

23

PROJECT SPECIFICATIONS and CONTRACT DOCUMENTS

ARROWHEAD RANCH INFRASTRUCTURE

CITY OF GLENDALE PROJECTS

BRIDGE AND CHANNEL IMPROVEMENT

UNION HILLS DRIVE AT SKUNK CREEK

PROJECT NO. A-845016

GLENDALE, ARIZONA

1984

MAYOR

GEORGE R. RENNER

COUNCILMEN

RICHARD BELLAH

JOE A. FALBO

BRUCE E. HEATWOLE

ROBERT L. HUFFMAN

QUENTIN V. TOLBY

DILLIS WARD

CITY MANAGER

JOHN MALTBIE

CITY CLERK

LAVERGNE BEHM

DESIGN FIRMS

HNTB WADSWORTH, JENSEN & ASSOCIATES

F.C. CIVIL ENGINEERING COMPANY



CAROLLO/SWENDEL-ROBBINS

PROJECT MANAGEMENT



A

A450.501

ADDENDUM NO. 1
TO
ARROWHEAD RANCH INFRASTRUCTURE
BRIDGE AND CHANNEL IMPROVEMENT
UNION HILLS DRIVE AT SKUNK CREEK

Project A-845016

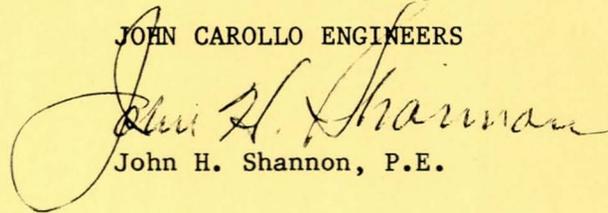
August 24, 1984

In accordance with Section 102, Bidding Requirements and Conditions of the Uniform Standard Specifications for Public Works Construction sponsored and distributed by the Maricopa Association of Governments, and in accordance with the INFORMATION FOR BIDDERS, Page IB-2, Paragraph 9., ADDENDA, of the Contract Documents, the following revisions to the Plans and Specifications shall become a part of the Contract Documents and the Bidder shall acknowledge receipt thereof on Page P-4 of the PROPOSAL.

NOTICE TO CONTRACTORS

On Page NC-1 of the Specifications under NOTICE TO CONTRACTORS, in the first paragraph and line four, delete "2:00 P.M., Friday, August 31, 1984" and insert therefor "2:00 P.M., Tuesday, September 11, 1984."

JOHN CAROLLO ENGINEERS



John H. Shannon, P.E.



Deck Joint Assemblies

Across the roadway to the limits shown, any of the designated types or models or deck joint assemblies manufactured by the following manufacturers or an approved equal will be acceptable:

<u>Manufacturer</u>	<u>Movement Rating</u>
Acme Titan TR 300 or TR 400 Type B	3" or 3-1/2"
Acme Trojan TR 300 or TR 400	
Delastiflex RC 300 or RC 400	
Felspan T-30A or 40A	
On-Flex Moder 35	
Wabo Alu-Strip Type III S-300 or S-400	
Wabo Maurer D-300	

The total length of roadway joint required is 312 lin. ft.

Across the sidewalk to the limits shown, ADOT Standard RJ-3 joint shall be used. The total length of sidewalk joint required is 24 lin. ft.

Median Joints

Transverse joints shall be included in the raised median at 20-foot centers as detailed on the plans.

No direct payment will be made for furnishing and installing median joints, the cost being considered as included in the cost of the structures.

Retaining Walls

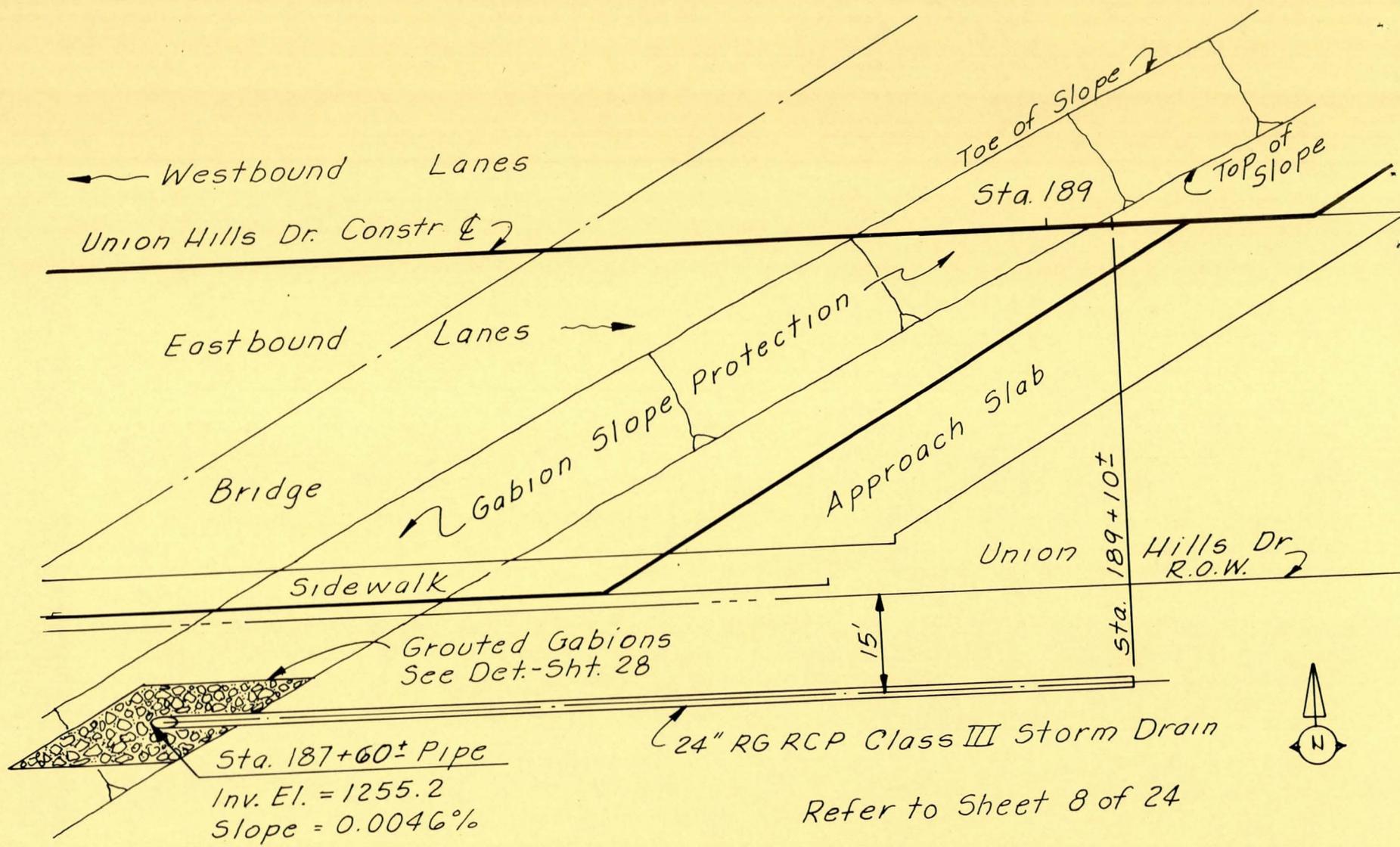
All retaining walls shall be to ADOT Standard RW-2 Case II with modifications as noted on the plans.

Elevations at the top of bases of retaining walls are as follows:

<u>Location</u>	<u>Top of Base Elevation</u>
N. E. Corner	1259.1'
S. E. Corner	1260.3'
S. W. Corner	1256.5'
N. W. Corner	1259.9'
North Median	1257.5' (height 11' - length 16')

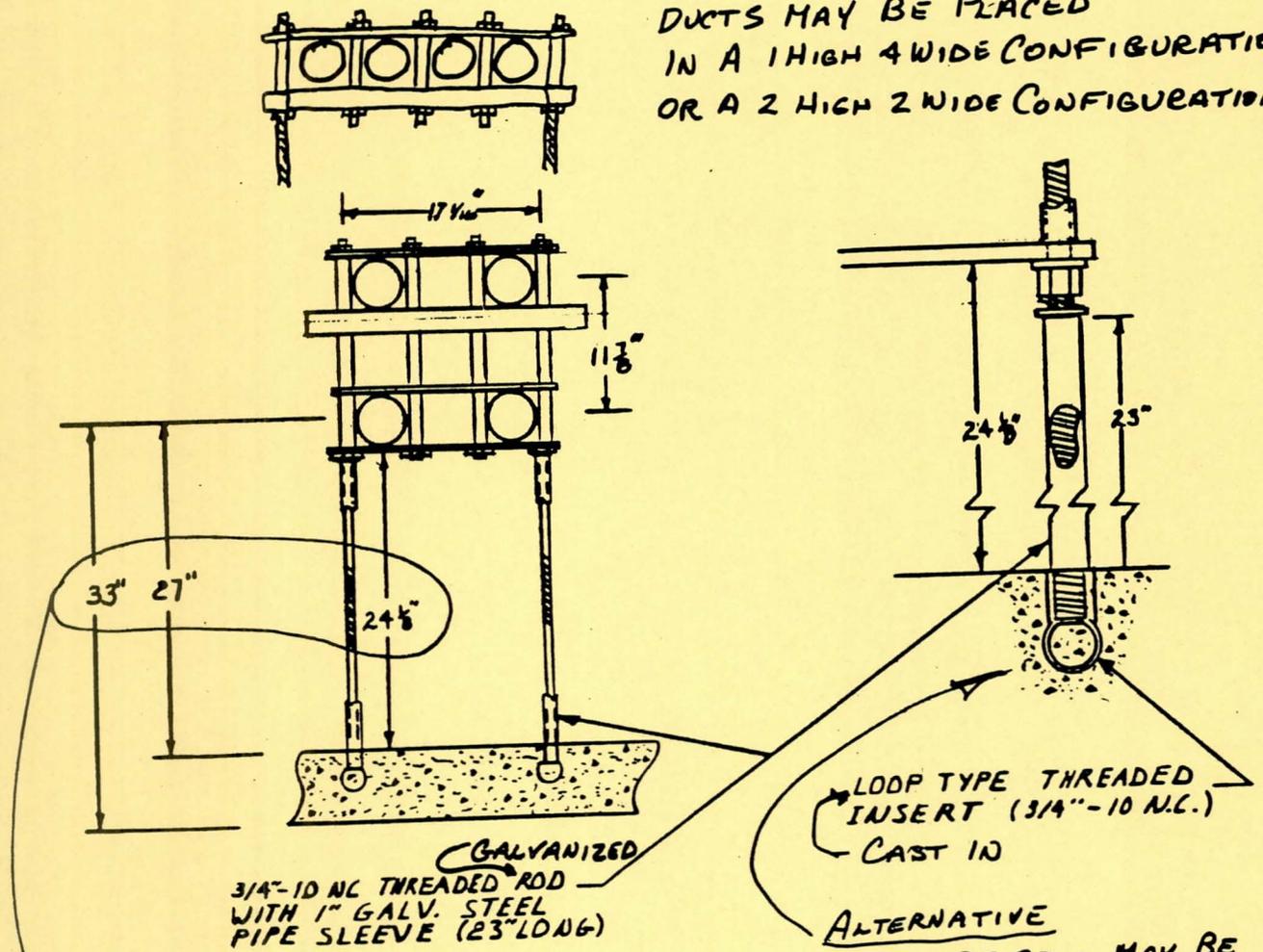
Elevations at the top of walls are as noted on the plans.

Elevations given above are for the tops of bases - the bases and keys lie below these elevations.



**STORM DRAIN DETAIL
SW CORNER OF BRIDGE**

DUCTS MAY BE PLACED
IN A 1 HIGH 4 WIDE CONFIGURATION
OR A 2 HIGH 2 WIDE CONFIGURATION



GALVANIZED
3/4"-10 NC THREADED ROD
WITH 1" GALV. STEEL
PIPE SLEEVE (23" LONG)

HEIGHT ABOVE
FLOOR VARIABLE
(DEPENDS ON HEIGHT
DUCTS CAN PASS
THRU DIAPHRAMS
AND ABUTMENTS

ALTERNATE FIBERGLASS DUCT INSTALLATION
(TYP.)

ADDENDUM NO. 2
TO
ARROWHEAD RANCH INFRASTRUCTURE
BRIDGE AND CHANNEL IMPROVEMENT
UNION HILLS DRIVE AT SKUNK CREEK

Project A-845016

August 31, 1984

In accordance with Section 102, Bidding Requirements and Conditions of the Uniform Standard Specifications for Public Works Construction sponsored and distributed by the Maricopa Association of Governments, and in accordance with the INFORMATION FOR BIDDERS, Page IB-2, Paragraph 9., ADDENDA, of the Contract Documents, the following revisions to the Plans and Specifications shall become a part of the Contract Documents and the Bidder shall acknowledge receipt thereof on Page P-5 of the PROPOSAL.

SPECIFICATIONS

INFORMATION FOR BIDDERS

On Page IB-2 of the INFORMATION FOR BIDDERS, under Paragraph 5 in the last sentence delete "September 11, 1984" and insert therefor, "October 2, 1984."

APPLICABLE MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD SPECIFICATIONS

On Page MAG-1, under APPLICABLE MAG STANDARD SPECIFICATIONS, Section 205, delete "Fill Construction" and insert therefor "Roadway Excavation." Also add the following applicable MAG Standard Specifications.

<u>"Section</u>	<u>Description</u>
405	Monuments
601	Trench Excavation, Backfill and Compaction
618	Storm Drain Construction"

SPECIAL PROVISIONS

On Page SP-23 add Section 34.

"34. LUMP SUM BID

"Payment for Union Hills Drive detour, bridge, and Skunk Creek Channel construction will be on a lump sum basis. ADOT and MAG measurement provisions apply to quantities in the tabulations. ADOT and MAG payment provisions are deleted. Tabulations of quantities, unit price, and

totals are for the purpose of determining the total amount for the lump sum bid and shall be used for the basis of monthly progress payments during construction."

After Page SP-23 insert Section 35.

"35. CONTROL OF STREAM FLOW

"During construction of Union Hills Drive Bridge and channel improvement, the Contractor shall be responsible for handling the flows of Skunk Creek. Adobe Dam, approximately 3 miles upstream from the project, retards major storm flows and limits the discharge at the dam to a maximum of 1,800 cfs until such time as the overflow spillway is reached. Scatter Wash, the remaining major watershed and areas below Adobe Dam contribute to the flow in Skunk Creek. The 100 year and 10 year flood flows for Skunk Creek at Union Hills Drive Bridge are approximately 10,000 cfs and approximately 3,500 cfs, respectively."

After Page SP-23 insert Section 36.

"36. CONDUIT

"Section 914 is additional to the Arizona Department of Transportation "Standard Specifications for Road and Bridge Construction."

914-1 DESCRIPTION: The work under this section shall consist of either the furnishing and installation or the installation only of conduit for utilities through the bridge.

914-2 MATERIALS: Materials shall be as indicated on the Plans or as furnished.

914-3 CONSTRUCTION REQUIREMENTS: The Contractor shall place the conduit at the locations and to the limits shown on the sketch attached to this Addendum. Splicing shall be accomplished as shown on the Plans. If not shown, splices are to be accomplished by the recommended procedures for the type of material being used so as to produce a water-tight seal. Joints adequate for expansion and contraction shall be provided at each abutment.

914-4 METHOD OF MEASUREMENT:

914-4.01 Conduit (Furnish and Install). Conduit (furnish and install) will be measured by the linear foot for the size and type of conduit specified and in accordance with the lengths given in the Project Plans.

914-4.02 Conduit (Install Only). Conduit (install only) will be measured by the linear foot for the size and type of conduit specified and in accordance with the lengths given in the Project Plans.

914-5 BASIS OF PAYMENT:

914-5.01 Conduit (Furnish and Install). The contract price for conduit shall include full compensation for furnishing and installing conduit in the quantities, types and sizes shown on the Plans. Any required splicing will not be paid for separately but shall be included in the work. The accepted quantity measured as provided above, will be paid for at the contract unit price.

914-5.02 Conduit (Install Only). The contract price for conduit shall include full compensation for installing conduit in the quantities, types and sizes shown on the Plans. Any required splicing and connection of supplied appendages will not be paid for separately but shall be included in the work. The accepted quantity, measured as provided above, will be paid for at the contract unit price.

After Page SP-23 insert Section 37.

"37. BRIDGE CONDUIT INSTALLATIONS

"MOUNTAIN BELL TELEPHONE CONDUITS: Relative to installation and inspection contact John Rogers, 238-2605.

"There will be four (4) 4-inch fiberglass conduits/A.O. Smith Red Thread T.A.B. F.R.E., George Ingram, Inc.) furnished and installed, with 5-inch fiberglass sleeves at abutments and bridge partitions, including expansion joints, supported by inverted fiberglass hanger assemblies at 12 foot maximum spacing secured to drilled and set Red Head NC threaded bolts.

"ARIZONA PUBLIC SERVICE COMPANY ELECTRIC CONDUIT: Relative to installation and inspection contact Ernie Cota, 271-3576.

"There will be four (4) 5-inch x 3/16 wall with ring seal fiberglass conduits (General Electric F.R.E., Abbott & Associates, Phoenix) furnished and installed with 6-inch fiberglass sleeves at abutments and bridge partitions, including expansion joints, supported by inverted fiberglass hanger assemblies at 10 foot maximum spacing secured to drilled and set Red Head NC threaded bolts.

"ARIZONA PUBLIC SERVICE GAS CONDUIT: Relative to installation and inspection contact Ernie Cota, 271-3576.

"There will be one (1) 8-inch steel standard wall 0.322 x 8-5/8 OD API 5L Grade B or API 5L-X42 conduit furnished and installed at each abutment wall and under the approach slab for installation of a future 4-inch gas line.

"STORER TV CONDUIT: Relative to installation and inspection contact Vince Featherly, 938-0777, Ext. 304.

"There will be two (2) 4-inch PVC Schedule 40 conduits furnished and installed at each abutment wall for installation of future TV conduit and cables."

After Page SP-23 insert Section 38.

"38. AVAILABLE MATERIAL

"Stockpiled material, in excess of 10,000 cy, from Arrowhead Ranch Infrastructure projects will be available for use in construction of the Skunk Creek Channel embankments. Designated locations are indicated on the sketch attached to this Addendum."

PROPOSAL

Delete Pages P-1 through P-4 and insert therefor the new Proposal Pages P-1 through P-5 attached to this Addendum. Items have been added to the tabulations and some quantities corrected.

PLANS

On Sheet 1 of 34 in the INDEX delete the Sheet Number "2" and insert therefor the Sheet Numbers "2A" and "2B." The Plan set will now consist of thirty-five (35) sheets.

Delete Detour Sheets 2 through 6 from the Plans and insert therefor half-size Phase I Sheets 2A and 2B (new Plan and Profile Drawings) and Sheets 3 through 6 (which have new stationing) attached to this Addendum.

On Sheets 2A and 7 existing Union Hills Drive paving (2 inch thick x 28 feet wide) at the mid-section, Sta. 175+00 to 178+50 and at the bridge and channel, Sta. 184+50 easterly to 193+50, the new channel right-of-way line, shall be removed and disposed of at the Glendale sanitary landfill located at 111th Avenue and Glendale Avenue. Payment for paving removal will be by the square yard under the existing paving removal item listed in the bid tables for detour and channel, respectively.

On Sheet 7, the indicated new sewer and relocated waterline are to be installed under another Arrowhead Ranch Infrastructure project and therefore are not in this contract.

Underground gas and telephone and the APS power line are being detailed for relocation by October 1, 1984. Sewer installation and waterline relocation are planned for installation by October 31, 1984.

