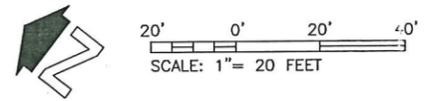
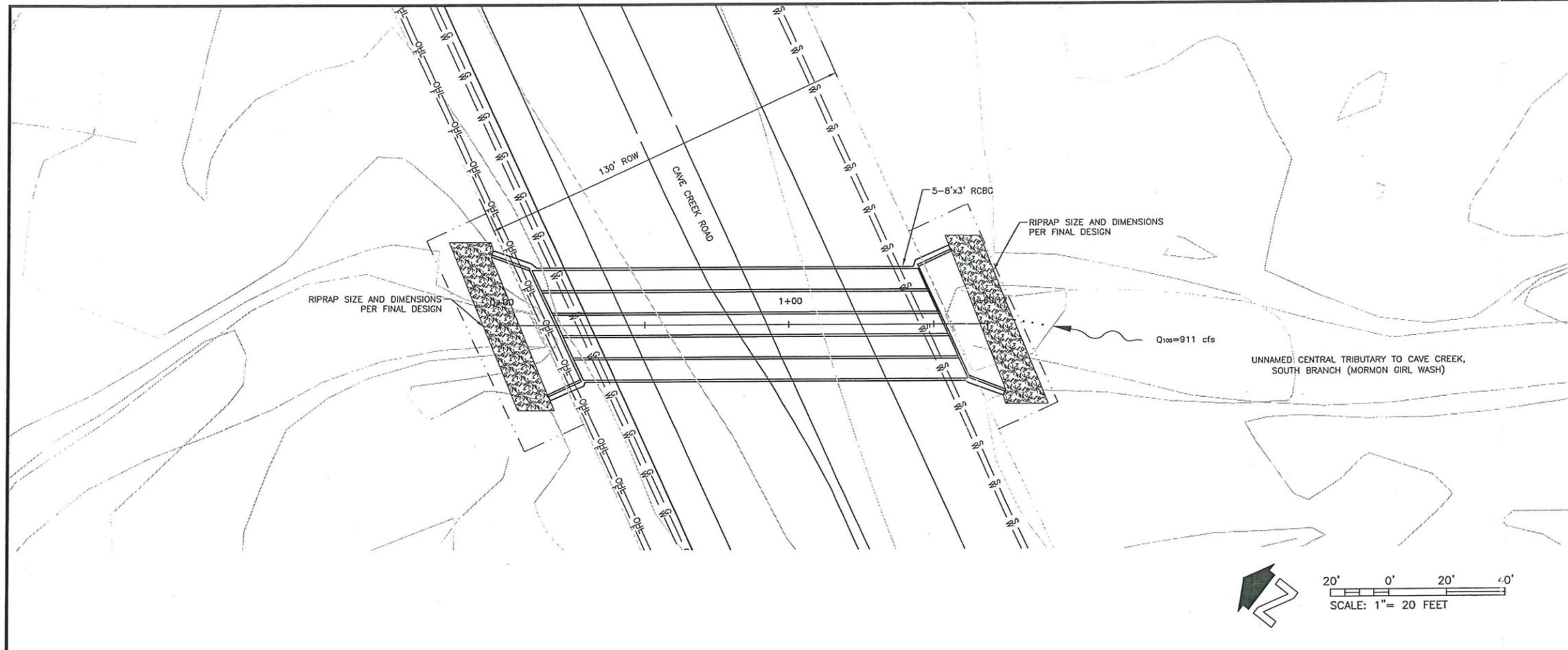


## **APPENDIX F      IMPROVEMENT PLANS AND COST ESTIMATES**

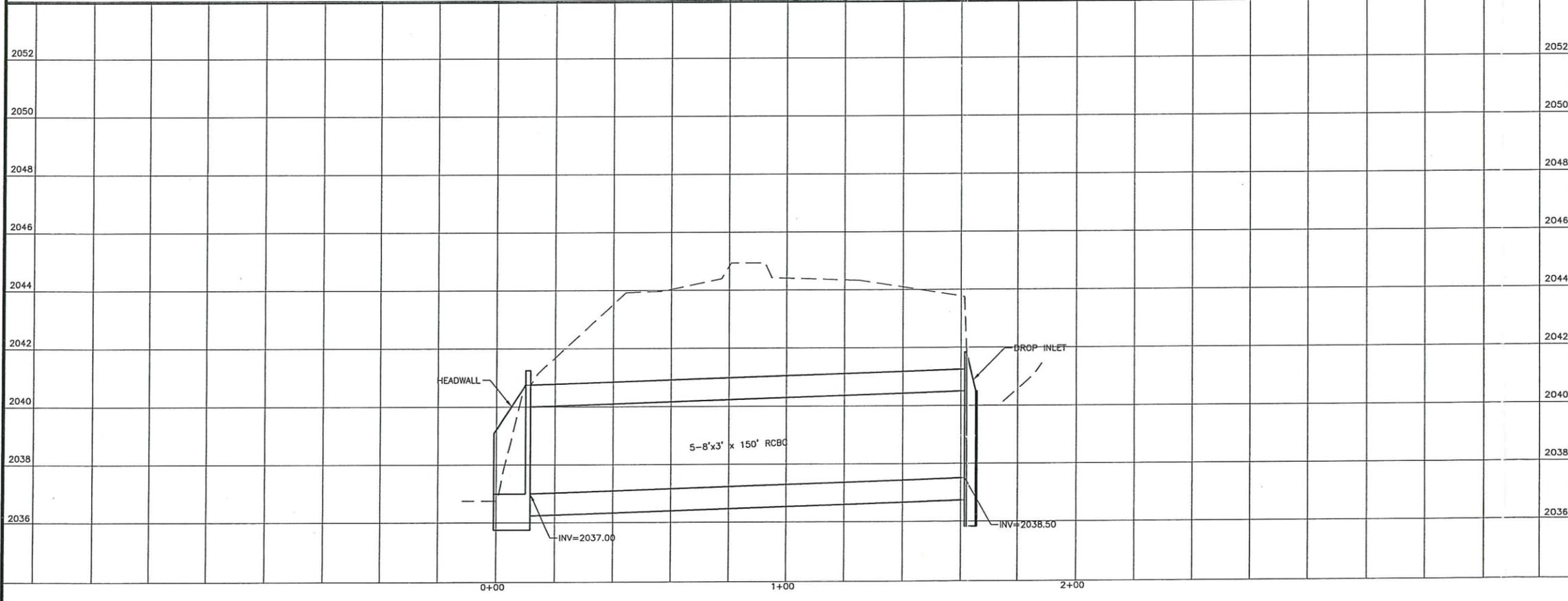
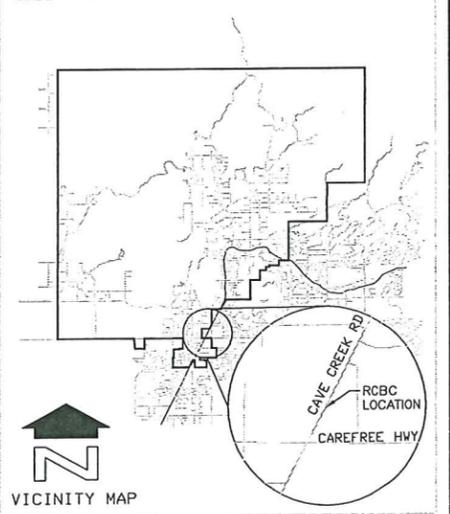
Improvement Plans

Cost Estimates (2008 Dollars)



**LEGEND**

---	PARCEL/ROW LINE
---	PROPOSED ROW
—OHL—OHL—	OVERHEAD APS LINE
—W—W—	BURIED WATER LINE
—G—G—	BURIED GAS LINE
—S—S—	BURIED SANITARY LINE
—F—F—	BURIED FIBER OPTIC



