

# Appendix J

## Culvert Master Output

### Assumptions -

- Only the major culverts are simulated / evaluated
- The As-builts / plans were adopted for the West Branch at Unser Blvd. since this is most likely the most critical crossing.
  
- Culvert sizes, material and number of culverts
  - field measured by Smith Engineering staff
  
- Manning's "n" as follows:
  - Corrugate metal (CMP) n = 0.025
  - Reinforced Concrete Box Culverts = n = 0.015
  - Reinforced Concrete Pipe n = 0.013
  
- Culvert Lengths – measured in AutoCAD or by field measurement
  
- Culvert Slopes – assume 1% slope
  
- Maximum allowable headwater elevation to top of roadway / top of headwall – field measured by Smith Engineering staff
  
- Assume relative elevations as follows:
  - Upstream – assume invert elevation = 100
  - Compute downstream invert elevation based on length and slope
  - Downstream – assume tail water depth = ½ of the culvert vertical open depth
  
- Assume culverts are clean – no sediment blockage

### SOLVE FOR -

- Maximum Capacity given maximum allowable headwater elevation

**RESULTS SUMMARY** - Included within Report Volume 1

## Culvert Calculator Report Lisbon Channel at Tarpon

Solve For: Discharge

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### Culvert Summary

Allowable HW Elevation	106.00 ft	Headwater Depth/Height	2.00
Computed Headwater Elev.	106.00 ft	Discharge	990.09 cfs
Inlet Control HW Elev.	106.00 ft	Tailwater Elevation	101.04 ft
Outlet Control HW Elev.	105.74 ft	Control Type	Inlet Control

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### Grades

Upstream Invert	100.00 ft	Downstream Invert	99.54 ft
Length	46.00 ft	Constructed Slope	0.010000 ft/ft

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### Hydraulic Profile

Profile	CompositeM2PressureProfile	Depth, Downstream	2.86 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	2.86 ft
Velocity Downstream	9.60 ft/s	Critical Slope	0.014446 ft/ft

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### Section

Section Shape	Box	Mannings Coefficient	0.024
Section Material	Concrete	Span	6.00 ft
Section Size	6 x 3 ft	Rise	3.00 ft
Number Sections	6		

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### Outlet Control Properties

Outlet Control HW Elev.	105.74 ft	Upstream Velocity Head	1.31 ft
Ke	0.70	Entrance Loss	0.91 ft

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### Inlet Control Properties

Inlet Control HW Elev.	106.00 ft	Flow Control	Submerged
Inlet Type	0° wingwall flares	Area Full	108.0 ft <sup>2</sup>
K	0.06100	HDS 5 Chart	8
M	0.75000	HDS 5 Scale	3
C	0.04230	Equation Form	1
Y	0.82000		

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## Culvert Calculator Report Ivory Channel at Southern Blvd

Solve For: Discharge

### Culvert Summary

Allowable HW Elevation	108.00 ft	Headwater Depth/Height	2.00
Computed Headwater Elev.	108.00 ft	Discharge	495.61 cfs
Inlet Control HW Elev.	108.00 ft	Tailwater Elevation	100.23 ft
Outlet Control HW Elev.	107.58 ft	Control Type	Inlet Control

### Grades

Upstream Invert	100.00 ft	Downstream Invert	98.23 ft
Length	177.00 ft	Constructed Slope	0.010000 ft/ft

### Hydraulic Profile

Profile	S2	Depth, Downstream	3.34 ft
Slope Type	Steep	Normal Depth	3.20 ft
Flow Regime	Supercritical	Critical Depth	4.00 ft
Velocity Downstream	14.86 ft/s	Critical Slope	0.009723 ft/ft

### Section

Section Shape	Box	Mannings Coefficient	0.015
Section Material	Concrete	Span	10.00 ft
Section Size	10 x 4 ft	Rise	4.00 ft
Number Sections	1		

### Outlet Control Properties

Outlet Control HW Elev.	107.58 ft	Upstream Velocity Head	2.39 ft
Ke	0.50	Entrance Loss	1.19 ft

### Inlet Control Properties

Inlet Control HW Elev.	108.00 ft	Flow Control	Submerged
Inlet Type	16 ft pipes; 10 - 45° skewed headwall	Area Full	40.0 ft <sup>2</sup>
K	0.49800	HDS 5 Chart	11
M	0.66700	HDS 5 Scale	4
C	0.03270	Equation Form	2
Y	0.75000		

## Culvert Calculator Report Lisbon Channel at Southern Blvd

Solve For: Discharge

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### Culvert Summary

Allowable HW Elevation	113.00 ft	Headwater Depth/Height	2.17
Computed Headwater Elev.	113.00 ft	Discharge	2,168.63 cfs
Inlet Control HW Elev.	113.00 ft	Tailwater Elevation	101.60 ft
Outlet Control HW Elev.	111.29 ft	Control Type	Inlet Control

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### Grades

Upstream Invert	100.00 ft	Downstream Invert	98.60 ft
Length	140.00 ft	Constructed Slope	0.010000 ft/ft

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### Hydraulic Profile

Profile	S2	Depth, Downstream	5.17 ft
Slope Type	Steep	Normal Depth	4.76 ft
Flow Regime	Supercritical	Critical Depth	6.00 ft
Velocity Downstream	17.47 ft/s	Critical Slope	0.009172 ft/ft

