

KINGMAN FIELD OFFICE SCOPING FORM

Proposal:

DOI-BLM-AZ-C010-2011-0010-DNA
NEPA Document Number

_____ RMP Implementation No.

S:/BLMshare: LANDS/BACKLOG/AZA00983
Document Location

Land Description: S½SW¼ sec. 27, T. 16 N., R. 13 W., G&SRM.

Applicant: Mohave County Flood Control

Authorization: Renewal of TUP AZA 35221 A

INVOLVEMENT: Indicate in the left column which disciplines need to provide information into the EA.

Needed Input (X)	Discipline	Signature
	Lands	
	Minerals	
	Range	
	Wild Horse and Burro	
	General Recreation	
X	Cultural and Paleontological Resources	/s/ Tim Watkins 12/17/2010
	Wilderness	
	Soils	
	Surface and Groundwater Quality/Water Rights	
	Air Quality	
X	Wildlife	/s/ Rebecca L. Peck 12/13/2010
X	Threatened and Endangered Plants and Animals	/s/ Rebecca L. Peck 12/13/2010
X	Migratory Birds	/s/ Rebecca L. Peck 12/13/2010
	Surface Protection	
	Hazardous Materials	
	Areas of Critical Environmental Concern	
	Visual Resources	
	Socio-Economics/Environmental Justice	
	General Botany/Noxious Weeds	
	Energy Policy	

Writer: /s/ Andy Whitefield

Date: 12/13/2010

Environmental Coordinator: /s/ David Brock

Date: 12/17/2010

Field Manager: /s/ Ruben A. Sánchez

Date: 12/17/2010

Determination of NEPA Adequacy (DNA)

U.S. Department of the Interior
Bureau of Land Management

OFFICE: Kingman Field Office (KFO)

NEPA DOCUMENT NUMBER: DOI-BLM-AZ-C010-2011-0010-DNA

CASE FILE NUMBER:

PROPOSED ACTION TITLE/TYPE: Issuance of Temporary Use Permit (TUP) AZA 35221 B for the reconstruction of the Wikeiup Dike and ADOT flood control structure (Note: this TUP would be the same as TUP AZA 35221 A except for its expiration date).

LOCATION/LEGAL DESCRIPTION: S½SW¼ sec. 27, T. 16 N., R. 13 W., G&SRM.

APPLICANT (if any): Mohave County Flood Control

A. Description of the Proposed Action and any applicable mitigation measures:

The proposed action is to issue TUP AZA 35221 B for the period of January 1, 2011 through June 30, 2011. TUP AZA 35221 B would contain the same terms and conditions as TUP AZA 35221 A, which had been issued on February 3, 2010 for the period through December 31, 2010. Due to the length of time for contracting this work the County did not anticipate it would need the area authorized under the TUP beyond 2010, therefore requiring the county to apply for a new TUP. Refer to the attached Draft TUP for a review of its terms and conditions.

TUP AZA 35221B is approximately 8.3 acres and is adjacent to the southeastern end of right-of-way AZA 35221, which is for the enlargement and maintenance of the Wikeiup Dike, and surrounds the north, west, and south of right-of-way AZPHX 85742, which is for ADOT's diversion structure (refer to the map, below). This is the same area authorized as a TUP in AZA 35221 A.



Issuance of TUP AZA 35221 for the Wikeiup Dike and ADOT Flood Control Rebuild
DOI-BLM-AZ-C010-2011-0010-DNA

B. Land Use Plan (LUP) Conformance

LUP Name: *Kingman Resource Management Plan/EIS*
Date Approved: March 1995

The proposed action is in conformance with the LUP, even though it is not specifically provided for, because it is clearly consistent with the following LUP decisions (objectives, terms, and conditions): Pages 66 and 67 of the RMP, a portion of item 2 of the errata sheet issued with the RMP/FEIS, and Decision L13a/V states “All other minor rights-of-way would be evaluated through the environmental review process and granted or rejected on a case-by-case basis. Existing rights-of-way would be used when possible to minimize surface disturbance.”

Although the LUP is silent in regards to TUPs, these are rights-of-way actions used to authorize development and/or construction activities for facilities authorized under rights-of-way but are separated because once the development and/or construction activities are completed the areas covered under these are no longer required for the operation and maintenance of the facilities authorized under rights-of-way. TUPs are generally processed concurrently with rights-of-way and are authorized under the same statutes as rights-of-way.

C. Identify applicable National Environmental Policy Act (NEPA) documents and other related documents that cover the proposed action.

DOI-BLM-AZ-C010- 2009-0052-EA was written to analyze and document the environmental effects of the enlargement of the right-of-way authorizing the reconstruction, operation, and maintenance of the Wikieup Dike and ADOT flood control structure, including the issuance of TUP AZA 35221 A. The Authorized Officer executed the Finding of No Significant Impact (FONSI) and Decision Record (DR) on December 18, 2009.

D. NEPA Adequacy Criteria

1. Is the new proposed action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document(s)? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document(s)? If there are differences, can you explain why they are not substantial?

Documentation of answer and explanation: Yes. EA DOI-BLM-AZ-C010- 2009-0052-EA analyzed the proposed action in its current form except for its expiration date.

2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the new proposed action, given current environmental concerns, interests, and resource values?

Documentation of answer and explanation: Yes. EA DOI-BLM-AZ-C010- 2009-0052-EA analyzed the issuance of the TUP in addition to the granting of right-of-way AZA 35221 for the enlargement of the area required for the reconstruction, maintenance, and operation of the Wikieup Dike as well as analyzing the reconstruction of the ADOT flood control structure as a connected action. Since these structures are in place and are in the best locations and are considered the best means to provide protection from flooding no other alternatives except for the No Action Alternative were analyzed.

Issuance of TUP AZA 35221 for the Wikieup Dike and ADOT Flood Control Rebuild
DOI-BLM-AZ-C010-2011-0010-DNA

3. Is the existing analysis valid in light of any new information or circumstances (such as, rangeland health standard assessment, recent endangered species listings, updated lists of BLM-sensitive species)? Can you reasonably conclude that new information and new circumstances would not substantially change the analysis of the new proposed action?

Documentation of answer and explanation: Yes. The FONSI and DR for EA DOI-BLM-AZ-C010-2009-0052-EA were executed approximately one ago it is a recent document and no new information is known or thought to exist which would change the conclusions from that document. The US Fish and Wildlife Service recently rendered a finding that the Sonoran Desert Tortoise population warrants listing under the provisions of the Endangered Species Act (ESA), however formal listing cannot be done due to higher priority duties. This species is now a Federal Candidate species. Consultation is not required since this sub-species has not been listed, however as a term and condition of TUP AZA 35221 B county employees and those working on behalf of the county are required to follow the KFO-BLM's "Guidelines for Handling Desert Tortoise Encountered on Roads and Vehicle Ways" (Exhibit C of the TUP).

4. Are the direct, indirect, and cumulative effects that would result from implementation of the new proposed action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?

Documentation of answer and explanation: Yes. EA DOI-BLM-AZ-C010-2009-0052-EA describes the anticipated direct, indirect, and cumulative effects of the proposed action. These would remain the same under the proposed action reviewed herein except the time of these effects would be extended.

5. Are the public involvement and interagency review associated with existing NEPA document(s) adequate for the current proposed action?

Documentation of answer and explanation: Yes. EA DOI-BLM-AZ-C010-2009-0052-EA was considered by the public and the BLM as necessary for the protection of property with minimal environmental concerns and therefore extensive public involvement was unnecessary. Lance Spurlock (ADOT) was consulted in regards to reconstruction of ADOT's flood control structure as well as under term and condition 11 of Exhibit A the county is required to consult and coordinate with ADOT in regards to the reconstruction of its structure.

E. Persons/Agencies/BLM Staff Consulted

<u>Name</u>	<u>Title</u>	<u>Resource/Agency Represented</u>
Rebecca Peck	Wildlife Biologist	BLM - KFO
Tim Watkins	Archaeologist	BLM - KFO

Note: Refer to the EA/EIS for a complete list of the team members participating in the preparation of the original environmental analysis or planning documents.

Conclusion

Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the NEPA documentation fully covers the proposed action and constitute BLM's compliance with the requirements of the NEPA.

/s/ Andy Whitefield
Signature of Project Lead
Andy Whitefield

12/13/2010
Date

/s/ David Brock
Signature of NEPA Coordinator
Dave Brock

12/17/2010
Date

/s/ Ruben A. Sánchez
Signature of the Responsible Official
Ruben Sanchez
Field Manager
Kingman Field Office

12/17/2010
Date

Note: The signed Conclusion on this Worksheet is part of an interim step in the BLM's internal decision process and does not constitute an appealable decision. However, the lease, permit, or other authorization based on this DNA is subject to protest and appeal under 43 CFR Part 4 and the program-specific regulations.

DECISION RECORD

NEPA Document Number: DOI-BLM-AZ-C010-2011-0010-DNA

Description of the Proposed Action:

The proposed action is to issue TUP AZA 35221 B for the period of January 1, 2011 through June 30, 2011. TUP AZA 35221 B would contain the same terms and conditions as TUP AZA 35221 A, which had been issued on February 3, 2010 for the period through December 31, 2010. Refer to the attached Draft TUP for a review of its terms and conditions.

TUP AZA 35221B is approximately 8.3 acres and is adjacent to the southeastern end of right-of-way AZA 35221, which is for the enlargement and maintenance of the Wikieup Dike, and surrounds the north, west, and south of right-of-way AZPHX 85742, which is for ADOT's diversion structure. This is the same area authorized as a TUP in AZA 35221 A.

LUP Name: *Kingman Resource Management Plan/EIS* Approved: March 1995

Based on the analysis of potential environmental impacts contained in the attached Determination of NEPA Adequacy and as analyzed in the previous environmental assessment DOI-BLM-AZ-C010- 2009-0052-EA, I have determined that the action will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

It is my decision to approve the action as proposed, with the following stipulations (if applicable).

/s/ Ruben A. Sánchez
Signature of the Responsible Official
Ruben Sanchez
Field Manager
Kingman Field Office

12/17/2010
Date

Exhibits:

- 1) Stipulations: See the Attached TUP AZA 35221 B

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

SERIAL NUMBER AZA 35221 B

1. A permit is hereby granted pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).

2. Nature of Interest:

a. By this instrument, the holder:

Mohave County Flood Control District
Post Office Box 7000
Kingman, Arizona 86402-7000

receives a right to perform construction measures for flood control structures within the following described public lands:

Gila and Salt River Meridian, Arizona

T. 16 N., R. 13 W.,
sec. 27, S $\frac{1}{2}$ SW $\frac{1}{4}$.

- b. The permit herein granted varies in its dimensions, its locations and dimensions being shown and described in the 95 percent design plans entitled "Wikieup Drainage Facilities Rehabilitation and Reconstruction" submitted by the Holder with its application for right-of-way AZA 35221. The permit herein granted contains 8.32 acres, more or less.
- c. This instrument will terminate on June 30, 2011 unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.
- d. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

This grant is exempt from rental charges provided that the facilities occupying the right-of-way meet the requirements for such exemptions found at 43 CFR 2806.14, or as per future regulations established by the Secretary of the Interior.

4. Terms and Conditions:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations parts 2800 and 2880.
- b. The stipulations, plans, maps, or designs set forth in Exhibits A, B, and C, dated December 16, 2010, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- c. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- d. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

(Signature of Holder)

(Signature of Authorized Officer)

(Title)

(Title)

(Date)

(Effective Date of Grant)

EXHIBIT A
TUP - AZA 35221 B
December 16, 2010

1. A copy of these stipulations, including exhibits and the Plan(s) of Operation (if required), shall be on the project area and available to persons directing equipment operation.
2.
 - a. Except as stipulated below, construction activities will be limited to the period of August 16 through February 28 to avoid disruption to migratory birds during their breeding season unless operations have substantially begun prior to February 28 and remain on a continuing basis, i.e. substantial operations occur during the weekdays. The BLM will periodically monitor construction activities and may conduct surveys for migratory bird nesting activities. In the event nesting activities on public lands are or may be disrupted as a result of the Holder's construction activities, the BLM may provide written notice to the Holder to cease all or part of its activities on public lands until the young birds have left the nest(s) or otherwise nesting activities would no longer be disrupted.
 - b. If the holder has not begun operations prior to February 28 and wishes to perform construction activities during March 1 through August 15, the holder would be required to request from the authorized officer a Notice to Proceed after having a survey conducted to the specifications of the authorized officer to determine if impacts to migratory birds would be anticipated. The authorized officer will have the discretion to either have BLM employee(s) perform this survey or to have the Holder hire a qualified biologist to perform the survey upon consultation with the BLM. No construction activities would be permitted during the breeding season until the authorized officer has issued a Notice to Proceed after a finding that no migratory birds are nesting within the vicinity of this right-of-way.
3. If any desert tortoise are observed in this permit area during construction they will be handled in accordance with the protocol of the Arizona Game and Fish Department (see Exhibit C, attached).
4. The holder will consult and coordinate with the Arizona Department of Transportation (ADOT) in any matter regarding the reconstruction of ADOT's diversion structure, for which right-of-way AZPHX 85742 was granted to ADOT, and in any matter which could affect ADOT's rights to construct, operate, maintain, and terminate that structure.
5. The holder will remove only the minimum amount of vegetation necessary for the construction of the flood control structures and related improvements.
6. The holder may dispose of vegetative waste that is generated during the reconstruction of the flood control structures by chipping it and applying it to disturbed areas.

7. The holder will protect all survey monuments. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments and civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of these by the holder or anyone operating on his behalf, the holder will immediately report the incident to the authorized officer and the respective installing agency (if known) in writing. The holder will be responsible for the restoration of the monument(s) in a manner suitable to the authorized officer after consultation with all parties involved. If Bureau cadastral or other Federal surveyors are used to restore the monument(s), the holder will be liable to the United States for the costs.
8. All cacti, yucca, nolina (beargrass) ocotillo, agave, or other state protected plants on public lands will be avoided where possible. Where they cannot be avoided the holder will transplant them in accordance with Exhibit B, "Reclamation Requirements" of the grant.
9. Any cultural or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land will be immediately reported to the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.
10. Construction sites will be maintained in a sanitary condition at all times; waste materials at those sites will be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
11. The holder will conduct all construction activities within the authorized limits of this permit area and within right-of-way AZA 35221 and, upon consultation and coordination with the Arizona Department of Transportation (ADOT) right-of-way AZPHX 85742.
12. Disposal of all liquid and solid waste produced during operation of this permit will be in an approved manner so it will not impact the air, soil, water, vegetation or animals.
13. Holder shall not violate applicable air and water quality standards or related facility siting standards established by or pursuant to applicable Federal and State law.

14. Holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release of spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

15. Use of pesticides and herbicides shall comply with the applicable Federal and State laws. Pesticides and herbicides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, Holder shall obtain from the authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer. Emergency use of pesticides shall be approved in writing by the authorized officer prior to use.

Exhibit B
TUP AZA 35221 B
December 16, 2010
Reclamation Requirements

1. Area under Reclamation Requirements

These requirements pertain to the area permitted under temporary use permit (TUP) AZA 35221 B excluding the Ordinary High Water limits as defined by the U.S. Army Corps of Engineers 404 permitting requirements and any areas embraced by right-of-way AZPHX 85742 that are required to be kept clear of vegetation for the operation and maintenance of the ADOT Diversion Structure so as not to interfere with rights granted to ADOT under that right-of-way.

2. Earthwork

Upon the termination of TUP AZA 35221 B the permit area will be re-contoured to its former condition to re-establish the approximate original contours of the lands.

3. Seeding

The permit area will be seeded in accordance with the following requirements or methods:

- (a) Seed Application: Seed may be broadcast by hand or by machine. The use of a seed drill is not recommended due to the slope and different sizes of the seed.
- (b) Covering Seed: The seed is to be covered the same day as broadcasting by dragging a piece of chain link fence behind an all-terrain vehicle, light truck, or similar vehicle if terrain and slopes allow. Where this cannot be done the seed will be covered using hand tools or other methods in consultation with the authorized officer.
- (c) Seed Mix and Rates: These areas are to be seeded with the species and rates listed in Table 1 (below).

TABLE 1: SEED MIX*	
Species	Rate per Acre, Pure Live Seed
Desert Globemallow (<i>Sphaeralcea ambigua</i>)	1 lb.
Desert Marigold (<i>Baileya multiradiata</i>)	1 lb.
Arizona Lupine (<i>Lupinus arizonicus</i>)	1 lb.
Mormon Tea (<i>Ephedra nevadensis</i>)	1 lb.
Creosote Bush (<i>Larrea tridentata</i>)	1/2 lb.
Flattop Buckwheat (<i>Eriogonum</i>)	1 lb.

fasciculatum)	
White Bursage (<i>Ambrosia dumosa</i>)	1/2 lb.

* If seed is unavailable, substitutes for the seed mix would be used upon coordination and approval by the BLM authorized officer.

3. Plant Salvage

All Cacti, Yucca, and other state protected plants that are to be disturbed in the permit area are to be replanted within areas disturbed during construction activities in a manner that mimics their natural distribution. If the number of cacti, yucca, and other state protected plants to be replanted exceeds the amount which would mimic their natural distribution in those areas, the excess will be replanted on public lands adjacent to the permit area or right-of-way AZA 35221 outside of washes.

Prickly pear, beaver tail, hedgehog, pincushion, cholla, ocotillo, and barrel cactus and small yuccas, Joshua Trees, and saguaros will be transplanted by hand to minimize damage to the plants. When possible yuccas and Joshua Trees will be replanted the same day as when they are uprooted, but may be transplanted up to 2 days after being uprooted.

Generally it is best to wait up to one week before planting cacti and ocotillo, but these may be stored up to 2 weeks before planting. This allows the root scars to harden which prevents the entry of bacteria through the roots which cause root rot. If plants need to be held longer than 2 weeks the Holder must consult with the BLM for nursery requirements.

Prior to uprooting, mark south side of barrel cactus and saguaros with a black felt pen and orientate the plant in the same direction when replanting. This helps to prevent sunburn to the growing tips upon replanting.



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Kingman Field Office
2755 Mission Boulevard
Kingman, Arizona 86401
www.az.blm.gov

TUP AZA 35221 B
Exhibit C
December 16, 2010

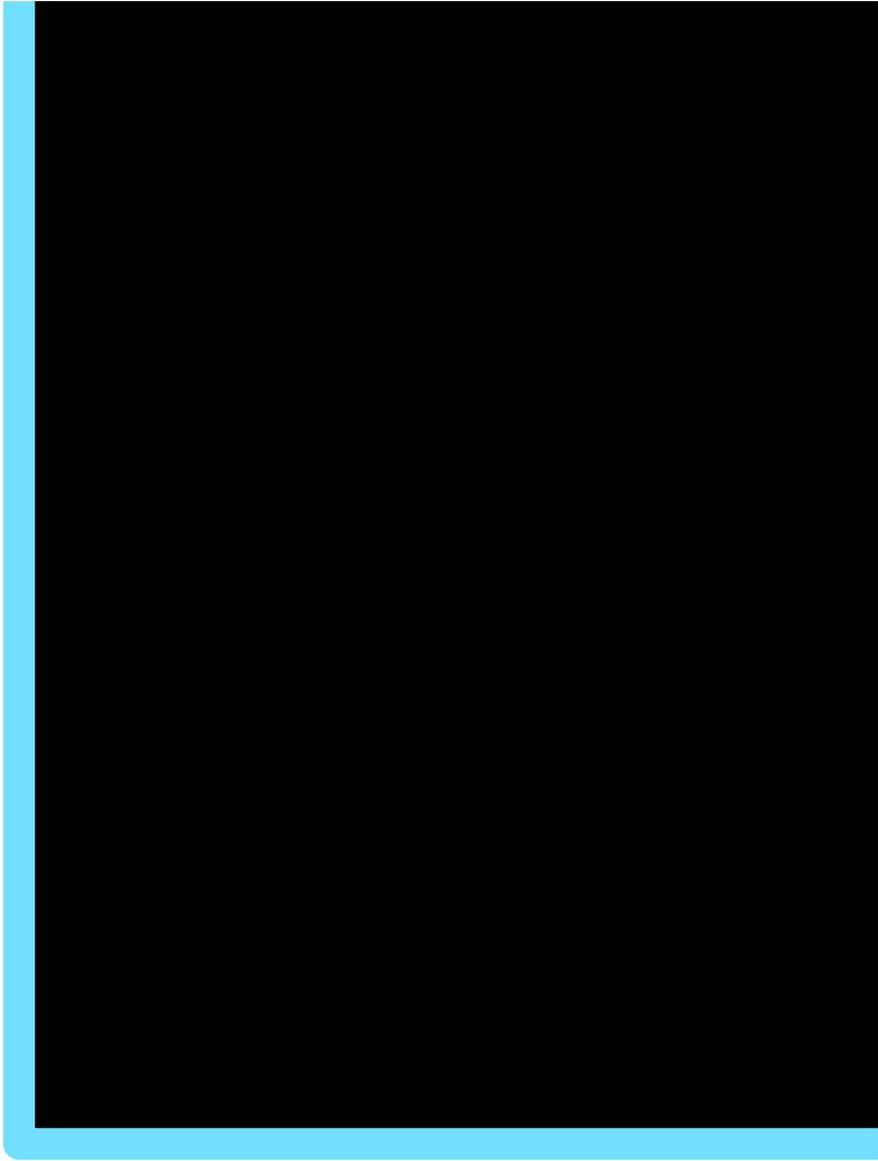
GUIDELINES FOR HANDLING DESERT TORTOISE ENCOUNTERED ON ROADS AND VEHICLE WAYS

1. Stop your vehicle and allow the tortoise to move off the road.
2. If the tortoise is not moving, gently** pick up the tortoise and move it approximately 200 feet off the road to a shaded location.
 - a. **Do not** turn the tortoise over.
 - b. Move the tortoise in the direction it was traveling. If it was crossing the road, move it in the direction it was crossing.
 - c. Keep the tortoise within 12-18 inches of the ground, move slowly so as not to cause it to become alarmed.
 - d. Release the tortoise under the shade of a bush or rock.

** Tortoise store water in their bladder. If a tortoise becomes alarmed its defense is to void its bladder onto the captor. This could lead to dehydration of the tortoise and potentially to death.

3. Prior to moving any parked vehicle or equipment at the project site check for tortoise under the vehicles.







Biological Evaluation
for
Threatened and Endangered
State Listed Species
BLM Sensitive Species
& Migratory Birds

KINGMAN FIELD OFFICE - BUREAU OF LAND MANAGEMENT

DATE: 12-2-2009

From: Rebecca Peck, Wildlife Biologist

To: Andy Whitefield, Realty Specialist

Project: Wikieup Dike Rebuild

AZA No. 35221; EA No. DOI-BLM-AZ-C010-2009-052-EA, Replacement for AZA 983.

Location: Near (west) the town of Wikieup, AZ.

the S½SW¼ of section 27, and the NE¼ and the NE¼NE¼SE¼ of sec. 28, T. 16 N., R. 13 W., G&SRM. The portion on private lands is in the NW¼SW¼ of said sec. 27.

Field Survey: A field survey was conducted on 10-20-2009 by Rebecca Peck, BLM. Also present was Andy Whitefield, BLM.

Habitat Description:

Public Land - Project is located within two habitat types:

Sonoran –Mohave Desert Scrub – *paloverde-cactus*

Federally Listed Species:

- a. The following federally listed or candidate species or their habitats are not found within the project or action area; therefore there would be “No Affect” to these species or their habitats from implementation of the proposed action.

Bald eagle – nesting or foraging habitat is not present within the project area.

Southwestern willow flycatcher – no habitat potential.

Yuma clapper rail - no habitat potential.

Arizona cliffrose (*Purshia subintegra*) – no habitat potential

California condor – no habitat potential

Yellow-billed cuckoo – no habitat potential

Desert pupfish – no habitat for this species, not within the project area.

Gila topminnow – no habitat for this species, not within the project area.

Hualapai Mexican vole – no habitat for this species.

Mexican spotted owl - no habitat for this species.

State Listed Species

Spotted bat (*Euderma maculatum*)
Western mastiff bat (*Eumops perotis*)

Impacts to bats: Approximately 11.8 acres of bat foraging habitat could be permanently removed.

Desert Tortoise – The project area is within Category III tortoise habitat.

Impacts to Tortoise: Approximately 11.8 acres of tortoise habitat are found at this location. Most of this habitat was previously disturbed during the original construction of the dike. It has substantially recovered from that disturbance. No burrows or tortoise were observed on public land in this area.

BLM Sensitive Species

Bats

Western small-footed myotis - *Myotis ciliolabrum*
Fringed myotis - *M. thysanodes*
Cave myotis - *M. velifer*
Arizona myotis - *M. occultus*
California leaf-nosed bat (*Macrotus californicus*)
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)

Impacts to bats: see State Listed Species above.

Reptiles

Chuckwalla (*Sauromalus obesus*)
Rosy boa (*Lichanura trivirgata*)

Impacts to Reptiles: Same as for desert tortoise above.

FWS Species of Concern

Townsend's big-eared bat - *Corynorhinus townsendii*

Impacts to Townsend's bat: Same as for bats above.

Birds Species of Conservation Concern –Migratory Birds (BLM, 2007).

The following species are expected to occur within the project area:

Loggerhead shrike - Nesting habitat is available at the project site. Primary nesting season: March 1- August 15

Costa's hummingbird -Nesting habitat is available at the project site. Primary nesting season: March 1 – June 1

Gilded flicker – Primary nesting season: March 1-July 2 – Nesting habitat: Saguaro-paloverde habitat. Only one large saguaro found on site that may provide nesting habitat for this species.

Elf owl – Primary nesting season: April 15- August 15 – Nesting habitat: saguaro-paloverde

Gila woodpecker – Primary nesting season: March 1 – August 15 – Nesting habitat: saguaro-paloverde habitat. Only one large saguaro found on site that may provide nesting habitat for this species.

Impacts to Migratory Bird Species: The project could permanently remove 11.8 acres of foraging and breeding habitat for the above species. If the project is constructed during the breeding season (March 1- August 15) there is potential that nests or nesting birds would be disturbed or destroyed. Birds would be affected by the removal of nesting substrate or disturbance (flushing from the nest) caused by repeated heavy equipment operation. Other species of migratory birds are also found nesting within this habitat type and could also be affected.

Recommended Mitigation:

1. Provide BLM tortoise handling guidelines (attached) to the project proponent and construction workers and advise on handling procedures for tortoise and other reptiles.
2. On public lands all construction and future maintenance would occur between September 1 through February 28 which is outside of the migratory bird breeding season. If construction occurs during the breeding season (March 1 through August 31) *a pre-construction nest survey, conducted during the breeding season, by a qualified biologist would be required along the proposed route and 150 feet to either side of the centerline. If an active nest is found on or within 150 feet of the proposed ROW, construction would not be authorized until the young have safely fledged. All nests would be reported to the authorized officer.
3. If construction or maintenance occurs outside of the migratory bird breeding season then a pre-construction nest survey would not be required.
4. A pre-construction survey was conducted by the BLM for all cacti, yucca, ocotillo, nolina and agave to estimate numbers and species. It was estimated that there are 40 cholla, 5 hedgehog, and 2 ocotillo within the project area. Approximately 85% are viable. All salvaged plants would be transplanted directly adjacent to the project area. Plants would be transplanted the same day as removal. Saguaros greater than 4 feet tall would be supported with guy wires. Great efforts to avoid disturbance to *all* saguaro cacti is highly recommended.

