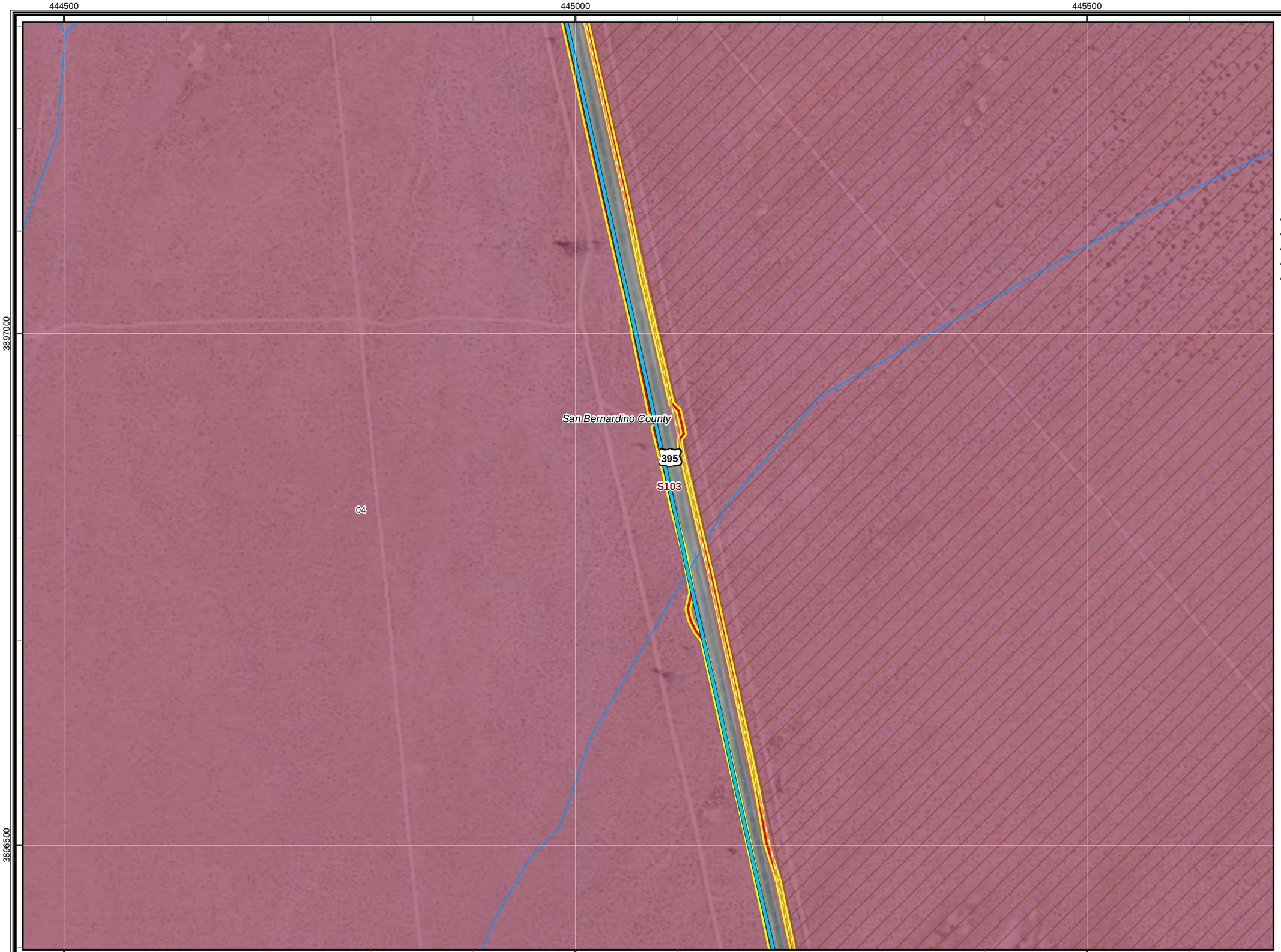
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-099

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

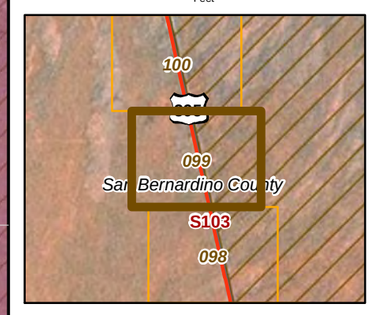
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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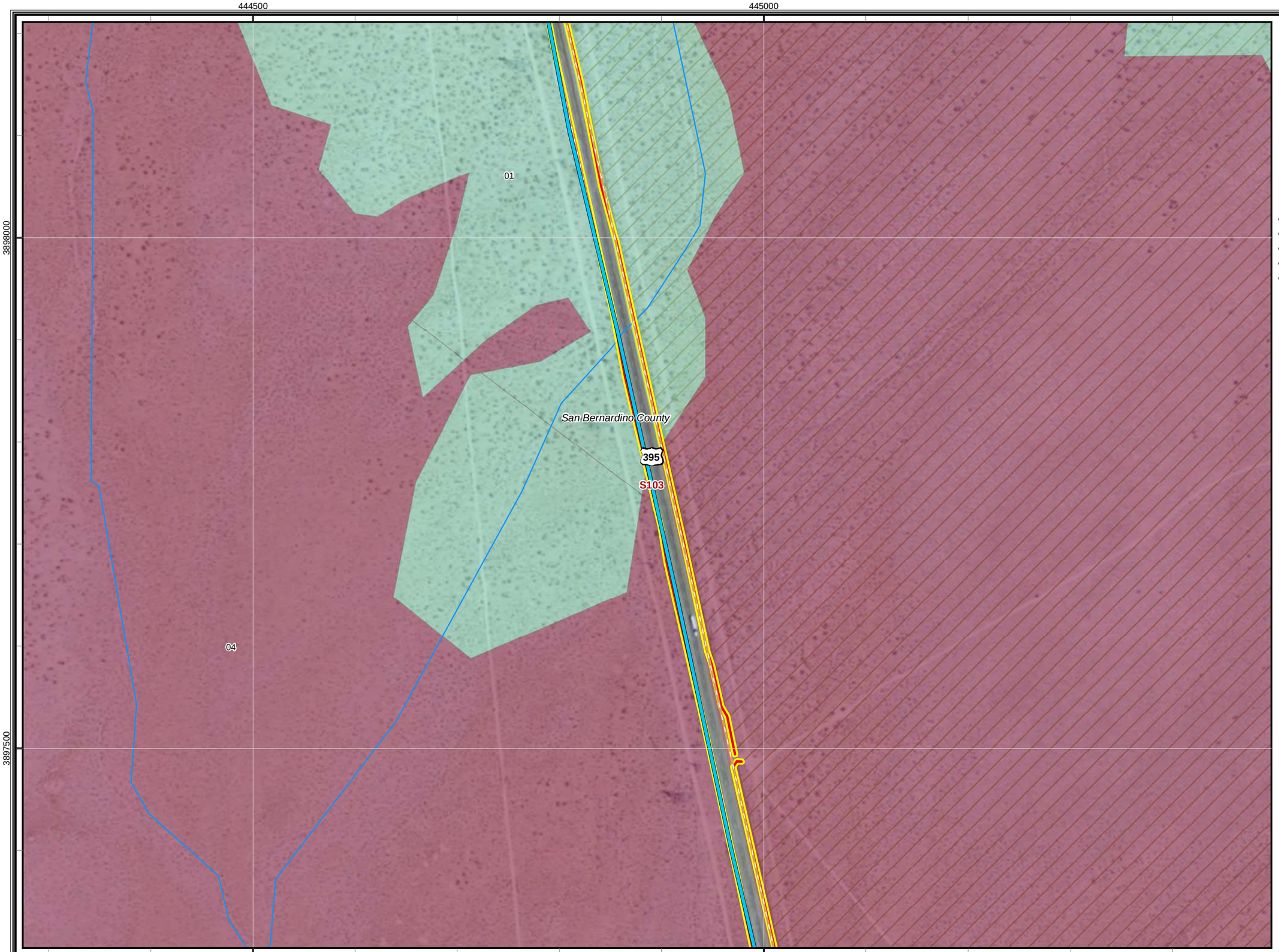
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-100

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

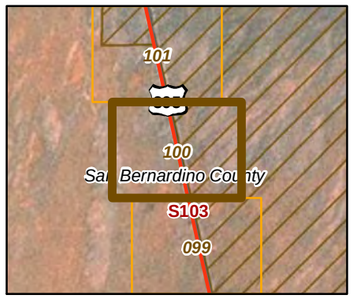
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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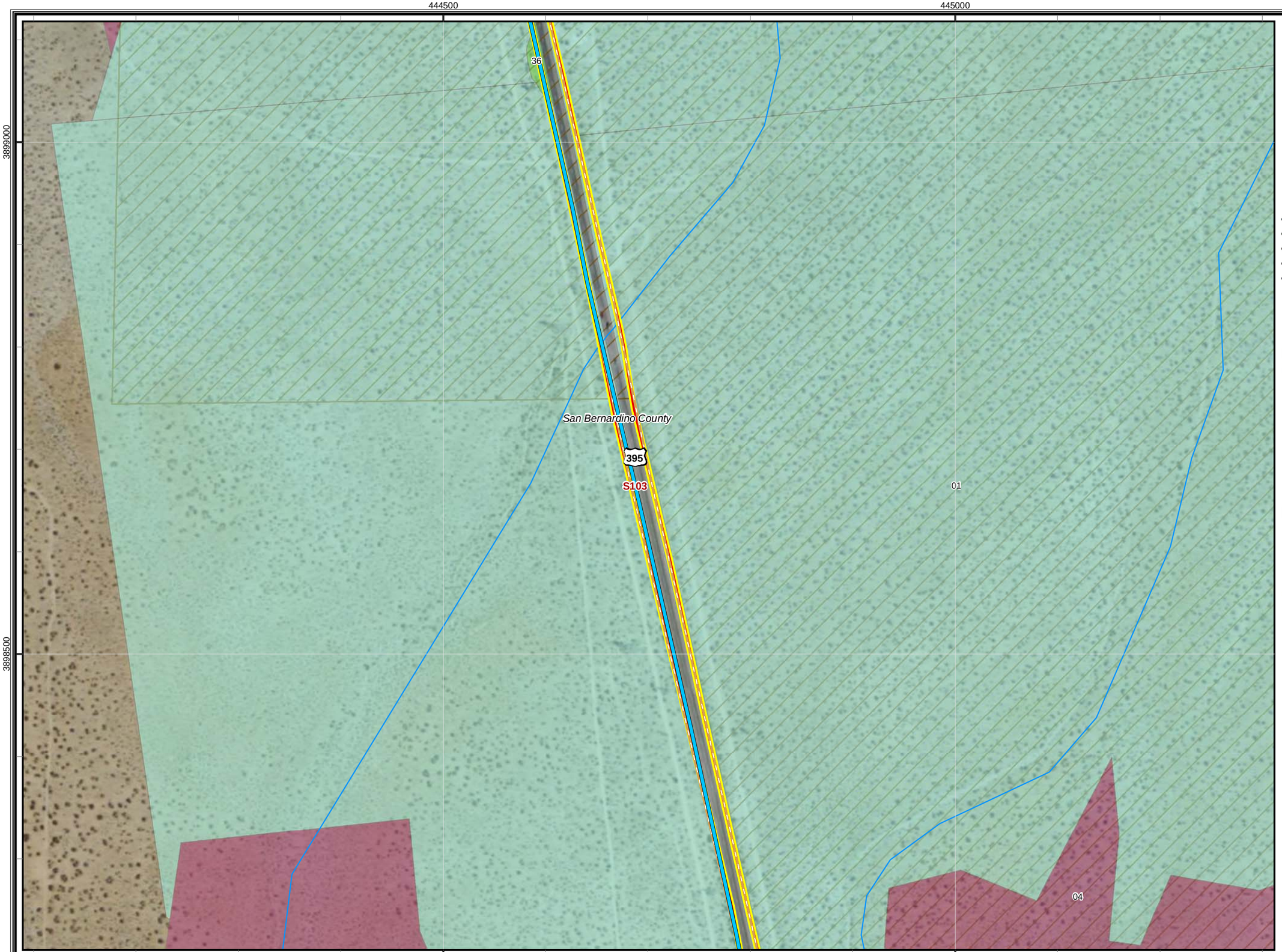
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-101

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

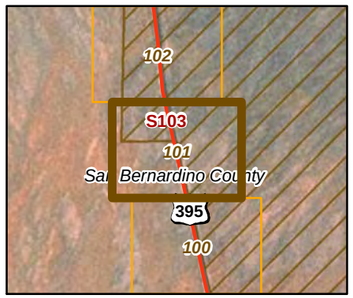
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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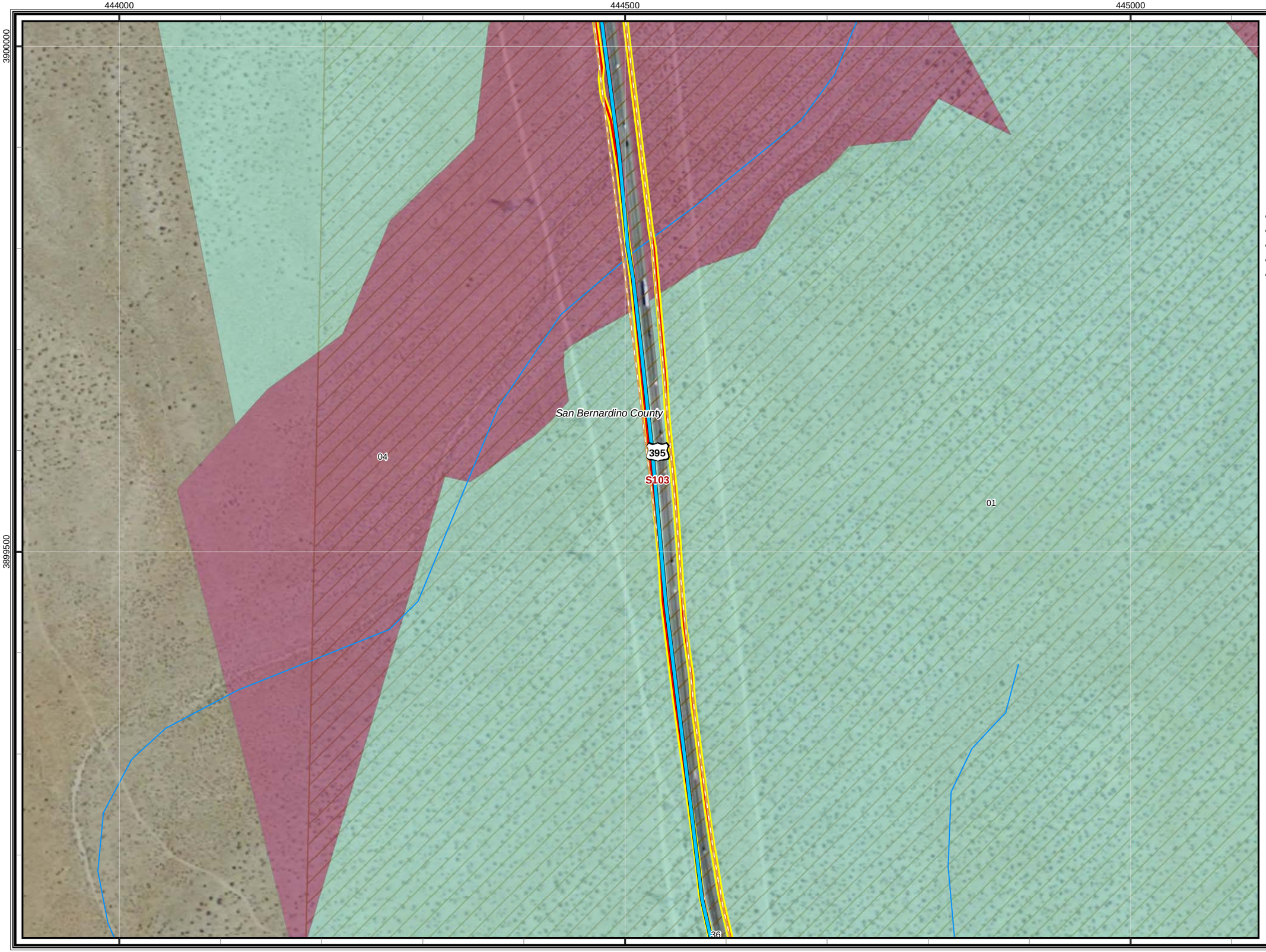
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-102

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

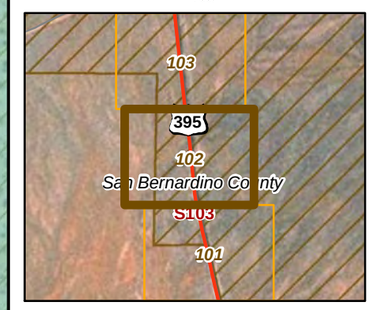
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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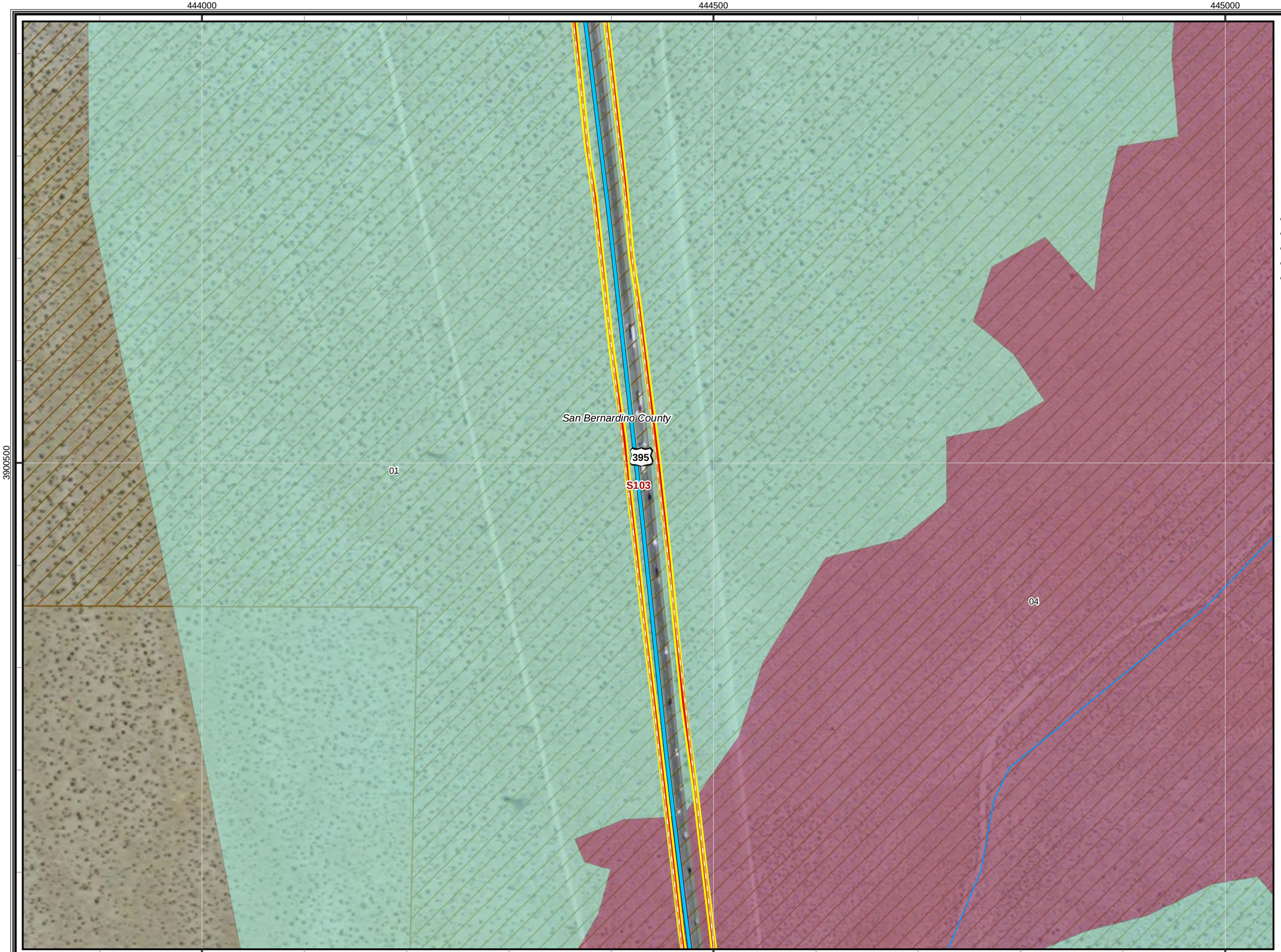
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-103

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

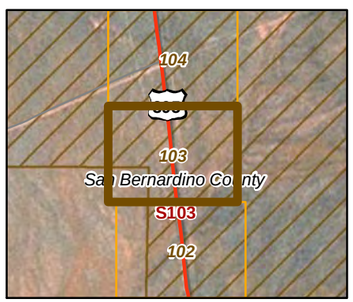
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-104

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

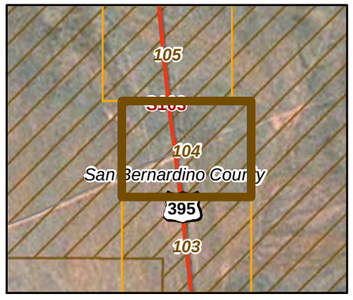
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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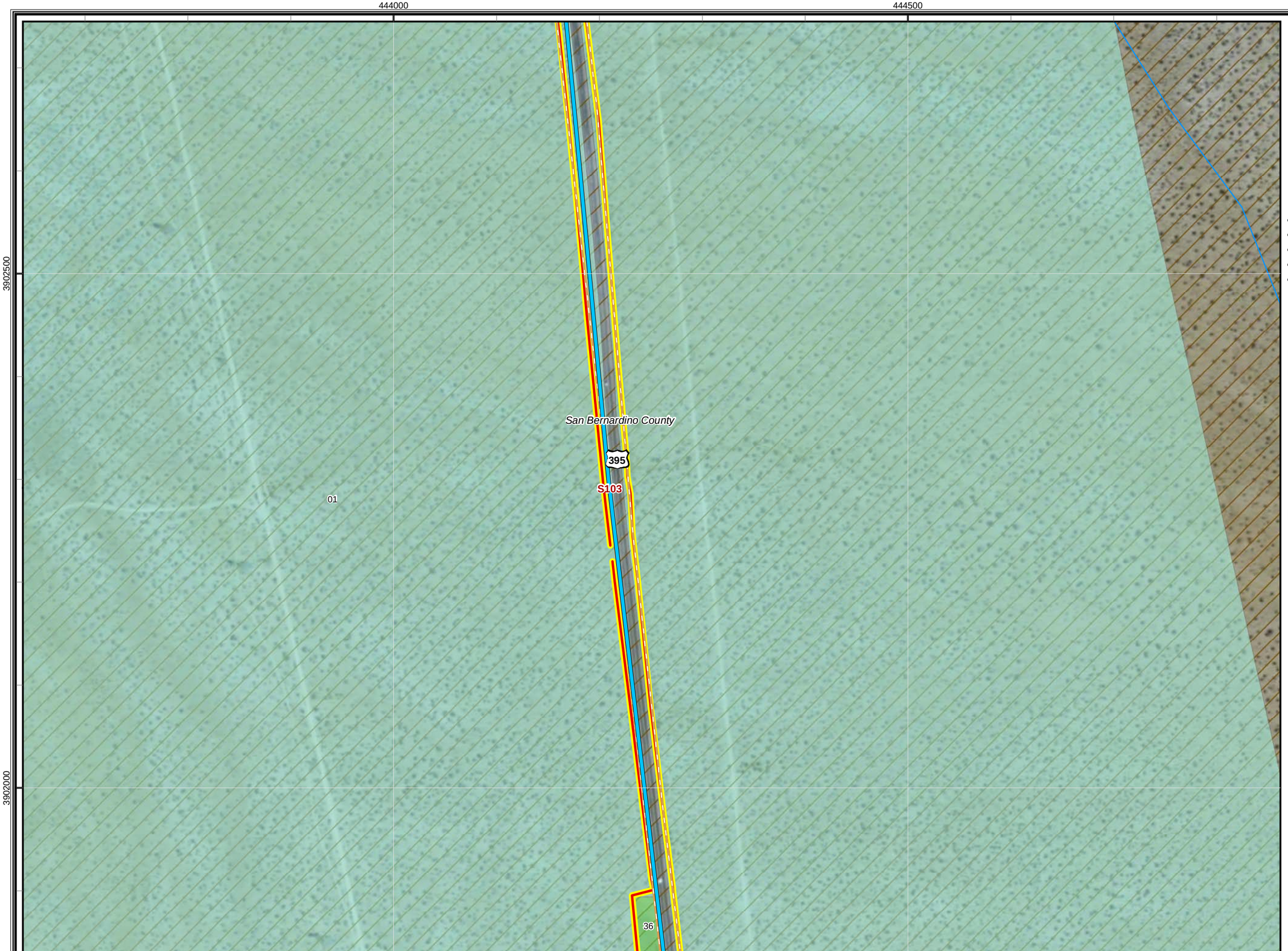
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-105

