

Historical Documentation of the Maricopa Drain



prepared for
**Flood Control District
of Maricopa County**

prepared by
URS Corporation

June 2001

**HISTORICAL DOCUMENTATION
OF THE
MARICOPA DRAIN**

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

prepared for

Flood Control District of Maricopa County
2801 West Durango Road
Phoenix, Arizona 85009-6399

prepared by

Kirsten Winter
A.E. (Gene) Rogge
Judson Joel White

URS Corporation
7720 N. 16th Street, Suite 100
Phoenix, Arizona 85020

with contributions by
Shelly Dudley

Project Control Number 117.08.31
Contract No. 2000C015, Assignment 2
URS Job No. E1-15448010.51
URS Cultural Resources Report 2001-51(AZ)

June 2001

INTRODUCTION

The Flood Control District of Maricopa County (FCDMC) retained URS Corporation to conduct an intensive cultural resources survey in support of the environmental permitting for the Laveen Area Conveyance Corridor (LACC) project. One of the historic resources identified within the construction area is the Maricopa Drain, an approximately 8-mile-long earthen channel (of which 6.5 miles was surveyed) that ranges from 10 to 30 feet wide. Research indicated that the Maricopa Drainage District No. 5 constructed the Maricopa Drain in 1923-1924 to drain fields in the southwestern Salt River Valley that had become waterlogged as the scope of irrigation expanded after completion of the Roosevelt Dam in 1911. Construction of the drain was an important element in the agricultural development in the southwestern Salt River Valley. By the late 1920s, after a number of dry years, a shortage of irrigation water replaced the problem of waterlogging. The ditch remained in use to collect tail water and deliver pumped water, including delivery of water to fulfill the water rights of the Maricopa Indians living on the Gila River Indian Reservation.

The ditch was recorded and designated as site AZ T:12:153 (ASM). Relatively few modifications have been made to the ditch over the years, which continues to be used and is maintained by the Salt River Project (SRP) as a drainage ditch of the Western Canal lateral system. A segment of the Drain in the E1/2 of Section 33, Township 1 North, Range 2 East (T1N, R2E) was realigned along aliquot parts of Section 33 probably in the early 1960s. The rest of the original alignment appears to be unaltered. A check structure was built in the ditch in the 1980s. Some intrusions, somewhat altered the landscape surrounding the Maricopa Drain, but much of the setting of the drain remains agricultural land and its function remains readily observable. In sum, the Maricopa Drain retains substantial historical integrity and was evaluated as eligible for the National Register of Historic Places (National Register) under Criterion A, for the role it played in the agricultural history of Salt River Valley.

The drain has been evaluated as eligible for nomination to the National Register under Criterion A. It was recommended that the drain be intensively documented prior to the onset of construction activities, which was broken into two components, in accordance with Arizona State Historic Preservation Office (SHPO) documentation standards. First, an intensive synthetic historical narrative was produced to document the drain's history in detail. This narrative was written by Shelly Dudley, Senior Historical Analyst at the SRP research archives. Secondly, this documentation incorporates a thorough series of documentary quality photographs. The photographs were sequenced based on drain segments and document all flow and drainage structures incorporated into the drain.

Construction of the LACC project will obliterate portions of the Maricopa Drain as it replaces the drain; and the remaining segments of the drain will be abandoned and filled in for safety and aesthetic reasons. To mitigate those impacts, this documentation (narrative history, maps, drawings, photographs, and slides) has been prepared in accordance with State Historic Preservation Act Documentation Standards for Historic Properties. Shelly Dudley, senior historical analysts of the SRP archives, played a major role in this study by researching the history of the Maricopa Drain and identifying and making available historical documents from the SRP archives.

The compiled documentation includes the following components:

- Arizona State Museum Archaeological Site Card for AZ T:12:153 (ASM)
- narrative describing the historical context and chronology of the Maricopa Drain by Shelly Dudley
- maps and drawings
 - general project location
 - survey results (depicts relation of the Maricopa Drain to the LACC project)
 - SRP Map of Irrigation System and Properties
 - current Zanjero (ditch rider) maps, sheets 39 and 40
 - right-of-way drawings, 17 sheets, 1959, 1968, 1971, 1977, 1980, 1981
 - 1903 U.S. Reclamation Service Salt River Valley Irrigation Map
 - Map Showing Peninsula, Horowitz and Champion Ditches (also depicts the Maricopa Drain), undated, but must date after 1924 when the Maricopa Drain was completed
 - 1934 aerial photographs of Maricopa Drain, 3 sheets)
- black and white photographs (5- by 7-inch) with log and key
- black and white photograph negatives (in SHPO copy only)
- color slides with log and key
- a copy of the project survey report titled *Cultural Resource Survey Of The Laveen Area Conveyance Channel, Maricopa County, Arizona*



Field No: _____ Recorders: Judson Joel White

NatlReg Opinion: Eligible

Recording Organization: URS Corporation, Cultural Resources Group Date Recorded: 2/9/01

Proj. Name: Cultural Resources Survey for the Laveen Area Conveyance Channel

Site Name: Maricopa Drain

Land status (check one): PVT CTY ___ CO ___ ST ___ TRIB ___ USFS ___ USFW ___
 NPS ___ BLM ___ DOD ___ ACE ___ BOR ___ RTC ___

Owner/Agency name: Flood Control District of Maricopa County (FCDMC)

Survey Colls: No Repository Inst: Arizona State Museum (Tucson)

Report Ref: 2001. Judson Joel White, Kirsten Winter and A.E. (Gene) Rogge. Cultural Resource Survey of the Laveen Area Conveyance Channel, Maricopa County, Arizona. URS, Phoenix.

Map name USGS: Fowler, AZ and Laveen, AZ Series: 7.5' State: AZ County: Maricopa El: 1000 ft

Site size: in meters Length: 7.24 km Width: 7.62 m How measured: EST_PACE_MAP X TAPE

center UTM Z	12 E	393000	N	3694753	BL	TWN	RNG	SC	SUBDIVISION
perim. UTM Z	12 E	385745	N	3694240		T1N	R1E	35	
perim. UTM Z	12 E		N			T1S	R1E	1, 2	
perim. UTM Z	12 E		N			T1S	R2E	5, 6	
perim. UTM Z	12 E		N			T1N	R2E	32, 33	

How were UTM's derived : USGS Map. X

Site Description/Remarks:

The Maricopa Drain is an approximately 8-mile earthen channel (6.5-miles of which was surveyed) that ranges from 10 to 30 feet wide. Documents in the SRP archives indicate that the Maricopa Drain was constructed almost 80 years ago. Therefore, arrangements were made for Shelly Dudley, senior historical analysts of the SRP archives, to document the history of this structure and use that information in recording and evaluating the historic values of the drain.

The Maricopa Indians were practicing irrigation agriculture near the confluence of the Salt and Gila Rivers when Euroamerican settlers arrived. The earliest official recorded date of cultivation for lands in the southwestern part of the Salt River Valley by non-Indians dates to 1883. Joseph Lambeye, Jean Orteig, and D. Claboret dug the first canal in what was known as the Peninsula, Horowitz, and Champion area in 1893. A 1903 U.S. Reclamation Service map indicates the Champion Living Ditch had its heading in the SW1/4 of Section 26, T1N, R2E about 1 mile south of the Salt River and 1.5 miles east of the LACC project. The label "living" apparently reflected the source of the water in a small marsh or shallow artesian well.¹

After the U.S. Reclamation Service completed Roosevelt Dam on the Salt River above the Phoenix Basin in 1911, the amount and reliability of water available for irrigation in the Salt River Valley increased markedly. As the scale of irrigation expanded, the marshy land of the southwest valley became waterlogged in less than a decade. In 1920, farmers in the southwest valley formed the Maricopa County Drainage District No. 5 under the authority of the Maricopa County Board of Supervisors. The District encompassed 2,700 acres. Clarence G. Thomas, Hugh H. Thomas and D.L. Sutton were elected as the first directors. In December 1920, the District issued \$95,500 in bonds, and \$88,000 were issued to Jimmy's Construction and Engineering, probably for construction of the Maricopa Drain.² However construction did not actually begin until 1923. The eastern end of the Drain followed the Champion Ditch for about 0.5 mile but was for the most part a new ditch.

In 1923, the District signed an agreement for a right-of-way with three local landowners, Gray Archer, N.P. McCallum, and Fancisco Satrustegui, who claimed water from the Champion Ditch. These landowners agreed to grant to the District the right-of-way and their interest in approximately the easternmost 0.5 mile of the Champion Ditch. These landowners retained claims to up to 100 inches of water provided by the ditch. The District recognized the right of these landowners to the first 2.5 second-feet of water and agreed to deliver that same amount of water.³ In 1924, the District obtained additional right-of-way, 50 to 100 feet wide, from the Clarence G., Hugh H, and Albion C. Thomas family for about the westernmost 2.5 miles of the Drain.⁴ Other parts of the drain apparently were constructed through unpatented public land.

	Additional Documentation type	document location
Agency Site No: _____	_____	in _____
Agency Project No: _____	_____	in _____
Natl Reg Rec: _____	_____	in _____

ASM Site No: AZ (ASM) ASM Proj No.: _____-_____ ASM Permit No: 95-43

ASM USE ONLY Class:___ Within AZ ___:___:___ (ASM)	Corrections:
QP ___:___:___ Contains AZ ___:___:___ (ASM)	
QP ___:___:___ Biblio Ref. ___ Plotted ___/___/___ by ___	
QP ___:___:___ Acc.No. ___-___ AZSITE DE ___/___/___ by ___	

Feature Names Keyword List

1	Ash Stain	58	Log Cabin
2	Artifact Scatter	59	Masonry Structure
3	Atalaya	60	Midden
4	Ball Court	61	Milled Lumber Structure
5	Barn	62	Mine
6	Battle Site	63	Mine Waste
7	Bedrock Grinding Stone	64	Monument
8	Bedrock Steps	65	Mound, Structural
9	Bin/Cist	66	Mound, Trash
10	Brick Kiln	67	One Room Structure
11	Bridge	68	Orchard
12	Burial/Grave	69	Ore Processing Facility
13	Burned Rock Midden	70	Ore Transport Feature
14	Cache	71	Outbuilding
15	Cairn	72	Outhouse
16	Canal	73	Oven
17	Car Body	74	Painted Petroglyph
18	Cavate Room	75	Pecked Bedrock Depression
19	Cemetery	76	Petroglyph
20	Charcoal Stain	77	Pictograph
21	Church/Religious Structure	78	Pithouse
22	Clearing in Desert Pavement	79	Plaza
23	Clay Quarry	80	Posthole
24	Coke Oven	81	Pottery Kiln
25	Compound Walls	82	Public Building
26	Communication System, Linear	83	Quarry
27	Constructed Linear Feature, Undefined	84	Railroad Track/Bed
28	Corral	85	Ramada/Shelter
29	Cremation	86	Reservoir
30	Depression, Undefined	87	Resource Procurement Area
31	District	88	Road/Trail
32	Dugout	89	Roasting Pit
33	Dump	90	Rock Alignment, Undefined
34	Excavated Linear Feature, Undefined	91	Rock Feature, Undefined
35	Fence	92	Rock Pile
36	Field	93	Rock Ring
37	Field House	94	Roomblock
38	Fired Brick Structure	95	Sawmill
39	Garden	96	Scatter, Sherd
40	Graffiti	97	Scatter, Trash
41	Grain Mill	98	Shed
42	Great Kiva	99	Shrine
43	Hearth	100	Soil Control Structure
44	Historic Settlement	101	Spring Control Device
45	Hogan	102	Stage Stop
46	House Extant	103	Stockade
47	House Foundation	104	Sweat Lodge
48	Human Remains	105	Tank
49	Hunting Feature	106	Tent Base
50	Intaglio	107	Tower
51	Kiln	108	Trading Post/Mercantile
52	Kiva	109	Trailer
53	Lime Kiln	110	Trincheras
54	Linear Border	111	Wall
55	Lithic Quarry	112	Water Control Device
56	Lithic Scatter	113	Well
57	Livestock Enclosure	114	Wickiup
		115	Windmill
		116	Other*

*(note in Feature Remarks)

Use, Culture, & Age Keyword List

Side B

Use	
1	Unknown Use
2	Accidental Loss
3	Passive Accumulation
4	Observation
5	Resource Procurement
6	Agricultural
7	Manufacturing/Production
8	Conveyance/Transportation
9	Storage
10	Disposal
11	Communication
12	Monument
13	Art
14	Recreation
15	Commerce
16	Defense
17	Religious/Ceremonial
18	Government/Public Bldg.
19	Habitation
20	Subsistence/ Food Prod.
21	Other*

Cultural Affiliation

1	Unknown	28	Pai
2	Native Culture	29	Havasupai
3	Native Archaeological Cult	30	Hualapai
4	Paleoindian	31	Yavapai
5	Archaic	32	Seri
6	Anasazi	33	Southern Paiute
7	Cohonina	34	Tarahumara
8	Hakataya	35	Yaqui
9	Hohokam	36	Yuman
10	Mogollon	37	Chemehuevi
11	Patayan	38	Cocopah
12	Prescott	39	Halichidhoma
13	Sinagua	40	Halyikwamai
14	Casas Grandes	41	Kahwan
15	Salado	42	Kavelchadom
16	Trincheras	43	Maricopa
17	Extant Native Culture	44	Mohave
18	Apache	45	Quechan
19	San Carlos Apache	46	Zuni
20	Tonto Apache	47	Nonnative Culture
21	White Mtn. Apache	48	African-American
22	Hopi	49	Asian-American
23	Navajo	50	Euro-American
24	O'odham	51	Mexican-American
25	Hia Ced O'odham	52	Spanish
26	Tohono O'odham	53	Other*
27	Akimel O'odham		

Age*

1	Unknown	
2	Post-contact	AD 1500-Present
3	Recent	AD 1950-Present
4	Historic	AD 1500-1950
5	Post AD 1700 Historic	AD 1700-1950
6	Late Historic	AD 1900-1950
7	Middle Historic	AD 1800-1900
8	Early Historic	AD 1700-1800
9	Prehistoric/Historic Transition	AD 1500-1700
10	Prehistoric	12000 BC-AD 1500
11	Ceramic	AD 200-1500
12	Late Ceramic	AD 1300-1500
13	Middle Ceramic	AD 1000-1300
14	Early Ceramic	AD 200-1000
15	Preceramic	12000 BC-AD 500
16	Preceramic/Ceramic Transition	500 BC-AD 500
17	Pre-500 BC Preceramic	12000 BC-500 AD
18	Archaic	8000 BC-200 AD
19	Late Archaic	1500 BC-AD 200
20	Middle Archaic	4800 BC-1500 BC
21	Early Archaic	8000 BC-4800 BC
22	Paleoindian	12000 BC-8000 BC

Depositional Context : (choose as many as apply)

<input checked="" type="checkbox"/> (1) Open, no depth	<input type="checkbox"/> (5) Rockshelter, no depth	<input type="checkbox"/> (8) Cave, no depth
<input type="checkbox"/> (2) Open, depth	<input type="checkbox"/> (6) Rockshelter, depth	<input type="checkbox"/> (9) Cave, depth
<input type="checkbox"/> (3) Open, depth unknown	<input type="checkbox"/> (7) Rockshelter, depth unknown	<input type="checkbox"/> (10) Cave, depth unknown
<input type="checkbox"/> (4) Open, exposed only in profile		

Topographic setting: Holocene floodplain of the Salt River

Vegetation: agricultural fields

Geology/soils:

Site Condition: The Maricopa Drain continues to be used collect tail water and deliver pump water for irrigation. The site has been regularly maintained by SRP and is in good operating condition. The Maricopa Drain will be destroyed by construction of the Laveen Area Conveyance Channel.

Site Type (choose one):

(a) Artifact Scatter (No other features visible on the surface)

(b) Features with associated artifacts

(c) Features with NO associated artifacts

Assemblage Composition (indicate quantities as counts, estimated ranges, "P" for types known only to be present, "0" for types not seen at the site.)

<u>0</u> prehistoric ceramic	<u>0</u> FCR	<u>0</u> glass	<u>0</u> animal remains/artifacts
<u>0</u> chipped stone	<u>0</u> shell	<u>0</u> metal	<u>0</u> plant remains/artifacts
<u>0</u> ground stone	<u>0</u> hist ceramic	<u>0</u> hist wood	<u>0</u> human remains

Diagnostics (indicate quantity of cult/temp/functnl types as counts, estimates, or "P")

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Assemblage Remarks:

Feature Data: (Complete one feature record for each type of feature recorded for this site.)

Feature No.	Name	Count	Use	Culture	Age	Period/Phase
1	112 (Maricopa Drain)	1	6	50	2	1923- present

Feature Remarks:
See site description on Sides A and E.

Feature No.	Name	Count	Use	Culture	Age	Period/Phase

Feature Remarks:
See site description on Sides A and E.

Feature Data: (Complete one feature record for each type of feature recorded for this site.)

Side D

Feature No. Name	Count	Use	Culture	Age	Period/Phase
Feature Remarks:					

Feature No. Name	Count	Use	Culture	Age	Period/Phase
Feature Remarks:					

FEATURES

AZ T:12:153 (ASM)

ARIZONA STATE MUSEUM ARCHAEOLOGICAL SITE CARD

By the late 1920s, after a number of dry years, a shortage of irrigation water replaced the problem of waterlogging. As early as 1923, the Indian Irrigation Service had suggested using the Drain to convey irrigation water to lands farmed by the Maricopa Indians at the northern edge of the Gila River Indian Reservation. In 1936, SRP signed a contract with the federal government to install and operate a well to satisfy water rights for the Maricopa Indians via the Drain. In 1973 a booster pump was installed and a check structure was built in 1981 to continue to meet those requirements.⁵

Drainage District No. 5 declared bankruptcy in 1944 because of inability to meet bond obligations and pay state and county taxes. By the early 1940s (and perhaps even in the 1930s), SRP took over maintenance of the Maricopa Drain and connected it to the SRP lateral system as a drainage ditch of the Western Canal.⁶ Although the FCDMC explored acquisition of the Maricopa Drain as a flood control structure in 1968, the 1944 bankruptcy had left Drain ownership uncertain and the FCDMC did not become involved in ownership or maintenance of the ditch. In the spring of 1971, SRP cleaned the ditch and graded the adjacent road, and in the 1970s SRP formally acquired easements for the ditch from current landowners. Plats showing this right-of-way were filed with the Maricopa County Recorder's Office in 1977.⁷

In summary, Maricopa Drainage District No. 5 built the Maricopa Drain in about 1923-1924 to drain waterlogged land in the southwestern portion of the Salt River Valley. Within a decade, a shortage of water, rather than an abundance of water, became a more common problem. The drain has continued to be used to collect irrigation tail water and deliver water to downstream users.

Field survey indicated that the Maricopa Drain remains an unlined, earthen channel. The Drain has been cleaned and maintained, more intensively since the 1970s than during its original half century of use, and a few modifications have been made over the years, such as adding a check structure in the 1980s. Review of the 7.5-minute USGS quadrangle and aerial photos provided by FCDMC identified a linear feature in the E1/2 of Section 33, T1N, R2E. Comparison with historic maps confirmed that this was the original alignment of the Maricopa Drain. Field observations indicated a swath of higher, greener, and denser vegetation about 10 meters wide demarcates this feature. SRP archives do not document when this realignment along aliquot parts of Section 33 was made, but probably was in the early 1960s (Shelley Dudley, personal communication, 13 February 2001). The rest of the original alignment appears to be unaltered.

Some intrusions such as high voltage electrical power lines, upgraded streets, and laser-leveled fields have altered somewhat the landscape surrounding the Maricopa Drain, but much of the setting of the Drain remains agricultural land and its function remains readily observable. We conclude that the Maricopa Drain retains sufficient historical integrity to be eligible for the National Register under Criterion A, for the role it played in the agricultural history of Salt River Valley.

Footnotes

¹U.S. Exhibit I, U.S. v Haggard, 17, 22. Maricopa County Recorder's Office, Book of Canals I 291. U.S. congress, House, Report in the Matter of the Investigation of the Salt and Gila Rivers Reservations and Reclamation Service, H. Report 1506, 62d Cong., 3d sess., 1913, 650-52.

²Clarence G. Thomas, President, to Maricopa County Board of Supervisors, 19 April 1923 (Clerk of the Board of Supervisors). SRP, also was building the Laveen and Crosscut drains at this time and Board of Governors Minutes of 30 December 1920 indicated SRP studied the potential of providing services for Drainage District No. 5 but no agreement was ever made.

³Agreement, N.P. McCallum, Gray Archer, and Francisco Satrustegui and Drainage District No. 5, 18 May 1923. Maricopa County Recorder's Office, Deeds Book 175:528.

⁴Right-of-Way Deed, 21 June 1924, Maricopa County Recorder's Office, Book of Deeds 186:199. The Thomas family owned the Webster House at that time.

⁵Letter, Herbert Clotts, Supervising Engineer, Indian Irrigation Service, to Commissioner of Indian Affairs, 19 October 1923. Contract for Pumping Water for Maricopa Indians on Gila River Indian Reservation, United States and Salt River Valley Water Users' Association, 5 May 1936. Agreement, Salt River Valley Water Users' Association and Bureau of Indian Affairs, Pima Agency, 11 September 1981.

⁶O.D. Miller, Director Drainage District No. 5 to Board of Supervisors Maricopa County, 29 October 1942. Stamp on letter notes approval on 6 January 1943. In the Matter of Drainage District No. 5, Maricopa Co., No. B 1134 PHX, U.S. District Court, "Notice to Creditors," January 1944. Association, Board of Governors, Minutes, 5 June 1933.

⁷Barry Lauseda to John C. Lowry, General Manager Flood Control District of Maricopa County, 4 September 1968. Charles Stidham to Lowry, Flood Control District of Maricopa County, 31 October 1968. Irrigation project records, Water Engineering and Transmission files. See Easement, McClellan and Salt River Project Agricultural Improvement and Power District, 20 September 1976. Docket 11898:742. Maricopa Drain Right-of-Way plats, Docket 12575, 289-90, 8 November 1977.



Shelly Dudley
SRP Research Archives

February 12, 2001
revised May 22, 2001

Maricopa Drain: A History

With the completion of a storage facility at the confluence of the Salt River and Tonto Creek, Roosevelt Dam, by the United States Reclamation Service in 1911, most of the farmers had an adequate water supply to irrigate the fertile lands in the Salt River Valley. Within a decade, the western section of the Valley became saturated with irrigation water from the intensive cultivation of the land. To combat this situation in the marshy region of the southwest Valley, farmers formed a drainage district under the authority of the Maricopa County Board of Supervisors. Organized in 1920, Maricopa County Drainage District No. 5 constructed a drainage ditch and utilized portions of an existing canal to drain the lands of its landowners. The "Maricopa Drain" still drains the lands while providing additional irrigation water to farmers.

Following the settlement of the villages by the Maricopa Indians near the confluence of the Salt and Gila Rivers in the late 1870s, the earliest official recorded date of cultivation for lands in the southwestern part of the Salt River Valley by non-Indians occurred in 1883. The first canal constructed for major portions of the land in the Peninsula, Horowitz, and Champion area was dug by Joseph Lambeye, Jean Orteig and D. Claboret in 1893. The "Champion Living Ditch," had its heading in the southwest quarter of Section 26, Township 1 North, Range 2 East, about one mile south of the south bank of the Salt River (see excerpt from 1903 U.S. Reclamation Service Map).

It appears that the original Champion Ditch received its supply of water from a small marsh where

a shallow well was dug, from which flowed a constant head of water. This marshy area possibly dried up from the continual flow of water to the irrigation ditch; consequently a new canal was dug further westward to provide water for farming.¹

With sustained irrigation, the land became waterlogged, including most of the lands in the Leon Irrigation District, and the landowners petitioned the Maricopa County Board of Supervisors to form a drainage district in 1920. An election was held on June 15, 1920, organizing Drainage District No. 5 (District), with the Board of Supervisors certifying the results of the election, including the district boundaries containing approximately 2,700 acres, on June 21, 1920. Clarence G. Thomas, Hugh H. Thomas and D. L. Sutton were elected as the first Directors of the District. On December 1, 1920, the District issued \$95,500 in bonds, of this amount \$88,000 were issued to Jimmy's Construction and Engineering, probably for the construction work on the canal.² It is likely that the canal built by Drainage District No. 5 was for the most part a new canal, although it may have used part of the Champion ditch in its upper reaches (see "Map showing Peninsula, Horowitz and Champion Ditches"). Shortly after the issuance of the District bonds, the Salt River Valley Water Users' Association Board of Governors passed a resolution to investigate the delivery of pump, flood and

¹U.S. Exhibit I, *U.S. v Haggard*, 17, 22. Maricopa County Recorder's Office, Book of Canals I 291. U.S. Congress, House, *Report in the matter of the Investigation of the Salt and Gila Rivers Reservations and Reclamation Service*, H. Report 1506, 62d Cong., 3d sess., 1913, 650-52.

²Clarence G. Thomas, President, to Maricopa County Board of Supervisors, April 19, 1923 (Clerk of the Board of Supervisors).

waste water to the Drainage District in December 1920, but this examination apparently never resulted in a contract.³

Although the District bonds were issued in 1920, it appears that actual construction of the ditch began a few years later. In 1923, the Drainage District signed an agreement for a right of way with three local landowners, Gray Archer, N. P. McCallum, and Francisco Satrustegui, who claimed water from the Champion Ditch. The contract granted and conveyed to the Drainage District the right of way and claim of interest in and to the Champion Ditch from a point approximately 300 feet west of the point where the Champion Ditch crossed the east line of Section 27, Township 1 North, Range 2 East, east to the end of the Champion Ditch held by Archer, McCallum, and Satrustegui. The men also conveyed all the water developed or that might be developed except for one hundred inches provided for in a portion of the ditch. The Drainage District agreed to enter the Champion Ditch approximately 300 feet west of the point where the ditch crossed the east line of the Section 27, Township 1 North, Range 2 East, and construct a drainage ditch in the Champion Ditch right of way from that point east. At this point the District was required to build a check of sufficient height and dimensions to raise the surface of the water so that it stood 7 feet below the surface of the ground (elevation of the surface of the ground at this point was 1029.04 feet above sea level). The Drainage District recognized the right of these Champion owners to the first 2.5 second feet of water and agreed to deliver that same amount of water to the three men developed by the drainage ditch or in

³Salt River Valley Water Users' Association, Board of Governors, "Minutes," December 30, 1920. Construction costs are comparable to the costs of the Salt River Valley Water Users' Association to construct the Crosscut and Laveen drains within the same time period.

the Champion Ditch. This right of way was said to run southwesterly through sections 27, 34, 33, 32 Township 1 North, Range 2 East for approximately four miles. Whether there was an existing ditch that matches this description is not known, but when the drain was constructed portions of the land were still unpatented.⁴

Additional land was needed for the drain. In 1924, the Drainage District obtained from the Clarence G., Hugh H., and Albion C. Thomas family a right of way for a strip of land varying from 50 to 100 feet wide, beginning at the northeast corner of the west half of the northwest quarter of Section 6, Township 1 South, Range 2 East and running through that section and sections 1 and 2 in Township 1 South, Range 1 East and Section 35, Township 1 North, Range 1 East where it entered the Salt River bed.⁵ (See 1934 aerials for early view of the drain.)

Portions of the "Maricopa Drain," as the ditch for the Drainage District became known as, are adjacent to the Gila River Indian Reservation. As early as 1923, the Indian Irrigation Service suggested using the drain as a source of water to irrigate the lands farmed by the Maricopa Indians at the northern edge of the Gila River Indian Reservation. By the late 1920s, what had first been a problem of waterlogging and drainage due to the increased irrigation above the Maricopa Drain was becoming a problem of water shortage due to the dry years, construction of additional dams on the Salt River, and groundwater pumping. In 1936, the Association and the United States signed a

⁴Agreement, N.P. McCallum, Gray Archer and Francisco Satrustegui and Drainage District No. 5, May 18, 1923. Maricopa County Recorder's Office, Deeds Book 175:528.

⁵Right of Way Deed, June 21, 1924, Maricopa County Recorder's Office, Book of Deeds 186:199.

contract which provided the Association would equip and operate a well to satisfy the rights of the lands of the Maricopa Indians. A booster pump was later installed during 1973 and water pumped from the drain to the Indian irrigation system. SRP also constructed a check structure (see Drawing No. B-112-543) downstream of the well to help supply the water requirements under the 1936 contract in 1981, as well as sign an additional agreement regarding the disposal of waste water with the Bureau of Indian Affairs.⁶

Available records do not provide much information regarding the operation and maintenance of the drainage ditch over the next fifty years. In the early 1940s, Drainage District No. 5 could not pay its state and county taxes or meet its bond obligations and proposed to declare bankruptcy under the Federal Bankruptcy Act. In January 1944, U.S. District Court accepted the bankruptcy agreement of the District. Possibly by the 1940s or even as early as 1933 when a Mr. J. W. Jackson requested the Board of Governors investigate the conditions relating to the drainage district, the Salt River Project started to maintain the Maricopa Drain. It was connected to the SRP lateral system as a drainage ditch of the Western Canal.⁷

⁶Letter, Herbert Clotts, Supervising Engineer, Indian Irrigation Service, to Commissioner of Indian Affairs, October 19, 1923. Contract for Pumping Water for Maricopa Indians on Gila River Indian Reservation, United States and Salt River Valley Water Users' Association, May 5, 1936. Agreement, Salt River Valley Water Users' Association and Bureau of Indian Affairs, Pima Agency, September 11, 1981.

⁷O. D. Miller, Director Drainage District No. 5 to Board of Supervisors Maricopa County, October 29, 1942. Stamp on letter notes approval on January 6, 1943. *In the Matter of Drainage District No. 5, Maricopa Co.*, No. B 1134 PHX, U.S. District Court, "Notice to Creditors," January 1944. Association, Board of Governors, Minutes, June 5, 1933.

The Flood Control District of Maricopa County explored the possibility of acquiring the Maricopa Drain as a flood control structure in 1968, however, the 1944 bankruptcy had left Drain ownership uncertain and the FCDMC did not become involved in ownership or maintenance of the ditch. SRP crews in the spring of 1971 cleaned the drainage ditch and graded the adjacent road. The Project filed plats that showed the right of way necessary for the operation and maintenance of the Maricopa Drain with the Maricopa County Recorder's Office in 1977 (see Drawings Nos. B-1-201, B-1-202, B-1-203). In 1996, SRP obtained an easement from Albert and Rose Trujillo for a segment of the drainage ditch. Current zanjero maps indicate that the Association still maintains the Maricopa Drain (see Zanjero Maps Area 39 and 40).⁸

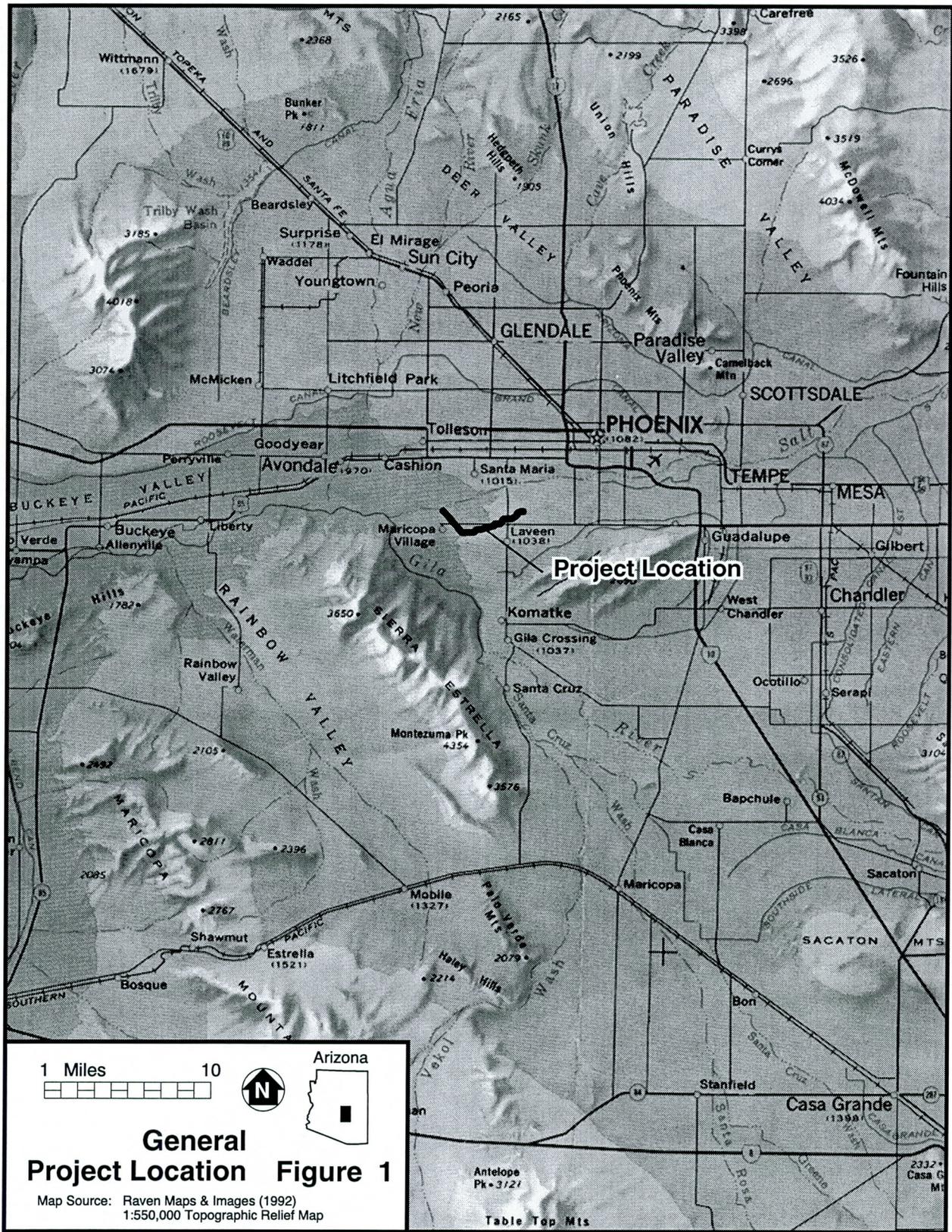
Summary

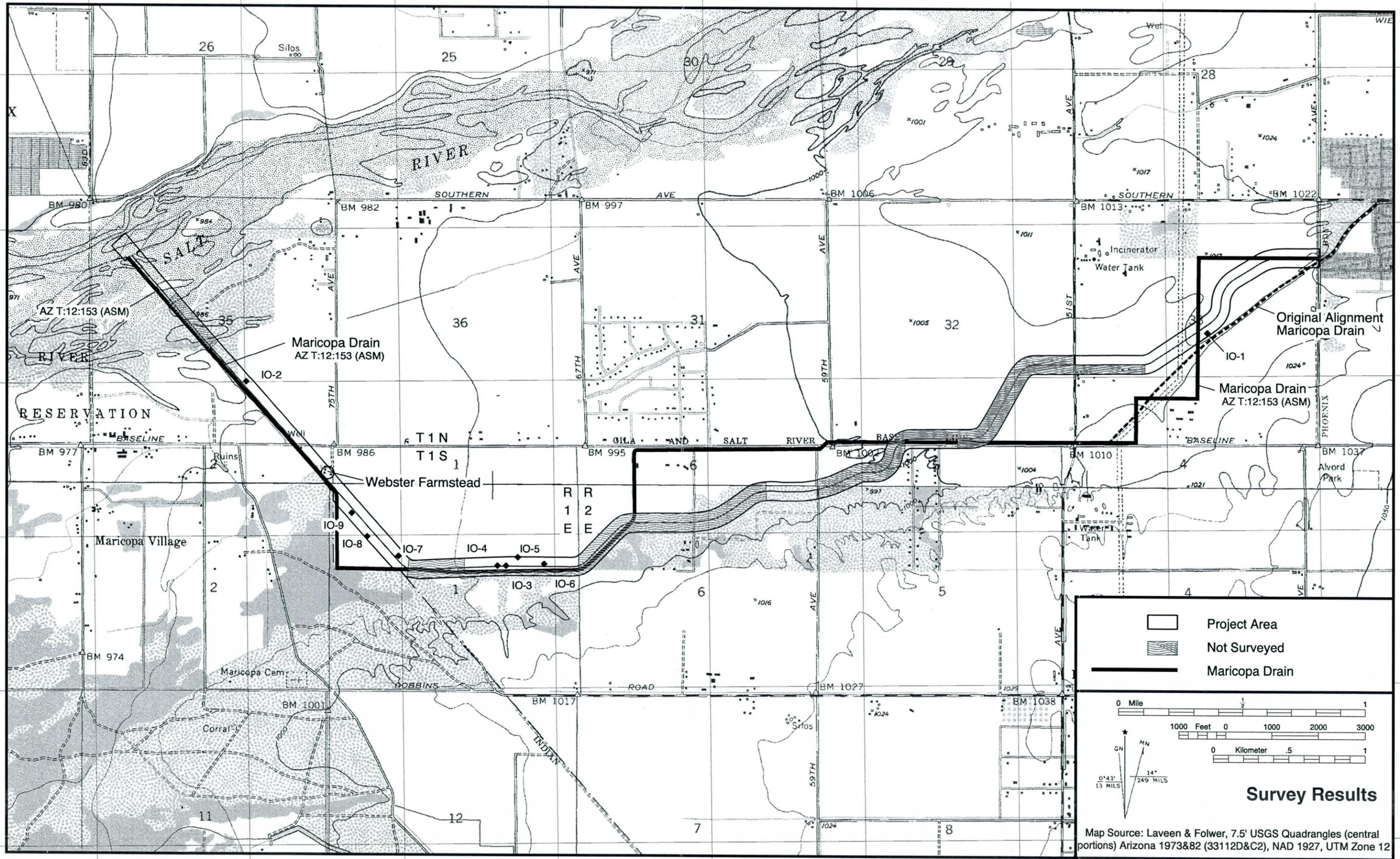
Local farmers and landowners needing to drain the waterlogged land located in the southwestern portion of the Salt River Valley in the 1920s, formed the Maricopa County Drainage District No. 5 to construct a drainage ditch. The Maricopa Drain, as it is now known, still serves that primary

⁸Barry Lauseda to John C. Lowry, General Manager Flood Control District of Maricopa County, September 4, 1968. Charles Stidham to Lowry, Flood Control District of Maricopa County, October 31, 1968. Irrigation project records, Water Engineering and Transmission files. See Easement, Trujillo and Salt River Project Agricultural Improvement and Power District, September 30, 1996 Docket 96-0693950. Maricopa Drain Right of Way plats, Docket 12575, 289-90, November 8, 1977.

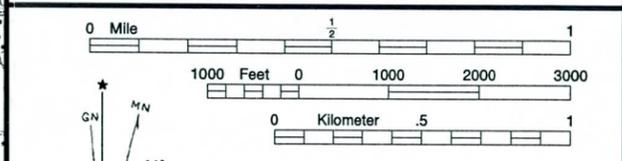
purpose as well as delivering additional irrigation water to agricultural lands, but is now operated and maintained by SRP. The drain retains its historic integrity with few modifications to its structures.