* Breeding bird season dates were determined from data presented for individual bird species in Corman et. al. 2005.

** The re-construction of the dike will result in long-term (>10 years) impacts to tortoise habitat however compensation is not recommended as most of this right-of-way and disturbance was in existence prior to BLM's adoption of the Rangeland Plan in 1988 which recommended habitat compensation for long-term habitat loss. The majority of the rebuild would be reclaimed via seeding with native plants and the planting of on-site salvaged succulents.

References

Corman T. E. and C. Wise-Gervais, eds. Arizona Game and Fish Department 2005, Arizona Breeding Bird Atlas. University of New Mexico Press.

Bureau of Land Management (BLM), 1988. *Desert Tortoise Habitat Management on the Public Lands: A Rangeland Plan*. November 1988.

BLM, 2007. Instruction Memorandum No. 2008-050. Migratory Bird Treaty Act – Interim Management Guidance. December 18, 2007.

Signed: _____ **Date:** _____



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
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Kingman, Arizona 86401
www.az.blm.gov

GUIDELINES FOR HANDLING DESERT TORTOISE ENCOUNTERED ON ROADS AND VEHICLE WAYS

1. Stop your vehicle and allow the tortoise to move off the road.
2. If the tortoise is not moving, gently** pick up the tortoise and move it approximately 200 feet off the road to a shaded location.
 - a. **Do not** turn the tortoise over.
 - b. Move the tortoise in the direction it was traveling. If it was crossing the road, move it in the direction it was crossing.
 - c. Keep the tortoise within 12-18 inches of the ground, move slowly so as not to cause it to become alarmed.
 - d. Release the tortoise under the shade of a bush or rock.

** Tortoise store water in their bladder. If a tortoise becomes alarmed its defense is to void its bladder onto the captor. This could lead to dehydration of the tortoise and potentially to death.

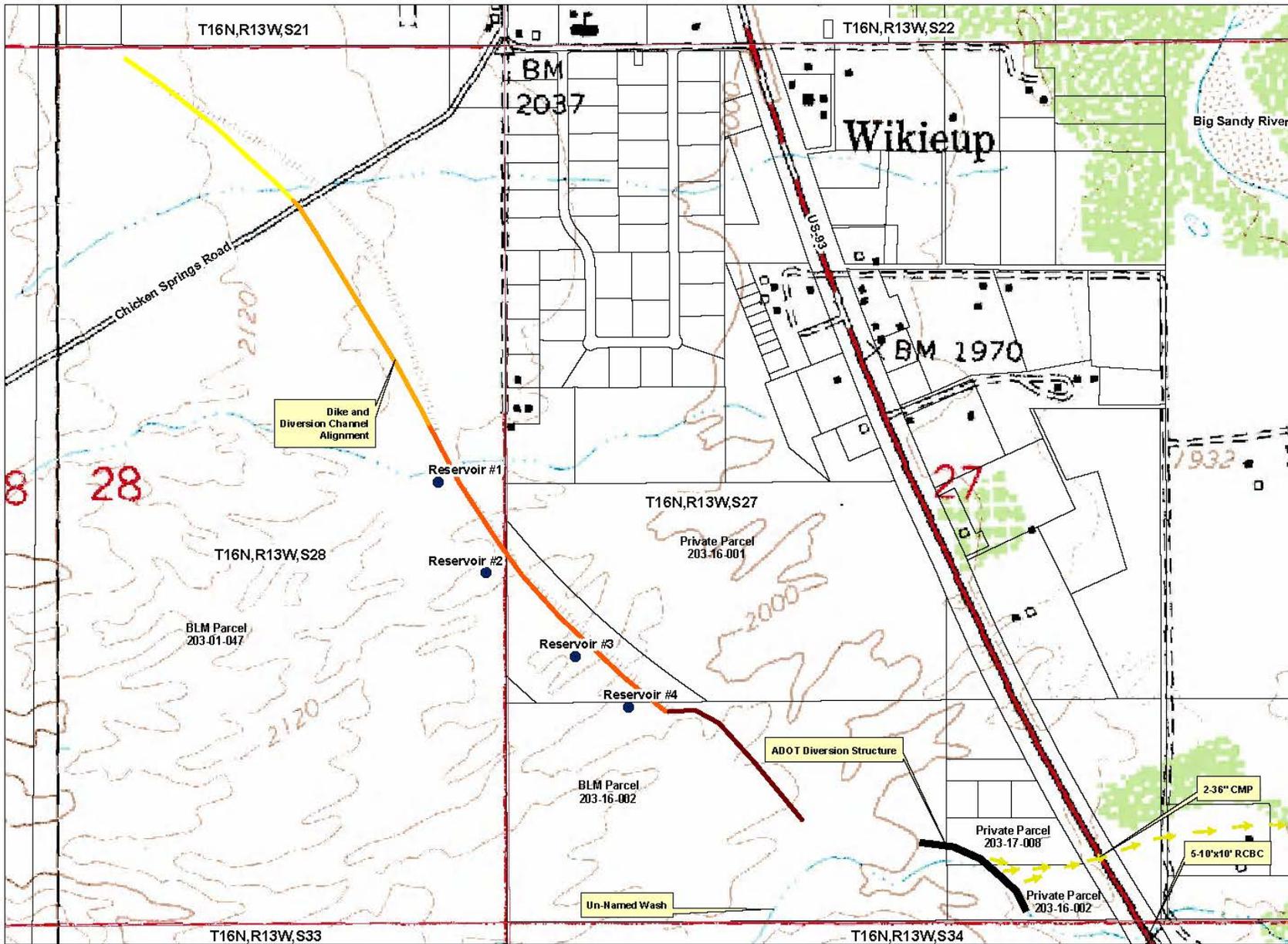
3. Prior to moving any parked vehicle or equipment at the project site check for tortoise under the vehicles.



APPENDIX A

IMPROVEMENTS, REHABILITATION AND RECONSTRUCTION OF TOWN OF WIKIEUP DRAINAGE FACILITIES

SUPPORTING EXHIBITS FOR ADDITIONAL RIGHT-OF-WAY APPLICATION



**Town of Wikieup
Improvements for
Drainage Structures**

Right-of-Way Application

Prepared For:
Bureau of Land Management

Prepared By:
Mohave County

August 2009

- Legend**
- ADOT Diversion Structure
 - July 30, 2007 Split Flow
 - Approximate Dike/Channel Alignment
 - Reach #1
 - Reach #2
 - Reach #3
 - Reach #4
 - Reservoir Locations
 - Approximate Parcel Boundary

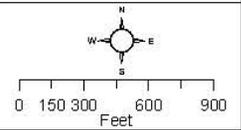
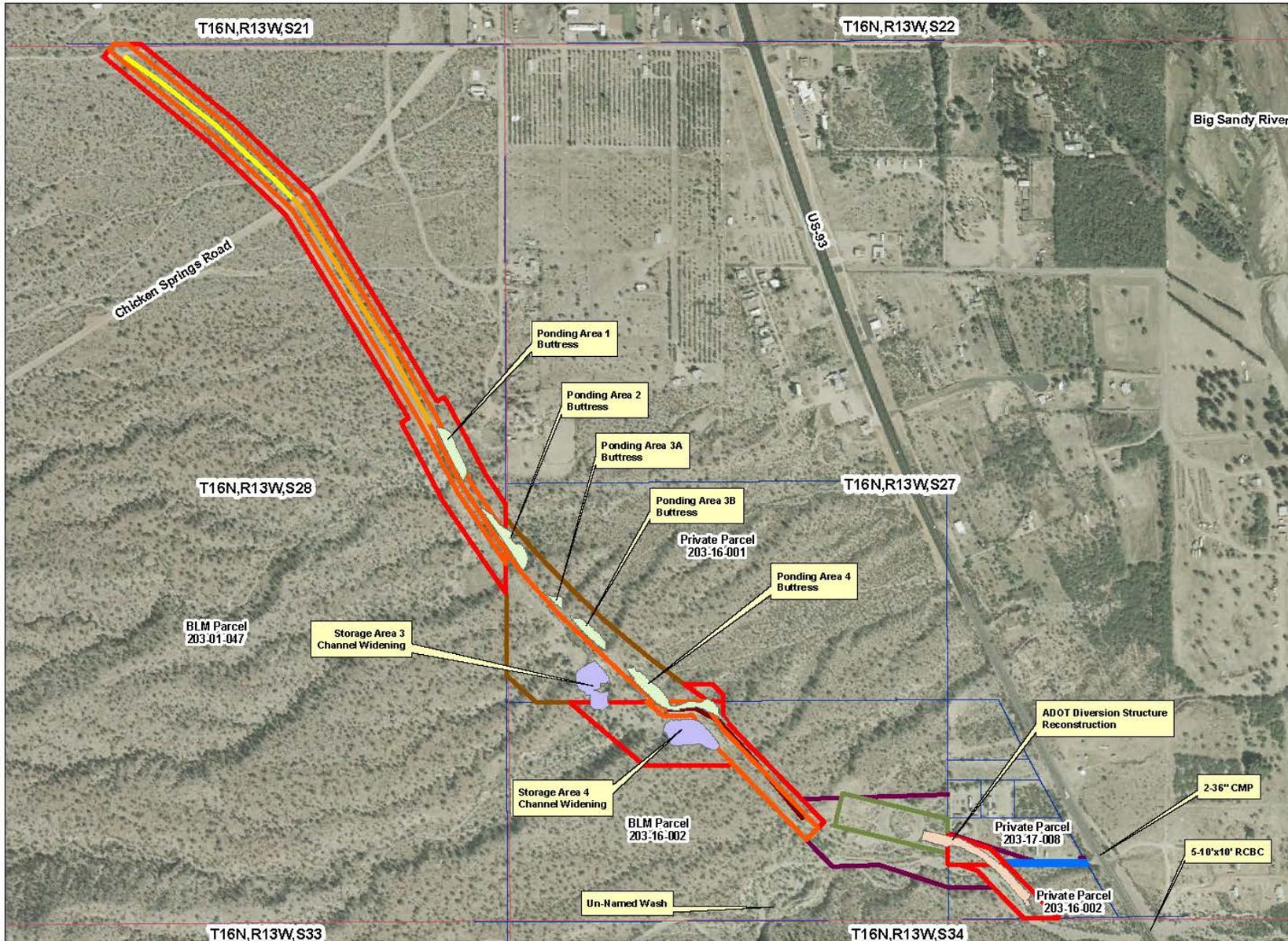


Exhibit A

Site Overview



**Town of Wikieup
Improvements for
Drainage Structures**

Right-of-Way Application

Prepared For:
Bureau of Land Management

Prepared By:
Mohave County

August 2009

- Legend**
- Approximate Dike/Channel Alignment
 - Reach # 1
 - Reach # 2
 - Reach # 3
 - Reach # 4
 - BLM AR983 R.O.W.
 - ADDITIONAL R.O.W.
 - ADOT R.O.W. (FUTURE BYPASS)
 - APPROX. ADOT R.O.W. (1951 BLM)
 - INGRESS/EGRESS R.O.W.
 - T.C.E.
 - DIKE REHAB FILL
 - DIVERSION CHANNEL WIDENING
 - ADOT DIVERSION STRUCTURE

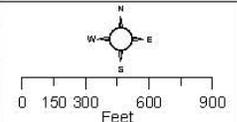


Exhibit B

Limits of
Existing and Proposed
Right-of-Way and
Temporary Construction
Easement

APPENDIX B

IMPROVEMENTS, REHABILITATION AND RECONSTRUCTION OF TOWN OF WIKIEUP DRAINAGE FACILITIES

DISCUSSION AND DOCUMENTATION FOR ADDITIONAL RIGHT-OF-WAY APPLICATION

**RIGHT-OF-WAY REQUESTED BY:
MOHAVE COUNTY**

**SUBMITTED TO:
BUREAU OF LAND MANAGEMENT
KINGMAN, AZ FIELD OFFICE**

TABLE OF CONTENTS

1.0	Project Description	1
1.1	Project Location	1
1.2	General Description of Drainage Facilities	1
2.0	Detailed Description of Drainage Features	3
2.1	Dike	3
2.2	Diversion Channel	3
2.2.1	Diversion Channel Reach #1	3
2.2.2	Diversion Channel Reach #2	4
2.2.3	Diversion Channel Reach #3	4
2.2.4	Diversion Channel Reach #4	4
2.3	Reservoirs	4
2.4	Un-named Wash	5
2.5	ADOT Diversion Structure	5
3.0	Need for Project	6
3.1.1	July 30, 2007 Storm	6
3.1.2	Adverse Impacts Resulting from July 30, 2007 Flood	8
3.1.3	Post-Flood Assessment of Dike	13
4.0	Project Details	14
4.1	Design/Construction Details	14
4.1.1	Rehabilitation of Dike and Improvements to Diversion Channel	14
4.2	Reconstruction of ADOT Diversion Structure	15
4.2.1	Volume of Material Necessary for Dike Rehabilitation and ADOT Diversion Structure Reconstruction	16
4.2.2	Environmental Effects from Proposed Project	16
4.2.3	Anticipated Construction Methods	19
5.0	Requested right-of-Way Acquisition	20
5.1	BLM Right-of-Way Grant A983	20
5.2	Proposed Right-of-Way Acquisition	21
6.0	Routine Maintenance Activities	23

TABLES

[LOCATED AT END OF DOCUMENT]

Table A.	Length of Drainage Facility Improvements Per ¼ Section
Table B.	Right-of-Way Information Per Parcel and Township/Range/Section
Table C.	Temporary Construction Easements Per Parcel and Township/Range/Section
Table D.	Mohave County Parcel Legal Descriptions
Table E.	Dike Length Per Parcel
Table F.	Bottom Width Improvements for Dike
Table G.	Reservoir (Storage Area) Areas, Locations and Mohave County Parcels
Table H.	Excavated Volumes for Channel Widening Per Mohave County Parcel
Table I.	Disturbed Area Per Mohave County Parcel and Township/Range/Section
Table J.	Fill Volume for Improvements Per Mohave County Parcel and Township/Section/Range

APPENDICES
[AS ATTACHED TO RIGHT-OF-WAY APPLICATION]

- Appendix A Exhibits
- Appendix B Discussion and Documentation (This Document)
- Appendix C 95% Construction Drawings
- Appendix D Cultural Resource Survey
- Appendix E Existing Right-of-Way

PROJECT DESCRIPTION

This document supports the right-of-way (R.O.W.) acquisition being requested by Mohave County in order to rehabilitate, reconstruct and maintain the existing drainage facilities protecting the Town of Wikieup, AZ and the US-93 roadway corridor. In their current condition, these drainage facilities pose a significant safety hazard to the Town and roadway infrastructure. Information regarding the project and associated R.O.W. and easement is provided in the following sections.

This document serves as **Appendix B** of the Wikieup Drainage Facilities' Application for Transportation and Utility Systems and Facilities on Federal Lands (Application), originally submitted to the BLM in July 2009, and resubmitted August 2009. Additional Application Appendices, which are referenced by this document, include the following: **Appendix A** – Supporting Exhibits, **Appendix C** – 95% Construction Drawings, **Appendix D** – Cultural Resources Survey and **Appendix E** – Right-of-Way Grants.

Project Location

The project is located within the Town of Wikieup, AZ, within Township 16 North, Range 13 West, Sections 27 and 28 of the Gila and Salt River Meridian. The Site Overview Exhibit (**Exhibit A**, provided in **Appendix A** of Application) shows the project location.

General Description of Drainage Facilities

A portion of the Town of Wikieup, Arizona, and a section of Highway US-93, have historically been protected from flood flows by a channel and dike system (referred to as the Diversion Channel and Dike, respectively) located approximately 0.5 miles west of US-93, and just south of the Town's landing strip. In addition to the Diversion Channel and Dike, four in-line reservoirs located at major inflow tributaries (identified as Reservoirs #1, #2, #3 and #4) were originally constructed as part of the system. The overall flood diversion system, constructed in the late 1960's, is approximately 1.2 miles in length, running primarily from northwest (upstream) to southeast (downstream). Right-of-way (R.O.W.) limits for the Dike and Channel were granted to Mohave County by BLM per Grant A983, dated October 15, 1971 (see Section 5.0), for those portions of the Dike and Channel located in Section 28 and the S1/2, SE1/4 of Section 27.

The Diversion Channel outfalls to a relatively large wash approximately 2,100 feet upstream of US-93 (referred to as the Un-named Wash). The Un-named Wash runs from west to east and eventually passes flow under US-93 via a 5-10'x10' reinforced concrete box culvert (RCBC). To direct flow toward the culvert crossing, and away from a historic flow split, a diversion structure (referred to as the ADOT Diversion Structure) was constructed just upstream of the highway. The ADOT Diversion Structure R.O.W. was granted to ADOT in 1951 per Grant AZPHX85742 (provided in **Appendix E** of the Application). Immediately downstream of the ADOT Diversion Structure a 2-36" corrugated metal pipes (CMP) has been installed to pass local runoff under the roadway. Date of original construction of the ADOT Diversion Structure is not known, but structure improvements are shown on ADOT as-built plans dated October 2, 1961. Proposed improvements to the Wikieup drainage facilities discussed below does not include work on either the 5-10'x10' RCBC or 2-36" CMP. In addition, no work shall take place within Section 34, Township 16 North, Range 13 West.

The Dike, Diversion Channel, Reservoirs, Un-named Wash, ADOT Diversion Structure and culvert crossing locations are shown on **Exhibits A and B** (provided in **Appendix A** of Application). In addition, these structures are shown with respect to Section, Township and Range on **Exhibit A** and the Grant A983 Right of Way Map (provided in **Appendix E** of the Application). Existing and proposed right-of-way limits are shown on **Exhibit B**, Existing and Proposed Right-of-Way Limits (provided in **Appendix A** of Application). Mohave County parcel boundaries area also shown on **Exhibit A**.

Tables providing information regarding existing drainage facilities and proposed improvements are located at the end of this document (**Appendix B** of the Application). The following tables are provided:

- **Table A.** Length of Drainage Facility Improvements Per ¼ Section
- **Table B.** Right-of-Way Information Per Parcel and Township/Range/Section
- **Table C.** Temporary Construction Easements Per Parcel and Township/Range/Section
- **Table D.** Mohave County Parcel Legal Descriptions
- **Table E.** Dike Length Per Parcel
- **Table F.** Bottom Width Improvements for Dike
- **Table G.** Reservoir (Storage Area) Areas, Locations and Mohave County Parcels
- **Table H.** Excavated Volumes for Channel Widening Per Mohave County Parcel
- **Table I.** Disturbed Area Per Mohave County Parcel and Township/Range/Section
- **Table J.** Fill Volume for Improvements Per Mohave County Parcel and Township/Section/Range

DETAILED DESCRIPTION OF DRAINAGE FEATURES

Dike

Fill material used for construction of the earthen Dike was obtained through the excavation of material during construction of the Diversion Channel and Reservoirs (see **Exhibit A** for Dike and Diversion Channel locations, provided in **Appendix A** of the Application). Given this construction methodology, the Dike serves as the left bank of the adjacent Diversion Channel, when looking in the downstream direction. In addition, the section of Dike between Reservoirs #1 and the Un-named Wash has been constructed between a series of ridgelines that separate major drainages truncated by the embankment; and therefore, as the Dike transitions into a ridgeline, the dike-channel typical section transforms to a channel-only section.

The existing Dike is an earthen, trapezoidal-shaped embankment, with a top width ranging between 15 and 20 feet and a bottom width ranging between 50 and 103 feet (see **Table F**). Dike height varies from upstream (north) to downstream (south), with the flood-side height of the Levee at the upstream and downstream ends approximately 3 feet and 9 feet high, respectively. However, at any one location the dry-side height of the Dike can be up to three times the flood-side height. The difference between dry-side and flood-side heights, other than the prevailing slope of the land, is a result of sediment aggradation taking place behind the Dike.

The Dike's flood-side and land-side embankment side slopes vary. Approximate flood-side side slopes range between 6H:1V at the upstream end, to 2.5H:1V near the midsection of the Dike, to near vertical as the Dike transitions into a channel-only section through ridgelines. Land-side embankment side slopes are steepest at the highest sections of the Dike, which are typically adjacent to reservoir locations, and are approximately 1.5H:1V.

Diversion Channel

As part of the overall flood diversion system, the earthen Diversion Channel was constructed in conjunction with the Dike. As mentioned above, it is believed that excavated material from Diversion Channel construction was used for construction of the Dike. The Diversion Channel runs adjacent to the toe of the flood-side embankment slope; and therefore, the Dike's embankment also serves as the Diversion Channel's left bank (looking in the downstream direction). For assessment purpose, the Diversion Channel has been divided into the four reaches (Reaches #1 - #4) with varying channel characteristics (see **Exhibit A**, provided in **Appendix A** of the Application). Diversion Channel reach descriptions are provided in the following sections.

Diversion Channel Reach #1

Diversion Channel Reach #1 conveys flow from the upstream end-of-embankment (northern limit) to Chicken Springs Road (approximately 1,240 feet in length). During a moderate to large event, flow within this reach is wide and shallow. Reach #1 has moderate vegetative cover and an approximate longitudinal slope of 0.023 ft/ft. Ordinary flows have formed a small drainage path (only a few inches deep) adjacent to the Dike embankment, which increases in width as flow progresses downstream. However, this flow path remains shallow with no truly defined banks. No armoring of the Dike is

provided within Reach #1. The Diversion Channel bed material is primarily sandy, with a small percentage of gravel-sized material.

Diversion Channel Reach #2

Diversion Channel Reach #2 is a well-defined channel from Chicken Springs Road to Reservoir #1 (approximately 1,590 feet in length). The Diversion Channel has a trapezoidal cross-sectional geometry, with a bottom width of approximately 30 feet. The Dike embankment serves as the left channel bank (looking downstream) and has a typical side slope of 2.5H:1V. The Diversion Channel section ranges between 6 and 8 feet in depth (when measured from top-of-embankment to channel bottom). The longitudinal slope of Reach #2 is approximately 0.024 ft/ft. At the time of this report, the Diversion Channel section was void of vegetation and no armoring of the Dike is provided. The Diversion Channel bed material is primarily sandy, with a small percentage of gravel-sized material.

Diversion Channel Reach #3

Diversion Channel Reach #3 extends from Reservoir #1 and through Reservoirs #2, #3 and #4 (approximately 2,290 feet in length). Within Reach #3 the Diversion Channel transects ridgelines that separate the four reservoirs. These ridgelines define the major drainage basins contributing directly to each reservoir area. As the embankment-channel-reservoir system transects a ridge, it transitions to a channel-only type section. A formal channel with a definitive right bank (looking downstream) does not exist within the reservoirs; however, the downstream direction of flow remains to the southeast, against the Dike embankment.

The typical Diversion Channel cross-section transecting a ridgeline has a trapezoidal geometry, with a bottom width ranging between 20 and 30 feet. Side slopes range from 2H:1V to 3H:1V. The longitudinal slope of this reach is approximately 0.01 ft/ft. The Diversion Channel section is void of vegetation and no armoring of the Dike is provided. The Diversion Channel bed material is primarily sand, with a small percentage of gravel- and cobble-sized materials

Diversion Channel Reach #4

Immediately downstream of Reservoir #4 the embankment-channel-reservoir flood diversion system begins to cut through a major ridge and transitions into a channel-only type cross-section. Reach #4 is a well-defined rectangular channel extending from Reservoir #4 to the Un-named Wash (approximately 1,040 feet in length). The channel has a bottom width of approximately 40 feet, with near vertical banks. The channel section is void of vegetation. Bed material is primarily sand, with a small percentage of gravel- and cobble-sized materials. In addition, areas of Stage II caliche are present along the reach at various locations, which is the only bank or toe protection within the reach. A large cemented-material outcrop, located at the downstream end of Reach #4, serves as grade control at the confluence with the Un-named Wash.

Reservoirs (Storage Areas)

As discussed above, the overall embankment-channel-reservoir flood diversion system includes four reservoirs, labeled Reservoir #1 (upstream) through Reservoir #4 (downstream), located at major drainages truncated by the Dike. Reservoirs were originally constructed through material excavation and construction of elevated

spillways. However, since construction of the flow diversion system (late 1960's), deposition of sediment has significantly impacted the reservoir storage capacities. At the time of this application, no below grade storage is available. However, as flow is conveyed from a relatively wide reservoir section to a channel-only section at each ridgeline, flow is constricted and attenuation occurs. The approximate area, location and Mohave County parcel for each reservoir is listed in **Table G**.

Un-named Wash

As discussed above, the Diversion Channel outfalls to a relatively large wash (referred to as the Un-named Wash) that conveys runoff to the east toward US-93. This flow is conveyed under US-93 via a 5-10'x10' RCBC. East of US-93 the Un-named Wash enters the Big Sandy River, which is considered a large, regional watercourse.

The subject reach of Un-named Wash is approximately 2,100 feet in length (extending from the Diversion Channel confluence to US-93), with a relatively steep gradient that averages about 0.04 ft/ft. The subject reach typical cross-section, downstream of the Diversion Channel confluence, varies from trapezoidal (upstream) to rectangular (downstream) in shape. Channel bottom width ranges from 140 feet (upstream) to 40 feet (downstream). Bed material primarily consists of a sandy-gravel-cobble composite, with little to no vegetation within the reach. Based on field observations, it appears that the Un-named Wash is aggrading over time. Aggradation is likely a result of the large sediment supply from the upstream contributing area dropping out as the longitudinal profile transitions from the upstream, steeper, mountainous terrain to the flatter topography approaching the Big Sandy River.

ADOT Diversion Structure

An historic flow split within the Un-named Wash is located approximately 1,000 feet upstream of US-93 (see **Exhibit A**, provided in **Appendix A** of the Application). At this split, to maintain flow within the predominant channel, a false left bank/diversion structure (referred to as the ADOT Diversion Structure) was constructed across the left (north) split alignment (approximately 700 feet in length). This structure directs flows to the south, toward the 5-10'x10' RCBC crossing under US-93. However, during the July 30, 2007 storm event the ADOT Diversion Structure was significantly damaged. Currently only remnant sections of the structure, including a section of rail bank approximately 100 feet in length, exist.

NEED FOR PROJECT

As a result of an extreme storm event that occurred on July 30, 2007, the drainage facilities protecting the Town of Wikieup and US-93 were significantly damaged. Structures that were considerably impacted are the Dike, ADOT Diversion Structure and the US-93 roadway corridor. Without improvements, rehabilitation and/or replacement of the drainage structures protecting the Town and roadway, the Town and roadway are at risk of substantial flood damage during the next moderate to large flood event. Discussion regarding the July 30th event and the associated damage is provided below.