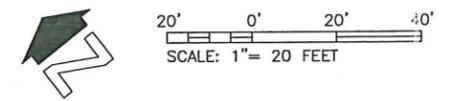
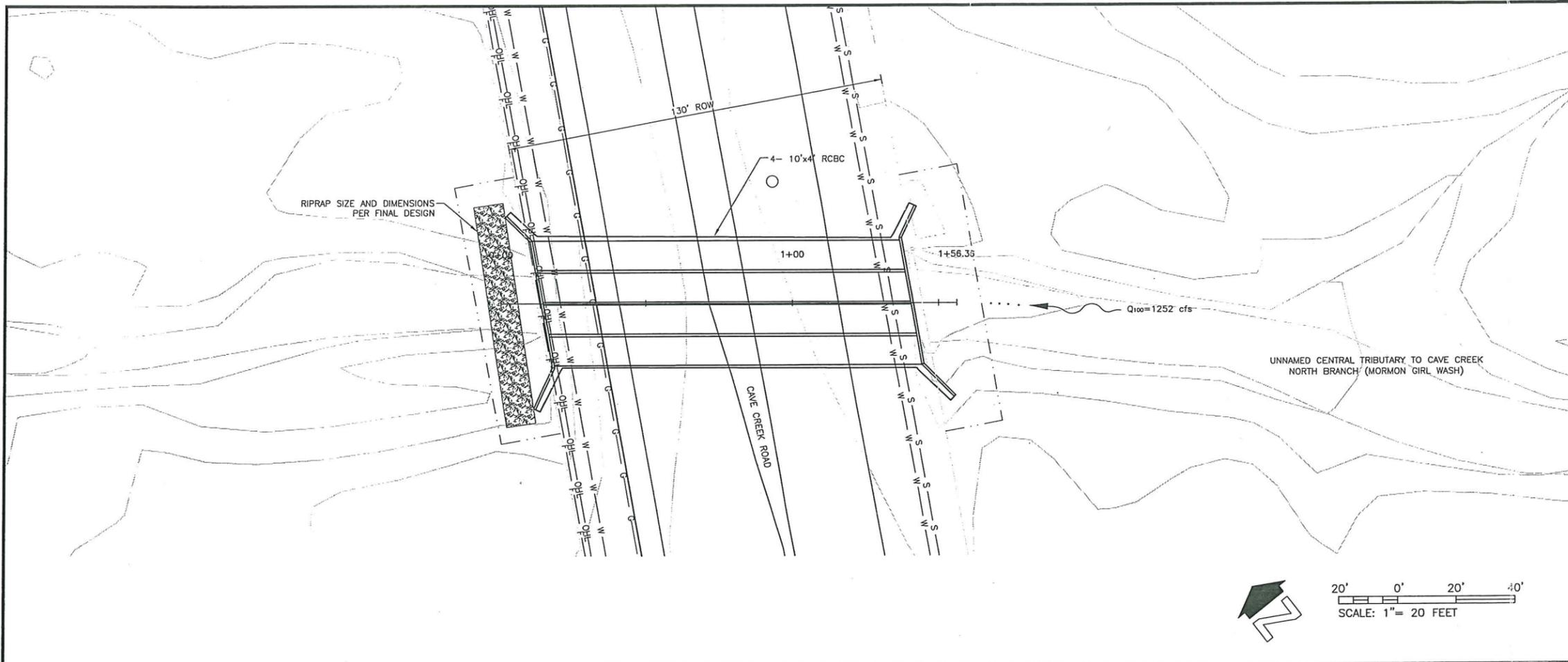
- NOTES**
- 1- BASIS OF ELEVATION NAVD88
  - 2- 2' CI CONTOUR MAPPING
  - 3- ALL UTILITY LOCATIONS ARE APPROXIMATE

NO.	REVISION	BY	DATE
2			
1			

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**

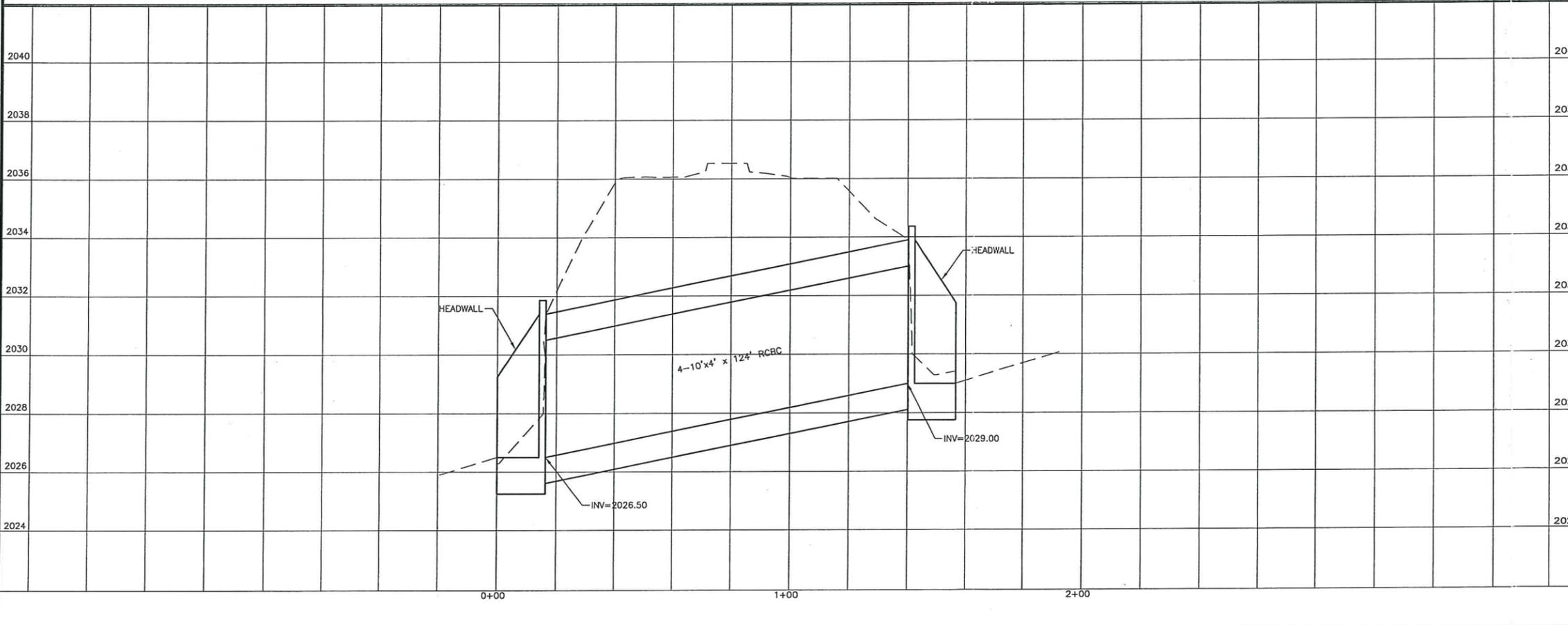
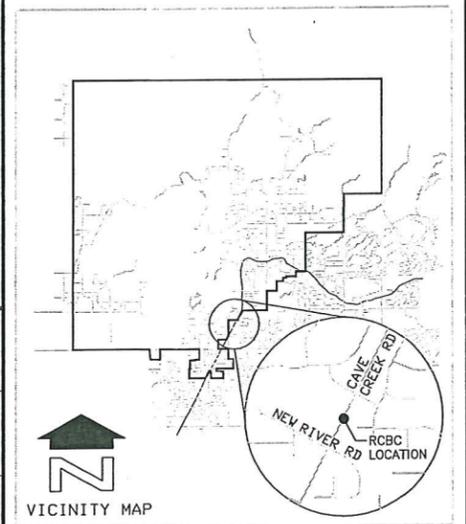
**CAVE CREEK DRAINAGE MASTER PLAN**  
**PROJECT CONTROL NUMBER: 690.02.20**  
**CONTRACT NUMBER: FCD 2004C072**  
**CAVE CREEK ROAD AT UNNAMED CENTRAL TRIBUTARY TO CAVE CREEK, SOUTH BRANCH (MORMON GIRL WASH)**

PRELIMINARY NOT FOR CONSTRUCTION	HDR ENGINEERING, INC. 3200 East Camelback Road, Suite 350 PHOENIX, ARIZONA 85018-2311 (602) 522-7700	
	BY	DATE
	DESIGN M. FOUNTAIN	01-2008
	DESIGN CHK. L. POTTER	01-2008
	PLANS MC/MF	01-2008
PLANS CHK.	01-2008	



**LEGEND**

- PARCEL/ROW LINE
- - - - - PROPOSED ROW
- OHL-OHL- OVERHEAD APS LINE
- W-W- BURIED WATER LINE
- G-G- BURIED GAS LINE
- S-S- BURIED SANITARY LINE
- F-F- BURIED FIBER OPTIC