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
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- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

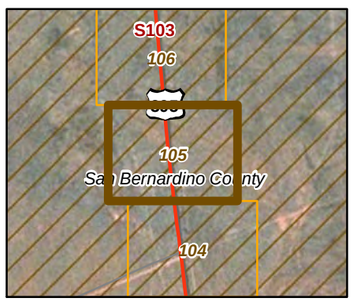
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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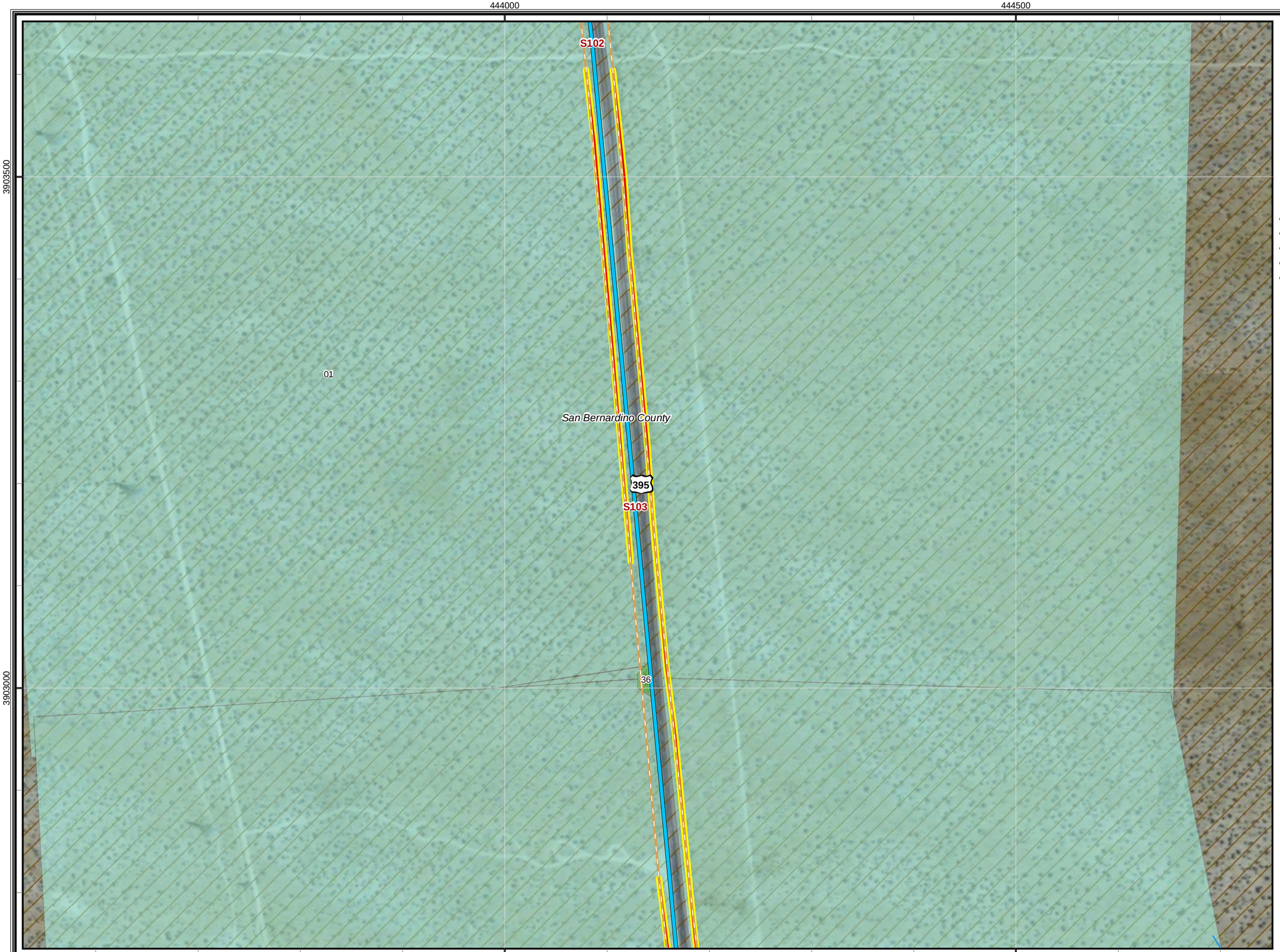


CBC Digital 395

R2-Kramer to Johannesburg-106

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

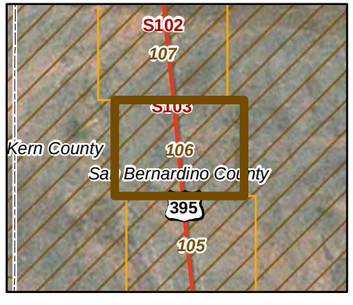
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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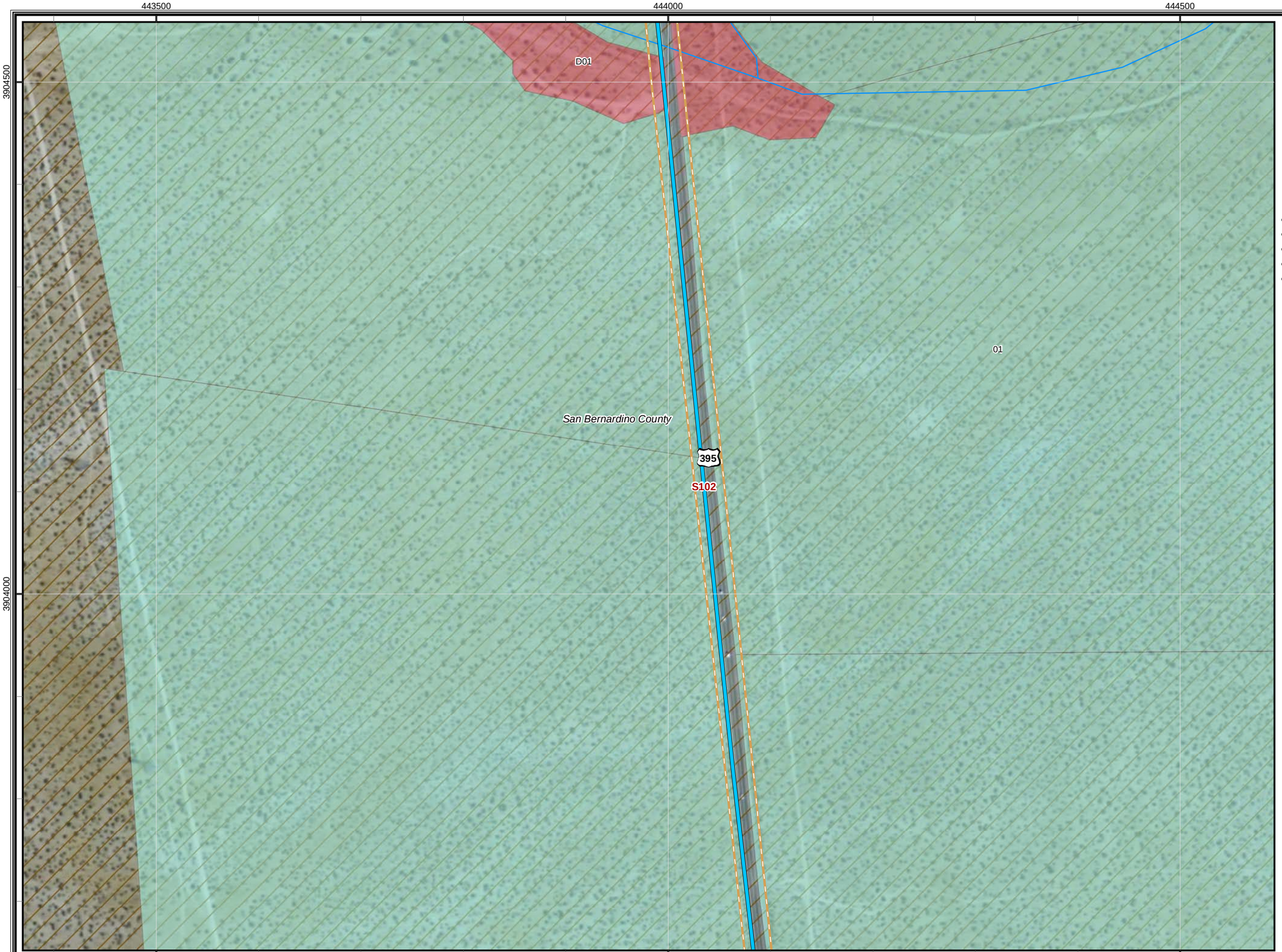


CBC Digital 395

R2-Kramer to Johannesburg-107

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

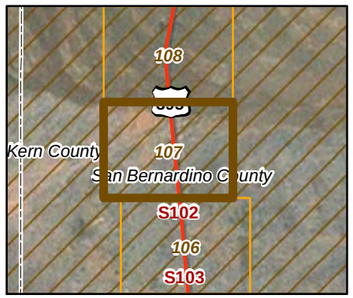
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R2-Kramer to Johannesburg-108

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

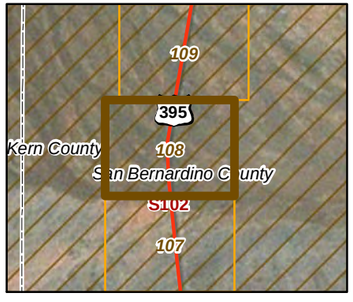
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R2-Kramer to Johannesburg-109

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

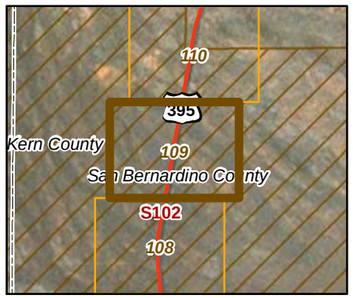
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-110

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

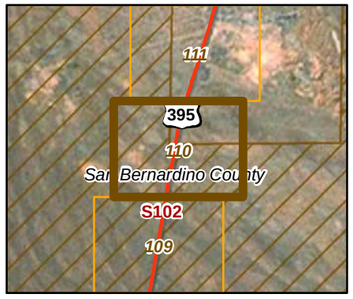
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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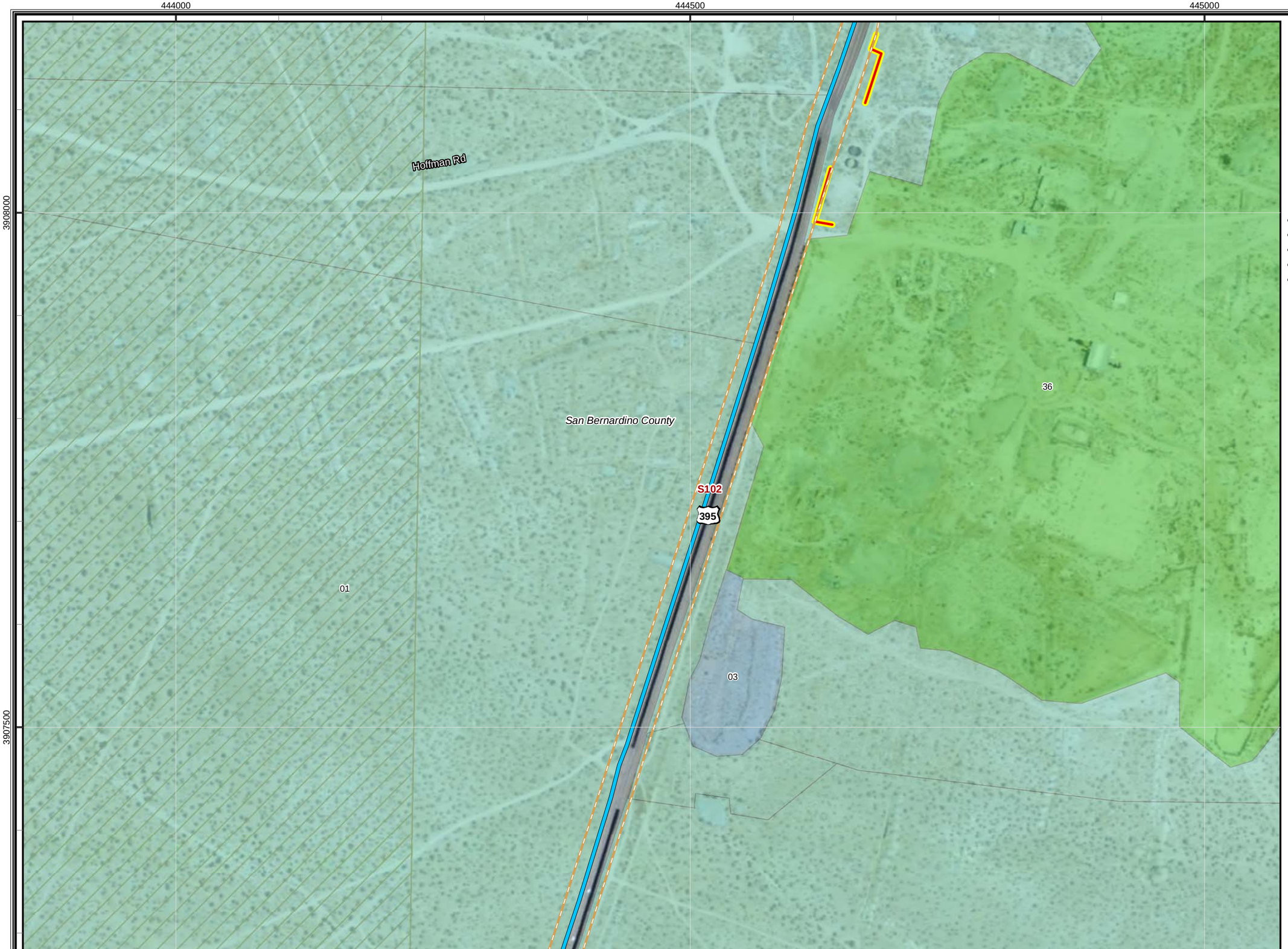
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-111

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

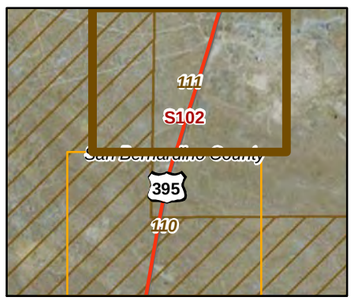
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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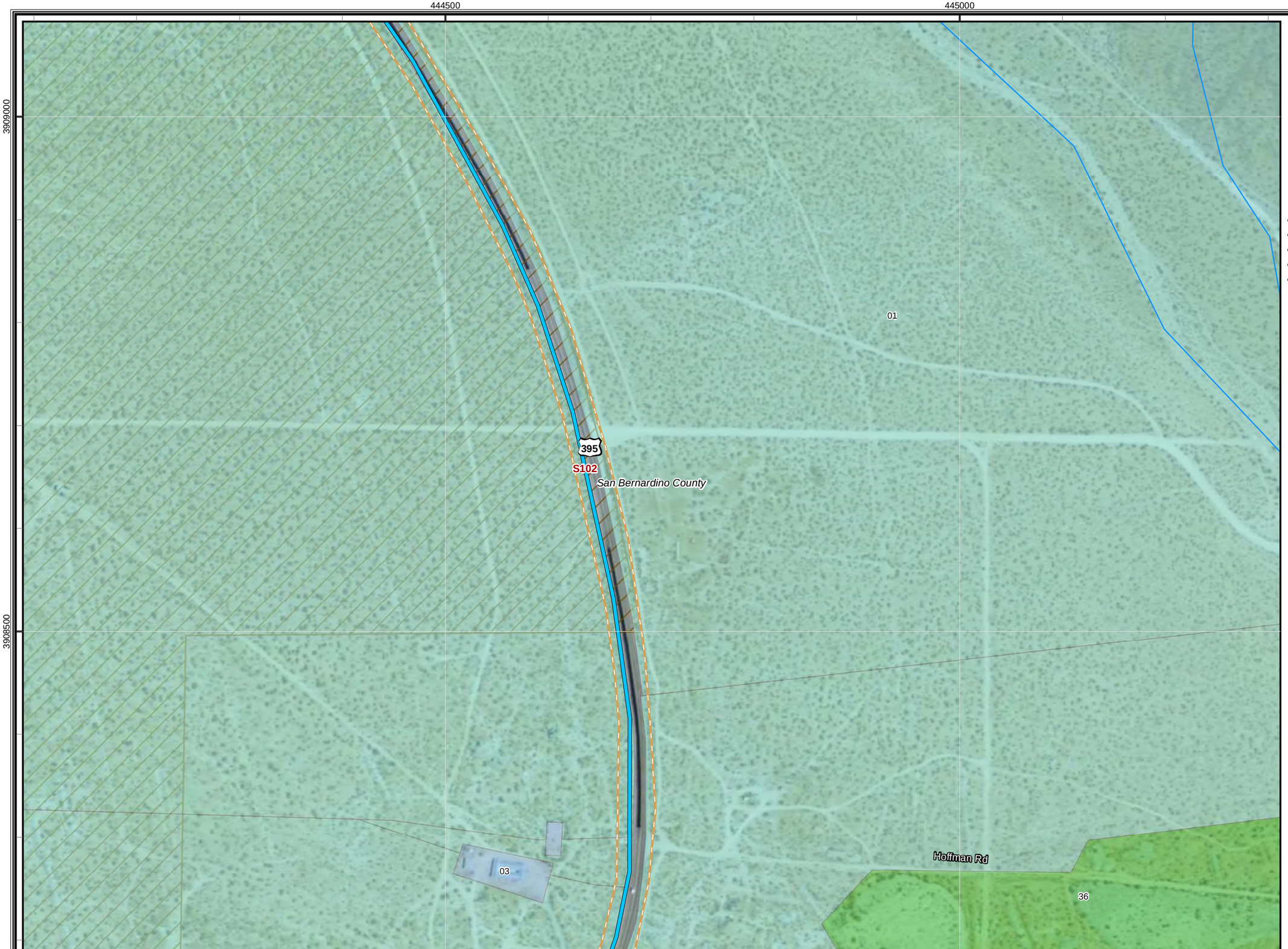


CBC Digital 395

R2-Kramer to Johannesburg-112

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

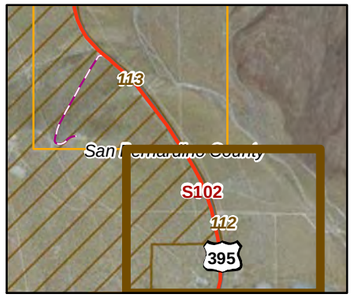
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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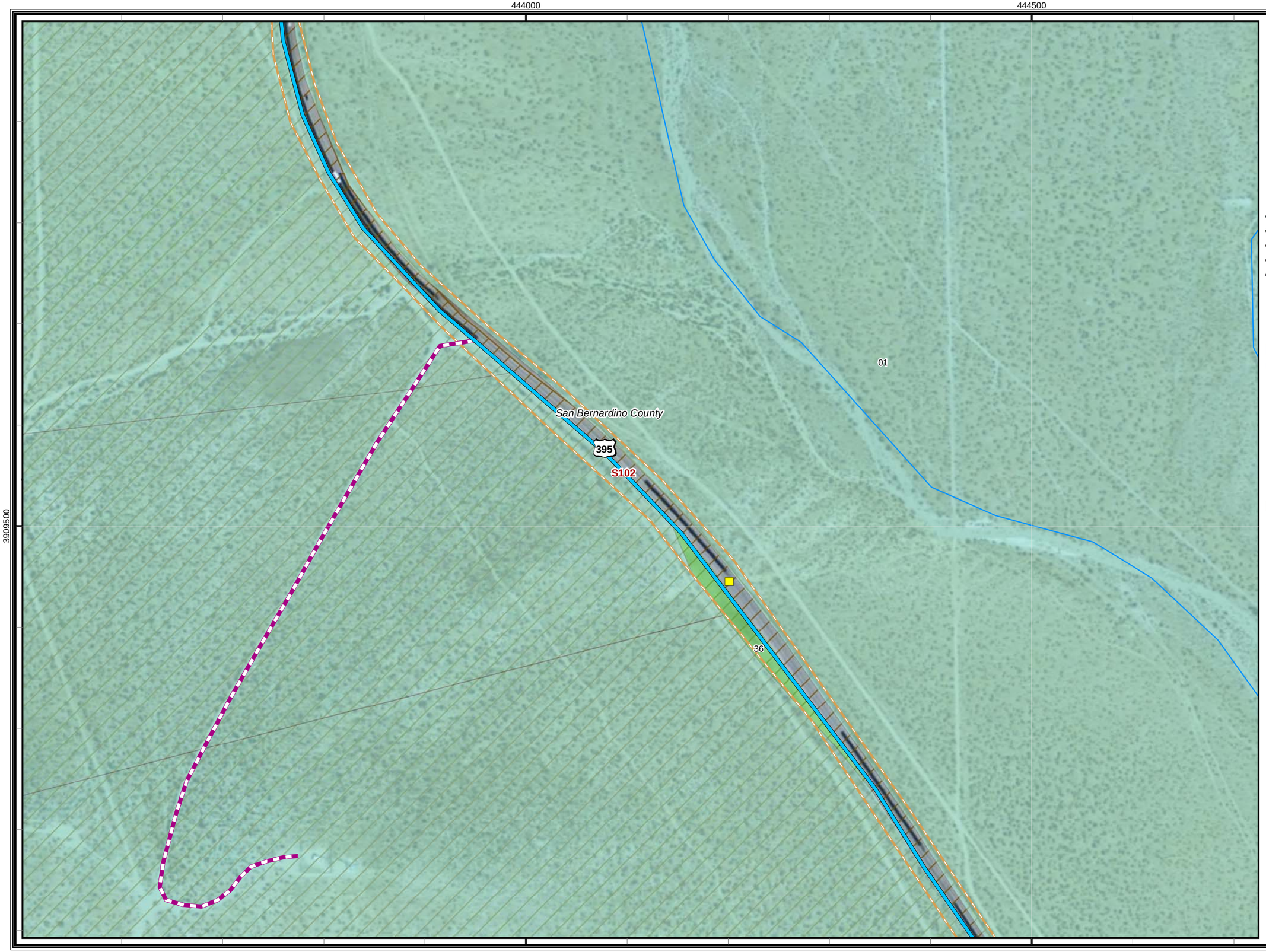
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-113

