
2.0 ALTERNATIVES

The dynamics of illegal entry dictate the placement and designs of various solutions for border control. A properly designed infrastructure system is an indispensable tool in deterring those attempting to illegally cross the U.S. border. The system is also integral to maintaining the USBP's flexibility in deploying agents and enforcement operations. A formidable infrastructure system relaxes stringent workforce demands by slowing down illegal entrants and increasing the window of time that agents have to respond. The more impenetrable the infrastructure is, the greater the window for apprehension and the lessening of a demand for personnel. As the flow of illegal traffic is decreased, greater benefits to the human and natural environment beyond the border will be realized. Strategically developed infrastructure systems would enable USBP managers to better utilize existing workforce when addressing the dynamic nature of illegal alien, terrorists, and narcotics trafficking.

The alternatives considered during the preparation of this SEA were formulated based upon their potential to satisfy the purpose and need as stated in Chapter 1, their potential to satisfy the spirit and intent of IIRIRA, and the knowledge and experience of the USBP. Obviously, any alternative to control the border must be placed in proximity to the border. However, several other selection criteria were used to develop and evaluate the alternatives for the USBP. Each criterion takes into consideration the health and safety of the USBP agents, capability to provide effective enforcement compatible aspects to other infrastructure components, potential environmental consequences, and compliance with the stated purpose and need. Briefly, the list of selection criteria includes:

- Area between primary and secondary fences should be at least 270 feet, where practicable, unless other constraints prohibit this width;
- Roads should be less than 20% vertical grade to provide clear line of sight and safe driving conditions;
- Secondary fences should have minimal angles in their alignments to provide clear line of sight;
- Reduce the overall enforcement footprint as it currently exists;
- Impact the minimal amount of land as practicable, assuming other selection criteria are satisfied;
- Design should be compatible with ISIS components;

- Provide systems that can be operated 24 hours per day, seven days per week;
- Convey certainty of apprehension and, thus, provide deterrence to illegal entry;
- Maximize flexibility in USBP agent deployment.

Viable alternatives, as defined in this SEA and NEPA, are constrained by those that meet the purpose and need to implement infrastructure that will achieve border control, satisfy the selection criteria above to the extent practicable, and provide a safe working environment for USBP agents. Three separate and distinct alternatives for completion of the proposed infrastructure along the international border will be evaluated in detail in this SEA: the No Action Alternative, the Preferred Alternative, and the Full Build Out Alternative. Other alternatives and alternative designs were considered initially, but have been eliminated from further consideration as operationally non-effective (i.e., does not satisfy the stated purpose and need) or did not satisfy the spirit and intent of IIRIRA. Each of these alternatives is described in detail in the following subsections.

2.1 NO ACTION ALTERNATIVE

The 2000 Corridor EA identified several projects that were approved and funded at the time the EA was published and other projects that the Naco and Douglas Stations had proposed as future actions. The preferred action presented by the 2000 Corridor EA contained both categories of “currently approved and funded” as well as “future” projects. The Finding of No Significant Impact (FONSI) for the 2000 Corridor EA committed that INS/USBP “...would allow projects that have been identified as necessary in the reasonably foreseeable future to continue, provided they are addressed in separate NEPA documentation, as appropriate, and tiered to this [2000 Corridor EA] Environmental Assessment.” Several of these projects have since been addressed by site-specific EAs, as required by the FONSI, and either have been completed or are currently underway. Others have not been evaluated under separate NEPA documents, as of yet, and thus require this SEA or another site or project-specific NEPA document to be completed prior to implementation. The status of each of the projects identified in the 2000 Corridor EA, as the Preferred Alternative, is presented in Table 2-1.

Table 2-1. Status of Projects Identified in the 2000 Corridor EA

Project	NEPA Document	Status	
		Addressed*	Remaining
Naco Station			
Construct 9 miles of steel landing mat fence	INS (October 2002; March 2003)	2.5 miles	6.5 miles
Construct 6.25 miles of vehicle barrier	USACE (Aug 2000)	3 miles	3.25 miles
Improve 8 miles of border road	USBP (March 2003)	4 miles	4 miles
Install 5 miles of stadium style lights	USACE (April 1999)	2 miles	3 miles
Install 7 RVS sites	INS (June 2000)	7 sites	
Construct 2 low-water crossings	USBP (March 2003)	2 + sites	
Use of 11.5 miles of portable generator lights	INS (Dec 2001)	10.5 miles of portable lights (30-50)	
Construct a new USBP Station			1 station
Install additional 8 RVS sites	INS (Jan 2003)	8 sites (plus 1 in Douglas)	
Douglas Station			
Install 10 RVS sites	INS (Jan 2003)	1 site	9
Acquire and use 73 portable light generators			73 lights
Construct a bridge and bollard fence at Whitewater Draw	USACE (June2001)	Crossing and fence	
Construct 7.5 miles of landing mat fence			7.5 miles
Install 8 miles of stadium style lights			8 miles
Upgrade 25 miles of border road to a all-weather surface			25 miles
Construct a new USBP Station	USACE (July 2000)	1 station	

* Note: The projects identified as addressed were evaluated in separate NEPA documents tied to the 2000 Corridor EA; however, these projects have either been completed or are currently under construction.

The No Action Alternative would allow the infrastructure activities presented in Table 2-1, with the exception of the Naco USBP Station, to be completed, since this SEA would suffice as the subsequent NEPA document required by the 2000 Cumulative EA FONSI. The “remaining” items described above would be the only infrastructure components that would result in additional impacts under the No Action Alternative, since the other items have been evaluated and disclosed under site-specific or project-specific NEPA documents. All of these items, however, are included in the cumulative impact analysis under Section 4 of this SEA.

Construction of a new USBP Naco Station would require a separate NEPA document since no site-specific project or funding has been identified as of the date of this publication. The general locations of the completed and on-going infrastructure projects are depicted in Figures 2-1a through 2-1o. A summary of the “remaining” items to be implemented under the No Action Alternative is presented in Table 2-2.

Table 2-2. Summary of Remaining Projects Identified under the No Action Alternative

Projects	Total
Naco Station	
Primary Fence Projects	
• Primary pedestrian fence (landing mat, picket and bollard)	6.5 Miles
• Vehicle barriers	3.25 Miles
Lighting Projects	
• Permanent lighting (stadium lights)	3 Miles
Roadway Projects	
• Road way upgrade to an all-weather surface	4 Miles
Drainage Structures	
• Construction low-water crossings	18 Each
Douglas Station	
Primary Fence projects	
• Primary pedestrian fence (landing mat, picket and bollard)	7.5 Miles
Lighting Projects	
• Permanent lighting (stadium lights)	8 Miles
Roadway Projects	
• Upgrade existing roads to 24 foot all-weather surface road	25 Miles
RVS Sites	
• Install and operate RVS sites	9 Sites
Total Infrastructure for the No Action Alternative	
Primary Fence Projects	17 Miles
Lighting Projects	11 Miles
Roadway Projects	29 Miles
RVS Sites	9 Each

Implementation of any of these “remaining” projects prior to the completion of this SEA would require separate NEPA documentation, in compliance with the 2000 Corridor Impact EA, FONSI and NEPA/CEQ regulations. Other projects that are deemed urgent or necessary in response to an identified security issue, that are not identified herein, would also require a separate NEPA document that could be tiered to the 2000 Corridor EA or the INS/JTF-6 2001 SPEIS.

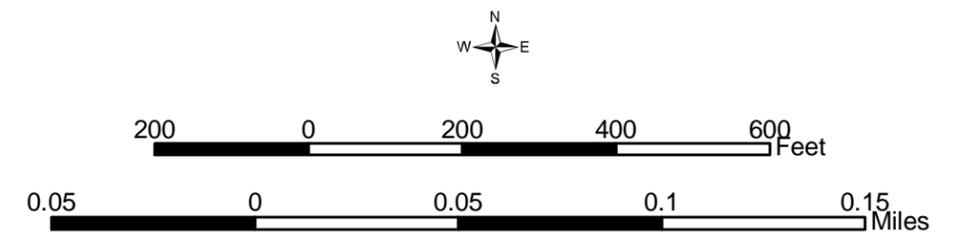
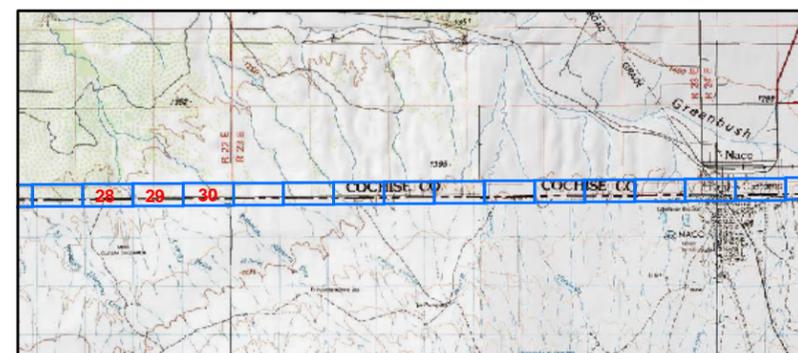
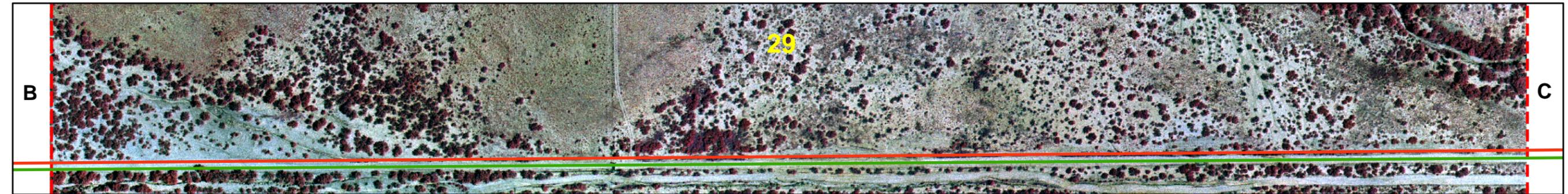
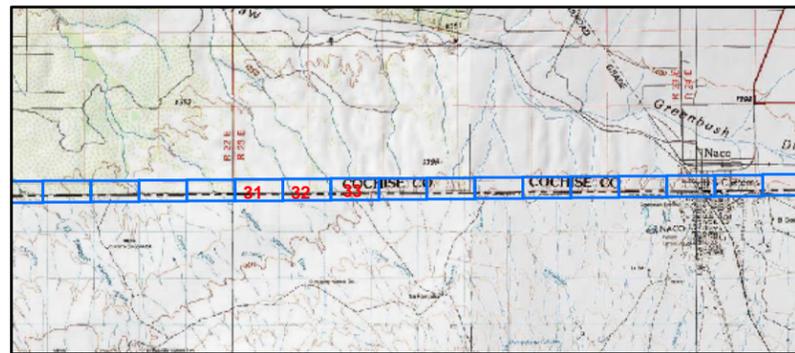
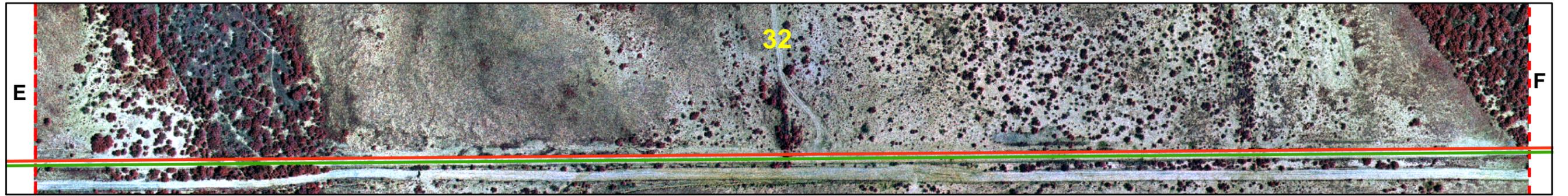
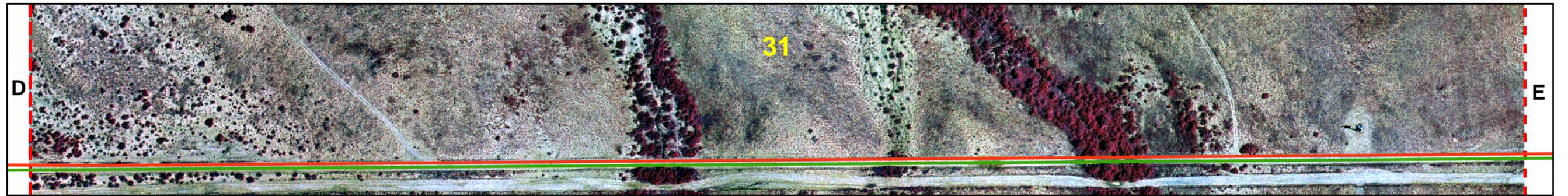


Figure 2-1a. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco West

Sources: All Infrastructure was digitized by GSRC, 2003.



Projects

— Remaining Primary Pedestrian Fence
 — Border Road Improvements

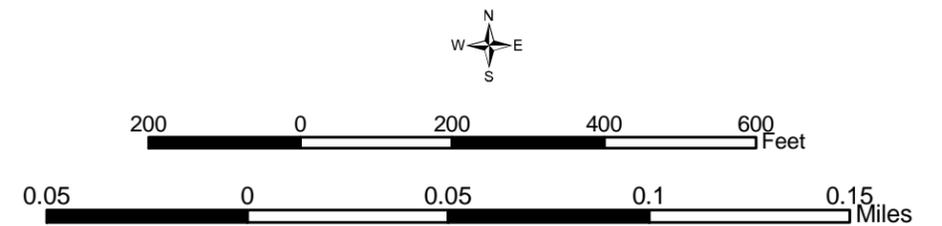
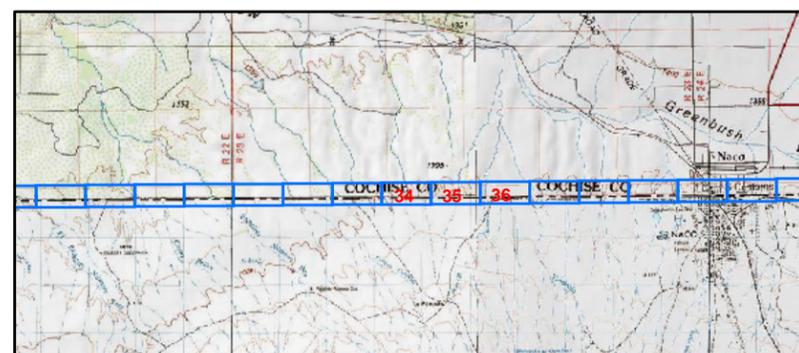


Figure 2-1b. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco West

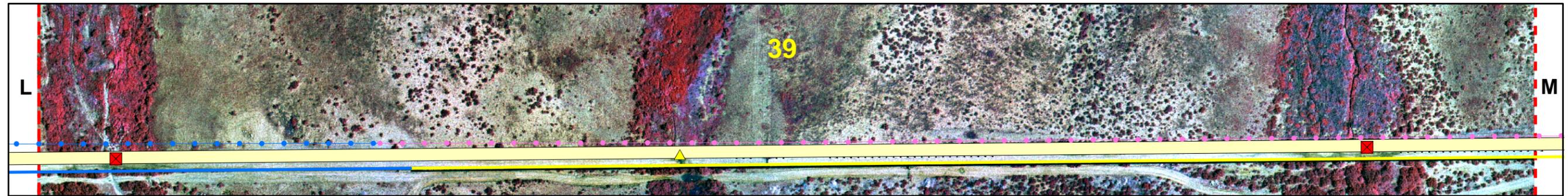
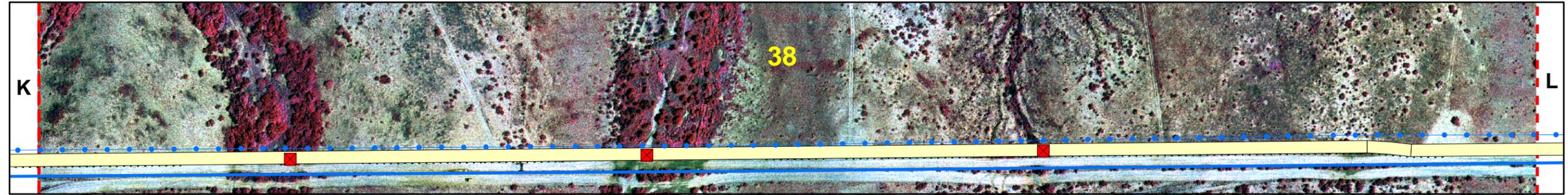


Projects

- Remaining Primary Pedestrian Fence
- Border Road Improvements
- Remaining Stadium Lights

Figure 2-1c. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco West

Sources: All Infrastructure was digitized by GSRC, 2003.



Projects	
	Vehicle Barriers and Ongoing Primary Pedestrian Fence
	Primary Pedestrian Fence
	Remaining Stadium Lights
	Stadium Lights
	Remaining Primary Pedestrian Fence
	Border Road Improvements
	Ongoing Naco 4-Mile Road Upgrade
	Ongoing Low Water Crossing
	Ongoing Drainage Crossing

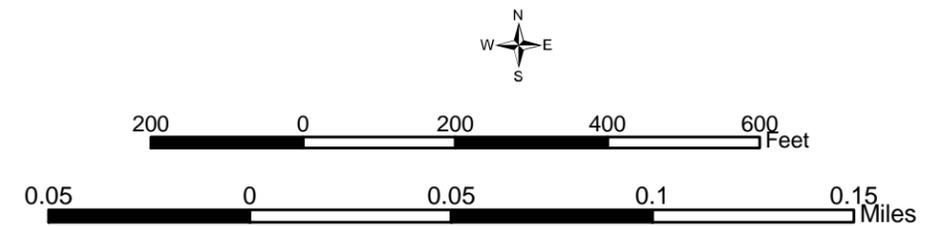


Figure 2-1d. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco West

Sources: All Infrastructure was digitized by GSRC, 2003.

