



# CAVE CREEK DRAINAGE MASTER PLAN FCDMC CONTRACT NUMBER 2004C072 OCOTILLO WASH FLOODPLAIN REDELINEATION CAVE CREEK, ARIZONA

### AUTHORITY FOR STUDY

THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY (FCDMC) HAS CONTRACTED HDR TO PREPARE THIS STUDY UNDER THE CONTRACT NUMBER 2004C072 AS PART OF THE CC DMP. PROJECT CONTROL NUMBER 690.02.20.

### PROJECT LOCATION

THE PROJECT SITE IS LOCATED WITHIN THE TOWN OF CAVE CREEK, ARIZONA WITHIN SECTIONS 14, 15 AND 22 OF TOWNSHIP 6 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN WITHIN THE COUNTY OF MARICOPA IN THE STATE OF ARIZONA.

### BENCHMARKS (NAVD 88)

BM #10 - ELEVATION 2275.856  
LOCATED AT THE INTERSECTION OF FLEMING SPRINGS ROAD AND ROCKAWAY HILLS DRIVE (NE CORNER).  
BM # 13 - ELEVATION 2306.736  
LOCATED AT THE INTERSECTION OF ECHO CANYON DRIVE AND CONTINENTAL MOUNTAIN DRIVE (NE CORNER).  
BM # 11 - ELEVATION 2320.194  
LOCATED AT THE INTERSECTION OF FLEMING SPRINGS ROAD AND ECHO CANYON DRIVE (SE CORNER).  
BM # 12 - ELEVATION 2429.245  
LOCATED ALONG FLEMING SPRINGS ROAD ALIGNMENT ADJACENT TO PARCEL NUMBER 21616025R OR 21616025S

