DOCKETED

Docket Number:	09-AFC-07C
Project Title:	Palen Solar Power Project - Compliance
TN #:	200170
Document Title:	Applicant Response to CEC Data Request 57- Part 1
Description:	N/A
Filer:	Tiffani Winter
Organization:	Galati Blek, LLP
Submitter Role:	Applicant's Representative
Submission Date:	8/13/2013 11:07:01 AM
Docketed Date:	8/13/2013

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August 12, 2013

California Energy Commission
Dockets Unit
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: **PALEN SOLAR HOLDINGS, LLC'S SUPPLEMENTAL RESPONSE TO CEC STAFF DATA REQUEST 57**
PALEN SOLAR ELECTRIC GENERATING SYSTEM
DOCKET NO. (09-AFC-7C)

Enclosed for filing with the California Energy Commission is the electronic version of **PALEN SOLAR HOLDINGS, LLC'S SUPPLEMENTAL RESPONSE TO CEC STAFF DATA REQUEST 57**, for Palen Solar Electric Generating System (09-AFC-7C).

Sincerely,

Marie Fleming

*Recorded by: AECOM *Date: August 9, 2013 ☐ Continuation ☒ Update

The Colorado River Aqueduct, a 242-mile-long water conveyance system that extends from the Colorado River at Lake Havasu to its western terminus at Lake Mathews, includes water channels, dams, diversion structures, and pumping plants. The resource occurs within the current survey area and appears unaltered since its previous recording (Dice 2001).

Several segments of the Colorado River Aqueduct system have been previously recorded and evaluated, and the resource has been consistently recommended eligible under NRHP criteria A and C (Neves and Goodman 2000; Hamilton and Beedle 2005). The resource is significant for its association with the economic development of Southern California and as a marvel of civil engineering. It is a National Historic Engineering Landmark.

The segment within the current study area appears eligible under NRHP Criterion A and CRHR Criterion 1 for its contribution to a major historical development for the region, the introduction of water supply, and under NRHP Criterion C and CRHR Criterion 3 for its significance in engineering. The segment remains in its original location and association, maintaining its feeling and setting wending through the desert and Palen and Eagle Mountains, and represents the design, materials, and workmanship of its period of significance.

Reference:

Dice, M.H.
2001 DPR 523 forms for the Colorado River Acqueduct (P-33-11265). On file at EIC.

Hamilton, M.C. and P. Beedle
2005 DPR 523 forms for the Colorado River Acqueduct (P-33-11265). On file at EIC.

Neves, J. and J. Goodman
2000 DPR 523 forms for the Colorado River Acqueduct (P-33-11265). On file at EIC.

Report Citation:

AECOM
2013 *Class II and III Cultural Resources Survey Report for the Palen Solar Electric Generating System Riverside County, California.*

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

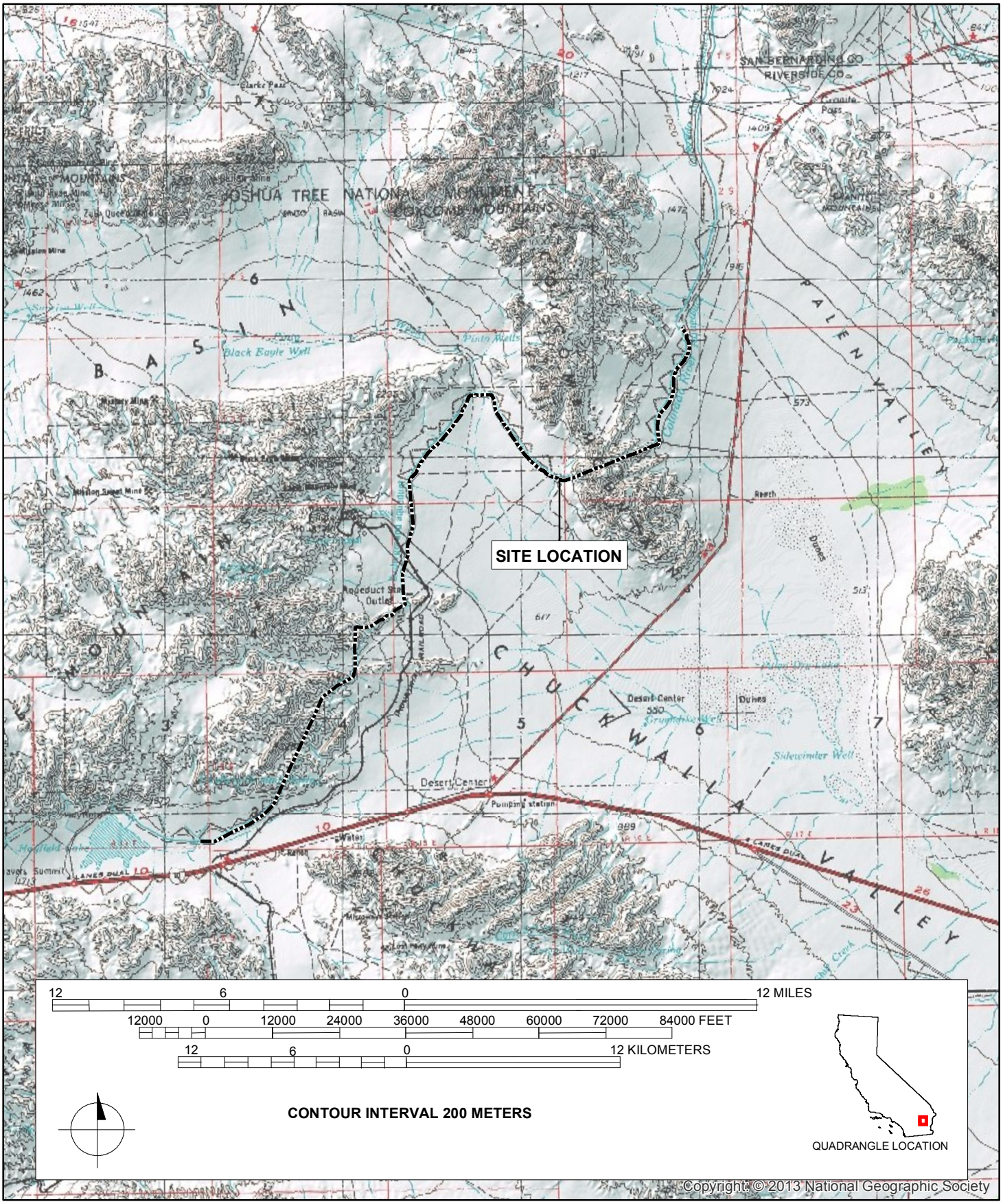
Primary #_____
HRI #_____
Trinomial_____

* Resource Name or # (Assigned by recorder) P-33-11265

* Map Name: USGS Quads Coxcomb Mts., Pinto Wells, Victory Pass, Buzzard Spring, Hayfield Spring

* Scale: 1:291,600

* Date of Map: 1983



*Required Information

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary # P-33-011265
HRI # _____
Trinomial _____

Page 1 of 1 *Resource Name or #: SRI-9990

*Recorded By: Scott Kremkau *Date: 9/9/2011 ☐ Continuation ☑ Update

Site not relocated
This is an update for the previous site record. The current project only examines the first 15 meters from the edge of the highway, corresponding to the Caltrans right-of-way. Based on existing information, the site is located in or near the right-of-way. However, during the current 2011 study, no trace of the site was found within the right-of-way. Site maps indicate the site continues beyond the right-of-way, but these portions were not investigated as part of the current project.

RECEIVED IN

APR 21 2009

EIC

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary Number: P-33-11265 UPDATE
HRI Number: _____
Trinomial: CA-RIV-6726H UPDATE
NRHP Status Code: _____
Other Listings: _____
Review Code: _____ Reviewer: _____ Date: _____

Resource Name: CA-RIV-6726H UPDATE

P1. Other Identifier: Colorado River Aqueduct; Casa Loma Siphon ; East Portal Adit of the San Jacinto Tunnel

P2. **Location:** ■ Not for Publication ☐ Unrestricted **a. County:** Riverside
b. **USGS 7.5' Quad:** Lakeview Date: 1967 (Photorevised 1979) T4S; R2W; N ½ of S ½ of Sec 11; S.B.B.M.
b. **USGS 7.5' Quad:** Cabazon Date: 1956 (Photorevised 1988) T3S; R2E; N ½ of N ½ of Sec 22; S.B.B.M.
c. Address: vicinity City: Lakeview and Cabazon, CA Zip:
d. UTM: Zone 11; NAD 83; 494335mE/ 3743925mN (Casa Loma Siphon section, under existing SCE transmission lines)
521511mE/ 3751067mN (East Portal Adit of the San Jacinto Tunnel)
e. Other Locational Data: The existing SCE 500kV Devers-Valley Transmission line transects two portions of the Colorado River Aqueduct. The 'western' location is part of the Casa Loma Siphon, at the northern base of Mt. Rudolph on the southern margin of the San Jacinto Valley, 0.1 mi. east of SCE Tower 33-1. The 'eastern' location is a half-mile section of the aqueduct within the SCE transmission line and access road ROW southeast of Cabazon, CA. The "eastern' location also includes the East Portal Adit of the San Jacinto Tunnel, situated at the northern base of the San Jacinto Mountains. The East Portal Adit is located approximately 1,500 ft. west of the intersection of Esperanza Ave. and Peach St., 0.2 mi. southwest of Tower 13-3.

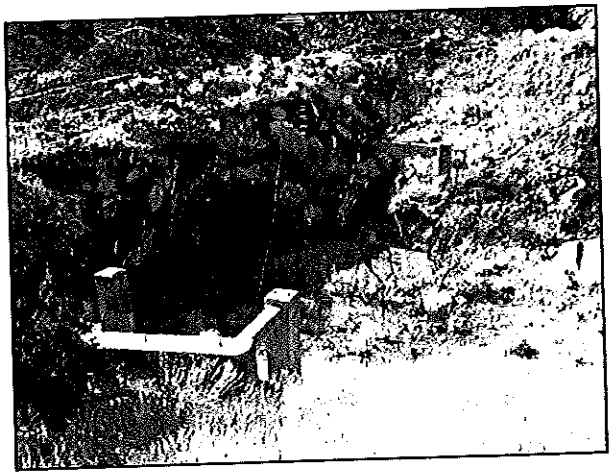
P3a. **Description:** The current survey updates two short segments of the Colorado River Aqueduct (CRA): a section of the Casa Loma Siphon near Lakeview, CA, and a section that includes the East Portal Adit of the San Jacinto Tunnel near Cabazon, CA. A more detailed description of the entire Colorado River Aqueduct (CRA) can be found on previously filed DPR forms. Since most of the surveyed portion the CRA is underground, this update focuses on the aboveground features present.

The section located near Cabazon consists of the East Portal Adit of the San Jacinto Tunnel and a large spoils pile some 420 ft. northeast of the adit. The East Portal Adit is marked on the 1956 7.5' Cabazon and 1956 15'Banning USGS topo maps. Construction of San Jacinto Tunnel began in 1933 and continued until the "holing through" on November 18, 1938. The tunnel was then lined with concrete and on October 14, 1939, a ceremony marking the official completion of the aqueduct was held at the West Portal of the San Jacinto Tunnel (Gruen 1998). (Continued on page 5)

P3b. **Resource Attributes:** HP.20 Canal/Aqueduct

P4. **Resources Present:** ☐Building ☐Structure ☐Object ☐Site ■District ■Element of District ☐Other (Isolates, etc.)

P5a. Photograph or Drawing: IMG_1763, December 16, 2008
P5b. Description of Photo: Overview of East Portal Adit, view southwest



P6. **Age and Sources:** 1933-1960 ■Historic ☐Prehistoric ☐Both

P7. **Owner and Address:**
Metropolitan Water District of Southern California
P.O. Box 54153, Los Angeles, CA 90053

P8. **Recorded by:**
M. DeGiovine, T. Martin, S. Wilson, and K. Chmiel
ICF Jones & Stokes
9775 Businesspark Avenue Suite 200
San Diego, CA 92131-1120

P9. **Date Recorded:** December 12 & 16, 2008, and January 15, 2009

P10. **Survey Type:** Intensive Pedestrian

P11. **Report Citation:**
Eckhardt, William T. and Stacie L. Wilson
2009 *Cultural Resources Inventory of the Proposed SCE Devers Substation to Valley Substation Project, Riverside County, California*. Prepared by ICF Jones & Stokes for Bureau of Land Management, Palm Springs.

Other Sources:
Gruen, J. P.
1998. *Colorado River Aqueduct Recording Project*. Groucho Publications, Los Angeles

Attachments: ☐NONE ■Location Map ■Sketch Map ■Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List):

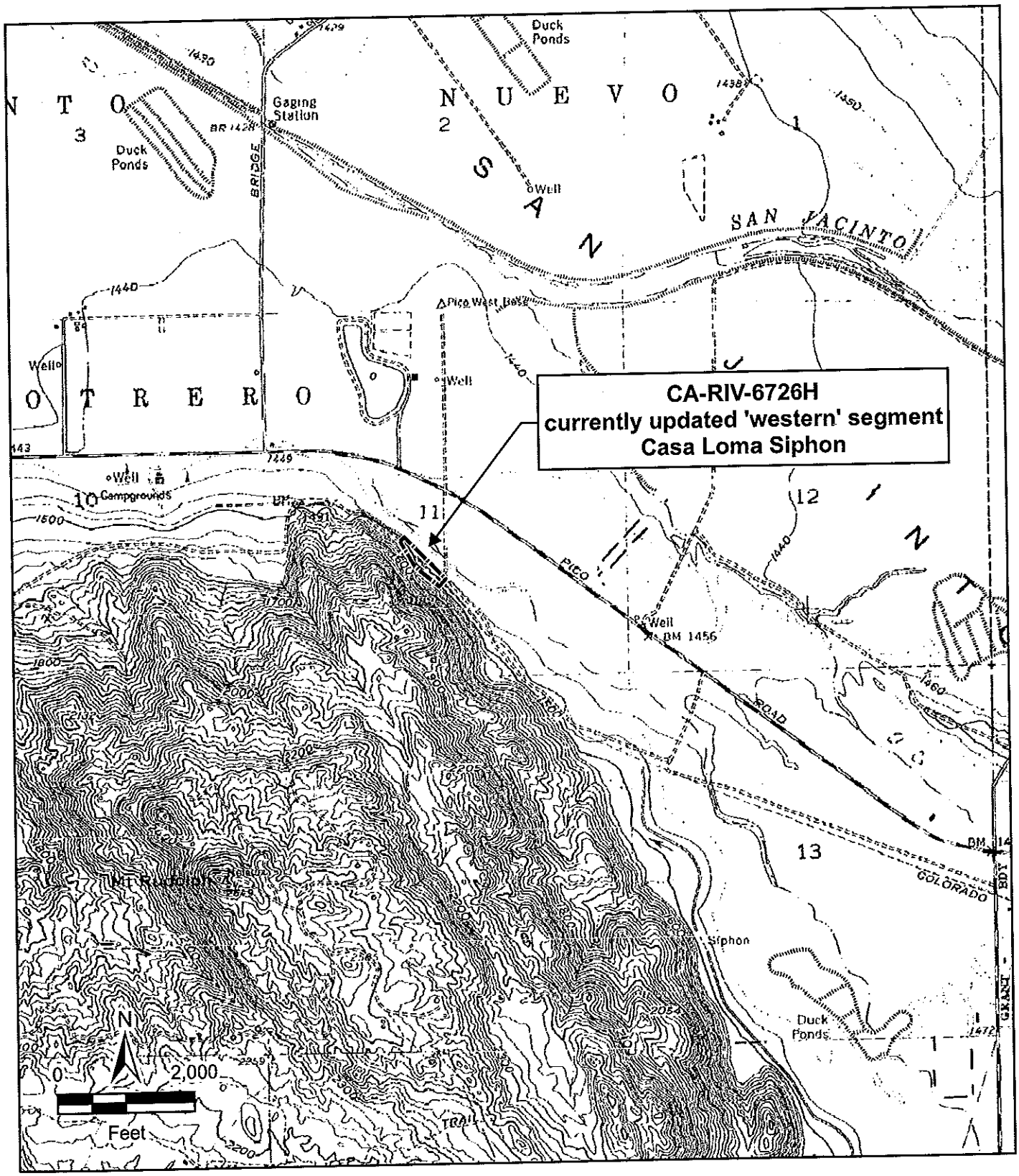
Required information is bold

State of California - The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #: P-33-006726 UDPATE
Trinomial: CA-RIV-6726H UPDATE

Resource Name or #: CA-RIV-6726H UPDATE

Map Name: Lakeview **Scale:** 1:24,000 **Date of Map:** 1953 (Photorevised 1988)



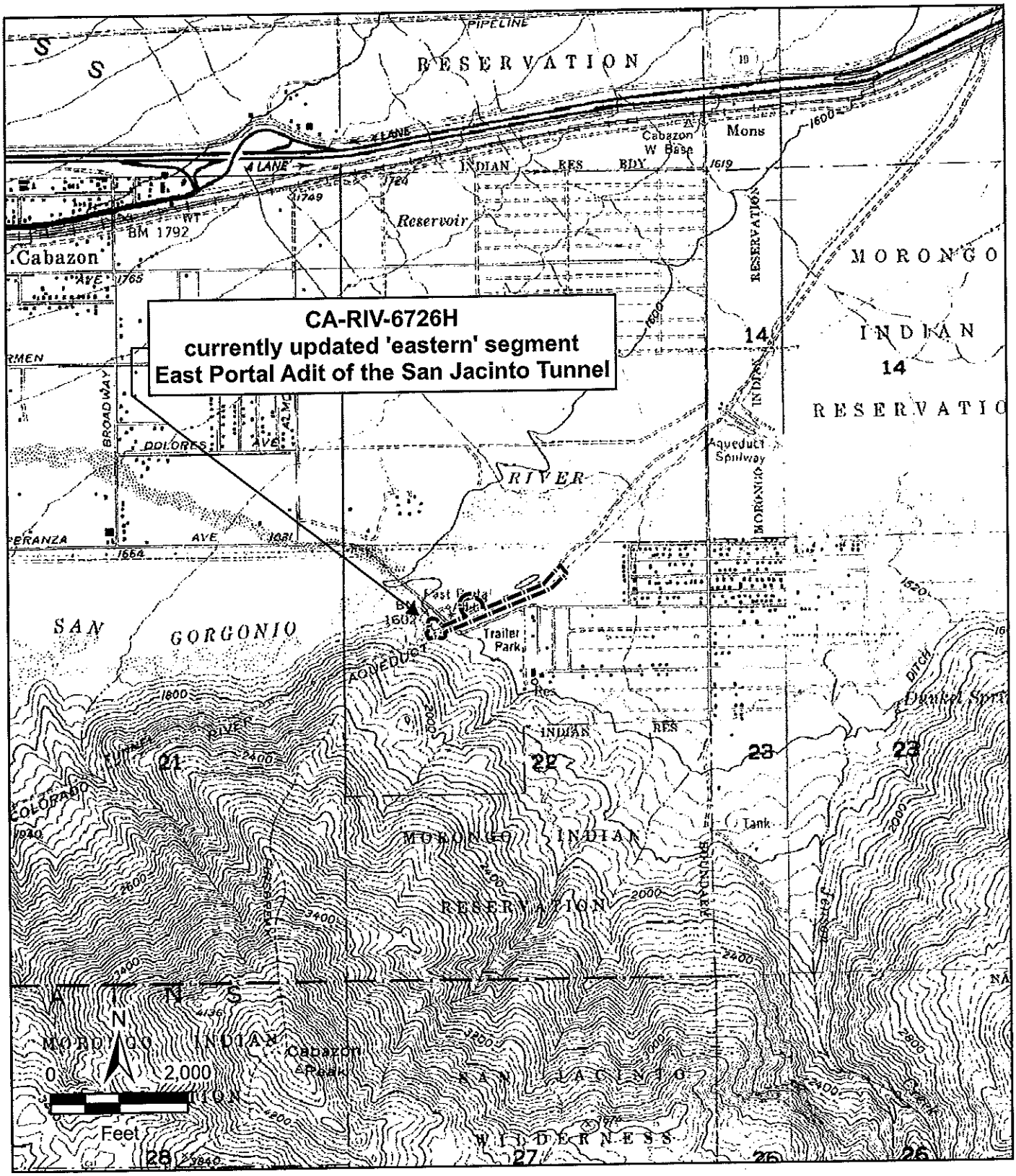
Required information is bold

State of California - The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #: P-33-006726 UDPATE
Trinomial: CA-RIV-6726H UPDATE