Delete Sheet 8 of 34 and insert therefor half-size Sheet 8-Rev. 1, attached to this Addendum. The existing ground contours have been redrawn in proper relation to Union Hills Drive and the new bridge.

On Sheet 8, on the small location plan, indicate between the Union Hills Detour and the Bridge Construction Site, Designated Stockpile Areas for excess material from other Arrowhead Ranch Infrastructure Projects, for Contractors use in the work.

On Sheet 8 under Construction Details and on Sheet 13, Section C-C, the expansion joint shall be of waterproof strip seal type across the street and ADOT Std. RJ-3 across the sidewalks. The median joint may remain open. Transverse joints in the raised median shall be at 20 foot intervals. Acceptable deck joint assembly manufacturers are listed on a separate page attached to this Addendum. Installation of weatherproof strip seal and RJ-3 at sidewalks are detailed on the detail of Deck Joints attached to this Addendum.

Relative to the Bridge Plan Sheets 8 to 24, utility conduits are to be installed through the bridge and abutments in accordance with the Special Provisions and installation details to be provided during construction at the locations indicated in the Utility Location Detail sketch and Alternate Fiberglass Duct Installation Detail attached to this Addendum.

On Sheet 9 in the LONGITUDINAL SECTION: WESTBOUND BRIDGE, after the words "Joint Detail Sheet" indicate the Number "13".

On Sheet 12 in MID-SECTION ABUTMENT 2, the 16 foot wall is to be ADOT Std. RW-2, Case II, 11-feet in height.

Relative to Sheets 12 and 20 regarding retaining wall details the elevations at the top of retaining wall bases are provided on a separate page attached to this Addendum.

On Sheet 13 in Section CC add the note: Concrete approach slab base shall be 16 inches of ABC. Special backfill at abutments and measurement shall be in accordance with ADOT Drawing No. C-13.40. Compaction shall be in accordance with ADOT Standard Specifications, for structural backfill at bridge approaches. At the exposed edge of each approach slab a 12-inch by 4-inch timber header and earth fill shall be placed to protect the concrete approach slab during current and future construction until street paving is placed.

On Plan Sheet 25 of 34, add 24-inch, Class III, storm drain pipe 70 feet south of center line, Union Hills Drive from approximately Sta. 187+60 to 189+10. See sketch, Storm Drain Detail - SW Corner of Bridge, attached to this Addendum.

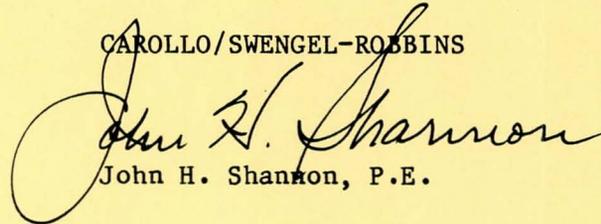
On Sheets 25, 27, 33 and 34, delete the words "& borrow" from the indicated easement note on the north and south side of the new channel easement. No borrow may be taken from these construction easements. There are sewer, water, telephone and gas lines along the north line of the new channel easement from Sta. 184+50 on existing Union Hills Drive

to 59th Avenue (some at shallow depth). Should stockpiled material from other Arrowhead Infrastructure projects be insufficient to complete the bridge and channel improvements the contractor shall furnish it.

On Sheet 28 of 34, see detail for RGRCP and channel inlet, make pipe ASTM, C-76, Class III; establish the indicated outlet invert $4\pm$ feet horizontally from the top of slope; delete "2.5-feet" for H and insert therefor "2.75 feet"; and, match overflow crest, level wingwall to wingwall, to the interior crown of the pipe.

Delete Sheet 30 of 34 from the Plans and insert therefor half-size Sheet 30-Rev. 1, attached to this Addendum. The cross section at the bridge site has been revised.

CAROLLO/SWENGEL-ROBBINS

A large, stylized handwritten signature in dark ink, appearing to read "John H. Shannon". The signature is written in a cursive style with a large initial "J".

John H. Shannon, P.E.

PROPOSAL

Place _____

Date _____

Proposal of _____

a Corporation organized and existing under the laws of the State of _____

_____ ; a partnership consisting of _____

_____ ; or an individual trading as _____

TO THE HONORABLE MAYOR AND COUNCIL
CITY OF GLENDALE
GLENDALE, ARIZONA

Gentlemen:

The undersigned hereby proposes and agrees to furnish any and all required labor, materials, construction equipment, transportation and services for the construction of:

Project No. A-845016, Arrowhead Ranch Infrastructure - Bridge and Channel Improvement: Union Hills Drive at Skunk Creek, in strict conformity with the Plans, Project Specifications and Contract Documents for the following unit prices:

- a. Extension of these unit prices on the basis of estimated quantities and the totaling of these extensions are for the purpose of comparing bids and making progress payments during construction. The mathematics of such extensions and totaling will be checked and corrected by the Department of Engineering before evaluating the bids, and the lowest of such corrected and checked totals will determine the lowest bid.
- b. * Indicates a contingent bid item for which installation is subject to direction of the Engineer during the construction period.
- c. The lump sum price bid shall be the sum of the totals for detour, channel and bridge construction as tabled on the following pages.

PROPOSAL

UNION HILLS DRIVE DETOUR TO 59TH AVENUE
STATION 2+79 TO 27+50

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
1	Remove Existing Paving	SY	1,100	\$ _____	\$ _____
2	Roadway Excavation	CY	400	\$ _____	\$ _____
3	Borrow Excavation	CY	2,400	\$ _____	\$ _____
4	Aggregate Base Course	TON	2,320	\$ _____	\$ _____
5	Prime Coat	GAL	3,550	\$ _____	\$ _____
6	A. C. Paving	TON	810	\$ _____	\$ _____
7*	MH F&C Adjust	EA	1	\$ _____	\$ _____
8*	Survey Mon. 120-1	EA	2	\$ _____	\$ _____
9	Traffic Control	LS	1	\$ _____	\$ _____
10	Miscellaneous	LS	1	\$ _____	\$ _____
Total				\$ _____	

*Indicates contingent item

PROPOSAL

SKUNK CREEK CHANNEL - UNION HILLS DRIVE AND 59TH AVENUE
STATION 83+00 TO 113+16

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
1	Clearing and Grubbing	LS	1	\$ _____	\$ _____
2	Remove Existing Paving	SY	2,800	\$ _____	\$ _____
3	Channel Excavation	CY	39,250	\$ _____	\$ _____
4	Channel Embankment	CY	46,530	\$ _____	\$ _____
5*	Channel Inlet and Pipe	LS	1	\$ _____	\$ _____
6*	24-Inch Storm Drain	LF	150	\$ _____	\$ _____
7	Gabion Riprap	CY	12,370	\$ _____	\$ _____
8	Wire Mesh Protection	SY	12,050	\$ _____	\$ _____
9*	Constr. Easement Grading	LS	1	\$ _____	\$ _____
10	Miscellaneous	LS	1	\$ _____	\$ _____
Total				\$ _____	

*Indicates contingent item

PROPOSAL

UNION HILLS DRIVE BRIDGE AT SKUNK CREEK
STATION 184+50 TO 191+00

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
1	Mobilization	LS	1	\$ _____	\$ _____
2	42-Inch Diameter Drilled Shafts	LF	1,140	\$ _____	\$ _____
3	Structural Excavation	CY	1,090	\$ _____	\$ _____
4	Structural Backfill	CY	3,560	\$ _____	\$ _____
5	Concrete 3,000 psi	CY	280	\$ _____	\$ _____
6	Concrete 3,500 psi	CY	740	\$ _____	\$ _____
7	Concrete 4,500 psi	CY	2,880	\$ _____	\$ _____
8	Reinforcing Steel	LB	944,000	\$ _____	\$ _____
9	Deck Joint Assembly	LF	430	\$ _____	\$ _____
10	4-in. PVC Sch. 40	LF	240	\$ _____	\$ _____
11	4-in. Fiberglass Conduit	LF	1,600	\$ _____	\$ _____
12	5-in. PVC Conduit	LF	1,860	\$ _____	\$ _____
13	8-in. Stl. Conduit	LF	70	\$ _____	\$ _____
14	Prestressing and Grout	LS	1	\$ _____	\$ _____
15	Pedestrian Handrail	LF	800	\$ _____	\$ _____
16	Miscellaneous	LS	1	\$ _____	\$ _____
Total				\$ _____	

The Lump Sum Bid Price for all work, complete in place, on this project is

_____ Words
 _____ Dollars
 _____ Cents \$ _____

NOTE: IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS SHALL GOVERN.

The undersigned hereby declares that he has visited the site(s) and has carefully examined the Project Specifications and Contract Documents relating to the work covered by the above bid or bids.

Upon receipt of notice of the acceptance of this bid, we will execute the formal Contract attached within ten (10) days, and will deliver a one hundred percent (100%) Performance Bond for the faithful performance of this Contract, together with a one hundred percent (100%) Payment Bond.

The bid security attached, without endorsement, in the sum of five percent (5%) of the total bid, is to become the property of the City of Glendale, Glendale, Arizona, in the event the Contract and Bonds are not executed within the time set forth, as liquidated damages for the delay and additional work caused thereby.

The undersigned has checked carefully all the above figures and understands that the City of Glendale, Arizona will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned understands that the Mayor and Council of the City of Glendale, Arizona reserves the right to reject any or all bids or to waive any informalities in the bid.

Respectfully submitted,

Contractor

By _____

(Complete Business Address)

SEAL - If Bidder
a Corporation

Bidder shall signify receipt of all Addenda here (if any):

CONSTRUCTION NOTES

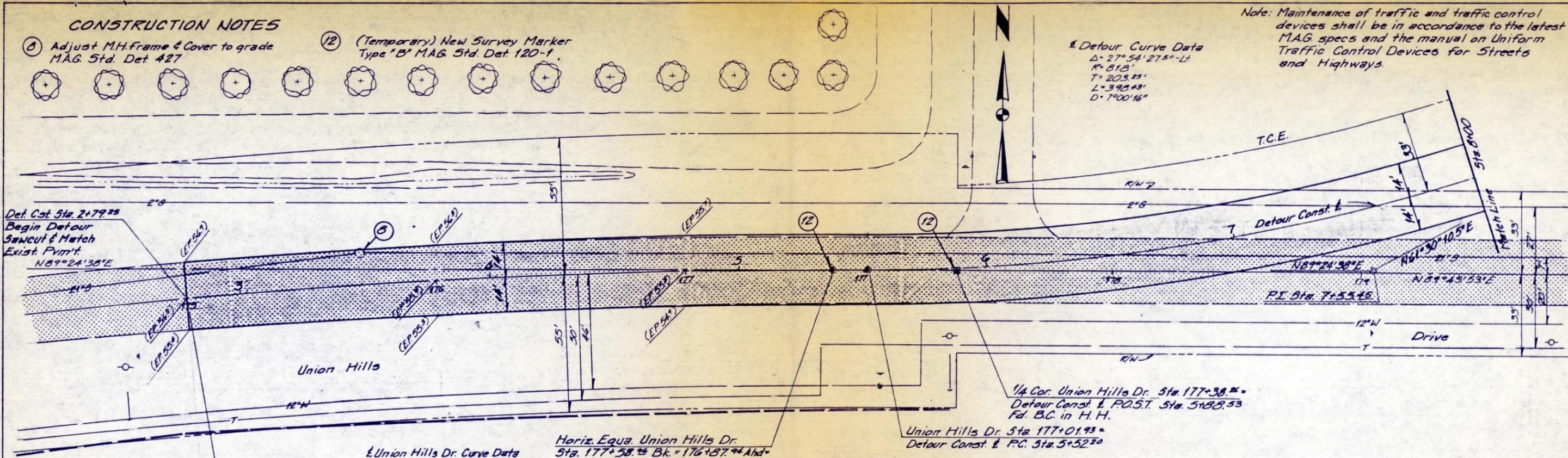
① Adjust M.H. Frame & Cover to grade
M.A.G. Std. Det. 427

⑫ (Temporary) New Survey Marker
Type "B" M.A.G. Std. Det. 120-1

Detour Curve Data
 $\Delta = 27^\circ 54' 27.5'' - L$
 $R = 513'$
 $T = 203.25'$
 $L = 393.43'$
 $D = 790.16''$

Note: Maintenance of traffic and traffic control devices shall be in accordance to the latest M.A.G. specs and the manual on Uniform Traffic Control Devices for Streets and Highways.

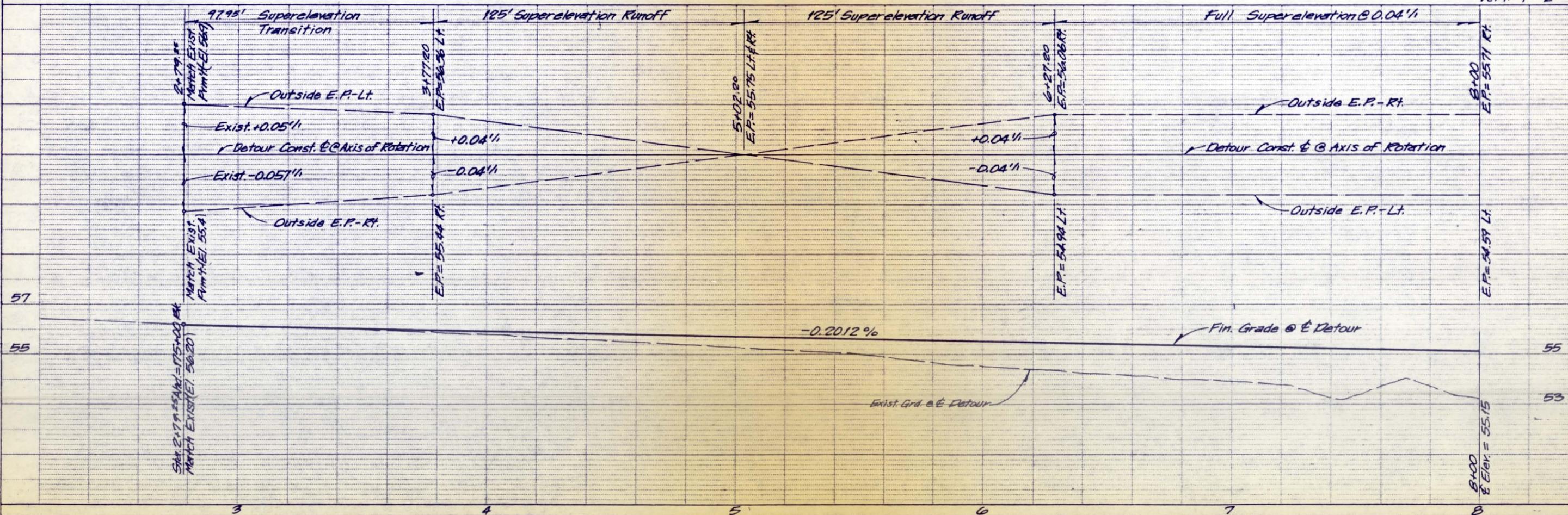
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BY	
SUBMITTED	
PLOTTED	
ALIGNMENT CHECKED	
RT. OF WAY CHECKED	
PLAN	
NOTE BOOK	
NO.	



**PHASE I
UNION HILLS DRIVE DETOUR**

Scale: Horiz. 1" = 20'
Vert. 1" = 2'

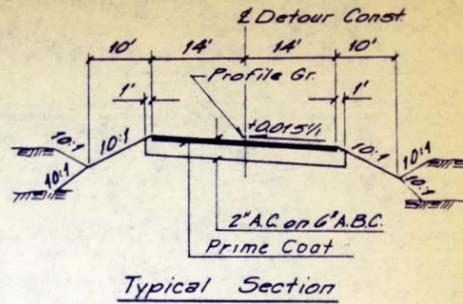
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STRUCTURE LOCATIONS CHECKED	
PROFILE	
NOTE BOOK	
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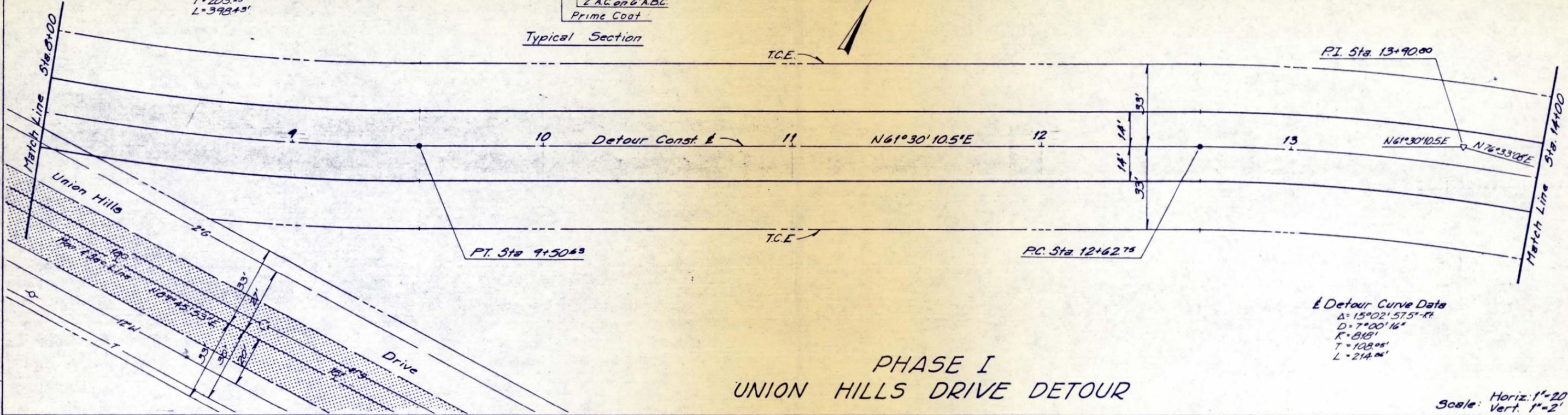
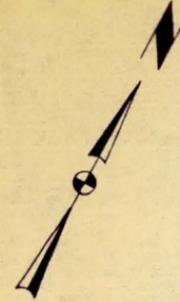
PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED CHECKED	
	BY	
	NOTE BOOK	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	BY	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK	
	NO.	

& Detour Curve Data
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 $D = 7^\circ 00' 16''$
 $R = 818'$
 $T = 203.25'$
 $L = 398.43'$



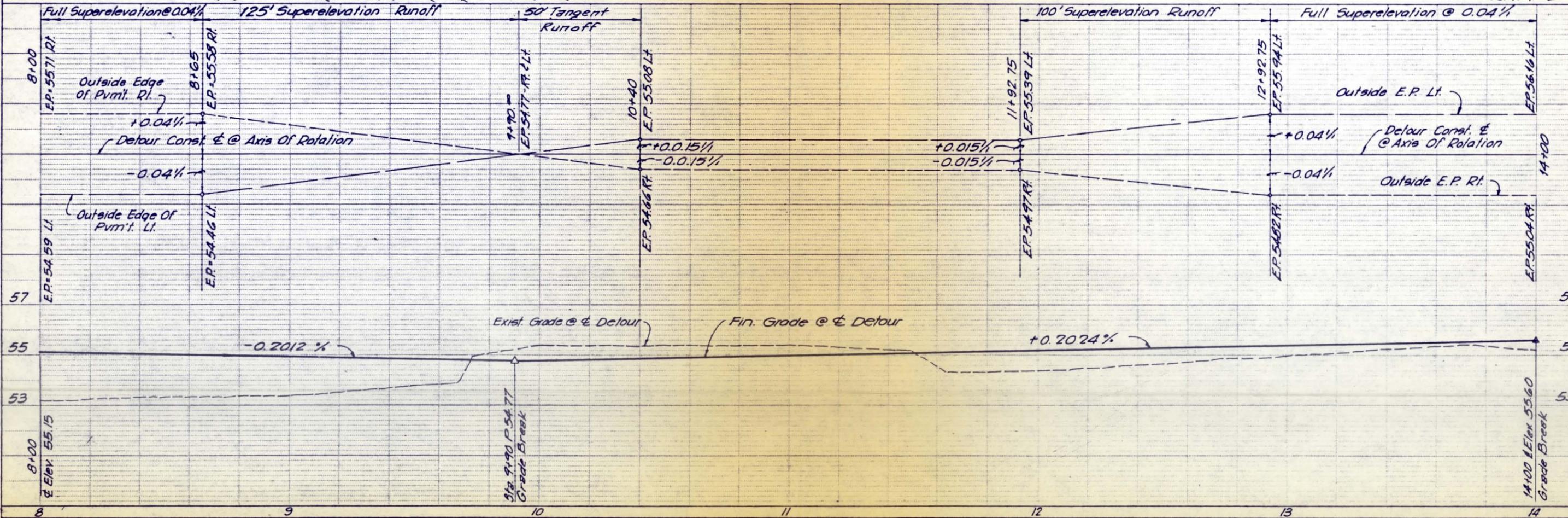
T.C.E.