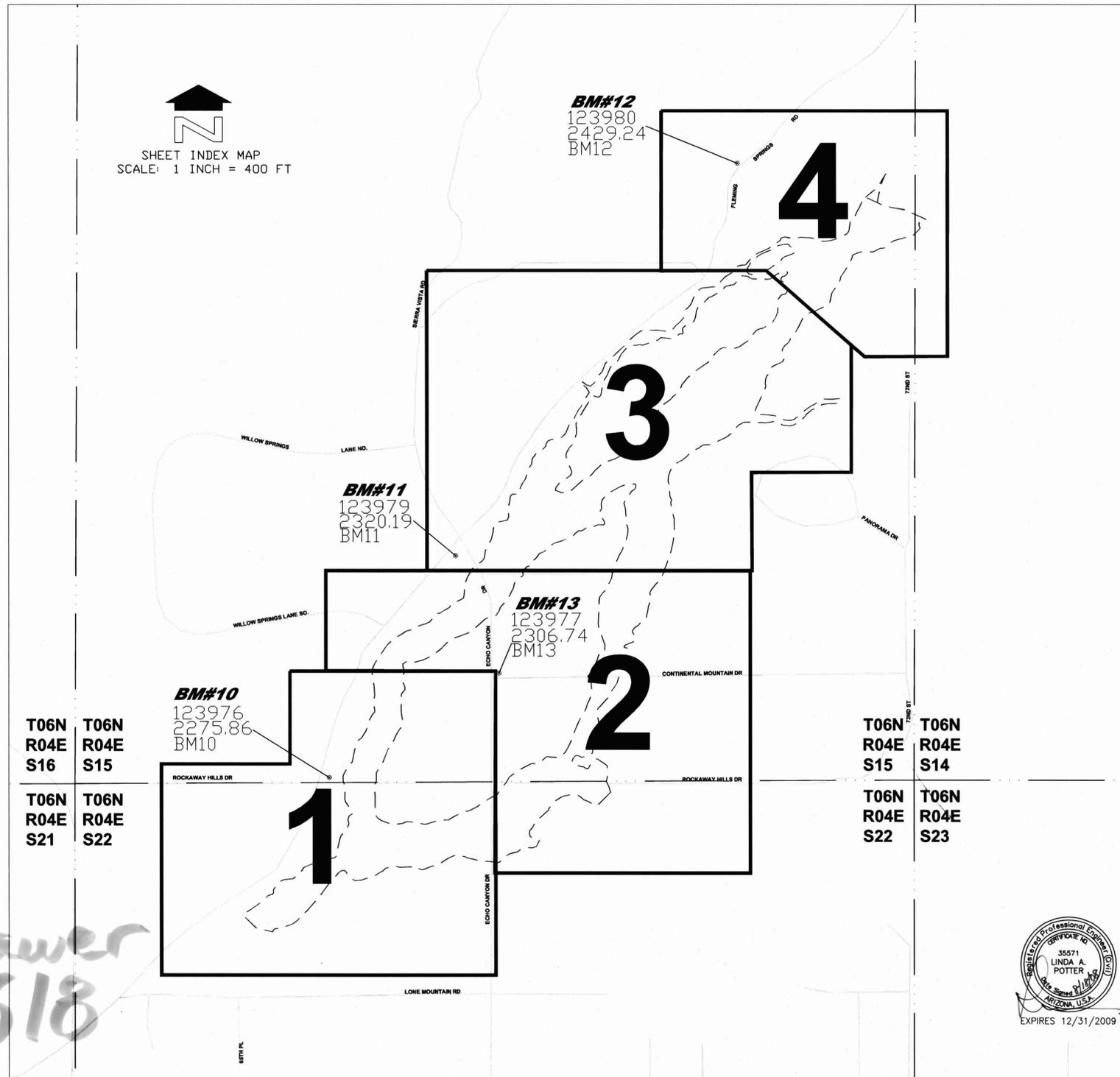
### SHEET INDEX

SHEET 1 - OCOTILLO WASH REACH 01, REACH 02 & SPLIT-2.  
SHEET 2 - OCOTILLO WASH REACH 02, SPLIT-1 & SPLIT-2.  
SHEET 3 - OCOTILLO WASH SPLIT-1, REACH 03, REACH 04, REACH 05, TRIB-5 & TRIB-6.  
SHEET 4 - OCOTILLO WASH REACH 05 & TRIB-5.

### ABBREVIATIONS

DMP - DRAINAGE MASTER PLAN  
CC - CAVE CREEK  
ROW - RIGHT OF WAY  
EXIST - EXISTING  
BCHH - BRASS CAP HAND HOLE  
T. - TOWNSHIP  
R. - RANGE  
S. - SECTION  
N.T.S. - NOT TO SCALE  
BM - BENCHMARK

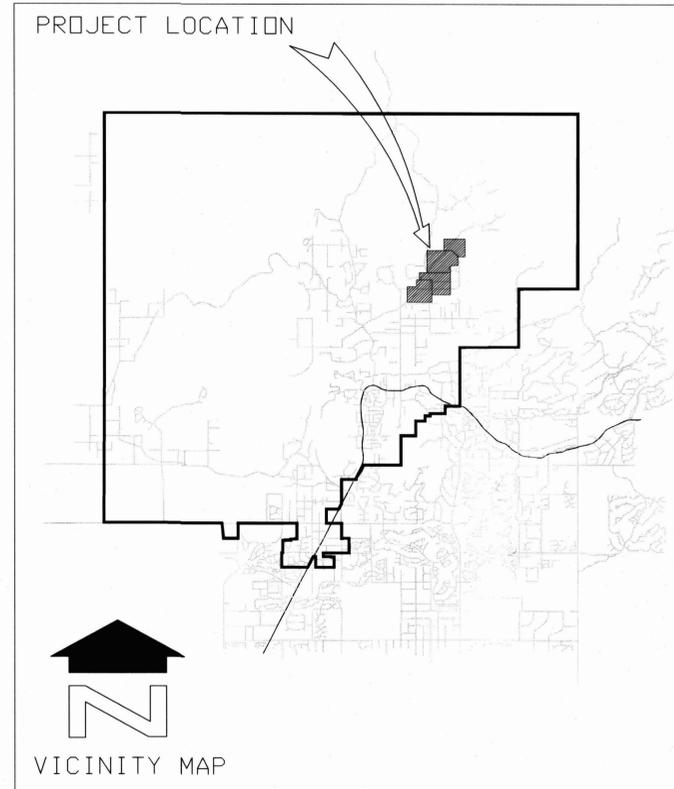
SHEET INDEX MAP  
 SCALE: 1 INCH = 400 FT



### SURVEY STATEMENT

I, STONE E. WAHL, AN ARIZONA REGISTERED LAND SURVEYOR, CERTIFY THAT THE FIELD SURVEYS, DOCUMENTED HEREIN, ALONG WITH ALL FIELD, AND OFFICE PROCESS PROCEDURES, USED DURING THE COURSE OF THIS SURVEY, WERE PERFORMED UNDER MY DIRECT SUPERVISION, AND THAT THESE SURVEYS, ARE RETRACEABLE, AND REPEATABLE. FURTHER, I CERTIFY THAT THE SUREY REPORT WAS PREPARED UNDER MY DIRECT SUPERVISION.