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

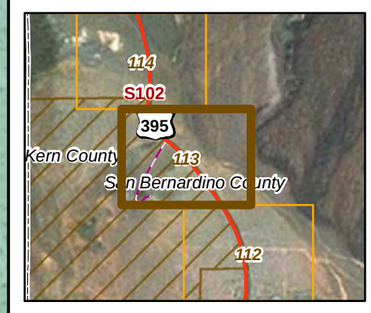
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R2-Kramer to Johannesburg-114

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

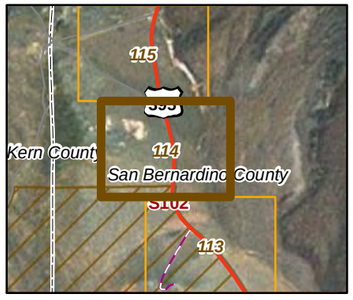
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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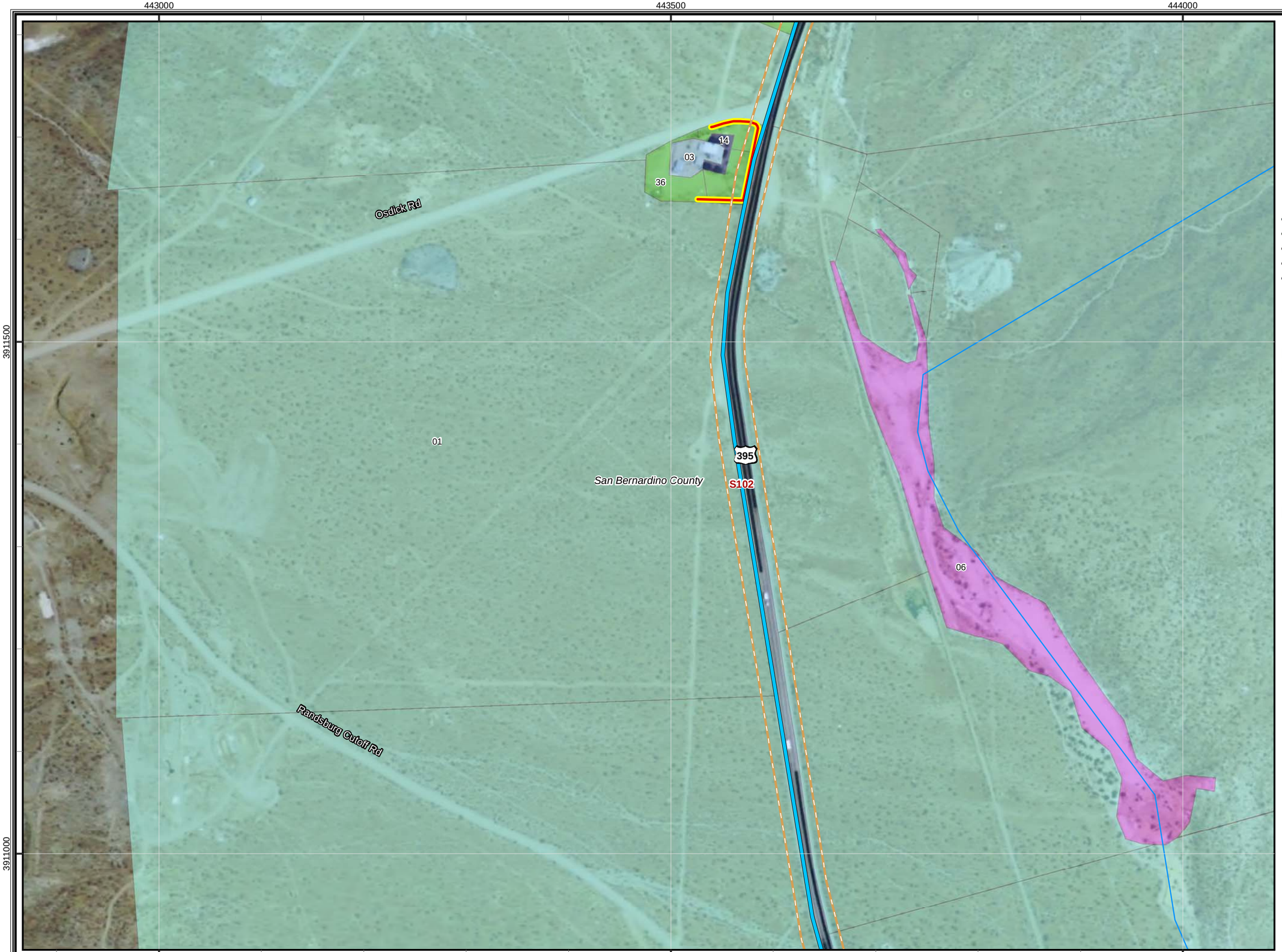
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-115

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

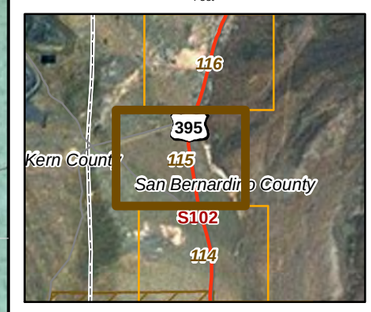
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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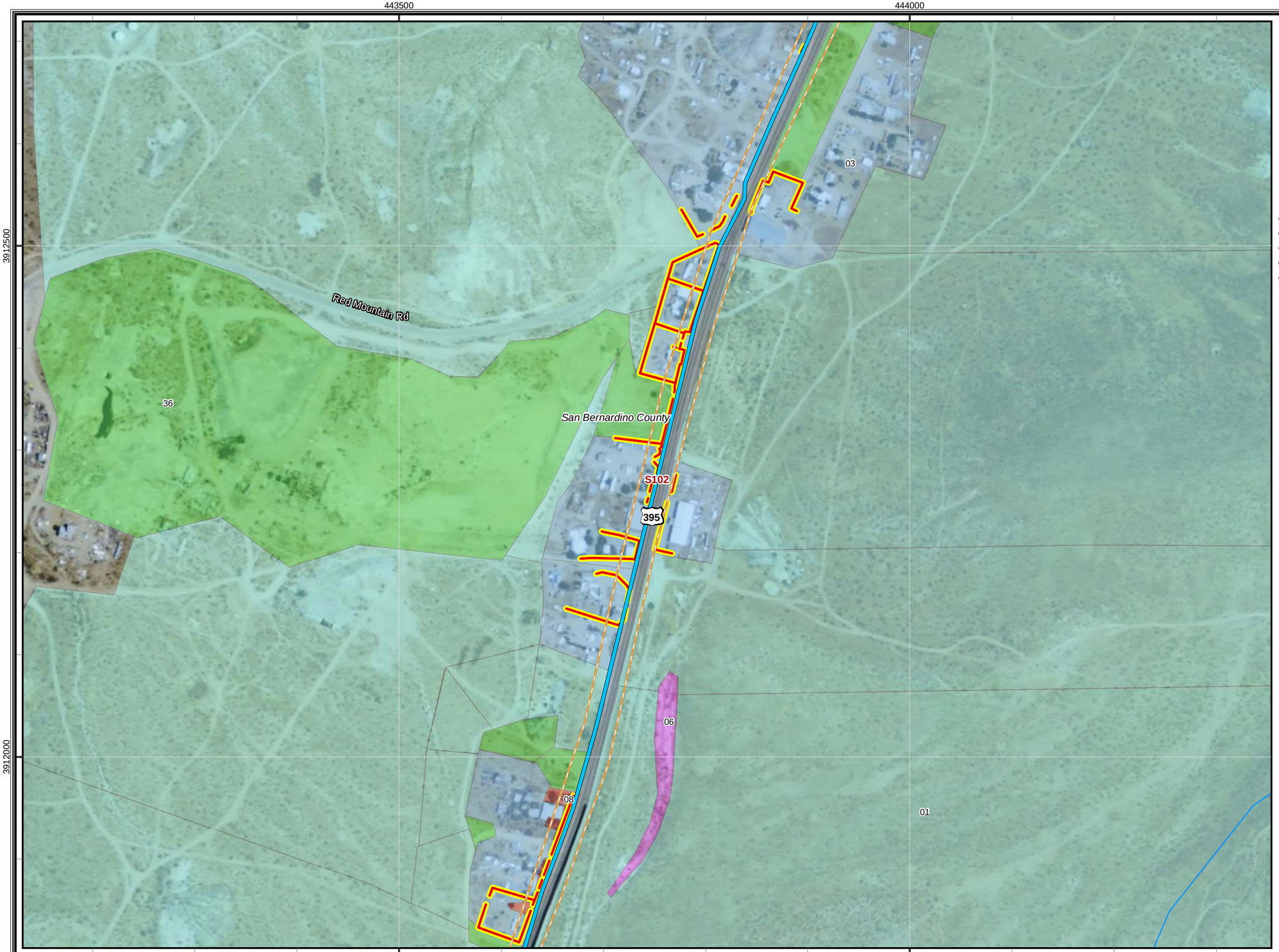
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-116

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

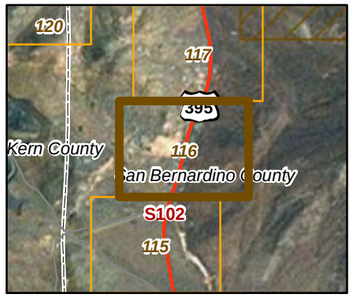
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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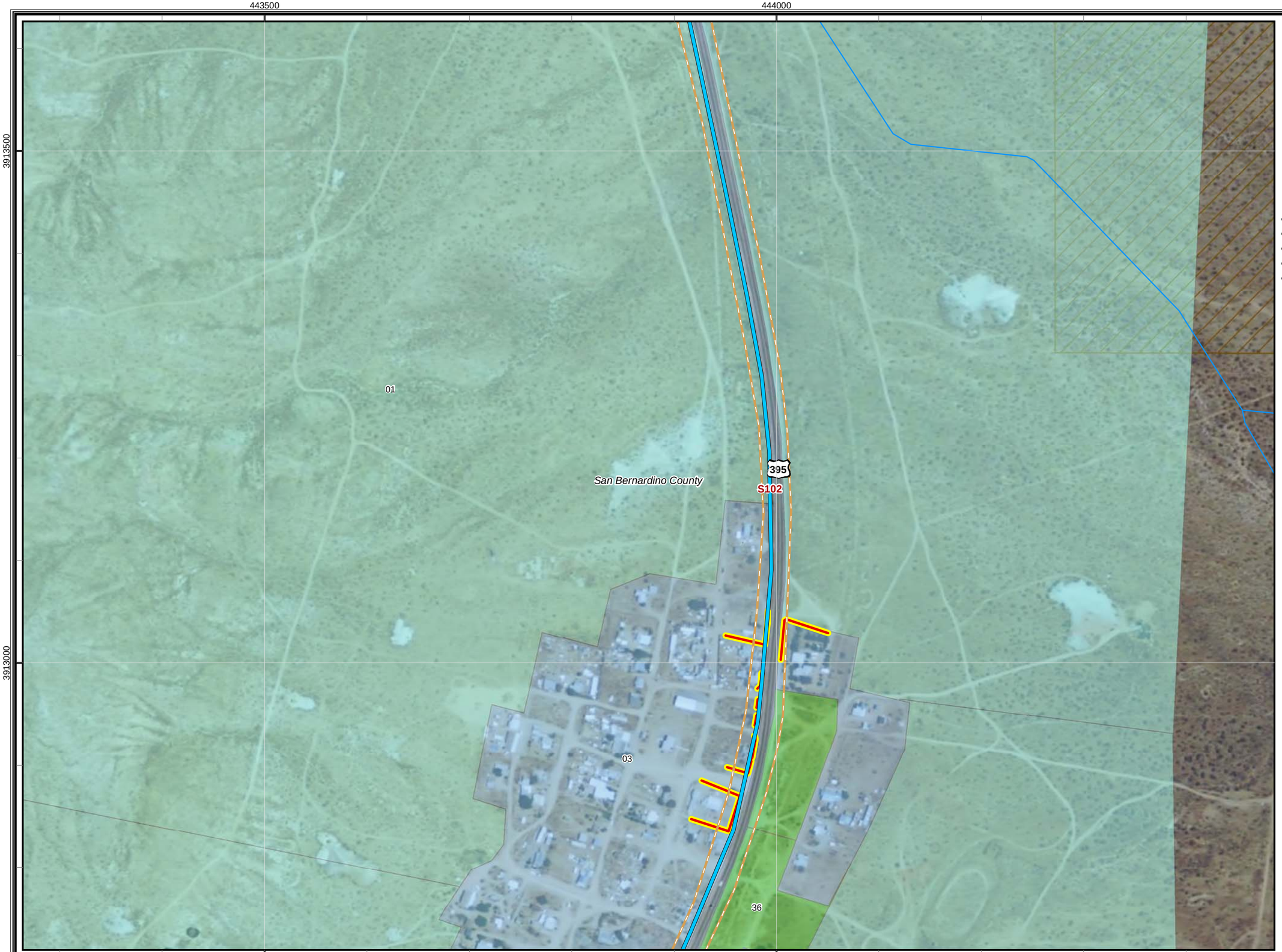
Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-117

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

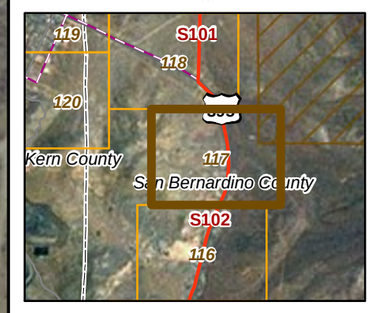
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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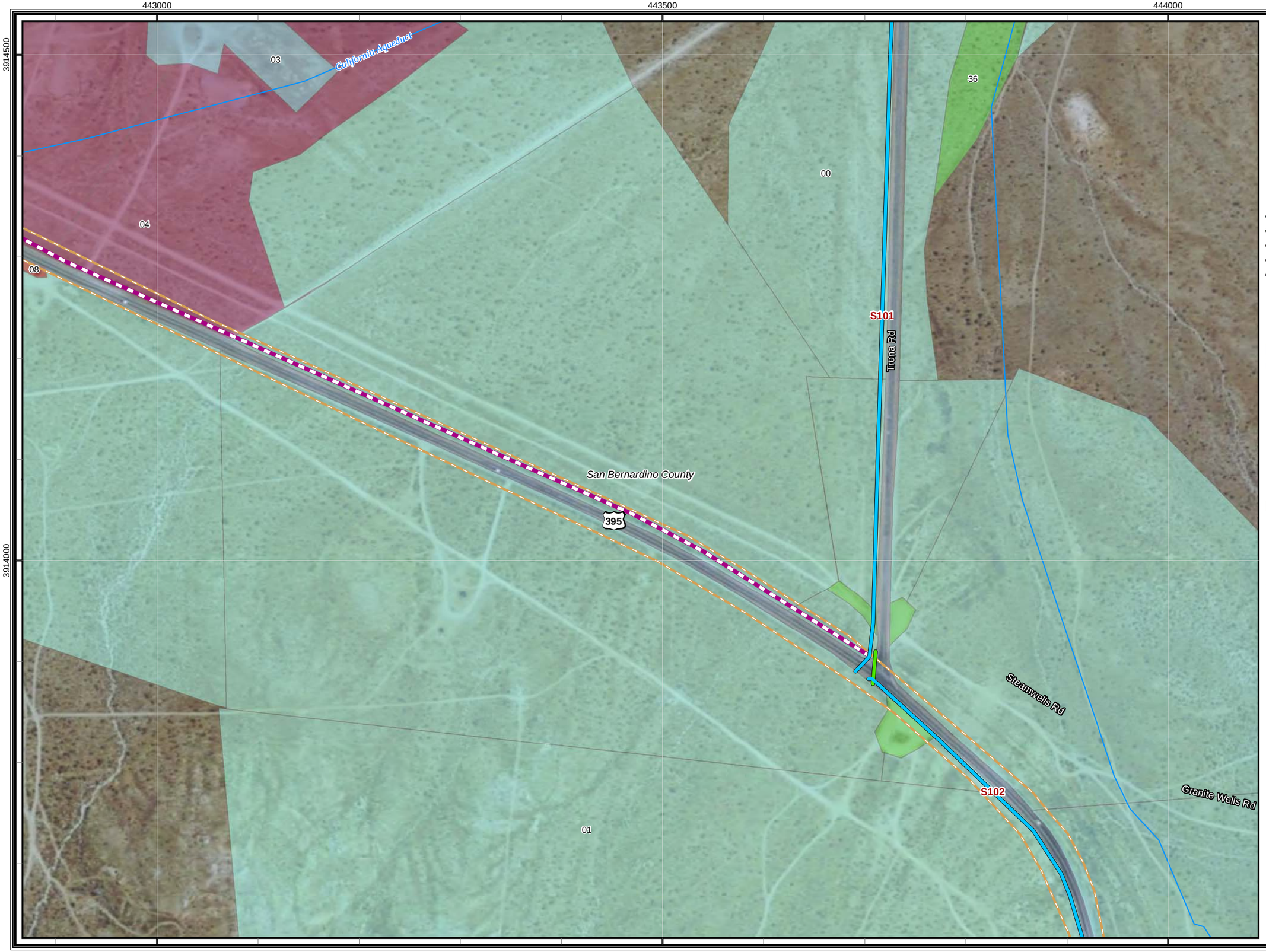
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-118

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

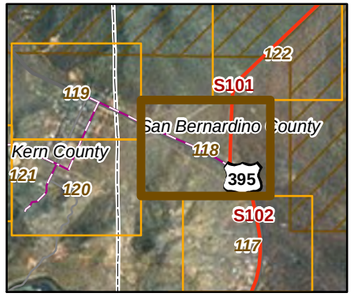
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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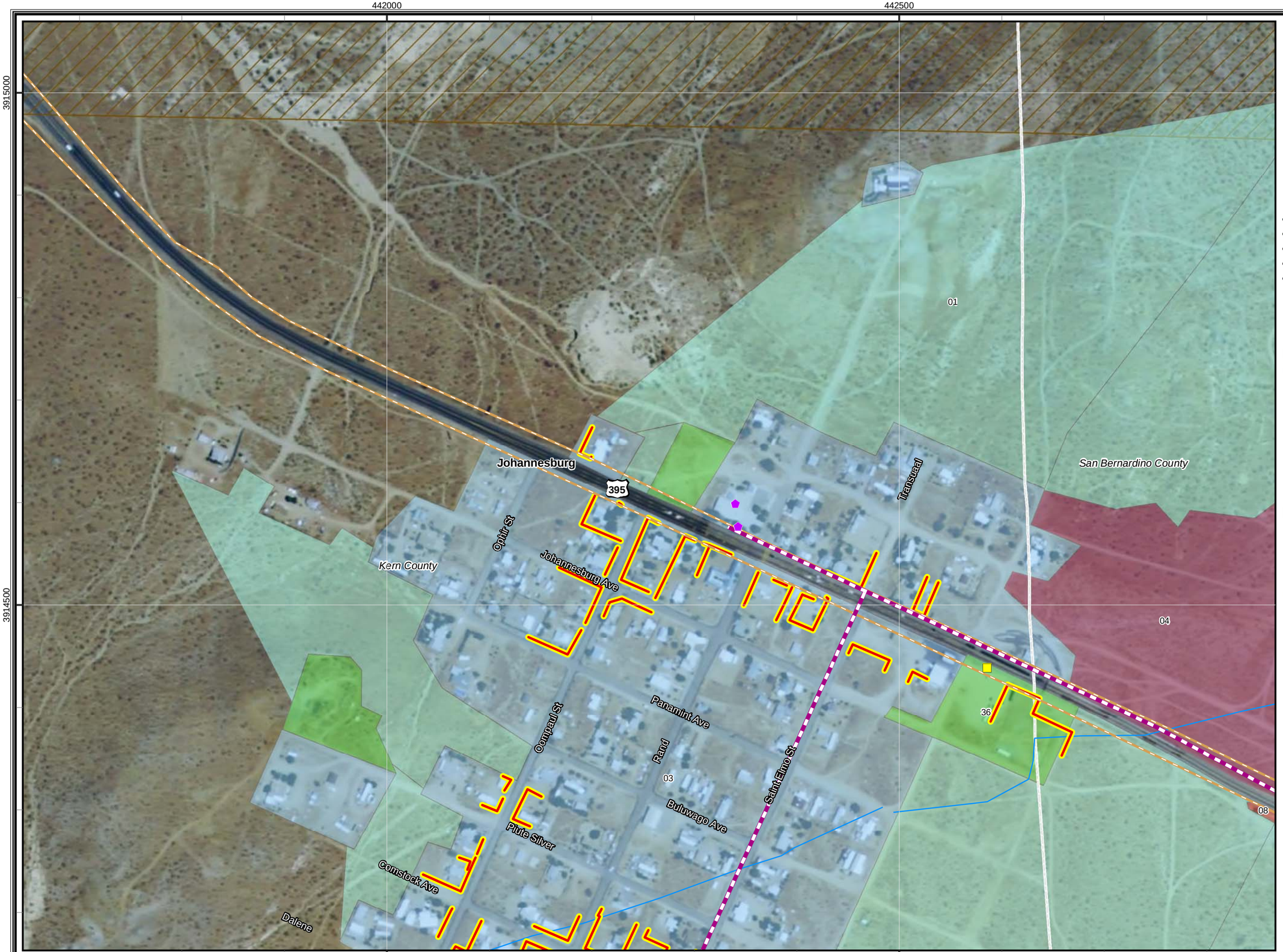
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-119

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

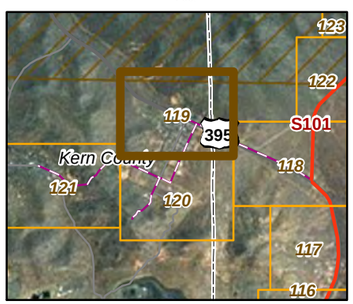
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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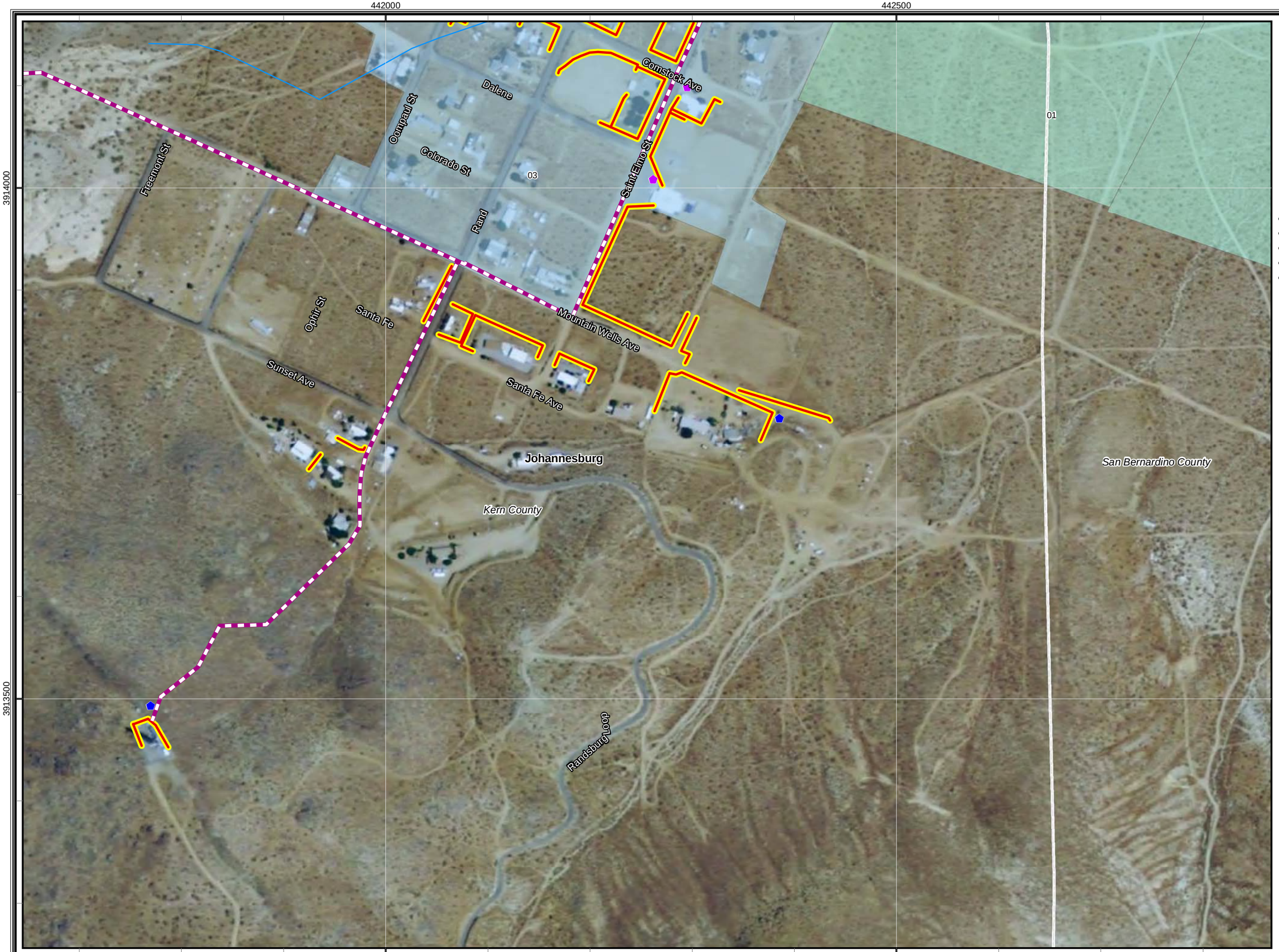
11-03-11

Chambers Group Inc.



