DRAFT

RELOCATION OF OLD TOWER ROAD DESIGN CONCEPT REPORT

A-905943

FOR THE CITY OF PHOENIX AVIATION DEPARTMENT

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

Registered Professional Engineer (Civil)
CERTIFICATE NO. 21123
DANIEL W. COOK
Signed 2-10-92
ARIZONA, U.S.A.

BRW

FEBRUARY 10, 1992

A105.603

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RELOCATION OF OLD TOWER ROAD

DESIGN CONCEPT REPORT

A-905943

Prepared For

CITY OF PHOENIX AVIATION DEPARTMENT

Prepared By

BRW, Inc.
2700 North Central Avenue
Suite 1000
Phoenix, Arizona 85004

February 10, 1992

Registered Professional Engineer
CERTIFICATE NO.
Date Signed 2-10-92
ARIZONA, U.S.A.

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Daniel W. Cook
Date Signed 2-6-92

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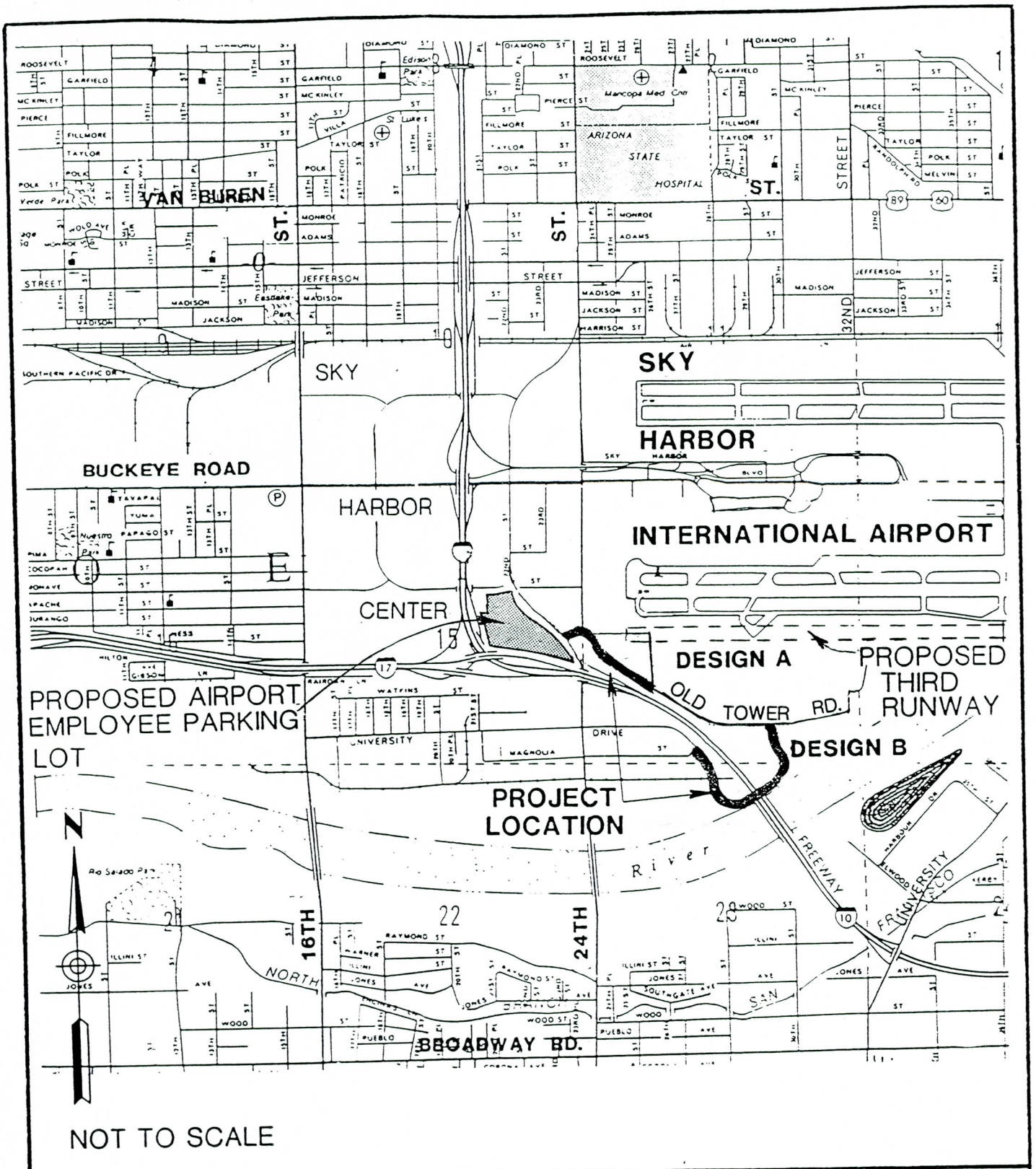
I Introduction

This Design Concept Report was undertaken to identify the impacts and costs of relocating an existing portion of Old Tower Road between 24th Street and the Air Guard facility on the south side of Sky Harbor International Airport. Existing Old Tower Road currently provides the only street access to the Air Guard facility. Three proposed improvement projects will impact the final alignment of this section Old Tower Road. The proposed realignment of 24th Street from I–10 to Jefferson Street and the proposed Airport Employee Parking Lot will necessitate the relocation of the Old Tower Road/24th Street intersection. The proposed third runway will necessitate existing Old Tower Road to be located out of the critical area and in such a manner as not to interfere with the 7:1 and the 50:1 guide slopes of the clear zone.

This design concept report will analyze two different designs for the connection of 24th Street to the existing Air Guard facility (and ultimately the future facility) which is located south of the airport. The first design, Design "A", discussed in Section A of this report, is the relocation of the existing 24th Street/Old Tower Road intersection and the realignment of a portion of existing Old Tower Road as shown on Figure A–1. The relocation of the intersection is necessary to accommodate the proposed realignment of 24th Street and the proposed entry to the new Airport Employee Parking Lot. The realignment of a portion of existing Old Tower Road is necessary for the construction of the proposed third runway. The realignment of existing Old Tower Road is to the south side and around the west end of the third runway outside of the critical area. The vertical alignment of the roadway must be depressed around the west end in order to keep the 16'–6" roadway clearance envelope out of the guide slopes of the clear zone.

The second design, Design "B", discussed in Section B of this report, is the construction of a new portion of Old Tower Road under the I–10 Salt River Bridge as shown on Figure A–1. The west end of the new portion of the roadway will connect to the intersection of University Drive and Magnolia Street on the west side of I–10. From this point the new roadway alignment is in a southeasterly direction approximately parallel with I–10. At the northwest end of the I–10 Salt River Bridge the new roadway alignment turns to the northeast under the first span of the bridge, between the abutment and the first pier. On the east side of the I–10 bridge the alignment continues in a northerly direction to its point of intersection with existing Old Tower Road. An existing large diameter steel tower pole for an overhead electric transmission line controls the roadway alignment on the east side of the I–10 bridge. This design will require the construction of a floodwall adjacent to the new roadway under the I–10 Salt River Bridge and the extension of two major storm drains on the east side of the bridge.

This design concept report analyzes the site conditions and constraints, traffic operations, drainage conditions, structures required, utilities effected, special construction requirements, right–of–way requirements, and construction cost estimates for both Design "A" and Design "B" for the Old Tower Road design concepts.



RELOCATION OF OLD TOWER ROAD
DESIGN CONCEPT REPORT

FIGURE NO. A-1

LOCATION MAP

BRW

A.1.0 Design "A" Overview
Old Tower Road/Realigned 24th Street Intersection

The proposed alignment of Old Tower Road and its proposed intersection with Realigned 24th Street are impacted by several site constraints. These site constraints establish a corridor for the proposed alignment. These site constraints include the proposed third runway and the associated critical area and clear zone, the proposed realignment of 24th Street and the proposed Airport Employee Parking Lot. The proposed third runway and the associated critical area and clear zone will control both the horizontal and vertical alignment of the portion of existing Old Tower Road that is relocated to the south side and around the west end of the proposed third runway. The realignment of 24th Street and the proposed Airport Employee Parking Lot will control the location of the intersection. The intersection location is set based on the traffic signal spacing along realigned 24th Street and the location of the entry into the parking lot. Other design considerations that affect the design include drainage and the proposed connection the existing 24th Street to the north.

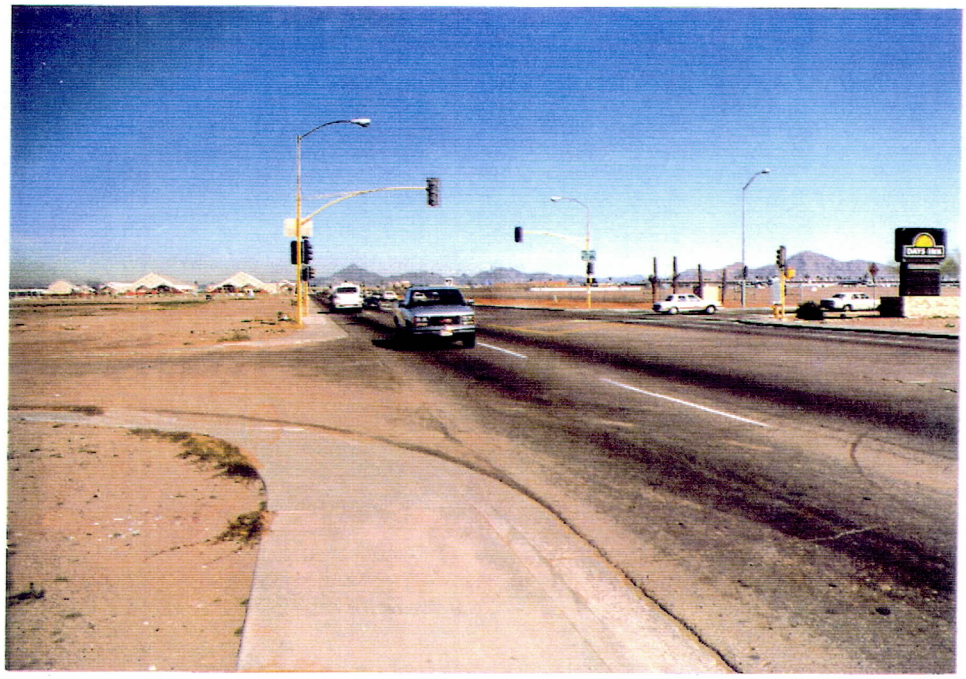
This Design Concept Report will establish a proposed final alignment for the portion of Old Tower Road to be realigned, establish the proposed intersection geometrics with Realigned 24th Street and will identify the proposed roadway preliminary geometrics.

A.2.0 Site Conditions

The topography at the project site is essentially flat with a prevailing ground elevation of approximately 1,103. Surface drainage in the area is generally from the northeast to the southwest. There are numerous existing utility lines which traverse the project site in the right–of–ways for existing 24th Street, realigned 24th Street and existing Old Tower Road. These utilities will not have a significant impact on this project and are discussed in a separate section of this report which follows. Photographs of the existing 24th Street and Old Tower Road intersection are shown in Figure A–2.

There is existing development along the east side of existing 24th Street between existing Old Tower Road and the westbound I–10 off ramp to 24th Street. This existing development is proposed to be acquired by the City of Phoenix for the proposed third runway. The remainder of the project site lies within existing street right–of–way or within City of Phoenix (Sky Harbor International Airport and Sky Harbor Center) owned property.

On the west side of this portion of realigned 24th Street the Aviation Department is proposing to construct an employee parking lot as shown in Figure A–1. This proposed parking lot will have an access roadway that aligns as the westerly leg of the Old Tower Road/24th Street intersection. The primary purpose of this access roadway is to provide bus access across Realigned 24th Street onto Old Tower Road and then onto existing 24th Street to the north which will have a future access onto the airport.



Looking North on Existing 24th Street at Old Tower Road Intersection.

Looking East on Existing Old Tower Road at Existing 24th Street Intersection.

Figure A–2
Photographs of Existing 24th Street/Old Tower Road Intersection

The proposed third runway will have a critical area, clear zone and MALSR towers that will impact the location of relocated Old Tower Road. These features are shown on the 40 scale layout, drawings, Figures A–3 and A–4, contained in this report.

The existing intersection of Old Tower Road and 24th Street is a signalized intersection. The 1989 two way traffic volume on 24th Street is approximately 36,000 ADT based on counts taken by BRW on February 6, 1989. The peak hour two way total traffic volume for the design year of 2005 for a build out condition for Sky Harbor Center is approximately 2,600 in the AM and 3,000 in the PM. No traffic counts on Old Tower Road were conducted by BRW.

A.3.0 Description of Design "A" Alternatives

Two separate alternates for Design "A" for the relocation of Old Tower Road have been developed and evaluated in this Design Concept Report. The alternates are similar in configuration and differ only in the layout of the minor intersection with Old Tower Road and existing 24th Street to the north.

Design "A", Alternate 1 provides a 100 foot radius curve in a "jug handle" type of configuration for the east approach of Old Tower Road into its intersection with realigned 24th Street. See Figures A–3, A–4 and A–5 for the 40 scale plan and profile of this alternate. The minor intersection with existing 24th Street to the north is radial to this curve and forms a tee intersection with Old Tower Road on the outside of the curve. This configuration results in a free flow movement for eastbound traffic on Old Tower Road allowing traffic to clear the 24th Street intersection faster and minimizing any traffic que that may development because of turning movement volumes.

Design "A", Alternate 2 creates a typical tee intersection with Old Tower Road and existing 24th Street to the north. See Figure A–6 and A–7 for the 40 scale layout of this alternate. This intersection configuration results in a right turn condition for eastbound Old Tower Road traffic and may possibly result in a traffic que for this movement that extends into the Realigned 24th Street intersection during peak hours. This intersection would be signed as a three way stop, or as a two way stop on the north and south legs and a free movement on the west leg. The two way stop condition as described here is uncommon.

The remaining design features of both alternates are identical. The key design features and constraints are summarized as follows:

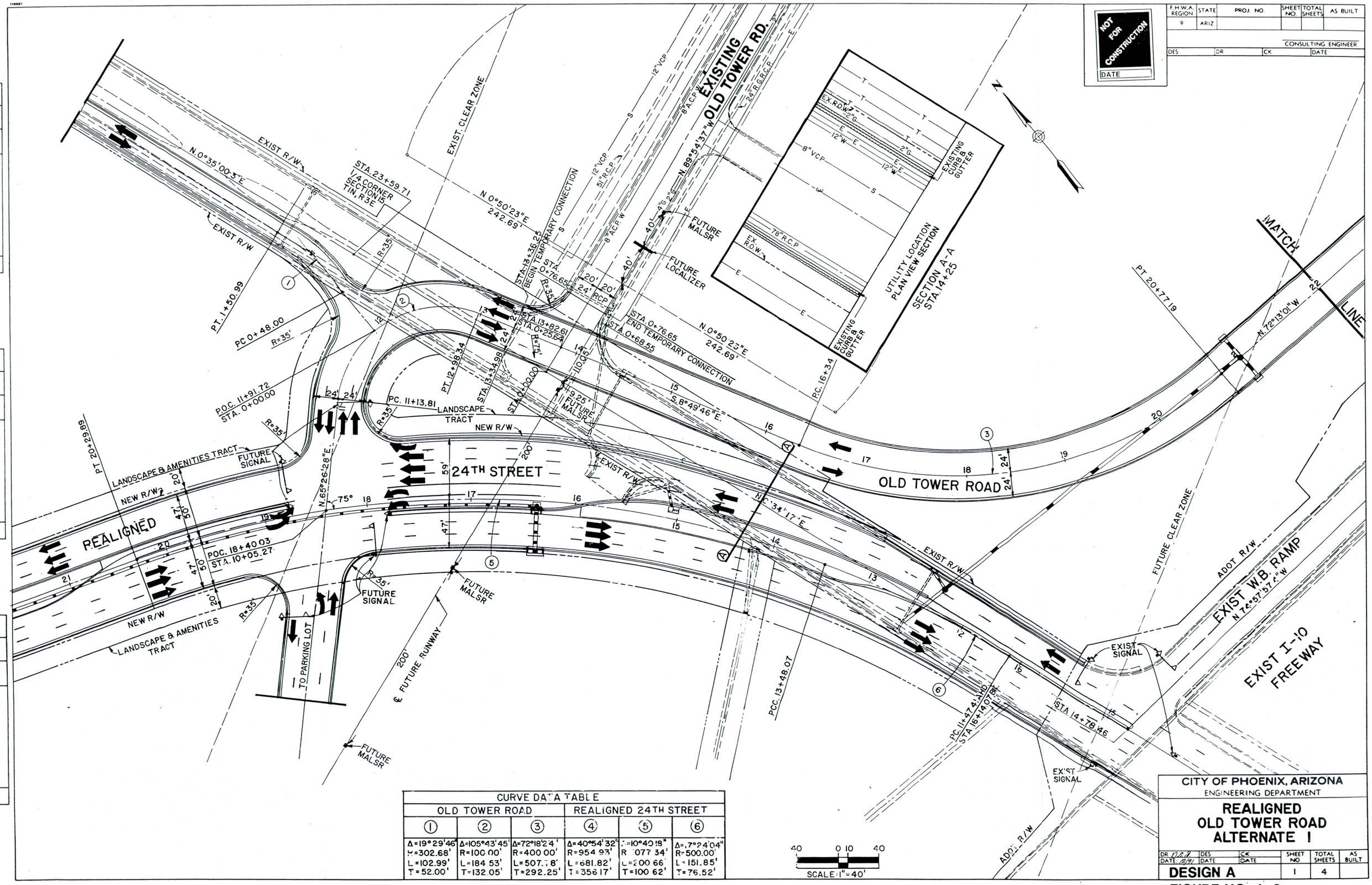
- The new intersection of Old Tower Road and Realigned 24th Street will be located at station 18+40 along Realigned 24th Street.
- The new intersection will be skewed fifteen degrees right (75 degree compliment angle) from the tangent point along the realigned 24th Street construction centerline.

- A right turn bay on Realigned 24th street for northbound to eastbound traffic will be constructed.
- The alignment of relocated Old Tower Road will not impact the future MALSR tower for the proposed third runway.
- The alignment of relocated Old Tower Road will be between the future critical area for the proposed third runway and Realigned 24th Street.
- The vertical alignment between stations 18+00 and 32+44 will be depressed below the prevailing ground elevation with a low point at station 21+00.
- The low point will be drained by gravity through a 24 inch storm drain into the existing 78 inch storm drain in existing 24th Street.
- The earth cut for the depressed portion of the roadway will have side slope of three horizontal to one vertical. Retaining wall structures will not be required.
- The relocated portion of Old Tower Road will match into existing Old Tower Road at station 32+44.
- A temporary connection from relocated Old Tower Road to existing Old Tower Road at approximately station 13+85 can be constructed. This will allow for phased construction of the this project. The temporary connection will allow the new intersection of relocated Old Tower Road and Realigned 24th Street to be constructed prior to the acquisition of the properties on the east side of existing 24th Street and south of existing Old Tower Road. The acquisition of these properties is necessary to construct the proposed third runway and Old Tower Road between stations 13+85 and 32+44.

F.H.W.A. REGION	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ				

NOT FOR CONSTRUCTION
DATE

CONSULTING ENGINEER
DES | DR | CK | DATE



CURVE DATA TABLE					
OLD TOWER ROAD			REALIGNED 24TH STREET		
①	②	③	④	⑤	⑥
Δ=19°29'46"	Δ=105°43'45"	Δ=72°18'24"	Δ=40°54'32"	Δ=10°40'18"	Δ=17°24'04"
R=302.68'	R=100.00'	R=400.00'	R=954.93'	R=1077.34'	R=500.00'
L=102.99'	L=184.53'	L=507.78'	L=681.82'	L=200.66'	L=151.85'
T=52.00'	T=132.05'	T=292.25'	T=356.17'	T=100.62'	T=76.52'

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REALIGNED OLD TOWER ROAD ALTERNATE 1

DR.	DES	CK	SHEET NO.	TOTAL SHEETS	AS BUILT
DATE	DATE	DATE	1	4	

DESIGN A

FIGURE NO. A-3

F.H.W.A. REGION	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ				

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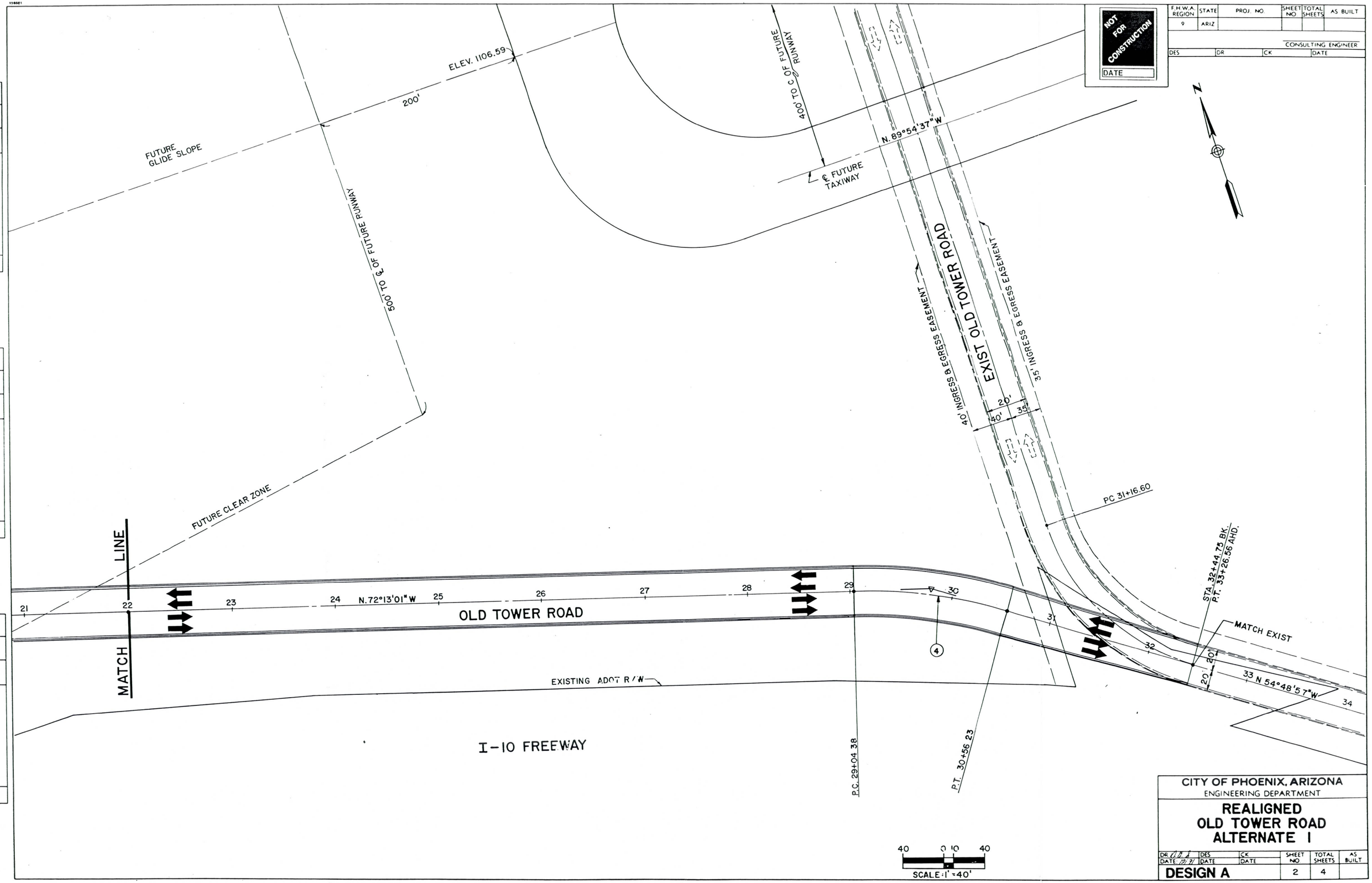

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REALIGNED OLD TOWER ROAD ALTERNATE I

DR.	DES	CK	SHEET NO	TOTAL SHEETS	AS BUILT
DATE	DATE	DATE			
DESIGN A			2	4	

FIGURE NO. A-4

F.H.W.A. REGION	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
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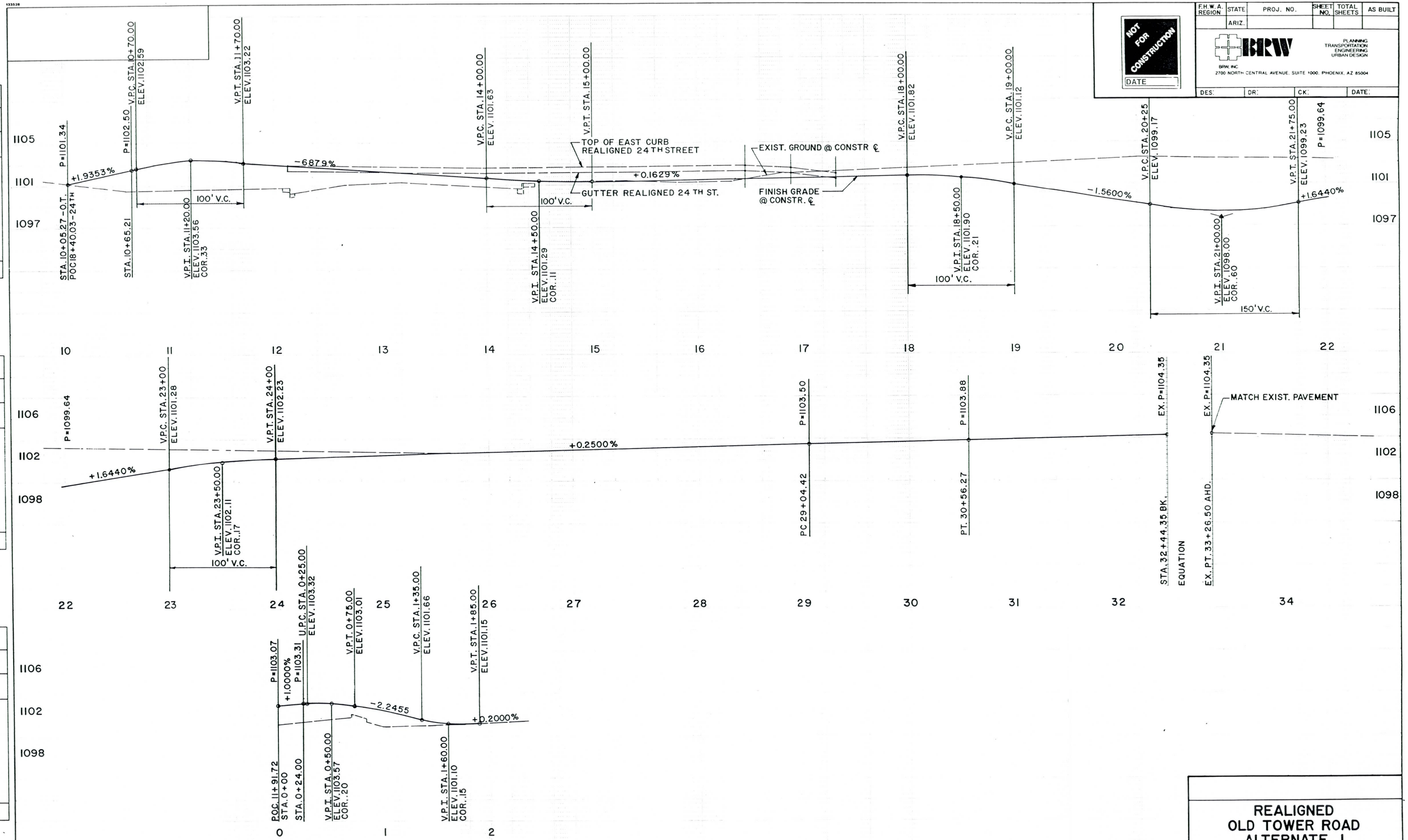
BRW, INC.
2700 NORTH CENTRAL AVENUE, SUITE 1000, PHOENIX, AZ 85004

DES:	DR:	CK:	DATE:



SCALE:
1"=20' HORIZ.
1"=4' VERT.