	Project Area
	Not Surveyed
	Maricopa Drain

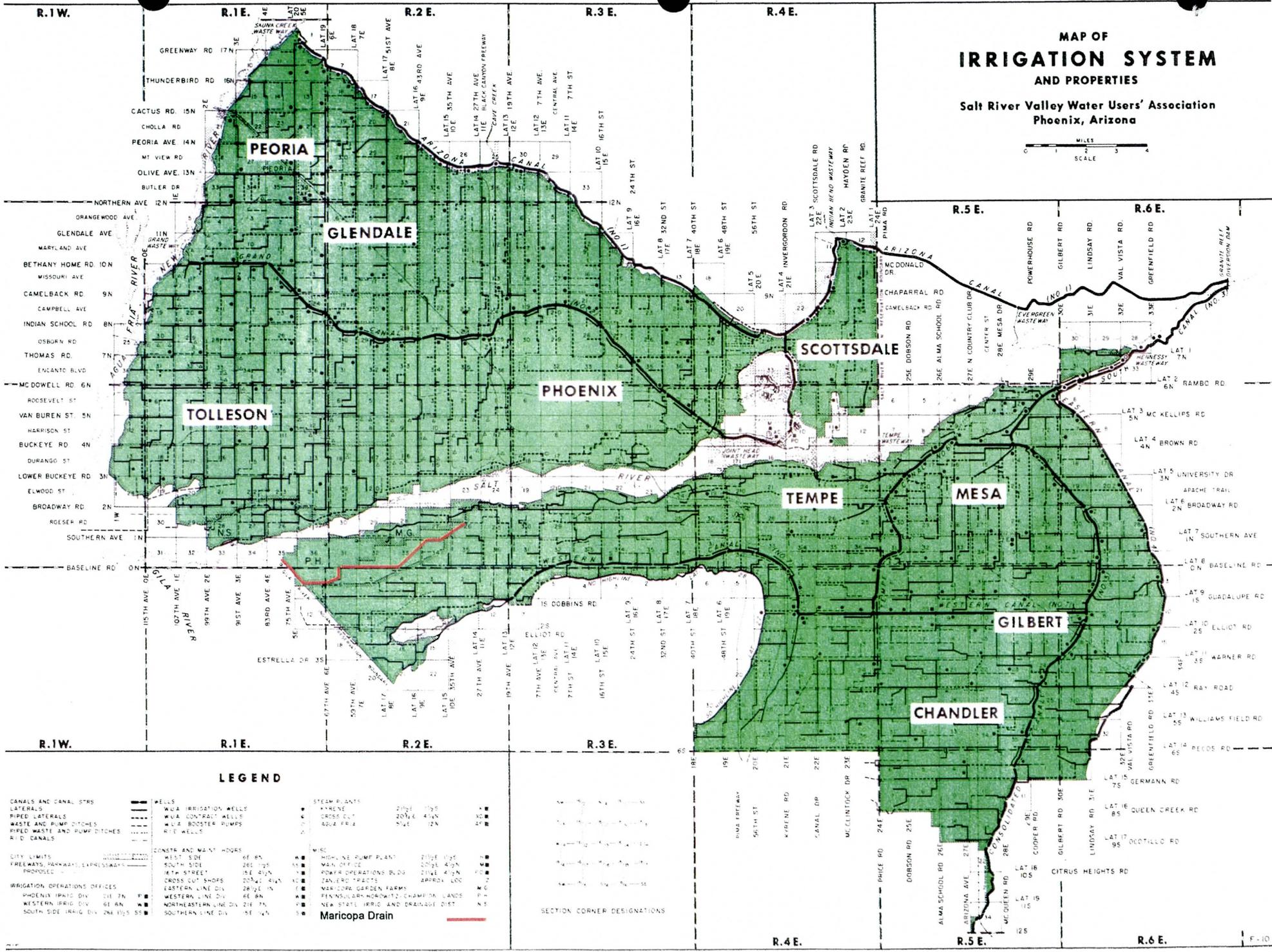
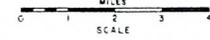


Survey Results

Map Source: Laveen & Folwer, 7.5' USGS Quadrangles (central portions) Arizona 1973&82 (33112D&C2), NAD 1927, UTM Zone 12

MAP OF IRRIGATION SYSTEM AND PROPERTIES

Salt River Valley Water Users' Association
Phoenix, Arizona



LEGEND

- | | | | | | |
|--|---|--|---|--|--|
| <ul style="list-style-type: none"> --- CANALS AND CANAL STRS --- LATERALS --- PIPED LATERALS --- WASTE AND PUMP DITCHES --- PIPED WASTE AND PUMP DITCHES --- R.I.D. CANALS | <ul style="list-style-type: none"> ● WELLS ○ WUA IRRIGATION WELLS ○ WUA DOMESTIC WELLS ○ W.U.A. BOOSTER PUMPS ○ R.I.E. WELLS | <ul style="list-style-type: none"> ■ STEAM PLANTS ■ KYRENE ■ CROSS CUT ■ AQUA FRIA | <ul style="list-style-type: none"> ■ WEST SIDE ■ SOUTH SIDE ■ 16TH STREET ■ 15E AVENUE ■ CROSS CUT SHOPS ■ EASTERN LINE DIV. ■ WESTERN LINE DIV. ■ NORTHEASTERN LINE DIV. ■ SOUTHERN LINE DIV. | <ul style="list-style-type: none"> ■ HIGHLINE PUMP PLANT ■ WUA OFFICE ■ PUMP OPERATIONS BLDG. ■ ZANLERO TRACTS ■ MARICOPA GARDEN FARM ■ PENNSYLVANIA NORTH 1/2 CHAMPAIN LANDS ■ NEW STATE IRRIG. AND DRAINAGE DIST. | <ul style="list-style-type: none"> ■ MARICOPA DRAIN |
|--|---|--|---|--|--|

SECTION CORNER DESIGNATIONS

39

R2E

SALT RIVER AREA

7E

8E

9E

10E

11E

LOWER BUCKEYE RD. 3N

ELWOOD ST.

JONES AVE.

BROADWAY RD. 2N

WIER AVE.

T1N

ROESER RD.

SUNLAND AVE.

SOUTHERN AVE. 1N

ALTA VISTA RD.

VINEYARD RD.

FREMONT RD.

BASELINE RD. 0N

BEVERLY RD.

SOUTH MOUNTAIN AVE.

T1S

EUCLID AVE.

GUADALUPE RD. 1S

7E

8E

9E

10E

11E

59TH AVE.

51ST AVE.

43RD AVE.

41ST AVE.

39TH AVE.

37TH AVE.

35TH AVE.

31ST AVE.

27TH AVE.

LEGEND

CANAL

- (S) LATERAL NUMBER
- 6.4 OPEN LATERAL
- 300 CAPACITY IN MINER'S INCHES
- 6 DELIVERY GATE
- 4 CONTINUATION OF LATERAL GATE
- PIPED LATERAL
- OPEN DRAIN OR PUMP DITCH
- PIPED DRAIN OR PUMP DITCH
- SRP WELL AND WHERE IT DISCHARGES
- DETENTION BASIN
- D. B.
- SRP BOOSTER PUMP
- CONTRACT WELL
- TIE TO STORM DRAIN
- S.D.
- ROOSEVELT IRRIGATION DIST. CANAL
- ROOSEVELT IRRIGATION DIST. WELL
- PRIVATE WELL
- INACTIVE FACILITY OR GATE (GREEN, ANY PATTERN)

* CAPACITIES ARE APPROXIMATE AND SUBJECT TO CHANGE

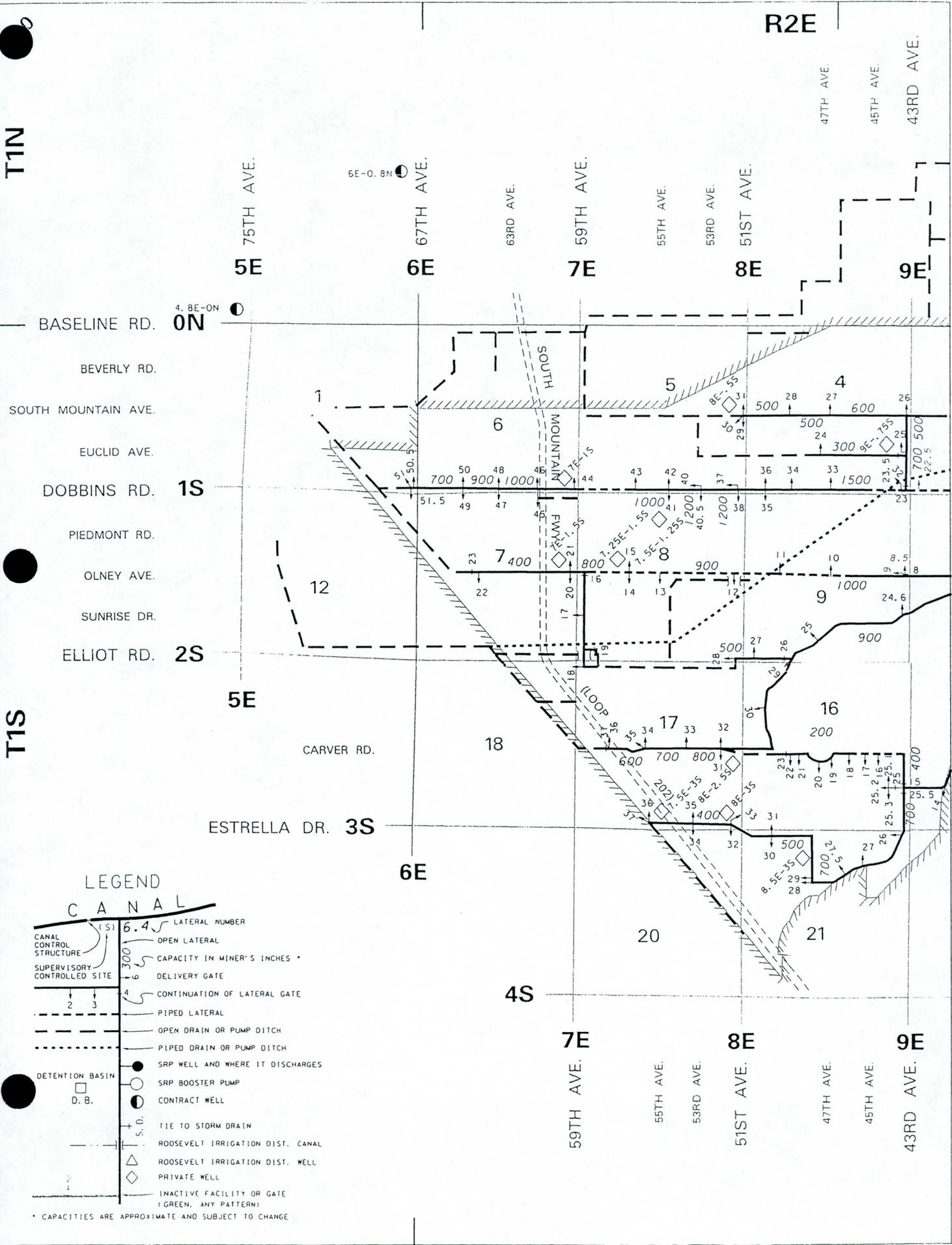
SEE AREA 40

R2E

T1N

T1S

R2E



LEGEND

CANAL

- (S) 6.4 LATERAL NUMBER
- CANAL CONTROL STRUCTURE
- 300 CAPACITY IN MINER'S INCHES
- 6 DELIVERY GATE
- 4 CONTINUATION OF LATERAL GATE
- PIPED LATERAL
- OPEN DRAIN OR PUMP DITCH
- PIPED DRAIN OR PUMP DITCH
- SRP WELL AND WHERE IT DISCHARGES
- SRP BOOSTER PUMP
- CONTRACT WELL
- TIE TO STORM DRAIN
- ROOSEVELT IRRIGATION DIST. CANAL
- ROOSEVELT IRRIGATION DIST. WELL
- PRIVATE WELL
- INACTIVE FACILITY OR GATE (GREEN, ANY PATTERN)

* CAPACITIES ARE APPROXIMATE AND SUBJECT TO CHANGE

TIES TO SECTION CORNERS

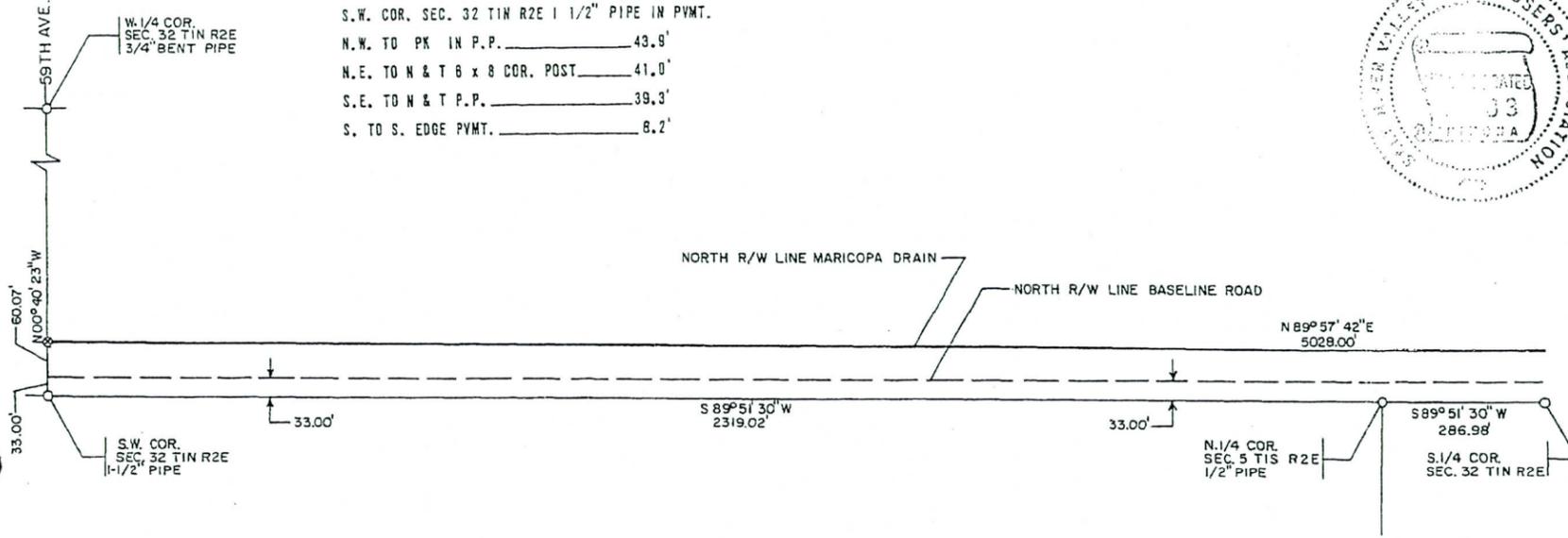
E. 1/4 COR. SEC. 32 T1N R2E IRON BAR
 W. TO N & T 1" FENCE POST _____ 29.2'
 W. N.W. TO PWR GUY P. _____ 35.2'
 N.E. TO GAS VENT _____ 43.6'
 E. TO PWR LINE N. & S. _____ 35.4'

N.E. COR. SEC. 5 T1S R2E B.C. IN HH.
 N.E. TO PK IN P.P. _____ 75.3'
 S.E. TO TEL. JUNCT. BOX _____ 38.65'
 S.W. TO N.E. COR BASE STEEL P.P. _____ 178.2'
 N.W. TO PK IN P.P. _____ 178.2'

S.E. COR. SEC. 32 T1N R2E B.C. IN HH.
 S.E. TO PK IN LIGHT P. _____ 56.8'
 N.E. TO PK IN LIGHT P. _____ 52.0'
 N.W. TO S. END HDWL. _____ 67.4'
 S.W. TO TEL. JUNCT. BOX _____ 87.6'

N. 1/4 COR. SEC. 5 T1S R2E 1/2" PIPE IN PYMT.
 N.E. TO PK IN P.P. _____ 56.2'
 S.E. TO N. & T. LIGHT P. _____ 95.1'
 S. TO S. EDGE PYMT. _____ 2.5'
 S.W. TO TEL. JUNCT. BOX _____ 48.7'

S.W. COR. SEC. 32 T1N R2E 1/2" PIPE IN PYMT.
 N.W. TO PK IN P.P. _____ 43.9'
 N.E. TO N & T 6 x 8 COR. POST _____ 41.0'
 S.E. TO N & T P.P. _____ 39.3'
 S. TO S. EDGE PYMT. _____ 8.2'



STATE OF ARIZONA } S.S.
 COUNTY OF MARICOPA }

KNOW ALL MEN BY THESE PRESENTS:

That the Salt River Valley Water Users' Association, an Arizona Corporation, hereby publishes this plat showing the right of way necessary for the operation and maintenance of the present

MARICOPA DRAIN NORTH OF BASELINE ROAD
 IN SEC. 32 T1N R2E

G. & S. R. B. & M.

Said plat does not show and it is not the intention to show or refer to all rights of way and rights possessed by the United States of America and neither the execution or recordation of said plat shall result in or constitute any diminution or other disposal in whole or in part, of any rights of way or rights which the United States of America is entitled to utilize or enforce.

IN WITNESS WHEREOF: The Salt River Valley Water Users' Association has hereunto caused its corporate name to be signed and its corporate seal to be affixed by the undersigned officers thereunto duly authorized this 13th day of JUNE, 1977

Attest Paul D. Rice Secretary By Karl F. Abel President
 SALT RIVER VALLEY WATER USERS' ASSOCIATION

STATE OF ARIZONA } S.S.
 COUNTY OF MARICOPA }

On this, the 13th day of JUNE, 1977 before me, the undersigned officer, personally appeared Karl F. Abel and Paul D. Rice who acknowledged themselves to be President and Secretary, respectively, of the Salt River Valley Water Users' Association and that they, as such officers, respectively, being duly authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by themselves as such officers respectively.

IN WITNESS WHEREOF: I hereunto set my hand and seal
Don Edmuth
 Notary Public
 My commission expires 5-3-77

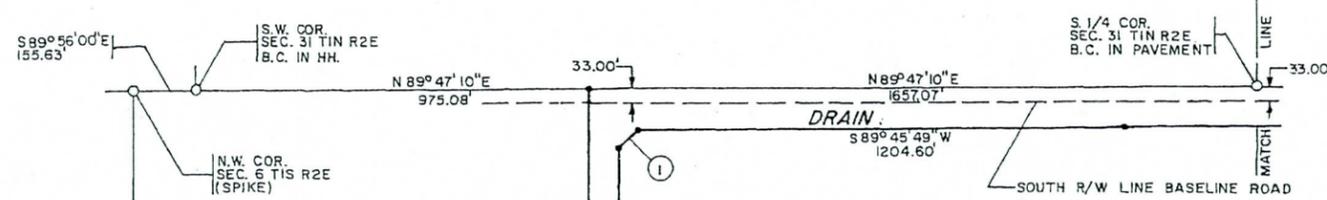
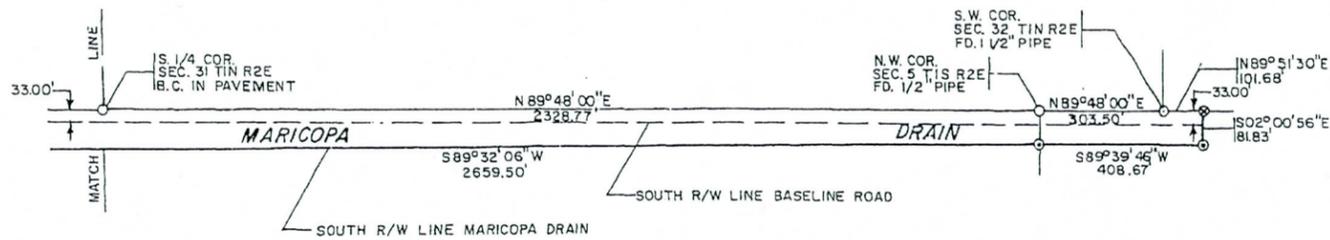
This is to certify that the survey described and plotted hereon was made under my direction during the month of November 1976

James H. James
 Registered Land Surveyor



- LEGEND:
 ○ INDICATES CORNER FOUND
 ⊙ INDICATES PK NAIL SET
 ⊙ INDICATES BRIDGE SPIKE SET.

SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA	
MARICOPA DRAIN NORTH OF BASELINE RD. IN SEC 32 T1N R2E	
Checked <u>J.H.Z.</u> Scale <u>1"=200'</u>	Recommended Approved <u>Paul D. Rice</u>
Date APRIL 4, 1977	Dwg No. 8-1-201



TIES TO SECTION CORNERS

S.W. COR. SEC. 31 T1N-R2E B.C. IN HH..	
S.W. TO "PK" IN SLIPFORM TO W.	53.15'
S.E. TO "PK" IN SLIPFORM TO E.	56.30'
N.W. TO TEL. JCT. BOX	69.10'
N.E. TO COR. POST TO E.	81.25'
S. 1/4 COR. SEC. 31 T1N-R2E B.C. IN PAVEMENT	
S.S.W. TO "PK" IN P.P.	28.50'
N. TO "PK" IN P.P.	34.75'
N.E. TO & HDWL	34.90'
N.W. TO E. GATE POST	78.70'
N.W. COR. SEC. 6 T1S-R2E (SPIKE)	
N. TO RR SPIKE	0.8'
S.W. TO STEM T.O. TO S.	47.3'
S.S.W. TO & HDWL E. END D/W	40.0'
N. TO FENCE E. & W.	54.7'

COURSES:

①	S 46° 29' 36" W	63.79'
②	S 26° 25' 37" W	91.72'
③	S 42° 29' 47" W	88.03'
④	S 51° 03' 34" W	134.73'
⑤	S 44° 32' 24" W	96.84'
⑥	S 76° 29' 34" W	85.69'
⑦	N 71° 20' 10" E	58.81'
⑧	N 41° 03' 37" E	73.97'
⑨	N 52° 00' 43" E	126.03'
⑩	N 37° 48' 08" E	38.19'
⑪	N 27° 38' 58" E	31.16'
⑫	N 09° 12' 57" E	39.12'

LEGEND:

- INDICATES CORNER FOUND
- ⊙ INDICATES BRIDGE SPIKE SET
- ⊗ INDICATES PK NAIL SET
- INDICATES MEASUREMENT POINT

STATE OF ARIZONA } S. S.
COUNTY OF MARICOPA }

KNOW ALL MEN BY THESE PRESENTS:

That the Salt River Valley Water Users' Association, an Arizona Corporation, hereby publishes this plat showing the right of way necessary for the operation and maintenance of the present

MARICOPA DRAIN SOUTH OF BASELINE ROAD

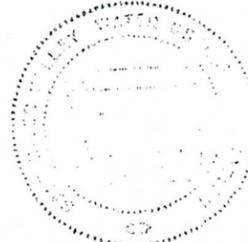
IN SEC. 5 & 6 T1S R2E

G.&S.R.B.A.M.

Said plat does not show and it is not the intention to show or refer to all rights of way and rights possessed by the United States of America and neither the execution or recordation of said plat shall result in or constitute any diminution or other disposal in whole or in part, of any rights of way or rights which the United States of America is entitled to utilize or enforce.

IN WITNESS WHEREOF: The Salt River Valley Water Users' Association has hereunto caused its corporate name to be signed and its corporate seal to be affixed by the undersigned officers thereunto duly authorized this 8th day of November, 1977

Attest Paul D. Rice Secretary By Karl E. Abel President
SALT RIVER VALLEY WATER USERS' ASSOCIATION



STATE OF ARIZONA } S. S.
COUNTY OF MARICOPA }

On this, the 8th day of November 1977 before me, the undersigned officer, personally appeared Karl E. Abel and Paul D. Rice who acknowledged themselves to be President and Secretary, respectively, of the Salt River Valley Water Users' Association and that they, as such officers, respectively, being duly authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by themselves as such officers respectively.

IN WITNESS WHEREOF: I hereunto set my hand and seal

James H. Lange
Notary Public

My commission expires MAY 3, 1979



This is to certify that the survey described and plotted hereon was made under my direction during the month of April 1977.

James H. Lange
Registered Land Surveyor



SALT RIVER VALLEY WATER USERS' ASSOCIATION
PHOENIX, ARIZONA

MARICOPA DRAIN SOUTH OF BASELINE RD.
IN SEC. 5 & 6 T1S R2E

Checked HLZ
Scale 1" = 300'

Recommended RLW
Approved Lee Walker

Date SEPTEMBER 15, 1977

Dwg No. B-1-202

(DAT 12595 - 1/6 290)

Vin

STATE OF ARIZONA } S. S.
 COUNTY OF MARICOPA }

KNOW ALL MEN BY THESE PRESENTS:
 That the Salt River Valley Water Users' Association,
 an Arizona Corporation, hereby publishes this plat
 showing the right of way necessary for the opera-
 tion and maintenance of the present

MARICOPA DRAIN
 IN SEC. 1 & 2 T1S R1E
 G.S.R.B.A.M.

Said plat does not show and it is not the inten-
 tion to show or refer to all rights of way and
 rights possessed by the United States of America
 and neither the execution or recordation of said
 plat shall result in or constitute any diminution
 or other disposal in whole or in part, of any
 rights of way or rights which the United States of
 America is entitled to utilize or enforce.

IN WITNESS WHEREOF: The Salt River Valley Water
 Users' Association has hereunto caused its corporate
 name to be signed and its corporate seal to be
 affixed by the undersigned officers thereunto duly
 authorized this 8th day of NOVEMBER, 1977

Attest Paul D. Rice Secretary By Karl F. Abel President
 SALT RIVER VALLEY WATER USERS' ASSOCIATION

STATE OF ARIZONA } S. S.
 COUNTY OF MARICOPA }

On this, the 8th day of NOVEMBER 1977 before me, the
 undersigned officer, personally appeared Karl F. Abel
 and Paul D. Rice who acknowledged themselves to be
 President and Secretary, respectively, of the Salt
 River Valley Water Users' Association and that they,
 as such officers, respectively, being duly authorized
 so to do, executed the foregoing instrument for the
 purposes therein contained by signing the name of
 the corporation by themselves as such officers
 respectively.

IN WITNESS WHEREOF: I hereunto set my hand and seal
Karl F. Abel
 Notary Public
 My commission expires MAY 3, 1979

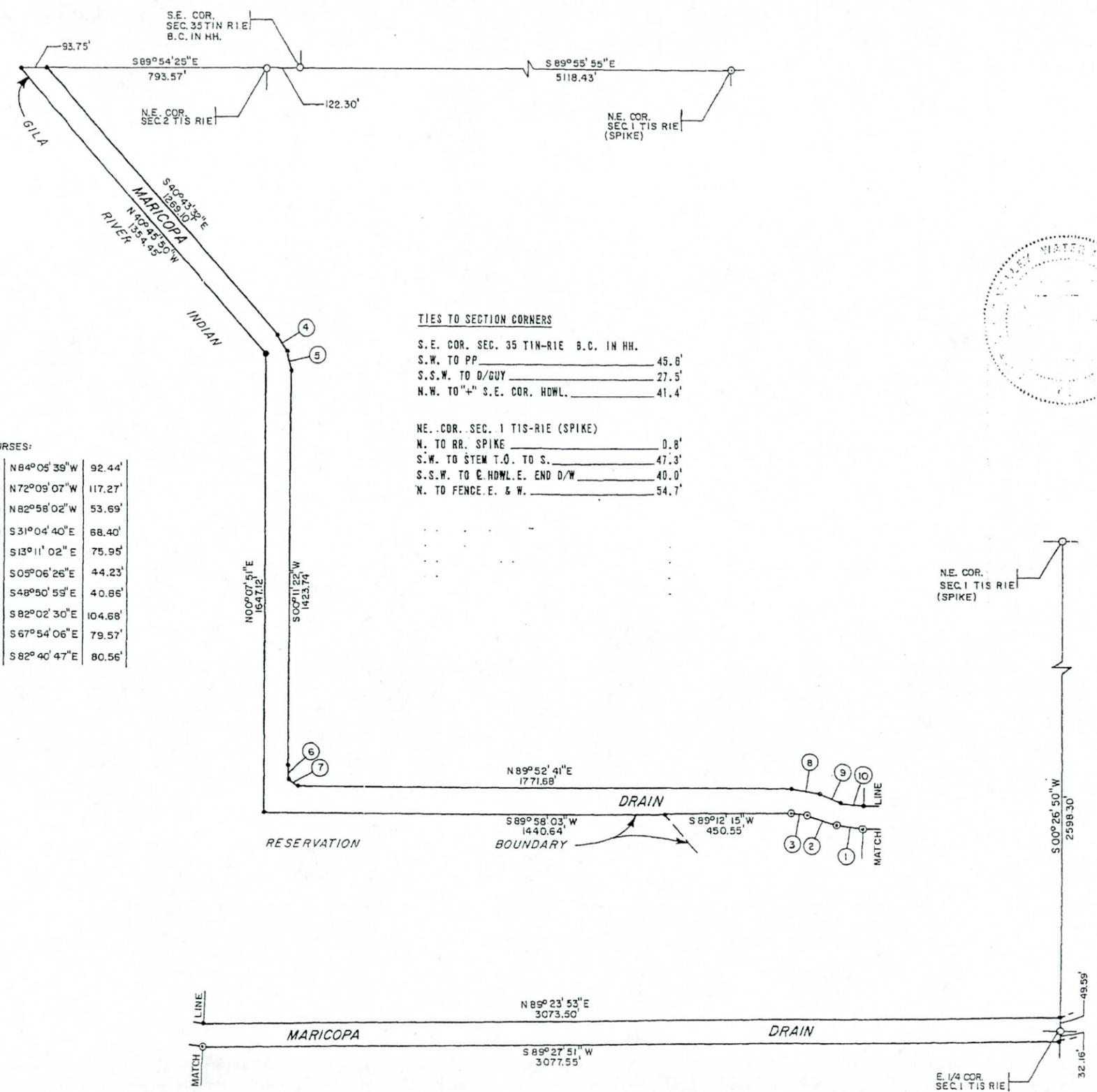
This is to certify that the survey described and
 plotted hereon was made under my direction during
 the month of June 1977.

James H. Lange
 Registered Land Surveyor



SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA	
MARICOPA DRAIN RIGHT OF WAY IN SEC. 1 & 2 T1S R1E	
Checked <u>J.H.L.</u> Scale 1" = 300'	Recommended <u>Ed Walker</u> Approved <u>Ed Walker</u>
Date SEPTEMBER 13, 1977	Dwg No. B-1-203

(DET 12575 - PG 289)



COURSES:

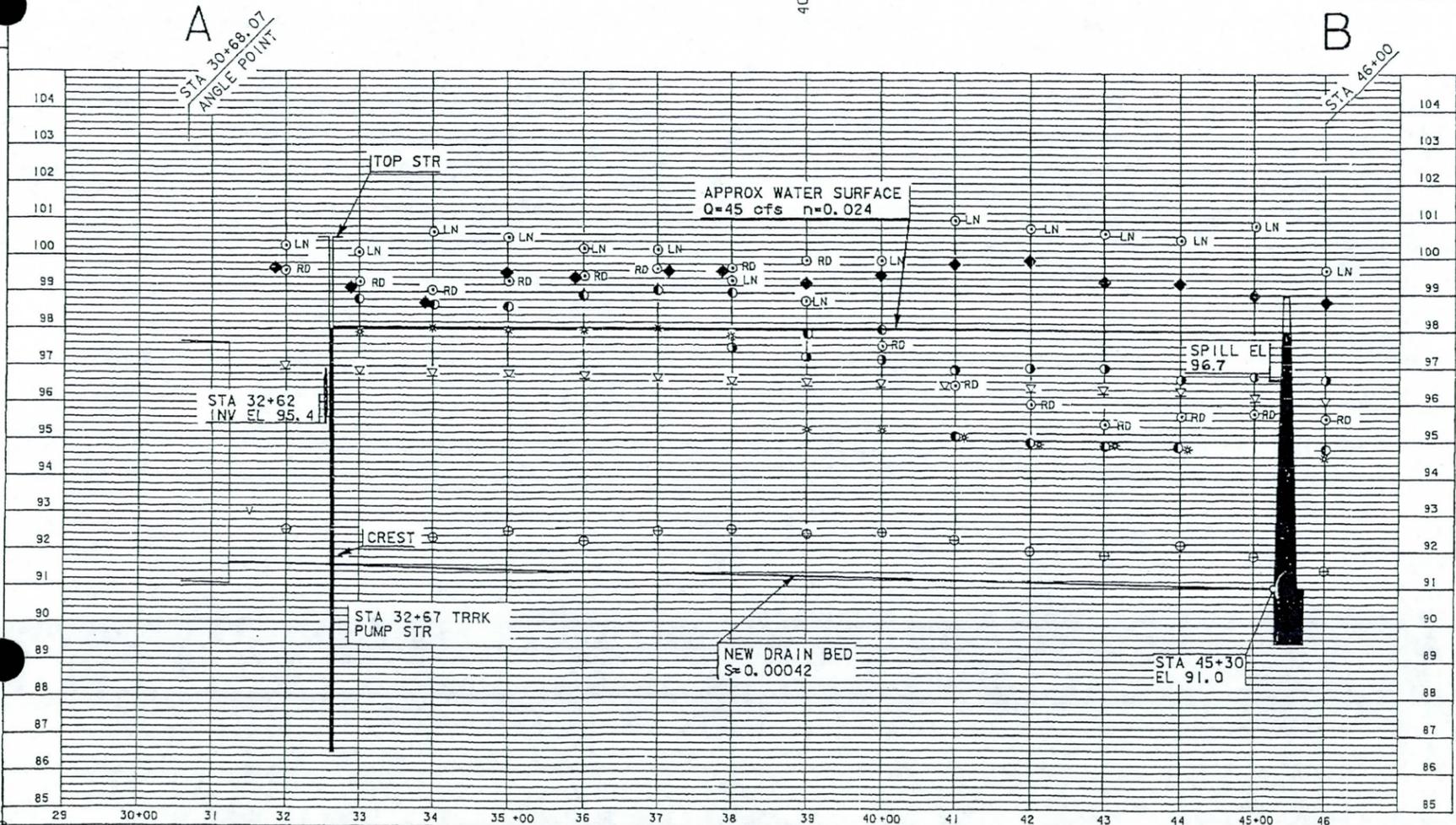
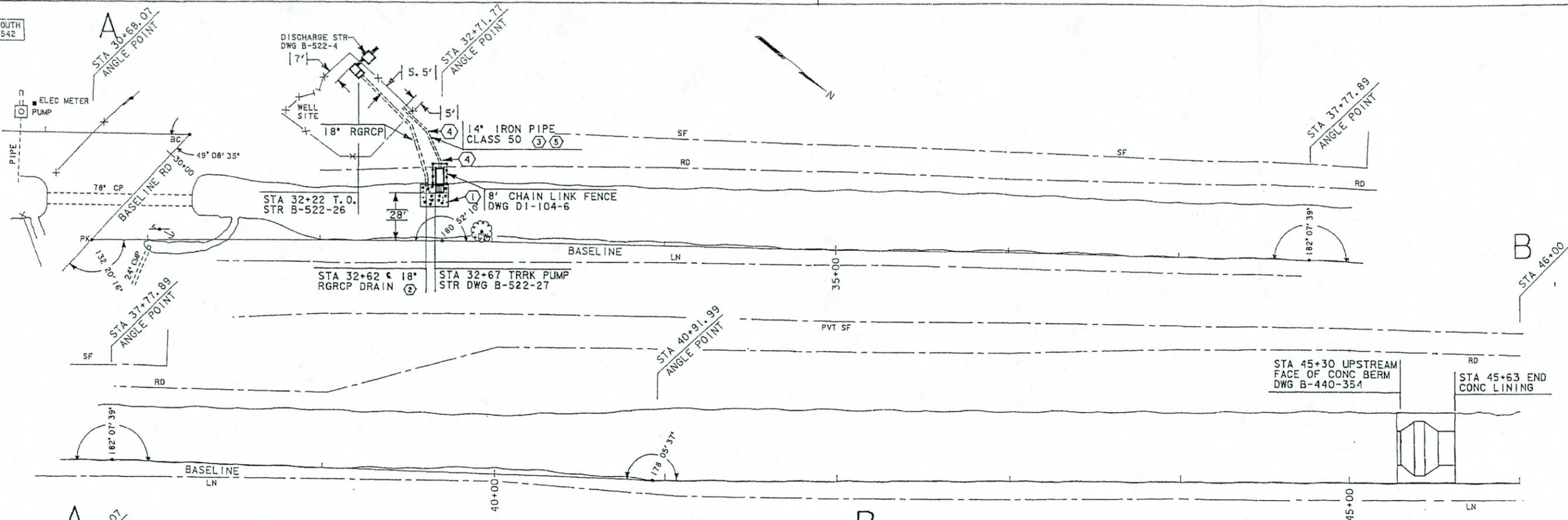
1	N84°05'39"W	92.44'
2	N72°09'07"W	117.27'
3	N82°58'02"W	53.69'
4	S31°04'40"E	68.40'
5	S13°11'02"E	75.95'
6	S05°06'26"E	44.23'
7	S48°50'59"E	40.86'
8	S82°02'30"E	104.68'
9	S67°54'06"E	79.57'
10	S82°40'47"E	80.56'

TIES TO SECTION CORNERS
 S.E. COR. SEC. 35 T1N-R1E B.C. IN HH.
 S.W. TO PP _____ 45.8'
 S.S.W. TO D/GUY _____ 27.5'
 N.W. TO "4" S.E. COR. HOWL. _____ 41.4'
 N.E. COR. SEC. 1 T1S-R1E (SPIKE)
 N. TO RR. SPIKE _____ 0.8'
 S.W. TO STEM T.O. TO S. _____ 47.3'
 S.S.W. TO E. HOWL. E. END D/W _____ 40.0'
 N. TO FENCE. E. & W. _____ 54.7'

LEGEND:
 ○ INDICATES CORNER FOUND
 ⊙ INDICATES BRIDGE SPIKE SET
 ● INDICATES RE-BAR SET
 • INDICATES MEASUREMENT POINT



CONT SOUTH
B-112-542



- TBM:
- STA 28+82 TOP PUMP PAD EL 101.55 BK W-444 P45
 - STA 35+45 TOP WOOD STK W BK E SIDE EL 100.52 BK W-444 P37
 - STA 41+05 TOP WOOD STK E BK E SIDE EL 101.49 BK W-444 P37

THE SRVWUA DOES NOT GUARANTEE THE LOCATION OR ELEV OF UTILITIES AND WILL NOT BE RESPONSIBLE FOR THEIR RELOCATION EXCEPT WITHIN LIMITS OF CONST BY SRVWUA

ALL PRECAST CONCRETE PIPE SHALL BE IN ACCORDANCE WITH ASTM C-76 CLASS 111 OR ASTM C-14 CLASS 2 UNLESS OTHERWISE NOTED AND MEET SRVWUA SPECIFICATIONS FOR PRECAST PIPE

PIPE BEDDING SHALL BE CLASS 'C' OR BETTER AND BACKFILL SHALL BE TYPE 1. ALL PER SRVWUA SPECIFICATIONS FOR PRECAST CONCRETE PIPE.

CONSTRUCTION BY WUA FORCES

SAFETY NOTE: ALL TRENCHING BY SRVWUA FORCES SHALL BE DONE IN ACCORDANCE WITH XB-411-118.

MECHANICAL C&M TO CUT ONE JOINT OF 14\"/>

① 3' MIN PLASTER BANK TO MIN EL 98.5 OVER 4 X 4- W2.9 X W2.9 WWF. TIE TO EXISTING BANK WITH MIN 12\"/>

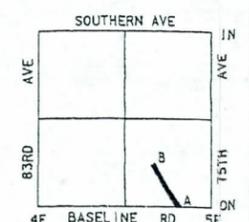
② PIPE TO BE STUBBED THROUGH AND CUTOFF FLUSH WITH FACE OF LINING

③ 14\"/>

④ 14\"/>

⑤ WESTERN C & M TO INSTALL DUCTILE IRON PIPE TO 5\"/>

BOOK W- 444
PAGE 46-55
BY J. BLOOMER



CONSTRUCTED STA 32+22 TO 32+67 & STA 45+30 TO 45+63. LOCATION OF NEW FACILITIES MAY NOT BE EXACT.