**NOTES**

- 1- BASIS OF ELEVATION NAVD88
- 2- 2' CI CONTOUR MAPPING
- 3- ALL UTILITY LOCATIONS ARE APPROXIMATE

NO.	REVISION	BY	DATE
2			
1			

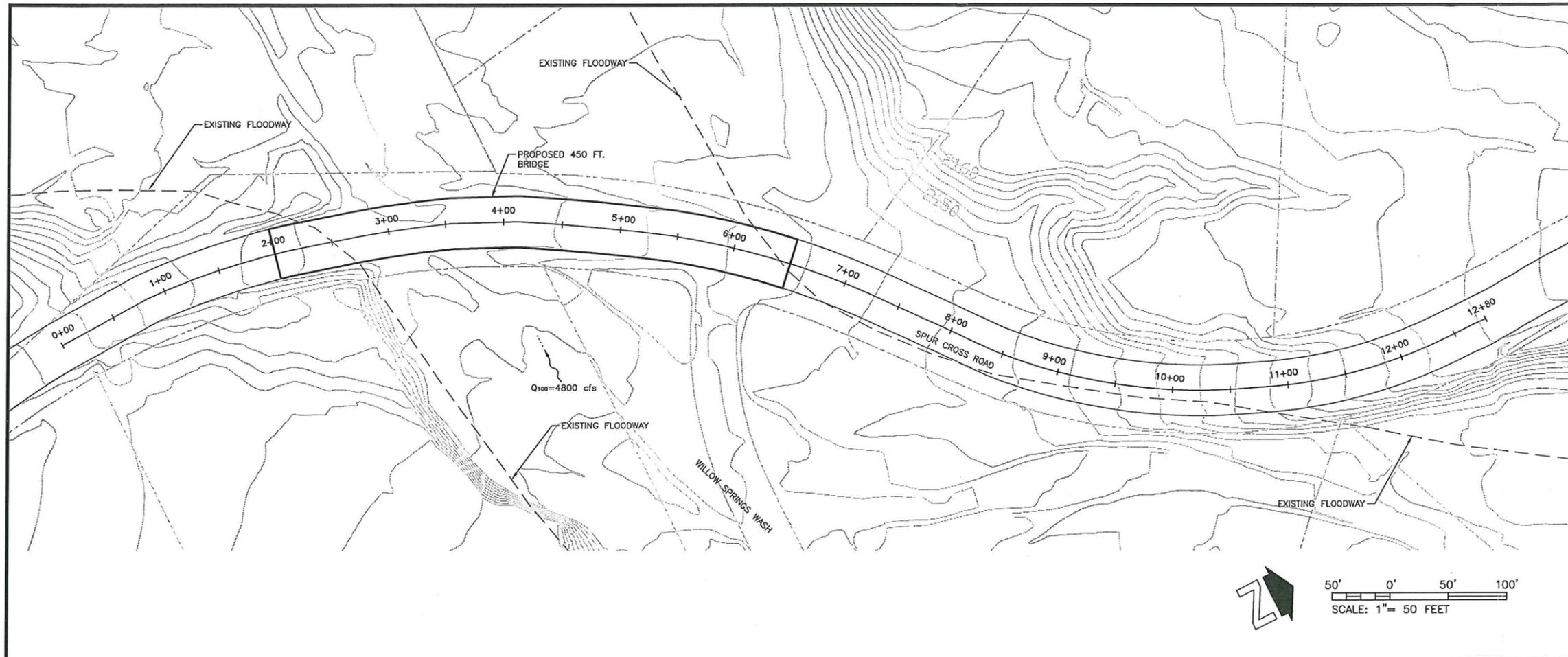
**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**

**CAVE CREEK DRAINAGE MASTER PLAN**  
**PROJECT CONTROL NUMBER: 690.02.20**  
**CONTRACT NUMBER: FCD 2004C072**  
**CAVE CREEK ROAD AT UNNAMED CENTRAL TRIBUTARY TO CAVE CREEK, NORTH BRANCH (MORMON GIRL WASH)**

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

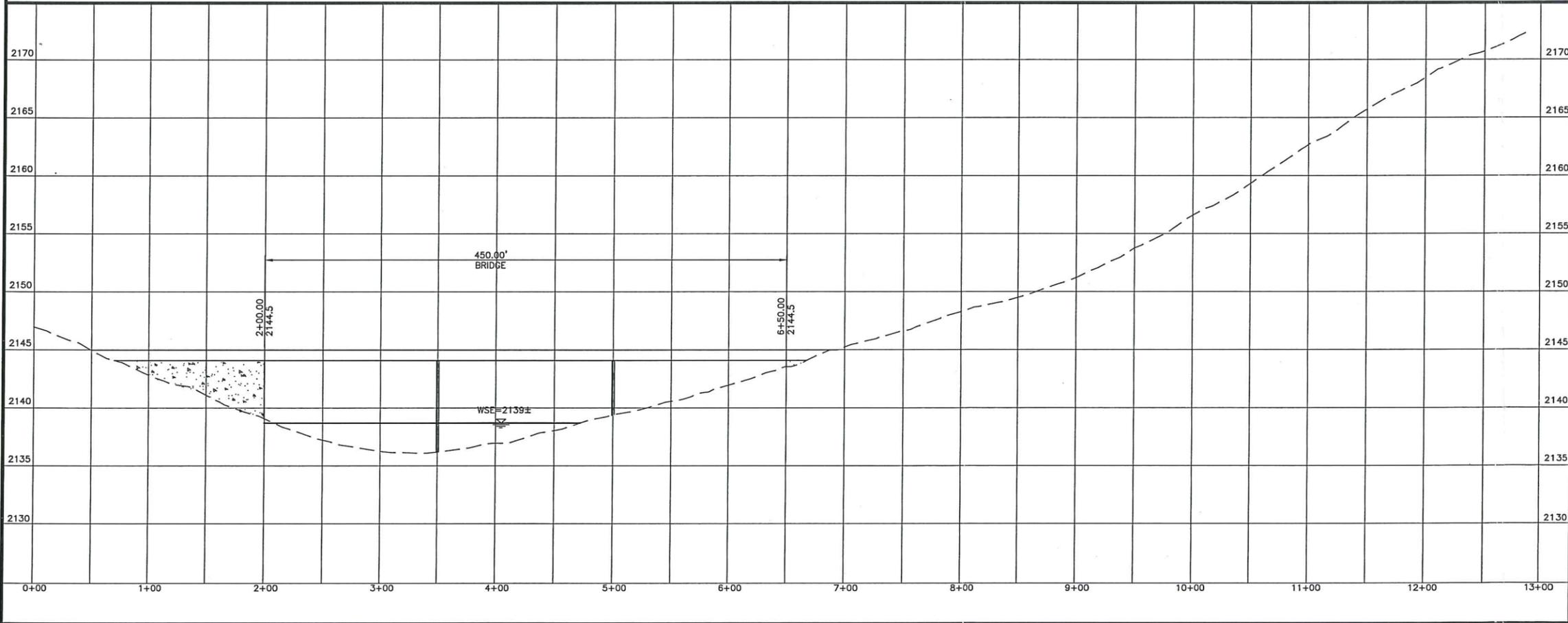
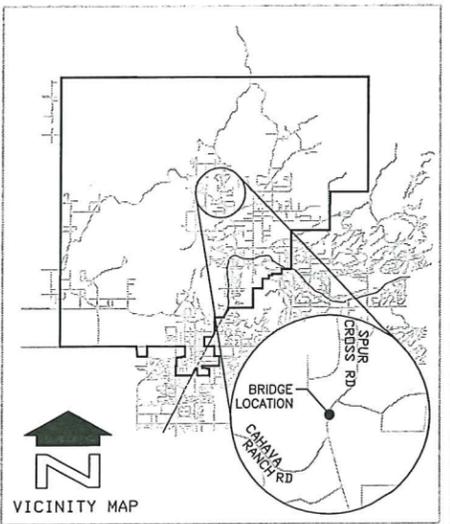
PRELIMINARY  
 NOT FOR  
 CONSTRUCTION

	BY	DATE
DESIGN	M. FOUNTAIN	01-2008
DESIGN CHK.	L. POTTER	01-2008
PLANS	MC/MF	01-2008
PLANS CHK.	-	01-2008



**LEGEND**

---	PARCEL/ROW LINE
---	PROPOSED ROW
---	FLOODPLAIN
---	FLOODWAY



**NOTES**

- 1- BASIS OF ELEVATION NAVD88
- 2- 2' CI CONTOUR MAPPING

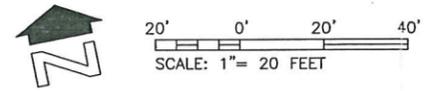
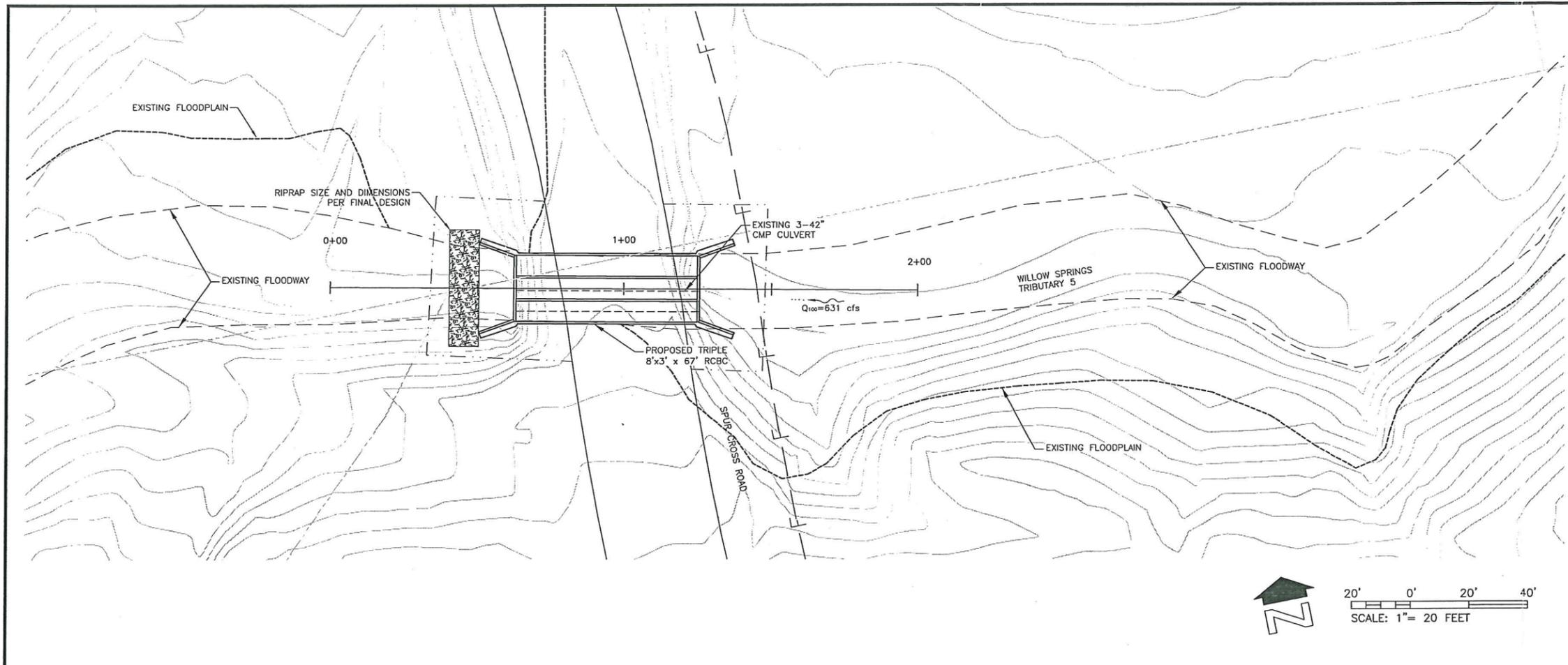
NO.	REVISION	BY	DATE
1			
2			