July 30, 2007 Storm

On July 30, 2007 a large storm event occurred over the area contributing to the Diversion Channel, Dike, ADOT Diversion Structure and subject section of US-93. Although the storm's precipitation depth and intensity occurring within the watershed during the event is not known for certain (and likely varied throughout the watershed), the Wikieup Precipitation Gage (Mohave County Sensor #7650) recorded 1.1 inches of rain over an approximate one hour time frame, with about 0.7 inches of this total falling within the initial 15 minutes. However, because the Wikieup Precipitation Gage is not located within the watershed, the rainfall depth and intensity that occurred directly within the contributing area may not be accurately reflected in the recorded gage data. Based on field observations, the storm's precipitation and intensity occurring with the contributing area was likely higher than the recorded data.

In addition to the large amount of precipitation collected during the event, according weather gage recordings, prior to this storm event the antecedent moisture condition within the watershed would have been considered high. The antecedent moisture describes the relative wetness of a watershed prior to a storm event, and has a significant effect on runoff response. Antecedent moisture conditions are highest when previous rainfall events have saturated the ground. This hydrologic condition reduces rainfall infiltration and increases runoff potential, which exacerbates flooding. According to the Wikieup Precipitation Gage (#7950), between July 25th and the July 30th storm event, approximately 2.7 inches of rain was collected. This is approximately 44 percent of the total recorded annual rainfall prior to the subject storm. Additional hydrologic conditions that affect the antecedent moisture condition include air temperature, wind speed and humidity levels, which affect the rate of evaporation. **Table 1** below provides recorded antecedent hydrologic conditions for the area between July 25th and the July 30th storm event.

Table 1. Recorded hydrologic conditions at Wikieup weather sensors between July 25th and 30th.

Gage #7650	Gage #7651	Gage #7652	Gage #7656
Precipitation¹ (inches)	Relative Humidity² (percent/100)	Temperature² (degrees)	Wind Speed² (miles/hour)
2.7	74	74	4.3

Notes: 1. Cumulative precipitation.
2. Average value.

Based on the above hydrologic conditions associated with the July 30th storm event, significant runoff would have been produced within the area contributing to the drainage facilities protecting the Town of Wikieup and US-93 roadway corridor. This is supported based on field observations and a simple discharge estimate. As can be seen in Photograph 1 below, the flood's high water mark (pointed to by Ted Lehman, JEF) is approximately 7 feet up the right channel bank. At this location (approximately 400 feet upstream of US-93) the channel is well entrenched between two ridges and is roughly 75 feet wide. Assuming a flow velocity ranging between 10 and 13 feet per second (appropriate based on flood photographs provided by local residents, see photographs below, and simplified HEC-RAS modeling results), the calculated discharge ranges between 5,250 and 6,825 cfs (Discharge = Velocity x Area). These estimated discharge rates are substantially higher than results from HEC-1 modeling of the watershed, which estimate the 100-year, 6-hour peak discharge at US-93 to be approximately 3,260 cfs.

Photograph 1. Evidence of high water mark, post July 30, 2007 flood event.



Adverse Impacts Resulting from July 30, 2007 Flood

Drainage facilities protecting the Town of Wikieup and the US-93 roadway corridor were significantly damaged during the July 30, 2007, flood event. Damage to these facilities included the following:

- **Overtopping of Dike.** Field evidence suggests that the runoff storage capacity behind the Dike was exceeded at the most downstream reservoir location (Reservoir #4), which resulted in overtopping of the Dike embankment. Overtopping flows eroded embankment material, resulting in rilling of the land-side (downstream) face of the Dike. Local runoff concentrates at areas of rilling, which exacerbates erosion of embankment with each rainfall (see Photograph 2).



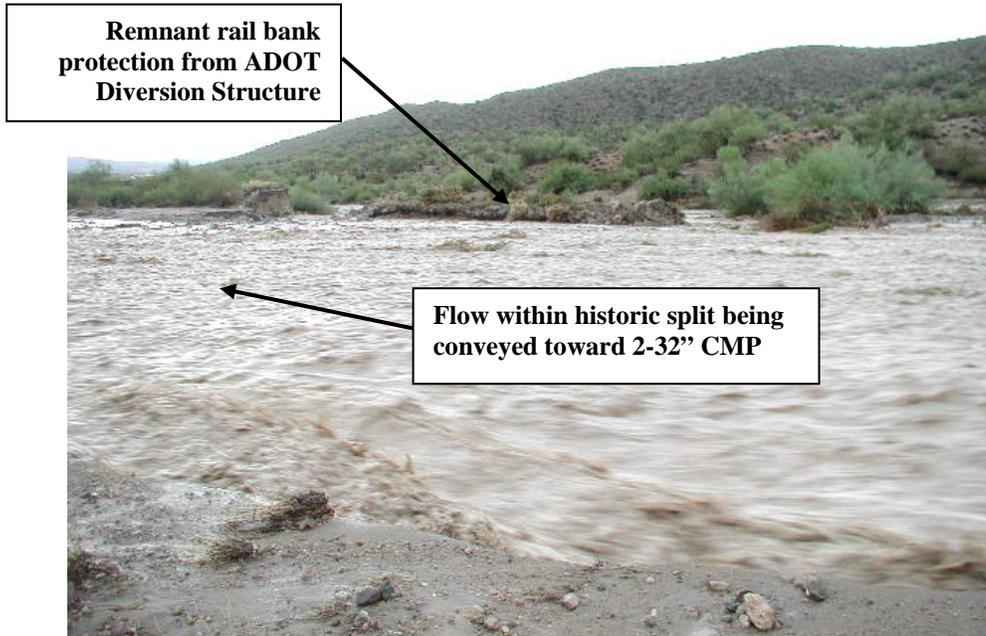
Photograph 2. Rilling down the land-side face of Dike embankment, induced by overtopping of the Dike during July 30, 2007 flood event and exacerbated over time. Photograph location is adjacent to Reservoir #4. Date of photograph is February 17, 2009.

- **Loss of ADOT Diversion Structure.** A significant portion of the ADOT Diversion Structure was lost during the July 30, 2007, flood event. The ADOT Diversion Structure was originally constructed to eliminate the historic flow split just upstream of US-93 by directing flow to the southeast, toward the 5-10'x10' RCBC crossing under the roadway. However, as a result of the structure loss during this large event, a significant portion of flow was conveyed to the east, toward the 2-36" CMP crossing under US-93. This relatively small crossing was installed only to convey local flows under US-93; and therefore, was severely undersized for conveyance of July 30th flood flows. As flood flows approached the 2-36" CMP crossing, water overtopped the roadway and US-93 was forced to shut down for approximately 2 hours. Based on anecdotal evidence, the depth of flow overtopping the roadway was in excess of 3 feet for about 1 hour. In addition, given the size of material transported during the event, it is likely that flow velocities over the roadway were in excess of 10 ft/s.

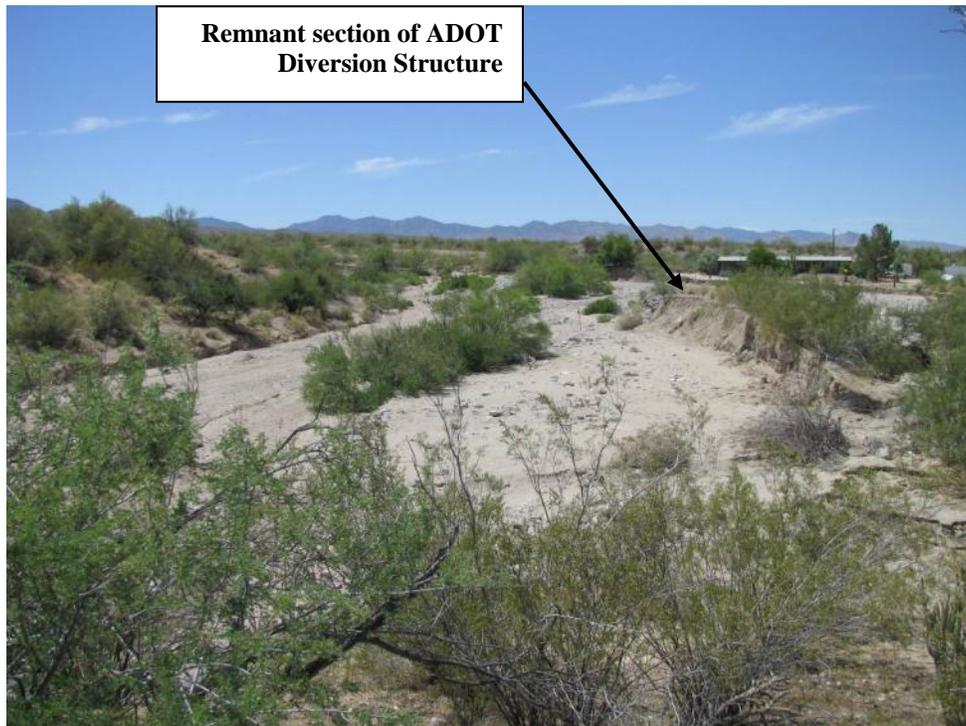
In addition to the shutdown of US-93, damage to infrastructure included the loss of the northbound shoulder, as well as the loss of the downstream headwall for the 2-36" CMP. Also, as a result of flood flows overtopping US-93, severe scour and erosion occurred through the property east of US-93. The remnants of the original ADOT Diversion Structure do not provide flood protection to the roadway corridor, and damage to the corridor should be expected during moderate to large storm events. Photographs below show the flow within the split during the storm event and the post-flood damage to the ADOT Diversion Structure and US-93 roadway corridor.

Photograph 3. Flow during July 30, 2007 flood event. Photograph showing historic flow split. Photograph taken from left channel bank, looking across channel to where the ADOT Diversion Structure was located.

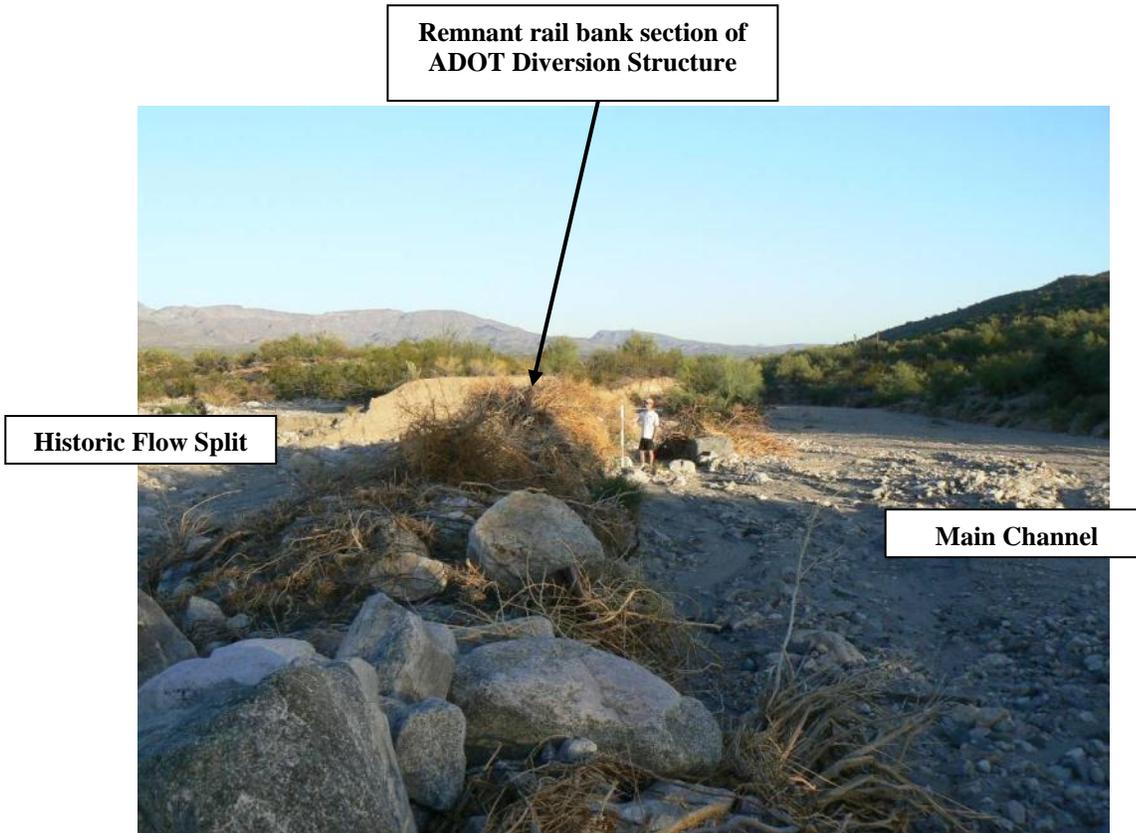




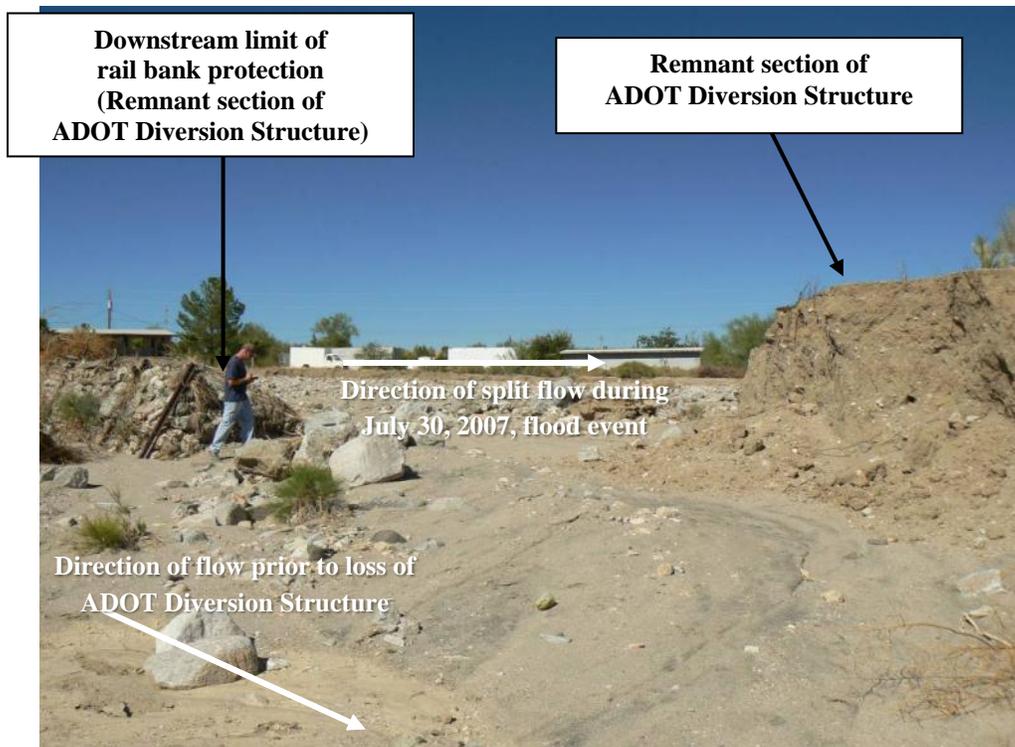
Photograph 4. Flow during July 30, 2007 flood event. Photograph showing historic flow split. Photograph taken from left bank, looking across channel to where the ADOT Diversion Structure was located. Remnant rail bank material is shown in the center of photograph. Main channel flow located beyond rail bank shown in photograph.



Photograph 5. Upstream view of main channel at historic flow split. Location of lost ADOT Diversion Structure (location of remnant rail bank at split) is beyond remnant section shown in photograph.



Photograph 6. Remnant ADOT Diversion Structure, comprised of rail bank. Rail bank significantly damaged during July 30, 2007, flood event.



Photograph 7. Downstream limit of lost left bank/flood diversion structure. Notice height of remnant structure is approximately 8 feet. Notice vertical bank comprised of erodible material. Channel shown in background is historic flow split.



Photograph 8. Downstream end of 2-36" CMP located at section of US-93 that was overtopped during July 30, 2007, flood event. Notice downstream headwall and northbound shoulder has been lost. In addition, several feet of local erosion has occurred, along with significant channel widening.



Photograph 9. Channel formation as a result of flow overtopping US-93. Photograph taken approximately 1,000 feet downstream of US-93. View is looking downstream (east). Date of photograph is September 18, 2007.

Post-Flood Assessment of Dike

JE Fuller/Hydrology & Geomorphology, Inc. (JEF) was tasked by Mohave County to evaluate the post-flood condition of the Dike in order to determine the potential for FEMA accreditation. The evaluation included hydraulic calculations to estimate the 100-year freeboard conditions, as well as a preliminary geotechnical assessment to determine embankment material suitability and level of safety. This initial assessment showed the Dike's lack of FEMA required freeboard and significant embankment safety deficiencies. To mitigate the embankment's freeboard and safety issues, JEF was tasked by Mohave County to design the rehabilitation of the Dike. Included in the design effort was a more thorough geotechnical assessment of the Dike's embankment. Based on the hydraulic and initial and secondary geotechnical assessments, the following safety deficiencies were identified:

- Unstable dry-side (downstream or landward) embankment slopes in the vicinity of reservoirs. Existing embankment slope factors of safety are less than 1.5.
- As a result of low in-situ relative densities (due to poor embankment material and construction methodology [i.e. dike material was "pushed up" rather than placed and compacted in acceptable lifts]), vegetation, and bioturbation unacceptable seepage gradients (constant head computations) exist that may lead to piping and contribute to the low downstream slope stability factors of safety.
- Sections of dike have substantial vegetation growth on landward and flood-sides of embankment.
- Extreme rilling and erosion of dry-side embankment slope in vicinity of reservoirs.
- The majority of length of dike does not meet FEMA freeboard criteria (typically 3 feet). In addition, overtopping of the dike occurs at Reservoir #4 and the Chicken Springs Road crossing during conveyance of the 100-year flow.

PROJECT DETAILS

Given the significant safety hazards associated with the Dike's existing condition, as well as the significant safety hazard associated with the loss of the ADOT Diversion Structure, Mohave County tasked JEF with the design of improvements for the drainage facilities protecting the Town of Wikieup and the subject section of US-93 roadway corridor. Without improvements to these drainage structures, flood damage to downstream property and infrastructure should be expected. Location of drainage facilities (Diversion Channel, Dike and ADOT Diversion Structure), in relation to the Town of Wikieup and US-93, are shown on **Exhibit A**, provided in **Appendix A** of the Application. Project details include the following:

1. Rehabilitate Dike to mitigate land-side embankment slope safety deficiencies such as over-steepness (approximately 1.5H:1V), rilling and over-vegetation growth. In addition, the elevation of approximately 336 feet of embankment (in vicinity of Reservoir 4) will be raised to provide adequate freeboard (see 95% Construction Drawings, Sheets 3, 9, 18 and 19, provided in **Appendix C** of the Application). The maximum embankment elevation increase will be 1.4 feet. Excavated material from Diversion Channel improvements (see Project Detail #2 below) will be used to flatten over-steepened side slopes and increase crest elevation.
2. Improve Diversion Channel (adjacent to Dike) through borrow of material adjacent to channel section to reduce flow depths and velocities against Dike. Reduced flow depths improve Dike freeboard conditions. Reduced flow velocities decrease potential Dike erosion. Borrow of material to occur in vicinity of Reservoirs #3 and #4.
3. Reconstruct ADOT Diversion Structure to redirect flow toward 5-10'x10' RCBC crossing und US-93. Reconstruction of structure will follow original alignment. Unsuitable remnant sections will be removed and replaced.

Design/Construction Details

Design/construction details are shown in the 95% Construction Drawings, provided in **Appendix C** of the Application. Additional discussion is provided below.

Rehabilitation of Dike and Improvements to Diversion Channel

As discussed above, significant safety deficiencies associated with the Dike include over-steepened embankment slopes at reservoir locations (land-side slope of Dike is approximately 1.5H:1V) and a lack of adequate 100-year freeboard capacity. To correct over-steepened slopes, fill material (battles) will be used to flatten the dry-side embankment face to approximately 2.5H:1V. Sections of Dike that do not meet freeboard capacity will be raised to 2 feet above the HEC-RAS¹ computed energy grade, which meets or exceeds ADOT design criteria. The elevation of approximately 336 feet of embankment (in vicinity of Reservoir 4) will be raised to provide adequate freeboard (see 95% Construction Drawings, Sheets 3, 9, 18 and 19, provided in **Appendix C** of the Application). The maximum embankment elevation increase will be 1.4 feet. Improvements to the Dike are to take place at each reservoir location, where safety

¹ US Army Corps of Engineers' Hydrologic Engineering Centers River Analysis System (HEC-RAS).

deficiencies are of most concern due to the existing condition of the Dike's embankment coupled with the large volume of water potentially attenuating (being stored or ponding behind Dike) within the reservoirs (storage areas). Reservoir locations are shown on **Exhibit A**, provided in **Appendix A** of the Application. Limits of the Dike rehabilitation are shown in the 95% Construction Drawings, Sheets 9 – 11, provided in **Appendix C** of the Application.

Material for the Dike's rehabilitation will be taken from the area excavated to improve/widen the Diversion Channel adjacent to the Dike. As discussed above, Diversion Channel improvements will increase the Dike's freeboard capacity. Improvements entail excavation of borrow material adjacent to the channel section in the vicinity of Reservoirs #3 and #4. Borrow material will be excavated from two ridges that define the channel's west bank (right bank when looking in the downstream direction) and separate Reservoirs #2, #3 and #4. Excavation into ridges are designed at 2H:1V. Channel improvements do not include modification to the channel section within the Ordinary High Water (OHW) limits (otherwise referred to as Waters of the U.S.) as defined by the U.S. Army Corps of Engineers' (USACE) 404 Permitting requirements. To ensure channel improvements do not occur within the OHW limits, constructed improvements will be benched approximately 2 feet above the channel bottom. Approximately 1.8 acres of newly disturbed area will result from the borrowing of material from the two ridges adjacent to the Diversion Channel in the vicinity of Reservoirs (Storage Areas) #3 and #4. Of this 1.8 acres, approximately 1 acre will be located on BLM land (Mohave County Parcel No. 203-16-002). Reservoir locations are shown on **Exhibit A**, provided in **Appendix A** of the Application.

Discussion regarding the volume of fill and excavation materials required for performing the above improvements is provided in Section 4.2.1. Limits of drainage excavation (borrow sources) for Diversion Channel widening are shown on **Exhibit B** (provided in **Appendix A** of Application) and on the 95% Construction Drawings, Sheets 12 and 13, provided in **Appendix C** of the Application). Areas of Dike rehabilitation fill (buttresses) are shown on **Exhibit B** and 95% Construction Drawings, Sheets 7, 9 -11. **Table A** lists the length improvements per quarter section. **Table E** lists the Dike length per parcel. **Table F** lists the bottom width improvements for the Dike. **Table G** lists areas, locations and Mohave County parcels for Reservoirs (Storage Areas) 1 – 4. **Table H** lists excavated volumes for Diversion Channel widening per Mohave County Parcel. **Table I** lists the disturbed area per Mohave County Parcel and Section, Township, Range. **Table J** lists the approximate fill volume for improvements per Mohave County parcel and Section, Township, Range.

Reconstruction of ADOT Diversion Structure

As discussed above, the ADOT Diversion Structure was originally constructed to eliminate the historic flow split located just upstream of US-93 (see **Exhibit A**, provided in **Appendix A** of the Application). This structure diverted flow to the southeast, toward the 5-10'x10' RCBC crossing under US-93. However, a significant portion of the structure was lost during the July 30, 2007, flood event and remnant sections do not provide flood protection to the US-93 roadway corridor, as originally intended.

The ADOT Diversion Structure will be reconstructed following very closely to the original alignment. Remnant sections will be removed and replaced, including a small

section of rail bank and rock backfill that was significantly damaged during the July 30, 2007, flood event. The new structure will be constructed out of earthen material, with fill being obtained from the excavation used to widen the Diversion Channel (see Section 4.1.1 above). The typical section will be trapezoidal in shape, with a top width of 12 feet, and flood- and dry-side slopes equal to 1.5H:1V and 3H:1V, respectively. The flood-side slope of the embankment will be protected with rail bank and rock backfill per ADOT Standard Detail C-17.15. The crest elevation along the structure has been set at 2 feet above the HEC-RAS computed energy grade elevation, with the height of the structure varying approximately between 5 and 8 feet. Rock backfill protecting the flood-side of the structure will extend below the estimated scour depth.

Discussion regarding the volume of fill and excavation materials required for performing the ADOT Diversion Structure reconstruction is provided in Section 4.2.1. Limits of drainage excavation (borrow sources) for Diversion Channel widening are shown on **Exhibit B** (provided in **Appendix A** of Application) and on the 95% Construction Drawings, Sheets 12 and 13, provided in **Appendix C** of the Application). Areas of fill for ADOT Diversion Structure reconstruction are shown on **Exhibit B** and 95% Construction Drawings, Sheets 7 and 8. **Table A** lists the length improvements per quarter section. **Table I** lists the disturbed area per Mohave County Parcel and Section, Township, Range. **Table J** lists the approximate fill volume for improvements per Mohave County parcel and Section, Township, Range.

Volume of Material Necessary for Dike Rehabilitation and ADOT Diversion Structure Reconstruction

As discussed above, fill material used for the Dike rehabilitation and ADOT Diversion Structure Reconstruction will be obtained from the widening of the Diversion Channel. Areas and volumes of excavation and fill are shown on the Earthwork Summary sheet (Sheet 7), provided with the 95% Construction Drawings of Diversion Channel (see **Appendix C** of the Application). Constructing the Dike buttresses and ADOT Diversion Structure will require approximately 30,000 CY of material. In general the cut and fill volumes for the project balance (differ by less than 1% of total excavation); therefore, extended stockpiling of excavated material is not anticipated. Conversely, if additional fill material is required, additional excavation will be relatively minor.

Environmental Effects from Proposed Project

The following sections are intended to address the potential environmental effects listed in Section 17 of the Application.

(a) Air Quality

Only minimal adverse impacts to air quality will occur during the construction of improvements. These impacts will only manifest within close proximity to heavy equipment operations and/or burning of non-salvageable vegetation from the clearing and grubbing process. After construction, the project will not have any effect on air quality as all placed fill will be compacted.

(b) Visual Impact

The project is located in rural Wikieup, Arizona. Visual impacts from the project will only be recognized by local residents, whom support the project. In addition, proposed

improvements are associated with existing structures, already recognized by Town residents.

(c) Surface and Ground Water Quality and Quantity

Adverse impacts to surface and ground water quality and quantity are not anticipated. In addition, adverse impacts as a result of construction activities will be mitigated through the Contractor's development and implementation of a project Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will be submitted to Mohave County for approval prior to the Contractor's commencement of work. In addition, all USACE 404 permitting requirements will be met, including all Section 401 General Conditions. Additional discussion regarding USACE 404 permitting is provided below.