REALIGNED OLD TOWER ROAD ALTERNATE I

DES:	DR:	CK:	SHEET NO.	TOTAL SHEETS	AS BUILT
DATE:	DATE:	DATE:			
DESIGN A			4	4	

FIGURE NO. A-5

F.H.W.A. REGION	STATE	PROJ. NO.	SHEET NO	TOTAL SHEETS	AS BUILT
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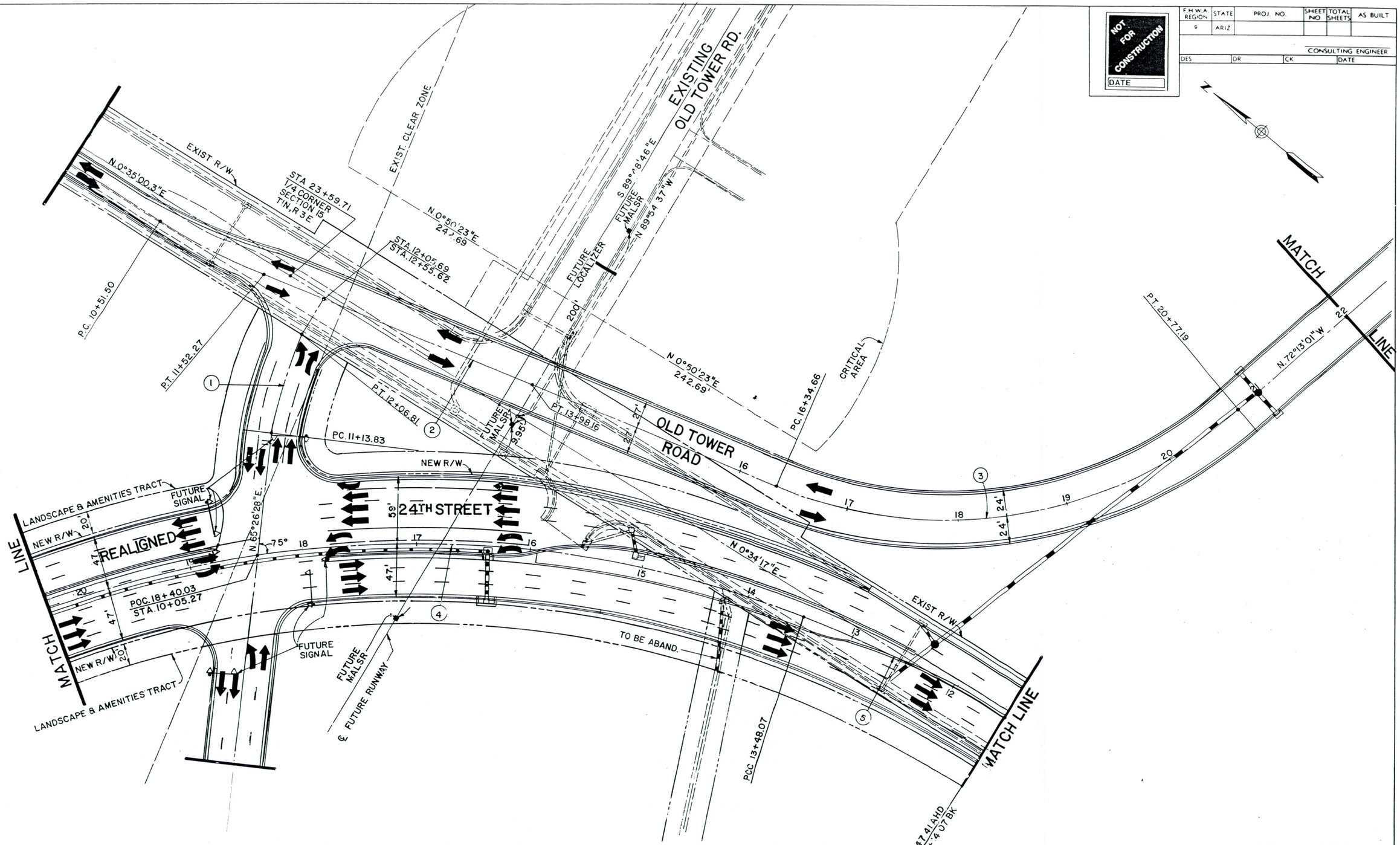

CURVE DATA TABLE				
OLD TOWER ROAD			24TH STREET	
1	2	3	4	5
Δ=25°07'49"	Δ=9°24'47"	Δ=72°18'24"	Δ=40°54'32"	Δ=10°40'18.4"
R=212.00'	R=631.61'	R=400.00'	R=954.93'	R=1077.34'
L=92.98'	L=103.77'	L=507.78'	L=681.82'	L=200.66'
T=40.50'	T=52.00	T=292.25'	T=356.17'	T=100.62'

40 0 10 40

SCALE 1"=40'

CITY OF PHOENIX, ARIZONA
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REALIGNED OLD TOWER ROAD ALTERNATE 2

DR	DES	CK	SHEET NO	TOTAL SHEETS	AS BUILT
DATE	DATE	DATE	1	2	

DESIGN A

FIGURE NO. A-6

F.H.W.A. REGION	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
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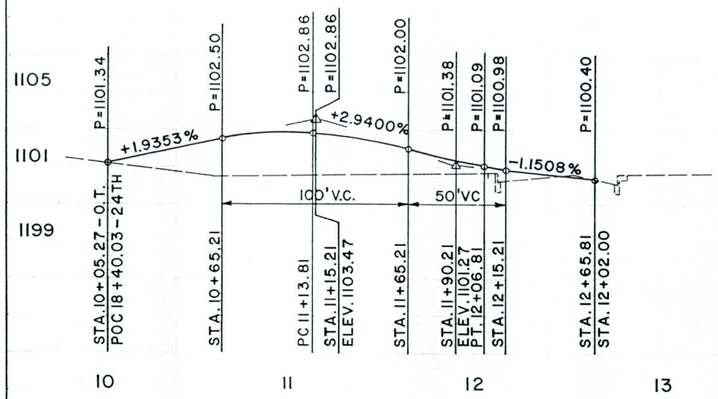

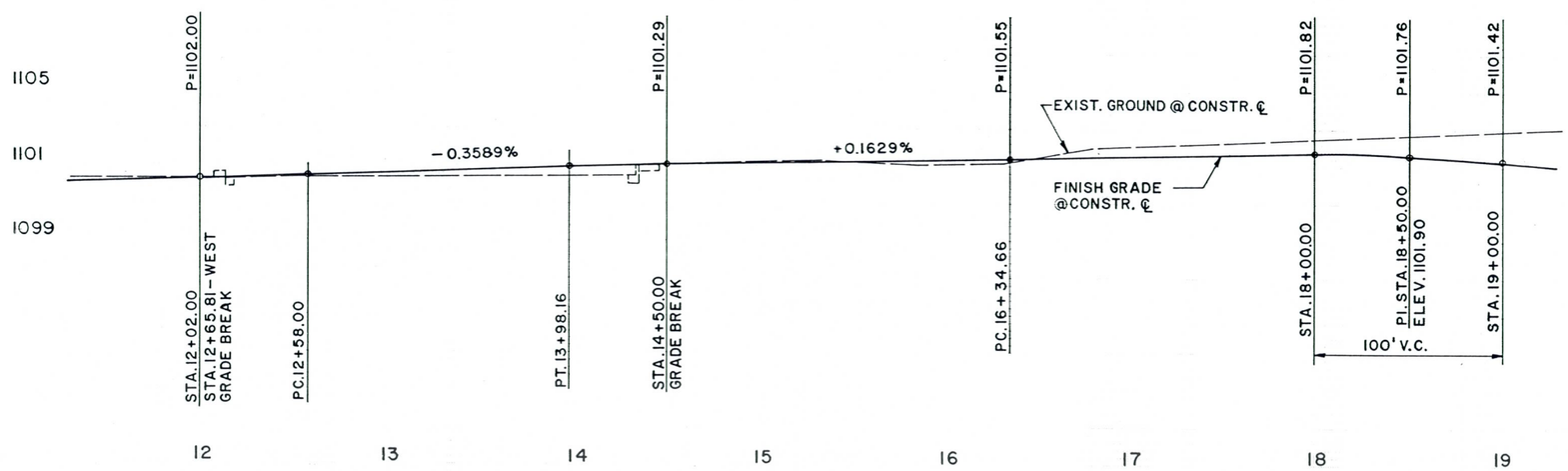

SCALE
1" = 20' HORIZ.
1" = 2' VERT.

REALIGNED OLD TOWER ROAD ALTERNATE 2

DES:	DR:	CK:	SHEET NO.	TOTAL SHEETS	AS BUILT
DATE	DATE:	DATE			
DESIGN A			2	2	

FIGURE NO. A-7

A.4.0 Recommended Design "A" Alternative

A.4.1 General

Discussions with City of Phoenix Street Transportation staff and Aviation Department staff resulted in the selection of Design "A", Alternate 1 as the preferred alternate. The selection of this alternate is primarily based on the requisite for the free flow traffic movement of the "jug handle" configuration.

The following detailed discussion of several salient features of Design "A", Alternate 1 is presented to provide a more accurate description of the proposed design for this portion of relocated Old Tower Road.

A.4.2 Traffic Operations

The proposed intersection of relocated Old Tower Road (two lanes in each direction) and Realigned 24th Street (three lanes in each direction) will require a traffic signal to control traffic movements. The 1989 traffic volume on existing 24th Street is approximately 36,000 ADT. The projected traffic volume on Old Tower Road is anticipated to be about 2,000 ADT after the relocation of the Air Guard facility and removal of the existing development on the east side of 24th Street between existing Old Tower Road and the westbound I-10 off-ramp to 24th Street. This intersection will meet the signal warrants prescribed in the Manual on Uniform Traffic Control Devices.

This intersection will have a right turn bay for northbound to eastbound movements which will be constructed with Realigned 24th Street. The westerly leg of the intersection is the entry into the proposed Airport Employee Parking Lot. A future right turn bay for southbound to westbound movements may be necessary because of parking lot operations, but this turn bay is not proposed to be constructed with Realigned 24th Street at this time.

The minor intersection with relocated Old Tower Road and existing 24th Street to the north will require a stop sign for southbound traffic on existing 24th Street.

A.4.3 Drainage

The proposed vertical alignment for the relocation of Old Tower Road has a depressed area between stations 18+00 and 32+44. The low point of this depressed area is at station 21+00 and is approximately six feet below the adjacent high points in the road profile. The elevation of this low point is approximately 1098.4.

This low point can be drained by gravity through a new 24 inch storm drain into the existing 78 inch storm drain in existing 24th Street. The invert elevation of the 78 inch storm drain at the proposed connection point is approximately 1082.5. The invert of the new 24 inch storm drain at the existing 78 inch storm drain will be approximately 1086.0.

The crown elevation of the 78 inch storm drain at the proposed connection point is approximately 1089.0. This configuration has a elevation difference of 9.4 feet between the crown on the 78 inch storm drain and the low point of Old Tower Road.

The catch basins and the new storm drain at the low point will be sized to intercept and convey the peak runoff from the tributary area for the 100-year reoccurrence interval rainfall event assuming a hydraulic grade line in the 78 inch storm drain that is three feet below the low point of Old Tower Road. The 100-year reoccurrence interval rainfall event was chosen to keep the roadway open for emergency use during the infrequent rainfall events. This portion of Old Tower Road serves as the access to the Air Guard facility.

The hydraulic grade line elevation for the 78 inch storm drain in existing 24th Street is unknown at this time. Recent upstream changes to this storm drain system by ADOT for the Papago Freeway storm drainage system have changed the original hydraulic grade line for the 78 inch storm drain. Additionally, recent changes in the channelization of the Salt River have impacted the water surface elevation in the river thus changing the tailwater elevation on the 78 inch storm drain outlet into the river. An analysis of the new hydraulic grade line for this storm drain, which is beyond the scope of this design concept report, is necessary for determining the exact capacity of the new catch basins and storm drain from the low point. Therefore, an accurate determination of the reoccurrence interval capacity of the drainage system at the low point in Old Tower Road will be unknown until the hydraulic grade line analysis of the 78 inch storm drain is completed.

A.4.4 Structures

No new retaining wall or similar type of major structures are necessary for the relocation of Old Tower Road for Design "A". However, minor structure such as catch basins and manholes are necessary.

A.4.5 Utilities

A number of existing and proposed public and private utilities traverse the project site. These utilities include both major and minor utilities in the right-of-ways for existing 24th Street, realigned 24th Street and existing Old Tower Road. These utilities are shown on the forty scale layout drawings included within this report and are summarized as follows:

Underground Electric
Underground Telephone
4 inch High Pressure Gas
2 inch High Pressure Gas
78, 51 and 24 inch Storm Drain
24 inch SRP Irrigation
12 inch Waterline
12 and 8 inch Sanitary Sewer

The horizontal or vertical relocation of existing underground utilities is NOT necessary for the relocation of Old Tower Road for Design "A". However, adjustment of manhole frames, water valve boxes and other surface featured associated with underground utilities is necessary. There are no major overhead electric or telephone lines that will need to be relocated.

A.4.6 Special Construction Requirements

There are no special construction requirements necessary for the relocation of Old Tower Road for Design "A". The usual maintenance of traffic during road construction will be necessary for vehicle movement to and from the Air Guard Complex.

A.4.7 Right-of-Way Requirements

There is no acquisition of new right-of-way required for the construction of the relocation of Old Tower Road for Design "A". See Figure A-8. The proposed roadway alignment is located within the following property currently owned or proposed to be owned by the City of Phoenix.

Existing 24th Street Right-of-way
Existing Old Tower Road Right-of-way
Proposed Realigned 24th Street Right-of-way
Existing Sky Harbor Center property
Existing Aviation Department property on the Airport
Proposed Aviation Department property south of Old Tower Road

The proposed Realigned 24th Street new right-of-way will be dedicated on the proposed Phase 5 Plat for Sky Harbor Center.

The necessary new right-of-way for the portion of Old Tower Road between existing 24th Street and proposed Realigned 24th Street will be dedicated on the proposed Phase 5 Plat for Sky harbor Center.

The necessary new right-of-way for the portion of Old Tower Road that is south of existing Old Tower Road, east of existing 24th Street and north of the westbound I-10 off-ramp to 24th Street will be acquired as part of the necessary land acquisition for the proposed improvements for the third runway currently being planned by the Aviation Department.

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2700 NORTH CENTRAL AVENUE
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PHOENIX, ARIZONA 85004
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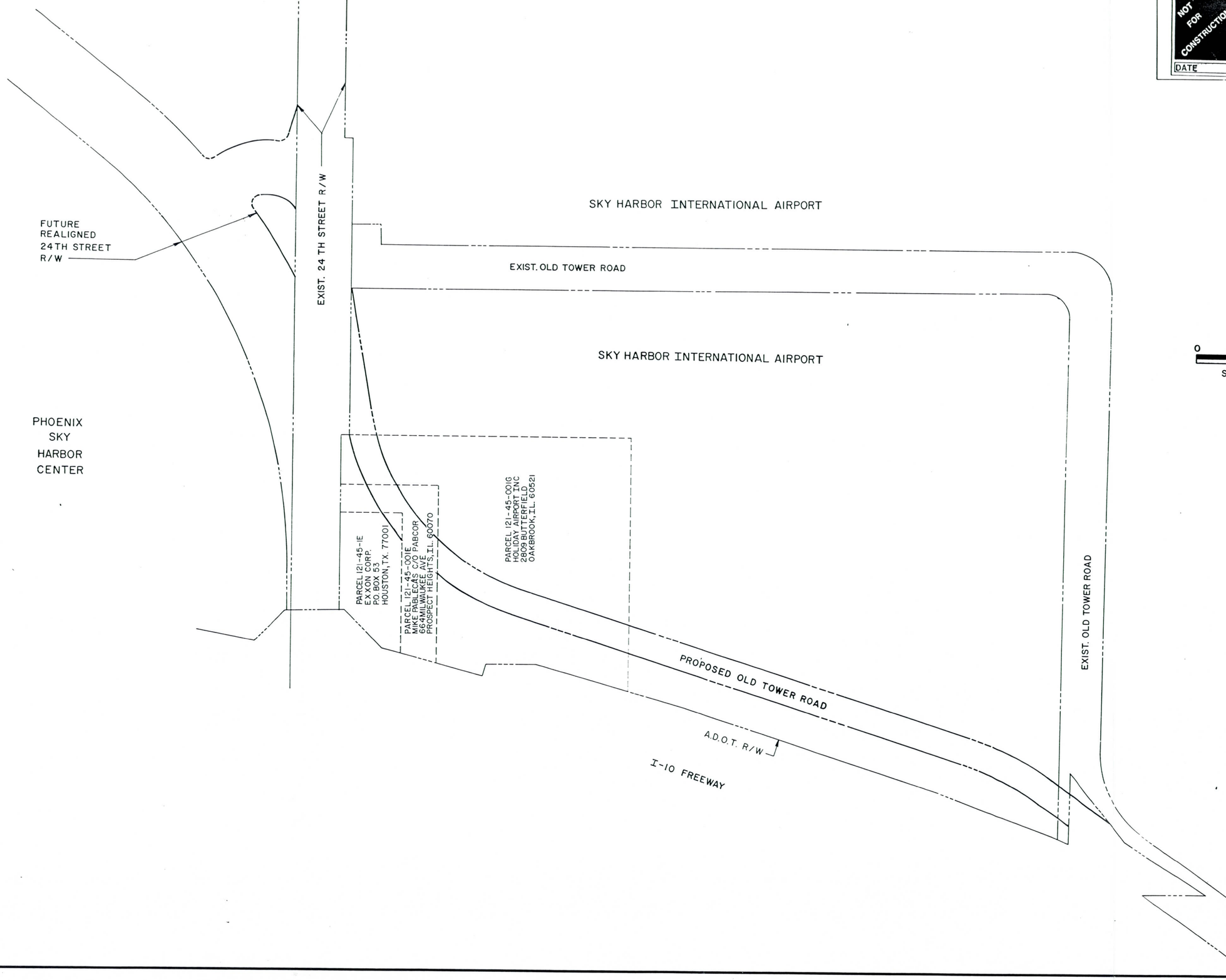
DES	DR	CK	DATE



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RELOCATION OF OLD TOWER ROAD
DESIGN CONCEPT REPORT

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DATE 12/8/91	DATE	DATE			

DESIGN A

FIGURE NO. A-8

A.4.8 Construction Cost Estimate

This preliminary construction cost estimate was prepared based on the 40 scale preferred preliminary plan presented in this report. The cost estimate was separated into the following three segments:

TABLE A-1
SUMMARY - DESIGN "A", OLD TOWER ROAD CONSTRUCTION COST ESTIMATE

1. Old Tower Road/24th Street Intersection		$ 36,235.00
2. Temporary Connection - Existing Old Tower Road to 24th Street Intersection.		$ 5,730.00
3. Relocated Old Tower Road		$ 199,385.00
	Total 1 & 2	$ 41,965.00
	Total 1 & 3	$ 235,620.00
	Total 1, 2 & 3	$ 241,350.00

TABLE A-2
DESIGN "A", OLD TOWER ROAD/24TH STREET INTERSECTION COST ESTIMATE

Description	Units	Unit Price	Amount
1. Subgrade Preparation	1650 SY	$ 3.50	$ 5,775.00
2. 5" Asphaltic Concrete–Base Course (C 3/4)	475 Tons	$ 28.00	$ 13,300.00
3. Vertical Curb & Gutter MAG Det. 220, Type A	696 LF	$ 6.00	$ 4,176.00
4. Survey Monument Type A	1 EA	$ 250.00	$ 250.00
5. Survey Monument Type B	5 EA	$ 150.00	$ 750.00
6. Catch Basin	2 EA	$1,900.00	$ 3,800.00
7. Storm Drain Pipe	60 LF	$ 50.00	$ 3,000.00
8. Remove Exist. Curb and Gutter	505 LF	$ 2.00	$ 1,010.00
9. Remove Exist. Median	850 SF	$ 1.00	$ 850.00
10. Remove Exist. Catch Basin	2 EA	$ 500.00	$ 1,000.00
11. Remove Exist. Pipe	60 LF	$ 10.00	$ 600.00
	SUBTOTAL		$ 34,511.00
	5% Contingency		$ 1,724.00
	TOTAL		$ 36,235.00

TABLE A-3
TEMPORARY CONNECTION
DESIGN "A", EXISTING OLD TOWER ROAD TO 24TH STREET INTERSECTION
COST ESTIMATE

Description	Units	Unit Price	Amount
1. Subgrade Preparation	390 SY	$ 3.50	$ 1,365.00
2. 5" Asphaltic Concrete-Base Course (C 3/4)	111 Tons	$ 28.00	$ 3,108.00
3. Vertical Curb & Gutter MAG Det. 220, Type A	164 LF	$ 6.00	$ 984.00
	SUBTOTAL		$ 5,457.00
	5% Contingency		$ 273.00
	TOTAL		$ 5,730.00

TABLE A-4
DESIGN "A", RELOCATED OLD TOWER ROAD COST ESTIMATE

Description	Units	Unit Price	Amount
1. Subgrade Preparation	10,430 SY	$ 3.50	$ 36,505.00
2. 5" Asphaltic Concrete-Base Course (C 3/4)	2,986 Tons	$ 28.00	$ 83,608.00
33. Vertical Curb & Gutter MAG Det. 220, Type A	3,943 LF	$ 6.00	$ 23,658.00
4. Survey Monument Type B	5 EA	$ 150.00	$ 750.00
5. Storm Drain Manhole	2 EA	$2,500.00	$ 5,000.00
6. Catch Basin	4 EA	$1,900.00	$ 7,600.00
7. Storm Drain Pipe	576 LF	$ 50.00	$ 28,800.00
8. Remove Exist. Curb and Gutter	604 LF	$ 2.00	$ 1,208.00
9. Remove Exist. Catch Basin	3 EA	$ 500.00	$ 1,500.00
10. Remove Exist. Pipe	126 LF	$ 10.00	$ 1,260.00
	SUBTOTAL		$ 189,889.00
	5% Contingency		$ 9,496.00
	TOTAL		$ 199,385.00

B.1.0 Design "B" Overview
Old Tower Road Under The I-10 Salt River Bridge

The proposed relocation of a portion of Old Tower Road under the I-10 Salt River Bridge is impacted by several site constraints. These site constraints have a significant impact on the cost of Design "B". This Design Concept Report will establish a proposed alignment and geometrics for the relocated portion of Old Tower Road.

One concern of the proposed alignment for Design "B" is by passing under the I-10 Salt River Bridge adjacent to the Salt River, the roadway must be designed to be free from inundation during the 100-year flood in the Salt River. The Salt River water surface analysis prepared by the Flood Control District of Maricopa County uses a flow of 200,000 cubic feet per second (cfs) during the design flood. Because the Old Tower Road vertical alignment must have a 16'-6" clearance under the bridge, the roadway grade will be approximately at elevation 1,099 feet. The 16'-6" clearance is the Arizona Department of Transportation (ADOT) minimum clearance for large vehicles. The water surface elevation at the bridge location is approximately 1,106 feet. Therefore, a flood wall/retaining wall approximately 8 feet above grade (this includes a 1 foot freeboard) will be required for the protection of Old Tower Road from inundation during the 100-year flood. All local runoff within the road right-of-way prism will be captured by catch basins and transported via storm sewers to a sump where the storm water runoff will be pumped into the Salt River. Gravity systems will not be possible because the maximum water surface elevation of the Salt River will be about 7 feet higher than the roadway.

There are some areas along the proposed alignment which will require a significant amount of earthwork. These areas are shown on the 40 scale plan and profile sheets. Also included is preliminary cost estimate showing costs for both the intersection improvements and the realignment under the I-10 Salt River Bridge.

This Design Concept Report analyzes the site conditions and constraints, traffic operations, drainage conditions, structures required, utilities affected, special construction requirements, right-of-way requirements and construction cost estimates for the relocation of Old Tower Road for Design "B". Figure A-1 shows the location of this design in relation to Sky Harbor International Airport and the I-10 Bridge over the Salt River.

B.2.0 Site Conditions

The topography adjacent to the project site is essentially flat with a prevailing ground elevation of approximately 1,103. The topography along the proposed alignment varies significantly due to mining operations within the River Floodplain and the alignment along the bank of the River. Local surface drainage in the area is generally from the northeast to the southwest towards the Salt River. There are several existing utility lines that cross the proposed alignment. These utilities are shown of the plan and profile sheets.

On the west side of I–10 there is no existing development along the proposed alignment. See Figure B–1. An existing excavation by a sand and gravel operation in the vicinity does exist at approximately station 18+50. This excavation is approximately 40 feet deep and will require the placement of about 43,000 cubic yards of fill along this portion of Old Tower Road. There is an existing earthen flood dike along the channel within the project area. This dike will need to be penetrated by the new construction of Old Tower Road. The new roadway will connect into University Drive at Magnolia Street, adjacent to I–10. See Figure B–2.

On the east side of I–10 there is no existing development along the proposed alignment. At Station 32+65, 40 feet left of the proposed centerline alignment, there is an existing large diameter steel pole tower for an overhead electric transmission line. This steel pole tower controls the location of the alignment. See Figure B–3. The CalMat property south of the existing Air Guard facility has been filled and graded level. There are two existing large diameter storm drain lines that run parallel to I–10 and discharge into the Salt River. The outlet structures for these storm drain lines are located along the proposed alignment. These outlet structures will need to be removed, the storm drain lines extended and the outlet structures reconstructed. See Figure B–4.

Should this new portion of Old Tower Road be constructed, a portion of existing Old Tower Road will be abandoned. The portion of existing Old Tower Road that would be abandoned is from 24th Street to the existing Cutter Aviation facility.

B.3.0 Description of Design "B"

B.3.1 GENERAL

The proposed relocation of Old Tower Road, Design "B", starts at the intersection of Magnolia Street and University Drive, which is located adjacent to and southwest of I–10, and terminates at existing Old Tower Road to the northeast of the I–10 Salt River Bridge, see Figure A–1. The preliminary alignment is shown on the 40 scale plan and profile sheets shown in Figures B–5, B–6, B–7 and B–8. Because this proposed alignment crosses under the I–10 Salt River Bridge protection from both inundation of the roadway and erosion and scour from the flood waters in the River must be provided. The design and construction of this portion of Old Tower Road must be planned so that there are not any significant changes in flow velocities or increases in upstream water surface elevation.

