

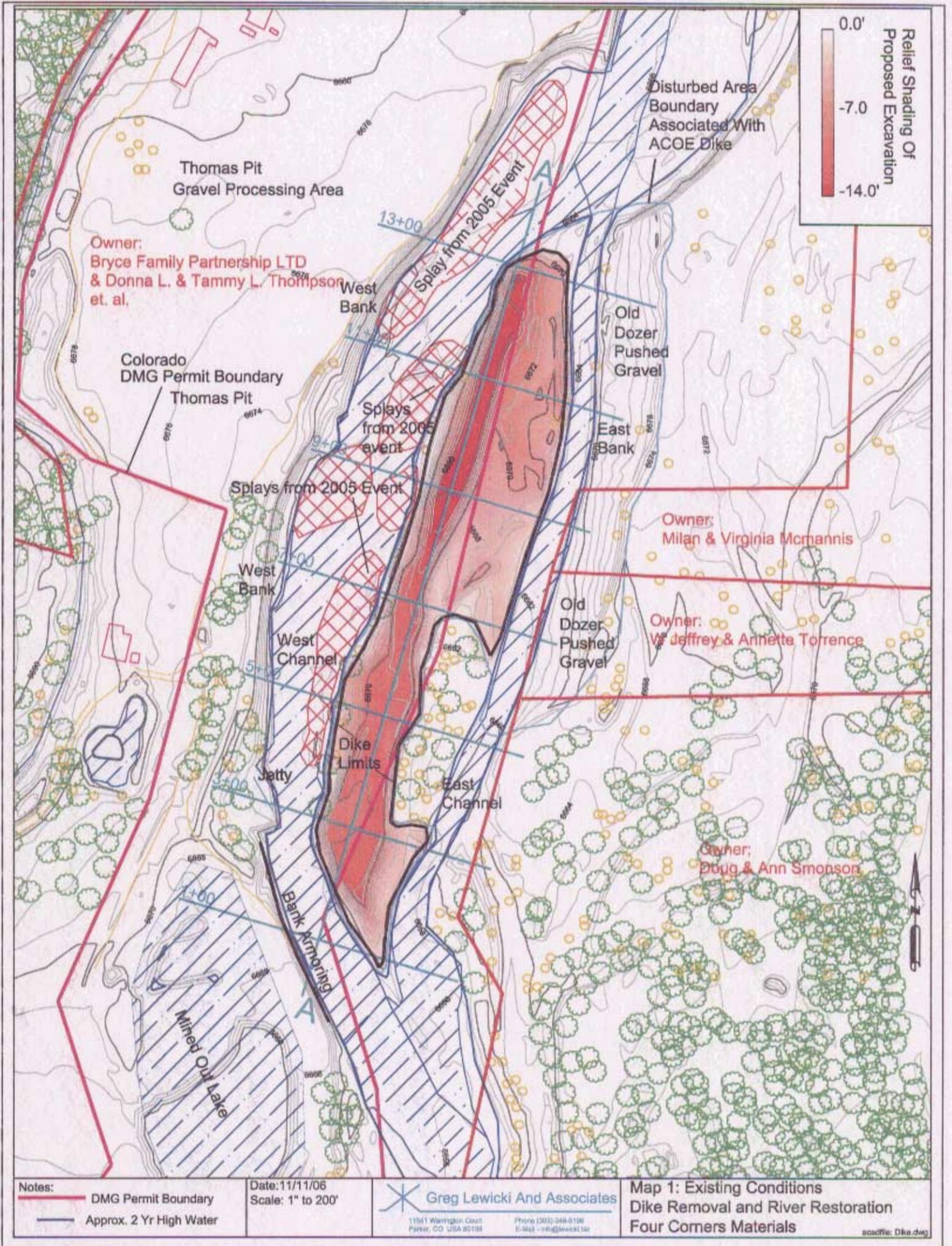
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