



ENVIRONMENTAL STEWARDSHIP SUMMARY REPORT OF THE CONSTRUCTION, OPERATION, AND MAINTENANCE OF TACTICAL INFRASTRUCTURE PEDESTRIAN FENCE SEGMENTS A-1 AND A-2A THROUGH A-2N U.S. Border Patrol San Diego Sector, California

U.S. Department of Homeland Security
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**ENVIRONMENTAL STEWARDSHIP SUMMARY REPORT
OF THE CONSTRUCTION, OPERATION, AND MAINTENANCE
OF TACTICAL INFRASTRUCTURE
PEDESTRIAN FENCE SEGMENTS A-1 AND A-2A THROUGH A-2N
U.S. BORDER PATROL, SAN DIEGO SECTOR,
CALIFORNIA**

July 2012

Lead Agency: Department of Homeland Security
U.S. Customs & Border Protection
Office of Finance, Asset Management
1300 Pennsylvania Ave NW
Washington, DC 20229

Point of Contact: Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office
Facilities Management & Engineering
1301 Constitution Ave NW
EPA West, Suite B-155
Washington, DC 20229

EXECUTIVE SUMMARY

The U.S. Customs and Border Protection (CBP) Secure Border Initiative (SBI) built tactical infrastructure (TI) for the U.S. Border Patrol (USBP), San Diego Sector. TI is a term used by USBP to describe the physical structures that facilitate enforcement activities; these items typically include, but are not limited to, roads, vehicle and pedestrian fences, lights, gates, and boat ramps. TI planned under SBI's Pedestrian Fence 225 (PF 225) Program within the San Diego Sector consisted of a total of 16.8 miles of pedestrian fence and roads within two sections. The primary pedestrian fence consisted of approximately 14.6 miles of the planned 16.8 miles of TI. The first section, which consists of segment A-1, is located adjacent to and within the Otay Mountain Wilderness (OMW) Area. The second section, designated as A-2, is subdivided into 14 segments that occur from Tecate to the Imperial County line: A-2A, A-2B, A-2C, A-2D, A-2E, A-2F, A-2G, A-2H, A-2I, A-2J, A-2K, A-2L, A-2M, and A-2N. Segments A-1 and A-2A consisted of approximately 6.6 miles of primary pedestrian fence and associated other roads. Segments A-2B through A-2N consisted of approximately 10.2 miles of primary pedestrian fence and associated access and other roads. Of the 14.6 miles of planned fence, 13.88 miles were built.

The ESPs addressed the construction, maintenance, and operation of a total of 16.8 miles of TI along the U.S./Mexico international border in San Diego County, California, composed of 15 different segments designated as A-1, A-2A, A-2B, A-2C, A-2D, A-2E, A-2F, A-2G, A-2H, A-2I, A-2J, A-2K, A-2L, A-2M and A-2N. Segments A-1 and A-2A are located in San Diego County within the San Diego Sector, Brown Field and Chula Vista USBP stations and consisted of approximately 6.6 miles of primary pedestrian fence and associated other roads. The project corridor for the A-1 segment begins at Puebla Tree Trail and ends at Border Monument 250. This segment is located adjacent to and within the OMW Area. The A-2A segment is located along the southeastern border of Tecate Peak west of Tecate, California. Segment A-2A was planned to be an extension of an existing fence near Tecate Peak. Segments A-2B through A-2N are located within the San Diego Sector, El Cajon, Campo, and Boulevard USBP stations, California and consisted of approximately 10.2 miles of primary pedestrian fence and associated access and other roads. In addition, approximately 5.1 miles of existing primary vehicle barrier (PVB) would be converted to primary pedestrian fence and are included in the total of 10.2 miles. Most of the construction would occur within the 60-foot-wide Roosevelt Reservation, which are public lands managed by the BLM. However, some of the new road construction (approximately 1.4 miles) would extend beyond the Roosevelt Reservation and affect additional Federal and private lands. The project corridor for A-2B through A-2N extends from the east side of Tecate Port of Entry (POE) to the eastern edge of O'Neil Valley, near the San Diego/Imperial County line. Specific descriptions regarding the TI are presented in the following paragraphs. Detailed project maps for each segment can be found in Appendix A.

The purpose of this report is to provide a comprehensive summary of the installation of TI and assess the final design and footprint of the TI. This Environmental Stewardship Summary Report (ESSR) will compare the final completed action to the originally planned installation of TI, as proposed in each the July 2008 *Final Environmental Stewardship Plan for the Construction, Operation, and Maintenance of Tactical Infrastructure U.S. Border Patrol San Diego Sector, El Cajon, Campo, and Boulevard Stations, California (A-2B through A-2N*

excluding A-2M), the *Final Environmental Stewardship Plan for the Construction, Operation, and Maintenance, Airport Mesa Road, U.S. Border Patrol San Diego County, California (A-2M)*, and the October 2008 *Final Environmental Stewardship Plan for the Construction, Operation, and Maintenance of Tactical Infrastructure U.S. Border Patrol San Diego Sector, California (A-1 and A-2A)*. Construction of Segments A-1 and A-2A occurred between August 2008 and February 2010. Construction of Segments A-2B through A-2N occurred between August 2008 and February 2009.

CBP provided environmental monitors during construction activities, who documented adherence to Best Management Practices (BMPs). Any deviations from the BMPs and required corrections were noted in weekly monitoring reports and on a BMP tracking spreadsheet. The most common BMP deviations recorded by environmental monitors in the San Diego Sector for segments A-1 and A-2A included lack of drip pans beneath stored equipment, lack of proper storage of toxic materials, widening of the existing roadbed due to improper use, and lack of perimeter flagging around areas that were scheduled to be disturbed.

The most common BMP deviations found for segments A-2B through A-2N included lack of flagging on access roads; off-road driving activity; widening of the existing roadbed due to improper use; lack of implementation of typical erosion-control measures; food-related trash items; uncapped vertical bollards; open steep-walled holes and trenches; and the lack of drip pans underneath stored equipment. At the close of construction in the San Diego Sector, some BMP deviations remained unresolved in A-1, A-2C, and A-2D.

According to the biological resources monitoring report for A-1 and A-2A, no impacts on individual species were documented as a result of any BMP deviations. However, designated Critical Habitat, as well as suitable habitat for the arroyo toad (*Bufo californicus*) and Quino checkerspot butterfly (*Euphydryas editha quino*), were impacted as a result of BMP deviations in A-1. No impacts on federally listed species or their habitat in segments A-2B through A-2N were documented as a result of deviations. Furthermore, no additional impacts on cultural resources were noted.

After the completion of the Environmental Stewardship Plans (ESP), changes were made to the alignment, design, or construction methods to facilitate construction, reduce costs or potential impacts, respond to stakeholder requests, or enhance the efficacy of the fence for enforcement purposes. These changes were reviewed and approved through CBP Headquarters and documented in change request (CR) forms. This report also summarizes any significant modifications during construction that resulted in additional or reduced environmental impacts.

This ESSR was prepared to document the impact areas, compared with the original ESPs and the changes identified in the CR forms, for the following reasons:

1. To compare anticipated to actual impacts, so that a final new baseline is established for future maintenance and repair and any potential future actions.
2. To document success of BMPs and any changes or improvements for the future.
3. To document any changes to the planned location or type of the TI.

CBP consultants surveyed the A-1 and A-2A through A-2N sites to inspect the final project corridor and infrastructure footprints. The survey was conducted to document any significant differences between the planned action and completed actions. When changes were noted, the CR forms were consulted to see if the changes were recorded and approved. A total of 13 CRs were approved for the segments; only six of these had the potential to result in environmental impacts.

The result of the post-construction surveys indicated that the permanent impacts on soils and vegetation decreased overall by 54.8 acres, from the original estimation of approximately 346.6 acres (160.3 acres of fence corridor and 186.3 acres of staging areas and access roads) in the ESPs to 291.8 acres (182.7 acres of fence corridor and 109.1 acres of staging areas and access roads), as determined by the post-construction survey. The decrease was largely due to the reduction in acres of the staging areas and access roads. The modifications and the impacts associated with the modifications are summarized in Table ES-1.

Table ES-1. Summary of Area Impacted by Construction Modifications

Segment/Area	ESP Predicted Impact (acres)	Surveyed Impact (acres)	Difference (acres)
A-1 Fence and Road Corridor	79.7	108.8	+29.1
A-2A Fence and Road Corridor	5.7	4.1	-1.6
A-2B Fence and Road Corridor	4.5	3.6	-0.9
A-2C Fence and Road Corridor	1.8	2.9	+1.1
A-2D Fence and Road Corridor	9.2	7.3	-1.9
A-2E Fence and Road Corridor	1.3	1.2	-0.1
A-2F Fence and Road Corridor	6.7	6.7	0
A-2G Fence and Road Corridor	2.5	2.8	+0.3
A-2H Fence and Road Corridor	1.8	1.2	-0.6
A-2I Fence and Road Corridor	8.3	7.6	-0.7
A-2J Fence and Road Corridor	0.7	0.7	0
A-2K Fence and Road Corridor	14.5	11.9	-2.6
A-2L Fence and Road Corridor	14.5	14.5	0
A-2M Fence and Road Corridor	0.7	0.8	+0.1
A-2N Fence and Road Corridor	8.4	8.6	+0.2
Total Fence Corridor Impacts	160.3	182.7	+22.4
Access Roads A-1 and A-2A	137.7	75.1	-62.6
Access Roads A-2B through A-2N	2.4	3.5	+1.1
Staging Areas A-1 and A-2A	24.5	22.7	-1.8
Staging Areas A-2B through A-2N	21.7	7.8	-13.9
Total Impacts	346.6	291.8	-54.8

The ESPs addressed 137.7 acres of new access road construction or improvement to existing access road for the project. However, the post-construction survey confirmed that the total impact area was 75.1 acres of new access road built or existing road improvement. This is a decrease in project footprint of approximately 62.6 acres.

The ESPs addressed the installation of 24.5 acres of staging areas in segments A-1 and A-2A and 21.7 acres of staging areas in segments A-2B through A-2N. The post-construction survey confirmed that 22.7 acres were used for segments A-1 and A-2A and 7.8 acres were used for segments A-2B through A-2N. The footprint of the total staging area impacts decreased from 46.2 acres to 30.5 acres.

The ESPs addressed 14.6 miles of new fence TI (4.4 miles in segments A-1 and A-2A and 10.2 miles in segments A-2B through A-2N). A total of 160.3 acres of fence corridor for the segments was planned to be impacted according to the ESPs. The post-construction survey confirmed that the footprint of the fence corridor impacted a total of 182.7 acres for all the segments. This is an increase in project footprint of 22.4 acres.

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SECTION 1.0
INTRODUCTION, OUTREACH, AND METHODS



1.0 INTRODUCTION, OUTREACH, AND METHODS

As part of an effort to document the installation of tactical infrastructure (TI) completed under the Pedestrian Fence 225 (PF225) program, this Environmental Stewardship Summary Report (ESSR) presents a compilation of the construction actions. It compares the final results of construction with the projects as proposed in the July 2008 *Final Environmental Stewardship Plan for the Construction, Operation, and Maintenance of Tactical Infrastructure U.S. Border Patrol San Diego Sector, El Cajon, Campo, and Boulevard Stations, California (A-2B through A-2N excluding A-2M)*; the *Final Environmental Stewardship Plan for the Construction, Operation, and Maintenance, Airport Mesa Road, U.S. Border Patrol San Diego County, California (A-2M)*; and the October 2008 *Final Environmental Stewardship Plan for the Construction, Operation, and Maintenance of Tactical Infrastructure U.S. Border Patrol San Diego Sector, California (A-1 and A-2A)*.

Before installing TI, U.S. Customs and Border Protection (CBP) performed an environmental review of the fencing projects and published the results in Environmental Stewardship Plans (ESPs), including mitigation and best management practices (BMP) for minimizing adverse effects on the environment. ESPs were drafted for each TI segment governed by the April 2008 Secretary of Homeland Security waiver of compliance with certain environmental laws and requirements, although some segments (such as A-1 and A-2A) were addressed in a single document. Professional biologists and archaeologists conducted field surveys of all project corridors during planning before construction. The results of the surveys were provided for review and comment to the affected resource agencies, such as the U.S. Fish and Wildlife Service (USFWS) and State Historic Preservation Office. Conservation measures and other BMPs identified in the ESP were made part of the request for proposals (RFP) issued to construction contractors and were also incorporated into the contract upon award.

CBP prepared a Biological Resources Plan (BRP) to identify the presence of sensitive biological resources, particularly federally protected species, and potential impacts on these resources. It was provided to affected resource agencies and land managers for review and appended, where appropriate, to the ESPs. The original ESPs were made available to the public on the CBP website www.borderfenceplanning.com, which has subsequently been changed to http://cbp.gov/xp/cgov/border_security/ti/ti_docs/sector/sdc/.

Information in this ESSR was compiled from environmental monitoring reports, from approved modifications made during construction, and through post-construction surveys of the project corridors. This ESSR compares anticipated impacts described and assessed by the original ESPs to actual impacts occurring in 15 segments, designated as A-1 and A-2A through A-2N (Figure 1-1). CBP prepared this ESSR to document the impacted area, compared with the original ESPs and changes identified in change request (CR) forms, for the following reasons.

1. To provide a comparison of the anticipated impacts to the actual impacts so that a final new baseline is established for future maintenance and repair and any potential future actions.
2. To document success of BMPs and any changes/improvements for the future.
3. To document any changes to the planned location or type of the TI.