CBC Digital 395

R2-Kramer to Johannesburg-120

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

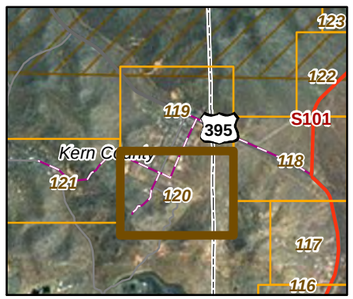
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R2-Kramer to Johannesburg-121

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

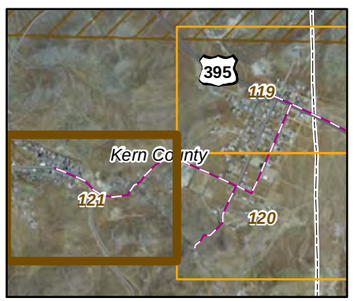
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R3-Johannesburg to Inyokern-122

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

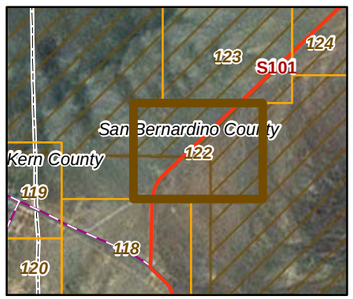
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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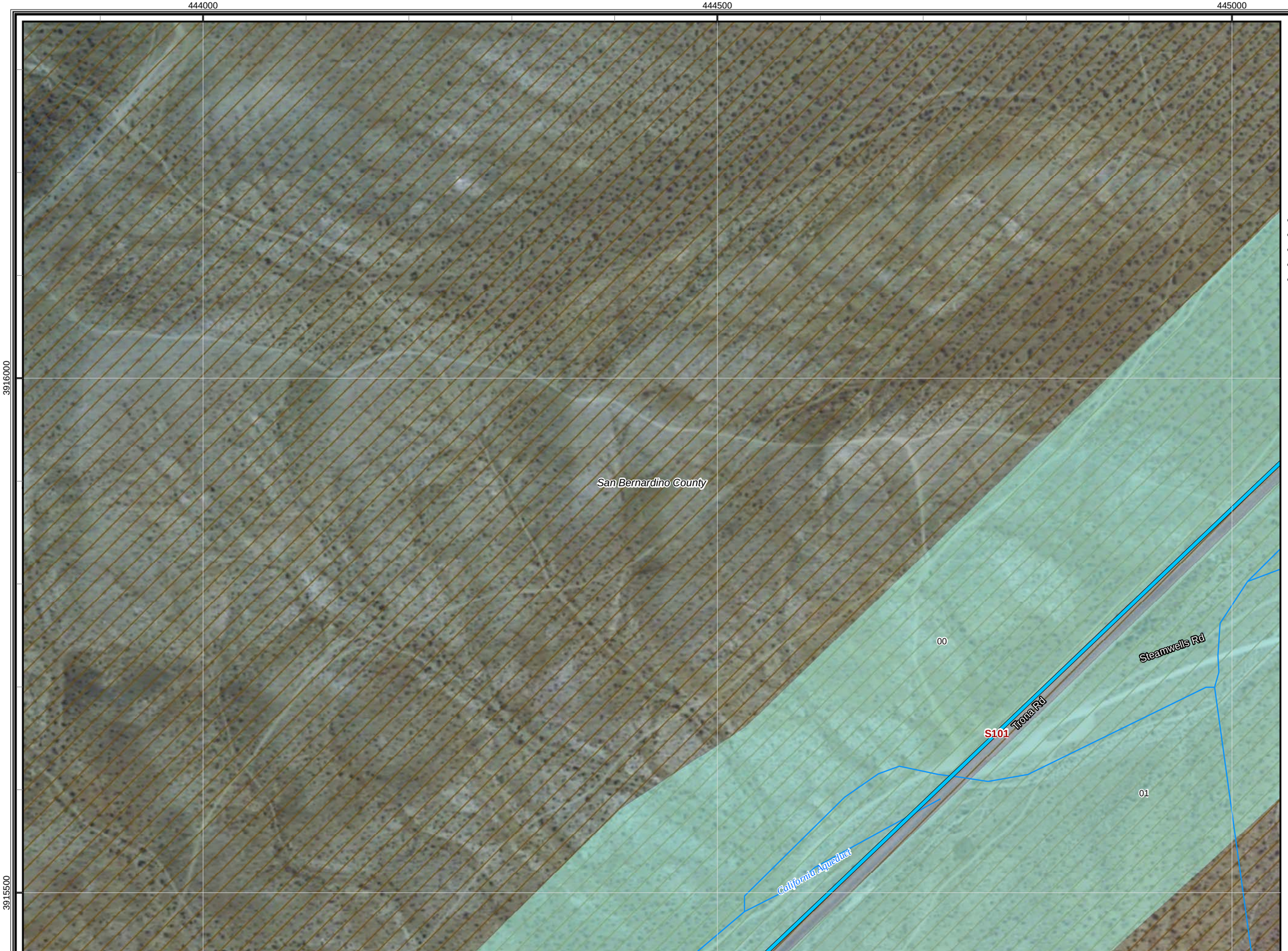


CBC Digital 395

R3-Johannesburg to Inyokern-123

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

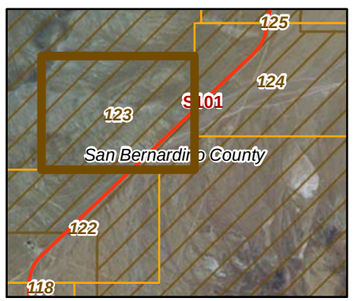
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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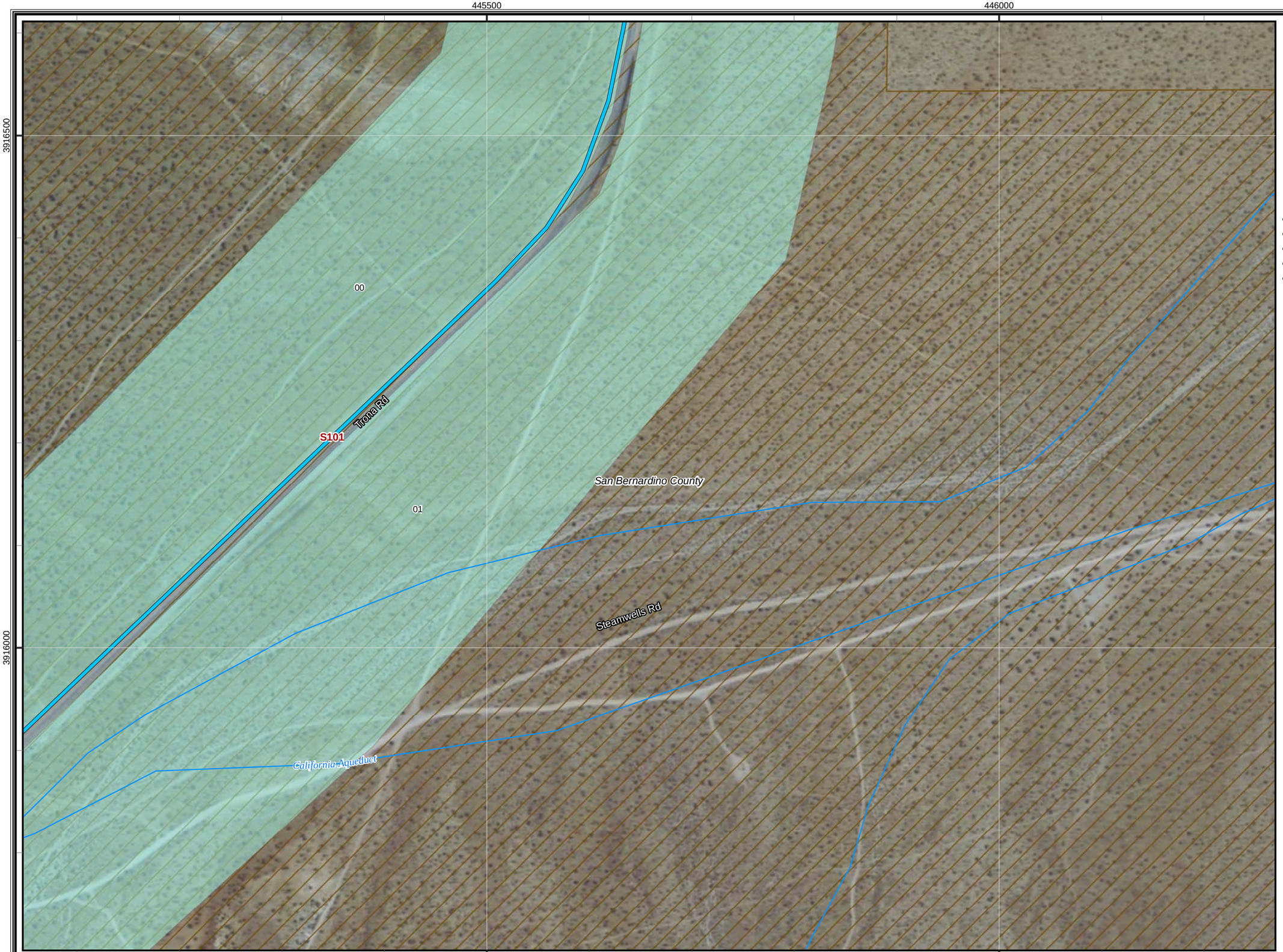


CBC Digital 395

R3-Johannesburg to Inyokern-124

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

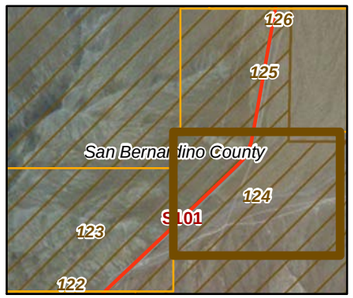
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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R3-Johannesburg to Inyokern-125

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

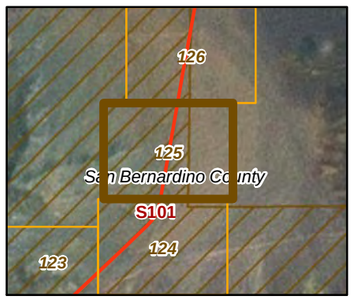
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R3-Johannesburg to Inyokern-126

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

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Chambers Group Inc.

CBC Digital 395

R3-Johannesburg to Inyokern-127

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet

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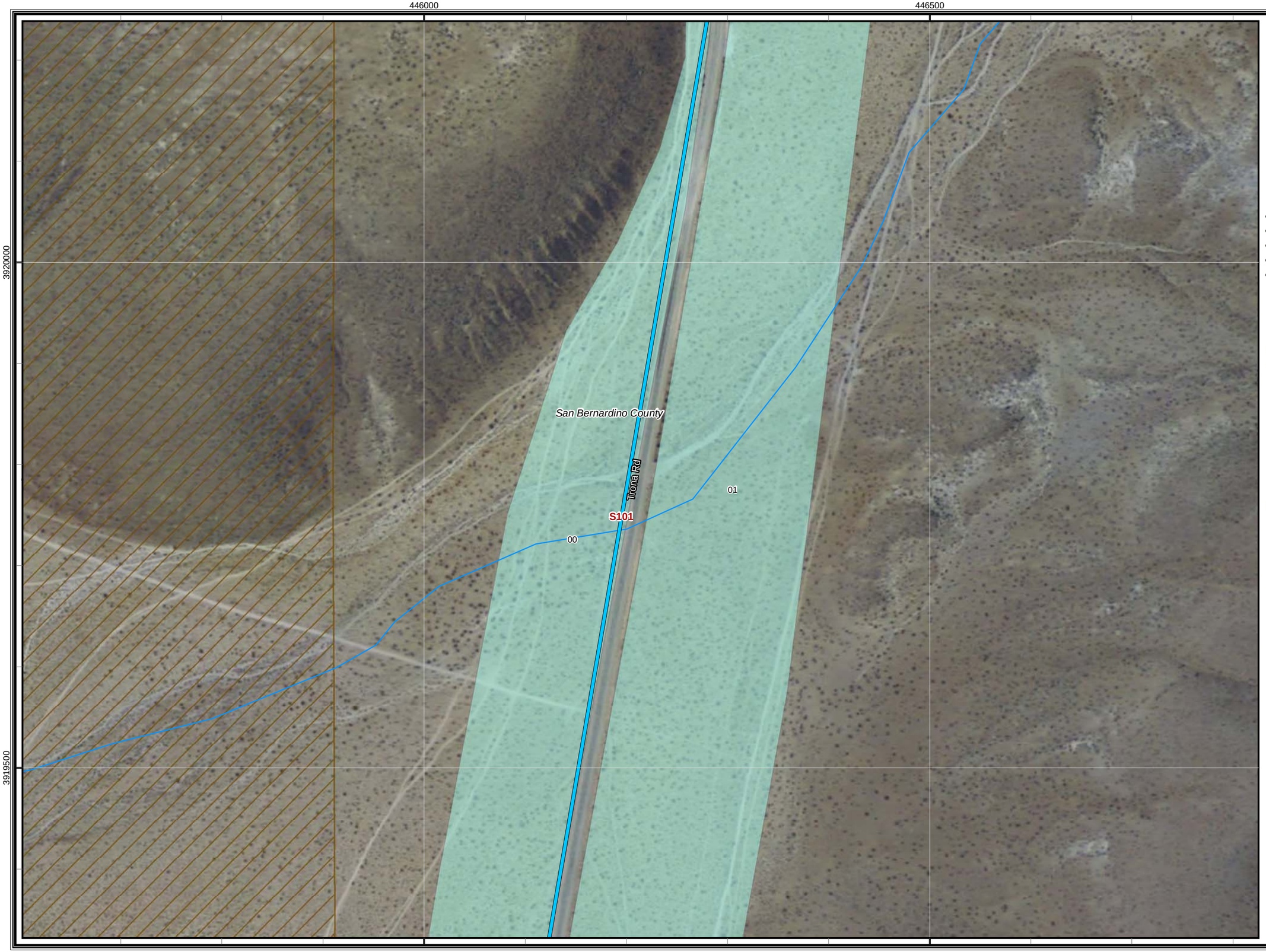
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-128

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

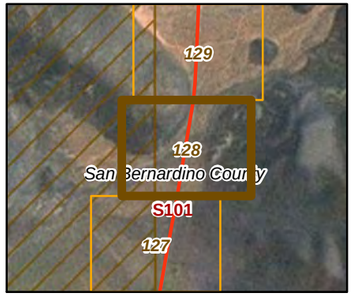
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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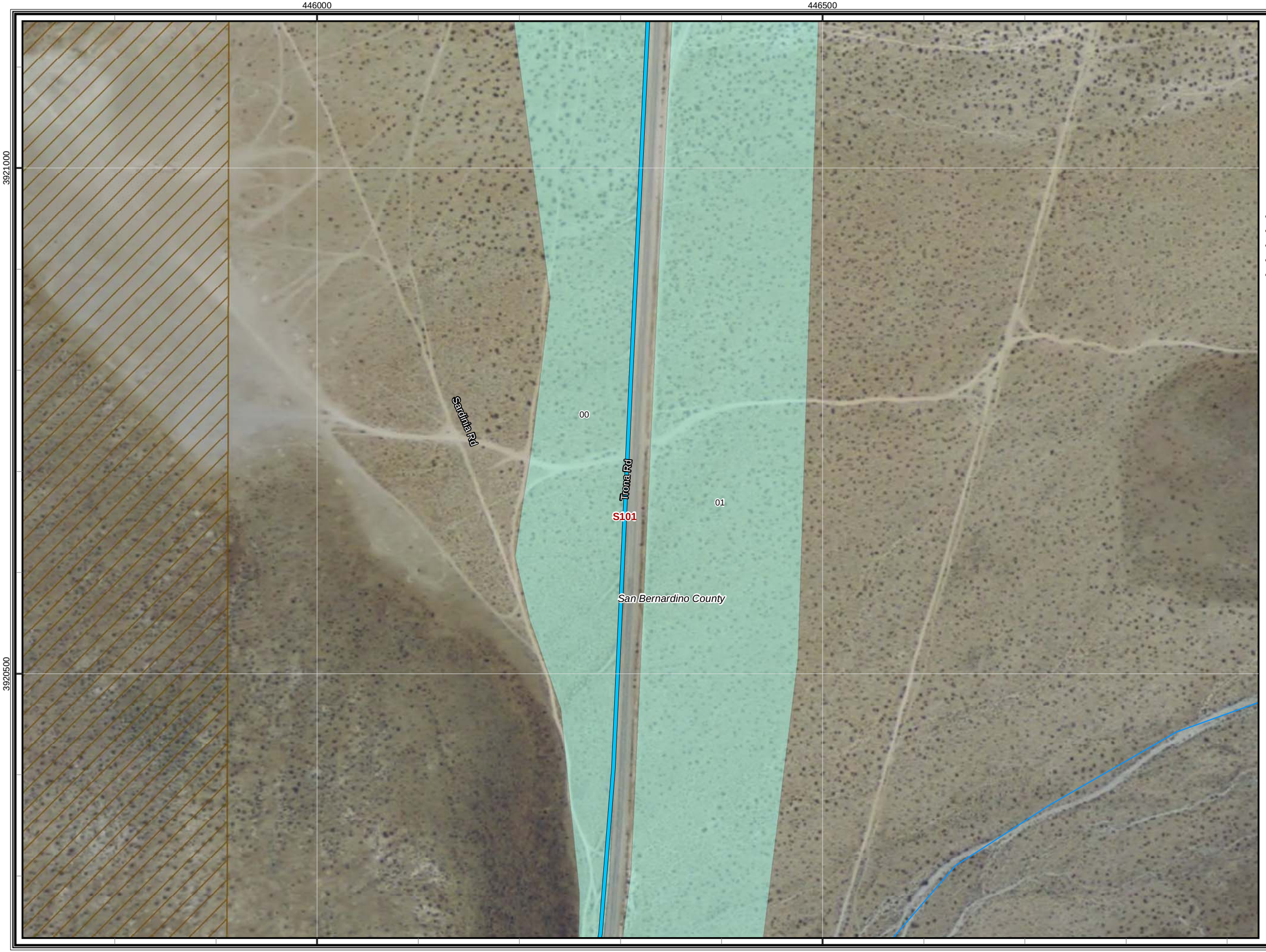

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R3-Johannesburg to Inyokern-129

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

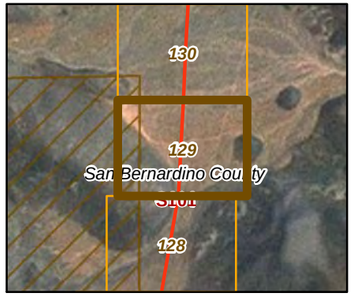
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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R3-Johannesburg to Inyokern-130

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

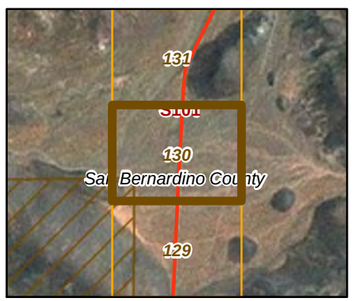
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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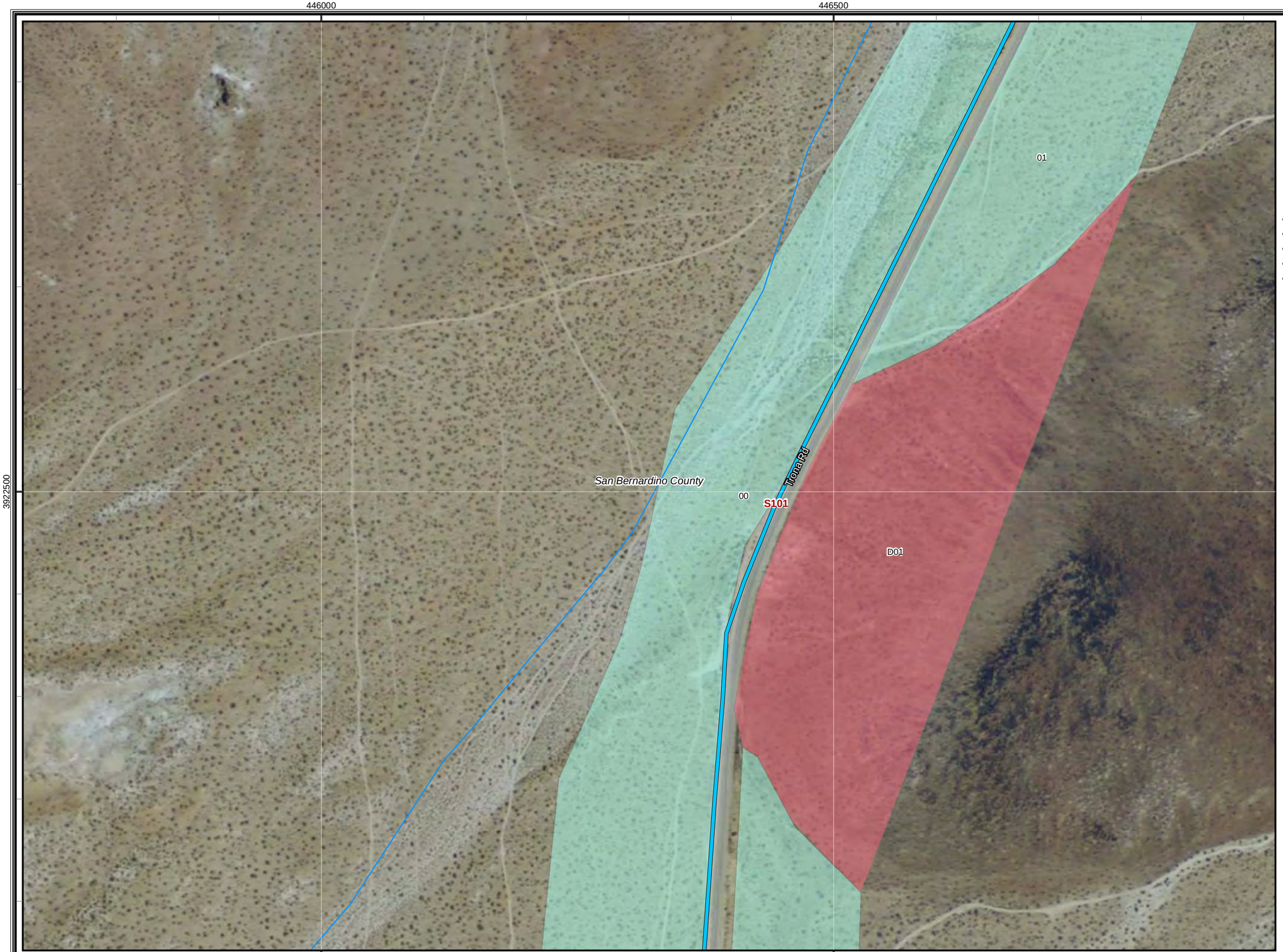