USACE 404 Permitting

Mohave County has coordinated with the USACE (Marjorie Blaine, Regulatory PM) in regards to 404 permitting issues. Ms. Blaine had been briefed through teleconference, e-mail correspondence, and memorandum and exhibit submittals on the conceptual improvements to the Diversion Channel, Dike and ADOT Diversion Structure. In addition, Ms. Blaine has agreed that JEF's delineation of Waters of the U.S., within the Diversion Channel, can be defined between the toe-of-Dike and toe-of-ridge (left and right banks, respectively, while looking in the downstream direction). Ms. Blaine has been assured that channel modifications would occur beyond Waters of the U.S. limits. Project borrow areas take into account the Waters of the U.S. by incorporating a bench approximately 2 feet above the existing channel bottom in the areas of all proposed cut (see 95% Construction Drawings, provide in **Appendix C** of the Application).

According to Ms. Blaine, Nationwide Permit No. 3 (Maintenance) would be applicable for the project components discussed above. In addition, Mohave County has been given approval by the USACE for County-wide use of NWP No. 3. According to NWP No. 3(a),

“This NWP authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage.”

Based on the above two-year requirement to contract for construction services, a contract for such services must be in place between Mohave County and a Contractor by July 30, 2009. However, the USACE has agreed to grant a contractual timeframe extension, if Mohave County can provide justification for said extension. Mohave County has submitted to the USACE the *Nationwide Permit 3 Time Extension for Contracting of Rehabilitation Services* memorandum, which describes in detail the timing of project elements. In particular, the memorandum explains that time required for developing an Intergovernmental Agreement with ADOT significantly delayed the design phase of the project, which then delayed the County from contracting for construction services by July 30, 2009.

In support of meeting all 404 permitting requirements, Mohave County contracted with Northland Research, Inc., of Flagstaff, AZ, to perform a cultural resources survey of the project area. To ensure a sufficient area would be surveyed, Mohave County coordinated

with Ms. Blaine and the agreed-upon survey limits were provided to Northland Research. A copy of the Cultural Survey Report, submitted to Mohave County in March 2009, is provided in **Appendix D** of the Application.

At the time of this Application submittal, Mohave County believes that a NWP No. 3 contractual timeframe extension will be granted by the USACE.

(d) Control or Structural Change On Any Stream or Other Body of Water

The proposed project will not alter the stream alignments (Diversion Channel and Un-named Wash) that have been established since original construction of the drainage facilities. The Diversion Channel and Dike were designed and constructed in the late 1960's. Date of original construction of the ADOT Diversion Structure is not known, but structure improvements are shown on ADOT as-built plans dated October 2, 1961. Note that the washes present near the project flow intermittently and per 404 Nationwide Permit obligations, construction will not occur while the washes/channel are flowing.

(e) Existing Noise Level

A temporary increase in noise level will only occur during construction activities. This increase will only be recognized by local residents whom support the project.

(f) Surface of the Land, Including Vegetation, Permafrost, Soil, and Soil Stability

As discussed in the project details above, cut material taken from borrow areas will be used as fill material necessary for Dike rehabilitation and ADOT Diversion Structure reconstruction. All areas disturbed for construction purposes will be cleared and grubbed. However, where applicable, vegetation identified by Mohave County and/or regulating agencies will be salvaged.

The estimated volume of borrow material ranges between 30,000 and 60,000 cubic yards. The spread between these estimated values accounts for the unknown depth of additional excavation that will be necessary for preparing the surface of the Dike's embankment. This additional excavation is based on an assumed clearing and grubbing depth of 5 feet (worst case scenario). Therefore, the estimated minimum volume of material necessary to rehabilitate the Dike and reconstruct the ADOT Diversion Structure, with minimal clearing and grubbing, is 30,000 CY. The estimated volume of material necessary to rehabilitate the Dike and reconstruct the ADOT Diversion Structure, with clearing and grubbing extending to a depth of 5 feet, is 60,000 CY. As the earthwork for this project is intended to balance, only material needed for fill will be excavated. Over-excavation consisting of material that does not meet specifications for fill will be hauled off-site or disposed of onsite in such quantities and at such locations as approved by the Engineer. Material that is removed as part of clearing and grubbing operations, when suitable as determined by the Engineer, may be re-used to fill voids after organic materials such as stumps, roots, and other objectionable material have been removed. Removed stumps, roots, and other combustible material, when burned or chipped may be wasted on the embankment buttress slopes after the slope construction has been approved by the Engineer. Material not suitable for on-site storage will be disposed on off-site.

Material borrow areas will be based on a cut slope of 2H:1V. Embankment fill will be placed at a 2.5H:1V. Typical channel widening and embankment fill sections are shown in the 95% Construction Drawings, Sheet 3, provided in **Appendix C** of Application.

Anticipated Construction Methods

Anticipated construction methods will be determined by the Contractor. Construction access will be along the existing channel or the existing road on the top of the Dike. Anticipated equipment used for the project includes: two (2) medium hydraulic excavator, two (2) backhoe loaders, two (2) midsize wheel loaders, three (3) 10-yard dump trucks, four (4) pickup trucks, two (2) vibratory soil compactors, one (1) mulcher, and two (2) medium track loaders (such as a CAT 953D bulldozer). Approximately 10 to 25 people will be working on site during construction. The approximate construction timeframe is four months.

Material removed from the clearing and grubbing process contains vegetation; therefore, excess excavated material shall be disposed of onsite in such quantities and at such locations as approved by the Engineer. Material that is removed as part of clearing and grubbing operations, when suitable as determined by the Engineer, may be re-used to fill voids after organic materials such as stumps, roots, and other objectionable material have been removed. Removed stumps, roots, and other combustible material, when burned or chipped may be wasted on the embankment buttress slopes after the slope construction has been approved by the Engineer. Material not suitable for on-site storage will be disposed on off-site.

The Contractor performing the work shall be responsible for developing a Stormwater Pollution Prevention Plan (SWPPP) that is in compliance with all local, State and Federal regulations. Prior to start of work, the SWPPP must be approved by Mohave County and BLM.

Disturbed areas include cut for Diversion Channel widening and fill for Dike rehabilitation and ADOT Diversion Structure reconstruction. Reseeding (hydroseeding) is not recommended within the channel or on the newly constructed section of Dike or ADOT Diversion Structure.

REQUESTED RIGHT-OF-WAY ACQUISITION

As discussed above, the project entails improvement, rehabilitation and reconstruction of the drainage structures protecting the Town of Wikieup and associated section of US-93. In order to complete the project, as well as to adequately maintain the existing and proposed drainage features, additional right-of-way is required. In addition, a temporary construction easement (T.C.E.) is also required for construction of improvements. Discussions regarding existing and proposed R.O.W. and T.C.E. limits are provided below. Existing and proposed R.O.W. and T.C.E. limits are shown on **Exhibit B**, provided in **Appendix A** of the Application. Proposed R.O.W. and T.C.E. limits are shown on the 95% Construction Drawings, Sheets 8 – 13, provided in **Appendix C** of the Application. Existing and proposed right-of-way is further detailed in **Tables B** and **C** provided at the end of this document (**Appendix B** of Application).

BLM Right-of-Way Grant A983

According to the Decision dated October 15, 1971 (Grant A893), right-of-way (R.O.W.) for the Diversion Channel and Dike was granted to Mohave County by BLM for the purpose of flood control. Grant A893 is provided in **Appendix E** of the Application.

According to Grant A893, application was made for a right-of-way 100 feet in width, 50 feet each side of what appears to have been the Dike's originally constructed centerline. However, as shown on **Exhibit B**, the existing R.O.W. limits do not provide sufficient area for maintenance of existing facilities or sufficient area for proposed improvements. Examples of inadequate existing R.O.W. limits include:

- Diversion Channel's width within Reach #2 exceeds the 50-foot offset defining the existing R.O.W. limits. Lack of sufficient R.O.W. prohibits routine channel maintenance activities.
- Existing right-of-way width within Reach #3 is not adequate for routine maintenance of Reservoirs #1 and #2. Reservoirs locations are areas of significant material aggradation. Material must be removed to maintain flood storage volume and Dike freeboard capacity.
- Right-of-Way width within Reach #4 does not encompass the full channel width at the upstream end of the reach. In addition, minimal R.O.W. coverage is offered for the remaining downstream section of Reach #4. Lack of sufficient R.O.W. prohibits routine channel maintenance activities.
- Proposed Diversion Channel improvements adjacent to Reservoirs #3 and #4 extend beyond the existing R.O.W. limits. Improvements to the Diversion Channel will help reduce the depth of flow behind the Dike during moderate to large events. In addition, cut material from channel widening will be used for rehabilitation of the Dike and reconstruction of the ADOT Diversion Structure.

In order for improvements of drainage facilities to take place, and for routine maintenance to occur, the Dike and Diversion Channel R.O.W. granted to Mohave County by BLM will require an increase from 11.7 acres to 28.9 acres (see **Table B**). This increase in acreage includes the following:

- An additional 50 feet (typical) of R.O.W. on each side of existing R.O.W. for Diversion Channel Reaches #1 and #2 (approximately 7.1 additional acres).

- An additional 100 feet (typical) of R.O.W. on each side of existing R.O.W. for Diversion Channel Reach #3 (approximately 4.0 additional acres).
- An additional 50 feet (typical) of R.O.W. on the northeast side of existing R.O.W. for Diversion Channel Reach #4 (approximately 1.2 additional acres). An additional R.O.W. area approximately 4.9 acres in size located on the southwest side of existing R.O.W. for Diversion Channel Reach #4.

Additional granting of R.O.W. to ADOT by BLM is not required for the improvements or maintenance of drainage facilities.

BLM Right-of-Way Grant 085742

According to the Decision dated October 17, 1951, right-of-way was granted to ADOT by BLM for the purpose of channel change. Right of way is located in the SE1/4, SW1/4, S27 and in the N1/2, N1/2, NW1/4, NE1/4, S34. The BLM Decision is provided in **Appendix E** of the Application.

Approximately 1,940 cubic yards of the reconstructed ADOT Diversion Structure will be located on BLM property (Parcel 203-16-002), within the ADOT-granted R.O.W. located in Section 27. Reconstruction will not require acquisition of additional R.O.W. The existing R.O.W. within Section 27 is 3.2 acres (see **Table B**).

Proposed Right-of-Way Acquisition (Including Temporary Construction Easements (TCE))

For improvements, reconstruction and/or maintenance of existing and proposed drainage structures, Mohave County is requesting the acquisition of the following right-of-way from the BLM (see **Table B**, provided at the end of this document – **Appendix B** of Application; see **Exhibit B**, provided in **Appendix A** of the Application):

- An additional 100 feet of right-of-way, 50 feet (typical) each side of existing right-of-way, for Reaches #1 and #2 of the Diversion Channel and Dike. This additional right-of-way will provide Mohave County the area necessary to perform routine maintenance activities within the Diversion Channel, as well as routine maintenance to the Dike's embankment. Existing right-of-way does not include the Diversion Channel's full channel width. Additional R.O.W. being requested is 7.1 acres in size.
- An additional 200 feet of right-of-way, 100 feet (typical) each side of existing right-of-way, for Reach #3 of the Diversion Channel and Dike. Additional right-of-way is necessary for routine maintenance of Reservoirs #1 and #2, as well as maintenance of the Dike's embankment. Given that the reservoir areas are located at major inflow tributaries, maintaining the channel, reservoirs and embankment within this requested right-of-way area is critical for protection of downstream property and infrastructure. Additional R.O.W. being requested is 4.0 acres in size.
- An additional 6.1 acres of right-of-way is being requested adjacent to the existing R.O.W. for Diversion Channel Reach #4. This R.O.W. includes an additional 50 feet (typical) on the northeast side of existing R.O.W. (approximately 1.2 additional acres), and an additional 4.9 acres on the southwest side of existing R.O.W.

For rehabilitation and reconstruction of existing and proposed drainage structures, Mohave County is requesting the following temporary construction easements (TCE)

from the BLM (see **Table C**, provided at the end of this document – **Appendix B** of Application; see **Exhibit B**, provided in **Appendix A** of the Application):

- Approximately 5.1 acres located within Mohave County Parcel 203-16-002, which is located in the SE1/4, SW1/4, S27.

Upon completion of the project, all TCE areas will be place back to pre-project conditions, with final approval from property owners and Mohave County.

ROUTINE MAINTENANCE ACTIVITIES

Routine maintenance activities are necessary to ensure the Diversion Channel, Dike and ADOT Diversion Structure are functional and safe. Recommended maintenance is to occur bi-annually and after significant rainfall events. Maintenance activities have been permitted by the USACE under NWP 3. Maintenance activities include, but are not limited to, the following:

- Removal of aggrading material within the Diversion Channel and Reservoirs #1 - #4.
- Repair of local erosion of Dike embankment, including rilling of embankment slopes.
- Repair of Dike embankment in the event of overtopping flood flow.
- Addition of fill material on dry-side of Dike to correct over-steepened slope.
- Removal of vegetation on Dike and ADOT Diversion Structure, and within the Diversion Channel and Reservoirs #1 - #4, to ensure near-post-project conditions are maintained. Perennial vegetation will be periodically removed at the maintenance crew discretion.
- Removal of aggrading material in vicinity of ADOT Diversion Structure.
- Repair of local erosion of ADOT Diversion Structure.
- Repair of ADOT Diversion Structure rail bank protection.

As discussed above in Section 5.0, the existing R.O.W. limits (BLM Grant A983) do not provide sufficient area for maintenance of existing facilities or proposed improvements. Therefore, additional right-of-way (as shown on **Exhibit B**, provided in **Appendix A** of the Application) is being requested by Mohave County.

Anticipated equipment used for routine maintenance activities include: backhoe loader, midsize wheel loaders, pickup trucks, mulcher, and 10-yard dump truck.

Table A. Length of Drainage Facility Improvements Per 1/4 Section

Improvements	Length	Section	1/4 Section
and Diversion Channel	3460	28	NE
and Diversion Channel	430	28	SE
and Diversion Channel	1570	27	SW
Diversion Channel	1040	27	SW
ADOT Diversion Structure	160	27	SW
ADOT Diversion Structure	540	27	SE

Table B. Right-of-Way Per Parcel and Township/Range/Section

Parcel No.	T.R.S.	Land Owner	R.O.W. Grantee	R.O.W. Length (feet)	Typical Existing Width ² (feet)	Existing Area ³ (acres)	Additional Width ³ (feet)	Additional Area ² (acres)	Total Area ² (acres)	Note
203-01-047	T16N,R13W,S28	BLM	Mohave Co.	2,910	100	6.7	100	7.1	13.8	Diversion Channel Reaches 1 and 2 [NE1/4, S28, T16N, R13W]
203-01-047	T16N,R13W,S28	BLM	Mohave Co.	976	100	2.2	200	4.0	6.2	Diversion Channel Reach 3 (Reservoirs 1, 2, and 3)[SE1/4, NE 1/4, and NE 1/4,S28, T16N, R13W]
203-16-001	T16N,R13W,S27	Private	ADOT	1,303	Varies	13.7	Varies	0.3	14.0	Diversion Channel Reach 3 (Reservoirs 3 and 4)[N1/2, SW 1/4,,S27, T16N, R13W]
203-16-002	T16N,R13W,S27	BLM	Mohave Co.	1,270	100	2.8	Varies	6.1	8.9	Reservoir 4 and Diversion Channel Reach 4 [SW1/2, SW 1/4,,S27, T16N, R13W]
203-16-002	T16N,R13W,S27	BLM	ADOT (1951)	700	200	3.2	N/A	N/A	3.2	ADOT Diversion Structure [SE1/4, SW 1/4,,S27, T16N, R13W]
203-17-008	T16N,R13W,S27	Private	Private.	220	N/A	N/A	Varies	0.9	0.9	ADOT Diversion Structure [N1/2, SW 1/4, SE 1/4,S27, T16N, R13W]
203-17-009	T16N,R13W,S27	Private	Private	450	N/A	N/A	Varies	1.6	1.6	ADOT Diversion Structure [S1/2, SW 1/4, SE 1/4,S27, T16N, R13W]
203-17-009	T16N,R13W,S28	Private	Private	490	N/A	N/A	20	0.2	0.2	Access gate at US 93 [N 1/2, SW1/4,SE 1/4,S27, T16N, R13W]

Table B Notes:

1. R.O.W. lengths are approximate given the non-uniform and/or non-linear shape of some R.O.W. areas.
2. R.O.W. widths listed are typical. R.O.W. widths vary given the non-uniform shape of the R.O.W. area.
3. Areas measured using ArcMap and/or AutoCAD.

Table C. Temporary Construction Easements Per Parcel and Township/Range/Section

Parcel No.	T.R.S.	Land Owner	R.O.W. Grantee	R.O.W. Length (feet)	Existing Width ² (feet)	Existing Area ³ (acres)	Additional Width ³ (feet)	Additional Area ² (acres)	Total Area ³ (acres)	Note
203-16-002	T16N,R13W,S27	BLM	Mohave Co.	N/A	N/A	N/A	Varies	5.1	5.1	ADOT Diversion Structure [SE1/4, SW1/4, S27, T16N, R13W]
203-07-008	T16N,R13W,S27	Private	Mohave Co.	N/A	N/A	N/A	Varies	0.3	0.3	ADOT Diversion Structure [N1/2, SW1/4, SW1/4, SE1/4, S27, T16N, R13W]
203-17-009	T16N,R13W,S27	Private	Mohave Co.	N/A	N/A	N/A	Varies	0.6	0.60	ADOT Diversion Structure [S1/2, SW1/4, SW1/4, SE1/4, S27, T16N, R13W]

Table C Notes:

1. R.O.W. lengths are approximate given the non-uniform and/or non-linear shape of some R.O.W. areas.
2. R.O.W. widths listed are typical. R.O.W. widths vary given the non-uniform shape of the R.O.W. area.
3. Areas measured using ArcMap and/or AutoCAD.

Table E. Dike Length Per Parcel		
Parcel ID	Owner	Length (ft)
203-16-001	Private	1300
203-16-002	BLM	450
203-01-047	BLM	3890

Table F. Bottom Width Improvements for Dike		
Location	Existing Bottom Width (ft)	Final Bottom Width (ft)
Storage Area 4	70	98
Storage Area 3b	103	129
Storage Area 3a	72	104
Storage Area 2	66	115
Storage Area 1	71	99
Upstream of Storage Areas	50	50

Table G. Reservoir (Storage Area) Areas, Locations and Mohave County Parcels					
Storage Area	Area (sq. ft.)	Area (acre)	Location	Parcel	Land Owner
SA1	98474.7455	2.26	SE1/4, NE1/4, S28, T16N, R13W	203-01-047	BLM
SA2	111983.5297	2.57	NE1/4, SE1/4, S28, T16N, R13W	203-01-047	BLM
SA3	35972.3554	0.83	NW1/4, SW1/4, S27, T16N, R13W	203-16-001	PVT
SA4	16990.2765	0.39	SW1/4, SW1/4, S27, T16N, R13W	203-16-001	PVT
SA4	91691.4601	2.10	NW1/4, SW1/4, S27, T16N, R13W	206-16-002	BLM

Table H. Excavated Volumes for Diversion Channel Widening Per Mohave County Parcel				
Storage Area	Excavated Volume (CY)	Parcel	Owner	Location
SA4	17474	203-16-002	BLM	NW1/4, SW1/4, S27, T16N, R13W
SA3	1261	203-16-002	BLM	SW1/4, SW1/4, S27, T16N, R13W
SA3	11453	203-16-001	PVT	NW1/4, SW1/4, S27, T16N, R13W

Table I. Disturbed Area Per Mohave County Parcel and Township/Range/Section					
Parcel ID	Section	Land Owner	Area (sq. ft.)	Area (acres)	Description
203-17-008	T16N,R13W,S27	PVT	15630.6225	0.36	ADOT Diversion Structure
203-16-001	T16N,R13W,S27	BLM	9010.3362	0.21	ADOT Diversion Structure
203-17-009	T16N,R13W,S27	PVT	16723.9072	0.38	ADOT Diversion Structure
203-16-001	T16N,R13W,S27	PVT	32725.6391	0.75	Borrow Area 3
203-16-002	T16N,R13W,S27	BLM	4305.5996	0.10	Borrow Area 3
203-16-002	T16N,R13W,S27	BLM	40865.3406	0.94	Borrow Area 4
203-16-002	T16N,R13W,S27	BLM	24260.5993	0.56	Storage Area 4 Butress
203-16-001	T16N,R13W,S27	PVT	21632.3304	0.50	Storage Area 4 Butress
203-16-001	T16N,R13W,S27	PVT	24110.3165	0.55	Storage Area 3B Butress
203-16-001	T16N,R13W,S27	PVT	9295.6926	0.21	Storage Area 3A Butress
203-16-001	T16N,R13W,S27	PVT	16765.4875	0.38	Storage Area 2 Butress
203-01-047	T16N,R13W,S28	BLM	13035.9512	0.30	Storage Areas 2 Butress
203-01-047	T16N,R13W,S28	BLM	25589.4755	0.59	Storage Area 1 Butress

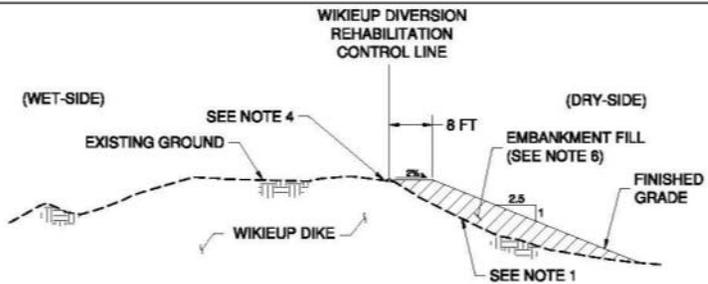
**Table J. Approximate Fill Volume for Improvements
Per Mohave County Parcel and Township/Section/Range**

Parcel ID	Section	Land Owner	Approx Fill Volume (CY)	Improvement	Location
203-16-002	T16N,R13W,S27	BLM	1938	ADOT Diversion Structure	S1/2, SW1/4, S27, T16N, R13W
203-17-008	T16N,R13W,S27	PVT	3195	ADOT Diversion Structure	N1/2, SW1/4, SW1/4, SE1/4, S27, T16N, R13W
203-17-009	T16N,R13W,S27	PVT	3190	ADOT Diversion Structure	S1/2, SW1/4, SW1/4, SE1/4, S27, T16N, R13W
203-01-047	T16N,R13W,S28	BLM	4898	Storage Area 1 Buttress	S1/2, NE1/4, S28, T16N, R13W
203-01-047	T16N,R13W,S28	BLM	2984	Storage Area 2 Buttress	N1/2, SE1/4, S28, T16N, R13W
203-16-001	T16N,R13W,S27	PVT	3574	Storage Area 2 Buttress	N1/2, SW1/4, S27, T16N, R13W
203-16-001	T16N,R13W,S27	PVT	1289	Storage Area 3A Buttress	N1/2, SW1/4, S27, T16N, R13W
203-16-001	T16N,R13W,S27	PVT	2751	Storage Area 3B Buttress	N1/2, SW1/4, S27, T16N, R13W
203-16-001	T16N,R13W,S27	PVT	2624	Storage Area 4 Buttress	N1/2, SW1/4, S27, T16N, R13W
203-16-002	T16N,R13W,S27	BLM	3901	Storage Area 4 Buttress	S1/2, SW1/4, S27, T16N, R13W

APPENDIX C

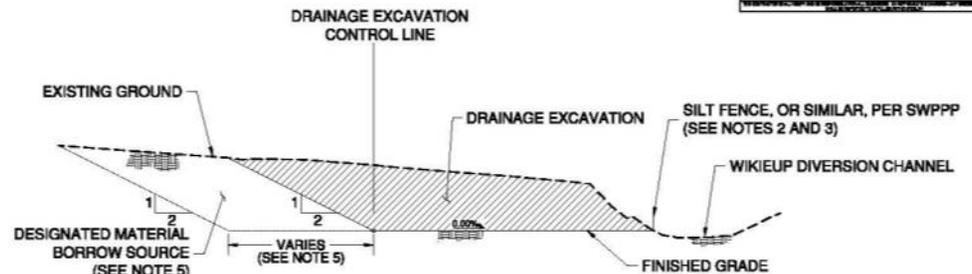
IMPROVEMENTS, REHABILITATION AND RECONSTRUCTION OF TOWN OF WIKIEUP DRAINAGE FACILITIES

95% CONSTRUCTION DRAWINGS



**DIKE REHABILITATION SECTION
WITHOUT EMBANKMENT ELEVATION INCREASE (NTS)**

WIKIEUP DIVERSION REHABILITATION CONTROL LINE
 STA 2+21 TO STA 5+35
 STA 5+35 TO 8+71 - NO CONSTRUCTION
 STA 8+71 TO STA 9+56
 STA 9+56 TO STA 11+20 - NO CONSTRUCTION
 STA 11+20 TO STA 14+12
 STA 14+12 TO STA 14+72 - NO CONSTRUCTION
 STA 14+72 TO STA 16+27
 STA 16+27 TO STA 18+09 - NO CONSTRUCTION
 STA 18+09 TO STA 22+60
 STA 22+60 TO STA 24+50 - NO CONSTRUCTION
 STA 24+52 TO STA 28+17

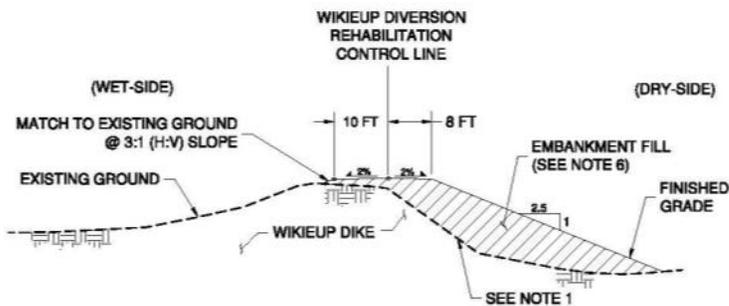


DRAINAGE EXCAVATION SECTION (NTS)

AREA 3 DRAINAGE EXCAVATION CONTROL LINE
 STA 0+00 TO STA 2+83.61
 AREA 4 DRAINAGE EXCAVATION CONTROL LINE
 STA 0+00 TO STA 3+47.47

NOTES:

- ALL AREAS REQUIRED FOR EMBANKMENT FILL SHALL BE CLEARED AND GRUBBED PER ADOT STANDARD SPECIFICATIONS SECTION 201, AND SPECIAL PROVISIONS SECTION 201.
- NO WORK SHALL BE PERMITTED WITHIN "WATERS OF THE U.S." AS IDENTIFIED ON PROJECT 404 DOCUMENTATION UNLESS EXPRESSLY AUTHORIZED.
- APPROPRIATE EROSION PROTECTION, AS SPECIFIED ON THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP), SHALL BE IMPLEMENTED BETWEEN "WATERS OF THE U.S." AND PROJECT CONSTRUCTION ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR DEVELOPMENT OF THE SWPPP. SWPPP SHALL BE REVIEWED AND APPROVED BY ALL APPLICABLE REGULATING AGENCIES.
- WHERE POSSIBLE, FILL SHALL BE EXTENDED HORIZONTALLY FROM THE WIKIEUP DIVERSION REHABILITATION CONTROL LINE TO ADJACENT HIGH GROUND ON THE EXISTING EMBANKMENT. SPECIFICALLY, AREAS OF RILLING SHALL BE CLEARED, GRUBBED, AND FILLED PER THIS NOTE AND SPECIAL PROVISIONS SECTIONS 201 AND 203.
- DESIGNATED MATERIAL BORROW SOURCE MAY BE USED FOR FILLING OF VOIDS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. THE LIMITS OF BORROW ARE SHOWN IN THE TYPICAL SECTION. EXCAVATION FOR BORROW SHALL NOT EXTEND BEYOND PROJECT ROW LIMITS.
- COMPACTED FILL PER SPECIAL PROVISION SECTION 203.