Resource Name or #: CA-RIV-6726H UPDATE

Map Name: Cabazon **Scale:** 1:24,000 **Date of Map:** 1956 (Photorevised 1988)



Required information is bold

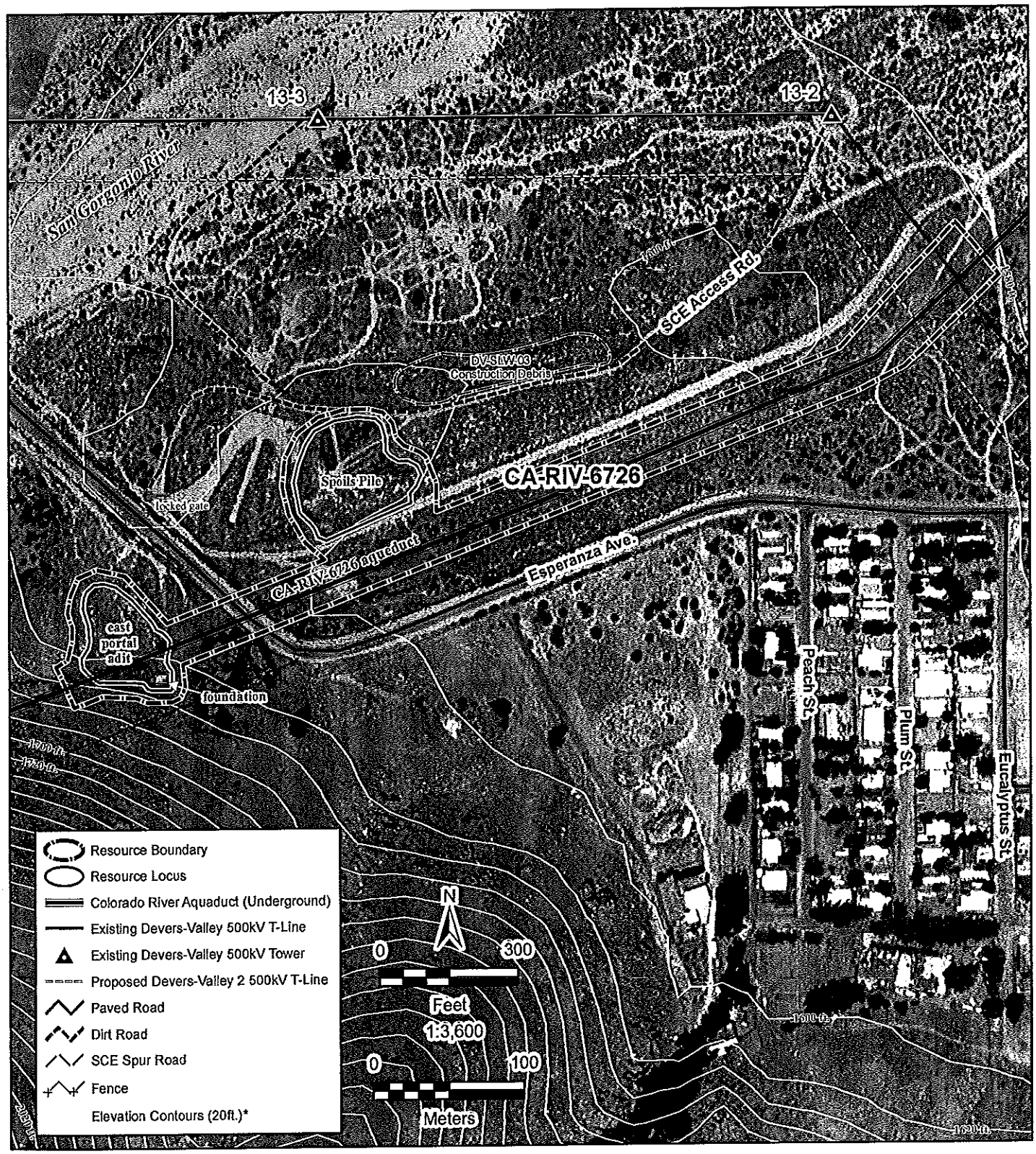
State of California - The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #: P-33-11265 UPDATE
Trinomial: CA-RIV-6726H UPDATE

Resource Name or #: CA-RIV-6726H UPDATE (East Portal Adit of the San Jacinto Tunnel)

Drawn By: SLW

Date: March 2009

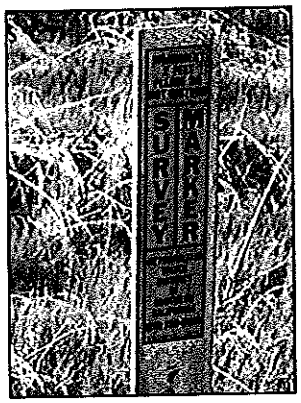


Source: ESRI USA Imagery 2009. *Derived from Riverside County 30m DEM

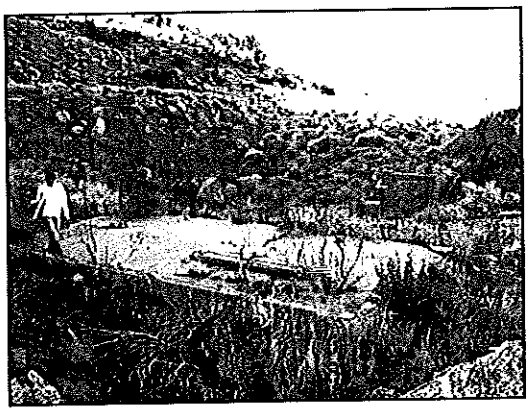
Required information is bold

P3a. **Description (continued):** Structural and physical remains in the East Portal Adit area consist of six concrete pillars, three concrete walls, a concrete foundation, and a large spoils pile. The adit, going into the San Jacinto Mountains., is approximately 20 ft. deep with a silty/sandy bottom. Three concrete walls are imbedded in the sides of the hill, measuring from 25 ft. to 12 ft. long. Several of the concrete pillars have fallen over and graffiti has been written on many of the concrete elements. The concrete foundation is located 30 ft. to the south and uphill from the adit. The foundation measures 17.5 ft. wide by 29 ft. long with a raised "section," "platform," or "cover" measuring 4 ft. by 6ft. by 4.4 in. The spoils pile measures 270 ft. wide by 240 ft. long and is located 420 ft. to the northeast of the adit on the north side of Esperanza Ave. The Colorado River Aqueduct leading to the San Jacinto Tunnel from the northeast is underground and marked by several survey markers. DV-SLW-03 is located 75 ft. to the northwest of the spoils pile. DV-SLW-03 consists of a trash scatter measuring 470 ft. by 100 ft., primarily comprised of construction debris, concrete waste, and large metal-rimmed wooden wire cable spools. Two datable items place DV-SLW-03 to the late 1950s/early 1960s. It is unclear if the DV-SLW-03 debris is associated with the CRA or the construction of the East Portal Adit (occurring between 1933 and 1939). If so, debris has been added to scatter throughout the decades following CRA construction.

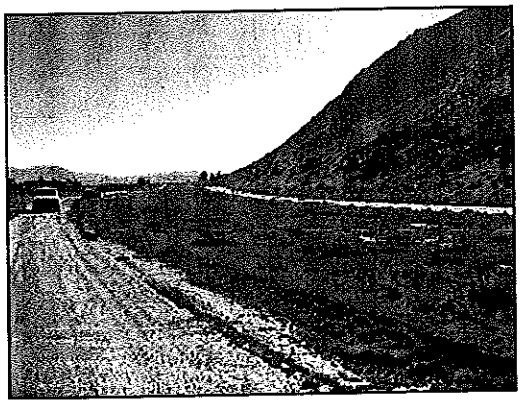
The currently updated 'western' segment is part of the Casa Loma Siphon portion of the Colorado River Aqueduct and is located directly under the SCE existing 500kV transmission lines at the northern base of the Lakeview Mountains. The Casa Loma Siphon is a double-barrel siphon that travels underground from the west portal of the San Jacinto Tunnel to the east portal of the Bernasconi Tunnel. It was one of the last components of the aqueduct to be completed in the fall of 1939. Six survey markers (mostly MWDSC) were noted. An example of the survey markers delineating the aqueduct location is shown below. These markers are mounted on flat, rectangular plastic and read: "Survey Marker" above "Metropolitan Water District of Southern California." Some modern trash in the area was observed.



P5a. DSCF0738, January 16, 2009
P5b. Example of survey marker found near the Casa Loma Canal portion of the Colorado River Aqueduct.



P5a. DSCF0720, January 15, 2009
P5b. Overview of foundation found at East Portal Adit, view north.



P5a. DSCF0744, January 16, 2009
P5b. Overview of the Casa Loma Siphon portion of the CRA, view east.

P5a. DSCF0721, January 15, 2009
P5b. Overview of the East Portal Adit, arrow points to foundation, view east/southeast.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 33-11265
HRI #
Trinomial CA-RIV-6726H; Update
NRHP Status Code 3S

Other Listings
Review Code **Reviewer** **Date**

***Resource Name or #:** Colorado River Aqueduct – Map Reference Number 1

P1. **Other Identifier:**
***P2.** **Location:** ***a. County** Riverside, California ☒ Not for Publication ☐ Unrestricted
***b. USGS 7.5' Quad** Winchester, CA **Date** 1953 (1979)
T 4 S; **R** 2 W; ¼ of ¼ of **Sec** 13, 24, 25; **S.B.B.M.**
T 4 S; **R** 1 W; **Sec** 29, 30, 20
c. Address: **City** San Jacinto **Zip** 92582
Nuevo 92567

d. Zone 11, NAD 27

	mE/	mN
	495403	3742817
	496971	3738792
	497890	3738776
	500227	3740073

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate): The Colorado River Aqueduct (CRA) system begins at the Whitsett Intake Pumping Plant on the California side of the Colorado River at Lake Havasu, and extends westward across the desert to the aqueduct terminus at Lake Mathews (formerly named Cajalco Reservoir). The linear distance traversed by the aqueduct, from the Colorado River to the inlet structure at Lake Mathews, is approximately 242 miles.

***P3a. Description** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): This primary form contains a brief description of the entire CRA, of which only segments have been surveyed previously. A more detailed description of the system as a whole can be found on the previously filed primary records. But briefly stated, components of the aqueduct consist of dams, diversion structures, pumping plants, and conduits which convey water across the Colorado and Mojave deserts from Parker Dam in Arizona to Lake Mathews in Riverside County for distribution to the various constituent cities. In all surveys, the aqueduct was recommended as eligible for the NRHP.

The current study evaluated the segment of the CRA that traversed the proposed SR79 APE. This is the Casa Loma Siphon, which is comprised of two barrels. The first barrel was built totally underground. The second barrel of the Casa Loma Siphon, built to expand upon the first, is comprised of an underground siphon and an above-ground canal, known as the Casa Loma Canal. Both siphons and canals are recognized water conveyance property types.

Siphons convey the water under such geological features as washes, and beneath constructed features such as railroad lines. There are two basic siphon types on the CRA: barrel siphons and box siphons. Box siphons are square, usually constructed in threes, and were used to connect two sections of open canal that traversed a wash. Canals were constructed in flat open areas.

The barrel siphons are round. The single barrel siphon has a diameter of 16 feet; the double barrel siphons have a diameter of 12 feet. Double-barreled siphons were used in situations with heads more than 25 feet. Blow-off valves are used to dewater these siphons when repairs are needed.

The siphons were built as cast-in-place concrete. When the plans called for a double barrel siphon, only one was constructed, although the connectors from the canal sections were set in place for the second barrel, to reduce the amount of disturbance around the siphon when the second barrel was added.

The Casa Loma Siphon was designed as a double-barreled siphon that travels underground from the west portal of the San Jacinto Tunnel to the conduit which connects to the east portal of the Bernasconi Tunnel. It was one of the last components of the aqueduct to be completed.

The second barrel of the Casa Loma Siphon and the Casa Loma Canal were constructed as part of the CRA expansion. Instead of following the alignment of the first barrel, the second barrel and the canal travel in a U shape in order to connect with the San Diego Canal (a later period expansion). The San Diego Canal, built as an element of the Second San Diego Aqueduct, carries State Water Project water to San Diego.

***P3b. Resource Attributes** (List all attributes and codes): HP 20: Canal/Aqueduct

***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☒ District ☒ Element of District ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.)

***P6. Date Constructed/Age and Source:** 1933-1960 ☐ Prehistoric ☒ Historic ☐ Both

***P7. Owner and Address:** Metropolitan Water District of Southern California, P.O. Box 54153, Los Angeles, CA 90053.

***P8. Recorded by** (Name, affiliation, address): Peggy Beedle, Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544.

P9. Date Recorded: March 15, 2005

***P10. Type of Survey:** ☒ Intensive ☐ Reconnaissance ☐ Other
Describe:

***P11. Report Citation** (Provide full citation or enter "none"): *Historical Resources Evaluation Report: Realign State Route 79 Between Domenigoni Parkway and Gilman Springs Road in the Cities of Hemet and San Jacinto and the County of Riverside.* Prepared for Christie Hammond, Caltrans District 8. Prepared by Applied EarthWorks, Inc., Hemet, California.

Attachments: ☐ None ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # 33-11265
Trinomial CA-RIV-6726H; Update
NRHP Status Code 3S

 ***Resource Name or #:** Colorado River Aqueduct

L1. Historic and/or Common Name: Colorado River Aqueduct

L2a. Portion Described: □ Entire Resource ☒ Segment □ Point Observation **Designation:**

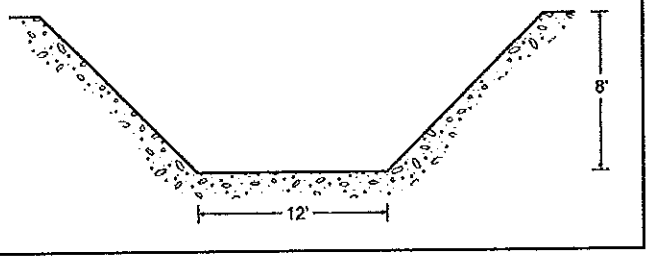
b. Location of point or segment (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map): UTM Zone 11, NAD 1927. East End of surveyed segment: 499456 mE/ 3739516 mN; West End of surveyed segment: 496970 mE/ 3738772 mN.

L3. Description (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate): The surveyed segment of the Casa Loma Canal is an open canal of standard MWD design; it is 12 feet wide at the base and approximately 8 feet deep. It is constructed of poured concrete, and enclosed by a chain-link fence. The access road is on the north side of the canal. A box siphon is located on the canal; at the time of survey the water was at the top of the siphon, therefore a description is not available.

L4. Dimensions (In feet for historic features and meters for prehistoric features):

a. **Top width**
b. **Bottom width** 12 feet
c. **Height or Depth** 8 feet
d. **Length of Segment** 8,725 feet

L4e. Sketch of Cross-Section



L5. Associated Resources: Access road, box siphon

L6. Setting (Describe natural features, landscape characteristics, slope, etc., as appropriate): The surveyed segment of the Casa Loma Canal crosses a flat expanse of land from Sanderson Avenue to its connection with the San Diego Canal, which is located just east of the intersection of Warren Road and Esplanade Avenue. The wastewater treatment plant is located on Sanderson to the north of the canal. The setting for the rest of the surveyed segment is open fields; the farmsteads on north Warren Road are visible in the distance.

L7. Integrity Considerations: The surveyed segment of the Casa Loma Canal is part of the Colorado River Aqueduct which is owned and operated by the Metropolitan Water District of Southern California (MWD). It is maintained in good working order. No major changes in design or materials have occurred since its construction. The wastewater treatment plant was constructed in the early 1960s, soon after the completion of the canal; no other modern features have intruded into the setting of the canal. It has retained integrity of setting, design, location, materials, workmanship, feeling and association. Therefore the Casa Loma Canal has retained a high level of integrity.

L8a. Photograph, Map, or Drawing:

L8b. Description of Photo, Map, or Drawing (View, scale, etc.): Casa Loma Canal and setting, facing SE

L9. Remarks: None.

L10. Form Prepared by (Name, affiliation, and address): P. Beedle, Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544.

L11. Date: January 22, 2008

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, OBJECT RECORD

Primary # 33-11265
HRI #
Trinomial CA-RIV-6726H; Update
NRHP Status Code 3S

***Resource Name or #:** Casa Loma Siphons/Canal

B1. Historic Name: Casa Loma Siphons/Canal **B2. Common Name:** Casa Loma Siphons/Canal

B3. Original Use: Canal/Aqueduct **B4. Present Use:** Canal/Aqueduct

B5. Architectural Style: No Style

B6. Construction History (Construction date, alterations, and date of alterations): First barrel built in 1939; Second barrel/canal built in 1958 & 1959

B7. Moved? ☒ No ☐ Yes ☐ Unknown **Date:** **Original Location:**

B8. Related Features:

B9a. Architect: Metropolitan Water District **b. Builder:** Metropolitan Water District

B10. Significance: Theme Water Conveyance System **Area:** Riverside County, CA
Period of Significance 1933-present **Property Type:** Siphon/Canal **Applicable Criteria** A, C
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity): MWD initially built the CRA between 1933 and 1939, and finished the planned expansion in 1960.

The CRA previously has been recommended as eligible under Criteria A, C, and D. The portion of the CRA evaluated here consists of the Casa Loma Siphons and Canal which are considered contributing elements to the historical significance of the larger 242-mile system under Criteria A and C.

The first barrel of Casa Loma siphon was constructed in 1939. During the second or expansion construction in 1959 and 1960, the second barrel was built along with the Casa Loma Canal. Both elements retain integrity.

Planning for the CRA began in 1923. Prior to construction the area between the Colorado River and the San Jacinto Mountains was largely unpopulated and geologists, engineers and surveyors studied the approximately 25,000 square miles of desert, from Boulder Canyon to the California-Mexico border, to find and map suitable locations for the aqueduct. Construction began in 1933. During the next six years components of the CRA were built, beginning at the eastern end at the Colorado River and working west. Metropolitan engineers had anticipated that certain tunnels, particularly the San Jacinto Mountain Tunnel, would be difficult to drive; such tunnels were also started early in the construction process (Gruen 1998; MWD 2006).

For economic reasons the pumping plants and double-barreled siphons were constructed at one-half or one-third capacity as originally designed. It was thought that the aqueduct would not need to run at full capacity for at least 50 years after completion. However, the growth from World War II industry and post-war settlement in Los Angeles necessitated expansion sooner than anticipated. Further construction on the aqueduct started in the 1950s, with the installation of the needed motors and pipes to bring the pumping plants to full capacity. The second barrels on the double siphons were also constructed (MWD 1998). It was at this time that the second barrel and a canal segment were added to the Casa Loma Siphon.