YNA0443	2	2-2-84	K&N	B/A	RAH			
---------	---	--------	-----	-----	-----	--	--	--

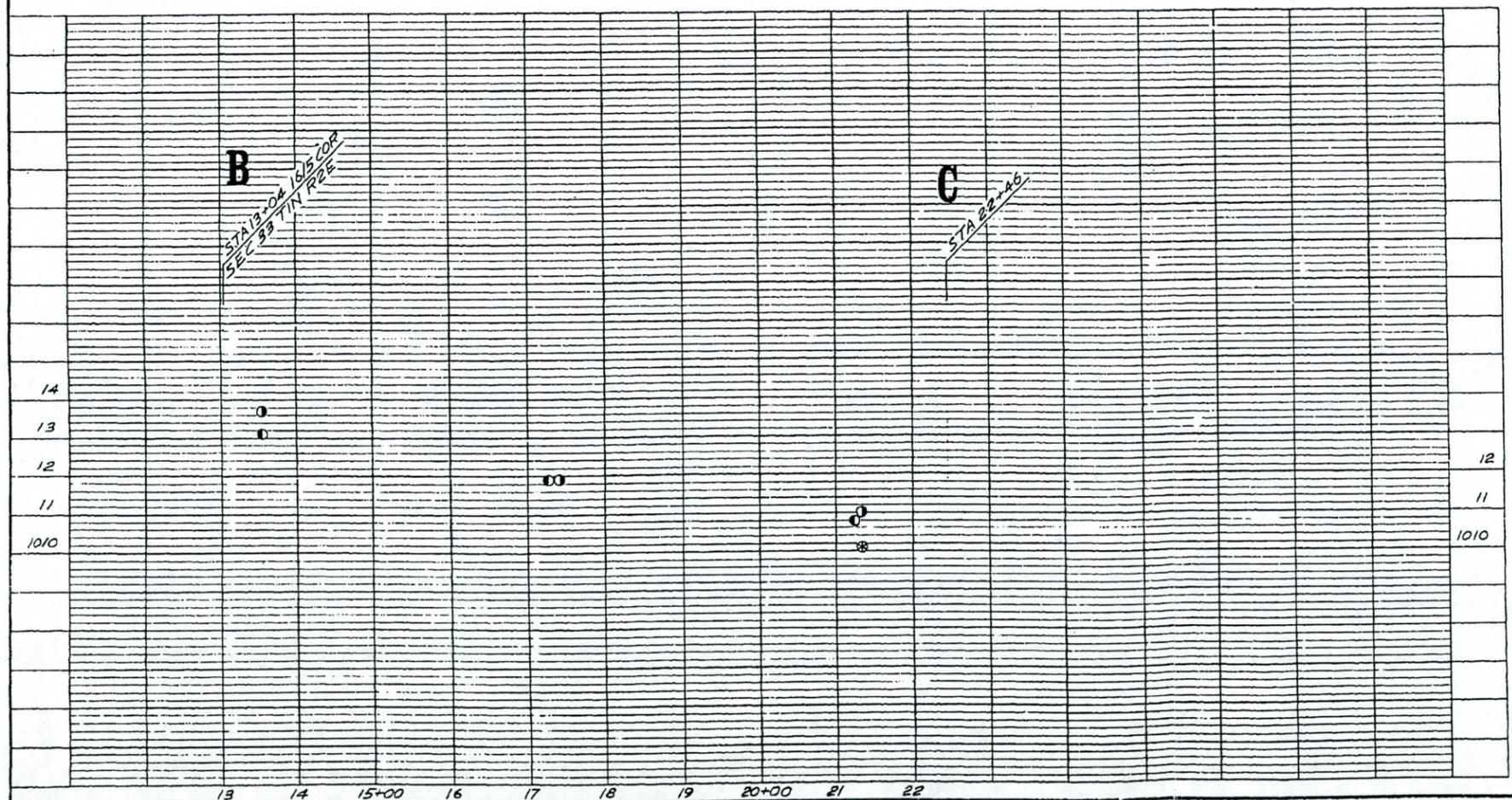
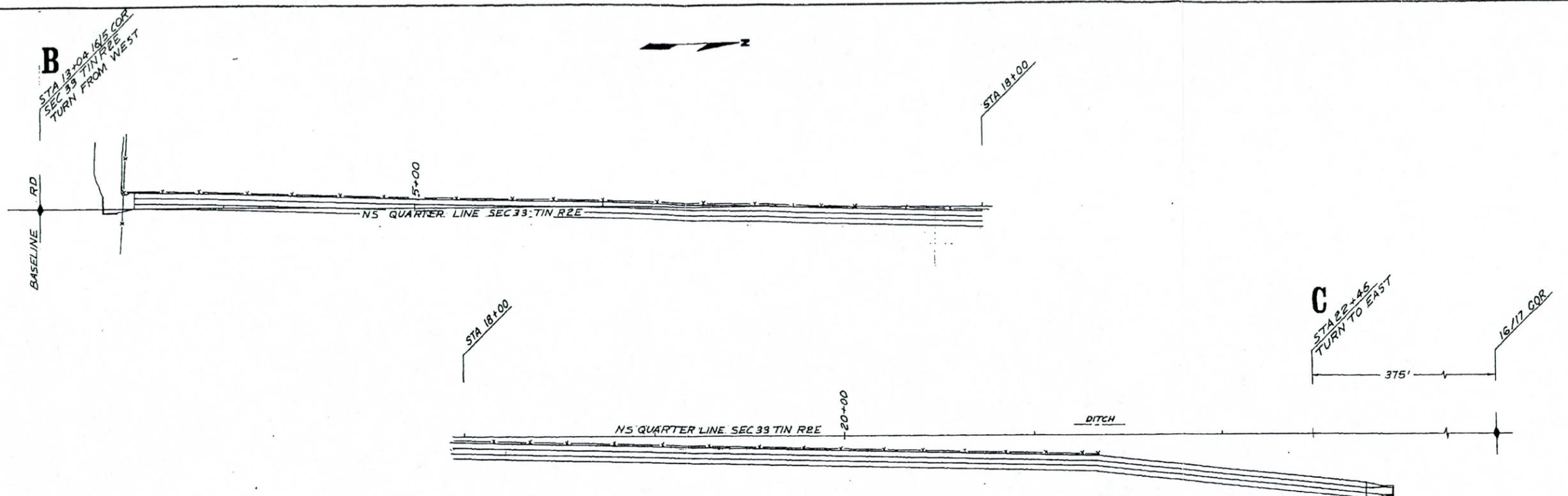
DESIGN STA 32+22 TO 32+67 & STA 45+30 TO 45+63

DI-104	1	3-3-82	KGW	KING	RAH	RAH	RAH	RAH
JOB NO	REV	DATE	DESIGNER	DRAFT	CHECKED	APPROVED		

SALT RIVER PROJECT
WATER AND POWER
PHOENIX, ARIZONA

MARICOPA DRAIN
SEC 35 TIN RIE
E OF 16/6 COR TO NW

DRAFTING	CHKD	SCALE: PLAN 1"=30'	PRO HOR 1"=100'	VERT 1"=2'
SHEET OF	DI-104	JUNE 15, 1981	B-112-543	



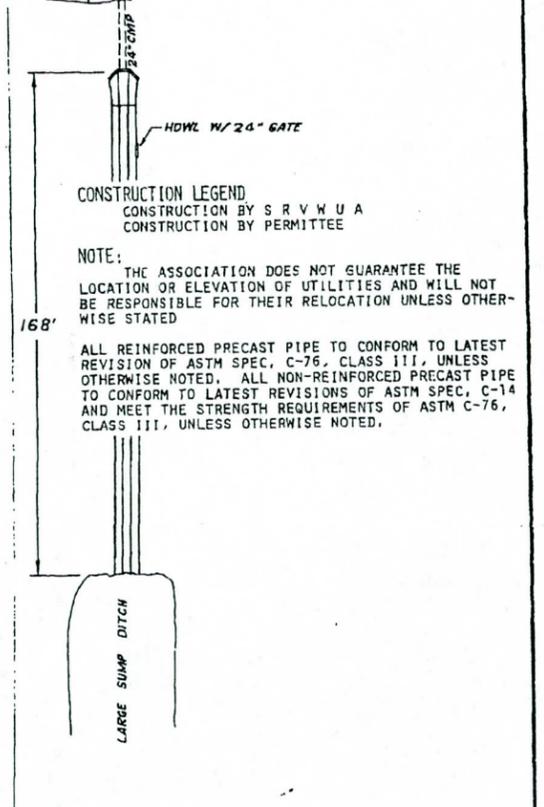
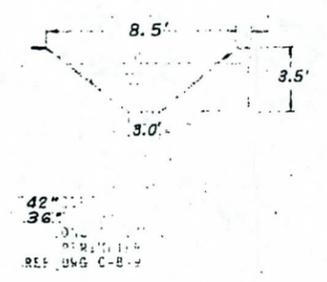
COR MONUMENTS USED FROM WUA TIES:

16/8 COR SEC 33 TIN R2E BRIDGE SPIKE, NW TO 6" x 8" COR POST FENCE N, S, & W 40.20', NE TO FENCE POST 47.30', SE TO COR HDWL INSIDE 1" 33.50', SW TO HDWL & OVER PIPE 36.45'.

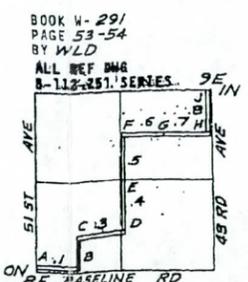
16/10 COR SEC 33 TIN R2E BRIDGE SPIKE, E TO TRUE 16/10 COR 10.0', SE TO S GATE COR POST SS LANE 41.05', SSW TO NAIL IN FENCE POST 22.10', ESE TO N&T N GATE POST 19.90'.

TBM:

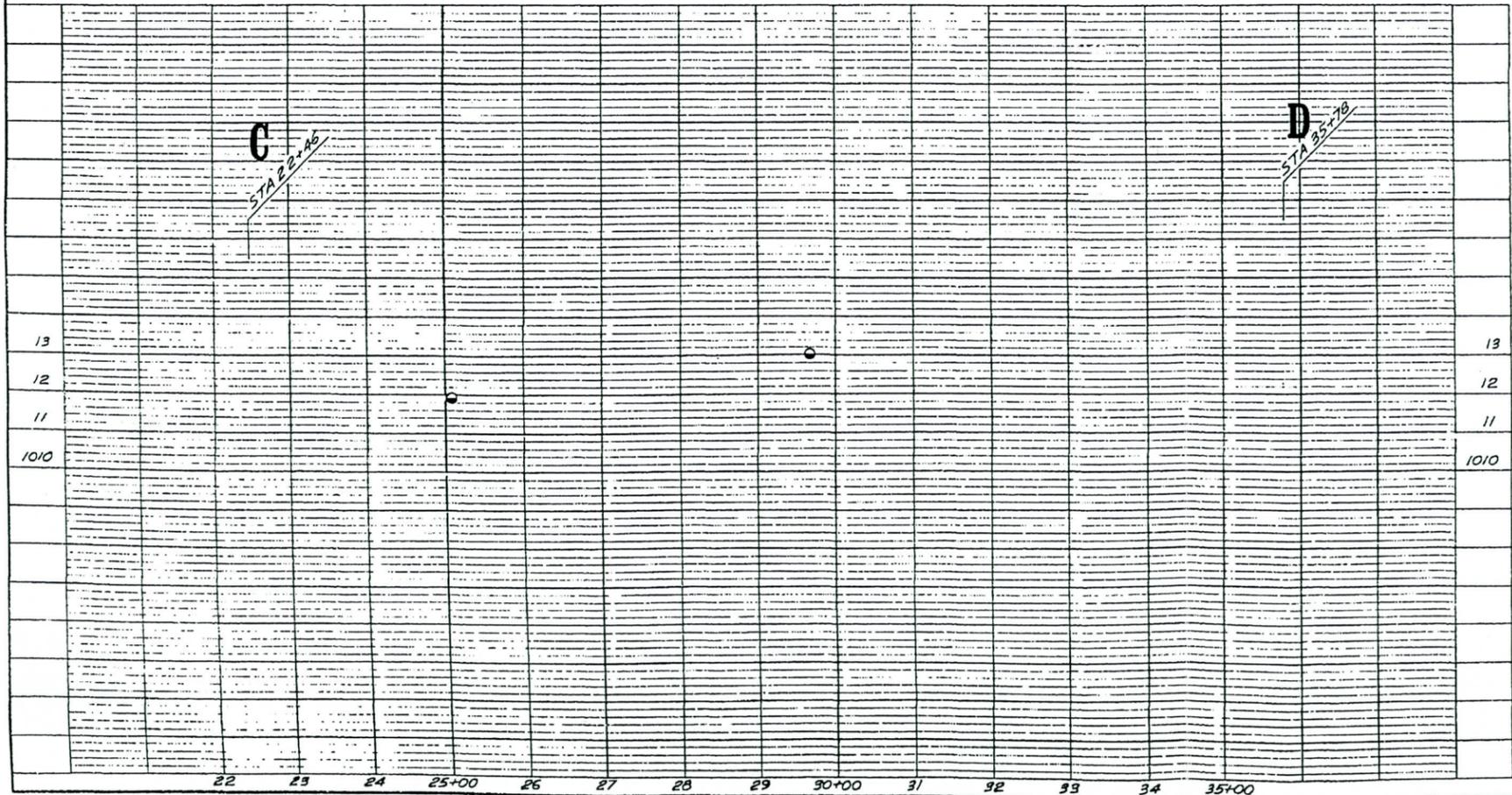
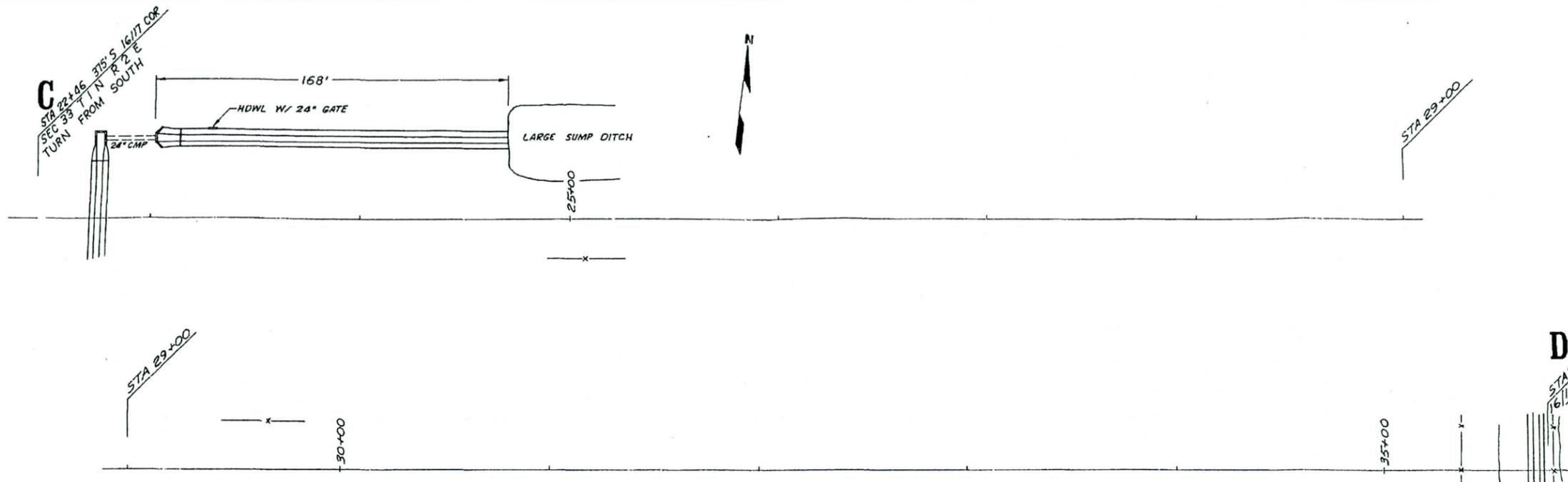
STA 13+49 NAIL NS COR POST EL 1015.74 BK W-291 P 54
 STA 19+33 NAIL TP EL 1011.77 BK W-291 P 53



- SYMBOLS FOR PROFILE**
- CENTER LINE OF ROAD
 - LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - CENTER LINE PVT SLIPFORM
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH



7-16-69	JUL	RG	JAB	GL	AS BUILT
REVISED	BY	CHECKED	APPROVED	DESCRIPTION	
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA					
WASTE DITCH SEC 33 TIN R2E 16/5 COR TO 16/17 COR					
DRAWN	CHKD	SCALE: PLAN 1" = 30'	PRO. HOR 1" = 100'	VERT 1" = 2'	
JLR	B/L	5-176	8-15-68	B-112-251.2	
SHEET	OF				



COR MONUMENTS USED FROM WUA TIES:

16/8 COR SEC 33 T1N R2E BRIDGE SPIKE, NW TO 6"x8" COR POST FENCE NS&W. 40.20'. NE TO FENCE POST 47.30'. SE TO COR HDWL INSIDE 33.50'. SW TO HDWL & OVER PIPE 36.45'.

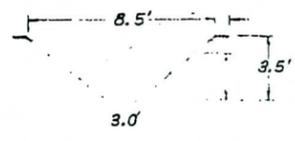
16/10 COR SEC 33 T1N R2E BRIDGE SPIKE, E TO TRUE 16/10 COR 10'. SE TO S GATE COR POST 33 LANE 41.05'. SSW TO NAIL IN FENCE POST 22.10'. ESE TO NAT N GATE POST 19.90'.

TBM:

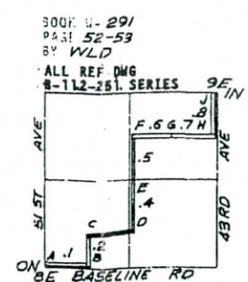
STA 19+33 NAIL TP EL 1011.77 BK W-291 P 53

STA 25+07 NAIL N BK SS SWAMP PIT EL 1014.33 BK W-291 P 53

STA 35+78 NAIL IN FENCE COR S&W OF STA EL 1017.70 BK W-291 P 52



- SYMBOLS FOR PROFILE**
- CENTER LINE OF ROAD
 - ◆ LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - CENTER LINE PVT SLIPFORM
 - HI GROUND
 - LOW GROUND
 - BCD DRAIN DITCH



CONSTRUCTION LEGEND

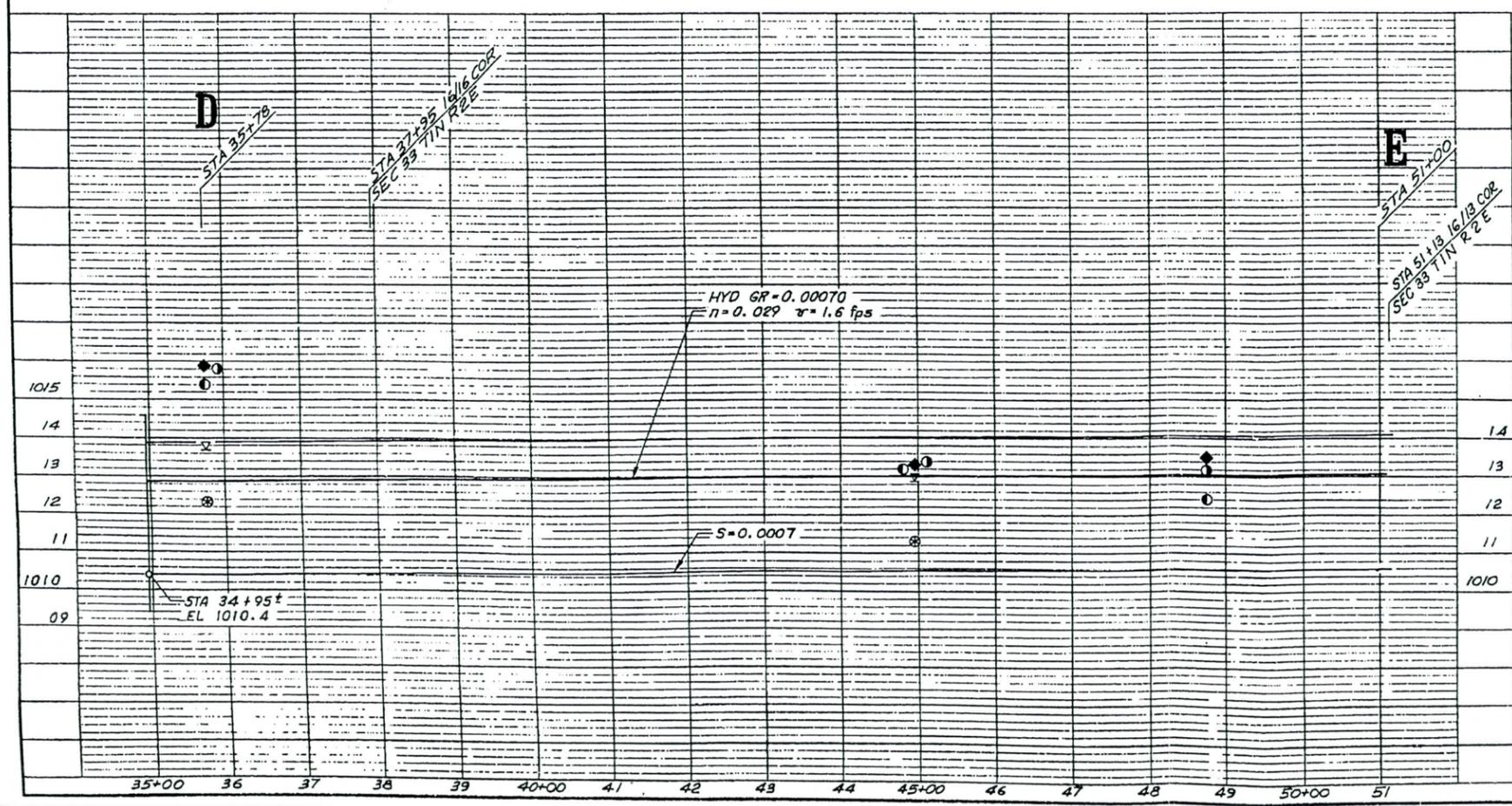
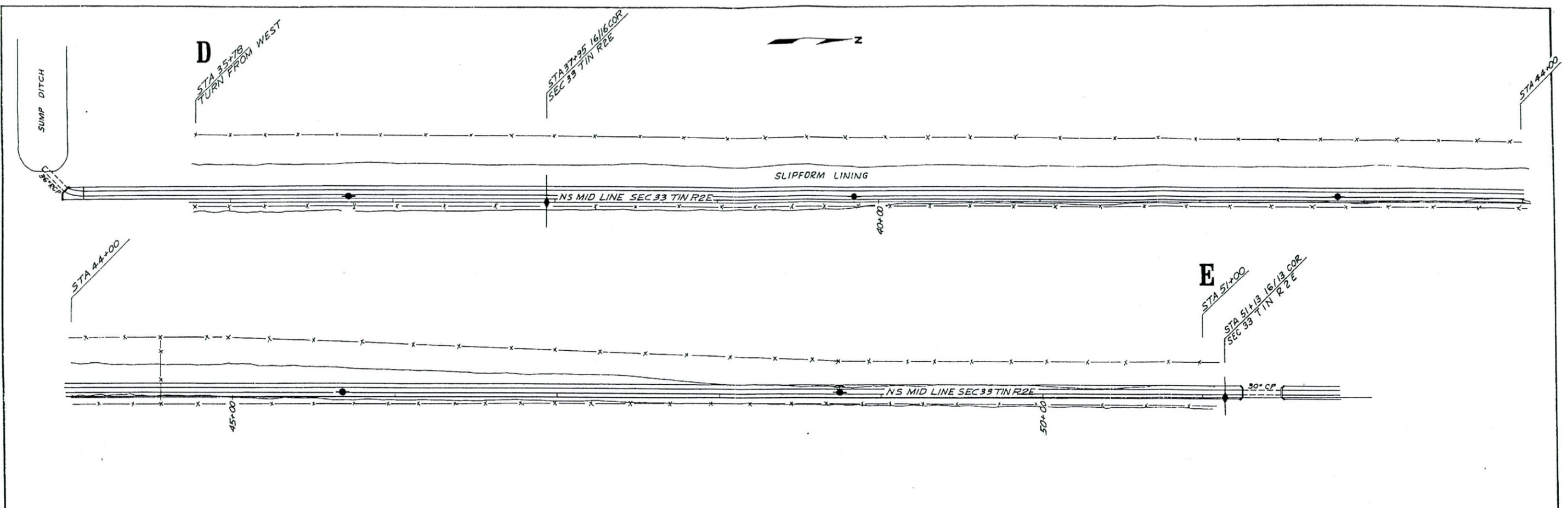
CONSTRUCTION BY S R V W U A
CONSTRUCTION BY PERMITTEE

NOTE:

THE ASSOCIATION DOES NOT GUARANTEE THE LOCATION OR ELEVATION OF UTILITIES AND WILL NOT BE RESPONSIBLE FOR THEIR RELOCATION UNLESS OTHERWISE STATED

ALL REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISION OF ASTM SPEC. C-76, CLASS III, UNLESS OTHERWISE NOTED. ALL NON-REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISIONS OF ASTM SPEC. C-14 AND MEET THE STRENGTH REQUIREMENTS OF ASTM C-76, CLASS III, UNLESS OTHERWISE NOTED.

7-16-68	JUL	REC	208	W	AS BUILT
REVISED	BY	CHECKED	APPROVED	DESCRIPTION	
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA					
WASTE DITCH SEC 33 T1N R2E 16/17 COR TO 16/16 COR					
DRAWN	JLR	CHKD.	D.J.	SCALE	PLAN 1" = 100' P&P HOR 1" = 100' VERT 1" = 2'
SHEET OF	5-176	8-16-68	B-112-251.3	M. F.	



COR MONUMENTS USED FROM MUA TIES:

16/8 COR SEC 33 T1N R2E BRIDGE SPIKE, NW TO 6"x8" COR POST FENCE NS&W 40.20', NE TO FENCE POST 47.30', SE TO COR HDWL INSIDE 33.50', SW TO HDWL OVER PIPE 36.45'.

16/10 COR SEC T1N R2E BRIDGE SPIKE, E TO TRUE 16/10 COR 10', SE TO 3 GATE COR POST SS L&M 41.05', SSW TO NAIL IN FENCE POST 22.10', ESE TO NAT N GATE POST 19.90'.

TBM:

STA 35+78 NAIL IN FENCE COR SW OF STA EL 1017.70 BK W-291 P 52

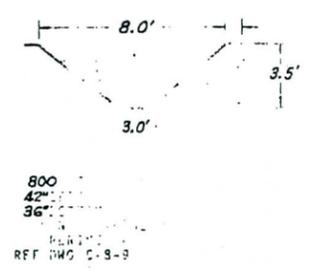
STA 39+85 WS PP EL 1016.15 BK W-291 P 51

STA 51+75 PP M&S EL 1014.95 BK W-291 P 50

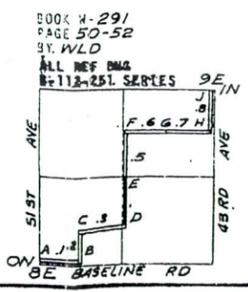
CONSTRUCTION LEGEND
CONSTRUCTION BY S R V W U A
CONSTRUCTION BY PERMITTEE

NOTE:
THE ASSOCIATION DOES NOT GUARANTEE THE LOCATION OR ELEVATION OF UTILITIES AND WILL NOT BE RESPONSIBLE FOR THEIR RELOCATION UNLESS OTHERWISE STATED

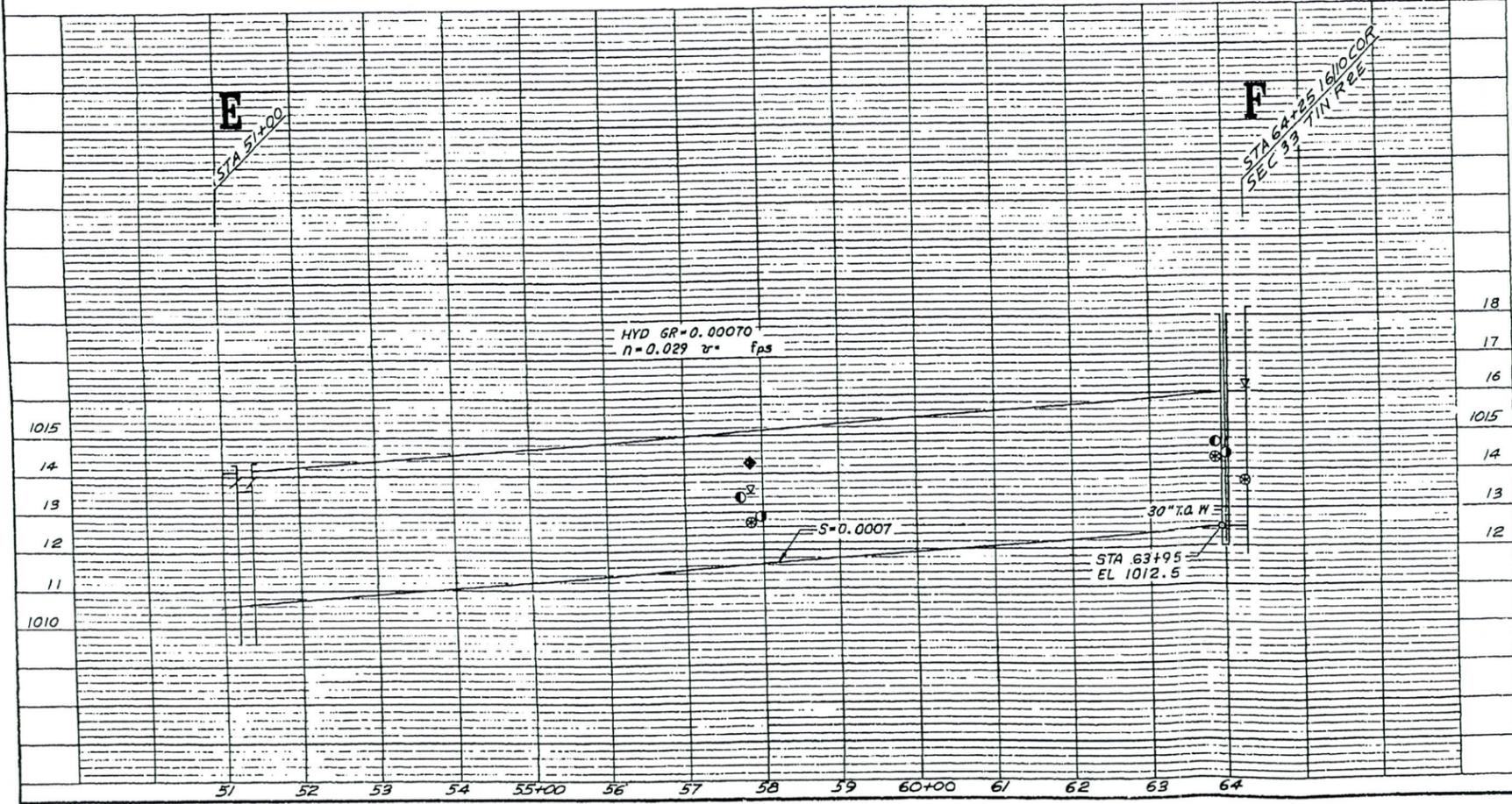
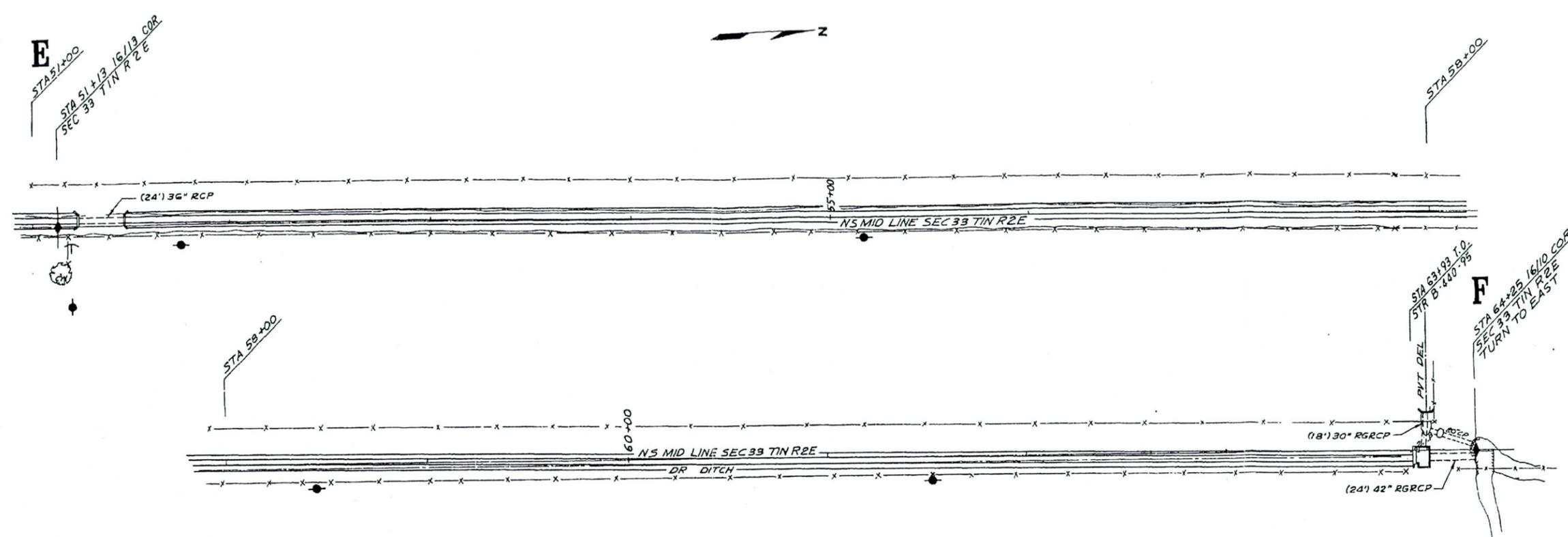
ALL REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISION OF ASTM SPEC, C-70, CLASS III, UNLESS OTHERWISE NOTED. ALL NON-REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISIONS OF ASTM SPEC, C-14 AND MEET THE STRENGTH REQUIREMENTS OF ASTM C-78, CLASS III, UNLESS OTHERWISE NOTED.



- SYMBOLS FOR PROFILE
- CENTER LINE OF ROAD
 - LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - CENTER LINE PVT SLIPFORM
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH



7-16-69	JUL	RGC	JAO	R	AS BUILT
REVISED	BY	CHECKED	APPROVED	DESCRIPTION	
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA					
WASTE DITCH SEC 33 T1N R2E 16/16 COR TO 16/13 COR					
DRAWN	JLR	CHD	D	SCALE: PLAN 1" = 40' HOR 1" = 10' VERT	
SHEET OF	5-176	9-2-68	B-112-251.4		



COR MONUMENTS USED FROM WUA TIES:

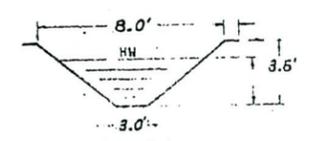
16/8 COR SEC 33 TIN R2E BRIDGE SPIKE, NW TO 6"x8" COR POST FENCE NS&W 40.20', NE TO FENCE POST 47.30', SE TO COR HDWL INSIDE R 33.50', SW TO HDWL E OVER POPE 36.45'.

16/10 COR SEC 33 TIN R2E BRIDGE SPIKE, E TO TRUE 16/10 COR POST 10', SE TO S GATE COR POST SS CANE 41.05', SSW TO NATL FENCE POST 22.10', ESE TO NAT N GATE POST 19.90'.

TBM:

STA 51+75 PP M&S EL 1014.95 BK W-291 P 50

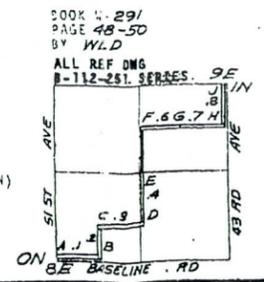
STA 58+45 PP EL 1015.38 BK W-291 P 50



STA 35+08 TO STA 63+83
800

42" DEPTH
36" BOTTOM
CONC THICKNESS
PERIMETER
REF DWG C-8-R

- SYMBOLS FOR PROFILE**
- CENTER LINE OF ROAD
 - LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - CENTER LINE PVT SLIPFORM
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH

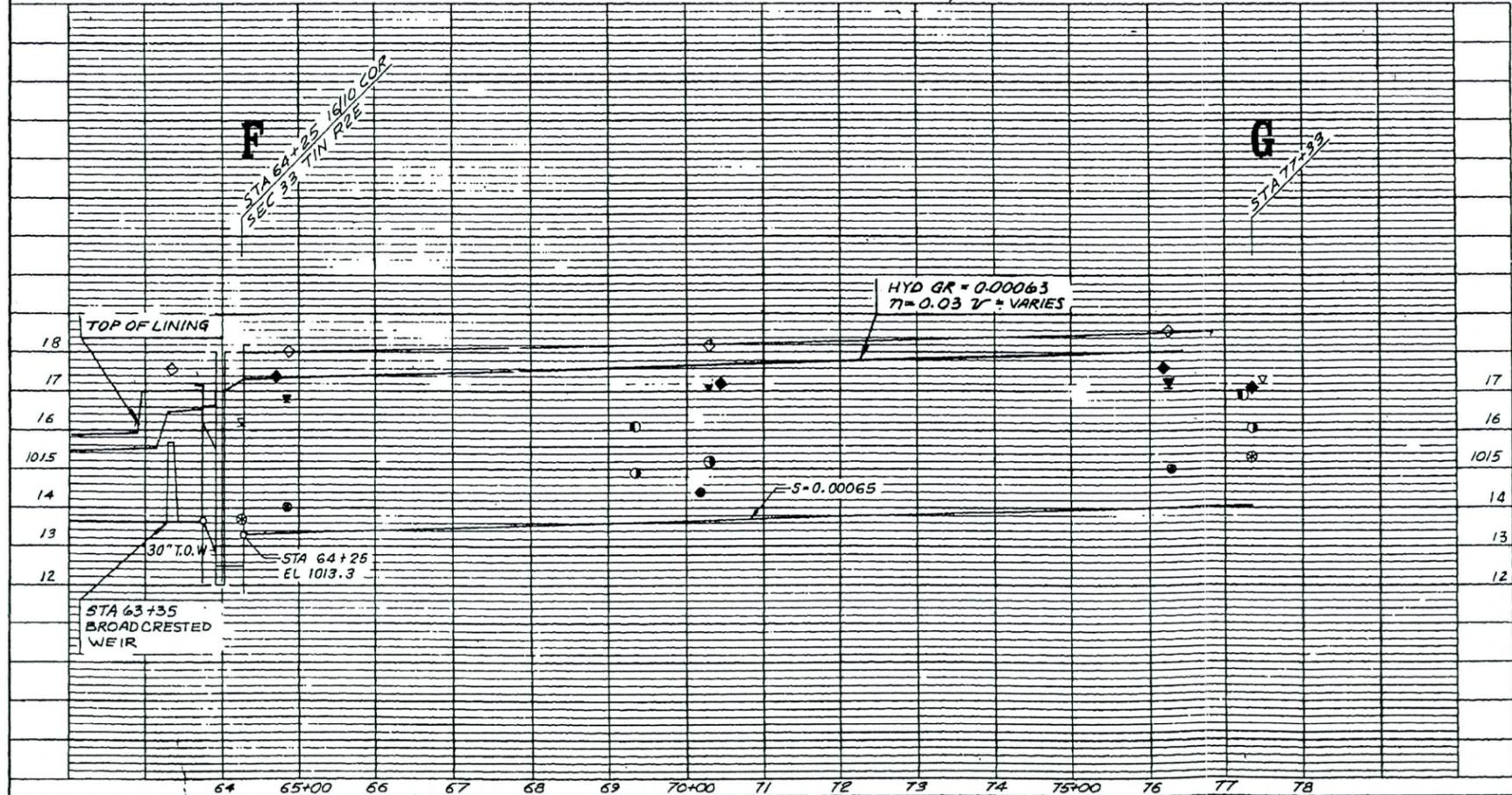
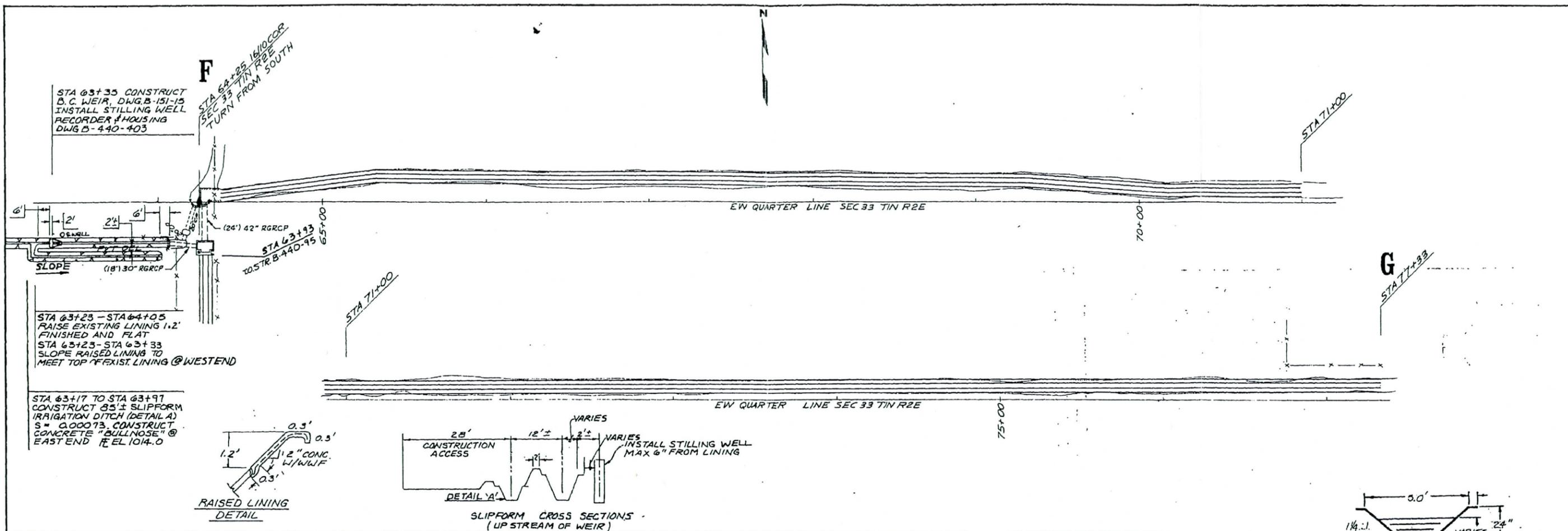


CONSTRUCTION LEGEND
CONSTRUCTION BY S R V W U A
CONSTRUCTION BY PERMITTEE

NOTE:
THE ASSOCIATION DOES NOT GUARANTEE THE LOCATION OR ELEVATION OF UTILITIES AND WILL NOT BE RESPONSIBLE FOR THEIR RELOCATION UNLESS OTHERWISE STATED.