**DIKE REHABILITATION SECTION
WITH EMBANKMENT ELEVATION INCREASE (NTS)**

WIKIEUP DIVERSION REHABILITATION CONTROL LINE
 STA 5+35 TO STA 8+71

NO.	REVISION	BY	DATE
TYPICAL SECTIONS			
MOHAVE COUNTY			
WIKIEUP DRAINAGE FACILITIES REHABILITATION AND RECONSTRUCTION			
PROJECT NUMBER	20090336-00	DATE	07-15-10
DESIGNED BY		CHECKED BY	
APPROVED BY		DATE	
95% DRAFT		1" = 20' HORIZONTAL 1" = 30' VERTICAL	
NOT FOR CONSTRUCTION			
TS - 01	TYPICAL SECTIONS		03 of 24

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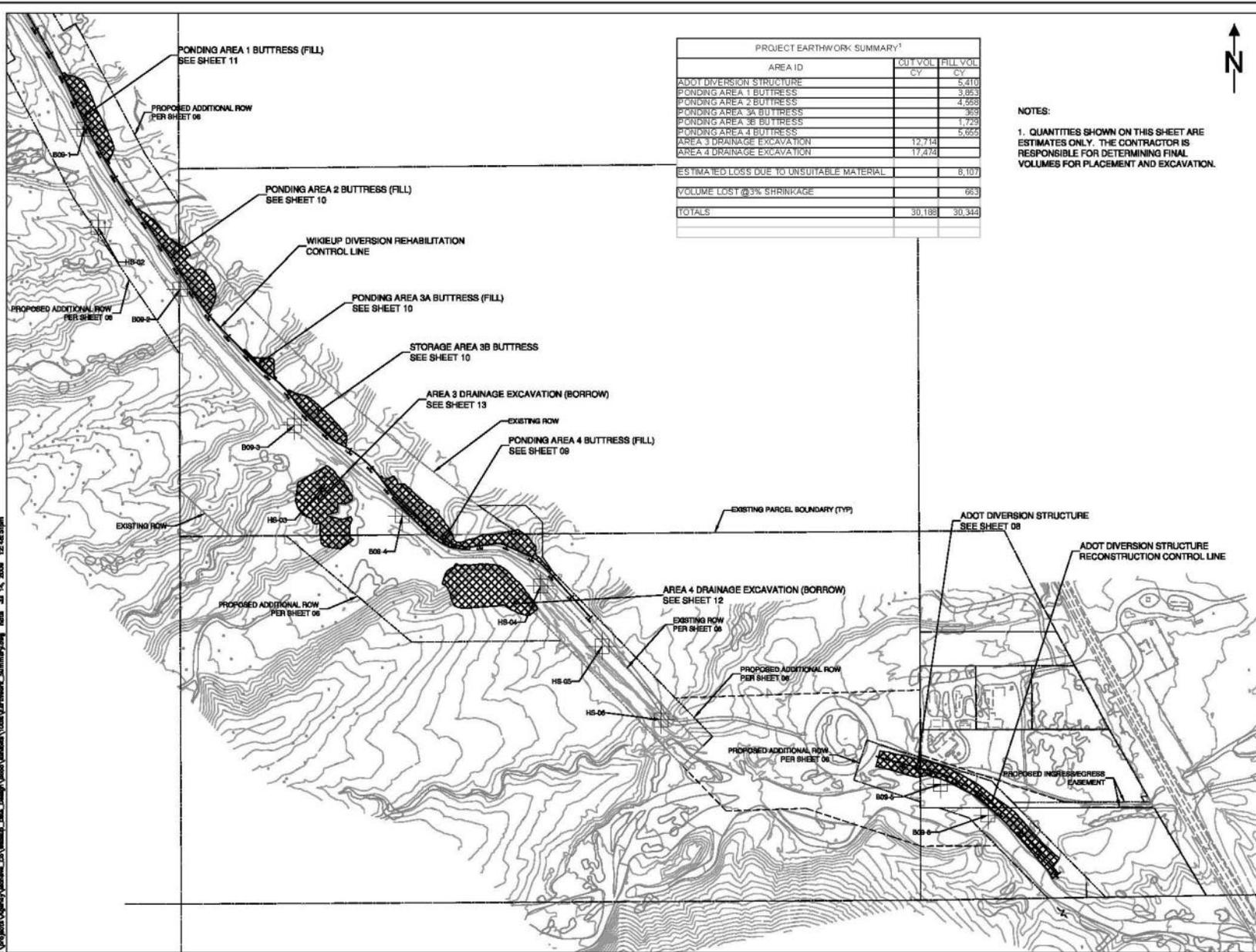


QUANTITY SUMMARY (MOHAVE COUNTY)										
NOTE NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	DRAWING NUMBER						
				7	8	9	10	11	12	Total
	201-01	CLEARING AND GRUBBING	ACRE		0.84	0.96	0.43			2.23
	202-01	REMOVAL OF STRUCTURES & OBSTRUCTIONS	L.SUM							
	203-01	DRAINAGE EXCAVATION	CU.YD				17474	12714		30188
	903-01	REMOVE AND REPLACE BARBED WIRE FENCE (TYPE 1)	L.FT.							
	903-02	REMOVE AND REPLACE GATE (TYPE 1) 14 FT.	EACH							
	913-01	BANK PROTECTION - DUMPED RIPRAP D50=6 IN.	CU.YD							
	913-02	RAIL BANK PROTECTION (TYPE 6)	L.FT.							

QUANTITY SUMMARY (ADOT)										
NOTE NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	DRAWING NUMBER						
				7	8	9	10	11	12	Total
	201-01	CLEARING AND GRUBBING	ACRE	0.95						0.95
	202-01	REMOVAL OF STRUCTURES & OBSTRUCTIONS	L.SUM	1						1
	203-01	DRAINAGE EXCAVATION	CU.YD	1213						1213
	903-01	REMOVE AND REPLACE BARBED WIRE FENCE (TYPE 1)	L.FT.	871						871
	903-02	REMOVE AND REPLACE GATE (TYPE 1) 14 FT.	EACH	1						1
	913-01	BANK PROTECTION - DUMPED RIPRAP D50=6 IN.	CU.YD	4						4
	913-02	RAIL BANK PROTECTION (TYPE 6)	L.FT.	748						748

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NO.	REVISION	BY	DATE
SUMMARY OF CONSTRUCTION QUANTITIES			
MOHAVE COUNTY			
WIKIEUP DRAINAGE FACILITIES REHABILITATION AND RECONSTRUCTION			
PROJECT NUMBER	20090316-00	DATE	07-19-10
95% DRAFT NOT FOR CONSTRUCTION		1" = 10' HORIZONTAL 1" = 10' VERTICAL	
DATE	05-01	TITLE	QUANTITY SUMMARY
		04 of 24	



PROJECT EARTHWORK SUMMARY ¹		
AREA ID	OUT VOL CY	FILL VOL CY
ADDT DIVERSION STRUCTURE		5,410
PONDING AREA 1 BUTTRESS		3,853
PONDING AREA 2 BUTTRESS		4,558
PONDING AREA 3A BUTTRESS		399
PONDING AREA 3B BUTTRESS		1,729
PONDING AREA 4 BUTTRESS		5,695
AREA 3 DRAINAGE EXCAVATION	12,714	
AREA 4 DRAINAGE EXCAVATION	17,474	
ESTIMATED LOSS DUE TO UNSUITABLE MATERIAL		6,107
VOLUME LOST @ 3% SHRINKAGE		663
TOTALS	30,188	30,344

NOTES:
 1. QUANTITIES SHOWN ON THIS SHEET ARE ESTIMATES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FINAL VOLUMES FOR PLACEMENT AND EXCAVATION.



NO.	REVISION	BY	DATE

EARTHWORK SUMMARY

CITY: **MOHAVE COUNTY**

PROJECT TITLE: **WIKIEUP DRAINAGE FACILITIES REHABILITATION AND RECONSTRUCTION**

PROJECT NUMBER: **20090136-00** DRAWING NO: **07-PS-10**

DATE: **07/20/09**

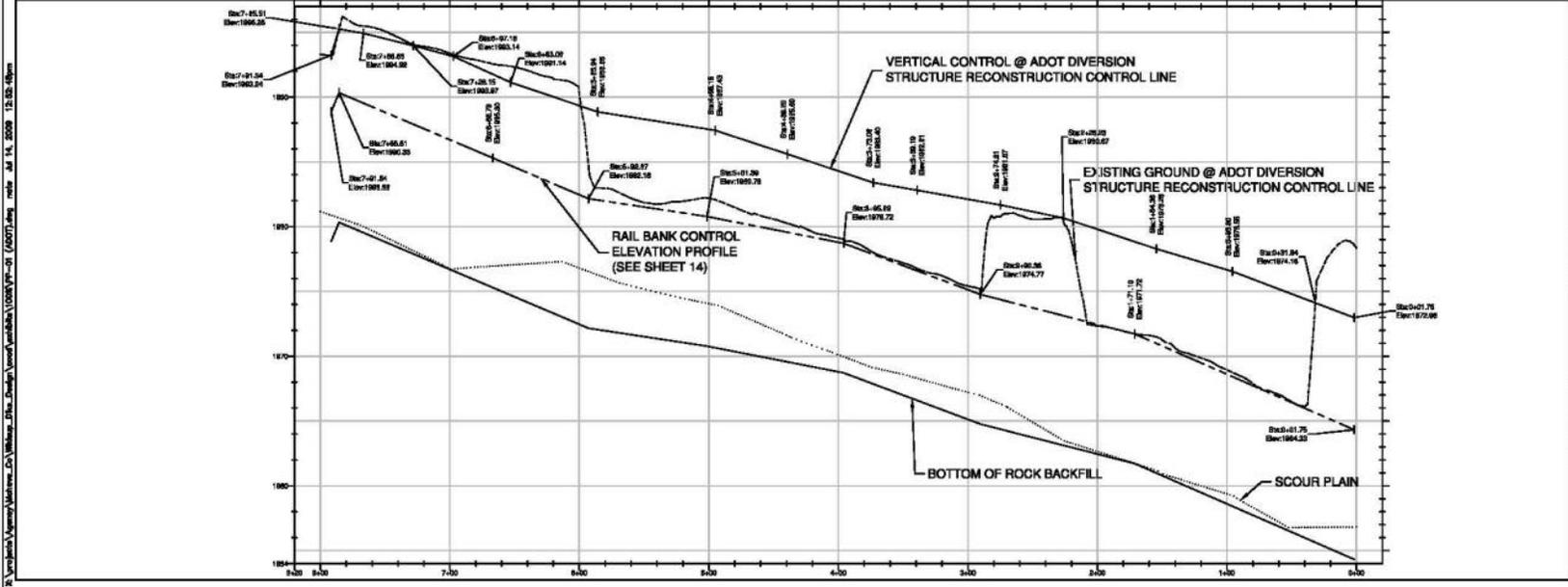
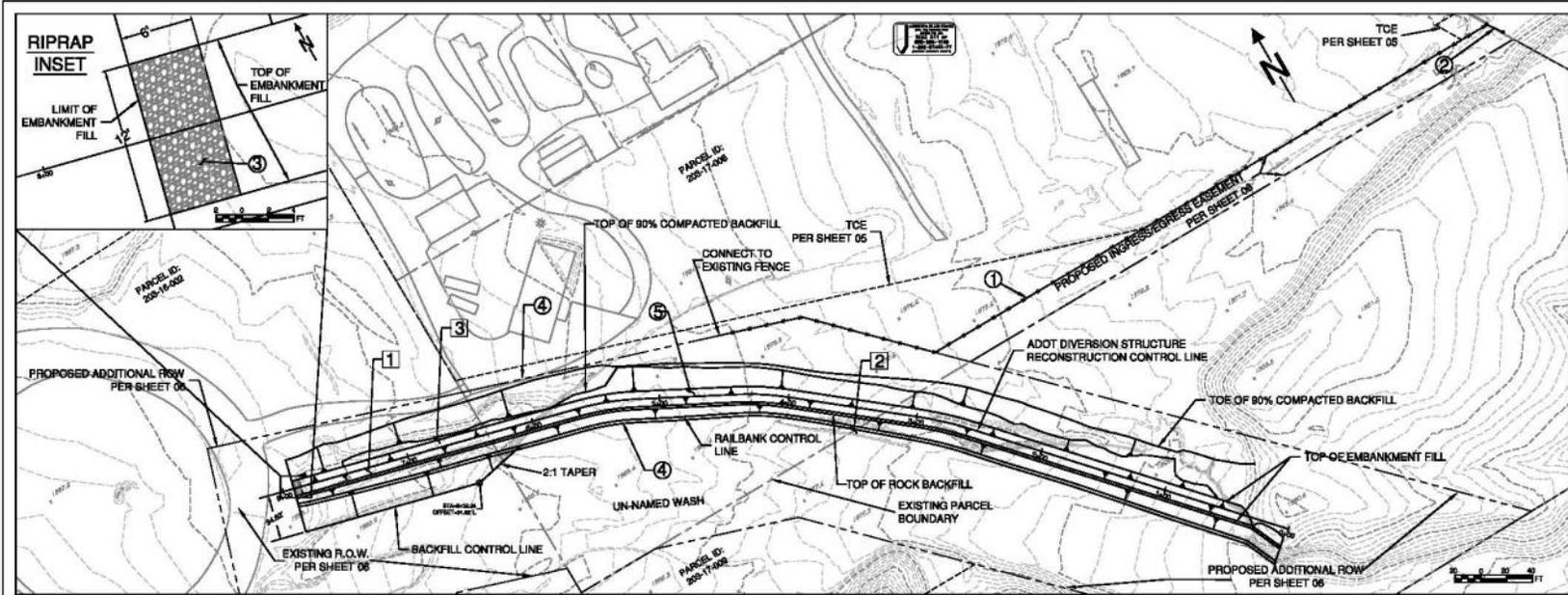
95% DRAFT

NOT FOR CONSTRUCTION

SCALE: **1" = 150' HORIZONTAL**
1" = 20' VERTICAL

REVISED: **RW-01** RIGHT OF WAY PAGE: **07** OF **24**

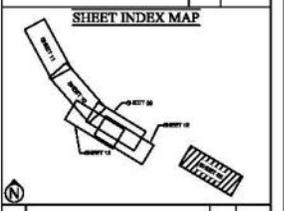
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JE FULLER
 CIVIL ENGINEERING
 1000 W. WASHINGTON ST. SUITE 100
 PHOENIX, AZ 85007
 PHONE: 602.254.1111
 FAX: 602.254.1112
 WWW.JEFULLER.COM

REMOVE	QTY	UNIT
1. CLEARING & GRUBBING AS NECESSARY PER SPECIAL PROVISION 301	BT	3048
2. STRUCTURES AND OBSTRUCTIONS FROM STA 04+7.48 TO STA 04+88.37	LF	104
3. DRAINAGE EXCAVATION	CY	3867

CONSTRUCT	QTY	UNIT
1. CONSTRUCT NEW SAND WRETHONGE PER ADOT STD D-18.10 TYPE I GABBED WIRE	LF	871
2. REMOVE AND REPLACE GATE PER ADOT STD D-18.10 TYPE I SINGLE GATE, 14 FT	LR	1
3. LOOSE RIPRAP, 24" x 24" THICKNESS = 18"	CY	5
4. RAILBANK, ADOT STD D-17.16, TYPE I STA 0+00.00 TO STA 0+49.24 PER DRAWING 87-01	LF	196
5. EMBANKMENT FILL - NOT A PAY ITEM STA 0+00.00 TO STA 7+81.26 PER DRAWING 87-01	CY	8410



NO.	REVISION	BY	DATE

ADOT DIVERSION STRUCTURE RECONSTRUCTION PLAN AND PROFILE STA 00+00 TO 08+00

CITY: MOHAVE COUNTY

PROJECT NO.: WIKIEUP DRAINAGE FACILITIES REHABILITATION AND RECONSTRUCTION

PROJECT NO.: 20050314-00 PROJECT DATE: 07/25/10

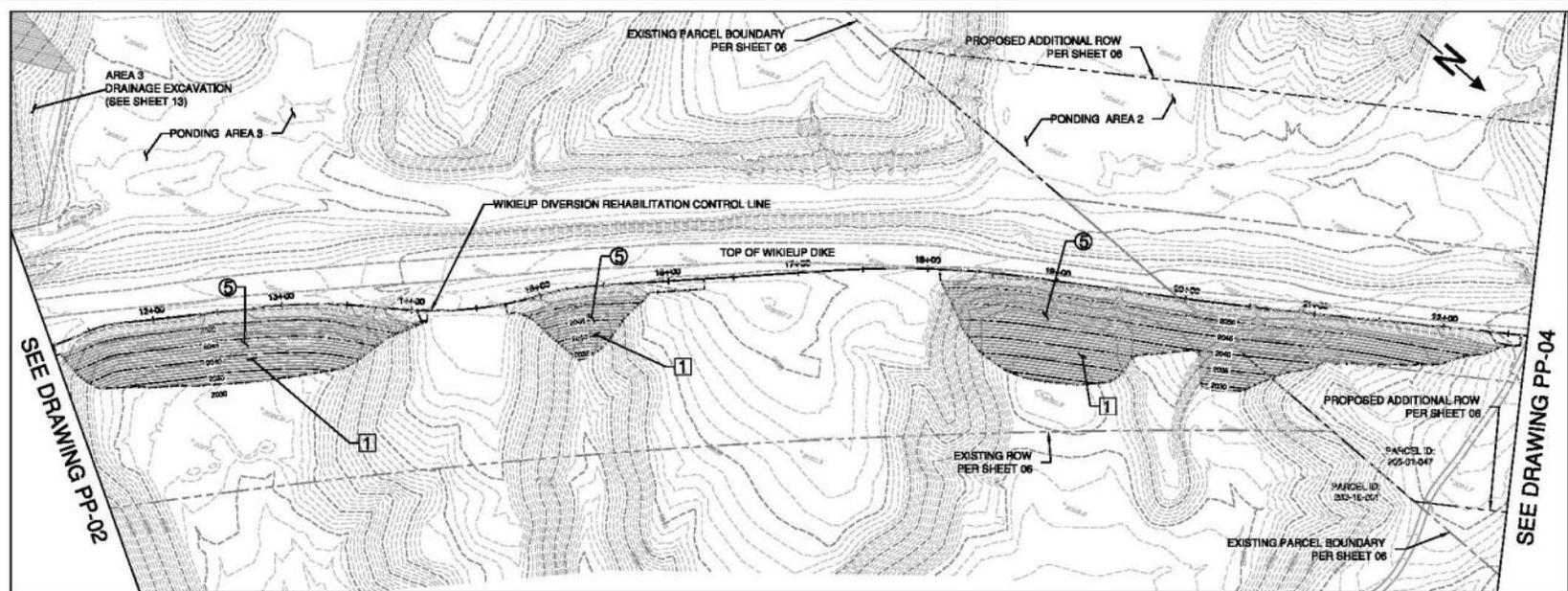
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NOT FOR CONSTRUCTION

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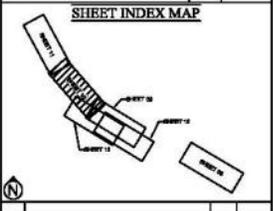
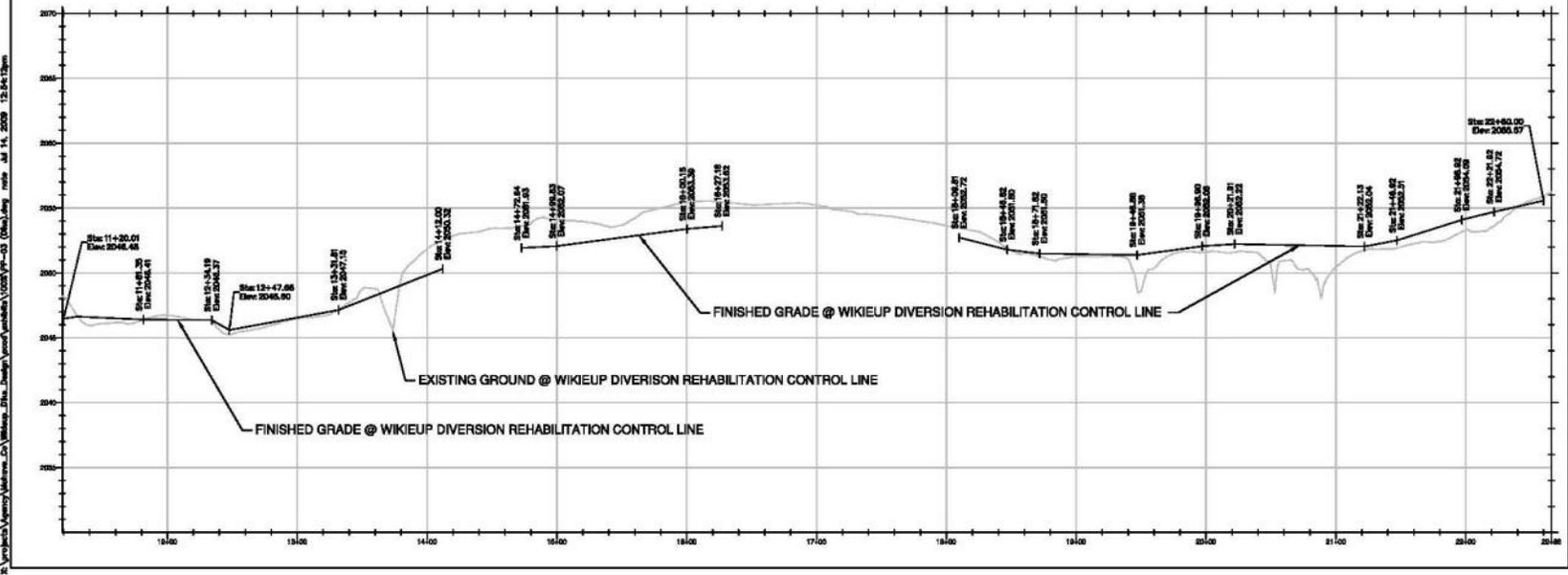
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REMOVE		QTY	UNIT
12	CLEARING & GRUBBING AS NECESSARY PER SPECIAL PROVISION 001 STA 11+50.01 TO STA 14+12.00	AC	0.07
	CLEARING & GRUBBING AS NECESSARY PER SPECIAL PROVISION 001 STA 14+72.84 TO STA 16+07.15	AC	0.08
	CLEARING & GRUBBING AS NECESSARY PER SPECIAL PROVISION 001 STA 18+00.01 TO STA 22+00.00	AC	0.09

CONSTRUCT		QTY	UNIT
1	EMBANKMENT FILL - NOT A PAY ITEM STORAGE AREA 06 BUTTRESS PER SHEET 03 STA 11+00.01 TO STA 14+12.00	CY	1708
	EMBANKMENT FILL - NOT A PAY ITEM STORAGE AREA 06 BUTTRESS PER SHEET 03 STA 14+72.84 TO STA 16+07.15	CY	395
	EMBANKMENT FILL - NOT A PAY ITEM STORAGE AREA 06 BUTTRESS PER SHEET 03 STA 18+00.01 TO STA 22+00.00	CY	4888



NO.	REVISION	BY	DATE

WIKIEUP DIVERSION REHABILITATION PLAN AND PROFILE STA 11+19 TO 22+66

SHEET: MOHAVE COUNTY

PROJECT TITLE: WIKIEUP DRAINAGE FACILITIES REHABILITATION AND RECONSTRUCTION

PROJECT NUMBER: 20090334-00

DATE: 07-28-10

95% DRAFT NOT FOR CONSTRUCTION

SCALE: 1" = 40' HORIZONTAL, 1" = 4' VERTICAL

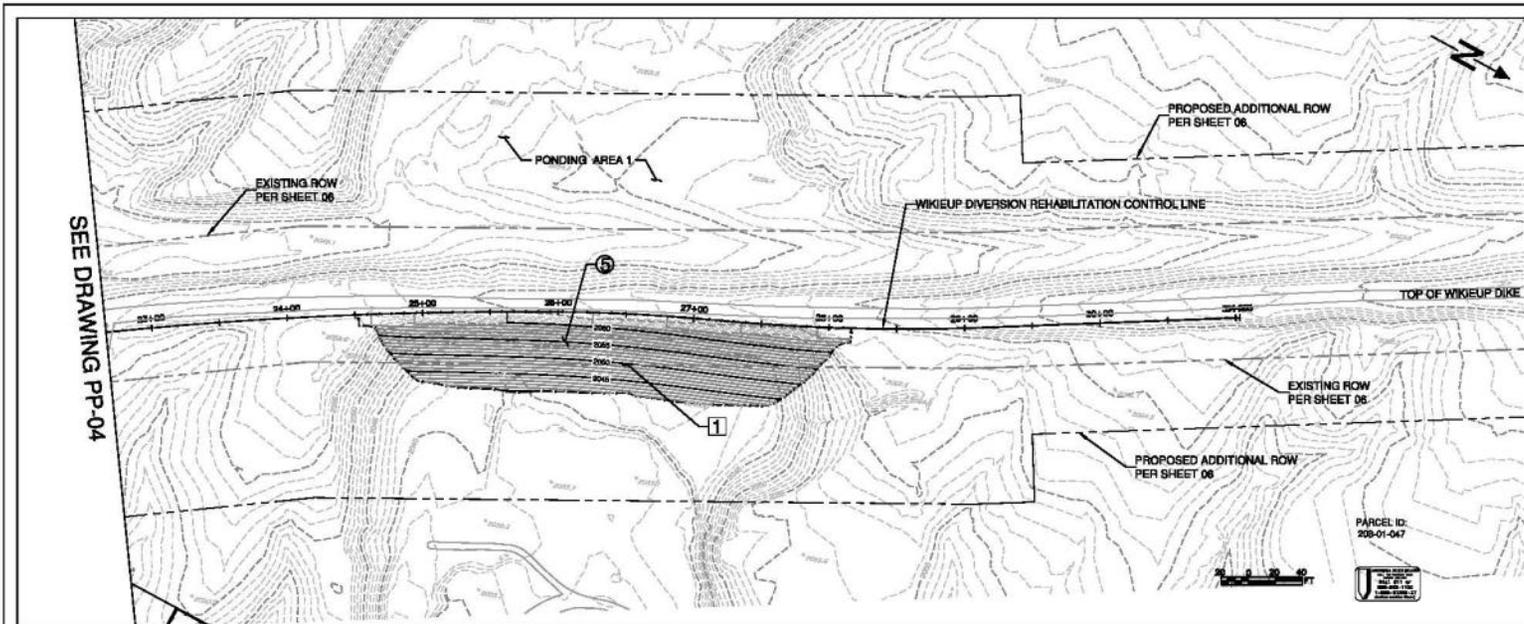
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PLAN AND PROFILE