CBC Digital 395

R3-Johannesburg to Inyokern-131

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

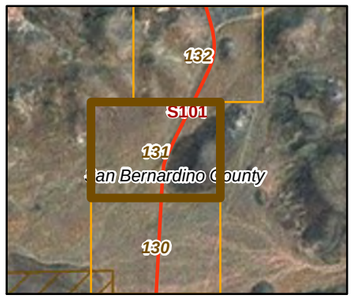
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R3-Johannesburg to Inyokern-132

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

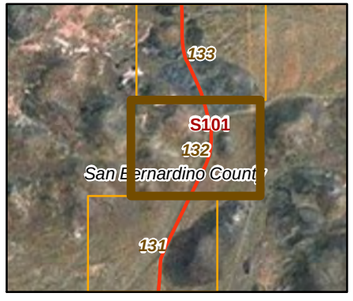
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R3-Johannesburg to Inyokern-133

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

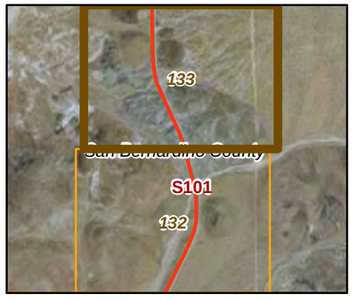
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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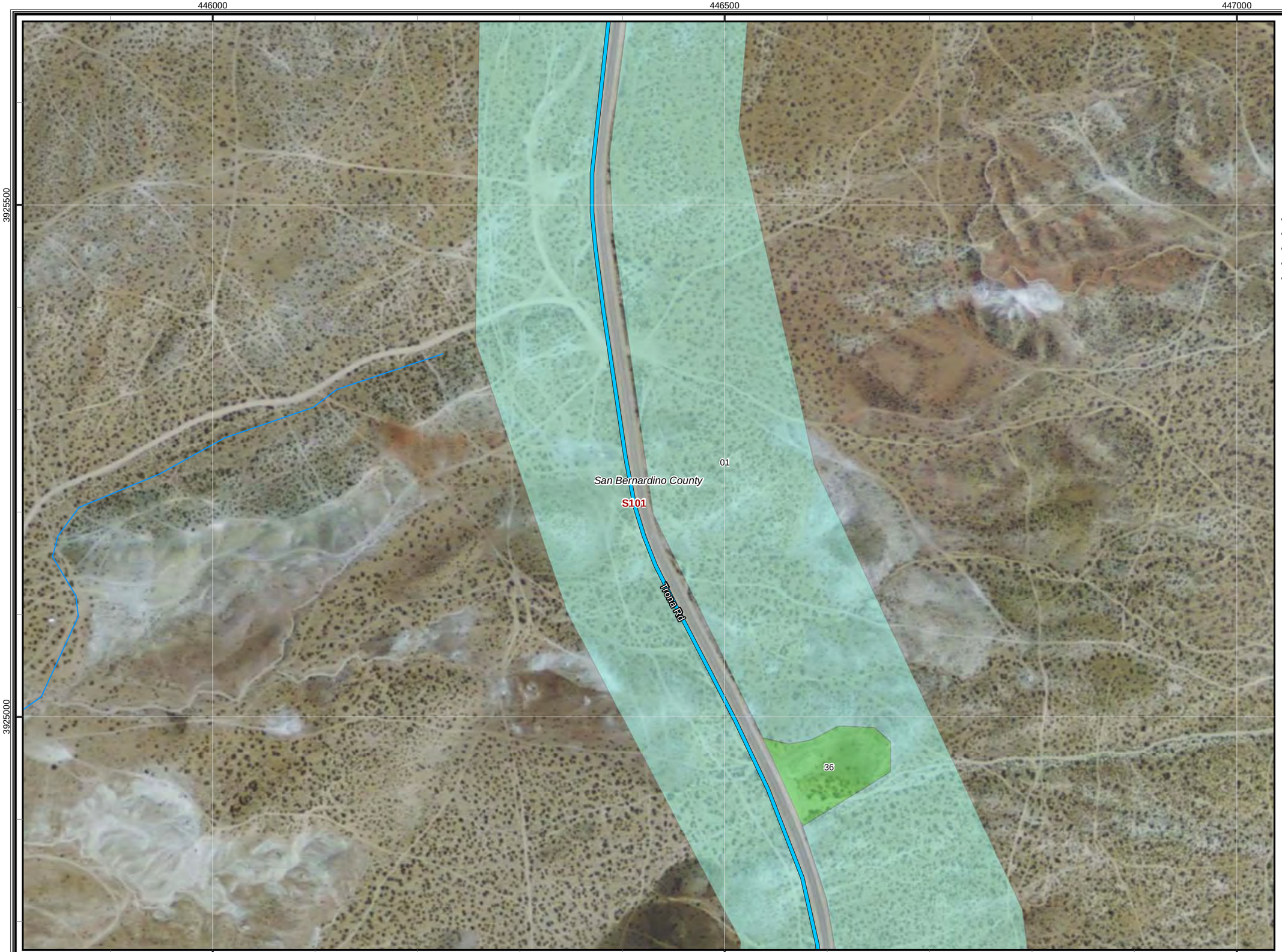
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-134

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

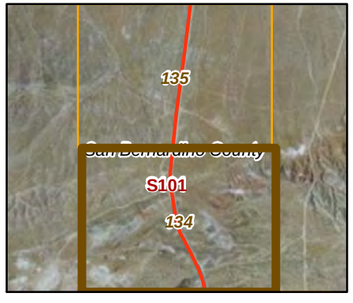
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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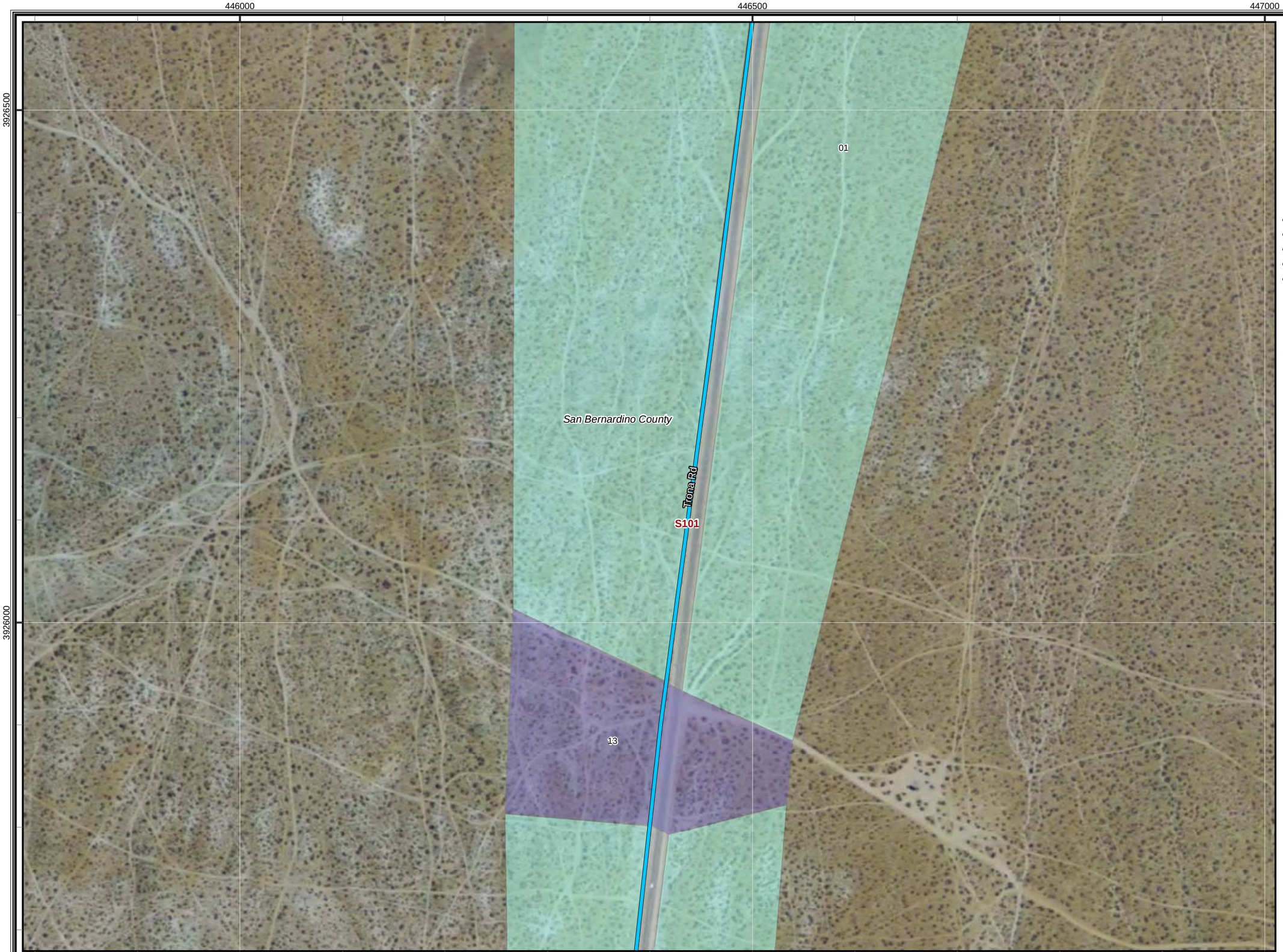
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-135

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

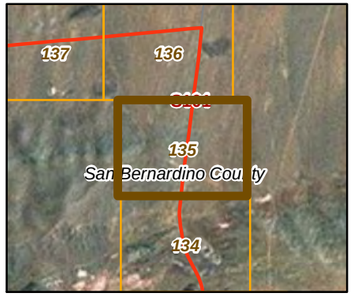
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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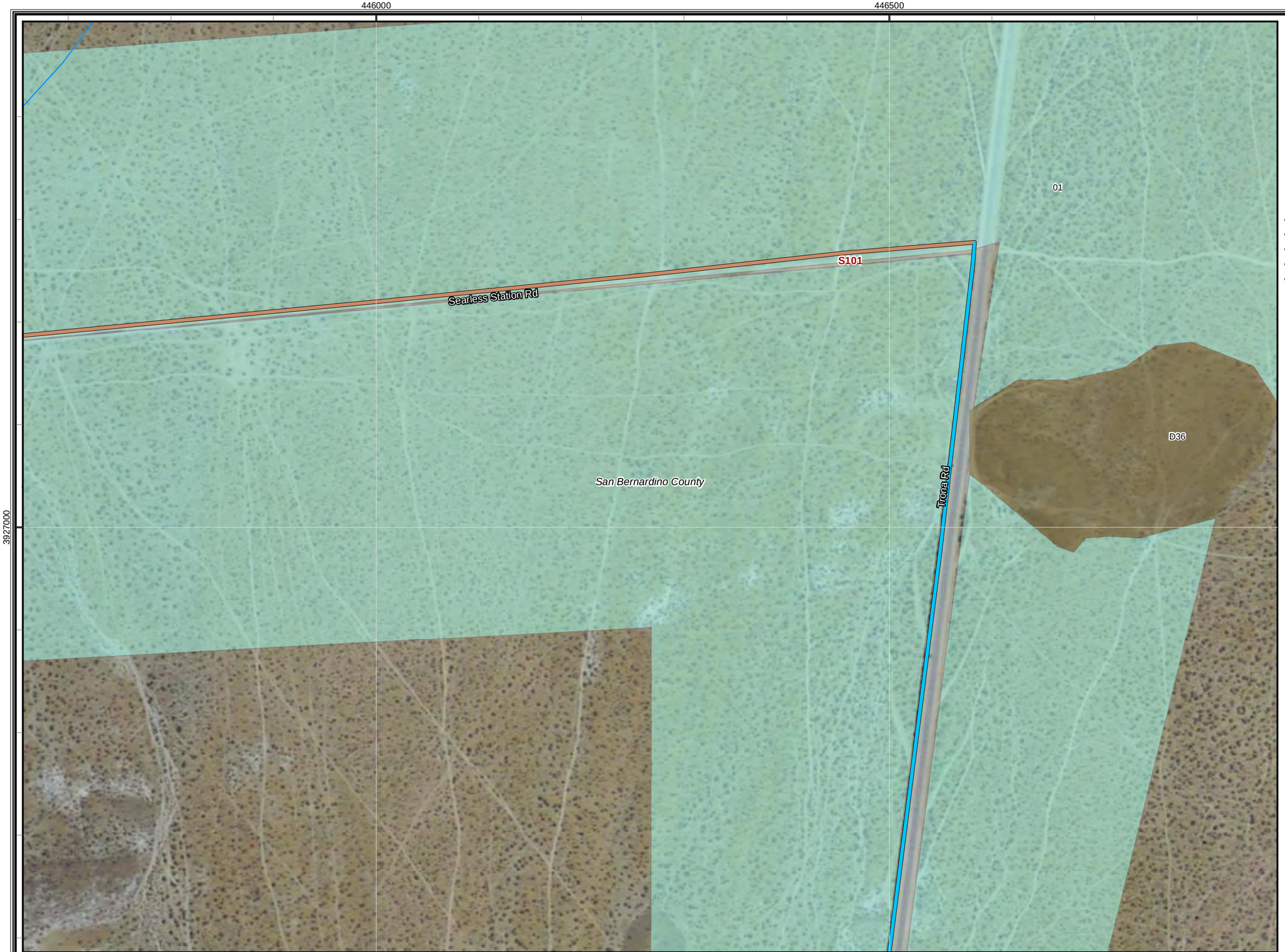
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-136

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

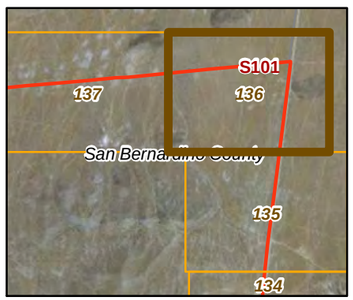
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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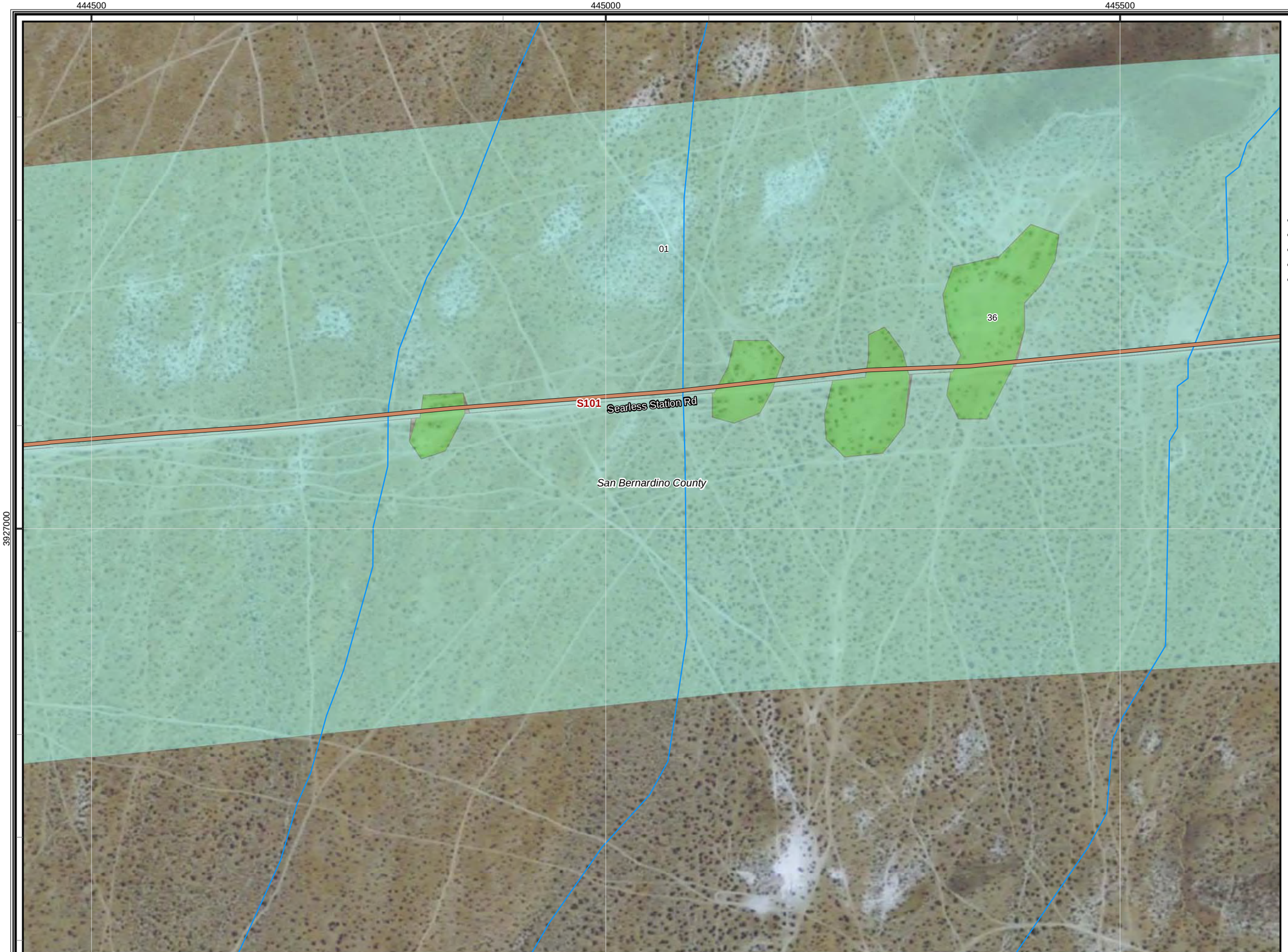
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-137

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

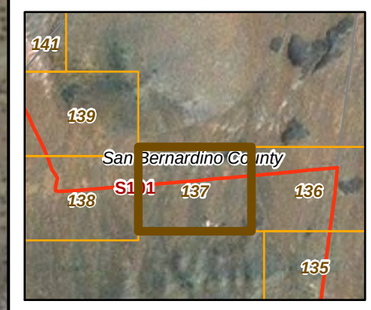
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

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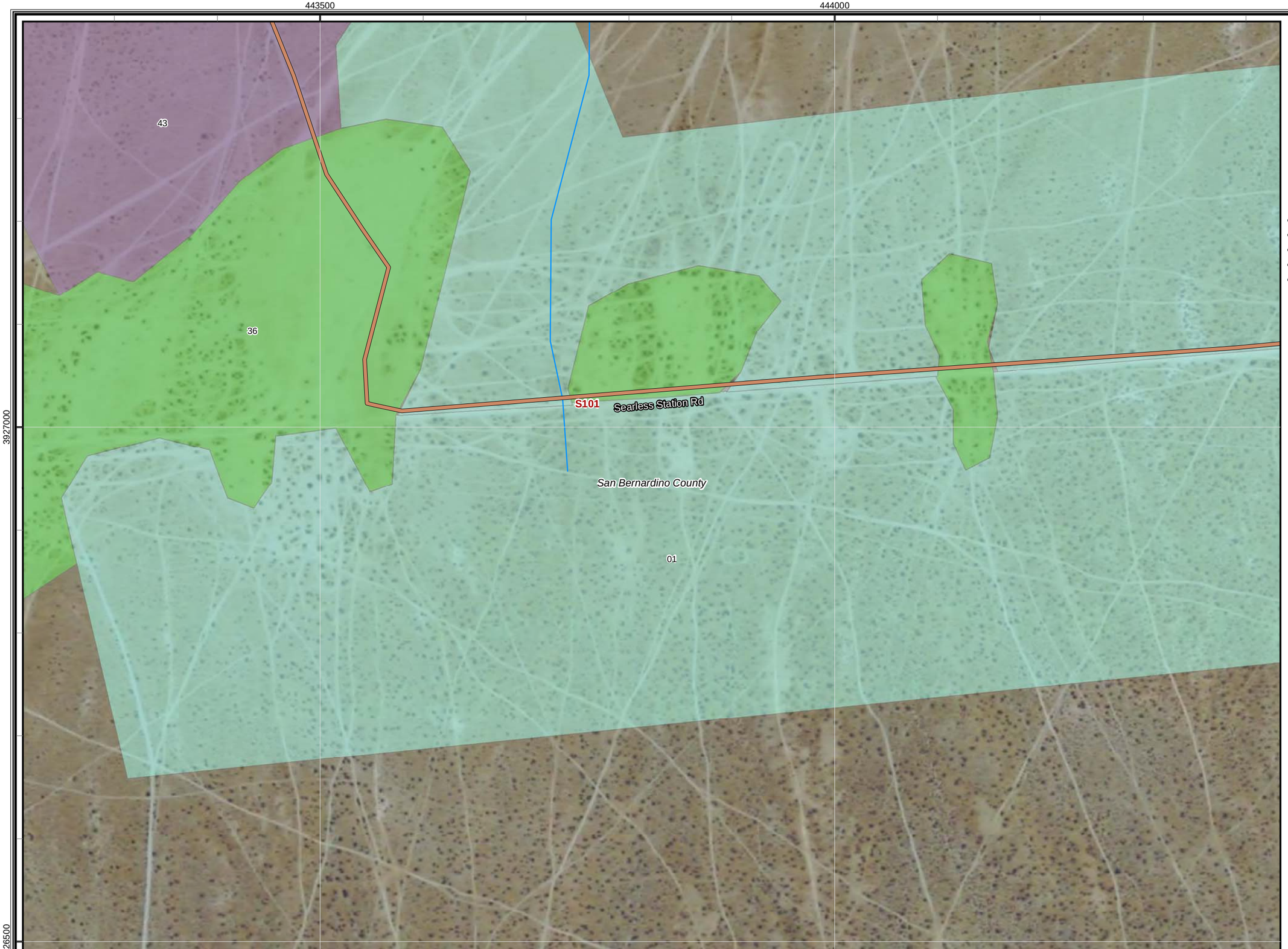