STONE E. WAHL  
AZ RLS #28237

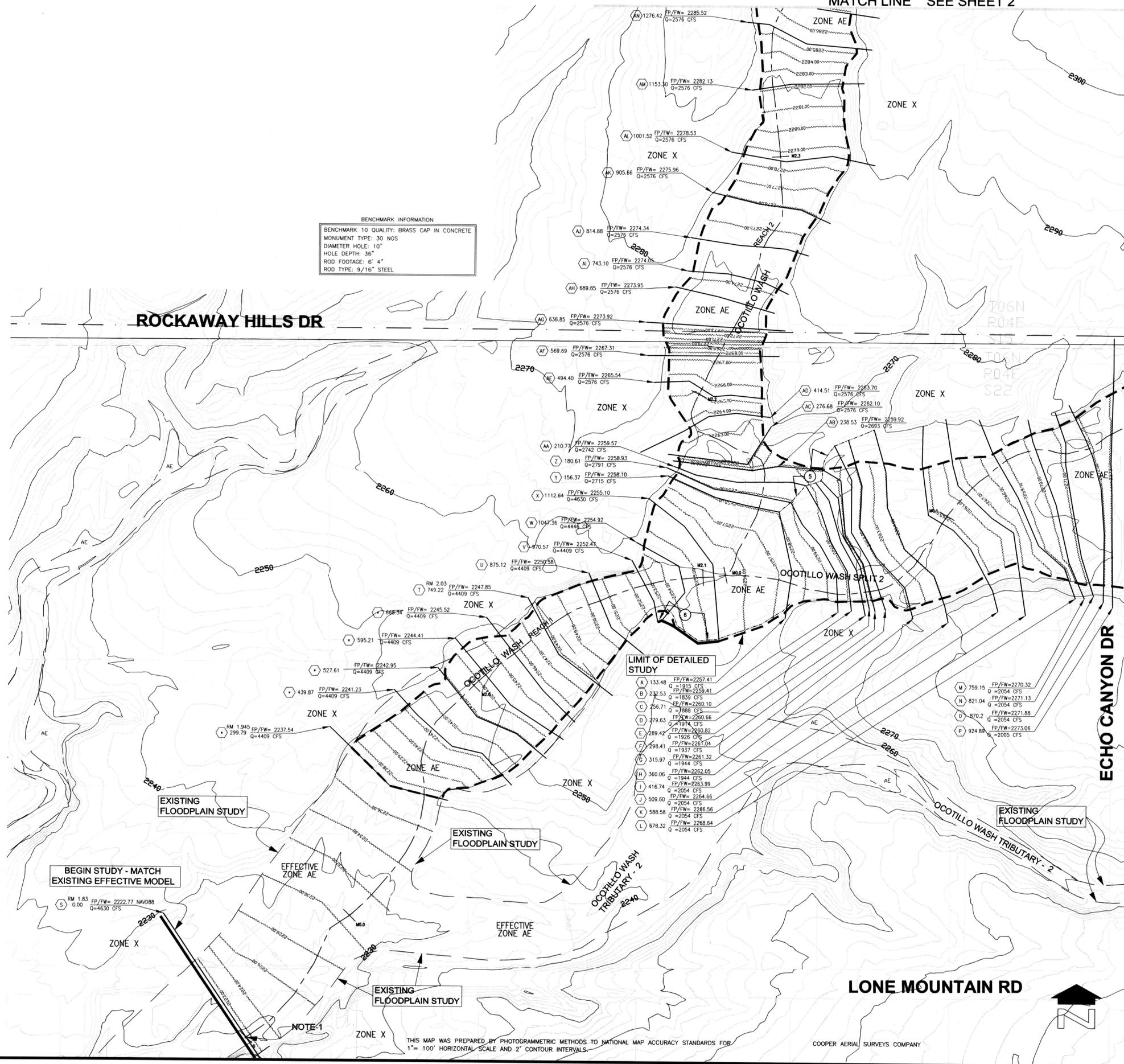


Drawer 318



**HDR ENGINEERING, INC.**  
3200 East Camelback Road, Suite 350  
PHOENIX, ARIZONA 85018-2311  
(602) 522-7700

MATCH LINE SEE SHEET 2



**BENCHMARK INFORMATION**  
 BENCHMARK 10 QUALITY: BRASS CAP IN CONCRETE  
 MONUMENT TYPE: 30 NGS  
 DIAMETER HOLE: 10"  
 HOLE DEPTH: 36"  
 ROD FOOTAGE: 6' 4"  
 ROD TYPE: 9/16" STEEL

**LIMIT OF DETAILED STUDY**

A	133.48	FP/FW=2257.41	Q=1815 CFS
B	232.53	FP/FW=2259.41	Q=1839 CFS
C	256.71	FP/FW=2260.10	Q=1888 CFS
D	279.63	FP/FW=2260.66	Q=1934 CFS
E	289.42	FP/FW=2260.82	Q=1926 CFS
F	298.41	FP/FW=2261.04	Q=1937 CFS
G	315.97	FP/FW=2261.32	Q=1944 CFS
H	360.06	FP/FW=2262.05	Q=1944 CFS
I	416.74	FP/FW=2263.99	Q=2054 CFS
J	509.60	FP/FW=2264.66	Q=2054 CFS
K	588.58	FP/FW=2266.56	Q=2054 CFS
L	678.32	FP/FW=2268.64	Q=2054 CFS

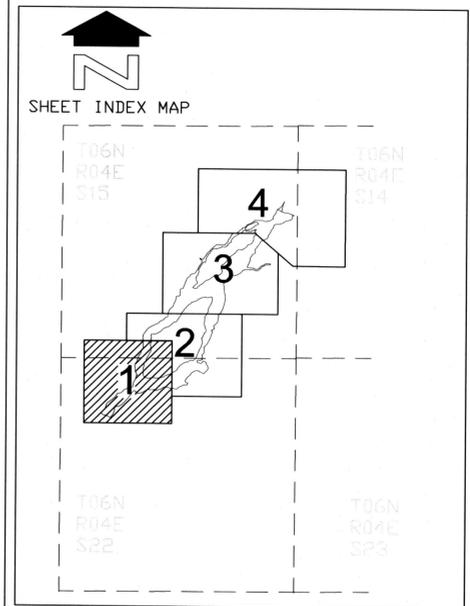
**LEGEND**

- 100-YR FLOODPLAIN AND FLOODWAY BOUNDARY
- LATERAL BASE LINES
- BASE FLOOD ELEVATION
- HYDRAULIC BASE LINE WITH RIVER MILE
- CROSS SECTION
- ELEVATION REFERENCE MARK
- ZONE DESIGNATION
- ZONE DESIGNATION
- BENCHMARK DESIGNATION

**BENCHMARKS**

NOTE: ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). CONVERSION FACTOR TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) IS = -2.07 FOOT.

