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## County of Bernalillo

State of New Mexico

ONE CIVIC PLAZA, N.W.  
ALBUQUERQUE, NEW MEXICO 87102

ADMINISTRATION (505) 768-4000

COMMISSION (505) 768-4217

FAX (505) 768-4329

June 4, 1992

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Richard G. Vaughan, P.E.  
Richard G. Vaughan & Associates  
3700 Coors Road, NW  
Albuquerque, New Mexico 87120

RE: DRAINAGE REPORT FOR CAMINO ALTO ROAD RECEIVED JUNE 4, 1992  
FOR WORK ORDER APPROVAL, (D-32/D4)

Dear Mr. Vaughan:

Based on the information provided it is difficult to determine what the backwater effect will have on upstream properties since it appears that you are raising the existing roadway by at least 5 feet. The existing roadway may have been able to pass the 100-year storm over it with less head, than the head that is now required for the boxes.

I believe the only way to show that you are not causing a backwater problem is to prepare a HEC-2 for the existing and for the proposed condition and compare results. This may be important if there are structures low enough upstream from the bridge structure.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.  
County Floodplain Administrator

xc: Susan Colonge, County Public Works

GA  
wp+3407

## DRAINAGE INFORMATION SHEET

PROJECT TITLE: Camino Alto Road ZONE ATLAS/DRNG. FILE #: D 32 #1  
 LEGAL DESCRIPTION: County Road - Sandia Knolls Subdivision  
 CITY ADDRESS: \_\_\_\_\_  
 ENGINEERING FIRM: Richard G. Vaughan & Assoc. CONTACT: Richard G. Vaughan  
 ADDRESS: 3700 Coors Rd NW PHONE: 831-4511  
 OWNER: Bernalillo County CONTACT: Susan Colonge  
 ADDRESS: Public Works Dept. PHONE: 843-6120  
 ARCHITECT: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
 SURVEYOR: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

## PRE-DESIGN MEETING:

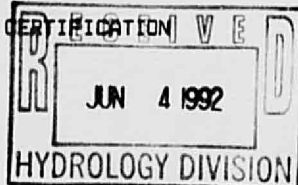
☐ YES☒ NO☐ COPY OF CONFERENCE RECAP  
SHEET PROVIDED

DRB NO. \_\_\_\_\_

EPC NO. \_\_\_\_\_

PROJ. NO. BC57-91

## TYPE OF SUBMITTAL:

☒ DRAINAGE REPORT☐ DRAINAGE PLAN☐ CONCEPTUAL GRADING & DRAINAGE PLAN☐ GRADING PLAN☐ EROSION CONTROL PLAN☐ ENGINEER'S CERTIFICATION

## CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL☐ PRELIMINARY PLAT APPROVAL☐ SITE DEVELOPMENT PLAN APPROVAL☐ FINAL PLAT APPROVAL☐ BUILDING PERMIT APPROVAL☐ FOUNDATION PERMIT APPROVAL☐ CERTIFICATE OF OCCUPANCY APPROVAL☐ ROUGH GRADING PERMIT APPROVAL☐ GRADING/PAVING PERMIT APPROVAL☒ OTHER Review (SPECIFY)DATE SUBMITTED: May 26, 1992

**ENGINEERING REPORT**

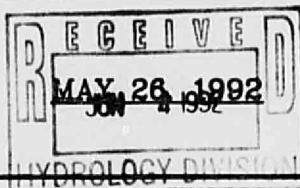
Prepared for:

**ENGINEERING DIVISION  
BERNALILLO COUNTY PUBLIC WORKS  
ALBUQUERQUE, NEW MEXICO**

PROJECT:

**"CAMINO ALTO BRIDGE CROSSING"  
BERNALILLO COUNTY, NEW MEXICO  
PROJECT NO. 57-91**

**FINAL DESIGN REPORT  
CAMINO ALTO ROAD**



**RgV RICHARD G. VAUGHAN & ASSOC.  
CONSULTING ENGINEERS**

3700 COORS ROAD N.W.  
ALBUQUERQUE, N.M. 87120  
(505) 831-4511



**"MEMBER CONSULTING ENGINEERS COUNCIL OF NEW MEXICO"**

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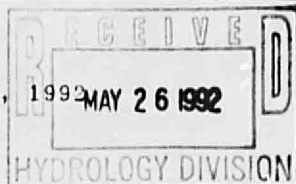
RgV

RICHARD G. VAUGHAN & ASSOCIATES  
CONSULTING ENGINEERS  
3700 Coors Road N.W.  
Albuquerque, New Mexico 87120  
(505) 831-4511

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Investigations/Studies/Reports  
Computer Applications/CADD

"Design for Quality and Performance"

May 22, 1992 MAY 26 1992



Public Works Department  
Bernalillo County  
2400 Broadway SE  
Albuquerque, New Mexico 87102

Attn: Susan Calongne, Project Engineer

Re: Camino Alto Bridge Crossing Project  
Engineering Contract 57-91  
Final Design Submittal

Dear Ms. Calongne,

Attached are twenty copies of the Final Design  
Submittal for the project including:

Design Report  
Drawings

We are available at any time to review this submittal with  
you and County personnel.

We have received Wage Rates from the State. I have also  
talked to Ms. Barnas of the Sandia Knolls Association and  
tentatively set a public hearing for June 2. I would suggest  
the following schedule for bidding and award of this  
project.

Submittal - May 22, 1992  
Public Hearing - June 2, 1992  
Final Plans - June 9, 1992  
Advertisement for Bids - June 9, 16, 23, 1992  
Pre-bid conference - June 18, 1992  
Bid - June 30, 1992  
County Commission Award - July 14, 1992  
Complete Construction - November 11, 1992 (120 days)

Sincerely,

*Richard G. Vaughan*  
Richard G. Vaughan, PE



CAMINO ALTO ROAD and DRAINAGE IMPROVEMENTS

PROJECT NO. 57-91

ROAD IMPROVEMENTS ACROSS FROST ARROYO

FINAL DESIGN REPORT

Prepared For

BERNALILLO COUNTY PUBLIC WORKS DEPARTMENT DEPARTMENT

Albuquerque, New Mexico

Prepared By

*Richard G. Vaughan & Associates*

3700 Coors Road NW

Albuquerque, New Mexico 87120

May 22, 1992

THIS MICROIMAGE IS THE BEST POSSIBLE  
REPRODUCTION DUE TO THE POOR QUALITY  
OF THE ORIGINAL DOCUMENT.