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### Section

Section Shape	Box	Mannings Coefficient	0.015
Section Material	Concrete	Span	12.00 ft
Section Size	12 x 6 ft	Rise	6.00 ft
Number Sections	2		

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### Outlet Control Properties

Outlet Control HW Elev.	111.29 ft	Upstream Velocity Head	3.52 ft
Ke	0.50	Entrance Loss	1.76 ft

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### Inlet Control Properties

Inlet Control HW Elev.	113.00 ft	Flow Control	Submerged
Inlet Type	30 to 75° wingwall flares	Area Full	144.0 ft <sup>2</sup>
K	0.02600	HDS 5 Chart	8
M	1.00000	HDS 5 Scale	1
C	0.03470	Equation Form	1
Y	0.86000		

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## Culvert Calculator Report Nicklaus Channel at Southern Blvd

Solve For: Discharge

### Culvert Summary

Allowable HW Elevation	106.00 ft	Headwater Depth/Height	1.33
Computed Headwater Elev.	106.00 ft	Discharge	778.92 cfs
Inlet Control HW Elev.	105.59 ft	Tailwater Elevation	101.17 ft
Outlet Control HW Elev.	106.00 ft	Control Type	Outlet Control

### Grades

Upstream Invert	100.00 ft	Downstream Invert	98.92 ft
Length	108.00 ft	Constructed Slope	0.010000 ft/ft

### Hydraulic Profile

Profile	M2	Depth, Downstream	3.35 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	3.35 ft
Velocity Downstream	10.21 ft/s	Critical Slope	0.019674 ft/ft

### Section

Section Shape	Circular ✓	Mannings Coefficient	0.025
Section Material	CMP ✓	Span	4.50 ft
Section Size	54 inch ✓	Rise	4.50 ft
Number Sections	6 ✓		

### Outlet Control Properties

Outlet Control HW Elev.	106.00 ft	Upstream Velocity Head	1.04 ft
Ke	0.50	Entrance Loss	0.52 ft

### Inlet Control Properties

Inlet Control HW Elev.	105.59 ft	Flow Control	Transition
Inlet Type	Headwall	Area Full	95.4 ft <sup>2</sup>
K	0.00780	HDS 5 Chart	2
M	2.00000	HDS 5 Scale	1
C	0.03790	Equation Form	1
Y	0.69000		

## Culvert Calculator Report Unser Channel at Commercial Drive

Solve For: Discharge

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### Culvert Summary

Allowable HW Elevation	105.00 ft	Headwater Depth/Height	1.25
Computed Headwater Elev.	105.00 ft	Discharge	352.84 cfs
Inlet Control HW Elev.	104.61 ft	Tailwater Elevation	101.15 ft
Outlet Control HW Elev.	105.00 ft	Control Type	Entrance Control

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### Grades

Upstream Invert	100.00 ft	Downstream Invert	99.15 ft
Length	85.00 ft	Constructed Slope	0.010000 ft/ft

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### Hydraulic Profile

Profile	S2	Depth, Downstream	2.20 ft
Slope Type	Steep	Normal Depth	2.12 ft
Flow Regime	Supercritical	Critical Depth	2.70 ft
Velocity Downstream	11.46 ft/s	Critical Slope	0.005048 ft/ft

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### Section

Section Shape	Box	Mannings Coefficient	0.015
Section Material	Concrete	Span	7.00 ft
Section Size	7 x 4 ft	Rise	4.00 ft
Number Sections	2		

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### Outlet Control Properties

Outlet Control HW Elev.	105.00 ft	Upstream Velocity Head	1.35 ft
Ke	0.70	Entrance Loss	0.95 ft

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### Inlet Control Properties

Inlet Control HW Elev.	104.61 ft	Flow Control	Unsubmerged
Inlet Type	0° wingwall flares	Area Full	56.0 ft <sup>2</sup>
K	0.06100	HDS 5 Chart	8
M	0.75000	HDS 5 Scale	3
C	0.04230	Equation Form	1
Y	0.82000		

## Culvert Calculator Report Unser Channel at Cabezon (14th Ave)

Solve For: Discharge

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### Culvert Summary

Allowable HW Elevation	108.00 ft	Headwater Depth/Height	1.60
Computed Headwater Elev.	108.00 ft	Discharge	963.27 cfs
Inlet Control HW Elev.	108.00 ft	Tailwater Elevation	101.39 ft
Outlet Control HW Elev.	107.70 ft	Control Type	Inlet Control

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### Grades

Upstream Invert	100.00 ft	Downstream Invert	98.89 ft
Length	111.00 ft	Constructed Slope	0.010000 ft/ft

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### Hydraulic Profile

Profile	S2	Depth, Downstream	3.35 ft
Slope Type	Steep	Normal Depth	3.14 ft
Flow Regime	Supercritical	Critical Depth	4.16 ft
Velocity Downstream	14.38 ft/s	Critical Slope	0.004570 ft/ft

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### Section

Section Shape	Box	Mannings Coefficient	0.015
Section Material	Concrete	Span	10.00 ft
Section Size	10 x 5 ft	Rise	5.00 ft
Number Sections	2		

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### Outlet Control Properties

Outlet Control HW Elev.	107.70 ft	Upstream Velocity Head	2.08 ft
Ke	0.70	Entrance Loss	1.46 ft

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### Inlet Control Properties