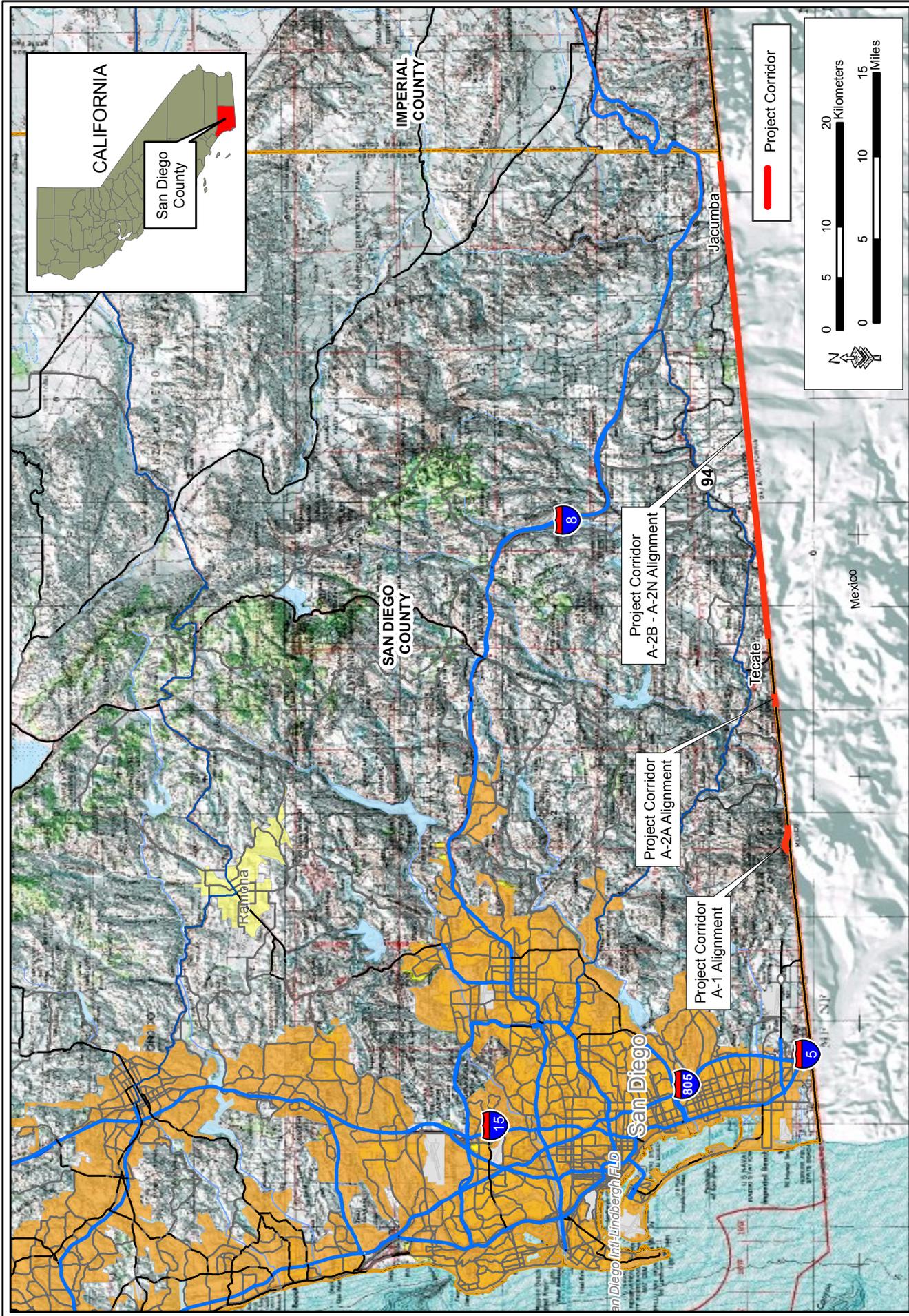


Figure 1-1: Vicinity Map

1.1 PUBLIC AND AGENCY OUTREACH

Before developing the ESP, CBP prepared a draft Environmental Impact Statement (EIS) to address the potential effects of the project for the San Diego Sector that included A-1 and A-2A. CBP mailed the draft EIS to interested parties, posted it on a public website, and announced a 45-day public review and comment period. A public open house was held at the San Diego Convention Center on January 17, 2008.

CBP also prepared a draft Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) to address the potential effects of the project that included A-2B through A-2N. A Notice of Availability (NOA) for the draft EA and FONSI was published in the *San Diego Tribune* on January 7, 2008, announcing the release of the documents for a 30-day public comment period. In addition, a public meeting was conducted in Alpine, California, on January 16, 2008.

After the April 2008 waiver, CBP reviewed, considered, and incorporated comments received on the draft EIS, draft EA, and FONSI from the public and other Federal, state, and local agencies, while preparing the ESPs. CBP addressed and incorporated results of public and agency coordination for the draft EIS, draft EA, and FONSI into the ESPs and posted them for the public.

In addition to its earlier public involvement and outreach program, CBP continued to coordinate with various Federal and state agencies while developing the ESPs and during construction. These agencies included the following:

U.S. Section, International Boundary and Water Commission (USIBWC) - CBP coordinated with USIBWC to ensure that any construction along the international border did not adversely affect international boundary monuments or substantially impede floodwater conveyance within international drainages.

U.S. Army Corps of Engineers (USACE), Los Angeles District - CBP coordinated all activities with USACE to identify potential jurisdictional waters of the United States, including wetlands, and to develop measures to avoid, minimize, or compensate for losses to these resources.

U.S. Fish and Wildlife Service (USFWS) - CBP coordinated with USFWS to identify listed species that could inhabit the project area, identify potential effects on listed species, and develop BMPs.

U.S. Department of the Interior (DOI) - CBP coordinated with U.S. Bureau of Land Management (BLM), since portions of the project were located on BLM lands, including the Otay Mountain Wilderness (OMW) area.

1.2 METHODS

1.2.1 Environmental Monitoring Process

CBP provided an environmental monitor during construction that occurred in areas where federally protected species were known or presumed to occur near the project corridor. Duties of the environmental monitor included documenting impacts beyond those described in the ESPs, advising on-site construction managers about the BMPs and other environmental issues as they arose, and ensuring that contractors followed the appropriate BMPs. Environmental monitors recorded observations daily and compiled weekly reports, which they submitted to CBP and USACE. Following completion of construction, a monitoring summary report was compiled.

The designated environmental monitor was to notify the construction manager of any activities that could harm or harass a federally listed species or any other environmental issue that was identified. Upon such notification, the construction manager was to temporarily suspend activities in the vicinity of the federally listed species and notify the contracting officer, the administrative contracting officer, and the contracting officer's representative of the suspension so that the key USACE personnel could be notified and apprised of the situation for resolution. In addition, CBP notified the USFWS Carlsbad Field Office if any federally listed species were directly impacted during construction. CBP maintained open coordination with USFWS during construction to discuss the implementation and effectiveness of BMPs.

1.2.2 Change Request Process

During construction, CBP identified potential modifications that, if implemented, would improve the effectiveness of the TI; reduce construction cost, schedule, or environmental impacts; enhance long-term maintenance requirements; address stakeholder concerns; or reduce risk to U.S. Border Patrol (USBP) agents' health and safety. These changes were reviewed and approved through CBP Headquarters, and documented in change request (CR) forms. The form described the proposed change or modification, justification for the change, anticipated effects on construction costs and schedule, and any other extenuating circumstances that would help to clarify the change. Each proposed change was carefully vetted across CBP to evaluate potential impacts before final CBP Headquarters approval.

1.2.3 Post-Construction Survey Methods

The objective of post-construction surveys was to locate, identify, photograph, and record the actual installation of the TI, including types of fence and the width of access roads and project corridors. In addition, the surveys recorded biological communities, wetlands, and other environmental conditions in and adjacent to the project corridor. Surveyors also recorded any other unusual conditions they observed, such as fence failure, significant erosion, hazardous waste, or construction debris.

Before the field surveys, CBP produced maps of the project corridors as described in the ESPs. Surveyors reviewed the ESPs for the location and type of fence to be installed, location and width of access and maintenance areas, and location and size of staging areas. CBP also produced approved CR forms, which surveyors used in the field to document the approved changes. Survey teams covered the entire A-1 and A-2A through A-2N project corridors and recorded the center line, length, and width of construction and access road alignments using a

Trimble Global Positioning System (GPS). Surveyors took periodic GPS coordinates of the temporary and permanent construction footprint, especially when the corridor appeared to be expanded or reduced. They also recorded the perimeter of staging areas using GPS, as well as the start and stop coordinates for various fence types.

Where possible, surveyors recorded temporary impacts south of the fence within A-1 using GPS. However, in some areas, they estimated these impacts due to the steep terrain. They developed these estimates through photographic analysis, on-ground visual estimates, and connecting recorded GPS points where they could be obtained. Photograph 1-1 depicts an example of how surveyors estimated temporary impact areas; as can be seen from this photograph, they overestimated these impacts or compensated for areas that could not be easily accessed during the surveys. The road and fence footprints would be considered permanent impact areas.



Photograph 1-1. Example of Temporary Impact Estimates

SECTION 2.0
DESCRIPTION OF THE PLANNED ACTION



2.0 DESCRIPTION OF THE PLANNED ACTION

The ESPs discussed the planned construction, maintenance, and operation of a total of 16.8 miles of TI along the U.S./Mexico international border in San Diego County, California, comprising 15 different segments designated as A-1, A-2A, A-2B, A-2C, A-2D, A-2E, A-2F, A-2G, A-2H, A-2I, A-2J, A-2K, A-2L, A-2M, and A-2N.

Segments A-1 and A-2A are in San Diego County within the San Diego Sector, Brown Field, and Chula Vista USBP stations, and were to consist of approximately 6.6 miles of primary pedestrian fence and associated other roads. The project corridor for the A-1 segment begins at Puebla Tree Trail and ends at border monument 250. This segment is adjacent to and within the OMW area. The A-2A segment lies along the southeastern border of Tecate Peak west of Tecate, California. Segment A-2A was planned to be an extension of an existing fence near Tecate Peak.

Segments A-2B through A-2N are within the San Diego Sector, El Cajon, Campo, and Boulevard USBP stations, and were to consist of approximately 10.2 miles of primary pedestrian fence and associated access and other roads. In addition, approximately 5.1 miles of existing primary vehicle barrier (PVB) included in the total of 10.2 miles would be converted to primary pedestrian fence. Most of the construction would occur within the 60-foot-wide Roosevelt Reservation¹, which is public land managed by the BLM. However, some of the new road construction (approximately 1.4 miles) would extend beyond the Roosevelt Reservation and affect additional Federal and private lands. The project corridor for A-2B through A-2N extends from the east side of Tecate Port of Entry (POE) to the eastern edge of O'Neil Valley, near the San Diego-Imperial County line.

Maintenance will include removing any debris accumulated on the fence after rain to avoid potential future flooding. Following storms, the washes will be patrolled for large debris, and the debris will be removed. Brush removal could include mowing, removal of small trees, and application of U.S. Environmental Protection Agency (USEPA) and U.S. Department of Agriculture (USDA) approved herbicide, if needed. Any destruction or breaches of the fence will be repaired, as needed. Additionally, access roads will be maintained or potentially upgraded to ensure year-round access for fence maintenance. Access road maintenance activities could include the periodic grading or repairing of eroded areas.

The paragraphs below provide specific descriptions of the segments. Detailed project maps for each segment are in Appendix A.

¹ The Roosevelt Reservation is a 60-foot-wide corridor that parallels most of the southwestern land border. It was set aside in 1907 by President Roosevelt as a border enforcement zone. A 2006 Memorandum of Understanding (MOU) among CBP and the U.S. Departments of Agriculture and Interior stipulates that CBP operations and TI construction within the 60-foot Roosevelt Reservation are consistent with the purpose of the Roosevelt Reservation.

2.1 SEGMENT A-1

The ESP anticipated that A-1 would include approximately 3.6 miles of primary pedestrian fence and 5.8 miles of other roads. The fence was to be built adjacent to the U.S./Mexico international border where topography allowed. It was proposed to deviate from the border to follow a new construction access road where conditions warranted, such as descent into canyon bottoms. Where the road would not be adjacent to the fence, trails suitable for light-tracked vehicles were planned to be built for fence installation and maintenance. According to the ESP, seven open-span bridges ranging from 40 to 60 feet long were to be built to cross larger washes and ephemeral streams in Copper and Buttewig Canyons.

About 35 percent (2.03 miles) of the construction access road was to be within the Roosevelt Reservation and BLM lands between the U.S./Mexico international border and the OMW boundary. About 65 percent of the length (3.77 miles) of the construction access road and approximately 2,300 feet (0.44 miles) of the primary pedestrian fence was to extend into the OMW. According to the ESP, Pedestrian-Vehicle Fence Type 1 (PV-1) would also be installed in this area.

The ESP identified approximately 22.5 acres of staging areas. To the west of A-1, the project would use approximately 5.1 miles of existing access road. A new access road would be built starting at the intersection of Alta and Donovan Prison Roads for a distance of approximately 0.5 mile. To the east of A-1, the project would use approximately 7.8 miles of access road. The ESP estimated that the improvements and use of Otay Mountain Truck Trail and Marron Valley Road as access roads would permanently impact up to 103.2 acres.

2.2 SEGMENT A-2A

According to the ESP, the A-2A project corridor was to include 0.8 mile of primary pedestrian fence and 0.8 mile of other roads. Segment A-2A was planned as an extension of an existing border fence west of Tecate near Tecate Peak. The fence was to be built along the southeastern border of Tecate Peak, pass through a riparian area, and encroach on a mix of privately owned land parcels and public land administered by the BLM within the Roosevelt Reservation. The ESP estimated that TI for A-2A would impact an approximately 60-foot-wide corridor. PV-1 fence would also be installed on this segment.

The ESP identified approximately 2.0 acres of construction staging areas. The ESP stated that Tecate Mission Road would serve as the access road for A-2A, and possible improvements to this road could permanently impact up to 34.5 acres.