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VI.	COST ESTIMATE-ROAD
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EXHIBIT A -	FINAL
EXHIBIT B -	FINAL
EXHIBIT C -	DRA
EXHIBIT D -	SPEC

THIS MICROIMAGE IS THE BEST POSSIBLE  
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TECHNICAL DATA - COUNTY

INTERSECTION DATA - CAMINO ALTO ROAD AND LOCAL CROSS ROADS

DESIGN SPEED	- 25MPH - MAJOR LOCAL ROAD
ACCIDENT DATA	- NONE
AS-BUILT PLANS	- NONE
CONTROLLED PHOTOS	- NONE
LOCATION SURVEY	- PROPERTY AND TOPO - 1991/1992
SURFACING	- 3" PMBP ON 6" BC
RIGHT OF WAY	- 60' FOR CAMINO ALTO ROAD
LOCATION MAP	- ATTACHED DRAWINGS
COUNTY ASSESSOR MAPS	- YES
PLAT MAPS	- YES
DRAINAGE MAPS	- 1983 FEMA FLOOD INSURANCE STUDY FROST ARROYO
TRAFFIC ESTIMATES	- 400 ADT - 1991, 800 ADT - 2011 BASED ON A 800 LOT SUBDIVISION

## I. INTRODUCTION

The road is located in Bernalillo County's East Mountain area approximately one mile east of State Road 14 and just north of State Road 44 (Frost Road).

This report summarizes all work performed for the Final Design effort and programming of the project. Recommendations are provided for all significant items of construction.

Approval is requested so that final design may continue to bid to meet construction schedules and allow construction to occur as soon as possible. Major design decisions have been reviewed with COUNTY personnel to expedite the project and all utility companies affected have been contacted, however the plans have not been presented to the area residents.

## II. EXISTING CONDITIONS

The existing roadway consists of two 11-12 foot wide paved driving lanes with minimal unpaved shoulders from 1 to 2 feet wide and minimal side ditches. The alignment across Frost Arroyo is a sweeping S-curve through the arroyo bottom from hillside to hillside at a posted speed of 15 mph. An existing 60" culvert is currently the flow crossing for the arroyo. The road is the only access to Sandia Knolls Subdivision and must be maintained for traffic during construction. Within the area of the crossing, residential lots and housing exist on the east side of Camino Alto. No abutting residential lots exist on the west side, but Garden Road intersects Camino Alto near the bottom of the south hill and serves residential lots to the west. Access to the west via Garden Road and to the lots on the east side of Camino Alto must be maintained.

Three utilities, water, cable tv, and electric power are within the road right-of-way and serve the lots to the west, east, and north. Power and cable tv elements require relocation.

The drainage area feeding Frost Arroyo at the crossing is approximately 10 square miles and extends east, north and south of the current crossing. Design flows are indicated in the drainage summary section.

Site distances are very bad and the existing culvert flow capacity is such that the road is often topped in a minimal rain. Replacement of the culvert and realignment correct site and drainage problems.

## III. PROPOSED IMPROVEMENTS-FROM FIELD REVIEW AND DESIGN

Road and crossing improvements include re-alignment of Camino Alto from the hillside approach at Garden Road north to the current alignment at the top of the hill. The alignment is shown on

the plans and was set horizontally to meet existing alignments at either end.

The vertical alignment is set to allow construction of multiple CBC boxes to carry the six hour-100 year flow.

The road improvements proposed include 2-12' driving lanes, 2-8' shoulders with 3" PMBP paving over 6" base course.

Garden Road is realigned to a 90 degree intersection with the new Camino Alto. To provide access to the remaining parcels on the old Camino Alto Road, a single turnout to the existing road is to be built such that the remaining portion of the existing Camino Alto forms a hammerhead cul-de-sac. Five lots are served by the turnout. The old road is blocked off to the north and south of the turnout with bermed sections. No work is intended on the remaining old section of Camino Alto. The turnout is located to minimize loss of trees and nominally centered on the lots to be served. All existing driveways and accesses to the lots are not modified.

The current 100 year flood plain elevation is 6642 with water flowing about 3' above the existing road. Lot 56a on the east side of Camino Alto is currently within the flood plain of the arroyo. Lot 56a is designated on the utility company maps and partially fenced, but is not a platted subdivision lot. The new crossing structure will pass the 100 year flow without increasing the existing flood plain elevation.

The new roadway is raised approximately 4' above the current low point of the existing road and about 10' above the natural grade. Because of slope limitations to stay within the right of way and the deep box structure, metal barrier sections are proposed on both sides of the roadway nominally from the start of the project to the new turnout to old Camino Alto.

#### IV. LOCATION SURVEY AND UTILITIES

A detailed location, topo, and utility survey was done and is shown on the drawings. A single power pole, signal pole, and about 500' of cable tv line require relocation. All utilities have been contacted about the required relocations.

#### V. DESIGN CHECKS-DRAINAGE STRUCTURES

In this preliminary design, design checks were done to verify the flows from the 1983 FEMA Study and also from current east mountain design criteria. The FEMA flow of approximately 3800 cfs was verified as that expected from a 24 hour-100 year storm. For a six hour-100 year storm Q100 is nominally 3000cfs. This flow was used to size the box structure and calculate backwater curves. The structure is a triple 14' x 8' CBC.

#### VI. COST ESTIMATE-ROAD WORK/AMAFCA DRAINAGE CONSTRUCTION

The project cost estimate is attached in Exhibit B for the road, structure, and channel work. Costing was done using recent SHD unit price data and is a detailed quantity takoff based on the drawings, improvements proposed, and detailed bid estimate listing. Cost of the project is \$ 384,150 including contractor gross receipts tax.

#### VII. ADDITIONAL PROJECT DATA

We have attached the drainage summary and summary specifications for the project. The summary specifications include the following from the Bid Documents:

- Table of Contents
- Section 1 - Advertisement for Bids
- Section 2 - Instructions to Bidders
- Section 3A.1 - Unit Price Bid Proposal Form
- Section 5 - Wages Rates

The specifications including complete bidding documents were submitted and reviewed with no comments. Minor changes in bid quantities have been made since the submittal and are reflected in the summary documents included herein. Other sections of the specifications including standard County Provisions, Technical Specifications, etc. remain unchanged for the earlier submittal.

The drawings are complete and include eighteen drawings. We have not included standard drawings for R and W code signs. These will be added to the Bid set. Standard NMSHTD serial drawings and Standard NMSHTD Technical Specifications are included in the project by reference only.

#### EXHIBIT A - PHASE II DRAWINGS (SEPARATELY ATTACHED)



UNIT PRICE BID PROPOSAL

To County of Bernalillo, Albuquerque, New Mexico (hereinafter called "Contracting Agency"):

1. The undersigned (hereinafter called "Bidder") in compliance with your invitation for bids for the construction of Camino Alto Bridge Crossing Bernalillo County, New Mexico Project Number 57-91, having carefully examined the Contract Documents and the sites of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth herein, and at the unit prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents of which this proposal is a part. Quantities shown in this unit prices proposal and in alternates, if any, are estimated, and actual payment will be made on the basis of confirmed quantities a constructed.
2. UNIT PRICE BID PROPOSAL

BID ITEM NO.	DESCRIPTION	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT
201002	CLEARING AND GRUBBING	L.S.	1		
202001	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1		
203001	UNCLASSIFIED EXCAVATION	C.Y.	1,296		
203010	BORROW	C.Y.	3,791		
207001	SUBGRADE PREPARATION	S.Y.	3,500		
212010	CLASS A SEEDING	ACRE	0.70		
212190	CLASS I TEMP. SOIL STABILANT	ACRE	0.42		
304001	BASE COURSE	TON	1,100		
304090	BASE COURSE/SUBBASE TESTING BY CONTRACTOR	L.S.	1		
401002	PLANT MIX BITUMINOUS PAVEMENT, TYPE 1, GRADE B	TON	510		
401090	PLANT MIX BITUMINOUS PAVEMENT, TESTING BY CONTRACTOR	L.S.	1		