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**

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

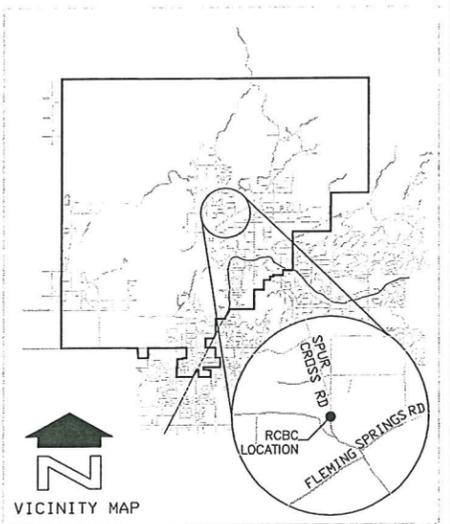
**SPUR CROSS ROAD AT WILLOW SPRINGS WASH**

PRELIMINARY NOT FOR CONSTRUCTION	<b>HDR ENGINEERING, INC.</b>	
	3200 East Camelback Road, Suite 350 PHOENIX, ARIZONA 85018-2311 (602) 522-7700	
	BY	DATE
	DESIGN	M. FOUNTAIN 01-2008
	DESIGN CHK.	L. POTTER 01-2008
PLANS	MC/MF 01-2008	
PLANS CHK.	- 01-2008	



**LEGEND**

- PARCEL/ROW LINE
- - - PROPOSED ROW
- FLOODPLAIN
- - - FLOODWAY
- OHL—OHL— OVERHEAD APS LINE
- W — W — BURIED WATER LINE
- G — G — BURIED GAS LINE
- S — S — BURIED SANITARY LINE
- F — F — BURIED FIBER OPTIC



**NOTES**

- 1- BASIS OF ELEVATION NAVD88
- 2- 2' CI CONTOUR MAPPING
- 3- ALL UTILITY LOCATIONS ARE APPROXIMATE

NO.	REVISION	BY	DATE
2			
1			

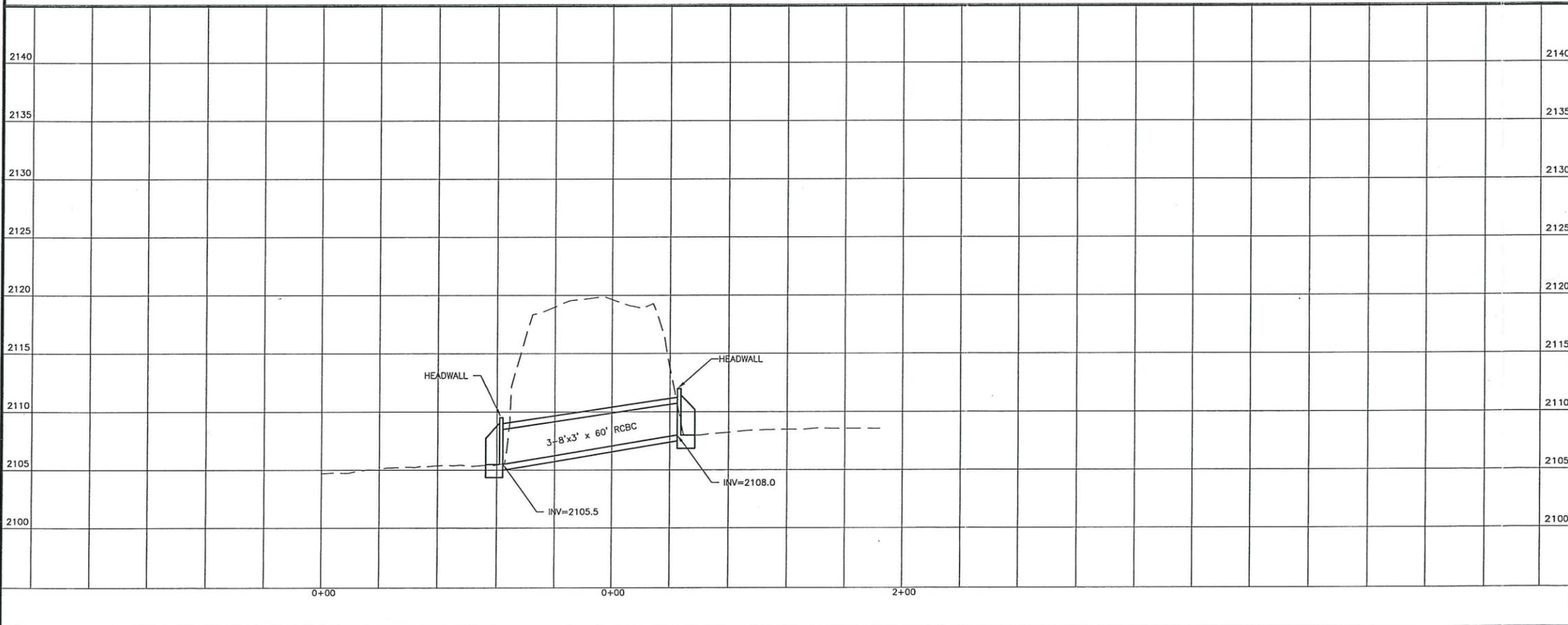
**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**

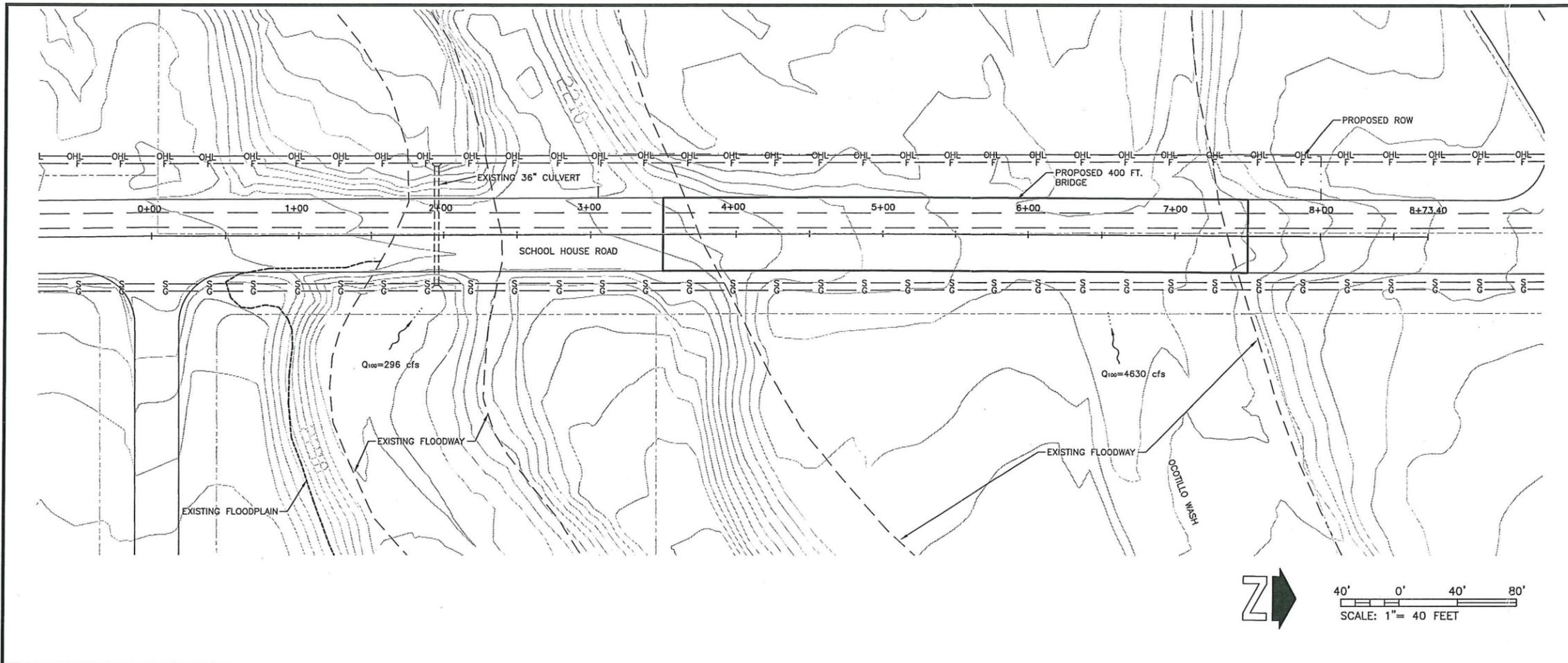
**CAVE CREEK DRAINAGE MASTER PLAN**  
**PROJECT CONTROL NUMBER: 690.02.20**  
**CONTRACT NUMBER: FCD 2004C072**  
**SPUR CROSS ROAD AT WILLOW SPRINGS WASH TRIBUTARY 5**