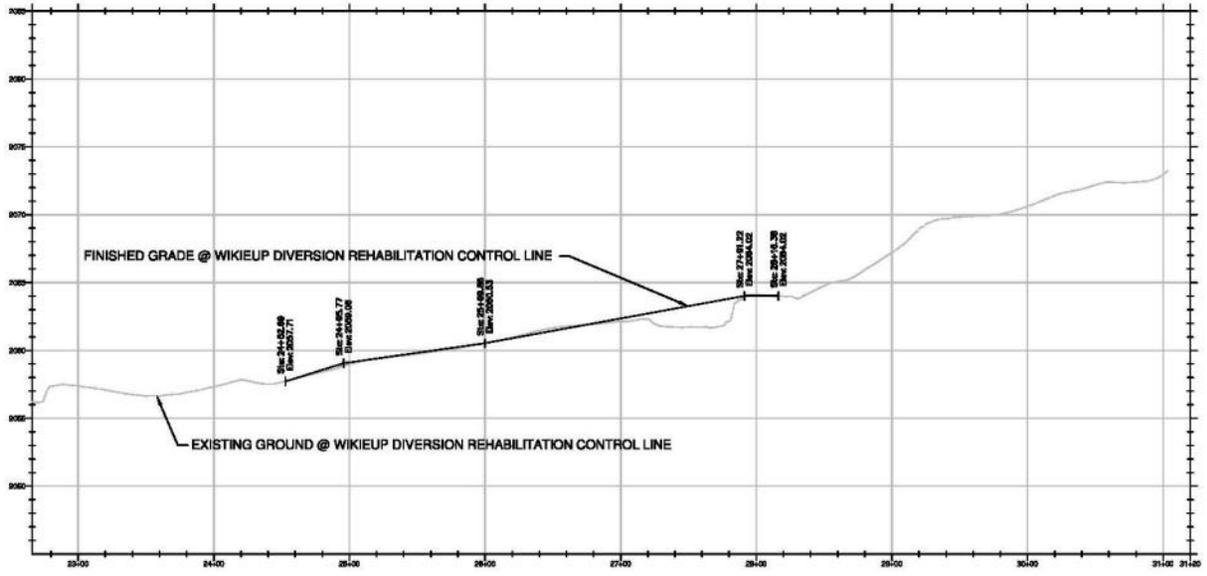
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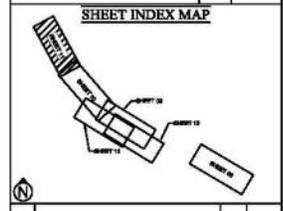
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SEE DRAWING PP-04

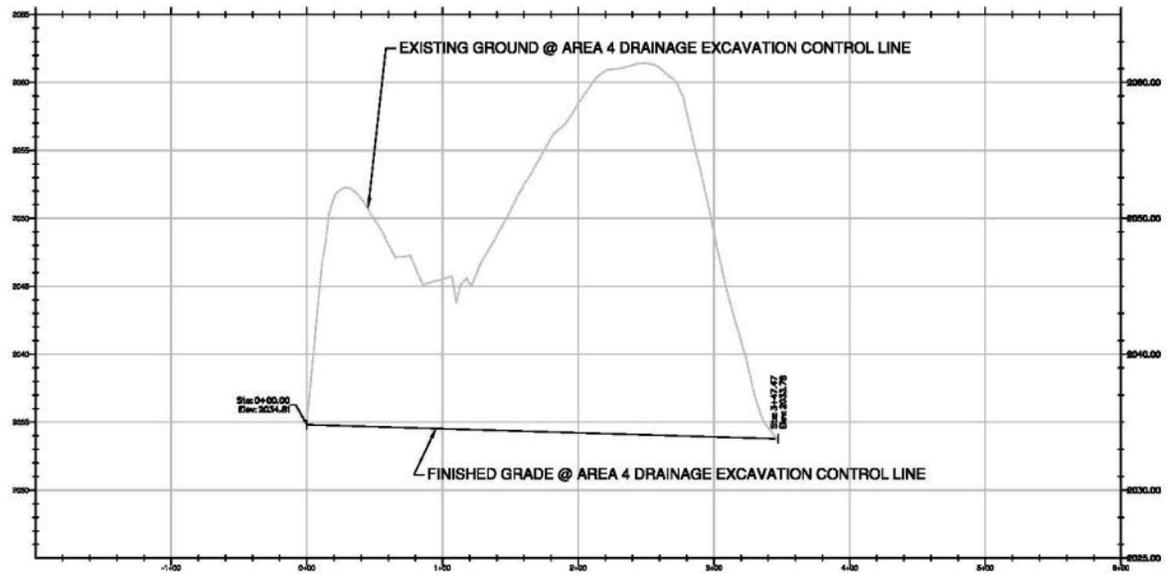
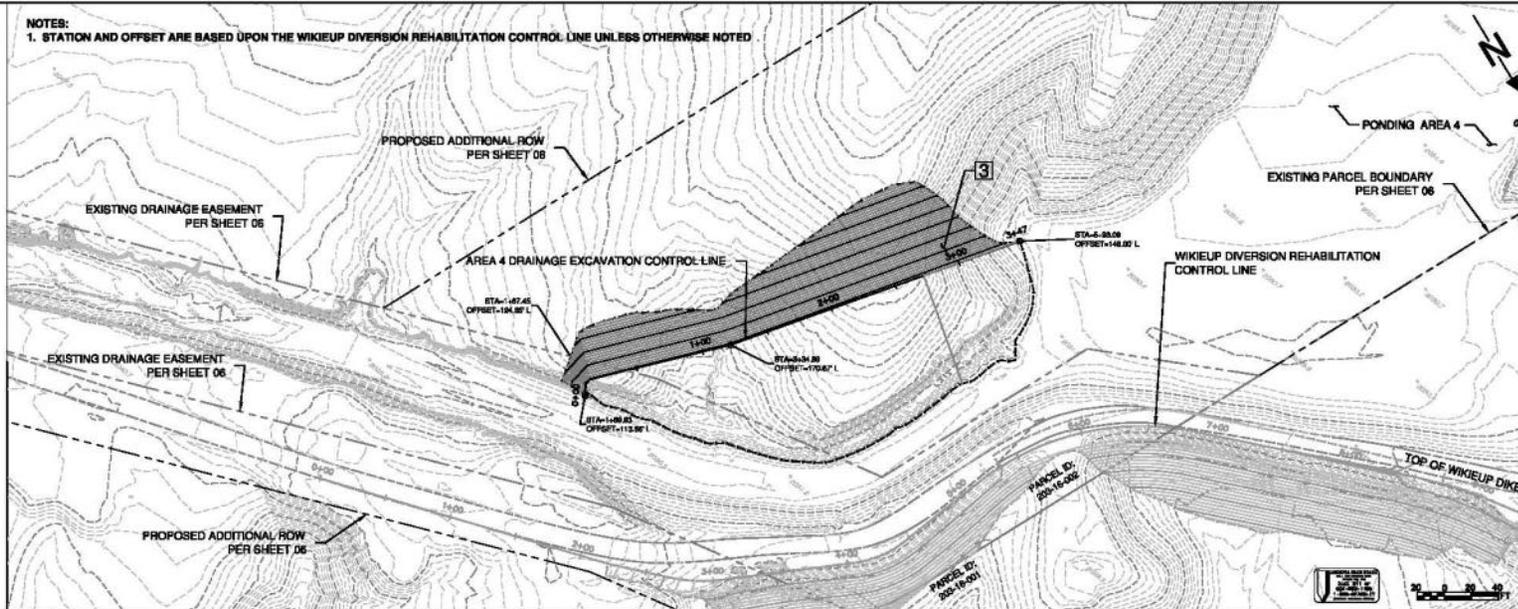


JE FULLER INCORPORATED			
REGISTERED PROFESSIONAL ENGINEER STATE OF ARIZONA			
REMOVES		AC	EST.
1	CLEARING & GRUBBING AS NECESSARY PER SPECIAL PROVISIONS 301 STA 24+62.00 TO STA 26+16.00		0.43
CONSTRUCT		CY	EST.
2	EMBANKMENT FILL - NET & PAY ITEM STORAGE AREA 1 BOTTINES PER SHEET 03 STA 24+62.00 TO STA 26+16.00		360



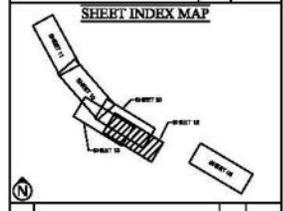
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WIKIEUP DIVERSION REHABILITATION PLAN AND PROFILE STA 22+66 TO 31+00			
PROJECT TITLE: MOHAVE COUNTY			
PROJECT: WIKIEUP DRAINAGE FACILITIES REHABILITATION AND RECONSTRUCTION			
PROJECT NUMBER: 20090336-00		DATE: 07-28-10	
DRAWN BY: SCW		CHECKED BY: SCW	
DESIGNED BY: MMB		APPROVED BY: MMB	
SCALE: 1" = 40' HORIZONTAL		SCALE: 1" = 2' VERTICAL	
SHEET: PP-04		PAGE: 10 OF 24	

NOTES:
 1. STATION AND OFFSET ARE BASED UPON THE WIKIEUP DIVERSION REHABILITATION CONTROL LINE UNLESS OTHERWISE NOTED.



NO.	DESCRIPTION	QTY	UNIT
3	DRAINAGE EXCAVATION AREA 4 DRAINAGE EXCAVATION CONTROL LINE STA 0+00 TO STA 3+47.07		1744

NO.	DESCRIPTION	QTY	UNIT
	CONSTRUCT		



NO.	REVISION	BY	DATE

AREA 4 DRAINAGE EXCAVATION PLAN AND PROFILE STA 0+00 TO 3+47

MOHAVE COUNTY

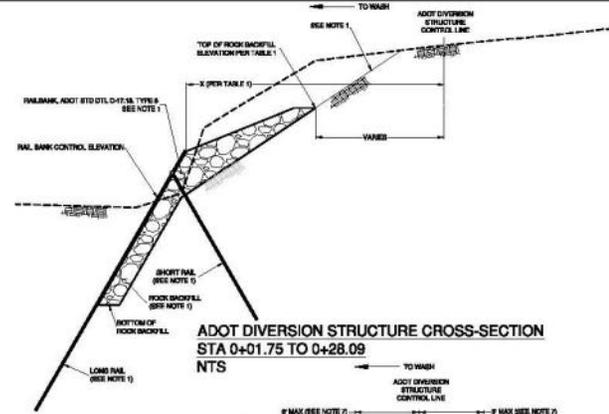
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PROJECT NUMBER: 20090316-00 CONTRACT NO: 07-PS-10

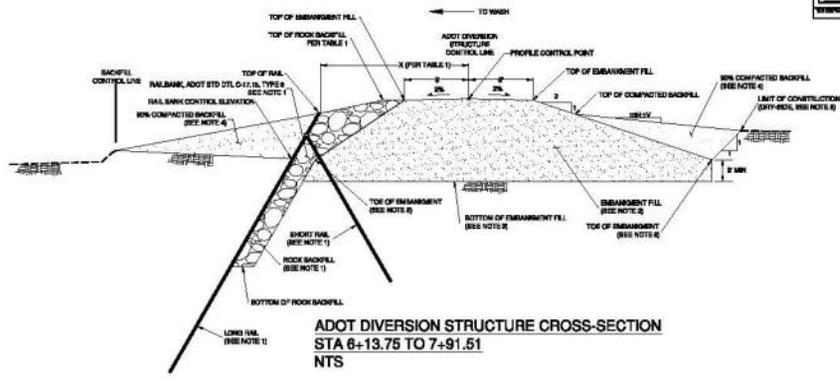
DESIGNED BY: NEW DATE: 06/09
 DRAWN BY: NEW DATE: 06/09
 CHECKED BY: NEW DATE: 06/09
 APPROVED: NEW DATE: 06/09

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 NOT FOR CONSTRUCTION
 1" = 40' HORIZONTAL
 1" = 4' VERTICAL

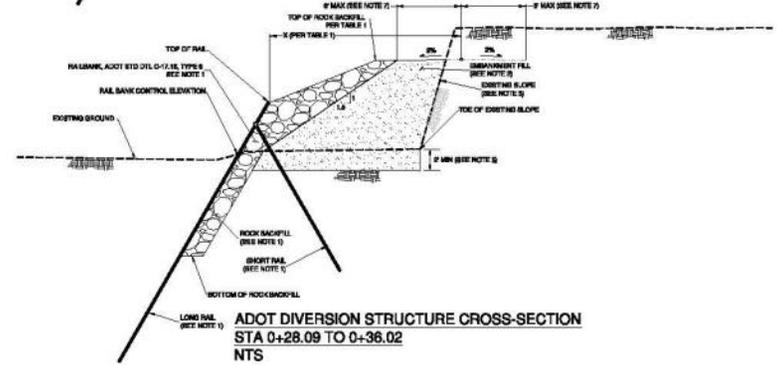
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**ADOT DIVERSION STRUCTURE CROSS-SECTION
 STA 0+01.75 TO 0+28.09
 NTS**



**ADOT DIVERSION STRUCTURE CROSS-SECTION
 STA 6+13.75 TO 7+91.61
 NTS**



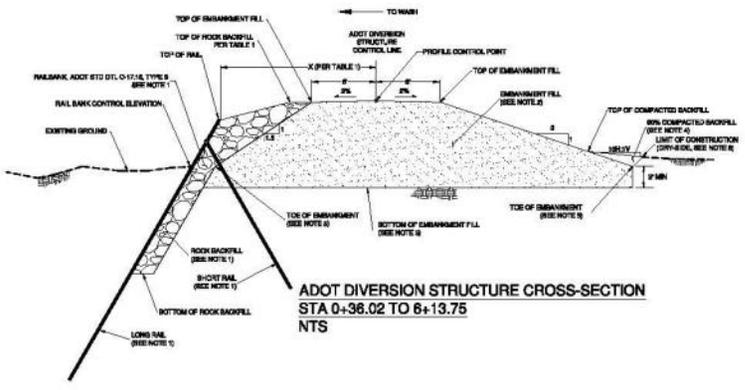
**ADOT DIVERSION STRUCTURE CROSS-SECTION
 STA 0+28.09 TO 0+36.02
 NTS**

TABLE 1: ADOT DIVERSION STRUCTURE
 FROM STA 0+01.75 TO STA 7+91.61

STATION	"X" LENGTH (FT)	TOP OF ROCK BACKFILL
0+01.75	28.75	1972.69
0+28.09	18.12	1973.69
0+31.84	19.04	1974.04
0+95.90	17.43	1978.43
1+54.36	18.20	1978.16
2+28.23	18.57	1980.55
2+74.81	18.21	1981.55
3+39.19	14.59	1982.69
3+73.06	13.56	1983.28
4+39.20	14.31	1985.49
4+95.15	15.42	1987.31
5+95.94	15.47	1988.74
6+28.00	15.24	1990.10
6+93.00	14.89	1991.02
6+97.18	15.09	1992.02
7+28.15	14.37	1992.95
7+66.69	13.34	1994.60
7+95.51	12.64	1995.13
7+91.61	11.80	1995.12

NOTES:

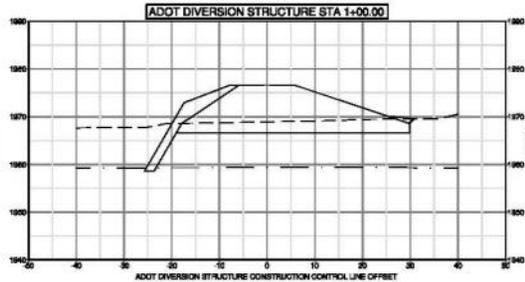
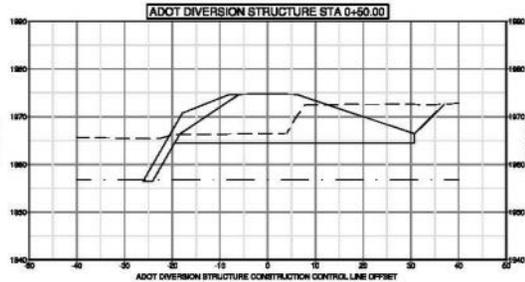
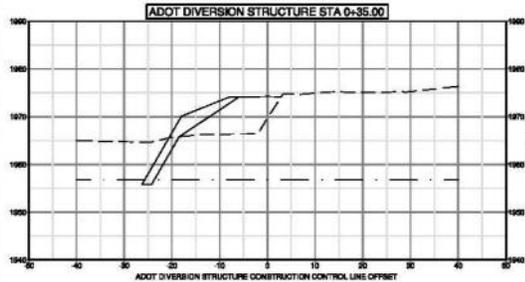
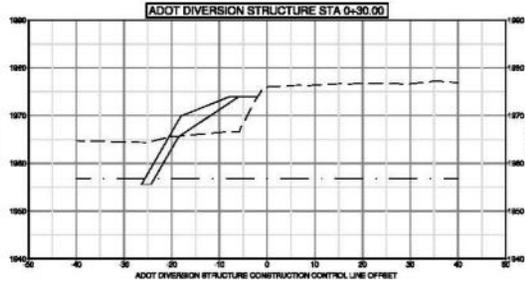
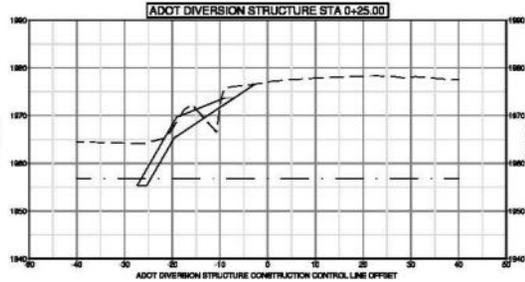
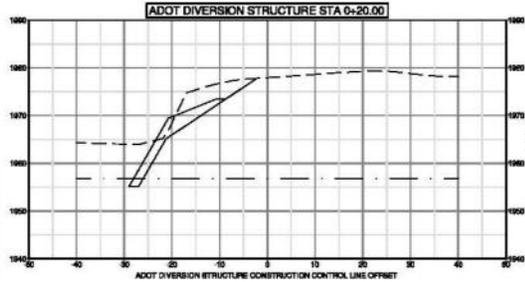
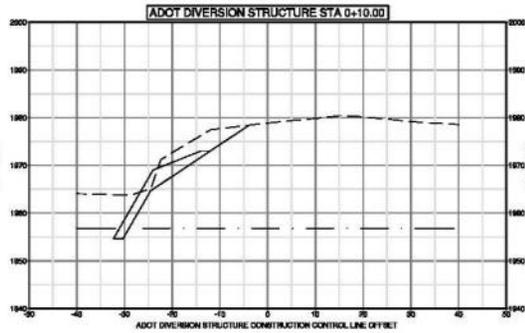
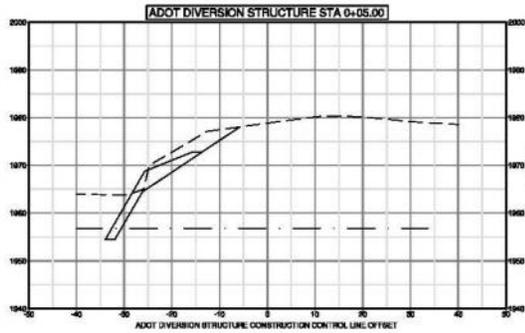
1. CONSTRUCT RAILS, ROCK BACKFILL, WIRE MESH (NOT SHOWN) AND FILTER FABRIC (NOT SHOWN) PER ADOT STANDARD DRAWING C-17.15, TYPE 6. REFER TO ADOT STD DTL C-17.15 FOR ADDITIONAL DIMENSIONS AND DETAILS.
2. PLACE EMBANKMENT FILL PER ADOT STANDARD SPECIFICATIONS SECTION 203-4, AND SPECIAL PROVISIONS, SECTION 203.
3. CLEAR AND GRUB AS REQUIRED FOR CONSTRUCTION ACCORDING TO ADOT STANDARD SPECIFICATIONS SECTION 201. AN ADDITIONAL 2 FEET OF SURFACE MATERIAL IS TO BE REMOVED FOR PLACEMENT OF EMBANKMENT FOUNDATION MATERIAL. THEREFORE, BOTTOM OF EMBANKMENT FILL ELEVATION SHALL BE AT MINIMUM 2 FEET BELOW THE RAIL BANK CONTROL ELEVATION AS SHOWN ON SHEET 08.
4. NATIVE MATERIAL EXCAVATED FOR PLACEMENT OF EMBANKMENT FOUNDATION IS ACCEPTABLE FOR USE AS 90% COMPACTED BACKFILL. NATIVE MATERIAL SHALL BE FREE OF VEGETATION, DEBRIS, CONSTRUCTION MATERIALS AND/OR FOREIGN OBJECTS.
5. TOE OF EMBANKMENT ELEVATION EQUAL TO CONTROL ELEVATION AS SHOWN ON ADOT DIVERSION STRUCTURE PLAN AND PROFILE SHEET.
6. LIMIT OF CONSTRUCTION ON DRY-SIDE OF DIVERSION STRUCTURE SHALL BE DETERMINED BY A 1H:1V EXCAVATION LINE THAT EXTENDS FROM TOE OF EMBANKMENT TO EXISTING GRADE.
7. PLACEMENT OF EMBANKMENT FILL SHALL EXTEND AT THE INDICATED SLOPES FROM THE TOP OF THE ROCK BACKFILL TO THE EXISTING GROUND SURFACE. THE EXISTING GROUND SURFACE SHALL BE CLEARED AND GRUBBED PER ADOT STANDARD SPECIFICATIONS SECTION 201.