BID ITEM NO.	DESCRIPTION	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT
401102	85-100 BITUMINOUS MATERIAL	TON	26		
401150	HYDRATED LIME	TON	8		
406001	CORING BY THE CONTRACTOR	EA.	5		
407012	ASPHALT FOR TACK COAT	TON	2		
408012	ASPHALT FOR PRIME COAT	TON	7		
501324	24" CULVERT PIPE	L.F.	203		
504015	REINFORCING BARS, GRADE 60	LBS.	103,170		
509050	STRUCTURAL CONCRETE, CLASS A	C.Y.	600		
603030	WIRE ENCLOSED RIPRAP	C.Y.	374		
604034	FILTER FABRIC	S.Y.	220		
606005	METAL BARRIER W-BEAM	L.F.	500		
606009	METAL BARRIER THRIE BEAM	L.F.	225		
606151	METAL BARRIER ANCHORAGE, TYPE C	EACH	4		
606403	PRECAST CONCRETE WALL BARRIER TYPE II	L.F.	400		
618001	TRAFFIC CONTROL MANAGEMENT	L.S.	1		
621001	MOBILIZATION	L.S.	1		
701010	PLYWOOD OR ALUMINUM PANEL SIGN	S.F.	77		
701101	POST FOR PLYWOOD/ALUMINUM PANEL SIGNS	L.F.	195		
702000	CONSTRUCTION SIGNING	S.F.	273		
702103	STEEL AND BASE POSTS FOR CONSTRUCTION SIGNING	L.F.	416.5		

BID ITEM NO.	DESCRIPTION	UNIT	EST. QUANTITY	UNIT PRICE	AMOUNT
702145	PORTABLE SIGN SUPPORT	EA.	10		
702215	BARRICADE TYPE III, 8 FT.	EA.	4		
702349	CHANNELIZATION DEVICES (BARRELS), TYPE A	EA.	5		
702350	CHANNELIZATION DEVICES (BARRELS), TYPE B	EA.	15		
703100	TRAFFIC MARKER - GUIDES	EA.	9		
703101	TRAFFIC MARKER - HAZARD	EA.	4		
704010	REFLECTORIZED PAINTED MARKINGS	L.F.	6,360		
704016	ADHESIVE NON-METALLIC MARKING TAPE	L.F.	200		
870001	CONSTRUCTION STAKING BY CONTRACTOR	L.S.	1		

SUBTOTAL OF ALL BID ITEMS =	\$	
NEW MEXICO GROSS RECEIPTS TAX AT 5.75% =	\$	
TOTAL BASE BID (ALL BID ITEMS AND NMGR) =	\$	

THE AWARD OF THE BID WILL BE BASED ON THE LOWEST RESPONSIBLE BIDDER, EXCLUDING ANY AND ALL GROSS RECEIPTS TAX, MEETING ALL SPECIFICATIONS.

FILE: CAMINO ALTO BRIDGE CROSSING - BCCA-CS1

PREPARED: Richard G. Vaughan, PE

COST ESTIMATE - CAMINO ALTO

USE

RICHARD G. VAUGHAN &amp; ASSOC - May. 18, 1992 BERNALILLO COUNTY PROGRAM YEAR - 1992

SUR SCH @ AH594 &amp; STRUCT QUANT @ BL723 &amp; CONCB @ DY916

FINAL DETAIL EST @V82, CONST SIGN @EF946, PERM @FC1000

ITEM NO	DESCRIPTION	UNIT	ROADWAY ESTIMATE	CHANNEL FINAL ESTIMATE	CONSTRUCTION SIGNING FINAL ESTIMATE	PERMANENT SIGNING FINAL ESTIMATE	CONSTRUCTION ENGINEERING FINAL ESTIMATE	PROJECT TOTAL FINAL ESTIMATE	USE \$ AMOUNT	UNIT PRICE
201002	CLEARING AND GRUBBING	LS	LS					1.00	1000.00	1000.00
202001	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	LS					1.00	3618.00	3618.00
203001	UNCLASSIFIED EXCAVATION	CY	481.48	814.81				1296.30	2787.04	2.15
203010	BORROW	CY	3791.34	0.00				3791.34	9592.10	2.53
207001	SUBGRADE PREPARATION	SY	3500.00					3500.00	1260.00	0.36
212010	CLASS A SEEDING	AC	0.46	0.24				0.70	465.74	663.00
212090	CLASS I TEMP SOIL STABILANT	AC	0.28	0.15				0.42	44.26	105.00
304001	BASE COURSE	TON	1100.00					1100.00	6776.00	6.16
304090	BASE COURSE/SUBBASE TEST CONTRACTOR	LS					LS	1.00	600.00	600.00
401002	PMBP TYPE I, GRADE B	TON	510.00					510.00	6696.30	13.13
401090	P.M.B.P. TESTING BY THE CONTRACTOR	LS					LS	1.00	600.00	600.00
401102	85-100 BITUMINOUS MATERIAL	TON	26.00					26.00	2990.00	115.00
401150	HYDRATED LIME	TON	8.00					8.00	742.40	92.80
406001	CORING BY THE CONTRACTOR	EA					5.00	5.00	200.00	40.00
407012	ASPHALT FOR TACK COAT	TON	2.00					2.00	163.60	81.80
408012	ASPHALT FOR PRIME COAT	TON	7.00					7.00	770.00	110.00
501624	24" CULVERT PIPE	LF	203.00					203.00	6094.06	30.02
504015	REINFORCING BARS GRADE 60	LB	103170.00					103170.00	53648.40	0.52
509050	STRUCTURAL CONCRETE CLASS A	CY	600.00					600.00	174892.00	291.47
603030	WIRE ENCLOSED RIPRAP	CY	323.02	50.91				373.93	33653.73	90.00
604034	FILTER FABRIC	SY	220.00					220.00	235.40	1.07
606005	METAL BARRIER W-BEAM	LF	500.00					500.00	5065.00	10.13
606009	METAL BARRIER THRIE BEAM	LF	225.00					225.00	5692.50	25.30
606151	METAL BARRIER ANCHORAGE TYPE C	EA	4.00					4.00	1832.00	458.00
606403	PRECAST CONCRETE WALL BARRIER TYPE II	LF			400.00			400.00	7560.00	18.90
618001	TRAFFIC CONTROL MANAGEMENT	LS					LS	1.00	2000.00	2000.00
621001	MOBILIZATION	LS	LS						22800.00	
701010	PLYWOOD OR ALUMINUM PANEL SIGN	SF				77.00		77.00	642.18	8.34
701101	POST FOR PLYWOOD/ALUMINUM PANEL SIGNS	LF				195.00		195.00	951.60	4.88
702000	CONSTRUCTION SIGNING	SF			273.00			273.00	1482.39	5.43
702103	STEEL AND BASE POSTS FOR CONST SIGNING	LF			416.50			416.50	1786.79	4.29
702145	PORTABLE SIGN SUPPORT	EA			10.00			10.00	835.90	83.59
702215	BARRICADE TYPE III, 8 FT	EA			4.00			4.00	873.36	218.34
702349	CHANNELIZATION DEVICES (BARRELS) TYPE A	EA			5.00			5.00	209.45	41.89
702350	CHANNELIZATION DEVICES (BARRELS) TYPE B	EA			15.00			15.00	1018.20	67.88
703100	TRAFFIC MARKER - GUIDES	EA	9.00					9.00	167.13	18.57
703101	TRAFFIC MARKER - HAZARD	EA	4.00					4.00	89.56	22.39
704010	REFLECTORIZED PAINTED MARKINGS	LF	5760.00		600.00			6360.00	381.60	0.06
704016	ADHESIVE NON-METALLIC MARKING TAPE	LF			200.00			200.00	56.00	0.28
870001	CONSTRUCTION STAKING BY CONTRACTOR	LS					LS	1.00	3000.00	3000.00