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

PRELIMINARY  
NOT FOR  
CONSTRUCTION

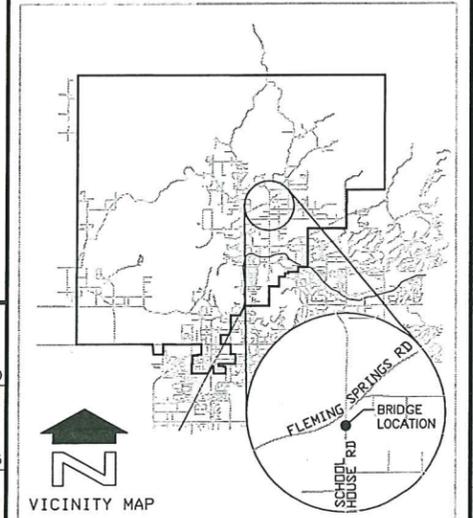
	BY	DATE
DESIGN	M. FOUNTAIN	01-2008
DESIGN CHK.	L. POTTER	01-2008
PLANS	MC/MF	01-2008
PLANS CHK.	-	01-2008





**LEGEND**

- PARCEL/ROW LINE
- PROPOSED ROW
- FLOODPLAIN
- FLOODWAY
- OHL—OHL— OVERHEAD APS LINE
- W—W— BURIED WATER LINE
- G—G— BURIED GAS LINE
- S—S— BURIED SANITARY LINE
- F—F— BURIED FIBER OPTIC



VICINITY MAP

**NOTES**

- 1- BASIS OF ELEVATION NAVD88
- 2- 2' CI CONTOUR MAPPING
- 3- ALL UTILITY LOCATIONS ARE APPROXIMATE

NO.	REVISION	BY	DATE
2			
1			

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**

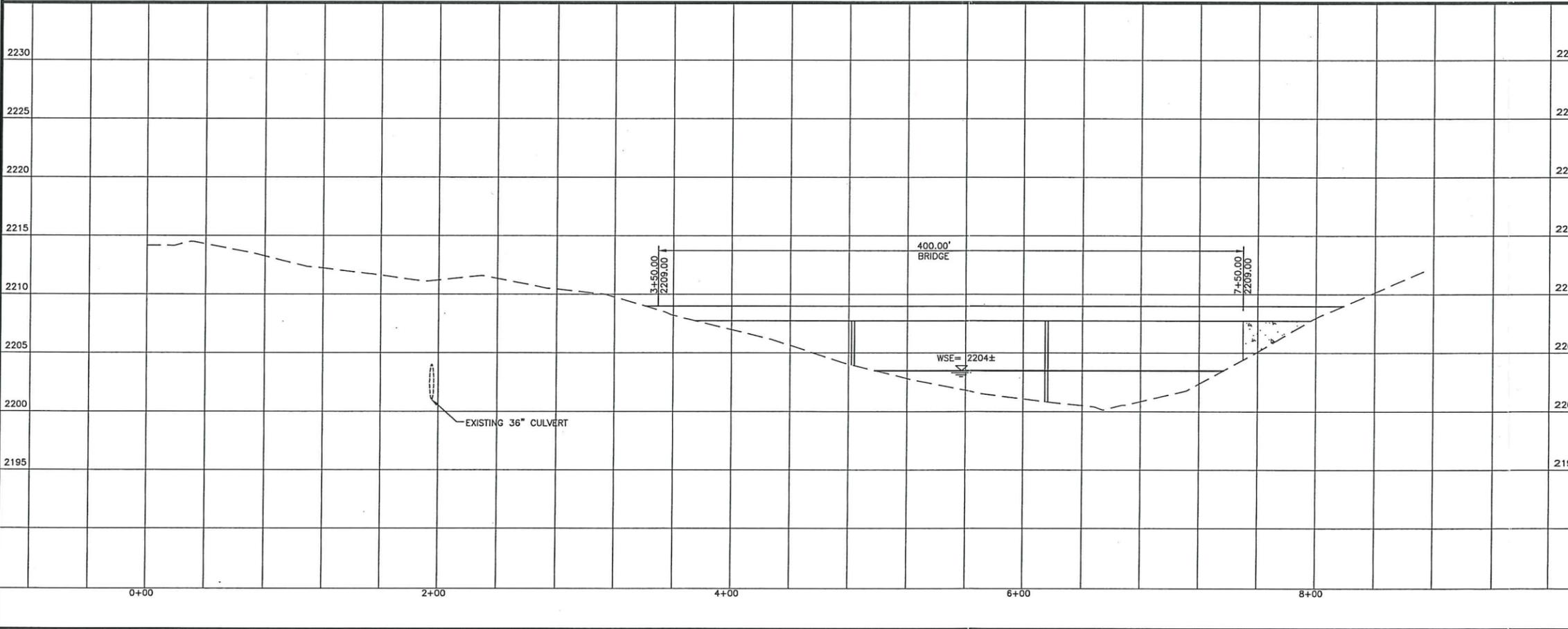
CAVE CREEK DRAINAGE MASTER PLAN  
 PROJECT CONTROL NUMBER: 690.02.20  
 CONTRACT NUMBER: FCD 2004C072

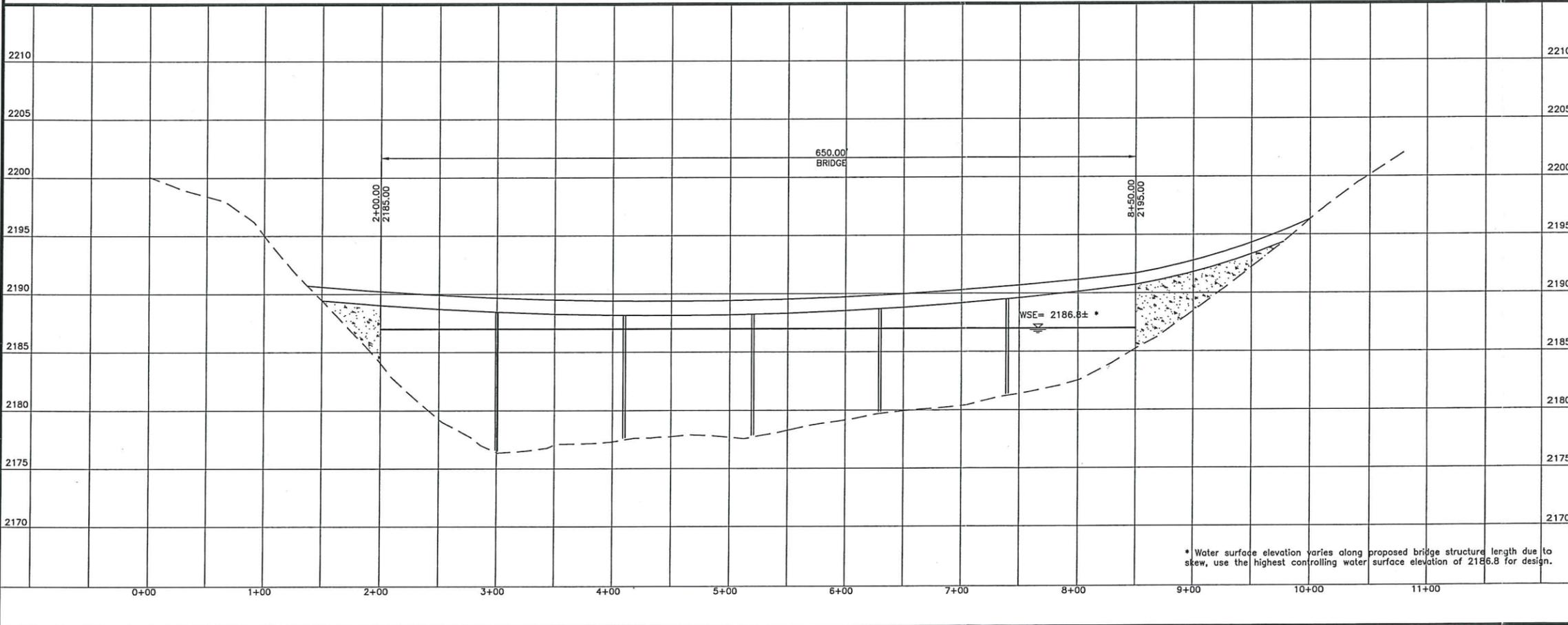
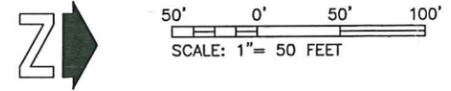
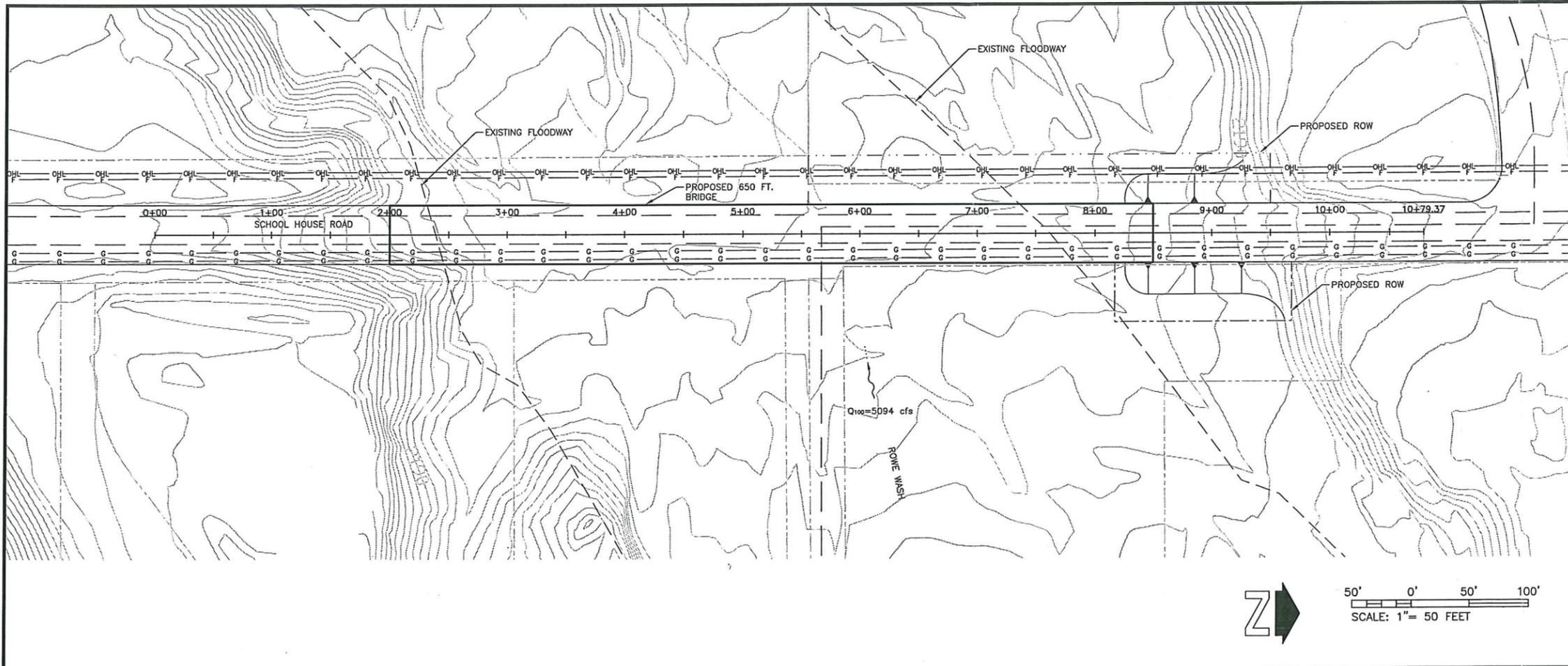
**SCHOOL HOUSE ROAD AT OCOTILLO WASH**