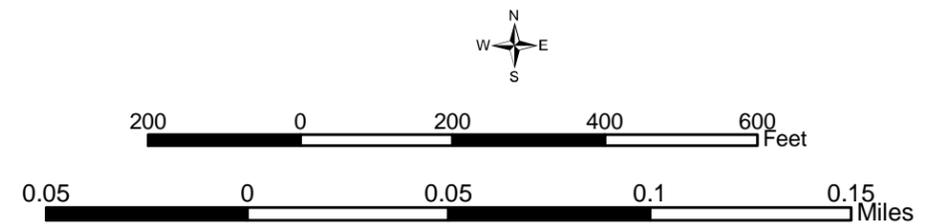
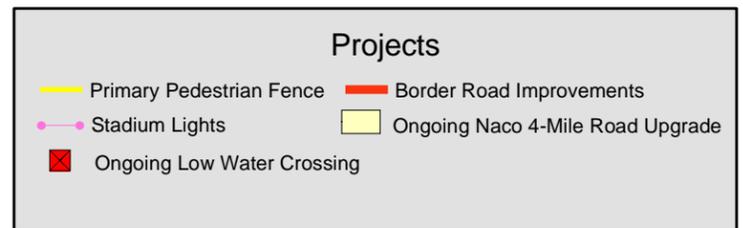
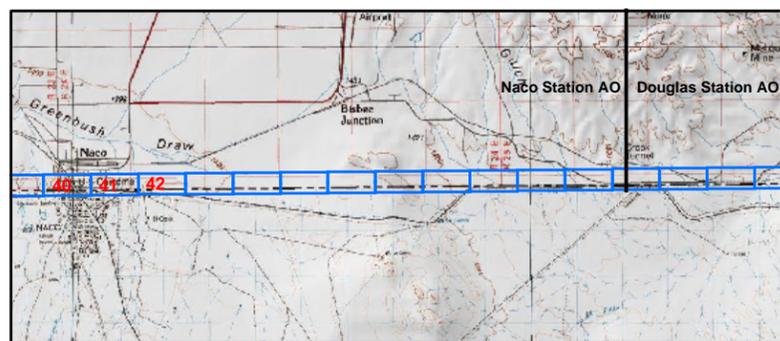
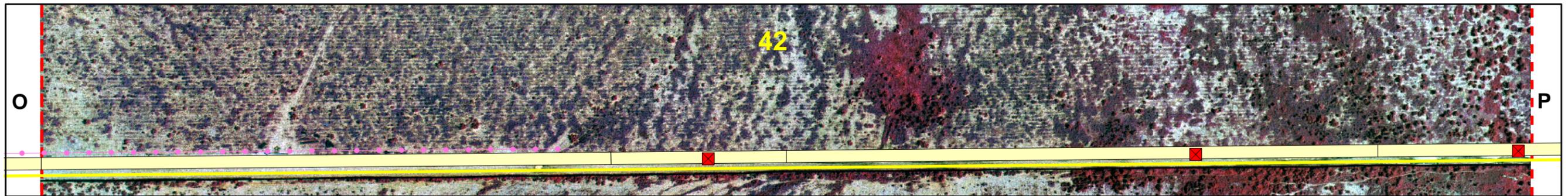
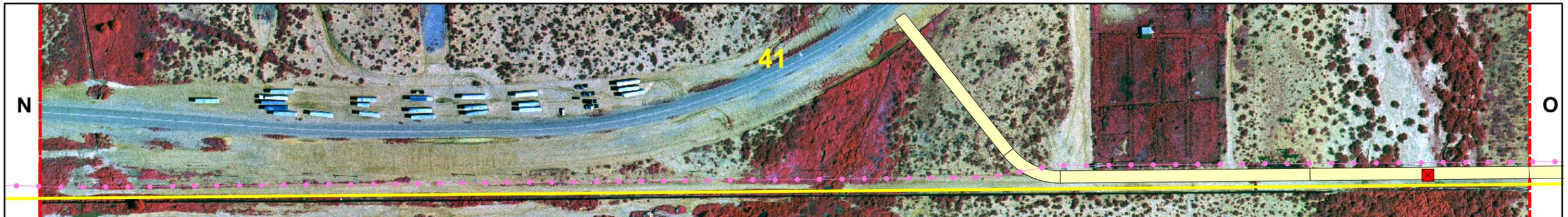


Figure 2-1e. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco East

Sources: All Infrastructure was digitized by GSRC, 2003.

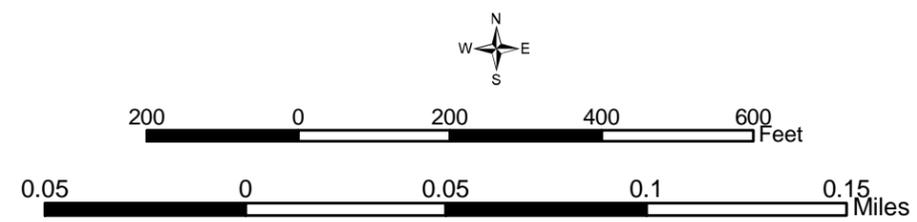
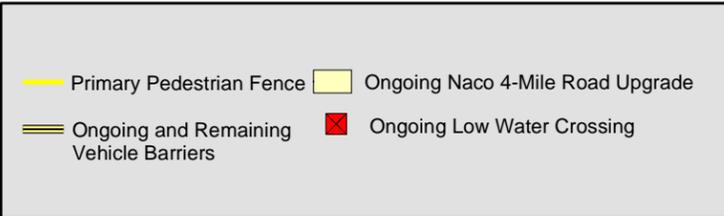
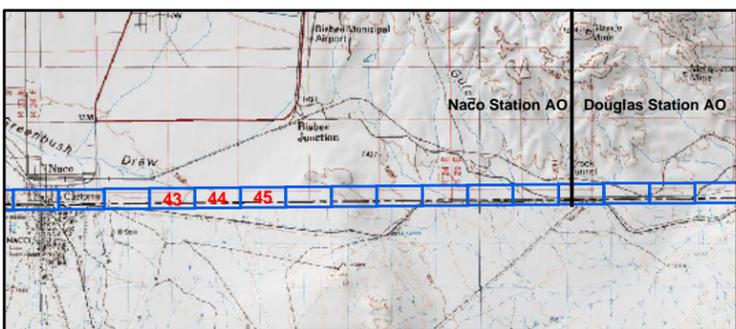
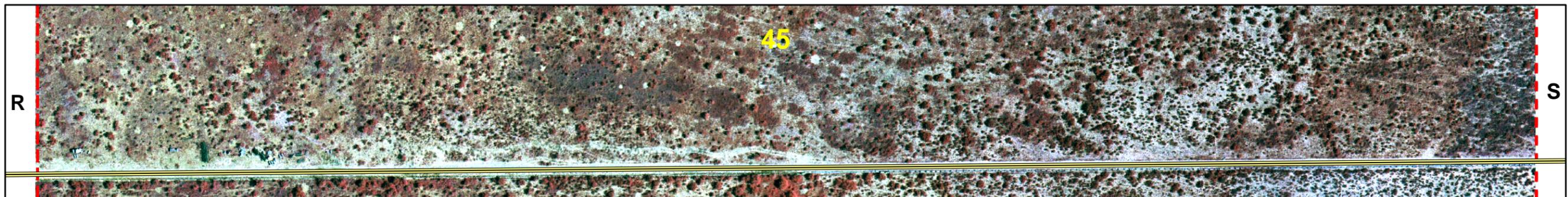
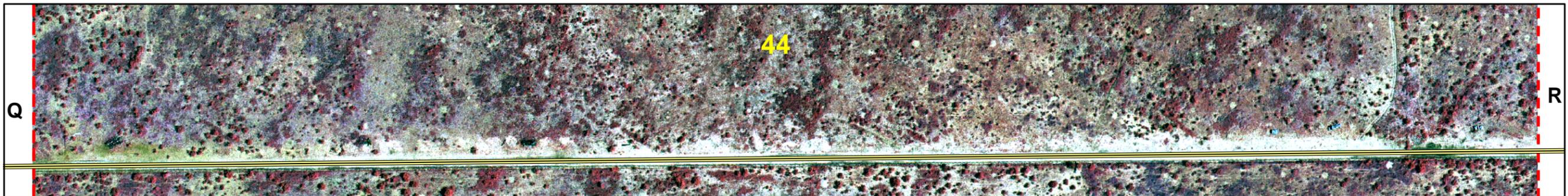
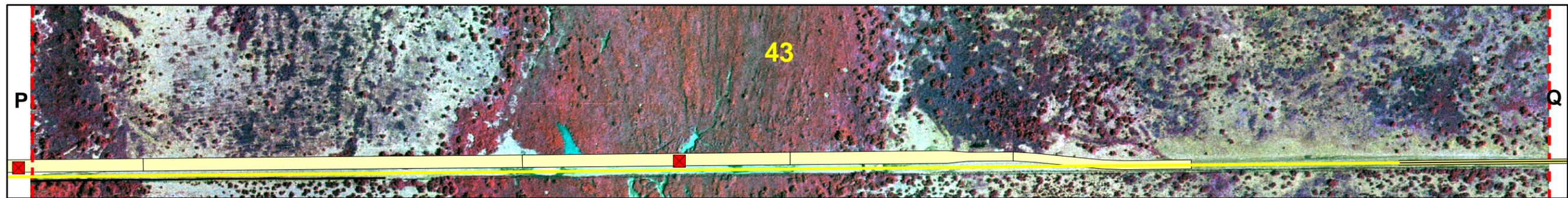


Figure 2-1f. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco East

Sources: All Infrastructure was digitized by GSRC, 2003.

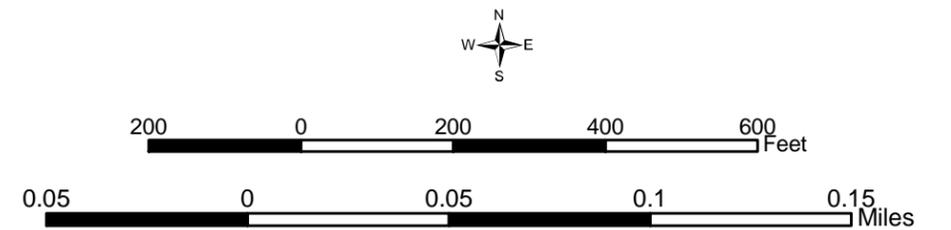
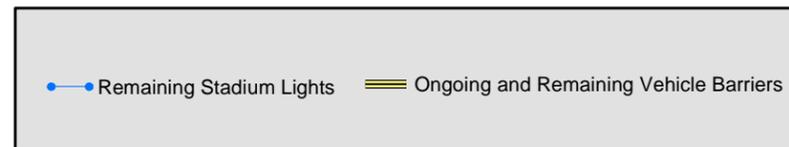
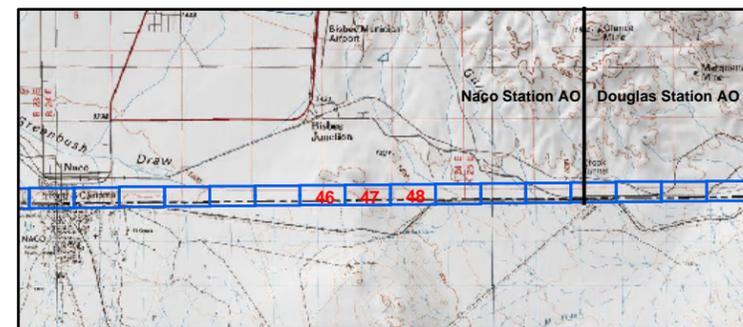
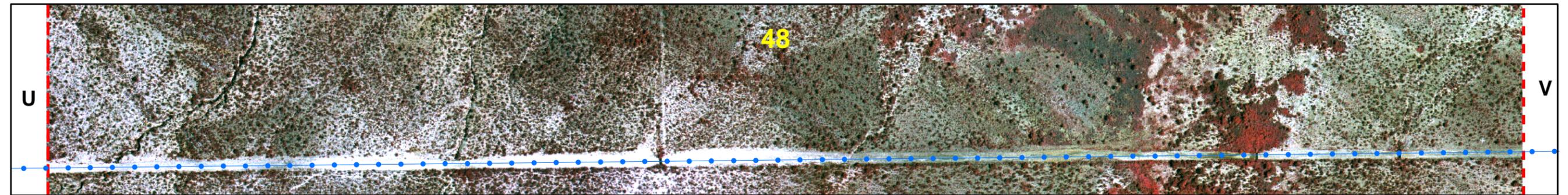
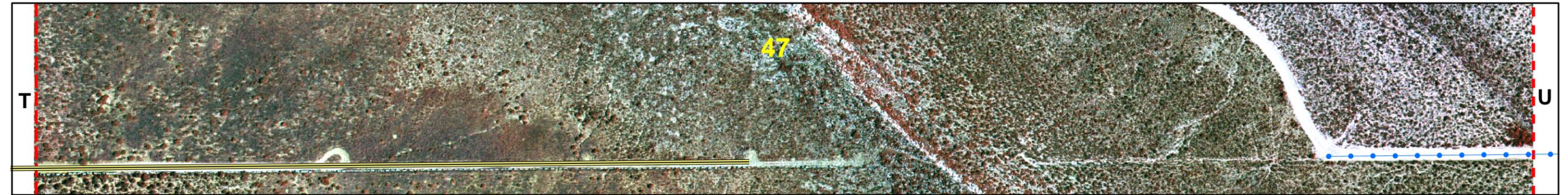
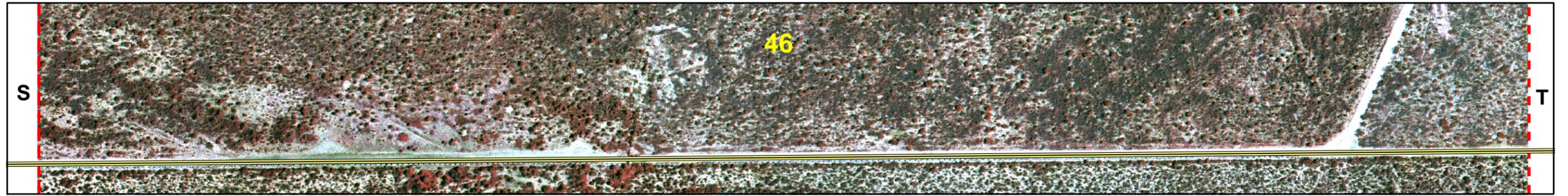


Figure 2-1g. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco East

Sources: All Infrastructure was digitized by GSRC, 2003.



Date: February 2003

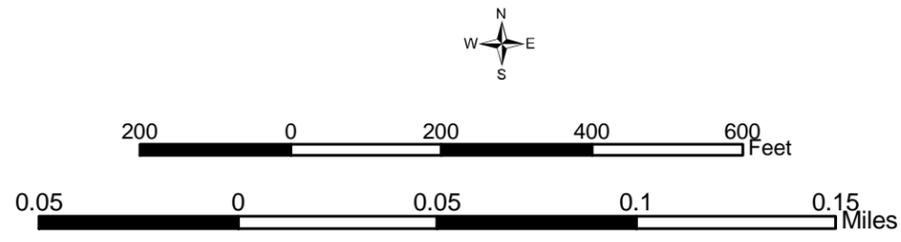
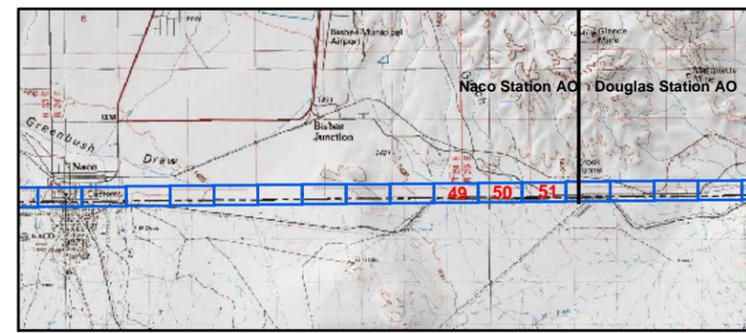
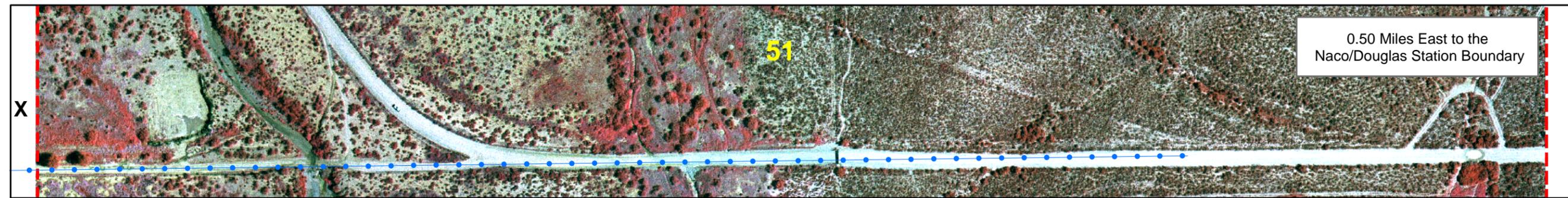
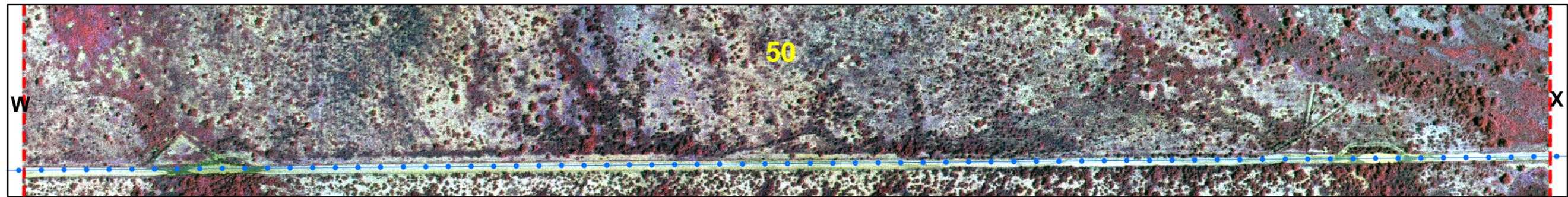
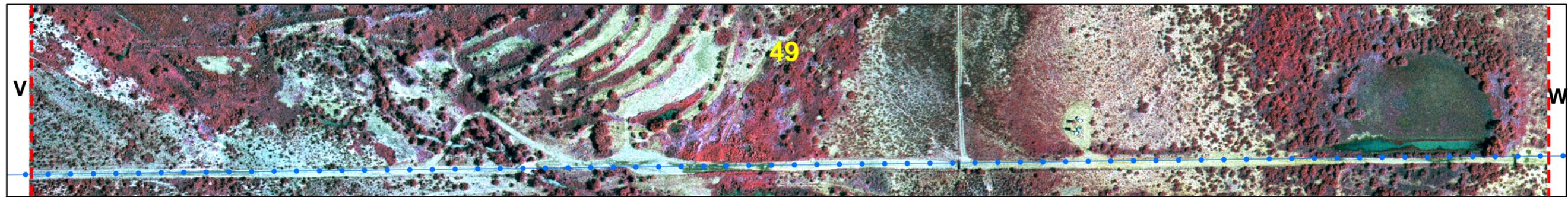


Figure 2-1h. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Naco East

Sources: All Infrastructure was digitized by GSRC, 2003.