CONSTRUCTION ESTIMATE TOTALS

363262.68

TOTAL ESTIMATE PLUS GRT = 384150.29

## FROST ARROYO:

1. Design Criteria - Section 22.2 Hydrology of the DPM, Vol. 2 for the City of Albuquerque, NM. August, 1991. (Adopted by the County of Bernalillo)

2. Basic Method - HYMO computer program as described in Part B of 22.2.

3. HYMO obtained from Cliff Anderson of AMAFCA, dated September, 1991

4. Design Assumptions and Criteria

A. Design Storm - 100 year, 6 hour event as defined by the NOAA Atlas 2, Precipitation - Frequency Atlas of the Western United States, Vol. IV - New Mexico.

B. Other Storm - 100 year, 24 hour even as defined by reference above.

C. Point Rainfall - P(60), P(360) and P(1440) obtained from Figures D, E, and F of the DPM.

1. P(60) = 2.1
2. P(360) = 2.7
3. P(1440) = 3.4

D. Mass Rainfall, Pt - computed using eq. 20 - 25, DPM  
(See HYMO Runs)

E. Deduction for Uncontrolled Watershed - 22.2 B.3 5).  
Point Precipitation was reduced according to Figure G. Reductions are as follows:

1. P(60) = .9
2. P(360) = .98
3. P(1440) = .987

F. Basin Characteristics - Area, elevation, overall reach length, average slope, velocity, time of concentration and time to peak were calculated according to Section 22.2 of DPM. Tabulated results are attached.

1. Land Treatment A - 85%  
Land Treatment C - 5%  
Land Treatment D - 10%
2. Initial Abstractions  
A = .65  
C = .35  
D = .10

## 3. Infiltration

A = 1.67  
C = .83  
D = .04 - 0.0

## G. Run HYMO program with following information.

1. use B.5 Simplified Input (COMPUTE NM HYD)
2. RAINFALL type 1 and 2 for 6 hour and 24 hour.

## H. HYMO program logic:

Compute Hyd for basin L  
Compute Hyd for basin K  
Add L & K at section 1  
Route L & K Combined to section 2  
Compute Hyd for basin J  
Add basin J to Combined L & K at section 2  
Route Combined LKJ to section 3  
Compute Hyd for basin I  
Compute Hyd for basin H  
Add I & H  
Add Combined LKJ to I & H  
Route Combined LKJIH to section 4  
Compute Hyd for basin F  
Add basin F to LKJIH  
Route LKJIHF to section 5  
Compute Hyd for basin F1  
Compute Hyd for basin G  
Add F1 & G  
Add F1 & G to LKJIHF  
Route LKJIHFF1G to section 6  
Compute Hyd for basin E  
Compute Hyd for basin C  
Add E & C  
Add E & C & combined  
Route new combined to section 7  
Compute Hyd for basin B  
Add B to combined  
Route to section 8  
Compute Hyd for basin D  
Compute Hyd for basin A  
Add A & D  
Add A & D to combined to get total

## I. Results:

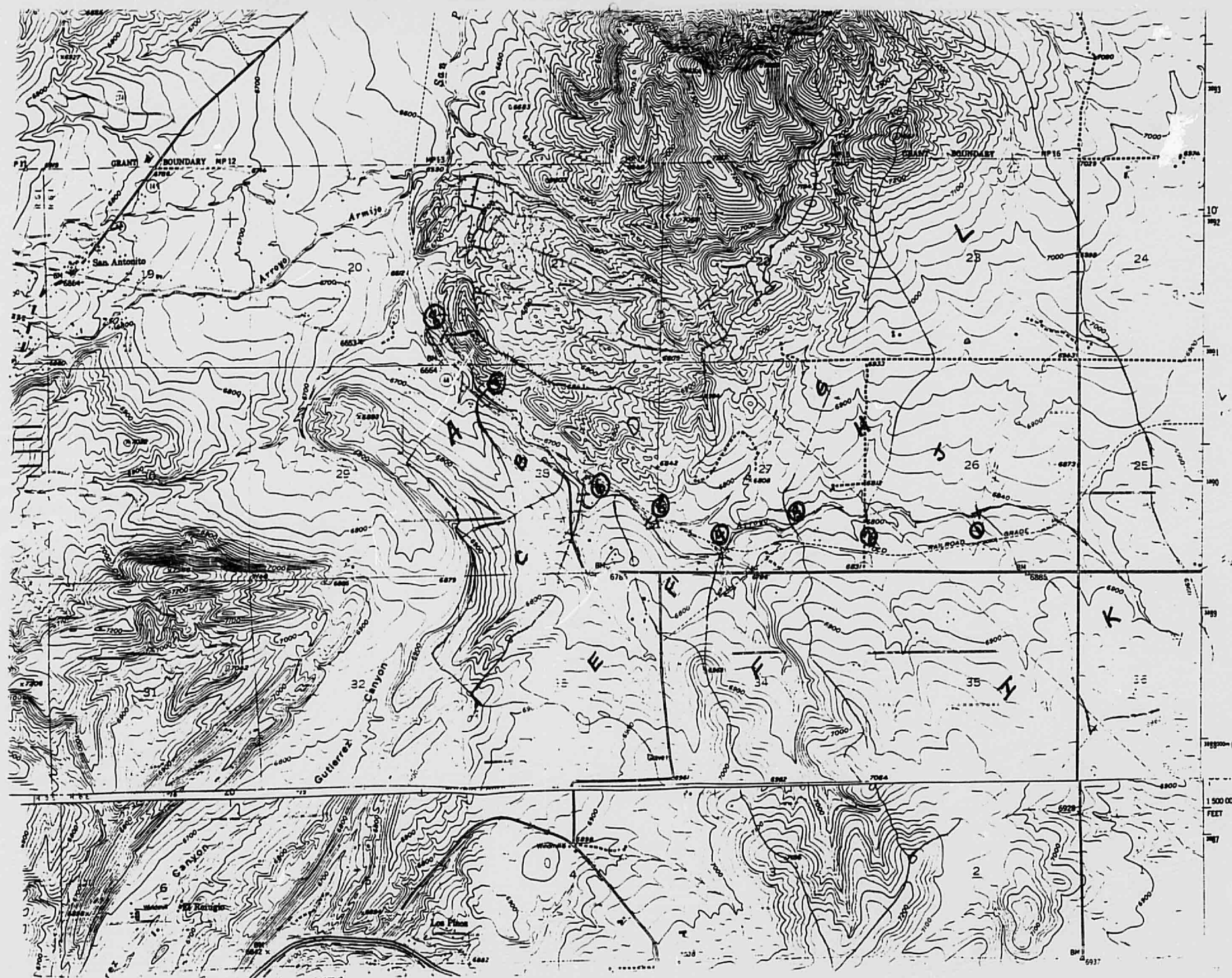
100 year - 6 hour = 3000 cfs  
100 year - 24 hour = 3950 cfs