Today, the CRA includes linear water conveyance features such as canals and tunnels, transmission lines and access roads, other built environment features like the pumping plants and the permanent operational camps, and historical archaeological sites, such as the remnants of the construction camps occupied in the 1930s. The CRA as an historic property includes all water-conveyance, power transmission, access and telecommunications facilities—as well as associated historical archaeological sites, buildings, structures, and objects no longer in use but related to earlier surveys and construction of the CRA.

The CRA is significant under Criterion A as its construction was a driving and enabling force for the economic development of southern California. The period of significance for Criterion A is from 1923 to the present. Previously the CRA has been recommended as being eligible under Criterion B for its association with William J. Mulholland (Neves and Goodman 2000; Dice 2001). Recent research undertaken in development of a Historic Property Treatment Plan (HPTP) for MWD (2006) demonstrates Mulholland was not directly involved in the designing, engineering, and construction of the CRA. It currently is not considered eligible under Criterion B. The CRA is significant under Criterion C as a marvel of civil engineering as outlined by Gruen (1998) who prepared HAER documentation of the CRA for the National Park Service. The American society of Civil Engineers declared it one of seven modern U.S. civil engineering wonders, and, in 1955, designated it a National Historic Engineering Landmark (Gruen 1998). The system is also significant under Criterion D for its potential to yield information about living and working conditions during the time of survey and construction, as embodied in remnant survey and construction camps, as well as tailing piles, and associated refuse deposits. The period of significance for the CRA under Criteria C, and D begins in 1923 and ends in 1960, with completion of the second phase of construction.

The CRA appears eligible for listing in the National Register under Criteria A, C, and D and is therefore considered to be a historical resource for the purposes of CEQA. Portions of this 242-mile long linear resource have been previously recorded in Riverside County on two occasions; both surveys recommended the property as eligible for the NRHP (see attached records). The portion of the CRA that is within the APE for the current project, consisting of the Casa Loma Siphon and Canal, retain integrity and should be considered contributing elements to the overall significance of this property if it were evaluated as a whole.

B11. Additional Resource Attributes (List attributes and codes): HP 20: Canal/Aqueduct

B12. References: Neves, J. and J. Goodman. 2000 DPR Form for the Colorado River Aqueduct completed by SWCA.

Dice, Michael. 2001 DPR Form for the Colorado River Aqueduct completed by L & L Environmental Inc.

Metropolitan Water District. 2006 *Historic Properties Treatment Plan for the Colorado River Aqueduct.* Prepared for Metropolitan Water District of Southern California. Prepared by Applied EarthWorks, Inc., Hemet, California.

Gruen, J. Philip 1998 *Colorado River Aqueduct Recording Project.* Los Angeles: Groucho Publications. 1998. Published version of HAER Document No. CA-226, Colorado River Aqueduct.

National Park Service 1997 National Register Bulletin 15: How To Apply the National Register Criteria for Evaluation. NPS, Washington, D.C.

Seifert, Donna J. 1995 National Register Bulletin 21: Defining Boundaries for National Register Properties. NPS, Washington, D. C.

B13. Remarks: None.

(This space reserved for official comment)

B14. Evaluator: M. C. Hamilton, P. Beedle, Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544.

Date of Evaluation: March 15, 2005

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P33-011265
HRI#
Trinomial CA-RIV-6726H

*Resource Name or #: Colorado River Aqueduct

*Map Name: Santa Ana, CA

*Scale: 1:250,000

*Date: 1959 (1979)

*Required information

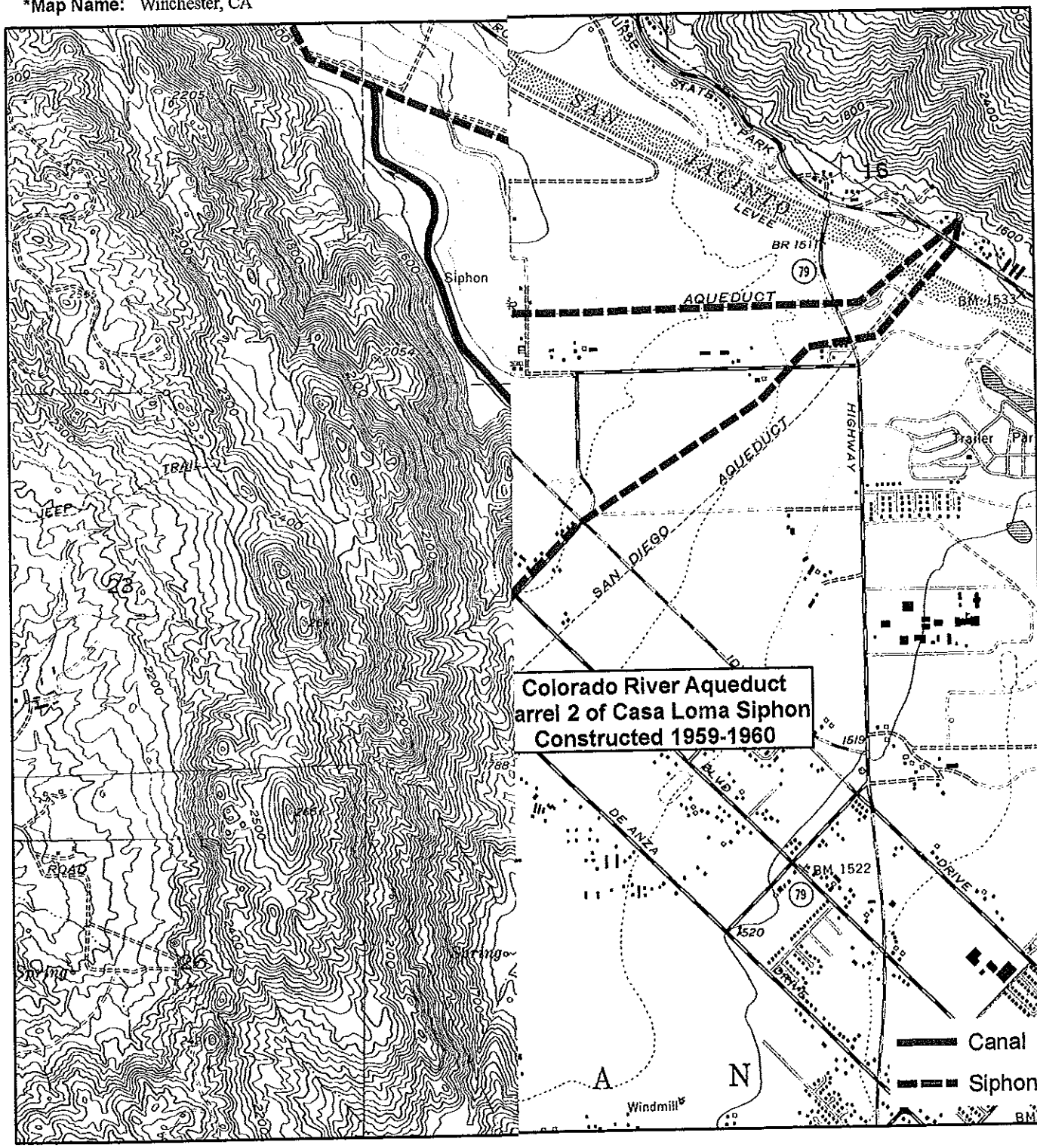
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P33-011265
HRI#
Trinomial CA-RIV-6726H

*Map Name: Winchester, CA

*Date: 1953 (1979)



TRUE NORTH

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #: P33-11265
HRI #:
Trinomial: CA-RIV-6726H UPDATE
NRHP Status Code:
Other Listings:
Review Code: Reviewer: Date:

***Resource Name: CA-RIV-6726H UPDATE**

P1. Other Identifier: Colorado River Aqueduct (CRA); P33-11265; BEP.625-B67

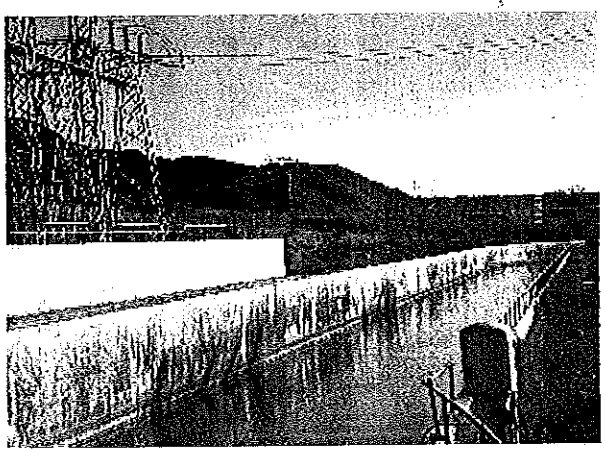
*P2. **Location:** ■ Not for Publication ☐ Unrestricted
and (P2b and P2c or P2d. Attach a Location Map as necessary)
***a. County:** Riverside County, CA
***b. USGS 7.5' Quad:** Hayfield, CA Date: 1987 Provisional T5S; R13E; Unsectioned Portion of; S.B.B.M.
c. Address: Vicinity City: Chiriaco Summit, CA Zip: 92201
d. UTM: (Give more than one for large and/or linear resources) Zone 11; NAD 83; 627115mE/ 3730525mN (N boundary)
627090mE/ 3730335mN (Pumping Station)
627400mE/ 3730300mN (E boundary)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
A portion addressed in this update is located at the Julian Hinds Pumping Station off of Hayfield Rd, north of Interstate 10.

*P3a. **Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The resource consists of a small portion of the 242 mile long stretch of the Colorado River Aqueduct (CRA) located within the vicinity of the Julian Hinds Pumping Station and the current area of potential effect from the proposed Blythe Energy transmission line corridor. The visible portions of the aqueduct are feeder pipes that run from the pumping station west over the Eagle Mountains. Natural setting in the location of this resource consists of alluvial soils, an elevation of approximately 1360 ft above MSL, and the Creosote Bush Scrub vegetation habitat that includes desert holly, hop sage, mesquite, mojave yucca, teddy bear cholla, and white bur-sage.

*P3b. **Resource Attributes:** (List attributes and codes) AH6. Water conveyance system.

*P4. **Resources Present:** ☐Building ■Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.):

P5a. Photograph or Drawing (Photo required for buildings, structures, and objects)



P5b. Description of Photo (View, date, accession #): 9 February 2005, Photo 7B, View to the east: Overview of Colorado River Aqueduct (CRA).

*P6. **Age and Sources:** ■Historic ☐Prehistoric ☐Both

*P7. **Owner and Address:**
Metropolitan Water District (MWD)
700 North Alameda Street
Los Angeles, CA 90012-2944

*P8. **Recorded by:** (Name, affiliation, and address)
Stacie Wilson, Andrea Craft, and Michael Wise
Mooney•Jones & Stokes
9903 Businesspark Avenue
San Diego, CA 92131

*P9. **Date Recorded:** 9 February 2005

*P10. **Survey Type:** (Describe) Intensive pedestrian survey.

*P11. **Report Citation:** (Cite survey report and other sources, or enter "none")
Survey Report:
Carrico, Richard L. and William T. Eckhardt
2005 Cultural Resource Inventory of the Proposed Blythe Energy Transmission Project, Riverside County, CA.
Other Sources:
Dice, Michael
2001 Site Record CA-RIV-6726H. Dated, 22 November 2001. California Historical Resources Information System, Eastern Information Center, University of California, Riverside.

***Attachments:** ☐NONE ■Location Map ■Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List): ☐Artifact Record ☐Photograph Record ☐Other (List):

State of California - The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

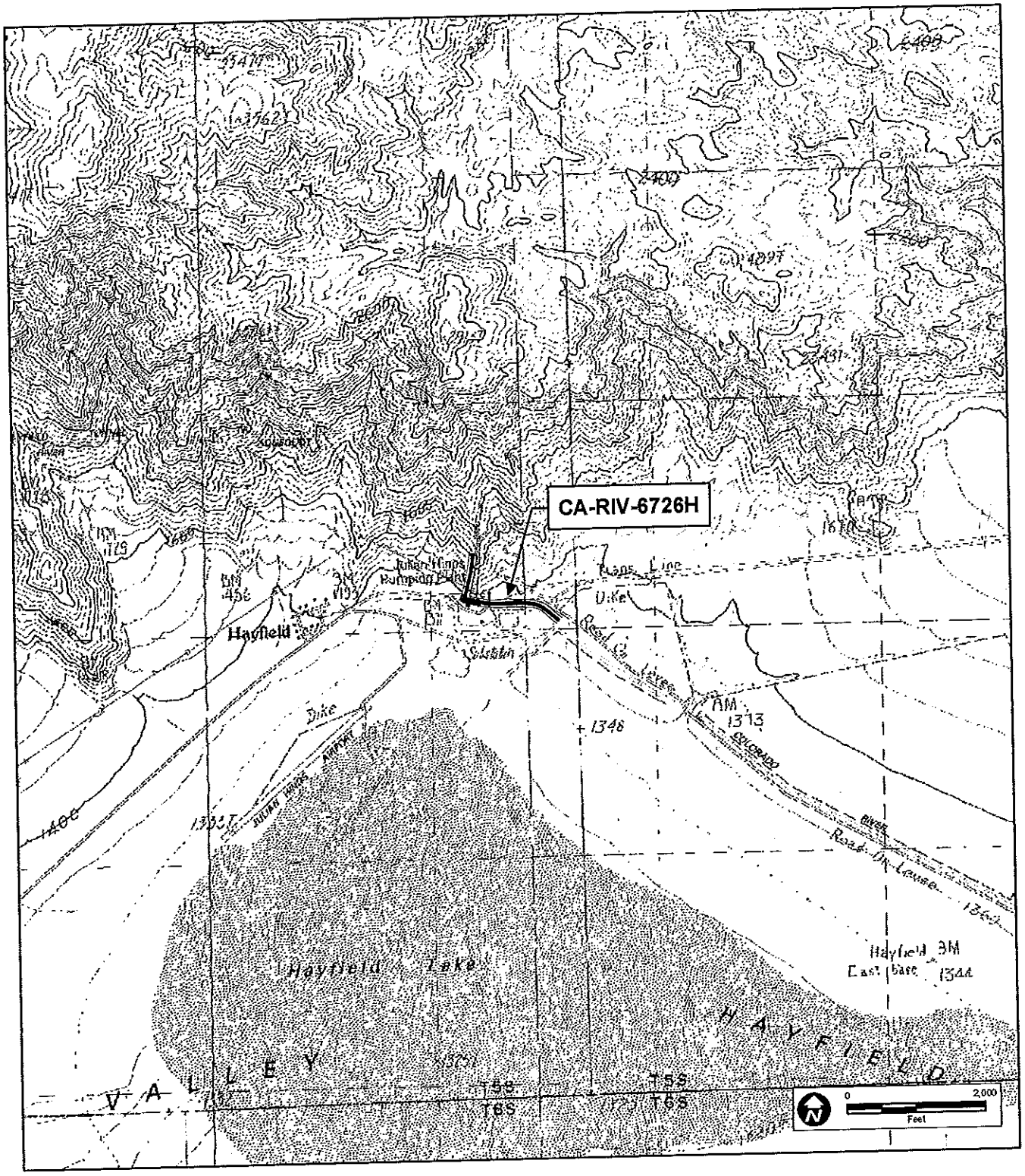
Primary #: **P33-11265**
Trinomial: **CA-RIV-6726H UPDATE**

Resource Name or #: CA-RIV-6726H UPDATE

Map Name: Hayfield, CA

Scale: 1:24,000

Date of Map: 1987 Provisional



Required information is bold

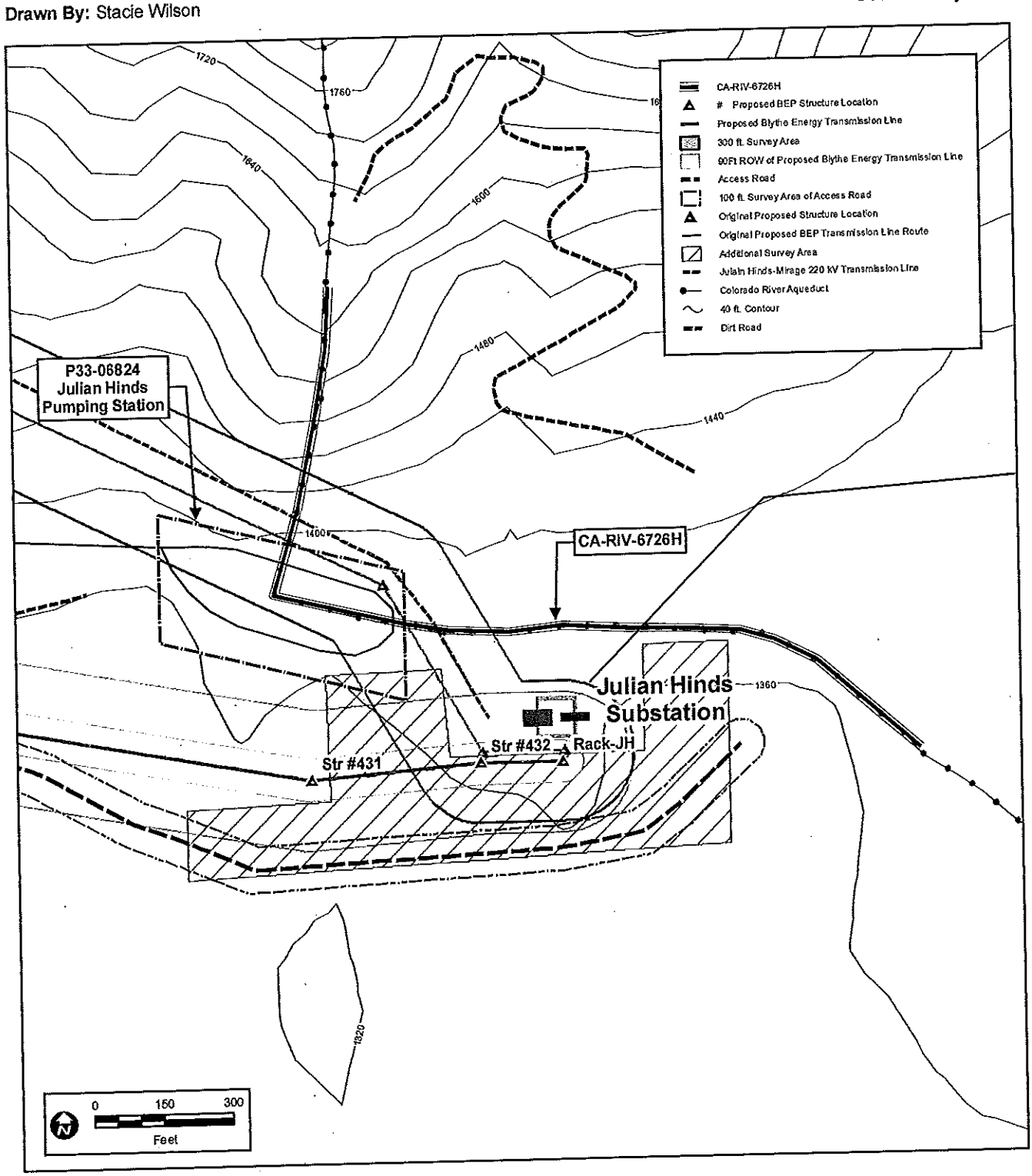
State of California - The Resource Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary #: **P33-11265**
Trinomial: **CA-RIV-6726H UPDATE**

Resource Name or #: CA-RIV-6726H UPDATE

Drawn By: Stacie Wilson

Date: 07 July 2005



Required information is bold

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # 33-11265
HRI #
Trinomial CA-RIV-6726; Update
NRHP Status Code

Other Listings
Review Code Reviewer Date

*Resource Name or #: Colorado River Aqueduct Casa Loma Siphon

P1. Other Identifier:

*P2. Location: *a. County Riverside, California ☒ Not for Publication ☐ Unrestricted

*b. USGS 7.5' Quad Winchester, CA Date 1953 (1979)

T 4 S; R 2 W; ¼ of ¼ of Sec 13, 24, 25; S.B.B.M.
T 4 S; R 1 W; Sec 29, 30, 20

c. Address: City San Jacinto Zip 92582
Nuevo 92567

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EIC

d. Zone 11, NAD 27

495403 mE/	3742817 mN
496971	3738792
497890	3738776
500227	3740073

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, additional UTMs, etc., when appropriate):

*P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): Siphons convey the water under such geological features as washes, and beneath constructed features such as railroad lines. Although called siphons, it is always noted that there is no real siphon action. The water flows down into the siphon and the pressure forces the water to the surface on the opposite side.