CBC Digital 395

R3-Johannesburg to Inyokern-138

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

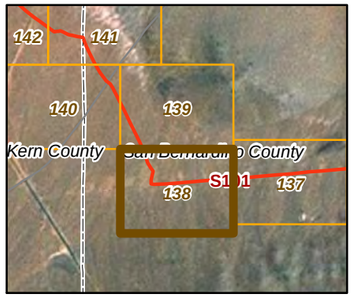
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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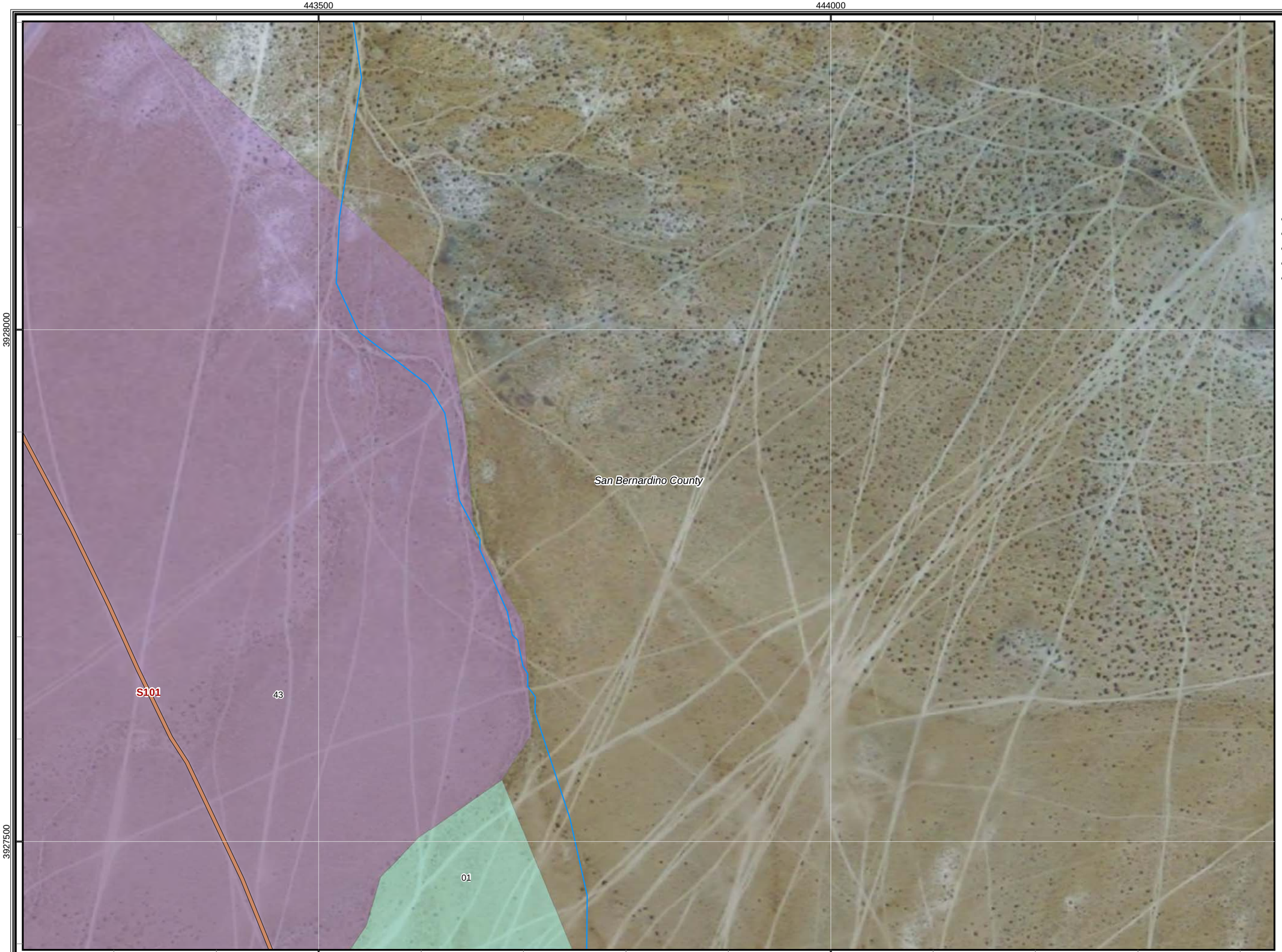


CBC Digital 395

R3-Johannesburg to Inyokern-139

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

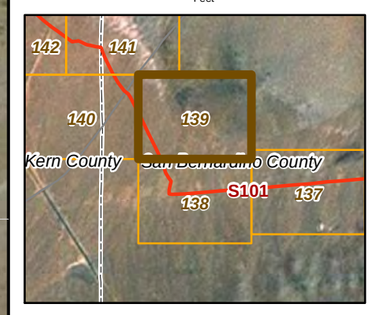
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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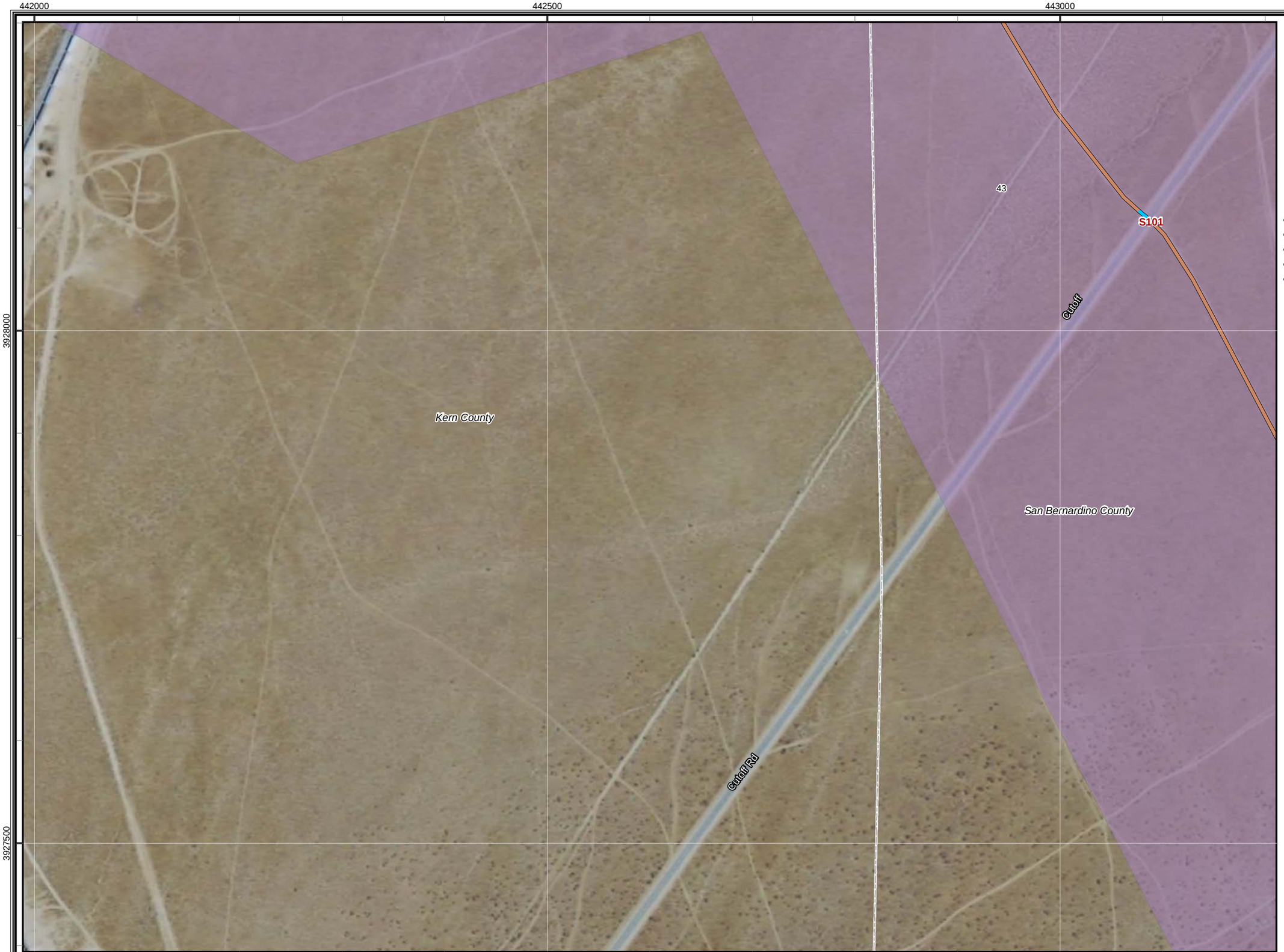


CBC Digital 395

R3-Johannesburg to Inyokern-140

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

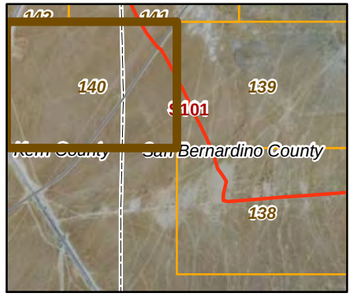
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R3-Johannesburg to Inyokern-141

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

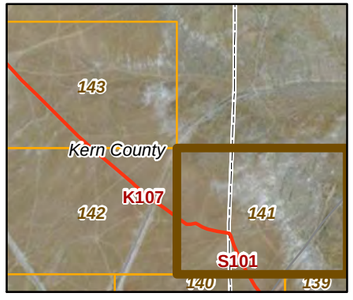
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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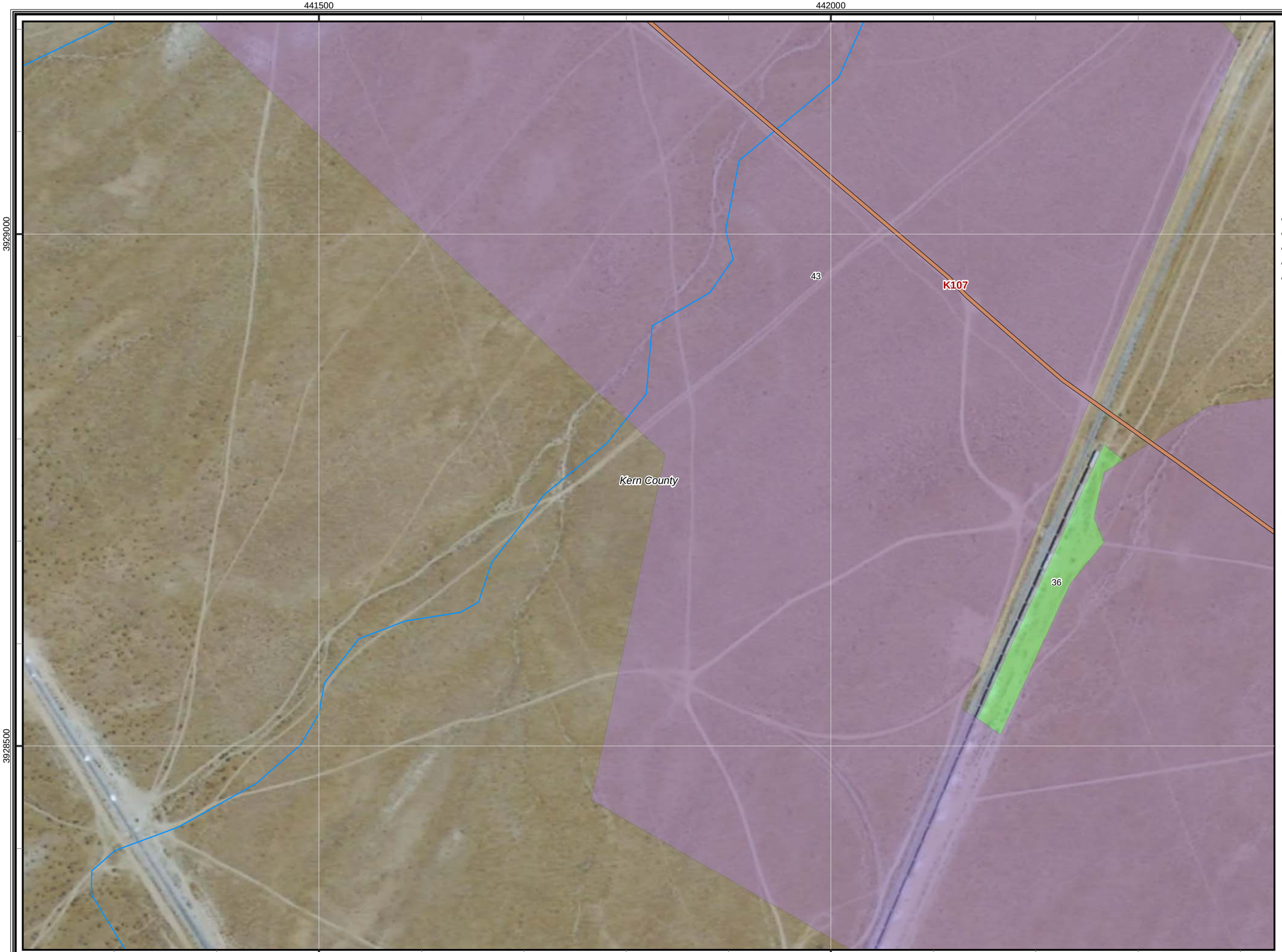


CBC Digital 395

R3-Johannesburg to Inyokern-142

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

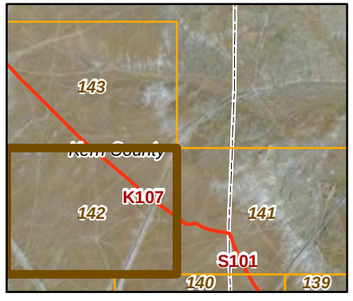
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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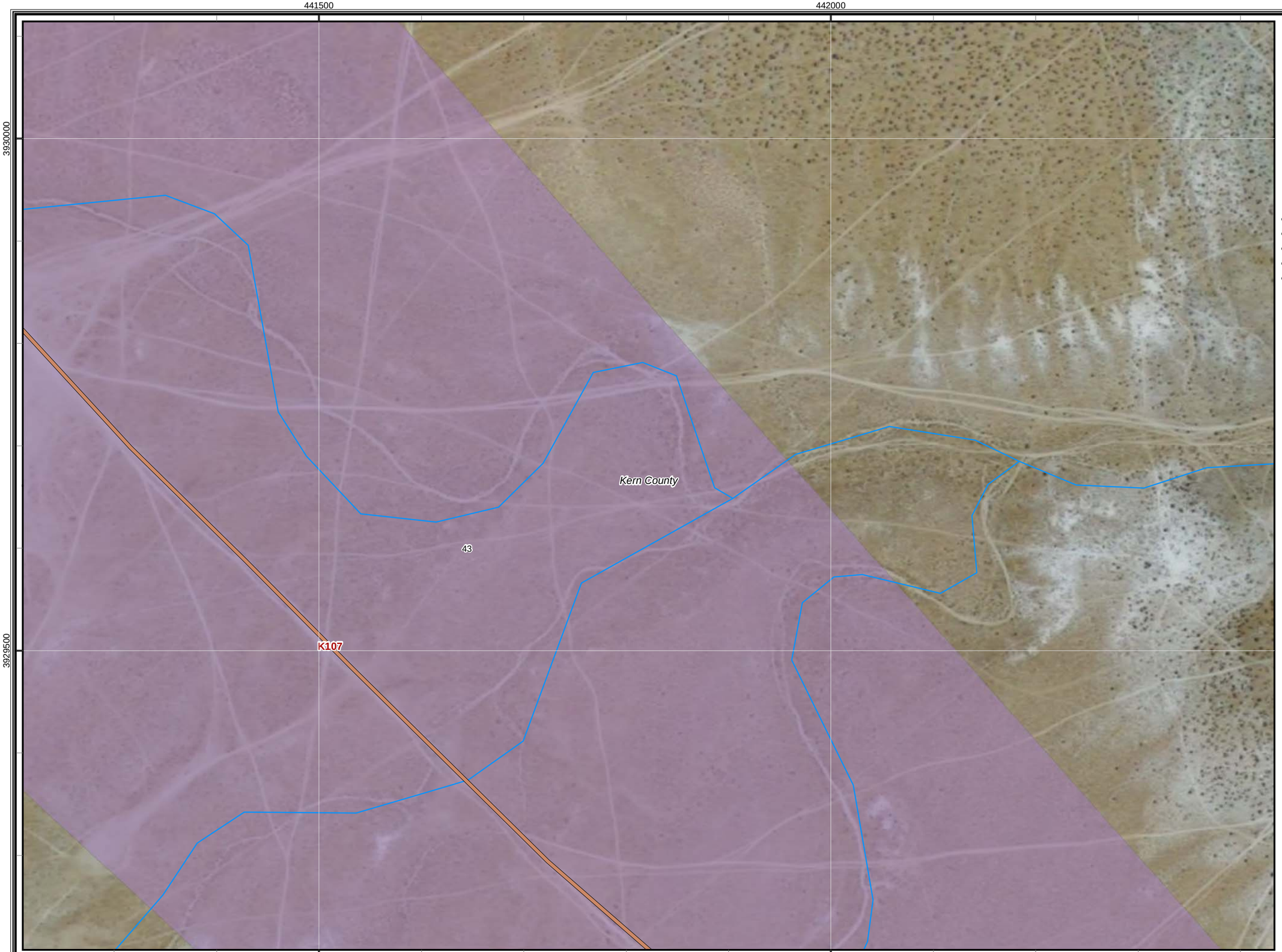


CBC Digital 395

R3-Johannesburg to Inyokern-143

Legend

Proposed Node / Facility

Project Staging Site

Staging Area

Laydown

Depot

Existing Facility

Anchor

POI

FOC Backbone Street Side from Barstow to Reno

Left Side

Right Side

Road Crossing

Dirt Road

Lease

Distribution Line

Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

Identified Core Areas

Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

Present

Regional Surveys

Not Detected, Regional Surveys

Present, Regional Surveys

Protocol Grids

Not Detected, Protocol Grids

Present, Protocol Grids

Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

Observed

Not Present

Existing ROW Fencing

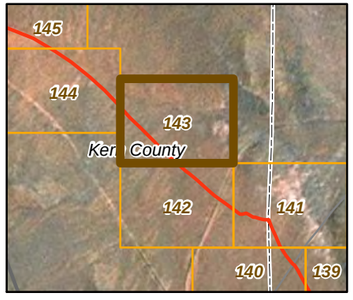
Waterway

City Limit

1:3,500

0 50 100 200 300

Feet



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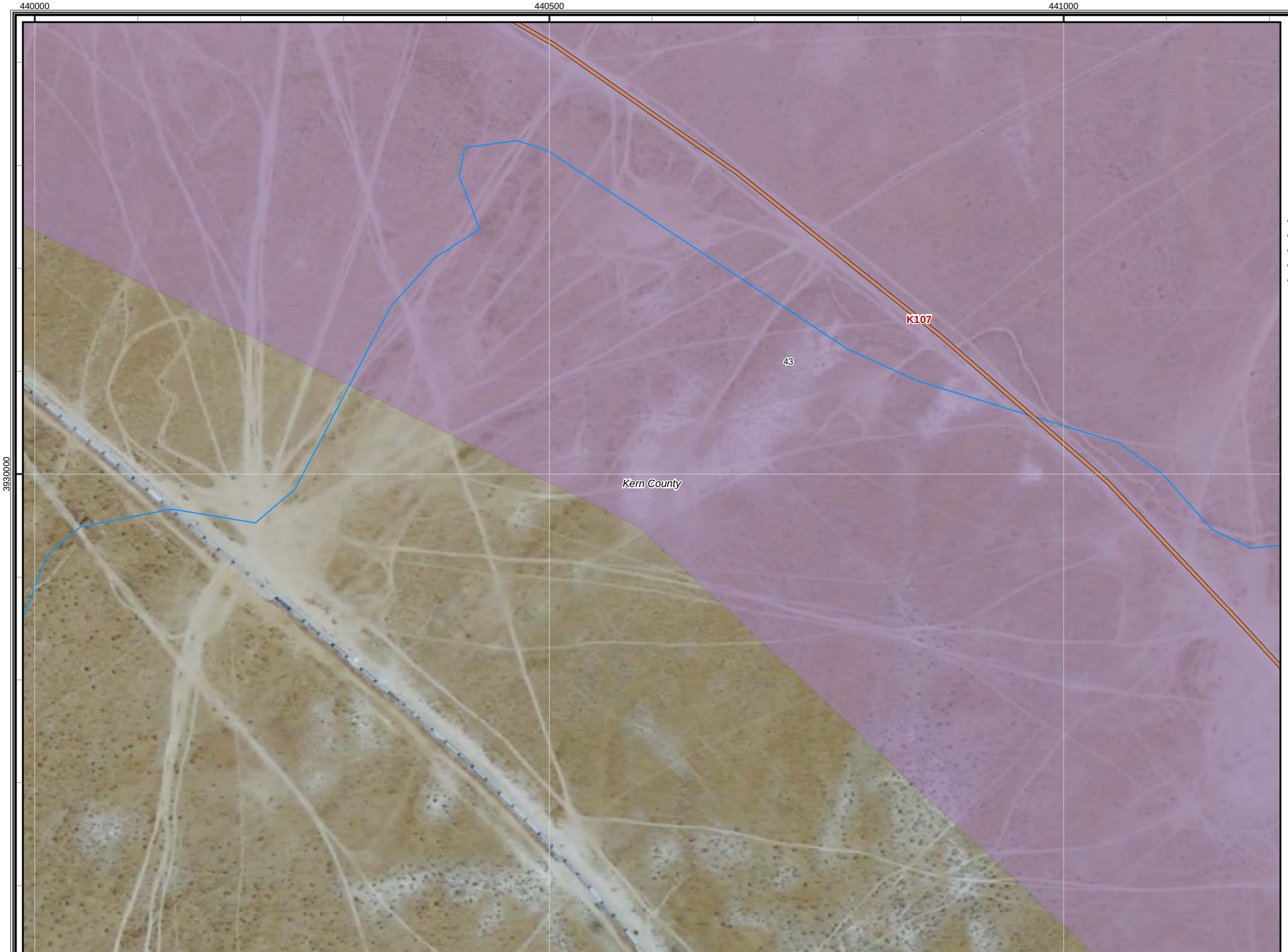


CBC Digital 395

R3-Johannesburg to Inyokern-144

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

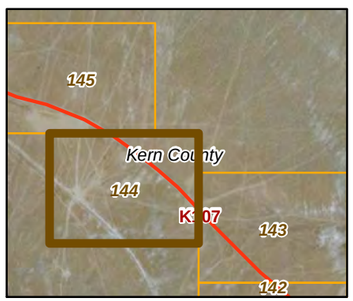
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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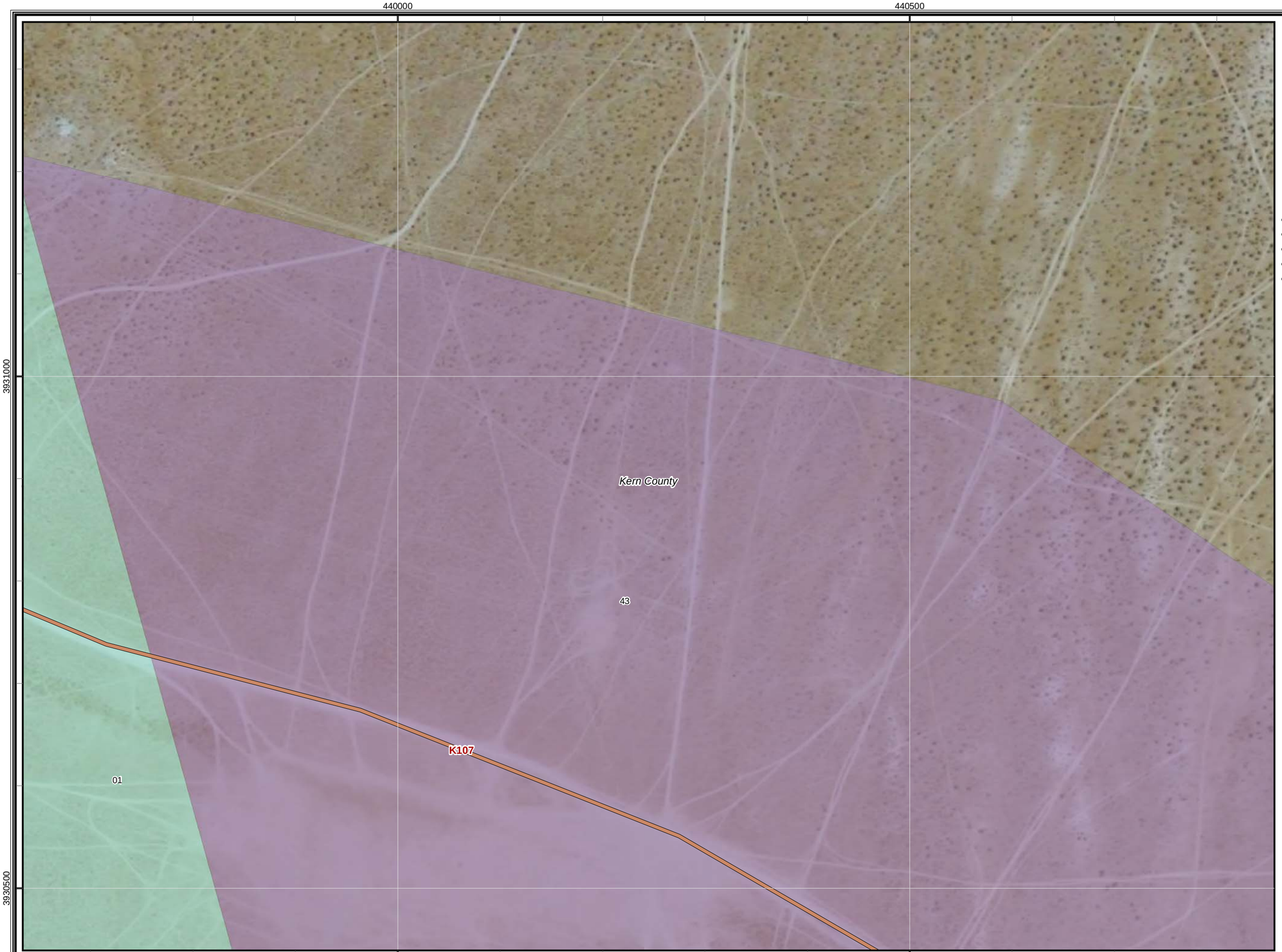