0000 0000 1307

SUBBASIN	AREA ac.	ELEV ft.	LENGTH ft.	SLOPE %	VEL. fps	tc min.	tp min.
A	130	300	4974	6.03	2.45	29.45	19.63
B	66	120	3027	3.96	2	31.57	21.05
C	219	280	6042	4.63	2.15	35.57	23.71
D	304	354	6835	5.18	2.4	34.3	22.87
E	490	360	8447	7.46	2.73	35.5	23.67
F1	116	243	4588	5.3	2.3	30.28	20.19
F	722	500	11931	4.19	2.05	48.77	32.51
G	796	860	16193	5.31	2.3	120	80.00
H	266	300	6510	4.61	2.15	36.4	24.27
I	1059	420	11468	3.66	1.91	49.01	32.67
J	177	160	4407	3.63	1.64	35.8	23.87
K	714	140	7518	1.86	1.27	51.98	34.65
L	871	780	15748	4.95	2.22	120	80.00

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25x

32x

25x

30X CULVERT ANALYSIS  
COMPUTATION OF CULVERT PERFORMANCE CURVE

April 10, 1992  
FROST ARROYO  
3-14x8 CBC'S  
FLOWLINE = 5632.64

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	42.00
Culvert Rise (Height of Opening) (feet).....	8.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	3
Manning's Roughness Coefficient (n-value).....	0.0130
Entrance Loss Coefficient of Culvert Opening.....	0.40
Culvert Length (feet).....	115.0
Culvert Slope (feet per foot).....	0.0093

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Normal Depth Outlet Control	Critical Depth (ft)	Depth at (ft)	Outlet Velocity (fps)
1000.0	0.00	4.41	4.44	1.64	2.60	9.15
2000.0	0.00	7.05	5.83	2.52	4.13	18.92
3000.0	0.00	9.27	7.51	3.25	5.41	21.98
4000.0	0.00	12.55	9.54	3.90	6.56	24.40

30X CULVERT ANALYSIS COMPUTER PROGRAM Version 1.6 Copyright (c) 1986  
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TRAPEZOIDAL CHANNEL ANALYSIS  
STANDARD STEP WATER SURFACE PROFILE

April 10, 1992  
FROST ARROYO

ROAD CROSSING / NEW TOP OF ROAD & BOX SECTION FLOW  
FLOWLINE 6632.62 AVG 8 BOX WITH 9.27' HW

PROGRAM INPUT DATA:  
DESCRIPTION

VALUE

Flow Rate (cubic feet per second).....	3000.0
Channel Bottom Slope (feet per foot).....	0.0100
Manning's Roughness Coefficient (n-value).....	0.0330
Channel Side Slope - Left Side (horizontal/vertical)....	13.00
Channel Side Slope - Right Side (horizontal/vertical)...	2.00
Channel Bottom Width (feet).....	45.0
Channel Flowline Elevation at Starting Station (feet)...	6632.64
Water Surface Elevation at Starting Station (feet).....	6641.91
Starting Channel Station (feet).....	0.00

PROGRAM RESULTS:

DESCRIPTION

VALUE

Normal Depth (feet).....	4.22
Critical Depth (feet).....	4.09

Station	Flowline WS Elev. (ft)	Depth (ft)	Flow Area (sq ft)	Vel Velocity (fps)	EGL Head (ft)	Slope (ft/ft)
0.00	6632.64	6641.91	9.27	1081.65	3.83	0.124
100.0	6632.64	6641.91	9.27	334.51	3.39	0.179
200.0	6632.64	6641.90	9.26	722.49	4.15	0.268
300.0	6632.64	6641.91	9.27	576.83	5.20	0.420
400.0	6632.64	6641.94	9.30	449.15	6.86	0.693
500.0	6632.64	6642.09	1.45	349.03	9.60	1.147

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986  
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TIC #25 8322. A manual with equations & flow chart is available.



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TRAPEZOIDAL CHANNEL ANALYSIS  
RATING CURVE COMPUTATION

April 10, 1992  
FROST ARROYO  
CURRENT ROAD CROSSING  
Q100 - 3000CFS

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0100
Manning's Roughness Coefficient (n-value).....	0.0330
Channel Side Slope - Left Side (horizontal/vertical)....	13.00
Channel Side Slope - Right Side (horizontal/vertical)...	9.00
Channel Bottom Width (feet).....	127.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	590.2	4.28	0.783	0.284	1.284	138.0	149.0
2.0	1941.9	6.52	0.870	0.659	2.659	298.0	171.0
3.0	2859.9	7.43	0.899	0.957	3.357	386.2	182.0
3.5	3075.4	7.60	0.904	0.897	3.497	404.6	184.2
3.6	3963.8	8.26	0.933	1.054	4.059	480.0	193.0
4.0	6654.8	9.73	0.961	1.471	5.470	684.0	215.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986  
Dossan G. Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092  
(713) 895-8322. A manual with equations & flow chart is available.

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PIPE CULVERT ANALYSIS  
COMPUTATION OF CULVERT PERFORMANCE CURVE

April 10, 1992  
FROST ARROYO  
CURRENT CULVERT CAPACITY  
FLOWLINE 6632/ROAD 6639

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Diameter (feet).....	5.00
FWHA Chart Number (1, 2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	3
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	67.0
Culvert Slope (feet per foot).....	0.0300

PROGRAM RESULTS:

Flow Rate (cfs)	Headwater Depth Inlet (ft) Control	Headwater Depth Outlet (ft) Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
100.0	0.00	4.59	2.85	2.25	2.85	2.25
150.0	0.00	6.19	4.36	2.82	3.61	2.92
200.0	0.00	8.44	6.26	3.44	4.04	3.44

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TRAPEZOIDAL CHANNEL ANALYSIS  
STANDARD STEP WATER SURFACE PROFILE

April 10, 1992  
FROST APPROVO

ROAD CROSSING / CURRENT TOP OF ROAD OVERFLOW SECTION  
FLOWLINE = 6639 AVG AT ROADWAY DAM

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	3000.0
Channel Bottom Slope (feet per foot).....	0.0100
Manning = Roughness Coefficient (n-value).....	0.0330
Channel Side Slope - Left Side (horizontal/vertical)....	13.00
Channel Side Slope - Right Side (horizontal/vertical)...	9.00
Channel Bottom Width (feet).....	127.0
Channel Flow-Line Elevation at Starting Station (feet)...	6639.00
Water Surface Elevation at Starting Station (feet).....	6641.50
Starting Channel Station (feet).....	0.00

PROGRAM RESULTS:

DESCRIPTION	VALUE
Channel Depth (feet).....	2.56
Channel Depth (feet).....	2.41

Station	Flowline Elev.	Depth	Flow Area	Vel	Velocity	EDL Slope
(ft)	(ft)	(ft)	(sq ft)	(fps)	Head(ft)	(ft/ft)
0.0	6639.00	6641.50	2.56	404.58	7.40	0.854 0.009518
100.0	6640.00	6642.54	2.54	394.09	7.61	0.898 0.010267
200.0	6641.00	6643.58	2.58	399.97	7.50	0.874 0.009848
300.0	6642.00	6644.58	2.58	396.73	7.56	0.888 0.010086
400.0	6643.00	6645.57	2.57	398.64	7.53	0.880 0.009952
500.0	6644.00	6646.55	2.56	397.50	7.55	0.854 0.010026

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986  
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(713) 375-8323. A manual with equations & flow chart is available.