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

PRELIMINARY  
 NOT FOR  
 CONSTRUCTION

	BY	DATE
DESIGN	M. FOUNTAIN	01-2008
DESIGN CHK.	L. POTTER	01-2008
PLANS	MC/MF	01-2008
PLANS CHK.		01-2008

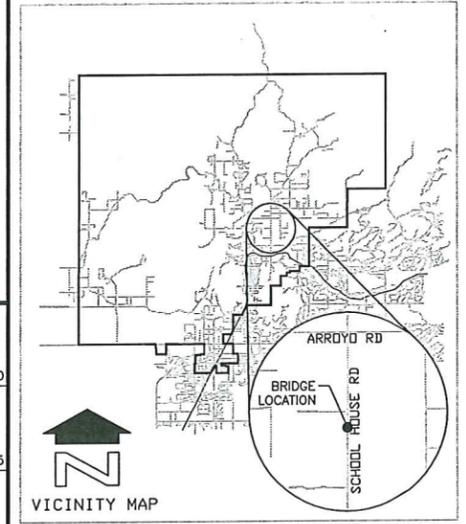




\* Water surface elevation varies along proposed bridge structure length due to skew, use the highest controlling water surface elevation of 2186.8 for design.

**LEGEND**

- PARCEL/ROW LINE
- PROPOSED ROW
- FLOODPLAIN
- FLOODWAY
- OHL—OHL— OVERHEAD APS LINE
- W—W— BURIED WATER LINE
- G—G— BURIED GAS LINE
- S—S— BURIED SANITARY LINE
- F—F— BURIED FIBER OPTIC