CBC Digital 395

R3-Johannesburg to Inyokern-145

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

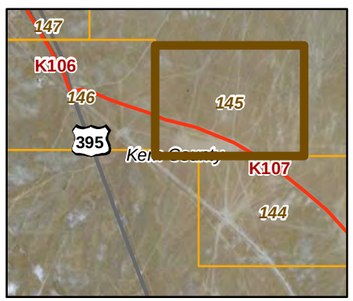
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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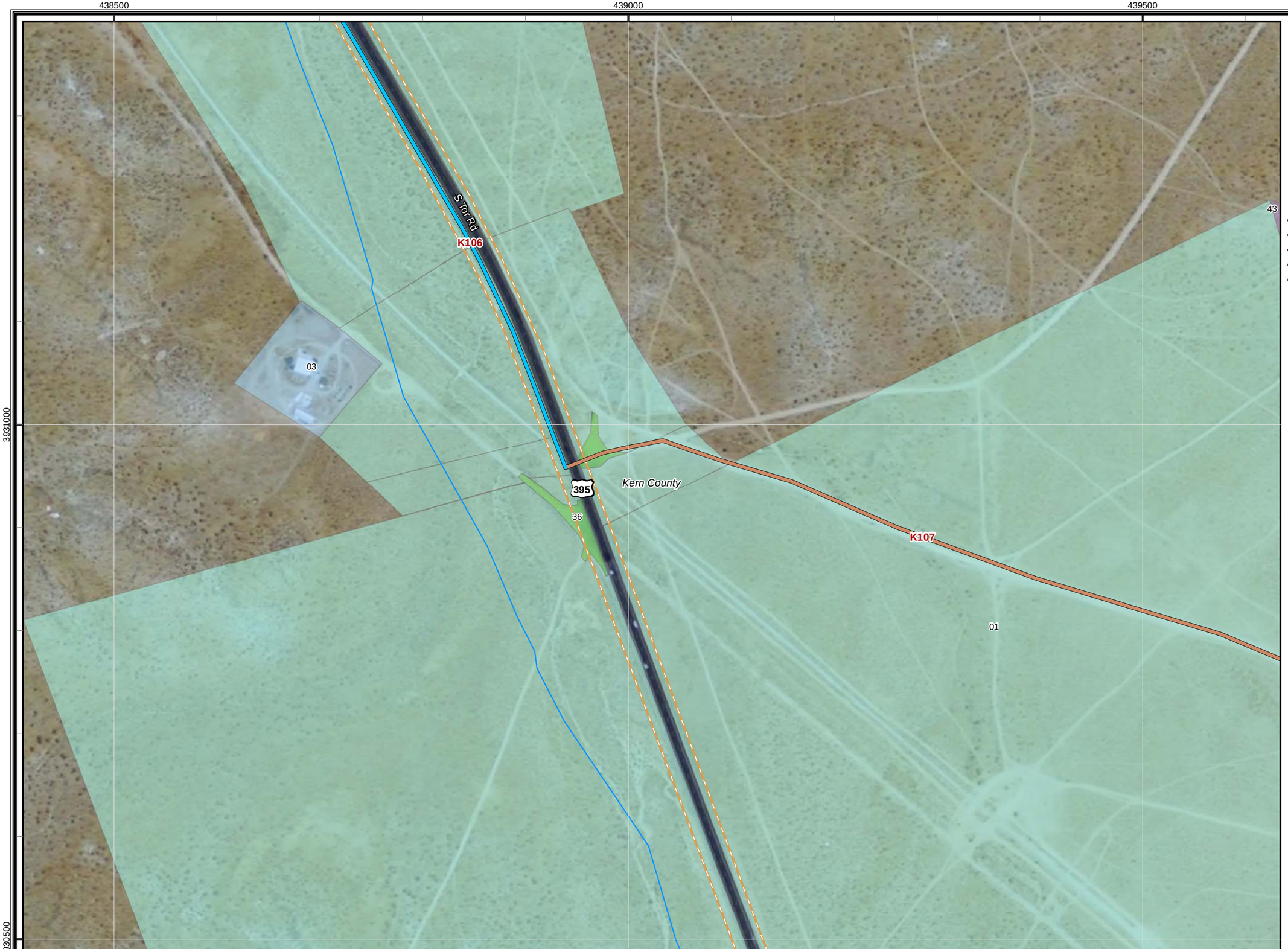
Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-146

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

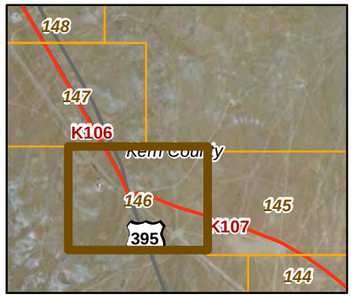
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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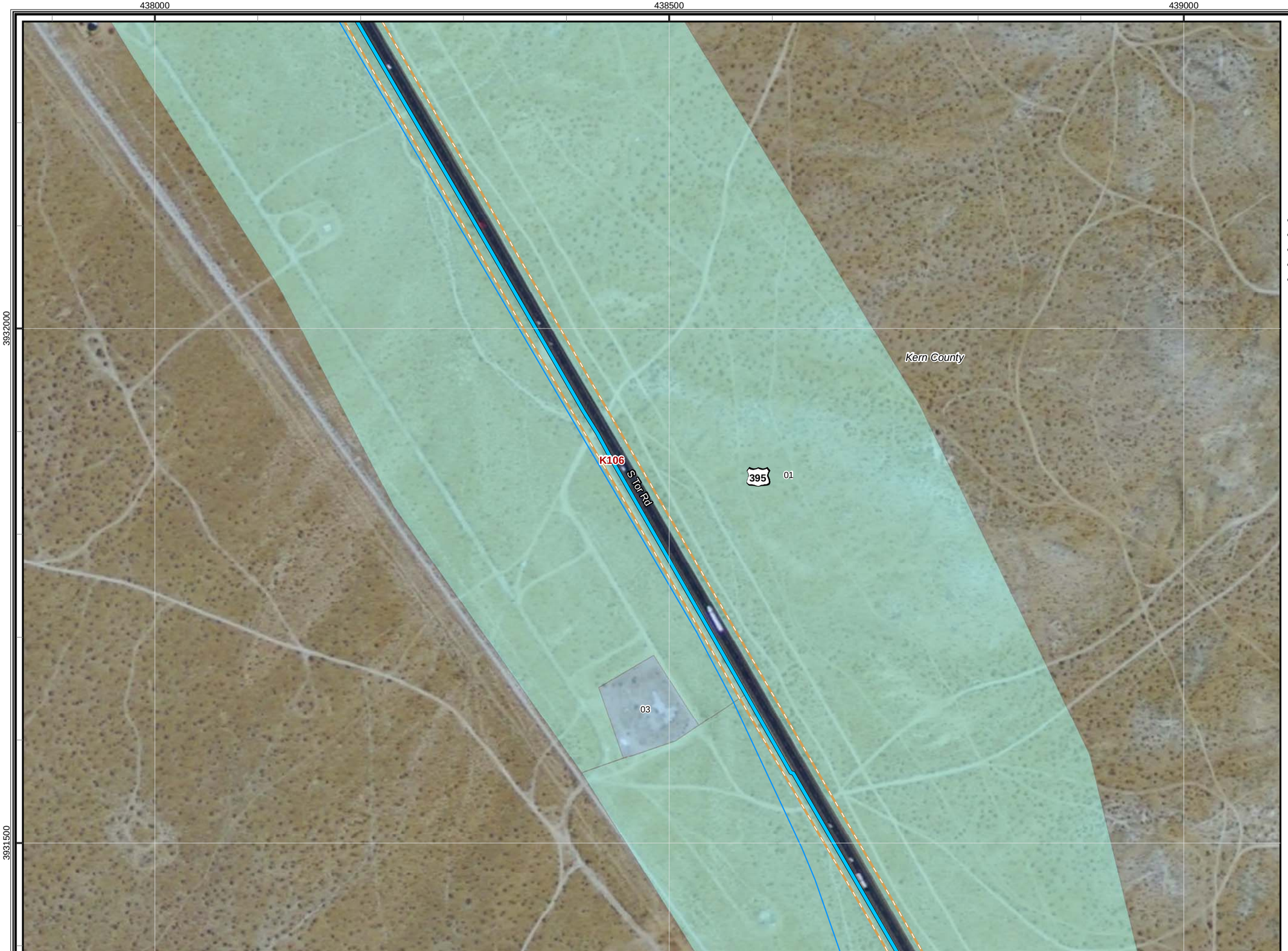


CBC Digital 395

R3-Johannesburg to Inyokern-147

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

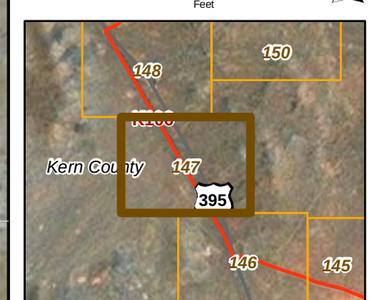
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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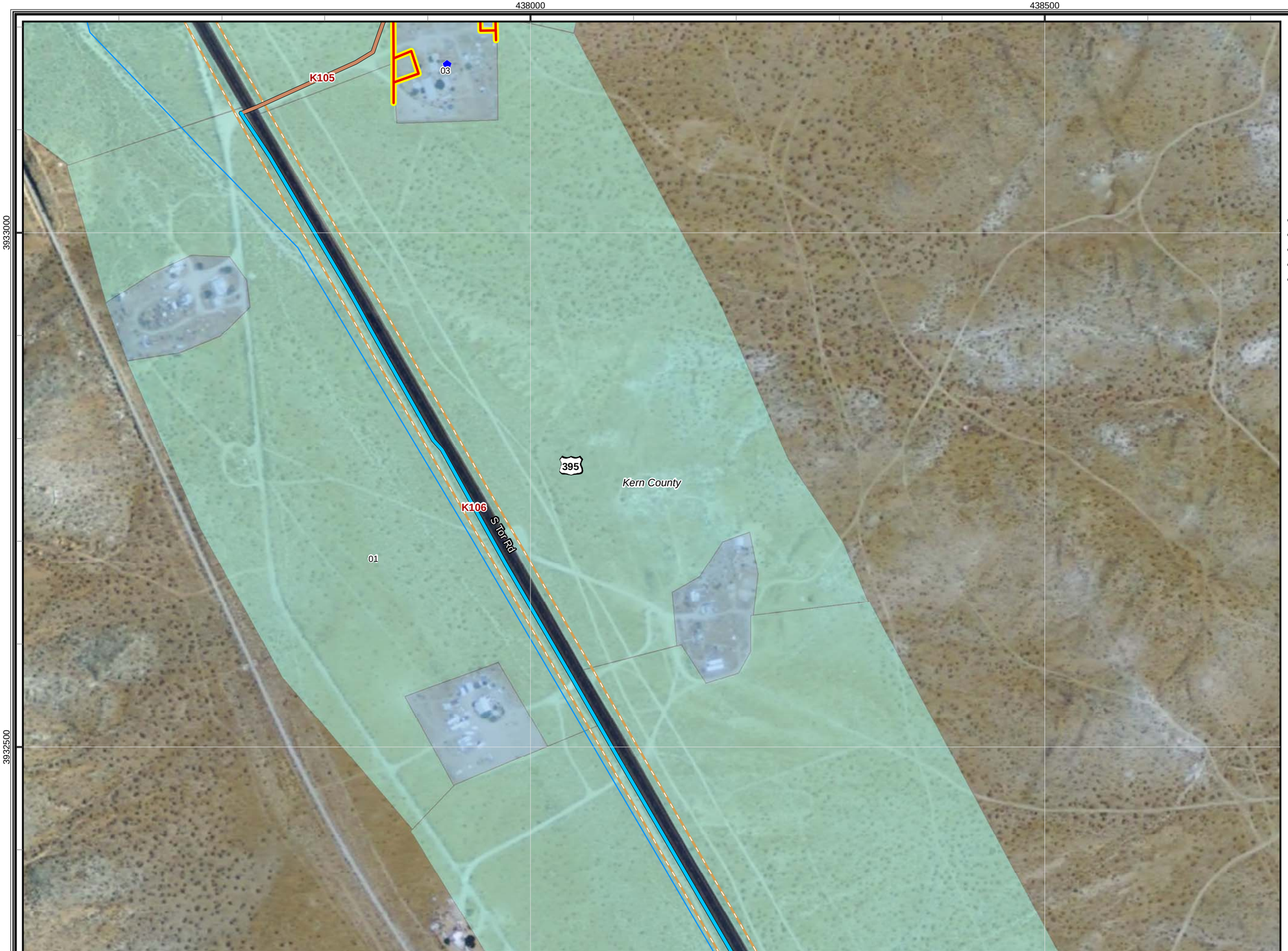


CBC Digital 395

R3-Johannesburg to Inyokern-148

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

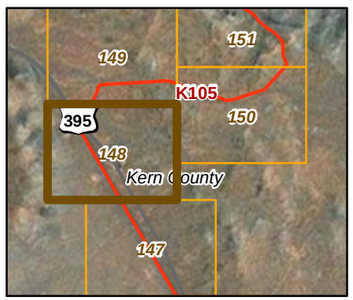
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

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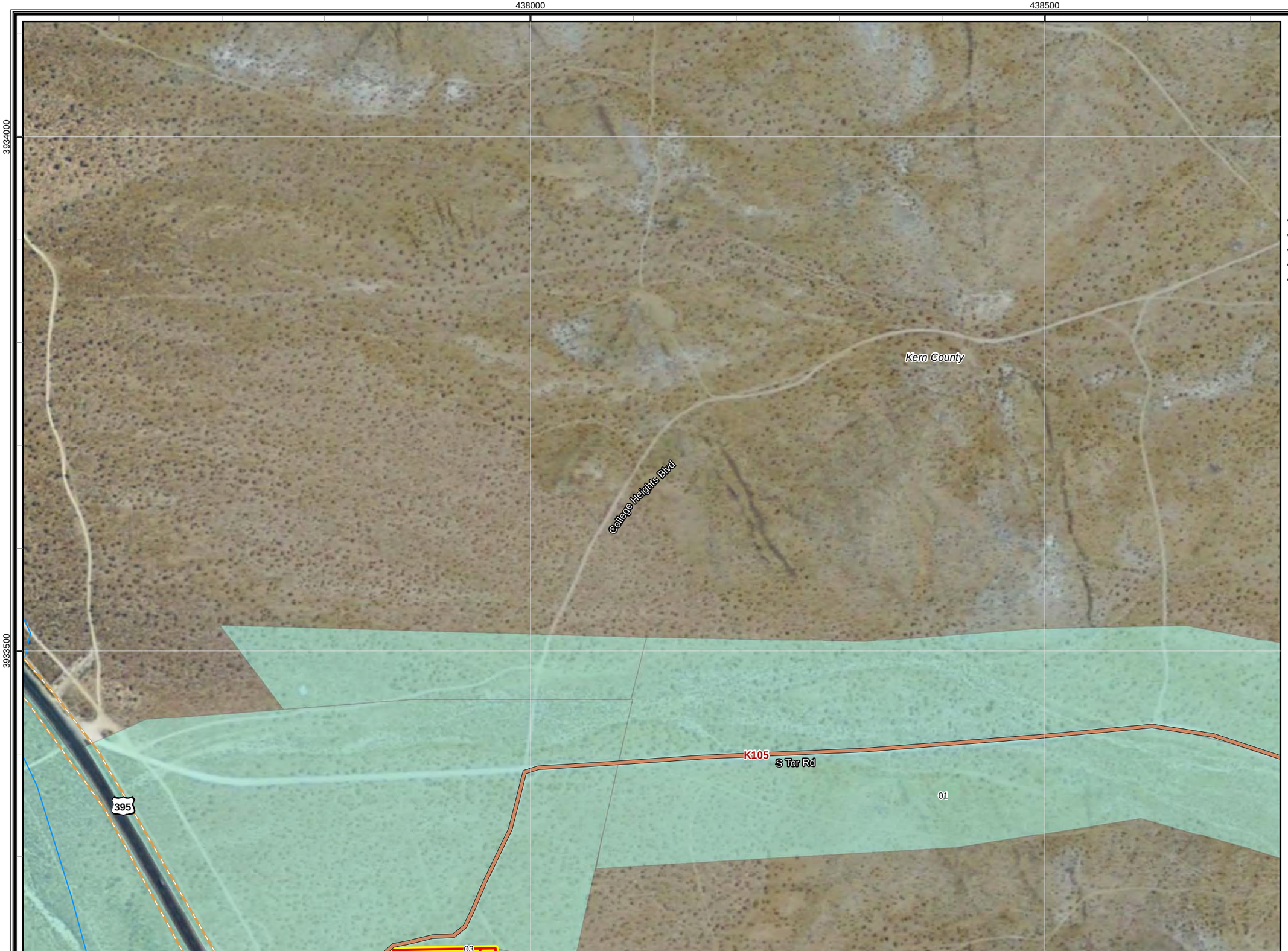


CBC Digital 395

R3-Johannesburg to Inyokern-149

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

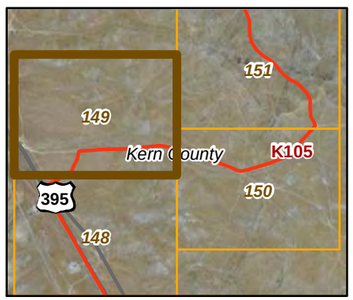
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

Chambers Group Inc.

CBC Digital 395

R3-Johannesburg to Inyokern-150

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

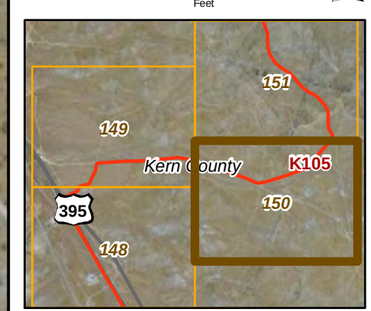
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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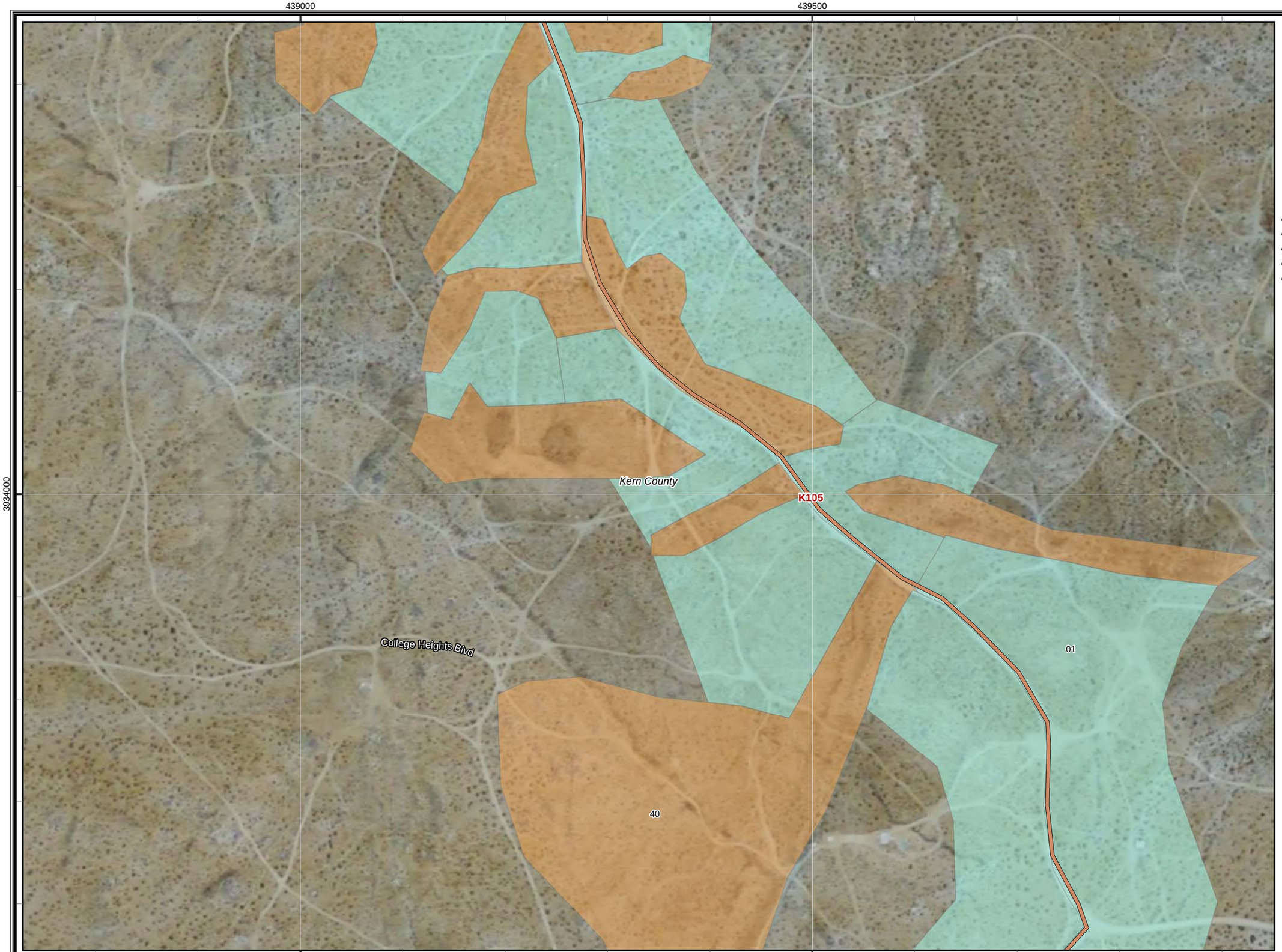
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-151