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
BM #10	2275.856	THE INTERSECTION OF FLEMING SPRINGS ROAD AND ROCKAWAY HILLS DRIVE. (NE CORNER)



**NOTES**

1-THE HYDRAULIC BASE LINE FOR OCOTILLO WASH TIES INTO THE EXISTING RIVER MILE 1.83 PER THE FIS FLOOD PROFILE DATED SEPTEMBER 30, 2005

2	REVISED D/S TIE-IN, OCOTILLO WASH	MAFO/08/08/08
1	REVISION	BY DATE

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**

**CAVE CREEK DRAINAGE MASTER PLAN**  
 PROJECT CONTROL NUMBER: 690.02.20  
 CONTRACT NUMBER: FCD 2004C072

**OCOTILLO WASH FLOODPLAIN DELINEATION, CAVE CREEK, AZ**

**HDR ENGINEERING, INC.**  
 3200 East Camelback Road, Suite 350  
 PHOENIX, ARIZONA 85018-2311  
 (602) 522-7700

DESIGN	BY	DATE
DESIGN	M. FOUNTAIN	08-18-08
DESIGN CHK.	L. POTTER	08-18-08
PLANS	MC/MF	08-18-08
PLANS CHK.	L. POTTER	08-18-08

EXPIRES 12/31/2009 FNL.MAFO.08182008 SHEET 1 OF 4

MATCH LINE SEE SHEET 2

ECHO CANYON DR

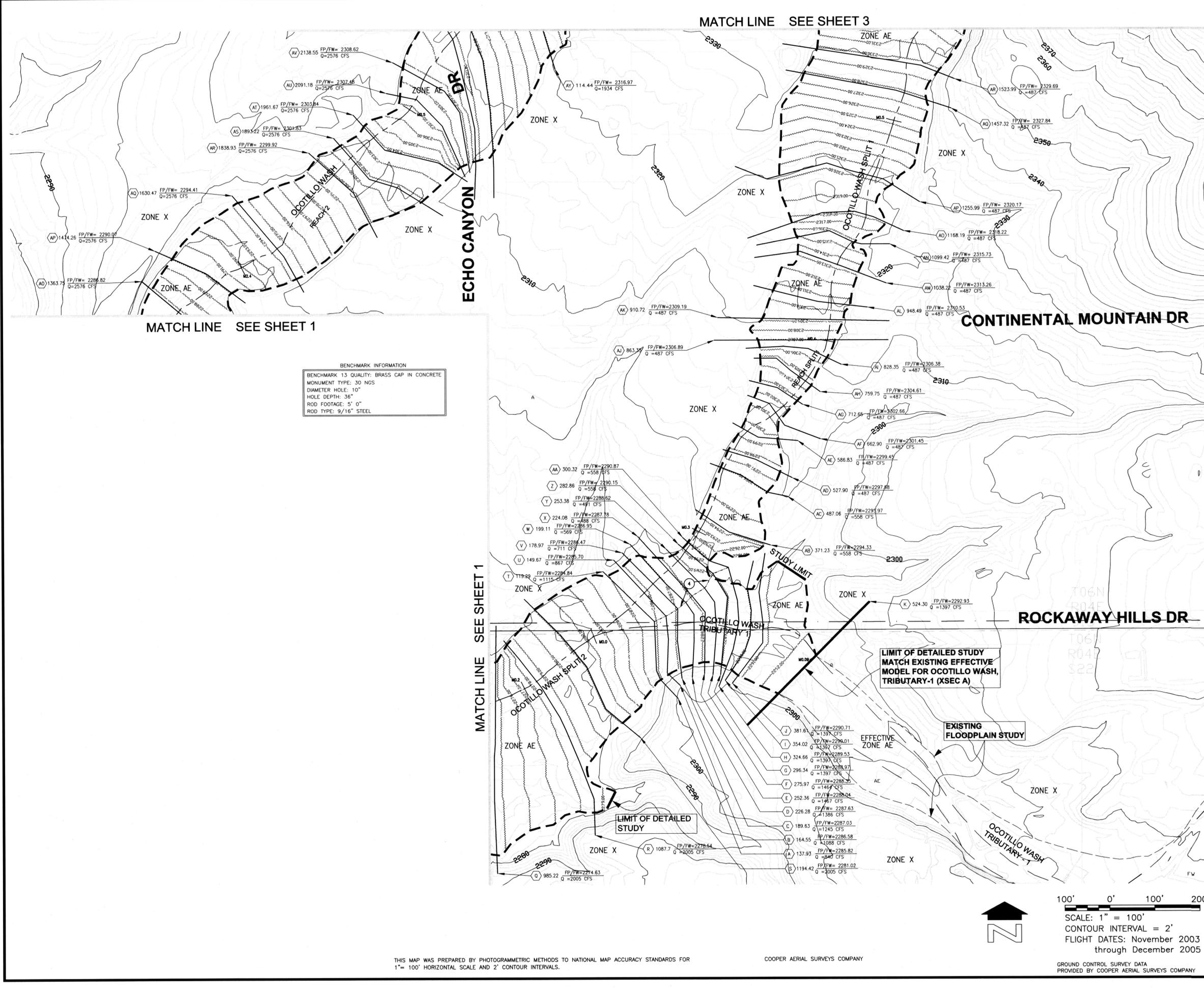


SCALE: 1" = 100'  
 CONTOUR INTERVAL = 2'  
 FLIGHT DATES: November 2003 through December 2003

GROUND CONTROL SURVEY DATA PROVIDED BY COOPER AERIAL SURVEYS COMPANY

COOPER AERIAL SURVEYS COMPANY

THIS MAP WAS PREPARED BY PHOTOGAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1" = 100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.



