

APPENDIX B
FEMA FLOOD DAMAGE MITIGATION
FUNDING DOCUMENTATION

PROJECT WORKSHEET

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 30 minutes. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the forms. You are not required to respond to this collection of information unless a valid OMB control number is displayed in the upper right corner of the forms. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0151). **NOTE:** Do not send your completed form to this address.

DECLARATION NO. FEMA- <u>1660</u> -DR- <u>AZ</u>	PROJECT NO. 271242	FIPS NO.	DATE December 20, 2006	CATEGORY D
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DAMAGED FACILITY Kolb Executive Park Gabions Permanent Repair	WORK COMPLETE AS OF: <u>12/20/06</u> : <u>0</u> %
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APPLICANT Pima County	COUNTY Pima County
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LOCATION Pantano Wash between Speedway Blvd and Tanque Verde Road	LATITUDE 32 14 26.65	LONGITUDE 110 50 30.25
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DAMAGE DESCRIPTION AND DIMENSIONS
Eastern Pima County received 8" to 14" of monsoon rainfall during the period of 7/25/06 to 8/4/06. One area of damage from the subsequent flooding event included the Kolb Road Executive Park gabion bank protection. The floods eroded the sediment base support along 800 feet of gabion bank protection that was constructed approximately 18 ft high x 3 ft wide, resulting in mass failure and slumping of the gabion structure in the central portion of this interval. The entire interval is at risk for additional failure during future flooding events. (see continuation sheet).

SCOPE OF WORK
Pima County intends to contract with an engineering consultant to perform the necessary basic engineering and design to complement the permanent repair for the 1300 feet of sub-standard gabion bank protection, and to perform construction inspection and quality assurance monitoring during the construction of the replacement soil cement bank protection structure.

In addition, the County will contract for special services to perform requisite geotechnical (slope stability and foundation evaluations), hydrology (floodplain evaluation and determination of 100 yr flood elevation along the repair interval), and survey (repair area layout, elevations, and grades) services in order to determine project conditions within the repair area for the purposes of design and permitting of the permanent repair.

(see continuation sheet).

Does the Scope of Work change the pre-disaster conditions at the site? Yes No
 Special Considerations issues included? Yes No Hazard Mitigation proposal included? Yes No
 Is there insurance coverage on this facility? Yes No

PROJECT COST					
ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	9999	Contractor cost estimate	1.00 / LS	\$813,863.	\$813,863.00
2	9999	Engineering & design consultant	1.00 / LS	\$52,000.0	\$52,000.00
3	9999	Special Services: Geotech/survey/hydrology	1.00 / LS	\$30,000.0	\$30,000.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
				TOTAL COST	\$895,863.00

PREPARED BY: R. Snider/B. Brooks TITLE: AZPACS

FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET – Damage Description and Scope of Work Continuation Sheet

O.M.B. No. 3067-0151
Expires April 30, 2001

DECLARATION NO. EMA- <u>1660-DR-</u> <u>AZ</u>	PROJECT NO. 271242	FIPS NO.	DATE December 20, 2006	CATEGORY D
APPLICANT Pima County		COUNTY Pima County		

DAMAGE DESCRIPTION AND DIMENSIONS

The replacement of these gabions in kind represents a substandard repair in relation to County Codes and Standards (attached). As a result, the County will repair this bank protection by removal of the gabion material, and construction of a soil cement bank protection structure in its place.

In addition, the substandard gabion bank protection extends 500 additional feet southward from the 800 feet of gabion bank protection along Kolb Executive Park, where it intersects with an existing soil cement bank protection structure on the west side of Pantano Wash. For the permanent repair of this project area, Pima County will replace the entire 1300 feet of sub-standard gabion bank protection (800 ft along the Executive Park + 500 ft continuation to the south) with soil cement bank protection in accordance with the County's Codes and Standards.

See attached layout maps and photos for this project.

SCOPE OF WORK

Pima County will replace the 1300 ft gabion bank protection structure with a 1300 ft soil cement bank protection structure. Prior to soil cement construction, the Contractor obtain necessary permits, mobilize to the site, perform clearing and grubbing of the work area, excavate and dispose of structures and obstructions, implement traffic control measures, install temporary access ramps, establish drainage control within the construction area, and remove the riprap installed as a temporary stabilization measure.