& Detour Curve Data
 $\Delta = 15^\circ 02' 57.5''$
 $D = 7^\circ 00' 16''$
 $R = 818'$
 $T = 108.05'$
 $L = 214.06'$

PHASE I UNION HILLS DRIVE DETOUR

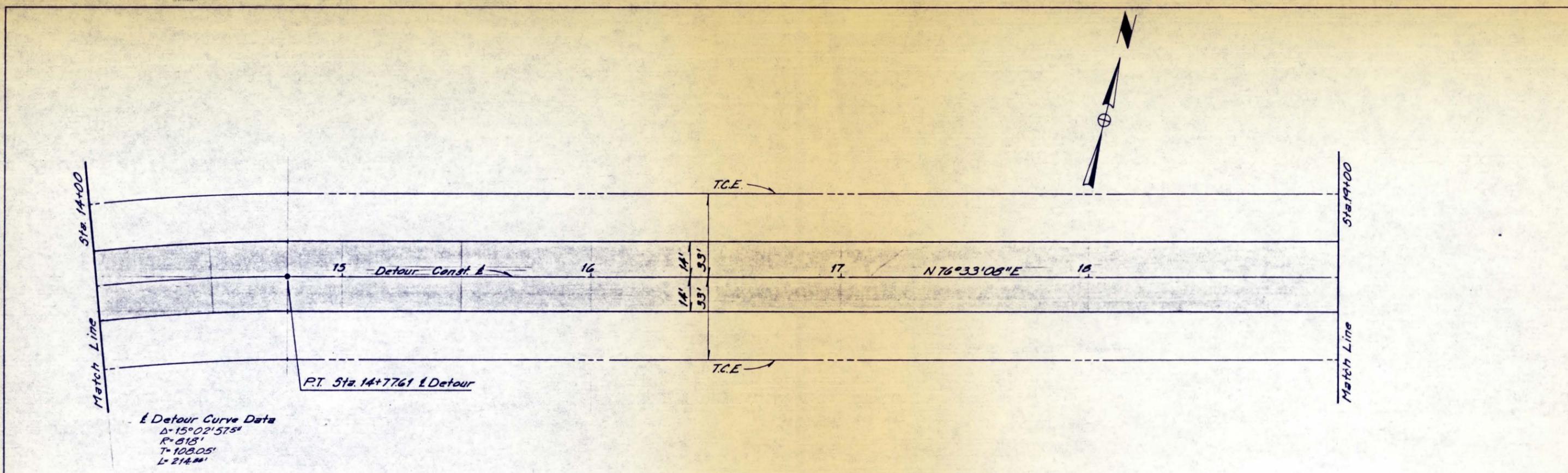
Scale: Horiz. 1"=20'
Vert. 1"=2'



3 70

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED	
	CHECKED	
	NO. OF WAYS CHECKED	
	NO.	

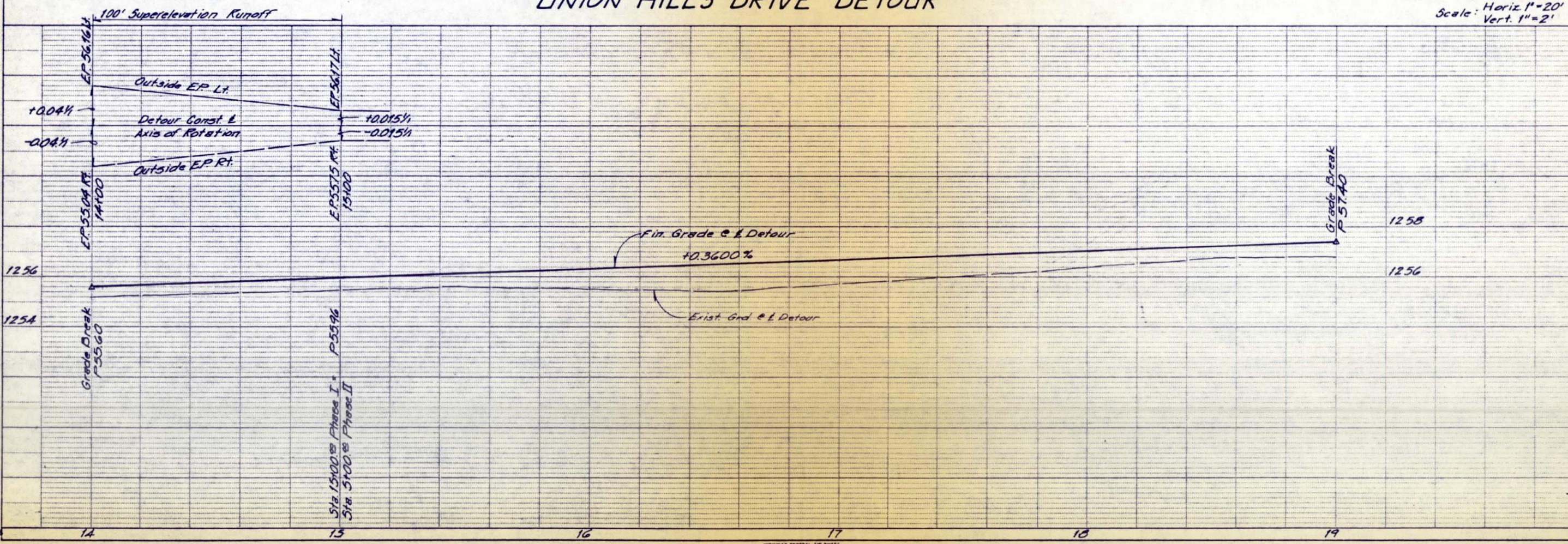
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	CHECKED	
	NO. OF WAYS CHECKED	
	NO.	



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 $L = 214.88'$

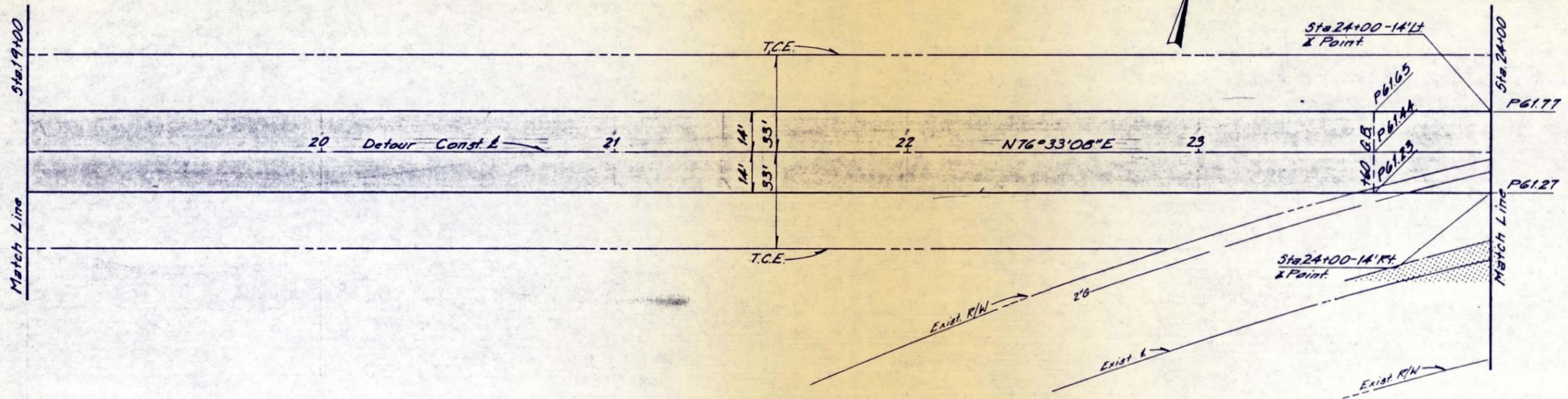
PHASE I UNION HILLS DRIVE DETOUR

Scale: Horiz. 1" = 20'
Vert. 1" = 2'



AUG 22 1964

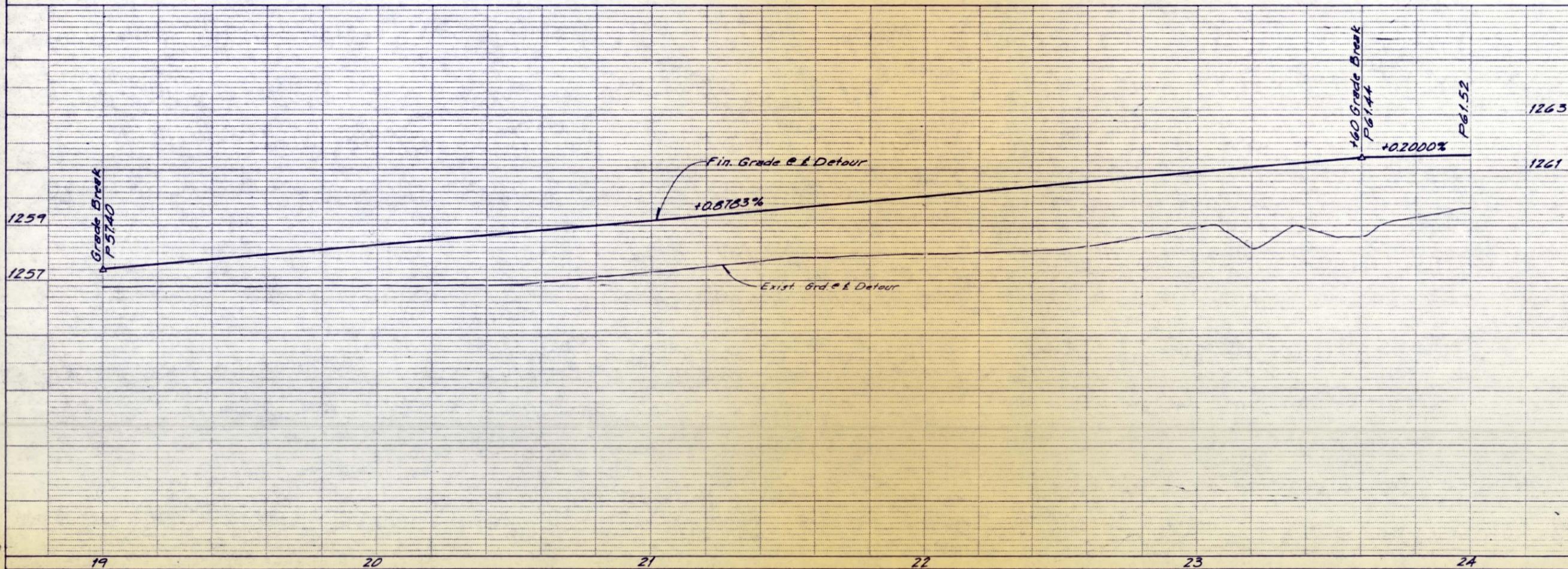
PLAN	DATE
BY	
REVISIONS	
1. SURVEYED	
2. ALIGNED	
3. CHECKED	
4. BY	
5. DATE	
6. NO.	



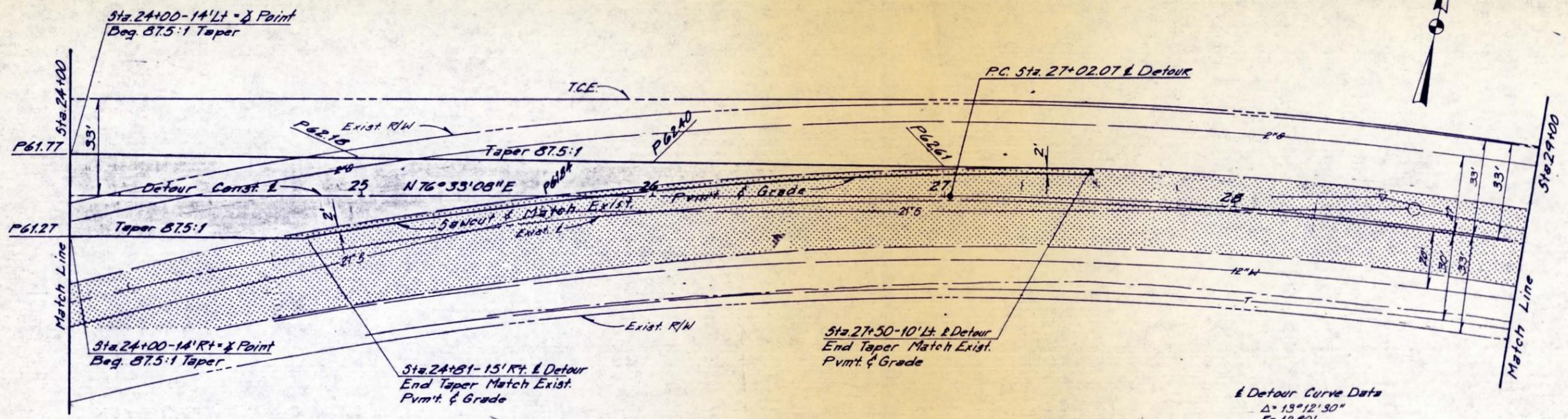
PHASE I
UNION HILLS DRIVE DETOUR

Scale: Horiz. 1"=20'
Vert. 1"=2'

PROFILE	DATE
BY	
REVISIONS	
1. SURVEYED	
2. GRADES CHECKED	
3. PLOTTED	
4. BY	
5. DATE	
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PLAN	SURVEYED	DATE
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	ALIGNMENT CHECKED	
	RT OF WAY CHECKED	
	NOTE BOOK	
	NO.	

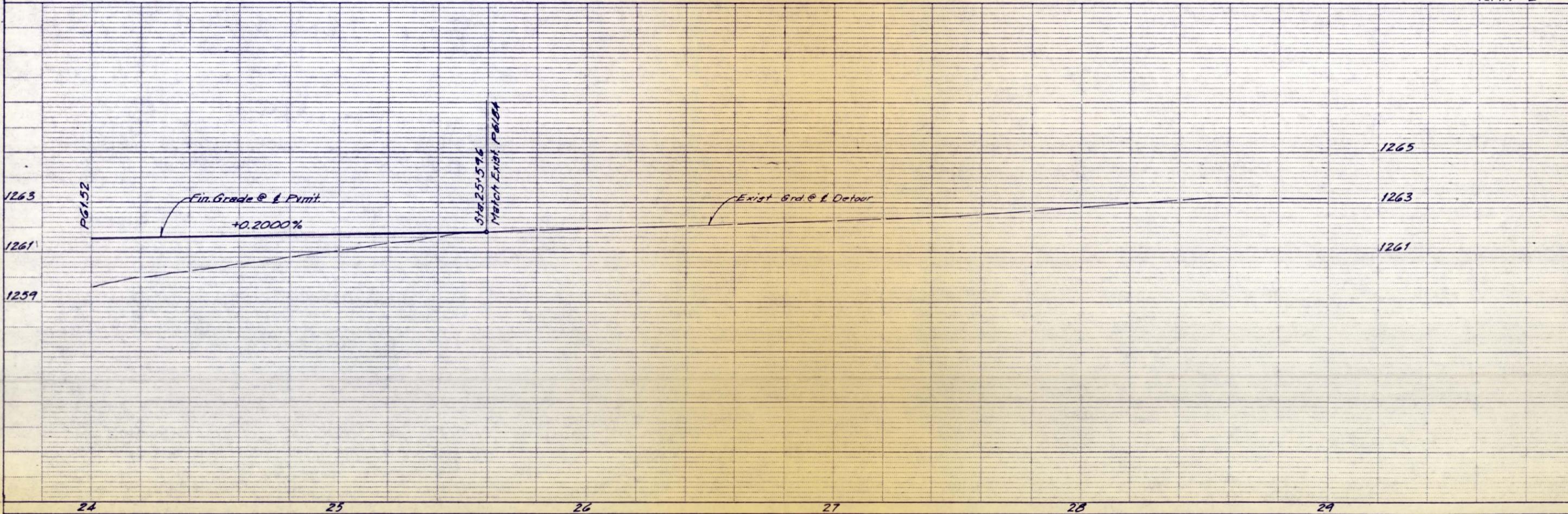


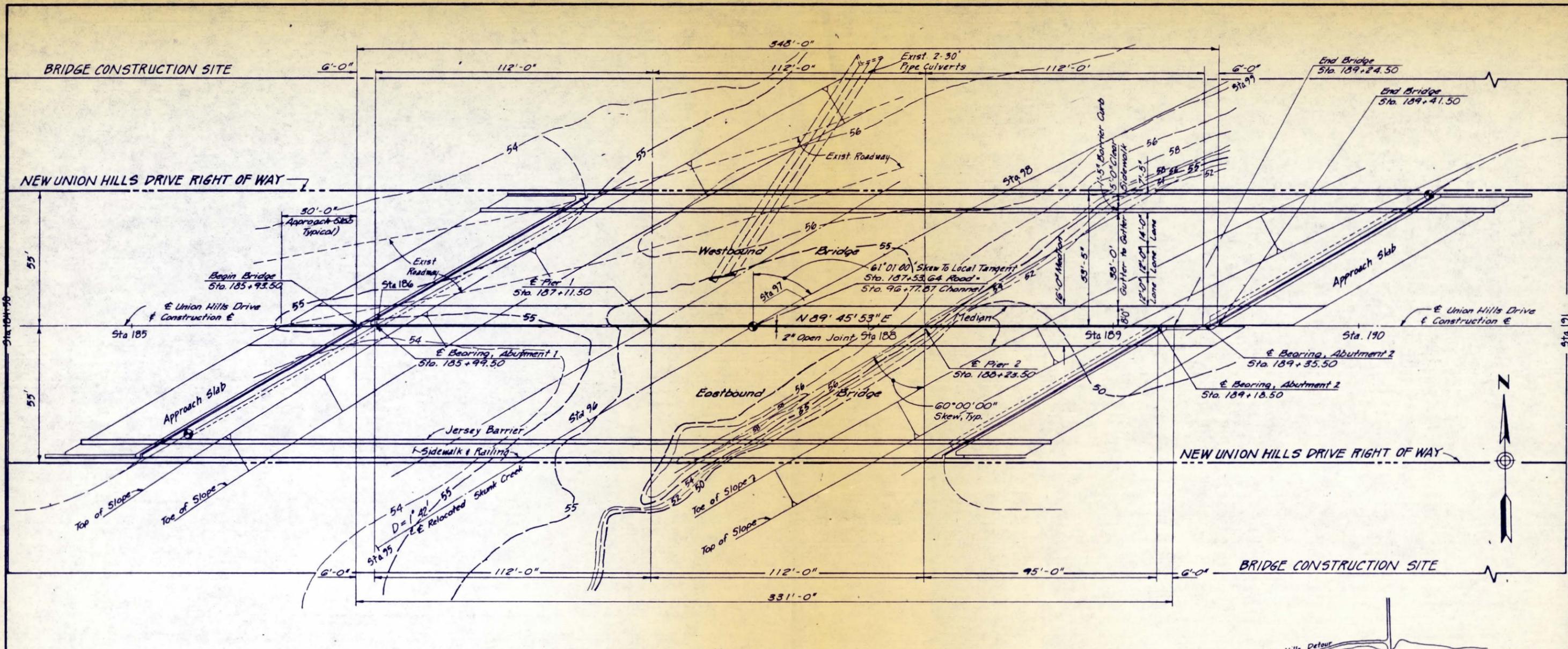
Detour Curve Data
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 $T = 143.20'$
 $L = 295.05'$

PHASE I UNION HILLS DRIVE DETOUR

Scale: Horiz. 1"=20'
Vert. 1"=2'

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK	
	NO.	