B.3.2 TRAFFIC OPERATIONS

The proposed typical roadway cross–section of this new portion of Old Tower Road will be four lanes, two in each direction, Type C1 in accordance with Standard Detail P–1013 of the City of Phoenix Supplement to MAG (MAG Detail P–1013). The typical roadway cross–section is shown in Figure B–9. This proposed cross–section will match the existing cross–section on University Drive. The existing cross–section on Magnolia Street is 40 feet curb to curb, Type L–1, MAG Detail P–1014

Looking Southeast on proposed alignment at the University Drive and Magnolia Street Intersection.

Looking West at sand and gravel excavation at Station 18+50 along alignment.

Figure B–1
Photographs of Existing Alignment West of I–10

Looking East at North Abutment of I–10 Salt River Bridge at Station 26+00.

Looking East under the I–10 Salt River Bridge at Station 28+50.

Figure B–2
Photographs of I–10 Salt River Bridge

Looking East on proposed alignment at Station 32+00.

Looking Northeast on proposed alignment at Station 38+00.

Figure B–3
Photographs of Existing Alignment East of I–10

Existing 96" Storm Drain Outlet

Existing Twin 72" Storm Drain Outlet

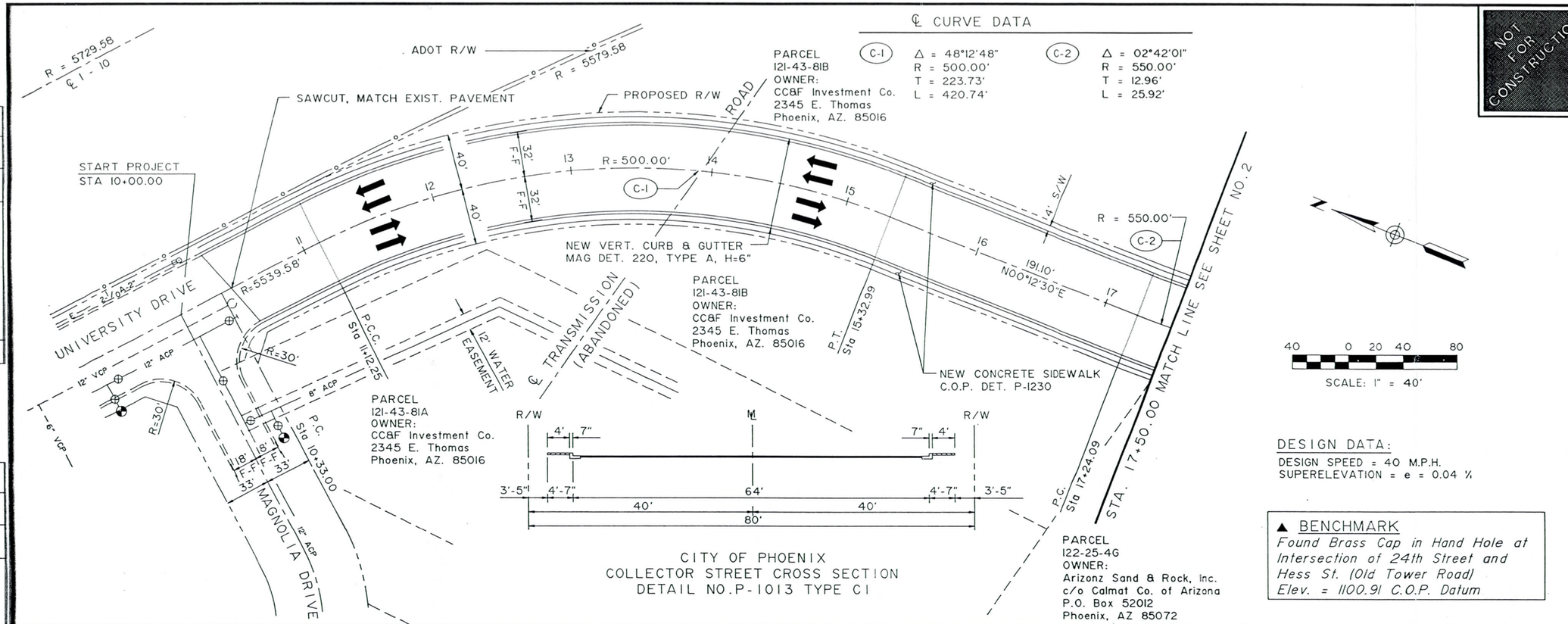
Figure B–4
Photographs of the Existing Storm Drain Outlet Structures

FHWA REGION	STATE	PROJ NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ				

NOT FOR CONSTRUCTION

BRW
2700 NORTH CENTRAL AVENUE
SUITE 1000
PHOENIX, ARIZONA 85004
PHONE (602) 234-1591
FAX (602) 230-9489
PHOENIX, SAN DIEGO, MINNEAPOLIS, DENVER, ORLANDO, SEATTLE

DES	DR	CK	DATE



CITY OF PHOENIX, ARIZONA
ENGINEERING DEPARTMENT

OLD TOWER ROAD
UNDER I-10/
SALT RIVER BRIDGE

DR DATE	DES DATE	CK DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
DESIGN B			1	4	

FIGURE NO. B-5

F H W A REGION	STATE	PROJ NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ				

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SUITE 1000
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PHONE (602) 234-1591
FAX (602) 230-9189
PHOENIX, SAN DIEGO, MINNEAPOLIS, DENVER, ORLANDO, SEATTLE

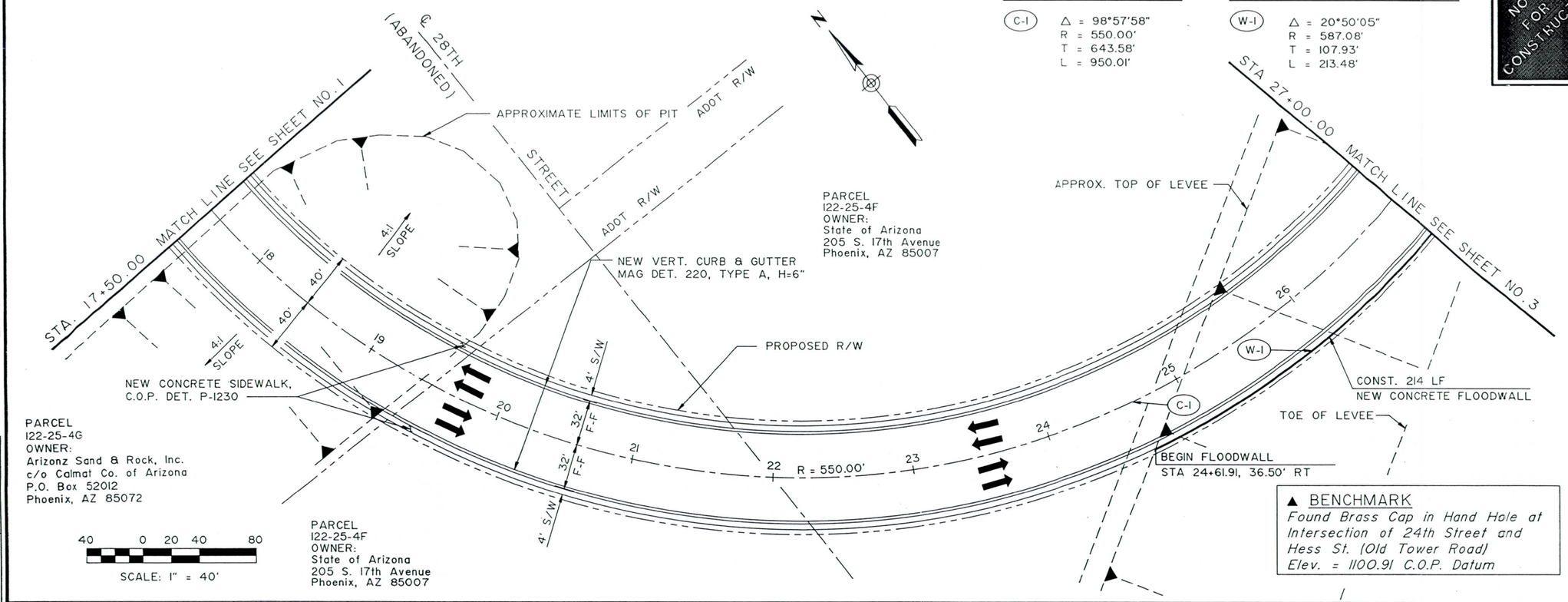
DES	DR	CK	DATE

℄ CURVE DATA

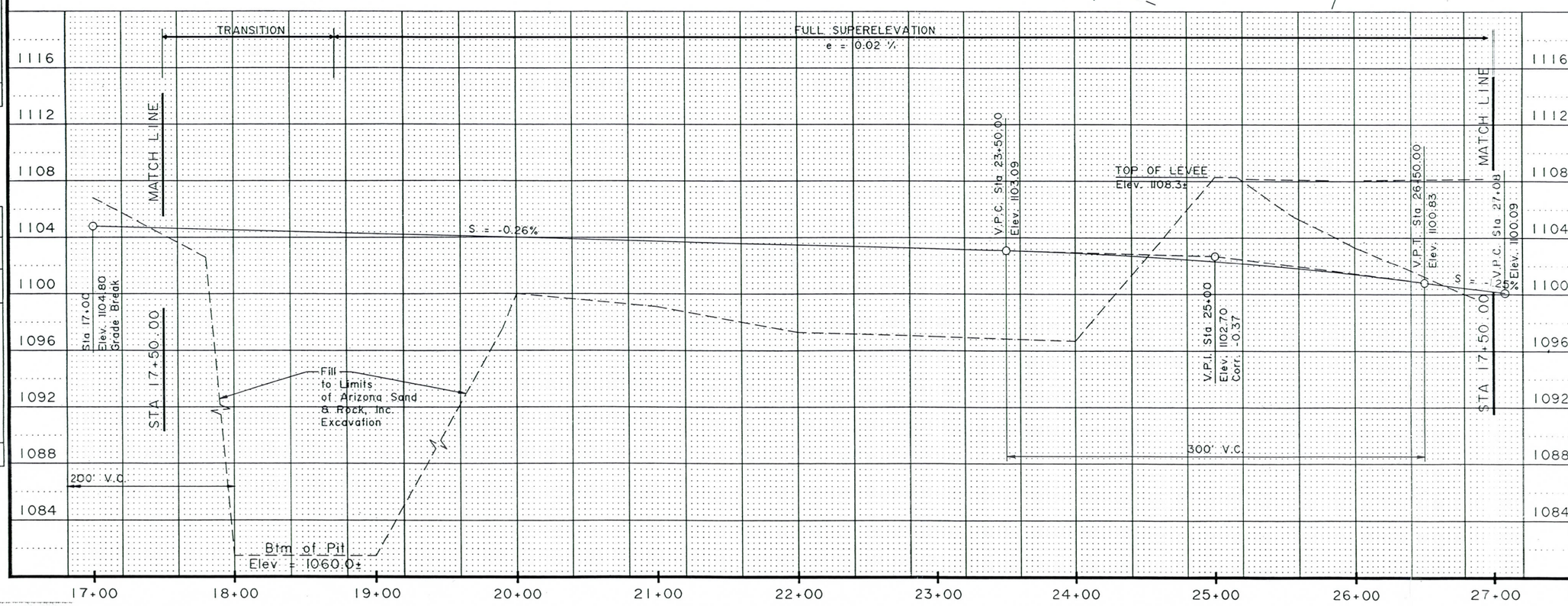
(C-1)
Δ = 98°57'58"
R = 550.00'
T = 643.58'
L = 950.01'

℄ WALL CURVE DATA

(W-1)
Δ = 20°50'05"
R = 587.08'
T = 107.93'
L = 213.48'



▲ BENCHMARK
Found Brass Cap in Hand Hole at Intersection of 24th Street and Hess St. (Old Tower Road) Elev. = 1100.91 C.O.P. Datum



CITY OF PHOENIX, ARIZONA
ENGINEERING DEPARTMENT

OLD TOWER ROAD
UNDER I-10/
SALT RIVER BRIDGE

DR DATE	DES DATE	CK DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
DESIGN B			2	4	

FIGURE NO. B-6

FHWA REGION	STATE	PROJ NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ				

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SUITE 1000
PHOENIX, ARIZONA 85004
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FAX (602) 230-9189
PHOENIX, SAN DIEGO, MINNEAPOLIS, DENVER, ORLANDO, SEATTLE

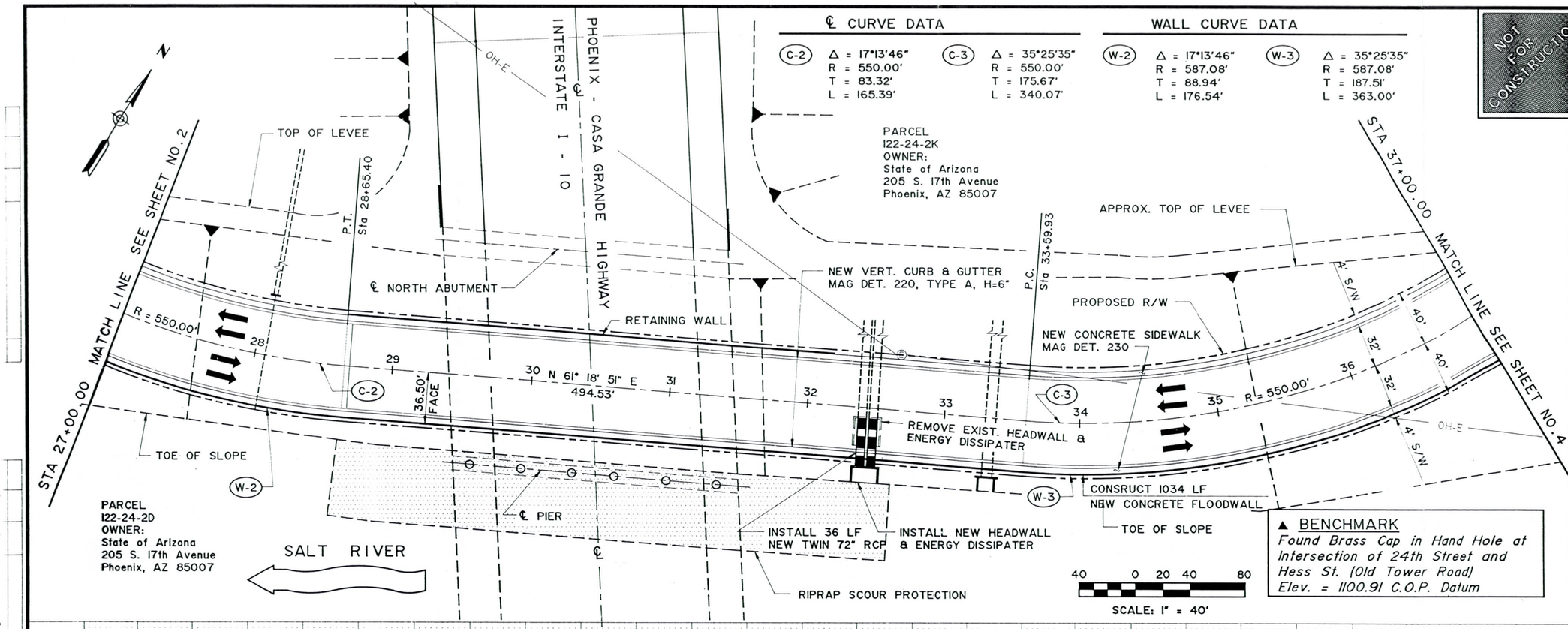
DES | DR | CK | DATE

℄ CURVE DATA

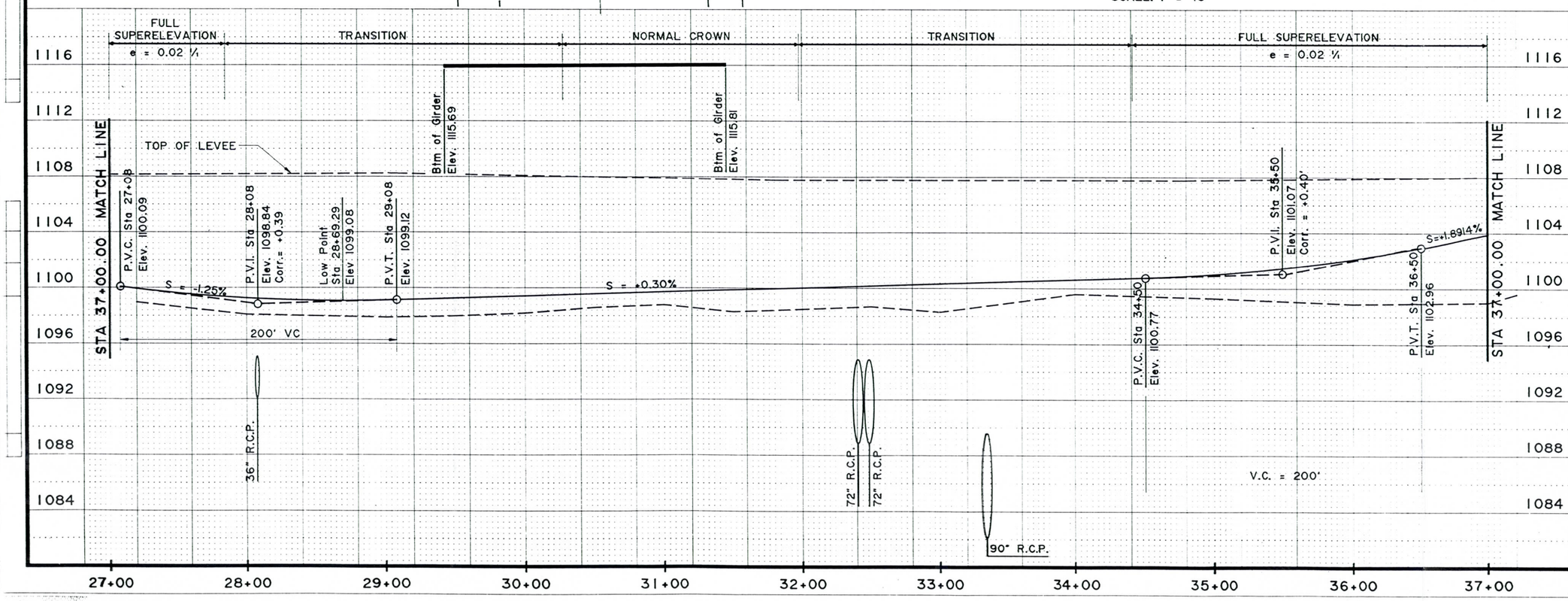
C-2	Δ = 17°13'46"	C-3	Δ = 35°25'35"	W-2	Δ = 17°13'46"
	R = 550.00'		R = 550.00'		R = 587.08'
	T = 83.32'		T = 175.67'		T = 88.94'
	L = 165.39'		L = 340.07'		L = 176.54'

WALL CURVE DATA

W-3	Δ = 35°25'35"
	R = 587.08'
	T = 187.51'
	L = 363.00'



▲ BENCHMARK
Found Brass Cap in Hand Hole at Intersection of 24th Street and Hess St. (Old Tower Road)
Elev. = 1100.91 C.O.P. Datum



CITY OF PHOENIX, ARIZONA
ENGINEERING DEPARTMENT

OLD TOWER ROAD
UNDER I-10/
SALT RIVER BRIDGE

DR DATE	DES DATE	CK DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
DESIGN B			3	4	

FIGURE NO. B-7

F.H.W.A. REGION	STATE	PROJ NO. --	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ				

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FAX (602) 230-9689
PHOENIX, SAN DIEGO, MINNEAPOLIS, DENVER, ORLANDO, SEATTLE

DES	DR	CK	DATE

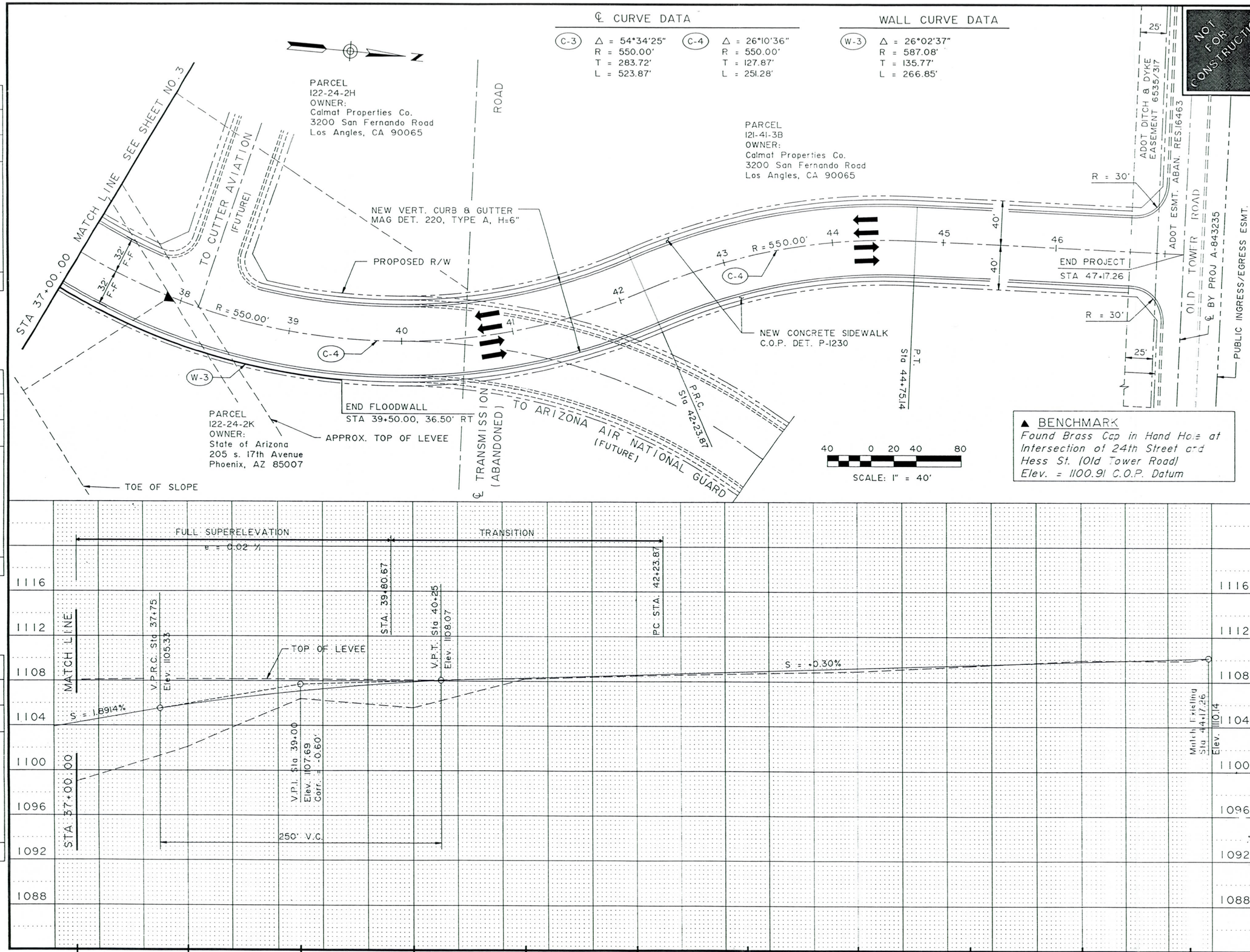
℄ CURVE DATA

(C-3) Δ = 54°34'25"
R = 550.00'
T = 283.72'
L = 523.87'

(C-4) Δ = 26°10'36"
R = 550.00'
T = 127.87'
L = 251.28'

WALL CURVE DATA

(W-3) Δ = 26°02'37"
R = 587.08'
T = 135.77'
L = 266.85'



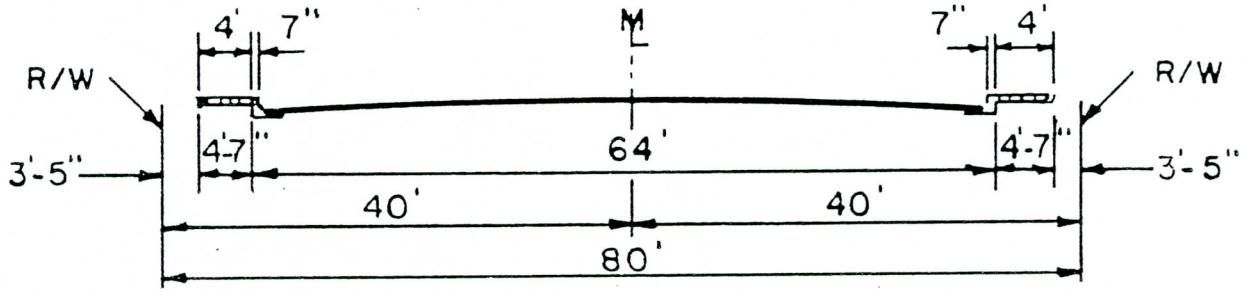
▲ BENCHMARK
Found Brass Cap in Hand Hole at Intersection of 24th Street and Hess St. (Old Tower Road) Elev. = 1100.91 C.O.P. Datum

CITY OF PHOENIX, ARIZONA
ENGINEERING DEPARTMENT

OLD TOWER ROAD
UNDER I-10/
SALT RIVER BRIDGE

DR DATE	DES DATE	CK DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
DESIGN B			4	4	

FIGURE NO. B-8



CITY OF PHOENIX

COLLECTOR STREET CROSS SECTION

DETAIL NO. P-1013 TYPE C1

RELOCATION OF OLD TOWER ROAD

DESIGN CONCEPT REPORT

FIGURE NO. B-9

TYPICAL SECTION

BRW

At the start of the project this new portion of Old Tower Road will connect to University Drive at its intersection with Magnolia Street. This new portion of Old Tower Road will create a through traffic movement with University Drive. Magnolia Street will then form a tee intersection with University Drive/Old Tower Road. Because University Drive is a signalized intersection at 24th Street, and Magnolia is not signalized at 24th Street, it is recommended that University Drive/Old Tower Road remain the through movement. Eastbound traffic on Magnolia Street should be stopped by means of a stop sign at University Drive/Old Tower Road.

At the west end of this new portion of Old Tower Road the new roadway will connect into existing Old Tower Road which provides access to the existing Air Guard facility. If the existing Air Guard facility is relocated to the south, the western end of Old Tower Road will be realigned to provide the desired access to the facility. The existing portion of Old Tower Road east of existing 24th Street and west of the existing Cutter Aviation site may be abandoned and removed with other future construction.

B.3.3 DRAINAGE

This proposed roadway alignment has significant drainage aspects that must be considered. A portion of the proposed alignment will be located within the Salt River floodplain as it crosses under the I–10 Salt River Bridge. This alignment will have a minimal impact on the water surface elevations in the Salt River and will create a special drainage situation with the roadway drainage.

The Salt River's discharge is approximately 200,000 cfs during the 100–year flood. The computed water surface elevation at the bridge is about 1,106 feet. To obtain a minimum clearance of 16'–6" from the bottom of the bridge, elevation 1,115.69, the roadway grade must be set at no higher than 1,099.19 feet (1,115.69' – 16.5'), which is approximately 7 feet lower than the computed 100–year water surface elevation.