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TRAPEZOIDAL CHANNEL ANALYSIS  
RATING CURVE COMPUTATION

April 10, 1992  
FROST ARROYO  
UPSTREAM SECTION  
FLOWLINE 6638 AVERAGE

PROGRAM INPUT DATA:  
DESCRIPTION

VALUE

Channel Bottom Slope (feet per foot).....	0.0100
Manning's Roughness Coefficient (n-value).....	0.0330
Channel Side Slope - Left Side (horizontal/vertical)....	5.00
Channel Side Slope - Right Side (horizontal/vertical)...	5.00
Channel Bottom Width (feet).....	135.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head (ft)	Energy Head (ft)	Flow Area (sq ft)	Top Width (ft)
1.0	617.1	4.38	0.787	0.297	1.297	141.0	147.0
2.0	1991.7	6.77	0.878	0.713	2.713	294.0	159.0
2.5	2914.1	7.77	0.908	0.938	3.438	375.0	165.0
3.5	3118.5	7.95	0.914	0.984	3.584	391.8	166.2
3.0	3984.7	8.68	0.934	1.170	4.170	459.0	171.0
4.0	4555.2	10.21	0.974	1.650	5.650	636.0	183.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1986  
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713/395-8322. A manual with equations & flow chart is available.

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TRAPEZOIDAL CHANNEL ANALYSIS  
STANDARD STEP WATER SURFACE PROFILE

April 10, 1982  
FROST ARROYO

UPSTREAM SECTION  
FLOWLINE = 5638 AVG UPSTREAM

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Flow Rate (cubic feet per second).....	2000.0
Channel Bottom Slope (feet per foot).....	0.0100
Manning's Roughness Coefficient (n-value).....	0.0330
Channel Side Slope - Left Side (horizontal/vertical)....	6.00
Channel Side Slope - Right Side (horizontal/vertical)...	6.00
Channel Bottom Width (feet).....	135.0
Channel Flowline Elevation at Starting Station (feet)...	5638.00
Water Surface Elevation at Starting Station (feet).....	5640.40
Starting Channel Station (feet).....	0.00

PROGRAM RESULTS:

DESCRIPTION	VALUE
Normal Depth (feet).....	2.54
Critical Depth (feet).....	2.39

Station	Flowline	WS Elev.	Depth	Flow Area	Vel	Velocity	ECL	Slope
(+ft)	(+ft)	(+ft)	(+ft)	(sq ft)	(fps)	Head(+ft)	(+ft/+ft)	
0.0	5638.00	5640.40	2.40	353.56	8.37	1.037	0.012186	
100.0	5637.00	5641.66	2.46	401.16	7.48	0.868	0.008596	
200.0	5640.00	5642.49	2.47	373.45	8.03	1.002	0.010735	
300.0	5641.00	5643.58	2.58	367.83	7.74	0.929	0.009546	
400.0	5642.00	5644.52	2.52	378.91	7.92	0.973	0.010261	

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.3 (c) 1984  
Dodson & Associates, Inc., 7015 4, Tidwell, #107, Houston, TX 77092  
(713) 875-8000. A manual with equations & flow chart is available.

ASPHALT INSTITUTE PROGRAM - HWY

03-08-1992

Printout of MS-1/MS-17 Results

## \*\*\*\*\* TRAFFIC INFORMATION \*\*\*\*\*

ANALYSIS PERIOD (years) = 30  
 INITIAL DESIGN LIFE (years) = 20  
 DESIGN LANE FACTOR = 0.50

INITIAL AVERAGE ANNUAL DAILY TRAFFIC (AADT) = 400  
 % OF AADT THAT IS TRUCKS = 5  
 ANNUAL COMPOUND GROWTH RATE (percent) = 2

Type of Usage is RURAL :

TRUCK CLASSIFICATION	Percent of TRUCKS	Truck Factor
87.0	0.03	
10.0	0.20	
3.0	0.67	
0.0	0.48	
0.0	0.70	
0.0	0.95	

## &gt;&gt;&gt;&gt;&gt; CALCULATED EQUIVALENT AXLE LOADS OF TRAFFIC :

\*\*\*\*\*

INITIAL YEAR (EAL) = 242  
 DESIGN LIFE (EAL) = 5,871  
 REMAINING 10 years (EAL) = 3,932  
 TOTAL PERIOD (EAL) = 9,803

## \*\*\*\*\* SUBGRADE INFORMATION \*\*\*\*\*

TYPE OF STRENGTH MEASUREMENT : CALIFORNIA BEARING RATIO (CBR)

INDIVIDUAL VALUES OF SUBGRADE STRENGTH :

NUMBER	C-VALUE
1	6

CBR CORRELATION EQUATION USED :  $M_r = [ 1500 \times \text{CBR} ]$ 

## &gt;&gt;&gt;&gt;&gt; CALCULATED DESIGN SUBGRADE RESILIENT MODULUS :

\*\*\*\*\*

AVERAGE  $M_r$  (psi) = 0  
 STANDARD DEVIATION OF  $M_r$  (psi) = 0  
 DESIGN  $M_r$  (psi) = 0



**CONTRACT DOCUMENTS  
AND  
CONSTRUCTION SPECIFICATIONS  
FOR  
CAMINO ALTO BRIDGE CROSSING  
57-91  
COUNTY OF BERNALILLO  
PUBLIC WORKS DEPARTMENT**



**PREPARED BY:**

**RICHARD G. VAUGHAN AND ASSOCIATES  
3700 COORS RD. N.W. SUITE E**



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COUNTY OF BERNALILLO  
CONTRACTING AGENCY AND OWNER

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ADVERTISEMENT FOR BIDS

COUNTY OF BERNALILLO  
CONTRACTING AGENCY AND OWNER  
BID NO. \_\_\_\_\_

Sealed bids will be received in the office of the Purchasing Director, County of Bernalillo, at the Albuquerque/Bernalillo County Government Center, One Civic Plaza NW, 10th Floor, Albuquerque, New Mexico, for the project listed below no later than \_\_\_\_\_ local time, \_\_\_\_\_ at which time the public opening and reading of bids received will begin in Government Center. Delivery of bids is the sole responsibility of the Bidder. The bids will be considered by the County following the opening of the bids, and an award of the Contract, if made, will be within 90 days after the Bid Opening.