Inlet Control HW Elev.	108.00 ft	Flow Control	Submerged
Inlet Type	0° wingwall flares	Area Full	100.0 ft²
K	0.06100	HDS 5 Chart	8
M	0.75000	HDS 5 Scale	3
C	0.04230	Equation Form	1
Y	0.82000		

# Culvert Calculator Report

## Westbranch and Unser Blvd Box Culvert Crossing

Solve For: Discharge

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### Culvert Summary

Allowable HW Elevation	5,285.50 ft	Headwater Depth/Height	1.25
Computed Headwater Elev.	5,285.50 ft	Discharge	3,099.24 cfs
Inlet Control HW Elev.	5,284.71 ft	Tailwater Elevation	5,268.61 ft
Outlet Control HW Elev.	5,285.50 ft	Control Type	Entrance Control

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### Grades

Upstream Invert	5,275.50 ft	Downstream Invert	5,264.61 ft
Length	573.00 ft	Constructed Slope	0.019005 ft/ft

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### Hydraulic Profile

Profile	S2	Depth, Downstream	3.51 ft
Slope Type	Steep	Normal Depth	3.50 ft
Flow Regime	Supercritical	Critical Depth	5.71 ft
Velocity Downstream	22.04 ft/s	Critical Slope	0.005066 ft/ft

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### Section

Section Shape	Box	Mannings Coefficient	0.015
Section Material	Concrete	Span	10.00 ft
Section Size	10 x 8 ft	Rise	8.00 ft
Number Sections	4		

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### Outlet Control Properties

Outlet Control HW Elev.	5,285.50 ft	Upstream Velocity Head	2.86 ft
Ke	0.50	Entrance Loss	1.43 ft

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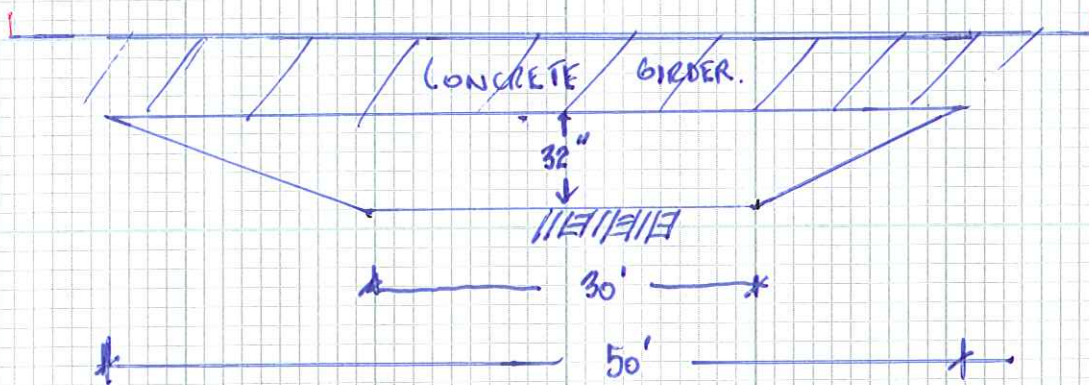
### Inlet Control Properties

Inlet Control HW Elev.	5,284.71 ft	Flow Control	Unsubmerged
Inlet Type	30 to 75° wingwall flares	Area Full	320.0 ft²
K	0.02600	HDS 5 Chart	8
M	1.00000	HDS 5 Scale	1
C	0.03470	Equation Form	1
Y	0.86000		



LOCATION: LISBON CHANNEL AT TARPON.

EXISTING STRUCTURE: CONCRETE BRIDGE CROSSING.



$$\text{AREA} = 0.5(A+B)H$$

$$= 0.5(50+30)2.67$$

$$\text{AREA} = 107 \text{ ft}^2$$

$$A = 50'$$

$$B = 30'$$

$$H = 2.67'$$

AVERAGE 'n' VALUE FOR SOIL & CONCRETE

$$\frac{0.015 + 0.033}{2} = 0.024$$

CONVERT TRAPEZOIDAL AREA TO EQUIVALENT  
 BOX CULVERT AREA FOR USE IN CULVERT MASTER.  
 SET SPAN @ 3'

$$\text{AREA} = 107 \text{ ft}^2$$

$$R = 3'$$

$$S = ?$$

$$A = R.S$$

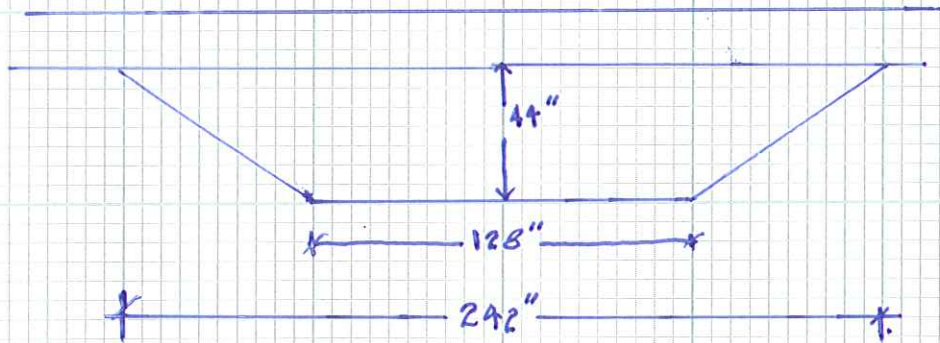
$$S = \frac{A}{R} = \frac{107 \text{ ft}^2}{3 \text{ ft}} = \frac{36 \text{ ft}}{6} = 6.$$