ALL REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISION OF ASTM SPEC. C-76, CLASS III, UNLESS OTHERWISE NOTED. ALL NON-REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISIONS OF ASTM SPEC. C-14 AND MEET THE STRENGTH REQUIREMENTS OF ASTM C-76, CLASS III, UNLESS OTHERWISE NOTED.

7-17-69	JUL	RGC	fab	NLS	AS BUILT
REVISED	BY	CHECKED	APPROVED	DESCRIPTION	
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA					
WASTE DITCH SEC 33 TIN R2E 16/13 COR TO 16/10 COR					
DRAWN	JLR	CHKD	DJ	SCALE	PLAN 1"=10' PRO HOR 1"=10' VERT 1"=2'
SHEET	5-176	DATE	9-2-68	PROJECT	B-112-251.5 M.F.

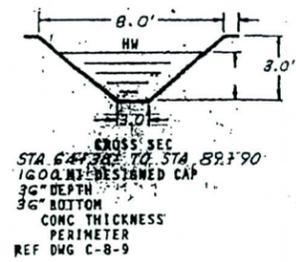
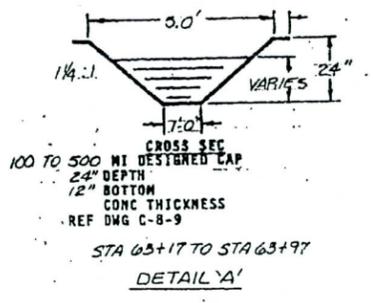


COR MONUMENTS USED FROM WUA TIES:

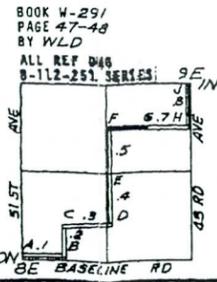
1678 COR SEC 33 T1N R2E BRIDGE SPIKE. NW TO 6'x8' COR POST FENCE NS&W 48.20', NE TO FENCE POST 47.30'. SE TO COR MON. INSIDE R 33.50'. SW TO HDWL & OVER PIPE 36.45'.

16710 COR SEC 33 T1N R2E BRIDGE SPIKE. E TO TRUE 16710 COR 10'. SE TO 3 GATE COR POST 55 LANE 41.05'. SSW TO NATL BR. FENCE POST 22.10'. ESE TO NAT W GATE POST 19.90'.

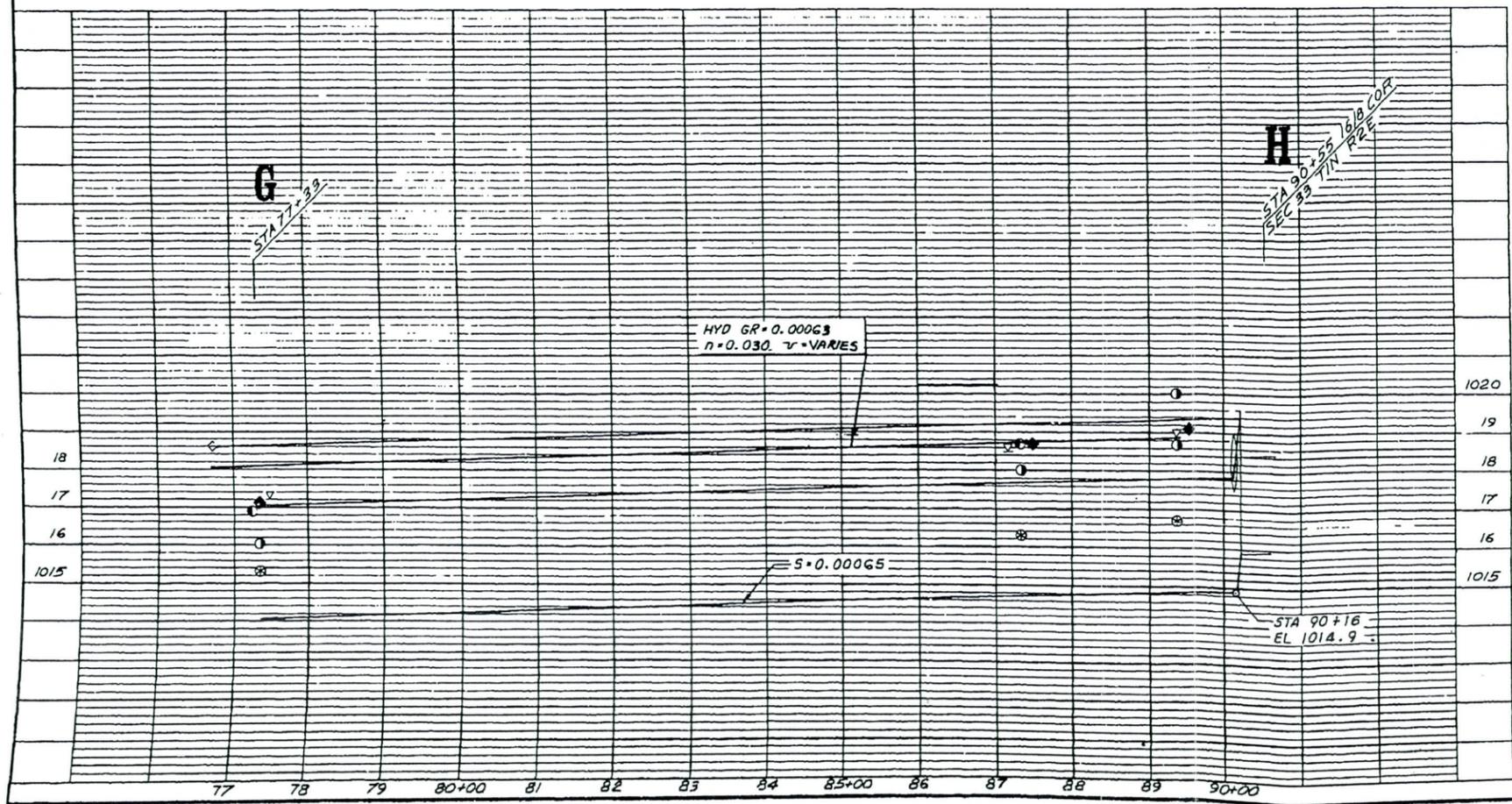
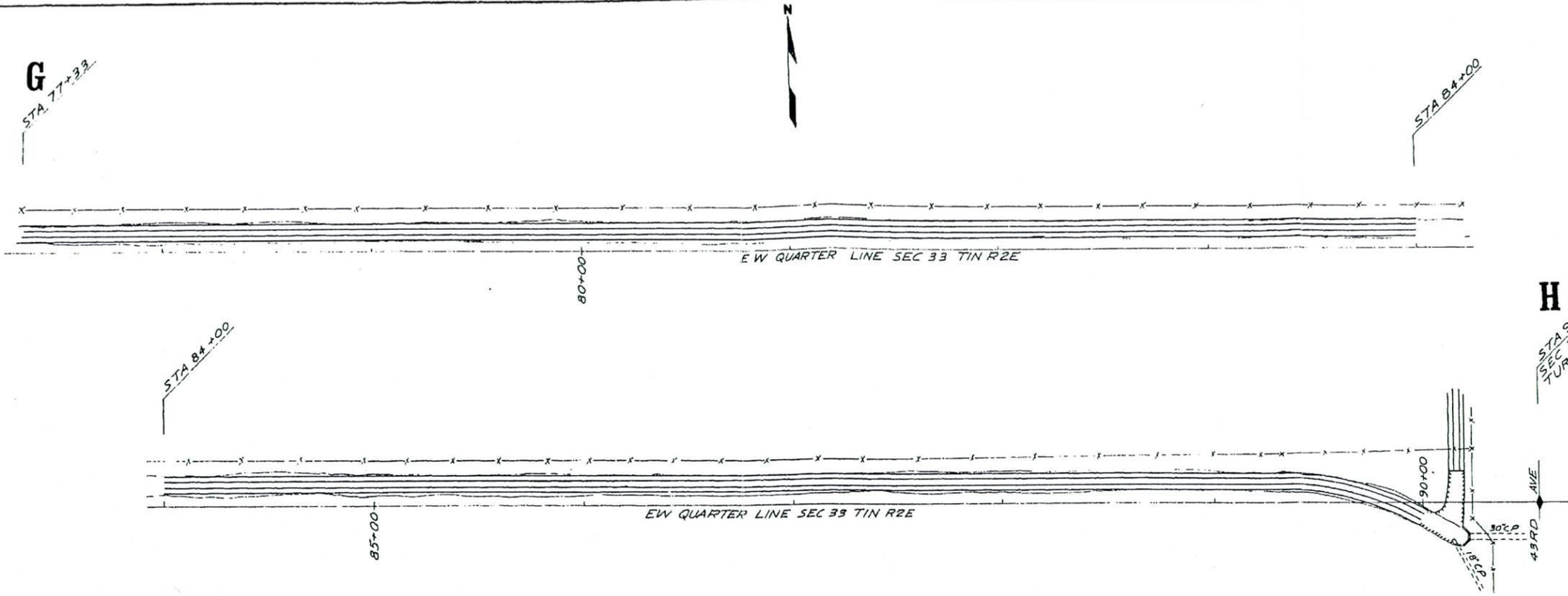
BM:
STA. 63+95 TOP STRUCTURE EL 1018.0



- SYMBOLS FOR PROFILE
- CENTER LINE OF ROAD
 - LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - CENTER LINE PVT SLIPFORM
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH



1-19-87	JAC	LA	LA		CONSTRUCTED 7/8/8
2-11-88	SSW	LA	la		IRRIGATION DITCH 63+18 TO 63+92
7-17-69	JUL	RCO	RCO	GR	AS BUILT
REVISED	BY	CHECKED	APPROVED	DESCRIPTION	
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA					
DRAIN DITCH SEC 33, T1N, R2E. 16/10 COR TO 16/9 COR					
DRAWN	CHKD	SCALE: PLAN 1"=30'	PRO	VERT 1"=2'	
SHEET	OF	5-176	8-19-68	B-112-251.6	M.1



COR MONUMENTS USED FROM WUA TIES:

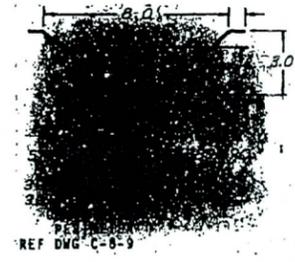
16/8 COR SEC 33 TIN R2E BRIDGE SPIKE, NW TO 6"x8" COR POST FENCE WSW 40.20', NE TO FENCE POST 47.30', SE TO COR HOWL INSIDE 33.50', SW TO HDWL * OYER PIPE 38.45'.

16/10 COR SEC 33 TIN R2E BRIDGE SPIKE, E TO TRUE 16/10 COR 10', SE TO 3 GATE COR POST 55 LAME 41.05', SSW TO NAT'L FENCE POST 22.10', ESE TO NAT'N GATE POST 19.90'.

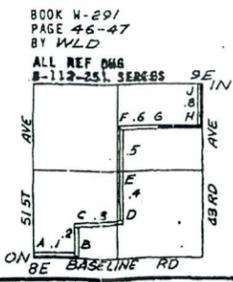
CONSTRUCTION LEGEND
CONSTRUCTION BY S R V W U A
CONSTRUCTION BY PERMITTEE

NOTE:
THE ASSOCIATION DOES NOT GUARANTEE THE LOCATION OR ELEVATION OF UTILITIES AND WILL NOT BE RESPONSIBLE FOR THEIR RELOCATION UNLESS OTHERWISE STATED

ALL REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISION OF ASTM SPEC. C-76, CLASS III, UNLESS OTHERWISE NOTED. ALL NON-REINFORCED PRECAST PIPE TO CONFORM TO LATEST REVISIONS OF ASTM SPEC. C-14 AND MEET THE STRENGTH REQUIREMENTS OF ASTM C-76, CLASS III, UNLESS OTHERWISE NOTED.



- SYMBOLS FOR PROFILE
- CENTER LINE OF ROAD
 - LOW BANK
 - ⊙ BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - CENTER LINE PVT SLIPFORM
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH

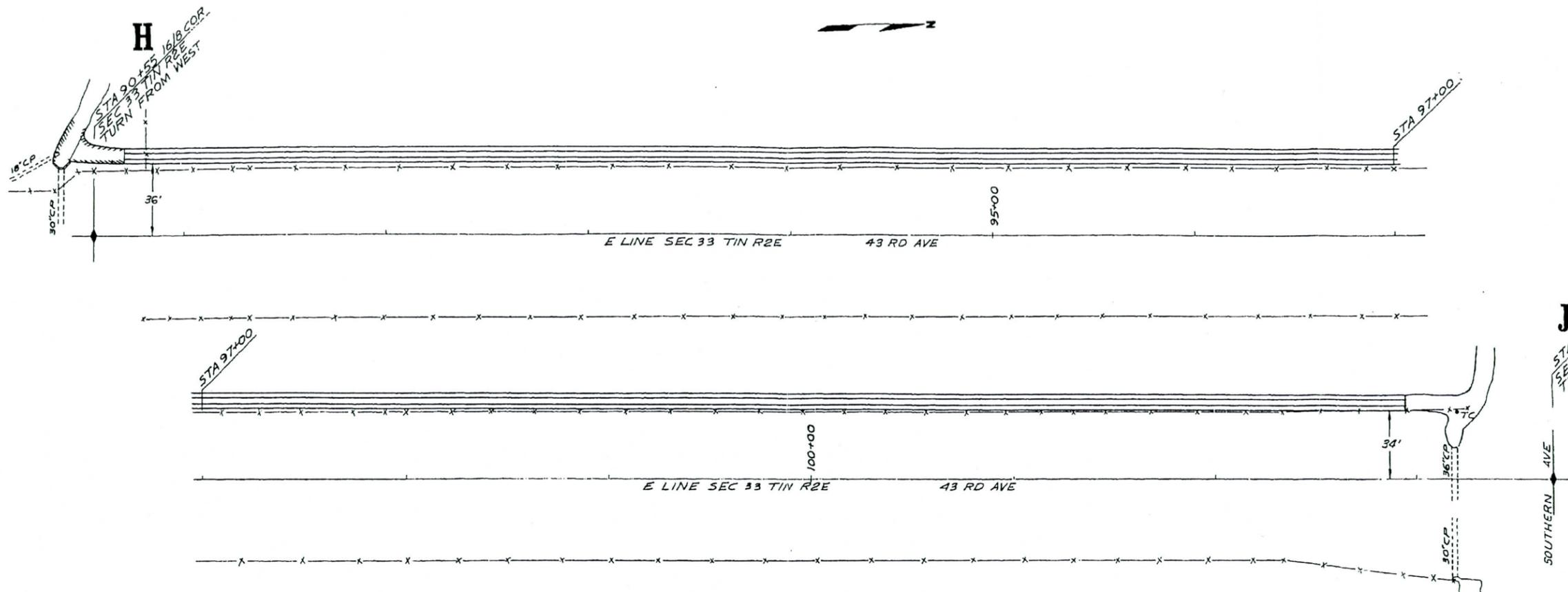


REVISED	BY	CHECKED	APPROVED	DESCRIPTION	
1-19-89	LA	JAC	LA	la	CONSTRUCTED 6 TO 14'
5-10-88	LA	SW	la		RAISE SOUTH BANK
11-21-80	REL	SSW	RAH		AS BUILT
7-17-69	JUL	RGC	la	R	AS BUILT

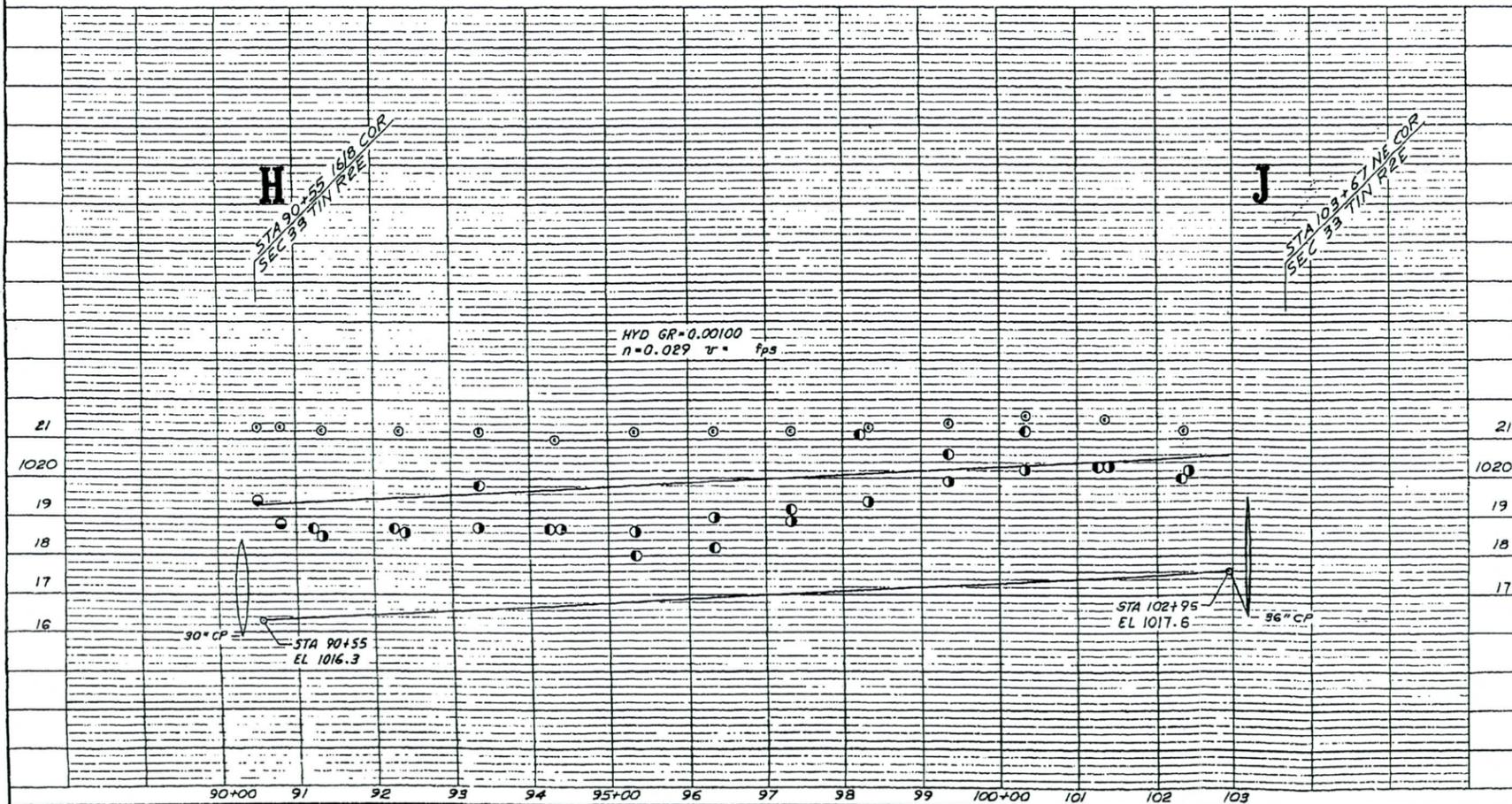
SALT RIVER VALLEY WATER USERS' ASSOCIATION
PHOENIX, ARIZONA

WASTE DITCH
SEC 33 TIN R2E
16/8 COR TO 16/8 COR

DRAWN	JLR	CHECKED	SW	SCALE:	PLAN 1"=30'	PRO HOR 1"=100'	VERT 1"=7'
SHEET OF	5-175	DATE	8-20-68	PROJECT	B-112-251.7		



CONT EAST
B-112-252

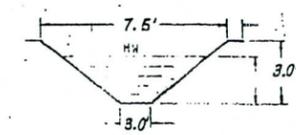


COR-MOMENTS USED FROM MUA TIES:
 147° COR SEC 33 TIN R2E BRIDGE SPIKE, NW TO 6"x8"
 COR POST FENCE 40.20', NE TO FENCE POST
 47.10', SE TO COR 33.56', SW TO
 MUA 6' OVER PAPE 36.45'.
 NE COR SEC 33 TIN R2E NW-BC, NE TO PP NAT
 76.89', SE TO 6" FENCE POST 62.70', SW TO 6"x6"
 FENCE POST 64.10', NW TO PP 79.75'.

CONSTRUCTION LEGEND
 CONSTRUCTION BY S R V U A
 CONSTRUCTION BY PERMITTEE

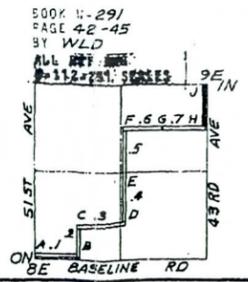
NOTE:
 THE ASSOCIATION DOES NOT GUARANTEE THE
 LOCATION OR ELEVATION OF UTILITIES AND WILL NOT
 BE RESPONSIBLE FOR THEIR RELOCATION UNLESS OTHER-
 WISE STATED

ALL REINFORCED PRECAST PIPE TO CONFORM TO LATEST
 REVISION OF ASTM SPEC. C-76, CLASS III, UNLESS
 OTHERWISE NOTED. ALL NON-REINFORCED PRECAST PIPE
 TO CONFORM TO LATEST REVISIONS OF ASTM SPEC. C-14
 AND MEET THE STRENGTH REQUIREMENTS OF ASTM C-76,
 CLASS III, UNLESS OTHERWISE NOTED.



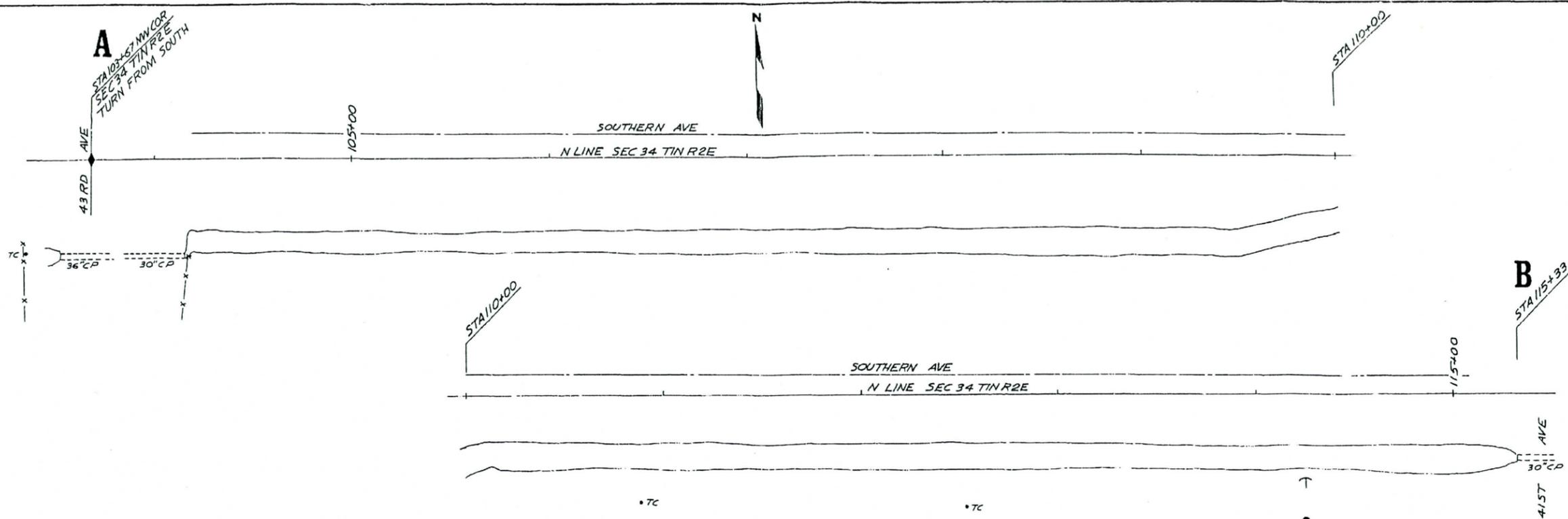
STA 90+70 TO STA 102+95
 800' DI DESIGNED
 36" DEPTH
 36" BOTTOM
 CONC THICKNESS
 PERIMETER
 REF DWG C-8-9

- SYMBOLS FOR PROFILE
- CENTER LINE OF ROAD
 - ◆ LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - CENTER LINE PVT SLIPFORM
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH



7-17-69	JUL	RGC	240	AL	AS BUILT
DESIGNED	BY	CHECKED	APPROVED	DESCRIPTION	
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA					
WASTE DITCH SEC 33 TIN R2E 161/8 COR TO NE COR					
DRAWN	JLR	CHANGED	SCALE	PLSK	NO. 100, VERT. 100
SHEET	5-176	DATE	8-20-68	PROJECT	B-112-251.8 M. F.

CONT SOUTH
B-112-251.8



CONT EAST
B-112-52.1

COR MONUMENTS USED FROM MVA TIES:

N4 COR SEC 34 T1N R2E IRON BAR, NE TO PP 01.30',
SE TO PECE P 44.65', SW TO LINE COR BLOB 106.60',
NW TO STREET 568.00'.

NW COR SEC 34 T1N R2E NW BC, NE TO PP NAT
78.85', SE TO B' FENCE POST 62.70', SW TO
'6"x8" FENCE POST 54.10', NW TO PP 79.75'.

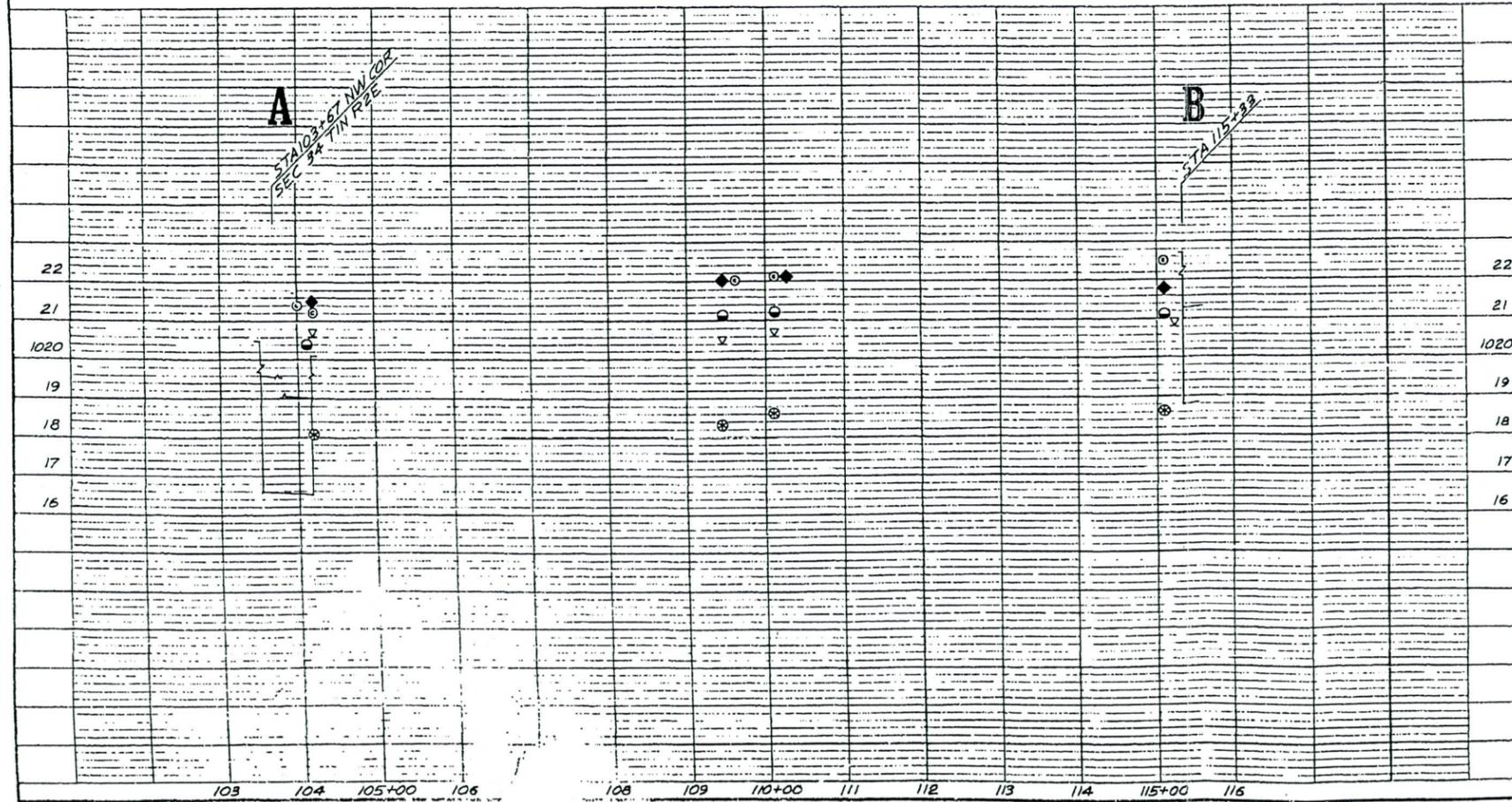
CONSTRUCTION LEGEND

CONSTRUCTION BY S R V W U A
CONSTRUCTION BY PERMITTEE

NOTE:

THE ASSOCIATION DOES NOT GUARANTEE THE
LOCATION OR ELEVATION OF UTILITIES AND WILL NOT
BE RESPONSIBLE FOR THEIR RELOCATION UNLESS OTHER-
WISE STATED.

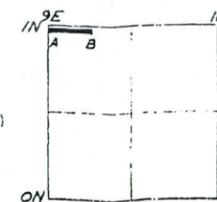
ALL REINFORCED PRECAST PIPE TO CONFORM TO LATEST
REVISION OF ASTM SPEC. C-76, CLASS III, UNLESS
OTHERWISE NOTED. ALL NON-REINFORCED PRECAST PIPE
TO CONFORM TO LATEST REVISIONS OF ASTM SPEC. C-14
AND MEET THE STRENGTH REQUIREMENTS OF ASTM C-76,
CLASS III, UNLESS OTHERWISE NOTED.



SYMBOLS FOR PROFILE

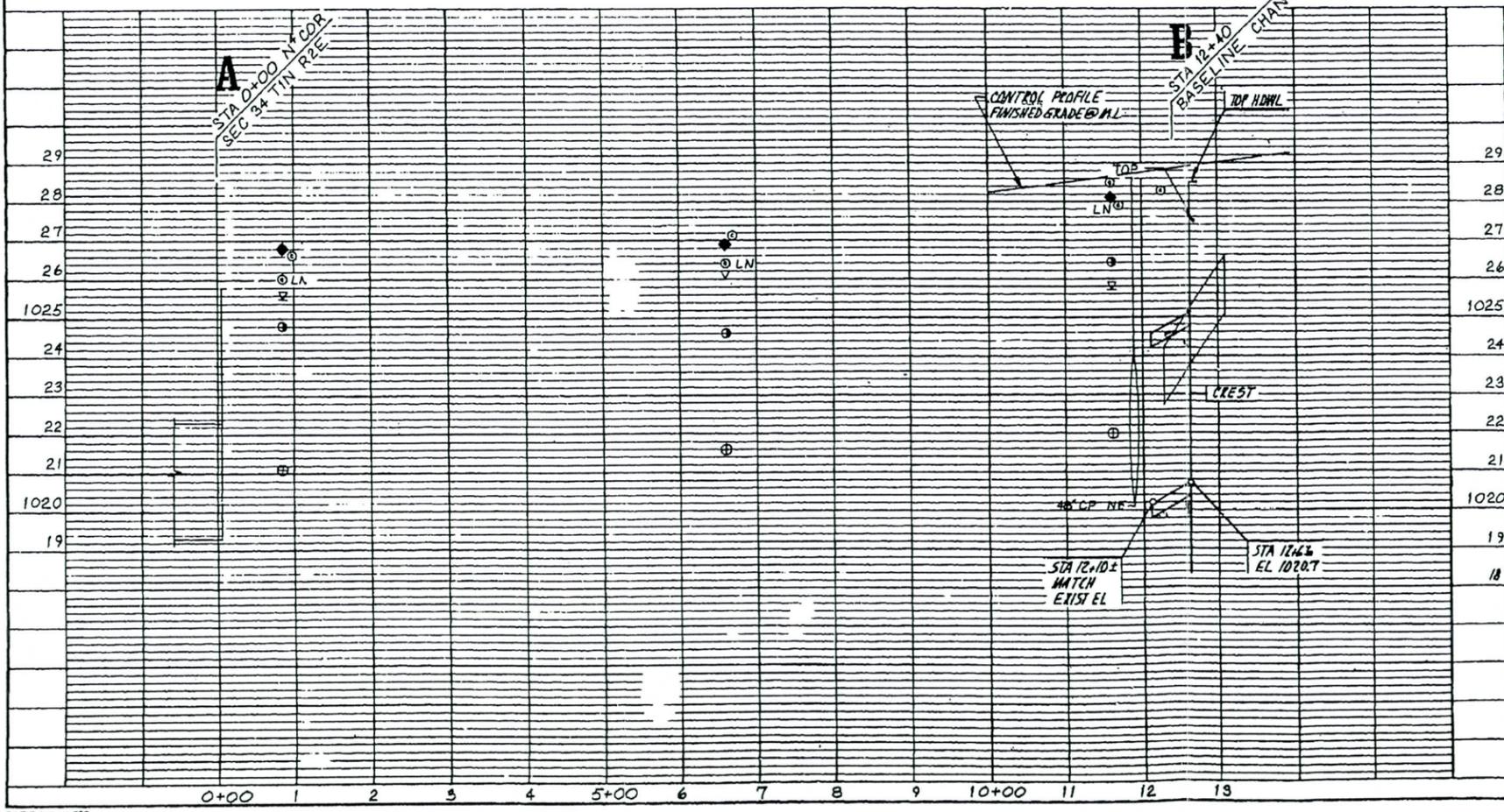
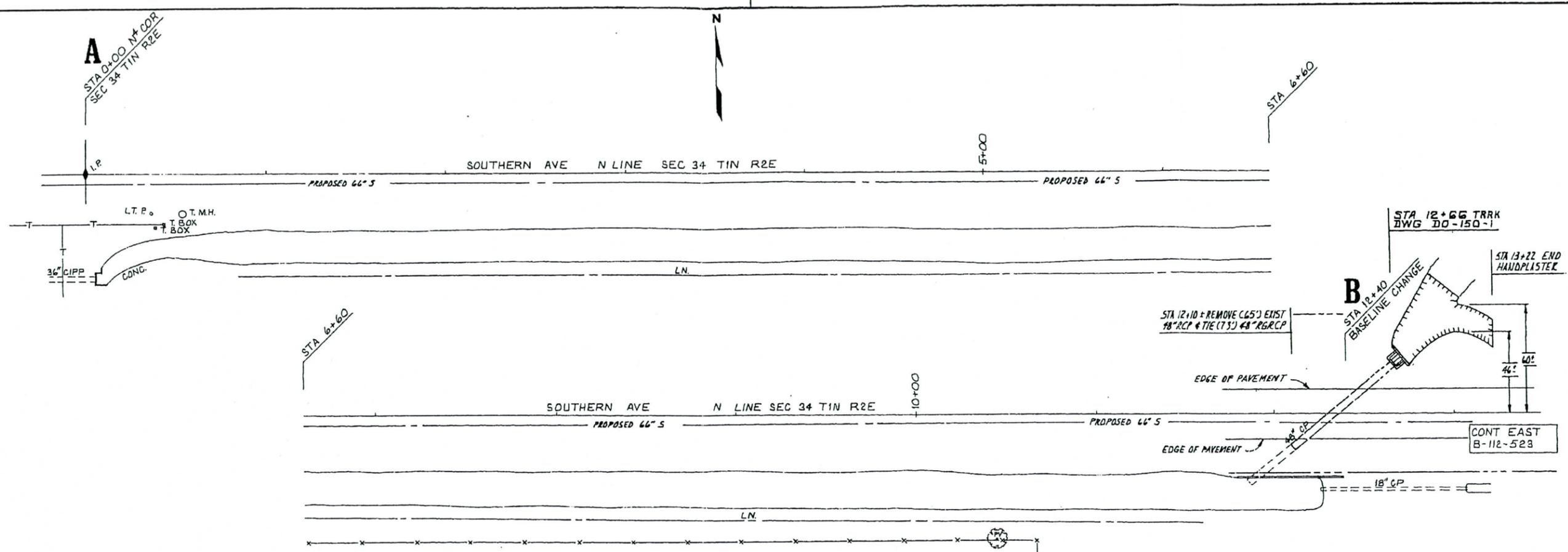
- ⊙ CENTER LINE OF ROAD
- ◆ LOW BANK
- ⊖ BED
- AVERAGE GROUND LEFT
- AVERAGE GROUND RIGHT
- AVERAGE GROUND (ONE GIVEN)
- ⊕ HIGH WATER
- ⊖ CENTER LINE PVT SLIPFORM
- ⊖ HI GROUND
- ⊖ LOW GROUND
- ⊖ BED DRAIN DITCH

BOOK W-291
PAGE 39-42
BY WLD



REVISION	BY	CHECKED	APPROVED	DESCRIPTION
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA				
WASTE DITCH SEC 34 T1N R2E NW COR TO 16/2 COR				
DRAWN	JLR	CHAD D/L	FILE PLAN	10' VERT. SCALE
SHEET OF	5-176	8-21-68	B-112-252	M.F.