MATCH LINE SEE SHEET 3

MATCH LINE SEE SHEET 1

MATCH LINE SEE SHEET 1

**BENCHMARK INFORMATION**  
 BENCHMARK 13 QUALITY: BRASS CAP IN CONCRETE  
 MONUMENT TYPE: 30 NGS  
 DIAMETER: HOLE: 10"  
 HOLE DEPTH: 36"  
 ROD FOOTAGE: 5' 0"  
 ROD TYPE: 9/16" STEEL

**LIMIT OF DETAILED STUDY  
 MATCH EXISTING EFFECTIVE  
 MODEL FOR OCOTILLO WASH,  
 TRIBUTARY-1 (XSEC A)**

**LIMIT OF DETAILED  
 STUDY**

**EXISTING  
 FLOODPLAIN STUDY**

**EFFECTIVE  
 ZONE AE**

THIS MAP WAS PREPARED BY PHOTOGAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1" = 100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

COOPER AERIAL SURVEYS COMPANY

100' 0' 100' 200'  
 SCALE: 1" = 100'  
 CONTOUR INTERVAL = 2'  
 FLIGHT DATES: November 2003  
 through December 2005

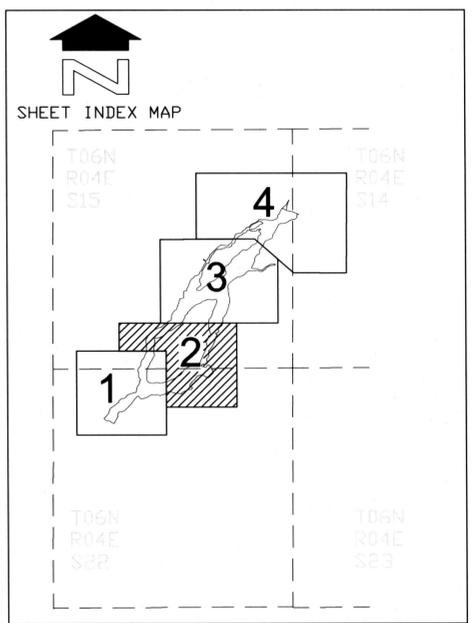
**LEGEND**

- 100-YR FLOODPLAIN AND FLOODWAY BOUNDARY
- LATERAL BASE LINES
- BASE FLOOD ELEVATION
- HYDRAULIC BASE LINE WITH RIVER MILE
- CROSS SECTION   
 CROSS SECTION SHOWN (FEET)  
 PROPOSED FEMA CROSS SECTION SEPARATION  
 FLOODPLAIN WATER SURFACE ELEVATION  
 EXISTING RIVER MILE STATIONING (MILE)  
 RM 1.945  
 ERM 2400  
 Q = 4630 CFS
- ELEVATION REFERENCE MARK
- ZONE DESIGNATION
- ZONE DESIGNATION
- BENCHMARK DESIGNATION

**BENCHMARKS**

NOTE: ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). CONVERSION FACTOR TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) IS = -2.07 FOOT.

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
BM #13	2306.736	THE INTERSECTION OF ECHO CANYON DRIVE AND CONTINENTAL MOUNTAIN DRIVE. (NE CORNER)



**NOTES**

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NO.	REVISION	DATE
1	REVISED U/S TIE-IN, TRIBUTARY 1	08/18/08
2		

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 OF MARICOPA COUNTY**

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 PROJECT CONTROL NUMBER: 690.02.20  
 CONTRACT NUMBER: FCD 2004C072**

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 3200 East Camelback Road, Suite 350  
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DESIGN CHK.	L. POTTER	08-18-08
PLANS	MC/MF	08-18-08
PLANS CHK.	L. POTTER	08-18-08