2.3 SEGMENT A-2B (CETIS' HILL)

In segment A-2B, approximately 0.62 mile of primary pedestrian fence and construction access and maintenance road was to be built along the border and tie into the existing primary pedestrian fence on either side of Cetis' Hill. Primary pedestrian fence had been installed previously along the border on either side of the hill, but not over the top of the hill. Preliminary designs indicated that construction and maintenance of the road and fence would require a

permanent footprint varying from 60 to 125 feet wide. Approximately 5.0 acres were to be permanently affected by road and fence. The ESP identified approximately 2.07 acres of staging areas.

2.4 SEGMENT A-2C (EAST BRICKYARD TO GUNSIGHT)

In segment A-2C, approximately 0.25 mile of construction access and maintenance road was to be built within the Roosevelt Reservation, and a primary pedestrian fence was to be installed along the southern toe of the road. This would permanently affect about 0.9 acre.

2.5 SEGMENT A-2D (HORSESHOE CANYON)

In segment A-2D, 1.27 miles of construction access and maintenance road would be built in the area as close to the border as practicable, and a primary pedestrian fence would be installed on the southern toe of the road. Cut and fill activities would be needed at some minor drainages to keep the footprint close to the border and to avoid creating unsafe driving conditions. Two existing access roads were to be improved to facilitate construction. The ESP estimated that the two access roads, construction and maintenance road, and primary pedestrian fence would affect a total of approximately 6.9 acres. The footprint is contained within BLM land. The ESP identified approximately 0.83 acre of staging areas.

2.6 SEGMENT A-2E (EAST BELL VALLEY)

Segment A-2E was planned as a short (0.18 mile) segment of other road and primary pedestrian fence. Existing primary pedestrian fence segments in this reach needed to be connected. A-2E was planned to tie all these segments together and extend the other road as far east as practicable. The road was to be widened to 60 feet to accommodate an all-weather road and parallel drainage ditches. The ESP estimated that this action would permanently affect approximately 0.9 acre. The ESP identified approximately 3.84 acres of staging areas.

2.7 SEGMENT A-2F (AG LOOP)

In segment A-2F, the project was to extend existing access roads south to the border and then install a construction access/maintenance road and primary pedestrian fence along the border for approximately 0.92 mile. This would permanently affect approximately 5.2 acres, all located on BLM lands. The ESP identified two staging areas, which were approximately 1.92 acres and 0.52 acre.

2.8 SEGMENT A-2G (LA GLORIA CANYON)

In segment A-2G, a road and primary pedestrian fence were to be built across La Gloria Canyon. This component would need extensive cut and fill activities to create a road platform that traverses the canyon. The entire length was planned to be 0.35 mile long; the width and height of the embankment were to be approximately 100 feet and 35 feet, respectively. Primary pedestrian fence was to be installed from the ends of the existing primary pedestrian fence on either side of La Gloria Canyon to the primary pedestrian fence along the road embankment. It

was estimated that this component would affect approximately 3.3 acres of BLM lands. The ESP identified approximately 1.87 acres of staging areas.

2.9 SEGMENT A-2H (WEST SMITH CANYON)

In segment A-2H, the existing road was to be extended to the western rim of Smith Canyon and primary pedestrian fence was to be installed along the southern toe of the road. The segment was to be approximately 0.25 mile long and up to 60 feet wide and blasting was expected to be needed to build the road. The ESP estimated that approximately 0.9 acre would be affected.

2.10 SEGMENT A-2I (RATTLESNAKE RIDGE)

In segment A-2I, the project was to build 1.14 miles of road and primary pedestrian fence as close to the border as practicable. The construction footprint was designed to be restricted to the Roosevelt Reservation; thus, some grades were estimated to be greater than 18 percent. The ESP estimated that the road and primary pedestrian fence would permanently affect approximately 8 acres. It identified approximately 1.88 acres of staging areas.

2.11 SEGMENT A-2J (WEST BOUNDARY PEAK)

In segment A-2J, the existing primary pedestrian fence had a gap approximately 425 feet long. Under the project, 0.09 mile of primary pedestrian fence was to be installed in the gap and an adjacent access and maintenance road built. The ESP projected that the road and primary pedestrian fence footprint would affect approximately 0.4 acre within the Roosevelt Reservation.

2.12 SEGMENT A-2K (WILLOWS 1)

In segment A-2K, according to the ESP, 2.0 miles of PVB would be converted to or replaced with primary pedestrian fence, as appropriate.

In the Jacumba area, USBP's access from Old Highway 80 to the border is through private property. Landowners have threatened to prevent use of these access roads; consequently, USBP had acquired an easement to access the border. The easement was planned to be developed into a 0.08-mile access road (Willows Access Road), and use of the road would be restricted to government agencies and their representatives. The road was designed to be approximately 16 feet wide and have parallel drainage on either side. The ESP estimated that the total area affected would be less than 0.3 acre.

2.13 SEGMENT A-2L (WILLOWS 2)

In segment A-2L, 2.0 miles of PVB was to be converted to or replaced with primary pedestrian fence, as appropriate. The ESP identified approximately 2.03 acres of staging areas.

2.14 SEGMENT A-2M (AIRPORT MESA)

In segment A-2M, Airport Mesa contains 0.01 mile of landing mat fence that was to be converted to or replaced with primary pedestrian fence, as appropriate. A 0.67-mile access road was to be built on the east side of Airport Mesa to the top at scope pad sites.

2.15 SEGMENT A-2N (O'NEIL VALLEY)

In segment A-2N, O'Neil Valley contains 1.16 miles of PVB that was to be converted to or replaced with primary pedestrian fence, as appropriate. The ESP identified approximately 6.76 acres of staging area.

2.16 MONITORING

Unexpected field conditions required practical changes to the planned project during construction. In these situations, CBP conducted the appropriate field surveys to document the potential environmental impacts that could occur and further coordinated with stakeholders to develop BMPs specific to changes required in the construction footprint.

The most common BMP deviations recorded by environmental monitors in the San Diego Sector for segments A-1 and A-2A included lack of drip pans beneath stored equipment, lack of proper storage of toxic materials, widening of the existing roadbed due to improper use, and lack of perimeter flagging around areas that were scheduled to be disturbed. The most common BMP deviations found for segments A-2B through A-2N included lack of flagging on access roads, off-road driving activity, widening of the existing roadbed due to improper use, failure to implement typical erosion-control measures, food-related trash items, uncapped vertical bollards, open steep-walled holes and trenches, and the lack of drip pans underneath stored equipment. At the close of construction in the San Diego Sector, some BMP deviations remained unresolved in segments A-1, A-2C, and A-2D.

The biological resources monitoring report for A-1 and A-2A documented no impacts on individual species as a result of any BMP deviations. However, deviations in A-1 affected critical habitat, as well as suitable habitat for the arroyo toad (*Bufo californicus*) and Quino checkerspot butterfly (*Euphydryas editha quino*). No federally listed species or their habitat were impacted within segments A-2B through A-2N as a result of deviations.

2.17 CHANGE REQUEST FORMS

Thirteen CR forms were approved during construction of the segments. However, only seven modifications had the potential to affect the construction footprint and thus change environmental impacts. Table 2-1 summarizes the project modifications that the ESPs determined could change the environmental impact.

Table 2-1. Summary of Approved CRs with Potential to Affect the Construction Footprint

Approval Date	Summary Description	Potential Environmental Impact
Segment A-1		
December 18, 2008	Redefines the western access of the A-1 project, Option 2. The only viable access to the Otay Truck Trail required construction of an access road across private property.	Ground disturbance
April 14, 2009	Design and build an approximately 310-foot-long by 32-foot-wide concrete low water crossing within the Monument 250 road.	Ground disturbance
April 10, 2009	Modify and build the proposed western access road alignment.	Ground disturbance
Segments A-2A, A-2B, A-2C, A-2D, A-2E, A-2F, A-2G, A-2H, A-2K, A-2L, A-2M		
June 18, 2008	Project mileages have been refined. Based on the plan and profile sheets, the mileages have been recalculated.	Increase or decrease in project footprint
Segment A-2F		
October 14, 2008	Realign about 700 feet of fence south of the existing easement. The original alignment was incompatible with SDG&E utility. The new alignment would still remain north of the Roosevelt Reservation. It would include a 12-foot road with appropriate drainage.	Ground disturbance
February 3, 2009	Reduce A-2F planned mileage from 1.09 miles to 0.99 mile	Decreases project footprint
Segment A-2M		
November 11, 2008	Request for an additional 336 feet of PV-1 fence to be added to segment A-2M.	Increases project footprint

2.18 IMPACT QUANTITIES ANTICIPATED IN THE ENVIRONMENTAL STEWARDSHIP PLAN

Table 2-2 identifies the pertinent resources that the ESPs expected would be affected. This table is not all-inclusive, as post-construction quantities could not be measured for some resource impacts, such as air, noise, and socioeconomic factors.

Table 2-2. Resources Expected to be Impacted

Resource	Expected Impacts*		Comment
	Permanent	Temporary	
Soils	149.9	46.5	Impacts on prime farmland soils found in A-1 and A-2A would be considered negligible to minor. No prime farmland soils were found in A-2B through A-2N.
Vegetation	263.4	46.5	Vegetation communities found throughout all segments.
Wildlife habitat	263.4	46.5	Construction of TI would result in loss of wildlife habitat
Threatened and endangered species	200	0	88.1 acres of habitat impacted for California gnatcatcher, and 119 acres of habitat impacted for Quino checkerspot butterfly.
Cultural resources	5 sites	0	Recommended archaeological monitoring at five sites for A-1 and A-2A.
Wetlands or other waters of the United States (WUS)	4.8	0	58 sites found within A-1 and A-2A. Six sites found within A-2A through A-2N.
Otay Mountain Wilderness areas	51.8	N/A	This impact represents 65 percent of the total expected permanent impact area of 79.7 acres.

* Unless otherwise noted, all quantifications are in acres

N/A: No temporary impacts within the OMW area are discussed in the ESP

SECTION 3.0
POST-CONSTRUCTION FINDINGS



3.0 POST-CONSTRUCTION FINDINGS

This section discusses the results of the post-construction surveys in both qualitative and quantitative terms, by construction type, as well as approved CRs that necessitated any changes in the project as described in the ESP. A summary of the impacts on the pertinent resources, based on these post-construction surveys, appears at the end of this section. Detailed project maps, which depict post-construction findings, are in Appendix A.

During large construction projects it is common for minor differences between field conditions and design drawings to require small modifications. These modifications can result in increases in the length of fence sections or the footprint of roads and staging areas. Changes such as this are expected under typical construction projects.

3.1 RESULTS OF ROAD MEASUREMENTS

3.1.1 Access Roads

3.1.1.1 A-1

The ESP stated that a new access road would be built starting at the intersection of Alta and Donovan Prison Roads for a distance of approximately 0.5 mile. The project would use approximately 5.1 miles of existing access road to the west of A-1 and approximately 7.8 miles of access road to the east. Up to 103.2 acres were expected to be permanently impacted by possible improvements and use of Otay Mountain Truck Trail and Marron Valley Road as access roads. The post-construction survey found approximately 29.6 acres of permanent impacts from access roads and 29.8 acres of temporary impacts, a total of 59.4 acres.

3.1.1.2 A-2A

The ESP stated that Tecate Mission Road would be the access road for A-2A and that possible improvements to this road could permanently impact up to 34.5 acres. The post-construction survey indicated that permanent new access roads impacted approximately 11 acres and temporary access roads impacted 5 acres, for a total of 16 acres.

3.1.1.3 A-2B (Cetis' Hill)

A new access road not proposed in the ESP was built from Humphries Road to the Border Road. No CR was approved for building this road. The post-construction survey indicated that approximately 0.12 mile (0.44 acre) of new road was built.

3.1.1.4 A-2C (East Brickyard to Gunsight)

New access roads were not required.

3.1.1.5 A-2D (Horseshoe Canyon)

New access roads were not required.

3.1.1.6 A-2E (East Bell Valley)

New access roads were not required.

3.1.1.7 A-2F (Ag Loop)

New access roads were not required.

3.1.1.8 A-2G (La Gloria Canyon)

New access roads were not required.

3.1.1.9 A-2H (West Smith Canyon)

New access roads were not required.

3.1.1.10 A-2I (Rattlesnake Ridge)

New access roads were not required.

3.1.1.11 A-2J (West Boundary Peak)

New access roads were not required.

3.1.1.12 A-2K (Willows 1)

A new access road (Willows Access) was built on the eastern end of Willows 1. The ESP stated that it would be 0.08 mile long (0.3 acre); the post-construction survey indicated that approximately 0.09 mile (0.33 acre) of new road was built. The new road followed the alignment proposed in the ESP.

3.1.1.13 A-2L (Willows 2)

New access roads were not required.

3.1.1.14 A-2M (Airport Mesa)

A new access road was built, which the ESP stated would be 0.67 mile long (2.4 acres). The post-construction survey indicated that approximately 0.57 mile (2.1 acres) of new road was built. The new road followed the alignment proposed in the ESP.

3.1.1.15 A-2N (O'Neil Valley)

New access roads were not required.

3.1.2 Maintenance and Other Roads**3.1.2.1 A-1**

The A-1 construction road, as reported in the ESP, was supposed to be 5.8 miles long (42.2 acres); however, the post-construction survey indicated that the project corridor was 5.1 miles long. No CR was approved for this reduction of road.

3.1.2.2 A-2A

The A-2A construction road, as reported in the ESP, was supposed to be 0.8 mile long (5.8 acres); however, the post-construction survey indicated that the project corridor was 0.77 mile long, for a total of 4.09 acres.

3.1.2.3 A-2B (Cetis' Hill)

The ESP stated that the A-2B construction road would be 0.62 mile long (4.5 acres); however, the post-construction survey indicated that the project corridor was 0.50 mile long (3.6 acres). Most of this road was experiencing erosion and was blocked off by sandbags and wattles. Photograph 3-1 shows typical wattles and sandbags found throughout the corridor.