USE 6 X 6 X 3 # BOX CULVERTS TO MODEL BRIDGE OPENING

ASSUME ENTRANCE LOSS  $K_e = 0.7$



LOCATION: COMMERCIAL AND UNSER CHANNEL



CONVERT TRAPEZOIDAL AREA =  $0.5(A+B)H$   
 $= 0.5(20 + 11) \times 3.67$   
 $= 56.8 \text{ ft}^2 = \boxed{57 \text{ ft}^2}$

$A = \frac{242 \text{ in}}{12 \text{ in/ft}} = 20'$

$B = \frac{128 \text{ in}}{12 \text{ in/ft}} = 10.6' \approx 11'$

$H = \frac{44 \text{ in}}{12 \text{ in/ft}} = 3.67 \text{ ft}$

CONVERT TRAPEZOIDAL AREA TO EQUIVALENT BOX AREA.

SET RISE = 4 FT

$A = 57 \text{ ft}^2$

$R = 4 \text{ ft}$

$S = ?$

$A = R \cdot S$

$S = \frac{A}{R} = \frac{57 \text{ ft}^2}{4 \text{ ft}} = 14' = 2 \times 7' \text{ SPANS.}$

USE 2 x 7'S x 4' R BOX CULVERTS  
 USE  $K_E = 0.7$ .

1550N Canyon @  
STARPOW AVE.

WAS THIS MOD  
LOOKING DOWNSTAIRS



Follows Conditional Case No.: 08-06-0317R



# Federal Emergency Management Agency

Washington, D.C. 20472

## LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	City of Rio Rancho Sandoval County New Mexico	CULVERT	HYDRAULIC ANALYSIS NEW TOPOGRAPHIC DATA
	COMMUNITY NO.: 350146		
IDENTIFIER	Cabezon Subdivision, Tract 12 Cbc Extension	APPROXIMATE LATITUDE & LONGITUDE: 35.230, -106.700 SOURCE: Other DATUM: NAD 27	
ANNOTATED MAPPING ENCLOSURES		ANNOTATED STUDY ENCLOSURES	
TYPE: FIRM*	NO.: 35043C2102 D      DATE: March 18, 2008	DATE OF EFFECTIVE FLOOD INSURANCE STUDY REPORT: March 18, 2008 PROFILE(S): 09P, 10P, 71P	

Enclosures reflect changes to flooding sources affected by this revision.

†M - Flood Insurance Rate Map; \*\* FBFM - Flood Boundary and Floodway Map; \*\*\* FHBM - Flood Hazard Boundary Map

### FLOODING SOURCE(S) & REVISED REACH(ES)

See Page 2 for Additional Flooding Sources

Black Arroyo West Branch - from approximately 440 feet downstream of 19th Avenue to approximately 620 feet upstream of Unser Boulevard  
Tributary A - from the confluence with Black Arroyo West Branch to approximately 400 feet upstream

### SUMMARY OF REVISIONS


Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Black Arroyo West Branch	Zone AE	Zone AE	YES	YES
	BFEs*	BFEs	YES	YES
	Zone X (unshaded)	Zone X (unshaded)	YES	NONE
Tributary A	Zone AE	Zone AE	YES	NONE