EXPIRES 12/31/2009  
 FNL.MAFO.08182008  
 SHEET 2 OF 4

MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 4

MATCH LINE SEE SHEET 2

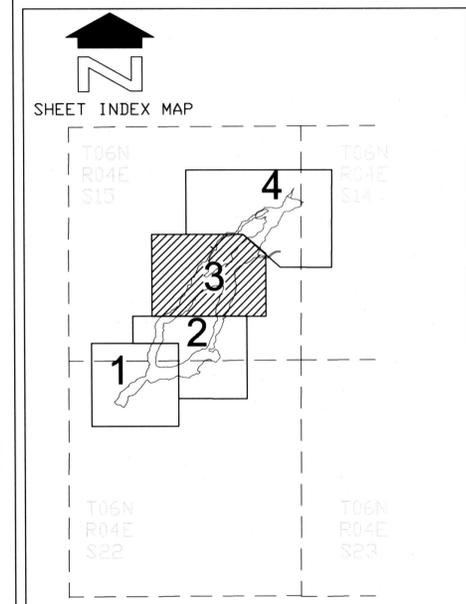
LEGEND

- 100-YR FLOODPLAIN AND FLOODWAY BOUNDARY
- LATERAL BASE LINES
- BASE FLOOD ELEVATION
- HYDRAULIC BASE LINE WITH RIVER MILE
- CROSS SECTION   
 CROSS SECTION DATA KEY FOR OCOTILLO WASH  
 A 144.44 FP/FW= 2250.55 Q=4630 CFS  
 PROPOSED FROM CROSS SECTION DESCRIPTION  
 EXISTING RIVER MILE STATIONING (MILE)  
 RM 1.945  
 100 YEAR DISCHARGE  
 ELEVATION REFERENCE MARK ERM 2400  
 ZONE DESIGNATION ZONE AE  
 ZONE DESIGNATION ZONE X  
 BENCHMARK DESIGNATION **BM#10**

BENCHMARKS

NOTE: ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). CONVERSION FACTOR TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) IS = -2.07 FOOT.

I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
BM #11	2320.194	THE INTERSECTION OF FLEMING SPRINGS ROAD AND ECHO CANYON DRIVE. (SE CORNER)



NOTES

1-THE HYDRAULIC BASE LINE FOR OCOTILLO WASH TIES INTO THE EXISTING RIVER MILE 1.83 PER THE FIS FLOOD PROFILE DATED SEPTEMBER 30, 2005

NO.	REVISION	BY	DATE
2			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

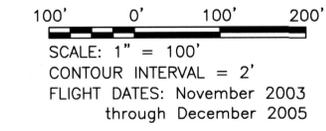
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OCOTILLO WASH FLOODPLAIN DELINEATION, CAVE CREEK, AZ

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3200 East Camelback Road, Suite 350 PHOENIX, ARIZONA 85018-2311 (602) 522-7700		
BY	DATE	
DESIGN M. FOUNTAIN	08-18-08	
DESIGN CHK. L. POTTER	08-18-08	
PLANS MC/MF	08-18-08	
PLANS CHK. L. POTTER	08-18-08	

CROSS SECTION DATA KEY FOR OCOTILLO WASH

AZ 215.17	FP/FW= 2320.57 Q=1764 CFS	BP 1054.18	FP/FW= 2247.27 Q=2209 CFS
BA 321.58	FP/FW= 2322.57 Q=1906 CFS	BR 1159.03	FP/FW= 2351.16 Q=2238 CFS
BB 384.36	FP/FW= 2325.62 Q=1984 CFS	BS 1241.24	FP/FW= 2353.81 Q=2248 CFS
BC 462.38	FP/FW= 2328.62 Q=2286 CFS	BT 1321.67	FP/FW= 2356.80 Q=2274 CFS
BD 671.13	FP/FW= 2335.31 Q=2277 CFS	BU 1382.93	FP/FW= 2359.57 Q=2313 CFS
BE 741.52	FP/FW= 2338.15 Q=2286 CFS	BV 1458.29	FP/FW= 2360.79 Q=2304 CFS
BF 826.04	FP/FW= 2341.46 Q=2283 CFS	BW 1510.76	FP/FW= 2362.11 Q=2326 CFS
BG 987.65	FP/FW= 2342.46 Q=2219 CFS	BX 1619.75	FP/FW= 2365.17 Q=2532 CFS
BY 1054.18	FP/FW= 2344.10 Q=1564 CFS		
BZ 2079.06	FP/FW= 2348.10 Q=1544 CFS		
CA 2040.08	FP/FW= 2346.62 Q=1554 CFS		
CB 1980.32	FP/FW= 2344.03 Q=1480 CFS		
CC 1886.06	FP/FW= 2340.81 Q=1487 CFS		
CD 1842.72	FP/FW= 2338.28 Q=1487 CFS		
CE 1708.38	FP/FW= 2334.45 Q=1477 CFS		