Photograph 3-1. Typical wattles and sandbags found throughout the segments

3.1.2.4 A-2C (East Brickyard to Gunsight)

The ESP stated that the A-2C construction road would be 0.25 mile long (1.8 acres); however, the post-construction survey indicated that the project corridor was 0.40 mile long (2.4 acres). Most of this road was experiencing erosion and was blocked off by sandbags and wattles during the post-construction survey.

3.1.2.5 A-2D (Horseshoe Canyon)

The ESP stated that the A-2D construction road would be 1.27 miles long (9.2 acres); however, the post-construction survey indicated that the project corridor was 1.1 miles long (7.3 acres). There was extensive erosion along portions of this road, and portions of it were blocked off by jersey barriers.

3.1.2.6 A-2E (East Bell Valley)

The ESP stated that the A-2E other road would be 0.18 mile long (1.3 acres); however, the post-construction survey indicated that the project corridor was 0.16 mile long (1.2 acres). There was no evidence of road widening as the ESP proposed. No CR was approved for omitting the road widening. The road was much eroded and had numerous sand bags and wattles.

3.1.2.7 A-2F (Ag Loop)

The ESP stated that the A-2F construction road would be 0.92 mile long (6.7 acres), and the post-construction survey indicated that the project corridor was 0.92 mile long (6.7 acres). There was no evidence of road widening as the ESP proposed. Portions of this road were eroded and blocked off by sandbags and wattles.

3.1.2.8 A-2G (La Gloria Canyon)

The ESP stated that the A-2G construction road would be 0.35 mile long (2.5 acres); however, the post-construction survey indicated that the project corridor was 0.38 mile long (2.8 acres). Portions of this road had extensive erosion and were blocked off by sandbags and wattles. The road will likely need to be resurfaced. Photograph 3-2 shows the erosion found in A-2G.



Photograph 3-2. La Gloria Canyon Erosion

3.1.2.9 A-2H (West Smith Canyon)

The ESP stated that the A-2H other road would be 0.25 mile long (1.8 acres); however, the post-construction survey indicated that the project corridor was 0.17 mile long (1.2 acres).

3.1.2.10 A-2I (Rattlesnake Ridge)

The ESP stated that the A-2I construction road would be 1.14 miles long (8.3 acres); however, the post-construction survey indicated that the project corridor was 1.05 miles long (7.6 acres). Portions of this road were eroded and blocked off by sandbags and wattles.

3.1.2.11 A-2J (West Boundary Peak)

The ESP stated that the A-2J construction road would be 0.09 mile long (0.7 acre), and the post-construction survey indicated that the project corridor was 0.09 mile long (0.7 acre).

3.1.2.12 A-2K (Willows 1)

The ESP stated that the A-2K construction road would be 2.0 miles long (14.5 acres), and the post-construction survey indicated that the project corridor was 1.63 miles long (11.9 acres). No CR was approved for this reduction of construction road.

3.1.2.13 A-2L (Willows 2)

The ESP stated that the A-2L construction road would be 2.0 miles long (14.5 acres), and the post-construction survey indicated that the project corridor was 2.0 miles long (14.5 acres). The ESP expected that the road along Willows 1 and Willows 2 would be widened. During the post-construction survey, these roads did not appear to be widened, as they already encompassed the full 60-foot width. Photograph 3-3 shows the road along Willows 1 and Willows 2.



Photograph 3-3. Road along Willows 1 and 2 that did not appear to be widened

3.1.2.14 A-2M (Airport Mesa)

The ESP stated that the A-2M maintenance or other road would be 0.10 mile long (0.7 acres); however, the post-construction survey indicated that the project corridor was 0.11 mile long (0.8 acre).

3.1.2.15 A-2N (O'Neil Valley)

The ESP stated that the A-2N maintenance or other road would be 1.16 miles long (8.4 acres); however, the post-construction survey indicated that the project corridor was 1.18 miles long (8.6 acres). During the post-construction survey, these roads did not appear to be widened, as they already encompassed the full 60-foot width.

3.2 FENCE

3.2.1 A-1

The ESP stated that A-1 would have a new primary pedestrian fence installed, which the post-construction survey confirmed. Photograph 3-4 shows an example of primary pedestrian fence

that was installed. The ESP expected the fence to be 3.6 miles long, and the post-construction survey recorded the project corridor as 3.6 miles long.

3.2.2 A-2A

The ESP stated that A-2A would have a new primary pedestrian fence installed, which the post-construction survey confirmed. The ESP expected the fence to be 0.8 mile long. The post-construction survey recorded the project corridor as 0.77 mile long.



Photograph 3-4. Example of primary pedestrian fence

3.2.3 A-2B (Cetis' Hill)

The ESP stated that A-2B would have new primary pedestrian fence installed, which the post-construction survey confirmed. The ESP expected the fence to be 0.62 mile long. A CR was approved to change the length to 0.49 mile; however, the post-construction survey indicated that the project corridor was 0.50 mile long.

3.2.4 A-2C (East Brickyard to Gunsight)

The ESP stated that A-2C would have new primary pedestrian fence installed, which the post-construction survey confirmed. According to the ESP, one portion of the fence was to jog further north of the border. The post-construction survey showed that this jog did not occur and that the fence followed the border. No CR was approved for the modification in location of the fence. The ESP expected the fence to be 0.25 mile long. There was an approved CR to change the length to 0.46 mile; however, the post-construction survey indicated that the project corridor was 0.40 mile long.

3.2.5 A-2D (Horseshoe Canyon)

The ESP stated that A-2D would have new primary pedestrian fence installed, which the post-construction survey confirmed. The ESP expected the fence to be 1.27 miles long. A CR was approved to change the length to 0.77 mile; however, the post-construction survey indicated that the project corridor was 0.92 mile long.

3.2.6 A-2E (East Bell Valley)

The ESP stated that A-2E would have new primary pedestrian fence installed, which the post-construction survey confirmed. The ESP expected the fence to be 0.18 mile long. A CR was approved to change the length to 0.15 mile; however, the post-construction survey indicated that the project corridor was 0.16 mile long.

3.2.7 A-2F (Ag Loop)

The ESP stated that A-2F would have new primary pedestrian fence installed for a distance of 0.92 mile. According to the ESP, one portion of the fence was to jog further north of the border. The post-construction survey showed that this jog did not occur and that the fence followed the border. A CR was approved to change the length of the fence to 0.99 mile; however, the post-construction survey indicated that the project corridor was 0.92 mile long.

3.2.8 A-2G (La Gloria Canyon)

The ESP stated that A-2G would have new primary pedestrian fence installed for a distance of 0.35 mile. A CR was approved to change the length to 0.44 mile; however, the post-construction survey indicated that the project corridor was 0.38 mile long.

3.2.9 A-2H (West Smith Canyon)

The ESP stated that A-2H would have new primary pedestrian fence installed, which the post-construction survey confirmed. The ESP expected the fence to be 0.25 mile long. A CR was approved to change the length to 0.16 mile; however, the post-construction survey indicated that the project corridor was 0.17 mile long. A road that was proposed to be abandoned and restored near West Smith Canyon was still in use; however, CBP has other planned projects in the area. Therefore, this road will likely remain open until completion of those projects.

3.2.10 A-2I (Rattlesnake Ridge)

The ESP stated that A-2I would have new primary pedestrian fence installed for a distance of 1.14 miles. The post-construction survey indicated that the project corridor was 1.05 miles long.

3.2.11 A-2J (West Boundary Peak)

The ESP stated that A-2J would have 0.09 mile of primary pedestrian fence installed near West Boundary Peak, and the post-construction survey indicated that the project corridor was 0.09 mile long.

3.2.12 A-2K (Willows 1)

The ESP stated that A-2K contained PVB fence that would be converted to primary pedestrian fence. The post-construction survey indicated that this was not done. Instead, the primary pedestrian fence was built immediately north of the existing PVB. No CR was approved for this change in design. The ESP expected the fence to be 2.0 miles long. A CR was approved to change the length to 1.69 miles; however, the post-construction survey indicated that the project corridor was 1.63 miles long.

3.2.13 A-2L (Willows 2)

The ESP stated that A-2L contained PVB fence that would be converted to primary pedestrian fence. The post-construction survey indicated that this was not done. Instead, the primary pedestrian fence was built immediately north of the existing PVB. No CR was approved for this change in design. The ESP expected the fence to be 2.0 miles long. A CR was approved to change the length to 2.11 miles; however, the post-construction survey indicated that the project corridor was 2.0 miles long.

3.2.14 A-2M (Airport Mesa)

The ESP stated that A-2M would have new primary pedestrian fence installed, and the post-construction survey confirmed this. The ESP expected the fence to be 0.10 mile long. A CR was approved to change the length to 0.05 mile; however, the post-construction survey indicated that the project corridor was 0.11 mile long. An observation pad proposed in the ESP was noted during the post-construction survey.

3.2.15 A-2N (O'Neil Valley)

The ESP stated that A-2N contained PVB fence that would be converted to primary pedestrian fence. The post-construction survey indicated that this was not done. Instead, the primary pedestrian fence was built immediately north of the existing PVB. No CR was approved for this change in design. The ESP expected the fence to be 1.16 miles long. A CR was approved to change the length to 1.48 miles; however, the post-construction survey indicated that the project corridor was 1.18 miles long.

3.3 STAGING AREAS

3.3.1 A-1

The ESP stated that A-1 staging areas would encompass approximately 22.5 acres. The post-construction survey found that construction used approximately 21.5 acres of staging areas. Hydro-seeding revegetation had been implemented at each staging area.

3.3.2 A-2A

The ESP stated that A-2A staging areas would encompass approximately 2.0 acres. The post-construction survey found that construction used approximately 1.2 acres of staging areas. Hydro-seeding had been implemented as part of revegetation.

3.3.3 A-2B (Cetis' Hill)

The ESP stated that A-2B would have a staging area on the northwest end of the project corridor on a rectangular parcel of land that would encompass approximately 2.07 acres. The post-construction survey found that the staging area was smaller than what was proposed in the ESP and encompassed only 0.38 acre.

3.3.4 A-2C (East Brickyard to Gunsight)

Staging areas were not proposed for A-2C, and none were observed.

3.3.5 A-2D (Horseshoe Canyon)

The ESP stated that A-2D would have one staging area that would encompass approximately 0.83 acre. The post-construction survey found that construction used two staging areas. No CR was approved for the additional staging area; however, this area was surveyed for biological and archaeological resources before ground was disturbed, and none were found. The first staging area encompassed 0.46 acre, while the second staging area encompassed 0.12 acre, for a total of 0.58 acre.

3.3.6 A-2E (East Bell Valley)

The ESP stated that A-2E would have one staging area on a rectangular parcel of land that would encompass approximately 3.84 acres. The post-construction survey found that construction used two staging areas. No CR was approved for the additional staging area; however, this area was surveyed for biological and archaeological resources before ground was disturbed, and none were found. The first staging area



Photograph 3-5. East Bell Valley staging area

encompassed 1.45 acres, while the second encompassed 0.10 acre, for a total of 1.55 acres. Photograph 3-5 shows a staging area within A-2E.

3.3.7 A-2F (Ag Loop)

The ESP stated that A-2F would have two staging areas on its northwest end that would encompass approximately 1.92 acres and 0.52 acre, for a total of 2.44 acres. The post-construction survey found that the staging areas were smaller than what the ESP proposed and encompassed only 0.2 acre and 0.39 acre, for a total of 0.59 acre.

3.3.8 A-2G (La Gloria Canyon)

The ESP stated that A-2G would have a staging area along its western end on a triangular parcel of land that would encompass approximately 1.87 acres. The post-construction survey found that the staging area was not used. However, another staging area was created about 0.1 mile to the east of the proposed staging area. This staging area encompassed 0.41 acre. No CR was approved for the additional staging area; however, this area was surveyed for biological and archaeological resources before ground was disturbed, and none were found.

3.3.9 A-2H (West Smith Canyon)

Staging areas were not proposed for A-2H, and none were observed.

3.3.10 A-2I (Rattlesnake Ridge)

The ESP stated that A-2I would have a staging area just west of the segment on a rectangular parcel of land that would encompass approximately 1.88 acres. The post-construction survey found that the staging area encompassed 1.65 acres and that hydro-seeding revegetation had been applied.

3.3.11 A-2J (West Boundary Peak)

Staging areas were not proposed for A-2J, and none were observed.

3.3.12 A-2K (Willows 1)

Staging areas were not proposed for A-2K, and none were observed.

3.3.13 A-2L (Willows 2)

The ESP stated that A-2L would have a staging area along its western end on a rectangular parcel of land that would encompass approximately 2.03 acres. The post-construction survey found that the staging area was not used.

3.3.14 A-2M (Airport Mesa)

Staging areas were not proposed for A-2M, but actual construction used a staging area that encompassed 0.42 acre. No CR was approved for the additional staging area; however, this area was surveyed for biological and archaeological resources before ground was disturbed, and none were found.

3.3.15 A-2N (O'Neil Valley)

The ESP stated that A-2N would have a staging area along its western end on a rectangular parcel of land that would encompass approximately 6.76 acres. The post-construction survey

found that the staging area was smaller than what the ESP proposed and encompassed only 2.23 acres.

3.4 MEASURED IMPACT QUANTITIES

3.4.1 Soils

The ESPs anticipated that the project would permanently remove all biological habitat from 346.6 acres of soils. This included 46.2 acres of soils in temporary staging areas, which were to be scraped and bladed using bulldozers or graders to level the areas and accommodate material staging. However, the permanent impacts on soils as surveyed were 291.8 acres, or 54.8 acres less than what the ESPs anticipated. Table 3-1 compares the permanent impact areas stated in the ESPs with the impact areas measured in the post-construction surveys.