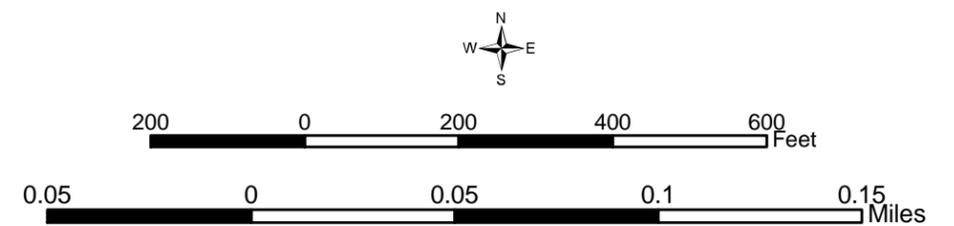
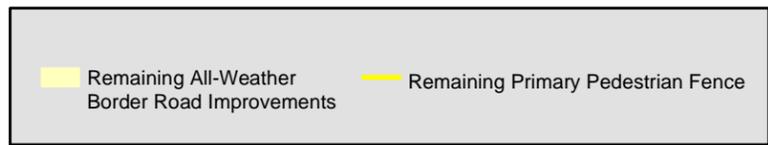
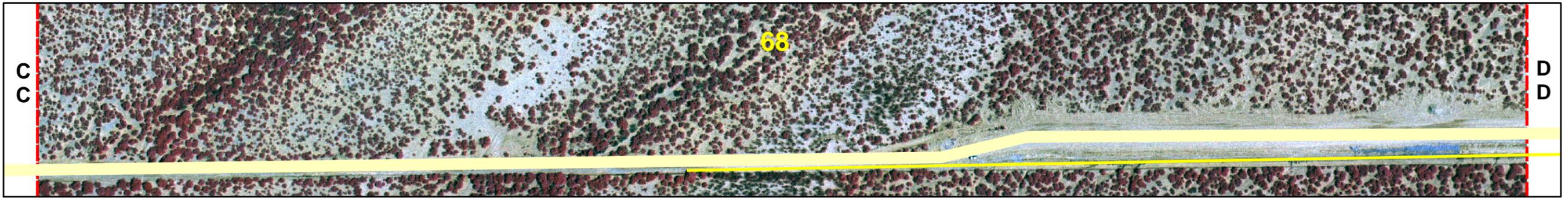
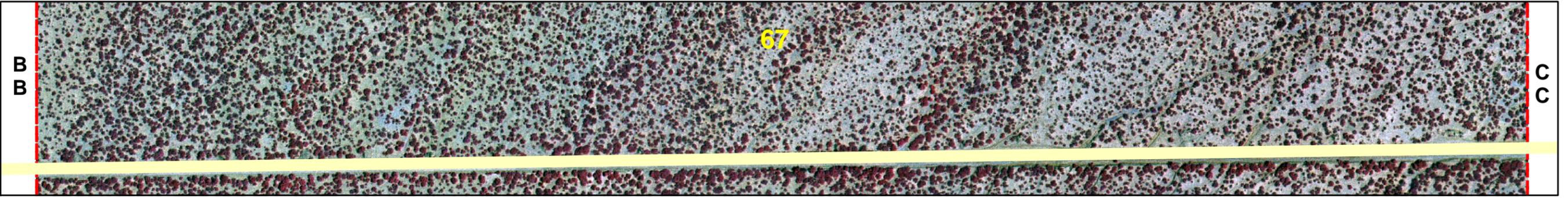
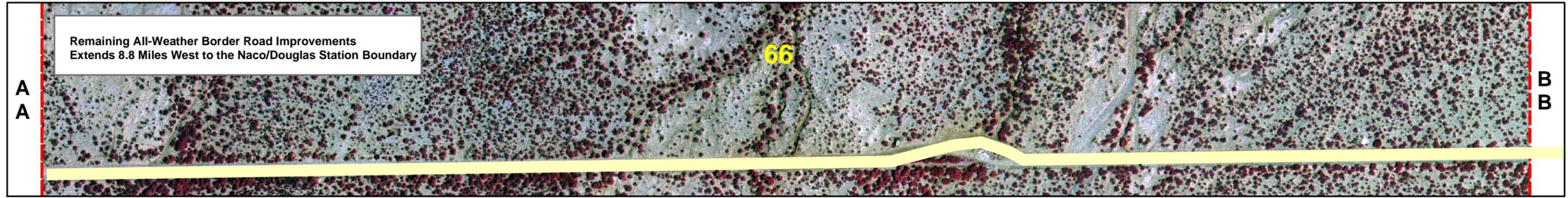


Figure 2-1i. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Douglas West

Sources: All Infrastructure was digitized by GSRC, 2003.

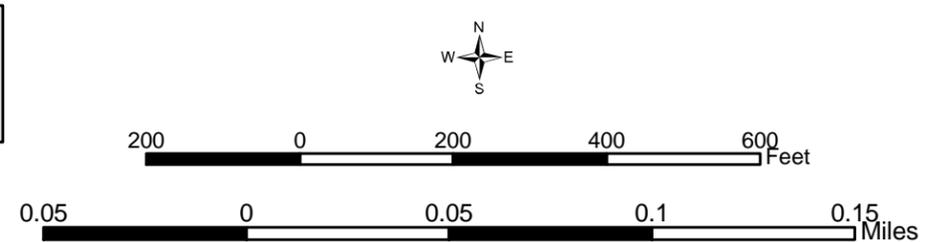
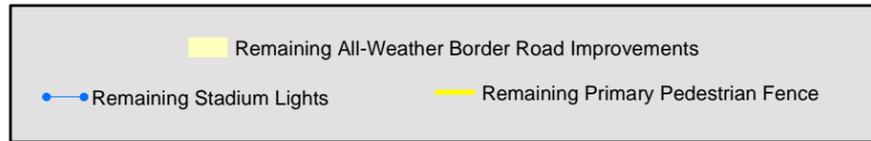
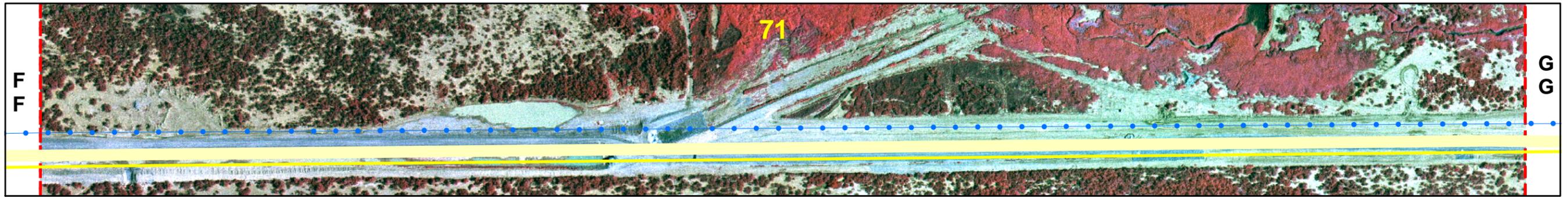
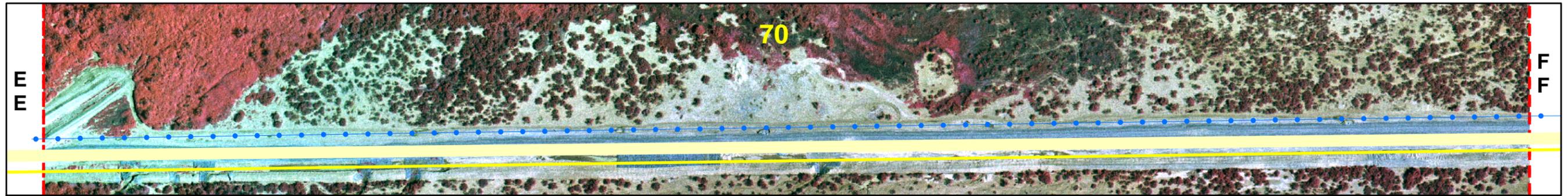
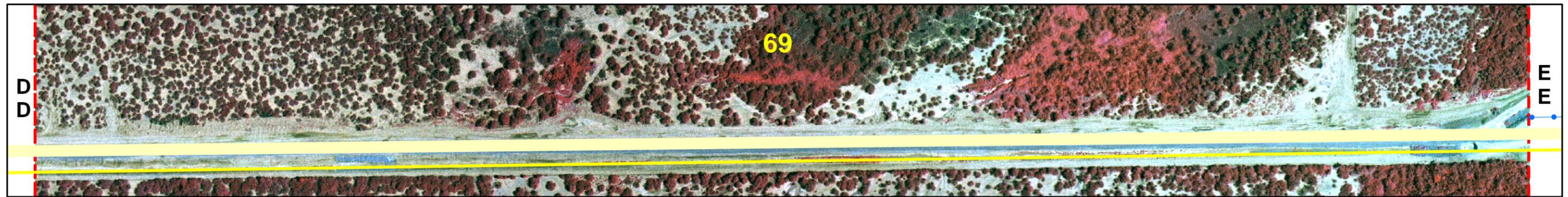
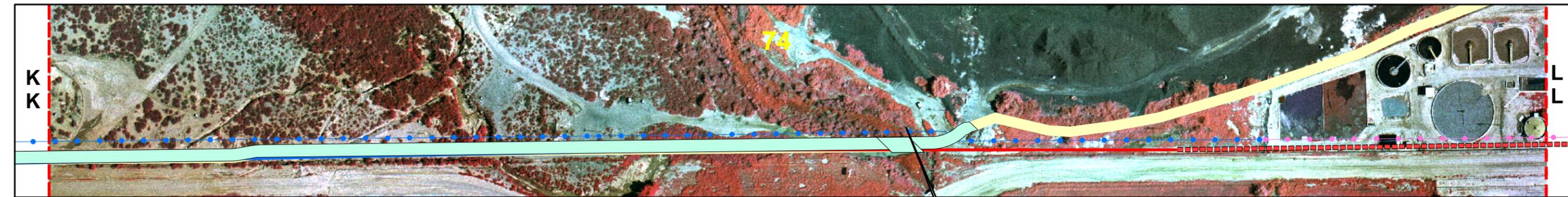
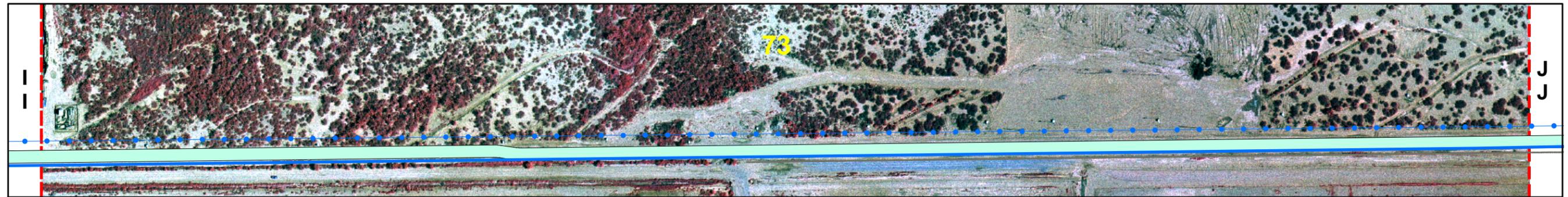


Figure 2-1j. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Douglas West

Sources: All Infrastructure was digitized by GSRC, 2003.



- Remaining Stadium Lights
- Remaining Primary Pedestrian Fence
- Ongoing Primary Pedestrian Fence
- Primary Pedestrian Fence
- Stadium Lights
- All-Weather Border Road Improvements
- Ongoing Whitewater Draw Road Upgrade
- Ongoing Bollard Fence

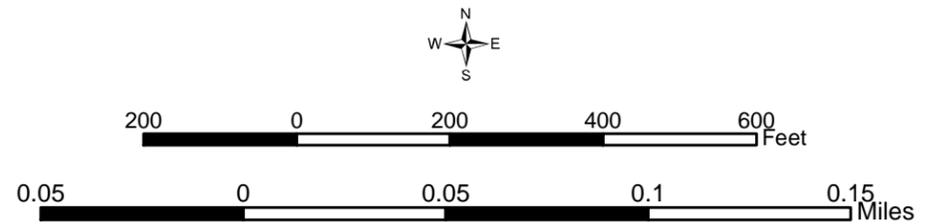


Figure 2-1k. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Douglas West

Sources: All Infrastructure was digitized by GSRC, 2003.

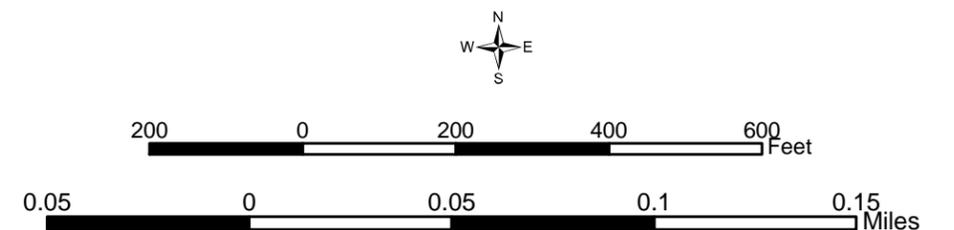


Figure 2-11. Existing, Ongoing, Remaining Infrastructure Projects under the No Action Alternative/Douglas

Sources: All Infrastructure was digitized by GSRC, 2003.

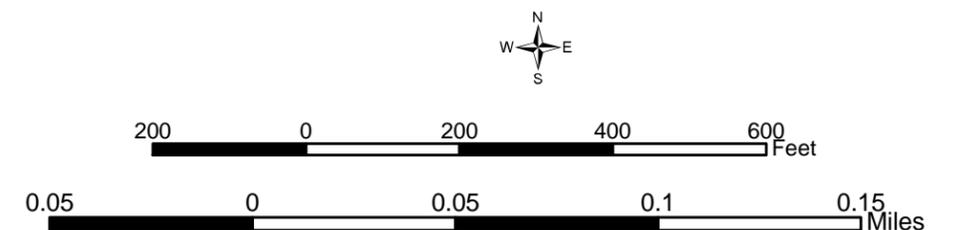
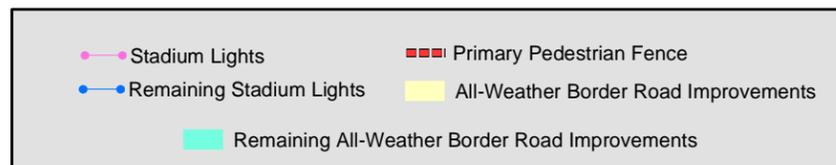
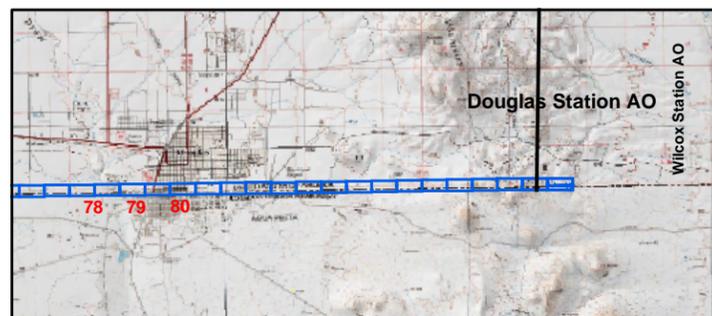
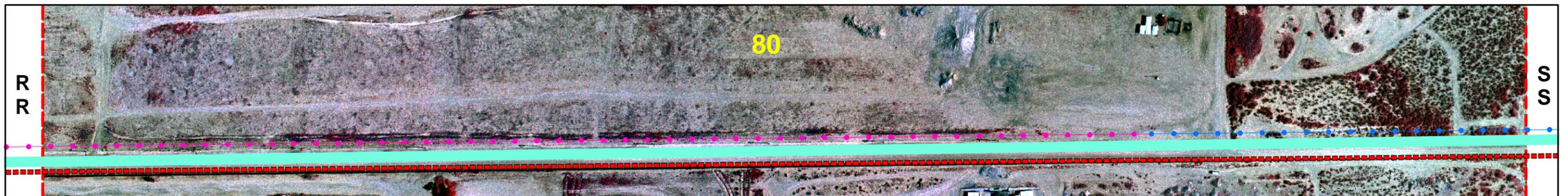
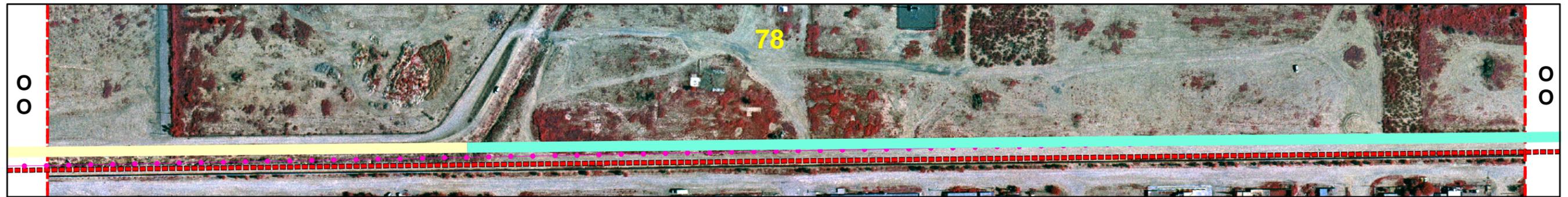


Figure 2-1m. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Douglas East

Sources: All Infrastructure was digitized by GSRC, 2003.