\* BFEs - Base Flood Elevations

### DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

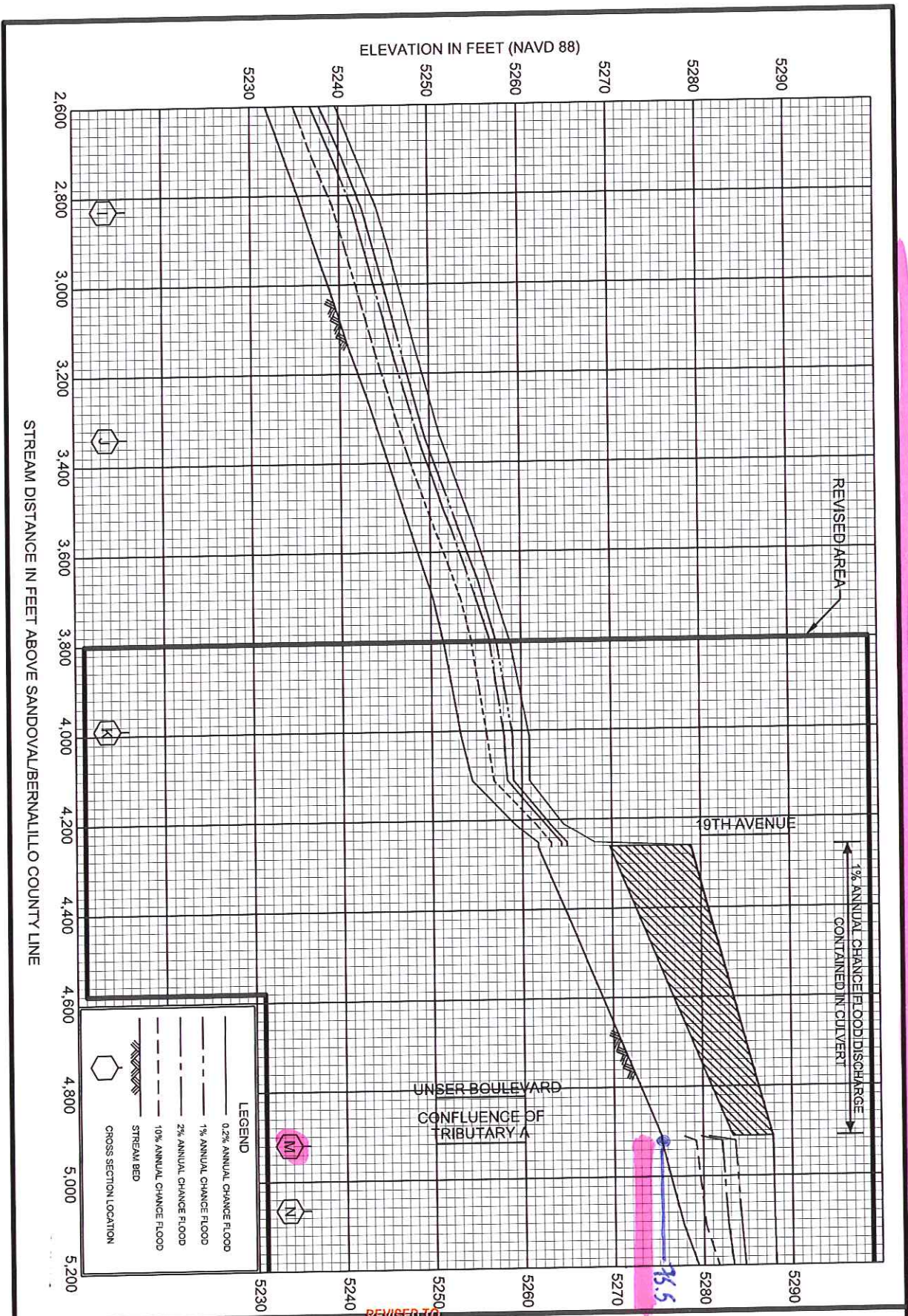
  
Joshua A. Smith, CFM, Program Specialist  
Engineering Management Branch  
Mitigation Directorate

112553 10.3.1.08063060

102-I-A-C



Need Inlet Elevation For Upstream Side of Inlet for Culvert.