The construction of a flood wall/retaining wall will protect the roadway from inundation during the 100–year flood. The flood wall/retaining wall will be constructed adjacent to the roadway and will tie back into the existing earthen flood dike that the roadway penetrates. The foundation of the flood wall/retaining wall will need to buried a sufficient depth and armored with riprap or roller compacted concrete to prevent river scour from washing out the wall. The bridge pier may also need additional scour protection.

The roadway will be drained by a lift station located at the low point of the roadway. This lift station is required because the roadway cannot drain by gravity when the water surface elevation in the river is higher than elevation 1099 feet.

B.3.4 STRUCTURES

The flood wall/retaining wall is required to separate and protect the new roadway from the Salt River flood waters. The elevation of the top of the wall is approximately 1107.2. This wall will have a minimum of 1 foot of freeboard above the 100–year water surface elevation of the Salt River. The footing will be protected from scour by means of riprap or roller compacted concrete and depth of bury. The adjacent bridge pier may also be protected with additional riprap or roller compacted concrete. The flood wall/retaining wall is estimated to be a maximum of 42 feet high under the bridge. The height of the wall will decrease where it ties into the existing earthen dike. The wall will be structurally designed to withstand hydrostatic pressures and hydrodynamic forces created by the flood waters. The flood wall/retaining wall will have water stops at all construction joints. A cross–section of the proposed flood wall/retaining wall and other details are shown in Figure B–10.

The flood wall/retaining wall will be tied back into the existing earthen dike to preserve the design intent of the existing dike. The terminus of the wall will have details the protect against seepage around the end of the wall or through the dike.

A much smaller retaining wall will need to be constructed on the northwest side of the roadway between the roadway and the bridge abutment slope. This retaining wall will be approximately six feet high.

The existing outlet structures for the two major storm drain lines will need to be relocated and the storm drains extended. The existing storm drain pipe will be extended under the proposed roadway and new outlet structures constructed.

B.3.5 UTILITIES

There are two existing storm drain lines that will need to be extended as part of this project. These storm drain lines are shown on the 40 scale plans.

The horizontal and vertical relocation of existing underground utilities (water, sanitary sewer, gas, electric and telephone) is NOT necessary for construction of this portion of Old Tower Road. However, adjustment of manhole frames, water valve boxes and other surface featured associated with underground utilities may be necessary.

The existing large diameter steel pole tower for the overhead electric transmission line at Station 32+65, 40 feet left will not need to be relocated based on this proposed alignment. There are no other major overhead electric or telephone lines that will need to be relocated.

F.H.W.A. REGION	STATE	PROJ NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ				

NOT FOR CONSTRUCTION USE

BRW
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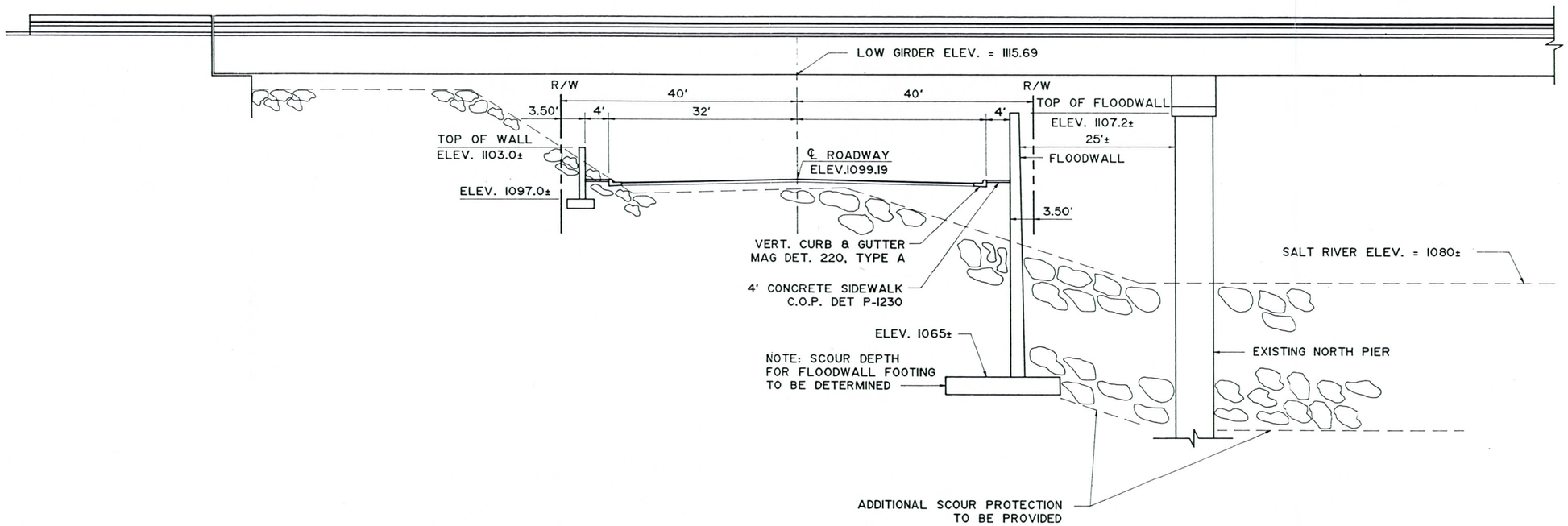
SUITE 1000
PHOENIX, ARIZONA 85004
PHONE (602) 234-1591
FAX (602) 230-9189
PHOENIX, TUCSON, SAN DIEGO, MINNEAPOLIS, DENVER, ST. PETERSBURG, SEATTLE

DES	DR	CK	DATE

I – 10 SALT RIVER BRIDGE



TYPICAL ROADWAY CROSS SECTION

STA 30+50

NOT TO SCALE

CITY OF PHOENIX, ARIZONA
ENGINEERING DEPARTMENT

OLD TOWER ROAD
UNDER I – 10 /
SALT RIVER BRIDGE

DR	DES	CK	SHEET NO.	TOTAL SHEETS	AS BUILT
DATE	DATE	DATE			

DESIGN B

FIGURE NO. B-10

B.3.6 SPECIAL CONSTRUCTION REQUIREMENTS

There are no traffic control requirements necessary for the construction of this portion of Old Tower Road. The usual maintenance of traffic during road construction will be necessary for vehicle movement to and from the Air Guard Complex on existing Old Tower Road.

The deep sand and gravel excavation on the west side of I–10 will require the construction of an approximate 40 foot earth fill. Coordination with the land owner for access will be necessary to minimize the cost of this fill construction.

The construction of the flood wall/retaining wall will require approximately 125,000 cubic yards of structural excavation for the placement of the footings. De–watering of the bottom of the excavation in the river bottom may also be necessary.

B.3.7 RIGHT–OF–WAY REQUIREMENTS

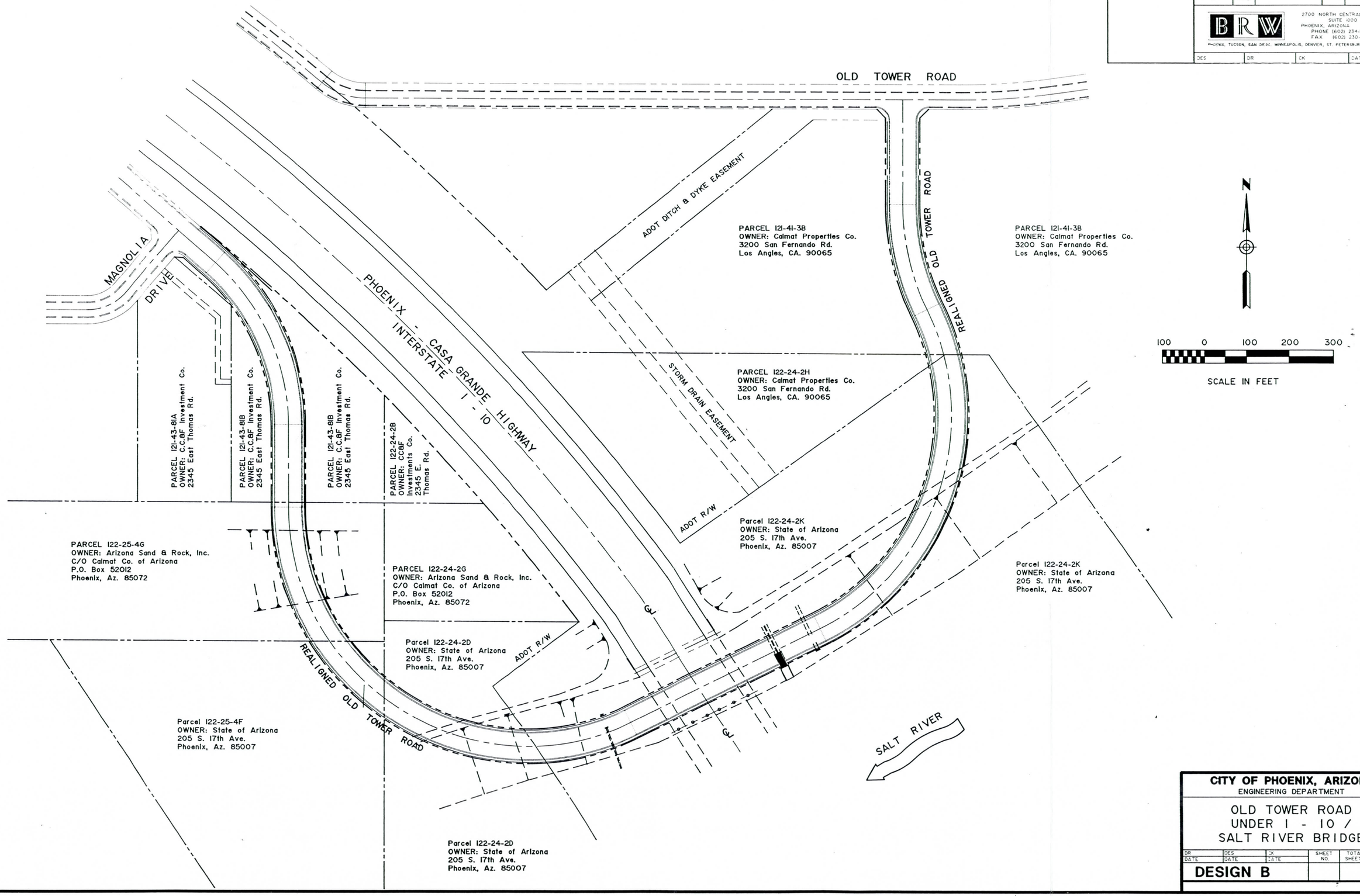
This portion of Old Tower Road will consist of four lanes, two in each direction, vertical curb and gutter, and 4' sidewalks on each side. The total right–of–way required for this roadway cross–section is 80 feet. A large portion of this new right–of–way will be located across ADOT Property. Therefore, the improvements must meet all ADOT requirements. Permits and approval from ADOT must also be obtained.

Additional right–of–way from other property owners is also required. The existing property owners and the necessary right–of–way is shown in Figure B–11.

F H W A REG. CN.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
6	ARIZ				

BRW
2700 NORTH CENTRAL AVENUE
SUITE 1000
PHOENIX, ARIZONA 85004
PHONE (602) 234-1591
FAX (602) 230-9189
PHOENIX, TUCSON, SAN DIEGO, MINNEAPOLIS, DENVER, ST. PETERSBURG, SEATTLE

DES	DR	CK	DATE



CITY OF PHOENIX, ARIZONA
ENGINEERING DEPARTMENT

OLD TOWER ROAD
UNDER I - 10 /
SALT RIVER BRIDGE

DR DATE	DES DATE	CK DATE	SHEET NO.	TOTAL SHEETS	AS BUILT

DESIGN B

FIGURE B-11

B.3.8 CONSTRUCTION COST ESTIMATE

The preliminary construction cost estimate for Design "B" was prepared based on the 40 scale preliminary plan presented in this report. The cost estimate is shown on Table B–1.

B.4.0 WATER SURFACE PROFILE

B.4.1 SALT RIVER (EXISTING CONDITIONS HEC–2 WATER SURFACE PROFILE)

The Flood Control District of Maricopa County has computed a water surface profile within the Salt River for a 100–year flood event. The computer program used to analyze the profile was HEC–2. The total flow used in analyzing the profile at the I–10 Salt River Bridge location was 200,000 cfs. According to the HEC–2 model, the existing velocities in the river at the I–10 Salt River Bridge are about 8.35 feet per second (fps) (see Appendix A). The river channel cross–section number and the corresponding HEC–2 cross–section number on the downstream side of the bridge is 16.882, and on the upstream side of the bridge is 16.904.

B.4.2 SALT RIVER (POST CONSTRUCTION HEC–2 WATER SURFACE PROFILE)

The proposed alignment for the relocation of Old Tower Road under the I–10 Salt River Bridge will effect the existing HEC–2 water surface model that the Flood Control District of Maricopa County has prepared. However, the construction of the retaining wall, to protect the roadway, will not significantly effect the water surface elevation. (See Appendix B)

HEC–2 cross–section numbers 16.829, 16.875, 16.882, 16.904 and 16.927 were modified to model the proposed alignment of Old Tower Road under the I–10 Salt River Bridge. The cross–sections were modified by changing the station of the right encroachment on the channel cross–section and the input of data to simulate the proposed flood wall/retaining wall.

The post construction water surface elevations are about 0.1 foot higher than the corresponding existing water surface elevations. The post construction velocities in the river at the I–10 Salt River Bridge are about 8.40 fps, or 0.05 fps faster than existing conditions. These changes in the water surface elevations and velocities are insignificant.

TABLE B–1

Relocated Old Tower Road Cost Estimate

Description		Units	Unit Price	Amount
1.	Subgrade Preparation	24,300 Tons	$ 1.50	$ 36,450.00
2.	5" Asphaltic Concrete–Base Course (C 3/4)	4,393 Tons	$ 28.00	$ 123,004.00
3.	Vertical Curb & Gutter MAG Det. 220, Type A	7,300 LF	$ 6.00	$ 43,800.00
4.	Sidewalk C.O.P. P–1230	29,210 SF	$ 1.50	$ 43,815.00
5.	Survey Monument Type A	2 EA	$ 250.00	$ 500.00
6.	Survey Monument Type B	7 EA	$ 150.00	$ 1,050.00
7.	Catch Basin	3 EA	$ 1,900.00	$ 5,700.00
8.	Storm Drain Pipe	500 LF	$ 30.00	$ 15,000.00
9.	Lift Station	1 EA	$ 15,000.00	$ 15,000.00
10.	Remove Exist. Curb and Gutter	120 LF	$ 2.00	$ 240.00
11.	Remove Exist. Pipe	60 LF	$ 10.00	$ 600.00
12.	Earth Work	167,650 CY	$ 2.80	$ 469,420.00
13.	Riprap	7,500 CY	$ 20.00	$ 150,000.00
13.	Retaining Wall	350 LF	$ 60.00	$ 21,000.00
14.	Flood Wall/Retaining Wall	1,520 LF	$ 300.00	$ 456,000.00
		SUBTOTAL		$1,381,579.00
		5% Contingency		$ 69,081.00
		TOTAL		$1,450,660.00

APPENDIX A

Existing Conditions HEC-2 Water Surface Profile

```
*****************************************
*  HEC-2 WATER SURFACE PROFILES         *
*                                       *
*  Version   4.6.0;  February 1991      *
*                                       *
*  RUN DATE    09FEB92    TIME   22:05:23 *
*****************************************
```

```
*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
```

Existing Conditions
Salt River
24th St to 44 1/1 St

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

THIS RUN EXECUTED 09FEB92 22:05:23

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
************************************

T1   SALT RIVER FLOOD INSURANCE STUDY 1983-1984
T2  AUGUST 1982  ADOT TOPO BASE MAP, AGUA FRIA RIVER TO COUNTRY CLUB ROAD 38ML
T3   100-YEAR FLOODPLAIN     STREAMLINE AT STATION  10000

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                                                         1073.31

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1         0        -1         0         0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43        53        21        55        26        56        22        54         4
      1        50       200

NC     .045      .045      .033       0.1       0.3
QT        2    200000    200000
ET   15.934       4.1       9.1      9750         0         0         0         0      9750     11300
X1   15.934        24      9750     11070       530       530       528
X3       10
GR     1095      8500      1080      8600      1080      9700    1092.6      9750      1075      9820
GR     1071      9860    1071.2      9945      1071     10040      1075     10090      1060     10200
GR   1082.4     10280      1080     10380      1076     10560      1075     10730      1071     10770
GR     1075     10830      1080     11070    1081.6     11270      1080     11400      1080     11620
GR     1075     11700      1080     11770      1085     11800    1100.5     11860

ET                          9.1                                                          9760     11205
X1   16.034        23      9760     11200       520       530       528
X3       10
GR     1100      8200      1095      8450      1080      9710    1095.2      9760    1072.9      9850
GR   1072.9     10020      1075     10040      1080     10210    1081.9     10265      1080     10330
GR     1075     10510    1072.9     10580      1075     10610      1075     10660      1080     10820
GR   1080.4     10960      1084     11200      1080     11260      1075     11280      1075     11520
GR     1080     11760      1085     11820      1102     11900

ET                          9.1                                                          9700     10710
X1   16.134        12      9700     10710       540       500       528
X3       10
GR     1100      8240      1080      8290      1080      9610    1096.5      9700      1080      9770
GR     1075     10070    1074.5     10110    1074.5     10380      1075     10410      1080     10630
GR     1095     10710      1098     10860
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NC	0	0	0	.3	.5					
QT	2	205000	205000							
ET			9.1						9660	10600
X1	16.178	14	9660	10600	260	200	230			
X3	10									
GR	1100	8050	1095	8180	1090	8360	1085	8470	1085	8660
GR	1090	8880	1095	9070	1095.5	9420	1097	9660	1080	9720
GR	1075.2	9830	1075.2	10510	1096	10600	1096	10605		
ET			9.1						3076	3934
X1	16.188	10	3076	3934.5	60	60	50			
X3	10							1094.5	1094.5	
GR	1099.4	3075	1099.4	3076	1094.9	3077	1089.5	3078	1075.3	3110
GR	1075.3	3904	1089.5	3933	1094.9	3934	1099.5	3934.5	1099.5	3935
SB	0.9	1.6	2.5	0	794	71.5	14923	0.5	1075.3	1075.2
X1	16.202				77	77	77			
X2			1	1094.9	1099.4					
X3	10							1099.4	1099.4	
BT	3	3075	1099.4		3507	1099.8		3935	1099.5	
X1	16.213	8	9690	10570	60	60	60			
X3	10									
GR	1100	9600	1095	9690	1080	9720	1077	9840	1076	9890
GR	1076	10510	1095	10570	1099.5	10800				
NC	0	0	0	.1	.3					
X1	16.254	7	9680	10570	200	270	215			
X3	10									
GR	1101.5	9580	1100	9680	1076.8	9750	1076.8	10350	1080	10380
GR	1095	10570	1099.5	10800						
ET	0	0	9.1	0	0	0	0	0	9700	10485
X1	16.347	12	9700	10480	500	470	490			
X3	10									
GR	1107.5	9580	1105	9700	1078.2	9800	1078.2	10210	1088.8	10260
GR	1084	10340	1085	10350	1095	10480	1094	10650	1095	11000
GR	1095	11150	1101	11290						
ET			9.1						9620	10800
X1	16.428	15	9620	10450	470	370	430			
GR	1105	9550	1100	9620	1080	9750	1080	9950	1083.4	10100
GR	1080	10250	1087.3	10330	1103	10450	1100	10450	1100	10550
GR	1095	10680	1090.5	10810	1095	10920	1100	11180	1101.5	11300
ET	0	4.1	9.1	0	11100	0	0	0	9600	10900
X1	16.528	19	9600	10370	560	430	528			
GR	1104	9450	1100	9600	1095	9610	1090	9650	1085	9700
GR	1082	9850	1080.2	9980	1080.2	10200	1085	10280	1090	10350
GR	1099	10370	1095	10400	1095	10570	1096	10650	1095	10720
GR	1092.5	10800	1095	10900	1100	11100	1102	11320		

ET	0	4.1	9.1	0	10800	0	0	0	9500	10730
X1	16.628	22	9220	10600	550	440	528			
GR	1106	9200	1100	9220	1098.7	9390	1095	9610	1090	9670
GR	1085	9700	1082	9850	1080.4	9920	1080.4	10200	1085	10250
GR	1100	10310	1109	10350	1105	10390	1105	10450	1107	10540
GR	1100	10600	1096	10650	1095	10700	1094	10730	1095	10800
GR	1100	11070	1102	11150						
ET			9.1						9496	10650
X1	16.689	19	9490	10650	360	230	320			
X3	10									
GR	1106.7	9030	1100	9050	1100	9400	1105	9490	1095	9540
GR	1090	9600	1085	9710	1080.6	9860	1080.6	10080	1085	10160
GR	1090	10200	1100	10250	1108	10350	1107	10490	1085	10540
GR	1085	10570	1100	10620	1106	10650	1106	10651		
NC	.04	.04	.03	.1	.3					
ET			9.1						9526	10630
X1	16.733	13	9520	10630	250	240	230			
X3	10									
GR	1106	8900	1100	9010	1102.1	9180	1100	9240	1099	9350
GR	1100	9460	1107.5	9520	1080.8	9620	1080.8	10520	1100	10580
GR	1105	10600	1107.5	10630	1107.5	10631				
ET			9.1						9287	10550
X1	16.829	20	9270	10550	330	500	510			
X3	10									
GR	1107.5	8650	1100	8670	1100	8870	1102	8990	1100	9180
GR	1107.5	9270	1105	9300	1100	9320	1095	9370	1087	9390
GR	1087	9430	1100.5	9480	1095	9620	1085	9660	1080.9	9750
GR	1080.9	10400	1085	10450	1105	10530	1109	10550	1109	10551
NC	0	0	0	.3	.5					
ET			9.1						8997	10530
X1	16.875	16	8970	10530	550	190	240			
X3	10									
GR	1121.5	8880	1109	8970	1105	9010	1100	9130	1085	9140
GR	1085	9180	1100	9200	1101.3	9380	1100	9540	1095	9650
GR	1085	9700	1081.2	9820	1080.9	9940	1080.9	10400	1105	10510
GR	1109.5	10530								
ET			9.1						28255	29798
X1	16.882	86	28229	29798	40	40	40			
X3	10							1118.4	1118.4	
GR	1122.7	28228	1122.7	28229	1118.4	28230	1116.25	28231	1100	28270
GR	1093	28313	1124	28315	1093	28315	1080.9	28360	1080.9	28391
GR	1124	28391	1124	28393	1080.9	28393	1080.9	28470	1124	28470
GR	1124	28472	1080.9	28472	1080.9	28548	1124	28548	1124	28550
GR	1080.9	28550	1080.9	28627	1124	28627	1124	28629	1080.9	28629
GR	1080.9	28705	1124	28705	1124	28707	1080.9	28707	1080.9	28783
GR	1124	28783	1124	28785	1080.9	28785	1080.9	28861	1124	28861
GR	1124	28863	1080.9	28863	1080.9	28940	1124	28940	1124	28942
GR	1080.9	28942	1080.9	29018	1124	29018	1124	29020	1080.9	29020

Downstream Side of I-10 Salt River Br.