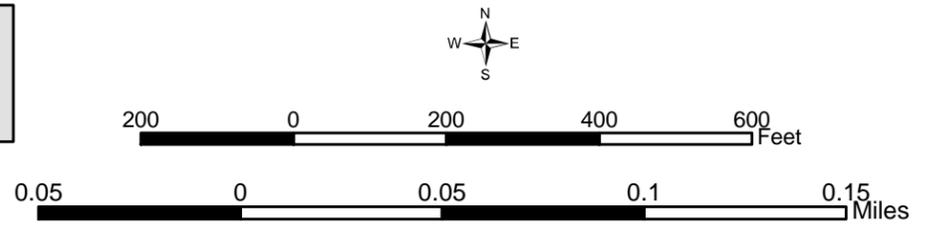
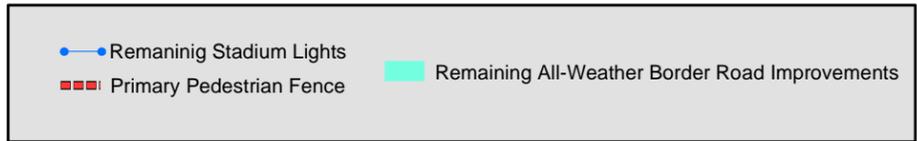
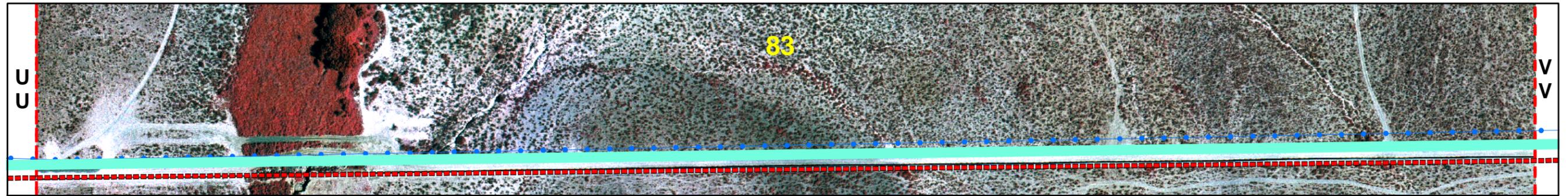
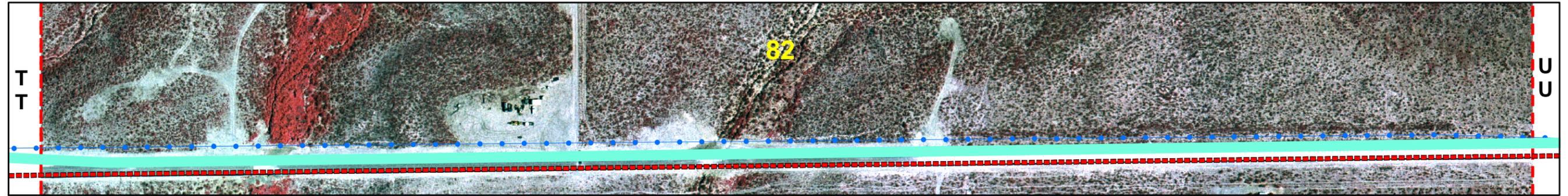
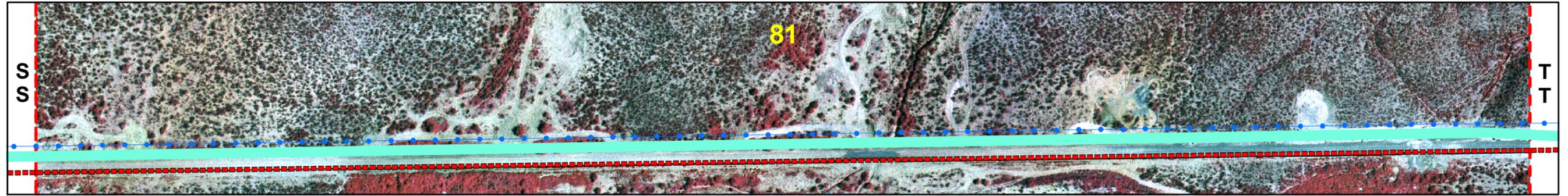
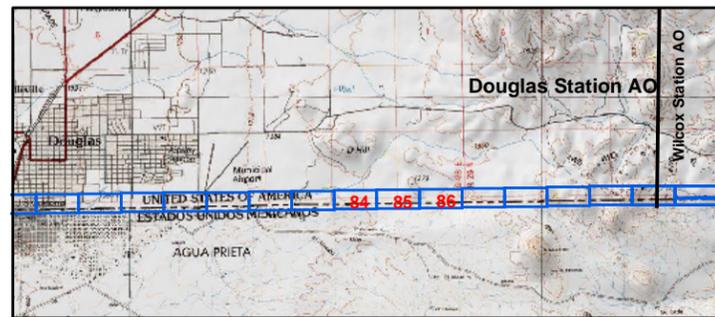
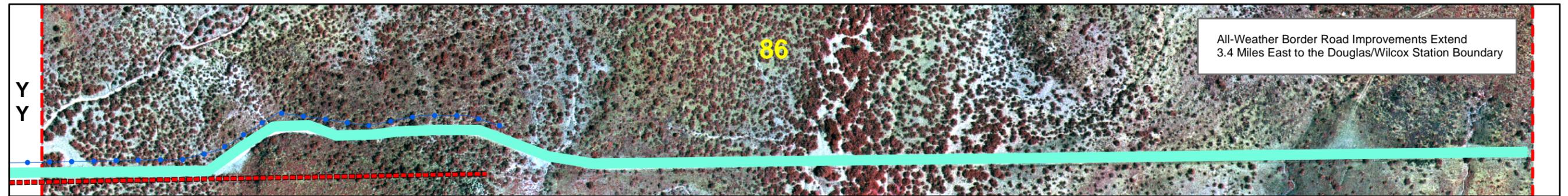
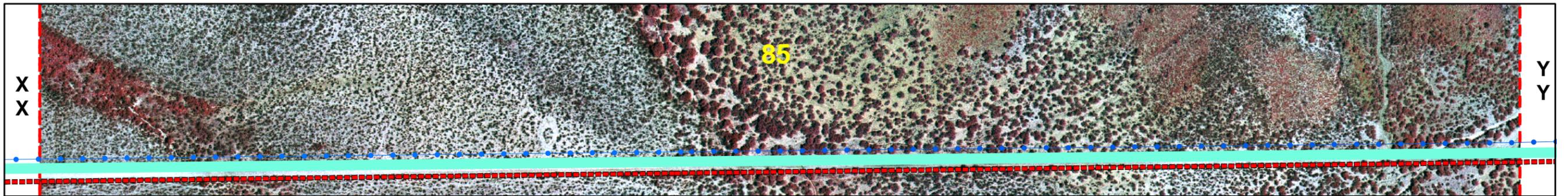
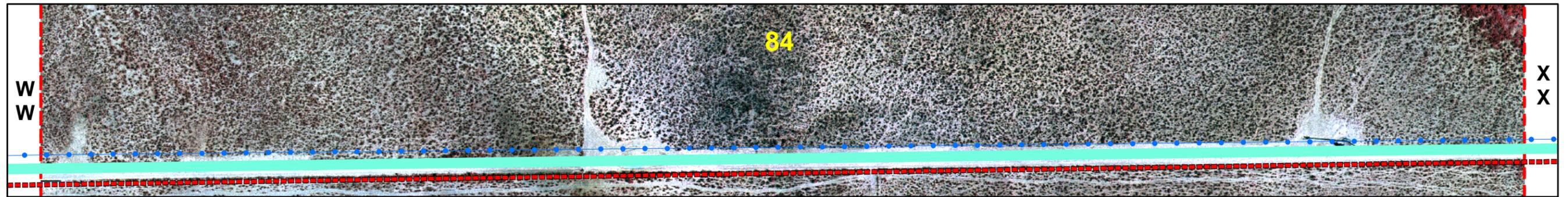


Figure 2-1n. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Douglas East

Sources: All Infrastructure was digitized by GSRC, 2003.



- - - Primary Pedestrian Fence
- Remaining Stadium Lights
- Remaining Primary Pedestrian Fence
- Remaining All-Weather Border Road Improvements

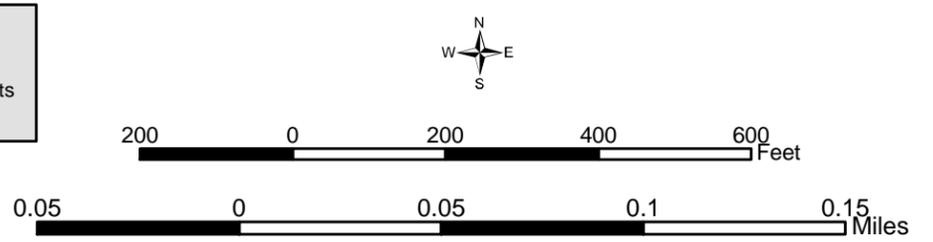


Figure 2-1o. Existing, Ongoing, and Remaining Infrastructure Projects under the No Action Alternative/Douglas East

Sources: All Infrastructure was digitized by GSRC, 2003.

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2.2 PREFERRED ALTERNATIVE

The Preferred Alternative includes only those infrastructure components that are considered essential to gain and maintain immediate control of the border. This alternative includes various types of infrastructure such as roads, fences, and lights at specified locations throughout the project corridor to develop an effective, safe, and defensible border control system. The Preferred Alternative would incorporate the completed and proposed infrastructure components to develop an enforcement system.

The USBP has acknowledged the importance of avoiding environmentally sensitive areas; therefore, infrastructure construction would not occur across the entire 57 miles of project corridor. Specifically, new infrastructure construction would not occur in the 8-mile portion from the eastern boundary of the Coronado National Memorial to the western limits of the Naco AO, within the Coronado National Forest.

The Naco and Douglas Stations have identified combinations of infrastructure that would provide different levels of control and specialized functions needed across the project corridor. A summary of the Preferred Alternative is provided in Figure 2-2. The alignments of the infrastructure proposed under this alternative are provided in Figure 2-2a through 2-2e. The combinations range from a minimal enforcement need that merely improves access, such as an all-weather roadway upgrade (Figure 2-3), to highly enforceable double fence systems, which incorporate all-weather patrols roads, drags roads, permanent lighting and all-weather maintenance roads (Figure 2-4). However, most of the areas without secondary fencing would incorporate primary fencing (Figure 2-5). In fact, the Preferred Alternative employs variations of two different concepts (areas with secondary fencing and areas without secondary fencing) to meet the specific level of enforcement required in an area.

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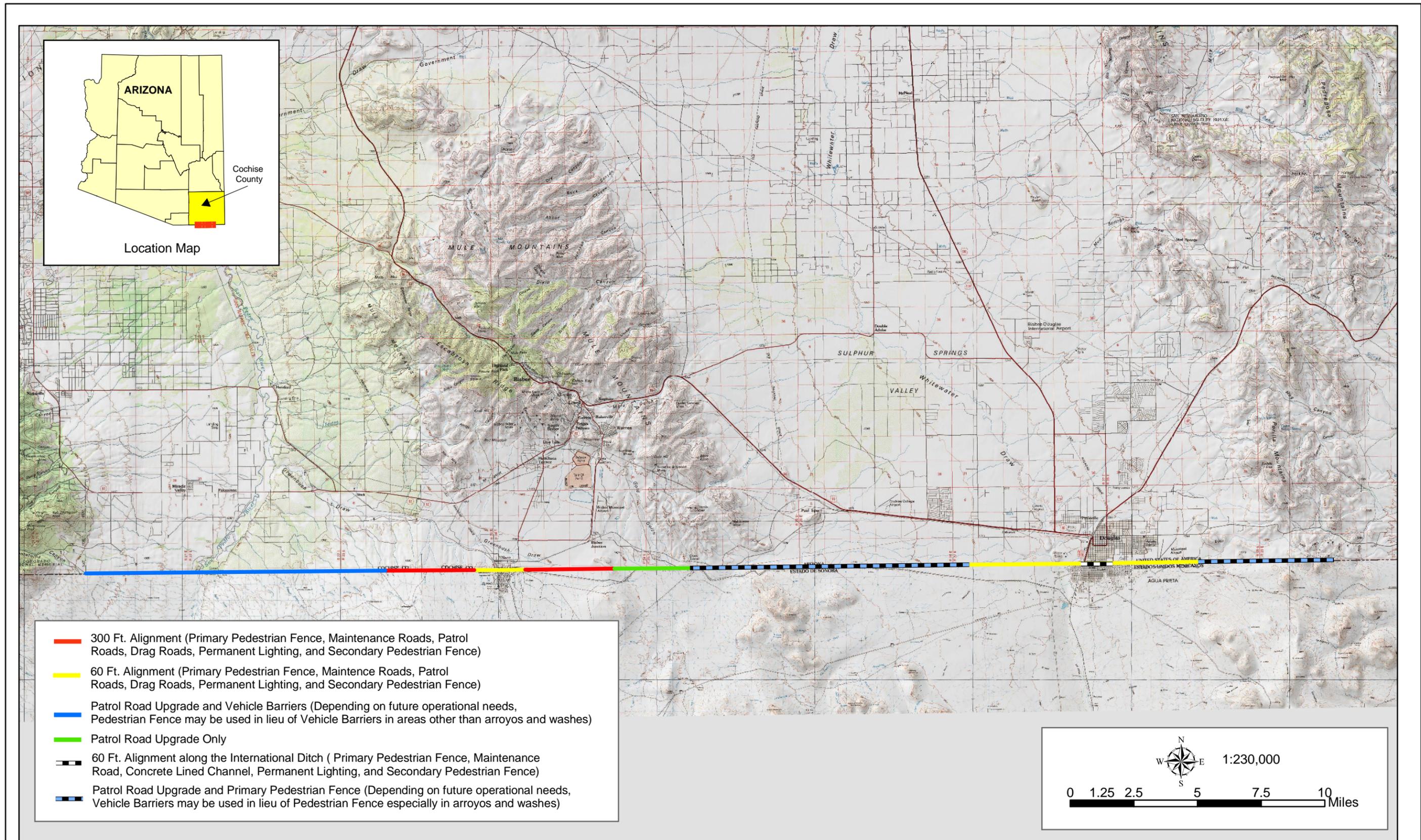


Figure 2-2: Summary - Preferred Alternative

Sources: USGS 1:100,000 Digital Raster Graphics
All other data from Gulf South Research Corporation