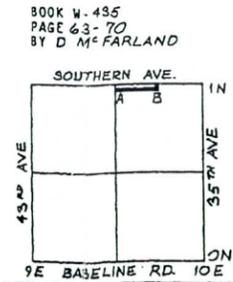
CONT WEST
B-112-52.1



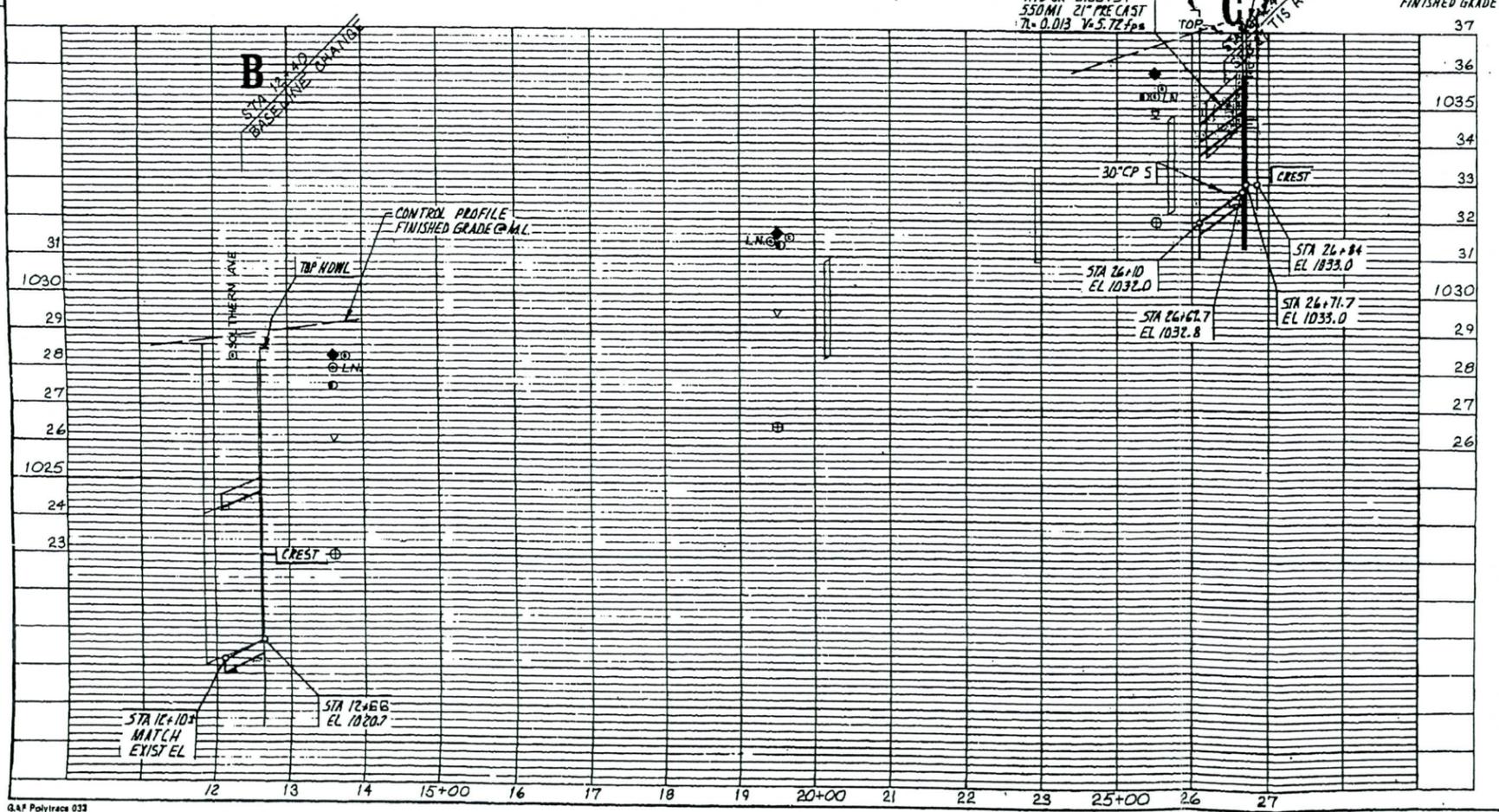
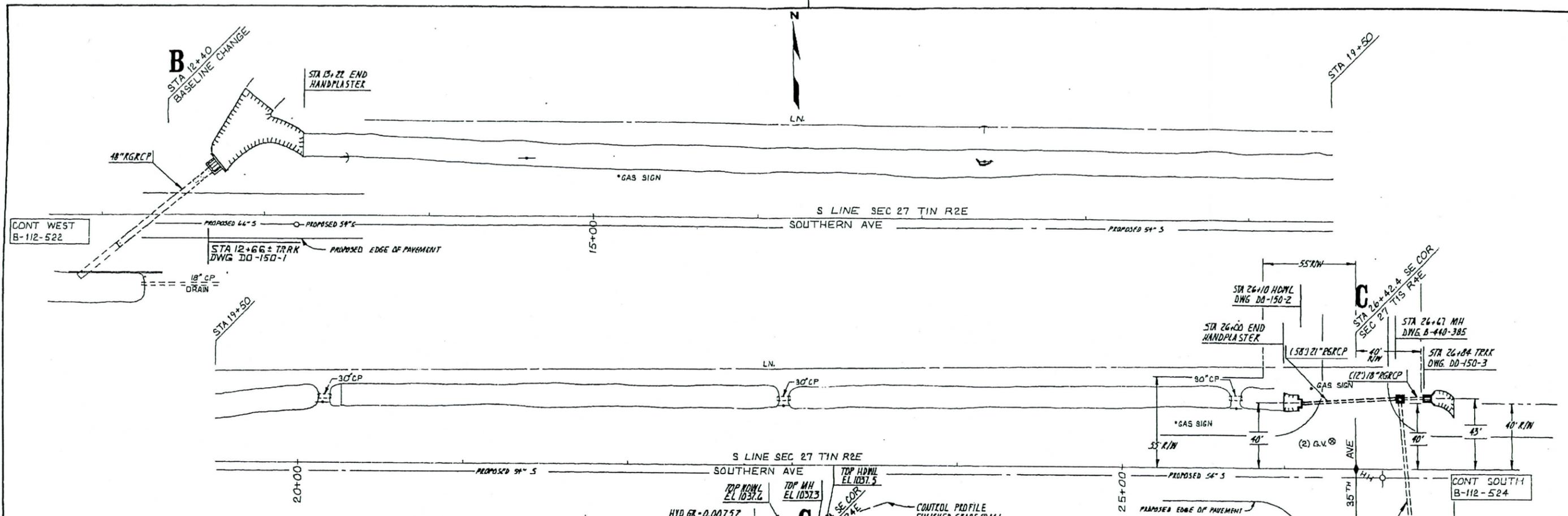
TBM:
NW COR SEC 35 STONE IN HH 10E 1N EL 1036.67 BK W-437 P 61.
STA 6+26 RR SPIKE IN PP N⁵ RD EL 1026.00 BK W-435 P 64.
STA 11+78 RR SPIKE IN PP NS RD EL 1027.74 BK W-435 P 64.
NUA TIES TO SECTION CORNERS USED:
N⁴ COR SEC 34 TIN R2E IRON PIPE .10' BELOW BLK TOP. NE TO RR SPIKE IN PP - 81.0'. SE TO ST. LT. P 42.6'. SW TO FIRE HYD-63.5'. S TO 36" CP TO W 58.5'.
NW COR SEC 35 TIN R2E STONE IN HH. SE TO X ON CURB 60.0'. NE TO HDNL 36.5'. NW TO PP 79.0'.

NOTE:
THE SRYWUA DOES NOT GUARANTEE THE LOCATION OR ELEV OF UTILITIES AND WILL NOT BE RESPONSIBLE FOR THEIR RELOCATION EXCEPT WITHIN LIMITS OF CONST BY SRYWUA.
ALL PRECAST CONCRETE PIPE SHALL BE IN ACCORDANCE WITH ASTM C-78 CLASS III OR ASTM C-14 CLASS 2 UNLESS OTHERWISE NOTED AND MEET SRYWUA SPECIFICATIONS FOR PRECAST PIPE.
PIPE BEDDING SHALL BE CLASS "C" OR BETTER AND BACKFILL SHALL BE TYPE 1, ALL PER SRYWUA SPECIFICATIONS FOR PRECAST CONCRETE PIPE.
SAFETY NOTE: ALL TRENCHING BY SRYWUA FORCES SHALL BE DONE IN ACCORDANCE WITH XB-411-118.

- SYMBOLS FOR PROFILE
- CENTER LINE OF ROAD
 - LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - BED PVT DELIVERY
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH
 - CATCH BASIN



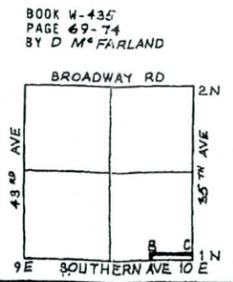
CONSTRUCTED @ "B"		LOCATION OF FACILITIES MAY NOT BE EXACT	
DD-150	2	2-3-86	CWY GCS RAH
DESIGN @ "B"			
DD-150	1	10-28-82	CWY BIA PWS PLS
JOB NO	REV	DATE	DESIGN'D DRAFT CHECKED APPROVED
SALT RIVER PROJECT			
WATER AND POWER		PHOENIX, ARIZONA	
DRAIN DITCH			
SEC 34 TIN R2E			
N ⁴ COR TO 16/1 COR			
DRAFTS. R. C.	CHKD BY	SCALE: PLAN 1" = 30'	PRO HOR 1" = 100' VERT 1" = 1'
SHEET OF	DD-150	6-2-80	B-112-522



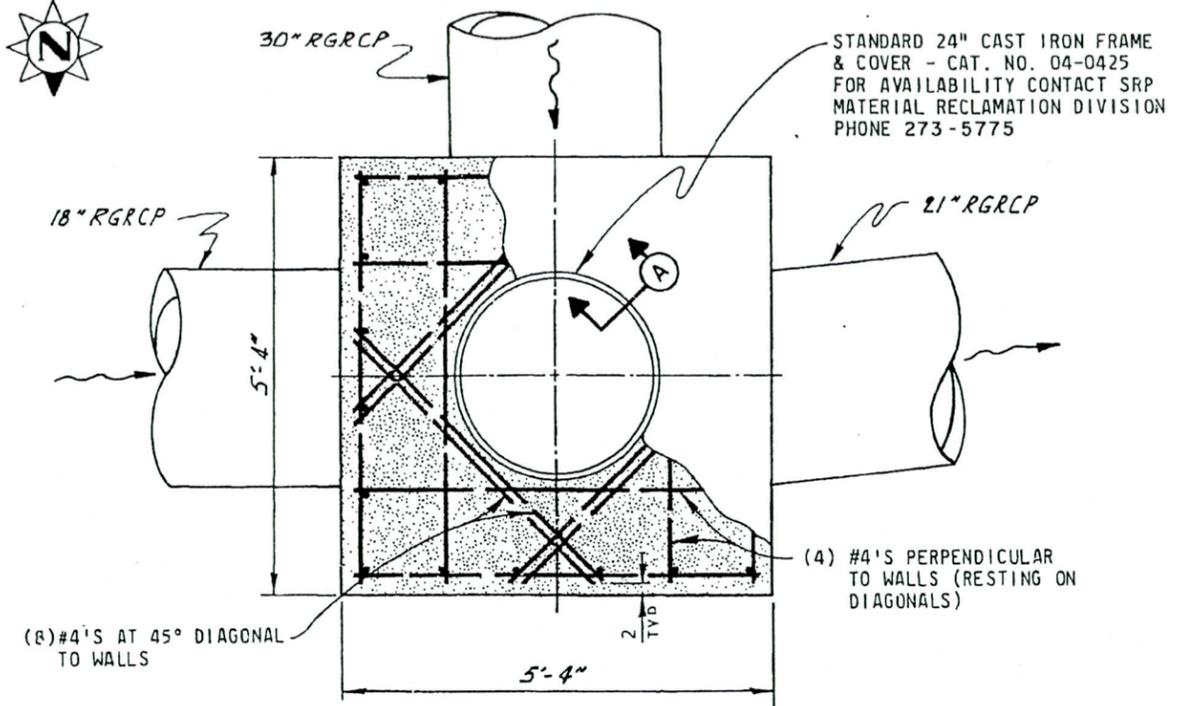
TBM:
 STA 14+59 NAIL IN PP N⁵ RD. EL 1030.62 BK W-435 P 64.
 STA 20+15 NAIL IN PP N⁵ RD EL 1032.35 BK W-435 P 64.
 STA 26+42.4 SE COR SEC 27 STONE IN HH 10E-1N EL 1036.67 BK W-435 P 64.
 WUA TIES TO SECTION CORNERS USED:
 N⁴ COR SEC 32 TIN R2E IRON PIPE .10" BELOW BLK TOP. NE TO RR SPIKE IN PP 81.0'. SE TO ST LT P 42.6'. SW TO FIRE HYD 63.5'. S TO & 36" CP TO W 58.5'.
 MW COR SEC 35 TIN R2E STONE IN HH. SE TO X ON CURB 60.0'. NE TO & HDWL 36.5'. NW TO PP 79.0'.

NOTE:
 THE SRVWA DOES NOT GUARANTEE THE LOCATION OR ELEVATION OF UTILITIES AND WILL NOT BE RESPONSIBLE FOR THEIR RELOCATION EXCEPT WITHIN LIMITS OF CONST BY SRVWA.
 ALL PRECAST CONCRETE PIPE SHALL BE IN ACCORDANCE WITH ASTM C-76 CLASS III OR ASTM C-14 CLASS 2 UNLESS OTHERWISE NOTED AND MEET SRVWA SPECIFICATIONS FOR PRECAST PIPE.
 PIPE BEDDING SHALL BE CLASS "C" OR BETTER AND BACKFILL SHALL BE TYPE 1. ALL PER SRVWA SPECIFICATIONS FOR PRECAST CONCRETE PIPE.
 SAFETY NOTE: ALL TRENCHING BY SRVWA FORCES SHALL BE DONE IN ACCORDANCE WITH X8-411-118.

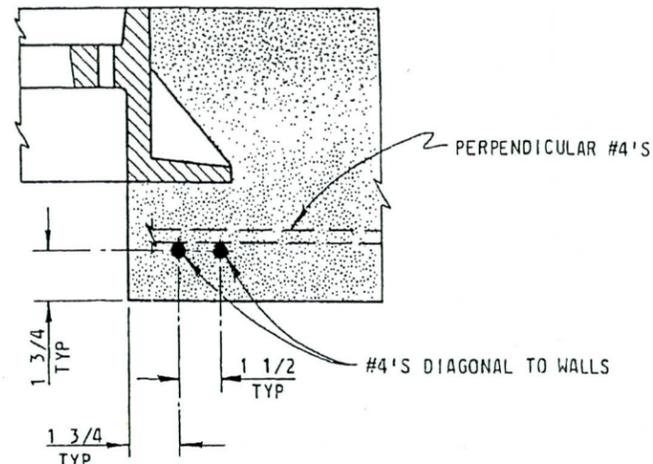
- SYMBOLS FOR PROFILE
- ⊙ CENTER LINE OF ROAD
 - LOW BANK
 - ⊖ BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - BED PVT DELIVERY
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH
 - CATCH BASIN



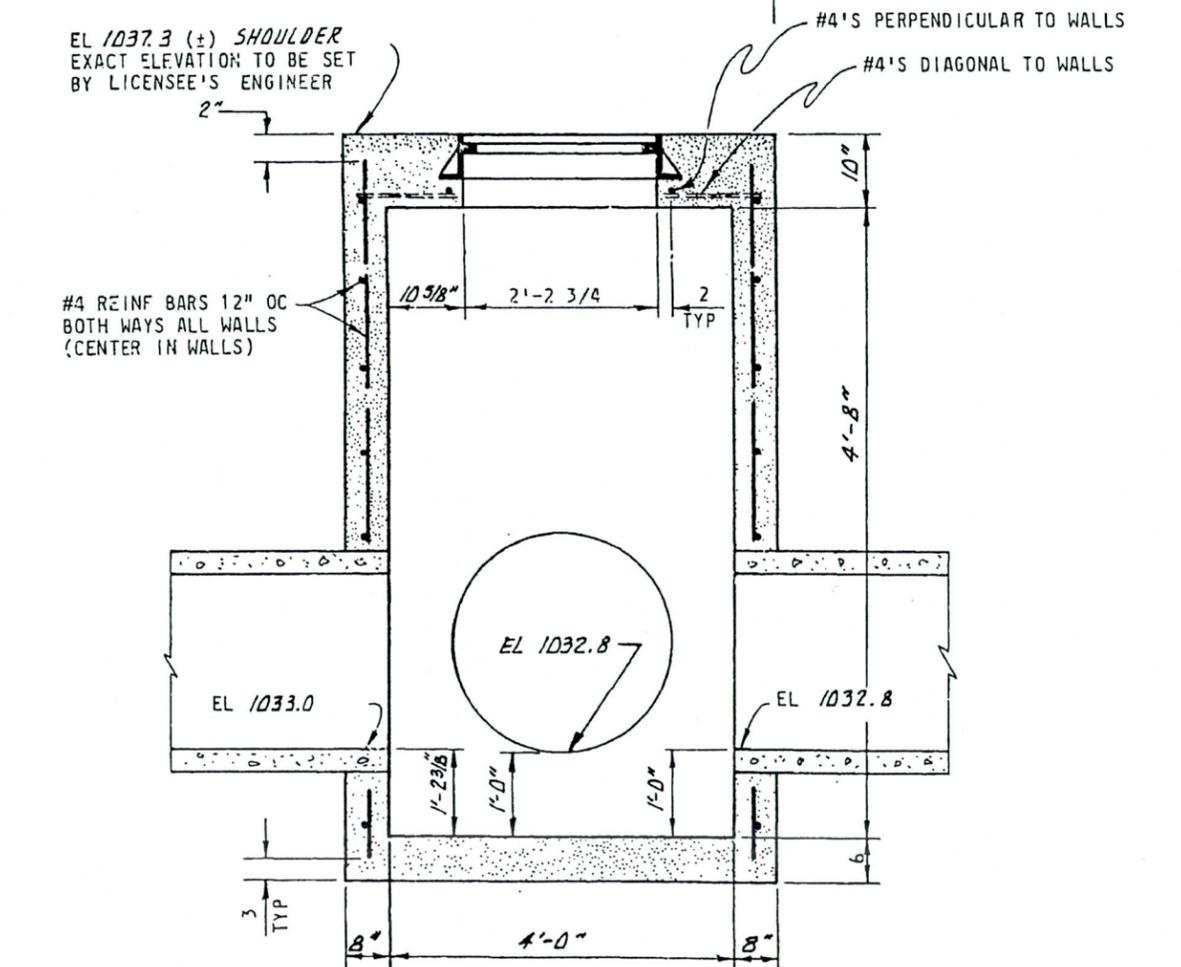
CONSTRUCTED @ "B" & "C"		LOCATION OF FACILITIES MAY NOT BE EXACT	
DD-150	2	1-31-86	CWV GCS RAH col
DESIGN @ "B" & "C"			
DD-150	1	10-29-87	CWV BIA PUS HEG col JER 97
JOB NO	REV	DATE	DESIGNER DRAFT CHECKER APPROVED
SALT RIVER PROJECT			
WATER AND POWER PHOENIX, ARIZONA			
DRAIN DITCH			
SEC 27 TIN R2E			
16/6 COR TO SE COR			
DRAFTS. R. C. CHAS 25	SCALE: PLAN 1"=30' P&D HOR 1"=100' VERT 1"=7'	2	Y2
SHEET OF	DD-150	6-2-80	B-112-523
PP			



STANDARD 24" CAST IRON FRAME & COVER - CAT. NO. 04-0425
FOR AVAILABILITY CONTACT SRP
MATERIAL RECLAMATION DIVISION
PHONE 273-5775



SECTION A



EL 1037.3 (±) SHOULDER
EXACT ELEVATION TO BE SET
BY LICENSEE'S ENGINEER

#4 REINF BARS 12" OC
BOTH WAYS ALL WALLS
(CENTER IN WALLS)

NOTE:
STRUCTURE TO BE POURED MONOLITHICALLY MINIMUM
3000 PSI AT 28 DAY CONCRETE
ALL REINFORCING STEEL SHALL BE ASTM A-615
GRADE 60.
CONCRETE TO BE CONSOLIDATED BY MEANS OF A
CONCRETE VIBRATOR.

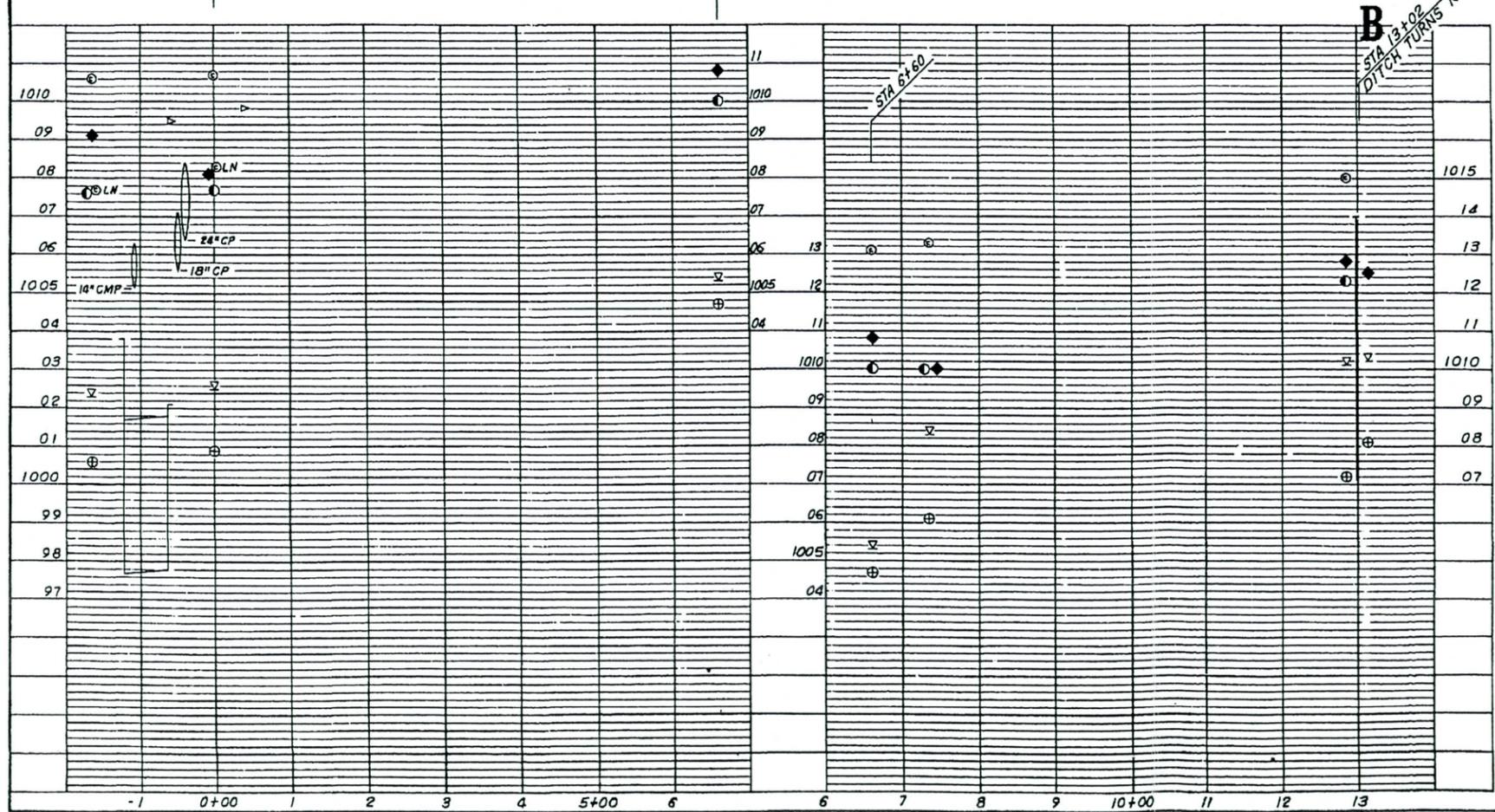
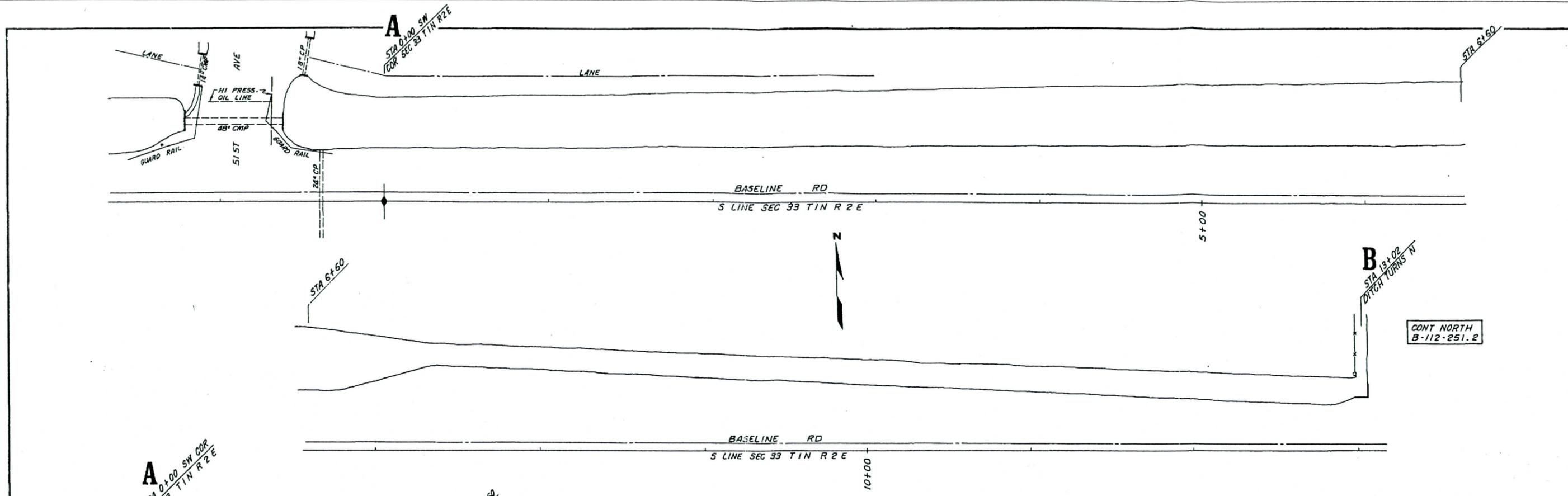
REF. DWGS:
PLAN PROFILE B-112-523 STA 26+67
CAST COVER B-54-24

TBM: STA 26+42.4 SE COR SEC 27 STONE IN H.H.
10E-1N EL 1036.67 BK W-435 PG 64.

FORM	114	REPRO. AT 100% OR 14.5X
FIRST USE		
MFG. REF.		

KEY	DESIGN BY	DATE	DFT. CHK.	ENG. CHK.	APPROVE	DESCRIPTION
	MSY	8-77				REDRAWN-REDESIGN

2-3-86	CWV	QCS	RAH	AW	CONSTRUCTED
REVD	BY	CHKD	APPROVED	DESCRIPTION	
SALT RIVER PROJECT					
WATER & POWER			PHOENIX, ARIZ.		
MANHOLE - CAST COVER					
SW COR SEC 26 T1N R 2 E					
DRAIN					
COORD: 10E-1N					
DESIGNED	CWV	DFT CHK	RAH/HCG		
DRAWN	BIA	ENGR CHK	CWV		
DATE	10-25-82	RECOMMENDED	RAH		
SCALE	NONE	APPROVED			
J.O. NO.	DD-150			B-440-385	REV



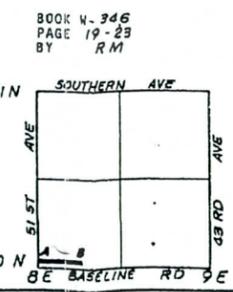
B.M.:
 x ON PUMP PAD 300' WEST OF E INTER OF BE - ON
 EL 1011.96 BK W-346 P 19

T.B.M.:
 STA 0+85 NAIL N SIDE PP S SIDE RD EL 1010.34 BK
 W-346 P 21
 STA 7+98 NAIL S SIDE 8"x8" CORNER POST EL 1011.34
 BK W-346 P 22
 STA 12+98 NAIL N SIDE 8"x8" CORNER POST EL 1015.74
 BK W-346 P 23

WUA TIES TO SECTION CORNERS USED:
 SW COR SEC 33 T1N R2E. S SW TO NAT IN PP 91.28'.
 NW TO DIL LINE MARKER 92.53'.
 S4 COR SEC 33 T1N R2E N TO 3" METAL POST 44.30'.
 W NW TO ROCK LITE POST 128.94'. S TO E LAT 25.00'.

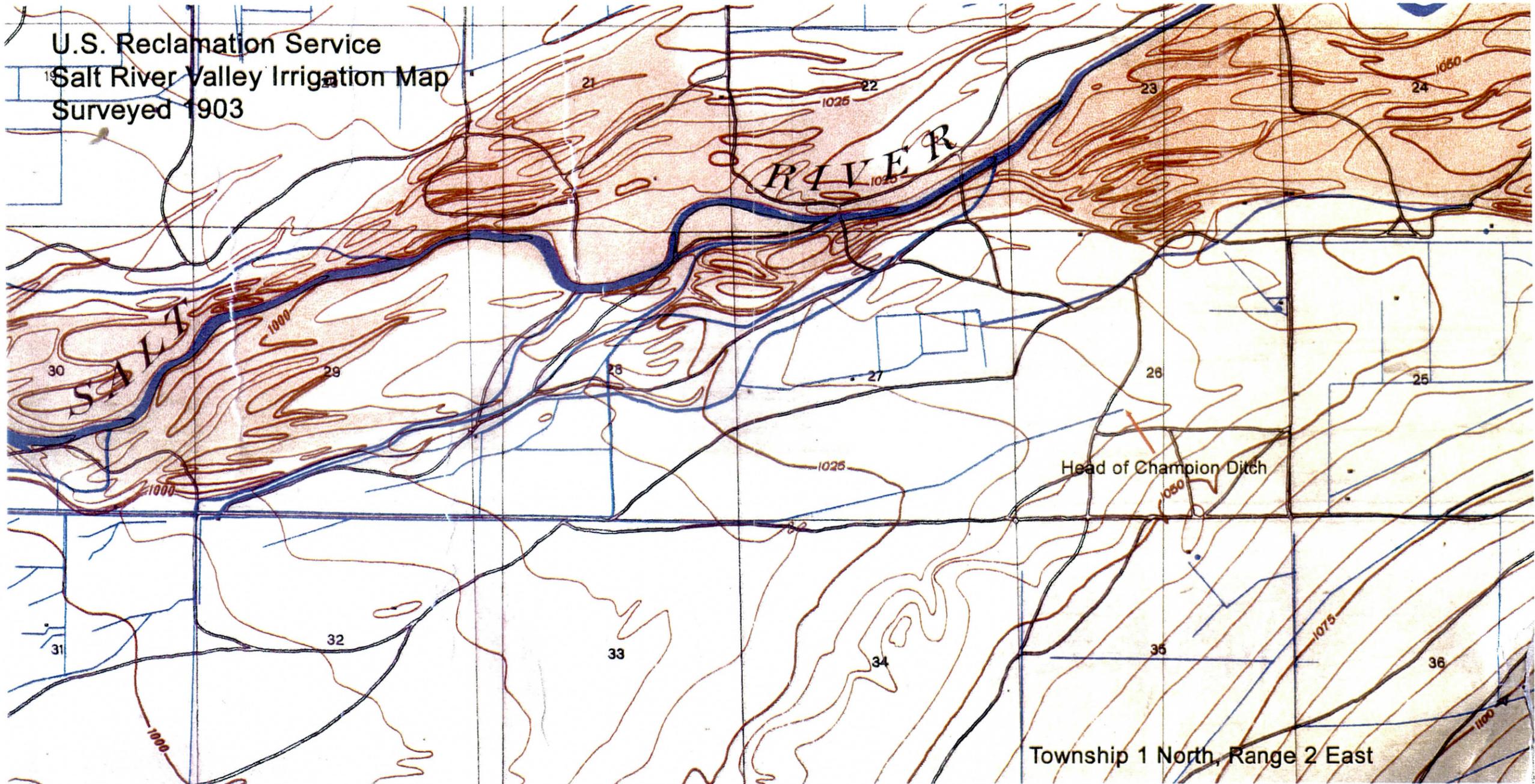
NOTES:
 THE ASSOCIATION DOES NOT GUARANTEE THE
 LOCATION OR ELEVATION OF UTILITIES AND WILL NOT
 BE RESPONSIBLE FOR THEIR RELOCATION EXCEPT WITHIN
 LIMITS OF CONSTRUCTION BY ASSOCIATION FORCES.
 ALL REINFORCED PRECAST PIPE TO CONFORM TO LATEST
 REVISION OF ASTM SPEC. C-76 CLASS III, UNLESS
 OTHERWISE NOTED. ALL NON-REINFORCED PRECAST PIPE
 TO CONFORM TO LATEST REVISIONS OF ASTM SPEC. C-14
 AND MEET THE STRENGTH REQUIREMENTS OF ASTM C-76
 CLASS III, UNLESS OTHERWISE NOTED.

- SYMBOLS FOR PROFILE**
- CENTER LINE OF ROAD.
 - LOW BANK
 - BED
 - AVERAGE GROUND LEFT
 - AVERAGE GROUND RIGHT
 - AVERAGE GROUND (ONE GIVEN)
 - HIGH WATER
 - BED PVT DELIVERY
 - HI GROUND
 - LOW GROUND
 - BED DRAIN DITCH
 - CATCH BASIN

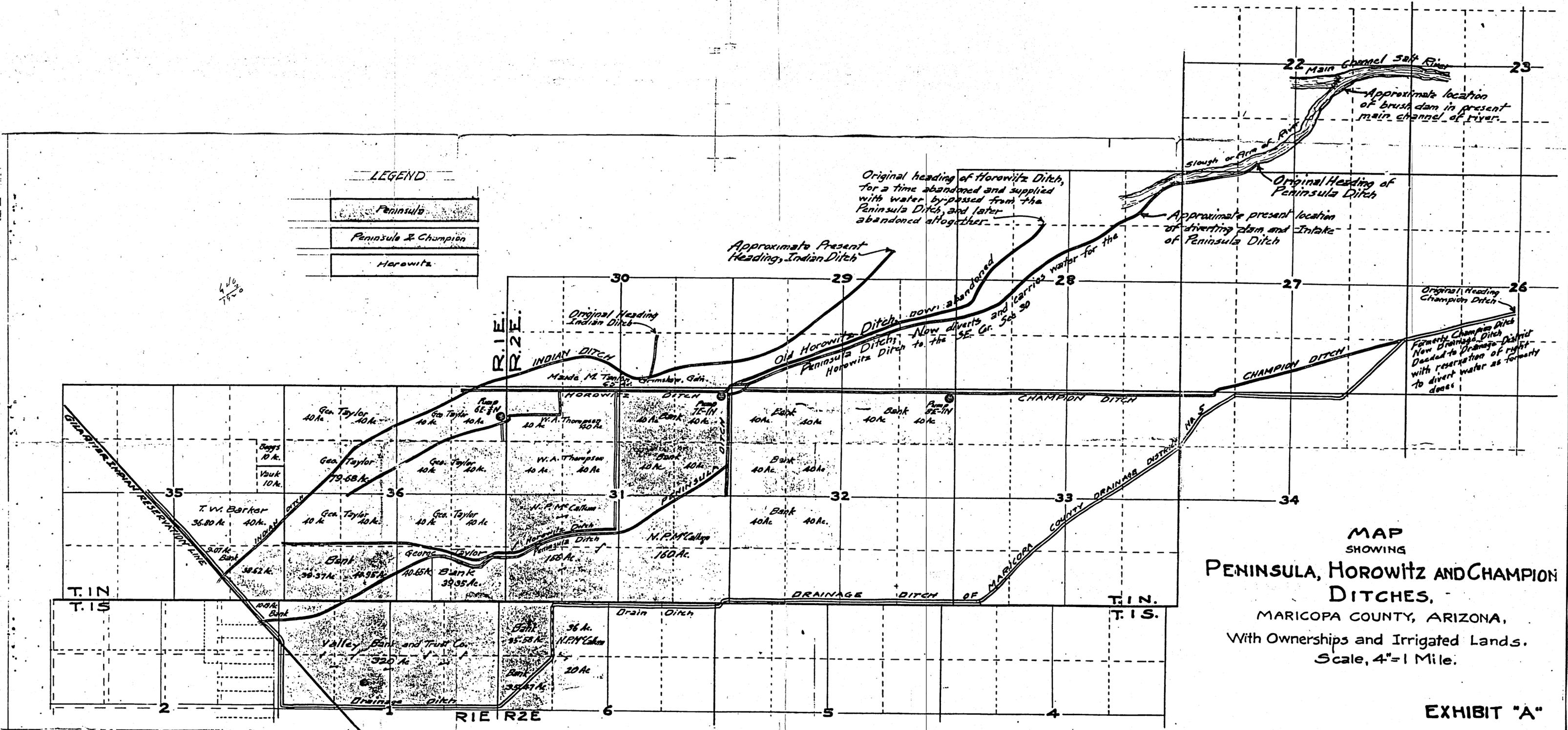


REVISED	DSGN'R	DRAFT	CHECKED	APPROVED	DESCRIPTION
SALT RIVER VALLEY WATER USERS' ASSOCIATION PHOENIX, ARIZONA					
WASTE DITCH SEC 33 T1N R2E SW COR TO 16/5 COR					
DRAWN	JLL	CHKD	20	SCALE: PLAN 1"=30' PRO HOR 1"=100' VERT 1"=2'	
SHEET	OF	1-079	8-25-71	B-112-251.1	

U.S. Reclamation Service
Salt River Valley Irrigation Map
Surveyed 1903



Township 1 North, Range 2 East

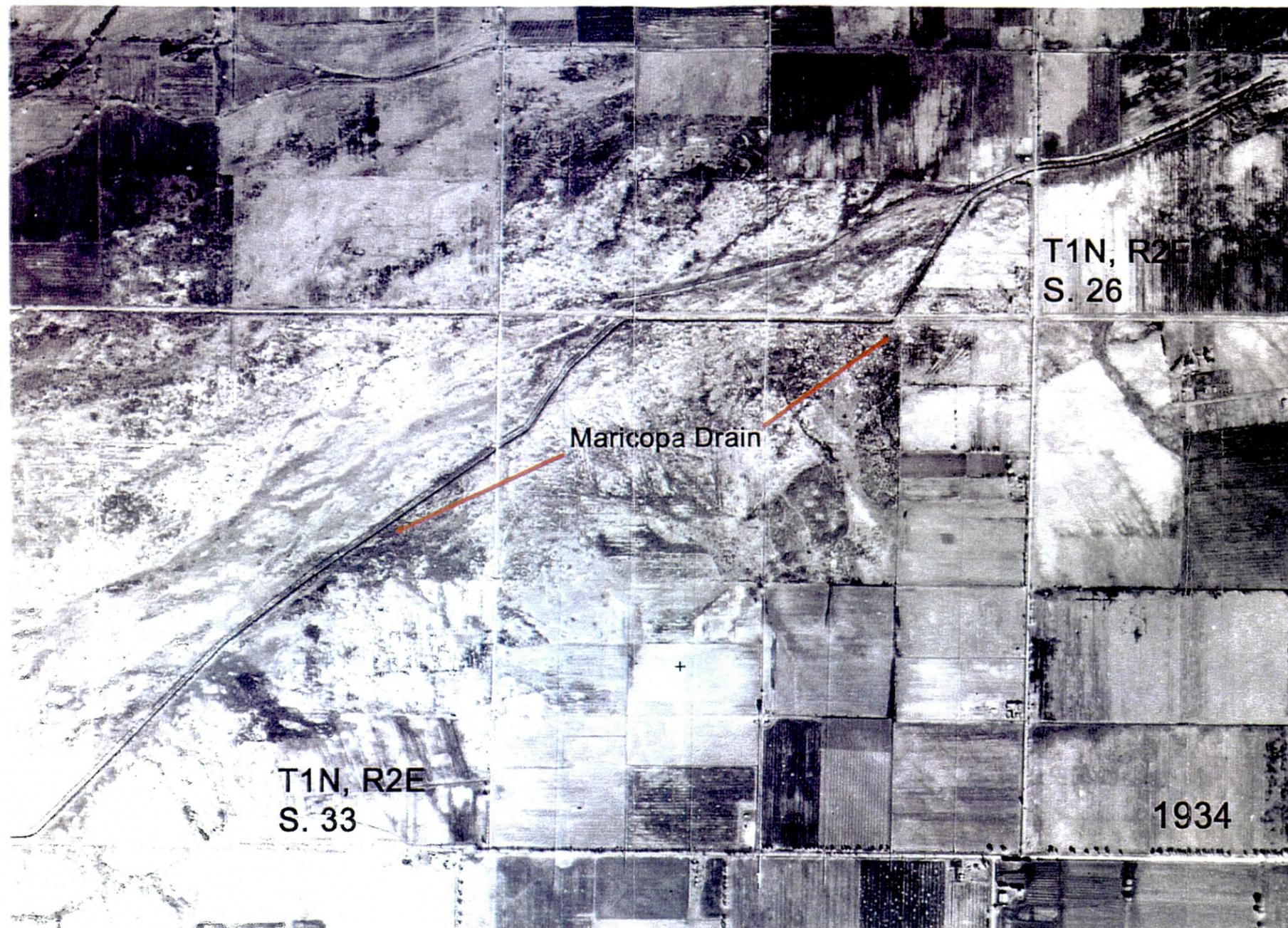


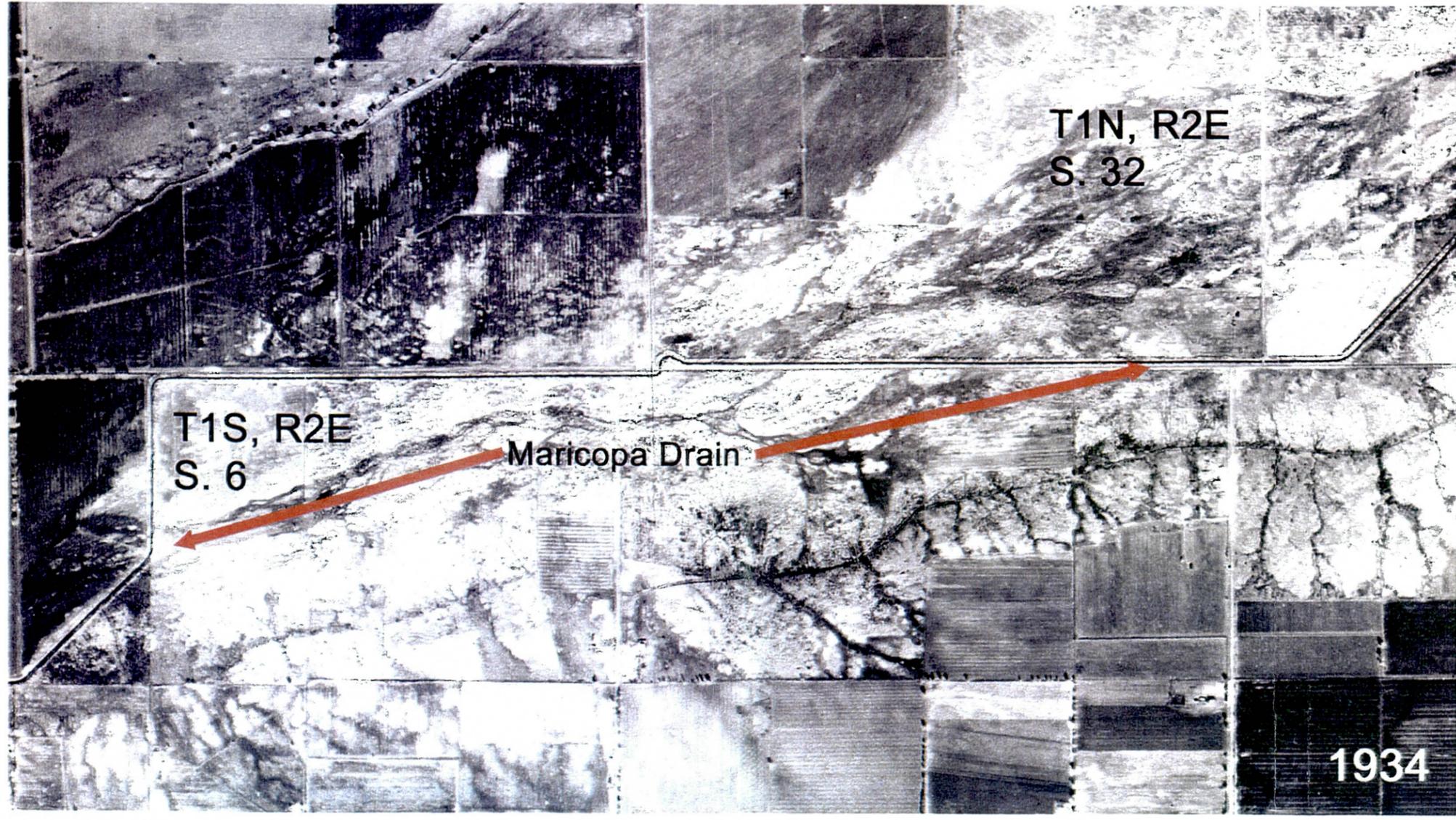
LEGEND

- Peninsula
- Peninsula & Champion
- Horowitz

MAP
SHOWING
**PENINSULA, HOROWITZ AND CHAMPION
DITCHES,**
MARICOPA COUNTY, ARIZONA,
With Ownerships and Irrigated Lands.
Scale, 4" = 1 Mile.