A pre-bid conference will be held at \_\_\_\_\_ on \_\_\_\_\_ in the 10th floor conference room of the Albuquerque/Bernalillo County Government Center, One Civic Plaza NW, Albuquerque, New Mexico.

For Instructions to Bidders, bidding forms, and Contract Documents, including plans, etc., to be used in connection with the submission of bids, the prospective Bidders are invited to contact the ENGINEER/ARCHITECT listed below. A \$ \_\_\_\_\_ deposit will be required for each set of plans, Contract Documents, and bidding forms. This deposit is refundable provided the bidding documents are returned in usable condition within ten (10) days after the Bid Opening. Portions of bidding documents may be purchased at the cost of reproduction.

The Bidder's attention is specifically directed to requirements in the Contract Documents for bid security, adherence to applicable federal, state and local statutes, regulations ordinances, affirmative action/equal employment opportunity and nondiscrimination compliance, payment of minimum wages, payment of taxes, time for bids to remain open, and the County of Bernalillo rights regarding award of the Contract.

The contracting Agency reserves the right to issue addenda to the approved Specifications during the advertising period as provided in the Contract Documents. A record of all the addenda and copies of the same will be available to all qualified Bidders from the Office of the Contracting Agency.

## Name and description of the Project:

Camino Alto Bridge Crossing  
Bernalillo County, New Mexico  
Project Number 57-91

Bidders are required to be licensed as Contractors in the State of New Mexico and must include license number in the prescribed place on the bid form.

## Names and Address of ENGINEER/ARCHITECT:

Richard G. Vaughan & Associates  
3700 Coors Boulevard NW  
Albuquerque, New Mexico 87120  
(505) 831-4511  
(505) 831-1963 (fax)

Advertised in: \_\_\_\_\_ For the County of Bernalillo  
\_\_\_\_\_ Albuquerque, New Mexico

Advertising Dates: \_\_\_\_\_ By \_\_\_\_\_  
\_\_\_\_\_ Title: \_\_\_\_\_  
Date: \_\_\_\_\_

INSTRUCTIONS TO BIDDERS1. SPECIFICATIONS AND BIDDING FORMS

Specifications and bidding forms may be obtained at Richard G. Vaughan & Associates, 3700 Coors Road NW, Suite F, Albuquerque, NM 87102.

All bids shall be sealed, addressed to the County Purchasing Department, and marked on the outside of the envelope with the name and address of the Bidder.

2. SPECIFICATIONS, FEES AND TAXES

a) Specifications: This work will be constructed in accordance with the New Mexico State Highway Department Standard Specifications for Road and Bridge Construction, latest edition. Each Bidder shall obtain copies of the above New Mexico State Highway Department specifications by writing or otherwise contacting the New Mexico State Highway Department, P. O. Box 1149, Santa Fe, NM 87503.

Any construction or modifications, etc., of new or existing water and sewer lines, or systems, will be performed in conformance to the City of Albuquerque Standard Specifications for Public Works Construction, latest edition.

b) License and Royalty Fees: All license and royalty fees for products or for processes shall be paid directly by the Contractor.

c) Pursuant to §13-1-108 NMSA 1978 (1987 Cum. Supp.) you are hereby notified that all bids submitted are to exclude the applicable state gross receipts tax or applicable local option tax. Bernalillo County will pay the applicable tax including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipts tax or applicable local option tax will be shown as a separate amount on each billing or request for payment made under the contract.

d) Permits: All permits required for this project shall be obtained by the Contractor. The cost shall be paid directly by the Contractor.

3. INTERPRETATION OF DOCUMENTS

If any person contemplating submitting a Bid Proposal for the Work is in doubt as to the meaning of any part of the plans, specifications or other Contract Documents, he may submit to

the Engineer a written request for an interpretation thereof at any time prior to forty-eight (48) hours before the time of opening of bids. Any interpretation of the documents will be made only by addendum duly issued.

4. ADDENDA

Each addendum shall be a part of the Contract Documents to the same extent as though contained in the original documents and itemized listings thereof and all Bidders shall be bound by such addenda. On his Bid Proposal, each Bidder shall acknowledge receipt of each addendum.

5. EXAMINATION OF SPECIFICATIONS, CONTRACT DOCUMENTS, AND PROJECT SITES

Each Bidder shall visit the site of the proposed work, fully acquainting himself with the existing conditions relating to the construction of the project, fully inform himself as to the facilities involved, and fully investigate the difficulties and restrictions attending the performance of the Contract. Each Bidder shall thoroughly examine and familiarize himself with the Specifications and all other Contract Documents. The Contractor, by the execution of the Contract shall not be relieved of any obligation thereunder due to his failure to receive or examine any form or legal instrument or to visit the site and acquaint himself with the conditions there existing. The Contracting Agency will be justified in rejecting any claim based on facts regarding and claim based on facts, which he should have been on notice as a result thereof. NOTE: The location of all underground utilities is the responsibility of the Contractor. The Bidder shall familiarize himself with Federal, State, and local laws, ordinances, rules and regulations affecting performance of the work and employment of labor thereon.

6. SUBMISSION OF BID PROPOSALS

Bid Proposals shall be made on the printed forms, which are a part of these Contract Documents, without separation from the documents. Prices shall be filled in for all items in the Bid Proposal including alternates, as required in the proposal form. Prices shall be shown in numerals in ink, printed or typed in the spaces provided. Alterations to bid amounts by erasures or by interlineations shall be initialed by the signer of the Bid Proposal. Any Bid Proposal not duly signed will not be considered. All Bid Proposals shall be submitted and received with the understanding that the Bidder accepts the terms and conditions contained herein.



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7. BID SECURITY

Each Bid Proposal shall be accompanied by a certified or cashier's check, payable without condition or recourse, to the Owner, or a bid bond issued by a surety duly authorized to conduct business in the State of New Mexico and acceptable to the Owner in the amount of five percent (5%) of the total amount of the bid. Bid security is submitted as a guaranty that the Bidder, if awarded the Contract, will promptly execute such Contract in accordance with the Bid Proposal and in the manner and form required by the Contract Documents and will furnish good and sufficient bond for the faithful performance of the same, and for the payment of all labor and materials. The bid security of the three lowest Bidders will be retained until the Contract is awarded or other disposition is made thereof. The bid security of all Bidders except the three lowest will be returned promptly after the canvass of bids. Bid Proposals submitted without the required bid security will not be considered.

8. MODIFICATION AND WITHDRAWAL OF BID PROPOSALS

Bid Proposals may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid Proposal must be executed) and delivered to the place where Bid Proposals are to be submitted at any time prior to the scheduled closing time for the receipt of bids.

9. OPENING OF BIDS

Bidders are invited to be present at the Bid Opening. The person reading the bids will utilize the following procedure prior to reading the amount of the bid:

- a) Read name of Bidder and Bidder's New Mexico contractor's license number and classification.
- b) Read the amount of the bid security.
- c) Verify Bidder's acknowledgment of addenda.
- d) Read the amount of the bid.
- e) Verify Bidder's execution of Certification of Bidder Regarding Affirmative Action/Equal Employment Opportunity and Nondiscrimination.
- f) Determine whether other requirements are met.