Date: April 2003

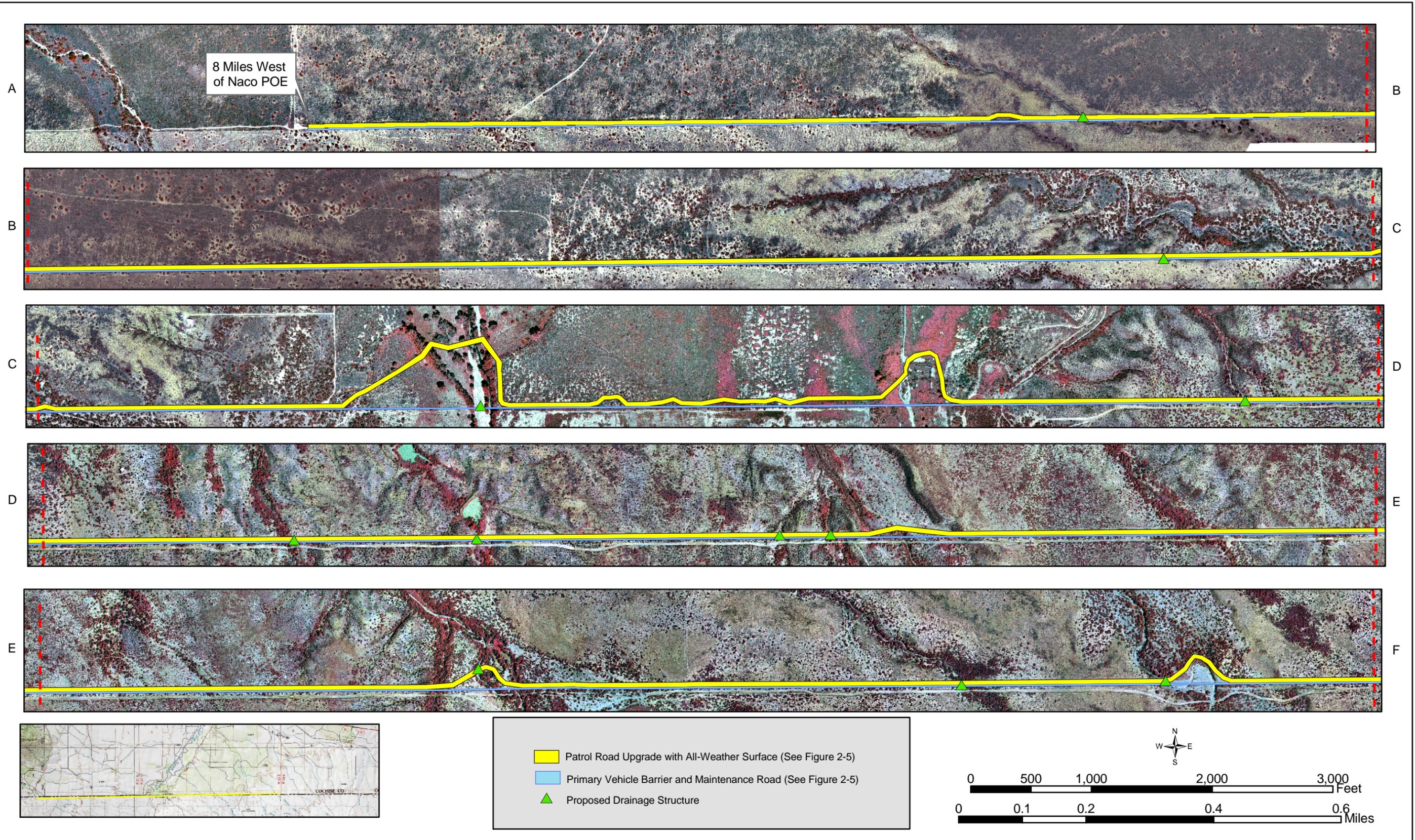


Figure 2-2a. Preferred Alternative

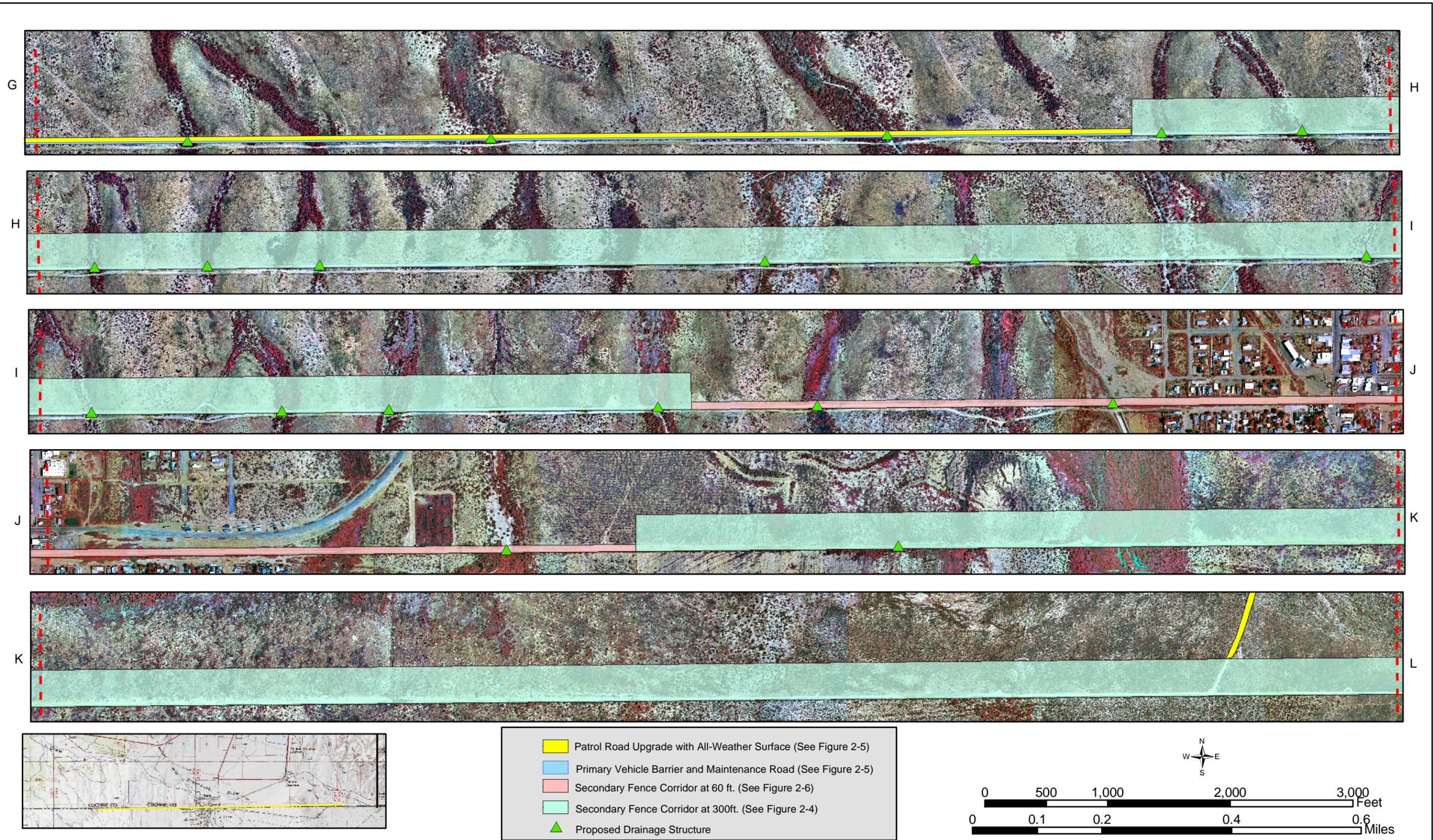


Figure 2-2b. Preferred Alternative

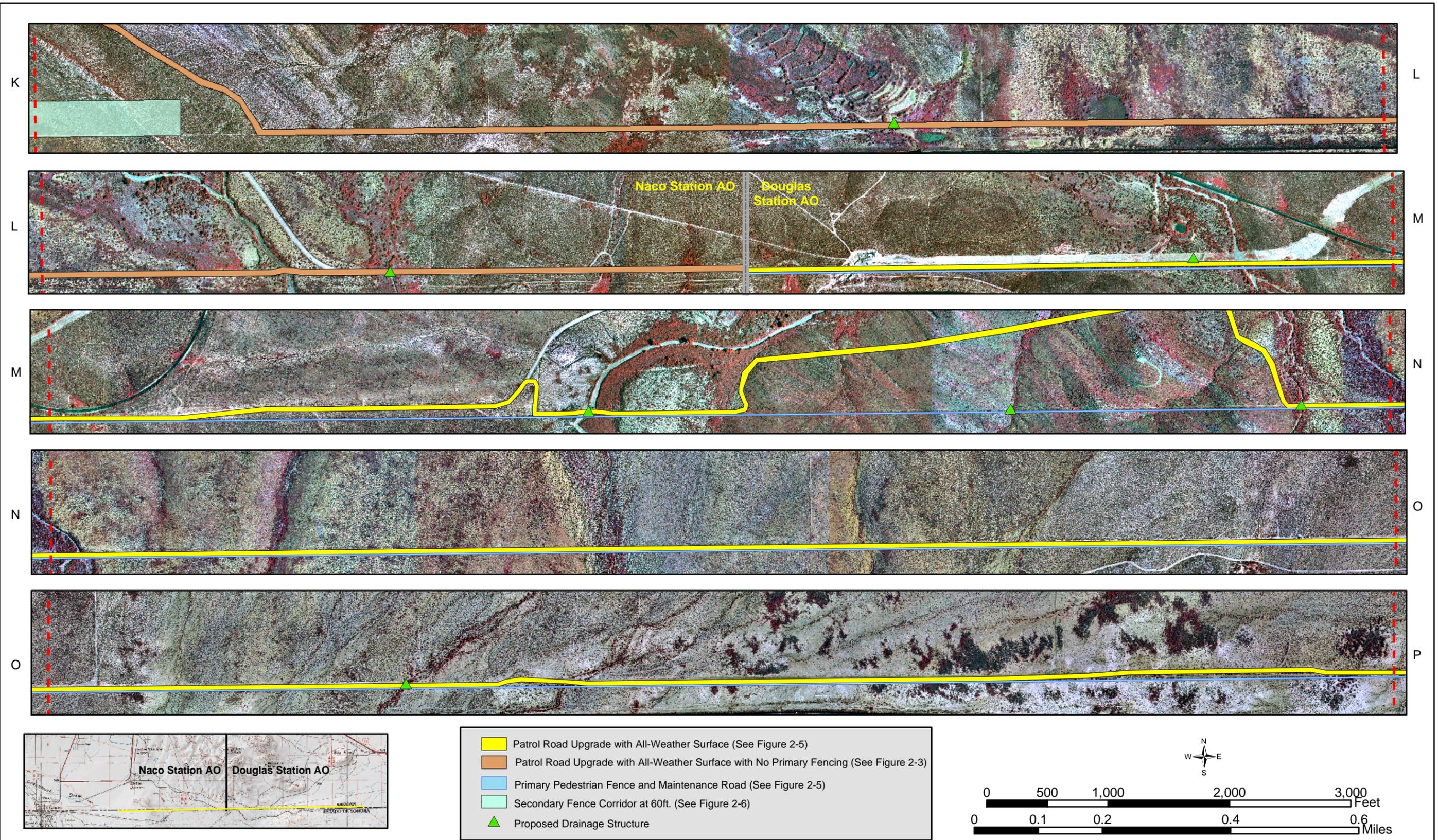


Figure 2-2c. Preferred Alternative

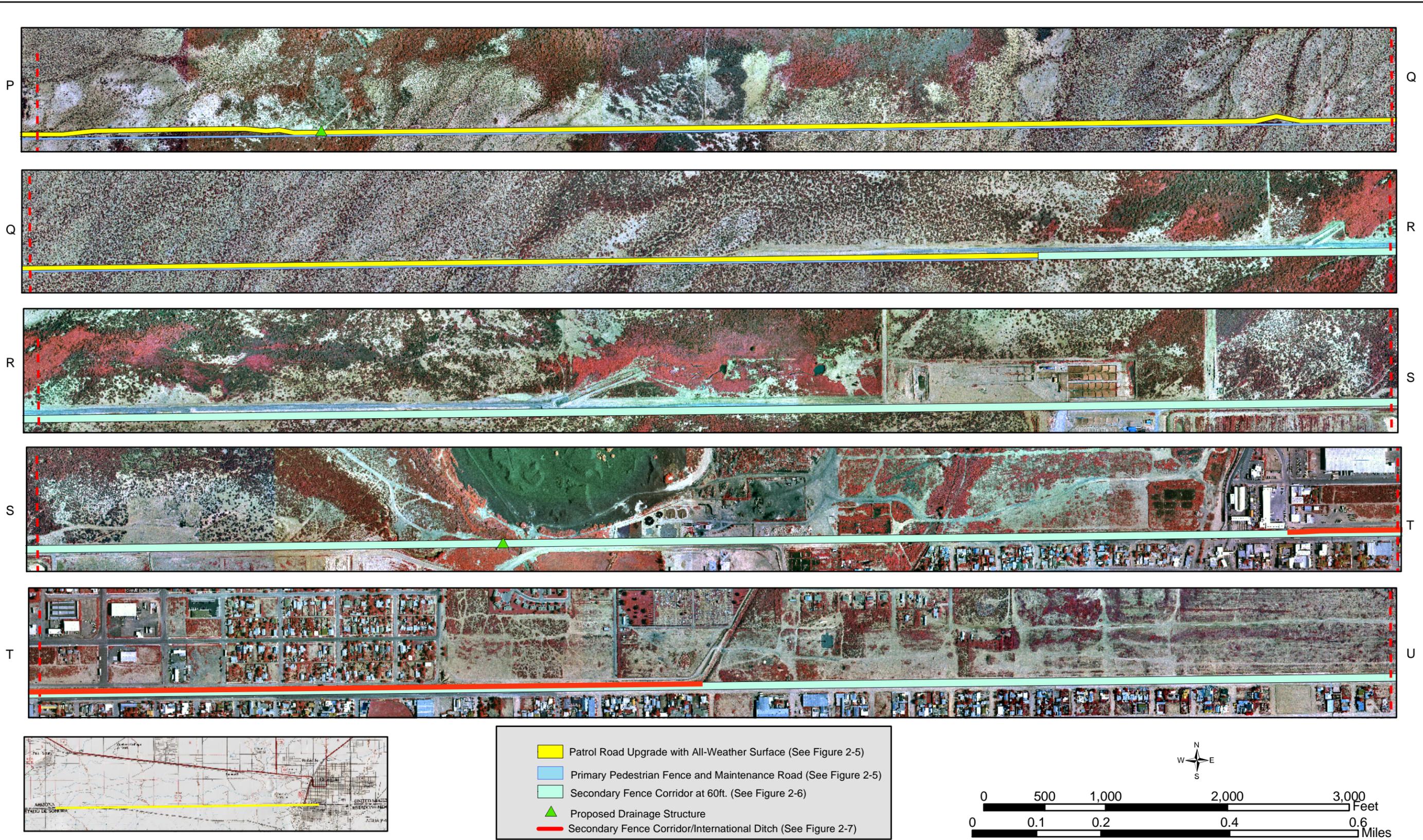


Figure 2-2d. Preferred Alternative

Sources: All Infrastructure was digitized by GSRC, 2003.

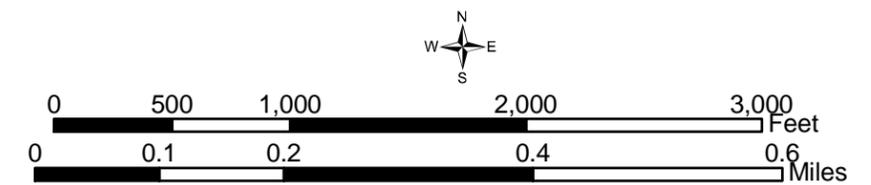
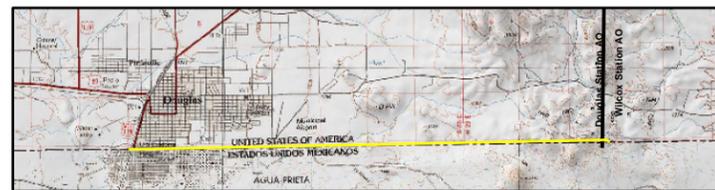
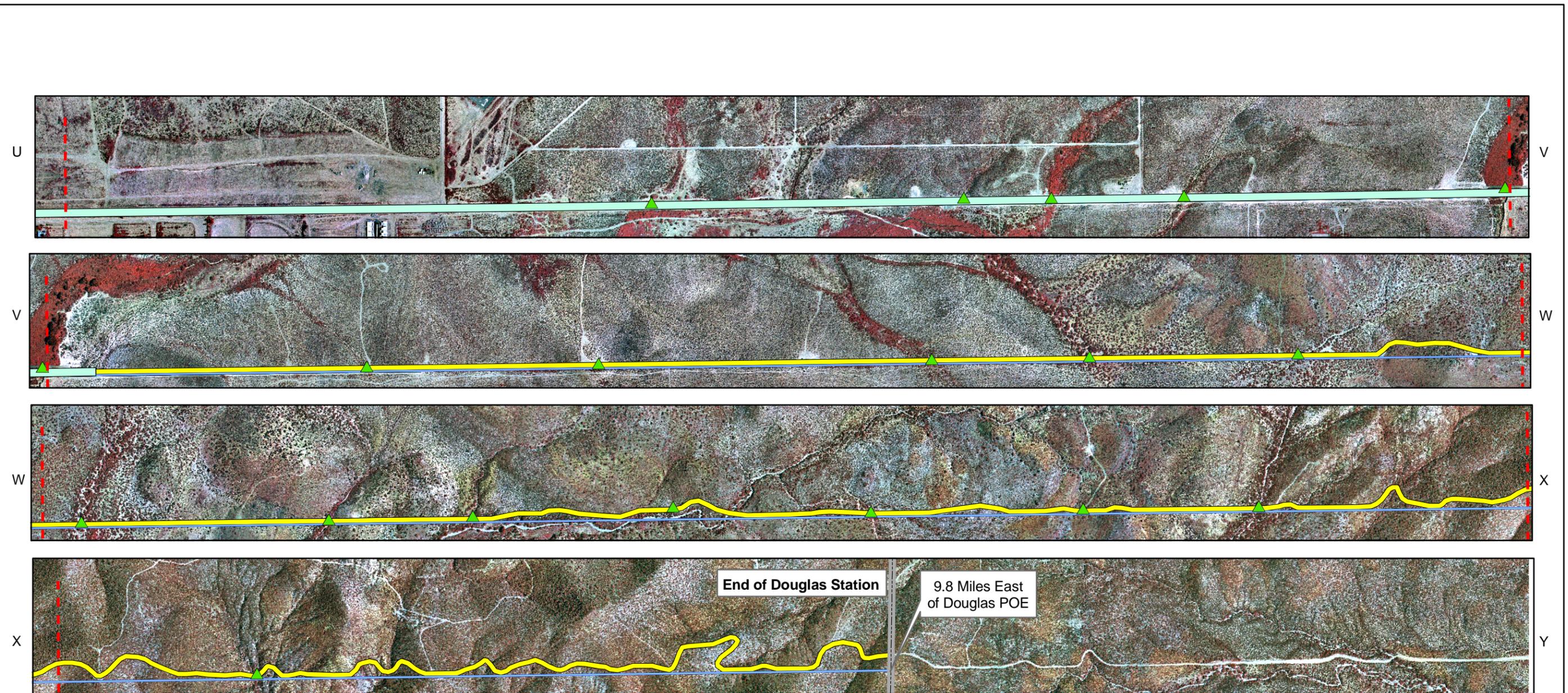


Figure 2-2e. Preferred Alternative

Sources: All Infrastructure was digitized by GSRC, 2003.

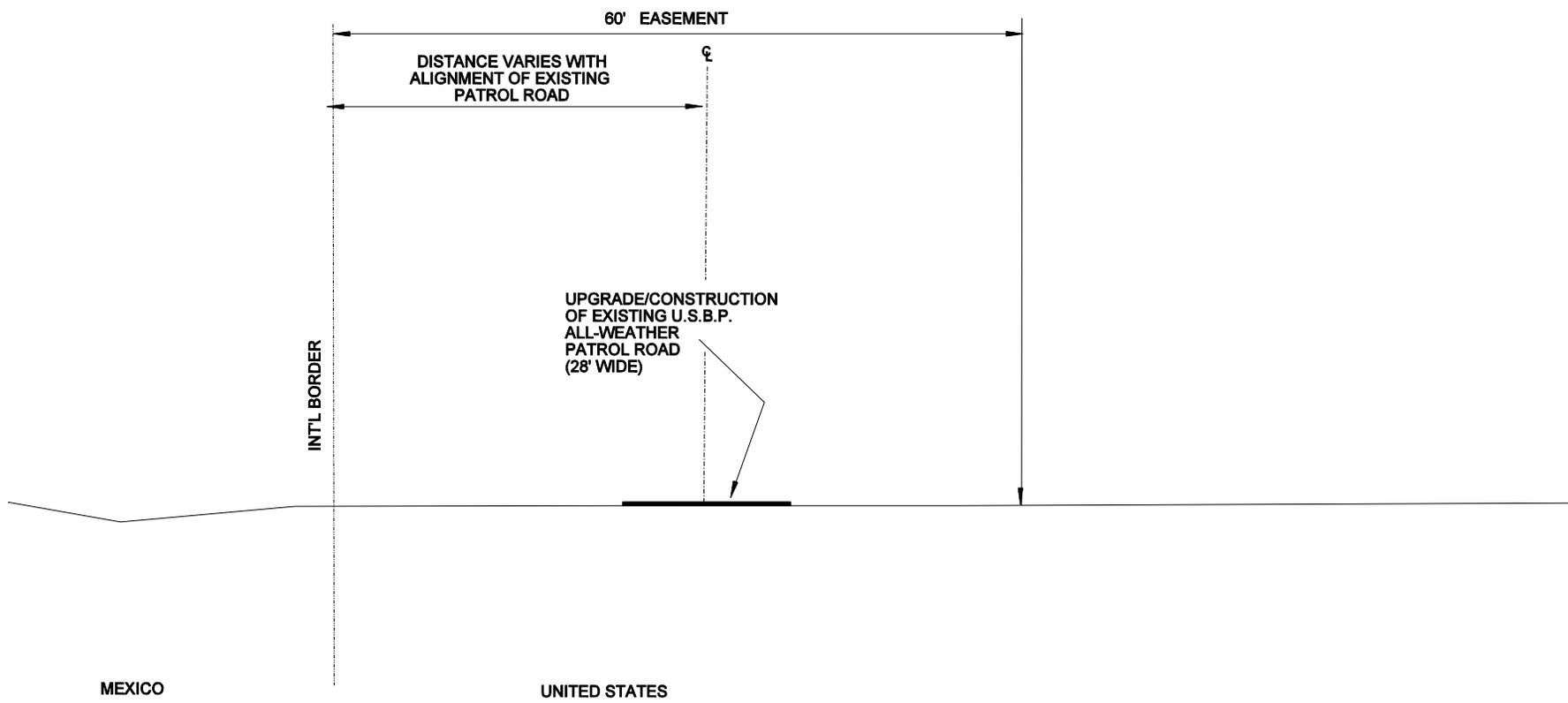


Figure 2-3: Schematic Cross Section of Infrastructure Components in Areas That Would Experience Roadway Upgrades Only

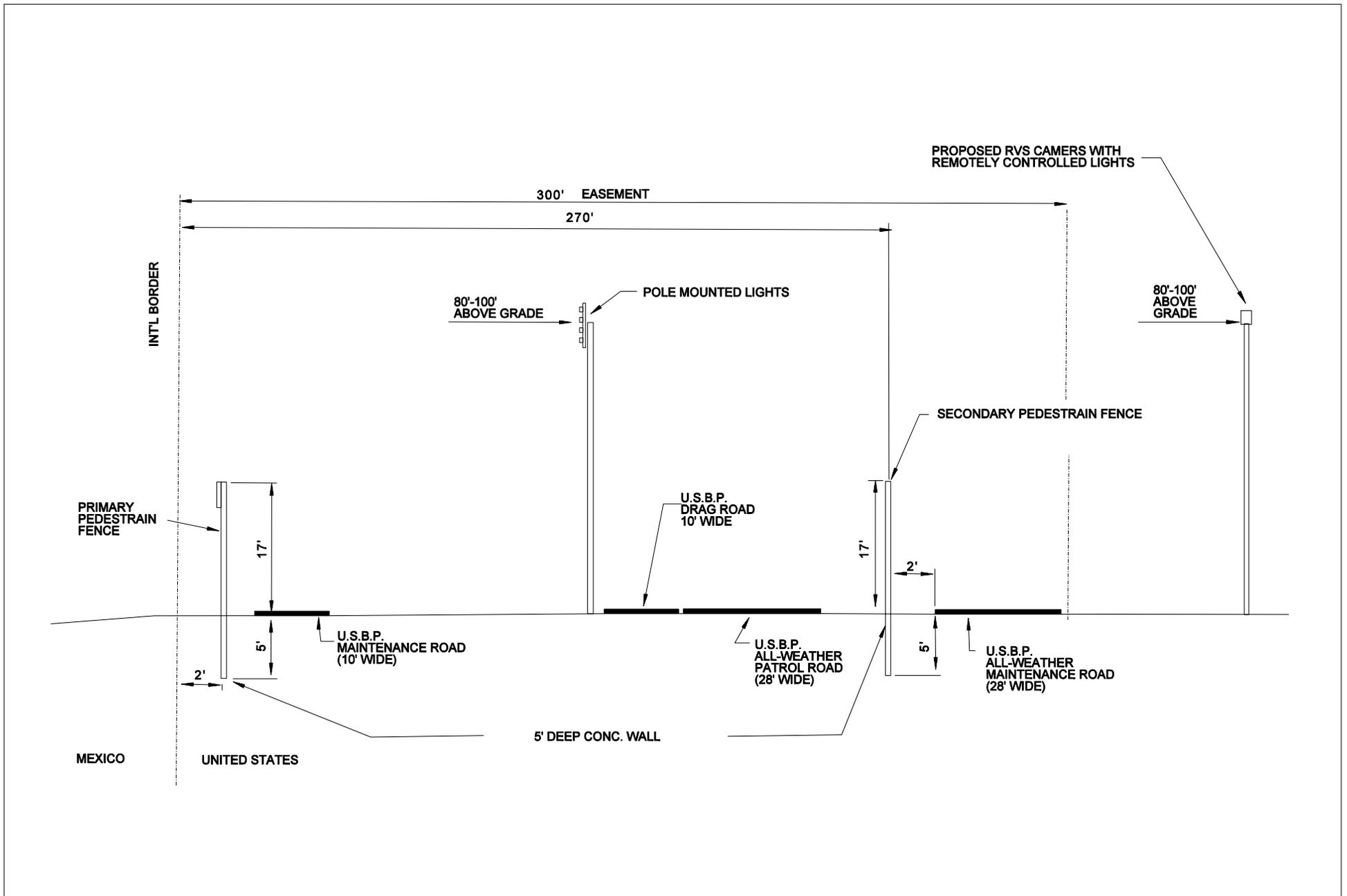


Figure 2-4: Typical Schematic Cross Section of Infrastructure Components
Where Secondary Fences Would Be Positioned 270 Feet North of the U.S.-Mexico Border