EXHIBIT "A"



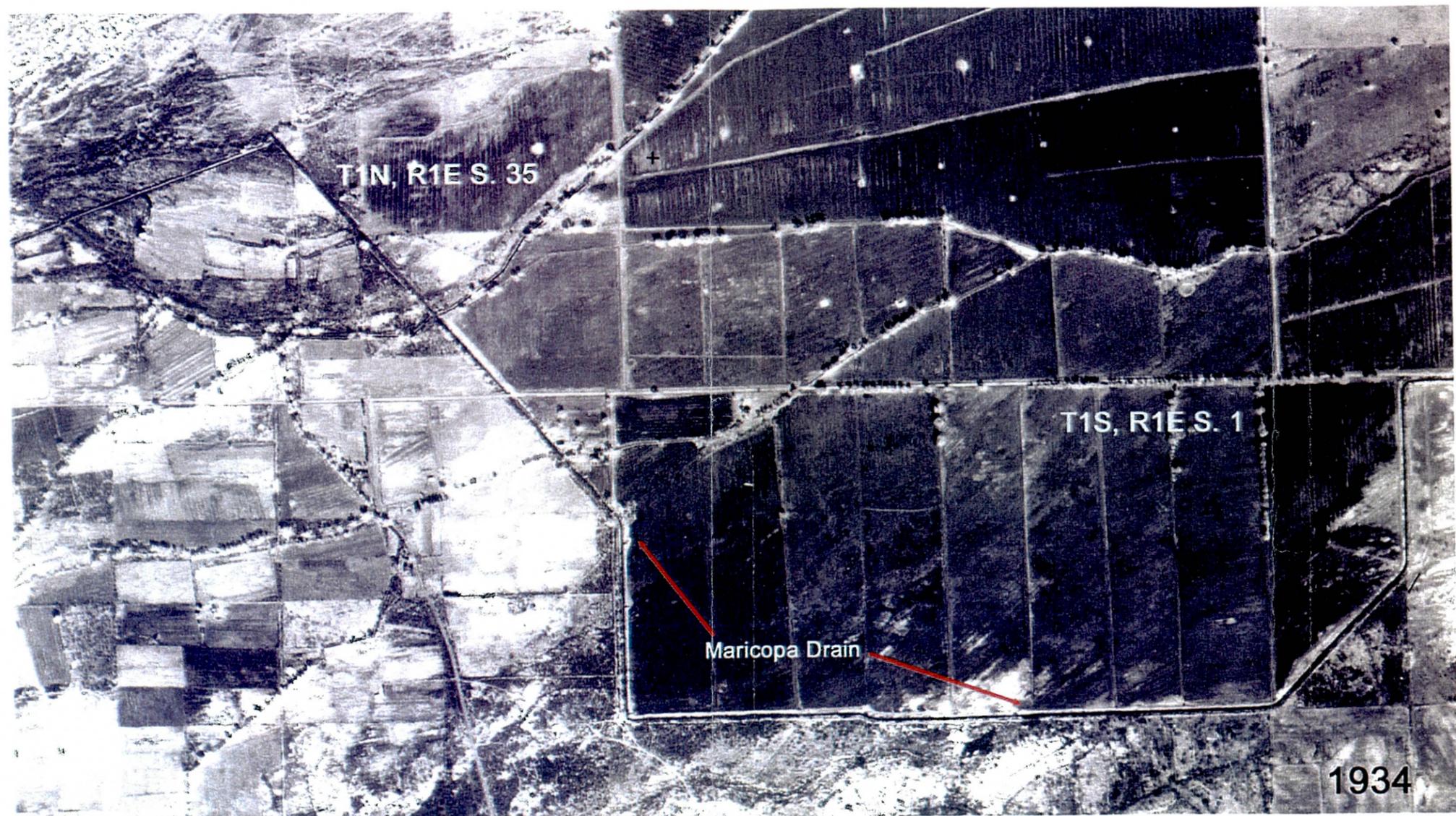


T1N, R2E
S. 32

T1S, R2E
S. 6

Maricopa Drain

1934



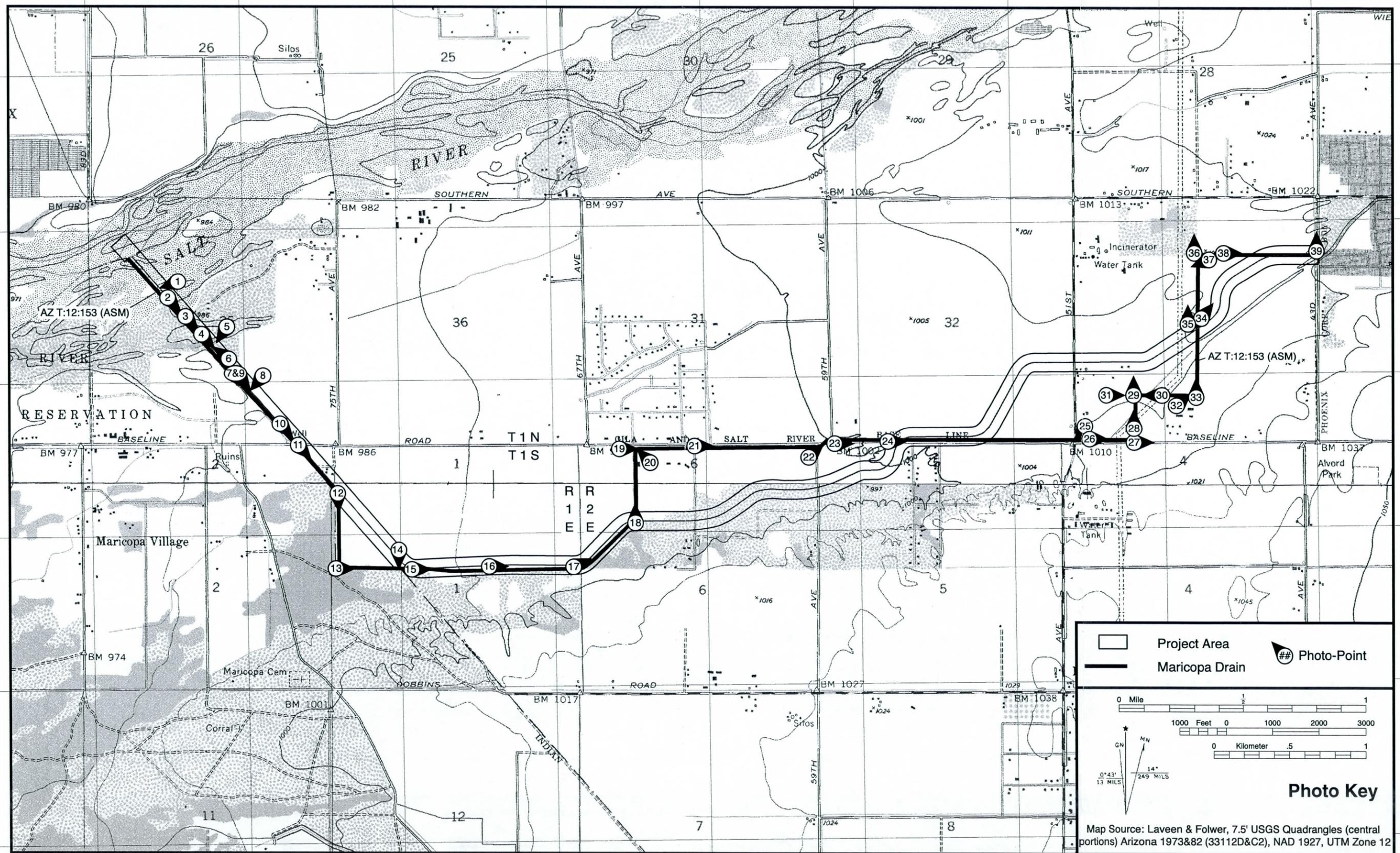


**MARICOPA DRAIN
BLACK AND WHITE PHOTOGRAPH LOG**

#	DIRECTION	DESCRIPTION
1	W/SW	Current outflow of the Maricopa Drain
2	SE	Looking SE along the Drain from the edge of the modern terrace along the Salt River
3	SE	A long, straight run on the Drain; private property to left, Gila River Indian Community boundary to right, & Mead-Phoenix powerline overhead
4	SE	Farther along western leg of the Drain; view of a pipe culvert check dam
5	S/SW	Close-up of outflow side of pipe culvert check dam
6	N/NW	Close-up of inflow side of pipe culvert check dam
7	SE	Next upstream run of the Drain, with a view of the second check dam. The check dam is hydraulic concrete and is placed in a concrete-line channel
8	SW	Concrete pip culvert that drains under the Maintenance Lane and into the Maricopa Drain near the second check dam
9	SE	A continuing run of the Maricopa Drain between the second check dam and Baseline Road
10	SW	View of pump station and supporting electrics immediately north of the intersection of the Maricopa Drain and Baseline Road
11	SW	Maricopa Drain facing south, as viewed from Baseline Road; the Webster Property is in the left of the frame
12	S	Run of the Maricopa Drain as it approaches the 90-degree turn in Section 1, Township 1 South, Range 1 East. The Gila River Indian Community is to the right of the maintenance lane
13	E	Drain as viewed from the 90-degree turn in Section 1, Township 1 South, Range 1 East
14	S	Pipe culverts draining canal laterals to the south of the Maricopa Drain
15	E	A slight S-bend in the Drain
16	E	A continuing eastward run of the Maricopa Drain, as it approaches the eastern edge of Section 1, Township 1 South, Range 1 East
17	NE	Maricopa Drain as viewed from the eastern edge of Section 6, Township 1 South, Range 2 East
18	N	Maricopa Drain as it traverses the northwest ¼ of Section 6, Township 1 South, Range 2 East
19	E	Maricopa Drain viewed from its turn to parallel Baseline Road
20	NW	Derelict pumping station located at the 90-degree turn where the Drain parallels Baseline Road in the northwest ¼ of Section 6, Township 1 South, Range 2 East
21	E	Maricopa drain as it parallels the southern edge of Baseline Road
22	NE	View of pipe culvert through which the Maricopa Drain crosses to the north side of Baseline Road, near the intersection of Baseline Road and 57 th Avenue
23	E	Drain as it parallels the northern edge of Baseline Road in the southeast ¼ of Section 32, Township 1 North, Range 2 East

**MARICOPA DRAIN
BLACK AND WHITE PHOTOGRAPH LOG**

#	DIRECTION	DESCRIPTION
24	E	View of the Maricopa Drain paralleling the northern edge of Baseline Road in the southeast ¼ of Section 32, Township 1 North, Range 2 East as the Drain approaches 51 st Avenue
25	SW	View of the box culvert through which the Drain passes beneath 51 st Avenue
26	E	The Drain as it parallels the northern edge of Baseline Road in the southeast ¼ of Section 32, Township 1 North, Range 2 East as the Drain approaches 51 st Avenue
27	E	An undercut retaining wall in the Drain Channel, where the Drain turns north in the southwest ¼ of Section 33, Township 1 North, Range 2 East
28	N	Northern run of the Maricopa Drain as it traverses the Southwest ¼ of Section 33, Township 1 North, Range 2 East
29	N	Pipe culvert and drainage control structure located at a 90-degree turn in the channel in the Southwest ¼ of Section 33, Township 1 North, Range 2 East
30	W	View of the inflow side of the control structure depicted in Frame 29
31	E	Eastward run of the Drain as approaches Check Dam 3, in the Southwest ¼ of Section 33, Township 1 North, Range 2 East
32	E	Check Dam 3, located in the Southwest ¼ of Section 33, Township 1 North, Range 2 East
33	N	Maricopa Drain as it turns north to traverse the West ½ of Section 33, Township 1 North, Range 2 East; note the concrete lined channel and its low water crossing construction style
34	NE	Close-up of pipe culvert and sluice gate where the Drain crosses a field road in the West ½ of Section 33, Township 1 North, Range 2 East
35	N	Maricopa Drain as it traverses the West ½ of Section 33, Township 1 North, Range 2 East
36	N	A large sluice gate and multiple culverts where the Drain passes under a field road at its eastward turn in the Northwest ¼ of Section 33, Township 1 North, Range 2 East
37	W/SW	A reverse angle view of Frame 36, showing the large sluice gate and an SRP Lateral Canal in the left of the frame and the Maricopa Drain in frame right
38	E	Maricopa Drain as it runs eastwards through the North ½ of Section 33, Township 1 North, Range 2 East. 43 rd Avenue is in the distance
39	N	Maricopa Drain and derelict pumping station at the eastern termination of the project area, at the Drain's intersection with 43 rd Avenue. From here, the Drain continues northward to Southern Avenue.



Project Area
 Maricopa Drain
 # Photo-Point

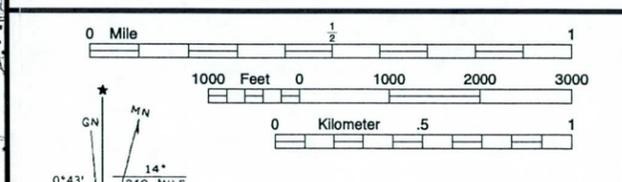


Photo Key

Map Source: Laveen & Folwer, 7.5' USGS Quadrangles (central portions) Arizona 1973&82 (33112D&C2), NAD 1927, UTM Zone 12















CA 10 27 1977
6727





6727

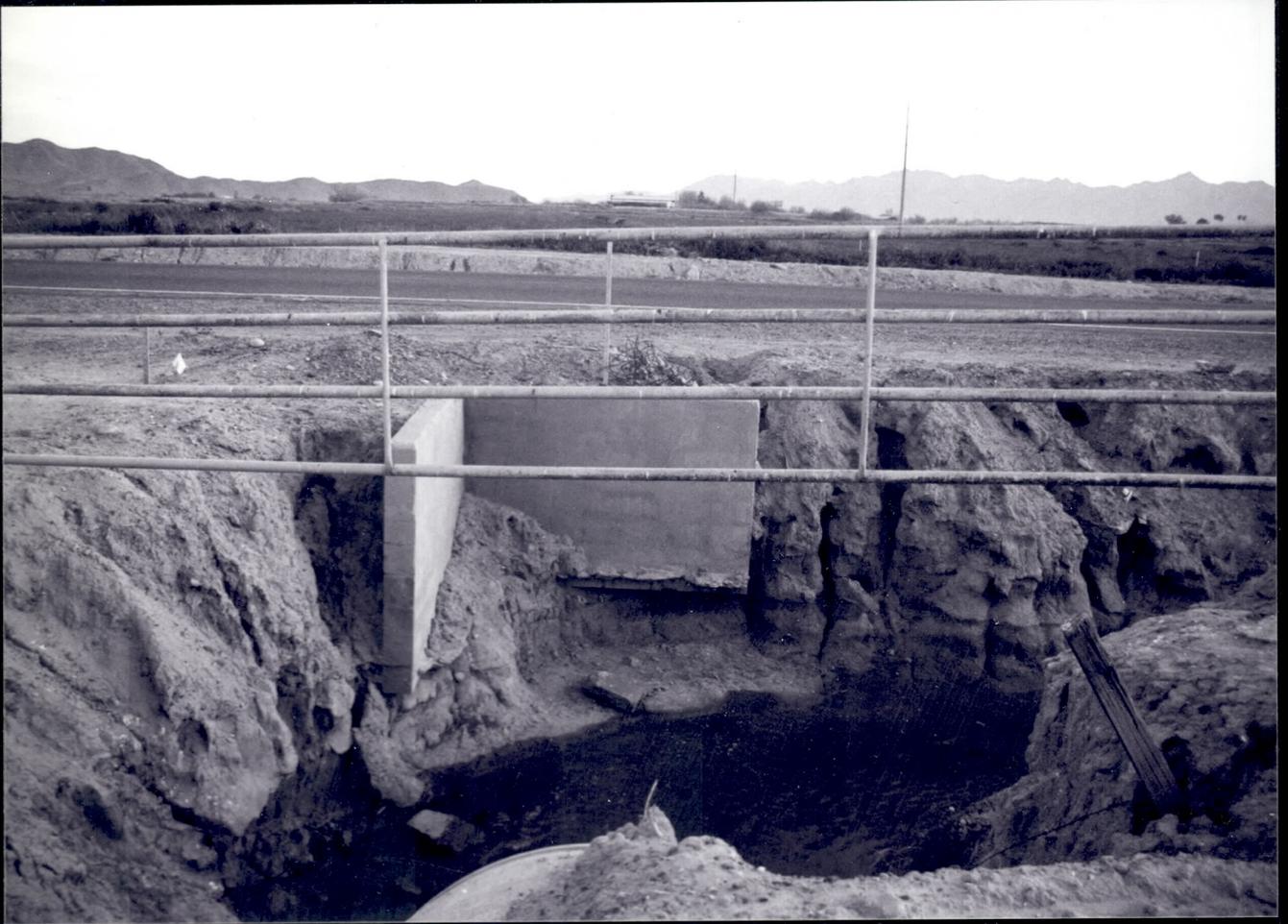


























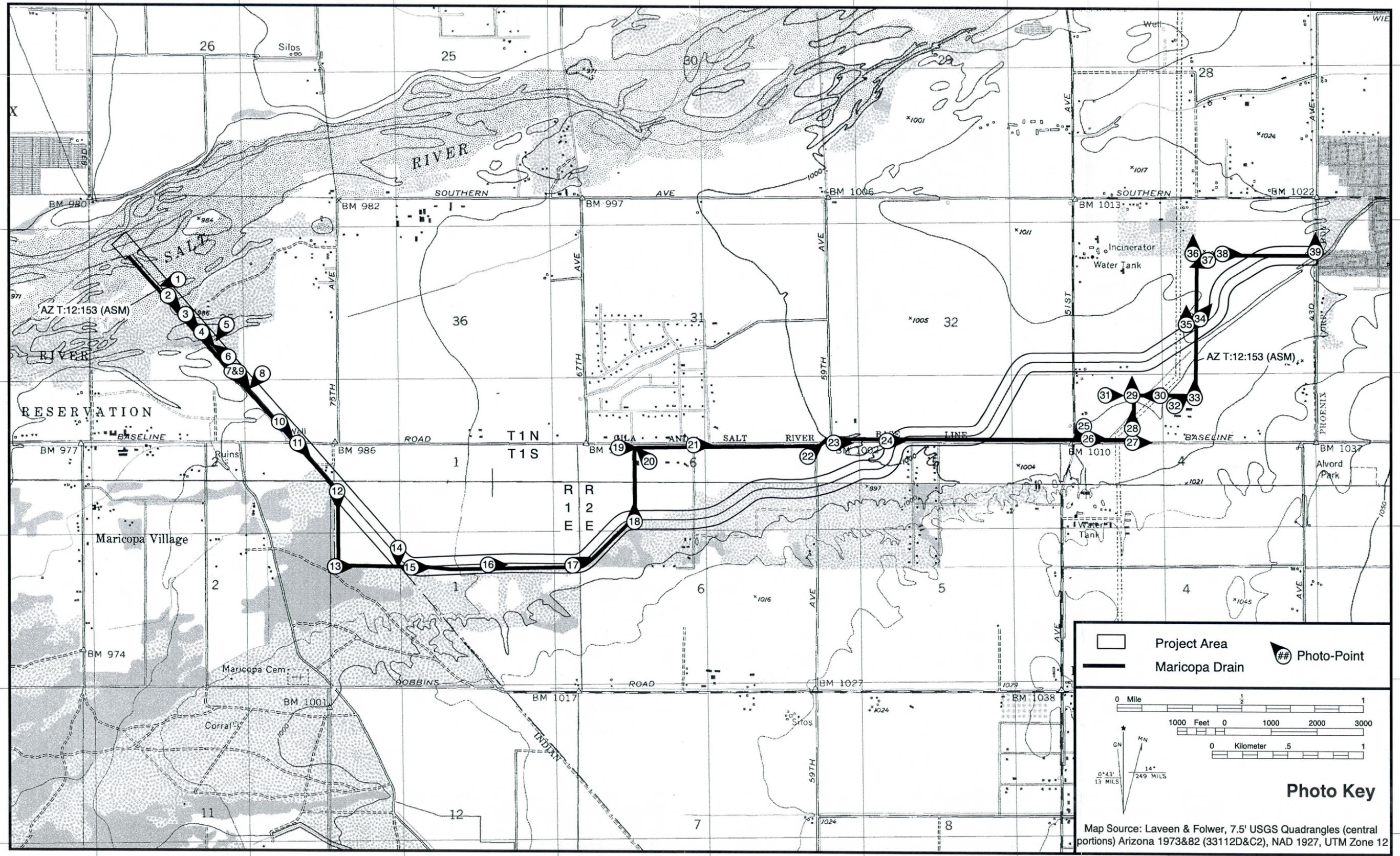


**MARICOPA DRAIN
COLOR SLIDE PHOTOGRAPH LOG**

#	DIRECTION	DESCRIPTION
1	W/SW	Current outflow of the Maricopa Drain
2	SE	Looking SE along the Drain from the edge of the modern terrace along the Salt River
3	SE	A long, straight run on the Drain; private property to left, Gila River Indian Community boundary to right, & Mead-Phoenix powerline overhead
4	SE	Farther along western leg of the Drain; view of a pipe culvert check dam
5	S/SW	Close-up of outflow side of pipe culvert check dam
6	N/NW	Close-up of inflow side of pipe culvert check dam
7	SE	Next upstream run of the Drain, with a view of the second check dam. The check dam is hydraulic concrete and is placed in a concrete-line channel
8	SW	Concrete pip culvert that drains under the Maintenance Lane and into the Maricopa Drain near the second check dam
9	SE	A continuing run of the Maricopa Drain between the second check dam and Baseline Road
10	SW	View of pump station and supporting electrics immediately north of the intersection of the Maricopa Drain and Baseline Road
11	SW	Maricopa Drain facing south, as viewed from Baseline Road; the Webster Property is in the left of the frame
12	S	Run of the Maricopa Drain as it approaches the 90-degree turn in Section 1, Township 1 South, Range 1 East. The Gila River Indian Community is to the right of the maintenance lane
13	E	Drain as viewed from the 90-degree turn in Section 1, Township 1 South, Range 1 East
14	S	Pipe culverts draining canal laterals to the south of the Maricopa Drain
15	E	A slight S-bend in the Drain
16	E	A continuing eastward run of the Maricopa Drain, as it approaches the eastern edge of Section 1, Township 1 South, Range 1 East
17	NE	Maricopa Drain as viewed from the eastern edge of Section 6, Township 1 South, Range 2 East
18	N	Maricopa Drain as it traverses the northwest ¼ of Section 6, Township 1 South, Range 2 East
19	E	Maricopa Drain viewed from its turn to parallel Baseline Road
20	NW	Derelict pumping station located at the 90-degree turn where the Drain parallels Baseline Road in the northwest ¼ of Section 6, Township 1 South, Range 2 East
21	E	Maricopa drain as it parallels the southern edge of Baseline Road
22	NE	View of pipe culvert through which the Maricopa Drain crosses to the north side of Baseline Road, near the intersection of Baseline Road and 57 th Avenue
23	E	Drain as it parallels the northern edge of Baseline Road in the southeast ¼ of Section 32, Township 1 North, Range 2 East

**MARICOPA DRAIN
COLOR SLIDE PHOTOGRAPH LOG**

#	DIRECTION	DESCRIPTION
24	E	View of the Maricopa Drain paralleling the northern edge of Baseline Road in the southeast ¼ of Section 32, Township 1 North, Range 2 East as the Drain approaches 51 st Avenue
25	SW	View of the box culvert through which the Drain passes beneath 51 st Avenue
26	E	The Drain as it parallels the northern edge of Baseline Road in the southeast ¼ of Section 32, Township 1 North, Range 2 East as the Drain approaches 51 st Avenue
27	E	An undercut retaining wall in the Drain Channel, where the Drain turns north in the southwest ¼ of Section 33, Township 1 North, Range 2 East
28	N	Northern run of the Maricopa Drain as it traverses the Southwest ¼ of Section 33, Township 1 North, Range 2 East
29	N	Pipe culvert and drainage control structure located at a 90-degree turn in the channel in the Southwest ¼ of Section 33, Township 1 North, Range 2 East
30	W	View of the inflow side of the control structure depicted in Frame 29
31	E	Eastward run of the Drain as approaches Check Dam 3, in the Southwest ¼ of Section 33, Township 1 North, Range 2 East
32	E	Check Dam 3, located in the Southwest ¼ of Section 33, Township 1 North, Range 2 East
33	N	Maricopa Drain as it turns north to traverse the West ½ of Section 33, Township 1 North, Range 2 East; note the concrete lined channel and its low water crossing construction style
34	NE	Close-up of pipe culvert and sluice gate where the Drain crosses a field road in the West ½ of Section 33, Township 1 North, Range 2 East
35	N	Maricopa Drain as it traverses the West ½ of Section 33, Township 1 North, Range 2 East
36	N	A large sluice gate and multiple culverts where the Drain passes under a field road at its eastward turn in the Northwest ¼ of Section 33, Township 1 North, Range 2 East
37	W/SW	A reverse angle view of Frame 36, showing the large sluice gate and an SRP Lateral Canal in the left of the frame and the Maricopa Drain in frame right
38	E	Maricopa Drain as it runs eastwards through the North ½ of Section 33, Township 1 North, Range 2 East. 43 rd Avenue is in the distance
39	N	Maricopa Drain and derelict pumping station at the eastern termination of the project area, at the Drain's intersection with 43 rd Avenue. From here, the Drain continues northward to Southern Avenue.



Project Area
 Maricopa Drain

Photo-Point

0 Mile 1/2 1
 1000 Feet 0 1000 2000 3000
 0 Kilometer .5 1

GN M_N
 0°43' 14°
 13 MILS 249 MILS

Photo Key

Map Source: Laveen & Folwer, 7.5' USGS Quadrangles (central portions) Arizona 1973&82 (33112D&C2), NAD 1927, UTM Zone 12

385 386 387 388 389 390 391 392 393

3696
3695
3694
3693
3692
3691

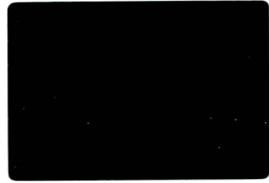
MADE IN U.S.A. 21



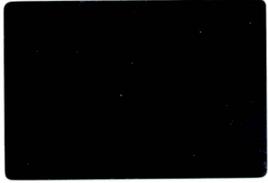
MADE IN U.S.A. 22



MADE IN U.S.A. 23



MADE IN U.S.A. 24



MADE IN U.S.A. 25



MADE IN U.S.A. 26



27



MADE IN U.S.A.

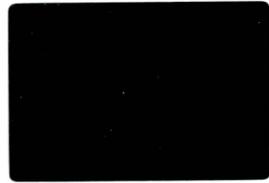
MADE IN U.S.A. 28



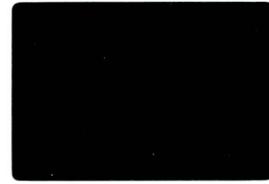
MADE IN U.S.A. 29



MADE IN U.S.A. 30



MADE IN U.S.A. 31



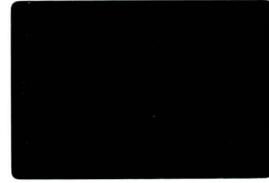
MADE IN U.S.A. 32



MADE IN U.S.A. 33



MADE IN U.S.A. 34



MADE IN U.S.A. 35



MADE IN U.S.A. 36



MADE IN U.S.A. 37



MADE IN U.S.A. 38



MADE IN U.S.A. 39



MADE IN U.S.A.

1



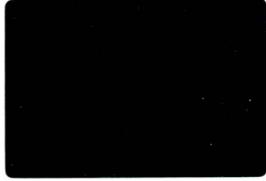
MADE IN U.S.A.

2



MADE IN U.S.A.

3



MADE IN U.S.A.

4



MADE IN U.S.A.

5



MADE IN U.S.A.

6



MADE IN U.S.A.

7



MADE IN U.S.A.

8



MADE IN U.S.A.

9



MADE IN U.S.A.

10



MADE IN U.S.A.

11



MADE IN U.S.A.

12



MADE IN U.S.A.

13



MADE IN U.S.A.

14



MADE IN U.S.A.

15



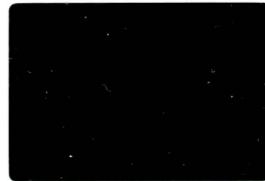
MADE IN U.S.A.

16



MADE IN U.S.A.

17



MADE IN U.S.A.

18



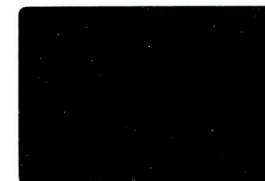
MADE IN U.S.A.

19



MADE IN U.S.A.

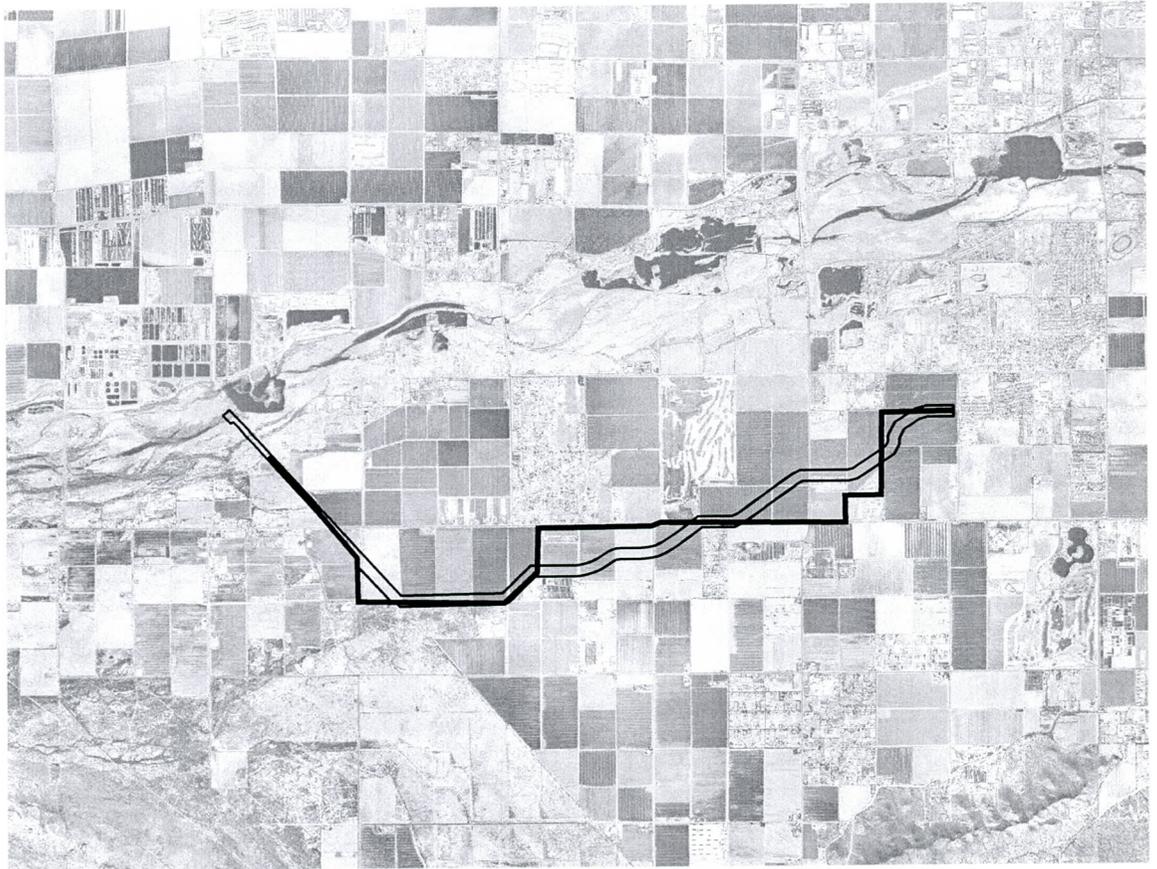
20





Cultural Resource Survey of the Laveen Area Conveyance Channel

Maricopa County, Arizona



prepared for
**Flood Control District
of Maricopa County**

prepared by
URS Corporation

Restrict Distribution

To prevent vandalism, restrict information in this report about the location of archaeological sites.

June 2001

**CULTURAL RESOURCE SURVEY OF THE
LAVEEN AREA CONVEYANCE CHANNEL,
MARICOPA COUNTY, ARIZONA**

prepared for

Flood Control District of Maricopa County
2801 West Durango Road
Phoenix, Arizona 85009-6399

prepared by

Judson Joel White
Kirsten Winter
A. E. (Gene) Rogge
URS Corporation
7720 N. 16th Street, Suite 100
Phoenix, Arizona 85020

with contributions by
Shelly Dudley

Project Control Number 117.08.31
Contract No. 2000C015, Assignment 2
URS Cultural Resource Report 2001-40(AZ)

Restrict Distribution

To prevent vandalism, restrict information in this report about the location of archaeological sites.

June 2001

TABLE OF CONTENTS

List of Figures	ii
List of Photographs	ii
List of Tables.....	ii
Abstract	iii
Acknowledgements	vi
Introduction	1
Project Description.....	1
Project Location	3
Environmental and Cultural Context	3
Environment.....	3
Culture History Summary	5
Records Check.....	8
Prior Studies	8
Survey Expectations.....	10
Survey Methods.....	10
Survey Results.....	16
Webster Farmstead.....	16
Maricopa Drain, AZ T:12:153 (ASM)	21
Isolated Occurrences	27
Previously Recorded Site Not Found.....	28
Conclusion and Recommendations	29
References Cited	30

LIST OF FIGURES

1	General Project Location.....	2
2	Prior Cultural Resource Studies and Previously Recorded Sites	4
3	Survey Results.....	17
4	Map of Webster Farmstead	18
5	Map of the Maricopa Drain and Early Irrigation Ditches	24

LIST OF PHOTOGRAPHS

1	Alfalfa Field	12
2	Alfalfa Field in the NE1/4 of Section 6, T1S, R2E.....	12
3	Fallow Field Where IOs 3, 4, 5 and 6 Were Found	13
4	Fallow Field Where IO 1 Was Found	13
5	Recently Tilled Field Where IO 2 Was Found.....	14
6	Recently Tilled Field Where IOs 7, 8, and 9 Were Found.....	14
7	Example of Field with Young Crop	15
8	Maricopa Drain Outfall Area in the Bed of the Salt River	15
9	Front Façade of the Webster House	20
10	Rear Elevation of the Webster House	20
11	Front Façade of the Storage Shed (former house) at the Webster Farmstead.....	22
12	Rear Elevation of the Storage Shed.....	22
13	Maricopa Drain in Section 33, T1N, R2E.....	26
14	Maricopa Drain Southwest of the Webster House	26

LIST OF TABLES

1	Isolated Occurrences	28
---	----------------------------	----

ABSTRACT

- Agencies:** Flood Control District of Maricopa County (FCDMC)
U.S. Army Corps of Engineers
- Report Title and Date:** *Cultural Resources Survey of the Laveen Area Conveyance Channel, Maricopa County, Arizona.* April 2001
- Project No.:** Project Control Number 117.08.31
Contract No. 2000C015, Assignment 2
URS Job No. E1-15448010.51
- Permit Number:** Arizona State Museum (ASM) Arizona Antiquities Act Blanket Permit 2001-28bl
- Project Description:** The FCDMC plans to construct the Laveen Area Conveyance Channel (LACC) to provide flood protection in the vicinity of the community of Laveen. The broad, shallow earthen channel will be 200 feet wide and 5.7 miles long, and is intended to accommodate use as a recreational trail. The maximum depth will be about 8.5 feet and the side walls generally will have 5:1 slopes, creating a trapezoidal cross section. Access and maintenance lanes, 16 feet wide, will be constructed on each side of the channel. An earthen-lined low flow channel will be built in the bottom of the structure, and an outfall to the Salt River will be constructed at the western end of the channel.