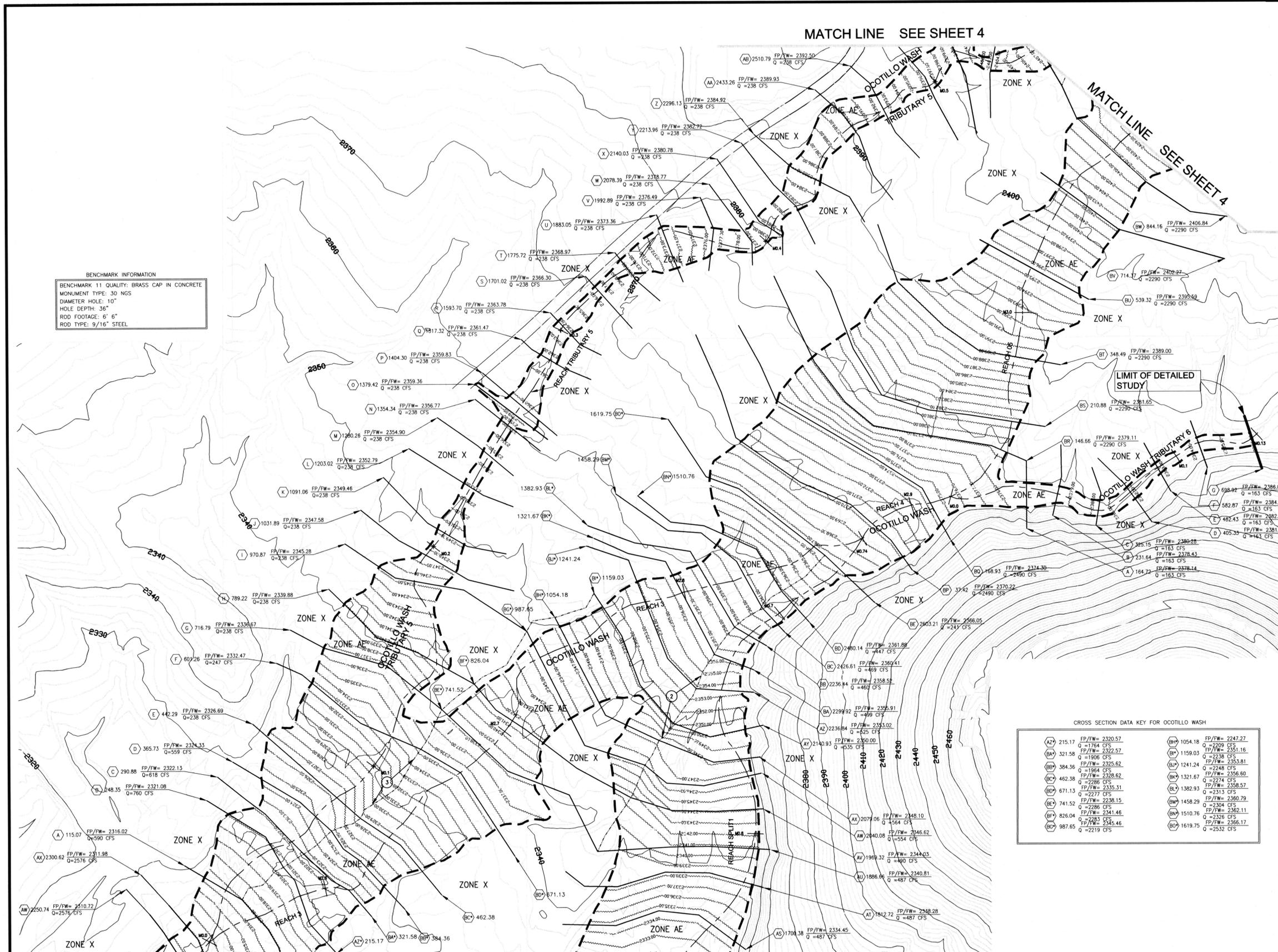


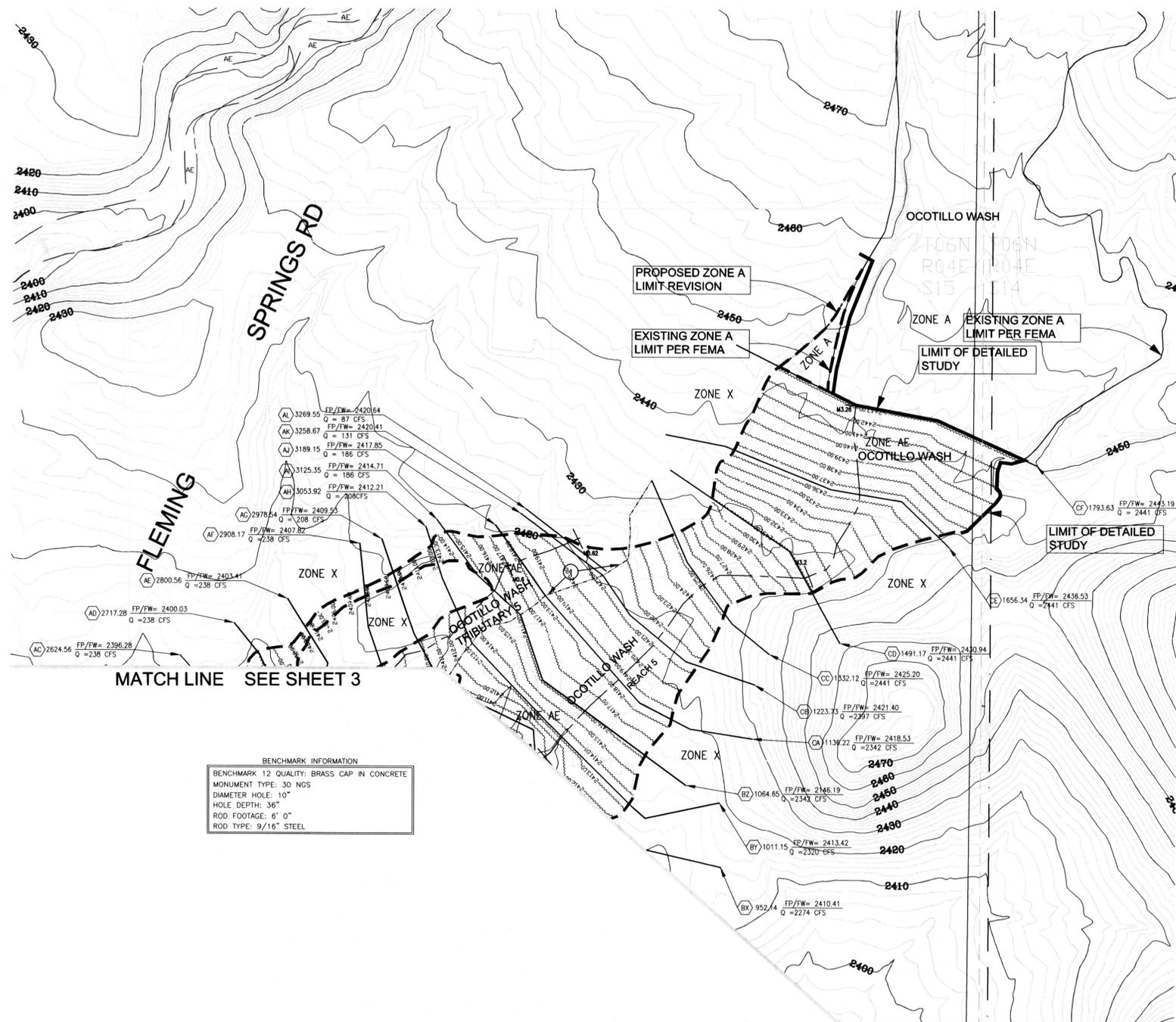
GROUND CONTROL SURVEY DATA PROVIDED BY COOPER AERIAL SURVEYS COMPANY

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS FOR 1" = 100' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS.

COOPER AERIAL SURVEYS COMPANY

BENCHMARK INFORMATION  
 BENCHMARK 11 QUALITY: BRASS CAP IN CONCRETE  
 MONUMENT TYPE: 30 NGS  
 DIAMETER HOLE: 10"  
 HOLE DEPTH: 36"  
 ROD FOOTAGE: 6' 6"  
 ROD TYPE: 9/16" STEEL





**BENCHMARK INFORMATION**  
 BENCHMARK 12 QUALITY: BRASS CAP IN CONCRETE  
 MONUMENT TYPE: 30 NGS  
 DIAMETER HOLE: 10"  
 HOLE DEPTH: 36"  
 ROD FOOTAGE: 8' 0"  
 ROD TYPE: 9/16" STEEL

MATCH LINE SEE SHEET 3

MATCH LINE SEE SHEET 3

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SCALE: 1" = 100'  
 CONTOUR INTERVAL = 2'  
 FLIGHT DATES: November 2003 through December 2005

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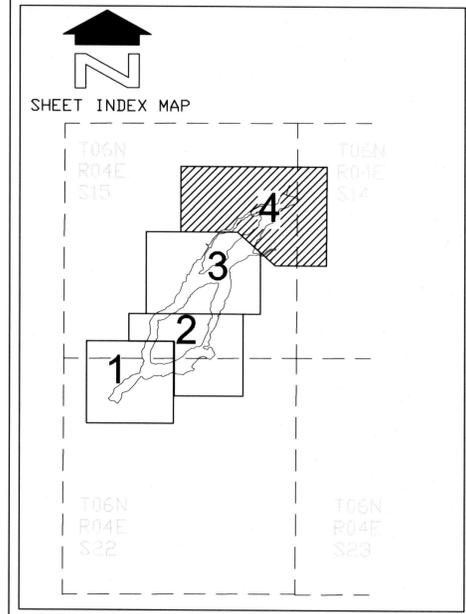
**LEGEND**

- 100-YR FLOODPLAIN AND FLOODWAY BOUNDARY
- LATERAL BASE LINES
- BASE FLOOD ELEVATION