Table 3-1. Total Area of Soils Permanently Impacted by Installation of Tactical Infrastructure

Segment/Area	ESP Predicted Impact (acres)	Surveyed Impact (acres)	Difference (acres)
A-1 Fence and Road Corridor	79.7	108.8	+29.1
A-2A Fence and Road Corridor	5.7	4.1	-1.6
A-2B Fence and Road Corridor	4.5	3.6	-0.9
A-2C Fence and Road Corridor	1.8	2.9	+1.1
A-2D Fence and Road Corridor	9.2	7.3	-1.9
A-2E Fence and Road Corridor	1.3	1.2	-0.1
A-2F Fence and Road Corridor	6.7	6.7	0
A-2G Fence and Road Corridor	2.5	2.8	+0.3
A-2H Fence and Road Corridor	1.8	1.2	-0.6
A-2I Fence and Road Corridor	8.3	7.6	-0.7
A-2J Fence and Road Corridor	0.7	0.7	0
A-2K Fence and Road Corridor	14.5	11.9	-2.6
A-2L Fence and Road Corridor	14.5	14.5	0
A-2M Fence and Road Corridor	0.7	0.8	+0.1
A-2N Fence and Road Corridor	8.4	8.6	+0.2
Total Fence Corridor Impacts	160.3	182.7	+22.4
Access Roads A-1 and A-2A	137.7	75.1	-62.6
Access Roads A-2B through A-2N	2.4	3.5	+1.1
Staging Areas A-1 and A-2A	24.5	22.7	-1.8
Staging Areas A-2B through A-2N	21.7	7.8	-13.9
Total Impacts	346.6	291.8	-54.8

3.4.2 Vegetation

Fence and road construction within all of the segments permanently impacted approximately 255.8 acres of vegetation, compared with the 263.4 acres estimated in the ESPs. This vegetation included southern mixed chaparral, Diegan coastal sage scrub, mulefat scrub, southern coast live oak riparian, whitethorn chaparral, chamise chaparral, and southern interior cypress forest in A-1 and A-2A. It also included coastal sage scrub, chamise chaparral, mixed chaparral, and coast live oak woodland in A-2B through A-2N.

3.4.3 Cultural Resources

Three previously recorded National Register of Historic Places (NRHP) eligible sites and seven unevaluated archaeological sites were identified within A-1 and A-2A. Eight previously recorded NRHP-eligible sites were noted in A-2B through A-2N. All construction avoided disturbing any of the previously recorded or unevaluated cultural sites. Therefore, no impacts on cultural resources occurred as a result of construction of any of the project segments.

3.4.4 Wetlands and Waters of the U.S.

The post-construction field surveys confirmed that construction did not increase the footprint within the jurisdictional wetland areas beyond what was originally planned: 4.8 acres of wetlands or WUS in 58 sites within A-1 and A-2A and 6 sites within A-2B through A-2N. No other additional wetlands or WUS were identified where the project corridor was modified, such as new access roads and staging areas.

3.4.5 Otay Mountain Wilderness Area

About 65 percent of the construction access road and approximately 2,300 feet of the primary pedestrian fence in A-1 extends into the OMW area. Of the ESP-estimated 79.7 acres of construction road corridor, 51.8 acres were expected to fall within the OMW area. The post-construction field surveys found that 61.7 acres were in the OMW area, an increase of 9.9 acres.

3.4.6 Federally Listed Species

According to the final biological monitoring reports for all segments in the project, environmental monitors observed the federally listed Quino checkerspot butterfly, willow monardella (*Monardella linoides* ssp. *viminea*), and coastal California gnatcatcher (*Polioptila californica californica*) near or within various segments of the project corridors. On four occasions, environmental monitors observed Quino checkerspot butterflies within A-1. Willow monardella was observed near Puebla Tree canyon (also in A-1) within the proposed project alignment; however, the project alignment was shifted in order to avoid impacts on this individual specimen. The coastal California gnatcatcher was observed in A-2A once, and twice within A-2B through A-2N. No individuals were harassed or harmed, and all faunal species left the corridor on their own accord. No impacts occurred on the individuals that were observed.

SECTION 4.0
DISCUSSION



4.0 DISCUSSION

4.1 DECREASED PROJECT FOOTPRINT

The post-construction surveys found that permanent impacts on soils and vegetation decreased overall by 54.8 acres, from the original ESP estimate of approximately 346.6 acres (160.3 acres of fence corridor and 186.3 acres of staging areas and access roads) to 291.8 acres (182.7 acres of fence corridor and 109.1 acres of staging areas and access roads). As can be seen in Table 3-1, the decrease was largely due to the reduction in size of staging areas and access roads.

The ESPs expected 137.7 acres of new access road construction or improvement to existing access road for the project. However, the post-construction survey found that the actual total impact area was 75.1 acres of new access road built or existing road improvement. This is a decrease in project footprint of approximately 62.6 acres.

The ESPs expected installation of 24.5 acres of staging areas in A-1 and A-2A and 21.7 acres of staging areas in A-2B through A-2N. The post-construction survey found that 22.7 acres were actually used for segments A-1 and A-2A and 7.8 acres for A-2B through A-2N. The total footprint of staging area impacts decreased from 46.2 acres to 30.5 acres.

4.2 INCREASED PROJECT FOOTPRINT

The ESPs projected 14.6 miles of new fence TI (4.4 miles in A-1 and A-2A and 10.2 miles in A-2B through A-2N). The post-construction survey found that 13.9 miles of new fence were actually built. The ESPs expected a total of 160.3 acres of impact area for the fence corridor. However, the post-construction survey found that the footprint of the fence corridor impacted a total of 182.7 acres for all segments, including the 2.2-mile increase in construction and other roads. This is an increase in project footprint of 22.4 acres.

4.3 ADDITIONAL ISSUES

Post-construction surveys identified some issues that require further consideration. Erosion problems were visible throughout most of the segments. Photograph 4-1 shows the typical erosion found.

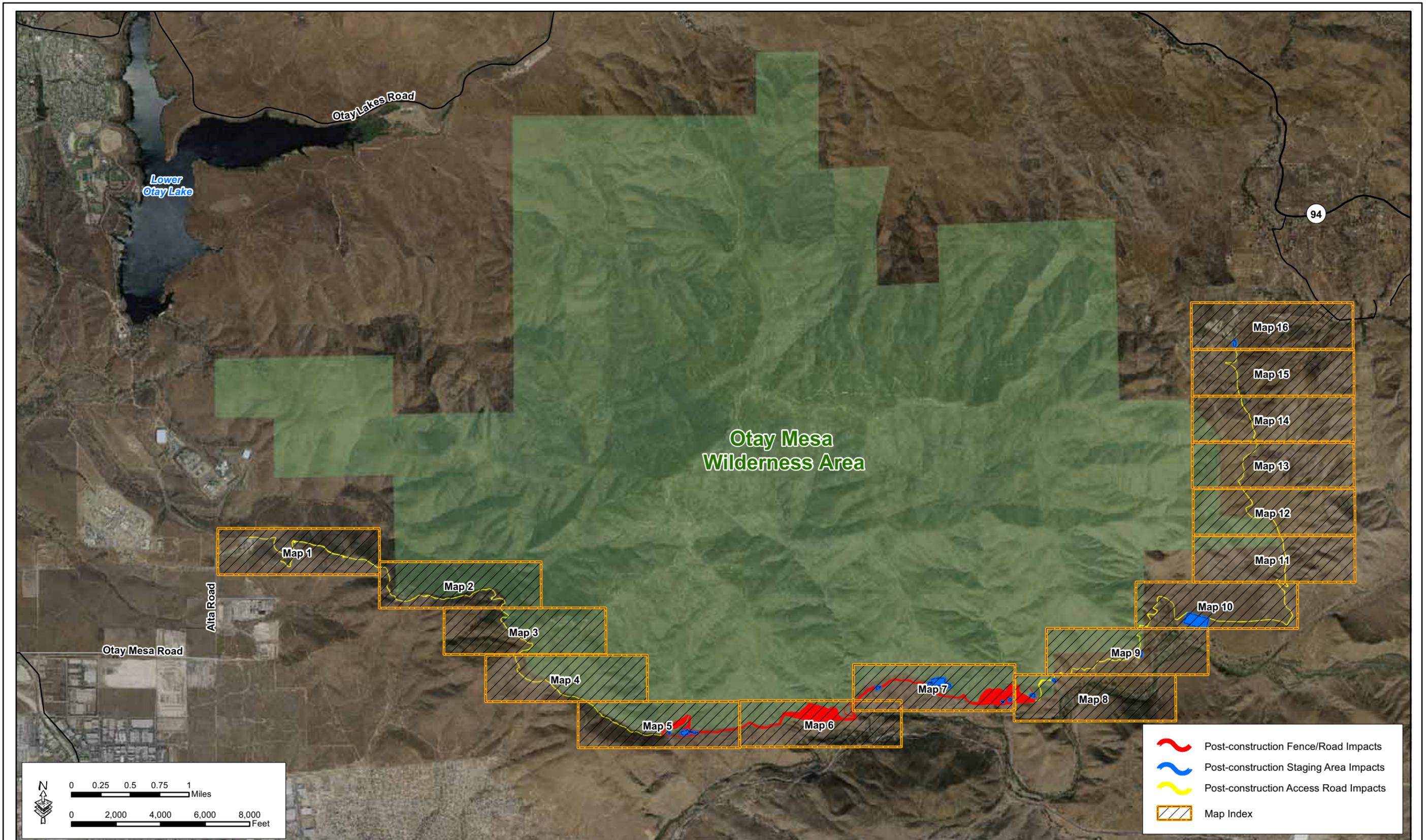
The second issue is the revegetation along segment A-2A. Post-construction surveys observed that revegetation in this segment was unsuccessful, and in some areas absent altogether. CBP is implementing a Comprehensive Tactical Infrastructure Maintenance and Repair (CTIMR) program to ensure the TI and related areas are maintained and repaired as needed.



Photograph 4-1. Typical erosion found on the segments

APPENDIX A
DETAILED PROJECT MAPS





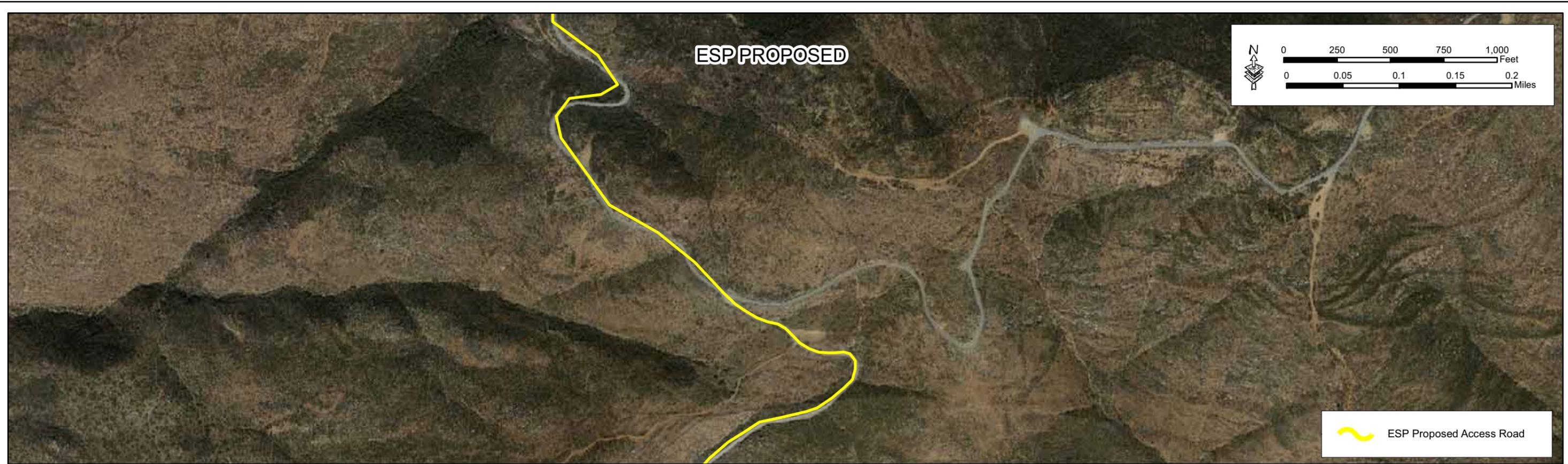
A-1 Corridor Post-construction Index Map