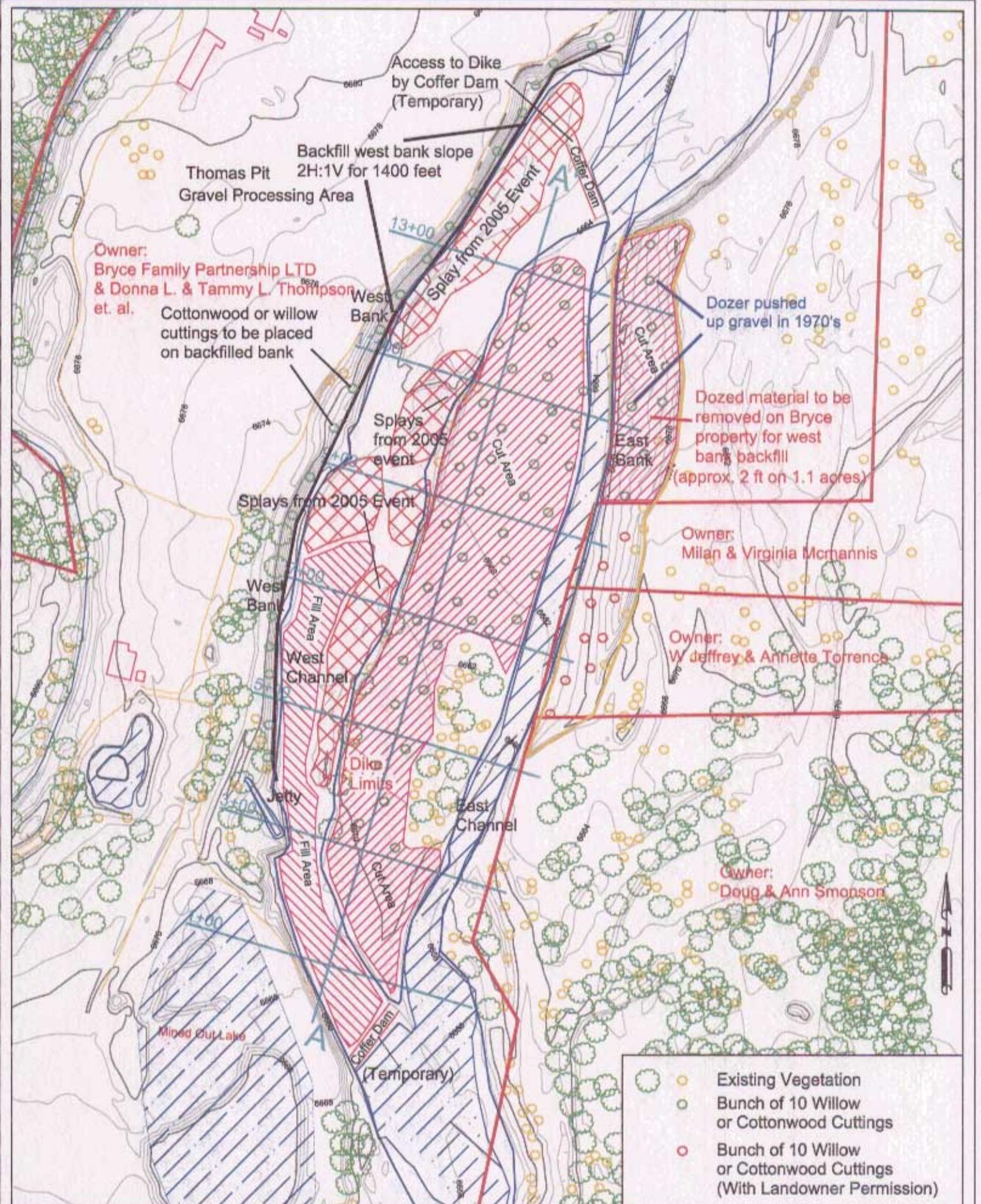
Date: 9/28/06
Scale: 1" to 5000'