The contractor will then construct 1300 feet of new soil cement bank protection along west side of the Pantano Wash. The soil cement bank protection will be 20 ft high x 8 ft wide. Following bank protection construction, the contractor will construct a paved maintenance roadway above the soil cement, install 1300 feet of barricade railing, install 1300 feet of post and cable on the outside of the maintenance road, and perform seeding and native plant mitigation activities to the extent required by the construction specifications.

See attached cost estimates, layouts, and photographs for additional information.

PREPARED BY:

271242 Pantano Kolb Permanent Bank Protection Repairs

West bank gabion replacement with soil cement bank protection (1300 L.F. along Kolb Exc. Park)
Dec 20, 2006

Item #	Description	Unit	Quantity	Unit Price	Amount
2010011	Clearing and Grubbing	Acre	1.67	1800.00	\$3,006.00
2020001	Removal of Structures & Obstructions	L.S.	1	24000.00	\$24,000.00
2020132	Removal and Disposal of Riprap	C.Y.	3400	34.00	\$115,600.00
2030401	Drainage Excavation	C.Y.	4622	3.50	\$16,177.00
3030001	Aggregate base	C.Y.	224	65.00	\$14,560.00
4060003	Asphaltic Concrete	Ton	224	100.00	\$22,400.00
5150001	Miscellaneous Utility Relocations	L.S.	1	6000.00	\$6,000.00
	Side drainage	L.S.	1	2640.00	\$2,640.00
7010005	Traffic Control	L.S.	1	3000.00	\$3,000.00
8050004	Seeding (Class II)	Acre	0.27	2000.00	\$540.00
8100001	AzPDES/NPDES (original)	L.S.	1	3000.00	\$3,000.00
8100011	AzPDES/NPDES (modified)	F.A.	3000.00	1.00	\$3,000.00
9010001	Mobilization	L.S.	1	60000.00	\$60,000.00
9200401	Soil Cement Bank Protection	C.Y.	7704	35.00	\$269,640.00
9200451	Cementitious Material (10%)	Ton	1300	160.00	\$208,000.00
9200001	Engineer's Field Office	L.S.	1	1200.00	\$1,200.00
9300001	Incidentals items	F.A.	1	18000.00	\$18,000.00
9330001	Barricade Railing (PC/COT Std. Dtl 105)	L.F.	1300	20.00	\$26,000.00
9330005	Post and Cable	L.F.	1300	12.00	\$15,600.00
9330103	Access Gates	Ea	1	1500.00	\$1,500.00

Construction subtotal **\$813,863.00**

Engineering & Design Consultant (6.4%) \$52,000.00

Special Services:
Geotechnical/Survey/
Hydrology Consultant \$30,000.00

Project Total **\$895,863.00**

PROJECT WORKSHEET

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DECLARATION NO. FEMA- <u>1660</u> -DR- <u>AZ</u>	PROJECT NO. 271252	FIPS NO.	DATE December 20, 2006	CATEGORY D
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DAMAGED FACILITY Mullins Landfill Soil Cement Bank Permanent Repair	WORK COMPLETE AS OF: <u>12/20/06</u> : <u>0</u> %
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APPLICANT Pima County	COUNTY Pima County
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LOCATION Pantano Wash between Speedway Blvd and Tanque Verde Road	LATITUDE 32 14 29.39	LONGITUDE 110 50 29.13
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DAMAGE DESCRIPTION AND DIMENSIONS
Eastern Pima County received 8" to 14" of monsoon rainfall during the period of 7/25/06 to 8/4/06. One area of damage from the subsequent flooding event included the soil cement bank protection adjacent to Mullins Landfill. Downcutting of protective sediment bar by 7 to 8 ft occurred along the toe of more than 400 feet of bank protection along the Mullins Landfill. Future runoff and flooding in this area will undermine the bank protection and may lead to mass failure of the structure, with potential for washout of buried wastes into the river channel or flood water intrusion into the buried landfill wastes. (see continuation sheet)

SCOPE OF WORK
Pima County intends to contract with an engineering consultant to perform the necessary basic engineering and design to complement the permanent toedown repair for the 1100 feet of existing soil cement bank protection along Mullins Landfill and for construction of 250 feet of new soil cement bank protection. The consultant would also perform construction inspection and quality assurance monitoring during the construction of the toedown extension and new soil cement bank protection structures.