**ADOT DIVERSION STRUCTURE CROSS-SECTION
 STA 0+36.02 TO 8+13.75
 NTS**

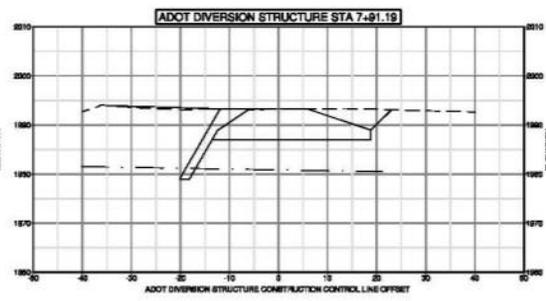
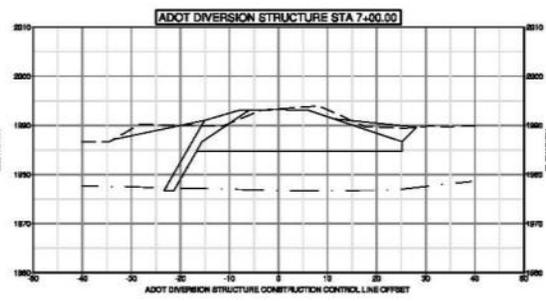
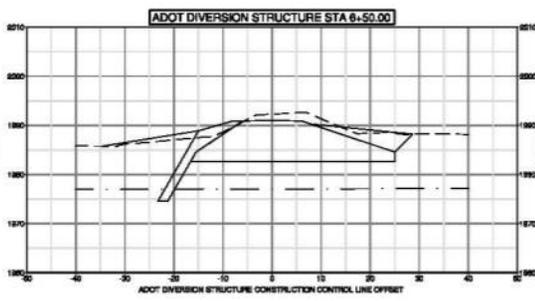
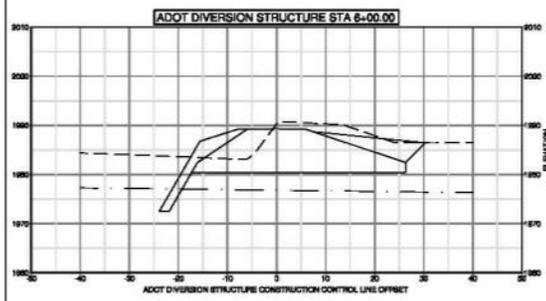
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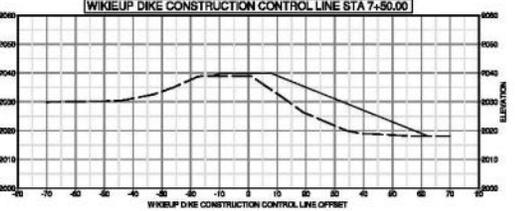
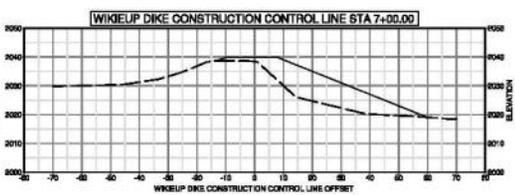
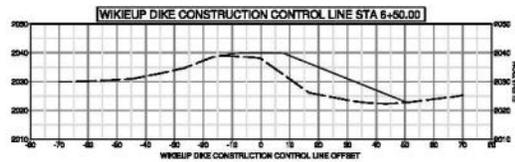
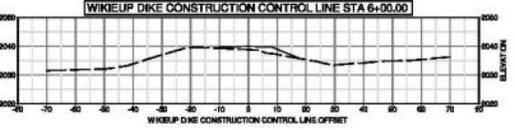
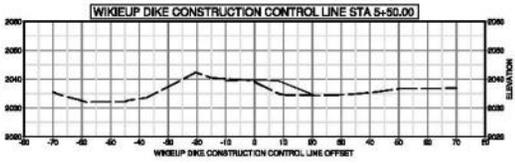
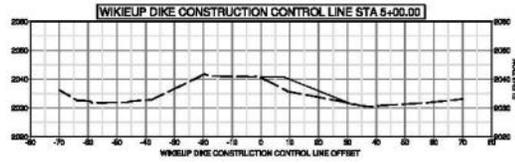
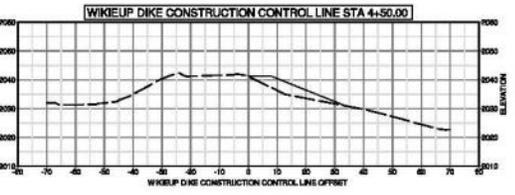
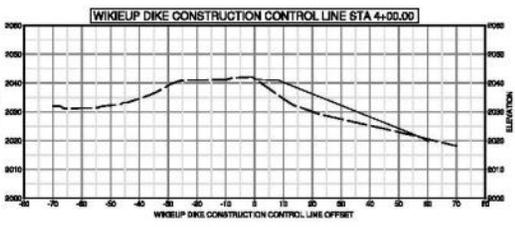
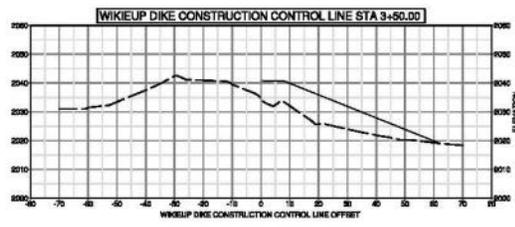
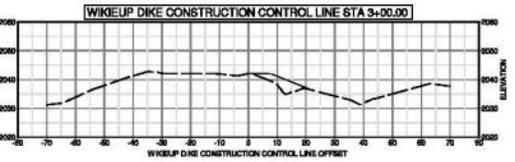
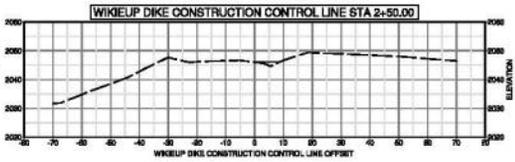
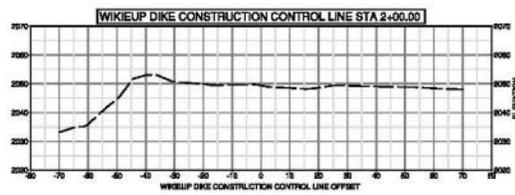
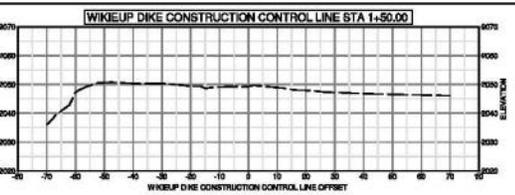
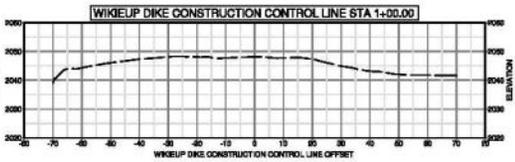
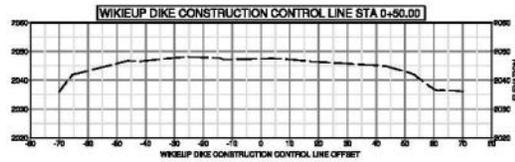
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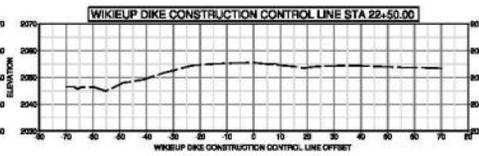
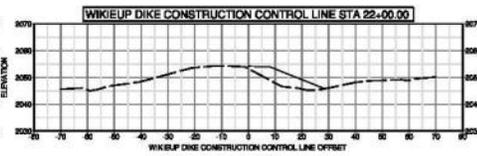
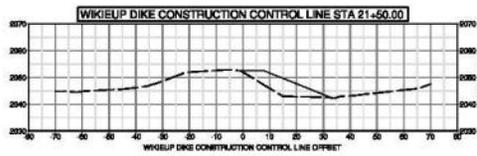
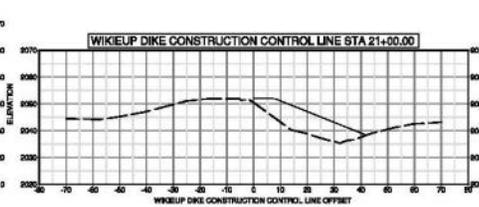
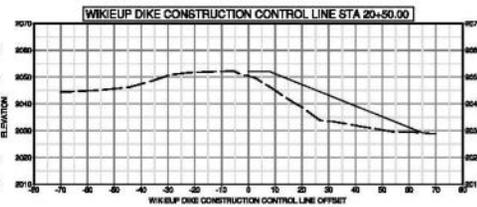
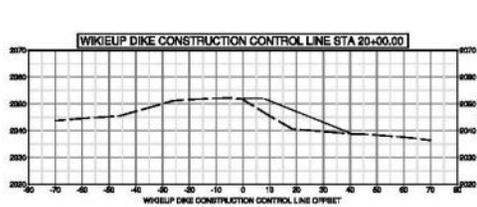
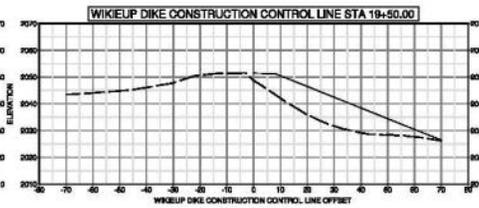
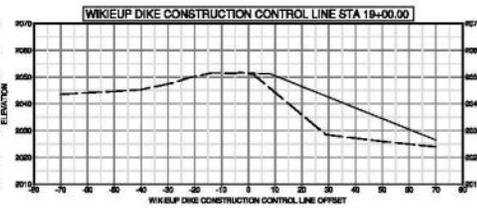
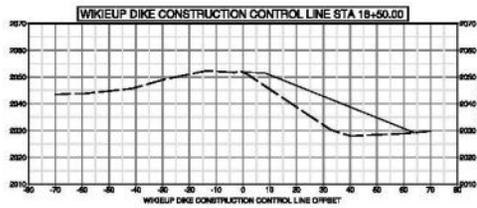
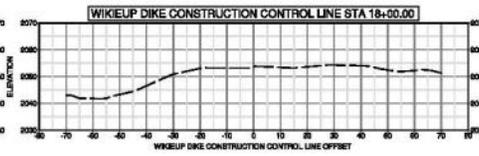
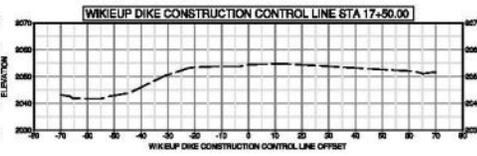
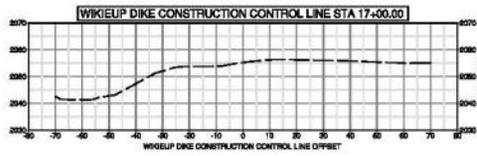
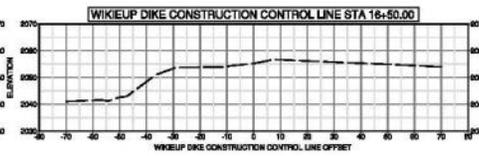
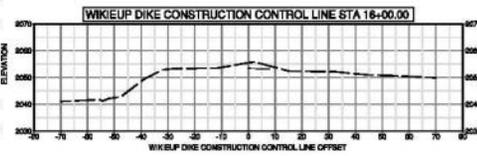
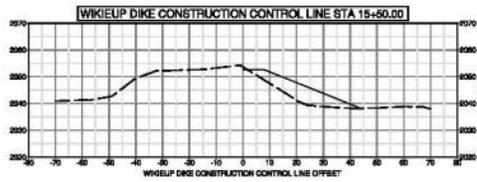
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NO.	REVISION	BY	DATE

**WIKIEUP DIKE REHABILITATION
CROSS SECTIONS**

CLIENT: MOHAVE COUNTY

PROJECT TITLE: WIKIEUP DRAINAGE FACILITIES
REHABILITATION AND RECONSTRUCTION

PROJECT NUMBER: 20090316-00 REVISION: 07-PS-10

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APPENDIX D

IMPROVEMENTS, REHABILITATION AND RECONSTRUCTION OF TOWN OF WIKIEUP DRAINAGE FACILITIES

CULTURAL RESOURCES SURVEY

**CULTURAL RESOURCES SURVEY OF
APPROXIMATELY 198 ACRES FOR THE
DIKE AND CHANNEL REHABILITATION PROJECT
WEST OF WIKIEUP, MOHAVE COUNTY, ARIZONA**

Prepared for:

Mohave County Flood Control District

Prepared by:

**David R. Hart, M.A., R.P.A.
Project No. 09-05**

Submitted by:

**David J. Dechambre, M.A., R.P.A.
President**

**Northland Research, Inc.
Flagstaff, Arizona**

March 2009

State Historic Preservation Office Cover Page

Client: Mohave County Flood Control District

Project Title: Wikieup Dike and Channel Rehabilitation Cultural Resource Survey

Project Description: Mohave County Flood Control District in cooperation with the Arizona Department of Transportation (ADOT) plans to rehabilitate the current dike and channel located west of Wikieup.

Location: The project area consists of gently sloping bajada intersected by washes on private and Bureau of Land Management (BLM) land located west of Wikieup, Arizona. The project area is located in portions of Sections 21, 27, 28, and 34, Township 16 North, Range 13 West.

Number of Acres Surveyed: 198

Number of New Sites: None

List of Eligible Properties: None

Comments: The survey was conducted on private land under Arizona State Museum (ASM) Blanket Permit No: 2009-18b1 and BLM permit No: AZ-000065, Authorization No. KFO-09-04. The records search identified 17 previously recorded sites within a one-mile radius of the project area. Four of the previously recorded sites are located within the project area. These sites were relocated and updated accordingly. None of the sites are considered eligible for the Arizona and National Register of Historic Places and no additional archaeological investigation is necessary.

INTRODUCTION

Northland Research, Inc. (Northland) has completed a Class I records search and a Class III intensive cultural resources survey of 198 acres located immediately west of Wikieup, Mohave County, Arizona (Figure 1). The survey was conducted on land administered by the Bureau of Land Management (BLM), as well as some private lands, at the request of the Flood Control District, Mohave County Public Works, Kingman, Arizona. The purpose of the survey was to identify, record, and assess any cultural resources prior to the proposed rehabilitation of a flood control dike and channel that provides some flood mitigation for the town of Wikieup. Dave Hart, Tina Carpenter, and Andy Salembier of Northland conducted the survey between February 19th and 20th, 2009 under Arizona State Museum (ASM) Blanket permit No: 2009-18b1 and BLM permit No. AZ-000065, Authorization No. KFO-09-04.

The records search resulted in the identification of 17 sites located within a one-mile radius of the project area, four of which are located within the project area. No new sites were identified, and the previously recorded sites were relocated and updated. Fourteen isolated occurrences (IOs) were also identified and recorded. None of the sites are recommended as AZ/NRHP eligible and no additional archaeological investigation is necessary.

ENVIRONMENTAL SETTING

The project area consists of a 198-acre corridor crossing private and BLM land in Sections 21, 27, 28, and 34, Township 16 North, Range 13 West (Gila & Salt River Meridian), Mohave County, Arizona (Map reference: USGS 1967 Wikieup and Wikieup NW, Arizona, 7.5' topographic quadrangles). The dike and channel are located on the sloping bajada just west of Wikieup at an average elevation of 2,060 feet (628 m) above mean sea level. The Big Sandy River is approximately one mile to the east and winds its way through a broad U-shaped alluvial valley between the Aquarius Mountains to the east and the Hualapai Mountains to the west. The geological composition of the mountains consists of Precambrian gneiss and granite and fall within the Mountain Region subdivision of the Basin and Range physiographic province of west-central Arizona (Wilson 1962).

Vegetation along the Big Sandy River near Wikieup is characteristic of the Paloverde-Cacti-Mixed Scrub Series of the Arizona Upland Subdivision of the Sonoran Desertscrub Biotic Community (Brown 1994:200–203). The area immediately to the west of the project area consists of Semidesert Grassland and is slightly higher in elevation (Brown 1994:123–131).

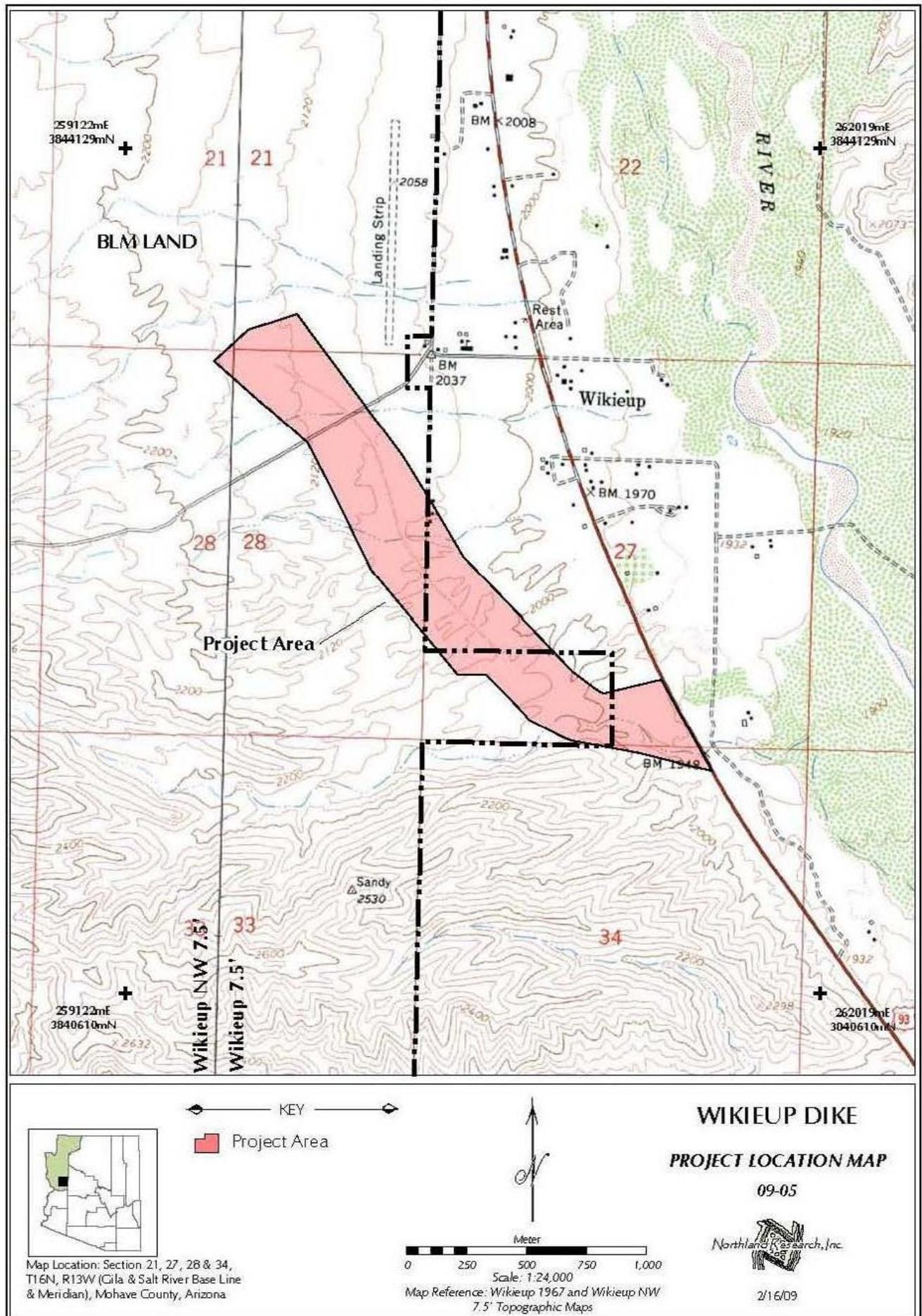


Figure 1. Project area.

CULTURAL SETTING

Western Arizona has a long history of human occupation and settlement. Cultural remains have been documented in the region from about 10,000 B.C. to the present (Stone 1991). Historical remains dating to the late nineteenth and early twentieth centuries have also been recorded. A brief summary of the major trends in each of the main periods of occupation is provided below. This discussion is general in nature and does not consider the many divergent opinions and interpretations that exist among specialists.

Paleoindian (ca. 11500–6000B.C)

Paleoindian sites with intact cultural deposits are exceptionally rare, in part because of the material culture and nomadic lifestyle as well as thousands of years of geomorphological processes that have deeply buried most sites. No Paleoindian sites with intact cultural deposits have been investigated in the regions of western Arizona. However, the Hualapai valley northwest of the project area is a likely area for the discovery of exposed Paleoindian deposits. The Hualapai Valley is the location of the Pleistocene-era Red Lake (Keller 1986:6, cited in Dosh et al. 1999:8). Paleoindian sites are often found in association with lakes and marshy areas that would have attracted large game. Unfortunately such strata are rarely exposed; it is more common to detect a Paleoindian presence by isolated flaked stone tools that are diagnostic to the time period. For example, Clovis points are well-crafted lanceolate points with distinctive basal fluting. Several Clovis points have been documented in parts of western Arizona, including the Aquarius Mountains (Wright 1993:14) and Placeritas Creek near U.S. Highway 93.

Archaic Period (ca. 6000 B.C.–A.D. 1 to 600)

The Archaic Period is characterized by a shift to diverse subsistence strategies revolving around wild plant gathering and small-game hunting. This shift correlates with a climatic change that brought about warmer, drier conditions beginning around 9,000 B.C. and resulting in essentially modern conditions by approximately 6,000 B.C. During the Early and Middle Archaic periods, land-use patterns are characterized by a high degree of residential mobility. In recent years, the term Early Agricultural has replaced the term Late Archaic in many areas of the southwest, reflecting the apparent emphasis on agriculture in southern and southeastern Arizona after 1000 B.C. (Huckell 1990, 1995; Wills and Huckell 1994). However, the Archaic tradition and hunter-gatherer nomadic way of life appears to have persisted longer in western Arizona than in many other areas of the Southwest.

Western Arizona is better characterized by the Desert Culture, or Desert Tradition, which represents a lifestyle and adaptation particular to the Great Basin (Jennings 1957; Steward 1938). The Archaic lifeways of the Desert Culture consist of nomadic bands that seasonally migrated across a loosely defined territory, exploiting resources as they became available.

Ceramic Period (ca. A.D. 600 to 1450)

After A.D. 600, ceramic production and agriculture became more widespread to varying degrees in west-central Arizona. As sedentism and cultural diversity were increasing, three distinct cultural complexes developed. Harold Colton (1939) applied the term “Patayan” to this complex of cultural traits. The Cerbat Branch occupied areas around the Bill Williams Basin, the Big Sandy River, Trout Creek, Cross Mountain, the Aquarius Mountains, and the Hualapai Mountains (Dobyns 1956). The ceramic tradition associated with the Cerbat is Tizon Brown Ware. The Prescott Branch adhered to the area around Copper Basin, Kirkland Junction, Bagdad, and parts of Burro Creek. Prescott Gray Ware is the defining ceramic type for the Prescott Branch (Keller 1986). The Lowland Patayan groups are located primarily along the lower Colorado River Valley. The Lowland Patayan relied more heavily on agriculture and typically produced Lower Colorado Buff Ware pottery.

Only limited knowledge exists about the Patayan cultures because few Patayan sites have been excavated. The group occupied western Arizona, including the lower Colorado River valley, as well as the peripheral desert regions (Waters 1982). Unfortunately, a sound chronology for the Patayan is lacking for a variety of reasons. No tree-ring or archaeomagnetic dates can be assigned, due to various environmental and cultural parameters, and settlement types. There is also an absence of multi-component or otherwise deeply stratified sites, and this is compounded by confusion associated with ceramic typologies. Site types typically identified include trails, rock shrines, and habitation sites that have rock rings, rock piles, clearings in the desert pavement (including intaglios¹), and artifact scatters (Stone 1991; McGuire 1982).

Historic Period

There is a strong cultural continuum between the prehistoric and historic period aboriginal groups. The Hualapai are the likely descendants of the Cerbat Branch based on cultural similarities. The Yavapai and the Havasupai are most likely related to the Prescott Branch, while the modern Mohave, Cocopah, Quechan, and Maricopa (Yuman) can be associated with the prehistoric Lowland Patayan.

Archaeological and ethnohistoric data indicate trade, warfare, alliance, and migration among all of the groups. Yumans tended to rely more heavily on agriculture for subsistence, though floods were somewhat unpredictable, limiting reliance on agriculture. A large portion of the diet was derived from hunting and gathering in the surrounding foothills, mountains, and valleys.

As is evidenced by the archaeological record, protohistoric and historic Native American settlements in the region are typified by ephemeral, seasonal structures along the rivers following the summer rains, and temporary camps in the surrounding marginal areas

¹Intaglios “are large naturalistic, anthropomorphic and geometric designs produced by scraping aside desert pavement to expose lighter colored underlying sediments. Their creation has been attributed to nearly every aboriginal group believed to have occupied the western Arizona desert through time” (Stone 1986:115).

throughout the winter and spring. More permanent *rancherías* were typically constructed with a pole framework covered with brush, mats, or mud daub. Ephemeral structures associated with seasonal camps for resource procurement consisted of jacals. Material culture consisted of pottery, blankets, baskets, and mats among other items.

Although contacts with Spanish explorers and missionaries were brief, Yumans were quick to adopt horses and wheat. It was not until the California gold rush of the mid-1800s that Anglo-Americans regularly traversed the territory.

Gold and silver mining brought the first European Americans to the region. New homestead laws enticed many Americans to settle Arizona in the late 1800s. The Desert Land Act of 1877 was designed to encourage irrigation in the arid western states. This act increased the amount of land that could be claimed under the homestead, but did not require residency on the claimed parcel. The Enlarged Homestead Act of 1909 and the Stock Raising Homestead Act of 1916 allowed larger plots of land to be claimed and provided additional incentives for homesteading in the southwest. Copper mining, cattle ranching, and cotton cultivation eventually became three of the economic staples for much of Arizona during the first half the twentieth century.

RECORDS REVIEW

Northland staff, as part of the cultural resources survey, conducted a records search and literature review of the project area and the surrounding area up to one mile away. Personnel consulted the AZSITE data base, ASM, State Historic Preservation Office (SHPO), BLM, and Northland’s archive for this information. Northland does not take responsibility for discrepancies in the available records from the various institutions. However, every effort was made to rectify differences where possible. The records search revealed that 11 known cultural resources surveys have been conducted within one mile of the project area (Table 1). The previous investigations resulted in the identification of 17 sites within one mile of the project area (Table 2). The first four sites represent records from the Kingman Field Office of the BLM. These sites were primarily recorded in the 1970s and resulted in multiple site numbers and sometimes multiple plotted locations. Figures 2 and 3 present the plotted locations of the prior investigations and previously recorded sites.

Table 1. Previous Investigations within an Approximate One-Mile Radius of the Project Area.

Survey No.	AZSITE No.	Location (1-mile radius)	Results (1-mile radius)	Reference
SU 72	N/A	Sec. 28, T16N, R13W	Unknown	Unknown*
SU 74	N/A	Sec. 21, T16N, R13W	Unknown	Unknown*
1993-156(ASM)	731	Sec. 22, 27, 34, 35, T16N, R13W	1 new site	Wright 1993
025-96-03.BLM	12335	Sec. 27, 28, T16N, R13W	Unknown	Hancock Road 1996*
1998-565(ASM)	11187	Sec. 21, 22, 27, 28, 33-35, T16N, R13W	12 new sites	Moreno et al. 2000
030-00-25.BLM	N/A	Sec. 28, 29, T16N, R13W	No sites	Wikieup Grazing Permit 2000*
030-00-27	N/A	Sec. 28, T16N, R13W	No sites	Cedar Canyon Allotment 2000*
030-01-19.BLM	N/A	Sec. 27, T16N, R13W	No sites	CAT Utilities Easement 2001*
030-01-33	N/A	Sec. 28, 29, T16N, R13W	No sites	Emergency Anchor Replacement 2001*
030-01-63	N/A	Sec. 28, 29, T16N, R13W	Unknown No	Unknown*
03-53 (NRI)	N/A	Sec. 21, 27, 28, 34, 35, T16N, R13W	sites	Hackbarth 2003

* No additional information available

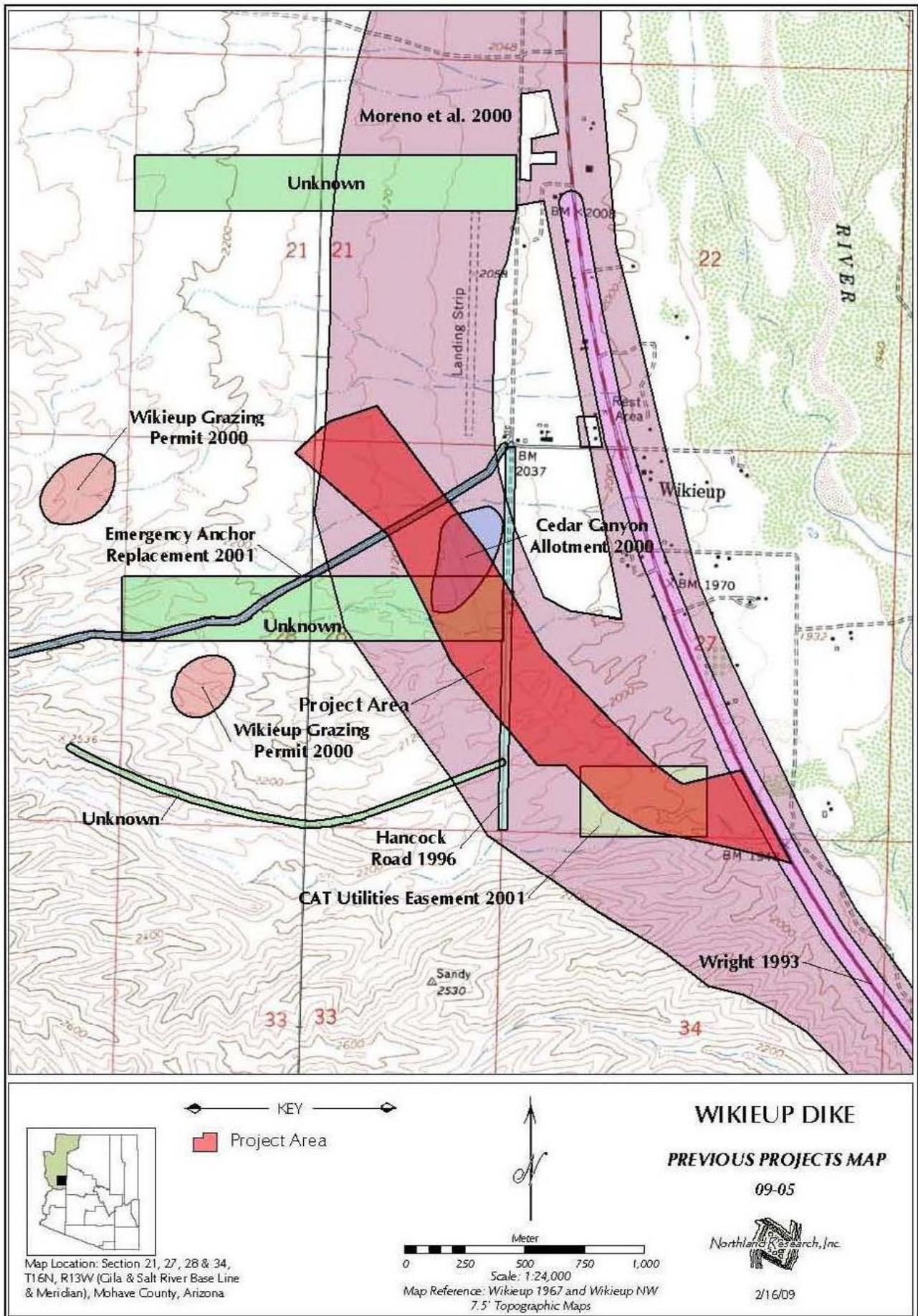
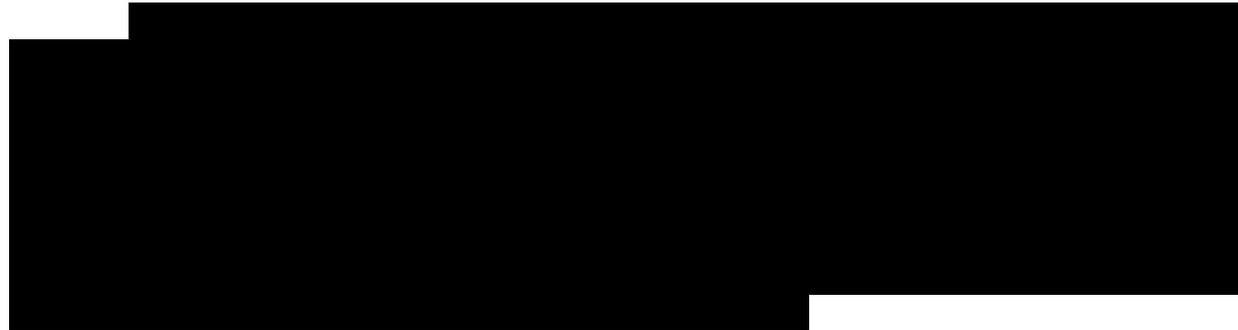


Figure 2. Previous cultural resources investigations.