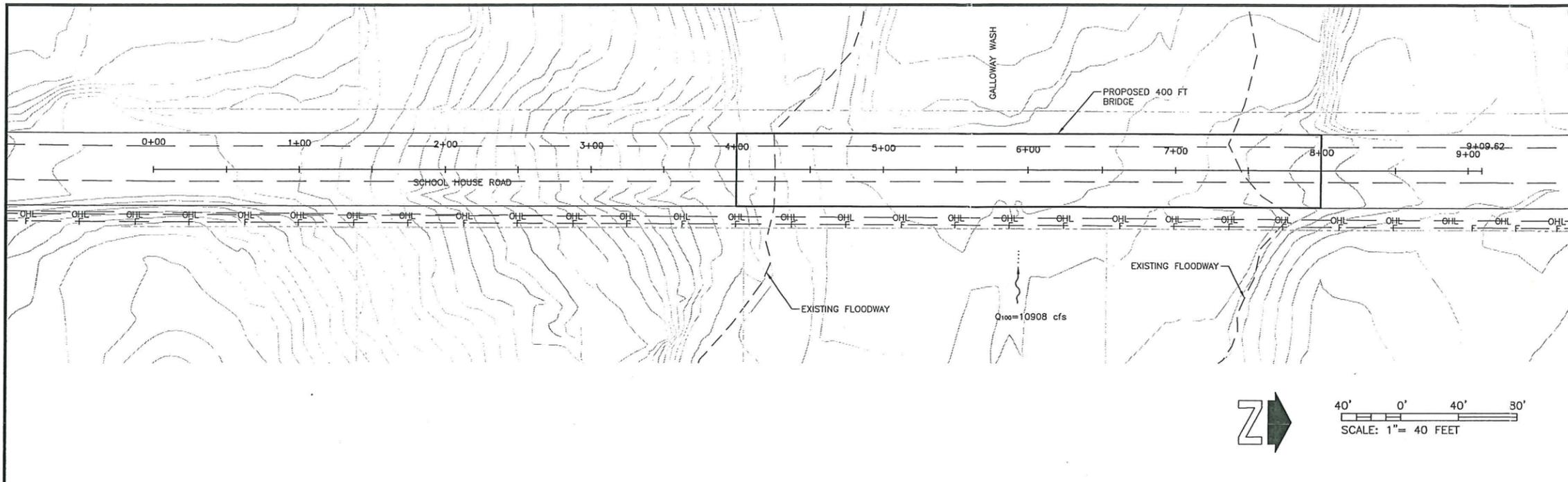
**NOTES**

- 1- BASIS OF ELEVATION NAVD88
- 2- 2' CI CONTOUR MAPPING
- 3- ALL UTILITY LOCATIONS ARE APPROXIMATE

NO.	REVISION	BY	DATE
1			

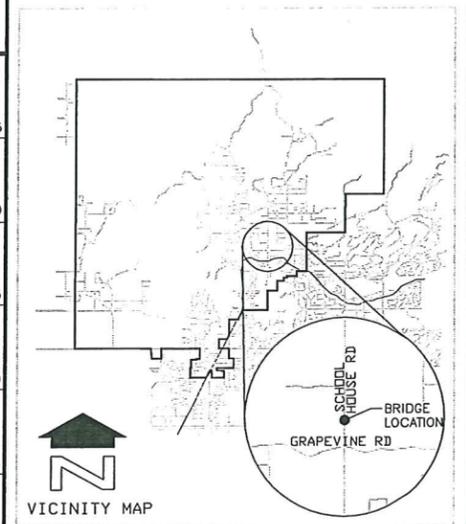
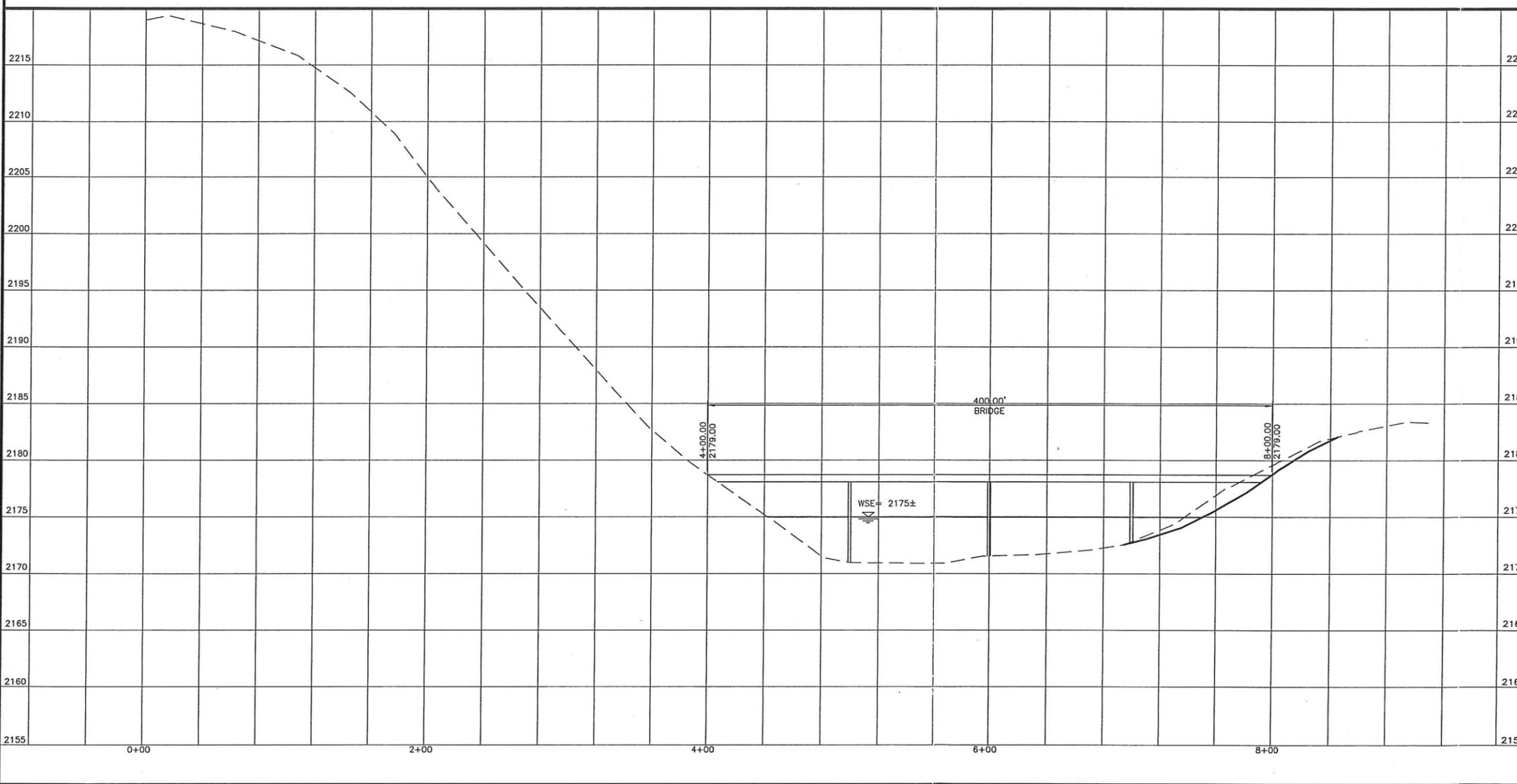
**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**  
**CAVE CREEK DRAINAGE MASTER PLAN**  
**PROJECT CONTROL NUMBER: 690.02.20**  
**CONTRACT NUMBER: FCD 2004C072**  
**SCHOOL HOUSE ROAD AT ROWE WASH**

<b>PRELIMINARY NOT FOR CONSTRUCTION</b>		<b>HDR ENGINEERING, INC.</b> 3200 East Camelback Road, Suite 350 PHOENIX, ARIZONA 85018-2311 (602) 522-7700	
DESIGN	M. FOUNTAIN	DATE	01-2008
DESIGN CHK.	L. POTTER		01-2008
PLANS	MC/MF		01-2008
PLANS CHK.			01-2008



### LEGEND

- PARCEL/ROW LINE
- PROPOSED ROW
- FLOODPLAIN
- FLOODWAY
- OHL—OHL— OVERHEAD APS LINE
- W—W— BURIED WATER LINE
- G—G— BURIED GAS LINE
- S—S— BURIED SANITARY LINE
- F—F— BURIED FIBER OPTIC



### NOTES

- 1- BASIS OF ELEVATION NAVD88
- 2- 2' CI CONTOUR MAPPING
- 3- ALL UTILITY LOCATIONS ARE APPROXIMATE

NO.	REVISION	BY	DATE
2			
1			

**FLOOD CONTROL DISTRICT OF MARICOPA COUNTY**  
**CAVE CREEK DRAINAGE MASTER PLAN**  
**PROJECT CONTROL NUMBER: 690.02.20**  
**CONTRACT NUMBER: FCD 2004C072**  
**SCHOOL HOUSE ROAD AT GALLOWAY WASH**

PRELIMINARY NOT FOR CONSTRUCTION	<b>HDR ENGINEERING, INC.</b>	
	3200 East Camelback Road, Suite 350 PHOENIX, ARIZONA 85018-2311 (602) 522-7700	
	BY	DATE
	DESIGN M. FOUNTAIN	01-2008
	DESIGN CHK. L. POTTER	01-2008
PLANS MC/MF	01-2008	
PLANS CHK. -	01-2008	



# Computation

Project: Cave Creek DMP	Computed: EC	Date
Subject: Cost Estimate	Checked: LP	Date
Task: Determine Cost Estimate for Proposed 5-8x3 RCBC	Sheet: 1 of 1	

**COST ESTIMATE**  
**Cave Creek Road at Unnamed Central Tributary to Cave Creek, South Branch (Mormon Girl Wash)**

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE*	AMOUNT
NA	Right-of-Way	ACRE	0.08	\$321,000	\$25,776
2010001	Clearing and Grubbing	L.SUM	1	\$10,700	\$10,700
2030301	Roadway Excavation	CU.YD.	500	\$6.42	\$3,210
2030401	Drainage Excavation	CU.YD.	1500	\$5.35	\$8,025
2030508	Structure Backfill	CU.YD.	1000	\$42.80	\$42,800
3030022	Aggregate Base, Class 2	CU.YD.	250	\$29.96	\$7,490
4060023	Asphaltic Concrete (3/4" mix)	TON	1000	\$42.80	\$42,800
6010003	Structural Concrete (Class S) (F'C=3,500)	CU.YD.	235	\$642.00	\$150,900
6016088	Headwall (Inlet Headwall 5-8x3 RCBC)	EACH	1	\$8,774	\$8,800
6016089	Headwall (Outlet Headwall w/Apron 5-8x3 RCBC)	EACH	1	\$23,540	\$23,500
6040001	Structural Steel	LB.	23993	\$1.07	\$25,700
6110201	Metal Handrail	L.FT.	60	\$42.80	\$2,600
7040070	Pavement Marking	L.FT.	500	\$0.43	\$200
	<b>SUBTOTAL</b>				<b>\$353,000</b>
9250001	Construction Surveying and Layout (2%)		1	\$7,060	\$7,060
2070001	Furnish Water Supply & Dust Palliative (2%)		1	\$7,060	\$7,060
7010001	Maintenance and Protection of Traffic		1	\$30,000	\$30,000
9010001	Mobilization (12%)		1	\$42,360	\$42,360
9240170	Quality Control (2%)		1	\$7,060	\$7,060
2030857	Erosion Control (1%)		1	\$3,530	\$3,530
N/A	Utility Relocations (5%)		1	\$17,650	\$17,650
N/A	Design (12%)		1	\$42,360	\$42,360
N/A	Construction Engineering and Contingencies (30%)		1	\$105,900	\$105,900
					<b>\$616,000</b>

\* Based on 2008 projected pricing



# Computation

Project: Cave Creek DMP	Computed: EC	Date
Subject: Cost Estimate	Checked: LP	Date
Task: Determine Cost Estimate for Proposed 4-10x4 RCBC	Sheet: 1 of 1	

## COST ESTIMATE

### Cave Creek Road at Unnamed Central Tributary to Cave Creek, North Branch (Mormon Girl Wash)

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE*	AMOUNT
NA	Right-of-Way	ACRE	0.08	\$321,000.00	\$26,515
2010001	Clearing and Grubbing	L.SUM	1	\$10,700.00	\$10,700
2030301	Roadway Excavation	CU.YD.	500	\$6.42	\$3,210
2030401	Drainage Excavation	CU.YD.	1500	\$5.35	\$8,025
2030508	Structure Backfill	CU.YD.	1000	\$42.80	\$42,800
3030022	Aggregate Base, Class 2	CU.YD.	250	\$29.96	\$7,490
4060023	Asphaltic Concrete (3/4" mix)	TON	750	\$42.80	\$32,100
6010003	Structural Concrete (Class S) (F'C=3,500)	CU.YD.	484	\$642.00	\$310,700
6016088	Headwall (Inlet Headwall 4-10x4 RCBC)	EACH	1	\$8,560.00	\$8,600
6016089	Headwall (Outlet Headwall w/Apron 4-10x4 RCBC)	EACH	1	\$23,540.00	\$23,500
6050001	Structural Steel	LB.	69626	\$1.07	\$74,500
6110201	Metal Handrail	L.FT.	60	\$42.80	\$2,600
7040070	Pavement Marking	L.FT.	500	\$0.43	\$200
<b>SUBTOTAL</b>					<b>\$551,000</b>
9250001	Construction Surveying and Layout (2%)		1	\$11,020	\$11,020
2070001	Furnish Water Supply & Dust Palliative (2%)		1	\$11,020	\$11,020
7010001	Maintenance and Protection of Traffic		1	\$50,000	\$50,000
9010001	Mobilization (12%)		1	\$66,120	\$66,120
9240170	Quality Control (2%)		1	\$11,020	\$11,020
2030857	Erosion Control (1%)		1	\$5,510	\$5,510
N/A	Utility Relocations (5%)		1	\$27,550	\$27,550
N/A	Design (12%)		1	\$66,120	\$66,120
N/A	Construction Engineering and Contingencies (30%)		1	\$165,300	\$165,300
					<b>\$965,000</b>