If any of the above requirements have not been met, the bid shall be read after the deficiency or deficiencies have been announced and noted.



10. BID CONSIDERATION TIME

The Owner will require time to study and canvass each Bid Proposal and to determine the Bid Proposal it deems to be in the best interest of the Owner to accept. In consideration thereof, no Bid Proposal may be withdrawn after the scheduled closing time for receipt of bids for the period of time specified in the Bid Proposal.

11. QUALIFICATION OF BIDDERS

The Owner may make such investigation as it deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated herein.

12. SUBCONTRACTORS, OTHER PERSONS, ORGANIZATIONS

If the Contract Documents require the identity of certain Subcontractors and other persons and organizations to be submitted to the Owner in advance of the Notice of Award, the apparent successful Bidder, and any other Bidder so requested, will within seven (7) days after the day of the Bid Opening, submit to the Owner a list of all Subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information as to similar projects and other evidence of qualification for each such Subcontractor, person, and organization if requested by the Owner. If the Owner, after due investigation, has reasonable objection to any proposed Subcontractor, other person, or organization, the Owner may, before giving the Notice of Award, request the apparent successful Bidder to submit an acceptable substitute without an increase in his bid amount. If the apparent successful Bidder declines to make any such substitution, he will not thereby sacrifice his Bid Security. Any Subcontractor, other person, or organization so listed and to whom the Owner does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to the Owner.

13. AWARD OF CONTRACT

a) The Owner reserves the right to reject any and all bids and waive any and all informalities and irregularities and the right to disregard all nonconforming or conditional bids or counter proposals.

b) If a Contract is awarded, it will be awarded to the lowest responsible Bidder on the Base Bid shown on the Bid Proposal; provided, however, that if the Bid Proposal is a Unit Price Bid Proposal and there is a discrepancy between the amount shown as the Base Bid and the actual total amount of the Bid Items determined by multiplying the Unit Price shown for each Bid Item by the Estimated Quantity shown for that Bid Item and adding each such amount, it will be awarded to the lowest responsible Bidder on the actual total amount of the Bid Items.

c) If the Contract is to be awarded, the Owner will give the apparent successful Bidder a Notice of Award within the period specified in the Bid Proposal.

14. PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

Simultaneously with his delivery of the executed contract, the Contractor shall furnish separate surety bonds each in the amount of one hundred percent (100%) of the total contract price as security for the faithful performance of the Contract and for the payment of all labor and materials. The sureties on such bonds shall be duly authorized to conduct business in the State of New Mexico and acceptable to the Owner.

15. GUARANTEE PROVISIONS

The Contractor shall guarantee the Work as provided in the Contract Documents.

16. AFFIRMATIVE ACTION PROGRAM

The Contractor shall comply with the Affirmative Action/Equal Employment Opportunity and Nondiscrimination requirements in the Special Provisions.

In the event that a State or Federal agency is providing funding for this Contract and has specific Affirmative Action/Equal Opportunity and Nondiscrimination requirements which are in conflict with these requirements, the specific State or Federal requirements will govern.

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17. CERTIFICATION OF BIDDER REGARDING AFFIRMATIVE ACTION/  
EQUAL EMPLOYMENT OPPORTUNITY AND NONDISCRIMINATION

Each Bidder shall execute and submit the Certification of Bidder Regarding Affirmative Action/Equal Employment Opportunity and Nondiscrimination in the completed Bid Proposal.

18. WAGE RATES

The Bidder's attention is directed to the fact that wages to be paid on this Project shall not be less than the prevailing wage rates as listed by the New Mexico State Office of Labor Commissioner and (where applicable) the prevailing Federal Wage Rate Decision listed by the U.S. Department of Labor and in effect at the time of this Contract.

19. PREFERENCES

In the construction of this Project, the Owner has no preference for any process, type of equipment, or kind of material but will consider all processes, types of equipment or kinds of material offered on an equal competitive basis if they are in fact the equal to that specified and will accomplish the purpose intended. The Owner reserves the right to be the sole judge as to whether or not a different process, type of equipment, or kind of material offered is in fact equal to that specified.

20. UTILITIES

The Contractor shall make all provisions for supply of power and water for construction purposes.

21. COLLUSION

No Bidder shall be interested in more than one bid. Collusion among Bidders or the submission of more than one bid under different names by any firm or individual shall be cause for rejection of all bids without consideration.

22. SAFETY STANDARDS AND ACCIDENT PREVENTION

With respect to all work performed under this Contract, the Contractor shall:

a) Comply with the safety standards provisions of applicable laws, building and construction codes, and the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public law

91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the Federal Register, Volume 36, Number 75, Saturday, April 17, 1971, as amended.

b) Exercise every precaution at all times for the prevention of accidents and the protection of persons, including employees and property.

c) Maintain at the Contractor's Office or another well known place at the job site, all articles necessary for giving first aid to the injured and shall make standing arrangements for the immediate removal to a hospital or a doctor's care.

23. EXTENSION OF UNIT PRICES

In case of an error in the extension of prices in the bid, the unit prices shall govern.

24. PROTESTS

Bidders have the right to protest an award. Protest must be filed with the Director of Purchasing, in writing, within fifteen (15) calendar days after knowledge of facts or occurrences giving rise to the protest.

25. PRE-BID CONFERENCE

A pre-bid conference will be held at \_\_\_\_\_ on \_\_\_\_\_, in the 10th floor conference room of the Albuquerque-Bernalillo County Government Center, One Civic Plaza NW, Albuquerque, New Mexico.



0000 0000 1333

Subcontractors:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

3. Addenda: Bidder acknowledges receipt of the following addenda:

Addendum No. _____	Date: _____	Addendum No. _____	Date: _____
Addendum No. _____	Date: _____	Addendum No. _____	Date: _____
Addendum No. _____	Date: _____	Addendum No. _____	Date: _____
Addendum No. _____	Date: _____	Addendum No. _____	Date: _____

4. Failure to acknowledge receipt, as provided above, may be considered sufficient grounds for disqualification of the bidder and rejection of his proposal. A record of all Addenda and copies of same will be available to all qualified bidders from the office of Richard G. Vaughan & Associates, 3700 Coors Boulevard, NW, Albuquerque, New Mexico, telephone number 831-4511, after 3:00 p.m., two (2) days prior to the letting. It shall be the Contractors's responsibility to become fully advised of all Addenda prior to submitting his bid.
5. Bidder agrees that this Bid Proposal may not be withdrawn for a period of ninety (90) calendar days after the scheduled closing time for receipt of bids.
6. If the contract is to be awarded, the Contracting Agency will give the apparent successful bidder Notice of Award within ninety (90) calendar days after the scheduled closing time for receipt of bids.
7. Upon receipt of Notice of Award, Bidder will execute the formal Contract Documents within ten (10) days and deliver Performance Bond, Labor and Materials Bond, and Certificate of Insurance as required herein.
8. The attached Bid Security is to become the property of the Contracting Agency in the event the contract and bonds are not executed within the time specified in this Bid Proposal as liquidated damages for the delay and additional expenses caused the Contracting Agency.