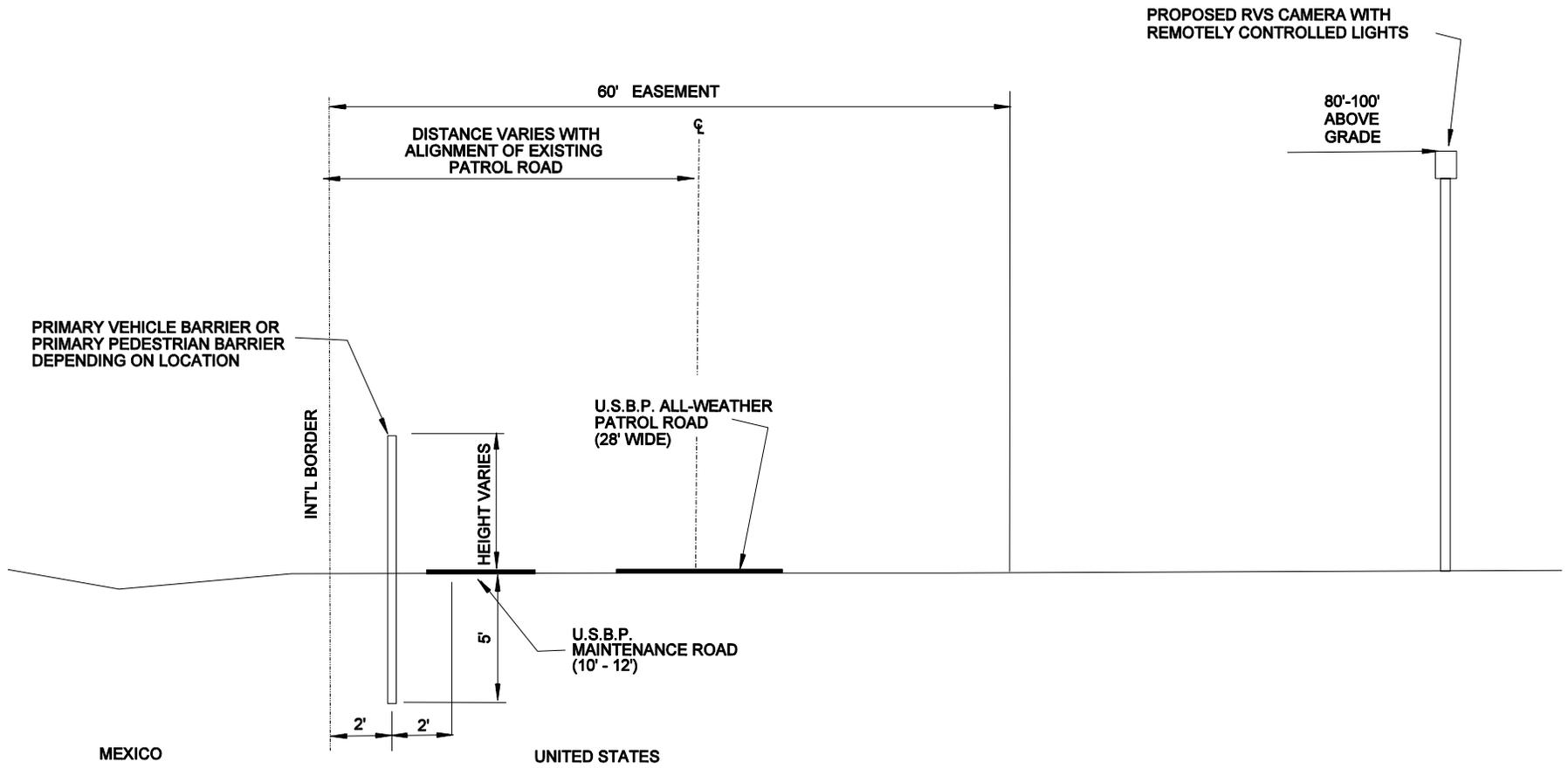


Figure 2-5: Schematic Cross Section of Infrastructure Components Where Secondary Fence Would Not Exist

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While the goal of the Preferred Alternative is to achieve a border control system through the employment of a combination of components, individual components would require site-specific construction across the entire project corridor. The following discussion provides a more detailed description of how individual infrastructure components would be positioned across the project corridor. Table 2-3 provides a brief summary of individual infrastructure components that would be required to accomplish this alternative.

Table 2-3. Summary of Construction Required for the Preferred Alternative

Infrastructure Component	New Construction Required		
	Naco AO	Douglas AO	Total
Primary and Secondary Fencing			
Primary Pedestrian Fence (miles)	8.4**	14**	22.4**
Secondary Pedestrian Fence (miles)	9	9	18
Primary Vehicle Barriers (miles)	8.2	0	8.2
Roadway Construction			
All-weather Primary Patrol Road (miles)	19.7	24	44.7
All-weather Maintenance Road (miles)	7	0	7
Primary Fence Maintenance Road	8.4	14	22.4
Drag Road (miles)	5	7.8	12.8
Drainage Structures			
(Low-water Crossings)	32	28	60
Lighting			
Permanent Lighting (miles)	7	6	13

** Installation of primary fencing would be analyzed for the need to install either pedestrian or vehicle barriers depending on operational needs assessed by the USBP.

2.2.1 Primary and Secondary Fences and Vehicle Barriers

Approximately 18.4 miles of primary pedestrian fencing have previously been addressed or implemented in past NEPA documents, including the 2000 Corridor EA. Under the Preferred Alternative, an additional 22.4 miles of primary pedestrian fencing would be positioned in the rural areas of the Naco and Douglas Stations AOs. In the Naco AO, approximately 6.2 miles would extend westward from about 2 miles west of the Naco POE. An additional 2.2 miles would then be installed, starting 2.3 miles east of the Naco POE and extending east. In the Douglas AO, primary fence construction would begin at the western station boundary near Crook Tunnel and extend westward about 10.5 miles, to the west side of Whitewater Draw. Approximately 3.5 miles of additional primary fence would be installed, starting 4.5 miles east of the POE.

As indicated above, the USBP Douglas Station is currently proposing primary fencing along 14 miles of the international border. However, the USBP believes that some of

this area can be controlled using vehicle barriers rather than fencing. Vehicle barriers would be installed to the maximum extent practicable in lieu of pedestrian fences. It is presently envisioned that vehicle barriers would be particularly useful within arroyos so that flow conveyance and transboundary wildlife migration would not be impeded, as discussed later in Chapter 4. However, the final determination on the extent, location, and need to install either vehicle barriers or pedestrian fencing would be made by the USBP based on operational needs and future intelligence.

The Preferred Alternative also proposes vehicle barriers within the Naco Station AO beginning at the eastern boundary of the Coronado National Memorial and extending eastward for 8.2 miles to the western limit of the proposed pedestrian fence (see Figure 2-5). The vehicle barriers would traverse the riparian areas along the San Pedro River. With the exception of arroyos and riparian areas, the USBP also believes future operational requirements may warrant that portions of this area would require pedestrian fencing instead of vehicle barriers. Again, the final determination would be made by the USBP based on future operational needs and intelligence.

Approximately 18 miles of secondary pedestrian fence are proposed for construction in the urban and surrounding areas of the Town of Naco and the City of Douglas and surrounding areas. Construction alignments for the first 2 miles of secondary fence in the Naco AO would be 60 feet from the primary fence and would extend 1 mile on either side of the Naco POE as depicted in Figure 2-6. This width is necessary to avoid displacement of businesses, residences and other facilities that have been built near the POE. The fence alignment would then be readjusted to 270 feet north of the primary fence and extend 3.5 miles on each side to further enhance enforcement capabilities (see Figure 2-3). The total length of the secondary fence in the Naco AO would therefore be 9 miles.

In the Douglas AO, the secondary fencing would be positioned 60 feet north of the primary fence and extend 4 miles west and 5 miles east from the Douglas POE (Figure 2-2d and Figure 2-2e). Also in the City of Douglas, a specialized design would be positioned immediately east of the Douglas POE. This design would encompass the international ditch, incorporating infrastructure components such as that depicted in Figure 2-7.

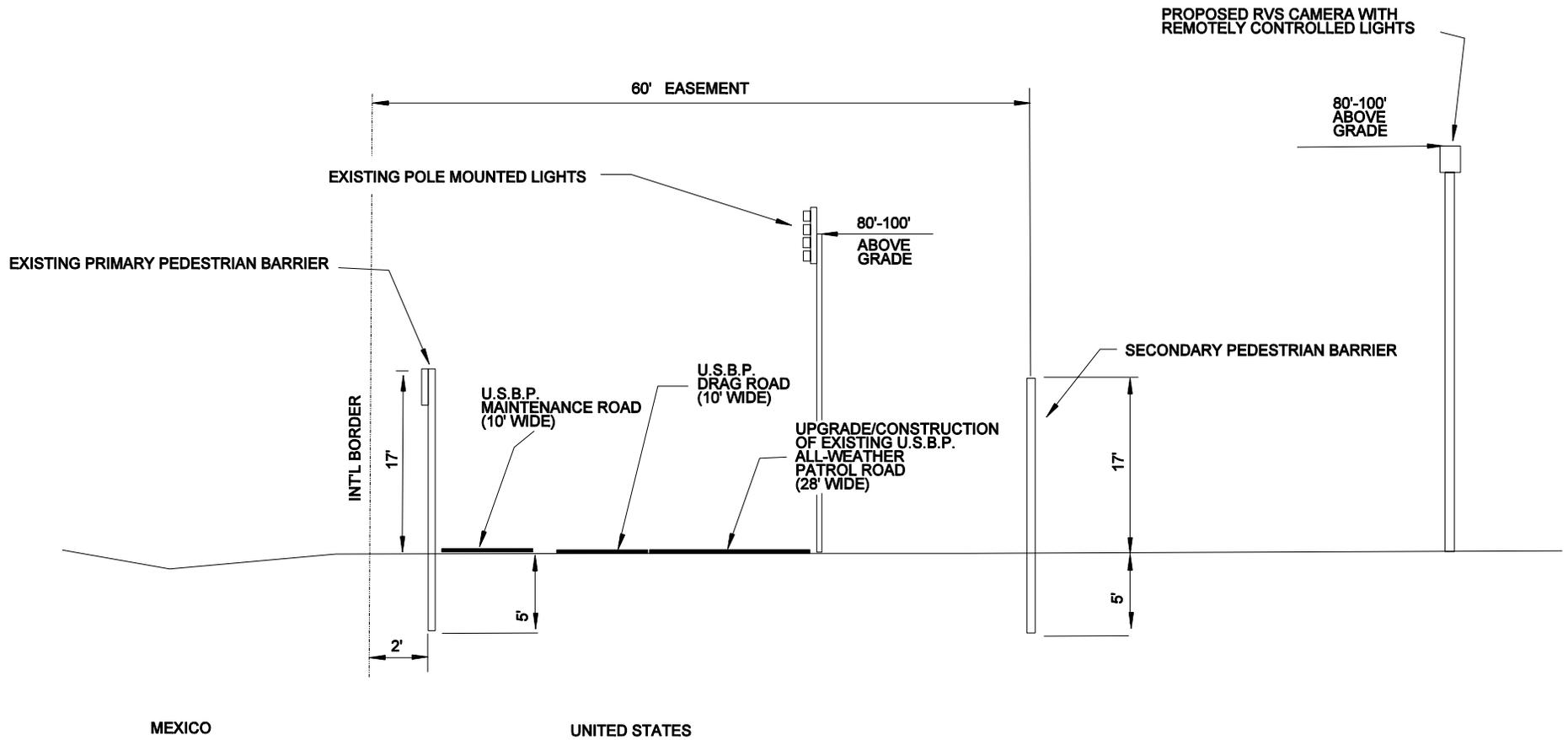


Figure 2-6: Schematic Cross Section of Infrastructure Components Where Secondary Fences would be Positioned 60 Feet North of the U.S./ Mexico Border

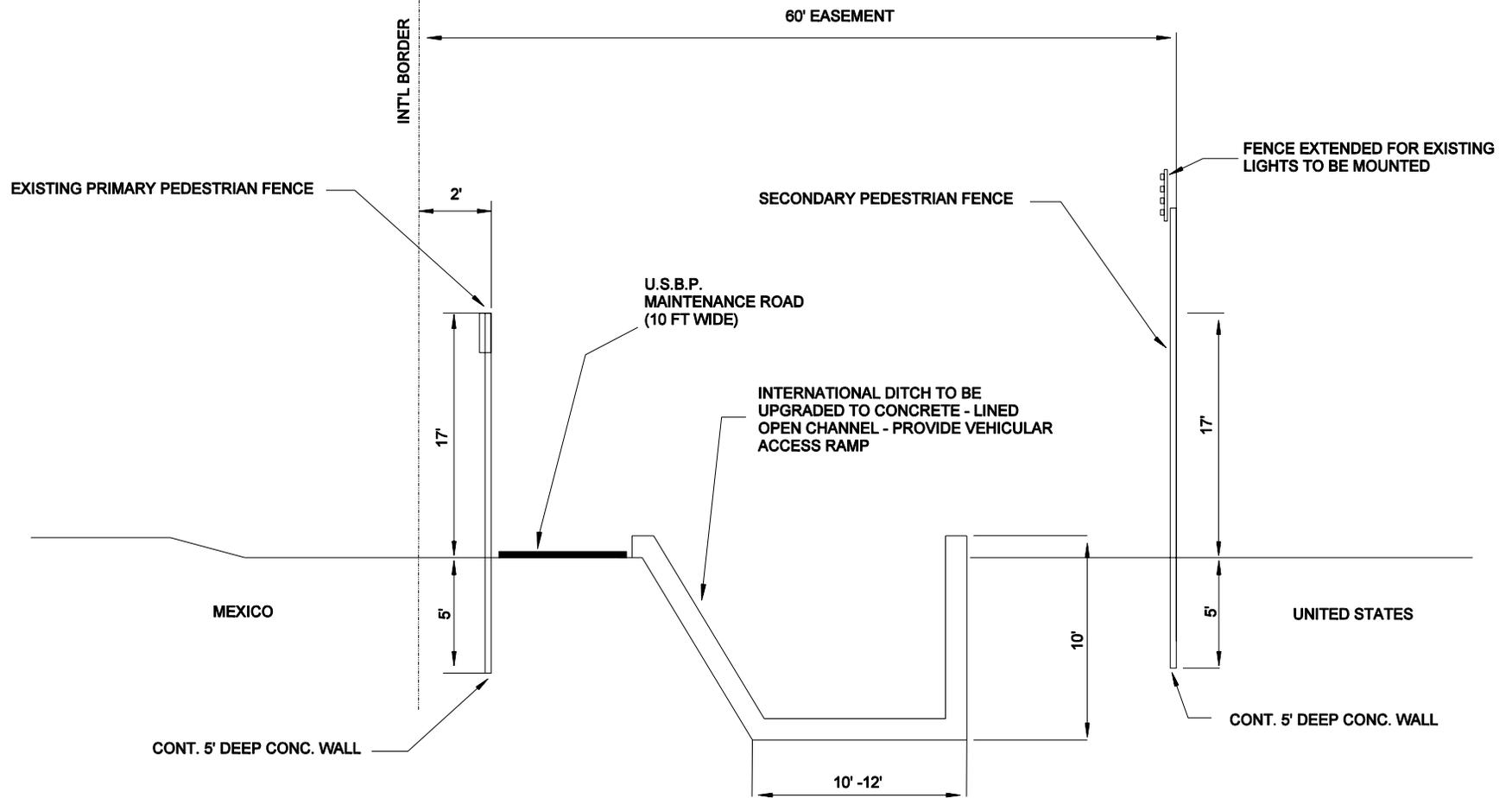


Figure 2-7: Typical Schematic Cross Section of Infrastructure Along the International Ditch in the City of Douglas

gsr/c GULF SOUTH RESEARCH CORPORATION

SCALE: not to scale

DATE: May 2003

Within the reaches proposed for secondary fence installation, patrol, drag, and maintenance roads would also be constructed. This additional infrastructure would essentially encompass the entire corridor width at all locations where the secondary fence is proposed. These various roads are described in more detail in the following subsections.

2.2.1.1 Roadways

The majority of roadway work would consist of all-weather surface upgrades to portions of the existing patrol roads along the rural areas of the project corridor. New roadway construction would be required in certain areas due to the need to align roadways with proposed secondary fencing positioned at 270 feet. In these areas, roadway construction would consist of a new all-weather surface patrol road with adjacent drag road, a primary pedestrian fence maintenance road (only required where new fence construction would exist), and a secondary fence all-weather maintenance road.

All-weather road construction and upgrade projects have been addressed for approximately 4 miles in the Naco AO. Under the Preferred Alternative, road construction within the secondary fence alignments within the Naco AO would be required for 5 miles. All-weather surface upgrades to existing patrol roads would be provided for the remaining 14.7 miles in the Naco AO and the entire Douglas AO (approximately 24 miles). These improvements would start 2 miles west of the Naco POE and extend approximately 11.7 miles west to the Coronado National Memorial. The remaining 3 miles would start 2 miles east of the Naco POE and extend to the eastern limit of the Naco AO.

Under the Preferred Alternative, no new patrol road construction would be required in the Douglas AO. The existing patrol road would be upgraded to an all-weather surface and experience some widening and leveling to reduce curves and slope reducing risks to USBP agents' health and safety, erosion problems, and maintenance costs. The existing road would be widened from 24 feet to 38 feet, which would include 2 to 4-foot shoulders on either side of the road. These improvements would be required on 25 miles of existing border roads. In addition, low-water crossings would be installed, as needed, in drainage areas. Low-water crossings would be constructed using concrete, culverts, asphalt, rock gabions, or a combination of these materials.

Past drag road activities were not considered as a specific infrastructure component; rather, the USBP agents dragged the sides of existing patrol roads to provide detection opportunities. The Preferred Alternative would incorporate 16.8 miles of drag roads in combination with patrol roads within areas where secondary fencing is proposed. Current drag roads along the shoulder of the existing patrol road would also be maintained.

Installation of additional primary fences and vehicle barriers would require about 22.4 miles of maintenance road to be constructed. These construction/maintenance roads would require little, if any, cut and fill activities. It is envisioned that these roads would be simply graded to remove vegetation and to provide a relatively smooth surface that would allow construction equipment (e.g., drilling rigs, welding trucks, cranes, fork lifts, cement trucks, etc.) to access the primary fence for construction and maintenance activities. These roads would be expected to be no more than 10 feet wide.

Typical of most road construction within southwest Arizona, earthwork would be required. The majority required by the Preferred Alternative would be conducted to the slope of new roads. In addition, roadway upgrades would only require some widening and leveling. Due to the topography of the project corridor, sections of the roadway may be elevated to as much as 20% vertical gradient (slope) in order to limit environmental impacts. Material requirements extrapolated from preliminary engineering designs suggest the total balance in cubic yards (CY) of cut (824,565 CY) and fill (948,689 CY) is estimated to result in a need of approximately 124,124 CY of fill material. However, actual amounts of needed material would be greatly reduced since the portions of the project corridor that would only require all-weather upgrades would only entail widening and leveling of the existing roadway. Therefore, the potential to reduce or eliminate the actual fill requirements is likely.

2.2.2 Permanent Lighting

Under the Preferred Alternative, permanent lighting would only be installed in areas where secondary fencing is constructed. As indicated under the No Action Alternative, 2 miles of permanent lighting have been previously addressed or installed in Naco and 3 miles in Douglas. Therefore, only 13 miles of new lighting would be required to illuminate the remaining areas between the proposed secondary and primary fences. In

the Naco AO, lighting installation would start 1 mile on each side of the POE and extend 3.5 miles further, east and west of the POE. In the Douglas AO, approximately 3 miles of permanent lighting would be required west of the POE and 3 miles east.

2.2.3 Drainage Structures

Numerous low-water crossings and other drainage structures have been completed or addressed throughout the border region in the Naco and Douglas AOs. The Preferred Alternative would include 60 additional potential low-water crossings and drainage structures at various locations along the project corridor. These structures are constructed within the footprint of the patrol roads and provide year-round access for USBP vehicles. More importantly, the structures reduce or eliminate erosion within stream channels, thus, reducing road and vehicle maintenance costs and sedimentation problems.

Implementation of the Preferred Alternative would ensure a greater presence along the rural areas of the border while minimizing environmental effects. Additionally, continuous access and control along the border would enhance response time of agents for apprehension and search and rescue operations, as well as serve to deter illegal crossings.