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GR   1080.9    29060     1093    29085     1124    29085     1124    29087     1093    29087
GR      1100    29100     1100    29164     1124    29164     1124    29166     1100    29166
GR      1100    29242     1124    29242     1124    29244     1100    29244     1100    29320
GR      1124    29320     1124    29322     1100    29322     1100    29477     1124    29477
GR      1124    29479     1100    29479     1100    29555     1124    29555     1124    29557
GR      1100    29557     1086    29567     1086    29627     1100    29634     1124    29634
GR      1124    29636     1100    29636     1100    29712     1124    29712     1124    29714
GR      1100    29714     1100    29760   1116.2    29790   1118.4    29795   1122.7    29798
GR    1122.7    29799
ET                          9.1                                                 28254    29798
X1    16.904       86     28229    29798       114      114      114
X2                                1118.4   1122.7
GR    1122.7    28228    1122.7    28229    1118.4    28230  1116.25    28231     1100    28270
GR      1093    28312      1124    28312      1124    28316     1093    28316   1080.9    28390
GR      1124    28390      1124    28394    1080.9    28394   1080.9    28469     1124    28469
GR      1124    28473    1080.9    28473    1080.9    28547     1124    28547     1124    28551
GR    1080.9    28551    1080.9    28626      1124    28626     1124    28630   1080.9    28630
GR    1080.9    28704    1080.9    28704      1124    28708   1080.9    28708   1080.9    28782
GR      1124    28782      1124    28786    1080.9    28786   1080.9    28860     1124    28860
GR      1124    28864    1080.9    28864    1080.9    28939     1124    28939     1124    28943
GR    1080.9    28943    1080.9    29017      1124    29017     1124    29021   1080.9    29021
GR    1080.9    29060     1093    29084      1124    29084     1124    29088     1093    29088
GR      1100    29100     1100    29163      1124    29163     1124    29167     1100    29167
GR      1100    29241     1124    29241      1124    29245     1100    29245     1100    29319
GR      1124    29319     1124    29323      1100    29323     1100    29476     1124    29476
GR      1124    29480     1100    29480      1100    29554     1124    29554     1124    29558
GR      1100    29558     1086    29567      1086    29627     1100    29633     1124    29633
GR      1124    29637     1100    29637      1100    29711     1124    29711     1124    29715
GR      1100    29715     1100    29760   1116.2    29790   1118.4    29795   1122.7    29798
GR    1122.7    29799
ET                          9.1                                                  8892    10540
X1    16.927       16     8820    10540       120      120      120
X3
GR    1121.5     8820     1105     8900      1100     8970     1093     9000     1093     9050
GR      1100     9070   1101.5     9290      1100     9450     1095     9630     1085     9680
GR      1082     9880     1081     9940      1081    10300     1100    10500     1123    10540
GR      1123    10541
NC         0        0        0       .1        .3                                  8770    10535
ET                          9.1
X1    17.027       21     8770    10530       440      540      528
X3        10
GR      1112     8500     1110     8645      1105     8770     1100     8960     1097     9000
GR      1097     9100     1100     9130      1105     9170     1106     9240     1105     9320
GR      1102     9400     1105     9460      1100     9600     1085     9670   1081.5     9750
GR    1081.5    10350     1085    10380      1101    10480     1100    10530     1105    10650
GR      1107    10760
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Upstream Side of I-10 Scelt River Br

ET	0	4.1	9.1	9566	0	0	0	0	9500	10700
X1	17.053	60	9716.1	10431.4	200	200	200			
CI	10055	1080.9				700				
GR	1098.4	8999.0	1098.4	9052.5	1100.7	9082.5	1101.2	9101.0	1101.2	9121.1
GR	1107.5	9148.1	1106.2	9155.6	1107.1	9177.6	1107.8	9217.1	1106.9	9245.2
GR	1104.9	9262.2	1105.7	9291.7	1104.3	9304.7	1104.5	9347.7	1103.3	9388.8
GR	1105.9	9406.3	1104.7	9417.8	1104.9	9464.4	1106.8	9503.9	1108.5	9566.0
GR	1102.6	9578.5	1100.5	9594.0	1099.3	9627.0	1100.0	9673.6	1099.4	9716.1
GR	1085.6	9746.6	1083.2	9760.6	1082.9	9822.7	1084.4	9832.2	1085.5	9850.7
GR	1085.1	9898.3	1083.2	9932.3	1089.2	9950.3	1090.9	9962.3	1090.8	9977.3
GR	1092.2	9987.3	1092.4	10000.0	1091.3	10030.0	1091.3	10087.6	1086.9	10102.1
GR	1084.0	10135.6	1084.0	10291.7	1087.2	10335.3	1088.0	10361.3	1087.6	10376.8
GR	1084.3	10384.3	1084.3	10398.3	1090.6	10431.4	1095.3	10467.9	1096.9	10488.9
GR	1098.4	10504.9	1102.0	10517.5	1101.7	10597.5	1103.0	10627.6	1104.9	10688.1
GR	1107.3	10748.2	1106.7	10813.7	1105.2	10869.3	1104.9	10927.8	1105.6	11000.9

ET	0	4.1	9.1	9366	0	0	0	0	9366	10900
X1	17.091	48	10216.6	10885.7	200	200	200			
CI	10145	1081.1				400				
GR	1102.2	8999.5	1103.4	9038.5	1104.5	9057.0	1107.3	9073.0	1107.5	9092.5
GR	1105.7	9115.1	1106.2	9156.6	1107.6	9174.1	1108.6	9197.6	1108.0	9232.7
GR	1107.1	9258.2	1108.9	9273.7	1110.0	9293.7	1100.7	9309.8	1102.5	9347.3
GR	1111.5	9366.3	1109.9	9372.8	1108.7	9405.3	1106.2	9436.4	1107.8	9445.4
GR	1108.0	9477.9	1107.3	9552.5	1108.6	9573.5	1100.8	9598.0	1101.0	9673.6
GR	1088.3	9708.1	1086.1	9731.6	1084.0	9769.7	1084.0	9890.3	1086.0	9938.3
GR	1090.6	9955.9	1091.3	9977.9	1092.5	10000.0	1093.3	10054.0	1093.4	10080.0
GR	1091.0	10140.1	1090.4	10179.6	1091.3	10216.6	1088.5	10240.7	1088.7	10255.7
GR	1083.6	10286.7	1083.6	10825.2	1105.5	10885.7	1105.3	10945.3	1102.9	10955.3
GR	1106.1	10969.3	1105.5	11001.4	1105.5	11007.4				

ET			9.1						9610	10905
X1	17.129	60	10295.7	10905.8	200	200	200			
CI	10139	1081.3								
GR	1106.7	8999.6	1107.4	9007.6	1105.8	9029.1	1107.8	9044.1	1107.8	9072.1
GR	1106.4	9085.6	1107.4	9095.6	1107.8	9158.2	1109.1	9166.2	1109.2	9182.7
GR	1101.3	9199.7	1101.9	9215.7	1108.8	9229.7	1108.5	9303.	1109.3	9362.4
GR	1111.1	9370.4	1111.7	9403.9	1109.3	9444.4	1109.8	9463.0	1107.7	9512.0
GR	1109.0	9529.0	1108.5	9581.6	1101.8	9598.6	1102.1	9656.6	1094.2	9675.1
GR	1090.0	9694.2	1084.2	9722.7	1084.3	9759.7	1083.9	9817.8	1084.7	9852.3
GR	1085.6	9863.3	1084.0	9895.4	1085.9	9928.9	1089.5	9946.4	1089.8	9971.4
GR	1091.0	9985.4	1091.4	10000.0	1093.0	10046.5	1094.1	10114.6	1089.6	10186.2
GR	1091.4	10221.7	1094.1	10295.7	1092.8	10339.3	1090.0	10372.3	1089.2	10409.8
GR	1086.8	10441.9	1087.0	10457.4	1083.5	10465.9	1083.5	10673.1	1084.7	10684.6
GR	1085.7	10739.2	1085.4	10848.3	1087.9	10854.3	1083.9	10892.3	1093.0	10905.8
GR	1099.5	10918.8	1100.2	10927.3	1098.4	10964.9	1099.5	10977.9	1101.3	11001.9

ET			9.1						9540	10875
X1	17.167	60	10270.2	10875.8	200	200	200			
CI	10133	1081.5								
GR	1106.9	8999.5	1106.9	9011.0	1110.0	9035.1	1108.5	9063.6	1109.6	9076.1
GR	1108.7	9122.1	1109.3	9138.2	1107.8	9168.2	1108.8	9231.7	1109.4	9261.3
GR	1111.6	9289.8	1110.3	9316.3	1110.8	9337.8	1109.2	9350.8	1109.1	9367.4
GR	1110.2	9382.9	1109.7	9415.9	1108.7	9440.9	1109.4	9459.0	1109.8	9492.0

```
SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

CCHV=     .100 CEHV=     .300
*SECNO 16.733

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.24

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1107.50 ELREA=      1107.50

   16.733     24.99   1105.79       .00       .00   1106.86      1.07       .19       .17   1107.50
 205000.0        .0  205000.0        .0        .0   24662.5        .0    1831.6     132.3   1107.50
      .10       .00      8.31       .00      .000      .030      .000      .000   1080.80   9526.37
 .000440      250.      230.      240.         2         0         0       .00   1083.21  10609.58

*SECNO 16.829

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1107.50 ELREA=      1109.00

   16.829     25.13   1106.03       .00       .00   1107.12      1.09       .25       .01   1107.50
 205000.0        .0  205000.0        .0        .0   24415.1        .0    2118.9     145.9   1109.00
      .12       .00      8.40       .00      .000      .030      .000      .000   1080.90   9287.79
 .000549      330.      510.      500.         2         0         0       .00   1247.30  10535.09

CCHV=     .300 CEHV=     .500
*SECNO 16.875

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1109.00 ELREA=      1109.50

   16.875     25.27   1106.17       .00       .00   1107.28      1.11       .15       .01   1109.00
 205000.0        .0  205000.0        .0        .0   24220.2        .0    2252.9     153.6   1109.50
      .13       .00      8.46       .00      .000      .030      .000      .000   1080.90   8998.21
 .000737      550.      240.      190.         1         0         0       .00   1517.02  10515.24

*SECNO 16.882

3265 DIVIDED FLOW
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SECNO     DEPTH     CWSEL     CRIWS     WEELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1118.40 ELREA=      1118.40

  16.882     25.30   1106.20       .00       .00   1107.32      1.12       .04       .00   1122.70
205000.0       .0  205000.0       .0       .0   24189.0        .0    2275.1     154.9   1122.70
     .13       .00      8.47       .00      .000      .030      .000      .000   1080.90  28255.13
 .001126      40.       40.       40.         0         0         0       .00   1481.19  29771.47

*SECNO 16.904

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=   0 MIN ELTRD=  1122.70 MAX ELLC=  1118.40

  16.904     25.41   1106.31       .00       .00   1107.48      1.17       .13       .03   1122.70
205000.0       .0  205000.0       .0       .0   23584.2        .0    2337.7     158.8   1122.70
     .13       .00      8.69       .00      .000      .030      .000      .000   1080.90  28254.86
 .001201     114.      114.      114.         0         0         0       .00   1447.19  29771.69

*SECNO 16.927
  16.927     25.55   1106.55       .00       .00   1107.62      1.07       .11       .03   1121.50
205000.0       .0  205000.0       .0       .0   24693.7        .0    2404.2     163.0   1123.00
     .14       .00      8.30       .00      .000      .030      .000      .000   1081.00   8892.47
 .000746     120.      120.      120.         2         0         0       .00   1618.93  10511.40

CCHV=     .100 CEHV=     .300
*SECNO 17.027
  17.027     25.49   1106.99       .00       .00   1108.04      1.05       .41       .00   1105.00
205000.0      52.6  203265.7    1681.7      49.4   24607.3     647.4    2707.2     185.1   1100.00
     .15      1.06      8.26      2.60      .040      .030      .040      .000   1081.50   8720.29
 .000828     440.      528.      540.         2         0         0       .00   2039.08  10759.37

*SECNO 17.053
CHIMP CLSTA=   10055.00 CELCH=    1080.90 BW=     700.00 STCHL=    9705.00 STCHR=   10431.40
EXCAVATION DATA
AEX=    4050.1SQ-FT     VEXR=        .0K*CU-YD     VEXT=        .0K*CU-YD
```

Downstream Side of I-10 Salt River Br

Upstream Side of I-10 Salt River Br

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3265 DIVIDED FLOW

3280 CROSS SECTION     17.05 EXTENDED      1.11 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9566.0   11000.9  TYPE=      1  TARGET=    -9566.000
    17.053     25.81   1106.71       .00       .00   1108.36      1.65       .14       .18   1099.56
  205000.0    2862.0  195630.3    6507.7     869.3  18558.9    1926.3    2814.3     192.9   1090.60
       .16      3.29     10.54      3.38      .040      .030      .040      .000   1080.90   9569.79
   .000628      200.      200.      200.         2         0         0       .00   1351.97  11000.90


*SECNO 17.091
CHIMP CLSTA=   10145.00 CELCH=    1081.10 BW=     400.00 STCHL=    9945.00 STCHR=   10885.70
EXCAVATION DATA
AEX=    3533.1SQ-FT     VEXR=      28.1K*CU-YD     VEXT=       28.1K*CU-YD


3265 DIVIDED FLOW

3280 CROSS SECTION     17.09 EXTENDED      2.25 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9366.0   11007.4  TYPE=      1  TARGET=    -9366.000
    17.091     26.65   1107.75       .00       .00   1108.54       .79       .09       .09   1087.75
  205000.0   32470.3  172162.7     367.0    6525.0  23058.1     298.5    2931.9     199.5   1105.50
       .17      4.98      7.47      1.23      .040      .030      .040      .000   1081.10   9417.08
   .000325      200.      200.      200.         2         0         0       .00   1514.86  11007.40


*SECNO 17.129
CHIMP CLSTA=   10139.00 CELCH=    1081.30 BW=     400.00 STCHL=    9939.00 STCHR=   10905.80
EXCAVATION DATA
AEX=    4332.4SQ-FT     VEXR=      29.1K*CU-YD     VEXT=       57.2K*CU-YD
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

3280 CROSS SECTION 17.13 EXTENDED 6.57 FEET

17.129	26.57	1107.87	.00	.00	1108.61	.74	.06	.00	1087.98
205000.0	33105.5	169627.0	2267.5	6771.7	23321.7	836.4	3071.5	206.7	1093.00
.18	4.89	7.27	2.71	.040	.030	.040	.000	1081.30	8999.60
.000319	200.	200.	200.	2	0	0	.00	1626.04	11001.90

*SECNO 17.167
CHIMP CLSTA= 10133.00 CELCH= 1081.50 BW= 400.00 STCHL= 9933.00 STCHR= 10875.80
EXCAVATION DATA
AEX= 4165.8SQ-FT VEXR= 31.5K*CU-YD VEXT= 88.7K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION 17.17 EXTENDED 7.06 FEET

17.167	26.36	1107.86	.00	.00	1108.71	.84	.07	.03	1086.73
205000.0	30266.6	171946.1	2787.3	6071.2	22146.2	992.4	3209.6	213.8	1096.00
.18	4.99	7.76	2.81	.040	.030	.040	.000	1081.50	8999.50
.000377	200.	200.	200.	2	0	0	.00	1466.57	11002.40

*SECNO 17.205
CHIMP CLSTA= 10130.00 CELCH= 1081.60 BW= 400.00 STCHL= 9930.00 STCHR= 10860.70
EXCAVATION DATA
AEX= 4067.5SQ-FT VEXR= 12.2K*CU-YD VEXT= 100.9K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION 17.20 EXTENDED 2.50 FEET

17.205	26.31	1107.91	.00	.00	1108.74	.83	.03	.00	1086.08
205000.0	31229.3	169061.5	4709.2	6266.9	21789.5	1431.1	3263.5	216.6	1099.20
.19	4.98	7.76	3.29	.040	.030	.040	.000	1081.60	8998.90
.000379	80.	80.	80.	1	0	0	.00	1558.02	11008.90

```
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

   16.628     23.13    1103.53       .00    1103.39    1106.30       2.77        .88        .20  100000.00
 205000.0        .0  199851.3    5148.7         .0    14813.5      949.8     1473.6       93.3    1100.00
      .08       .00      13.49      5.42       .000       .033       .045       .000    1080.40    9500.00
 .002036      550.       528.      440.          2          0          0        .00     986.04   10730.00

FLOW DISTRIBUTION FOR SECNO=     16.63          CWSEL=   1103.53

STA=    9500.   10600.   10650.   10700.   10730.
  PER Q=     97.5       .6      1.2       .7
   AREA=  14813.5    276.8    401.8    271.1
    VEL=     13.5      4.7      6.0      5.4
  DEPTH=     17.3      5.5      8.0      9.0

*SECNO 16.689

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     9496.0   10650.0  TYPE=      1  TARGET=     1154.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

   16.689     23.77    1104.37       .00    1103.69    1106.96       2.58        .64        .02  100000.00
 205000.0        .0  205000.0        .0         .0    15891.0         .0     1588.8      100.3  100000.00
      .09       .00      12.90       .00       .000       .033       .000       .000    1080.60    9496.00
 .001958      360.       320.      230.          2          0          0        .00     934.55   10641.86

FLOW DISTRIBUTION FOR SECNO=     16.69          CWSEL=   1104.37

STA=    9496.   10650.
  PER Q=    100.0
   AREA=  15891.0
    VEL=     12.9
  DEPTH=     16.6

CCHV=      .100 CEHV=      .300
*SECNO 16.733
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH .     VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.17

3470 ENCROACHMENT STATIONS=     9526.0   10630.0  TYPE=      1  TARGET=     1104.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

   16.733     25.46   1106.26       .00   1105.79   1107.29      1.03       .18       .16 100000.00
 205000.0       .0  205000.0       .0        .0   25170.2        .0    1697.3     105.7 100000.00
      .10       .00      8.14       .00      .000      .030      .000      .000   1080.80   9526.00
  .000414      250.      230.      240.         2         0         0       .00   1089.19  10615.19


FLOW DISTRIBUTION FOR SECNO=     16.73          CWSEL=   1106.26

STA=    9526.   10630.
  PER Q=    100.0
   AREA=  25170.2
    VEL=      8.1
  DEPTH=     23.1

*SECNO 16.829

3470 ENCROACHMENT STATIONS=     9287.0   10550.0  TYPE=      1  TARGET=     1263.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

   16.829     25.58   1106.48       .00   1106.03   1107.53      1.04       .23       .00 100000.00
 205000.0       .0  205000.0       .0        .0   24989.5        .0    1990.9     119.4 100000.00
      .11       .00      8.20       .00      .000      .030      .000      .000   1080.90   9287.00
  .000510      330.      510.      500.         2         0         0       .00   1250.39  10537.39


FLOW DISTRIBUTION FOR SECNO=     16.83          CWSEL=   1106.48

STA=    9287.   10550.
  PER Q=    100.0
   AREA=  24989.5
    VEL=      8.2
  DEPTH=     20.0
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

CCHV=     .300 CEHV=     .500
*SECNO 16.875

3470 ENCROACHMENT STATIONS=     8997.0   10530.0  TYPE=      1  TARGET=     1533.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

    16.875     25.72   1106.62       .00   1106.17   1107.67      1.05       .14       .00 100000.00
  205000.0        .0  205000.0        .0        .0   24901.3        .0    2128.3     127.0 100000.00
       .12       .00      8.23       .00      .000      .030      .000      .000   1080.90    8997.00
   .000674      550.      240.      190.         1         0         0       .00   1520.23   10517.23

FLOW DISTRIBUTION FOR SECNO=     16.88          CWSEL=   1106.62

STA=    8997.   10530.
  PER Q=    100.0
   AREA=  24901.3
    VEL=      8.2
  DEPTH=     16.4

*SECNO 16.882

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=    28255.0   29798.0  TYPE=      1  TARGET=     1543.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1118.40 ELREA=      1118.40

    16.882     25.75   1106.65       .00   1106.20   1107.71      1.06       .03       .00 100000.00
  205000.0        .0  205000.0        .0        .0   24853.3        .0    2151.2     128.4 100000.00
       .12       .00      8.25       .00      .000      .030      .000      .000   1080.90   28255.00
   .001040       40.       40.       40.         0         0         0       .00   1482.18   29772.30

FLOW DISTRIBUTION FOR SECNO=     16.88          CWSEL=   1106.65

STA=   28255.   29798.
  PER Q=    100.0
   AREA=  24853.3
    VEL=      8.2
  DEPTH=     16.8
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Downstream Side of I-10 Salt River Br

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 16.904

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=   0 MIN ELTRD=  1122.70 MAX ELLC=  1118.40

3470 ENCROACHMENT STATIONS=    28254.0   29798.0  TYPE=      1  TARGET=     1544.000
   16.904     25.84   1106.74       .00   1106.31   1107.86      1.11       .12       .03 100000.00
 205000.0       .0  205000.0       .0        .0   24218.8        .0    2215.4     132.2 100000.00
      .13       .00      8.46       .00      .000      .030      .000      .000   1080.90  28254.00
 .001112      114.      114.      114.         0         0         0       .00   1448.89  29772.50

FLOW DISTRIBUTION FOR SECNO=     16.90          CWSEL=   1106.74

STA=   28254.   29798.
  PER Q=    100.0
   AREA=  24218.8
    VEL=      8.5
  DEPTH=     16.7

*SECNO 16.927

3470 ENCROACHMENT STATIONS=     8892.0   10540.0  TYPE=      1  TARGET=     1648.000
   16.927     25.98   1106.98       .00   1106.55   1107.99      1.01       .10       .03 100000.00
 205000.0       .0  205000.0       .0        .0   25380.2        .0    2283.7     136.5 100000.00
      .13       .00      8.08       .00      .000      .030      .000      .000   1081.00   8892.00
 .000682      120.      120.      120.         2         0         0       .00   1620.13  10512.13

FLOW DISTRIBUTION FOR SECNO=     16.93          CWSEL=   1106.98

STA=    8892.   10540.
  PER Q=    100.0
   AREA=  25380.2
    VEL=      8.1
  DEPTH=     15.7
```

Upstream Side of
I-10 Scelt River Br

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

CCHV=     .100 CEHV=     .300
*SECNO 17.027
3280 CROSS SECTION     17.03 EXTENDED       .35 FEET

3470 ENCROACHMENT STATIONS=     8770.0   10535.0  TYPE=      1  TARGET=     1765.000
    17.027     25.85   1107.35       .00   1106.99   1108.38      1.02       .38       .00   1105.00
  205000.0        .0  204922.4      77.6        .0   25249.7      36.2    2590.8     157.0   1100.00
       .15       .00      8.12      2.14      .000      .030      .040      .000   1081.50   8770.00
   .000774      440.      528.      540.         2         0         0       .00   1765.00  10535.00

FLOW DISTRIBUTION FOR SECNO=     17.03          CWSEL=   1107.35

STA=    8770.   10530.   10535.
  PER Q=    100.0       .0
   AREA=  25249.7     36.2
    VEL=      8.1      2.1
  DEPTH=     14.3      7.2

*SECNO 17.053
CHIMP CLSTA=   10055.00 CELCH=    1080.90 BW=     700.00 STCHL=    9705.00 STCHR=   10431.40
EXCAVATION DATA
AEX=    4050.1SQ-FT     VEXR=        .0K*CU-YD     VEXT=        .0K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION     17.05 EXTENDED      1.48 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9500.0   10700.0  TYPE=      1  TARGET=     1200.000
    17.053     26.18   1107.08       .00   1106.71   1108.69      1.60       .14       .17   1099.56
  205000.0    3056.4  195392.5    6551.1     922.8   18829.8    1758.0    2698.2     163.7   1090.60
       .16      3.31     10.38      3.73      .040      .030      .040      .000   1080.90   9500.00
   .000597      200.      200.      200.         2         0         0       .00   1145.25  10700.00
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  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

FLOW DISTRIBUTION FOR SECNO=     17.05          CWSEL=   1107.08

STA=    9500.    9705.   10431.   10628.   10700.
  PER Q=      1.5     95.3      3.0       .2
   AREA=    922.8  18829.8   1545.3    212.7
    VEL=      3.3     10.4      4.0      1.9
  DEPTH=      4.5     25.9      7.9      2.9

*SECNO 17.091
CHIMP CLSTA=   10145.00 CELCH=    1081.10 BW=     400.00 STCHL=    9945.00 STCHR=   10885.70
EXCAVATION DATA
AEX=    3533.1SQ-FT     VEXR=      28.1K*CU-YD     VEXT=       28.1K*CU-YD


3265 DIVIDED FLOW

3280 CROSS SECTION     17.09 EXTENDED      2.59 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9366.0   10900.0  TYPE=      1  TARGET=     1534.000
    17.091     26.99   1108.09       .00   1107.75   1108.85       .77       .08       .08   1087.75
  205000.0   32673.6  172285.0      41.4    6689.3   23371.8      37.3    2816.7     169.7   1105.50
       .16      4.88      7.37      1.11      .040      .030      .040      .000   1081.10   9412.93
   .000311      200.      200.      200.         2         0         0       .00   1477.15  10900.00


FLOW DISTRIBUTION FOR SECNO=     17.09          CWSEL=   1108.09

STA=    9413.    9770.    9890.    9945.   10886.   10900.
  PER Q=      5.0      7.7      3.2     84.0       .0
   AREA=   2534.2   2904.8   1250.3  23371.8     37.3
    VEL=      4.0      5.5      5.3      7.4      1.1
  DEPTH=      7.1     24.1     22.9     24.8      2.6

*SECNO 17.129
CHIMP CLSTA=   10139.00 CELCH=    1081.30 BW=     400.00 STCHL=    9939.00 STCHR=   10905.80
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

EXCAVATION DATA
AEX=    4332.4SQ-FT     VEXR=      29.1K*CU-YD     VEXT=       57.2K*CU-YD

3280 CROSS SECTION     17.13 EXTENDED      6.87 FEET


3470 ENCROACHMENT STATIONS=     9610.0   10905.0  TYPE=      1  TARGET=     1295.000
    17.129     26.86   1108.16       .00   1107.87   1108.92       .75       .06       .00   1087.98
  205000.0   33302.9  171697.1        .0    6483.9   23601.7        .0    2954.8     176.1 100000.00
       .17      5.14      7.27       .00      .040      .030      .000      .000   1081.30   9610.00
   .000320      200.      200.      200.         1         0         0       .00   1295.00  10905.00


FLOW DISTRIBUTION FOR SECNO=     17.13          CWSEL=   1108.16

STA=    9610.    9657.    9675.    9694.    9723.    9760.    9818.    9852.    9863.    9895.    9929.    9939.   10906.
  PER Q=      .3       .3       .6      1.5      2.4      3.8      2.2       .7      2.0      2.1       .5     83.8
   AREA=   288.5    185.4    306.9    600.5    885.0   1398.4    823.5    253.2    750.2    777.9    214.4  23601.7
    VEL=     2.1      2.9      4.2      5.0      5.5      5.5      5.5      5.4      5.4      5.4      5.0      7.3
  DEPTH=     6.2     10.0     16.1     21.1     23.9     24.1     23.9     23.0     23.4     23.2     21.2     24.4

*SECNO 17.167
CHIMP CLSTA=   10133.00 CELCH=    1081.50 BW=     400.00 STCHL=    9933.00 STCHR=   10875.80
EXCAVATION DATA
AEX=    4165.8SQ-FT     VEXR=      31.5K*CU-YD     VEXT=       88.7K*CU-YD

3280 CROSS SECTION     17.17 EXTENDED      7.36 FEET


3470 ENCROACHMENT STATIONS=     9540.0   10875.0  TYPE=      1  TARGET=     1335.000
    17.167     26.66   1108.16       .00   1107.86   1109.02       .85       .07       .03   1086.73
  205000.0   31077.4  173922.6        .0    6168.2   22418.8        .0    3089.5     182.1 100000.00
       .18      5.04      7.76       .00      .040      .030      .000      .000   1081.50   9559.02
   .000377      200.      200.      200.         2         0         0       .00   1315.98  10875.00


FLOW DISTRIBUTION FOR SECNO=     17.17          CWSEL=   1108.16

STA=    9559.    9585.    9601.    9631.    9671.    9702.    9735.    9762.    9779.    9867.    9927.    9933.   10876.
  PER Q=      .0       .1       .4       .9      1.1      1.5      1.5       .9      4.9      3.5       .3     84.8
   AREA=    60.2     94.6    270.4    480.5    498.2    601.7    565.5    344.7   1827.2   1303.8    121.5  22418.8
    VEL=     1.4      2.3      3.1      3.8      4.5      5.0      5.4      5.4      5.4      5.6      5.6      7.8
  DEPTH=     2.4      5.9      8.9     12.2     15.8     18.5     20.6     20.8     20.8     21.5     21.7     23.8
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 17.205
CHIMP CLSTA=   10130.00 CELCH=    1081.60 BW=     400.00 STCHL=    9930.00 STCHR=   10860.70
EXCAVATION DATA
AEX=    4067.5SQ-FT     VEXR=      12.2K*CU-YD     VEXT=      100.9K*CU-YD

3280 CROSS SECTION     17.20 EXTENDED      2.79 FEET


3470 ENCROACHMENT STATIONS=     9550.0   10860.0  TYPE=      1  TARGET=     1310.000
    17.205     26.58   1108.18       .00   1107.91   1109.05       .87       .03       .00   1086.08
  205000.0   32242.6  172757.4        .0    6286.1   22055.7        .0    3141.8     184.5 100000.00
       .18      5.13      7.83       .00      .040      .030      .000      .000   1081.60   9550.00
   .000384       80.       80.       80.         0         0         0       .00   1310.00  10860.00


FLOW DISTRIBUTION FOR SECNO=     17.20          CWSEL=   1108.18

STA=    9550.    9571.    9593.    9621.    9670.    9742.    9753.    9819.    9858.    9930.   10861.
  PER Q=       .0       .1       .4      1.1      3.2       .7      3.8      2.3      4.2     84.3
   AREA=     39.2     89.0    238.5    597.4   1311.6    238.1   1398.6    831.1   1542.5  22055.7
    VEL=      1.0      1.8      3.1      3.8      5.0      5.6      5.6      5.6      5.6      7.8
  DEPTH=      1.8      4.1      8.6     12.2     18.2     21.6     21.2     21.0     21.5     23.7

*SECNO 17.242
CHIMP CLSTA=   10126.00 CELCH=    1081.70 BW=     400.00 STCHL=    9926.00 STCHR=   10856.20
EXCAVATION DATA
AEX=    3785.1SQ-FT     VEXR=      17.5K*CU-YD     VEXT=      118.3K*CU-YD


3470 ENCROACHMENT STATIONS=     9550.0   10856.0  TYPE=      1  TARGET=     1306.000
    17.242     26.50   1108.20       .00   1107.91   1109.11       .91       .05       .01   1087.08
  205000.0   30654.9  174345.1        .0    5952.1   21713.5        .0    3219.0     188.0 100000.00
       .19      5.15      8.03       .00      .040      .030      .000      .000   1081.70   9567.77
   .000410      120.      120.      120.         2         0         0       .00   1288.23  10856.00