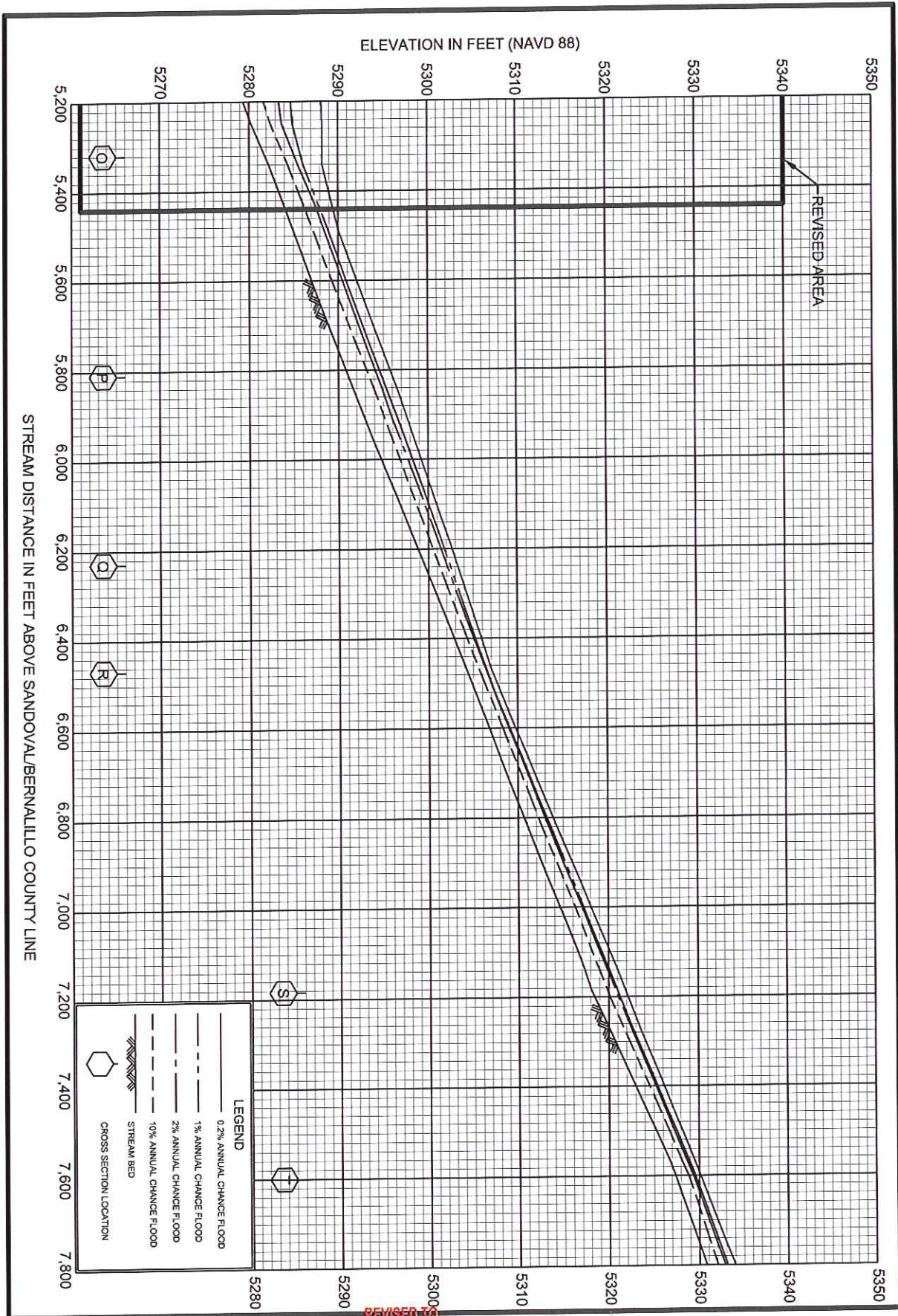
09P

FEDERAL EMERGENCY MANAGEMENT AGENCY  
SANDOVAL COUNTY, NM  
AND INCORPORATED AREAS

REVISED TO REFLECT LOMR EFFECTIVE: June 15, 2009

### FLOOD PROFILES

BLACK ARROYO WEST BRANCH

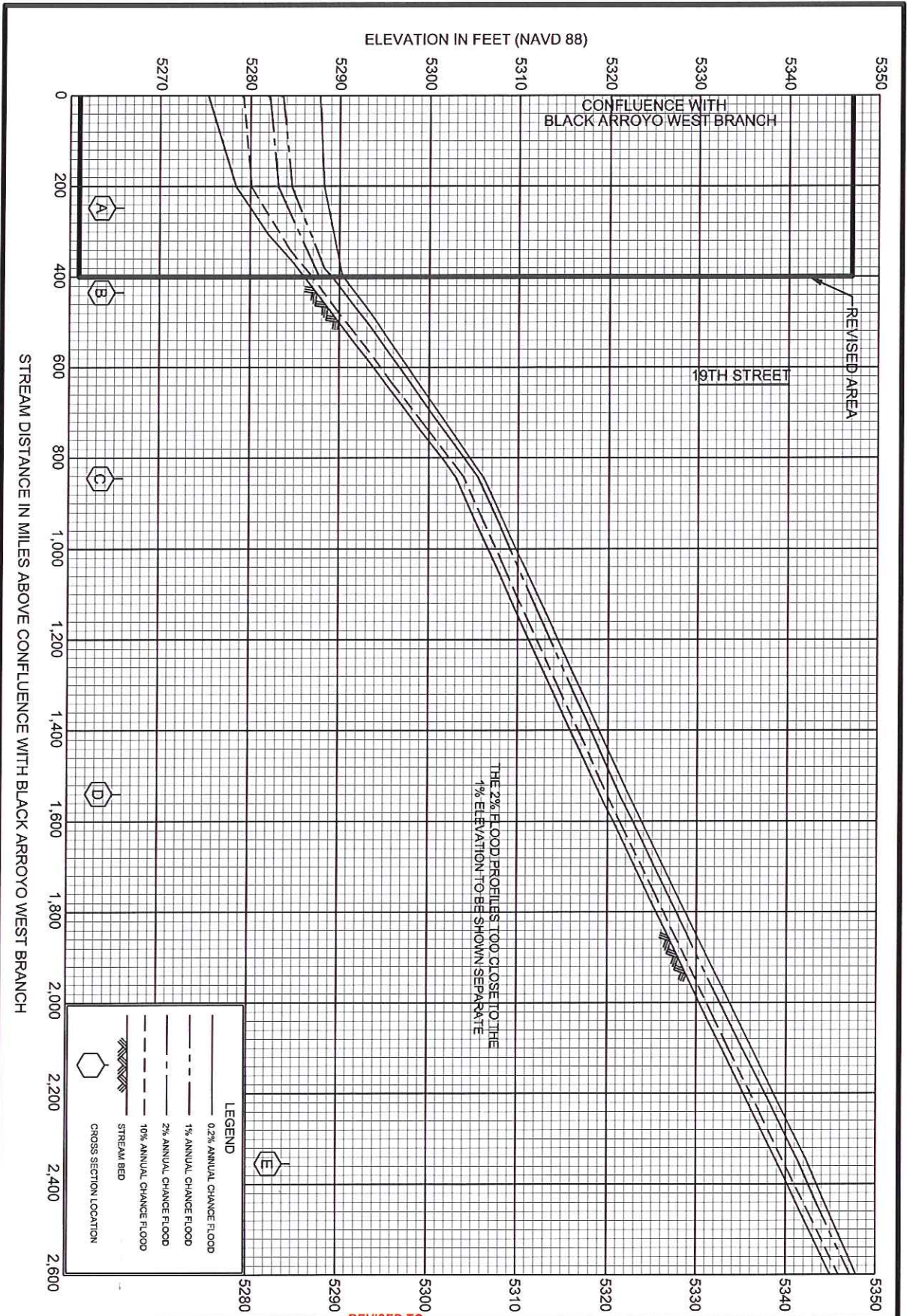


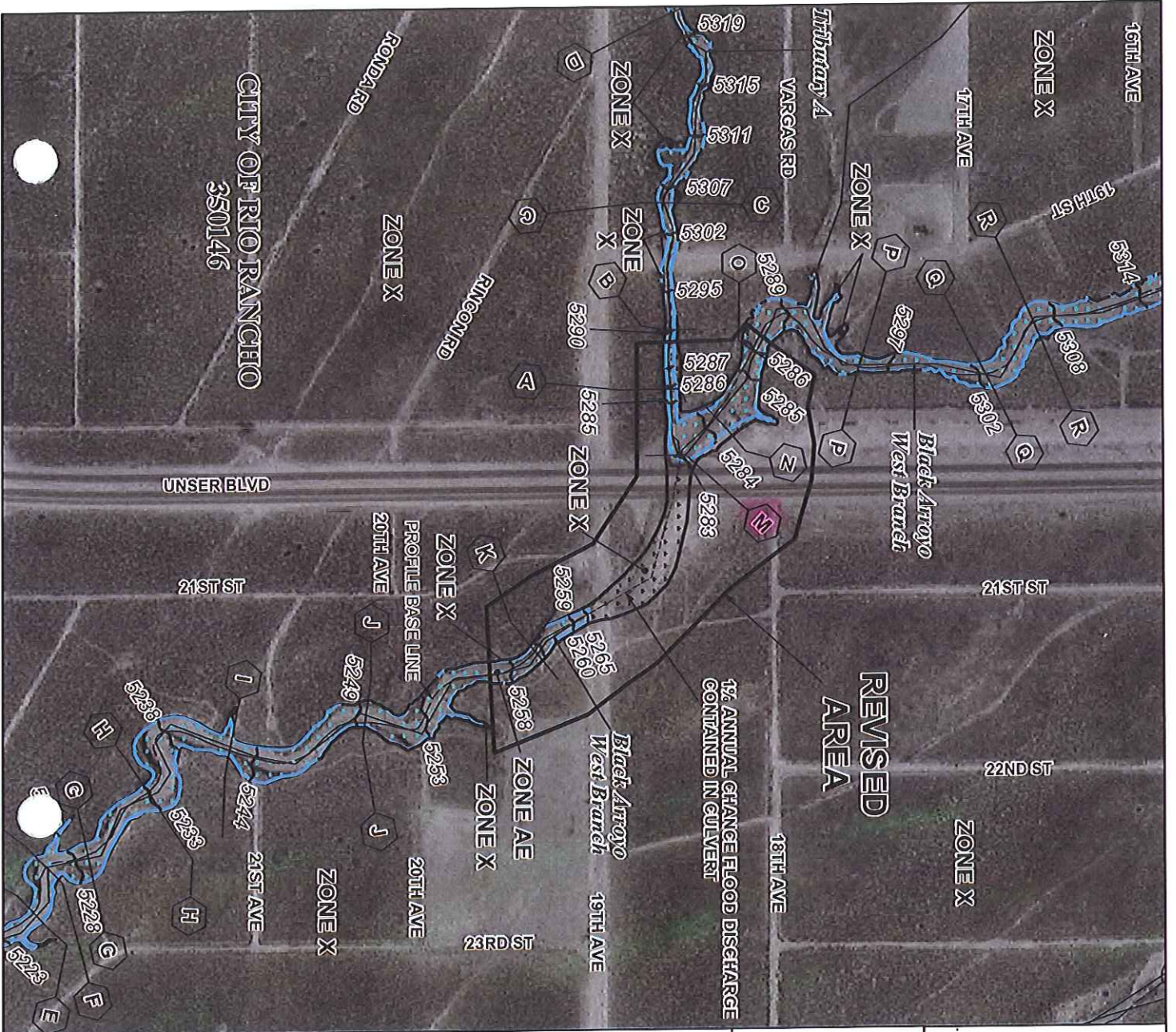
REVISED TO  
 REFLECT LOMR  
 EFFECTIVE: June 15, 2009

### FLOOD PROFILES

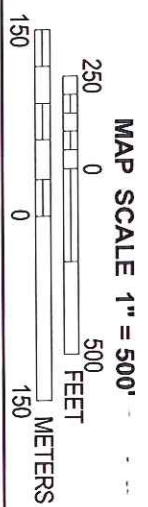
FEDERAL EMERGENCY MANAGEMENT AGENCY  
 SANDOVAL COUNTY, NM  
 AND INCORPORATED AREAS

BLACK ARROYO WEST BRANCH





- Legend**
- 1% annual chance (100-Year) Floodplain
  - 1% annual chance (100-Year) Floodway
  - 0.2% annual chance (500-Year) Floodplain



**NFIP**

**PANEL 2102D**

**FIRM**  
FLOOD INSURANCE RATE MAP

SANDOVAL COUNTY,  
NEW MEXICO  
AND INCORPORATED AREAS

**PANEL 2102 OF 2225**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:  
COMMUNITY NUMBER PANEL SUFFIX  
RIO RANCHO, CITY OF 350146 2102 D