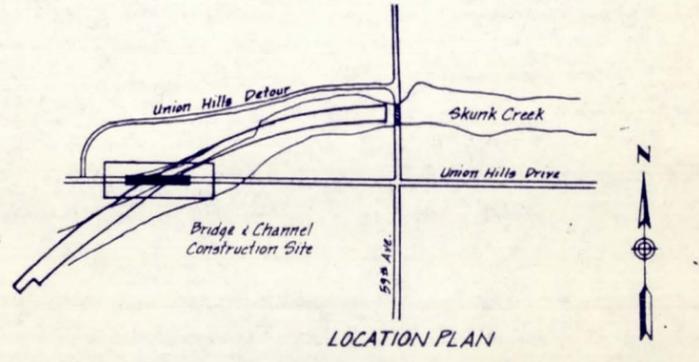




PLAN

NEW THREE SPAN CONTINUOUS CAST-IN-PLACE POST-TENSIONED CONCRETE BOX GIRDER BRIDGES

Scale: 1" = 20'



LOCATION PLAN

GENERAL NOTES

Construction Specifications
 The Arizona Department of Transportation 1982 "Standard Specifications for Construction of Highways, Streets and Bridges."
 Special Provisions and Supplemental Specifications.

Design Specifications
 AASHTO Standard Specifications for Highway Bridges, 1977, revised to date.

Design Loads
 Dead Load: Dead load includes allowance of 25 pounds per square foot for future wearing surface.
 Live Load: HS20-44.
 Earthquake: Seismic risk zone 2.
 Other Loads: As specified by AASHTO.

Materials and Unit Stresses
 All concrete shall be Class S unless otherwise noted.
 Reinforcing steel shall conform to ASTM 615 Specifications.
 Bar size No. 6 and smaller shall be designed as Grade 40 and furnished as Grade 40 or Grade 60. Bar size No. 7 and larger shall be Grade 60.

Superstructure	$f'_c = 4,500$ psi
Deck Slab (transverse design)	$f'_c = 1,400$ psi
Pier Columns and Abutments	$f'_c = 3,500$ psi
Drilled Caissons	$f'_c = 4,000$ psi
All other concrete	$f'_c = 3,000$ psi
Grade 40 Reinforcing Steel	$f_s = 20,000$ psi
Grade 60 Reinforcing Steel	$f_s = 24,000$ psi
Prestressing Steel	$f'_s = 270,000$ psi
(1/2" diameter 7 Wire Strand)	

Construction Details

Barriers and curbs shall be constructed after the superstructure has been prestressed and the forms removed. Dimensions shall not be scaled from drawings. Chamfer all exposed corners of concrete 3/4" unless otherwise noted.

All dimensions for reinforcing steel shall be to center of bars, unless noted otherwise.
 All reinforcing steel shall have a 2" clear cover, unless noted otherwise.

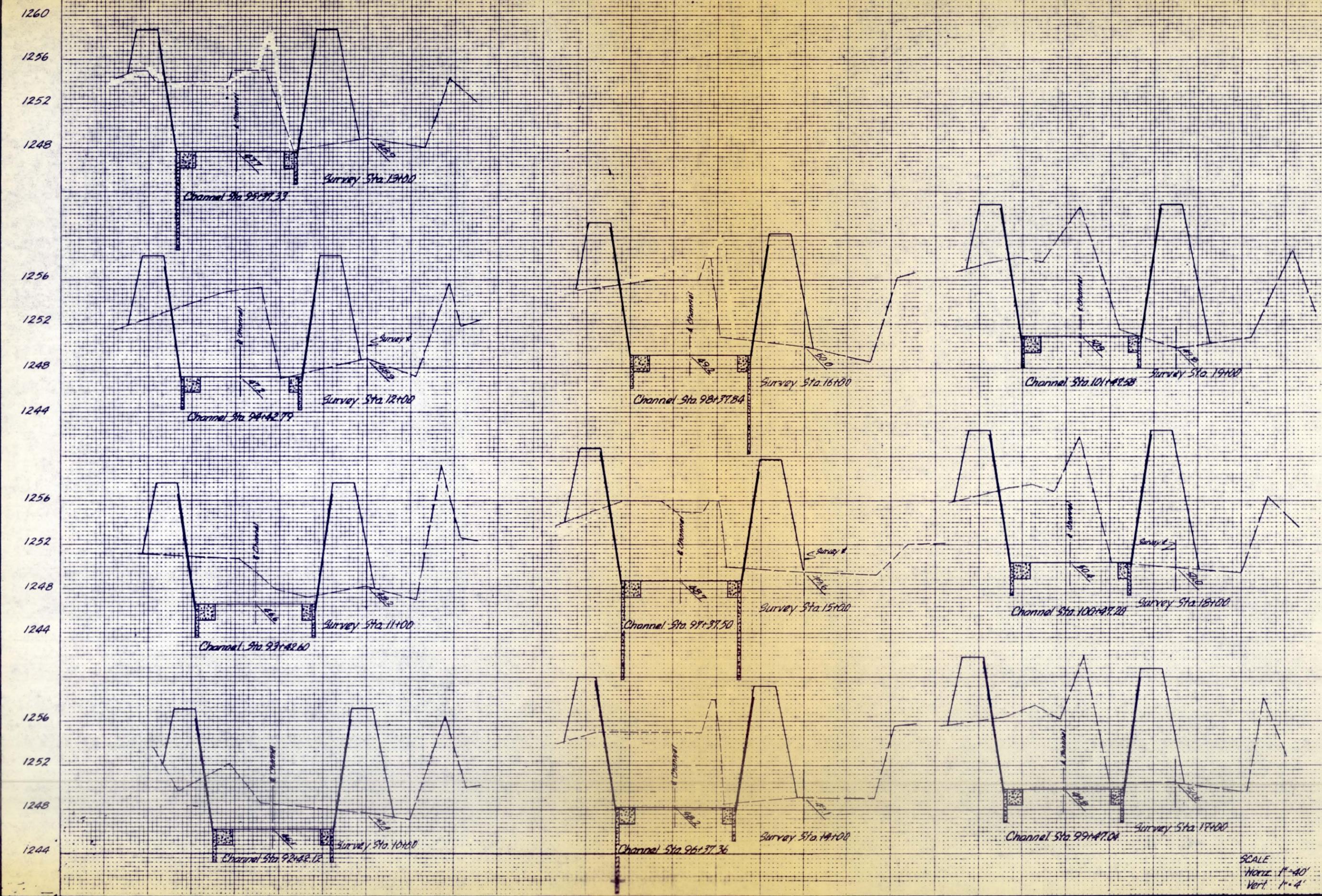
Expansion joint shall be waterproof type. Use strip seal joints with 3" total movement capacity, such as Acme AS300 Type III.

All exposed concrete surfaces shall be finished in accordance with Arizona Highway Department Standard Specification 502-3.13, Finishing Formed Concrete unless otherwise noted. See ADOT Std. C-13.12 for Structural Excavation and Special Backfill Limits.

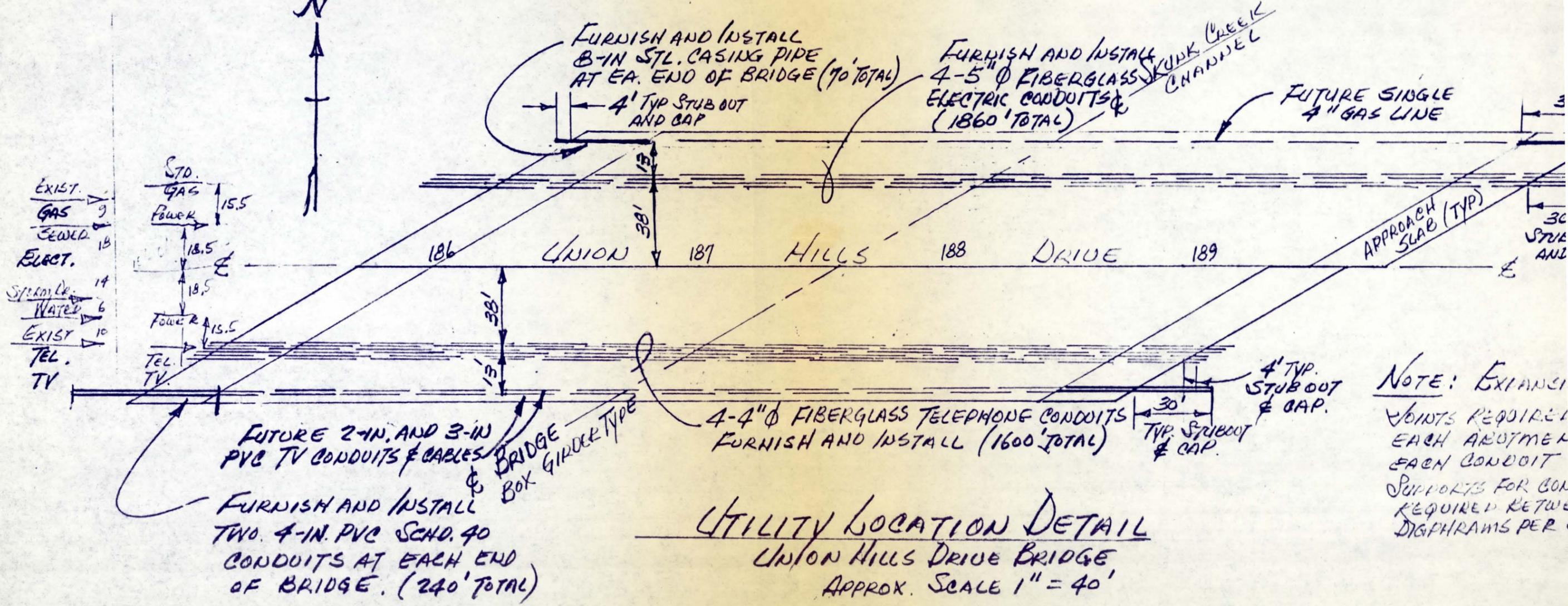
Caisson Note
 Structural Excavation and caisson concrete shall be to neat lines shown below ground.
 Concrete shall be poured against undisturbed material immediately after excavation.

⊙ Indicates as drilled boring location.

LOCATION PLAN



SCALE
 Horiz. 1"=40'
 Vert. 1"=4'



FURNISH AND INSTALL
8-IN STL. CASING PIPE
AT EA. END OF BRIDGE (70' TOTAL)

4' TYP. STUB OUT
AND CAP

FURNISH AND INSTALL
4-5" Ø FIBERGLASS
ELECTRIC CONDUITS &
(1860' TOTAL)

SKUNK CREEK
CHANNEL

FUTURE SINGLE
4" GAS LINE

186 UNION HILLS DRIVE 187 188 189

APPROACH
SLAB (TYP)

FUTURE 2-IN. AND 3-IN
PVC TV CONDUITS & CABLES
FURNISH AND INSTALL
TWO 4-IN. PVC SCHD. 40
CONDUITS AT EACH END
OF BRIDGE. (240' TOTAL)

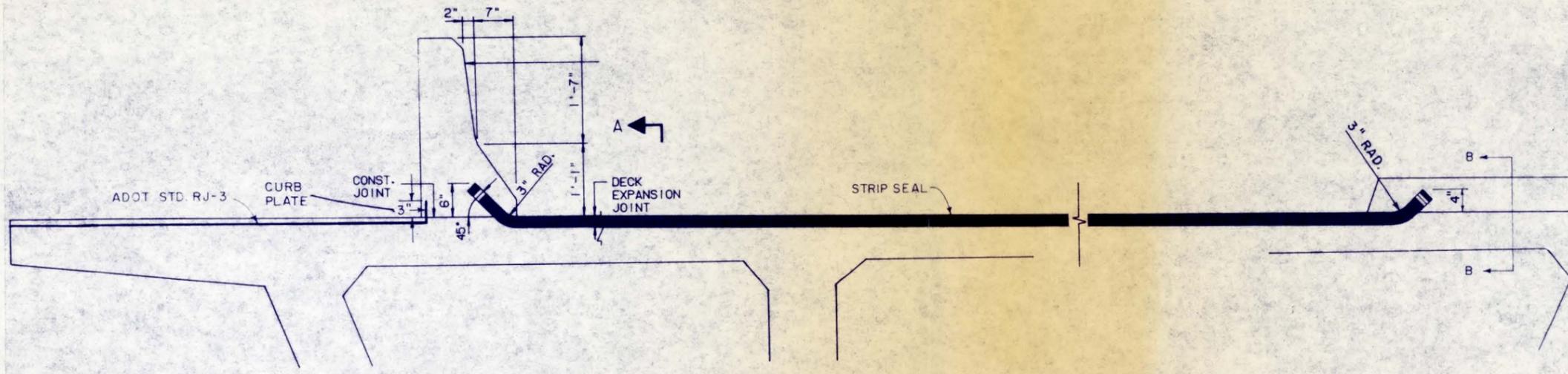
4-4" Ø FIBERGLASS TELEPHONE CONDUITS
FURNISH AND INSTALL (1600' TOTAL)

30'
TYP. STUB OUT
& CAP.

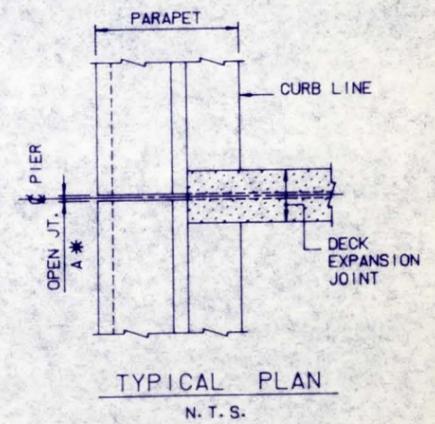
4' TYP.
STUB OUT
& CAP.

UTILITY LOCATION DETAIL
UNION HILLS DRIVE BRIDGE,
APPROX. SCALE 1" = 40'

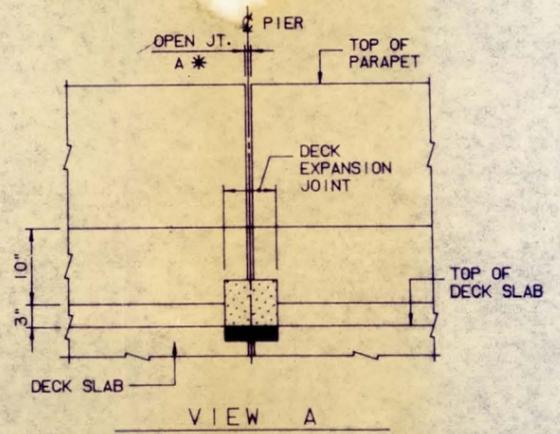
NOTE: EXPANDED
JOINTS REQUIRED
EACH ANOTHER
EACH CONDUIT
SUPPORTS FOR CON
REQUIRED BETWEEN
DIAPHRAGMS PER



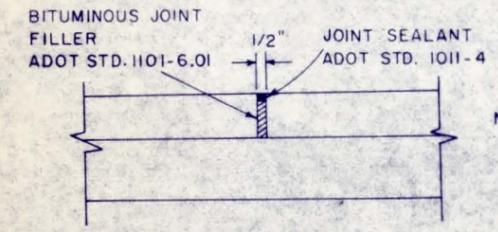
TYPICAL SECTION AT STANDARD PARAPET



TYPICAL PLAN
N. T. S.



VIEW A



SECTION B-B
MEDIAN JOINT

NOTE: RAISED MEDIAN SHALL BE
POURED AFTER PRESTRESSING
OF DECK.

DECK JOINTS

PROJECT SPECIFICATIONS and CONTRACT DOCUMENTS

ARROWHEAD RANCH INFRASTRUCTURE

CITY OF GLENDALE

BRIDGE AND CHANNEL IMPROVEMENT

UNION HILLS DRIVE AT SKUNK CREEK

PROJECT NO. A-845016

GLENDALE, ARIZONA

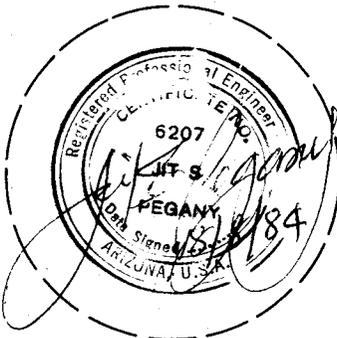
1984

DESIGN FIRMS

HNTB WADSWORTH, JENSEN & ASSOCIATES



F.C. CIVIL ENGINEERING COMPANY



CAROLLO/SWENGEL-ROBBINS

PROJECT MANAGEMENT

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NOTICE TO CONTRACTORS

Sealed bids will be either mailed to the City of Glendale Engineering Department, 7022 North 58th Drive, Glendale, Arizona, 85301, or hand delivered to the City Engineering Department, 6402 West Glendale Avenue, Glendale, Arizona, no later than 2:00 P.M., Friday, August 31, 1984, for furnishing all plant, material, equipment and labor, and to complete construction of: Project No. A-845016:

Arrowhead Ranch Infrastructure - Bridge and Channel Improvement:
Union Hills Drive at Skunk Creek

At that time, the bids will be publicly opened and read aloud in the Engineering Department Conference Room, 6402 West Glendale Avenue, Glendale, Arizona. Any bid received after close of bids will be returned unopened.

Plans, Project Specifications and Contract Documents may be examined, and copies may be obtained at Carollo/Swengel-Robbins c/o John Carollo Engineers, 1314 North Third Street, Suite 300, Phoenix, Arizona 85004. A nonrefundable charge of \$30.00 shall be made for each set of Plans and Specifications issued from this office.

Each bid shall be in accordance with the Plans, Project Specifications and Contract Documents, and shall be made out on the Bid Form(s) included in the Project Specifications and Contract Documents Book; shall be accompanied by a certified or cashier's check or bid bond for five percent (5%) of the amount of the bid, made payable to the order of the City of Glendale, Arizona. The proposal guarantees of all but the three lowest qualified bidders will be returned immediately following the opening and checking of Proposals. The Proposal guarantees of the three lowest qualified bidders will be returned immediately after the Contract Documents have been executed.

Certified or cashier's checks, or bid bond, will be given as a guarantee that the successful bidder will enter into the contract if awarded him and shall be declared forfeited as liquidated damages if said bidder refuses to enter into said contract after being requested to do so by the City of Glendale, Arizona.

The City of Glendale reserves the right to reject any or all bids or waive any informality in a bid.

The City of Glendale is an equal opportunity employer, and minority and women's business enterprises are encouraged to submit bids on this project.

CITY OF GLENDALE, ARIZONA

By:
City Manager

Dated:
Published:

Project No. A-845016

SN-1.

SPECIAL NOTICE

BIDDER'S ATTENTION IS CALLED TO THE FACT THAT NO BID IS COMPLETE WITHOUT THE RETURN OF THIS BOOK OF PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS. BIDS WILL BE RETURNED UNOPENED IF NOT SUBMITTED PROPERLY SEALED.