FLOW DISTRIBUTION FOR SECNO=     17.24          CWSEL=   1108.20

STA=    9568.    9582.    9599.    9648.    9702.    9736.    9756.    9790.    9803.    9853.    9919.    9926.   10856.
  PER Q=       .0       .2       .9      1.6      1.4      1.0      1.9       .7      2.8      3.9       .4     85.0
   AREA=     43.4    131.7    524.9    758.7    586.5    383.0    691.8    274.0   1014.3   1392.6    151.3  21713.5
    VEL=      1.5      2.9      3.7      4.4      5.0      5.4      5.7      5.6      5.6      5.7      5.7      8.0
  DEPTH=      3.0      7.7     10.8     14.0     16.9     19.1     20.6     20.3     20.4     21.1     21.0     23.3
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THIS RUN EXECUTED 09FEB92 22:05:58

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EC-2 WATER SURFACE PROFILES

ersion 4.6.0; February 1991
****

TE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

EAR FLOODPLAIN STR

MMARY PRINTOUT

SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP
15.934	200000.00	9750.00	9750.00	.00	7.08	4.47	11070.00	11832.17	2082.17	1093.31	.00
15.934	200000.00	9750.00	9750.00	.00	7.94	4.73	11070.00	11300.00	1550.00	1094.31	1.00
16.034	200000.00	9766.14	9760.00	.00	6.68	5.09	11200.00	11860.83	2094.69	1093.68	.00
16.034	200000.00	9762.52	9760.00	.00	8.54	2.19	11200.00	11205.00	1442.48	1094.58	.90
16.134	200000.00	9716.22	9700.00	.00	13.49	.00	10710.00	10697.61	981.38	1092.68	.00
16.134	200000.00	9708.87	9700.00	.00	12.09	.00	10710.00	10706.85	997.98	1094.41	1.73
16.178	205000.00	9673.55	9660.00	.00	13.73	.00	10600.00	10587.72	914.17	1093.16	.00
16.178	205000.00	9668.10	9660.00	.00	12.54	.00	10600.00	10594.39	926.29	1094.71	1.55
16.188	205000.00	3077.30	3076.00	.00	13.71	.00	3934.50	3933.70	856.40	1093.28	.00
16.188	205000.00	3077.02	3076.00	.00	12.64	.00	3934.50	3933.98	856.95	1094.78	1.50
16.202	205000.00	3076.82	3076.00	.00	12.03	.00	3934.50	3934.09	857.27	1095.72	.00
16.202	205000.00	3076.41	3076.00	.00	11.02	.00	3934.50	3934.29	857.88	1097.55	1.83
16.213	205000.00	9677.91	9690.00	.65	12.76	.65	10570.00	10604.33	926.43	1095.67	.00
16.213	205000.00	9644.66	9690.00	1.34	11.57	1.34	10570.00	10698.75	1054.09	1097.52	1.85
16.254	205000.00	9693.59	9680.00	.00	14.88	.69	10570.00	10595.37	901.78	1095.49	.00
16.254	205000.00	9687.88	9680.00	.00	13.26	1.63	10570.00	10692.06	1004.18	1097.39	1.89
16.347	205000.00	9730.91	9700.00	.00	18.62	3.80	10480.00	11190.06	1459.15	1096.72	.00
16.347	205000.00	9730.50	9700.00	.00	18.99	2.87	10480.00	10485.00	754.50	1096.82	.11
16.428	205000.00	9609.65	9620.00	.83	14.13	5.16	10450.00	11239.13	1612.20	1100.74	.00
16.428	205000.00	9620.00	9620.00	.00	14.63	5.24	10450.00	10800.00	1164.24	1100.94	.20
16.528	205000.00	9524.53	9600.00	1.50	12.41	4.79	10370.00	11100.01	1575.47	1102.52	.00
16.528	205000.00	9600.00	9600.00	.00	12.16	5.05	10370.00	10900.00	1300.00	1103.13	.61

SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP	
16.628	205000.00	9208.71	9220.00	2.13	12.24	5.96	10600.00	10800.02	1345.38	1103.39	.00	
16.628	205000.00	9500.00	9220.00	.00	13.49	5.42	10600.00	10730.00	986.04	1103.53	.15	
16.689	205000.00	9496.55	9490.00	.00	13.45	.00	10650.00	10638.45	940.48	1103.69	.00	
16.689	205000.00	9496.00	9490.00	.00	12.90	.00	10650.00	10641.86	954.55	1104.37	.68	
16.733	205000.00	9526.37	9520.00	.00	8.31	.00	10630.00	10609.58	1083.21	1105.79	.00	
16.733	205000.00	9526.00	9520.00	.00	8.14	.00	10630.00	10615.19	1089.19	1106.26	.47	
16.829	205000.00	9287.79	9270.00	.00	8.40	.00	10550.00	10535.09	1247.30	1106.03	.00	
16.829	205000.00	9287.00	9270.00	.00	8.20	.00	10550.00	10537.39	1250.39	1106.48	.46	
16.875	205000.00	8998.21	8970.00	.00	8.46	.00	10530.00	10515.24	1517.02	1106.17	.00	
16.875	205000.00	8997.00	8970.00	.00	8.23	.00	10530.00	10517.23	1520.23	1106.62	.45	
16.882	205000.00	28255.13	28229.00	.00	8.47	.00	29798.00	29771.47	1481.19	1106.20	.00	Downstream Side of
16.882	205000.00	28255.00	28229.00	.00	8.25	.00	29798.00	29772.30	1482.18	1106.65	.45	I-10 Salt River Br
16.904	205000.00	28254.86	28229.00	.00	8.69	.00	29798.00	29771.69	1447.19	1106.31	.00	
16.904	205000.00	28254.00	28229.00	.00	8.46	.00	29798.00	29772.50	1448.89	1106.74	.44	Upstream Side
16.927	205000.00	8892.47	8820.00	.00	8.30	.00	10540.00	10511.40	1618.93	1106.55	.00	
16.927	205000.00	8892.00	8820.00	.00	8.08	.00	10540.00	10512.13	1620.13	1106.98	.42	
17.027	205000.00	8720.29	8770.00	1.06	8.26	2.60	10530.00	10759.37	2039.08	1106.99	.00	
17.027	205000.00	8770.00	8770.00	.00	8.12	2.14	10530.00	10535.00	1765.00	1107.35	.37	
17.053	205000.00	9569.79	9705.00	3.29	10.54	3.38	10431.40	11000.90	1351.97	1106.71	.00	
17.053	205000.00	9500.00	9705.00	3.31	10.38	3.73	10431.40	10700.00	1145.25	1107.08	.37	
17.091	205000.00	9417.08	9945.00	4.98	7.47	1.23	10885.70	11007.40	1514.86	1107.75	.00	
17.091	205000.00	9412.93	9945.00	4.88	7.37	1.11	10885.70	10900.00	1477.15	1108.09	.33	
17.129	205000.00	8999.60	9939.00	4.89	7.27	2.71	10905.80	11001.90	1626.04	1107.87	.00	
17.129	205000.00	9610.00	9939.00	5.14	7.27	.00	10905.80	10905.00	1295.00	1108.16	.30	
17.167	205000.00	8999.50	9933.00	4.99	7.76	2.81	10875.80	11002.40	1466.57	1107.86	.00	
17.167	205000.00	9559.02	9933.00	5.04	7.76	.00	10875.80	10875.00	1315.98	1108.16	.30	
17.205	205000.00	8998.90	9930.00	4.98	7.76	3.29	10860.70	11008.90	1558.02	1107.91	.00	
17.205	205000.00	9550.00	9930.00	5.13	7.83	.00	10860.70	10860.00	1310.00	1108.18	.28	
17.242	205000.00	8999.00	9926.00	5.08	8.03	3.06	10856.20	10994.36	1487.86	1107.91	.00	
17.242	205000.00	9567.77	9926.00	5.15	8.03	.00	10856.20	10856.00	1288.23	1108.20	.29	
17.280	205000.00	9547.80	9920.00	4.53	7.29	.00	10969.40	10966.58	1418.78	1108.14	.00	
17.280	205000.00	9547.15	9920.00	4.47	7.18	.00	10969.40	10967.22	1420.06	1108.47	.33	
17.318	205000.00	9464.24	9827.30	4.99	8.33	1.44	10798.30	10869.34	1373.38	1108.05	.00	
17.318	205000.00	9458.19	9827.30	4.92	8.19	1.44	10798.30	10882.37	1399.27	1108.38	.33	

SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP
17.356	205000.00	9383.51	9787.80	5.32	8.50	4.74	10645.40	10805.11	1421.61	1108.17	.00
17.356	205000.00	9383.00	9787.80	5.25	8.36	4.69	10645.40	10805.36	1422.36	1108.50	.33
17.394	205000.00	9290.42	9886.00	6.64	11.13	6.50	10314.00	10534.81	1244.39	1108.00	.00
17.394	205000.00	9290.00	9886.00	6.55	10.93	6.41	10314.00	10534.00	1244.00	1108.34	.33
17.432	205000.00	9259.83	9881.00	6.71	11.46	6.71	10309.00	10534.29	1274.46	1108.10	.00
17.432	205000.00	9259.13	9881.00	6.61	11.25	6.61	10309.00	10534.00	1274.87	1108.43	.33
17.453	205000.00	9232.53	9877.00	6.68	11.29	6.60	10305.00	10533.65	1301.11	1108.25	.00
17.453	205000.00	9248.00	9877.00	6.62	11.12	6.57	10305.00	10518.00	1270.00	1108.56	.31
17.459	205000.00	9223.29	9877.00	6.71	11.30	6.62	10303.00	10533.64	1310.35	1108.28	.00
17.459	205000.00	9236.00	9877.00	6.65	11.14	6.61	10303.00	10514.00	1278.00	1108.58	.30
17.470	205000.00	9217.23	9875.00	6.73	11.38	6.68	10301.00	10533.52	1316.29	1108.31	.00
17.470	205000.00	9217.00	9875.00	6.63	11.18	6.58	10301.00	10533.00	1316.00	1108.62	.31
17.486	205000.00	9202.12	9873.00	6.75	11.32	6.64	10299.00	10532.66	1330.54	1108.40	.00
17.486	205000.00	9202.00	9873.00	6.66	11.12	6.54	10299.00	10532.00	1330.00	1108.71	.31
17.498	205000.00	9181.54	9871.00	6.69	11.12	6.51	10297.00	10532.65	1351.11	1108.52	.00
17.498	205000.00	9181.08	9871.00	6.59	10.93	6.42	10297.00	10532.00	1350.92	1108.82	.30
17.508	205000.00	9169.26	9869.00	6.69	11.43	6.71	10295.00	10532.56	1363.30	1108.51	.00
17.508	205000.00	9169.00	9869.00	6.60	11.23	6.61	10295.00	10532.00	1363.00	1108.81	.30
17.536	205000.00	9171.38	9865.00	6.85	12.02	7.07	10291.00	10531.40	1360.01	1108.54	.00
17.536	205000.00	9171.00	9865.00	6.76	11.80	6.97	10291.00	10531.00	1360.00	1108.84	.30
17.568	205000.00	9214.56	9861.00	7.22	12.50	7.35	10285.00	10531.09	1316.53	1108.61	.00
17.568	205000.00	9214.00	9861.00	7.12	12.27	7.24	10285.00	10531.00	1317.00	1108.90	.29
17.606	205000.00	9224.46	9854.00	7.44	12.53	7.38	10278.00	10530.18	1305.72	1108.83	.00
17.606	205000.00	9224.08	9854.00	7.34	12.31	7.28	10278.00	10530.00	1305.92	1109.11	.28
17.644	205000.00	9218.63	9848.00	7.55	13.19	7.75	10272.00	10529.13	1310.50	1108.93	.00
17.644	205000.00	9218.17	9848.00	7.44	12.96	7.64	10272.00	10529.00	1310.83	1109.21	.27
17.682	205000.00	9219.86	9842.00	7.72	13.83	8.20	10266.00	10509.25	1289.39	1109.05	.00
17.682	205000.00	9219.36	9842.00	7.62	13.59	8.08	10266.00	10509.00	1289.63	1109.32	.27
17.720	205000.00	9159.38	9836.00	8.48	17.07	9.84	10260.00	10526.29	1212.00	1108.48	.00
17.720	205000.00	9159.42	9836.00	8.31	16.70	9.67	10260.00	10526.26	1213.12	1108.79	.30
17.758	205000.00	9215.53	9830.00	7.56	13.63	8.00	10254.00	10528.83	1313.29	1110.39	.00
17.758	205000.00	9236.00	9830.00	7.60	13.62	8.10	10254.00	10507.00	1271.00	1110.49	.11
17.795	205000.00	9255.59	9826.00	7.84	12.87	7.56	10250.00	10529.28	1273.69	1110.90	.00
17.795	205000.00	9279.00	9826.00	7.90	12.88	7.67	10250.00	10506.00	1227.00	1110.99	.10

SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP
17.833	205000.00	9347.11	9823.00	8.53	13.49	7.89	10247.00	10528.19	1181.08	1111.00	.00
17.833	205000.00	9373.00	9823.00	8.63	13.53	7.99	10247.00	10508.00	1135.00	1111.08	.09
17.871	205000.00	9473.56	9820.10	9.38	16.15	9.34	10244.10	10526.44	1052.88	1110.61	.00
17.871	205000.00	9490.00	9820.10	9.42	16.10	9.40	10244.10	10509.00	1019.00	1110.72	.11
17.909	205000.00	9473.94	9817.00	9.50	16.43	9.47	10241.10	10526.06	1052.13	1110.97	.00
17.909	205000.00	9494.00	9817.00	9.59	16.43	9.58	10241.10	10505.00	1011.00	1111.06	.09
17.947	205000.00	9474.13	9813.90	9.54	16.50	9.51	10238.00	10525.87	1051.74	1111.39	.00
17.947	205000.00	9493.00	9813.90	9.61	16.50	9.60	10238.00	10507.00	1014.00	1111.48	.09
17.970	205000.00	9474.22	9812.10	9.56	16.55	9.53	10236.10	10525.78	1051.56	1111.65	.00
17.970	205000.00	9493.00	9812.10	9.64	16.56	9.63	10236.10	10506.00	1013.00	1111.73	.08
17.998	205000.00	9475.86	9835.00	12.98	18.51	14.04	10233.80	10524.14	893.96	1111.24	.00
17.998	205000.00	9475.54	9835.00	12.85	18.29	13.91	10233.80	10524.00	894.83	1111.40	.16
18.036	205000.00	9471.00	9806.60	10.42	13.25	10.39	10230.60	10529.00	1058.00	1114.17	.00
18.036	205000.00	9470.89	9806.60	10.39	13.20	10.36	10230.60	10529.00	1058.11	1114.22	.05
18.074	205000.00	9471.33	9803.40	10.51	13.39	10.48	10227.40	10528.67	1057.34	1114.50	.00
18.074	205000.00	9471.23	9803.40	10.48	13.35	10.46	10227.40	10528.00	1056.77	1114.55	.05
18.112	205000.00	9471.81	9800.20	10.60	13.53	10.58	10224.20	10528.19	1056.39	1114.83	.00
18.112	205000.00	9471.72	9800.20	10.57	13.49	10.56	10224.20	10528.00	1056.28	1114.88	.04
18.150	205000.00	9472.27	9797.00	10.86	13.93	10.84	10221.00	10516.73	1044.46	1115.13	.00
18.150	205000.00	9472.19	9797.00	10.83	13.89	10.82	10221.00	10516.00	1043.81	1115.17	.04
18.188	205000.00	9474.20	9793.80	13.13	17.07	12.71	10217.80	10339.70	865.50	1114.66	.00
18.188	205000.00	9474.11	9793.80	13.10	17.02	12.69	10217.80	10339.00	864.88	1114.71	.04
18.216	205000.00	9473.54	9791.30	12.75	16.49	12.41	10215.40	10352.46	878.92	1115.43	.00
18.216	205000.00	9473.48	9791.30	12.73	16.45	12.39	10215.40	10352.00	878.52	1115.46	.03
18.254	205000.00	9471.24	9788.30	10.97	13.98	10.91	10212.30	10465.74	994.49	1117.08	.00
18.254	205000.00	9471.20	9788.30	10.96	13.96	10.90	10212.30	10465.00	993.80	1117.10	.02
18.292	205000.00	9470.78	9788.00	10.33	13.12	10.33	10212.00	10529.22	1058.43	1117.81	.00
18.292	205000.00	9470.75	9788.00	10.32	13.11	10.32	10212.00	10529.00	1058.25	1117.82	.02
18.330	205000.00	9471.16	9788.00	10.43	13.28	10.43	10212.00	10528.84	1057.69	1118.12	.00
18.330	205000.00	9471.13	9788.00	10.42	13.27	10.42	10212.00	10528.00	1056.87	1118.14	.01
18.367	205000.00	9471.66	9788.00	10.53	13.43	10.53	10212.00	10528.34	1056.68	1118.45	.00
18.367	205000.00	9471.63	9788.00	10.52	13.42	10.52	10212.00	10528.00	1056.37	1118.46	.01
18.405	205000.00	9472.06	9788.00	10.68	13.68	10.68	10212.00	10527.94	1055.88	1118.77	.00
18.405	205000.00	9542.00	9788.00	11.09	14.48	11.28	10212.00	10527.00	985.00	1118.59	-.18

APPENDIX B

Post Construction HEC–2 Water Surface Profile

```
*****************************************
*  HEC-2 WATER SURFACE PROFILES         *
*                                       *
*  Version   4.6.0;  February 1991      *
*                                       *
*  RUN DATE    10FEB92    TIME   05:39:00 *
*****************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

Salt River w/
Proposed Old Tower Road
24th St to 44 St.

```
X      X  XXXXXXX   XXXXX              XXXXX
X      X  X         X     X           X     X
X      X  X         X                       X
XXXXXXX  XXXX       X           XXXXX   XXXXX
X      X  X         X                 X
X      X  X         X     X           X
X      X  XXXXXXX   XXXXX             XXXXXXX
```

THIS RUN EXECUTED 10FEB92 05:39:00

```
****************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
****************************************

T1   SALT RIVER FLOOD INSURANCE STUDY 1983-1984
T2  AUGUST 1982  ADOT TOPO BASE MAP, AGUA FRIA RIVER TO COUNTRY CLUB ROAD 38ML
T3   100-YEAR FLOODPLAIN     STREAMLINE AT STATION  10000

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                                                           1093.31

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1         0        -1         0         0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43        53        21        55        26        56        22        54        4
      1        50       200

NC     .045      .045      .033       0.1       0.3
QT        2    200000    200000
ET   15.934       4.1       9.1      9750         0         0         0         0      9750     11300
X1   15.934        24      9750     11070       530       530       528
X3       10
GR     1095      8500      1080      8600      1080      9700    1092.6      9750      1075      9820
GR     1071      9860    1071.2      9945      1071     10040      1075     10090      1080     10200
GR   1082.4     10280      1080     10380      1076     10560      1075     10730      1071     10770
GR     1075     10830      1080     11070    1081.6     11270      1080     11400      1080     11620
GR     1075     11700      1080     11770      1085     11800    1100.5     11860

ET                          9.1                                                          9760     11205
X1   16.034        23      9760     11200       520       530       528
X3       10
GR     1100      8200      1095      8450      1080      9710    1095.2      9760    1072.9      9850
GR   1072.9     10020      1075     10040      1080     10210    1081.9     10265      1080     10330
GR     1075     10510    1072.9     10580      1075     10610      1075     10660      1080     10820
GR   1080.4     10960      1084     11200      1080     11260      1075     11280      1075     11520
GR     1080     11760      1085     11820      1102     11900

ET                          9.1                                                          9700     10710
X1   16.134        12      9700     10710       540       500       528
X3       10
GR     1100      8240      1080      8290      1080      9610    1096.5      9700      1080      9770
GR     1075     10070    1074.5     10110    1074.5     10380      1075     10410      1080     10630
GR     1095     10710      1098     10860
```

NC	0	0	0	.3	.5					
QT	2	205000	205000							
ET			9.1						9660	10600
X1	16.178	14	9660	10600	260	200	230			
X3	10									
GR	1100	8050	1095	8180	1090	8360	1085	8470	1085	8660
GR	1090	8880	1095	9070	1095.5	9420	1097	9660	1080	9720
GR	1075.2	9830	1075.2	10510	1096	10600	1096	10605		
ET			9.1						3076	3934
X1	16.188	10	3076	3934.5	60	60	50			
X3	10							1094.5	1094.5	
GR	1099.4	3075	1099.4	3076	1094.9	3077	1089.5	3078	1075.3	3110
GR	1075.3	3904	1089.5	3933	1094.9	3934	1099.5	3934.5	1099.5	3935
SB	0.9	1.6	2.5	0	794	71.5	14923	0.5	1075.3	1075.2
X1	16.202				77	77	77			
X2			1	1094.9	1099.4					
X3	10							1099.4	1099.4	
BT	3	3075	1099.4		3507	1099.8		3935	1099.5	
X1	16.213	8	9690	10570	60	60	60			
X3	10									
GR	1100	9600	1095	9690	1080	9720	1077	9840	1076	9890
GR	1076	10510	1095	10570	1099.5	10800				
NC	0	0	0	.1	.3					
X1	16.254	7	9680	10570	200	270	215			
X3	10									
GR	1101.5	9580	1100	9680	1076.8	9750	1076.8	10350	1080	10380
GR	1095	10570	1099.5	10800						
ET	0	0	9.1	0	0	0	0	0	9700	10485
X1	16.347	12	9700	10480	500	470	490			
X3	10									
GR	1107.5	9580	1105	9700	1078.2	9800	1078.2	10210	1088.8	10260
GR	1084	10340	1085	10350	1095	10480	1094	10650	1095	11000
GR	1095	11150	1101	11290						
ET			9.1						9620	10800
X1	16.428	15	9620	10450	470	370	430			
GR	1105	9550	1100	9620	1080	9750	1080	9950	1083.4	10100
GR	1080	10250	1087.3	10330	1103	10450	1100	10450	1100	10550
GR	1095	10680	1090.5	10810	1095	10920	1100	11180	1101.5	11300
ET	0	4.1	9.1	0	11100	0	0	0	9600	10900
X1	16.528	19	9600	10370	560	430	528			
GR	1104	9480	1100	9600	1095	9610	1090	9650	1085	9700
GR	1082	9850	1080.2	9980	1080.2	10200	1085	10280	1090	10350
GR	1099	10370	1095	10400	1095	10570	1096	10650	1095	10720
GR	1092.5	10800	1095	10900	1100	11100	1102	11320		

```
ET        0       4.1       9.1         0     10800         0         0         0      9500     10730
X1   16.628        22      9220     10600       550       440       528
GR     1106      9200      1100      9220    1098.7      9390      1095      9610      1090      9670
GR     1085      9700      1082      9850    1080.4      9920    1080.4     10200      1085     10250
GR     1100     10310      1109     10350      1105     10390      1105     10450      1107     10540
GR     1100     10600      1096     10650      1095     10700      1094     10730      1095     10800
GR     1100     11070      1102     11150

ET                          9.1                                                       9496     10650
X1   16.689        19      9490     10650       360       230       320
X3       10
GR   1106.7      9030      1100      9050      1100      9400      1105      9490      1095      9540
GR     1090      9600      1085      9710    1080.6      9860    1080.6     10080      1085     10160
GR     1090     10200      1100     10250      1108     10350      1107     10490      1085     10540
GR     1085     10570      1100     10620      1106     10650      1106     10651

NC      .04       .04       .03        .1        .3
ET                          9.1                                                       9526     10630
X1   16.733        13      9520     10630       250       240       230
X3       10
GR     1106      8900      1100      9010    1102.1      9180      1100      9240      1099      9350
GR     1100      9460    1107.5      9520    1080.8      9620    1080.8     10520      1100     10580
GR     1105     10600    1107.5     10630    1107.5     10631

ET                          9.1                                                       9287     10480
X1   16.829        20      9270     10480       330       500       510
X3       10
GR   1107.5      8650      1100      8670      1100      8870      1102      8990      1100      9180
GR   1107.5      9270      1105      9300      1100      9320      1095      9370      1087      9390
GR     1087      9430    1100.5      9480      1095      9620      1085      9660    1080.9      9750
GR   1080.9     10400      1085     10450    1107.2     10480      1109     10550      1109     10551

NC        0         0         0        .3        .5
ET                          9.1                                                       8997     10450
X1   16.875        16      8970     10450       550       190       240
X3       10
GR   1121.5      8880      1109      8970      1105      9010      1100      9130      1085      9140
GR     1085      9180      1100      9200    1101.3      9380      1100      9540      1095      9650
GR     1085      9700    1081.2      9820    1080.9      9940    1080.9     10400    1107.2     10450
GR   1109.5     10530