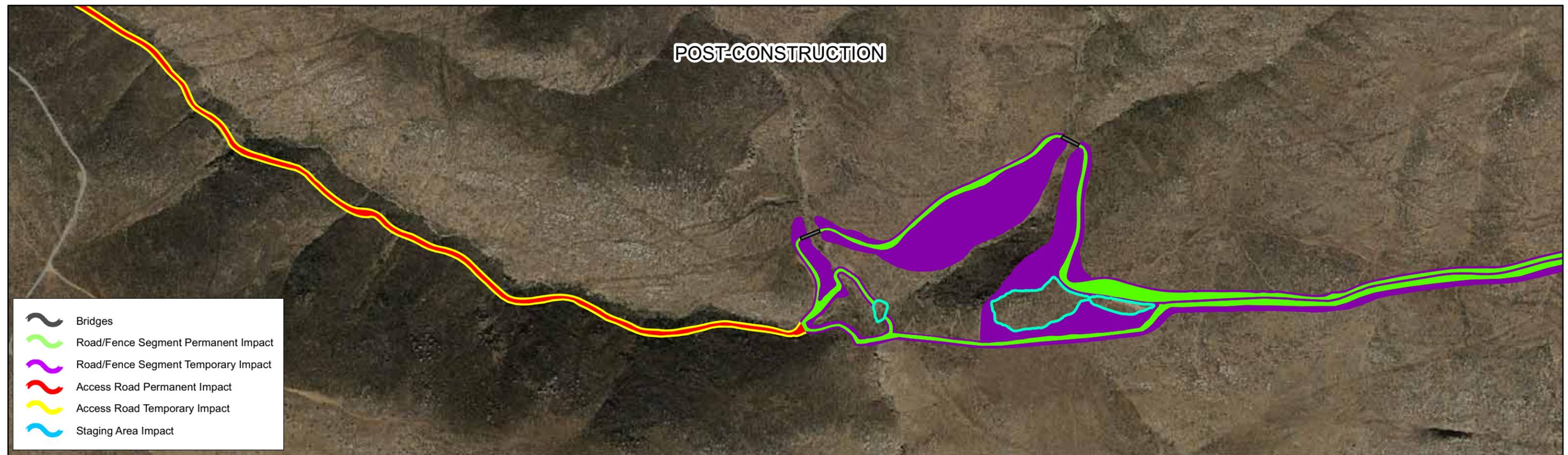
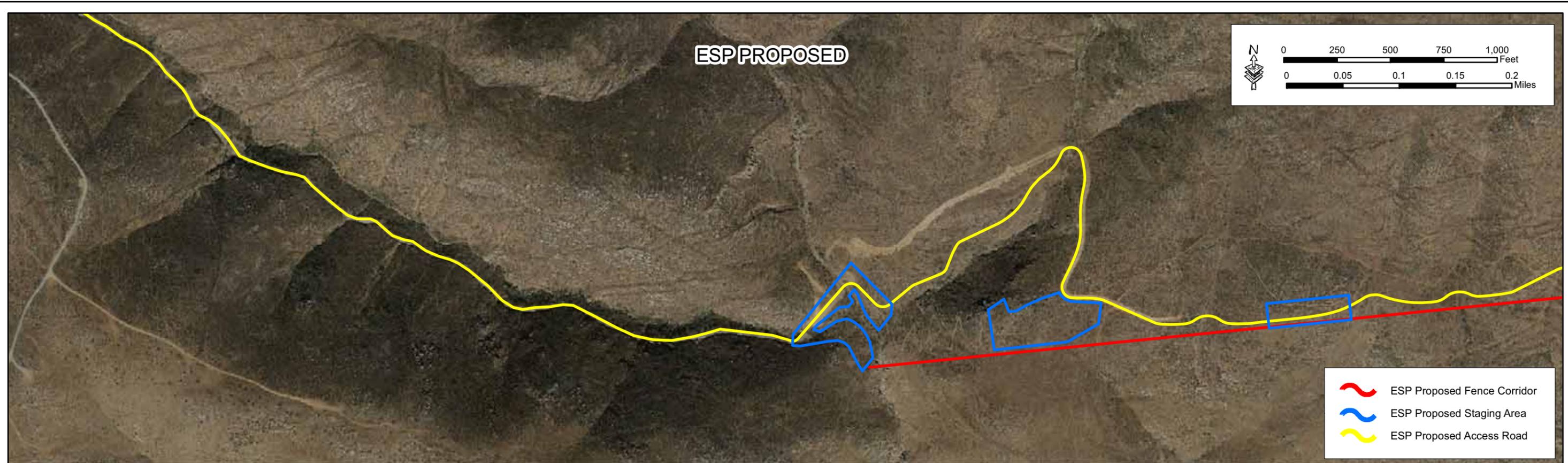
January 2012

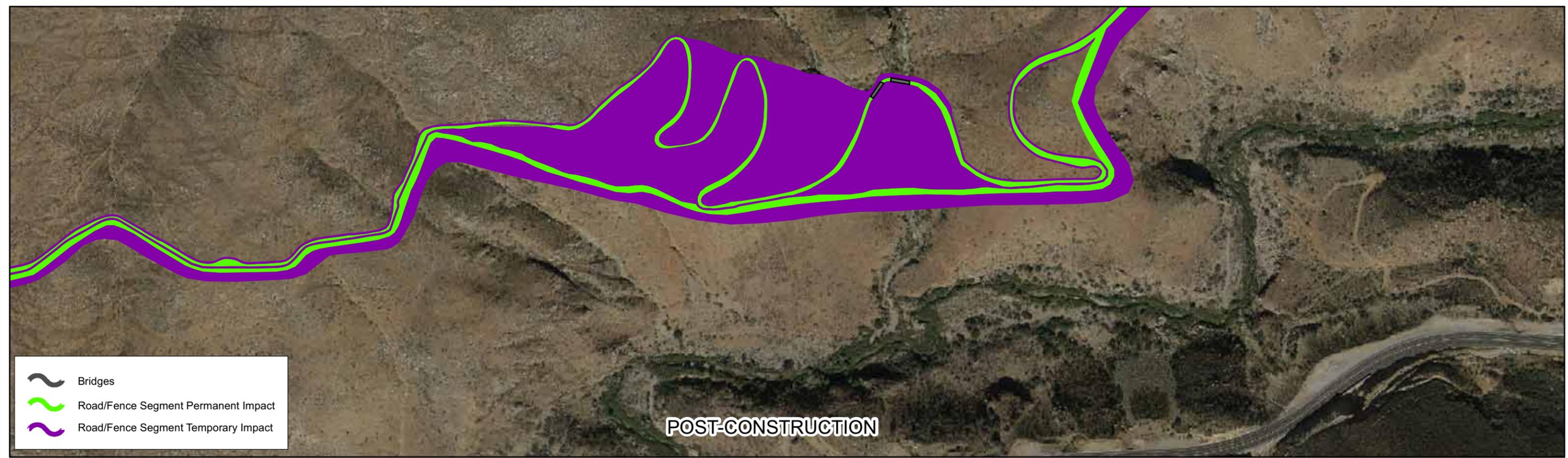
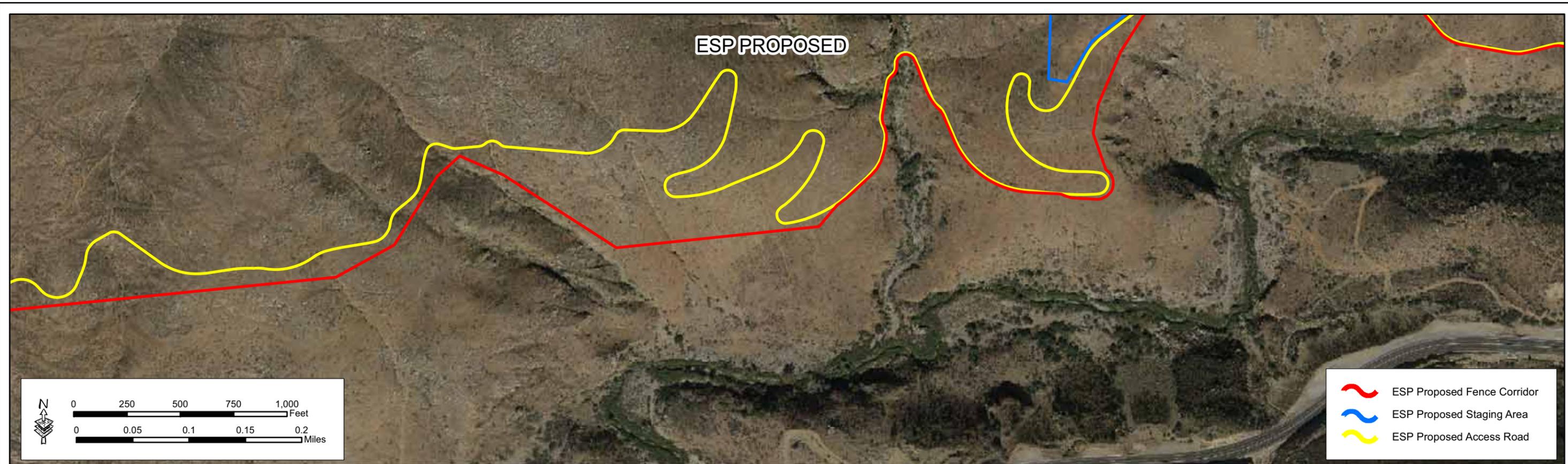




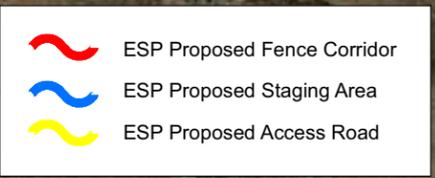
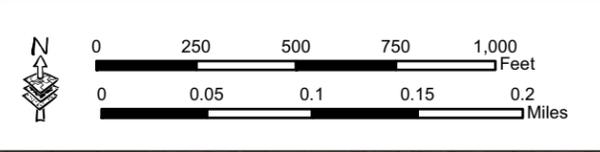




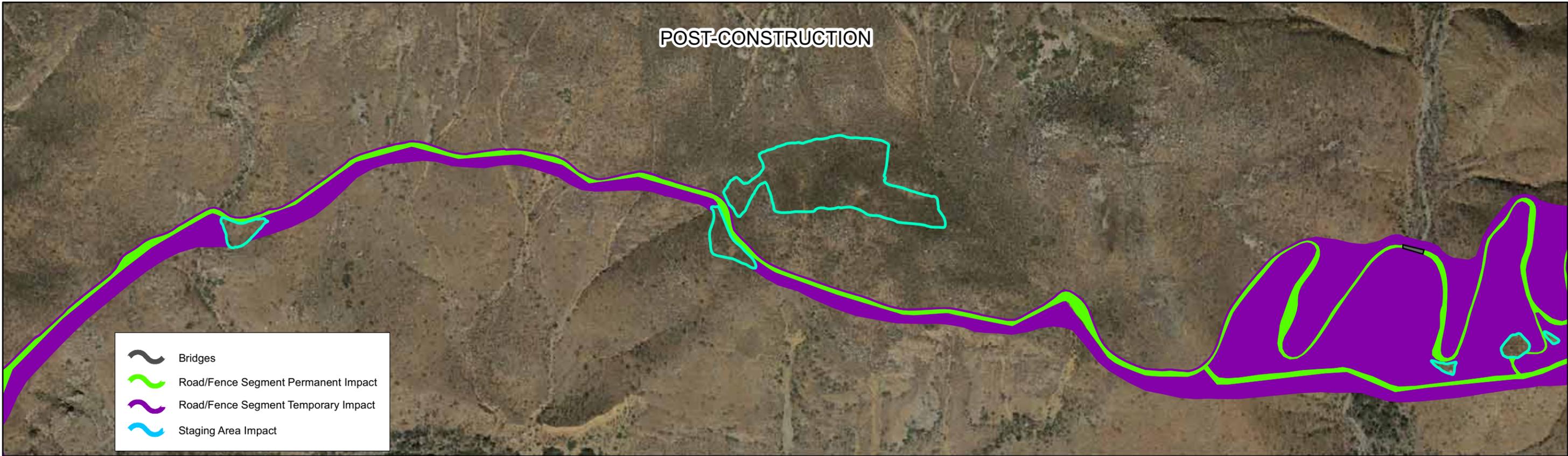




ESP PROPOSED



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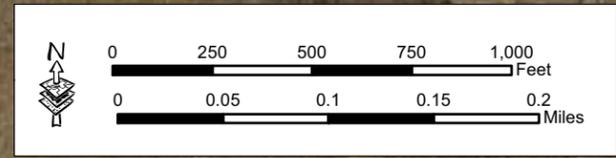


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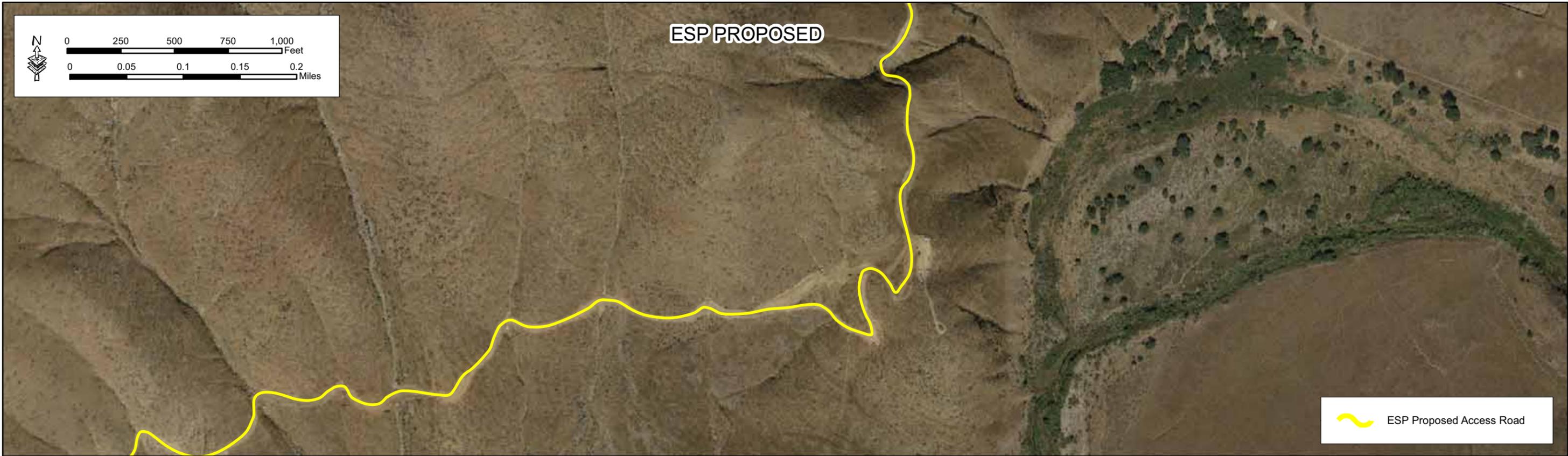