INFORMATION FOR BIDDERS

1. PROPOSAL: Bids to receive consideration shall be made in accordance with the following instructions:

Before submitting a bid, bidders shall carefully examine the Plans and Project Specifications and Contract Documents, visit the site of the work, fully inform themselves as to all existing conditions and limitations, and shall include sums in the bid covering the cost of each item included in the contract.

Bids shall be properly executed upon the proposal form. Numbers shall be stated both in words and in figures, and the signatures of all persons shall be in longhand. The completed forms shall be without interlineations, alterations, or erasures. In case of a difference in written words and figures in a proposal, the amount stated in written words shall govern.

Bids shall not contain any recapitulations of the work to be done. Alternative proposals will not be considered unless called for. No oral, telegraphic, telephonic, or modified proposals will be considered.

Bids shall be delivered either to the office of the City Manager or the City Engineer, City of Glendale, on or before the day and hour set for the opening of bids in the "Notice to Contractors", as published. Bids shall be enclosed in a sealed envelope bearing the title of the work and the name of the bidder. It is the sole responsibility of the bidder to see that his bid is received in proper time.

2. BID SECURITY: Each proposal shall be accompanied by a certified check or bid bond acceptable to the Owner, in an amount equal at least to five percent (5%) of the proposal payable without condition to the Owner as a guarantee that the bidder, if awarded the contract, will promptly execute such contract in accordance with the proposal and in manner and form required by the Project Specifications and Contract Documents, and will furnish good and sufficient bond for the faithful performance of the same. The bid securities of the three (3) lowest bidders will be retained until the contract is awarded, or other disposition made thereof. The bid securities of all bidders, except the three (3) lowest, will be returned promptly after the canvass of bids.

3. WITHDRAWAL OF BID: Any bidder may withdraw his bid, either personally or by telegraphing or by written request, at any time prior to the scheduled closing time for receipt of bids.

4. LATE BIDS: Bids received after the scheduled closing time for receipt of bids, as contained in these documents, will be returned to the bidder unopened.

5. **AWARD OR REJECTION OF BIDS:** The contract will be awarded to the lowest and best qualified responsible bidder complying with these instructions and with the "Notice to Contractors". The City of Glendale, Arizona, however, reserves the right to accept or reject any or all bids if it may deem it best for the public good, and to waive any informality in the bids received. Award is tentatively scheduled for September 11, 1984.
6. **BIDDERS INTERESTED IN MORE THAN ONE BID:** No person, firm or corporation shall be allowed to make, file or be interested in more than one (1) bid for the same work unless alternate bids are called for. A person, firm, or corporation who has submitted a subproposal to a bidder, or who has quoted prices on materials to a bidder is not thereby disqualified from submitting a subproposal or quoting prices to other bidders.
7. **CONTRACT, BONDS AND INSURANCE:** The form of contract, which the successful bidder as Contractor will be required to execute, and the forms of bonds and insurance forms which he will be required to furnish are included in the Project Specifications and Contract Documents and should be carefully examined by the bidder. The contract, bonds and insurance form will be executed in four (4) original counterparts.
8. **INTERPRETATION OF PLANS, PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS:** If any person contemplating a bid for proposed contract is in doubt as to the true meaning of any part of the Plans, Project Specifications or other proposed Contract Documents, or finds discrepancies in or omissions from the Plans, Project Specifications and Contract Documents, he may submit to the Department of Engineering a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Questions received less than four (4) working days before the bid opening time shall not be answered. Any interpretation or correction of the proposed Documents will be made only by Addendum, duly issued, and a copy of such Addendum will be mailed or delivered to each person receiving a set of such Documents. The City of Glendale will not be responsible for any other explanations or interpretations of the proposed Documents.
9. **ADDENDA:** Any addenda issued during the time of bidding, forming a part of the Documents received by the bidder for the preparation of his bid, shall be covered in the bid and shall be made a part of the contract.
10. **ASSIGNMENT OF CONTRACT:** No assignment by the Contractor of any contract to be entered into hereunder, or any part thereof, or of funds to be received thereunder by the Contractor, will be recognized by the Owner unless such assignment has had prior approval of the Owner and the Surety has been given due notice of such assignment in writing and has consented thereto in writing.

11. PLANS, PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS TO SUCCESSFUL BIDDER: The successful bidder may obtain seven (7) sets of Plans, Project Specifications and Contract Documents for this project from the Director of Engineering at no cost. The Contractor may purchase additional sets of Plans, Project Specifications and Contract Documents for Thirty Dollars (\$30.00) per set from Carollo/Swengel-Robbins.

12. TIME OF COMPLETION: The Contractor shall commence work under this project on or before the tenth day following receipt of the Notice to Proceed for that project from the City of Glendale and shall fully complete all work under the project within 210 consecutive calendar days from and including the date of receipt of such notice. The Contractor shall, at all times, during the continuance of the contract, prosecute the work with such force and equipment as is sufficient to complete all work within the time specified.

13. LIQUIDATED DAMAGES: Should the Contractor fail to complete the work under this contract within the time for completion stated in the preceding paragraph under "TIME OF COMPLETION", then the Contractor shall pay the City of Glendale, Arizona, liquidated damages for each and every calendar day of delay until the work is completed or accepted, subject to the provisions of Section 108.9, Standard Specifications for Public Works Construction, Maricopa Association of Governments.

14. CITY OF GLENDALE TRANSACTION PRIVILEGE TAX: The City of Glendale transaction privilege tax shall be waived under the conditions of this contract; however, the Contractor shall be responsible for reporting and payment of all other county, state or federal taxes.

15. PRE-BID CONFERENCE: A pre-bid conference will be held on August 23, 1984, at 10:00 A.M. in the Carollo/Swengel-Robbins field office, 19020 N. 59th Avenue, Glendale, Arizona. Bidders, Contractors and other interested parties are invited to attend this conference which will be conducted by the Owner and Engineer to answer any questions.

16. EXCESS MATERIAL: Removal and disposal of excess material from the work site will be the Contractor's responsibility. Broken concrete and asphalt may be delivered to the Glendale Sanitary Landfill located at 111th Avenue and Glendale Avenue. The prevailing regulations and fee schedule will not be waived for work under this project. All materials, to be disposed of at the landfill, shall be weighed and disposed of at the prevailing rate.

17. ELECTRICAL POWER AND WATER: The Contractor shall make his own arrangements for electric power and water. Subject to the convenience of the City, he may be permitted to connect to existing facilities where available, but he shall meter and bear the cost of such power or water. Fire hydrant meters may be obtained from the City of Glendale. Installation and removal of meters should be scheduled at least twenty-four hours in advance through the Field Operations Department at 931-5561. A \$325.00 deposit is required for each meter. The cost of the water is at the prevailing rate.

18. 5% PREFERENTIAL AFFIDAVIT: Qualifying Contractors shall complete and submit a notarized statement, to accompany the bid, that business taxes have been paid in the State of Arizona in accordance with the terms and provisions of the Preference Statute, ARS-34-241, 34-242 and 34-243. The "5% Preferential Affidavit" form is included following the Proposal for the purpose of qualification.

Contractors not completing affidavit will be presumed to not qualify for 5% preference in accordance with Statutes.

GENERAL CONDITIONS

1. GENERAL: By Ordinance No. 1110 New Series, the City of Glendale adopted the "Uniform Standard Specifications for Public Works Construction", which are sponsored and distributed by the Maricopa Association of Governments. Copies of these documents, with revisions, are on file in the office of the Clerk of the City of Glendale, and are hereby made a part of the Project Specifications and Contract Documents.

PART 100 - GENERAL CONDITIONS - MARICOPA ASSOCIATION OF GOVERNMENTS

101	Abbreviations and Definitions
102	Bidding Requirements and Conditions
103	Award and Execution of Contract
104	Scope of Work
105	Control of Work
106	Control of Materials
107	Legal Relations and Responsibility to Public
108	Commencement, Prosecution and Progress

Whenever in the Uniform Standard Specifications the words "The Contracting Agency" are used, the meaning shall be the City of Glendale.

In all cases where ASTM, AASHTO, AWWA, USAG, Federal, City of Phoenix, MAG Specifications, Maricopa County, Arizona State Highway, or other standard specifications are referred to, unless otherwise stated, revisions, supplements or addenda issued on or before the date of this contract shall prevail.

In the event of any conflict between these Project Specifications and Contract Documents and the requirements of the Plans, Detail Drawings, MAG Standard Details and Specifications, these Project Specifications and Contract Documents shall prevail.

2. DEFINITIONS: The following terms, as used in or pertaining to the Project Specifications and Contract Documents, are defined as follows:

CITY: The word "City" refers to the City of Glendale, Arizona. The official representative of said City in these proceedings shall be the Director of Engineering.

CONTRACTOR: The word "Contractor" means the person, firm, or corporation with whom the Contract is made by the City.

MATERIALS: The term "Materials" includes, in addition to materials incorporated in the project, equipment and other material used and/or consumed in the performance of the work.

SUBCONTRACTOR: The word "Subcontractor" includes those having a direct contract with the Contractor and those who furnish material worked to a special design according to the Plans and/or Project Specifications and Contract Documents for this work, but does not include those who merely furnish materials not so worked.

ENGINEER: The word "Engineer" means a person, firm, or corporation duly authorized by the Director of Engineering to act for him as an agent and representative of the City, in staking out work, inspecting materials and construction, and interpreting Plans, Project Specifications and Contract Documents.

PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS: The words "Project Specifications and Contract Documents" mean the Notice to Contractors, Information for Bidders, General Conditions, Special Provisions, Proposal, Contract, Payment Bond, Performance Bond, Certificates of Insurance, Applicable MAG Specifications and Standard Details, Plans and Addenda thereto.

3. **PROPOSAL QUANTITIES:** It is expressly understood and agreed by the parties hereto that the quantities of the various classes of work to be done and material to be furnished under this Contract, which have been estimated as stated in the Proposal, are only approximate and are to be used SOLELY for the purpose of comparing, on a consistent basis, the proposals offered for the work under this Contract; and the Contractor further agrees that the City will not be held responsible if any of the quantities shall be found incorrect; and the Contractor will not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission, or misstatement is found to occur in the estimated quantities, the same shall not invalidate this Contract or release the Contractor from the execution and completion of the whole or any part of the work in accordance with the Project Specifications and Contract Documents and the Plans herein mentioned, or for the prices herein agreed upon and fixed therefore, or excuse him from any of the obligations or liabilities hereunder, or entitle him to any damages or compensation except as may be provided for in this Contract.

4. **DUST PREVENTION:** The Contractor shall take whatever steps, procedures, or means required to prevent abnormal dust conditions due to his construction operations in connection with this Contract. The dust control measures shall be maintained at all times during construction of the project, to the satisfaction of the Engineer, in accordance with the requirements of the "Maricopa County Health Department Air Pollution Control Regulations".

5. **PRE-CONSTRUCTION CONFERENCE: PROGRESS SCHEDULE; TRAFFIC CONTROL:** The Contractor shall meet with the Engineer for a Pre-construction Conference prior to commencing work to discuss the following subjects:

a. A construction schedule in bar graph form shall be submitted for review and acceptance by the Engineer. Schedule shall show the order in which the Contractor proposes to carry out the work. The schedule shall indicate dates on which materials will be furnished, construction of the several segments will start, and the contemplated dates for completion of each segment in conformance with the sequence of construction outlined in the Special Provisions.

b. A plan shall be submitted for review and acceptance by the Engineer for maintaining traffic as required by the City of Glendale at all times during the progress of the work, as described in the Special Provisions.

c. A plan for job safety, health, sanitation, cleanup and dust control on the project shall be submitted for review and acceptance by the Engineer as required by MAG Sections 104 and 107.

d. The Contractor may submit revised schedules after the work is in progress for acceptance by the Engineer. Schedule changes (overtime) requiring an increase in the City's Engineering personnel shall be subject to review and acceptance by the Engineer.

6. MAINTENANCE OF IRRIGATION FACILITIES: Where irrigation facilities interfere with construction, the Contractor shall remove and replace the affected irrigation facilities to the original condition, or as noted on the Plans. Prior to any work on such facilities, the Contractor shall contact the Owners relative to shutdown of irrigation water. Final acceptance of replaced facilities will depend upon final acceptance of the Owner and Engineer.

7. PAYMENTS TO CONTRACTOR: Payments will be made on the basis of itemized monthly statements provided by the Contractor in accordance with the standard specifications. Three (3) copies of the itemized statement should be submitted along with a "Claim on the City of Glendale" form to the Department of Engineering. After verification, payments will be mailed by the Finance Department.

The City will make a partial payment to the Contractor on the basis of an estimate prepared by the Contractor, and approved by the Director of Engineering, for work completed through the last day of the preceding calendar month.

The City will retain ten percent (10%) of each such estimate until acceptance of the project and final payment. Upon 100% completion and acceptance of the project, and with the request for final payment, the Contractor shall complete and submit the Contractor's Affidavit Form, which is included in these Specifications.

8. **EXISTING UTILITIES:** The Contractor is hereby advised that the location of all utilities, as shown on the Plans, may not be complete nor exact and the Contractor shall satisfy himself as to the exact location of the utilities by contacting the utility companies before proceeding with the work. The Contractor shall be responsible for any damage done to public or private property.

Utility companies and other interested parties have been provided with construction plans and the construction schedule for this project. The Contractor shall comply with MAG Specifications 105.6 to cooperate with the utility companies.

9. **SURVEY CONTROL POINTS AND MONUMENTS:** Existing survey monuments indicated on the Plans or found during construction shall be protected by the Contractor, and in the event removal is necessary, removal and replacement shall be performed by permission of the Engineer, under direct supervision of the Engineer or his authorized representative. Survey monuments shall be constructed to conform to the requirements of MAG Specifications, Section 405 and Standard Details.

10. **COORDINATION WITH OTHER CONTRACTORS AND ACTIVITIES:** Construction at various locations in Arrowhead Ranch Development is underway or commencing in the coming months involving installation of waterlines, sewer lines, other utilities, subdivision improvements, streets and bridges. Agricultural activities including cultivation, irrigation and harvesting will continue at various locations. The Contractor is hereby advised that a number of contractors will be working at several locations within the development and will require access to their work. Refer to MAG Section 105.7 COOPERATION BETWEEN CONTRACTORS.

APPLICABLE
ARIZONA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS - 1982 EDITION
BRIDGE CONSTRUCTION

<u>Section</u>	<u>Description</u>
109	Measurement and Payment
201	Clearing and Grubbing
202	Removal of Structures and Obstructions
203	Earthwork
206	Furnish Water Supply
303	Aggregate Subbases and Aggregate
404	Bituminous Treatments
406	Asphaltic Concrete
601	Concrete Structures
602	Prestressing Concrete
604	Steel Structures
605	Steel Reinforcement
609	Drill Shaft Foundations
701	Maintenance and Protection of Traffic
1001	Material Sources
1003	Reinforcing Steel
1004	Structural Metals
1005	Bituminous Materials for Surfacing
1006	Portland Cement Concrete
1011	Joint Materials

Refer to Special Provisions for superseded or additional construction specifications.

APPLICABLE
MARICOPA ASSOCIATION OF GOVERNMENTS
STANDARD SPECIFICATIONS
DETOUR AND CHANNEL CONSTRUCTION

<u>Section</u>	<u>Description</u>
109	Measurement and Payment
201	Clearing and Grubbing
205	Fill Construction
206	Structure Excavation and Backfill
210	Borrow Excavation
211	Fill Construction
215	Earthwork for Open Channels
225	Watering
301	Subgrade Preparation
310	Untreated Base
315	Bituminous Prime Coat
321	Asphalt Concrete Pavement
336	Pavement Matching and Surface Replacement
345	Adjusting Frames, Covers, Water Meter Boxes and Valve Boxes
350	Removal of Existing Improvements
401	Traffic Control
701	Rock, Gravel and Sand
702	Base Materials
710	Asphalt Concrete
711	Paving Asphalt
712	Liquid Asphalt
713	Emulsified Asphalt
735	Reinforced Concrete Pipe
765	Rubber Gaskets for Concrete Pipe

Refer to Special Provisions for superseded or additional construction specifications.

SPECIAL PROVISIONS

1. STANDARD SPECIFICATIONS AND DETAILS

The provisions of MAG Uniform Standard Specifications and Details for Public Works Construction, which are not altered or modified by the Drawings or by these Special Provisions or by any subsequently issued Addendum shall apply to the contract even though the Contractor's attention is not specifically drawn to such provisions.

2. SUBCONTRACTS

Subcontracts shall be in accordance with MAG Section 108.2 with the following addition:

Certified copies of any and all subcontracts shall be furnished to the Office of the Director of Engineering; prices may be omitted.

3. TRAFFIC CONTROL

All traffic affected by this construction shall be regulated in accordance with MAG Uniform Standard Specifications for Public Works Construction, Part 400 - Right-of-Way and Traffic Control, Section 401, Traffic Control.

Permission to restrict or close City streets shall be in accordance with MAG Uniform Standard Specifications for Public Works Construction.

4. TRAFFIC REGULATIONS

The following shall be considered major streets:

Union Hills Drive
59th Avenue

All traffic and/or traffic control devices on this project shall be provided, maintained and/or controlled as specified in the City of Phoenix Traffic Barricade Manual, 1980 revision.

Permission to restrict City of Glendale streets, sidewalks and alleys (street closure permits) shall be requested as specified in Section III of the Traffic Barricade Manual from the City of Glendale.

All traffic on this project shall be regulated as specified in Section IV of the Traffic Barricade Manual.

Two-way traffic shall be maintained at all times in accordance with the Contractor's accepted traffic plan.

5. MATERIAL AND EQUIPMENT DRAWINGS

The Contractor shall furnish the Engineers with four (4) copies of shop drawings, pipe layout diagrams, manufacturer's catalog data, and detailed information, in sufficient detail to show complete compliance with all specified requirements, covering but not limited to the following items:

- A. Concrete Mix Designs
- B. Piles - Metal Steel
- C. Prestressing Steel
- D. Reinforcing Steel
- E. Castings
- F. Conduit
- G. Asphalt Pavement Design
- H. Shoring Design

Acceptance: The Contractor, at his own expense, shall make such changes in the above drawings as may be necessary to conform to the Plans, Project Specifications and Contract Documents. When submitted for the Engineer's review, shop drawings, line layouts, etc., shall bear the Contractor's certification that he has reviewed, check and approved the shop drawings, etc., and that they are in conformance with the requirements of the Contract Documents. Prior to acceptance of such drawings, any work which the Contractor may do on the fabrications covered by the same shall be at his own risk, as the City will not be responsible for any expense or delays incurred by the Contractor for changes to make the same conform to the drawings as finally approved.

One copy of submitted drawings or lists shall be returned to the Contractor marked, "RESUBMITTAL NOT REQUIRED. CORRECTIONS, IF ANY, NOTED," "CORRECT AND RESUBMIT. CORRECTIONS NOTED." If the original submittal is "RESUBMITTAL NOT REQUIRED," the Contractor may proceed with the work. If corrections are required, four copies of the corrected drawings and data shall be submitted, of which one copy will be returned to the Contractor. If a new submittal is required, it shall be made in the same manner as the original submittal.

Upon final acceptance of the above drawings, lists, samples, and other data, the same shall become a part of the Contract, and the fabrication furnished shall be in accordance with the same. Provided, however, that the approval of such drawings, lists, Project Specifications and Contract Documents, samples, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment, for any fabrication, of the requirements of the Contract or from any tests otherwise required by the Project Specifications and Contract Documents.

6. REMOVAL OF EXISTING IMPROVEMENTS

Removal of existing improvements necessary for the completion of the project shall be in accordance with MAG Standard Specification No. 350. All items, unless otherwise indicated on the Plans, removed or disturbed shall be replaced in like or better condition than before construction of the pipeline.