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

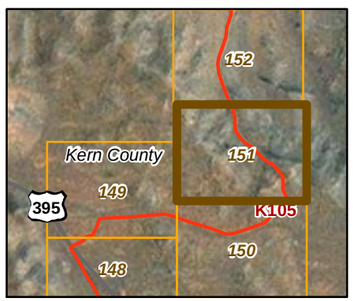
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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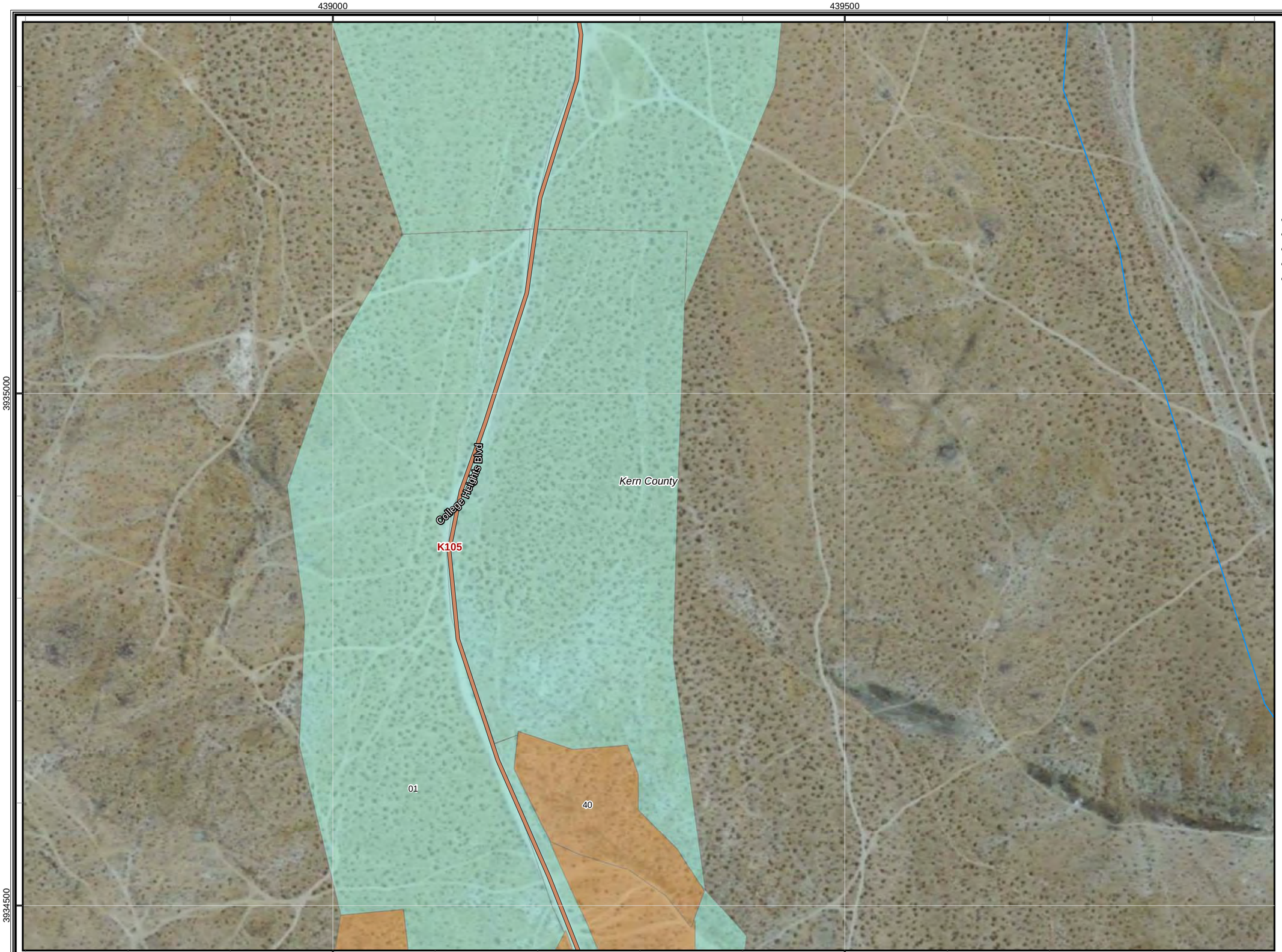
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-152

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

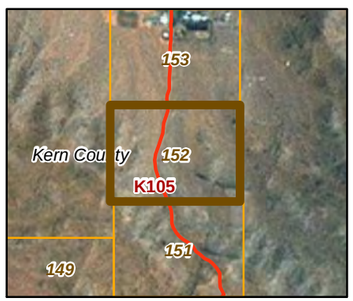
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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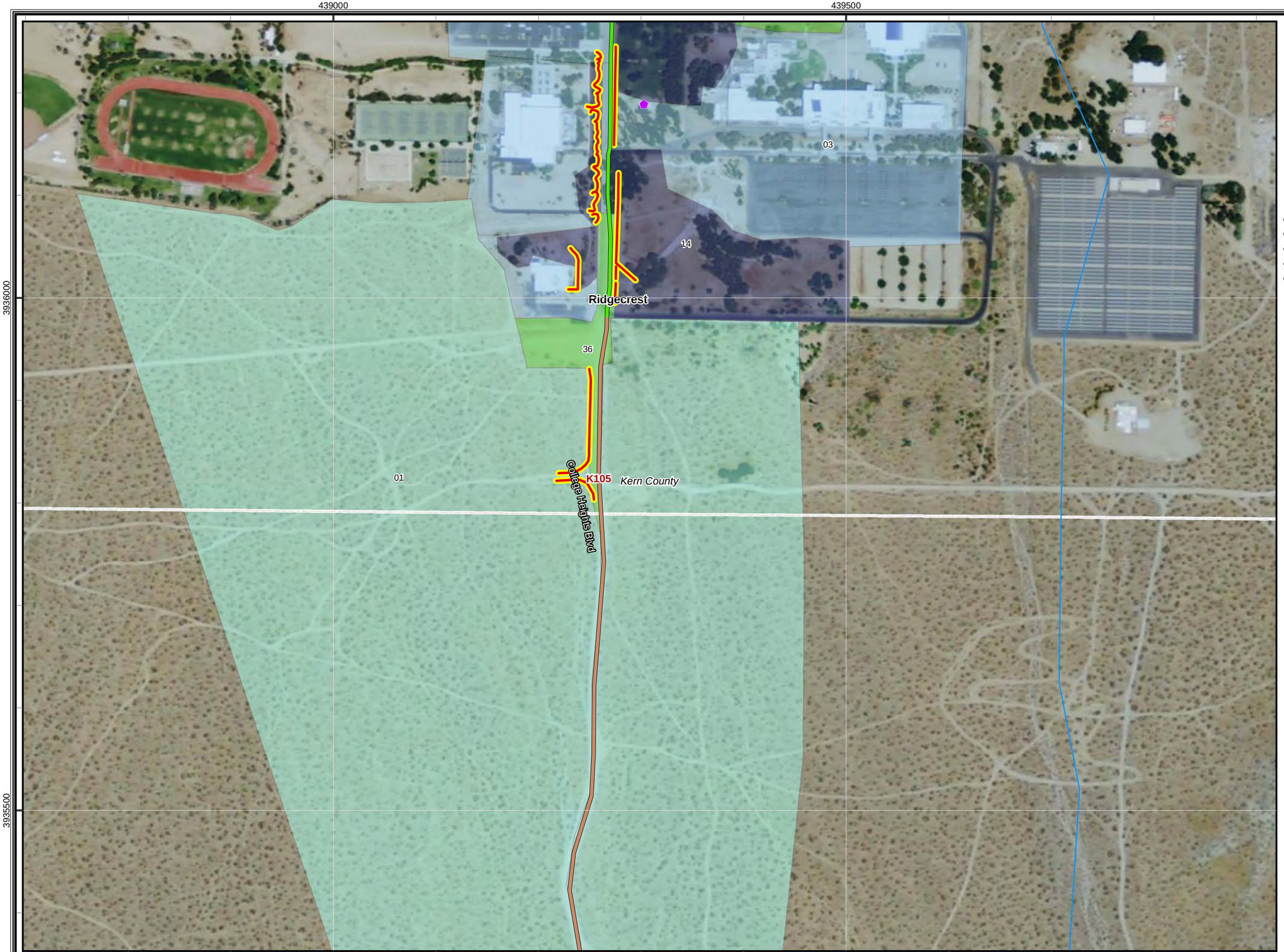
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-153

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

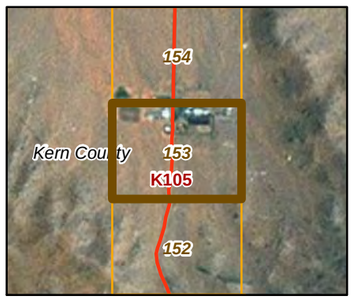
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R3-Johannesburg to Inyokern-154

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

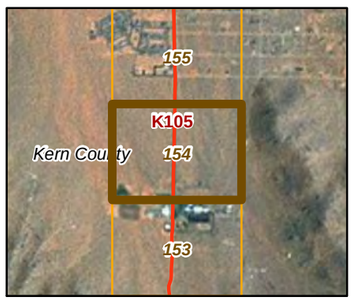
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R3-Johannesburg to Inyokern-155

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

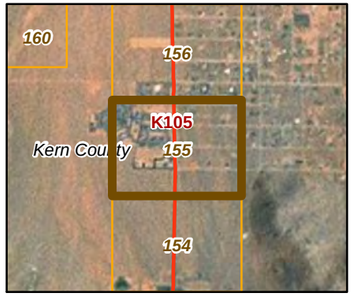
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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11-03-11

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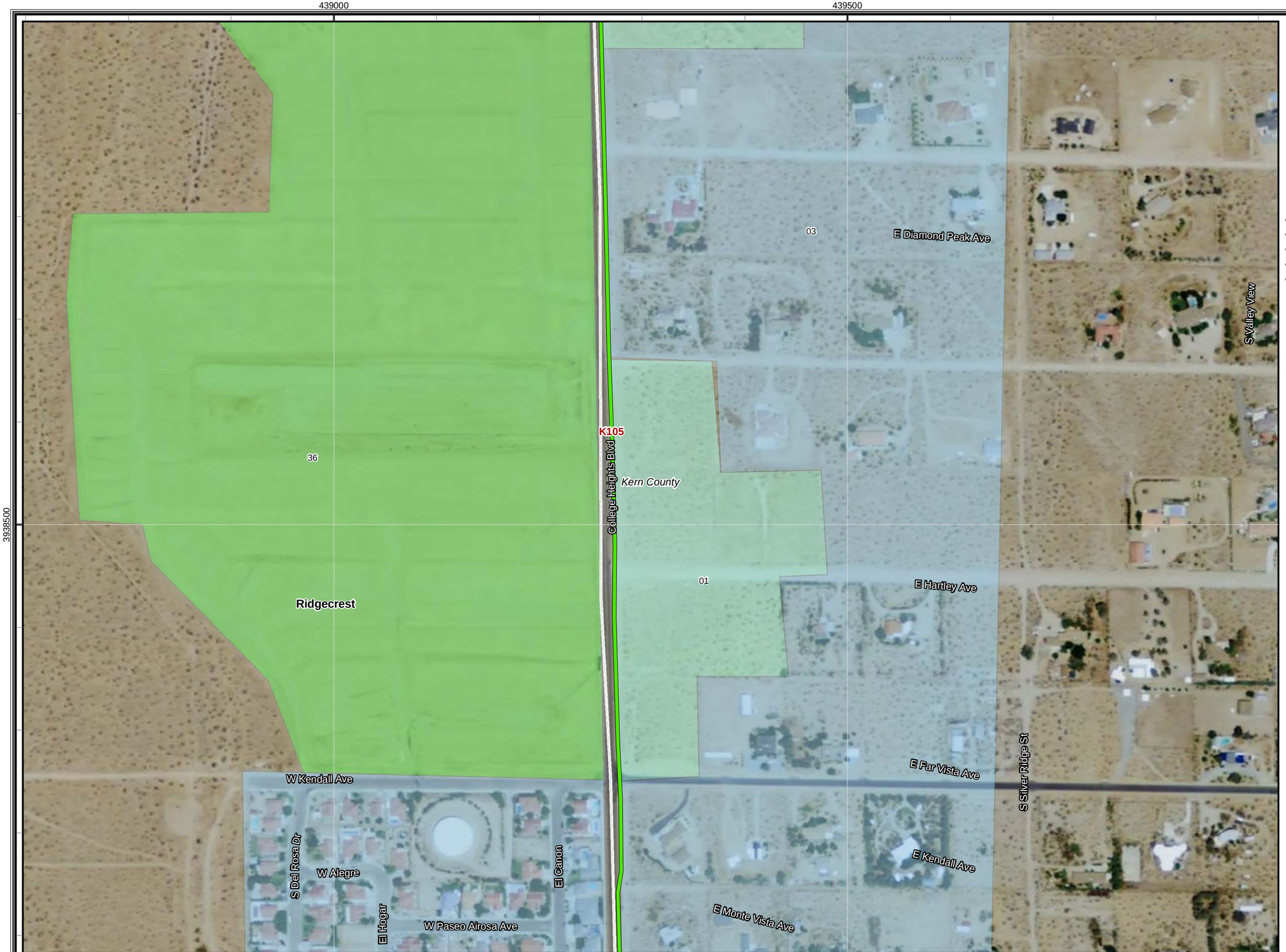


CBC Digital 395

R3-Johannesburg to Inyokern-156

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

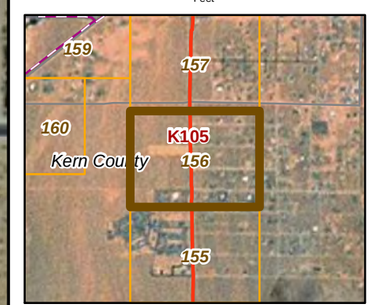
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R3-Johannesburg to Inyokern-157

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

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- Road Crossing
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Mohave Ground Squirrel Records

Incidental Observations

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Regional Surveys

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- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

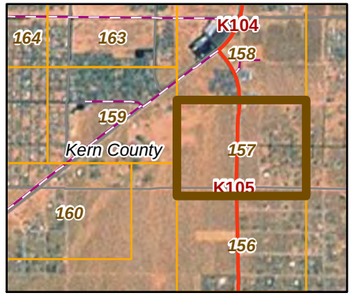
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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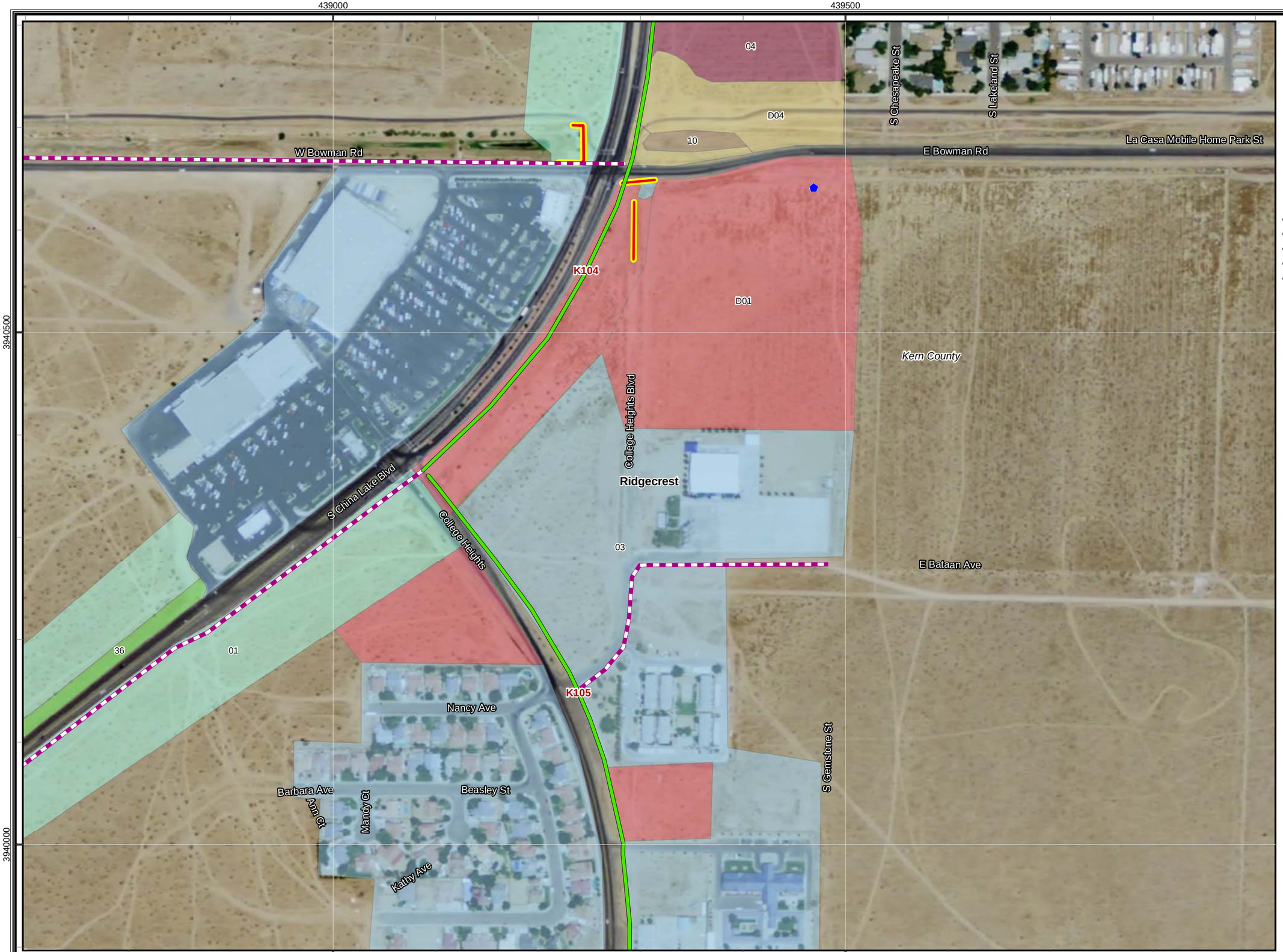
11-03-11

Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-158

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
- Dirt Road
- Lease
- Distribution Line
- Aerial Distribution Line

Mohave Ground Squirrel

Known Populations:

- Identified Core Areas
- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

- Present

Regional Surveys

- Not Detected, Regional Surveys
- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
- Desert Tortoise Critical Habitat

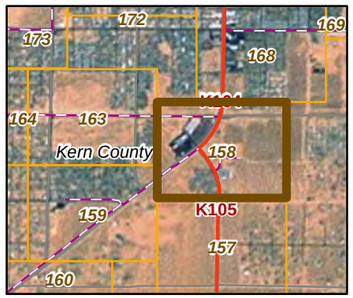
Desert Tortoise Fence

Status

- Observed
- Not Present
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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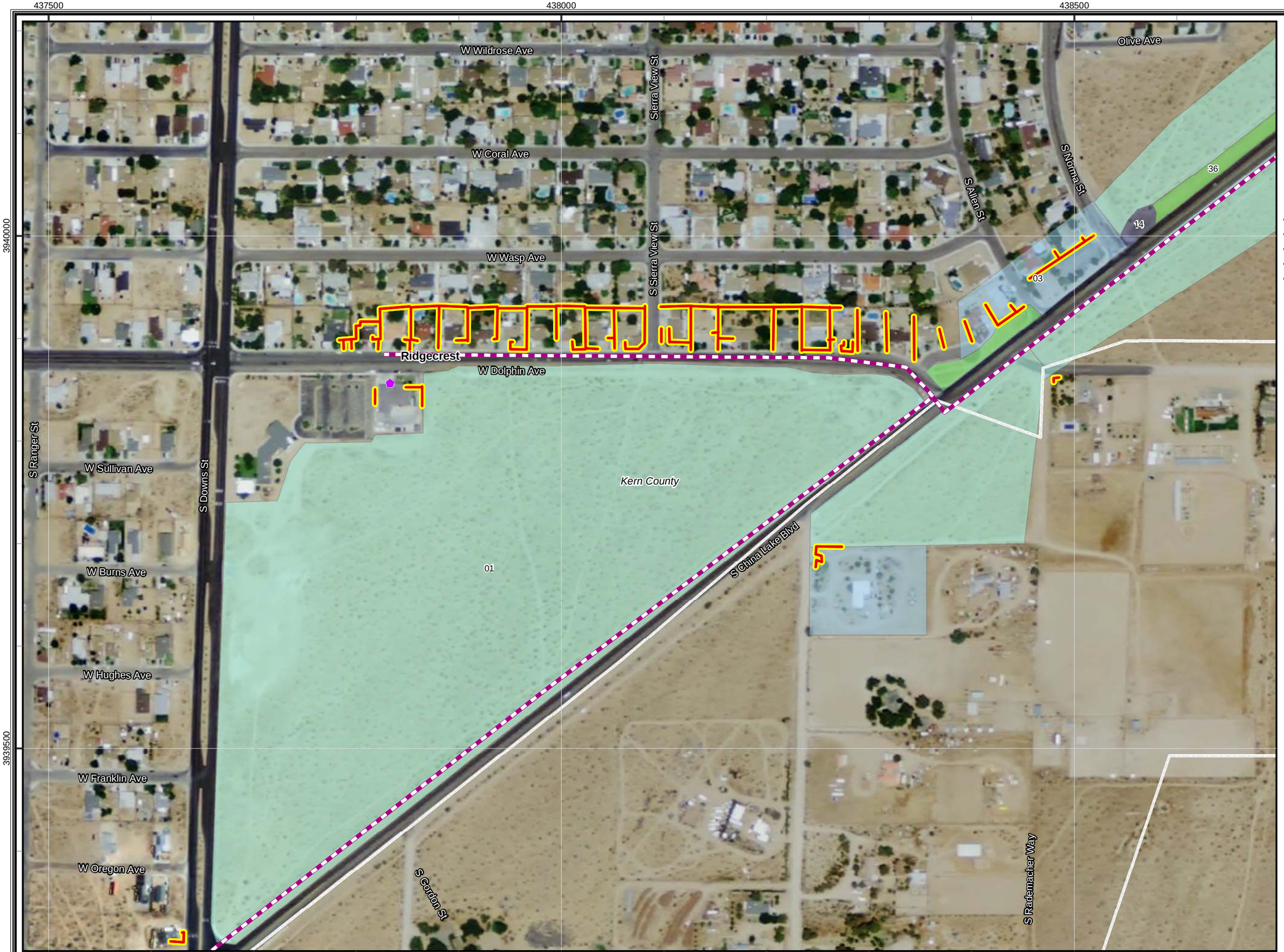
Chambers Group Inc.



CBC Digital 395

R3-Johannesburg to Inyokern-159

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

- Left Side
- Right Side
- Road Crossing
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- Lease
- Distribution Line
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Mohave Ground Squirrel

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- Other Known Populations

Mohave Ground Squirrel Records

Incidental Observations

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Regional Surveys

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- Present, Regional Surveys

Protocol Grids

- Not Detected, Protocol Grids
- Present, Protocol Grids
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Desert Tortoise Fence

Status

- Observed
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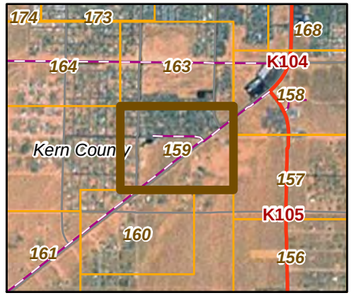
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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CBC Digital 395

R3-Johannesburg to Inyokern-160

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
- POI

FOC Backbone Street Side from Barstow to Reno

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- Present, Regional Surveys

Protocol Grids

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- Desert Tortoise Critical Habitat

Desert Tortoise Fence

Status

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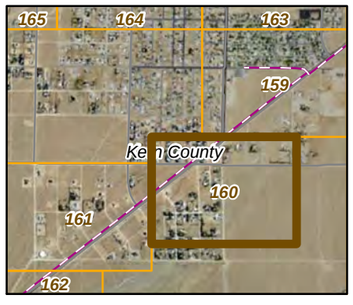
- Existing ROW Fencing
- Waterway
- City Limit

1:3,500

0 50 100 200 300
Feet



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Chambers Group Inc.

CBC Digital 395

R3-Johannesburg to Inyokern-161

Legend

- Proposed Node / Facility

Project Staging Site

- Staging Area
- Laydown
- Depot

Existing Facility

- Anchor
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FOC Backbone Street Side from Barstow to Reno

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11-03-11

Chambers Group Inc.