ET                          9.1                                                      28255     29741
X1   16.882        86     28229     29741        40        40        40
X3       10                                                          1118.4    1118.4
GR   1122.7     28228    1122.7     28229    1118.4     28230    1116.25     28231      1100     28270
GR     1093     28313      1124     28315      1093     28315    1080.9     28360    1080.9     28391
GR     1124     28391      1124     28393    1080.9     28393    1080.9     28470      1124     28470
GR     1124     28472    1080.9     28472    1080.9     28548      1124     28548      1124     28550
GR   1080.9     28550    1080.9     28627      1124     28627      1124     28629    1080.9     28629
GR   1080.9     28705      1124     28705      1124     28707    1080.9     28707    1080.9     28783
GR     1124     28783      1124     28785    1080.9     28785    1080.9     28861      1124     28861
GR     1124     28863    1080.9     28863    1080.9     28940      1124     28940      1124     28942
GR   1080.9     28942    1080.9     29018      1124     29018      1124     29020    1080.9     29020
```

Modified Cross-Section

Modified Cross-Section

Downstream Side of I-10 Salt River Br

Modified Cross-Section

10FEB92 05:39:00

GR	1080.9	29060	1093	29085	1124	29085	1124	29087	1093	29087
GR	1100	29100	1100	29164	1124	29164	1124	29166	1100	29166
GR	1100	29242	1124	29242	1124	29244	1100	29244	1100	29320
GR	1124	29320	1124	29322	1100	29322	1100	29477	1124	29477
GR	1124	29479	1100	29479	1100	29555	1124	29555	1124	29557
GR	1100	29557	1086	29567	1086	29627	1100	29634	1124	29634
GR	1124	29636	1100	29636	1100	29712	1124	29712	1124	29714
GR	1100	29714	1100	29740	1107.2	29741	1118.4	29795	1122.7	29798
GR	1122.7	29799								

Upstream Side of I-10 Salt River Br

ET			9.1						28254	29741
X1	16.904	86	28229	29741	114	114	114			
X2				1118.4	1122.7					
GR	1122.7	28228	1122.7	28229	1118.4	28230	1116.25	28231	1100	28270
GR	1093	28312	1124	28312	1124	28316	1093	28316	1080.9	28390
GR	1124	28390	1124	28394	1080.9	28394	1080.9	28469	1124	28469
GR	1124	28473	1080.9	28473	1080.9	28547	1124	28547	1124	28551
GR	1080.9	28551	1080.9	28626	1124	28626	1124	28630	1080.9	28630
GR	1080.9	28704	1080.9	28704	1124	28708	1080.9	28708	1080.9	28782
GR	1124	28782	1124	28786	1080.9	28786	1080.9	28860	1124	28860
GR	1124	28864	1080.9	28864	1080.9	28939	1124	28939	1124	28943
GR	1080.9	28943	1080.9	29017	1124	29017	1124	29021	1080.9	29021
GR	1080.9	29060	1093	29084	1124	29084	1124	29088	1093	29088
GR	1100	29100	1100	29163	1124	29163	1124	29167	1100	29167
GR	1100	29241	1124	29241	1124	29245	1100	29245	1100	29319
GR	1124	29319	1124	29323	1100	29323	1100	29476	1124	29476
GR	1124	29480	1100	29480	1100	29554	1124	29554	1124	29558
GR	1100	29558	1086	29567	1086	29627	1100	29633	1124	29633
GR	1124	29637	1100	29637	1100	29711	1124	29711	1124	29715
GR	1100	29715	1100	29740	1107.2	29741	1118.4	29795	1122.7	29798
GR	1122.7	29799								

Modified Cross-Section

ET			9.1						8892	10490
X1	16.927	16	8820	10490	120	120	120			
X3										
GR	1121.5	8820	1105	8900	1100	8970	1093	9000	1093	9050
GR	1100	9070	1101.5	9290	1100	9450	1095	9630	1085	9680
GR	1082	9880	1081	9940	1081	10300	1100	10460	1107.2	10490
GR	1123	10541								

Modified Cross-Section

NC	0	0	0	.1	.3				8770	10535
ET			9.1							
X1	17.027	21	8770	10530	440	540	528			
X3	10									
GR	1112	8500	1110	8645	1105	8770	1100	8960	1097	9000
GR	1097	9100	1100	9130	1105	9170	1106	9240	1105	9320
GR	1102	9400	1105	9460	1100	9600	1085	9670	1081.5	9750
GR	1081.5	10350	1085	10380	1101	10480	1100	10530	1105	10650
GR	1107	10760								

ET	0	4.1	9.1	9566	0	0	0	0	9500	10700
X1	17.053	60	9716.1	10431.4	200	200	200			
CI	10055	1080.9				700				
GR	1098.4	3999.0	1098.4	9052.5	1100.7	9082.5	1101.2	9101.0	1101.2	9121.1
GR	1107.5	9148.1	1106.2	9155.6	1107.1	9177.6	1107.8	9217.1	1106.9	9245.2
GR	1104.9	9262.2	1105.7	9291.7	1104.3	9304.7	1104.5	9347.7	1103.3	9388.8
GR	1105.9	9406.3	1104.7	9417.8	1104.9	9464.4	1106.8	9503.9	1108.5	9566.0
GR	1102.6	9578.5	1100.5	9594.0	1099.3	9627.0	1100.0	9673.6	1099.4	9716.1
GR	1085.6	9746.6	1083.2	9760.6	1082.9	9822.7	1084.4	9832.2	1085.5	9850.7
GR	1085.1	9898.3	1083.2	9932.3	1089.2	9950.3	1090.9	9962.3	1090.8	9977.3
GR	1092.2	9987.3	1092.4	10000.0	1091.3	10030.0	1091.3	10087.6	1086.9	10102.1
GR	1084.0	10135.6	1084.0	10291.7	1087.2	10335.3	1088.0	10361.3	1087.6	10376.8
GR	1084.3	10384.3	1084.3	10398.3	1090.6	10431.4	1095.3	10467.9	1096.9	10488.9
GR	1098.4	10504.9	1102.0	10517.5	1101.7	10597.5	1103.0	10627.6	1104.9	10688.1
GR	1107.3	10748.2	1106.7	10813.7	1105.2	10869.3	1104.9	10927.8	1105.6	11000.9

ET	0	4.1	9.1	9366	0	0	0	0	9366	10900
X1	17.091	48	10216.6	10885.7	200	200	200			
CI	10145	1081.1				400				
GR	1102.2	8999.5	1103.4	9038.5	1104.5	9057.0	1107.3	9073.0	1107.5	9092.5
GR	1105.7	9115.1	1106.2	9156.6	1107.6	9174.1	1108.6	9197.6	1108.0	9232.7
GR	1107.1	9258.2	1108.9	9273.7	1110.0	9293.7	1100.7	9309.8	1102.5	9347.3
GR	1111.5	9366.3	1109.9	9372.8	1108.7	9405.3	1106.2	9436.4	1107.8	9445.4
GR	1108.0	9477.9	1107.3	9552.5	1108.6	9573.5	1100.8	9598.0	1101.0	9673.6
GR	1088.3	9708.1	1086.1	9731.6	1084.0	9769.7	1084.0	9890.3	1086.0	9938.3
GR	1090.6	9955.9	1091.3	9977.9	1092.5	10000.0	1093.3	10054.0	1093.4	10080.0
GR	1091.0	10140.1	1090.4	10179.6	1091.3	10216.6	1088.5	10240.7	1088.7	10255.7
GR	1083.6	10286.7	1083.6	10825.2	1105.5	10885.7	1105.3	10945.3	1102.9	10955.3
GR	1106.1	10969.3	1105.5	11001.4	1105.5	11007.4				

ET			9.1						9610	10905
X1	17.129	60	10295.7	10905.8	200	200	200			
CI	10139	1081.3								
GR	1106.7	8999.6	1107.4	9007.6	1105.8	9029.1	1107.8	9044.1	1107.8	9072.1
GR	1106.4	9085.6	1107.4	9095.6	1107.8	9158.2	1109.1	9166.2	1109.2	9182.7
GR	1101.3	9199.7	1101.9	9215.7	1108.8	9229.7	1108.5	9303.	1109.3	9362.4
GR	1111.1	9370.4	1111.7	9403.9	1109.3	9444.4	1109.8	9463.0	1107.7	9512.0
GR	1109.0	9529.0	1108.5	9581.6	1101.8	9598.6	1102.1	9656.6	1094.2	9675.1
GR	1090.0	9694.2	1084.2	9722.7	1084.3	9759.7	1083.9	9817.8	1084.7	9852.3
GR	1085.6	9863.3	1084.0	9895.4	1085.9	9928.9	1089.5	9946.4	1089.8	9971.4
GR	1091.0	9985.4	1091.4	10000.0	1093.0	10046.5	1094.1	10114.6	1089.6	10186.2
GR	1091.4	10221.7	1094.1	10295.7	1092.8	10339.3	1090.0	10372.3	1089.2	10409.8
GR	1086.8	10441.9	1087.0	10457.4	1083.5	10465.9	1083.5	10673.1	1084.7	10684.6
GR	1085.7	10739.2	1085.4	10848.3	1083.9	10854.3	1083.9	10892.3	1093.0	10905.8
GR	1099.5	10918.8	1100.2	10927.3	1098.4	10964.9	1099.5	10977.9	1101.3	11001.9

ET			9.1						9540	10875
X1	17.167	60	10270.2	10875.8	200	200	200			
CI	10133	1081.5								
GR	1106.9	8999.5	1106.9	9011.0	1110.0	9035.1	1108.5	9063.6	1109.6	9076.1
GR	1108.7	9122.1	1109.3	9138.2	1107.8	9168.2	1108.8	9231.7	1109.4	9261.3
GR	1111.6	9289.8	1110.3	9316.3	1110.8	9337.8	1109.2	9350.8	1109.1	9367.4
GR	1110.2	9382.9	1109.7	9415.9	1108.7	9440.9	1109.4	9459.0	1109.8	9492.0

```
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

CCHV=      .100 CEHV=      .300
*SECNO 16.733

3301 HV CHANGED MORE THAN HVINS

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.24

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1107.50 ELREA=      1107.50

    16.733     24.99   1105.79        .00        .00   1106.86       1.07        .19        .17   1107.50
  205000.0        .0  205000.0        .0        .0   24662.5         .0     1831.6      132.3   1107.50
       .10       .00       8.31       .00       .000      .030       .000       .000    1080.80   9526.37
   .000440      250.      230.      240.          2         0          0        .00    1083.21  10609.58

*SECNO 16.829

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1107.50 ELREA=      1107.20

    16.829     25.09   1105.99        .00        .00   1107.14       1.15        .25        .02   1107.50
  205000.0        .0  205000.0        .0        .0   23795.4         .0     2115.3      145.6   1107.20
       .12       .00       8.62       .00       .000      .030       .000       .000    1080.90   9288.13
   .000565      330.      510.      500.          2         0          0        .00    1190.23  10478.36

CCHV=      .300 CEHV=      .500
*SECNO 16.875

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1109.00 ELREA=      1107.20

    16.875     25.22   1106.12        .00        .00   1107.33       1.20        .16        .03   1109.00
  205000.0        .0  205000.0        .0        .0   23288.9         .0     2245.0      152.9   1107.20
       .13       .00       8.80       .00       .000      .030       .000       .000    1080.90   8998.77
   .000793      550.      240.      190.          2         0          0        .00    1449.18  10447.95

*SECNO 16.882

3265 DIVIDED FLOW
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SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1118.40 ELREA=      1118.40

  16.882     25.37   1106.27        .00        .00    1107.39       1.12        .04        .02    1122.70
205000.0        .0  205000.0        .0        .0    24139.5         .0     2266.8      154.2    1107.20
     .13       .00       8.49       .00       .000       .030       .000       .000    1080.90   28254.96
 .001116       40.        40.       40.          2          0          0        .00    1450.77   29740.87

*SECNO 16.904

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=    0 MIN ELTRD=  1122.70 MAX ELLC=  1118.40

  16.904     25.47   1106.37        .00        .00    1107.55       1.18        .13        .03    1122.70
205000.0        .0  205000.0        .0        .0    23519.9         .0     2329.2      158.0    1107.20
     .13       .00       8.72       .00       .000       .030       .000       .000    1080.90   28254.69
 .001193      114.       114.      114.          0          0          0        .00    1416.56   29740.89

*SECNO 16.927
  16.927     25.56   1106.56        .00        .00    1107.68       1.12        .12        .02    1121.50
205000.0        .0  205000.0        .0        .0    24115.2         .0     2394.8      162.1    1107.20
     .14       .00       8.50       .00       .000       .030       .000       .000    1081.00    8892.43
 .000791      120.       120.      120.          2          0          0        .00    1594.90   10487.34

CCHV=     .100 CEHV=     .300
*SECNO 17.027
3280 CROSS SECTION      17.03 EXTENDED        .07 FEET

  17.027     25.58   1107.08        .00        .00    1108.11       1.04        .42        .01    1105.00
205000.0       57.7  203216.3     1726.0       53.4    24744.8      665.3     2695.3      184.1    1100.00
     .15       1.08       8.21       2.59       .040       .030       .040       .000    1081.50    8718.33
 .000812      440.       528.      540.          1          0          0        .00    2041.67   10760.00

*SECNO 17.053
CHIMP CLSTA=   10055.00 CELCH=    1080.90 BW=     700.00 STCHL=    9705.00 STCHR=   10431.40
```

Downstream Side of I-10 Salt River Br.

Upstream Side of I-10 Salt River Br.

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

EXCAVATION DATA
AEX=    4050.1SQ-FT     VEXR=        .0K*CU-YD     VEXT=        .0K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION     17.05 EXTENDED     1.20 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9566.0   11000.9  TYPE=      1  TARGET=    -9566.000
    17.053     25.90   1106.80       .00       .00   1108.44      1.64       .14       .18   1099.56
  205000.0    2905.3  195480.1    6614.7     881.0   18621.5    1969.1    2803.0     191.9   1090.60
       .16      3.30     10.50      3.36      .040      .030      .040      .000   1080.90   9569.61
   .000620      200.      200.      200.         2         0         0       .00   1363.72  11000.90

*SECNO 17.091
CHIMP CLSTA=   10145.00 CELCH=    1081.10 BW=     400.00 STCHL=    9945.00 STCHR=   10885.70
EXCAVATION DATA
AEX=    3533.1SQ-FT     VEXR=      28.1K*CU-YD     VEXT=      28.1K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION     17.09 EXTENDED     2.33 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9366.0   11007.4  TYPE=      1  TARGET=    -9366.000
    17.091     26.73   1107.83       .00       .00   1108.61       .78       .09       .09   1087.75
  205000.0   32500.4  172116.4     383.2    6559.1   23128.1     307.6    2921.2     198.6   1105.50
       .17      4.95      7.44      1.25      .040      .030      .040      .000   1081.10   9416.16
   .000321      200.      200.      200.         2         0         0       .00   1529.85  11007.40

*SECNO 17.129
CHIMP CLSTA=   10139.00 CELCH=    1081.30 BW=     400.00 STCHL=    9939.00 STCHR=   10905.80
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	ES	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

EXCAVATION DATA
AEX= 4332.4SQ-FT VEXR= 29.1K*CU-YD VEXT= 57.2K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION 17.13 EXTENDED 6.64 FEET

17.129	26.64	1107.94	.00	.00	1108.68	.74	.06	.00	1087.98
205000.0	33137.8	169576.1	2286.1	6813.4	23393.0	843.5	3061.3	205.8	1093.00
.17	4.86	7.25	2.71	.040	.030	.040	.000	1081.30	8999.60
.000315	200.	200.	200.	2	0	0	.00	1629.68	11001.90

*SECNO 17.167
CHIMP CLSTA= 10133.00 CELCH= 1081.50 BW= 400.00 STCHL= 9933.00 STCHR= 10875.80
EXCAVATION DATA
AEX= 4165.8SQ-FT VEXR= 31.5K*CU-YD VEXT= 88.7K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION 17.17 EXTENDED 7.14 FEET

17.167	26.44	1107.94	.00	.00	1108.78	.84	.07	.03	1086.73
205000.0	30305.1	171880.9	2813.9	6100.7	22215.8	1001.7	3199.9	213.0	1096.00
.18	4.97	7.74	2.81	.040	.030	.040	.000	1081.50	8999.50
.000373	200.	200.	200.	2	0	0	.00	1473.59	11002.40

*SECNO 17.205
CHIMP CLSTA= 10130.00 CELCH= 1081.60 BW= 400.00 STCHL= 9930.00 STCHR= 10860.70
EXCAVATION DATA
AEX= 4067.5SQ-FT VEXR= 12.2K*CU-YD VEXT= 100.9K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION 17.20 EXTENDED 2.57 FEET

17.205	26.38	1107.98	.00	.00	1108.81	.83	.03	.00	1086.08
205000.0	31270.8	168988.9	4740.4	6302.2	21857.9	1442.0	3254.0	215.7	1099.20
.19	4.96	7.73	3.29	.040	.030	.040	.000	1081.60	8998.90
.000374	80.	80.	80.	1	0	0	.00	1560.29	11008.90

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   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

   16.628     23.13    1103.53        .00    1103.39    1106.30       2.77        .88        .20  100000.00
 205000.0        .0   199851.3     5148.7         .0    14813.5      949.8     1473.6       93.3    1100.00
      .08       .00      13.49       5.42       .000       .033       .045       .000    1080.40    9500.00
 .002036      550.       528.       440.          2          0          0        .00     986.04   10730.00

FLOW DISTRIBUTION FOR SECNO=     16.63          CWSEL=   1103.53

STA=     9500.    10600.    10650.    10700.    10730.
  PER Q=      97.5       .6      1.2       .7
   AREA=  14813.5    276.8    401.8    271.1
    VEL=      13.5      4.7      6.0      5.4
  DEPTH=      17.3      5.5      8.0      9.0

*SECNO 16.689

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=     9496.0   10650.0  TYPE=      1  TARGET=     1154.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

   16.689     23.77    1104.37        .00    1103.69    1106.96       2.58        .64        .02  100000.00
 205000.0        .0   205000.0        .0         .0    15891.0         .0     1588.8      100.3  100000.00
      .09       .00      12.90        .00       .000       .033       .000       .000    1080.60    9496.00
 .001958      360.       320.       230.          2          0          0        .00     954.55   10641.86

FLOW DISTRIBUTION FOR SECNO=     16.69          CWSEL=   1104.37

STA=     9496.    10650.
  PER Q=     100.0
   AREA=  15891.0
    VEL=      12.9
  DEPTH=      16.6

CCHV=      .100 CEHV=      .300
*SECNO 16.733
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
 TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.17


3470 ENCROACHMENT STATIONS=     9526.0   10630.0  TYPE=      1  TARGET=     1104.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

   16.733     25.46   1106.26       .00   1105.79   1107.29      1.03       .18       .16 100000.00
 205000.0        .0  205000.0        .0        .0   25170.2        .0    1697.3     105.7 100000.00
      .10       .00      8.14       .00      .000      .030      .000      .000   1080.80   9526.00
  .000414      250.      230.      240.         2         0         0       .00   1089.19  10615.19


FLOW DISTRIBUTION FOR SECNO=     16.73          CWSEL=   1106.26

STA=     9526.    10630.
  PER Q=     100.0
   AREA=  25170.2
    VEL=      8.1
  DEPTH=     23.1

*SECNO 16.829

3470 ENCROACHMENT STATIONS=     9287.0   10480.0  TYPE=      1  TARGET=     1193.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

   16.829     25.55   1106.45       .00   1105.99   1107.55      1.10       .24       .02 100000.00
 205000.0        .0  205000.0        .0        .0   24341.4        .0    1987.1     119.1 100000.00
      .11       .00      8.42       .00      .000      .030      .000      .000   1080.90   9287.00
  .000526      330.      510.      500.         2         0         0       .00   1191.98  10478.98


FLOW DISTRIBUTION FOR SECNO=     16.83          CWSEL=   1106.45

STA=     9287.    10480.
  PER Q=     100.0
   AREA=  24341.4
    VEL=      8.4
  DEPTH=     20.4
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

CCHV=     .300 CEHV=     .500
*SECNO 16.875

3470 ENCROACHMENT STATIONS=     8997.0   10450.0  TYPE=      1  TARGET=     1453.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=    100000.00 ELREA=    100000.00

   16.875     25.68   1106.58       .00   1106.12   1107.71      1.14       .15       .02 100000.00
 205000.0        .0  205000.0        .0        .0   23945.5        .0    2120.1     126.3 100000.00
      .12       .00      8.56       .00      .000      .030      .000      .000   1080.90   8997.00
  .000725      550.      240.      190.         2         0         0       .00   1451.81  10448.81

FLOW DISTRIBUTION FOR SECNO=     16.88          CWSEL=   1106.58

STA=     8997.    10450.
  PER Q=     100.0
   AREA=  23945.5
    VEL=      8.6
  DEPTH=     16.5

*SECNO 16.882

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=    28255.0   29741.0  TYPE=      1  TARGET=     1486.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      1118.40 ELREA=      1118.40

   16.882     25.81   1106.71       .00   1106.27   1107.77      1.06       .03       .02 100000.00
 205000.0        .0  205000.0        .0        .0   24776.4        .0    2142.5     127.7 100000.00
      .12       .00      8.27       .00      .000      .030      .000      .000   1080.90  28255.00
  .001034       40.       40.       40.         2         0         0       .00   1450.81  29740.93

FLOW DISTRIBUTION FOR SECNO=     16.88          CWSEL=   1106.71

STA=    28255.    29741.
  PER Q=     100.0
   AREA=  24776.4
    VEL=      8.3
  DEPTH=     17.1
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Downstream Side of I-10 Salt River Br

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  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 16.904

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=   0 MIN ELTRD=  1122.70 MAX ELLC=  1118.40

3470 ENCROACHMENT STATIONS=    28254.0   29741.0  TYPE=      1  TARGET=     1487.000
    16.904     25.90   1106.80       .00   1106.37   1107.92      1.12       .12       .03 100000.00
  205000.0        .0  205000.0        .0        .0   24129.5        .0    2206.5     131.4 100000.00
       .13       .00      8.50       .00      .000      .030      .000      .000   1080.90  28254.00
   .001108      114.      114.      114.         0         0         0       .00   1417.35  29740.94

FLOW DISTRIBUTION FOR SECNO=     16.90          CWSEL=   1106.80

STA=   28254.   29741.
  PER Q=    100.0
   AREA=  24129.5
    VEL=      8.5
  DEPTH=     17.0

*SECNO 16.927

3470 ENCROACHMENT STATIONS=     8892.0   10490.0  TYPE=      1  TARGET=     1598.000
    16.927     25.98   1106.98       .00   1106.56   1108.05      1.06       .11       .02 100000.00
  205000.0        .0  205000.0        .0        .0   24790.2        .0    2273.9     135.6 100000.00
       .13       .00      8.27       .00      .000      .030      .000      .000   1081.00   8892.00
   .000723      120.      120.      120.         2         0         0       .00   1597.10  10489.10

FLOW DISTRIBUTION FOR SECNO=     16.93          CWSEL=   1106.98

STA=    8892.   10490.
  PER Q=    100.0
   AREA=  24790.2
    VEL=      8.3
  DEPTH=     15.5
```

Upstream Side of
I-10 Salt River Br

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

CCHV=     .100 CCHV=     .300
*SECNO 17.027
3280 CROSS SECTION     17.03 EXTENDED       .44 FEET

3470 ENCROACHMENT STATIONS=     8770.0   10535.0  TYPE=      1  TARGET=     1765.000
    17.027     25.93   1107.43       .00   1107.08   1108.44      1.01       .39       .01   1105.00
  205000.0        .0  204922.0      78.0        .0   25397.5      36.7    2578.3     156.0   1100.00
       .15       .00      8.07      2.13      .000      .030      .040      .000   1081.50   8770.00
   .000759      440.      528.      540.         1         0         0       .00   1765.00  10535.00

FLOW DISTRIBUTION FOR SECNO=     17.03          CWSEL=   1107.43

STA=    8770.   10530.   10535.
  PER Q=    100.       .0
   AREA=  25397.5     36.7
    VEL=      8.1      2.1
  DEPTH=     14.4      7.3

*SECNO 17.053
CHIMP CLSTA=   10055.00 CELCH=    1080.90 BW=     700.00 STCHL=    9705.00 STCHR=   10431.40
EXCAVATION DATA
AEX=    4050.1SQ-FT     VEXR=        .0K*CU-YD     VEXT=        .0K*CU-YD

3265 DIVIDED FLOW

3280 CROSS SECTION     17.05 EXTENDED      1.56 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=     9500.0   10700.0  TYPE=      1  TARGET=     1200.000
    17.053     26.26   1107.16       .00   1106.80   1108.75      1.59       .13       .17   1099.56
  205000.0    3094.9  195286.8   6618.4     934.2   18884.3    1778.2    2686.2     152.6   1090.60
       .15      3.31     10.34      3.72      .040      .030      .040      .000   1080.90   9500.00
   .000591      200.      200.      200.         2         0         0       .00   1148.14  10700.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     BSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

FLOW DISTRIBUTION FOR SECNO=     17.05          CWSEL=   1107.16

STA=    9500.    9705.   10431.   10628.   10700.
  PER Q=      1.5      95.3      3.0       .2
   AREA=    934.2  18884.3   1560.0    218.1
    VEL=      3.3      10.3      4.0       1.9
  DEPTH=      4.6      26.0      8.0       3.0

*SECNO 17.091
CHIMP CLSTA=   10145.00 CELCH=    1081.10 BW=     400.00 STCHL=    9945.00 STCHR=   10885.70
EXCAVATION DATA
AEX=    3533.1SQ-FT     VEXR=      28.1K*CU-YD     VEXT=       28.1K*CU-YD


3265 DIVIDED FLOW

3280 CROSS SECTION     17.09 EXTENDED      2.65 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     9366.0   10900.0  TYPE=       1  TARGET=     1534.000
    17.091     27.05   1108.15       .00   1107.83   1108.92       .76       .08       .08   1087.75
  205000.0   32705.3  172251.9      42.9    6724.0   23434.2      38.3    2805.1     168.7   1105.50
       .16      4.86      7.35      1.12      .040      .030      .040      .000   1081.10   9412.11
   .000308      200.      200.      200.         2         0         0       .00   1479.26  10900.00


FLOW DISTRIBUTION FOR SECNO=     17.09          CWSEL=   1108.15

STA=    9412.    9770.    9890.    9945.   10886.   10900.
  PER Q=      5.0       7.7      3.2     84.0       .0
   AREA=   2557.3    2912.8   1253.9  23434.2     38.3
    VEL=      4.0       5.4      5.3      7.4      1.1
  DEPTH=      7.2      24.2     22.9     24.9      2.7

*SECNO 17.129
CHIMP CLSTA=   10139.00 CELCH=    1081.30 BW=     400.00 STCHL=    9939.00 STCHR=   10905.80
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


EXCAVATION DATA
AEX=     4332.4SQ-FT      VEXR=       29.1K*CU-YD      VEXT=       57.2K*CU-YD

3280 CROSS SECTION      17.13 EXTENDED      6.93 FEET


3470 ENCROACHMENT STATIONS=      9610.0   10905.0  TYPE=       1  TARGET=      1295.000
    17.129      26.93   1108.23       .00   1107.94   1108.98       .75       .06       .00   1087.98
  205000.0   33321.0  171679.0        .0    6505.4   23664.8        .0    2943.7     175.0 100000.00
       .17      5.12      7.25       .00      .040      .030      .000      .000   1081.30   9610.00
   .000317      200.      200.      200.         1         0         0       .00   1295.00  10905.00


FLOW DISTRIBUTION FOR SECNO=      17.13          CWSEL=   1108.23

STA=     9610.     9657.     9675.     9694.     9723.     9760.     9818.     9852.     9863.     9895.     9929.     9939.    10906.
  PER Q=       .3        .3        .6       1.5       2.4       3.8       2.2        .7       2.0       2.1        .5      83.7
   AREA=    291.5     186.6     308.2     602.3     887.4    1402.2     825.8     253.9     752.3     780.0     215.1   23664.8
    VEL=      2.1       2.9       4.2       5.0       5.5       5.5       5.5       5.4       5.4       5.4       5.0       7.3
  DEPTH=      6.3      10.1      16.1      21.1      24.0      24.1      23.9      23.1      23.4      23.3      21.3      24.5

*SECNO 17.167
CHIMP CLSTA=   10133.00 CELCH=    1081.50 BW=     400.00 STCHL=    9933.00 STCHR=   10875.80
EXCAVATION DATA
AEX=     4165.8SQ-FT      VEXR=       31.5K*CU-YD      VEXT=       88.7K*CU-YD

3280 CROSS SECTION      17.17 EXTENDED      7.43 FEET


3470 ENCROACHMENT STATIONS=      9540.0   10875.0  TYPE=       1  TARGET=      1335.000
    17.167      26.73   1108.23       .00   1107.94   1109.08       .85       .07       .03   1086.73
  205000.0   31115.4  173884.6        .0    6192.6   22480.2        .0    3078.8     181.0 100000.00
       .18      5.02      7.74       .00      .040      .030      .000      .000   1081.50   9558.76
   .000373      200.      200.      200.         2         0         0       .00   1316.24  10875.00