There are two basic siphon types on the Colorado River Aqueduct: barrel siphons and box siphons. Box siphons are square, usually constructed in threes, and were used to connect two sections of open canal that traversed a wash.

The barrel siphons are round. The single barrel siphon has a diameter of 16 feet; the double barrel siphons have a diameter of 12 feet. Double-barreled siphons were used in situations with heads more than 25 feet. Blow-off valves are used to dewater these siphons when repairs are needed.

At the beginning of aqueduct construction, the siphons were cast-in-place concrete. When the plans called for a double barrel siphon, only one was constructed, although the connectors from the canal sections were constructed for the second barrel, to reduce the amount of disturbance around the siphon when the second barrel would be constructed.

The Casa Loma Siphon is a double-barreled siphon that travels underground from the west portal of the San Jacinto Tunnel to the east portal of the Bernasconi Tunnel. It was one of the last components of the aqueduct to be completed in the fall of 1939.

*P3b. Resource Attributes (List all attributes and codes): HP 20: Canal/Aqueduct

*P4. Resources Present: ☐ Building ☐ Structure ☐ Object ☐ Site ☒ District ☒ Element of District ☐ Other:

P5. Photograph or Drawing: (Photograph required for buildings, structures, and objects.)

*P6. Date Constructed/Age and Source: 1939 ☐ Prehistoric ☒ Historic ☐ Both

*P7. Owner and Address: Metropolitan Water District of Southern California, P.O. Box 54153, Los Angeles, CA 90053.

*P8. Recorded by (Name, affiliation, address): Peggy Beedle, Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544.

P9. Date Recorded: March 15, 2005

*P10. Type of Survey: ☒ Intensive ☐ Reconnaissance ☐ Other
Describe:

*P11. **Report Citation** (Provide full citation or enter "none"): *Historical Resources Evaluation Report: Realign State Route 79 Between Domenigoni Parkway and Gilman Springs Road in the Cities of Hemet and San Jacinto and the County of Riverside.* Prepared for David Bricker, Caltrans District 8. Prepared by Applied EarthWorks, Inc., Hemet, California.

Attachments: ☐ None ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record Other:

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
BUILDING, STRUCTURE, OBJECT RECORD

Primary # 33-11265
HRI #
Trinomial CA-RIV-6726; Update
NRHP Status Code

***Resource Name or #:** Colorado River Aqueduct Casa Loma Siphon

B1. Historic Name: Colorado River Aqueduct

B2. Common Name: Colorado River Aqueduct

B3. Original Use: Canal/Aqueduct **B4. Present Use:** Canal/Aqueduct

B5. Architectural Style: No Style

B6. Construction History (Construction date, alterations, and date of alterations): 1933-1939
The Colorado River Aqueduct conducts water from the Colorado River to the greater Los Angeles area. West of the San Jacinto Mountains the water travels underground through tunnels and siphons. The Casa Loma siphon extends west from the San Jacinto Tunnel to the Bernasconi Tunnel. Siphons typically have two 12 foot-diameter barrels. The first barrel was usually cast-in-place concrete, the second one, which was installed during the aqueduct expansion in 1958 and 1959, was pre-cast concrete. The surveyed segment is underground with no above-ground features.

B7. Moved? ☒ No ☐ Yes ☐ Unknown **Date:** **Original Location:**

B8. Related Features: Pumping plants, villages, siphons, reservoirs, dams,

B9a. Architect: Metropolitan Water District of Southern California **b. Builder:** Metropolitan Water District

B10. Significance: Theme Water Conveyance **Area:** Riverside County, CA

Period of Significance 1933-present **Property Type:** Aqueduct **Applicable Criteria** A, C
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity): The Colorado River Aqueduct meets the criteria for eligibility for both the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). The Colorado River Aqueduct is regionally significant under Criterion A as a driving and enabling force for the economic development of southern California. It is also significant under Criterion C as a marvel of civil engineering. The use of pre-cast concrete pipes was developed during its construction; this is now the construction method of choice for underground pipes. The Casa Loma Siphon is a contributing feature of the Colorado River Aqueduct as part of the system that brings water to Los Angeles and as a early example of a pre-cast concrete pipe.

B11. Additional Resource Attributes (List attributes and codes): HP 20: Canal/Aqueduct

B12. References: *Historic Resource Evaluation Report: Realign State Route 79 Between Domenigoni Parkway and Gilman Springs Road in the Cities of Hemet and San Jacinto and the County of Riverside.* Prepared for David Bricker, Caltrans District 8. Prepared by Applied EarthWorks, Inc., Hemet, California.

B13. Remarks: None.

B14. Evaluator: Applied EarthWorks, Inc., 3292 E. Florida Ave., Suite A, Hemet, CA 92544.
Date of Evaluation: March 15, 2005

(This space reserved for official comment)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 33-11265
HRI#
Trinomial CA-RIV-6126H

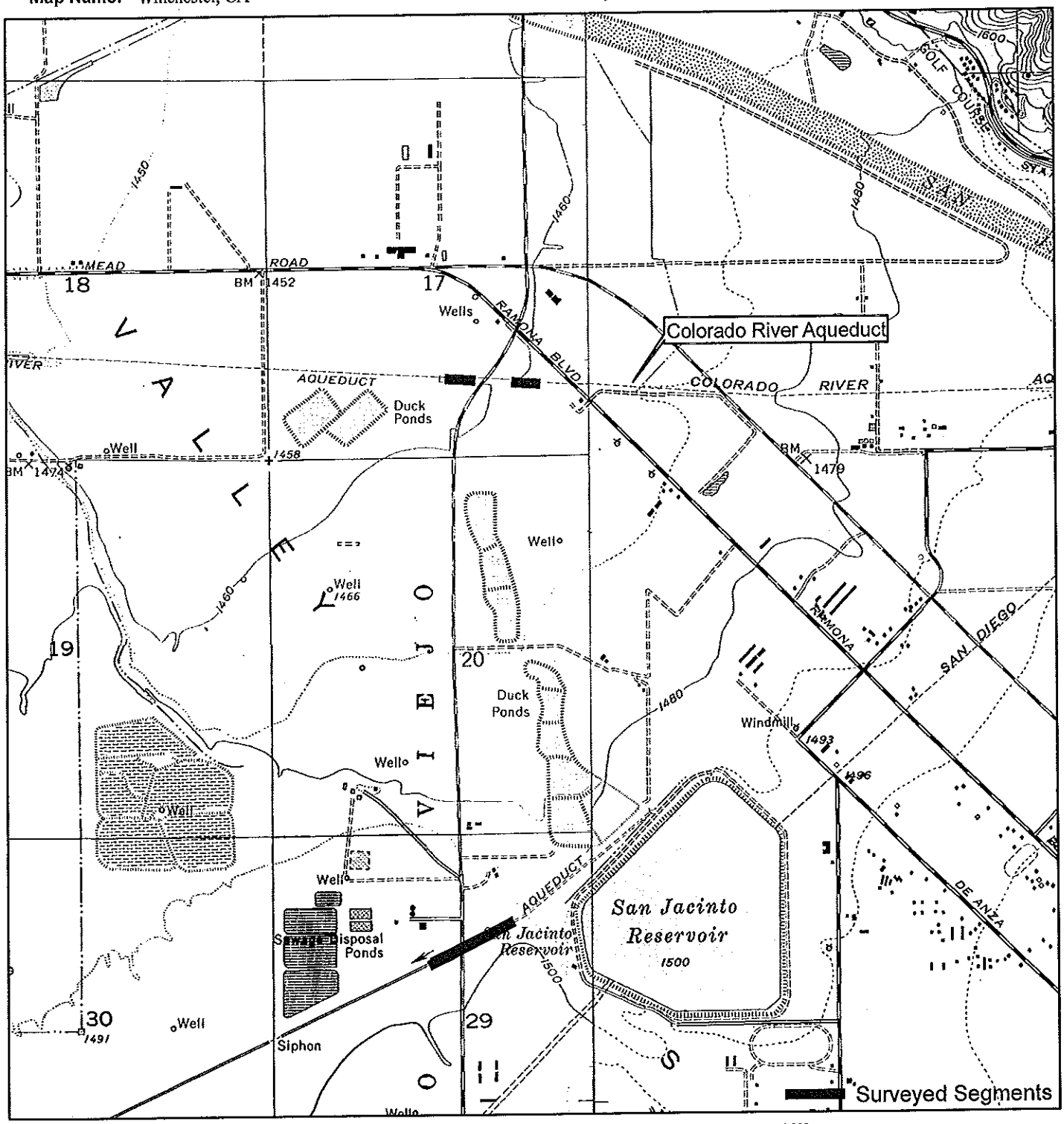
Page 4 of 4

*Resource Name or #: Colorado River Aqueduct

*Map Name: Winchester, CA

*Scale: 1:24,000

*Date: 1953 (1979)



DPR 523J (1/95)

*Required information

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #: P-33-011265
HRI #:
Trinomial: CA-RIV-6726H update

***Resource Name or #:** Colorado River Aqueduct (CRA)

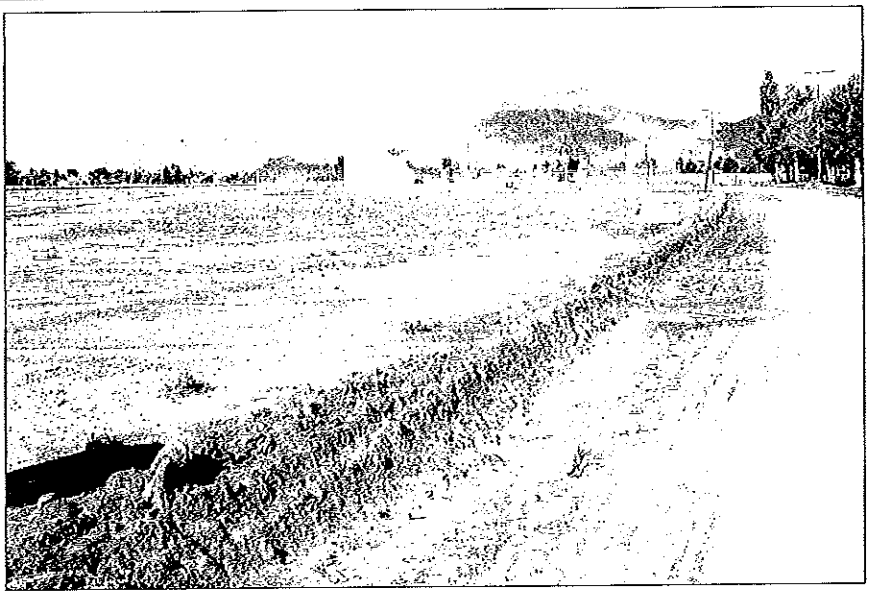
*Recorded by: Brian Boggs

Date: November 3, 2003

***P2.** ***a. County:** Riverside
***b. USGS 7.5' Quad:** Lakeview and Perris, CA **Date:** 1967 (Photorevised 1979)
d. UTM: (Give more than one for large and/or linear resources) Zone 11, begin point: 494461 mE / 3743811 mN, end point: 490322 mE / 3743424 mN

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries). The Colorado River Aqueduct (CRA) is 242 miles long and runs from the Colorado River in the vicinity of Parker Dam, CA, to Lake Mathews in western Riverside County. Dice (2001) recorded the segment of the CRA in Riverside County. This update includes only the portion of the CRA within The Villages of Lakeview (TVOL) development project area, extending from the northern edge of the Lakeview Mountains, across plowed agricultural fields, and then through the town of Lakeview, California. This section of the CRA is buried and its location is marked by a series of standpipes, pressure valves, concrete access ports, and two benchmarks.

P5b. Description of Photo (View, date, accession #): View west along the aqueduct.



***P7. Owner and Address:**
Metropolitan Water District (MWD) of Southern California
5230 Carroll Canyon Rd. #310
San Diego, CA 92121

***P8. Recorded by:**
Brian Boggs, Gini Austerman, and Lashawn Lee
Statistical Research, Inc.
P.O. Box 390
Redlands, CA 92373

***P9. Date Recorded:**
November 3, 2003

***P10. Survey Type: (Describe):**
Intensive survey for CEQA review.

***P11. Report Citation:** Lerch, Michael K., and Amanda C. Cannon (editors), 2007, *Mystic Paavo': Cultural Resources Survey and Evaluation of The Villages of Lakeview Specific Plan, Riverside County, California.* Technical Report 05-34. Statistical Research, Redlands, California. Final report submitted to County of Riverside and Lewis Operating Corporation, Upland, California.

***A1. Dimensions:** **a. Length:** 14,980 feet (E/W) **b. Width:** 15 feet (N/S)
Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ■ Other: Global Information System (GIS)
Method of Determination: (check any that apply) ☐ Artifacts ■ Features ☐ Soil ☐ Vegetation
☐ Topography ☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ■ Other (Explain): USGS Lakeview and Perris, CA 7.5-minute maps

Reliability of Determination: ■ High ☐ Medium ☐ Low
Explain: The CRA alignment is clearly marked on the USGS Lakeview and Perris, CA 7.5-minute maps. This section of the CRA is buried and its location is marked by a series of standpipes, pressure valves, and concrete access ports.

***A4. Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map): The portion of the CRA within the TVOL project area consists of a pipe buried approximately 3 feet below ground surface, serviced by vertical hatches (Dice 2001). Its surface expression in the project area consists of a series of vertical standpipes, pressure valves, and concrete access ports. Graded areas and access roads are adjacent to portions of the CRA. Off-site components include benchmarks. Two were identified, including one in TVOL-22 Locus C (CA-RIV-398/414).

The central component of the CRA was built between 1933 and 1938, and ancillary facilities were completed in 1941, all under the direction of Frank Weymouth. L & L Environmental first recorded this portion of the CRA in 2001 for the Municipal Water

*Required information

District (MWD). Dice (2001) noted that the portion of the CRA in the project area is intact and has not been notably modified since its construction.

Two benchmarks were identified associated with this section of the CRA in the TVOL project area. Both benchmarks were placed by the MWD, likely during the survey in advance of the construction of the CRA. The following is a description of each benchmark.

Aqueduct Benchmark 1: Placed on a large, isolated granite boulder on the south side of the dirt road that skirts the northern slope of Mt. Rudolph. A metal plaque, placed on the north side of the boulder and visible from the road, reads "Please do not disturb nearby survey marker. For information write to the director, Dept. Of Water Resources, Sacramento, Calif." The brass benchmark cap reads "METROPOLOITAN DISTRICT OF SOUTHERN CALIFORNIA / ELEVATION [blank] FEET ABOVE MEAN SEA LEVEL / DO NOT DISTURB UNDER PENALITY OF THE LAW / BENCHMARK 40 S 1931." A large white arrow, outlined in gray, is painted on the boulder surface, pointing to the benchmark. The paint is weathered. Two spike nails have been pounded into cracks in the boulder. Animal burrows were noted on all sides at the base of the boulder.

Aqueduct Benchmark 2: Cemented into a flat, horizontal rock surface on the west side of the northernmost toe of Mt. Rudolph. The brass benchmark caps reads "METROPOLOITAN DISTRICT OF SOUTHERN CALIFORNIA / ELEVATION [blank] FEET ABOVE MEAN SEA LEVEL / DO NOT DISTURB UNDER PENALITY OF THE LAW / BENCHMARK 40 R 1931." A large white arrow, outlined in gray, is painted on the boulder surface, pointing to the benchmark. The paint is weathered. A second plastic benchmark, placed by the MWD and labeled "LS 3708," is located nearby.

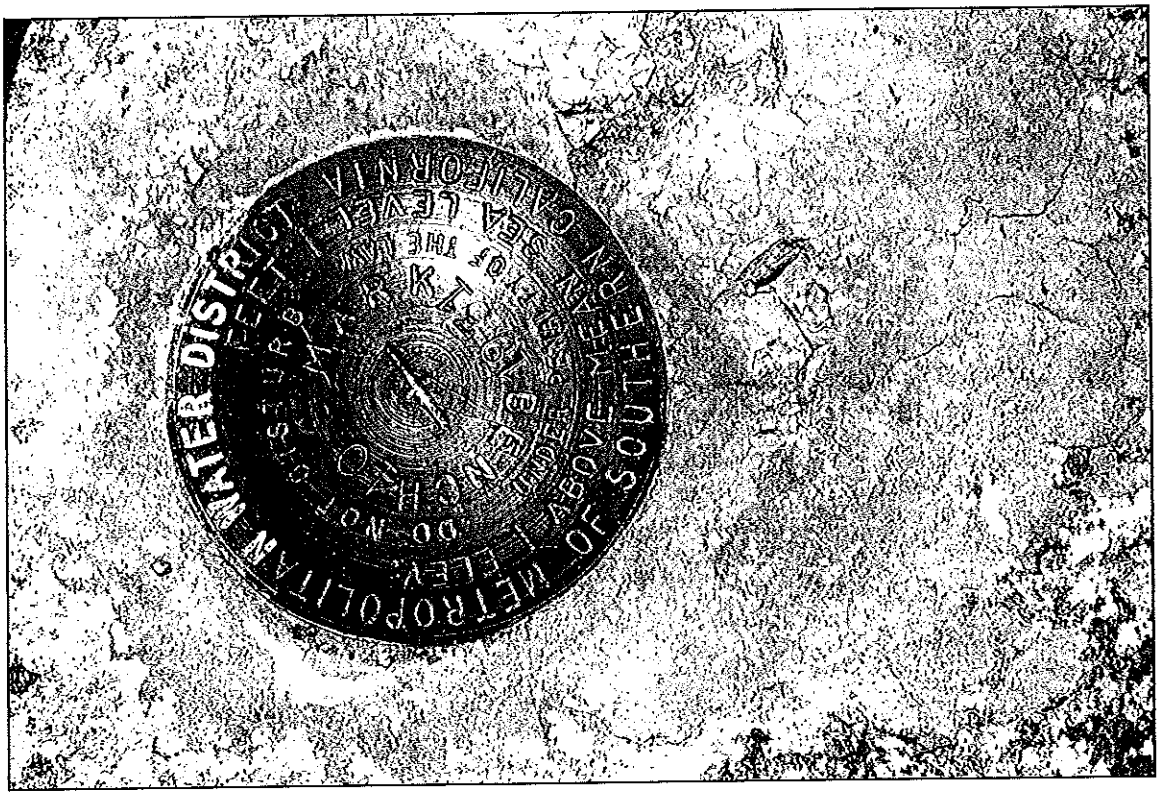
***A7. Site Condition:** ☐ Good ■ Fair ☐ Poor (Describe disturbances.): The CRA remains in use and this segment is in good condition. The CRA segment is underground; however, the alignment is marked by standpipes and round concrete access ports. The ports are in good condition. However, the setting of the CRA in the Lakeview area has changed since its construction in the 1930s, from entirely rural to mixed use.