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GENERAL LOCATION MAP
Dike Removal and River Restoration
Four Corners Materials

acadfile: Dike.dwg





Owner:
Bryce Family Partnership LTD
& Donna L. & Tammy L. Thompson
et. al.

Cottonwood or willow cuttings to be placed on backfilled bank

Backfill west bank slope 2H:1V for 1400 feet

Thomas Pit
 Gravel Processing Area

Access to Dike by Cofferd Dam (Temporary)

13+00

Splay from 2005 Event

Dozer pushed up gravel in 1970's

Dozed material to be removed on Bryce property for west bank backfill (approx. 2 ft on 1.1 acres)

Splays from 2005 event

Splays from 2005 Event

Owner:
Milan & Virginia Mcmannis

Owner:
W Jeffrey & Annette Torrence

Owner:
Doug & Ann Smonson

West Bank

West Bank

West Channel

Jetty

East Channel

Mined Out Lake

(Temporary)

- Existing Vegetation
- Bunch of 10 Willow or Cottonwood Cuttings
- Bunch of 10 Willow or Cottonwood Cuttings (With Landowner Permission)

Notes: Topography shown is approx. final topography after dike removal.
 — Approx. 2 Yr High Water

Date: 11/11/06
 Scale: 1" to 200'

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Map 2: Dike Removal and River Restoration Activities
Four Corners Materials

acaf01a: Dike.dwg

Thomas Pit
Gravel Processing Area

13+00

Cofferdam
A

West
Bank

11+00

Dozer pushed
up gravel in 1970's

Cut Area

Dozed material to be
removed on Bryce
property for west
bank backfill
(approx. 2 ft on 1.1 acres)

East
Bank

Cut Area

9+00

West
Bank

7+00

Fill Area

West
Channel

5+00

Dike
Limits

East
Channel

Jetty

Fill Area

Cut Area

1+00

Mined Out Lake

Cofferdam
A

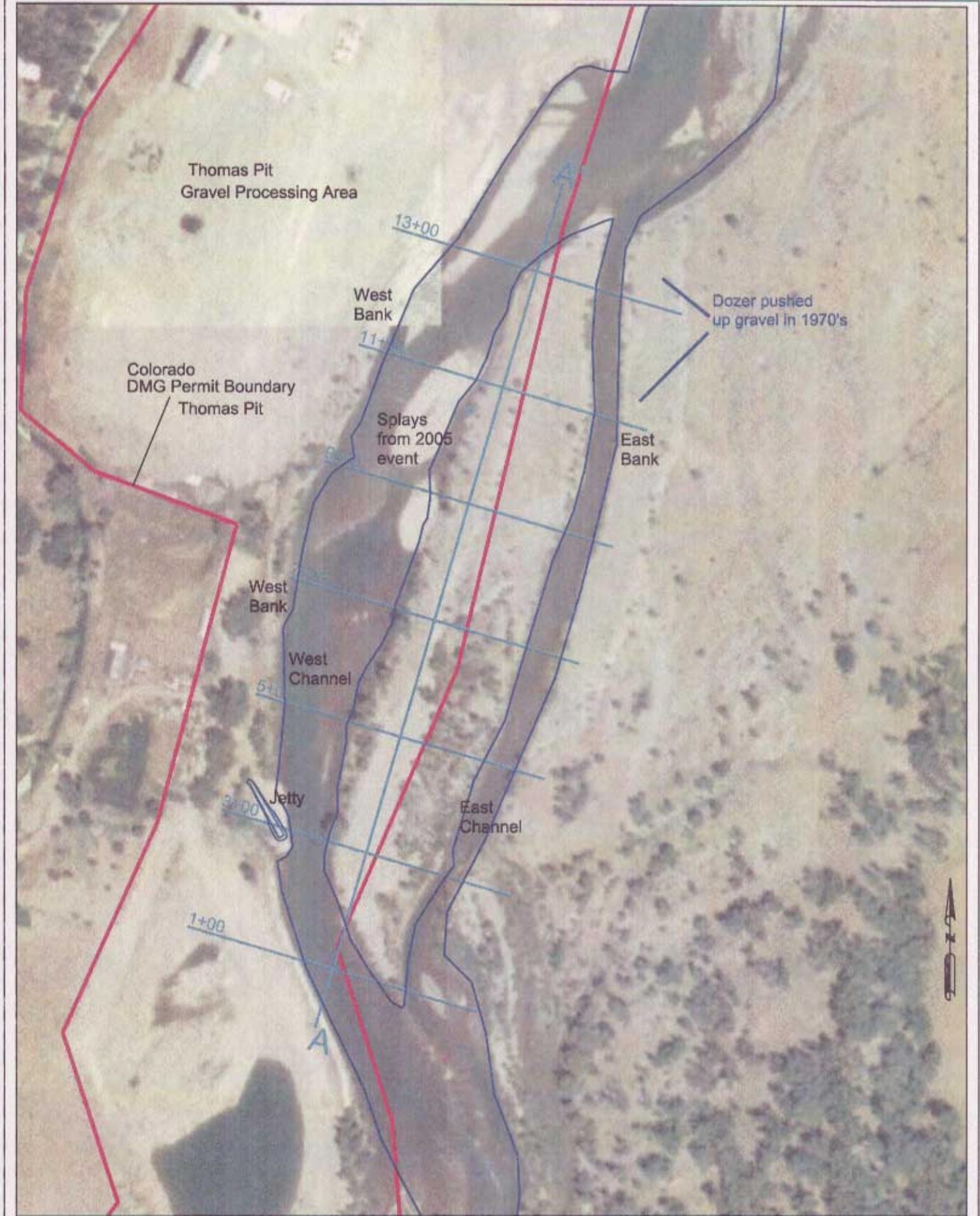
Notes: Aerial taken in November 2002 as part of Animas River Study.