The 1917 GLO for Township 16 North, Range 13 West, depicts a road labeled “to Chicken Springs & Yucca” as passing through the project area, while a Kingman to Signal road is depicted east of the project area in addition to numerous homesteads. A search of land patents for Sections 21, 27, 28, and 34 revealed several types of patents (Table 3).

Table 3. Recorded GLO Land Patents for Sections 21, 27, 28, 34

BLM Serial No.	Name	Issue Date	Section/Lot	Acres	Patent Authority
AZAR 0007139	Elsie M. Wheadon	3/21/1961	21/E½ SESESESE	1.25	Sale-Small Tract (52 Stat. 609)
AZAR 0023426	Frederick H. Wheadon	10/27/1961	21/W½ SESESESE	1.25	Sale-Small Tract (52 Stat. 609)
AZPHX 0038258	Thomas J. Hardwick	1/8/1924	27/N½NE, SENE, NESE	160	Homestead Entry Original (12 Stat. 392)
AZPHX 0057519	Robert C. Jacobson	11/11/1937	27/E½NW, SWNE, W½SE	200	Desert Land Act (19 Stat. 377)
AZPHX 0070199	James R. Chaffin, Robert C. Jacobson	1/11/1939	27/SESE	40	Desert Land Act (19 Stat. 377)
AZPHX 0084334	Frederick O. Tennille	8/1/1956	27/W½NW, N½SW	160	Desert Land Act (19 Stat. 377)
AZA 00024101	Wickieup Community Church	7/7/1967	28/NENENENE	2.5	Sale-Rec. and Public Purposes (44 Stat. 741)
AZAR 0007778	Medlin family	6/26/1956	34	640	Exchange-Private-Taylor Act (48 Stat. 1269)

FIELD METHODS AND RESULTS

The Class III, intensive on-ground survey for cultural resources was conducted of the 198 acre project area located west of Wikieup, Mohave County, Arizona. The pedestrian survey consisted of archaeologists walking parallel transects spaced 20 meters apart. The area along and between transects was inspected for cultural remains. The entire parcel was surveyed except for areas of fenced private property. Ground visibility within the project area was generally good (75 percent) due to the absence of thick grasses. The pedestrian survey resulted in the identification of no new archaeological sites, though four previously recorded sites were relocated and updated accordingly. In addition to the recorded sites, northland identified and recorded 14 IOs (Figure 4).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

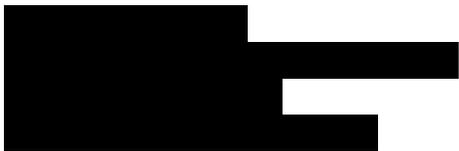
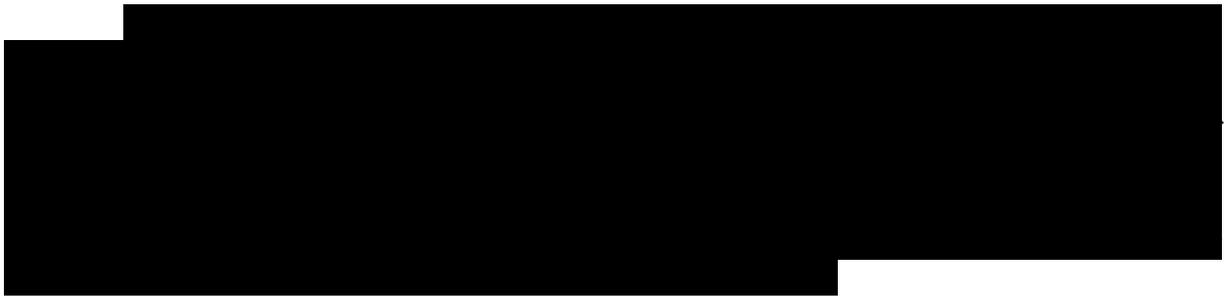
[REDACTED]







Figure 6. Photograph of concrete foundation



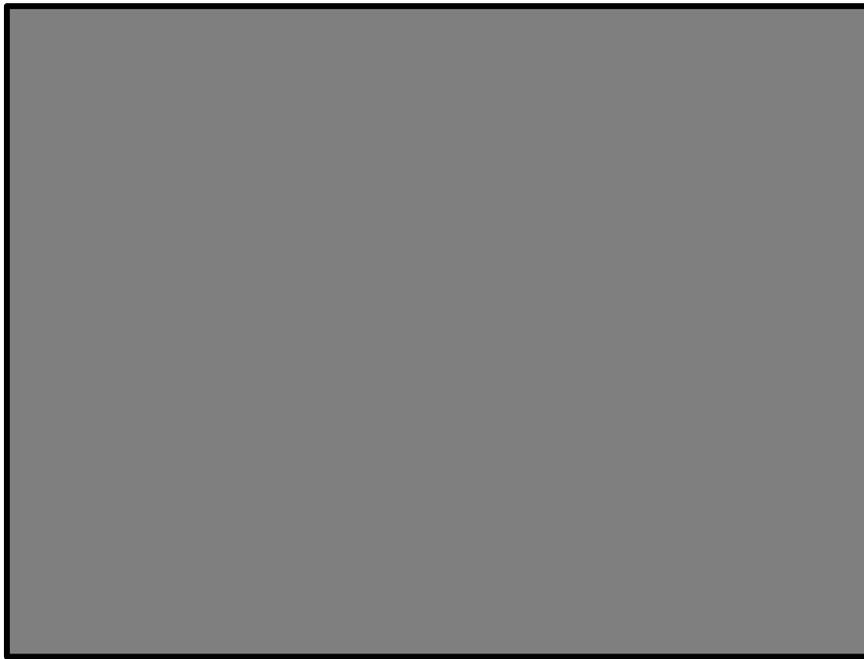


Figure 7. Photograph of structures at AZ M:6:43(ASM).

Isolated Occurrences

Fourteen isolated occurrences were identified throughout the project area (Table 4). Each isolate was recorded according to artifact type and location. Isolated occurrences are not considered AZ/NRHP eligible and therefore require no additional investigation. Many of the dirt road segments are likely part of the same road network. However, given the difficulty of following the faint alignments, individual segments were recorded as they were seen.

Table 4. Isolated Occurrences.

Artifact/Feature No.	Type	Sub-type/ Material	UTM Coordinates		Comments
			Easting	Northing	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

* Date based on Toulouse 1971

SUMMARY AND RECOMMENDATIONS

Northland completed a Class III cultural resources survey and Class I records search of 198 acres west of Wikieup, Mohave County, Arizona. The purpose of the survey was to identify, record, and assess any cultural resources that might be present prior to the proposed rehabilitation of the flood control dike and channel. The records search revealed 17 sites located within a mile radius of the project area including four sites located within the project boundary. No new sites were identified during the survey, but 14 IOs were recorded and the four previously recorded sites [REDACTED] were relocated and updated accordingly.

[REDACTED] appears to have been destroyed or is plotted in the wrong location on the available records. [REDACTED] have already been determined as not eligible for AZ/NRHP listing. [REDACTED] was originally recommended eligible (Moreno et al. 2008), but SHPO determined the site required eligibility testing in December of 2001. Upon relocating and re-recording the site, Northland recommends that the site not be considered AZ/NRHP eligible based on the absence of abundant and diverse historic artifacts of a diagnostic nature, the absence of potential subsurface depth to cultural materials, and the lack of archival records, and the overall lack of research potential. Northland recommends archaeological clearance for the dike and channel rehabilitation because no significant historic properties will be adversely affected by construction or related activities.

Northland's inspection of the property examined the ground surface only. It is important to note that if previously unidentified cultural resources are encountered during materials extraction and related activities, the contractor must stop all ground disturbing actions in the vicinity of the discovery until an archaeologist is notified and the nature and significance of the find is evaluated. If human remains are encountered during construction activity, the Arizona State Museum must be notified per A.R.S. §41-865 and appropriate tribal entities must be consulted.

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APPENDIX E

IMPROVEMENTS, REHABILITATION AND RECONSTRUCTION OF TOWN OF WIKIEUP DRAINAGE FACILITIES

EXISTING BLM RIGHT-OF-WAY



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Arizona State Office
3022 Federal Building
Phoenix, Arizona 85025

IN REPLY REFER TO:

A 983 R/W
(943)

Att
WDB
re

October 15, 1971

DECISION

RIGHT-OF-WAY GRANTED

Details of Grant

Serial Number of Grant: A 983

Name of Grantee: Mohave County Board of Supervisors

Map Showing the Location and Dimensions of Grant:

Map Designations: Wikieup Flood Control, Mohave County

Date Filed: August 17, 1967

Permitted Use by Grantee: Right-of-way for flood control structures

Authority for Grant: Act of February 15, 1901 (31 Stat. 790; 43 U.S.C. 959)

Regulations Applicable to Grant:

Code Reference: 43 CFR 2800

Circular Numbers: - - -

Date of Grant: October 15, 1971

Expiration Date of Grant: - - -

Rental: None

Amount: - - -

When Payable by Grantee: - - -

Terms and Conditions of Grant

Pursuant to the authority vested in the undersigned by Bureau Order No. 701 of July 23, 1964 (29 F.R. 10526), a right-of-way, the details of which are shown above, is hereby granted, subject to the following terms and conditions:

1. All valid rights existing on the date of the grant;
2. All regulations in the circulars, if any, specified above;
3. Filing of proof of construction within 5 years of the date of the grant;
4. Further terms and conditions as follows:
 - (a) The permittee agrees that in all his operations under this permit he shall comply with the applicable State and Federal laws and regulations concerning the use of poisonous substances, including insecticides, herbicides, fungicides, rodenticides, and other similar substances. Prior to the use of such substances on or near the right-of-way, the permittee shall obtain from the Authorized Officer approval of a written plan for such use. The plan shall state the type and quantity of material to be used, the pest to be controlled, the method of application and such other information as the Authorized Officer may require. All use of such substances on or near the right-of-way shall be in accordance with the approved plan. If the use of a poison is prohibited by the Secretary of the Interior, it shall not be used. If use of a poison is limited by the Secretary of the Interior, it shall be used only in accordance with that limitation.
 - (b) The permittee will provide for the proper maintenance and repair of all structures covered by this permit with periodic inspections to determine the soundness of the structures and appurtenances thereto.
 - (c) The permittee agrees to indemnify and hold the United States, its officers, agents and employees harmless against any loss or expense for personal injury, death or property damage arising out of the use for which this permit is granted, i.e., construction, maintenance or repair of the subject flood control structures and appurtenances thereto.
 - (d) Civil Rights Stipulation, copy attached.

Form ASO 1814-2
Rev. May 1965

TITLE VI--CIVIL RIGHTS ACT OF 1964
Form of Assurance for Transfer Documents
other than Patents

(1) The grantee (lessee) covenants and agrees that he will comply with provisions of Title VI of the Civil Rights Act of 1964, and that he will not, for the period during which the property conveyed by this instrument is used for right-of-way for flood control structures, or for another purpose involving the provision of similar services or benefits, engage in any discriminatory action prohibited by 43 CFR 17.3, to the end that no person in the United States shall, on grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under the program for which the grantee received Federal financial assistance by this grant. This assurance shall obligate the grantee, or in the case of transfer of the property granted herein, any transferee, for the period of his grant (lease, etc.).

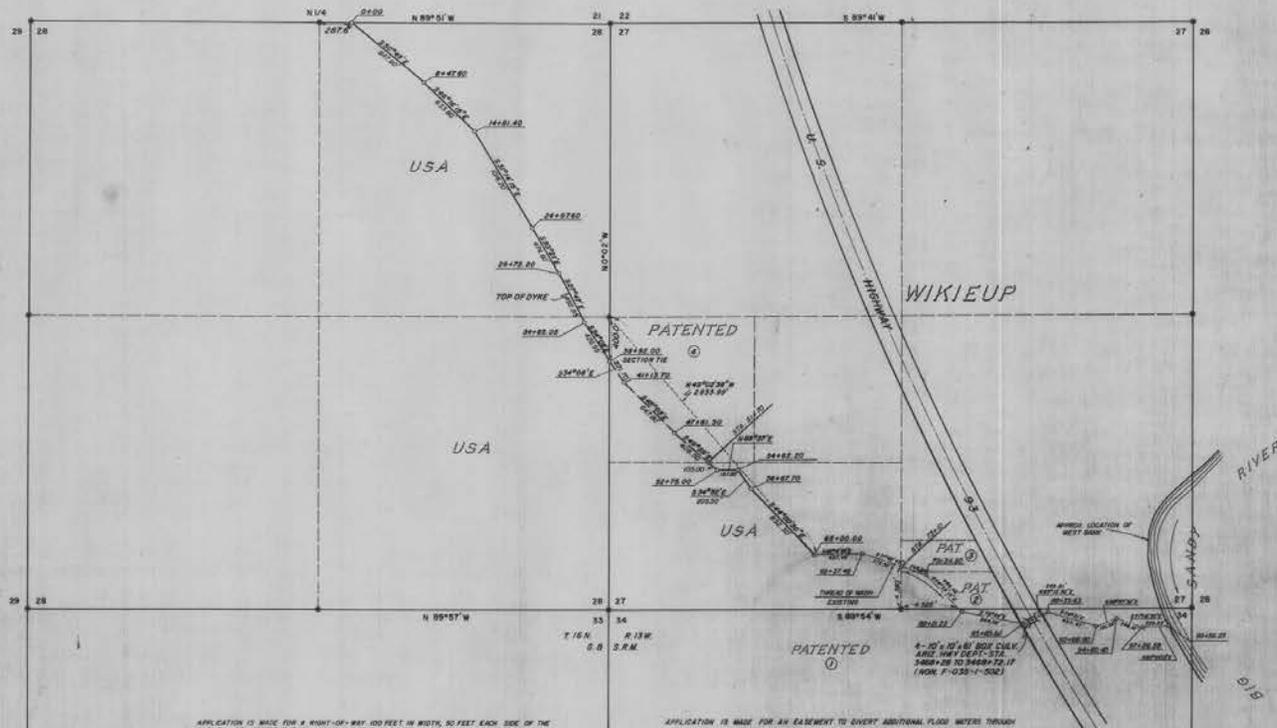
(2) The grantee (lessee) further agrees that he will not transfer the property conveyed by this instrument for the purposes designated in paragraph one hereof or for another purpose involving the provision of similar services or benefits, unless and until the transferee gives similar written assurance to the authorized officer, Bureau of Land Management, that he will comply with provisions of paragraph one hereof.

(3) The grantee (lessee) agrees that the right is reserved to the Department of the Interior to declare the terms of this grant terminated in whole or in part and to revert in the United States title to the property conveyed herein, in the event of a breach of the nondiscrimination provisions contained in paragraph one hereof at any time (or during the term of this lease, right-of-way, etc.).

(4) The grantee (lessee) agrees that as long as property conveyed hereby is used for the purpose designated in paragraph one hereof, or for another purpose involving the same or similar services or benefits, the obligation to comply with the provisions of Title VI of the Civil Rights Act of 1964 shall constitute a covenant running with the land for the term of this grant, lease, etc.

(5) The grantee (lessee) agrees that in the event of violation or failure to comply with the requirements imposed by paragraph one the United States may seek judicial enforcement of such requirements.

(6) The grantee (lessee) agrees that he will, upon request of the Secretary of the Interior or his delegate, post and maintain on the property conveyed by this document signs and posters bearing a legend concerning the applicability of Title VI of the Civil Rights Act of 1964 to the area or facility granted.



APPLICATION IS MADE FOR A RIGHT-OF-WAY 100 FEET IN WIDTH, 50 FEET EACH SIDE OF THE SURVEY LINE, ACROSS THE FOLLOWING FEDERALLY TRIMMED LANDS:

SEC.	T.	R.	FROM	TO	FEET	MILES
29	18	13	STA. 0+00	STA. 38+90	3900	0.737
27	18	13	STA. 51+90	STA. 85+00	3310	0.737
					TOTAL	0.800

APPLICATION IS MADE FOR AN EASEMENT TO DIVERT ADDITIONAL FLOOD WATERS THROUGH THE FOLLOWING EXISTING CHANNEL:

SEC.	T.	R.	FROM	TO	FEET	MILES
27	18	13	STA. 69+00	STA. 73+10	80	0.181

ENGINEER'S STATEMENT

Nathaniel J. Devlin states he is by occupation a Civil Engineer employed by the County of Mohave to make the survey of the Route of the Flood Control Ditch as described and shown on this map, that the survey of said works were made under his supervision and under authority, commencing on the 27th day of October, 1966, and ending on the 3rd day of November, 1966, and that such survey is accurately represented upon this map.

Nathaniel J. Devlin

APPLICANT'S CERTIFICATE

This is to certify that Nathaniel J. Devlin who subscribed the statement hereon, is the person employed by the undersigned applicant to prepare this map, which has been adopted by the applicant as the approximate final location of the works there shown, and that this map is filed as part of the complete application, and in order that the applicant may obtain the benefits of the Act of Congress approved February 15, 1901 (31 Stat. 790, 43 U.S.C. 950), and I further certify that the right-of-way herein described is desired for the Control and Diversion of Flood Waters.

James S. Nelson
 SUPERVISOR - MOHAVE COUNTY BOARD OF SUPERVISORS
 Attest:
Mark R. Boyer
 CLERK OF THE BOARD

PREPARED FOR
 COUNTY OF MOHAVE
 RIGHT OF WAY MAP
 WIKIEUP FLOOD CONTROL
 MOHAVE COUNTY, ARIZONA

DRAWN BY: N.J.D. DATE: 11/15/66
 SCALE: 1"=80' REVISIONS: 01/15/66
 N. J. DEVLIN & ASSOCIATES CIVIL ENGINEERS AND LAND SURVEYORS TUCSON, ARIZONA



THIS SURVEY IS SUBJECT TO ANY ADJUSTMENT TO CORRECT FOR CURVATURE OF THE EARTH AND FOR REFRACTION OF THE AIR.

FROM	TO	FEET	MILES
STA 61+00	STA 73+10	80	0.15

APPLICANT'S REQUEST FOR ADJUSTMENT TO CORRECT FOR CURVATURE OF THE EARTH AND FOR REFRACTION OF THE AIR.

SEC	T	R	FROM	TO	FEET	MILES	
26	16	13	STA 0+00	STA 30+00	3000	0.737	
27	16	13	STA 31+70	STA 63+00	3130	0.752	
					TOTAL	6130	1.489

SEC	T	R
27	16	13

DATE

ENGINEER'S STATEMENT

APPLICANT'S CERTIFICATION

Nathaniel J. Devlin states he is by occupation a Civil Engineer employed by the County of Mohave to make the survey of the Route of the Flood Control Ditch as described and shown on this map, that the survey of said works was made under his supervision and under authority, commencing on the 27th day of October, 1966, and ending on the 3rd day of November, 1966, and that such survey is accurately represented upon this map.

This is to certify that Nathaniel J. Devlin who subscribed the statement herein is the person employed by the undersigned applicant to prepare this map, which has been submitted by the applicant as the approximate final location of the works there shown, and that this map is filed as part of the complete application, and in order that the applicant may obtain the benefits of the Act of Congress approved February 15, 1901 (31 Stat. 750, 43 U.S.C. 950), and I further certify that the right-of-way herein described is desired for the Control and Diversion of Flood Waters.



PREPARED FOR
 COUNTY OF MOHAVE
 RIGHT OF WAY MAP
 WIKIEUP FLOOD CONTROL
 MOHAVE COUNTY, ARIZONA

Nathaniel J. Devlin
 Nathaniel J. Devlin

James P. Necca
 JAMES P. NECCA
 COUNTY BOARD OF SUPERVISORS

Attest:

RECEIVED
BUREAU LAND MANAGEMENT
WASHINGTON, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Land & Survey Office
Phoenix, Arizona

OCT 25 2 30 PM 1951

October 17, 1951

DECISION

Applicant: **Arizona State Highway Department**

Serial: **085742**

Map filed: **May 4, 1949**

Right-of-way: **channel change**

Prepermit allowed:

Type:

Expiration date:

Act: **Sec. 17 of the Act of 11/9/21
42 Stat. 216; 23 U.S.C. 18**

Length on public land:

Regulations: **43 CFR Secs. 24.42
to 24.44**

Annual rental:

Name of line: **Non Federal Aid Project
No. 58 Wickenburg-Kingman Highway**

RIGHT-OF-WAY APPROVED

The above-described application and map for a right-of-way have been examined and found to conform to the appropriate regulations. All interested Government agencies have recommended favorable action thereon.

Pursuant to the above-mentioned act and regulations thereunder, the right-of-way over public lands as shown on the map is approved, subject to

- (1) All valid existing rights;
- (2) The reservations for rights-of-way for canals and ditches constructed under the authority of the United States;
- (3) The reservation to the United States of all fissionable-source materials in accordance with the act of August 1, 1946 (60 Stat. 755, 42 U.S.C. sec. 1801);
- (4) The stipulation that the grantee shall not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, and shall require an identical provision to be included in all subcontracts., and all other conditions heretofore agreed to by the applicant in its application filed in the above numbered case.

Right-of-Way affects part of **SE1/4**, sec. 27, part of **E1/2**, sec. 34, west of highway, T. 16 N., R. 13 W.

THOS. F. BRITT
MANAGER

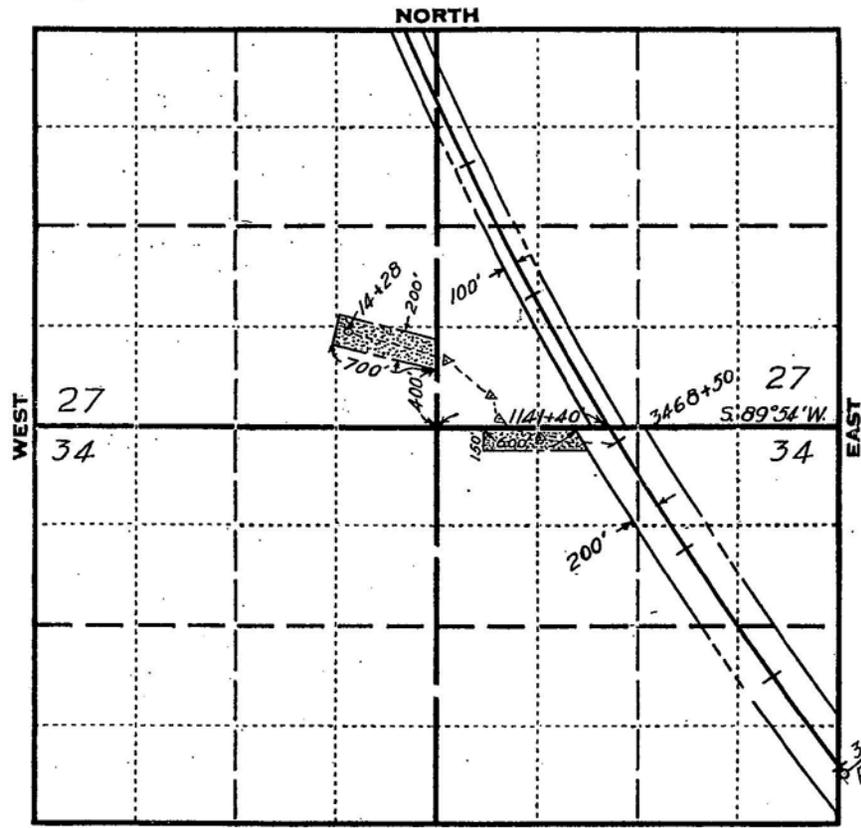
**Thos. F. Britt
Manager**

edl Routed 1/29/53 PFK/APC

Section 27 & 34
 Subdivision PART OF SE 1/4 SW 1/4 SEC. 27.
PART OF N 1/2 N 1/2 NW 1/4 NE 1/4 SEC. 34 W. OF HWY.
 Township 16 NORTH
 Range 13 WEST

ARIZONA HIGHWAY DEPARTMENT
 RIGHT OF WAY DIVISION

Serial No. _____



ARIZONA STATE HIGHWAY DEPARTMENT
 Sketch showing parcel of land in MOHAVE
 County, Arizona, requested to be withdrawn from entry to be used as a
R/W FOR CHANNEL CHANGE

NON Federal AID Project No. 58-WICKENBURG-KINGMAN Highway.
 Date: 4/29/49

 Arizona State Highway Eng'r.

CERTIFICATE OF MANAGER,
 U. S. BUREAU OF LAND MANAGEMENT
 I, hereby certify, that according to the records of this office, the
 parcel of land shown on this sketch (is-are) unappropriated and unre-
 served public lands.
 Date: 5-10-49

 Manager

U. S. DEPARTMENT OF INTERIOR
 Pursuant to the provisions of Section 17, of the Act of Congress,
 approved November 9, 1921, 42 Statute 212, this map is approved.
 Subject to all valid existing rights, but reserving rights of way for canals
 and ditches constructed by authority of the United States.
 Date: _____

 Assistant Secretary

3443+1130
 PC-3442 8/21

AREA TO BE WITHDRAWN

Plat Drawn By: VENSEL
 Plat Ordered By: _____
 Location of Pit Area: _____