A14. Remarks: In 1995, the CRA was named a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. CA-RIV-6726H is recommended as eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) under Criterion A. The CRA is currently in use. The MWD owns the aqueduct and CRA easement. This segment of the CRA is located within proposed open space land use designation for TVOL development project and consequently, will be preserved as a greenbelt.

A15. References: (Documents, informants, maps, and other references)

Dice, Michael L.
2001 Archaeological site record for CA-RIV-6726H. Document on file, California Historical Resources Information System, Eastern Information Center, University of California, Riverside.

***A17. Form Prepared by:** Amanda Cannon **Date:** April 4, 2007
Affiliation and Address: Statistical Research, Inc., P.O. Box 390, Redlands, CA 92373



MWD Benchmark 1512, associated with CA-RIV-6726H.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #: P-33-011265
Trinomial: CA-RIV-6726H update

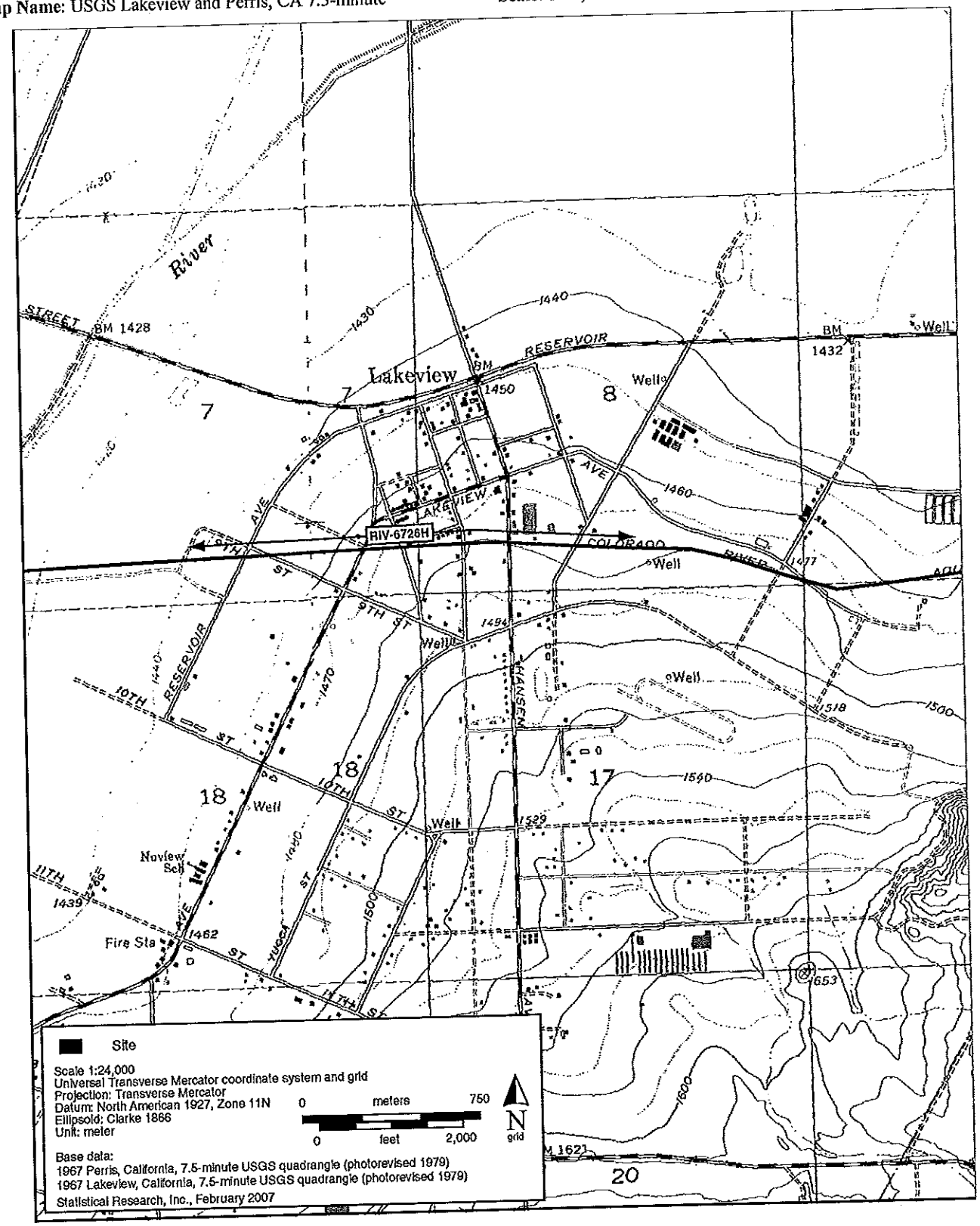
Page 4 of 5

Resource Name or #: Colorado River Aqueduct (CRA)

Map Name: USGS Lakeview and Perris, CA 7.5-minute

Scale: 1:24,000

Date of Map: 1967 (Photorevised 1979)



*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

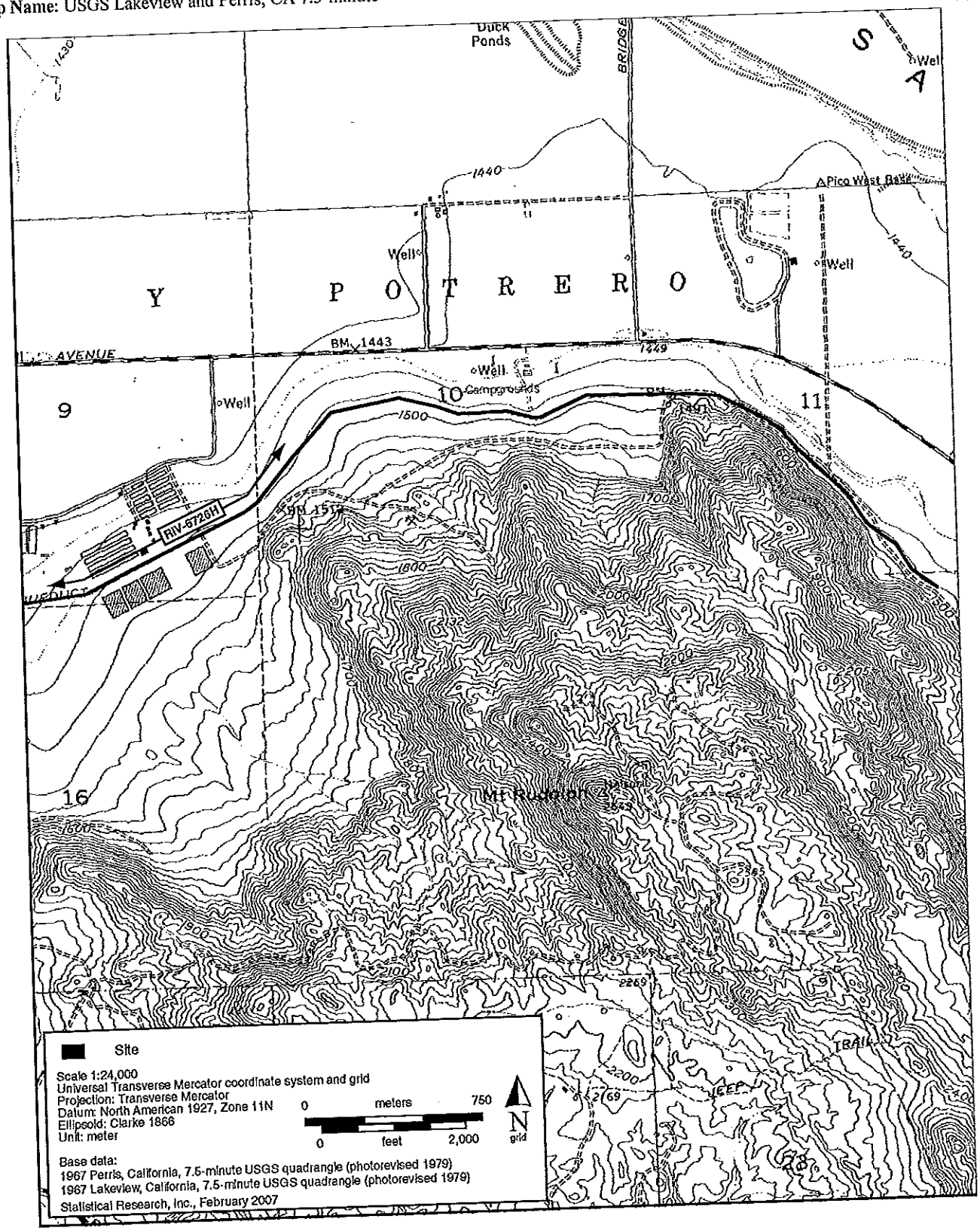
LOCATION MAP

Primary #: P-33-011265
Trinomial: CA-RIV-6726H update

Resource Name or #: Colorado River Aqueduct (CRA)

Map Name: USGS Lakeview and Perris, CA 7.5-minute

Scale: 1:24,000 **Date of Map:** 1967 (Photorevised 1979)



*Required information

PRIMARY RECORD

L & L Environmental, Inc.
1269 Pomona Rd. Suite #102
Corona, CA. 92882

RECEIVED IN
FEB 0 4 2002
EIC

Primary #: 33-11265
HRI#: update

Trinomial: CA-RIV-6726H
NRHP Status Code: _____
Other Listings: _____

Review Code: _____ Reviewer: _____ Date: _____

 ***Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)**

P1. Other Identifier: Riverside County Portion of the Colorado River Aqueduct

P2.* Location: _____ Not for Publication __X__ Unrestricted

a.* County: Riverside
and (P2b and P2c or P2d; attach location map) **San Bernardino**

b.* USGS Quad: various, see continuation page. Dated: various. Photo-revised: xxxx.
Township: various Range: various Section: various
Elevation: 450ft. asl Parker Lake, 1807ft. Hayfield Lift pump, 1405ft. Lake Mathews

c. Address: None City: Zip:

d.* UTM: Zone 11 Begin point: 686456mE 3772825mN (WGS1984 datum) (or 686535mE /3772631mN according to NAD1927). Begin Riverside County only, not on Colorado River.
End point: 464668mE 3744269mN (WGS1984 datum) (or 464748mE /3744073mN according to NAD1927).
UTM Derivation: _____ USGS Quad __X__ GPS
GPS UTM Corrected: _____ Yes __X__ No **GPS brand/model: Topo v2.6.1**

e. Other Locational Data (e.g. parcel number, directions to resource, etc. as appropriate): The Riverside County portion of the Aqueduct begins on the *Arica Mts, CA.* USGS 7.5' and then the *East of Granite Pass, CA.* USGS 7.5. It then skips to the *Cadiz Valley SE, CA.* USGS 7.5'. Once on this USGS, it runs west until it ends on the *Lake Mathews, CA.* USGS 7.5'.

P3a.* Description (Describe resource and its major elements; include design, materials, condition, alterations, size, setting, and boundaries): ***Note: the "Detailed Description" below is associated with that portion of the Aqueduct located in the study area only.***

General Description:

The site boundary is associated with that portion of the Colorado River Aqueduct (CRA) that is located in Riverside County only. The CRA runs from Parker Lake on the Colorado River to Lake Mathews in Western Riverside County. The eastern third of the Aqueduct is mostly located in San Bernardino County. The San Bernardino County portion is not included in this site record.

The CRA lifts water up and over a series of ranges in the eastern part of Southern California. Water then runs mostly downhill to Lake Mathews, the primary reservoir. Water is lifted from a point 450ft above sea level on Parker Lake to Hayfield Mountain at 1807ft abs. Once crossing the range, water runs downhill through a series of tunnels, conduits and siphons to Lake Mathews at 1405ft. abs. The total length of the main Aqueduct system is 242 miles, of which about 162 miles is located in Riverside County. Additional pipelines and reservoirs are located downstream from Lake Mathews, and the San Diego Aqueduct takes part of the water at San Jacinto, but these segments of the system are not discussed herein.

The Aqueduct first appears as a short stretch located northeast of the Granite Mountains. It then enters Riverside County three miles south of the West Iron Portal, a tunnel that carries water through a lift and drop system near the Iron Mountains. From here, the Aqueduct runs south in the Palin Valley, then west through a tunnel across the Coxcomb Mountains. Upon crossing a plain, the water is pumped through a tunnel under the Eagle Mountains and into the Chuckwalla Valley. Upon reaching Hayfield Lake, once part of the CRA system of reservoirs but subsequently abandoned, the water is pumped upward to the highest point crossed, 1807ft. It then flows downhill within the Shavers valley and thence through a series of tunnels (the Coachella Tunnels) to the northwest. North of Desert Hot Springs, the water runs through a series of conduits, siphons and tunnels until the east portal of the San Jacinto tunnel, located a few miles south of Cabazon.

Continued P3.a

After exiting the San Jacinto Mountains, the Aqueduct runs a relatively straight and unimpeded path until emptying in the artificial Lake Mathews. The San Diego Aqueduct begins at San Jacinto. This conduit was not added to the system until much later.

The CRA was constructed from 1933-1938, with completion of all ancillary facilities in 1941. William Mulholland, the head of the LADWP, had planned the associated surveys in eastern Riverside County and southeastern San Bernardino County as early as 1923. Details of CRA construction would require that a vast "wasteland" (some 25,000 square miles of mostly parched desert), would need to be surveyed, cost-effective right-of-way alternatives examined, electric power, transportation corridors and communications lines brought in, the Parker Dam and supplemental dams spanning the Colorado built, tunnels dug, access roads constructed and water obtained and piped to the workers and equipment needed for the construction. The right-of-way route was termed the Parker Route because of its beginnings at a new dam that was planned for a location on the Colorado River north of Parker, Arizona.

To carry out this engineering feat required nearly 16 years of planning and 242 miles of total construction length from the Colorado to the artificial Lake Mathews. Included was the boring of some 92.09 miles of tunnel approximate 16 feet in diameter, construction of 54.1 miles of trenched conduit roughly 18ft wide and 16ft high, excavation and lining of 62.8 miles of canal, the construction of the Parker Dam and two smaller dams, and finally five hydraulic lift stations that would suck water from the Colorado to the point where gravity would take over.

The system would require much more power that was available from Parker Dam power generators, so a 237-mile transmission line network was built in order to link Parker Dam and Boulder (Hoover) Dam to the system. The total cost for the project would eventually reach about $220 million in 1933 dollars. Actual construction began in the nadir of the Depression, and the 10,000 jobs it created softened the blow of the Depression on Southern California.

Detailed (on-site) Description:

The portion of the CRA located within the study area that can be observed at the modern ground surface level is found between the western White Water tunnel exit and Cottonwood Creek. The portion consists of a pipeline placed into a trench that had been cut into low rolling hills with a southern aspect. Intermittent stream channels were filled between the cuts, then a trench was cut that would be able to support a steel conduit. Similar to other sections of the Aqueduct, the water is transported in a pipe buried about three feet below grade and serviced by vertical hatches. Further east, between the tunnel exit and the Whitewater Canyon to the east, the Aqueduct runs through a tunnel bored through alluvium and rock several hundred feet below Whitewater Mesa itself.

Two types of Aqueduct construction took place within the archaeological study area on or about 1933-4 (the exact dates of construction within the study area are uncertain). Several miles east of the study area, an excavated trench and conduit section fed water from the Big Morongo siphon to the San Andreas Fault siphon, whereupon two connected tunnels, one short and one larger, were excavated beneath the mesas surrounding the White Water River canyon. Figure 4 in *Dice and Irish (2001)* shows that there were some impacts the result of construction in the center of the White Water canyon. Here, it is likely a siphon was placed beneath the alluvium of the canyon. In the western portion of the study area, the Aqueduct exits from the White Water tunnel portal and heads for the eastern terminus of the San Jacinto Mountain tunnel roughly 15 miles away. Thus, the study area associated with the Phase 1 survey exhibits a trenched conduit, a conduit-tunnel joint, a tunnel right-of-way, and associated access roads.

Given its importance to Southern California modern history, the CRA should be considered a National Register-eligible site.

Continued P2.b.* USGS Quad: see list below

Note: Off-project area 7.5' quad maps are not attached as part of this recordation form since more than 75 maps would be required. The on-site (project) 7.5' quad map and a set of 1:100,000 scale maps have been attached instead. The following is a list of the 7.5' quad maps associated with San Bernardino and Riverside Counties, and the Aqueduct right-of-way can be found on these maps.

7.5' Quad Name	County	Version Date
Gene Wash, CA/AZ	San Bernardino (SBC)	1975
Whipple Wash, CA	SBC	1970
Parker AZ/CA	SBC	1975
Parker NW, CA	SBC	1975
Vidal Junction, CA	SBC	1971
Vidal NW, CA	SBC	1971
Grommet, CA	SBC	1971
Rice, CA	SBC	1978
Arica Mountains, CA	**Riverside (RIV) and SBC**	**1978**
East of Granite Pass, CA	**RIV and SBC**	**1983**
Granite Pass, CA	SBC	1978
Danby Lake, CA	SBC	1978
Iron Mountains, CA	SBD	1978
Cadiz Valley SE, CA	**RIV and SBC**	1978
Coxcomb Mountains, CA	RIV	1985
East of Victor Pass, CA	RIV	1985
Pinto Wells, CA	RIV	1985
Victory Pass, CA	RIV	1985
Buzzard Spring, CA	RIV	1985
Hayfield Spring, CA	RIV	1985

L & L Environmental, Inc.
1269 Pomona Rd. Suite #102
Corona, CA. 92882

Primary #: 33-11265
HRI#: _____
Trinomial: CA-RIV-6726H

 *Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)

P2.b.* USGS Quad: see list

7.5' Quad Name	County	Version Date
Hayfield, CA	RIV	1985
Cottonwood Spring, CA	RIV	1985
Cottonwood Basin, CA	RIV	1984
Thermal Canyon, CA	RIV	1972
Rockhouse Canyon, CA	RIV	1985
West Berdoo Canyon, CA	RIV	1985
Keys View, CA	RIV	1988
East Deception Canyon, CA	RIV	1985
Seven Palms Valley, CA	RIV	1978
Desert Hot Springs, CA	RIV	1972
Morongo Valley, CA	RIV	1997
White Water, CA	**RIV**	**1996 (Attached Below)**
Cabazon, CA	RIV	1996
Beaumont, CA	RIV	1996
San Jacinto, CA	RIV	1978
Lakeview, CA	RIV	1976
Perris, CA	RIV	1978
Steele Peak, CA	RIV	1973
Lake Mathews, CA	RIV	1988

P3b.* Resource Attributes (List attributes and codes)**:** HP20

P4.* Resources Present: _____ Building __X__ Structure ____ Object _____ Site ____ District ____ Element of District ____ Isolate ____ Other

P5a. Photograph or Drawing (Required for **HRI** buildings, structures, and objects)**:** Sample cross-section of site taken from MWD (1941). Drawing of on-site cut/fill area attached on map page. Also attached are Fairchild/Whittier archival aerial photographs.

P5b. Description of Photo (View, date, accession #)**:** See attached table in Photography section.

P6.* Date Constructed/Age and Source:_____ Prehistoric __X__ Historic ____ Both

P7.* Owner and Address: Metropolitan Water District of Southern California 5230 Carroll Canyon Rd. #310, San Diego, CA. 92121

P8.* Recorded by: Michael Dice L & L Environmental, Inc. 1269 Pomona Rd. Suite 102 Corona, California 92882
Project #: JBG-01-172 (survey) and JBG-01-281 (recordation)

P9.* Date recorded: September 5 and 17, 2001

P10.* Type of Survey (Describe): Systematic field survey utilizing 10 m transects, with spot checking within the historic Aqueduct right-of-way area, excluding off-project portions.