7. SEQUENCE OF CONSTRUCTION

The Contractor for the Arrowhead Ranch Infrastructure Bridge and Channel Improvement Project has a designated time to complete all work under the Contract from the written Notice to Proceed. The Contractor is required to coordinate his work with the City of Glendale and other Contractors performing work in public rights-of-way and in the development.

Construction of Union Hills Drive west detour and relocation of existing utilities (culverts, water, gas, telephone, TV and electric) around the bridge site shall be completed prior to commencing work on the bridge foundation and superstructure. Channel excavation, dike construction, and bank protection shall be coordinated for minimum conflict with bridge construction for completion within the designated period. The Contractor shall coordinate with Union Hills Drive street construction for a complete and competent roadway.

8. SOILS CONDITIONS

The Contractor shall make his own determination as to soils and subsurface conditions and shall complete his work in whatever material and under whatever condition he may encounter or create, without extra cost to the City. The boring logs are available for information only. A copy of the complete soils report is available for examination at the office of Carollo/Swengel-Robbins c/o John Carollo Engineers.

9. MISCELLANEOUS ITEMS

The lump sum to be paid for miscellaneous items will be compensation in full for work on any item shown on the Plans or specified but not specifically included for payment under any other item. Miscellaneous items shall include; but not be limited to: bond expense; permits; mobilization; traffic control, pipe supports, power pole bracing, encasement where indicated on the Plans or required by conditions encountered, removal of existing items, drainage restoration and replacement; relocation or repair of any items unavoidably damaged, destroyed or moved as a result of construction; replacement of signs, delineators; and project cleanup.

10. PARTIAL USE OR ACCEPTANCE

The Contractor will comply with a requirement of urgent or unforeseen need under the terms and conditions of the Contract and in accordance with MAG Sections 105.14 and 105.15A

11. REPORTS

The Contractor will provide the Engineer a Daily Report, on a form provided, indicating the work in progress, work completed, equipment used, numbers and category of personnel and such other pertinent information as applicable.

12. RECORD DRAWINGS

The Contractor shall maintain at the site one copy of all Contract Documents, Engineering Drawings, and approved Shop Drawings in good order and marked to record all changes made during construction. These drawings are for use by the Engineer and shall be delivered to the Engineer upon completion of the work.

The Contractor shall maintain and keep up-to-date a complete record set of as-built prints. The drawings shall be corrected daily to show every approved field change from the Contract Drawings. The prints shall be marked to show the precise location of new and concealed work and equipment. The Contractor shall submit his marked blue-line prints to the Engineer as required. The Contractor shall not make changes in the layout or work without written instructions from the Engineer in each case.

13. SPECIAL PROVISIONS FOR THE CONSTRUCTION OF UNION HILLS DRIVE BRIDGE AND SKUNK CREEK CHANNEL

All work shall be performed in accordance with the following, unless otherwise modified in these Specifications:

1. Plans prepared by Howard Needles Tammen & Bergendoff, dated July 18, 1984 and consisting of, in general, paved detour, bridge construction, channel excavation and embankment, bank protection and grading.
2. State of Arizona Department of Transportation Highways Division Standard Specifications for Road & Bridge Construction, 1982 Edition and all supplements thereto, hereinafter referred to as the ADOT Standard Provisions.
3. Uniform Standard Specifications for the Maricopa Association of Governments for Public Work Construction, 1979 Edition and all supplements thereto, hereinafter referred to as the MAG Specifications, for the channel construction.

14. SPECIAL PROVISIONS FOR THE UNION HILLS DRIVE BRIDGE

Special provisions for the Union Hills Drive Bridge over Skunk Creek are written with reference to the ADOT Standard Provisions. The following provisions shall be adhered to throughout the bridge construction:

15. STRUCTURAL EXCAVATION AND STRUCTURAL BACKFILL

Additional to the requirements of Subsection 203-5:

The quantities shown in the Proposal for these items are only for structural excavation and structure backfill for bridges.

On Standard Drawing C-13.40, structural backfill shall be used for all backfill, including that shown as special backfill. Where specified on Project Plans, structure backfill will consist of aggregate base C1.2. Any overexcavation by the Contractor shall be backfilled with the same material specified for use within pay limits.

Structural excavation and structural backfill for the bridge structures will be paid for as herein specified under Item 6011101 - Construct Bridge Structures.

Overexcavation and concrete required to fill overexcavation back to planned grade of bottom of footing will be paid for as specified under Section 104.03.

16. CONCRETE STRUCTURES

Additional to the requirements of Section 601:

CONCRETE STRUCTURES: For concrete structures other than bridge superstructures, keyed construction joints may be added and ferrule loops may be substituted for continuous reinforcement in construction joints, if accepted by the Engineer.

For concrete structures other than bridge superstructures, weakened plane joints may be constructed in lieu of keyed construction joints, if accepted by the Engineer.

Before placing the pier column and drilled shaft foundation concrete on bridge structures, the Contractor shall insure that the vertical reinforcing steel will not interfere with the horizontal cap reinforcing steel and tendon ducts. Reinforcing steel shall not be cut to facilitate installation, except as noted on the Plans.

The integrally cast monolithic diaphragms with fillets, as detailed on the Project Plans for bridge structures, may be substituted with the alternate as described on the Project Plans at the Contractor's option. Any additional costs associated with the alternate, including additional materials and labor, will be at the expense of the Contractor and no additional payment will be made.

The elevations of the bottoms of footings indicated on the Plans shall be considered as approximate only, and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be necessary to secure a satisfactory foundation.

The Contractor shall be responsible for any additional costs incurred should he elect to fabricate materials or do other work prior to the final determination of footing elevations.

601-5 BASIS OF PAYMENT: The cost of furnishing and installing the polychloroprene cellular joint seals, with adhesive, into the 1-1/4 inch x 2-1/2 inch joint openings between the sidewalk slabs and the wing walls of bridge structures will be considered as being included in the cost of the structure.

17. CONSTRUCT BRIDGE STRUCTURES

It is the intent of the City to compensate the Contractor for the construction of each of the following structures on the basis of a lump sum amount:

Union Hills Drive Bridge Over Skunk Creek - Quantities for the major items of work necessary to construct the substructures and superstructures have been calculated and the quantities for each structure are shown as "Approximate Quantities" in the Plans for each structure.

The bidding schedule contains a separate sheet for each of the above structures, which indicates the approximate quantities for each structure. The bidders shall complete each sheet. The total of the sum of the products of the approximate quantity and the unit bid price will be deemed to be the lump sum amount bid to construct the specific structure.

An Award of Contract, if an award be made, will be on the basis of the lowest amount bid, which amount includes the sum of the lump sum amounts bid for the structures.

In the preparation of his bid, each bidder shall take all the steps necessary to satisfy himself as to the accuracy of the quantities shown and of all the additional items of work necessary to complete the structure so that the unit prices bid are not only a reflection of the quantities determined by him to be necessary to construct the structure, but also reflect any additional costs necessary to cover the work for which no approximate quantities are shown.

No adjustment in the lump sum amount, nor in any of the unit prices making up the lump sum amount, will be made because of any errors made either by the Engineer in his calculations of quantities, or by the Contractor in his calculations, or in any omission or inadvertence on his part in determining the amount to be bid for each item.

In the event that a revision in the Project Plans or Specifications is ordered by the Engineer for a specific structure, the provisions of Subsection 104.02 shall apply, except that each item shown in the bidding schedule for that structure shall be deemed to be a major item and thus eligible for an adjustment in unit price by either party to the

Contract. Adjustment in unit prices will be considered only for those items which are revised because of the ordered revisions. If revisions are ordered and such revisions affect the work for which there are no unit bid prices, any increase in the cost of such work will be paid for in accordance with the requirements of Subsection 104.03.

Each structure shall be constructed in accordance with the requirements of the Specifications for each of the items of work either shown in the bidding schedule or as otherwise necessary to complete the structure.

Payment for all work necessary to construct the substructure and superstructure, including all excavating, backfilling, concrete, reinforcing and structural steel, deck joint assemblies, approach slabs, prestressing cast-in-place concrete, barriers and curbs, drilled shaft foundations, chain link fence, median decorative pavement, slope paving, cast-in-place anchors and work related to utility, traffic signal, lighting and signing systems, will be made on the basis of the lump sum amount, except as may be otherwise determined, all as hereinbefore specified.

Partial payments will be made in accordance with the requirements of Subsection 109.06 on the basis of quantities shown in the bidding schedule for each structure and the respective unit prices. No later than the 20th of each month, the Contractor shall furnish the Engineer an estimate of the quantity of each item of work. The Engineer shall be the sole judge as to the approximate quantities of work eligible for payment in any month. Such determinations will not be on the basis of the normal precise, detailed calculations. The total amount of the partial payments shall equal the lump sum amount bid unless a revision in the structure and the application of Subsection 104.02 results in either an increase or a decrease in the compensation to the Contractor.

Adjustments in the Contract unit price for materials which are not within reasonably close conformity with the Plans and Specifications, as described and specified in Subsection 105.03, or are deficient, as described and specified in Subsection 601.6, will be made as required under the appropriate subsection.

No direct payment will be made for furnishing and installing timber headers at approach slabs, the cost being considered as included in the cost of the structures.

Concrete quantities for the concrete barrier on the structure are included in the quantities for Items 6010002 (A, B, C, & D) Structural Concrete (Class S) ($f'c = 3,000$).

18. PRESTRESSING CONCRETE

Additional to the requirements of Subsection 602.07:

All ducts shall have vents placed within 6 feet of the high points in the duct profile so that spacing of vents does not exceed 400 feet. Vents shall be 1/2-inch minimum diameter standard pipe or suitable

plastic pipe. Connections to ducts shall be made with metallic or plastic structural fasteners. Plastic components, if selected, shall not react with the concrete or enhance corrosion of the prestressing steel, and shall be free of water soluble chlorides. The vents shall be mortar-tight, taped as necessary, and shall provide means for injection of grout through the vents and for sealing the vents. Ends of vents shall be removed 1 inch below the roadway surface after grouting has been completed.

19. VERTICAL RESTRAINERS

A. DESCRIPTION: The Contractor shall furnish and install restrainer units consisting of cables and assemblies and associated materials or components, in conformance with the details indicated on the Project Plans, and in accordance with the Standard Specifications and these Special Provisions.

Components required for each restrainer unit type are detailed on the Project Plans and shall include various combinations of the following: structural steel components, bolts, bearing plats, polyvinyl chloride pipe, elastomeric pads, expansion joint filler, duct tape, expanded polystyrene, sheet neoprene, hardboard and incidentals.

B. MATERIALS: Cables shall be 3/4-inch preformed, 6 x 19, wire strand core or independent wire rope core (IWRC), galvanized ASTM A603 Class A coating, right regular lay, manufactured of improved plow steel with a minimum breaking strength of 23 tons. Two certified copies of mill test reports of each manufactured lengths of cable used shall be furnished to the Engineer.

Free ends of cable restrainer units shall be securely wrapped at each end to prevent separation.

Cable assemblies shall consist of cables, swaged fittings, studs and nuts, and shall conform to the following requirements:

The swaged fitting shall be machined from hot-rolled bars of steel conforming to AISI C 1035, and shall be annealed, suitable for cold swaging. A lock pin hole to accommodate a 1/4-inch plated spring steel pin shall be drilled through the head of the swaged fitting to retain the stud in proper position. The manufacturer's identifying mark shall be stamped on the body of the swaged fitting.

The 1 inch diameter stud shall conform to the requirements of ASTM A 449 after galvanizing. Threads shall have a Class 2A fit before galvanizing. Prior to galvanizing, a 3/8-inch slot for the locking pin shall be milled in the stud end.

Nuts, except jam nuts, shall conform to the requirements of ASTM A 325, except they need not be Grade DH of ASTM A 563 or Grade 2H of ASTM A 194, nor is it necessary for them to be lubricated. After galvanizing,

the pitch diameter of the nut and the head of the swaged fitting may be tapped over ANSI B1.1 Class 2B tolerance by 0.023-inch oversize, if the study threads conform to Class 2A fit before galvanizing.

The swaged fittings, stud and nut assembly shall develop the specified breaking strength of the cable.

The cable assemblies shall be shipped as a complete unit, including stud and nut.

One sample of cable properly fitted with swaged fitting and right hand thread stud at both ends, 3 feet in total length, shall be furnished to the Engineer for testing for each 200 cable assemblies or fraction thereof to be furnished. In no case shall less than one sample of the cable assembly be furnished to the Engineer for testing.

Unless otherwise specified, all steel parts shall conform to the requirements of ASTM A 36. Steel for bearing bars or bins shall conform to the requirements of ASTM A 36 or A 576 Grade 1030 (AISI 1030) and shall be other than rimmed or capped steel.

All steel parts shall be galvanized as specified in Subsection 604-3.05. Holes may be drilled after galvanizing provided all holes are cleaned and painted with two applications of commercial quality zinc-rich primer, organic vehicle type, without thinner.

Elastomeric pads shown with restrainer units shall conform to the provisions in Subsection 604.09(B), "Elastomeric Bearing Pads", except that the pads may consist of elastomer only, regardless of thickness. Laminated reinforcement will not be required. The Durometer Hardness shall be 60.

Polyvinyl chloride (PVC) pipe shall be commercial quality. When indicated on the Plans, bond breaker on PVC pipe shall consist of mortar-tight wrapping of plastic sheet or rubber sheet, 0.010-inch minimum thickness, or equal.

Tempered hardboard shall conform to Federal Specification LLL-B-810, Type II, smooth one side, plain. Hardboard shall be 1/8-inch minimum thickness, unless indicated or specified otherwise.

Expanded polystyrene shall be a commercially available polystyrene board. Expanded polystyrene shall have a flexural strength of 35 pounds per square inch, minimum, determined in accordance with ASTM Designation C203, and a compressive yield strength of between 16 and 40 pounds per square inch, at 5 percent compression. When indicated on the Plans, surfaces of expanded polystyrene shall be faced with hardboard. Hardboard shall be 1/8-inch minimum thickness, conforming to Federal Specification LLL-D-810, any type.

Other facing materials may be used provided they furnish equivalent protection. All boards shall be held in place by nails, waterproof adhesive, or other means accepted by the Engineer.

Expansion joint filler shall be new extruding and resilient filler (bituminous type) conforming to the provisions of ASTM D 1751.

Neoprene sheets shown with restrainer units shall conform to the requirements for neoprene in Subsection 1011-5. The neoprene sheets shall be smooth, free from pin holes or surface blemishes, and shall show no evidence of delamination.

C. CONSTRUCTION REQUIREMENTS: Restrainers shall be installed as indicated on the Project Plans.

The Contractor shall provide means of holding the cable assemblies in their planned positions.

D. MEASUREMENT: Vertical restrainers will be measured as a unit for each restrainer, which shall consist of the number of cables indicated on the Plans.

E. BASIS OF PAYMENT: Payment for restrainers for the bridge structures will be made as herein specified under "Construct Bridge Structures", which payment shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved to install the restrainers, complete in place, as indicated on the Project Plans.

20. STEEL REINFORCEMENT

Superseding the requirements of the fourth paragraph under Subsection 605-3.01:

Steel reinforcement shall be protected at all times from damage. Rust, seams, surface irregularities or mill scale will not be cause for rejection, provided the weight, dimensions, cross-sectional area, and tensile properties of a hand wire brushed test specimen are not less than the requirements of these Specifications.

Superseding the requirements of paragraphs six and seven under Subsection 605-3.01:

Reinforcement shall be accurately fabricated and placed as indicated on the Plans and shall be firmly held in place by 16 gauge or heavier tie wires and by using precast mortar blocks or steel chairs, spacers, hangers, supporting wires or other acceptable supports. Tack welding of reinforcement will not be permitted unless accepted in writing by the Engineer. The use of pebbles, broken stone, concrete masonry blocks, brick, metal pipe, and wood blocks will not be permitted for the purpose of spacing or support.

The following tolerances will be allowed in the placing, tying and supporting of reinforcing steel:

In slabs and beams, horizontal bars shall be within 1/4-inch plus or minus, measured vertically, from the position indicated on the Plans.

In vertical walls, columns, wings, and similar members, clearance from the forms shall be as indicated on the Plans, plus or minus 1/2-inch.

In slabs or walls, long runs of bars may vary plus or minus two inches in spacing; however, the full number of bars required shall be placed.

Reinforcement in any member shall be inspected and accepted before any concrete is poured.

Column vertical reinforcing steel shall not be spliced.

The quantity of reinforcing steel for the concrete barrier on the structure is included in this item.

Payment for steel reinforcement for the bridge structures will be made as herein specified under Special Provision Section "Construct Bridge Structures".

21. DRILLED SHAFT FOUNDATION

Additional to the requirements of Section 609:

Open excavations shall be covered at the end of each shift as accepted by the Engineer.

Load tests, when required by the Engineer to determine the adequacy and acceptability of a drilled shaft, will be measured for payment in accordance with the requirements of Subsection 109.04 only when the drilled shaft is determined to be acceptable, otherwise the load test will be at the Contractor's expense.

Casing, if used in the drilling operation, shall be removed from the hole as concrete is placed therein.

Drilling slurry or chemical stabilizer shall not be used except when permitted by the Engineer. Surface water shall not be permitted to enter the hole and all water which may have infiltrated into the hole shall be removed before placing concrete therein.

No measurement or direct payment will be made for the reinforcing steel extending from the top of the caisson into the abutments, the cost being considered as included in the cost of DRILLED SHAFT FOUNDATION.

Payment for drilled shaft foundations for the bridge structures will be made as herein specified under "Construct Bridge Structures" section of the Special Provisions.

22. DECK JOINT ASSEMBLIES

DESCRIPTION: This section consists of furnishing and installing expansion devices including the seals, anchorage system, hardware and sidewalk sliding cover plates, where required, in conformity with the Project Plans and the requirements of these Special Provisions. Deck joint assembly shall have the movement rating indicated on the Project Plans.

MATERIALS:

A. Elastomer for Seal Elements. Elastomer material shall be compatible with concrete and shall be resistant to abrasion, oxidation, aging and sunlight, and to oils, gasoline, salt and other materials that may be spilled on or applied to the surface.

The elastomer for compression seal elements shall be polychloroprene rubber (Neoprene) and shall conform to the requirements of ASTM D 2628.

The elastomer for strip seal elements shall be either polychloroprene rubber (Neoprene) or Ethylene Polypropylene Diene Monomer (EPDM) and shall conform to the requirements of ASTM D 2628 except as follows:

B. Neoprene. The low and high temperature recovery tests may be omitted.

The minimum tensile strength shall be 1,500 pounds per square inch.

The minimum elongation at break shall be 175 percent.

The hardness, Type A durometer, shall be 60 plus or minus 5 for single strip seals and 70 plus or minus 5 for dual strip seals.

The oven aging test requirements shall allow a 30 percent loss of tensile strength, a 40 percent loss of elongation, and a hardness, Type A durometer points change of 0 to +15.

C. EPDM. The hardness, Type A durometer, shall be 70 + 10.

The compression set test shall be modified to be performed for 22 hours at 158 degrees F, with a maximum set of 25 percent.

All other requirements shall be as above described for Neoprene.

D. Fabric for Seal Elements. Fabric used for reinforcement in a seal element shall be a nonwicking fabric conforming to the requirements of ASTM D 578.

E. Lubricant Adhesive and Sealant. The lubricant adhesive and sealant used to install a seal element into a deck joint assembly shall be a one part, moisture curing, polyurethane and aromatic hydrocarbon solvent mixture and shall have the following physical properties:

<u>Physical Property</u>	<u>Requirement</u>
Solids Content, Percent by Weight	70 ±10
Film Strength (ASTM D 412)*	
Tensile Strength, minimum, psi	1,200
Elongation at Break, minimum, percent	250
*For cast films of the adhesive solids,	
Weight per Gallon	8 lbs ±10%

The lubricant adhesive and sealant shall have a viscosity such that it will perform suitably with installation equipment, remaining fluid from 5 degrees F to 120 degrees F.