2.3 FULL BUILD OUT ALTERNATIVE

The Full Build Out Alternative includes an infrastructure system that is needed to ensure absolute control of illegal access across the U.S.-Mexico border. The infrastructure components in this alternative are similar to those identified in the Preferred Alternative. However, there are significant differences in the alignment of roadways, overall width of the project corridor, and the combination of infrastructure and overall extent of control across the project corridor.

Full Build Out Alternative vs. Preferred Alternative

- Secondary fences aligned 270 feet north of the U.S.-Mexico border increase from 7 miles to approximately 49 miles; All-weather maintenance roads increased accordingly 7 miles to 45.8 miles.
- Secondary fences aligned 60 feet north of the U.S.-Mexico border reduced to 2.2 miles rather than 11 miles.
- New all-weather surface primary patrol roads increased to 43.8 miles rather than 5 miles.
- Requires new construction of patrol roads rather than upgrades to existing patrol road alignments.
- Does not incorporate installation of primary vehicle barriers.
- New permanent lighting installation increased to 31 miles rather than 13 miles.

The component groups proposed under the Full Build Out Alternative encompass a combination of roads, fences, and lights throughout the project corridor to develop a highly enforceable and defensible corridor along the U.S.-Mexico border. Nevertheless, the USBP maintains the importance of avoiding environmentally sensitive areas. Specifically, infrastructure construction would not occur from the eastern boundary of the Coronado National Memorial to the western limits of the Naco AO, within the Coronado National Forest. Therefore, as with the Preferred Alternative, construction of infrastructure would only occur across 49 miles of the project corridor.

The Full Build Out Alternative would involve the combination of primary and secondary fencing, permanent lighting, and upgrade various roadways across 49 miles of the project corridor. A map detailing the specific alignment of combinations of infrastructure components across the entire project corridor is provided in Figures 2-8a through 2-8e.

2.3.1 Infrastructure Components

Many infrastructure component projects exist (either completed or ongoing) within the alignments of the project corridor that have previously been addressed by the Corridor EA and other NEPA documents. Therefore, actual construction required to accomplish this alternative would be somewhat reduced. Table 2-4 provides a summary of new construction required to accomplish this alternative. The following discussion provides a more detailed description of how the individual components would be positioned across the project corridor for the Full Build Out Alternative.

Table 2-4. Summary of New Construction Requirements for the Full Build Out Alternative

Infrastructure Component	New Construction Required
<u>Primary and secondary Fencing</u>	<u>Miles</u>
• Primary Pedestrian Fence	30.6
• Secondary Pedestrian Fence	49
<u>Roadway Construction</u>	<u>Miles</u>
• All-weather Primary Patrol Road	43.8
• All-weather Maintenance Road	45.8
• Drag Road	43.8
<u>Drainage Structures</u>	<u>Each</u>
• Low-water Crossings	60
<u>Lighting</u>	<u>Miles</u>
• Permanent lighting	31

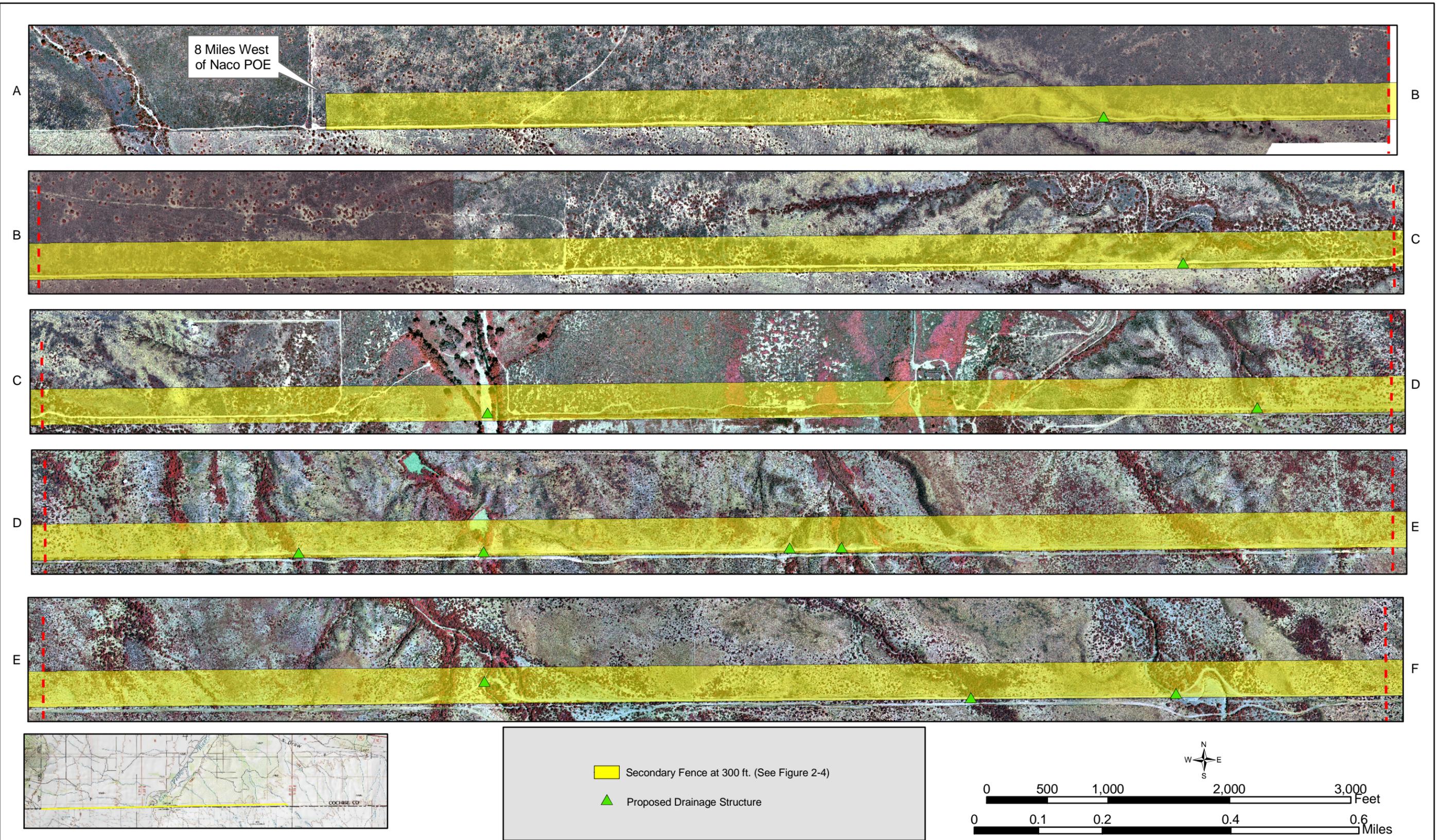


Figure 2-8a. Full Build Out Alternative

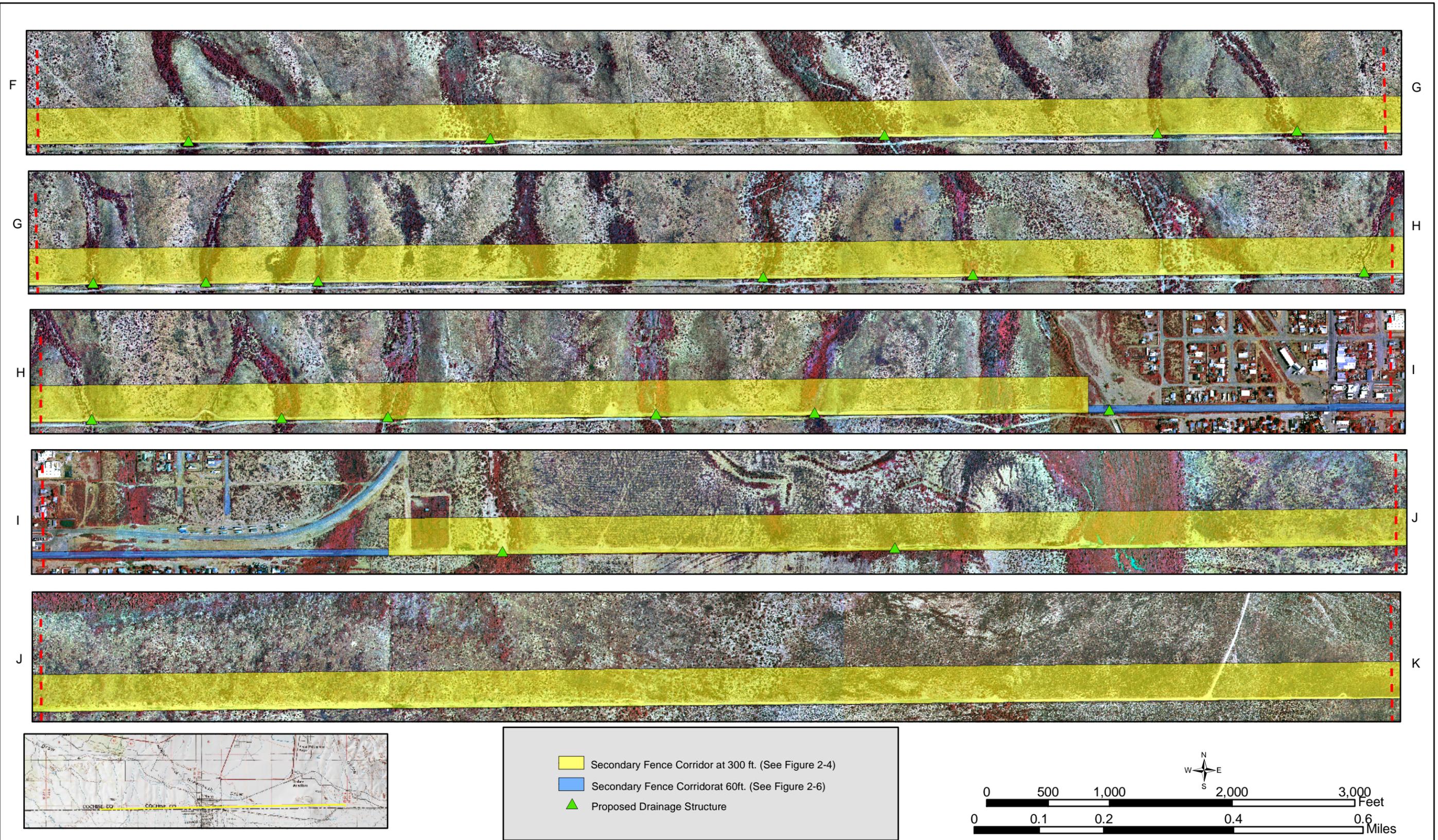


Figure 2-8b. Full Build Out Alternative

Sources: All Infrastructure was digitized by GSRC, 2003.

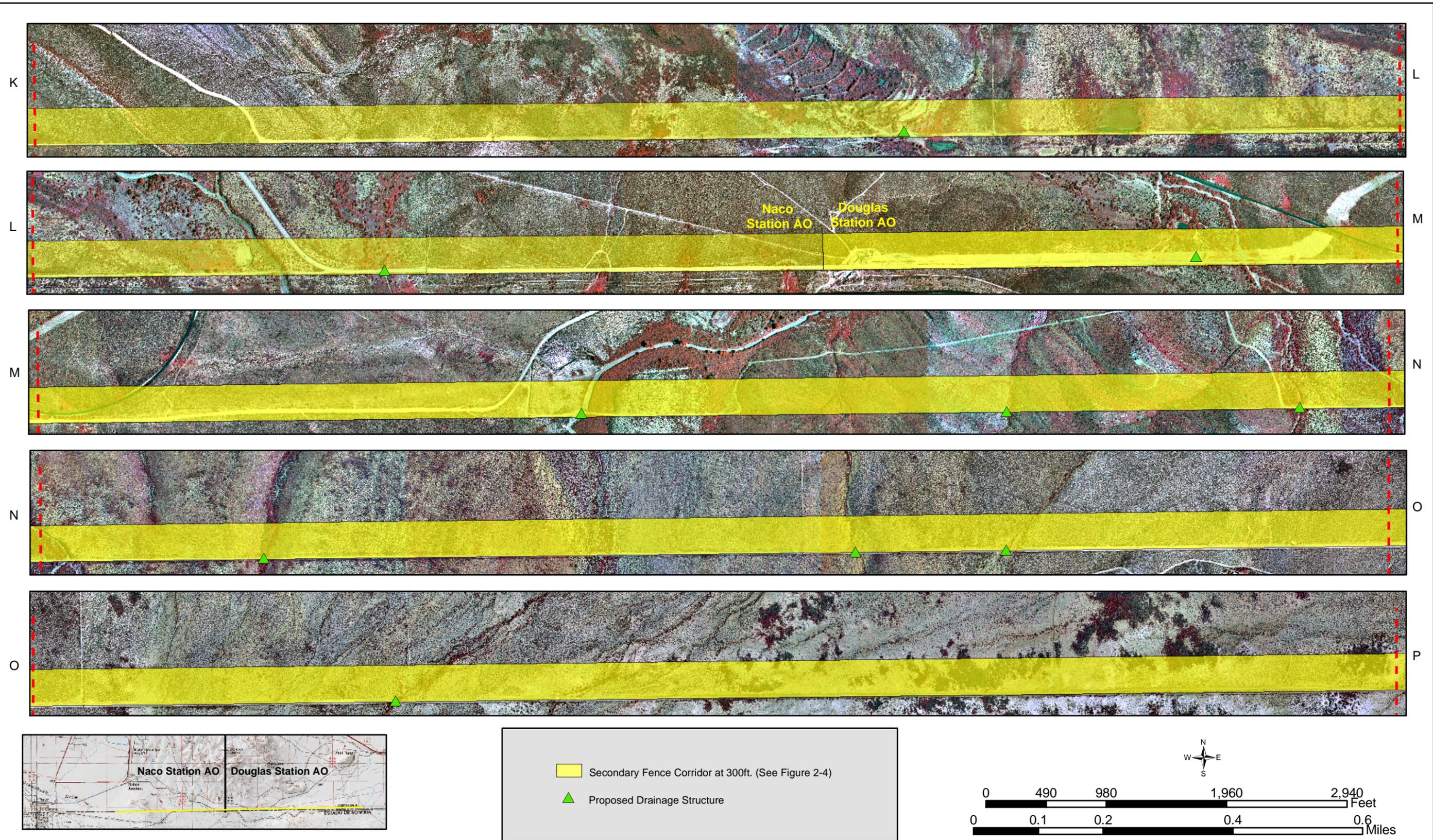


Figure 2-8c. Full Build Out Alternative

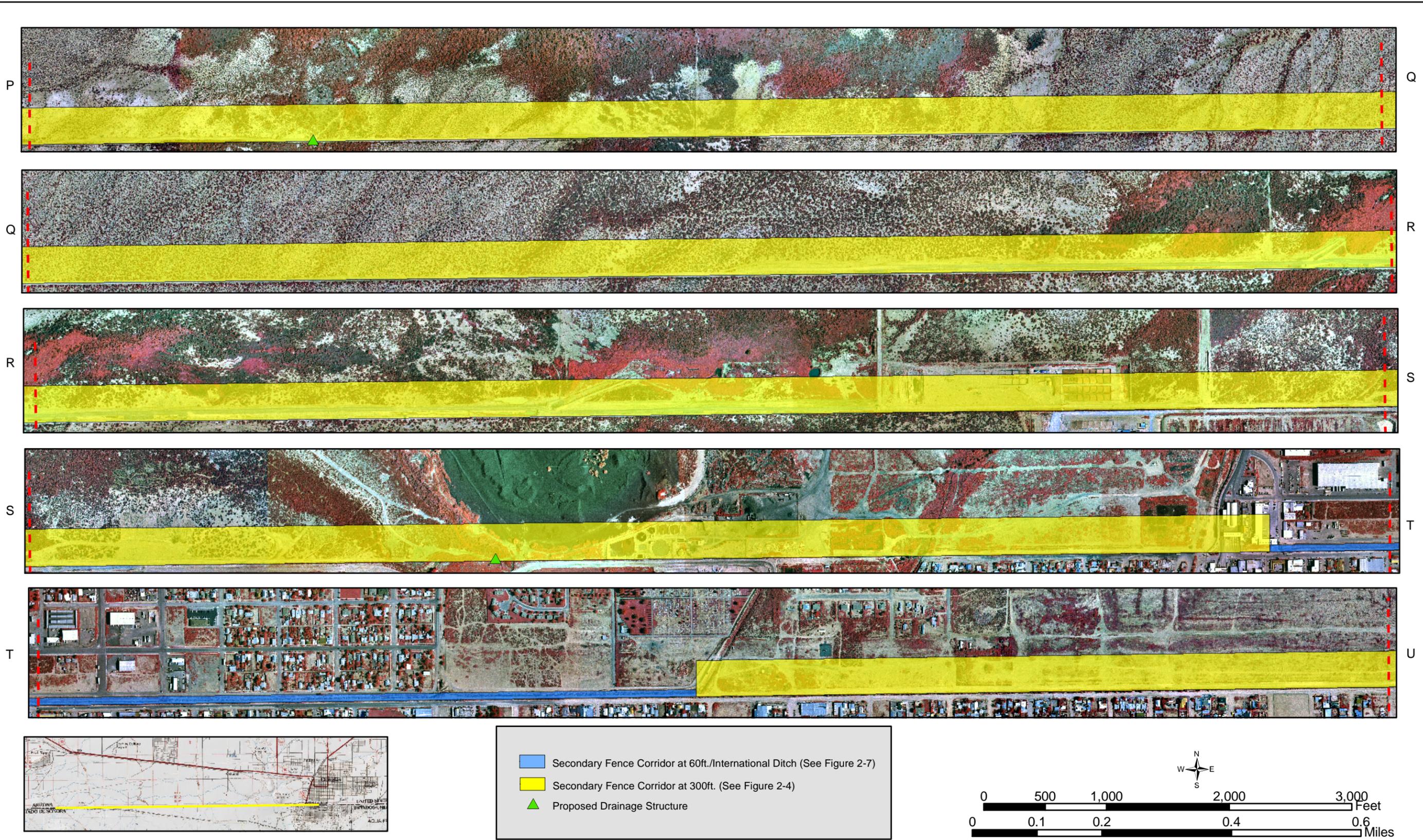


Figure 2-8d. Full Build Out Alternative

Sources: All Infrastructure was digitized by GSRC, 2003.