P11.* Report citations: **1)** Dice, M.H., and L. Irish (2001) "*Mark Technologies Corporation Alta Mesa Pumped Storage Hydroelectric Project: A Class III Intensive Field Survey On Federal And Private Properties Located Within Sections 3, 4, 5, 9 And 10, T3S, R3E, Cabazon/White Water Area, County Of Riverside, California*". **2)** Metropolitan Water District Of Southern California (1941) "*The Great Aqueduct: The Story Of The Planning And Building Of The Colorado River Aqueduct.*" Metropolitan Water District Of Southern California, Los Angeles.

Attachments:

- __X__ Location Map (7.5' USGS quadrangle)
- __X__ Archaeological Site Record
- ____ Sketch Map
- __X__ Linear Feature Record
- ____ Milling Station Record
- ____ Rock Art Record
- ____ Artifact Record
- ____ Illustration Sheet
- __X__ Photograph Record
- ____ Building, Structure, and Object Record
- ____ District Record
- __X__ Other (list): scanned images added to Photograph record page.

A1.* **Dimensions: Length:** 162 miles (m/l) **Width:** average 100 meters.

Method of measurement: _____Paced _____Taped _____Visual estimate __X__Other

Method of determination (Check any that apply) : _____Artifacts _____Features _____Soil _____Vegetation _____Topography _____Cut bank _____Animal burrow _____Excavation _____Property boundary __X__Other (Explain): An estimate of the width of the CRA was made using topographic maps, while the length in Riverside County is noted by MWD (1941).

Reliability of determination: __X__High _____Medium _____Low Explain:

Limitations (Check any that apply) : _____Restricted access _____Paved/built over _____Site limits incompletely defined _____Disturbances _____Vegetation _____Other(Explain):

A2. **Depth:** _____ None _____ Unknown. **Method of Determination:** maximum depth below the modern ground surface is about 20ft, as described in MWD (1941), other parts are on the surface.

A3.* **Human Remains:** Present __X__Absent Possible Unknown (explain):

A4.* **Features** (Number, describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map): The Colorado River Aqueduct should be considered a feature within the site, and visual aspects of the feature include access portals, a trench and roads and earthworks associated with the 1933 construction.

A5.* **Cultural Constituents** (Describe and quantify artifacts, human-introduced organic residues, etc. not associated with features): No artifacts were noted that are not associated with features.

A6.* **Were Specimens Collected?** __X__ No _____ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated).

A7.* **Site Condition:** __X__ Good _____ Fair _____ Poor (Describe disturbances). The site, within the study area, is probably unchanged since the construction date.

A8.* **Nearest Water** (Type, distance, and direction): Cottonwood Creek lies along the western edge of the studied portion of the site, but the Aqueduct runs beneath Cottonwood Creek (within a siphon?).

A9.* **Elevation:** (see P2b). 1600 feet above sea level.

A10. Environmental Setting (within project area only)
Vegetation (Site and vicinity): Ruderal vegetation and alien grasses are located on the right-of-way.
Soil (Site and surrounding): Moderately coarse alluvium, but varies due to trench cut.
Landform: Site cuts across finger ridges and shallow valley
Geology: Decomposed granitic alluvium.
Exposure/Slope: varies: 3-10%.
Other associations: None.

A11. Historical Information: None.

A12.* Age: _____ Prehistoric _____ 1542-1769 _____ 1769-1848 _____ 1848-1880 _____ 1880-1914 __X__ 1914-1945 _____ Post 1945 _____ Undetermined

Factual or estimated dates of occupation (Explain): Construction of the site is well documented by many historians.

A13. Interpretations (Discuss scientific, interpretive, ethnic, and other values of site, if known): The site represents a major historical development associated with water availability for all of Southern California.

A14. Remarks: None.

A15. Report citations: **1)** Dice, M.H., and L. Irish (2001) "*Mark Technologies Corporation Alta Mesa Pumped Storage Hydroelectric Project: A Class III Intensive Field Survey On Federal And Private Properties Located Within Sections 3, 4, 5, 9 And 10, T3S, R3E, Cabazon/White Water Area, County Of Riverside, California*". **2)** Metropolitan Water District Of Southern California (1941) "*The Great Aqueduct: The Story Of The Planning And Building Of The Colorado River Aqueduct.*" Metropolitan Water District Of Southern California, Los Angeles.

A16. Photographs (List subject(s), direction of view, and accession numbers or attach a Photograph Record): Photograph record attached with scanned images.
Accession numbers: None.

B1. Historic Name: Colorado River Aqueduct
B2. Common Name: Same as above.
B3. Original Use: Water transport.
B4. Present Use: Same.
***B5. Architectural Style:** No known style.
***B6. Construction History:** (Construction date, alterations, and date of alterations): Probably between 1933 and 1941.
***B7. Moved?** _X_No __Yes __Unknown. Date: _____ **Original Location:**
***B8. Related Features:** none.
B9a. Architect: MWD, LAMWD **B9b. Builder**: W. Mulholland et al.
***B10. Significance: Theme:** Water Resource Development **Area:** Southern California

Period of Significance: Regional Development of Southern California, post-1930. **Property Type:** Aqueduct. **Applicable Criteria:** Sec. Int. Standards Criterion A and B (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.):

Within the study area, this portion of the site exhibits an adit, cut-and-filled conduit trench and probably a siphon under Cottonwood Creek. The site is likely to be significant as the Aqueduct is **a) associated with events that have made a significant contribution to the broad patterns of our history,** and **b) is associated with the lives of persons significant in our past.** Clearly, the Aqueduct is important to the historic of modern industrial development in Southern California, and is directly associated with the most important architect of that development, William J. Mulholland.

B11. Additional Resource Attributes: (List attributes and codes): HP20.
***B12. References: 1)** Dice, M.H., and L. Irish (2001) "*Mark Technologies Corporation Alta Mesa Pumped Storage Hydroelectric Project: A Class III Intensive Field Survey On Federal And Private Properties Located Within Sections 3, 4, 5, 9 And 10, T3S, R3E, Cabazon/White Water Area, County Of Riverside, California*". **2)** Metropolitan Water District Of Southern California (1941) "*The Great Aqueduct: The Story Of The Planning And Building Of The Colorado River Aqueduct.*" Metropolitan Water District Of Southern California, Los Angeles.

B13. Remarks: The portion of the site discussed appears to be unchanged since construction ended.
***B14: Evaluator:** Michael Dice.

Date of Evaluation: November 22, 2001.

This space reserved for official comments:

NOTE: A sketch map of the site can be found on the Sketch Map pages.

LINEAR FEATURE RECORD

L & L Environmental, Inc.
1269 Pomona Rd. Suite #102
Corona, CA. 92882

Primary #: 33-11265
Trinomial: CA-RIV-6726H

 ***Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)**

L1. Historic and/or Common Name: Colorado River Aqueduct

L2. Portion Described: _____ Entire Resource __X__ Segment _____ Point Observation
Designation: The data found within the November 2001 DPR523 recordation forms is only associated with that portion located within a particular study area, as delineated in Dice and Irish (2001). This portion is about 4000 feet long. A general statement about the Aqueduct, as it relates to Riverside County, is also discussed.

L3. Description (Describe construction details, materials and artifacts found at this segment/point. Provide plans/sections as appropriate)**:** See attached continuation pages for feature description.

L4e. Sketch of Cross-Section (include scale) Facing: East.
See attached site recordation map. Cross-section is included as an inset.

L4. Dimensions: (in feet for historic features)
a. Top Width: roughly 200 feet, if the cut-and-fill trench across ridges is included.

b. Bottom Width: roughly 10 feet at the base of the conduit.

c. Height or Depth: roughly 16 feet from the base of the conduit to the modern ground surface.

d. Length of Segment: Total length is about 4000 feet.

L5. Associated Resources: none.

L6. Setting (Describe natural features, landscape characteristics, slope, etc. as appropriate)**:** The segment is located between an adit and Cottonwood Creek: cut-and-fill trench through finger ridges.

L7. Integrity Considerations: The site appears to be completely intact since initial construction.

L8. Description of Photo, map or Drawing (View, scale, etc.): See attached photographic record page.

L9. Remarks: None.

L10. Form prepared by (name/affiliation/address): Michael Dice L&L Environmental, Inc. 1269 Pomona Road Suite 102 Corona, CA. 92882.

L11. Date: November 22, 2001.

LOCATION MAP

L & L Environmental, Inc.
1269 Pomona Rd. Suite #102
Corona, CA. 92882

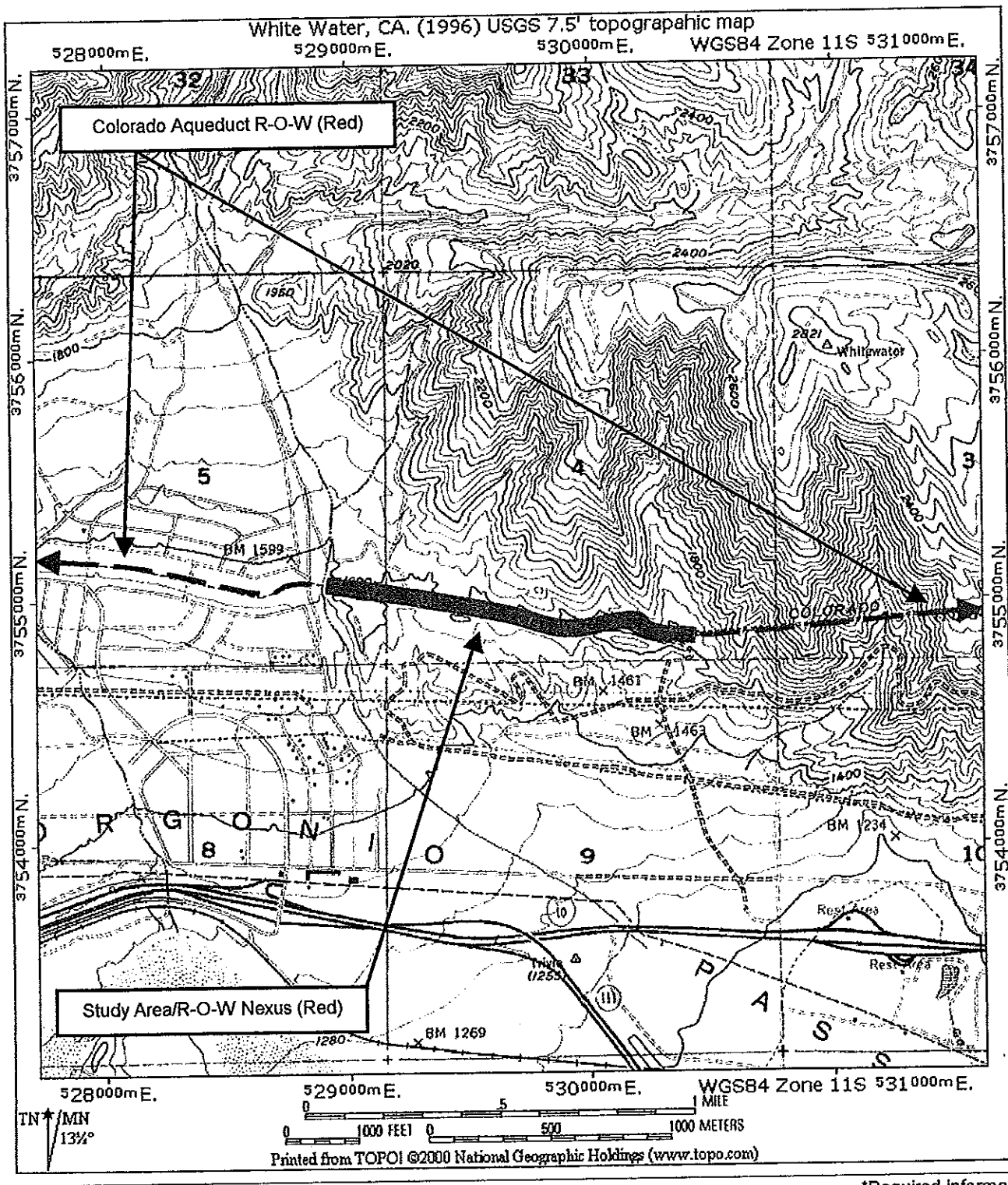
Primary #: 33-11265
HRI#: _____
Trinomial: CA-RIV-6726H

*Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)

*Map Name: USGS White Water, CA. 7.5'

Scale: 1:24,000 (inches)
Focused map.

Date of Map: 1996



location map

*Required information

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Primary #: 33-11265
HRI#: _____
Trinomial: CA-RIV-6726H

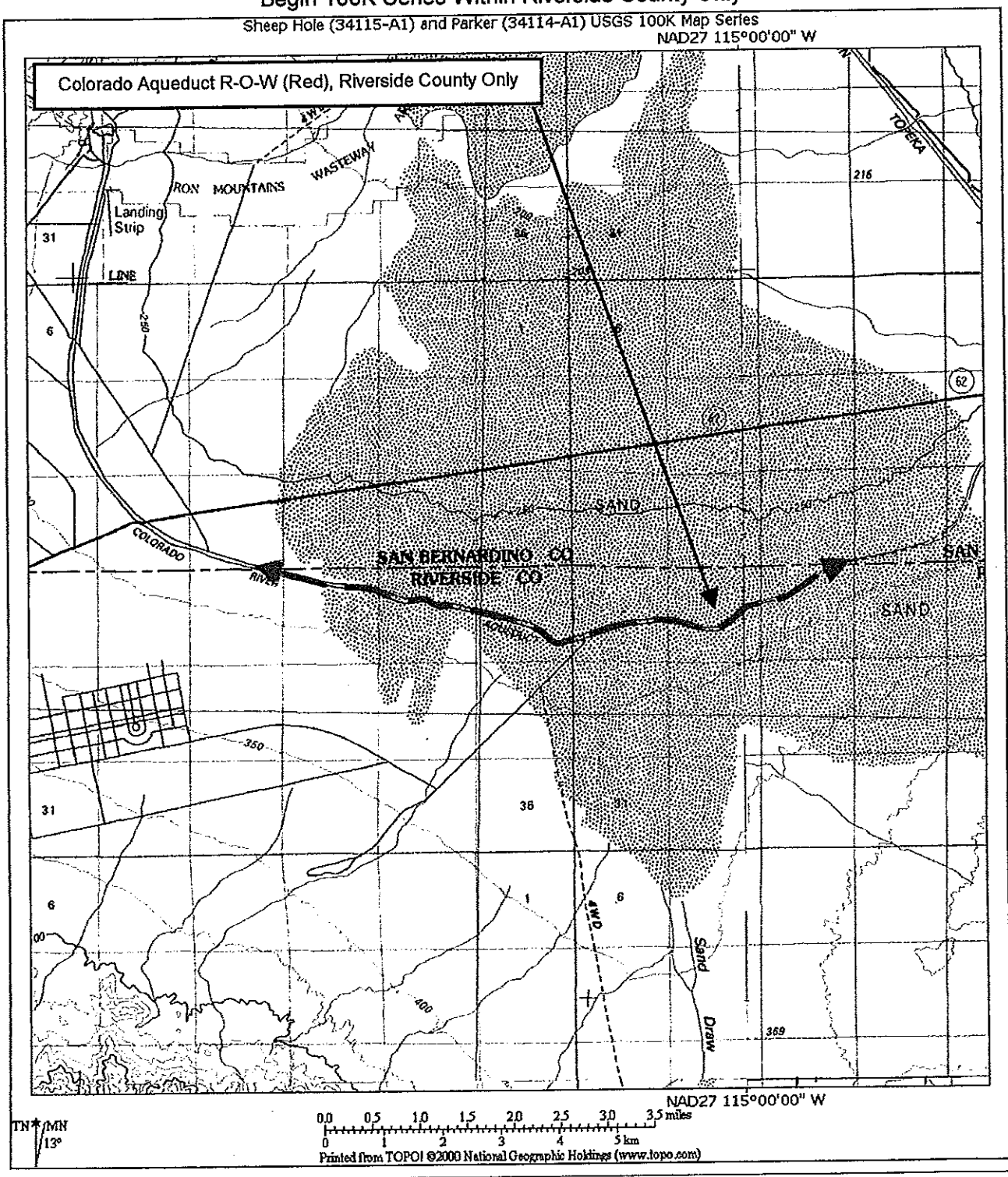
***Resource Name or # (Assigned by recorder):** Colorado River Aqueduct (CRA)

***Map Name:** USGS *Sheep Hole Mts.* (34115-A1) and USGS *Parker* (34114-A1)

Scale: 1:100,000 (inches)

Date of Maps: 1975

Begin 100K Series Within Riverside County Only



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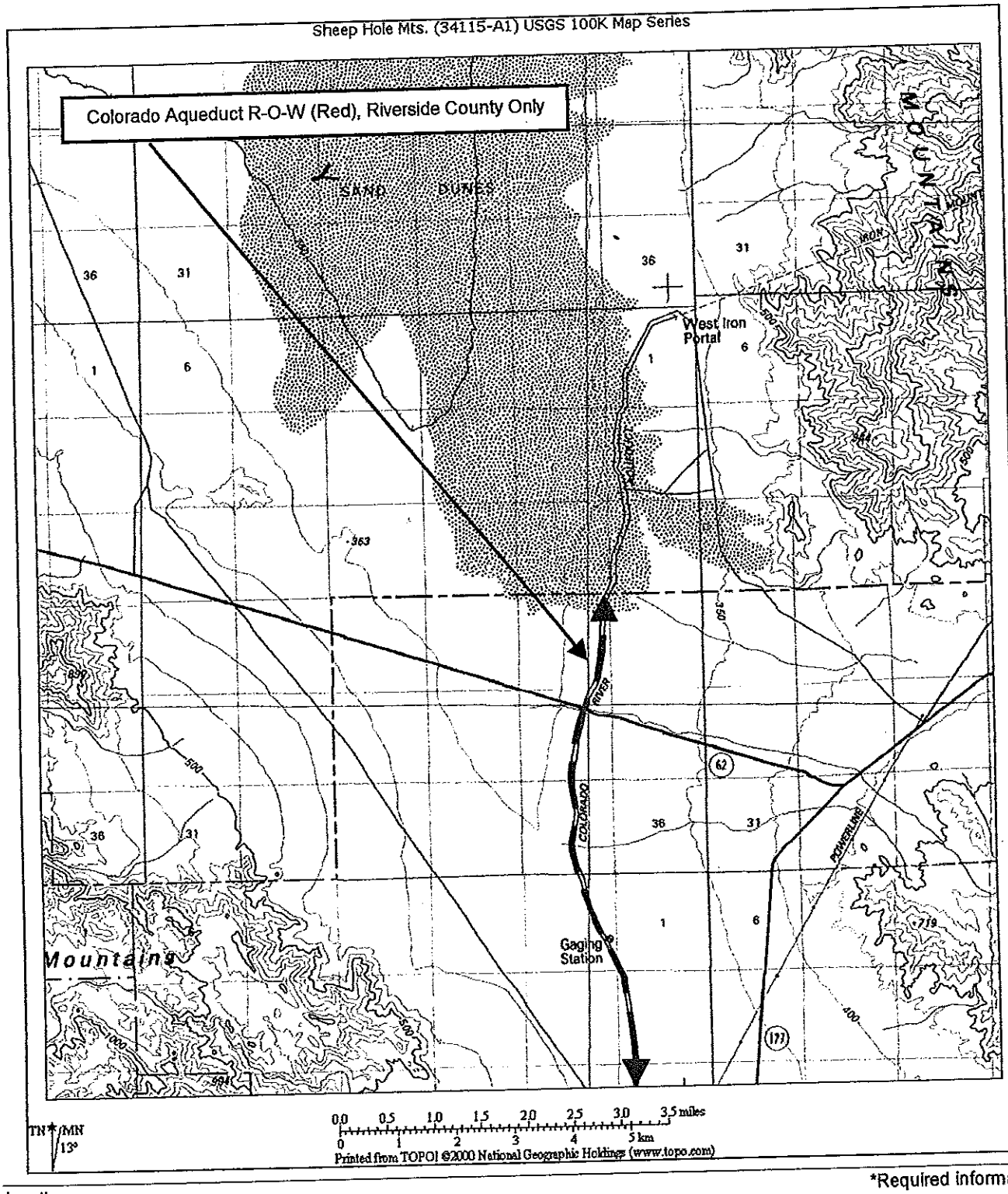
*Map Name: USGS Sheep Hole Mts. (34115-A1) Scale: 1:100,000 (inches) Date of Map: 1975