The FCDMC retained URS Corporation to conduct a cultural resource survey in support of the environmental permitting for the LACC project. The survey was designed to assess the impact of construction activities on cultural resources in accordance with applicable state and federal laws. Although none of the lands to be crossed by the LACC are under federal ownership, the project will involve construction activities within "jurisdictional waters" of the United States and therefore requires a permit under Section 404 of the Clean Water Act. The U.S. Army Corps of Engineers administers this permitting program, and issuance of a 404 permit is a federal undertaking subject to Section 106 of the National Historic Preservation Act, and implementing regulations for *Protection of Historic Properties* (36 CFR Part 800). The U.S. Army Corps of Engineers determined that their jurisdiction was limited only to those parts of the project crossing jurisdictional waters, which is just the Salt River channel, but the FCDMC directed us to conduct a comparable level of inventory for the entire project.

Location:

The LACC project is in the southwestern Phoenix metropolitan area, crossing parts of Sections 32 and 33, Township 1 North, Range 2 East (T1N, R2E); Sections 5 and 6, T1S, R2E; Sections 1 and 2, T1S, R1E; and Section 35, T1N, R1E, Gila and Salt River Baseline and Meridian. The project area is depicted on the U.S. Geological Survey (USGS) Fowler and Laveen (1952) 7.5-minute topographic quadrangles.

**Acreage and
Jurisdiction:**

The area of potential effect was defined to include all areas that could be disturbed by construction activities, which encompass approximately 291 acres. Except for public road rights-of-way, all of the property examined at the time of the survey was privately owned. Portions of the defined survey area could not be intensively inspected because of agricultural crops, livestock feedlots and pens, and residential development. About 60 percent of the total survey acreage (174 acres) was intensively inspected.

**Personnel and
Dates of Fieldwork:**

Judson Joel White directed the field survey, and was assisted by Kirsten Winter, project historian, and archaeologists Laura Ramos and Sebastian Chamorro. A total of 10 person-days were expended on the fieldwork, which was conducted from 7 to 9 February 2001. Dr. A.E. (Gene) Rogge served as principal investigator.

**National Register-
Eligible Properties:**

The survey recorded two historic resources evaluated as eligible for the National Register of Historic Places (National Register). The Webster House is a Pyramid Cottage style house built circa 1909. The house retains substantial integrity, and is a relatively rare local example of a once much more common style. The house is considered National Register-eligible under Criterion C for its architectural characteristics.

The Maricopa Drain, which was designated as site AZ T:12:153 (ASM), was built in about 1923-1924. This ditch was an important element of the local irrigation network in the southwestern Salt River Valley. Although a short segment of the ditch was realigned, probably in the 1960s, most of the drain appears to have been changed little since it was built. The Maricopa Drain is evaluated as National Register-eligible under Criterion A.

**National Register-
Ineligible Resources:**

One other building on the Webster farmstead is more than 50 years old, but has been moved and its historical integrity is severely compromised; therefore, this building is not considered National Register-eligible.

Nine isolated occurrences of Hohokam artifacts (a total of 36 pieces of flaked stone, ground stone, and pottery sherds) discovered by the survey are evaluated as ineligible for the National Register.

Recommendations:

The Webster House is in the direct path of the proposed LACC, and the LACC will obliterate portions of the Maricopa Drain as it replaces the drain; the remaining segments of the drain will be abandoned and filled in for safety and aesthetic reasons. These effects will be adverse, as defined by regulations for *Protection of Historic Properties* (36 Code of Federal Regulations [CFR] Part 800), which implement Section 106 of the National Historic Preservation Act. However, the U.S. Army Corps of Engineers concludes that federal purview of the project extends only to the channel of the Salt River, and only a short segment of the Maricopa Drain. The FCDMC has opted to voluntarily consider impacts on significant historic properties throughout the remainder of the project. We recommend that the impacts on the Webster House and Maricopa Drain be mitigated by compiling documentation (maps, drawings, photographs, narrative history) of these properties in accordance with State Historic Preservation Act Documentation Standards for Historic Properties. This documentation has been prepared and compiled as a separate deliverable that will be incorporated into the State Historic Preservation Office (SHPO) files.

Intact remnants of Hohokam or early historic-era canals may be buried within parts of the project but there is no efficient, inexpensive way to verify that. Three recent archaeological testing projects and one archaeological monitoring project in the immediate vicinity of the LACC failed to find such canals. Budgets for these efforts must have exceeded one hundred thousand dollars. In consideration of the meager results for these expenditures, we do not recommend archaeological testing to try to identify canals within the LACC area of potential effect. Archaeological monitoring of construction might be an option, but the excavation of the broad shallow channel probably would be done with belly scrapers and is unlikely to be conducive to recognizing archaeological features.

In the event that unrecorded National Register-eligible or potentially eligible properties or human remains are discovered during construction of the LACC, activities in the vicinity of the discovery should be halted and reasonable measures to avoid or minimize harm to the resource should be implemented. FCDMC should notify the ASM in accordance with the Arizona Antiquities Act, and the find should be evaluated and treated in consultation with ASM and the SHPO, as warranted. If the discovery were within jurisdictional waters of the United States, the U.S. Army Corps of Engineers also should be notified.

ACKNOWLEDGEMENTS

We gratefully acknowledge the efforts of Theresa Pinto, environmental planner, and Bobbie Ohler, project manager, for the Flood Control District of Maricopa County in facilitating our work on this project. We appreciate the cooperation of colleagues Todd Bostwick, Brian Kenny, and Jim Rodgers in providing information and reports about very recent cultural resource studies in the project vicinity. We thank Jo Ellen Saenz and William Haggard, Jr. for providing information about the Webster House. We also thank Shelly Dudley, senior historic analyst of the Salt River Project archives, for application of her research expertise to documenting the history of agriculture in the southwestern Salt River Valley and her contributions to this report.

The URS team included survey crewmembers Sebastian Chamorro and Laura Ramos, and we thank them for their efforts in successfully completing the fieldwork. We also thank Teresa MacDonald and Tom MacDonald, who applied their talents in preparing drawings to document the Webster House. Ron Savage prepared the report graphics, and Keryn Darr edited the report, and we appreciate their attention to the details.

CULTURAL RESOURCE SURVEY OF THE LAVEEN AREA CONVEYANCE CHANNEL, MARICOPA COUNTY, ARIZONA

INTRODUCTION

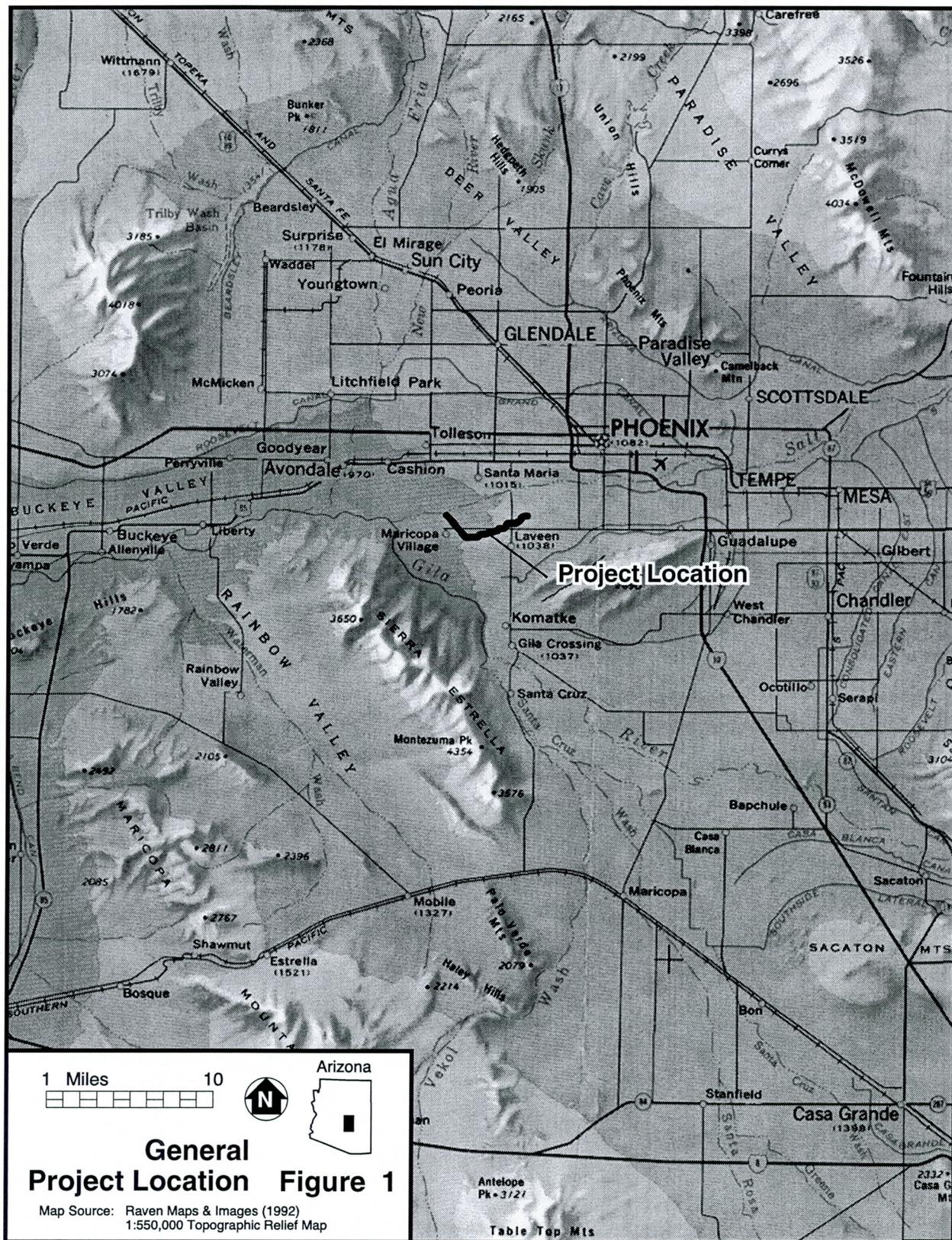
The Flood Control District of Maricopa County (FCDMC) plans to construct the Laveen Area Conveyance Channel (LACC) to provide flood protection in the vicinity of the community of Laveen in the southwestern Phoenix metropolitan area (Figure 1). The LACC will replace the Maricopa Drain, a ditch that is operated and maintained (but not owned) by the Salt River Project (SRP) as a drain or pump ditch. Although the Maricopa Drain has provided incidental flood benefits, the ditch is not designed to safely convey runoff from major storm events. The LACC will follow the alignment of portions of the Maricopa Drain, replacing it, and the other portions of the drain will be filled in for safety and aesthetic reasons.

Project Description

The LACC is designed to accommodate runoff from the 100-year storm event and alleviate local flooding problems. The broad, shallow earthen channel will be 200 feet wide and 5.7 miles long, and is intended to accommodate use as a recreational trail. The maximum depth will be about 8.5 feet and the side walls generally will have 5:1 slopes, creating a trapezoidal cross-section. Access and maintenance lanes, 16 feet wide, will be constructed on each side of the channel. An earthen-lined low flow channel will be built in the bottom of the structure, and the channel will outfall to the Salt River west of 75th Avenue.

Temporary construction easements, 100 feet wide, are required on each side of the permanent 200-foot-wide right-of-way, except where the channel will abut the boundary of the Gila River Indian Community. There will be no temporary construction easement on the southwestern side of the channel at that point to avoid encroachment onto the reservation.

The FCDMC retained URS Corporation to conduct a cultural resource survey in support of the environmental permitting for the LACC project. The survey was designed to assess the impact of construction activities on cultural resources in accordance with applicable state and federal laws. Although none of the lands to be crossed by the LACC are under federal ownership, the project will involve construction activities within "jurisdictional waters" of the United States and therefore requires a permit under Section 404 of the Clean Water Act. The U.S. Army Corps of Engineers administers this permitting program, and issuance of a 404 permit is a federal undertaking subject to Section 106 of the National Historic Preservation Act, and implementing regulations for *Protection of Historic Properties* (36 Code of Federal Regulations [CFR] Part 800). The U.S. Army Corps of Engineers determined that their jurisdiction was limited only to those parts of the project crossing jurisdictional waters, which is just the Salt River channel, but the FCDMC directed us to conduct a comparable level of inventory for the entire project.



The survey was conducted under the authority of an Arizona Antiquities Act Blanket Permit 2001-28bl issued by the Arizona State Museum (ASM) to URS. Records and the report of the project will be curated at the ASM in accordance with a Records Management and Repository Agreement. Judson Joel White directed the field survey, and was assisted by Kirsten Winter, project historian, and archaeologists Laura Ramos and Sebastian Chamorro. A total of 10 person days were expended on the fieldwork, which was conducted from 7 to 9 February 2001. Dr. A.E. (Gene) Rogge served as principal investigator.

Project Location

The community of Laveen is centered on the intersection of 51st Avenue and Dobbins Road. The eastern end of the LACC project area is about 2 miles north of Laveen, and the western end is about 4 miles northwest. The survey area is a linear corridor through portions of Sections 32 and 33, Township 1 North, Range 2 East (T1N, R2E0; Sections 5 and 6, T1S, R2E; Sections 1 and 2, T1S, R1E; and Section 35, T1N, R1E, Gila and Salt River Baseline and Meridian. The project area is depicted on the U.S. Geological Survey (USGS) Fowler and Laveen (1952) 7.5-minute topographic quadrangles (Figure 2).

The area of potential effect was defined to include all areas that could be disturbed by construction activities. The defined survey area encompassed approximately 291 acres, which was composed of four areas. For 4.5 miles the survey corridor was 400 feet wide and accounted for 218.2 acres. Where the LACC abuts the boundary of the Gila River Indian Community the survey corridor narrowed to 300 feet for a distance of 1.2 miles, encompassing 43.4 acres. The third segment included small block of about 1.9 acres area where the outfall will be built in the Salt River channel. The fourth survey area included a 65-foot-wide corridor along those parts of the Maricopa Drain that do not overlap the LACC alignment and will be backfilled. These parts, aggregating to about 3.5 miles long, encompass 27.6 acres. Except for public road rights-of-way, all of the property examined at the time of the survey was privately owned.

ENVIRONMENTAL AND CULTURAL CONTEXT

This section of the report briefly describes the natural environment of the study area, and summarizes the regional cultural history.

Environment

The project area is within the Basin and Range physiographic province and the Sonoran Desert biome (Wilson 1962:86). The project is situated on the early Holocene floodplain of the Salt River and generally parallels the dissected edge of the Pleistocene terrace on the south side of the Salt River (Doyel and Ensor 1997:23-26). Elevations within the study area range from about 970 feet above sea level in the bed of the Salt River to approximately 1,020 feet at the eastern end of the LACC.

The local climate is hot and dry (Sellers and Hill 1974). Annual precipitation averages less than 8 inches, with the heaviest amounts falling in July through September as brief, violent thunderstorms and between December and March as gentler winter rains. Temperatures during late June and early July commonly exceed 110 degrees Fahrenheit. Daytime winter temperatures are usually 60 degrees or higher, but drop into the 30s at night. The first freezing temperature is usually recorded around 19 November, and the last around 4 March.

Cultural History Summary

As is the case throughout the Southwest, the culture history of south central Arizona can be divided into four eras that very broadly equate with changing adaptations or life ways. These include Paleoindian (ca. 10,000-5500 B.C.), Archaic (ca. 5500 B.C.-A.D. 100), Hohokam (ca. A.D. 100-1500), Protohistoric and Historic Aboriginal and Euroamerican (post A.D. 1500). Rodgers' (2000) recent review of the cultural history of the southwest Phoenix area serves as the primary source for the following summary.

Paleoindian and Archaic Eras

In Arizona, both the Paleoindian and the following Archaic periods are best known from research in southern portion of the state, particularly at Ventana Cave (Haury 1976), sites in the vicinity of Sulphur Springs, and in the San Pedro River Valley (Huckell 1984, 1996). No sites of the Paleoindian or Archaic periods are recorded in the vicinity of the LACC.

The Paleoindian period reflects the colonization and expansion of human populations into North America during the terminal Pleistocene. Following a hunter-gatherer life way, Paleoindian groups probably were organized into small family bands or similar groupings of kinsmen. These bands probably were nomadic, following mobile herds of large prey animals, including extinct megafauna species such as mammoth. While biased by factors of variable preservation, the period is best represented in the archaeological record by characteristically large, lanceolate projectile points, particularly the Clovis and Folsom types.

In broad archaeological terms, the Archaic era represents the efforts of social groups across North America to respond to the sweeping environmental changes of the early and early-middle Holocene. Archaic assemblages in southern and central Arizona are denoted by the absence of the lanceolate projectile points of the Paleoindian period and by the absence of pottery common to the following Hohokam period. Archaic lithic assemblages are most recognizable by representative projectile point types, particularly San Pedro, Pinto, and Cienega types. Archaic lithic tool assemblages are characterized by a greater diversity than is encountered in either the preceding Paleoindian period or the subsequent Hohokam phases. Included is an array of bifacial implements, most prominently incorporating invasively retouched pieces, projectile points, utilized and unutilized ("blanks" or "preforms") bifaces, and drills. Unifacially retouched pieces, most commonly interpreted as scraping implements, also are frequently present. Lithic debitage

assemblages are notable, especially in the late Archaic era, for the dominance of bifacial reduction products.

In southern Arizona, Archaic manifestations are taxonomically grouped into the Cochise Culture (Huckell 1984; Sayles and Antevs 1941). Comparative data derived from geological, archaeological, and chronometric evidence are used to divide the Archaic era of southern Arizona into three phases (Whalen 1971). These are the Sulphur Springs Phase (ca. 5500-1300 B.C.), Chiricahua Phase (ca. 3500-1500 B.C.), and San Pedro Phase (ca. 1500-200 B.C.).

Hohokam

There are four (some researchers argue for five) major periods in the Hohokam chronology, which in turn, are divided into a number of phases based on differences in decorated ceramics, other artifact styles, architectural forms, and mortuary practices. The Hohokam historical sequence is reasonably well dated, except for the initial appearance of the tradition (Crown and Judge 1991; Dean 1991; Haury 1976; McGuire and Schiffer 1982).

Archaeologists have long debated the origin of the Hohokam. The cultural tradition is viewed on the one hand as an indigenous outgrowth of the preceding Archaic sequence, or alternatively as the result of immigration from Mesoamerica. Recent research in the Tucson Basin documents the presence of Late Archaic, ceramic-producing, agricultural pit house villages lacking Hohokam traits, but does not resolve the issue of Hohokam origins (for example, Mabry 1998).

About 15 years ago, researchers initiated attempts to reconstruct the expansive Hohokam regional system (Crown and Judge 1991). The Hohokam core area was viewed as the Gila-Salt Basin, which in turn was seen as having been surrounded by a number of peripheral subareas. To the north and east, peripheral areas centered on the Agua Fria River, Verde River, and Tonto Basin. Peripheries south and east of the Gila-Salt Basin include the Safford, San Pedro River, Tucson Basin, and Upper Santa Cruz River areas. To the west and south, peripheral areas include the Gila Bend area and the eastern and western subdivisions of the Papagueria.

In the Gila-Salt Basin, the Pioneer period (about A.D. 300-775) is divided into four phases, but an earlier manifestation, the Red Mountain phase, which predates A.D. 300, also has been recognized (Cable and Doyel 1987; Mabry 1998). Morris (1969) originally recognized this phase almost 30 years ago, but corroborating evidence has been found only recently. From the few sites that have been investigated, the Red Mountain phase appears similar to the terminal Late Archaic sites recently documented in the Tucson Basin, and the relation of the Red Mountain Phase to subsequent Hohokam phases remains unclear.

The four succeeding Pioneer period Hohokam phases include Vahki (A.D. 300-500), Estrella (500-600), Sweetwater (600-700), and Snaketown (700-775) (Dean 1991). Changes primarily in ceramics and architecture signal differences among Pioneer period phases.

Phases defined for the Colonial period include the Gila Butte (A.D. 775-850) and Santa Cruz (A.D. 850-975) (Dean 1991). It is during the Colonial period that domestic architectural units began to be arranged into clusters or courtyard groups (Howard 1985; Wilcox and others 1981). Monumental architecture in the form of ball courts also occurred at some of the more substantial Colonial-period villages in the Gila-Salt Basin.

Usually a single phase is associated with the Sedentary period (about A.D. 975-1150). In the Gila-Salt Basin this is the Sacaton phase. In addition, a Santan phase, transitional to the Classic period, is sometimes defined. The Sedentary period witnessed further expansion of settlements and canal irrigation systems as well as the development of various alternate agricultural strategies. The construction of ball courts continued and another form of monumental architecture, the platform mound, was developed. Hierarchical relationships among Sedentary-period sites are recognized in the Gila-Salt Basin as well as the Tucson Basin (Doelle and others 1987; Gregory 1991; Howard 1985; Wilcox and Sternberg 1983).

The Classic period is divided into two phases in the Gila-Salt Basin. These are the Soho (A.D. 1150-1300) and Civano (A.D. 1300-1400) phases. The Classic period contrasts sharply with the pre-Classic periods, exhibiting radical shifts in material culture, architecture, mortuary practices, and settlement patterning. Agricultural intensification occurred in the Gila-Salt and Tucson basins, and it has been argued that the Tucson Basin increased in importance as a regional center at this time (Doelle and Wallace 1991).

A late Classic or post-Classic occupation, labeled the Polveron phase, has been identified at a small number of sites in the Gila-Salt Basin (Crown and Sires 1984; Rapp 1996; Sires 1983). Researchers still are attempting to interpret this phase (for example, Chenault 1995; Craig 1995; Hackbarth 1995), which is characterized by pit houses constructed on top of apparently abandoned platform mounds, small clusters of pit house in other settings, and high quantities of obsidian debitage. Red-on-brown decorated wares are common as are Salado polychromes. Hopi yellow wares, although not common, usually are present.

The presence of the Hohokam is well documented by archaeological evidence up to about A.D. 1450 or 1500, but archaeological evidence of subsequent periods is rare. Modern O'odham groups consider themselves to be descendents of the Hohokam, as do other groups such as the Hopi, but the relationship between these ethnohistoric groups and the preceding Hohokam is difficult to demonstrate archaeologically. O'odham and Hopi oral traditions provide some insight into the very late prehistoric and protohistoric periods (Bahr and others 1994; Teague 1993).

Euroamerican Settlement

When the first European explorers arrived in the Salt River Valley, they found no settlements of native peoples (Bostwick and others 1996). The valley apparently was a contested boundary zone between the territories of Piman villagers who resided on the Gila River to the south, the Yavapais living to the north and west, and the Western Apaches to the northeast and east. By this time, the Pimas also had been joined by the Maricopa, an amalgamation of several Yuman-

speaking groups who migrated up the Gila River from their homeland on the lower Colorado River, apparently driven out by warfare with the neighboring Quechans and Mojaves.

The Salt River Valley was never settled during the eras of Spanish and Mexican rule of the region (Sheridan 1995). In 1848, the United States acquired the territory under the terms of the Treaty of Guadalupe Hidalgo at the conclusion of the War with Mexico. In 1865 the U.S. Army established Fort McDowell (originally known as Camp Verde, and then Camp McDowell) near the confluence of the Salt and Verde rivers. Within two decades, soldiers based at this fort and others dispersed across the Arizona Territory had conquered the Yavapai and Apache, paving the way for non-native settlement.

Subsequent Euroamerican settlement focused on mining, but was soon followed by ranching and farming. In the late 1860s, Euro-Americans began irrigating along the Salt River by re-excavating the remnants of Hohokam canals, and the Phoenix townsite was laid out in 1870. Agricultural activity in the Salt River Valley continued to thrive and expand as a result of ongoing irrigation efforts.

Farmers harvested mainly hay and grain beginning in the late nineteenth and early twentieth centuries in the valley, which was sold to local mining operations. Later, cotton became a profitable product, largely due to increased demand for long staple varieties during World War I. Feeder cattle also were raised in the southwest valley, and to a smaller extent, dairy cattle (Ryden 1989).

RECORDS CHECK

Rodgers (2000) checked cultural resource records for the Laveen Area Drainage Master Plan, an earlier stage of planning that led to the design of the LACC. His review indicates that the LACC crosses through an area intensively occupied by the Hohokam and numerous Hohokam village sites and irrigation canals, along with some historic-era irrigation canals, have been recorded in the area. Only limited additional background research was conducted for this survey, focusing on Museum of Northern Arizona (MNA) records, which Rodgers did not check, and results of recent and ongoing studies conducted after Rodgers completed his review.

Prior Studies

One MNA study (Weaver 1981), and subsequent studies by Effland (1984) and Effland and Green (1988) were conducted for the Liberty to Coolidge transmission line, but no sites were found in the vicinity of the LAAC corridor. Another MNA survey was conducted for the Palo Verde to Kyrene 500-kV transmission line survey (Powers 1978; Yablon 1982). Ten archaeological sites and 41 isolated finds were found within a corridor about 300 feet wide and 73.3 miles long. This linear survey overlaps the LACC for approximately 1.7 miles, from the bed of the Salt River southeastward to where the two features diverge in the W $\frac{1}{2}$ of Section 1, T1S,

R1E (refer to Figure 2). One of the sites and one isolated occurrence reported by the Palo Verde to Kyrene survey are located in the vicinity of this area of overlap.

Site AZ T:12:2 (MNA) (NA 15,677), better known as Villa Buena, is less than one-quarter mile south of the LACC corridor in Section 1, T1S, R1E. Pueblo Grande Museum staff originally recorded the site as AZ T:12:3 (PG) (Rodgers 2000:25, 27; Schroeder 1940). In the mid-1960s, research by Arizona State University (ASU) documented approximately 40 mounds and two large ball courts at the site, and collected almost 3000 pottery sherds from the surface of this large Hohokam village site. Field and analysis notes on file at ASU document this work (Rodgers 2000:26-27, Yablon 1982:18). Analysis of the collected sherds indicates the site was occupied from the Pioneer to late Classic periods (Sweetwater to Civano phases). The National Park Service subsequently conducted archaeological test excavations at the site (Huckell 1981).

Powers (1978: Figure 1) also reported an isolated occurrence of artifacts northwest of Villa Buena, identifying it as Locus 40. The locus is described as consisting of a piece of ground stone and 6 to 10 pieces of flaked stone.

Three recent surveys, three archaeological testing projects, and one archaeological monitoring project have been conducted in the vicinity of the LACC. Aguila (1999) found no sites in a survey along Baseline Road east of 51st Avenue, and Northland Research (2001) found no sites in a parcel just to the east of the LACC corridor. Grafil (2000) recorded nine archaeological sites during survey along Baseline Road between 51st Avenue and 75th Avenue and along 75th Avenue between Southern Avenue and Broadway. The closest of these sites to the LACC corridor is AZ T:12:127 (ASM), which is located along 75th Avenue about 0.25 mile north of Baseline Road (refer to Figure 2). Definition of this site was based 111 artifacts distributed across an area of 13.6 acres, a density of only 0.002 artifact per square meter (an average of only 1 artifact for every 22- by 22-meter area). The assemblage included 67 sherds (dominated by 56 pieces of Gila Plain, Salt Variety), 39 flaked stone artifacts, 2 unidentified faunal specimens, and three historical artifacts. No features were noted. Grafil (2000:25) concluded that this site "is likely the northern periphery of Baseline Ruin, located 400 meters to the south." Howard (1991) plots the Baseline Ruin on his map of Hohokam sites and canals in the Phoenix Basin in the NE1/4 of Section 2, T1S, R1E, but the site is poorly known. Howard based his plotting on the field books of Frank Midvale (Jerry Howard, personal communication, 2001).

Brown (2000) tested five archaeological sites and two canal alignments along Baseline Road between 51st Avenue and 75th Avenue (as well as two sites along 75th Avenue north of the Salt River). Only one site, AZ T:12:151 (ASM), was found to have any subsurface features (three or four hearths and an adobe wall), and was evaluated as eligible for listing on the National Register of Historic Places (National Register). Specific testing at the plotted alignments of Canal Primero and the Indian Ditch failed to find archaeological remnants of those canals.

Homburg and Ciolek-Torrello (2000) recently conducted archaeological test excavations for the Maricopa County Department of Transportation (MCDOT) at locations along Baseline Road between 7th and 51st Avenues searching for Hohokam canal segments and other archaeological features. Approximately 600 meters of trenches were excavated at selected locations, focusing on

the area between 29th Avenue and approximately 400 meters west of 43rd Avenue. Only a single isolated pit feature was found approximately 300 meters west of 29th Avenue. This feature was designated as site AZ T:8:106 (ASM), and evaluated as not eligible for the National Register. None of the anticipated Hohokam canals were identified. MCDOT also has sponsored recent archaeological testing along 51st Avenue from Broadway Road south to the Gila River Indian Reservation. Although this work anticipated finding several Hohokam canals, none were located (Ciolek-Torrello 2000; Brian Kenny, MCDOT, personal communication, February 2001).

Jim Rodgers (personal communication, 20 February 2001) recently completed archaeological monitoring of utility installation along 43rd Avenue between Broadway Road and Baseline Road. This project crossed numerous alignments of Hohokam Canals, but none were detected.

Survey Expectations

The LACC crosses an area intensively occupied by the Hohokam. We expected to find evidence of perhaps two recorded large sites—Pueblo Primero and Baseline Ruin—where the LACC corridor is near them. The survey corridor also crosses several plotted alignments of Hohokam canals, including Canal Laveen, Canal Primero, and Canal Baseline mapped by Midvale. When recorded, another canal, designated as site AZ T:12:92 (ASM), was described as an undated 600-meter-long depressed channel of dark soil (Owens 1995). The historic Leon Canal followed the alignment of Canal Primero, and the alignment of another historic irrigation canal, Indian Canal, also crossed the project area. The Maricopa Drain also was recognized as a potentially historic structure.

Because the area has been highly developed for modern agriculture and is now being converted to suburban uses, we anticipated that this development masked the surface indications of many archaeological sites and canals. We anticipated that the current agricultural uses would either hinder our survey if crops were being grown, or facilitate the survey if fields had been recently plowed. Project aerial photographs also indicated there were some buildings within the survey corridor and the historic values of some of these might warrant evaluation.

SURVEY METHODS

The crew located the survey corridor using USGS topographic quadrangles and project design drawings. The study corridor was intensively inspected by three to four crewmembers walking systematic transects spaced 20 meters apart. A GeoExplorer II global positioning system (GPS) unit, which is accurate to ± 5 meters or better with differential correction, was used for mapping. No artifact collections were made and no subsurface testing was undertaken.

We used ASM guidelines in designating archaeological sites and defining their boundaries. ASM Administrative Rules (Chapter 8-201.A.3) implementing the Arizona Antiquities Act (ARS 41-841, et seq.) define an archaeological site as:

any area with material remains of past Indian or non-Indian life or activities that are of archaeological interest, including without limitation, historic or prehistoric ruins, burial grounds, and inscriptions made by human agency.

The ASM Site Recording Manual (version 1.1, page A-7) defines remains of archaeological interest as one or more archaeological features, which are, in turn, defined as:

Physical remains of past human activity which are at least 50 years old and which are distinguished by boundaries that are based entirely on observable variations in the spatial distribution of the remains. Features include passive accumulations of artifacts, such as artifact concentrations, as well as purposeful constructions, excavations, or deposits.

An artifact concentration is defined as "thirty or more artifacts within an area measuring no more than 50 feet (15 meters) in diameter, except in cases where the artifacts clearly originated from the same item."

Additional guidance is provided by an ASM letter dated 1 October 1994 that identifies other situations that may warrant designations as an archaeological site, including the following:

- 20 or more artifacts, including at least two classes of artifact types within an area 15 meters in diameter
- one or more archaeological features in temporal association with any number of artifacts
- two or more temporally associated archaeological features without artifacts

The ASM guidelines also recognize that other particular circumstances may warrant designation as an archaeological site, and encourage archaeologists to use professional judgment to make appropriate field decisions.

When cultural materials were located, the crew examined the surrounding areas to determine whether the finds warranted designation as a site or isolated occurrence.

FCDMC acquired rights-of-entry for the survey team, with the exception of one trailer park in the SW1/4 of Section 35, T1N, R2E. The degree of development and ground disturbance in this parcel would have made survey impossible even if access had been available.

Agricultural fields dominate current land use along the LACC corridor, although transportation and residential housing developments also are present along the survey corridor. Farming focuses on growing cotton and alfalfa in fields leveled for flood irrigation. At the time of the survey, several fields of alfalfa totally obscured the ground surface making survey impossible (Photograph 1 and 2). Some fields were fallow and the extent of weedy cover varied considerably in these fields (Photographs 3 and 4). Some recently cultivated fields or fields with recently germinated crops provided good to excellent ground surface visibility (Photographs 5, 6, and 7). In the outfall area, recent alluvial sediments and cobbles mantled the ground surface and



Photograph 1: Alfalfa Field (view east from 51st Avenue)



Photograph 2: Alfalfa Field in the NE1/4 of Section 6, T1S, R2E (view to the east)



Photograph 3: Fallow Field Where IOs 3, 4, 5, and 6 Were Found (view to the southeast)



Photograph 4: Fallow Field Where IO 1 Was Found (view to the southwest)



Photograph 5: Recently Tilled Field Where IO 2 Was Found (view to the northwest)



Photograph 6: Recently Tilled Field Where IOs 7, 8 and 9 Were Found (view to the northwest)



Photograph 7: Example of Field with Young Crop (view to the northeast) Note height of terraced on the right indicating substantial cuts and fills used to level land in this area.



Photograph 8: Maricopa Drain Outfall Area in the Bed of the Salt River (view to the east)

vegetation was dense in places (Photograph 8). One parcel on the southern margin of the Salt River channel is a pasture with dense grass cover that made it impossible to intensively inspect.

Other areas that could not be intensively inspected include livestock feed lots and pens, including an area south of the Maricopa Drain in Section 1, T1S, R1E and in the NW1/4 of Section 6, T1S, R2E. Residential development along the Maricopa Drain on the southern margins of Pueblo Primero obscured the ground surface in that area. Maintained roadways also obscured part of the survey corridor. In total, about 60 percent of the total survey acreage (174 of 291 acres) was intensively inspected (Figure 3).

SURVEY RESULTS

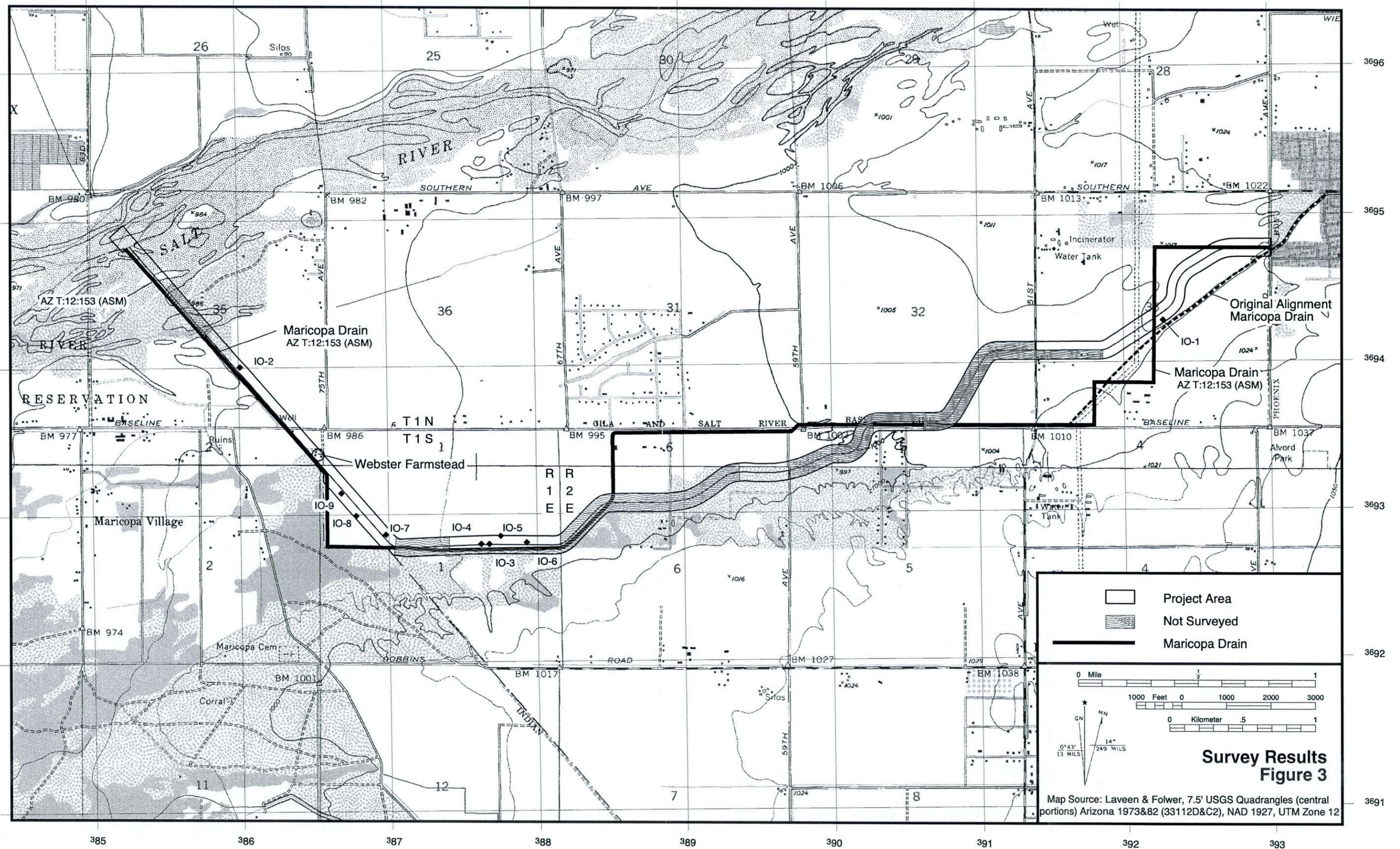
The survey resulted in the recording of two historic resources, and nine isolated occurrences of Hohokam artifacts (refer to Figure 3). One of the historic resources is the Webster farmstead, and the other is the Maricopa Drain, which was designated site AZ T:12:153 (ASM). Both of these historic resources are evaluated as eligible for the National Register. The isolated finds are evaluated as ineligible for the National Register.