**REVISED TO  
REFLECT LOMR  
EFFECTIVE: June 15, 2009**

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
35043C2102D

**EFFECTIVE DATE**  
MARCH 18, 2008



Federal Emergency Management Agency

**NATIONAL FLOOD INSURANCE PROGRAM**

**CITY OF RIO RANCHO**  
350146

UNSER BLVD

21ST ST

20TH AVE  
21ST AVE  
23RD ST

ZONE X  
FINEON RD

ZONE X  
PROFILE BASE LINE  
20TH AVE

ZONE X  
20TH AVE

ZONE X  
5319  
5315  
5311  
5307  
5302

ZONE X  
5295  
5290  
5285  
5286  
5287  
5285  
5284  
5283

ZONE X  
5259  
5265  
5260  
5258

Black Arroyo  
West Branch

19TH AVE

ZONE X  
17TH AVE  
19TH ST

Black Arroyo  
West Branch

**REVISIED  
AREA**

18TH AVE

16TH AVE  
ZONE X

21ST ST

22ND ST

ZONE X



Federal Emergency Management Agency  
Washington, D.C. 20472

**LETTER OF MAP REVISION  
DETERMINATION DOCUMENT (CONTINUED)**

**OTHER FLOODING SOURCES AFFECTED BY THIS REVISION**

**FLOODING SOURCE(S) & REVISED REACH(ES)**

Tributary A - from the confluence with Black Arroyo West Branch to approximately 400 feet upstream

**SUMMARY OF REVISIONS**

Flooding Source	Effective Flooding BFES*	Revised Flooding BFES	Increases YES	Decreases NONE
Tributary A				

\* BFES - Base Flood Elevations

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Joshua A. Smith, CFM, Program Specialist  
Engineering Management Branch  
Mitigation Directorate



# Federal Emergency Management Agency

Washington, D.C. 20472

## LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

### COMMUNITY INFORMATION

#### APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

We have made this determination pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria, including adoption of the FIS report and FIRM, and the modifications made by this LOMR, are the minimum requirements for continued NFIP participation and do not supersede more stringent State/Commonwealth or local requirements to which the regulations apply.

NFIP regulations Subparagraph 60.3(b)(7) requires communities to ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management ordinances; therefore, responsibility for maintenance of the altered or relocated watercourse, including any related appurtenances such as bridges, culverts, and other drainage structures, rests with your community. We may request that your community submit a description and schedule of maintenance activities necessary to ensure this requirement.

#### COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance flood discharges computed in the FIS report for your community without considering subsequent changes in watershed characteristics that could increase flood discharges. Future development of projects upstream could cause increased flood discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on flood discharges subsequent to the publication of the FIS report for your community and could, therefore, establish greater flood hazards in this area.

Your community must regulate all proposed floodplain development and ensure that permits required by Federal and/or State/Commonwealth law have been obtained. State/Commonwealth or community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If your State/Commonwealth or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

We will not print and distribute this LOMR to primary users, such as local insurance agents or mortgage lenders; instead, the community will serve as a repository for the new data. We encourage you to disseminate the information in this LOMR by preparing a news release for publication in your community's newspaper that describes the revision and explains how your community will provide the data and help interpret the NFIP maps. In that way, interested persons, such as property owners, insurance agents, and mortgage lenders, can benefit from the information.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

A handwritten signature in black ink that reads "Joshua A. Smith".

Joshua A. Smith, CFM, Program Specialist  
Engineering Management Branch  
Mitigation Directorate



Federal Emergency Management Agency  
Washington, D.C. 20472

**LETTER OF MAP REVISION  
DETERMINATION DOCUMENT (CONTINUED)**

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. Frank Pagano  
Director, Mitigation Division  
Federal Emergency Management Agency, Region VI  
Federal Regional Center, Room 206  
800 North Loop 288  
Denton, TX 76209  
(940) 898-5127

**STATUS OF THE COMMUNITY NFIP MAPS**

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

Please note that Cross section L has been deleted from profile panel 09P and FIRM panel 35043C2102 D as base(1-percent annual chance) flood is contained in a culvert in this area.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

A handwritten signature in cursive script, reading "Joshua A. Smith".

Joshua A. Smith, CFM, Program Specialist  
Engineering Management Branch  
Mitigation Directorate



**Federal Emergency Management Agency**  
Washington, D.C. 20472

**LETTER OF MAP REVISION  
DETERMINATION DOCUMENT (CONTINUED)**

**PUBLIC NOTIFICATION OF REVISION**

**PUBLIC NOTIFICATION**

FLOODING SOURCE	LOCATION OF REFERENCED ELEVATION	BFE (FEET NAVD 88)		MAP PANEL NUMBER(S)
		EFFECTIVE	REVISED	
Black Arroyo West Branch	Approximately 380 feet downstream of 19th Avenue	5259	5258	35043C2102 D
	Approximately 300 feet upstream of confluence with Tributary A	5284	5285	35043C2102 D
Tributary A	Just upstream of the confluence with Black Arroyo West Branch	5278	5283	35043C2102 D
	Approximately 320 feet upstream of confluence with Black Arroyo West Branch	5286	5287	35043C2102 D

Within 90 days of the second publication in the local newspaper, a citizen may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. Therefore, this letter will be effective only after the 90-day appeal period has elapsed and we have resolved any appeals that we receive during this appeal period. Until this LOMR is effective, the revised BFEs presented in this LOMR may be changed.

A notice of changes will be published in the *Federal Register*. A short notice also will be published in your local newspaper on or about the dates listed below. Please refer to FEMA's website at [https://www.floodmaps.fema.gov/fhm/Scripts/bfe\\_main.asp](https://www.floodmaps.fema.gov/fhm/Scripts/bfe_main.asp) for a more detailed description of proposed BFE changes, which will be posted within a week of the date of this letter.

LOCAL NEWSPAPER      Name: *The Albuquerque Journal*  
    Dates: 02/06/2009    02/13/2009

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

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Mitigation Directorate