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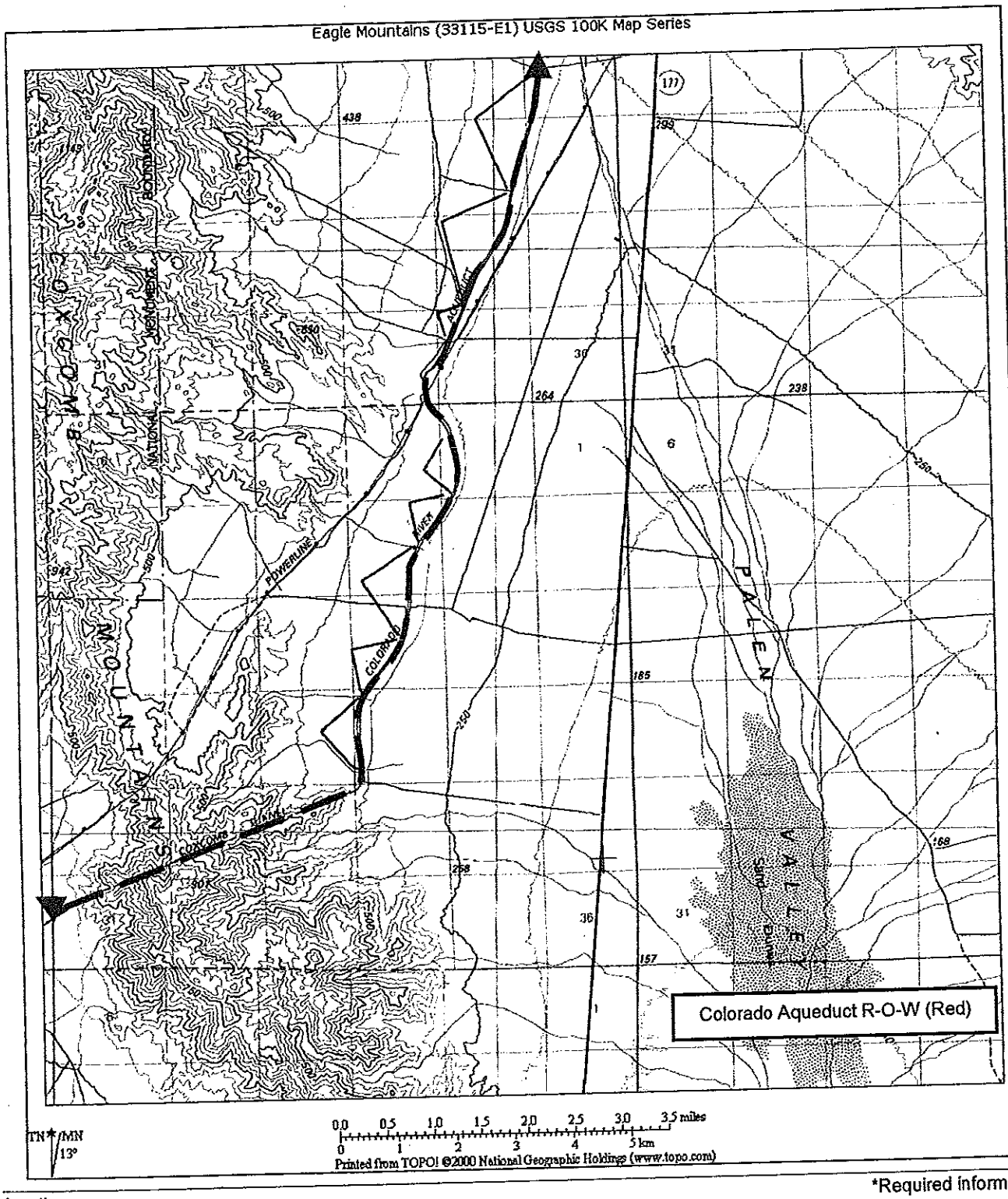
*Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)

*Map Name: USGS Eagle Mountains (33115-E1) Scale: 1:100,000 (inches) Date of Map: 1975



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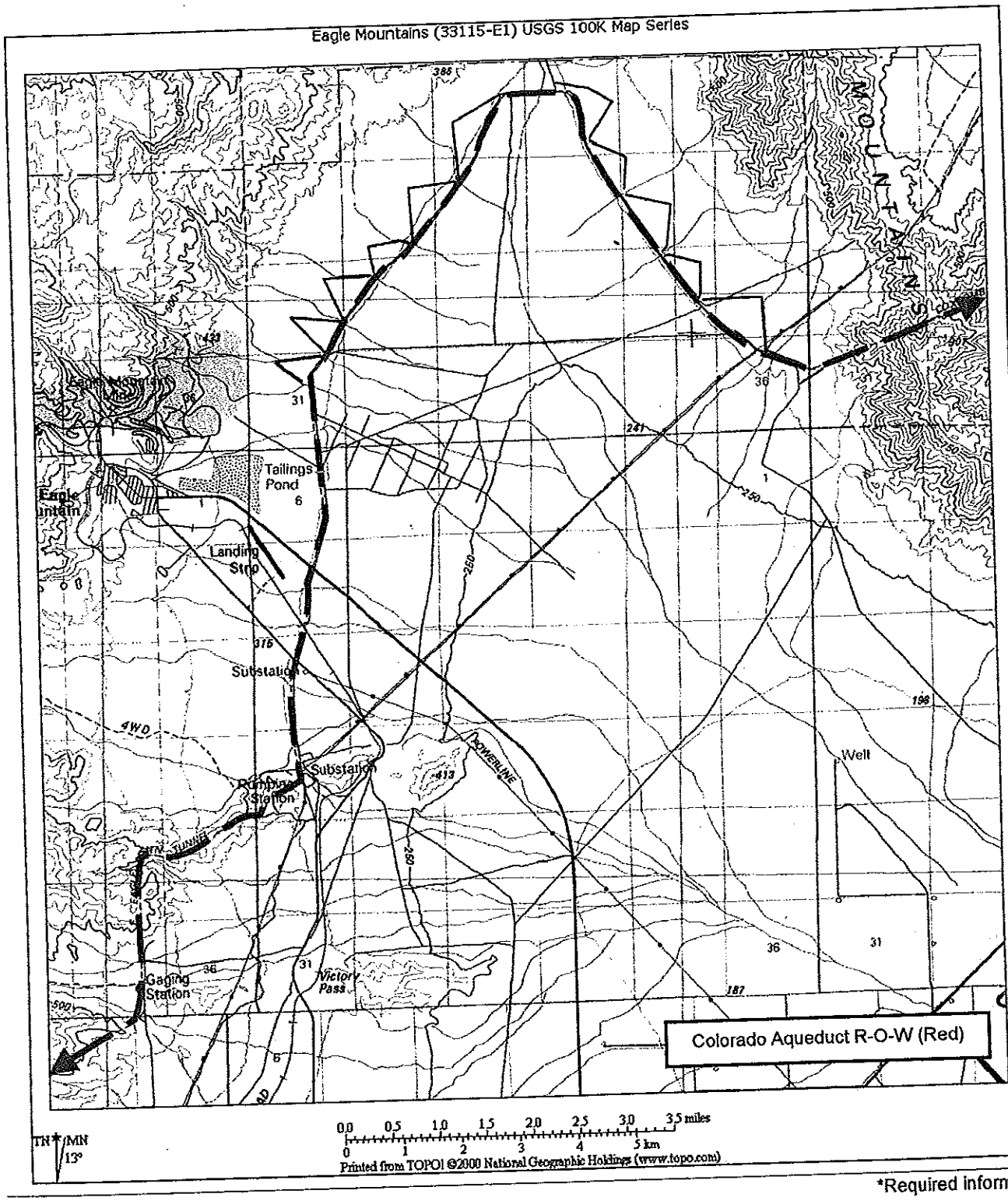

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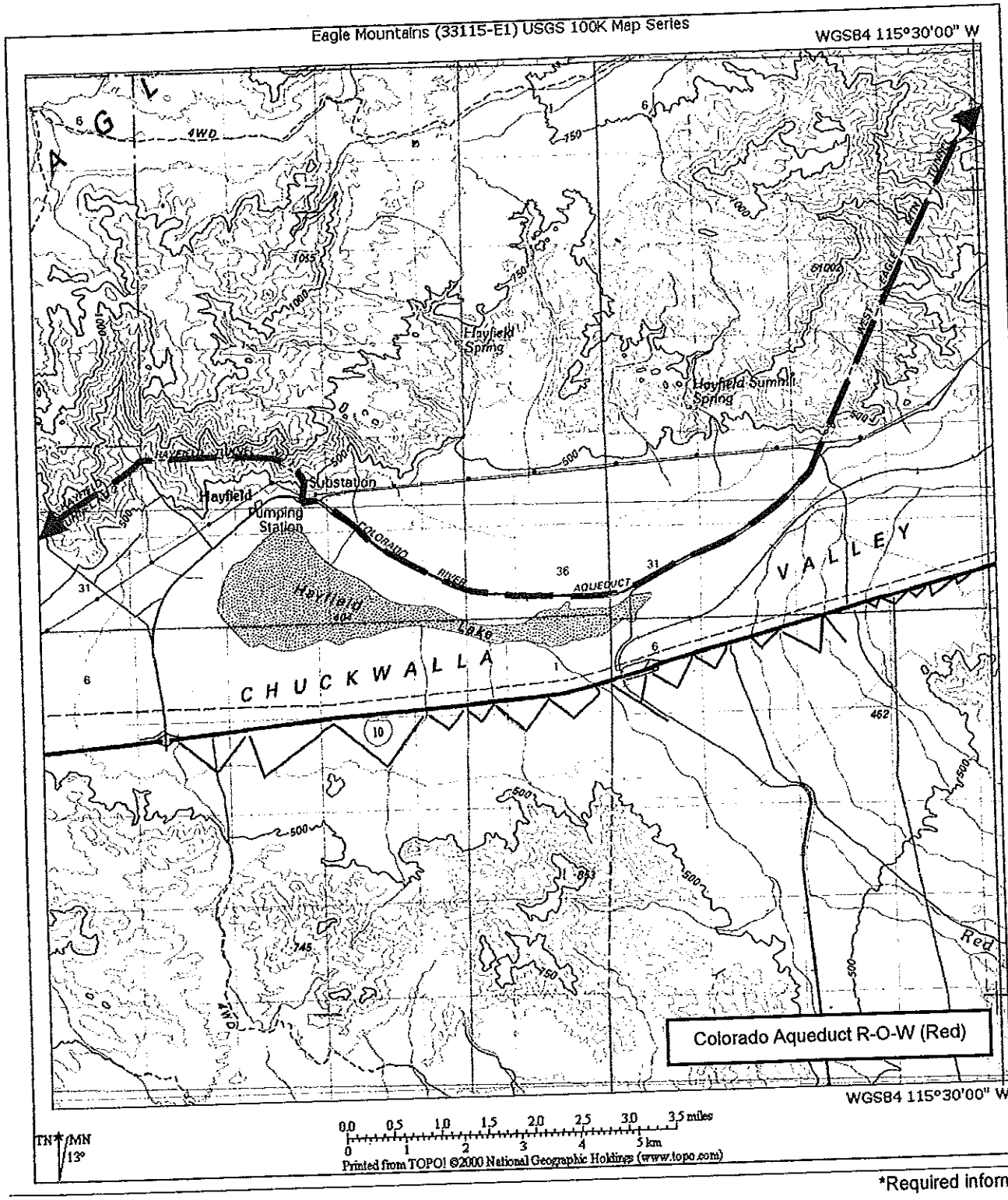

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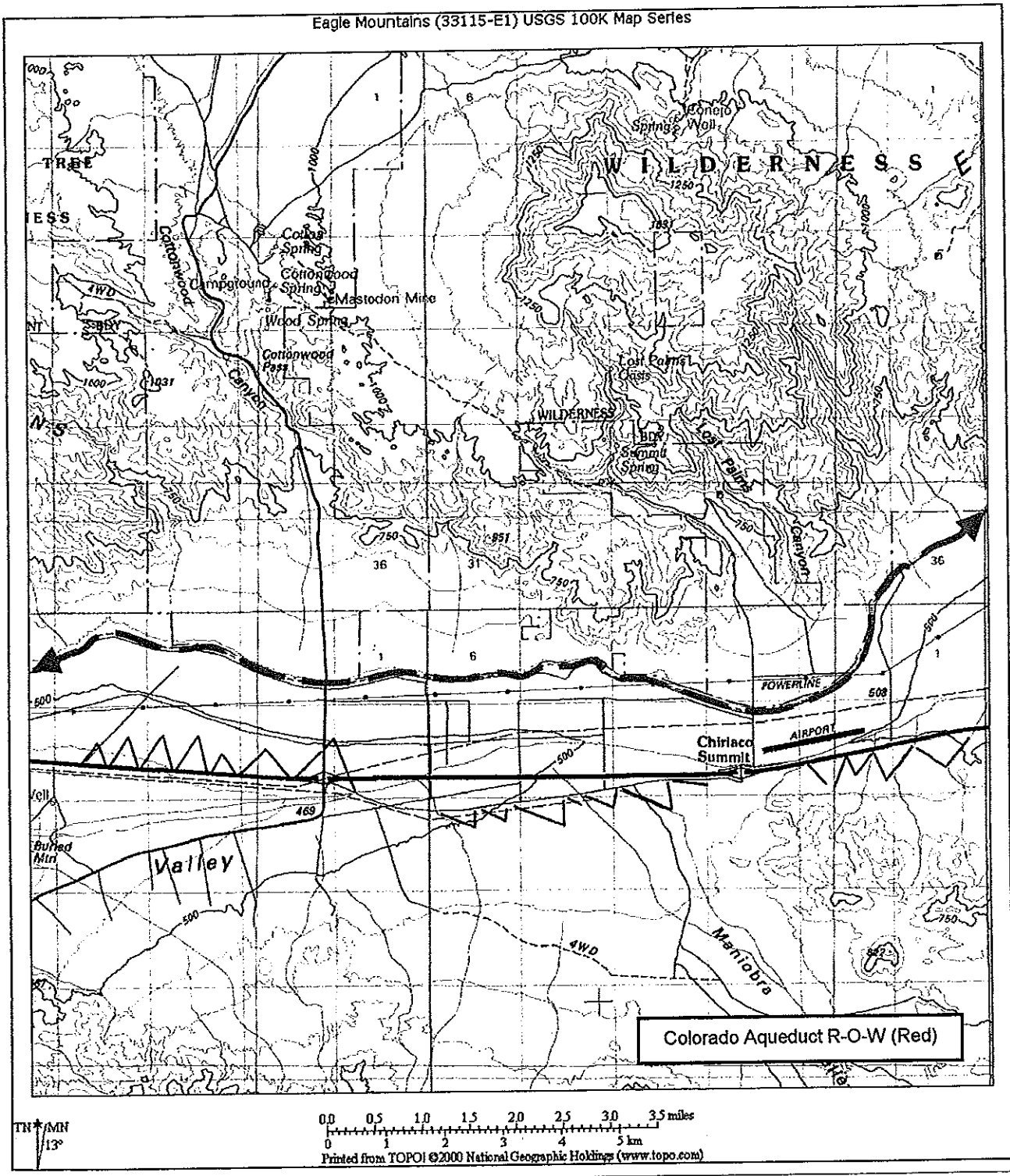

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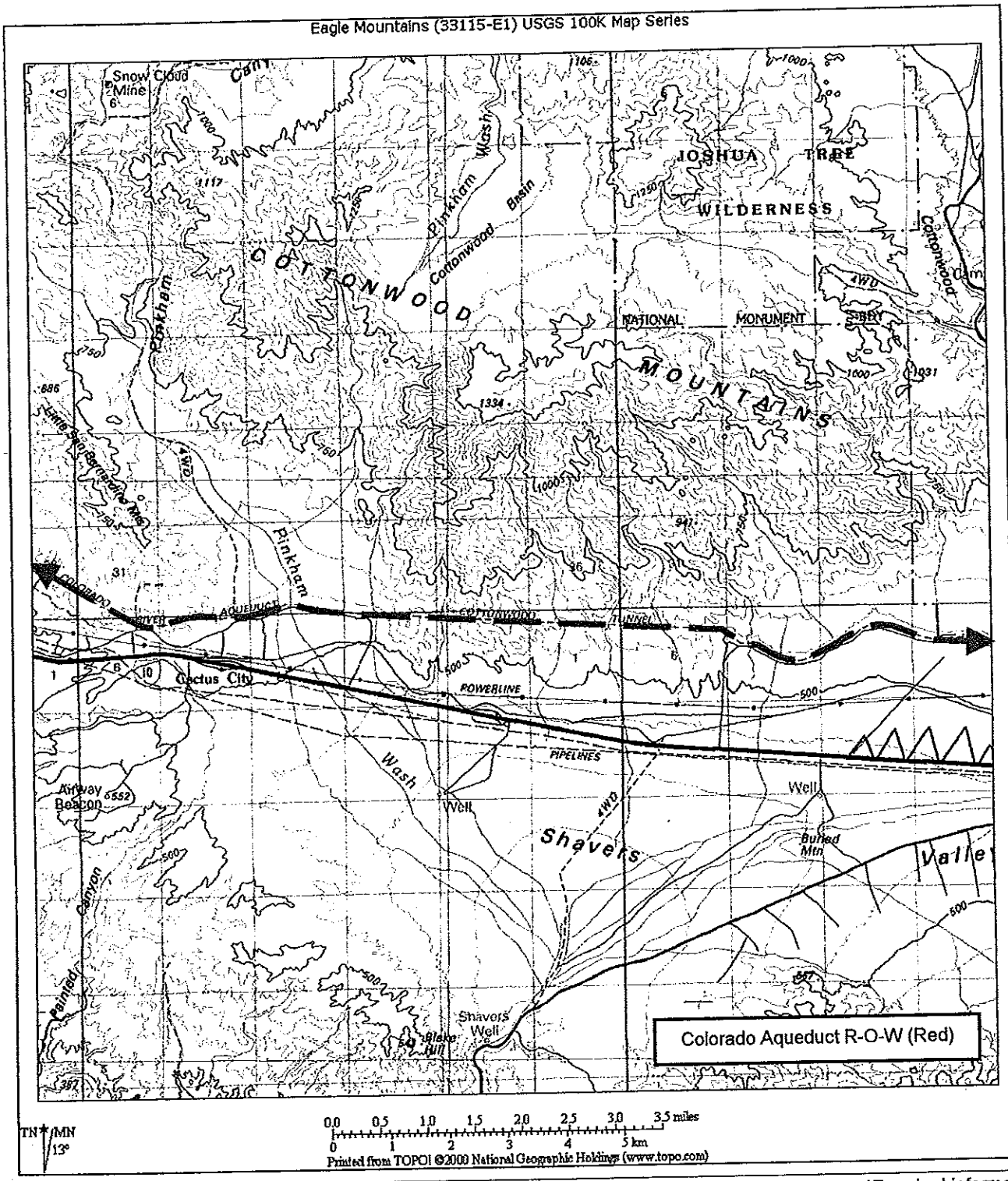