Date: 11/13/06
Scale: 1" to 200'
Approx. 2 Yr
High Water

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Map 3: 2002 Aerial
Dike Removal and River Restoration
Four Corners Materials

acadfile: Dike.dwg



Notes: Aerial taken in Spring of 2005 as part of USDA agricultural study.

Date: 11/11/06
 Scale: 1" to 200'

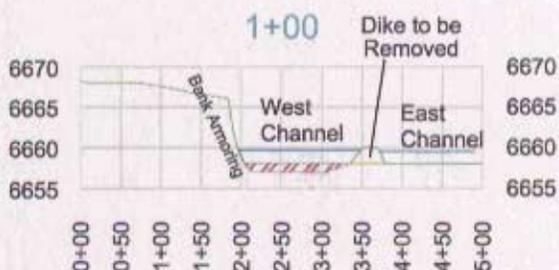
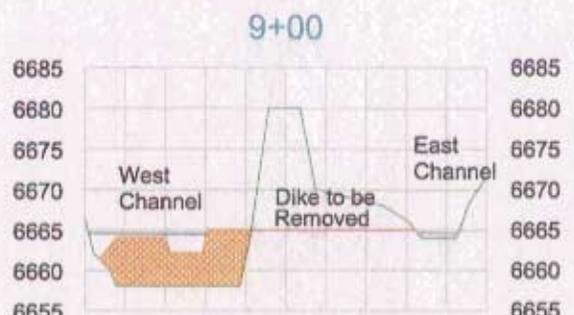
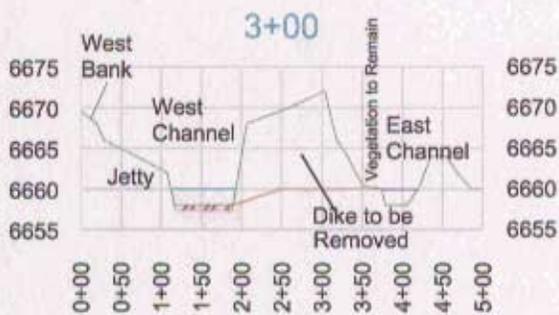
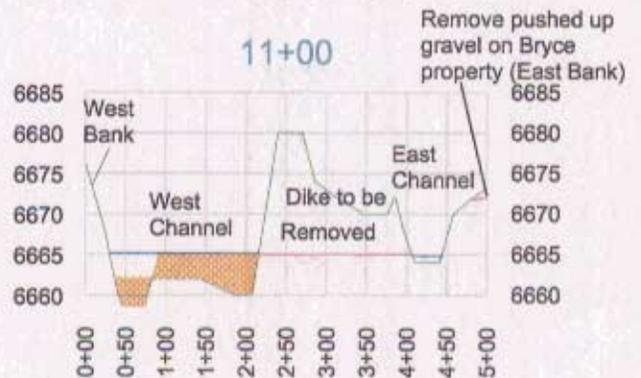
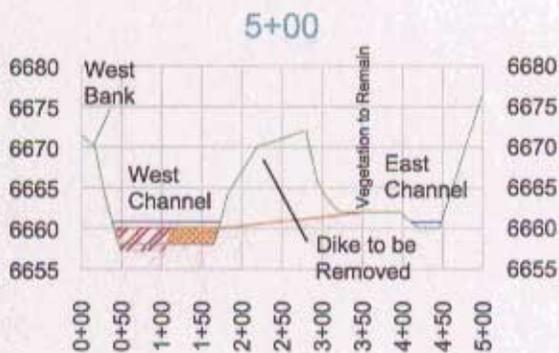
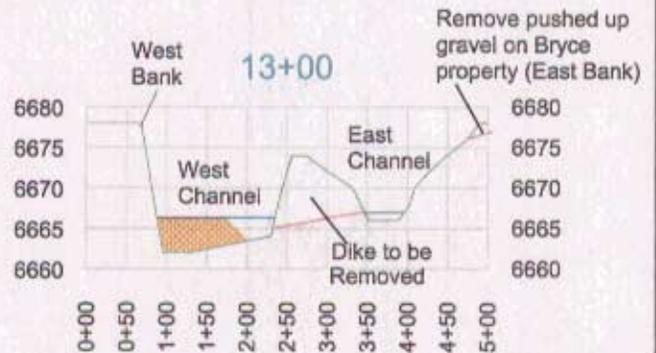
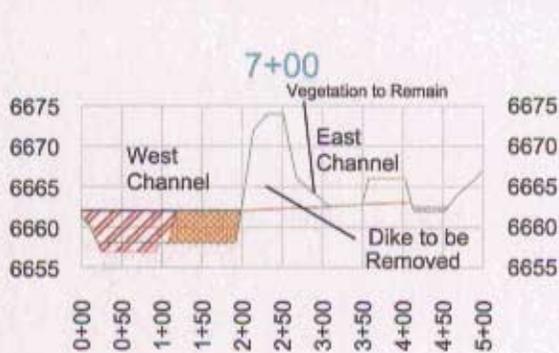
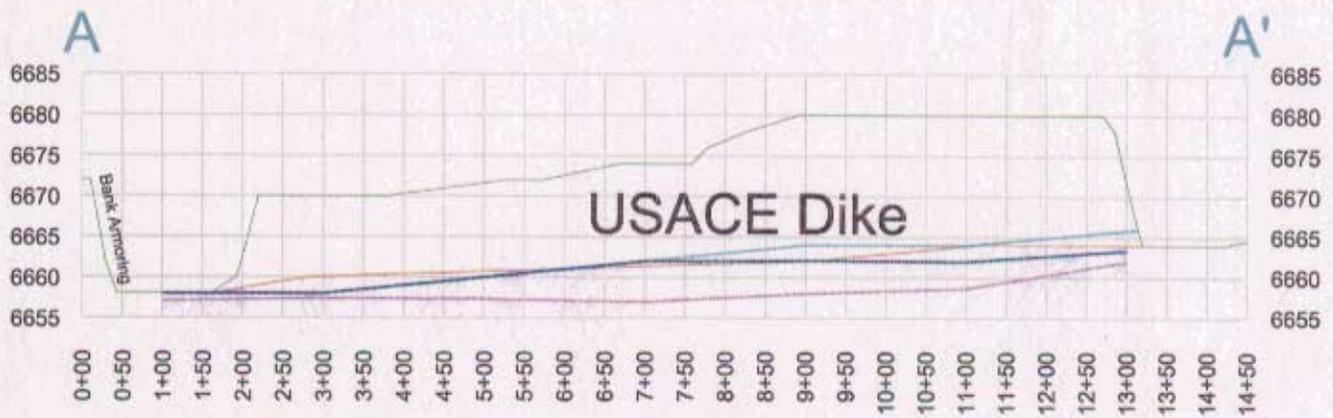
— Approx. 2 Yr High Water