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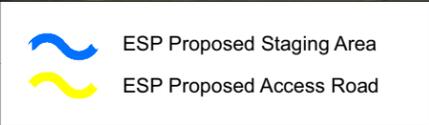
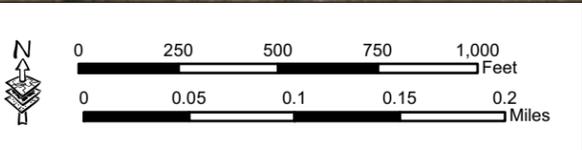
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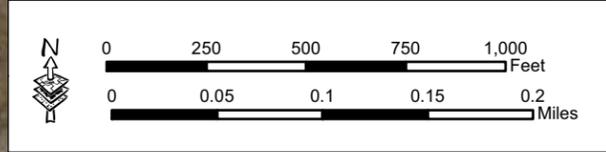
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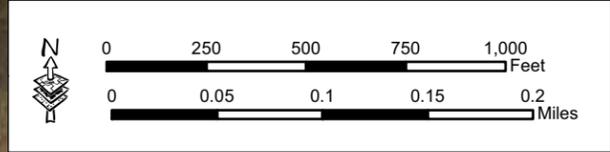


 ESP Proposed Access Road

POST-CONSTRUCTION

 Access Road Permanent Impact
 Access Road Temporary Impact

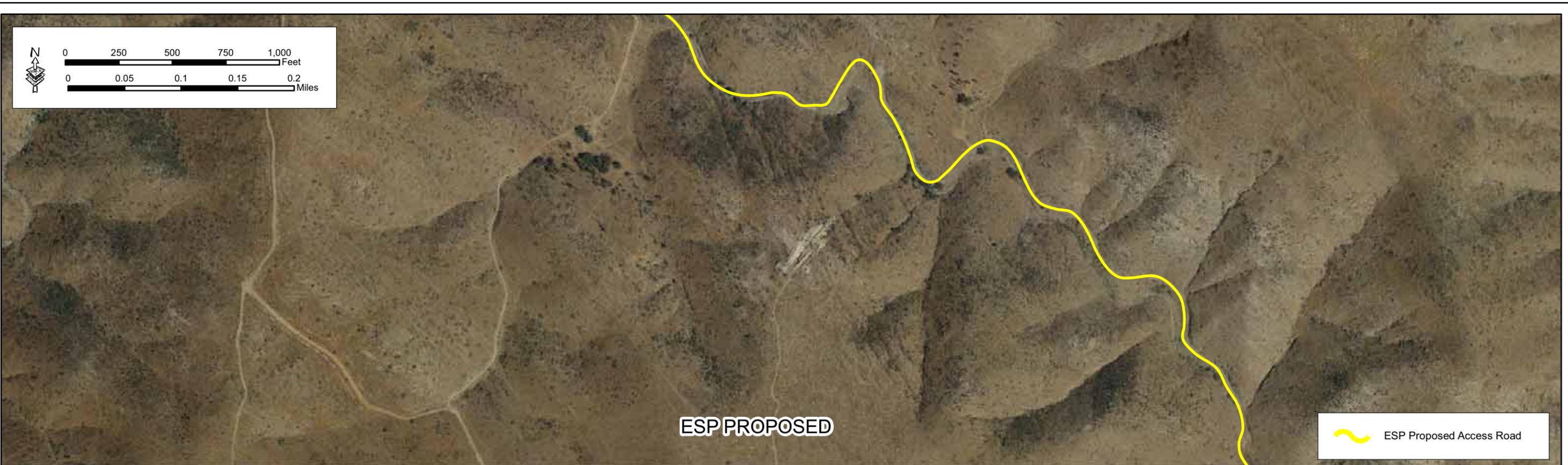
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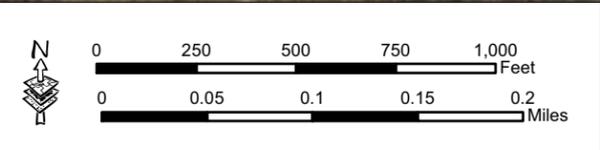
 ESP Proposed Access Road

POST-CONSTRUCTION

 Access Road Permanent Impact
 Access Road Temporary Impact



ESP PROPOSED

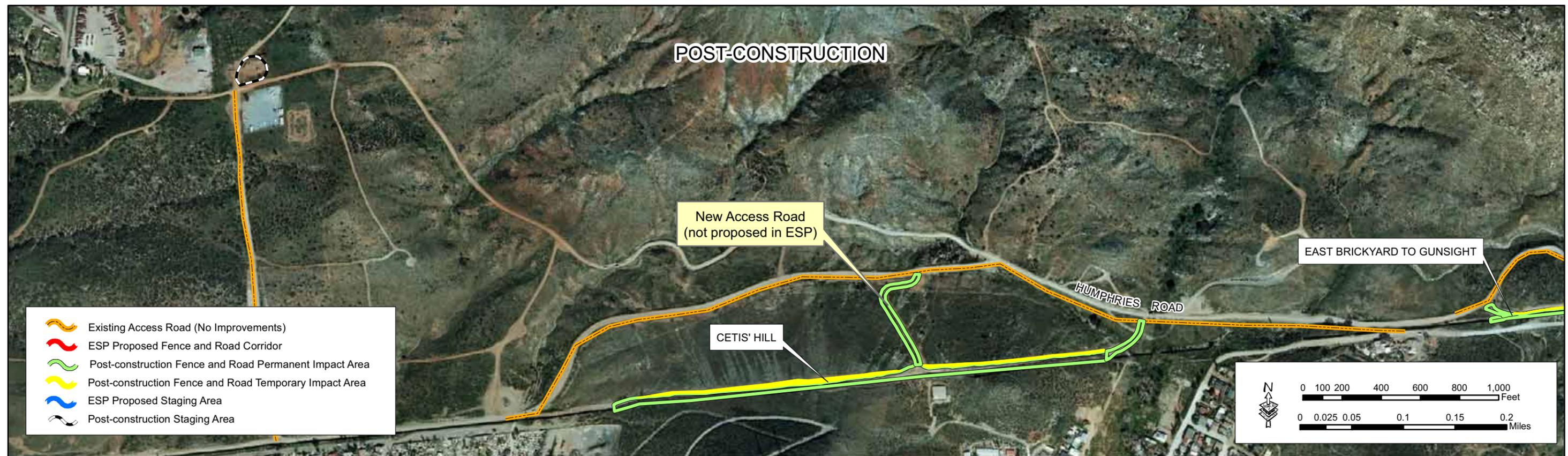
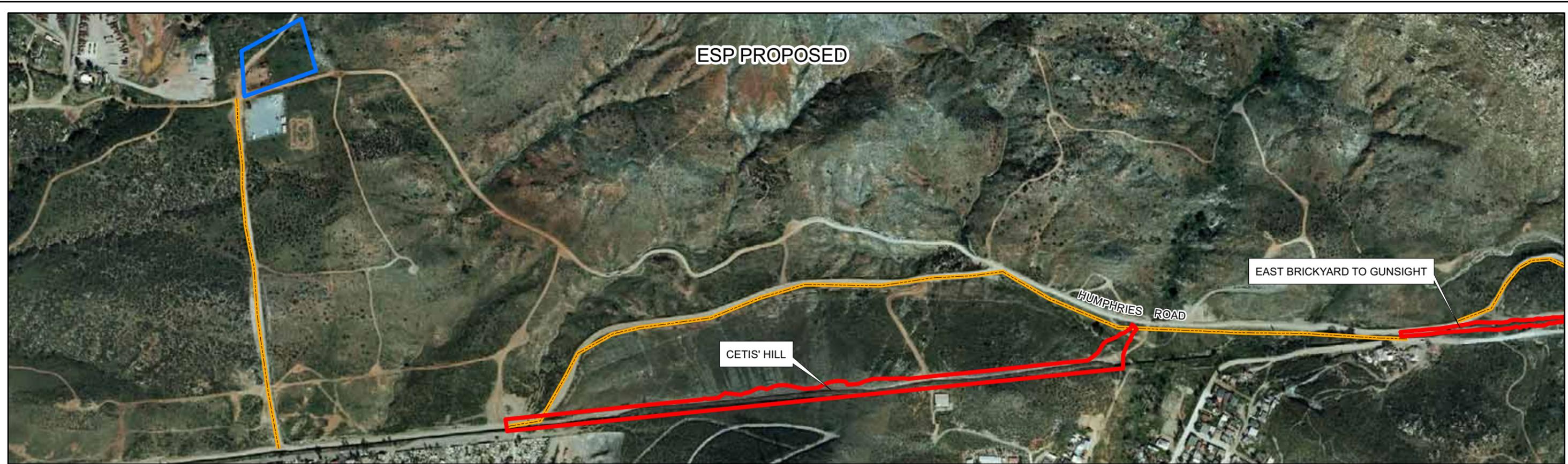


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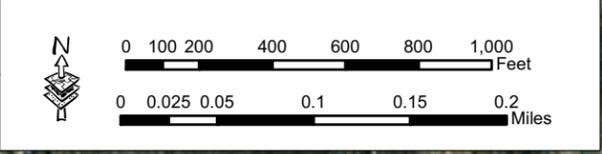




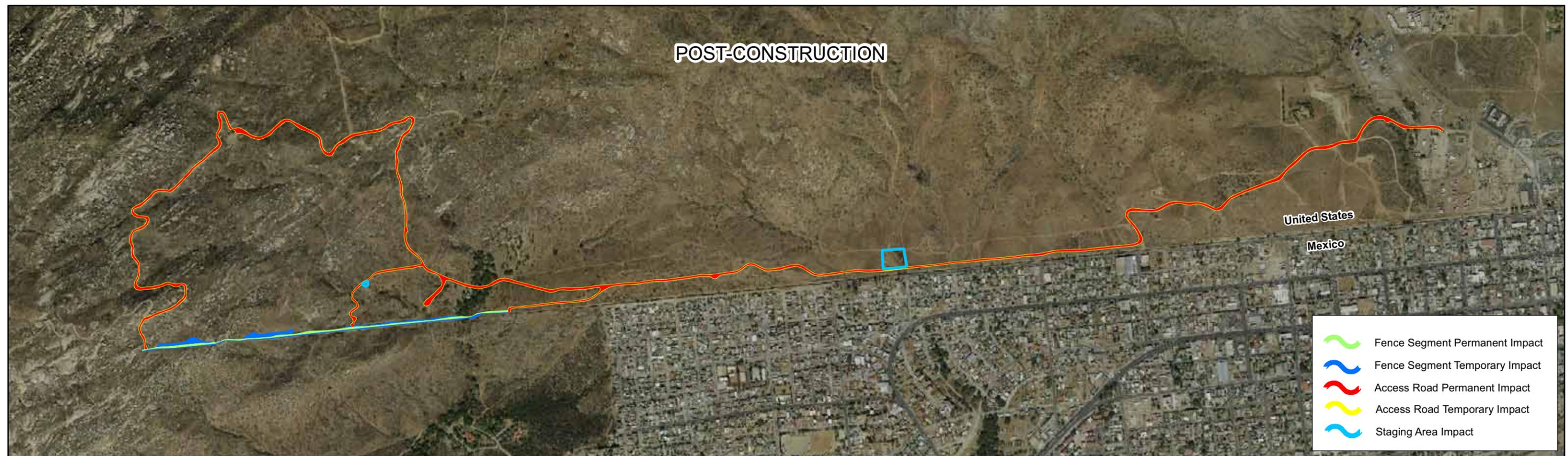
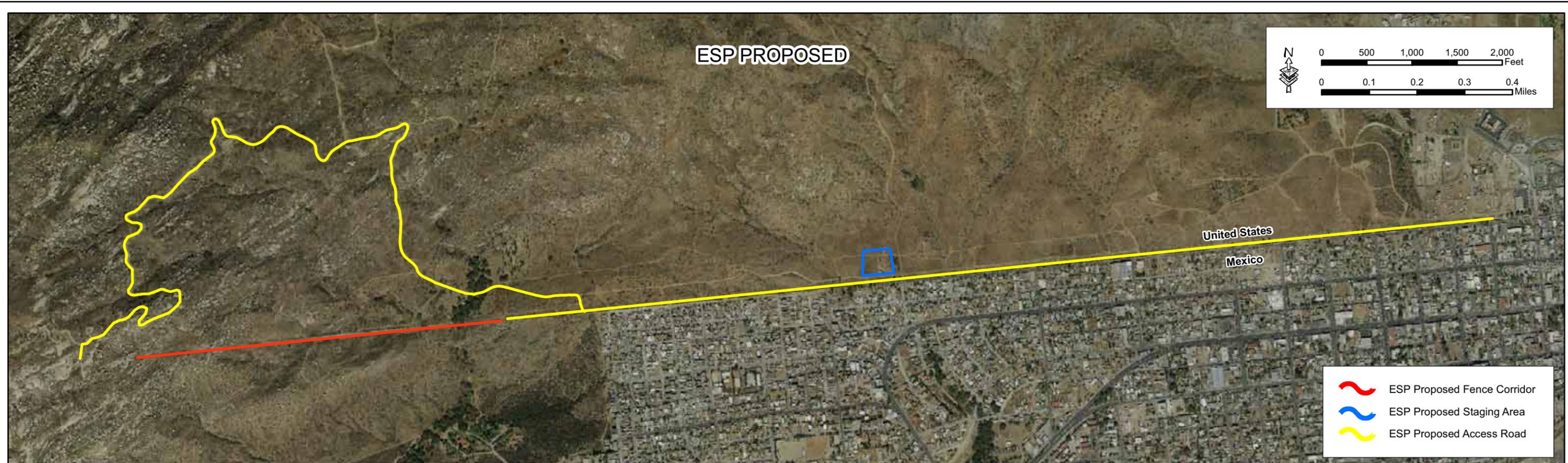