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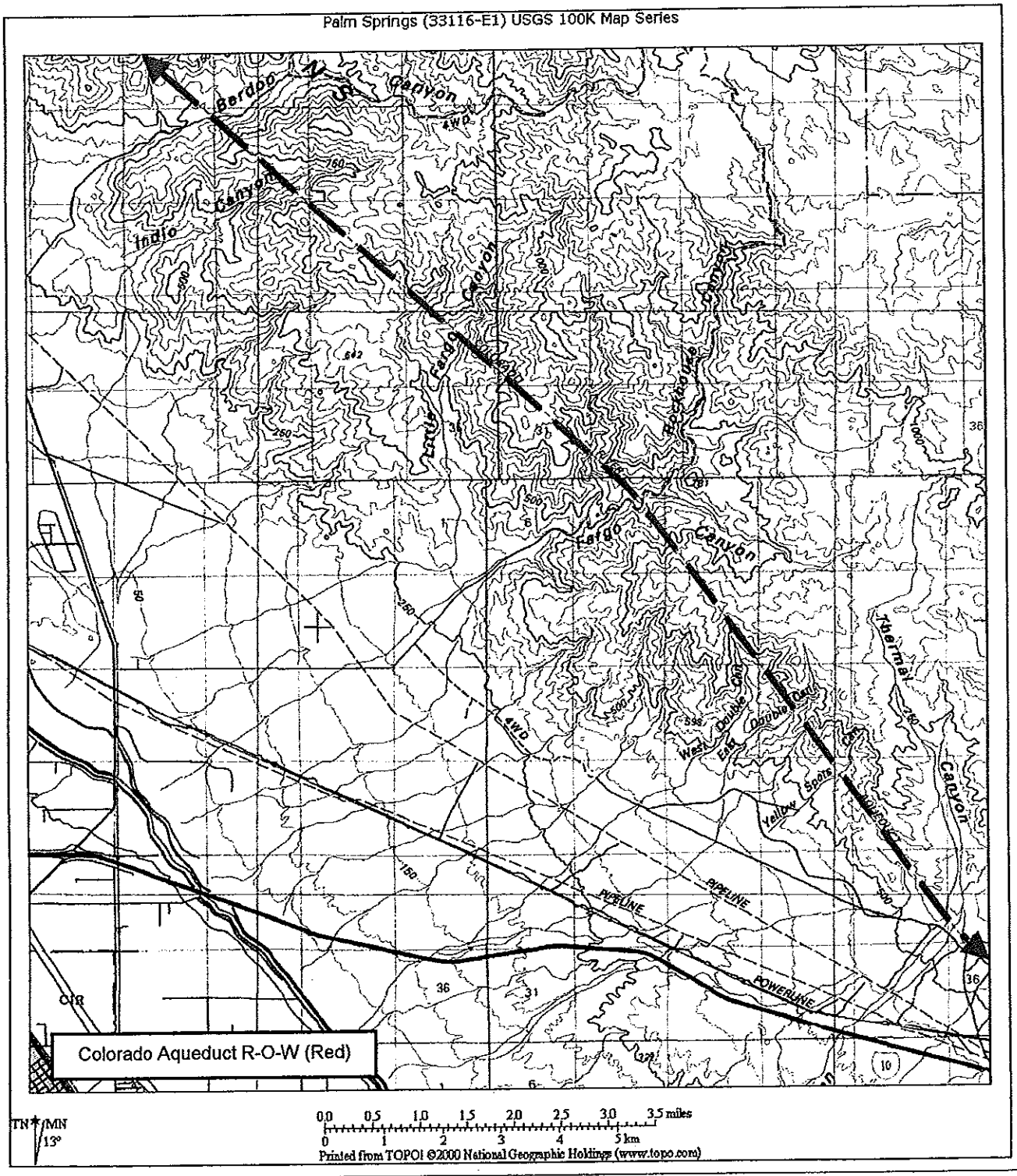
*Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)

*Map Name: USGS Palm Springs (33116-E1) Scale: 1:100,000 (inches) Date of Map: 1975



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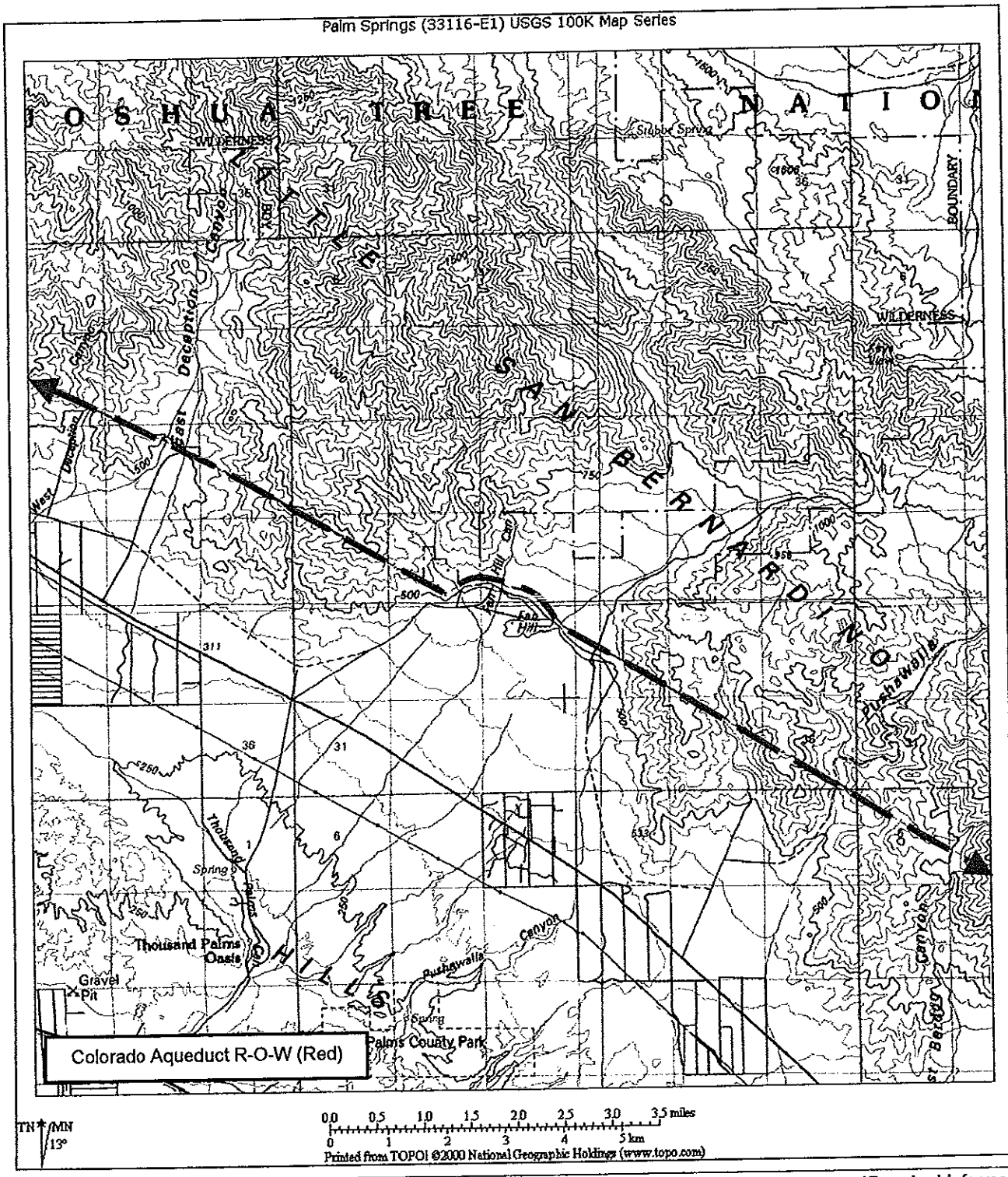
*Map Name: USGS Palm Springs (33116-E1)

Scale: 1:100,000 (inches)

Date of Map: 1975



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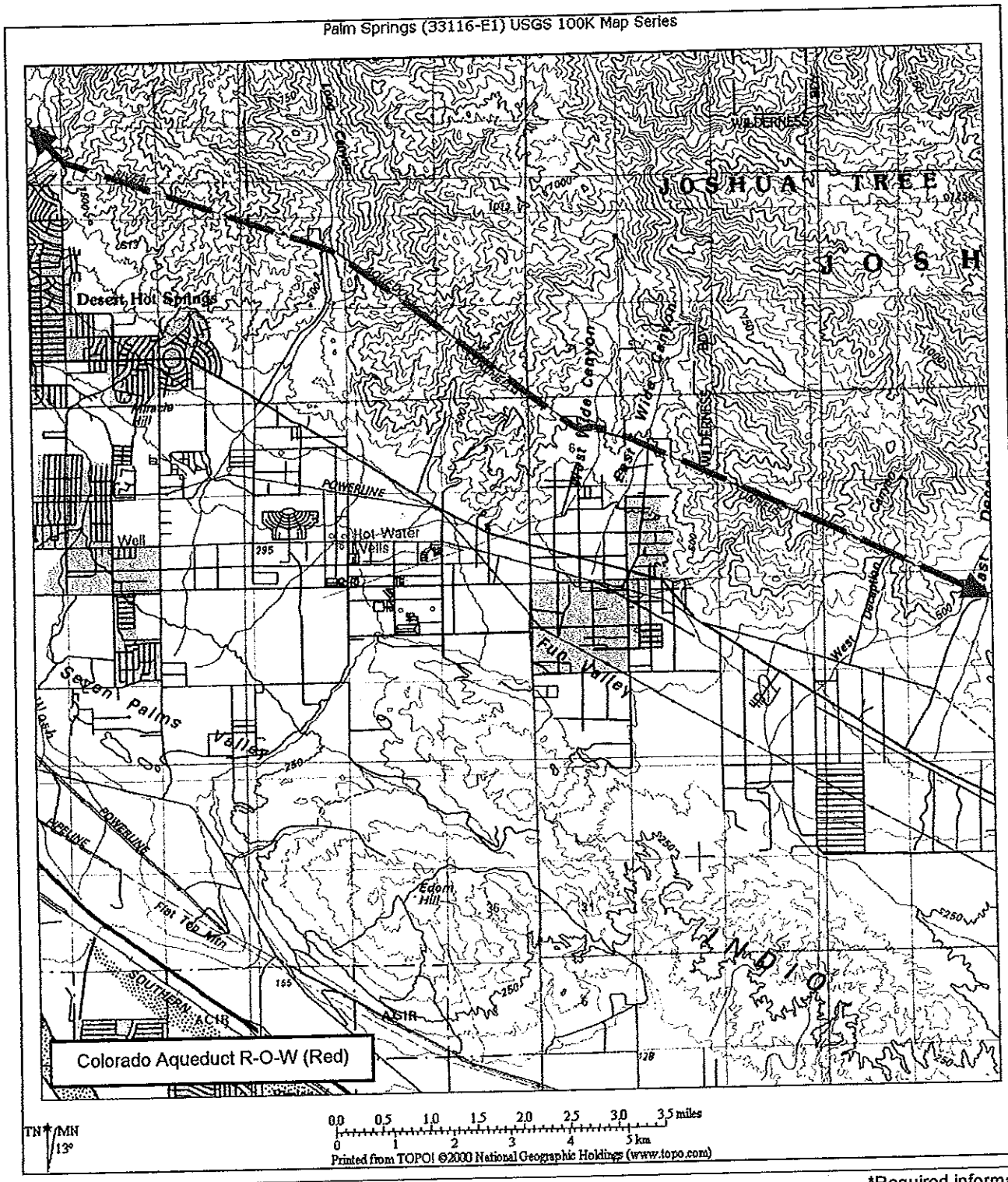
Date of Map: 1975



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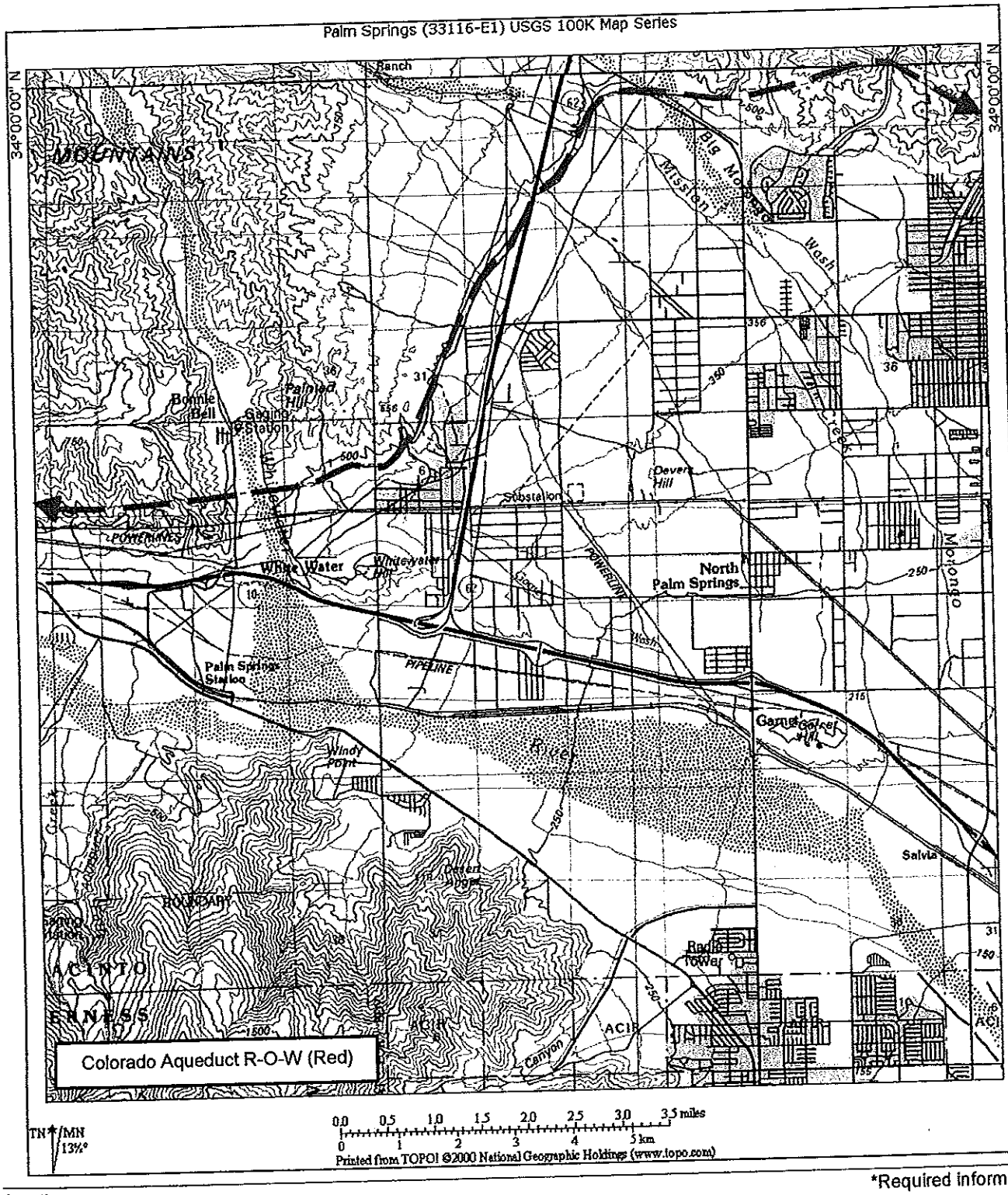

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***Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)**

***Map Name: USGS Palm Springs (33116-E1)** **Scale: 1:100,000 (inches)** **Date of Map: 1975**

Palm Springs (33116-E1) USGS 100K Map Series

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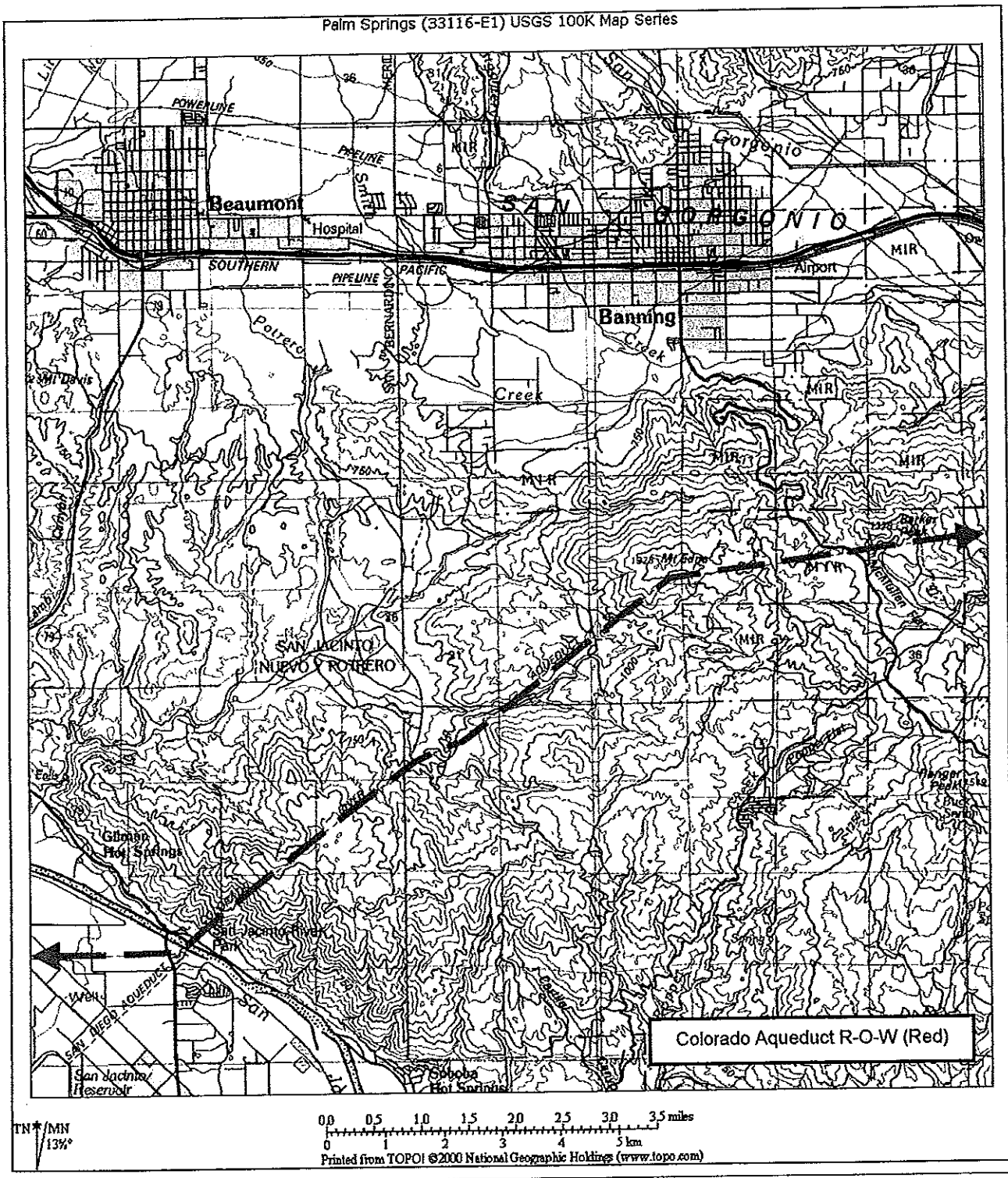
*Resource Name or # (Assigned by recorder): Colorado River Aqueduct (CRA)

*Map Name: USGS Palm Springs (33116-E1) Scale: 1:100,000 (inches) Date of Map: 1975



location map

*Required Information