\* Based on 2008 projected pricing



# Computation

Project: Cave Creek DMP	Computed: EC	Date
Subject: Cost Estimate	Checked: LP	Date
Task: Determine Cost Estimate for Proposed Bridge at Willow Springs Wash/Spur Cross		Sheet: 1 of 1

**COST ESTIMATE**  
**Spur Cross Road at Willow Springs Wash**

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE*	AMOUNT
NA	Right of Way	ACRE	0.00	\$321,000	\$0
2030501	Structural Excavation	CU.YD.	500	\$6.42	\$3,210
2030508	Structure Backfill	CU.YD.	1000	\$42.80	\$42,800
6011371	Approach Slab	SQ.FT.	9100	\$24	\$214,200
NA	Bridge superstructure	SQ.FT.	20475	\$120	\$2,453,700
<b>SUBTOTAL</b>					<b>\$2,714,000</b>
9250001	Construction Surveying and Layout (2%)		1	\$54,280	\$54,280
2070001	Furnish Water Supply & Dust Palliative (2%)		1	\$54,280	\$54,280
7010001	Maintenance and Protection of Traffic		1	\$50,000	\$50,000
9010001	Mobilization (12%)		1	\$325,680	\$325,680
9240170	Quality Control (2%)		1	\$54,280	\$54,280
2030857	Erosion Control (1%)		1	\$27,140	\$27,140
N/A	Design (12%)		1	\$325,680	\$325,680
N/A	Construction Engineering and Contingencies (30%)		1	\$814,200	\$814,200
					<b>\$4,420,000</b>

\* Based on 2008 projected pricing



# Computation

Project: Cave Creek DMP	Computed: EC	Date
Subject: Cost Estimate	Checked: LP	Date
Task: Determine Cost Estimate for Proposed 3-8x3 RCBC	Sheet: 1 of 1	

**COST ESTIMATE**  
**Spur Cross Road at Willow Springs Wash, Tributary 5**

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE*	AMOUNT
NA	Right-of-Way	ACRE	0.03	\$321,000.00	\$11,042
2010001	Clearing and Grubbing	L.SUM	1	\$10,700.00	\$10,700
2030301	Roadway Excavation	CU.YD.	500	\$6.42	\$3,210
2030401	Drainage Excavation	CU.YD.	1500	\$5.35	\$8,025
2030508	Structure Backfill	CU.YD.	1000	\$42.80	\$42,800
3030022	Aggregate Base, Class 2	CU.YD.	250	\$29.96	\$7,490
4060023	Asphaltic Concrete (3/4" mix)	TON	750	\$42.80	\$32,100
6010003	Structural Concrete (Class S) (F'C=3,500)	CU.YD.	143	\$642.00	\$91,800
6016088	Headwall (Inlet Headwall 3-8x3 RCBC)	EACH	1	\$6,955	\$7,000
6016089	Headwall (Outlet Headwall w/Apron 3-8x3 RCBC)	EACH	1	\$16,050	\$16,100
6040001	Structural Steel	LB.	23993	\$1.07	\$25,700
6110201	Metal Handrail	L.FT.	40	\$42.80	\$1,700
7040070	Pavement Marking	L.FT.	500	\$0.43	\$200
	<b>SUBTOTAL</b>				<b>\$258,000</b>
9250001	Construction Surveying and Layout (2%)		1	\$5,160	\$5,160
2070001	Furnish Water Supply & Dust Palliative (2%)		1	\$5,160	\$5,160
7010001	Maintenance and Protection of Traffic		1	\$30,000	\$30,000
9010001	Mobilization (12%)		1	\$30,960	\$30,960
9240170	Quality Control (2%)		1	\$5,160	\$5,160
2030857	Erosion Control (1%)		1	\$2,580	\$2,580
N/A	Utility Relocations (5%)		1	\$12,900	\$12,900
N/A	Design (12%)		1	\$30,960	\$30,960
N/A	Construction Engineering and Contingencies (30%)		1	\$77,400	\$77,400
					<b>\$458,000</b>

\* Based on 2008 projected pricing



# Computation

Project: Cave Creek DMP	Computed: EC	Date
Subject: Cost Estimate	Checked: LP	Date
Task: Determine Cost Estimate for Proposed Bridge at Ocotillo Wash/School House		Sheet: 1 of 1

**COST ESTIMATE  
School House Road at Ocotillo Wash**

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE*	AMOUNT
NA	Right of Way	ACRE	0.09	\$321,000	\$27,638
2030501	Structural Excavation	CU.YD.	500	\$6.42	\$3,210
2030508	Structure Backfill	CU.YD.	1000	\$42.80	\$42,800
6011371	Approach Slab	SQ.FT.	7725	\$24	\$181,800
NA	Bridge superstructure	SQ.FT.	20600	\$120	\$2,468,700
<b>SUBTOTAL</b>					<b>\$2,724,000</b>
9250001	Construction Surveying and Layout (2%)		1	\$54,480	\$54,480
2070001	Furnish Water Supply & Dust Palliative (2%)		1	\$54,480	\$54,480
7010001	Maintenance and Protection of Traffic		1	\$50,000	\$50,000
9010001	Mobilization (12%)		1	\$326,880	\$326,880
9240170	Quality Control (2%)		1	\$54,480	\$54,480
2030857	Erosion Control (1%)		1	\$27,240	\$27,240
N/A	Design (12%)		1	\$326,880	\$326,880
N/A	Construction Engineering and Contingencies (30%)		1	\$817,200	\$817,200
					<b>\$4,436,000</b>

\* Based on 2008 projected pricing



# Computation

Project: Cave Creek DMP	Computed: EC	Date
Subject: Cost Estimate	Checked: LP	Date
Task: Determine Cost Estimate for Proposed Bridge at Rowe Wash/School House	Sheet: 1 of 1	

**COST ESTIMATE  
School House Road at Rowe Wash**

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE*	AMOUNT
NA	Right of Way	ACRE	0.06	\$321,000	\$19,902
2030501	Structural Excavation	CU.YD.	500	\$6.42	\$3,210
2030508	Structure Backfill	CU.YD.	1000	\$42.80	\$42,800
6011371	Approach Slab	SQ.FT.	10300	\$24	\$242,500
NA	Bridge superstructure	SQ.FT.	33475	\$120	\$4,011,600
<b>SUBTOTAL</b>					<b>\$4,320,000</b>
9250001	Construction Surveying and Layout (2%)		1	\$86,400	\$86,400
2070001	Furnish Water Supply & Dust Palliative (2%)		1	\$86,400	\$86,400
7010001	Maintenance and Protection of Traffic		1	\$50,000	\$50,000
9010001	Mobilization (12%)		1	\$518,400	\$518,400
9240170	Quality Control (2%)		1	\$86,400	\$86,400
2030857	Erosion Control (1%)		1	\$43,200	\$43,200
N/A	Design (12%)		1	\$518,400	\$518,400
N/A	Construction Engineering and Contingencies (30%)		1	\$1,296,000	\$1,296,000
					<b>\$7,005,000</b>

\* Based on 2008 projected pricing



# Computation

Project: Cave Creek DMP	Computed: EC	Date
Subject: Cost Estimate	Checked: LP	Date
Task: Determine Cost Estimate for Proposed Bridge at Galloway Wash/School House		Sheet: 1 of 1

**COST ESTIMATE**  
**School House Road at Galloway Wash**

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE*	AMOUNT
NA	Right of Way	ACRE	0.00	\$321,000	\$0
2030501	Structural Excavation	CU.YD.	500	\$6.42	\$3,210
2030508	Structure Backfill	CU.YD.	1000	\$42.80	\$42,800
6011371	Approach Slab	SQ.FT.	2575	\$24	\$60,600
NA	Bridge superstructure	SQ.FT.	20600	\$120	\$2,468,700
<b>SUBTOTAL</b>					<b>\$2,575,000</b>
9250001	Construction Surveying and Layout (2%)		1	\$51,500	\$51,500
2070001	Furnish Water Supply & Dust Palliative (2%)		1	\$51,500	\$51,500
7010001	Maintenance and Protection of Traffic		1	\$50,000	\$50,000
9010001	Mobilization (12%)		1	\$309,000	\$309,000
9240170	Quality Control (2%)		1	\$51,500	\$51,500
2030857	Erosion Control (1%)		1	\$25,750	\$25,750
N/A	Design (12%)		1	\$309,000	\$309,000
N/A	Construction Engineering and Contingencies (30%)		1	\$772,500	\$772,500
<b>SUBTOTAL</b>					<b>\$4,196,000</b>

\* Based on 2008 projected pricing