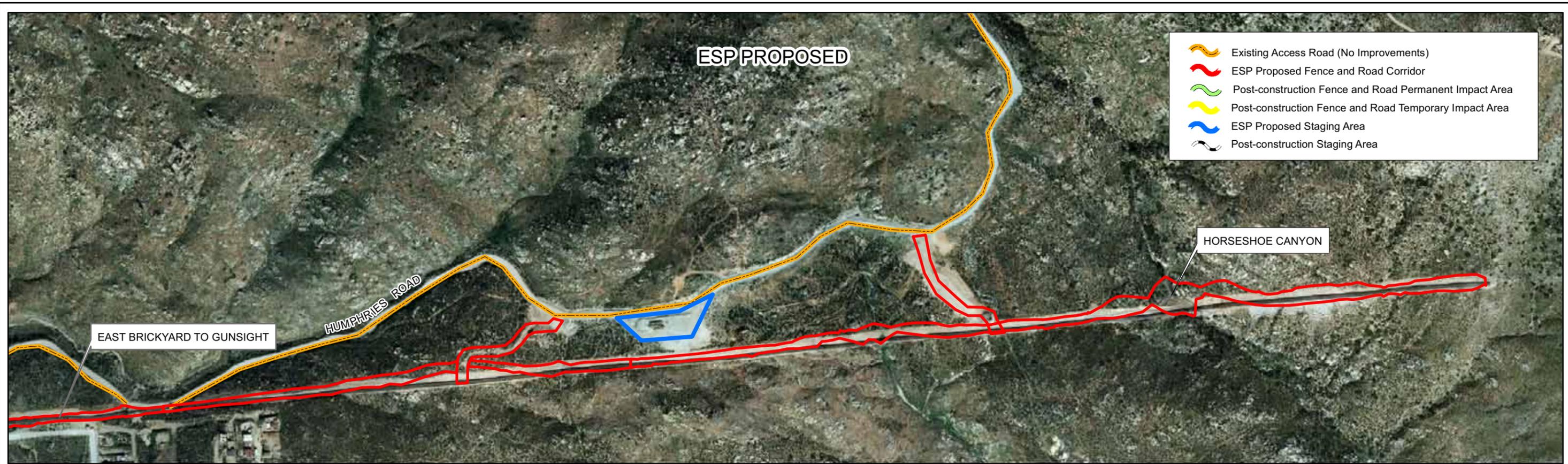


-  Existing Access Road (No Improvements)
-  ESP Proposed Fence and Road Corridor
-  Post-construction Fence and Road Permanent Impact Area
-  Post-construction Fence and Road Temporary Impact Area
-  ESP Proposed Staging Area
-  Post-construction Staging Area



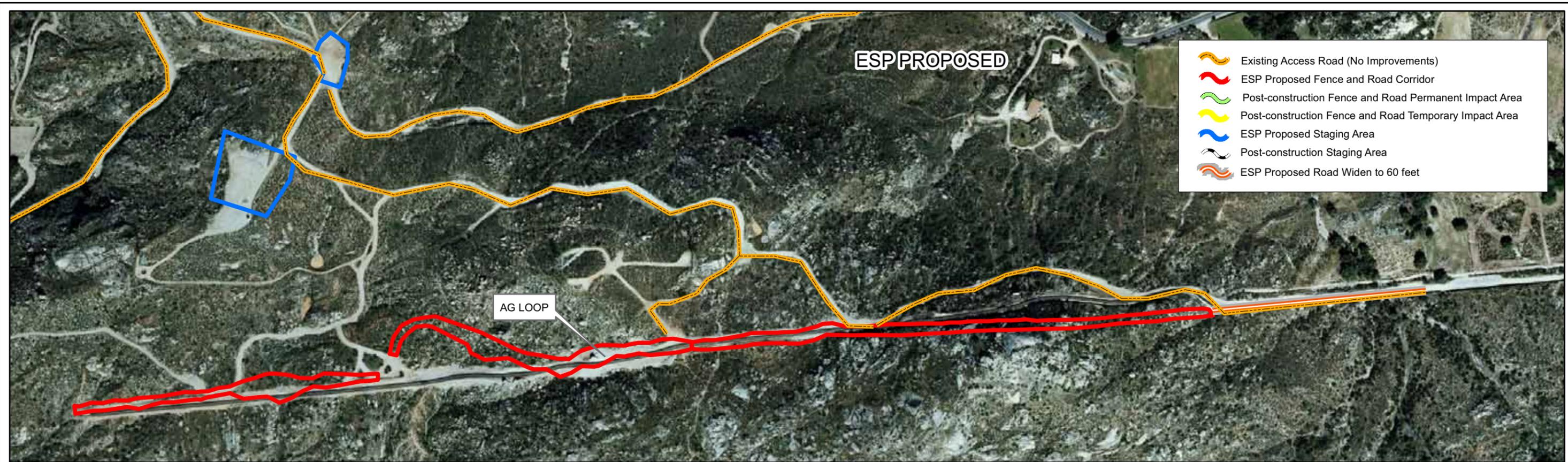
Cetis' Hill (A-2B), Staging Area, and Access Road





East Brickyard to Gunsight(A-2C), Horseshoe Canyon (A-2D), Staging Area, and Access Road

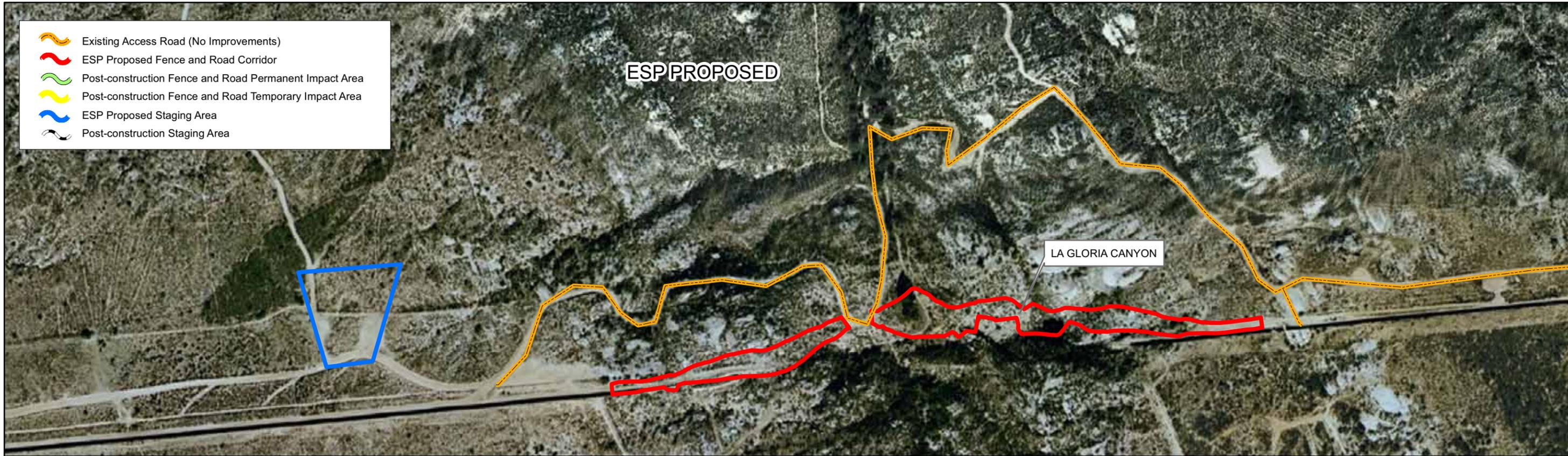




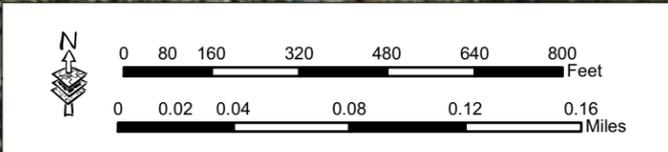
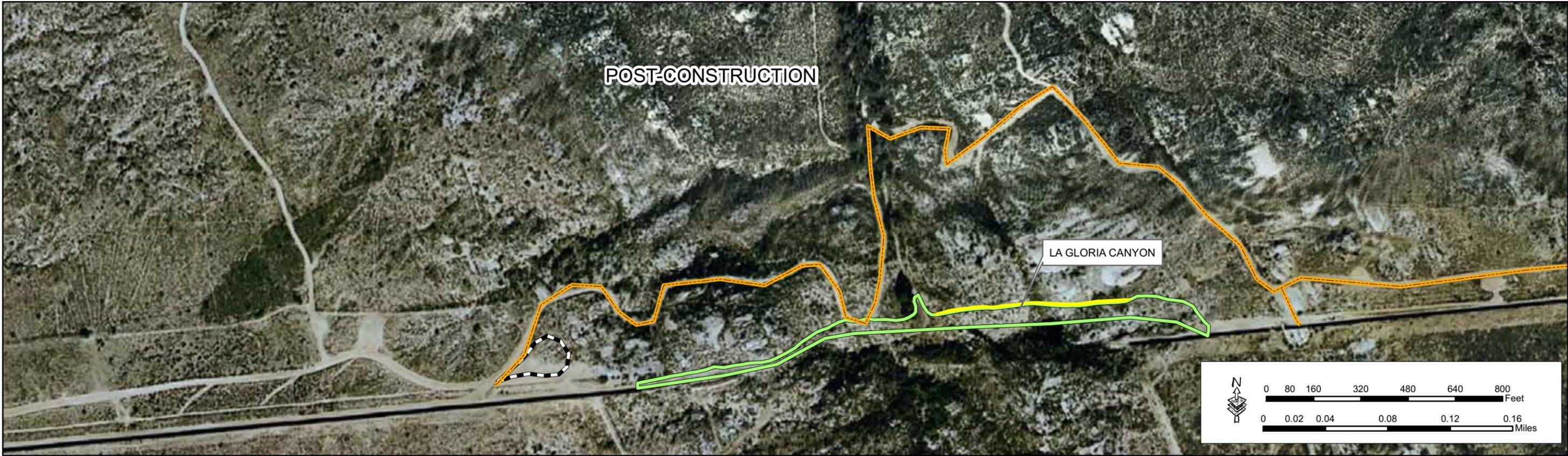
Ag Loop (A-2F), Road Widening, Staging Area, and Access Road

-  Existing Access Road (No Improvements)
-  ESP Proposed Fence and Road Corridor
-  Post-construction Fence and Road Permanent Impact Area
-  Post-construction Fence and Road Temporary Impact Area
-  ESP Proposed Staging Area
-  Post-construction Staging Area

ESP PROPOSED



POST-CONSTRUCTION

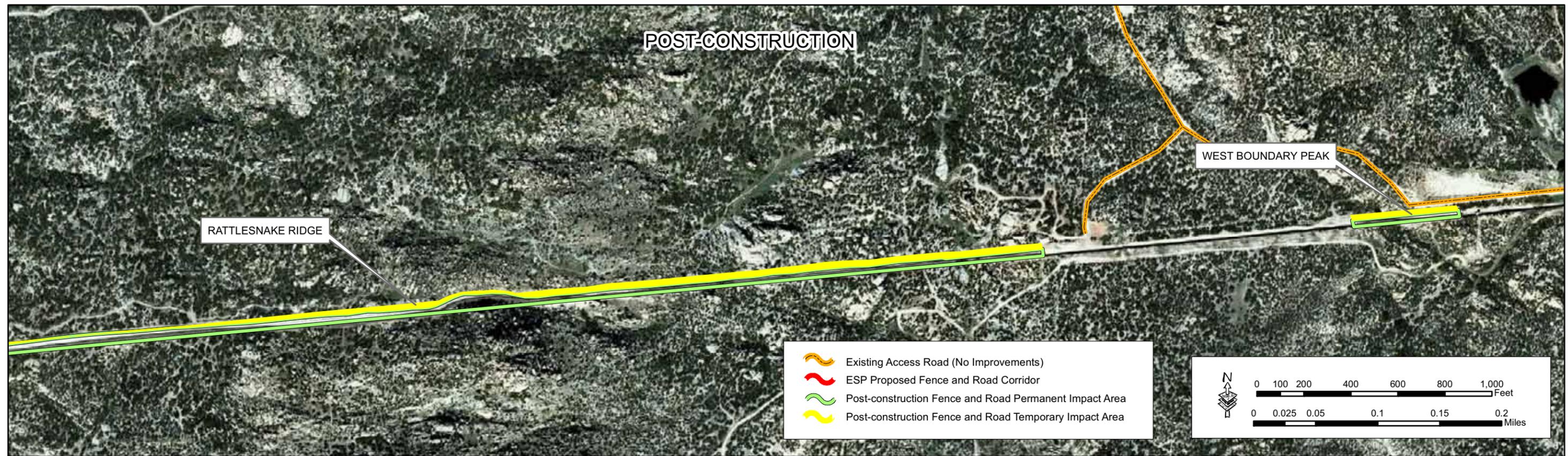


La Gloria Canyon (A-2G), Staging Area, and Access Road





Rattlesnake Ridge (A-21), Staging Area, and Access Road



Rattlesnake Ridge (A-2I), West Boundary Peak (A-2J), and Access Road

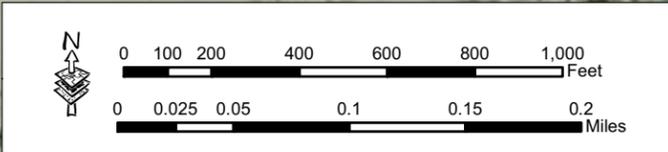
ESP PROPOSED

-  ESP Proposed Fence and Road Corridor
-  ESP Proposed Converting PVB to Fence
-  ESP Proposed Road Widening
-  Post-construction Fence and Road Permanent Impact Area



POST-CONSTRUCTION

Road not widened
(as proposed in ESP)





Willow Access Road (A-2K), Road Widening, and PVB Converted to Fence (Willow 1)



Staging Area, Access Road, and PVB Converted to Fence (Willows 2)



Airport Mesa (A2M), O'Neil Valley (A-2N), Staging Area, Access Road, and PVB Converted to Fence (Willows 2)