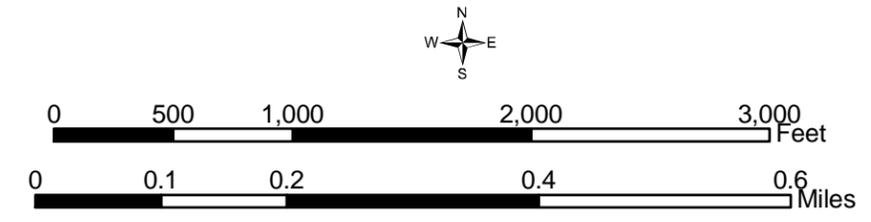
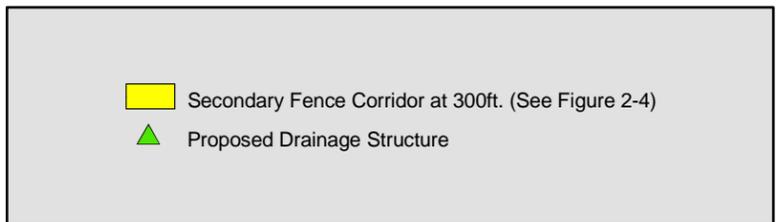
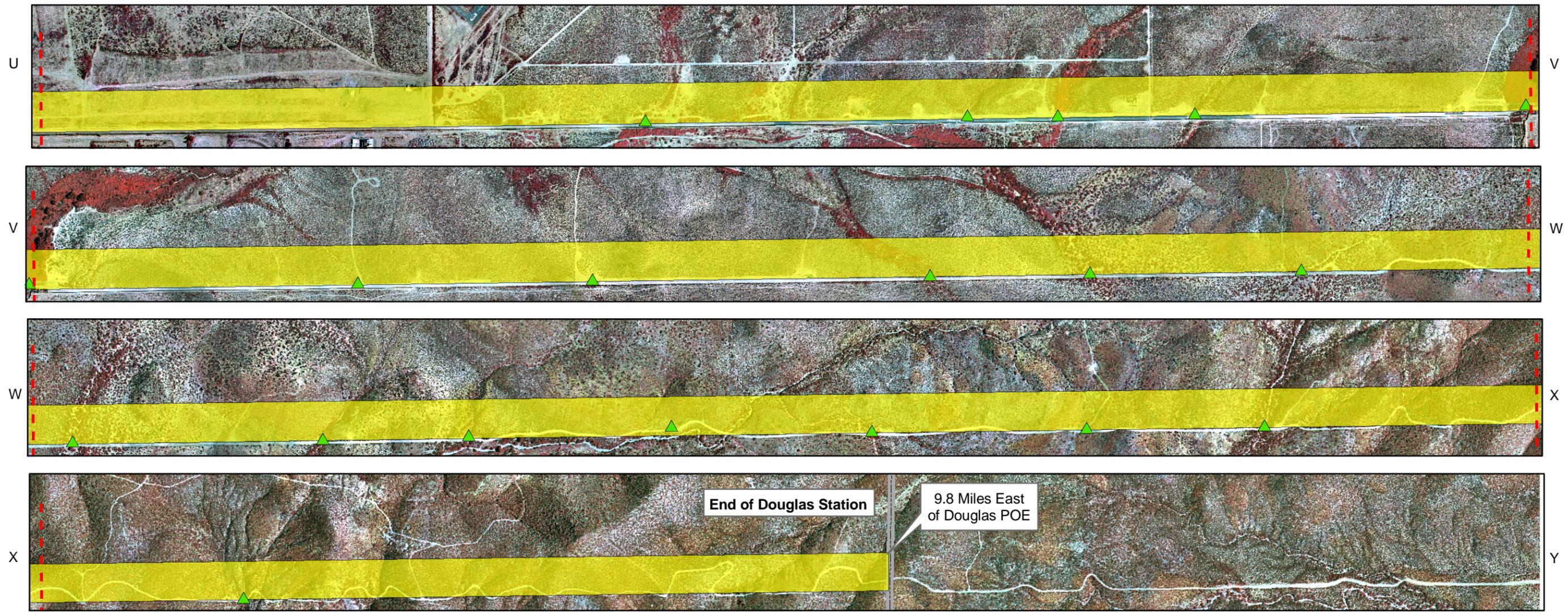


Figure 2-8e. Full Build Out Alternative

Sources: All Infrastructure was digitized by GSRC, 2003.

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2.3.1.1 Primary and Secondary Fences

Fence construction would consist of 30.6 miles of new primary pedestrian fencing across the project corridor and would extend from the eastern boundary of the Coronado National Memorial eastward to the eastern boundary of the Douglas AO, linking existing or ongoing primary fencing projects.

In addition, 49 miles of secondary fencing would be constructed under the Full Build Out Alternative. Depending on the location, construction alignments would vary slightly; however, the majority (45.8 miles) would be positioned 270 feet north of the U.S.-Mexico border in a virtually straight alignment. Due to the proximity of residential areas and limited space in the Town of Naco, the secondary fence alignment would be reduced to 60 feet north of the U.S.-Mexico border and extend approximately 0.4 miles west and 0.6 miles east of the POE (see Figure 2-5). In the City of Douglas, new secondary pedestrian fencing would also be reduced to 60 feet for approximately 1.2 miles. The area encompassing the international ditch would be constructed in the same manner as described under the Preferred Alternative and depicted previously in Figure 2-7.

2.3.1.2 Roadways

Roadway construction would consist of an all-weather surface patrol road with an adjacent drag road, a primary pedestrian fence maintenance road (only required where new fence construction would exist), and a secondary fence maintenance road. Where practical, the existing roadways would be used as primary fence construction and maintenance roads. The patrol road would, for all intents and purposes, be a new road since it would need to be constructed parallel to the secondary fence and to a width of 38 feet. Construction of the secondary fencing would also require a maintenance road on the north side of the secondary fence to allow future maintenance and repair activities that could further serve as additional access to contained areas.

2.3.1.3 Earthwork

The majority of earth work required by the Full Build Out Alternative would be conducted to create the bed and vertical gradient (slope) of new and improved roads. The design of this slope is generally intended not to exceed 20%. However, due to the topography of the project corridor, sections of the roadway may be elevated to as much as 20% slope in order to limit the area of disturbance. Preliminary engineering designs suggest

the total balance in CY of cut (1,832,368 CY) and fill (2,108,199 CY) is estimated to result in approximately 275,831 CY of needed fill material. Every effort would be made to reduce or eliminate the actual fill requirements by minimizing slopes and gradient, as practicable.

2.3.1.4 Permanent Lighting

Under the Full Build Out Alternative, approximately 31 miles of new permanent lighting would be required and would be positioned within the area between the primary and secondary fences. Light poles would be positioned approximately 225 feet apart and shielded to limit illumination to the footprint of the project corridor. The final spacing would, however, be dictated by topography and operational needs. In the Naco AO, installation would occur from the eastern boundary of the Coronado National Memorial and extend approximately 15 miles eastward. Installation would begin 1 mile east of the Naco POE and extend 21 miles to Whitewater Draw, within the Douglas AO. In the City of Douglas, 1.5 miles of existing light would be replaced along the international ditch. Additional lights would be installed approximately 2 miles east of the POE and extend another 8 miles to the eastern boundary of the Douglas Station.

2.3.1.5 Drainage Structures

The Full Build Out Alternative would require low-water crossings and drainage structures in the same 60 drainages, which were identified under the Preferred Alternative.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

Several alternatives were considered but eliminated from further consideration. These included:

- Primary Pedestrian Barrier Fence Only Alternative
- Primary Vehicle Barrier System Alternative
- Primary Patrol Road Only Alternative

While each of the components of these alternatives are considered valuable enforcement measures that have the ability to meet individual enforcement criteria, they do not possess the ability to address all of the enforcement strategy requirements. Construction of fences (pedestrian and vehicle) alone would provide an initial degree of deterrence; however, these barriers they would remain vulnerable to destruction on the

southern side without the ability to identify and maintain such breeches that are accomplished from regular patrols. Secondly, if the primary fence is breached, USBP agents have to resort to time-consuming reactive enforcement measures such as waiting for illegal entrants to expose themselves further north or relying on substandard road conditions to respond. Exhaustive searches can and do have detrimental effects on the human and natural environments, as well as increase health and safety risks to USBP agents and UDAs.

Construction of a vehicle barrier only would cause as much damage as the construction of a pedestrian barrier/fence and would do nothing to deter illegal foot traffic. By constructing only a patrol road along the unfenced border, little would be accomplished to effectively deter or detect illegal crossings. A patrol road only alternative fails to provide for the conditions that deter an area's desirability for illegal entry and/or smuggling as well as limits agent response time.

Careful consideration has led the USBP to conclude that any configuration not including a combination of strategically positioned infrastructure would not provide the detection and apprehension capabilities needed to deter illegal activity or allow the USBP to control the immediate border. Therefore, these alternatives alone were not considered viable.

2.5 POSSIBLE CONTRACTORS AND STAGING SITES

National Guard units, USBP maintenance personnel, Active and Reserve units provided through JTF-6, or private contractors would complete activities proposed under these alternatives. In order to stage equipment and manpower, several temporary staging sites would need to be identified prior to construction. Past construction activities have generally been located relatively close to the Town of Naco and the City of Douglas. In fact, two previously utilized staging sites have been identified. One is located on property owned by the City of Douglas, on Hwy 80 near the Cochise County Community College, Douglas Campus (approximately 20 acres) and the other is located immediately adjacent to the U.S.-Mexico Border on the west side of the Town of Naco. These sites would be utilized to the fullest extent during construction activities. However, due to the linear nature of the project corridor, additional staging sites would be required and will be

identified once mission commanders or private contractors identify their equipment needs. To the extent practicable, all sites would be selected in previously disturbed areas and within the project footprint.

2.6 SUMMARY

Three alternatives, the No Action Alternative, Preferred Alternative, and Full Build Out Alternative, will be carried forward for analysis. A summary matrix (Table 2-5) shows how each of the alternatives satisfies the stated purpose and need. Table 2-6 presents a summary matrix of the impacts from each of the alternatives and how they affect the environmental resources in the project corridor and the Region of Influence (ROI). While the Full Build Out Alternative clearly provides the greatest measure of control in support of the stated purpose and need, the impacts to the human and natural environment would be much greater. The Preferred Alternative generally satisfies the goal of the USBP enforcement strategy while minimizing direct impacts to the natural environment. Indirect benefits through the protection of habitat north of the border and the reduction of adverse effects caused by UDA and drug smuggling traffic would occur under either alternative.

Table 2-5. Summary Matrix of How Alternatives Meet the Goals of the Stated Purpose and Need

Goals of the Purpose and Need Identified in Section 1.2	No Action	Preferred Alternative	Full Build Out Alternative	Primary Pedestrian Fence Only Alternative	Vehicle Barrier Fence Only Alternative	Patrol Road Only Alternative
Deter illegal entries (vehicle & pedestrian)	Partially	Some	Yes	Partially	No	Some
Enhance the safety of USBP agents	Partially	Yes	Yes	No	No	Some
Reduce enforcement footprint	No	Some	Yes	Partially	Some	No
Create a defensible and enforceable zone that reduces illegal crossings and drug smuggling operations	No	Yes	Yes	No	No	No
Enhances response time for USBP agents	Yes	Yes	Yes	No	No	Yes

Definition of Terms

- Yes** Meets the goals of the purpose and need.
- No** Does not meet the goals of the purpose and need.
- Partially** Alternative generally has the potential to meet the goals of the purpose and need, however it requires other elements to be considered effective.
- Some** Alternative may meet the goals of the purpose and need to some extent, yet lacks the consistency to be considered effective.

Table 2-6. Summary Matrix of Potential Impacts

Affected Environment	No Action Alternative	Preferred Alternative	Full Build Out Alternative
Land Use	Impacts would occur to 120 acres, of which 96 acres have previously been disturbed.	A total of 542 acres of open rangeland would ultimately be converted to restricted access and 13 acres of conservation area would be impacted.	Impacts would occur to approximately 1,730 acres of open rangeland by restricting access about 64 acres of conservation area would be altered. The remaining area consists of primarily rangeland and open space.
Aesthetics and Visual Resources	Impacts would be dependent on individual perspective. Illumination, fencing and roadway impacts would occur. However these activities would remain near more urban developments.	Impacts would be dependent on individual perspective. The aesthetic value would be reduced by the presence of illumination, fencing and roadways. However, by limiting the amount of fences and permanent lighting across the entire project corridor, the magnitude of impacts would be minimal.	Impacts would be dependent on individual perspective. The aesthetic value would be reduced by the presence of illumination, fencing and roadways. Visual resource impacts would also occur to the San Pedro National Conservation Area as construction activities would conflict with visual resources management objectives of the BLM.
Transportation	Minor Impacts requiring increased manpower to man and maintain checkpoints impacts.	Temporary indirect impacts would occur as a result of a slight increase in traffic along U.S. Hwy 80 between Douglas and Naco. Trucks transporting fill material would log between 24,000 and 48,000 miles per year during the period of construction. Indirect beneficial impacts would occur by reducing or eliminating UDA drive throughs and hindering northward movement of UDA traffic.	Temporary indirect impacts would occur as a result of a slight increase in traffic along U.S. Hwy 80 between Douglas and Naco. Trucks transporting fill material would log between 44,600 and 67,000 miles per year during the period of construction. Minor indirect beneficial impacts would occur by reducing UDA drive throughs and hindering northward movement of UDA traffic.
Geology, Soils and Prime Farmlands	Approximately 120 acres would be directly impacted; however, most of the soils have been previously disturbed. Indirect impacts would continue from illegal traffic and consequent enforcement activities.	Approximately 542 acres are likely to be disturbed because of construction activities. Since the identified 5 acres of prime farmlands are not properly irrigated and are not suitable to be utilized as such, impacts to prime farmland would be insignificant.	Approximately 1,730 acres would be directly impacted. Since the identified 13 acres of prime farmlands are not properly irrigated and are not suitable to be utilized as such, impacts to prime farmland would be insignificant.
Vegetation Community	Approximately 24 acres of undisturbed vegetation would be permanently altered; illegal traffic would indirectly impact vegetation communities.	Approximately 542 acres of vegetation would be permanently altered. Indirect impacts would occur to areas between fencing and roadways. Other indirect impacts could potentially occur to those areas lying outside the project corridor as UDA and smuggler activity possible shifts to avoid the enforceable areas.	Approximately 1,486 acres of vegetation would be permanently altered. Indirect impacts could potentially occur to those areas lying outside the project corridor as UDA and smuggler activity possible shifts to avoid the enforceable areas.
Aquatic and Wildlife Resources	Approximately 24 acres of potential wildlife habitat would be impacted; illegal traffic would continue to damage vegetation, thereby causing synergistic impacts to wildlife.	Approximately 482 acres of wildlife habitat would be altered. Approximately 0.2 acres of aquatic habitat in the San Pedro River would be altered. Beneficial impacts to wildlife populations are anticipated through the protection of habitat to the north of the project corridor. Indirect impacts could occur as UDA and smuggler activity shift to areas that are outside of the project corridor.	Approximately 1,486 acres of wildlife habitat would be altered. Approximately 3 acres of aquatic habitat in the San Pedro River would be altered. Beneficial impacts to wildlife populations are anticipated through the protection of habitat to the north of the project corridor. Indirect impacts could occur as UDA and smuggler activity shift to areas that are outside of the project corridor.

Table 2-6. Summary Matrix of Potential Impacts

Affected Environment	No Action Alternative	Preferred Alternative	Full Build Out Alternative
Unique and Sensitive Areas	No direct impacts; illegal traffic would continue to damage unique and sensitive areas by causing accidental wildfires, creating trails, and discarding trash.	No direct impacts to the Coronado National Forest or Coronado National Memorial would occur; however, 2.6 acres of the San Pedro Riparian NCA would be directly impacted (area encompassed by roadway and primary fencing) by the construction of vehicle barriers and road improvements. Indirect impacts would occur due to increased degradation of habitat to areas between the fence and roadway.	No direct impacts to the Coronado National Forest or Coronado National Memorial would occur. Approximately 64 acres of the San Pedro Riparian NCA, which is the area between two fences and all-weather maintenance roads. Indirect effects would also occur, as infrastructure would traverse through pristine habitats thus reducing scenic value. Additionally, beneficial indirect impacts would occur as UDA and smuggler activity in these unique and sensitive areas would be reduced and possibly eliminated.
Protected Species and Critical Habitat	No direct impacts; indirect impacts would occur due to UDAs and smugglers trampling habitat and possibly threatened and endangered plant species outside of the project corridor.	No direct impacts would occur to the Mexican spotted owl. Impacts to the spikedace and loach minnow would occur a result of disturbing approximately 0.2 acres of designated habitat. Temporary impacts would occur to the spikedace and the loach minnow during construction activities. Beneficial indirect impacts would also occur, as habitat north of the project corridor would be protected from trampling by UDAs. Other direct impacts may occur as a result of water withdrawals for construction activities.	No direct impacts would occur to the Mexican spotted owl; however, the spikedace and loach minnow critical habitat (3 acres) would be directly impacted. Indirect impacts that would occur are the result of UDAs and smugglers shifting illegal activities to the outlying areas east and west of the project corridor in an attempt to avoid detection. Beneficial indirect impacts would also occur, as habitat north of the project corridor would be protected from trampling by UDAs. Other direct impacts may occur as a result of water withdrawals for construction activities.
Cultural Resources	Direct impacts would occur to 5 potentially eligible sites; however, activities would generally occur within existing alignments of the existing roadways. Nevertheless, these sites would require mitigation. Indirect impacts could occur to known or unknown cultural sites due to continued foot and illegal vehicle traffic. Section 106 and mitigation of these sites would be completed prior to initiation of construction near these sites.	Direct impacts would occur to 12 potentially eligible sites; indirect beneficial impacts would occur with the reduction and possible elimination of UDA and smuggler traffic. Section 106 and mitigation of these sites would be completed prior to initiation of construction near these sites.	Direct impacts would occur to 17 potentially eligible cultural sites; indirect beneficial impacts could occur as the enforcement zone would protect against disturbances and destruction of known and unknown cultural resources from illegal activities. Section 106 and mitigation of these sites would need to be completed prior to initiation of construction near these sites.

Table 2-6. Summary Matrix of Potential Impacts

Affected Environment	No Action Alternative	Preferred Alternative	Full Build Out Alternative
Air Quality	A short-term degradation in local air quality during construction would occur during construction activities; impacts are considered insignificant. Also, the improved roads would provide a reduction in fugitive dust across the Douglas AO and the surrounding urban area of the Town of Naco.	A short-term degradation in local air quality during construction would occur during construction activities; impacts are considered insignificant since tons/yr of emission levels would remain below the <i>de minimus</i> thresholds. Also, the improved roads would provide a reduction in fugitive dust.	A short-term degradation in local air quality during construction would occur during construction activities; impacts would also be considered insignificant since tons/yr of emission levels would remain below the <i>de minimus</i> thresholds. Also, the improved roads would provide a reduction in fugitive dust.
Water Resources	Approximately 1.3 acres of potential wetlands or Waters of the U.S. may be directly impacted. In addition, temporary impacts associated with construction of low-water crossing, roads, and fences would occur. Consultation would be made with the USACE to confirm potential impacts to wetlands or Waters of the U.S., and, if needed, proper permit(s) would be obtained (e.g. Section 404 permit). Roadway construction is estimated to result in minor impacts resulting from approximately 5.7 ac-ft over a 3 to 5-year construction period (construction and suppression).	Approximately 5 acres of potential wetland and 12 acres of Waters of the U.S. may be directly impacted. In addition, temporary impacts associated with construction of low-water crossing, roads, and fences would occur. Consultation would be made with the USACE to confirm potential impacts to wetlands or Waters of the U.S., and, if needed, proper permit(s) would be obtained (e.g. Section 404 permit). Roadway construction is estimated to result in temporary impacts from approximate 10 ac-ft of water over a 5 to 10-year construction period (construction and suppression).	Approximately 8.3 acres of potential wetlands and 28.8 acres of Waters of the U.S. may be directly impacted. In addition, temporary impacts associated with construction of low-water crossing, roads, and fences would occur. Consultation would be made with the USACE to confirm potential impacts to wetlands or Waters of the U.S., and, if needed, proper permit(s) would be obtained (e.g. Section 404 permit). Roadway construction is estimated to result in temporary impacts resulting from approximately 18 ac-ft of water over a 8 to 12-year construction period (construction and suppression).
Socioeconomic	Indirect impacts would result in minor noise, visual and dust and from societal costs from illegal immigration and smuggling.	Indirect socioeconomic impacts may result in minor noise, visual and dust. Indirect benefits from the effectiveness of the USBP in the reduction of illegal aliens and drug smuggling.	Indirect socioeconomic impacts may result in minor noise, visual and dust. Indirect benefits from the effectiveness of the USBP in the reduction of illegal aliens and drug smuggling.