FLOW DISTRIBUTION FOR SECNO=      17.17          CWSEL=   1108.23

STA=     9559.     9585.     9601.     9631.     9671.     9702.     9735.     9762.     9779.     9867.     9927.     9933.    10876.
  PER Q=       .0        .1        .4        .9       1.1       1.5       1.5        .9       4.9       3.5        .3      84.8
   AREA=     61.9      95.7     272.3     483.1     500.2     603.8     567.3     345.8    1833.0    1307.7     121.9   22480.2
    VEL=      1.4       2.3       3.1       3.8       4.5       5.0       5.4       5.4       5.4       5.6       5.6       7.7
  DEPTH=      2.4       6.0       8.9      12.2      15.8      18.6      20.6      20.8      20.8      21.6      21.8      23.9
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 17.205
CHIMP CLSTA=   10130.00 CELCH=    1081.60 BW=     400.00 STCHL=    9930.00 STCHR=   10860.70
EXCAVATION DATA
AEX=     4067.5SQ-FT     VEXR=      12.2K*CU-YD     VEXT=      100.9K*CU-YD

3280 CROSS SECTION     17.20 EXTENDED      2.86 FEET

3470 ENCROACHMENT STATIONS=     9550.0   10860.0  TYPE=      1  TARGET=     1310.000
    17.205     26.65   1108.25       .00   1107.98   1109.11       .86       .03       .00   1086.08
  205000.0   32279.3  172720.6        .0    6310.8   22116.2        .0    3131.2     183.5 100000.00
       .18      5.11      7.81       .00      .040      .030      .000      .000   1081.60   9550.00
   .000381       80.       80.       80.         0         0         0       .00   1310.00  10860.00

FLOW DISTRIBUTION FOR SECNO=     17.20          CWSEL=   1108.25

STA=    9550.    9571.    9593.    9621.    9670.    9742.    9753.    9819.    9858.    9930.   10861.
  PER Q=      .0       .1       .4      1.1      3.2       .7      3.8      2.3      4.2     84.3
   AREA=    40.6     90.4    240.3    600.6   1316.3    238.8   1402.9    833.7   1547.2  22116.2
    VEL=     1.0      1.8      3.1      3.8      5.0      5.6      5.6      5.5      5.6      7.8
  DEPTH=     1.9      4.2      8.7     12.3     18.3     21.7     21.3     21.1     21.5     23.8

*SECNO 17.242
CHIMP CLSTA=   10126.00 CELCH=    1081.70 BW=     400.00 STCHL=    9926.00 STCHR=   10856.20
EXCAVATION DATA
AEX=     3785.1SQ-FT     VEXR=      17.5K*CU-YD     VEXT=      118.3K*CU-YD

3470 ENCROACHMENT STATIONS=     9550.0   10856.0  TYPE=      1  TARGET=     1306.000
    17.242     26.56   1108.26       .00   1107.98   1109.17       .91       .05       .01   1087.08
  205000.0   30693.7  174306.3        .0    5975.2   21773.7        .0    3208.6     187.0 100000.00
       .19      5.14      8.01       .00      .040      .030      .000      .000   1081.70   9567.62
   .000406      120.      120.      120.         2         0         0       .00   1288.38  10856.00

FLOW DISTRIBUTION FOR SECNO=     17.24          CWSEL=   1108.26

STA=    9568.    9582.    9599.    9643.    9702.    9736.    9756.    9790.    9803.    9853.    9919.    9926.   10856.
  PER Q=      .0       .2       .9      1.6      1.4      1.0      1.9       .7      2.8      3.9       .4     85.0
   AREA=    44.3    132.8    528.0    762.2    588.7    384.3    693.9    274.9   1017.5   1396.8    151.7  21773.7
    VEL=     1.5      2.9      3.7      4.4      4.9      5.3      5.6      5.6      5.6      5.7      5.7      8.0
  DEPTH=     3.1      7.8     10.9     14.1     17.0     19.2     20.7     20.4     20.5     21.2     21.1     23.4
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THIS RUN EXECUTED 10FEB92 05:39:36

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****************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

-YEAR FLOODPLAIN STR

SUMMARY PRINTOUT

	SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP
	15.934	200000.00	9750.00	9750.00	.00	7.08	4.47	11070.00	11832.17	2082.17	1093.31	.00
	15.934	200000.00	9750.00	9750.00	.00	7.94	4.73	11070.00	11300.00	1550.00	1094.31	1.00
	16.034	200000.00	9766.14	9760.00	.00	6.68	5.09	11200.00	11860.83	2094.69	1093.68	.00
	16.034	200000.00	9762.52	9760.00	.00	8.54	2.19	11200.00	11205.00	1442.48	1094.58	.90
*	16.134	200000.00	9716.22	9700.00	.00	13.49	.00	10710.00	10697.61	981.38	1092.68	.00
	16.134	200000.00	9708.87	9700.00	.00	12.09	.00	10710.00	10706.85	997.98	1094.41	1.73
	16.178	205000.00	9673.55	9660.00	.00	13.73	.00	10600.00	10587.72	914.17	1093.16	.00
	16.178	205000.00	9668.10	9660.00	.00	12.54	.00	10600.00	10594.39	926.29	1094.71	1.55
	16.188	205000.00	3077.30	3076.00	.00	13.71	.00	3934.50	3933.70	856.40	1093.28	.00
	16.188	205000.00	3077.02	3076.00	.00	12.64	.00	3934.50	3933.98	856.95	1094.78	1.50
	16.202	205000.00	3076.82	3076.00	.00	12.03	.00	3934.50	3934.09	857.27	1095.72	.00
	16.202	205000.00	3076.41	3076.00	.00	11.02	.00	3934.50	3934.29	857.88	1097.55	1.83
	16.213	205000.00	9677.91	9690.00	.65	12.76	.65	10570.00	10604.33	926.43	1095.67	.00
	16.213	205000.00	9644.66	9690.00	1.34	11.57	1.34	10570.00	10698.75	1054.09	1097.52	1.85
	16.254	205000.00	9693.59	9680.00	.00	14.88	.69	10570.00	10595.37	901.78	1095.49	.00
	16.254	205000.00	9687.88	9680.00	.00	13.26	1.63	10570.00	10692.06	1004.18	1097.39	1.89
*	16.347	205000.00	9730.91	9700.00	.00	18.62	3.80	10480.00	11190.06	1439.15	1096.72	.00
*	16.347	205000.00	9730.50	9700.00	.00	18.99	2.87	10480.00	10485.00	754.50	1096.82	.11
*	16.428	205000.00	9609.65	9620.00	.83	14.13	5.16	10450.00	11239.13	1612.20	1100.74	.00
*	16.428	205000.00	9620.00	9620.00	.00	14.63	5.24	10450.00	10800.00	1164.24	1100.94	.20
	16.528	205000.00	9524.53	9600.00	1.50	12.41	4.79	10370.00	11100.01	1575.47	1102.52	.00
	16.528	205000.00	9600.00	9600.00	.00	12.16	5.05	10370.00	10900.00	1300.00	1103.13	.61

	SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP	
	16.628	205000.00	9208.71	9220.00	2.13	12.24	5.96	10600.00	10800.02	1345.38	1103.39	.00	
	16.628	205000.00	9500.00	9220.00	.00	13.49	5.42	10600.00	10730.00	986.04	1103.53	.15	
	16.689	205000.00	9496.55	9490.00	.00	13.45	.00	10650.00	10638.45	940.48	1103.69	.00	
	16.689	205000.00	9496.00	9490.00	.00	12.90	.00	10650.00	10641.86	954.55	1104.37	.68	
*	16.733	205000.00	9526.37	9520.00	.00	8.31	.00	10630.00	10609.58	1083.21	1105.79	.00	
*	16.733	205000.00	9526.00	9520.00	.00	8.14	.00	10630.00	10615.19	1089.19	1106.26	.47	
	16.829	205000.00	9288.13	9270.00	.00	8.62	.00	10480.00	10478.36	1190.23	1105.99	.00	
	16.829	205000.00	9287.00	9270.00	.00	8.42	.00	10480.00	10478.98	1191.98	1106.45	.46	
	16.875	205000.00	8998.77	8970.00	.00	8.80	.00	10450.00	10447.95	1449.18	1106.12	.00	
	16.875	205000.00	8997.00	8970.00	.00	8.56	.00	10450.00	10448.81	1451.81	1106.58	.45	
	16.882	205000.00	28254.96	28229.00	.00	8.49	.00	29741.00	29740.87	1450.77	1106.27	.00	Downstream Side of I-10 Salt River Br
	16.882	205000.00	28255.00	28229.00	.00	8.27	.00	29741.00	29740.93	1450.81	1106.71	.44	
	16.904	205000.00	28254.69	28229.00	.00	8.72	.00	29741.00	29740.89	1416.56	1106.37	.00	Upstream Side
	16.904	205000.00	28254.00	28229.00	.00	8.50	.00	29741.00	29740.94	1417.35	1106.80	.43	
	16.927	205000.00	8892.43	8820.00	.00	8.50	.00	10490.00	10487.34	1594.90	1106.56	.00	
	16.927	205000.00	8892.00	8820.00	.00	8.27	.00	10490.00	10489.10	1597.10	1106.98	.42	
	17.027	205000.00	8718.33	8770.00	1.08	8.21	2.59	10530.00	10760.00	2041.67	1107.08	.00	
	17.027	205000.00	8770.00	8770.00	.00	8.07	2.13	10530.00	10535.00	1765.00	1107.43	.36	
	17.053	205000.00	9569.61	9705.00	3.30	10.50	3.36	10431.40	11000.90	1363.72	1106.80	.00	
	17.053	205000.00	9500.00	9705.00	3.31	10.34	3.72	10431.40	10700.00	1148.14	1107.16	.36	
	17.091	205000.00	9416.16	9945.00	4.95	7.44	1.25	10885.70	11007.40	1529.85	1107.83	.00	
	17.091	205000.00	9412.11	9945.00	4.86	7.35	1.12	10885.70	10900.00	1479.26	1108.15	.33	
	17.129	205000.00	8999.60	9939.00	4.86	7.25	2.71	10905.80	11001.90	1629.68	1107.94	.00	
	17.129	205000.00	9610.00	9939.00	5.12	7.25	.00	10905.80	10905.00	1295.00	1108.23	.29	
	17.167	205000.00	8999.50	9933.00	4.97	7.74	2.81	10875.80	11002.40	1473.59	1107.94	.00	
	17.167	205000.00	9558.76	9933.00	5.02	7.74	.00	10875.80	10875.00	1316.24	1108.23	.29	
	17.205	205000.00	8998.90	9930.00	4.96	7.73	3.29	10860.70	11008.90	1560.29	1107.98	.00	
	17.205	205000.00	9550.00	9930.00	5.11	7.81	.00	10860.70	10860.00	1310.00	1108.25	.27	
	17.242	205000.00	8999.00	9926.00	5.06	8.00	3.05	10856.20	10994.52	1488.78	1107.98	.00	
	17.242	205000.00	9567.62	9926.00	5.14	8.01	.00	10856.20	10856.00	1298.38	1108.26	.28	
	17.280	205000.00	9547.66	9920.00	4.52	7.27	.00	10969.40	10966.71	1419.06	1108.21	.00	
	17.280	205000.00	9547.03	9920.00	4.46	7.16	.00	10969.40	10967.34	1420.31	1108.53	.32	
	17.318	205000.00	9462.94	9827.30	4.97	8.30	1.45	10798.30	10872.13	1378.94	1108.12	.00	
	17.318	205000.00	9457.05	9827.30	4.90	8.17	1.44	10798.30	10884.84	1404.19	1108.45	.33	

SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP
17.356	205000.00	9383.40	9787.80	5.31	8.47	4.73	10645.40	10805.16	1421.77	1108.24	.00
17.356	205000.00	9382.91	9787.80	5.23	8.33	4.68	10645.40	10805.41	1422.50	1108.56	.32
17.394	205000.00	9290.29	9886.00	6.62	11.09	6.48	10314.00	10534.95	1244.66	1108.07	.00
17.394	205000.00	9290.00	9886.00	6.53	10.90	6.39	10314.00	10534.00	1244.00	1108.40	.33
17.432	205000.00	9259.68	9881.00	6.69	11.41	6.68	10309.00	10534.43	1274.75	1108.17	.00
17.432	205000.00	9259.00	9881.00	6.60	11.21	6.59	10309.00	10534.00	1275.00	1108.49	.32
17.453	205000.00	9232.40	9877.00	6.66	11.25	6.58	10305.00	10533.78	1301.38	1108.32	.00
17.453	205000.00	9248.00	9877.00	6.61	11.09	6.56	10305.00	10518.00	1270.00	1108.62	.30
17.459	205000.00	9223.17	9877.00	6.69	11.26	6.60	10303.00	10533.78	1310.61	1108.35	.00
17.459	205000.00	9236.00	9877.00	6.63	11.10	6.59	10303.00	10514.00	1278.00	1108.64	.30
17.470	205000.00	9217.11	9875.00	6.71	11.33	6.66	10301.00	10533.66	1316.55	1108.38	.00
17.470	205000.00	9217.00	9875.00	6.62	11.14	6.57	10301.00	10533.00	1316.00	1108.69	.30
17.486	205000.00	9202.00	9873.00	6.73	11.28	6.62	10299.00	10532.80	1330.79	1108.47	.00
17.486	205000.00	9202.00	9873.00	6.64	11.09	6.53	10299.00	10532.00	1330.00	1108.77	.30
17.498	205000.00	9181.44	9871.00	6.67	11.08	6.49	10297.00	10532.78	1351.34	1108.59	.00
17.498	205000.00	9181.00	9871.00	6.58	10.89	6.41	10297.00	10532.00	1351.00	1108.88	.29
17.508	205000.00	9169.16	9869.00	6.67	11.39	6.69	10295.00	10532.69	1363.54	1108.58	.00
17.508	205000.00	9169.00	9869.00	6.58	11.19	6.59	10295.00	10532.00	1363.00	1108.87	.29
17.536	205000.00	9171.27	9865.00	6.83	11.97	7.05	10291.00	10531.52	1360.25	1108.60	.00
17.536	205000.00	9171.00	9865.00	6.74	11.76	6.95	10291.00	10531.00	1360.00	1108.90	.29
17.568	205000.00	9214.41	9861.00	7.20	12.45	7.33	10285.00	10531.22	1316.81	1108.67	.00
17.568	205000.00	9214.00	9861.00	7.10	12.23	7.22	10285.00	10531.00	1317.00	1108.96	.29
17.606	205000.00	9224.38	9854.00	7.42	12.48	7.36	10278.00	10530.30	1305.93	1108.89	.00
17.606	205000.00	9224.01	9854.00	7.32	12.27	7.26	10278.00	10530.00	1305.99	1109.16	.27
17.644	205000.00	9218.53	9848.00	7.52	13.14	7.72	10272.00	10529.25	1310.72	1108.99	.00
17.644	205000.00	9218.08	9848.00	7.42	12.91	7.61	10272.00	10529.00	1310.92	1109.26	.27
17.682	205000.00	9219.75	9842.00	7.70	13.78	8.17	10266.00	10509.28	1289.53	1109.11	.00
17.682	205000.00	9219.27	9842.00	7.60	13.54	8.06	10266.00	10509.00	1289.73	1109.37	.26
17.720	205000.00	9159.23	9836.00	8.44	16.99	9.80	10260.00	10526.43	1212.54	1108.55	.00
17.720	205000.00	9159.42	9836.00	8.28	16.63	9.64	10260.00	10526.26	1213.35	1108.84	.29
17.758	205000.00	9215.48	9830.00	7.55	13.59	7.99	10254.00	10528.89	1313.42	1110.42	.00
17.758	205000.00	9234.00	9830.00	7.59	13.59	8.08	10254.00	10507.00	1271.00	1110.53	.10
17.795	205000.00	9255.53	9826.00	7.83	12.84	7.55	10250.00	10529.34	1273.81	1110.92	.00
17.795	205000.00	9279.00	9826.00	7.89	12.86	7.65	10250.00	10506.00	1227.00	1111.02	.10

	SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP
	17.833	205000.00	9347.06	9823.00	8.52	13.46	7.88	10247.00	10528.25	1181.18	1111.02	.00
	17.833	205000.00	9373.00	9823.00	8.62	13.50	7.98	10247.00	10508.00	1135.00	1111.11	.09
	17.871	205000.00	9473.50	9820.10	9.36	16.12	9.33	10244.10	10526.50	1053.00	1110.64	.00
	17.871	205000.00	9490.00	9820.10	9.40	16.07	9.38	10244.10	10509.00	1019.00	1110.75	.11
	17.909	205000.00	9473.88	9817.00	9.49	16.40	9.46	10241.10	10526.12	1052.24	1110.99	.00
	17.909	205000.00	9494.00	9817.00	9.58	16.40	9.57	10241.10	10505.00	1011.00	1111.08	.09
	17.947	205000.00	9474.08	9813.90	9.52	16.47	9.49	10238.00	10525.92	1051.84	1111.42	.00
	17.947	205000.00	9493.00	9813.90	9.60	16.47	9.58	10238.00	10507.00	1014.00	1111.50	.09
	17.970	205000.00	9474.17	9812.10	9.55	16.53	9.52	10236.10	10525.83	1051.65	1111.67	.00
	17.970	205000.00	9493.00	9812.10	9.63	16.53	9.62	10236.10	10506.00	1013.00	1111.76	.08
	17.998	205000.00	9475.81	9835.00	12.96	18.48	14.02	10233.80	10524.19	894.15	1111.26	.00
	17.998	205000.00	9475.49	9835.00	12.83	18.26	13.89	10233.80	10524.00	894.97	1111.42	.16
*	18.036	205000.00	9470.98	9806.60	10.41	13.24	10.39	10230.60	10529.02	1058.04	1114.18	.00
*	18.036	205000.00	9470.87	9806.60	10.38	13.19	10.36	10230.60	10529.00	1058.13	1114.23	.05
	18.074	205000.00	9471.32	9803.40	10.50	13.38	10.48	10227.40	10528.68	1057.37	1114.50	.00
	18.074	205000.00	9471.22	9803.40	10.47	13.34	10.46	10227.40	10528.00	1056.78	1114.55	.05
	18.112	205000.00	9471.79	9800.20	10.59	13.53	10.58	10224.20	10528.21	1056.41	1114.84	.00
	18.112	205000.00	9471.70	9800.20	10.57	13.49	10.55	10224.20	10528.00	1056.29	1114.89	.05
	18.150	205000.00	9472.26	9797.00	10.86	13.92	10.83	10221.00	10516.74	1044.49	1115.13	.00
	18.150	205000.00	9472.17	9797.00	10.83	13.88	10.81	10221.00	10516.00	1043.83	1115.18	.04
	18.188	205000.00	9474.19	9793.80	13.13	17.07	12.71	10217.80	10339.71	865.52	1114.67	.00
	18.188	205000.00	9474.10	9793.80	13.10	17.02	12.69	10217.80	10339.00	864.90	1114.71	.04
	18.216	205000.00	9473.53	9791.30	12.75	16.48	12.41	10215.40	10352.47	878.94	1115.43	.00
	18.216	205000.00	9473.47	9791.30	12.73	16.45	12.39	10215.40	10352.00	878.53	1115.46	.03
	18.254	205000.00	9471.24	9788.30	10.97	13.97	10.91	10212.30	10465.74	994.51	1117.08	.00
	18.254	205000.00	9471.20	9788.30	10.96	13.96	10.90	10212.30	10465.00	993.80	1117.10	.02
	18.292	205000.00	9470.78	9788.00	10.32	13.12	10.32	10212.00	10529.22	1058.44	1117.81	.00
	18.292	205000.00	9470.75	9788.00	10.32	13.11	10.32	10212.00	10529.00	1058.25	1117.83	.02
	18.330	205000.00	9471.15	9788.00	10.43	13.28	10.43	10212.00	10528.85	1057.69	1118.12	.00
	18.330	205000.00	9471.12	9788.00	10.42	13.27	10.42	10212.00	10528.00	1056.88	1118.14	.01
	18.367	205000.00	9471.66	9788.00	10.52	13.43	10.52	10212.00	10528.34	1056.69	1118.45	.00
	18.367	205000.00	9471.63	9788.00	10.52	13.42	10.52	10212.00	10528.00	1056.37	1118.46	.01
	18.405	205000.00	9472.05	9788.00	10.68	13.68	10.68	10212.00	10527.95	1055.89	1118.77	.00
	18.405	205000.00	9542.00	9788.00	11.08	14.48	11.28	10212.00	10527.00	985.00	1118.59	-.18

SECNO	Q	SSTA	STCHL	VLOB	VCH	VROB	STCHR	ENDST	TOPWID	CWSEL	DIFWSP
18.417	205000.00	9472.11	9737.70	10.67	13.67	10.67	10211.70	10527.89	1055.79	1118.89	.00
18.417	205000.00	9472.00	9737.70	10.53	13.43	10.53	10211.70	10527.00	1055.00	1119.14	.25
18.455	205000.00	9472.36	9783.50	10.74	13.78	10.75	10207.50	10527.64	1055.29	1119.26	.00
18.455	205000.00	9472.00	9783.50	10.61	13.58	10.62	10207.50	10527.00	1055.00	1119.48	.22
18.492	205000.00	9472.69	9786.10	10.89	14.01	10.89	10210.40	10527.31	1054.62	1119.62	.00
18.492	205000.00	9472.28	9786.10	10.77	13.82	10.77	10210.40	10527.00	1054.72	1119.82	.20
18.530	205000.00	9472.95	9798.70	10.94	14.09	10.93	10224.40	10527.05	1054.10	1120.02	.00
18.530	205000.00	9472.58	9798.70	10.83	13.91	10.82	10224.40	10527.00	1054.42	1120.20	.18
18.568	205000.00	9473.11	9821.30	10.99	14.14	10.94	10249.60	10526.89	1053.77	1120.44	.00
18.568	205000.00	9473.00	9821.30	10.89	13.99	10.84	10249.60	10526.00	1053.00	1120.60	.16
18.606	205000.00	9473.27	9853.90	11.02	14.19	10.92	10285.90	10526.73	1053.46	1120.86	.00
18.606	205000.00	9473.00	9853.90	10.93	14.04	10.84	10285.90	10526.00	1053.00	1121.01	.15
18.644	205000.00	9473.41	9896.60	11.05	14.21	10.86	10333.60	10526.59	1053.18	1121.30	.00
18.644	205000.00	9473.14	9896.60	10.97	14.08	10.78	10333.60	10526.00	1052.86	1121.43	.13
18.682	205000.00	9473.74	9949.30	11.12	14.32	10.75	10392.80	10526.26	1052.52	1121.72	.00
18.682	205000.00	9473.51	9949.30	11.05	14.21	10.68	10392.80	10526.00	1052.49	1121.84	.12
18.720	205000.00	9473.85	10012.20	11.12	14.31	10.00	10463.70	10526.15	1052.30	1122.18	.00
18.720	205000.00	9473.64	10012.20	11.05	14.21	9.94	10463.70	10526.00	1052.36	1122.29	.10
18.758	205000.00	9474.27	10085.10	10.74	13.89	6.69	10546.80	10573.63	1099.36	1122.80	.00
18.758	205000.00	9474.12	10085.10	10.71	13.83	7.01	10546.80	10563.00	1088.88	1122.88	.08
18.795	205000.00	9474.55	10168.20	10.14	13.18	6.25	10637.70	10663.97	1189.43	1123.53	.00
18.795	205000.00	9474.40	10168.20	10.09	13.11	6.31	10637.70	10663.00	1188.60	1123.60	.07
18.833	205000.00	9495.00	10257.00	9.20	12.00	8.75	10720.80	10834.92	1339.92	1124.36	.00
18.833	205000.00	9495.00	10257.00	9.17	11.95	8.72	10720.80	10835.03	1340.03	1124.41	.06
18.871	205000.00	9462.03	10337.00	8.37	11.07	8.20	10795.40	11004.40	1542.36	1125.00	.00
18.871	205000.00	9462.00	10337.00	8.35	11.03	8.18	10795.40	11004.00	1542.00	1125.05	.05
18.909	205000.00	9470.00	10409.30	8.45	11.48	8.49	10861.90	11156.39	1589.67	1125.23	.00
18.909	205000.00	9470.00	10409.30	8.43	11.43	8.47	10861.90	11156.48	1589.96	1125.28	.05
18.947	205000.00	9555.00	10477.00	9.41	13.51	9.78	10927.70	11314.74	1467.67	1125.17	.00
18.947	205000.00	9555.00	10477.00	9.38	13.45	9.75	10927.70	11314.84	1468.47	1125.22	.05
* 18.987	205000.00	9432.00	10546.40	6.96	9.64	7.07	10997.60	11491.61	2059.61	1126.72	.00
* 18.987	205000.00	9432.00	10546.40	6.94	9.61	7.05	10997.60	11491.67	2059.67	1126.75	.03
19.027	205000.00	9408.00	10615.70	6.73	9.28	6.72	11067.50	11626.10	2218.10	1127.04	.00
19.027	205000.00	9408.00	10615.70	6.72	9.25	6.70	11067.50	11626.16	2218.16	1127.07	.03

APPENDIX C

Letter From ADOT

ARIZONA DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

206 South Seventeenth Avenue Phoenix, Arizona 85007

ROSE MOFFORD
Governor

[redacted]

JAMES S. CREEDON
Acting Director

[redacted]

GARY K. ROBINSON
State Engineer

January 21, 1991

Mr. Jim Carroll
Aviation Department
3400 Sky Harbor Blvd.
Phoenix, AZ 85034

RE: Old Tower Road Relocation

Dear Mr. Carroll:

The conceptual drawings of seven alternatives proposing to relocate Old Tower Road have been reviewed. ADOT's preference is to see alternative six or a similar alignment selected for further study. We realize that alternate seven is the City of Phoenix Aviation Department's preferred alignment, but ADOT has some reservations with respect to this alternate.

With respect to relocating Old Tower Road under the north span of the I-10 Bridge over the Salt River, we have serious concerns relating to scour and erosion of the north bank and the integrity of our existing bank protection. Specifically, if a vertical face retaining wall were constructed to support your roadway, the approach flow conditions would be altered such that the existing protection below the wall would not function as intended. Before any such proposal could be further considered, a complete hydraulic design, including scour effects up through the 500-year flood will have to be completed. Such a study will have to include present and future conditions when bed degradation and other long-term losses have occurred. The addition of any facility under the bridge can not introduce any restriction to the flow, and can not increase the scour risk to any component of the bridge site. Vertical clearance above the facility is a minimum 16'-6".

Some additional factors to be included in the development of this proposal are as follows:

1. Two 72-in. pipes drain to the Salt River on the northeast side of the I-10 Bridge. These pipes are to be considered in the design of the proposed roadway relocation.

2. Design consideration are to be given to the 36-in. RCP and energy dissipater draining to the Salt River on the southwest side of the I-10 Bridge.

3. The Salt River dike on the southwest side of the I-10 Bridge is not to be severed by the proposed roadway.

4. An ADOT ditch and dike easement exists where the proposed road (alternate seven) intersects Old Tower Road. The operational characteristic of any drainage feature in this area is to be maintained.

Enclosed are the seven conceptual drawings you had loaned me for our review. Thank you for including ADOT early in the developmental stage of this proposal. If you would like to reconvene and discuss our position, I can be reached at 255-7545.

Sincerely,

Timothy W. Fletcher

TIMOTHY W. FLETCHER, P.E.
Design Engineer
Urban Highway Section

TWF:mj

cc: Tom Parlante
Dan Lance
Dick Bruesch
Ray Jordan