In addition, the County will contract for special services to perform requisite geotechnical (slope stability and foundation evaluations), hydraulic (floodplain evaluation and determination of 100 yr flood elevation along the repair interval), and survey (repair area layout, elevations, and grades) services in order to determine project conditions within the repair area for the purposes of design and permitting of the permanent repairs.
(see continuation sheet).

Does the Scope of Work change the pre-disaster conditions at the site?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Special Considerations issues included?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Hazard Mitigation proposal included?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is there insurance coverage on this facility?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	9999	Contractor cost estimate	1.00 / LS	\$460,276.	\$460,276.00
2	9999	Engineering & design consultant	1.00 / LS	\$33,000.0	\$33,000.00
3	9999	Special Services: Geotech/survey/hydrology	1.00 / LS	\$20,000.0	\$20,000.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
				TOTAL COST	\$513,276.00

PREPARED BY: R. Snider/B. Brooks	TITLE: AZPACS
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FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET – Damage Description and Scope of Work Continuation Sheet

O.M.B. No. 3067-0151
 Expires April 30, 2001

DECLARATION NO. EMA- <u>1660-DR-</u> <u>AZ</u>	PROJECT NO. 271252	FIPS NO.	DATE December 20, 2006	CATEGORY D
APPLICANT Pima County		COUNTY Pima County		

DAMAGE DESCRIPTION AND DIMENSIONS

The entire 1100 ft of existing soil cement bank protection along Mullins Landfill north of the grade control structure (see attached map) is at risk during future stormwater runoff and flooding events. The County plans to extend the toe of this structure by construction of a new abutting soil cement structure approximately 1100 ft long x 12 ft high x 8 ft wide. This will be constructed on the channel side of the existing bank protection, with a 4 ft overlap of structures at the base of the existing bank protection.

In addition, in accordance with County Codes and Standards (attached) for major river corridor bank protection, the County plans to construct a new 250 ft soil cement bank protection structure at the north end of the existing bank protection structure, to provide complete bank protection along the entire west side of Mullins Landfill. There currently is no bank protection for this final reach to the northwest corner of the landfill(see attached map). The new soil cement bank protection will be 20 ft high and 8 ft wide.

See attached layout, floodplain maps, and photographs for this project.

SCOPE OF WORK

Prior to soil cement construction, the Contractor will obtain necessary permits, mobilize to the site, perform clearing and grubbing of the work area, excavate and dispose of structures and obstructions, implement traffic control measures, install temporary access ramps, establish drainage control within the construction area, and remove the riprap installed as a temporary stabilization measure. The contractor will then construct 1100 feet of toedown soil cement bank protection along the east side of the Pantano Wash along Mullins Landfill. The toedown soil cement bank protection will be 12 ft high x 8 ft wide. In addition, the Contractor will construct 250 linear feet of new soil cement bank protection, 20 ft high and 8 ft wide. Bank protection construction for this project will require approximately 4600 cy of new soil cement material.

See attached cost estimate, layouts, and photographs for additional information.

PREPARED BY:

271252 Mullins Landfill Soil Cement Bank Protection Permanent Repair

Dec 20, 2006

Item #	Description	Unit	Quantity	Unit Price	Amount
2010011	Clearing and Grubbing	Acre	1.67	1800.00	\$3,006.00
2020001	Removal of Structures & Obstructions	L.S.	1	24000.00	\$24,000.00
2020132	Removal and Disposal of Riprap	C.Y.	1500	34.00	\$51,000.00
2030401	Drainage Excavation	C.Y.	0	3.50	\$0.00
3030001	Aggregate base	C.Y.	0	65.00	\$0.00
4060003	Asphaltic Concrete	Ton	0	100.00	\$0.00
5150001	Miscellaneous Utility Relocations	L.S.	1	6000.00	\$6,000.00
	Side drainage	L.S.	1	0.00	\$0.00
7010005	Traffic Control	L.S.	1	3000.00	\$3,000.00
8050004	Seeding (Class II)	Acre	0	2000.00	\$0.00
8100001	AzPDES/NPDES (original)	L.S.	1	3000.00	\$3,000.00
8100011	AzPDES/NPDES (modified)	F.A.	3000.00	1.00	\$3,000.00
9010001	Mobilization	L.S.	1	60000.00	\$60,000.00
9200401	Soil Cement Bank Protection	C.Y.	4622	35.00	\$161,770.00
9200451	Cementitious Material (10%)	Ton	780	160.00	\$124,800.00
9200001	Engineer's Field Office	L.S.	1	1200.00	\$1,200.00
9300001	Incidentals items	F.A.	1	18000.00	\$18,000.00
9330001	Barricade Railing (PC/COT Std. Dtl 105)	L.F.	0	20.00	\$0.00
9330005	Post and Cable	L.F.	0	12.00	\$0.00
9330103	Access Gates	Ea	1	1500.00	\$1,500.00

Construction subtotal **\$460,276.00**

Engineering & Design Consultant (7.2%) **\$33,000.00**

Special Services:
Geotechnical/Survey/
Hydraulic consultant **\$20,000.00**

Project Total \$513,276.00

PROJECT WORKSHEET

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DECLARATION NO. FEMA- <u>1660</u> -DR- <u>AZ</u>	PROJECT NO. 271254	FIPS NO.	DATE December 20, 2006	CATEGORY D
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DAMAGED FACILITY Pantano Townhome Rock and Rail Permanent Repair	WORK COMPLETE AS OF: <u>12/20/06</u> : <u>0</u> %
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APPLICANT Pima County	COUNTY Pima County
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LOCATION Pantano Wash between Speedway Blvd and Tanque Verde Road	LATITUDE 32 14 40.84	LONGITUDE 110 50 38.38
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DAMAGE DESCRIPTION AND DIMENSIONS
Eastern Pima County received 8" to 14" of monsoon rainfall during the period of 7/25/06 to 8/4/06. One area of damage from the subsequent flooding event included the erosion of approximately 500 feet of sandbar along the Pantano Townhomes, damaging the 14 ft high x 3 ft wide rock and rail bank protection along 225 ft of this interval. Future flooding in this area will expose and damage additional rock and rail bank protection immediately adjacent to roadways and homes, leading to potential damage and failure of these structures. (see continuation sheet)

SCOPE OF WORK
Pima County intends to contract with an engineering consultant to perform the necessary basic engineering and design to complement the permanent repair for the 1650 feet of sub-standard rock and rail bank protection, and to perform construction inspection and quality assurance monitoring during the construction of the replacement soil cement bank protection structure.

In addition, the County will contract for special services to perform requisite geotechnical (slope stability and foundation evaluations), hydrology (floodplain evaluation and determination of 100 yr flood elevation along the repair interval), and survey (repair area layout, elevations, and grades) services in order to determine project conditions within the repair area for the purposes of design and permitting of the permanent repair.

(see continuation sheet).

Does the Scope of Work change the pre-disaster conditions at the site? Yes No

Special Considerations issues included? Yes No Hazard Mitigation proposal included? Yes No

Is there insurance coverage on this facility? Yes No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	9999	Contractor cost estimate	1.00 / LS	\$916,032.	\$916,032.00
2	9999	Engineering & design consultant	1.00 / LS	\$57,000.0	\$57,000.00
3	9999	Special Services: Geotech/survey/hydrology	1.00 / LS	\$25,000.0	\$25,000.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
			/		\$0.00
				TOTAL COST	\$998,032.00

PREPARED BY: R. Snider/B. Brooks	TITLE: AZPACS
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FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET – Damage Description and Scope of Work Continuation Sheet

O.M.B. No. 3067-0151
 Expires April 30, 2001

DECLARATION NO. EMA- 1660-DR- AZ	PROJECT NO. 271254	FIPS NO.	DATE December 20, 2006	CATEGORY D
APPLICANT Pima County		COUNTY Pima County		

DAMAGE DESCRIPTION AND DIMENSIONS

The replacement of the rock and rail bank protection in kind represents a substandard repair in relation to County Codes and Standards (attached). As a result, the County will repair this bank protection by removal of the damaged rock and rail material, and construction of a new soil cement bank protection structure in its place.