- HYDRAULIC BASE LINE WITH RIVER MILE
- CROSS SECTION   
 CROSS SECTION STATION (FEET) 144.44  
 PROPOSED FEMA CROSS SECTION DESCRIPTION  
 FLOODPLAIN WATER SURFACE ELEVATION FP = 2250.55  
 EXISTING FEMA CROSS SECTION DESCRIPTION  
 FLOODPLAIN WATER SURFACE ELEVATION Q = 4630 CFS  
 100 YEAR DISCHARGE  
 CROSSING RIVER MILE STATIONING (MILE) RM 1.945
- ELEVATION REFERENCE MARK ERM 2400
- ZONE DESIGNATION ZONE AE
- ZONE DESIGNATION ZONE X
- BENCHMARK DESIGNATION **BM#10**

**BENCHMARKS**

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I.D. NUMBER	ELEVATION (FT)	DESCRIPTION/LOCATION
BM #12	2429.245	ALONG FLEMING SPRINGS ROAD ADJACENT TO PARCEL NUMBER 21616025R OR 21616025S



**NOTES**

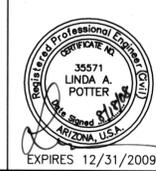
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NO.	REVISION	BY	DATE
1			

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BY	DATE
DESIGN M. FOUNTAIN	08-18-08
DESIGN CHK. L. POTTER	08-18-08
PLANS MC/MF	08-18-08
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EXPIRES 12/31/2009 FNL.MAFO.08182008 SHEET 4 OF 4