— DMG Permit Boundary

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**Map 4: 2005 Aerial
 Dike Removal and River Restoration
 Four Corners Materials**

arcinfo: Dba.dwg



- Existing Surface (2002)
- Post Restoration
- Approximate West Channel Invert (2002)
- Approximate Natural Splay Fill (2005)
- ▨ Placed Fill
- Post Restoration West Channel
- East Channel
- Approx. 2 Yr High Watermark

Notes:

Date: 11/11/06
Scale: As Shown

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**Cross-Sections
Dike Removal and River Restoration
Four Corners Materials**

roadfile: Dike.dwg



Figure 1: Image taken 9/6/05. Note undercutting of lower tier and inter-block erosion on east bank. Blocks were installed for embankment protection for an adjacent gravel pit lake under Permit 200275200.



Figure 2: Cofferdam installation during construction of erosion control structures for Permit 200275200 on the same site. Similar dam to be installed for proposed operation. Dam top to be wide enough for one-way equipment traffic (approximately 20 feet).



Figure 3: Picture of southern portion of dike from west bank looking east.



Figure 4: Remnant of dredge hole. Primary fill location.



Figure 5 – Looking southeast from west bank with splays in west channel and dike in the shade.



Figure 6 – North of dike looking south at dozer pushed area and both channels.

Alternatives Analysis

Prepared by Four Corners Materials

The following alternatives exist for the planned operation. It should be noted that primarily the options default to No Action or the Proposed Action. This is due to the economic situation associated with proposed activities. While Four Corners Materials (FCM) is an environmentally sound operator and endeavors to act responsibly, it cannot undertake activities such as those described in this document with no economic balance. FCM believes that the proposed activities will benefit the river and reduce future maintenance needs; however, the gravel to be extracted from the dike will be used to partially supply the local demand and pay for the activities described. This balance of environmental responsibility and sustainable economics is important to FCM. The following alternatives represent the analysis FCM undertook prior to the submission of this proposal.

Proposed Dike Removal and River Restoration

o Pros

- . Reduced maintenance to existing structures.
- . Provide for a portion of local demand.
- . Achieve reclamation of pre-law disturbed ground.
- . Satisfy landowner's desire to reduce impacts to river banks and visual disturbance.
- . River health improved.

o Cons

- . Extraction volume does not completely meet FCM local demand for one year.
- . High costs due to selective extraction techniques, high ratio of moved tons to sellable tons, and permitting costs associated with a very low tonnage.

No Action

o Pros

- . No change to river system (could also be considered con).

o Cons

- . Continued head and down cutting from dredge hole.
- . Limited revegetation success.
- . No reclamation of pre-law mining disturbance.

Project Needs

- . Need to satisfy one year demand at Trimble Lane facility from some off river location which would increase costs due to longer distance.
- . Other new disturbance in off-river location would have negative impacts that are probably more significant than those described in the proposed alternative.

Increased Extraction of Dike Area

o Pros

- . Provide for all of local demand.
- . Achieve reclamation of pre-law disturbed ground.
- . Satisfy landowner's desire to reduce impacts to river banks and visual disturbance.
- . Reduced cost per ton due to increase tonnage with similar fixed costs.

o Cons

- . Excessive extraction may worsen effects of erosion.

Reduced Extraction of Dike Area

o Pros

- . Reduced maintenance to existing structures.
- . Provide for a portion of local demand.
- . Achieve reclamation of pre-law disturbed ground.
- . Satisfy landowner's desire to reduce impacts to river banks and visual disturbance.
- . River health improved.

o Cons

- . Extraction volume does not completely meet local demand.
- . Higher costs due to reduced tonnage with similar fixed costs. This may cause the project to default to "No Action" based on economic analysis.

Offsite Extraction

o Pros

- . No change to river system (could also be considered con).

o Cons

- . Continued head and down cutting from dredge hole.
- . Limited revegetation success.
- . No reclamation of pre-law mining disturbance.
- . Probable disturbance of some new off site area