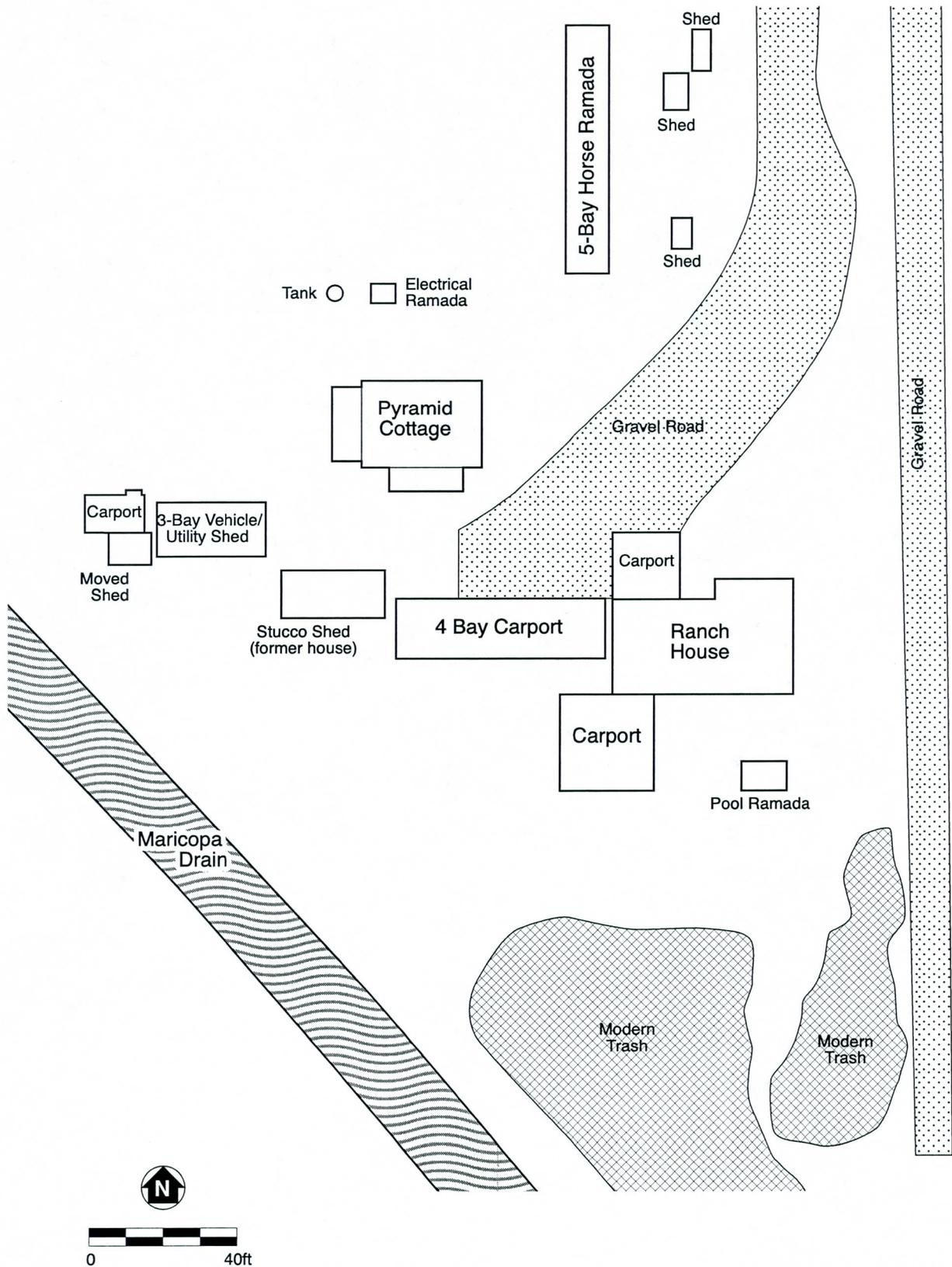
In addition, several in-use, concrete lined irrigation field ditches were noted. These are part of the Western Canal system but none are major laterals. The U.S. Reclamation Service began construction of the Western Canal in 1911 after the Tempe Canal Company refused to sell the Tempe Canal to the federal government for incorporation into the larger SRP irrigation system. The Western Canal was previously determined eligible for the National Register and Historic American Engineer Record documentation has been compiled (Anderson 1990). The field ditches of the Western Canal have been continuously maintained, upgraded, and modified over the years. We conclude they do not contribute to the historic values of the Western Canal and do not warrant preservation.

Webster Farmstead

The Webster farmstead is located south of Baseline Road on the west side of 75th Avenue and just east of the boundary of the Gila River Indian Reservation. The Maricopa Drain runs just to the southwest of the farm complex, which consists of two houses, a storage building, a vehicle storage shed, three covered parking areas, four other small sheds, horse corrals, and other minor structures (Figure 4).

One of the houses and the storage shed are the only buildings of historic age. According to the Webster family, an old barn and shed previously located on the property have been demolished. The other residence is a ranch-style house constructed in the early 1970s. The vehicle storage shed is constructed of steel supports, horizontal wood siding, and the roof covering is standing seam metal. All of the covered parking areas are modern structures of steel supports with standing seam metal roofs and concrete slab foundations.





Map of the Webster Farmstead Figure 4

The farmstead has changed ownership at least 10 times in the past century since James P. Washburn of Maricopa County acquired the property from the public domain by cash entry in December 1901. The Websters purchased the farm from the Haggards of the Buckeye area in 1968. The Haggards, who owned the property since 1946, produced cotton and hay, while the Websters used the farm primarily for a cattle operation. The Websters no longer raise cattle and currently use the property to raise horses and as a residence.

Webster House

The Webster House, located near the center of the farmstead, is a Pyramid Cottage constructed circa 1909. The Pyramid Cottage style dates from the late Victorian era, and is a predecessor of the classic Bungalow (Roberts and others 1992). House pattern books offered mail-order plans for houses of the Pyramid Cottage style. The defining characteristics of this style include the following:

- one-story height
- cross-wing floor plan
- asymmetrical façade and box-like shape
- hip roof, sometimes “belcast” or curved as it reaches the eaves, commonly with a small dormer centered on the front roof
- front porch over a recessed entry usually supported by one column
- raised stone or concrete block foundation with brick or rusticated concrete block upper walls
- tall, flat-topped, round or segmentally arched door and window openings
- double-hung and fixed picture windows
- simple molded wood trim
- corbeled brick masonry trim

The Webster House is a one-story building set on a concrete wall foundation, facing east (Photographs 9 and 10). The wall materials are rusticated concrete block and horizontal wood siding. Rusticated concrete blocks typically were made with easy-to-use concrete block-forming machines obtained through mail order catalogs. Residents of the adjacent Gila River Indian Community told the Websters that the concrete blocks for the house were cast on site, suggesting local Indians were hired to make the blocks (Jo Ellen Saenz, personal communication, 12 February 2001).

The Webster House has a belcast roof covered with asphalt composition shingles with clay tile along the ridgelines. The windows are double hung, 1 over 2-light and 1 over 1-light, wood frame windows with concrete lintels. One of the windows has a wrought iron grill covering. The recessed entry forms a porch, which is supported by two Ionic order concrete columns. Two single entries are located on the porch with concrete lintels. The main entrance has been covered with a metal security door and the original transom has been covered with decorative wood. The



Photograph 9: Front Facade of the Webster House (view to the west-southwest)



Photograph 10: Rear Elevation of the Webster House (view to the east-northeast)

other entry has been boarded over. There is a hipped roof dormer with a vent centered in the front roof. A rusticated concrete block interior chimney is located on the north elevation.

Two wood-frame shed roof wings are located on the south and west elevations. A former property owner indicated these were originally screened sleeping porches and remained so until at least 1968 (William H. Haggard, Jr., personal communication, 3 April 2001). After the Websters purchased the property, these porches were filled in to create a bedroom on the south elevation and an enclosed porch and office on the west elevation. These frame additions are clad in horizontal wood siding with vertical slat siding under the roofline. Modern two-light, aluminum frame, sliding windows have been installed in these wings on the east, south, and west elevations.

The Webster House retains substantial integrity and locally is a relatively rare example of a once much more common style. Therefore, we conclude that the house is eligible for the National Register under Criterion C.

Storage Shed (Former House)

The storage shed is located south of the Webster House. A former property owner indicated this building originally was used as a house in an agricultural field east of the Webster property, and was moved to its current location in the late 1950s or early 1960s (William H. Haggard, Jr., personal communication, 3 April 2001). The building probably was constructed in the early twentieth century.

The building is a one-story structure of wood frame construction clad with concrete stucco over chicken wire (Photographs 11 and 12). Part of the building covered with horizontal wood siding appears to be an addition. The windows are double-hung, 6 over 2-light windows with wood sashes and surrounds. The roof is a side gable with a shed roof addition, both covered with standing seam metal over wood shingles. The building rests on a concrete foundation.

The building is in poor structural condition. Several of the window openings are boarded over, and the single entry front door has been replaced with a metal door. The roof is deteriorating and falling in, and the additions adversely affect the overall integrity of the original structure. Because the building has been moved and retains little historic integrity, we conclude it is ineligible for the National Register.

Maricopa Drain, AZ T:12:153 (ASM)

The Maricopa Drain is an approximately 8-mile earthen channel (of which 6.5 miles was surveyed) that ranges from 10 to 30 feet wide. Documents in the SRP archives indicate that the Maricopa Drain was constructed almost 80 years ago. Therefore, arrangements were made for Shelly Dudley, senior historical analyst of the SRP archives, to document the history of this structure and use that information in recording and evaluating the historic values of the drain.



**Photograph 11: Front Facade of the Storage Shed, (former house) at the Webster Farmstead
(view to the southeast)**



Photograph 12: Rear Elevation of the Storage Shed (view to the northeast)

History

The Maricopa Indians were practicing irrigation agriculture near the confluence of the Salt and Gila rivers when Euroamerican settlers arrived. The earliest official recorded date of cultivation for lands in the southwestern part of the Salt River Valley by non-Indians dates to 1883. Joseph Lambeye, Jean Orteig, and D. Claboret dug the first canal in what was known as the Peninsula, Horowitz, and Champion area in 1893. A 1903 U.S. Reclamation Service map indicates the Champion Living Ditch had its heading in the SW1/4 of Section 26, T1N, R2E about 1 mile south of the Salt River and 1.5 miles east of the LACC project. The label "living" apparently reflected the source of the water in a small marsh or shallow artesian well.¹

After the U.S. Reclamation Service completed Roosevelt Dam on the Salt River above the Phoenix Basin in 1911, the amount and reliability of water available for irrigation in the Salt River Valley increased markedly. As the scale of irrigation expanded, the marshy land of the southwest valley became waterlogged in less than a decade. In 1920, farmers in the southwest valley formed the Maricopa County Drainage District No. 5 under the authority of the Maricopa County Board of Supervisors. The District encompassed 2,700 acres. Clarence G. Thomas, Hugh H. Thomas, and D.L. Sutton were elected as the first directors. In December 1920, the District issued \$95,500 in bonds, and \$88,000 were issued to Jimmy's Construction and Engineering, probably for construction of the Maricopa Drain.² However, construction did not actually begin until 1923. The eastern end of the Drain followed the Champion Ditch for about 0.5 mile but was for the most part a new ditch (Figure 5)

In 1923, the District signed an agreement for a right-of-way with three local landowners, Gray Archer, N.P. McCallum, and Francisco Satrustegui, who claimed water from the Champion Ditch. These landowners agreed to grant to the District the right-of-way and their interest in approximately the easternmost 0.5 mile of the Champion Ditch. These landowners retained claims to up to 100 inches of water provided by the ditch. The District recognized the right of these landowners to the first 2.5 second-feet of water and agreed to deliver that same amount of water.³ In 1924, the District obtained additional right-of-way, 50 to 100 feet wide, from the Clarence G., Hugh H., and Albion C. Thomas family for about the westernmost 2.5 miles of the Drain.⁴ Other parts of the drain apparently were constructed through unpatented public land.

¹ U.S. Exhibit I, *U.S. v Haggard*, 17, 22. Maricopa County Recorder's Office, Book of Canals I 291. U.S. congress, House, *Report in the Matter of the Investigation of the Salt and Gila Rivers Reservations and Reclamation Service*, H. Report 1506, 62d Cong., 3d sess., 1913, 650-52.

² Clarence G. Thomas, President, to Maricopa County Board of Supervisors, 19 April 1923 (Clerk of the Board of Supervisors). SRP, also was building the Laveen and Crosscut drains at this time and Board of Governors Minutes of 30 December 1920 indicated SRP studied the potential of providing services for Drainage District No. 5 but no agreement was ever made.

³ Agreement, N.P. McCallum, Gray Archer, and Francisco Satrustegui and Drainage District No. 5, 18 May 1923. Maricopa County Recorder's Office, Deeds Book 175:528.

⁴ Right-of-Way Deed, 21 June 1924, Maricopa County Recorder's Office, Book of Deeds 186:199. The Thomas family owned the Webster House at that time.

By the late 1920s, after a number of dry years, a shortage of irrigation water replaced the problem of waterlogging. As early as 1923, the Indian Irrigation Service had suggested using the drain to convey irrigation water to lands farmed by the Maricopa Indians at the northern edge of the Gila River Indian Reservation. In 1936, SRP signed a contract with the federal government to install and operate a well to satisfy water rights for the Maricopa Indians via the drain. In 1973 a booster pump was installed and a check structure was built in 1981 to continue to meet those requirements.⁵

Drainage District No. 5 declared bankruptcy in 1944 because of inability to meet bond obligations and pay state and county taxes. By the early 1940s (and perhaps even in the 1930s), SRP took over maintenance of the Maricopa Drain and connected it to the SRP lateral system as a drainage ditch of the Western Canal⁶. Although the FCDMC explored acquisition of the Maricopa Drain as a flood control structure in 1968, the 1944 bankruptcy had left Drain ownership uncertain and the FCDMC did not become involved in ownership or maintenance of the ditch. In the spring of 1971, SRP cleaned the ditch and graded the adjacent road, and in the 1970s SRP formally acquired easements for the ditch from current landowners. Plats showing this right-of-way were filed with the Maricopa County Recorder's Office in 1977.⁷

In summary, Maricopa Drainage District No. 5 built the Maricopa Drain in about 1923-1924 to drain waterlogged land in the southwestern portion of the Salt River Valley. Within a decade, a shortage of water, rather than an abundance of water, became a more common problem. The drain has continued to be used to collect irrigation tail water and deliver water to downstream users.

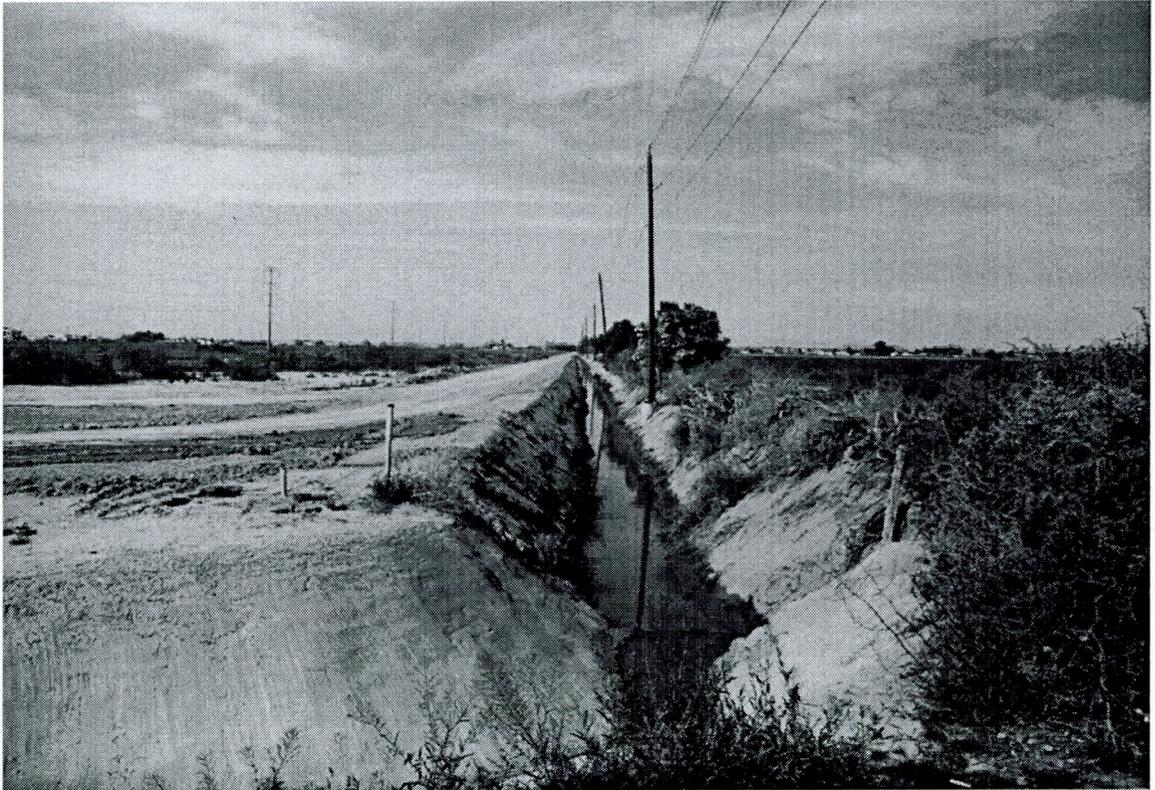
Current Condition and Evaluation

Field survey indicated that the Maricopa Drain remains an unlined, earthen channel (Photographs 13 and 14). The drain has been cleaned and maintained, more intensively since the 1970s than during its original half century of use, and a few modifications have been made over the years, such as adding a check structure in the 1980s. Review of the 7.5-minute USGS quadrangle and aerial photos provided by FCDMC identified a linear feature in the E1/2 of Section 33, T1N,

⁵ Letter, Herbert Clotts, Supervising Engineer, Indian Irrigation Service, to Commissioner of Indian Affairs, 19 October 1923. Contract for Pumping Water for Maricopa Indians on Gila River Indian Reservation, United States and Salt River Valley Water Users' Association, 5 May 1936. Agreement, Salt River Valley Water Users' Association and Bureau of Indian Affairs, Pima Agency, 11 September 1981.

⁶ O.D. Miller, Director Drainage District No. 5 to Board of Supervisors Maricopa County, 29 October 1942. Stamp on letter notes approval on 6 January 1943. *In the Matter of Drainage District No. 5, Maricopa Co.*, No. B 1134 PHX, U.S. District Court, "Notice to Creditors," January 1944. Association, Board of Governors, Minutes, 5 June 1933.

⁷ Barry Lauseda to John C. Lowry, General Manager Flood Control District of Maricopa County, 4 September 1968. Charles Stidham to Lowry, Flood Control District of Maricopa County, 31 October 1968. Irrigation project records, Water Engineering and Transmission files. See Easement, McClellan and Salt River Project Agricultural Improvement and Power District, 20 September 1976. Docket 11898:742. Maricopa Drain Right-of-Way plats, Docket 12575, 289-90, 8 November 1977.



Photograph 13: Maricopa Drain in Section 33, T1N, R2E (view to the north)



Photograph 14: Maricopa Drain Southwest of the Webster House (view to the southeast)

R2E. Comparison with historic maps confirmed that this was the original alignment of the Maricopa Drain. Field observations indicated that a swath of higher, greener, and denser vegetation about 10 meters wide demarcates this feature. SRP archives do not document when this realignment along aliquot parts of Section 33 was made, but probably was in the early 1960s (Shelley Dudley, personal communication, 13 February 2001). The rest of the original alignment appears to be unaltered.

Some intrusions such as high-voltage electrical power lines, upgraded streets, and laser-leveled fields have somewhat altered the landscape surrounding the Maricopa Drain, but much of the setting of the drain remains agricultural land and its function remains readily observable. We conclude that the Maricopa Drain retains sufficient historical integrity to be eligible for the National Register under Criterion A, for the role it played in the agricultural history of the Salt River Valley.

Isolated Occurrences

The nine isolated occurrences (IOs) found within the study area are single artifacts or small artifact clusters, and in one case a larger, low-density surface scatter (Table 1, refer to Figure 3). None of these finds meet ASM guidelines for designation as archaeological sites. IOs were found principally in areas of good surface visibility along the western half of the LACC corridor (refer to Photographs 3, 5 and 6).

IO 1, a single flaked stone core, is the only artifact found along the LACC corridor east of 67th Avenue. IO 3, 4, 5 and 6 cluster in the E1/2 of Section 1, T1S, R1E. The seven artifacts found in these IOs include four pieces of flaked stone (two flakes and two cores), two metate fragments, and a single sherd of plain ware pottery (probably Wingfield Plain).

IO 7, 8 and 9 cluster in the NW1/4 of this same section, a location that corresponds to what Powers (1978) previously had reported as Locus 40 when a survey was conducted for the Palo Verde to Kyrene transmission line project. Locus 40 was described as a cluster of 6 to 10 flakes and a piece of ground stone. The 13 artifacts in IOs 7, 8, and 9 include 9 pieces of flaked stone (8 flakes and 1 core), 1 hammer stone, 1 piece of ground stone, and 2 sherds of plain ware pottery (probably Wingfield Plain).

Fifteen items were recorded at IO 2. These include four pieces of flaked stone (two flakes and three cores), two pieces of ground stone, and eight sherds of plain ware pottery (probably five pieces of Wingfield Plain and three pieces of Gila Plain). IO 2 is in the general vicinity of the Baseline Ruin. The meager findings in this area do not support Grafil's (2000) hypothesis that site AZ T:12:27 (ASM), which she recorded about 0.25 mile to the east of IO 2, is an extension of the Baseline Ruin.

**TABLE 1
ISOLATED OCCURRENCES**

IO No.	Area (m ²)	Description
1	<1	1 metabasalt core with three platforms and two working faces.
2	30,000	3 plain, grit tempered sherds (probably Gila Plain) 5 plain, phyllite tempered sherds (probably Wingfield Plain) 1 metabasalt single platform core 1 basalt single platform core, reused as hammer stone 1 cryptocrystalline silicate lenticular core 1 metabasalt flake 1 cryptocrystalline silicate flake 2 vesicular basalt ground stone fragments
3	5	1 basalt core fragment 1 vesicular basalt trough metate fragment
4	5	2 metaquartzite flakes 1 plain, phyllite tempered sherd (probably Wingfield Plain)
5	<1	1 vesicular basalt trough metate fragment
6	<1	1 basalt single platform core
7	55	2 plain, phyllite tempered sherds (probably Wingfield Plain) 1 metabasalt single platform core 1 metabasalt flake 2 basalt flakes 1 cryptocrystalline silicate flake
8	<1	1 basalt hammer stone
9	25	4 basalt flakes 1 vesicular basalt ground stone fragment

All of the IOs probably reflect uses of flaked and ground stone tools and ceramic containers in conjunction with a variety of limited activities on the margins of large, Hohokam villages and in surrounding fields. Any archaeological features, such as hearths, that might have been left by such activities almost certainly would have been destroyed by agricultural development. None of the artifacts provide any precise chronological evidence, and further study of these isolated finds is unlikely to yield important information. We have identified no other historic values of these isolates that warrant preservation, and conclude they are ineligible for the National Register.

Previously Recorded Resources Not Found

Pueblo Primero is a Classic-period Hohokam village site, designated as AZ T:12:14 (PG) and AZ T:12:19 (ASU). Decades ago, Pueblo Primero was described as a very substantial archaeological site with two ball courts, a platform mound, house remnants, and numerous trash middens. Although the site has been the sporadic focus of research for 80 years (Bostwick and Rice 1987; Howard 1991; Kelley 1939; Midvale 1966, 1968; Schroeder 1940; Turney 1929), relatively little is known about the site. Agricultural development has disturbed the site since at least the 1930s, and more recent residential development has further damaged the site.

A short segment of the Maricopa Drain cuts through the southeast corner of Pueblo Primero, in the NE¼ NW¼ of Section 6, T1S, R12E. Survey of a narrow corridor along the drain found no

evidence of Pueblo Primero. The location of this site was recorded and mapped decades ago and is subject to some margin of error. Because the survey encompassed only a narrow transect through a highly disturbed area, the lack of evidence for Pueblo Primero is not unusual.

The survey also found no evidence of the several Hohokam and historical canal alignments that have been plotted in the area, except for the realigned segment of the Maricopa Drain discussed above. This may be due to agricultural development and dense vegetation in the vicinity of several expected intersection points. This is particularly true for Canal Laveen in Sections 32 and 33, T1N, R2E and in Section 6, T1S, R2E; for the canal designated as AZ T:12:92 (ASM) in Section 5, T1S, R2E; and for Canal Primero in Section 1, T1S, R1E (refer to Figure 2). However, even the canal alignment intersections in areas of good surface visibility, such as Canal Baseline and the Indian Canal in Section 35, T1N, R1E, did not manifest any observable surface evidence. Such findings are the rule rather than the exception throughout the Salt River Valley because the degree of modern development has obliterated surface evidence of almost all Hohokam canals.

CONCLUSION AND RECOMMENDATIONS

The survey was able to effectively inspect only about 60 percent of the total area of potential effect (174 of 291 acres) due to poor surface visibility or land use and access issues. This degree of coverage is less than ideal, but we conclude it represents a reasonable inventory effort. Additional isolated artifacts may remain unrecorded, but we conclude it is unlikely that any significant archeological or historical sites were missed.

To be sure, intact remnants of Hohokam or early historic-era canals may be buried within parts of the project but there is no efficient, inexpensive way to verify that. Although it is generally agreed that the Patrick (1903), Turney (1929), Midvale (1966, 1968), and Howard (1991) canal maps are broadly accurate, they nonetheless lack locational precision. This is largely due to the limits in survey technology at the time the canals were mapped, and the lack of surface evidence of these features within the modern developed landscape. Therefore, there is no way to precisely target archaeological testing to search for buried remnants of these canals. Agricultural plowing, ripping, and land leveling may have destroyed some canals, although deeper canals certainly can remain intact beneath the plow zone. As discussed above, three recent archaeological testing projects and one monitoring project in the LACC project vicinity along Southern Avenue, Baseline Road, 43rd Avenue, and 51st Avenue have been conducted to search for buried remnants of canals and other archaeological features. None of these projects were successful in finding the major Hohokam canals or historic-era canals, such as Canal Primero/Leon Canal, Canal Laveen, the South Branch of Canal Laveen, and the Indian Ditch, which are the major canals that cross the LACC corridor. Budgets for these efforts must have exceeded one hundred thousand dollars (Todd Bostwick, Pueblo Grande Museum, and Brian Kenny, MCDOT, personal communication February 2001). In consideration of the meager results for these expenditures, we do not recommend archaeological testing to try to identify canals within the LACC area of potential effect. Archaeological monitoring of construction might be an option, but the excavation of the broad, shallow channel probably would be done with belly scrapers and is unlikely to be conducive to recognizing archaeological features.

In summary, two significant historical properties have been identified within the project area—the Webster House and the Maricopa Drain. We conclude the Webster House is National Register-eligible under Criterion C, and the Maricopa Drain is eligible under Criterion A. The Webster House is in the direct path of the proposed LACC, and the LACC will obliterate portions of the Maricopa Drain as it replaces the drain; the remaining segments of the drain will be abandoned and filled in for safety and aesthetic reasons. These effects will be adverse, as defined by regulations for *Protection of Historic Properties* (36 CFR Part 800), which implement Section 106 of the National Historic Preservation Act. However, the U.S. Army Corps of Engineers concludes that federal purview of the project extends only to the channel of the Salt River, and only a short segment of the Maricopa Drain. The FCDMC has opted to voluntarily consider impacts on significant historic properties throughout the remainder of the project. We recommend that the impacts on the Webster House and Maricopa Drain be mitigated by compiling documentation (maps, drawings, photographs, narrative history) of these properties in accordance with State Historic Preservation Act Documentation Standards for Historic Properties. This documentation has been prepared and compiled as a separate deliverable that will be incorporated into the State Historic Preservation Office (SHPO) files.

In the event that unrecorded National Register-eligible or potentially eligible properties or human remains are discovered during construction of the LACC, activities in the vicinity of the discovery should be halted and reasonable measures to avoid or minimize harm to the resource should be implemented. FCDMC should notify the ASM in accordance with the Arizona Antiquities Act, and the find should be evaluated and treated in consultation with ASM and the SHPO, as warranted. If the discovery were within jurisdictional waters of the United States, the U.S. Army Corps of Engineers also should be notified.

REFERENCES CITED

Aguila, Lourdes

1997 *Archaeological Survey of Baseline Road from 7th to 51st Avenues, Phoenix, Maricopa County, Arizona.* Archaeological Consulting Services, Tempe.

1999 *A Cultural Resources Survey for the Proposed El Paso Natural Gas 2039 Line Relocation/Removal, Southwest Phoenix, Maricopa County, Arizona.* Archaeological Consulting Services, Tempe.

Anderson, Fred

1990 *Western Canal, South Side of the Salt River, Mesa, Tempe, and Phoenix, Maricopa County, Arizona.* Historic American Engineering Record No. AZ-22. Salt River Project, Phoenix and National Park Service, Western Region, San Francisco.

Bahr, Donald, Juan Smith, William Smith Allison and Julian Hayden

1994 *Short Swift Time of Gods on Earth: The Hohokam Chronicles.* University of California Press, Berkeley.

Bostwick, Todd W. and Glen Rice

1987 *A Cultural Resource Inventory for the Southwest Loop Freeway Project.* OCRM Report No. 66. Department of Anthropology, Arizona State University, Tempe.

- Bostwick, Todd W., David H. Greenwald and Mary-Ellen Walsh-Anduze
 1996 The Hohokam Post-Classic Period Occupation and a Piman Presence on the Salt River Floodplain. In *Life on the Floodplain: Further Investigations at Pueblo Salado for the Phoenix Sky Harbor International Airport*, edited by David H. Greenwald, J.H. Ballagh, D.R. Mitchell and R.A. Anduze, pp. 419-448. Anthropological Paper No. 4. Pueblo Grande Museum, Phoenix.
- Brown, Gregory
 2000 *Preliminary Report on Arizona and National Register of Historic Places Eligibility Testing of Sites and Canal Alignments along Southern and 75th Avenues, Maricopa County, Arizona*. Logan Simpson Design, Tempe.
- Cable John S. and David E. Doyel
 1987 Pioneer Period Village Structure and Settlement Patterns in the Phoenix Basin. In *The Hohokam Village: Site Structure and Organization*, edited by David E. Doyel, pp. 21-71. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Glenwood Springs, Colorado.
- Chenault, Mark L.
 1995 *In Defense of the Polvoron Phase*. Paper presented at the Arizona Archaeological Council Fall Meeting, Flagstaff.
- Ciolek-Torrello, Richard
 2000 *Plan of Work, Archaeological Testing, 51st Avenue between Broadway Road and the GRIC Boundary, Phoenix, Maricopa County, Arizona* (revised). Statistical Research, Tucson.
- Craig, Douglas B.
 1995 *The Timing and Tempo of Architectural Change During the Hohokam Classic Period*. Paper presented at the Arizona Archaeological Council Fall Meeting, Flagstaff.
- Crary, Joseph S.
 1993 *Archaeological Survey of the Picacho to Toltec and GRIC to Phoenix Segments of the Santa Fe Pacific Pipeline, Pinal and Maricopa Counties, Arizona*. Archaeological Consulting Services, Tempe.
- Crown, Patricia L. and James Judge (editors)
 1991 *Chaco and Hohokam: Prehistoric Regional Systems in the American Southwest*. School of American Research Press, Albuquerque.
- Crown, Patricia L. and Earl W. Sires, Jr.
 1984 The Hohokam Chronology and Salt-Gila Aqueduct Research. In *Hohokam Archaeology along the Salt-Gila Aqueduct, Central Arizona Project, Volume 9: Synthesis and Conclusions*, edited by Lynn S. Teague and Patricia L. Crown, pp. 73-86. Archaeological Series 150. Arizona State Museum, University of Arizona, Tucson.
- Dean, Jeffery S.
 1991 Thoughts on Hohokam Chronology. In *Exploring the Hohokam: Prehistoric Desert People of the American Southwest*, edited by G. J. Gumerman, pp. 61-149. Amerind Foundation, Dragoon, Arizona and University of New Mexico Press, Albuquerque.
- Doelle, William H., Frederick Huntington and Henry Wallace
 1987 Rincon Phase Community Reorganization in the Tucson Basin. In *The Hohokam Village: Site Structure and Organization*, edited by David E. Doyel, pp. 71-96. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Glenwood Springs.

- Doelle, William H. and Henry D. Wallace
 1991 The Changing Role of the Tucson Basin in the Hohokam Regional System. In *Exploring the Hohokam: Prehistoric Desert People in the American Southwest*, edited by George J. Gumerman, pp. 279-346. Amerind Foundation, Dragoon, Arizona, and University of New Mexico Press, Albuquerque.
- Douglas, Diane L.
 1994 *An Archaeological Survey for the Proposed Salt River 51st Avenue Quarry, Maricopa County, Arizona*. Archaeological Consulting Services, Tempe.
- Doyel, David E. and B. E. Ensor (editors)
 1997 *Archaeological Survey in Districts 6 and 7, Gila River Indian Community, Volume 1: Orientation and Results*. Cultural Resources Report No. 98, Archaeological Consulting Services, Tempe.
- Effland, Richard W., Jr.
 1984 Archaeological and Historical Cultural Resource Assessment for the Western Area Power Administration, Liberty to Coolidge Rebuild Project. Cultural Resources Report No. 16. Archaeological Consulting Services, Tempe.
- Effland, Richard W., Jr. and Margerie Green
 1988 *Cultural Resource Investigation for the Western Area Power Administration Liberty to Coolidge Rebuild Project*. Cultural Resources Report No. 56. Archaeological Consulting Services, Tempe.
- Grafil, Linda S.
 2000 *A Cultural Resource Survey Along 75th and Southern Avenues, Maricopa County, Arizona*. Technical Report No. 995034. Logan Simpson Design, Tempe.
- Gregory, David
 1991 Form and Variation in Hohokam Settlement Patterns. In *Chaco and Hohokam: Prehistoric Regional Systems in the American Southwest*, edited by Patricia L. Crown and W. James Judge, pp. 159-195. School of American Research, Santa Fe.
- Haury, Emil W.
 1976 *The Hohokam: Desert Farmers and Craftsmen*. University of Arizona Press, Tucson.
- Hackbarth, Mark
 1995 *Dust in the Wind: A Critical Reappraisal of the Polvoron Phase*. Paper presented at the Arizona Archaeological Council Fall Meeting, Flagstaff.
- Homburg, J. A. and R. Ciolek-Torrello
 2000 *Archaeological Testing Along Baseline Road, 7th to 51st Avenues, Phoenix, Maricopa Counties, Arizona*. Technical Report 00-49. Statistical Research, Tucson.
- Howard, Jerry
 1985 Courtyard Groups and Domestic Recycling: A Hypothetical Model of Growth. In *Proceedings of the 1983 Hohokam Conference*, edited by A. E. Dittert and D. Dove, pp. 211-222. Occasional Papers 2(1), Arizona Archaeological Society, Phoenix.
- 1991 Charting the Past: Mapping the Prehistoric Canals and Sites of the Salt River Valley. In *The Operation and Evolution of a Prehistoric Irrigation System: The East Papago Canal Study*, by Jerry Howard and Gary Huckleberry, pp. 2.1-2.19. Publications in Archaeology No. 18. Soil Systems, Phoenix.
- Huckell, Bruce B.
 1984 The Paleo-Indian and Archaic Occupations of the Tucson Basin: An Overview. *Kiva* 49 (3-4): 133-145.

- Huckell, Bruce B.
1996 The Archaic Prehistory of the North American Southwest. *Journal of World Prehistory* 10(3): 305-373.
- Huckell, Lisa W.
1981 *Test Excavations at Villa Buena (AZ T:12:9), a Hohokam site on the Gila River Indian Reservation*. Western Archaeological Center, National Park Service, Tucson.
- Kelley, Audie R.
1939 *Salt River Valley Stratigraphic Survey Project, Site AZ T:12:11 (PG)*. On file, Pueblo Grande Museum, Phoenix.
- Mabry, Jonathan B.
1998 *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Analysis and Synthesis*. Anthropological Papers No. 19. Center for Desert Archaeology, Tucson.
- McGuire, Randall H. and M. Schiffer
1982 *Hohokam and Patayan: Prehistory of Southwest Arizona*. Academic Press, New York.
- Midvale, Frank
1966 *The Prehistoric Irrigation of the Salt River Valley*. Arizona Collection, Hayden Library, Arizona State University, Tempe.

1968 Prehistoric Irrigation in the Salt River Valley, Arizona. *Kiva* 34(1):28-32.
- Morris, Donald H.
1969 Red Mountain: An Early Pioneer Period Hohokam Site in the Salt River Valley of Central Arizona. *American Antiquity* 34 (1):40-53.
- Northland Research
2001 *Cultural Resource Survey in Section 34, T1N, R2* (in preparation). Northland Research, Tempe.
- Owens, Jeffrey D.
1995 *Cultural Resources Survey of 59th Avenue between Southern Avenue and Dobbins Road, Phoenix, Maricopa County, Arizona*. Technical Report 95-96. Soil Systems, Phoenix.
- Patrick, Herbert R.
1903 *Ancient Canal Systems and Pueblos of the Salt River Valley*. Bulletin No. 1. Phoenix Free Museum, Phoenix.
- Powers, Margaret A., M. J. Keane and D. Weaver
1978 *Final Report for an Archaeological Survey of the Palo Verde to Kyrene 500 kV Transmission Line, Maricopa County, Arizona*. Museum of Northern Arizona, Flagstaff.
- Rapp, John
1996 Current Research, Archaeological Consulting Services. *Arizona Archaeological Council Newsletter* 20(2).
- Roberts, Allen, Thomas Graham and Claudia Anderson
1992 *Historic Homes of Phoenix: An Architectural and Preservation Guide*. City of Phoenix, Phoenix.
- Rodgers, James B.
1998 *An Archeological Inventory of the 43rd Avenue Storm Water Drainage System in Laveen and Phoenix, Arizona*. Contract Archeological Series 992-9. Scientific Archaeological Services, Phoenix.

- Rodgers, James B.
2000 *A Cultural Resource Assessment for the Laveen Area Drainage Master Plan Project of Central Maricopa County, Arizona*. Contract Series 2000-8. Scientific Archaeological Services, Phoenix.
- Ryden, Don W.
1989 *South Mountain Agricultural Area Historical Resources Survey*. Don W. Ryden AIA/Architects, Phoenix.
- Saenz, Jo Ellen
2001 Personal communication with Kirsten Winter, 12 February 2001. Owner.
- Sayles, E. B. and E. Antevs
1941 *The Cochise Culture*. Medallion Papers No. 29. Gila Pueblo Archaeological Foundation, Globe, Arizona.
- Schroeder, Albert H.
1940 *A Stratigraphic Survey of Pre-Spanish Trash Mounds of the Salt River Valley*. Master's thesis, Department of Anthropology, University of Arizona, Tucson.
- Sellers, William D. and Richard H. Hill
1974 *Arizona Climate, 1931-1972* (revised, 2nd). University of Arizona Press, Tucson.
- Shepard, Kristopher S. and A.E. Rogge
1997 *Lower Buckeye to Dusty Lane: A Cultural Resource Inventory of 51st Avenue through Laveen, Arizona*. Dames & Moore. Phoenix.
- Sheridan, Thomas E.
1995 *Arizona: A History*. University of Arizona Press, Tucson.
- Sires, Earl W., Jr.
1983 Archaeological Investigations at Los Fosas (AZ U:15:19): A Classic Period Settlement on the Gila River. In *Hohokam Archaeology Along the Salt-Gila Aqueduct, Central Arizona Project: Habitation Sites on the Gila River*, edited by Lynn S. Teague and Patricia L. Crown, Vol. 6, pp. 493-658. Archaeological Series 150. Arizona State Museum, University of Arizona, Tucson.
- Stephen, David V.M.
2000 *Preliminary Report for Laveen 500 Project*. Professional Archaeological Services and Technologies, Tucson.
- Teague, Lynn S.
1993 Prehistory and the Traditions of the O'odham and Hopi. *Kiva* 58(4):435-454.
- Turney, Omar A.
1929 *Prehistoric Irrigation*. Arizona State Historian, Phoenix.
- Walsh-Anduze, Mary-Ellen
1999 *Cultural Resources Survey of Nearly 56 Acres at 43rd Avenue and Baseline Road, Maricopa County, Arizona*. Technical Report 99-05. Northland Research, Tempe.
- Weaver, Donald
1981 *Cultural Resources Location and Identification Study: Liberty to Coolidge (Arizona) Transmission Line Upgrade*. Museum of Northern Arizona, Flagstaff.

Whalen, Norman

1971 *Cochise Culture Sites in the Central San Pedro Drainage, Arizona*. Ph.D. dissertation, University of Arizona, Department of Anthropology. Tucson.

Wilson, Eldred D.

1962 *A Resume of the Geology of Arizona*. Bulletin No. 171. Arizona Bureau of Mines, University of Arizona, Tucson.

Wilcox, David R., Thomas R. McGuire and Charles Sternberg

1981 *Snaketown Revisited*. Archaeological Series No. 155. Arizona State Museum, University of Arizona, Tucson.

Wilcox, David R. and Charles Sternberg

1983 *Hohokam Ballcourts and Their Interpretation*. Archaeological Series 160. Arizona State Museum, University of Arizona, Tucson.

Yablon, Ronald K.

1982 *Final Report of Four Sites along the Palo Verde to Kyrene 500kV Transmission System, Maricopa County, Arizona*. Report A-78-130. Museum of Northern Arizona, Flagstaff.