Each lot of lubricant adhesive and sealant shall be delivered in sealed containers plainly marked with the manufacturer's name or trademark and the date of manufacture. The shipping containers shall also indicate any special precautions or instructions required because of product toxicity, flammability, or other such information pertinent to the proper storage and use of the product.

F. Steel Extrusions. Material for steel extrusions for deck joint assemblies shall be ASTM A 36, A 588, or A 242, except that ASTM A 242 shall not be used for extrusions that are to be welded.

G. Aluminum Extrusions. Material for aluminum extrusions for deck joint assemblies shall be aluminum alloy 6061-T6 or 6063-T6 conforming to the requirements of ASTM B 221.

H. Steel Shapes and Plates. Steel shapes and plates shall conform to the requirements of ASTM A 36, A 588, A 572 (Grade 50), or other weldable steel meeting the acceptance of the Engineer.

I. Bolts. All bolts shall conform to the requirements of ASTM A 325, Type 1.

23. CONSTRUCTION REQUIREMENTS

GENERAL: Deck joint assemblies shall consist of metal and elastic assemblies which are anchored to the concrete over the joint. Compression seal armor shall be cast in the concrete and strip seal assemblies shall be bolted into a formed recess in the concrete using cast-in-place anchors. The completed assembly shall be in planned position, shall satisfactorily resist the intrusion of foreign material and water and shall provide bump free passage of traffic. Deck joint assemblies shall impart negligible forces to the cast-in-place anchors or bridge members due to expansion or contraction. The joint shall be designed to perform satisfactorily across a joint skewed at 45 degrees.

For each type and size of seal on a project, one piece of the material supplied shall be at least 18 inches longer than required by the Project Plans. The additional length will be removed by the Engineer and used for testing by the Materials Section. Certificates of Compliance conforming to the requirements of Subsection 106.05 shall be submitted.

A. Shop Drawings. Prior to fabrication, the Contractor shall submit eight sets of Shop Drawings to the Engineer for his acceptance in accordance with the requirements of Subsection 105.02. The Shop Drawings shall show complete details of the cast-in-place anchor layout and the method of installation to be followed, including formed recess details, a temperature correction chart for adjusting the dimensions of the joint according to the ambient temperature and any additions or rearrangements of the reinforcing steel from that indicated on the Project Plans.

In determining the quality or suitability of a deck joint assembly submitted for acceptance for each application, the factors to be considered will include, but will not be limited to, the ability of the assembly to resist the intrusion of foreign material and water throughout the full range of movement, the capability of installing or removing elastomeric portions of the assembly at any amount of closure, and the ability to function without distress to any component.

B. Strip Seals. Strip seals shall be continuous single or dual extruded or molded shapes made of material conforming to the requirements hereinbefore specified under "Elastomer for Seal Elements" and of a configuration as determined by each manufacturer and as indicated on the Project Plans. Each seal element shall be marked on the top surface with the manufacturer's name or trademark, the lot number and the size designation.

The strip seal shall be furnished and installed in one continuous length and field splices will not be allowed unless otherwise specified on the Project Plans.

C. Welding. All welding shall be in accordance with the requirements of Subsection 604-3.06.

D. Armor. Metal for strip seal assemblies shall be aluminum alloy extrusions or steel. Where structural aluminum parts come into contact with concrete, they shall be coated with a coal tar type bituminous paint on the applicable surfaces to the satisfaction of the Engineer. All steel, except A 588, shall be hot dip galvanized in conformance with provisions in Subsection 604-3.05.

E. Painting. No paint is required for metal components made from steel conforming to the requirements of ASTM A 588 and for aluminum conforming to the requirements of ASTM B 221. All other exposed metal surfaces, not in contact with the joint seal or concrete, shall be painted in accordance with the requirements of SECTION 610 - PAINTING. The paint shall be one coat each of Paint Numbers 1, 2 and 3.

F. Joint Preparation and Installation. Joints to be sealed shall be covered or otherwise protected at all times prior to installing the elastomeric portion of the assembly. The elastomer shall be installed at such time and in such a manner that it will not be damaged by construction operations.

For the strip seal assemblies, the Contractor shall employ a factory trained representative of the joint manufacturer to provide on-site technical assistance at the time of the form-out of the recess and the installation of the anchorage, assembly and seal.

Stiffened metal pan forms shall be used to form the recess. The formed recess shall be sandblasted to remove all residue that could affect the adhesion of sealants. Irregularities shall be ground down to a level surface and pits and hollows shall be leveled with an epoxy grout meeting the acceptance of the Engineer.

If the Contractor elects to form the joint with a secondary concrete pour, the surface of the existing concrete shall be coated prior to the pour with an epoxy specifically formulated for bonding new concrete to old concrete. The epoxy shall be accepted by the Engineer.

Strip seal assemblies that utilize metal side sections shall not be installed into the formed recess until the Contractor has applied a thin bead of sealant, or other accepted material, to the horizontal surface of the formed recess.

The sealant shall be applied along a line parallel to the center line of the joint for the joint's entire length. The sealant shall be located such that it will produce a watertight barrier along both the near edge and far edge of the metal-to-concrete contact area.

The Contractor shall seal the space between the edge of the strip seal assembly side sections and the vertical faces of the formed recess with an accepted nonshrink grout or an accepted sealant, as recommended by the manufacturer and accepted by the Engineer. If the space is sealed with grout, it shall fill the space for its full depth and, if sealant is used, the sealant shall be to a depth of one-half of an inch, minimum.

All anchors shall be retightened to the manufacturer's recommended torque at least four hours after initial tightening.

Immediately prior to the installation of the seal element, the metal contact surfaces of the joint armor shall be clean, dry and free of oil, rust, paint or foreign material. The contact surfaces of the seal element shall be cleaned with normal butylacetate, using clean rags or mops, immediately prior to application of the lubricant-adhesive or sealant. The lubricant-adhesive or sealant shall be applied to the seal element and joint armor contact surfaces at the rate recommended by the manufacturer.

The seal element shall be installed in strict accordance with the manufacturer's recommendations, subject to these Special Provisions and the acceptance of the Engineer, using equipment manufactured specifically for the installation of said element. The equipment shall not cause structural damage to either the seal element or the joint armor and shall not twist, distort, or cause other malformations in the installed seal element. Any perforation or tearing of the seal element due to installation procedures or construction activities will be cause for rejection of the installed seal element.

Deck joint assemblies for post-tensioned structures shall be installed at the narrowest joint opening possible to adjust for long-term creep.

Each shipment of joint seal materials shall be accompanied by a Certificate of Compliance as provided in Subsection 106.05, "Certificates" of the Standard Specifications, except that said certificate shall state that the materials involved comply in all respects to the manufacturer's current published specifications for the product involved.

G. Method of Measurement. Deck joint assemblies will be measured by the linear foot for each size of seal specified. Measurement will be made along the center line of the joint and at the surface of the roadway or sidewalk from face-of-curb or barrier to face-of-curb or barrier. Measurement will be to the nearest linear foot. No measurement will be made for that portion of the deck joint assembly required by Plan Details to extend through the face-of-curb or barrier, such being considered as incidental to the sealing of the joint.

H. Basis of Payment. The accepted quantities of deck joint assemblies, measured as provided above, will be paid for as herein specified under "Construct Bridge Structures", complete in place, including the seal, anchorage system, shop paint, equipment, labor and incidentals necessary for furnishing and installing median island and sidewalk cover plates, if specified.

24. METAL HANDRAIL

Under this item, the Contractor shall furnish and erect the steel handrail as indicated on the Project Plans and in accordance with applicable provisions of Section 513 of the Standard Specifications and the following requirements:

MATERIALS: Tubular steel shall conform to ASTM A 500, Grade R; steel pipe shall conform to ASTM A 501; miscellaneous steel and plate washers shall conform to ASTM A 36; high strength bolts shall conform to ASTM A 325 or ASTM A 449. All handrail steel shall be galvanized after fabrication in accordance with the requirements of AASHTO M 111. Steel fittings, hardware, etc., shall be galvanized in accordance with the requirements of ASTM A 153. The weight of the coating shall be as specified in ASTM A 153.

25. CONSTRUCTION REQUIREMENTS

GENERAL: Metal railing shall conform to the horizontal and vertical lines indicated on the Project Plans or ordered by the Engineer. The railing shall present a smooth, uniform appearance in its final position.

Shims shall be installed at posts and railings, where necessary to provide uniform bearing and conformance with the horizontal lines and vertical grade lines. Shims at steel posts shall be either commercial quality galvanized sheet steel or asbestos sheet packing, at the option of the Contractor.

The difference between out-to-out rail sleeve dimensions and the clear inside dimensions of the tubular steel rails shall not exceed 3/16 of an inch.

Materials shall be carefully handled so that no parts will be bent, broken, or otherwise damaged. Fabrication, handling, or installation methods which will injure or distort the members shall not be used.

Bearing surfaces to be in permanent contact shall be cleaned before the railing parts are assembled.

When ordered by the Engineer, the vertical position of the metal railing shall be adjusted to compensate for camber and dead load deflection of the superstructure. The amount of adjustment will be determined by the Engineer and will be ordered before the metal railing is installed.

MEASUREMENT: Metal handrail will be measured by the linear foot of handrail erected in accordance with these Specifications.

BASIS OF PAYMENT: The accepted quantities of metal handrail, measured as provided above, will be paid for at the Contract unit price, complete in place.

26. SPECIAL PROVISIONS FOR THE SKUNK CREEK CHANNEL

Special Provisions for the Skunk Creek Channel are written with reference to the MAG Specifications. The following provisions shall be adhered to throughout the channel construction.

27. CLEARING AND GRUBBING

Superseding the requirements of the third paragraph under Subsection 201.3:

For the full width of the new channel and new channel right-of-way, all trees, stumps, brush, roots, rubbish, debris and other objectional matter shall be removed.

28. GABION CONSTRUCTION

DESCRIPTION: The work shall consist of furnishing and installing gabion riprap revetments, wire mesh protection, and gabion pipe protection, including filter fabric, excavation and earthfill.

A. Materials. Gabions shall be a minimum of 12-gauge galvanized steel wire with a minimum of 9-gauge galvanized steel wire selvages, fabricated into hexagonal triple-twist 3-inch x 4-inch mesh openings. Galvanizing shall be a minimum of 0.80 ounces per square foot, applied before weaving by the hot dip process and conforming to ASTM A 386 and ASTM A 385. Wire shall conform to Federal Specification QQ-W-461G.

Lacing wire shall be a minimum of 13-gauge galvanized steel wire, or as indicated on the Drawings. Wires shall have a minimum tensile strength of 60,000 pounds per square inch and shall have Class 3 zinc coating as specified in ASTM A 641.

Wire clips shall be a minimum of 9-gauge galvanized steel wire.

Wire mesh protection, at the locations indicated on the Drawings, shall consist of the same wire mesh as that specified above for gabions and shall be furnished to the work site in roll sizes such that the minimum number of rolls will be required to complete the coverage shown. The wire mesh protection shall be connected to the surface of gabions after installation using wire ties meeting the above requirements for lacing wire. The wire ties shall be looped around two mesh openings of the wire mesh protection and the tops of the gabions and shall be securely twisted to prevent their loosening. The wire ties shall be spaced at about 12-inch centers around all edges of each separate wire mesh protection sheet, including abutting edges of the sheets (as indicated on the Plans). Wire ties shall be double loops of lacing wire with each loop individually twisted. Wire ties between edges shall be spaced to form a uniform grid at about 4-foot centers through the wire mesh protection area. As an option, these latter interior ties may be hog rings placed to form a uniform grid at about 2-foot centers.

Rock shall be hard and durable, as accepted by the Engineer. The rock shall be 3 to 6 inches in diameter.

Filter fabric shall be composed of strong rot-proof polymeric fibers oriented into a stable network such that the fibers retain their relative positions with respect to each other. The fabric shall be free of any chemical treatment or coating which could reduce permeability, and shall have no flaws or defects which could significantly alter its physical properties. The filter fabric shall meet the following minimum physical properties:

Water Permeability	0.10 cm/sec
Grab Strength Wet (ASTM D 1682)	120 pounds
Grab Elongation Wet (ASTM D 1682)	20 percent

The Contractor shall certify that the fabric meets this Specification and shall provide information from the manufacturer showing that it equals or exceeds the above physical properties.

B. Excavation. Excavation shall be to the lines and grades indicated on the Drawings and staked in the field. To the extent they are needed, suitable excavated materials from the specified excavations shall be used in the construction of required earth fill. The suitability of materials will be determined by the Engineer.

All surplus or unsuitable excavated materials will be designated as surplus excavated material and shall be disposed of at locations designated by the Engineer.

C. Earth Fill. Earth fill shall be in accordance with Section 211 and to the lines and grades indicated on the Drawings and stakes in the field. All fill material shall be obtained from required channel excavations. Backfill shall be compacted by mechanical tamping and/or vibratory rolling.

D. Foundation Preparation. The foundation on which the gabions, filter fabric, or bedding is to be placed shall be cut or filled and graded to the lines and grades indicated on the Drawings. Surface irregularities and loose materials shall be removed. Excavation beyond the specified lines and grades shall be corrected by filling the resulting voids with accepted compacted earth fill or bedding material.

Gabions, fabric, and bedding shall not be placed until the foundation preparation is completed, and the subgrade surfaces have been inspected and accepted by the Engineer.

E. Filter Fabric. When filter fabric is specified beneath the gabions, it shall be placed in unstretched condition on the prepared foundation surface free of sharp surfaces and debris. The filter strips shall be loosely laid and shall have a minimum of 24 inches overlap at each joint. Securing pins shall be 12 inches minimum length, with washers. Pins shall be inserted through both strips of overlapped fabric at no greater than 6-foot intervals along a line through the midpoint of the overlap. Additional pins shall be installed where needed to prevent slippage. The fabric shall be protected during construction from extensive exposure to sunlight. Extensive exposure to sunlight will be defined as exposure of 10 days or longer or as otherwise recommended by the fabric manufacturer. Any damaged fabric shall be replaced by the Contractor at his own expense. Gabions shall not be dropped on the fabric.

F. Gabions. Gabions shall be assembled and wired together. Each gabion unit shall be assembled by tying all untied edges, including all four edges of diaphragms, with lacing wire. The lacing procedure consists of cutting a length of lacing wire approximately 1-1/2 times the distance to be laced (not to exceed 5 feet), securing one end of the

wire at the corner by looping and twisting lacing with single and double loops at approximately 5-inch intervals, and securing the other end of the wire to selvages by looping and twisting.

Lacing wire may be replaced with wire clips for assembling baskets along vertical edges of diaphragms only. Clips shall not be used at cut sections or where gabions are stacked on other gabions more than two high. Wire clips may be installed at the top and bottom ends of each vertical edge, and evenly spaced in between, with four required for 12-inch deep gabions, five for 18-inch deep gabions, and eight for 36-inch deep gabions.

Gabions shall be placed to the lines and grades indicated on the Drawings and staked in the field. They shall be securely tied to each adjoining gabion with lacing wire (not clips) along the perimeter of all vertical contact surfaces in the same manner as described above for assembly. Gabions stacked on other gabions shall be laced to the lower gabion with lacing wire along the front, back and ends. Wire clips shall not be used to secure adjoining gabions. Use lacing wire only!!

The filling of gabions, including installed connecting wires, shall be performed as follows:

1. Each empty cell shall be first filled to a depth of 12 inches for 3-foot deep gabions, 9 inches for 1-1/2 foot deep gabions, and completely for 1 foot deep gabions.
2. Four connecting wires (two parallel in each direction) shall be uniformly spaced and securely fastened to each face of each cell, at a height of 12 inches above the base for 3-foot deep gabions, and 9 inches for 1-1/2 foot deep gabions.
3. Cells shall be filled to a further depth of 12 inches (completely for a 1-1/2 foot deep gabion), and four other connecting wires shall be similarly tied at this level in the 3-foot deep gabions.
4. Each filling, incremental or otherwise, shall contain stone of such size that not less than two layers of stone are required to complete the filling.

All connecting wires shall be looped around two mesh openings and the ends of the wires shall be securely twisted to prevent their loosening.

Cells in the row shall be filled in stages such that the depth of rock fill in any cell does not exceed the depth in an adjoining cell by more than 1 foot. Rock shall be placed in gabions by mechanical equipment or by hand, except that along all visible faces of the completed structure, the stone shall be carefully placed and packed by hand for a depth of approximately 8 to 10 inches to ensure proper alignment and a neat, compact, square appearance.

When the gabion has been filled, the lid shall be bent and stretched until it meets the perimeter edges of the front and end panels. The lid shall then be tightly laced with lacing wire to the edges of the front and end panels and to each diaphragm in the same manner as described above for assembling. To assist in closing and lacing, a pinch bar or special closing tool shall be used. Lacing adjacent lids to the vertical panels in one operation is acceptable. Wire clips shall not be used to secure lids as noted above.

G. MEASUREMENT AND PAYMENT: For items of work for which specific unit prices are established in the Contract, the volume of rock will be measured within the neat lines of the gabion structures and computed to the nearest cubic yard. Payment for "Gabion Riprap" will be made at the Contract unit price, including gabions, rock, excavation, foundation preparation, and filter fabric. Payment for "Wire Mesh Protection" in place as specified will be made at the Contract unit price per square yard measured to the nearest square yard. Such payments shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work.

The quantity for "Gabion Excavation Backfill" indicated on the Plans is for informational purposes only and no direct payment will be made therefor.

29. TEMPORARY CONSTRUCTION AND BORROW EASEMENT GRADING

DESCRIPTION: Temporary construction and borrow easement grading shall be as uniform as practicable with the details indicated on the Plans and the requirements in these Special Provisions.

SCOPE OF WORK: The Contractor is permitted to use local borrow materials from within the temporary construction and borrow easement for new channel embankment, provided the material is suitable and in accordance with Sections 210 and 211 of the MAG Specifications and as directed by the Engineer.

The Contractor is only permitted to remove local borrow material from existing dikes and mounds of dirt within the temporary construction and borrow easement. Excavation below the existing channel flow line or borrow pits shall not be permitted.

If insufficient material exists within the temporary construction and borrow easement, the Contractor shall make his own arrangements for obtaining imported borrow material and he shall pay all costs involved.

The Contractor shall grade the area to drain between the new dike and the outer limits of the temporary construction and borrow easement. The Contractor's grading operation may commence upon completion of the gabion foundation construction and acceptance given by the Engineer.

The Contractor is not required to regrade the entire area between the new dike and the outer limits of the temporary construction and borrow easement. The existing dikes, old channel and mounds of dirt within the area shall be removed and/or knocked down and the area reshaped and regraded.

Any reshaping, regrading and fill construction on the outside toe of slope of the new dike shall be a maximum of six (6) feet from the top of dike. The area outside the new dike shall be graded to provide no greater than a four to one (4:1) slope from the dike to the natural ground. The final drainage pattern outside the new dike construction shall be parallel to the new channel and sloped to drain toward the downstream project limits.

The Contractor shall not be required to perform any compaction within the limits of the temporary construction and borrow easement. Final grading and reshaping of the area shall be accepted by the Engineer.

PAYMENT: Payment for this item of work will be made at the lump sum Contract price for temporary construction and borrow easement grading. Such price shall include clearing, stripping, excavation, fill, backfill, grading, shaping, hauling, removal and finishing, and all incidental costs.

30. COOPERATION WITH UTILITIES AGENCIES

When the Contractor's operations result in damage to any utility, the location of which has been brought to his attention, he shall assume full responsibility for such damages.