In addition, the substandard rock and rail bank protection extends for a distance of 1650 feet along the east side of Pantano Wash, extending from the northwest corner of Mullins Landfill to approximately 600 feet north of the rock and rail damaged area. For the permanent repair of this project area, Pima County will replace the entire 1650 feet of sub-standard rock and rail bank protection with soil cement bank protection in accordance with the County's Codes and Standards. The new soil cement bank protection structure will be 20 ft high x 8 ft wide along its entire length.

See attached layout maps and photos for this project.

SCOPE OF WORK

Pima County will replace the 1650 ft rock and rail bank protection structure with a 1650 ft soil cement bank protection structure. Prior to soil cement construction, the Contractor obtain necessary permits, mobilize to the site, perform clearing and grubbing of the work area, excavate and dispose of structures and obstructions, implement traffic control measures, install a temporary access ramp, establish drainage control within the construction area, and remove the riprap installed as a temporary stabilization measure.

The contractor will then construct 1650 feet of new soil cement bank protection along west side of the Pantano Wash. The soil cement bank protection will be 20 ft high x 8 ft wide, and will require approximately 9800 cy of mixed soil and cement material. Following bank protection construction, the contractor will install 1650 feet of barricade railing, install 1650 feet of post and cable inside the County Right of Way, and perform seeding as required by the construction specifications.

See attached cost estimates, layouts, and photographs for additional information.

PREPARED BY:

271254 Pantano Kolb Bank Protection Permanent Repair

Pantano Townhomes replacement of rock and rail bank stabilization (1650 L.F.)

Dec 20, 2006

Item #	Description	Unit	Quantity	Unit Price	Amount
2010011	Clearing and Grubbing	Acre	2.12	1800.00	\$3,816.00
2020001	Removal of Structures & Obstructions	L.S.	1	30000.00	\$30,000.00
2020132	Removal and Disposal of Riprap	C.Y.	1833	34.00	\$62,322.00
2030401	Drainage Excavation	C.Y.	5867	3.50	\$20,534.50
3030001	Aggregate base	C.Y.	0	65.00	\$0.00
4060003	Asphaltic Concrete	Ton	0	100.00	\$0.00
5150001	Miscellaneous Utility Relocations	L.S.	1	7500.00	\$7,500.00
	Side drainage	L.S.	1	18800.00	\$18,800.00
7010005	Traffic Control	L.S.	1	3750.00	\$3,750.00
8050004	Seeding (Class II)	Acre	1.14	2000.00	\$2,280.00
8100001	AzPDES/NPDES (original)	L.S.	1	3750.00	\$3,750.00
8100011	AzPDES/NPDES (modified)	F.A.	3750.00	1.00	\$3,750.00
9010001	Mobilization	L.S.	1	75000.00	\$75,000.00
9200401	Soil Cement Bank Protection	C.Y.	9778	35.00	\$342,230.00
9200451	Cementitious Material (10%)	Ton	1650	160.00	\$264,000.00
9200001	Engineer's Field Office	L.S.	1	1500.00	\$1,500.00
9300001	Incidentals items	F.A.	1	22500.00	\$22,500.00
9330001	Barricade Railing (PC/COT Std. Dtl 105)	L.F.	1650	20.00	\$33,000.00
9330005	Post and Cable	L.F.	1650	12.00	\$19,800.00
9330103	Access Gates	Ea	1	1500.00	\$1,500.00

**Construction
subtotal**

\$916,032.50

Engineering & Design
Consultant (6.3%)

\$57,000.00

Special Services:
Geotechnical/survey/hydrologic consultant

\$25,000.00

Project Total

\$998,032.50