The following telephone numbers should put the Contractor in contact with the proper personnel:

- Mountain Bell Telephone Company.....263-3219
- Salt River Project.....273-2201
- Arizona Public Service.....271-7014
- Location Staking (APS, Mountain Bell, SRP) Blue Stake....263-1100

31. CONSTRUCTION STAKES, LINES AND GRADES

The Engineer's responsibilities for construction staking are limited to establishing horizontal and vertical control points and establishing reference ties to those principal control points to be set in finished channel or pavement as follows:

- Land Survey Section Corners and Ties
- Land Survey 1/4-Section Corners and Ties
- Horizontal Construction Center Line Angle Points and Ties
- Vertical Construction Angle Points at Center Line (VPI)
- Construction Project Bench Marks (BM)

The Contractor shall check the horizontal and vertical construction control points and, from them, stake the construction layout lines, including the following:

Bridge and channel excavation cut stakes at 50-foot stations and deflection points. One copy of the cut sheet calculations shall be provided to the Engineer before excavation begins on each section.

Curb, curb and gutter, and valley gutter. Offset blue-top stakes at 25-foot stations, angle points, P.C.'s, P.T.'s and radius points.

Culverts, catch basins, etc.

Blue-top embankment and gabion protection subgrade stakes, all at 50-foot stations.

One copy of all survey notes, including calculations sheets, shall be provided to the Engineer prior to the start of the construction of that section affected by the survey.

No bid item provision is made in these Documents for payment to the Contractor for construction stakes, lines, and grades. The unit cost bid for each related construction item shall include the staking cost for that item.

32. TRAFFIC LANE STRIPING, MARKERS, AND STREET NAME SIGNS

Traffic lane markers and striping will be surveyed and completed by the City of Glendale.

Markers to be supplied to the City of Glendale by the Contractor are limited to those designated on the Plans.

Street name signs and permanent traffic signs will be provided and installed by the City of Glendale.

33. CATCH BASINS (CONCRETE STRUCTURES)

The concrete work for catch basins shall conform to Section 505.

Other work and materials required for the catch basins shall conform to the appropriate sections.

For all work and material pertaining to catch basins, complete in place including grates, payment will be made at the Contract price for each catch basin of each type and size indicated on the Plans and listed in the Proposal.

PROPOSAL

Place _____

Date _____

Proposal of _____

a Corporation organized and existing under the laws of the State of _____

_____ ; a partnership consisting of _____

_____ ; or an individual trading as _____

TO THE HONORABLE MAYOR AND COUNCIL
CITY OF GLENDALE
GLENDALE, ARIZONA

Gentlemen:

The undersigned hereby proposes and agrees to furnish any and all required labor, materials, construction equipment, transportation and services for the construction of:

Project No. A-845016, Arrowhead Ranch Infrastructure - Bridge and Channel Improvement: Union Hills Drive at Skunk Creek, in strict conformity with the Plans, Project Specifications and Contract Documents for the following unit prices:

- a. Extension of these unit prices on the basis of estimated quantities and the totaling of these extensions are for the purpose of comparing bids only. The mathematics of such extensions and totaling will be checked and corrected by the Department of Engineering before evaluating the bids, and the lowest of such corrected and checked totals will determine the lowest bid.
- b. * Indicates a contingent bid item for which installation is subject to direction of the Engineer during the construction period.
- c. The lump sum price bid shall be the sum of the totals for detour, channel and bridge construction as tabled on the following pages.

PROPOSAL

UNION HILLS DRIVE DETOUR TO 59TH AVENUE
STATION 0+00 TO 17+00

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
1	Grading Under Paving	SY	5,140	\$ _____	\$ _____
2	Aggregate Base Course	TON	1,660	\$ _____	\$ _____
3	A. C. Paving	TON	580	\$ _____	\$ _____
4	Prime Coat	GAL	2,570	\$ _____	\$ _____
5	Drainage Culvert	LS	1	\$ _____	\$ _____
6	Traffic Maintenance	LS	1	\$ _____	\$ _____
7	Miscellaneous	LS	1	\$ _____	\$ _____
			Total	\$ _____	\$ _____

SKUNK CREEK CHANNEL - UNION HILLS DRIVE AND 59TH AVENUE
STATION 83+00 TO 112+66

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
1	Clearing and Grubbing	LS	1	\$ _____	\$ _____
2	Channel Excavation	CY	39,250	\$ _____	\$ _____
3	Channel Embankment	CY	46,532	\$ _____	\$ _____
4	Channel Inlet and Pipe	LS	1	\$ _____	\$ _____
5	Gabion Riprap	CY	12,366	\$ _____	\$ _____
6	Wire Mesh Protection	SY	12,044	\$ _____	\$ _____
7	Temporary Construction and Borrow Easement Grading	LS	1	\$ _____	\$ _____
8	Miscellaneous	LS	1	\$ _____	\$ _____
			Total	\$ _____	\$ _____

PROPOSAL

UNION HILLS DRIVE BRIDGE AT SKUNK CREEK
STATION 184+50 TO 191+00

Item	Description	Unit	Quantity	Unit Cost	Total
1	Mobilization	LS	1	\$ _____	\$ _____
2	42-Inch Diameter Drilled Shafts	LF	450	\$ _____	\$ _____
3	Structural Excavation	CY	1,090	\$ _____	\$ _____
4	Structural Backfill	CY	3,560	\$ _____	\$ _____
5	Concrete 3,000 psi	CY	280	\$ _____	\$ _____
6	Concrete 3,500 psi	CY	740	\$ _____	\$ _____
7	Concrete 4,500 psi	CY	2,880	\$ _____	\$ _____
8	Reinforcing Steel	LB	944,000	\$ _____	\$ _____
9	Deck Joint Assembly	LF	430	\$ _____	\$ _____
10	Prestress Including Concrete	LS	1	\$ _____	\$ _____
11	Pedestrian Handrail	LF	400	\$ _____	\$ _____
12	Miscellaneous	LS	1	\$ _____	\$ _____
			Total	\$ _____	\$ _____

The Lump Sum Bid Price for all work, complete in place, on this project is

_____ Words

_____ Dollars

_____ Cents \$ _____

NOTE: IN CASE OF DISCREPANCY, THE AMOUNT SHOWN IN WORDS SHALL GOVERN.

The undersigned hereby declares that he has visited the site(s) and has carefully examined the Project Specifications and Contract Documents relating to the work covered by the above bid or bids.

Upon receipt of notice of the acceptance of this bid, we will execute the formal Contract attached within ten (10) days, and will deliver a one hundred percent (100%) Performance Bond for the faithful performance of this Contract, together with a one hundred percent (100%) Payment Bond.

The bid security attached, without endorsement, in the sum of five percent (5%) of the total bid, is to become the property of the City of Glendale, Glendale, Arizona, in the event the Contract and Bonds are not executed within the time set forth, as liquidated damages for the delay and additional work caused thereby.

The undersigned has checked carefully all the above figures and understands that the City of Glendale, Arizona will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned understands that the Mayor and Council of the City of Glendale, Arizona reserves the right to reject any or all bids or to waive any informalities in the bid.

Respectfully submitted,

Contractor

By _____

(Complete Business Address)

SEAL - If Bidder
a Corporation

Bidder shall signify receipt of all Addenda here (if any):

5% PREFERENTIAL AFFIDAVIT
For Resident Bidders Only

This affidavit form is for the use of Bidders who are able to qualify under Section 34-241 of the Arizona Revised Statutes.

State of Arizona,

County of _____.

_____ being first duly sworn, upon his oath deposes and says:

That he is _____ of the _____
(Title) (Company)

_____ and that he makes this affidavit for and on behalf of the said company being thereunto duly authorized; that in connection with the tender of bid to furnish labor, materials, construction equipment, transportation and services, for construction of Project No. A-845016:

Arrowhead Ranch Infrastructure - Bridge and Channel Improvement, Union Hills Drive at Skunk Creek, for the City of Glendale.

The affiant certifies and declares that _____
(Company)

_____ has fully complied with the terms and provisions of the Arizona Revised Statutes, and by virtue of such compliance is entitled to the 5% preference authorized thereunder; that he makes this affidavit in order to induce the granting of the said 5% preference in connection with the hereinbefore described bid.

Signed and dated at _____, this _____
day of _____, 19__.

Contractor

By _____

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

Subscribed and sworn to _____ before me
this _____ day of _____, 19__.

My commission expires:

Notary Public

CONTRACT

THIS AGREEMENT, made and entered into this _____ day of _____, 19____, by and between the City of Glendale, Arizona, a municipal corporation, organized and existing under and by virtue of the laws of the State of Arizona, party of the first part, hereinafter designated the Owner, and _____

of the City of _____, County of _____, and State of _____, party of the second part, herein after designated the Contractor.

WITNESSETH: That the said Contractor has covenanted, and agreed, for and in consideration of the payments made as provided for in the Proposal and Project Specifications and Contract Documents, to the Contractor by the said Owner, and under the penalty expressed in the bond hereto attached, at his proper cost and expense to do all the work and furnish all materials, tools, labor, and all appliances and appurtenances called for by the Agreement, free from all claims, liens and charges whatsoever, in the manner, and under the conditions hereinafter specified, that are necessary for the construction of:

PROJECT NO. A-845016, Arrowhead Ranch Infrastructure, Bridge and Channel Improvement, Union Hills Drive at Skunk Creek

The work done and materials and equipment furnished shall be strictly pursuant to and in conformity with the Plans, Project Specifications and Contract Documents. The Project Specifications and Contract Documents and drawings furnished by the Contractor with his Proposal and the additional drawings or prints and other information to be furnished by the Contractor in accordance with the Project Specifications and Contract Documents are made a part of this Agreement when and as approved by the City of Glendale, Arizona, are intended to be complementary and all Project Specifications and Contract Documents, Plans, drawings, or prints furnished by the Contractor and approved by the City of Glendale shall be complementary therewith. Any work appearing in or upon the one and not mentioned in the others shall be executed according to the true intent and meaning of the said Plans, Project Specifications and Contract Documents, drawings, or prints the same as though the said work were contained and described in all.

The Notice to Contractors, Information to Bidders, Special and Technical Provisions, Proposal, List of Pipe Suppliers, 5% Preferential Affidavit, Bid Bond, Payment Bond, Performance Bond, Certificate of Insurance, Contractors Affidavit, Appendix, Plans and Addenda thereto, are hereby understood to be a part of this Contract.

It is further covenanted and agreed that the work shall be executed under the direction and supervision of the City of Glendale, Arizona, or its properly authorized agents, on whose inspection all work shall be accepted or rejected.

The City shall have full power to reject or condemn all materials furnished or work performed under this Contract which do not conform to the terms and conditions herein expressed.

To prevent all disputes and litigation, it is further agreed by and between the said City of Glendale, Arizona, and said Contractor, that the Engineering Department of the City of Glendale shall determine all questions in relation to the work and the construction thereof, and it shall in all cases decide all questions which may arise relative to the execution of the work under this Contract on the part of the said Contractor and its estimates and decisions shall be final and conclusive; and such estimates and decisions, in case any question may arise, shall be a condition precedent to the right of said Contractor to receive any money or compensation for anything done or furnished under this Contract.

IN WITNESS WHEREOF, four (4) identical counterparts of this Contract, each of which shall for all purposes be deemed an original thereof, have been duly executed by the parties hereinabove named, on the date and year first herein written.

(SEAL) ATTEST:

CITY OF GLENDALE, ARIZONA
PARTY OF THE FIRST PART (OWNER)

City Clerk

Title

APPROVED: (AS TO FORM)

City Attorney

WITNESSES:

PARTY OF THE SECOND PART (CONTRACTOR)

Title

BID BOND
(Surety Bond)

KNOW ALL MEN BY THESE PRESENTS:

That we, _____,

as Principal, (hereinafter called the Principal), and the _____

_____, a corporation duly organized under the

laws of the State of _____, as Surety, (hereinafter called the Surety), are held and firmly bound unto the City of Glendale, a municipal corporation as Obligee, in the sum of five percent (5%) of the total amount of the bid of Principal, submitted by him to the Mayor and Council of the City of Glendale, for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, and administrators, successors and assigns, jointly and severally, firmly by these presents, and in conformance with A.R.S.

WHEREAS, the said Principal is herewith submitting its Proposal for Project No. A-845016, Arrowhead Ranch Infrastructure, Bridge and Channel Improvement, Union Hills Drive at Skunk Creek

NOW, THEREFORE, if the City of Glendale shall accept the Proposal of the Principal and the Principal shall enter into a Contract with the City of Glendale, in accordance with the terms of such Proposal and give such Bonds and Certificates of Insurance as specified in the Project Specifications and Contract Documents with good and sufficient Surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter into such Contract and give such Bond and Certificates of Insurance, if the Principal shall pay to the City of Glendale the sum of money set forth above as liquidated damages for failure of the Principal to enter into the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, A.D., 19__

Principal

Title

Witness:

Surety

Witness:

Title

STATUTORY PAYMENT BOND PURSUANT TO TITLE 34,
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS:

That, _____

(Hereinafter called the Principal), as Principal, and _____,

a corporation organized and existing under the laws of the State of _____

_____ with its principal office in the City of _____,

(hereinafter called the Surety), as Surety, are held and firmly bound

unto _____ the City of Glendale, a municipal corporation

(hereinafter called the Obligee), in the amount of _____

Dollars (\$ _____), for the payment whereof, the said Principal

and Surety bind themselves, and their heirs, administrators, executors,

successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract
with the Obligee, dated the _____ day of _____,

19____, to construct _____ Project No. A-845016 - Arrowhead Ranch

Infrastructure - Bridge and Channel Improvement, Union Hills Drive at
Skunk Creek

which Contract is hereby referred to and made a part hereof as fully and
to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if
the said Principal shall promptly pay all moneys due to all persons
supplying labor or materials to him or his subcontractors in the prose-
cution of the work provided for in said Contract, then this obligation
shall be void, otherwise to remain in full force and effect;

PROVIDED, HOWEVER, that this bond having been required of the said Principal in order to comply with the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, all rights and remedies on this bond shall inure solely to such persons and shall be determined in accordance with the provisions, conditions and limitations of said Title, Chapter and Article, to the same extent as if they were copied at length herein.

The prevailing party or any party which recovers judgment on this bond shall be entitled to such reasonable attorney's fees as may be fixed by the court or a judge thereof.

Witness our hands this _____ day of _____, 19__.

PRINCIPAL SEAL

BY: _____

SURETY SEAL

BY: _____

AGENCY OF RECORD

AGENCY ADDRESS

STATUTORY PERFORMANCE BOND PURSUANT TO TITLE 34,
CHAPTER 2, ARTICLE 2, OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS:

That, _____
(Hereinafter called the Principal), as Principal, and _____,
a corporation organized and existing under the laws of the State of _____
_____ with its principal office in the City of _____,
(hereinafter called the Surety), as Surety, are held and firmly bound
unto _____ the City of Glendale, a municipal corporation
(hereinafter called the Obligee), in the amount of _____
Dollars (\$ _____), for the payment whereof, the said Principal
and Surety bind themselves, and their heirs, administrators, executors,
successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract
with the Obligee, dated the _____ day of _____,
19____, to construct _____ Project No. A-845016 - Arrowhead Ranch
Infrastructure - Bridge and Channel Improvement, Union Hills Drive at
Skunk Creek

which Contract is hereby referred to and made a part hereof as fully and
to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if
the said Principal shall faithfully perform and fulfill all the under-
takings, covenants, terms, conditions and agreements of said Contract
during the original term of said Contract and any extension thereof,
with or without notice to the Surety, and during the life of any
guaranty required under the Contract, and shall also perform and fulfill

all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived; then the above obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of said Title, Chapter and Article, to the same extent as if it were copied at length herein.

The prevailing party or any party which recovers judgment on this bond shall be entitled to such reasonable attorney's fees as may be fixed by the court or a judge thereof.

Witness our hands this _____ day of _____, 19__.

PRINCIPAL SEAL

BY: _____

SURETY SEAL

BY: _____

AGENCY OF RECORD

AGENCY ADDRESS

CITY OF GLENDALE, ARIZONA
ENGINEERING AND DEVELOPMENT DEPARTMENT
CERTIFICATE OF INSURANCE

The _____
certifies that the following insurance policies have been issued on behalf of
Name of Insured _____

Address of Insured _____

Name and Address of Additional Named Insured: City of Glendale, Arizona
P. O. Box 1556
Glendale, Arizona 85311

Type of Insurance	Policy No.	Eff. Date	Exp. Date	Limits of Liability
(1) Workmen's Compensation				Statutory
(2) Contractors Protective Bodily Injury				\$1,000,000 each occurrence
(2) Contractor(s) Protective Property Damage				\$1,000,000 each accident \$1,000,000 aggregate
(3) Contractual Bodily Injury				\$1,000,000 each occurrence
(3) Contractual Property Damage				\$1,000,000 each accident \$1,000,000 aggregate
(4) Automobile Bodily Injury & Property Damage				\$1,000,000 each occurrence

When the project includes construction of a new, or modification of an exist-
ing building (in addition to the above types):

- (5) Fire and Extended Coverage plus Vandalism and Malicious Mischief - for
the Full Amount of the Contract.

Policy No. Eff. Date Exp. Date

Policy Includes Coverage For:

- (1) a. Damage caused by blasting.
b. Damage caused by collapse or structural injury.
c. Damage to underground utilities.
- (2) Liability assumed in construction agreements and other types of contracts
or agreements in effect in connection with insured operations.
- (3) All owned, hired, or nonowned automotive equipment used in connection
with the insured operation.

It is agreed that none of these policies will be canceled or changed so
as to affect this certificate until ten (10) days written notice of such
cancellation or change has been delivered to the City of Glendale.

It is further agreed that:

These policies shall not expire until all work has been completed
and the project has been accepted by the City of Glendale. (If a
policy does expire during the life of the Contract, a renewal

Certificate of Insurance (Continued)

Certificate of the required coverage must be sent to the City of Glendale not less than five (5) days prior to expiration date.) The Contractor hereby agrees to indemnify and save harmless the City of Glendale and any jurisdiction or agency issuing permits for any work included in the project, their officers, agents and representatives from all suits, actions, loss, damage, expense, cost, or claims of any character or any nature brought on account of any injuries sustained by any person or property arising out of the work done in fulfillment of the construction of the improvement under the terms of this agreement, or on account of any act or omission by the Contractor or his agents, or from any claims or amounts arising or recovered under Workmen's Compensation laws or any other law, by-law, ordinance, or order or decree.

This Certificate is not valid unless countersigned by an authorized representative of the Insurance Company.

Date:

Countersigned by:

Signature

CITY OF GLENDALE, ARIZONA
PUBLIC WORKS/ENGINEERING DEPARTMENT

CONTRACTOR'S AFFIDAVIT
REGARDING
SETTLEMENT OF CLAIMS

PROJECT No. A-845016 - Arrowhead Ranch Infrastructure - Bridge and
Channel Improvement: Union Hills Drive at Skunk Creek

To the City of Glendale, Arizona

Gentlemen:

This is to certify that all lawful claims for materials, rental of equipment and labor used in connection with the construction of the above project, whether by subcontractor or claimant in person, have been duly discharged.

The undersigned, for the consideration of \$ _____, as set out in the final pay estimate, as full and complete payment under the terms of the Contract, hereby waives and relinquishes any and all further claims or right of lien under, in connection with, or as a result of the above described project. The undersigned further agrees to indemnify and save harmless the City of Glendale against any and all liens, claims of liens, suits, actions, damages, charges and expenses whatsoever, which said City may suffer arising out of the failure of the undersigned to pay for all labor performance and materials furnished for the performance of said installation.

Signed and dated at _____, this _____
day of _____, 19____.

Contractor

By _____

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

The foregoing instrument was subscribed and sworn to before me this _____
_____ day of _____, 19____.

Notary Public

My Commission Expires _____