

**Mini-DCR for SEAGO
Davis Rd – MP5 & MP13
For Construction**

Submitted by Cochise County



August 11, 2023

Davis Road is a heavily used trucking route which travels to I-10 and points beyond from the Agua Prieta and Douglas area. This traffic is expected to increase with the planned construction of a new International Port of Entry in Douglas, that is scheduled to open in 2028. Unfortunately, Davis Road is subject to frequent closures due to the flooding during heavy weather conditions. The roadway within these segments of Davis Road, are in need of the installation of arch culverts. In addition, the safety of this site would be improved with a re-alignment of the roadway and reconstruction to the proposed design speed of 65 miles per hour.



Introduction

This project is located in Cochise County, on Davis Road between SR 80 and SR 191. Davis Road is classified as a Rural Major Collector and eligible for federal aid funds. The 24 mile road connects the town of Tombstone, along SR 80, and McNeal, along SR 191, and serves commuter, regional, and commercial traffic. Davis Road is the main route to I-10 and Tucson from the Agua Prieta and Douglas area. It is also used heavily by trucks that are avoiding the steep grades of SR 80 in the Bisbee area. Countless locations along Davis Road experience frequent flooding resulting in innumerable road closures.

The purpose of this project is to improve the safety and operation of Davis Road. This proposal requests funds to support the inclusion of an arch culvert at these locations (MP5 & MP13). The full scope of roadway improvements at this location will accomplish the project goals of providing all weather access along the road by adding drainage culverts and improving roadway geometrics. This project is scheduled for construction to begin in the 2023-2024 timeframe as \$2,893,000 has already been awarded through a Congressionally Direct Spending Request by Senator Mark Kelly. This request for funding would go towards helping to pay the additional project costs.

Background Data

There are no as-built plans available for Davis Road. The earliest records are from 1984 when Cochise County prepared an alignment study and right-of-way plat for the corridor as well as improvement plans for the west 14 miles of Davis Rd. The improvements consisted of horizontal and vertical alignment changes and constructed a chip seal surface treatment over a 6" base. A later County project in 1987, called "West Davis Rd" built a 24 ft roadway consisting of 3-1/2" AC over the existing chip seal and base pavement section. Also in 1987, the "East Davis Rd" County project constructed a 24 ft roadway (2" AC over 6" cement treated base) from the "West Davis Road" project to US 191. This was a surfacing project which followed the existing profile.

The terrain is flat with occasional rolling features. The high desert elevation varies between 4000' to 5000'. The as-built cross slope is 2%.

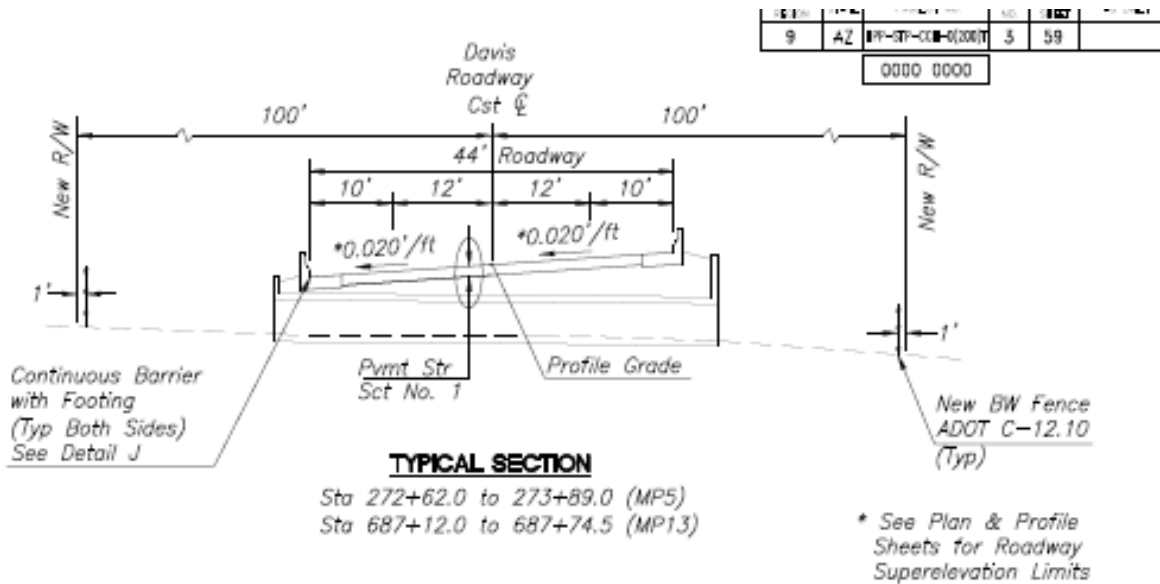
Land ownership along Davis Road is a combination of private and State Trust Land, primarily used for ranching and agriculture. Cochise County has obtained the necessary right-of-way for this infrastructure project.

Project Scope

This project proposes new vertical and horizontal alignments with design speed of 65 mph. A new reinforced concrete arch culvert at each milepost will convey the 25 peak storm flow under the highway. Project length for MP5 would be 3,234 feet/0.61 miles and project length for MP13 would be 1,623 feet/0.31miles. The pavement will be widened from 24' to 40' to mitigate single vehicle road accidents precipitated by running off the roadway edge. This specific request supports the inclusion of these arch culverts into a larger Davis Rd project.



Typical Section Sketch



Project Development Considerations

Cochise County, with Stantec, has completed Design and Environmental & Utility Clearance, but an update may be needed. Pavement marking plans, signing plans, and traffic control plans are completed to 100% design plan set, with Stantec set to update and stamp the design plan set, will be funded through local funds.

Because more than 1 acre of land will be disturbed, an AZPDES (Arizona Pollutant Discharge Elimination System) Permit will be required. A Storm Water Pollution Prevention Plan (SWPPP) will also be required.

The project is not located in an EPA non-attainment area.

The project will be constructed with Congressionally Directed Spending funding and Cochise County funding. A consultant has prepared the final construction documents. ADOT will perform the construction administration.

Estimated Cost

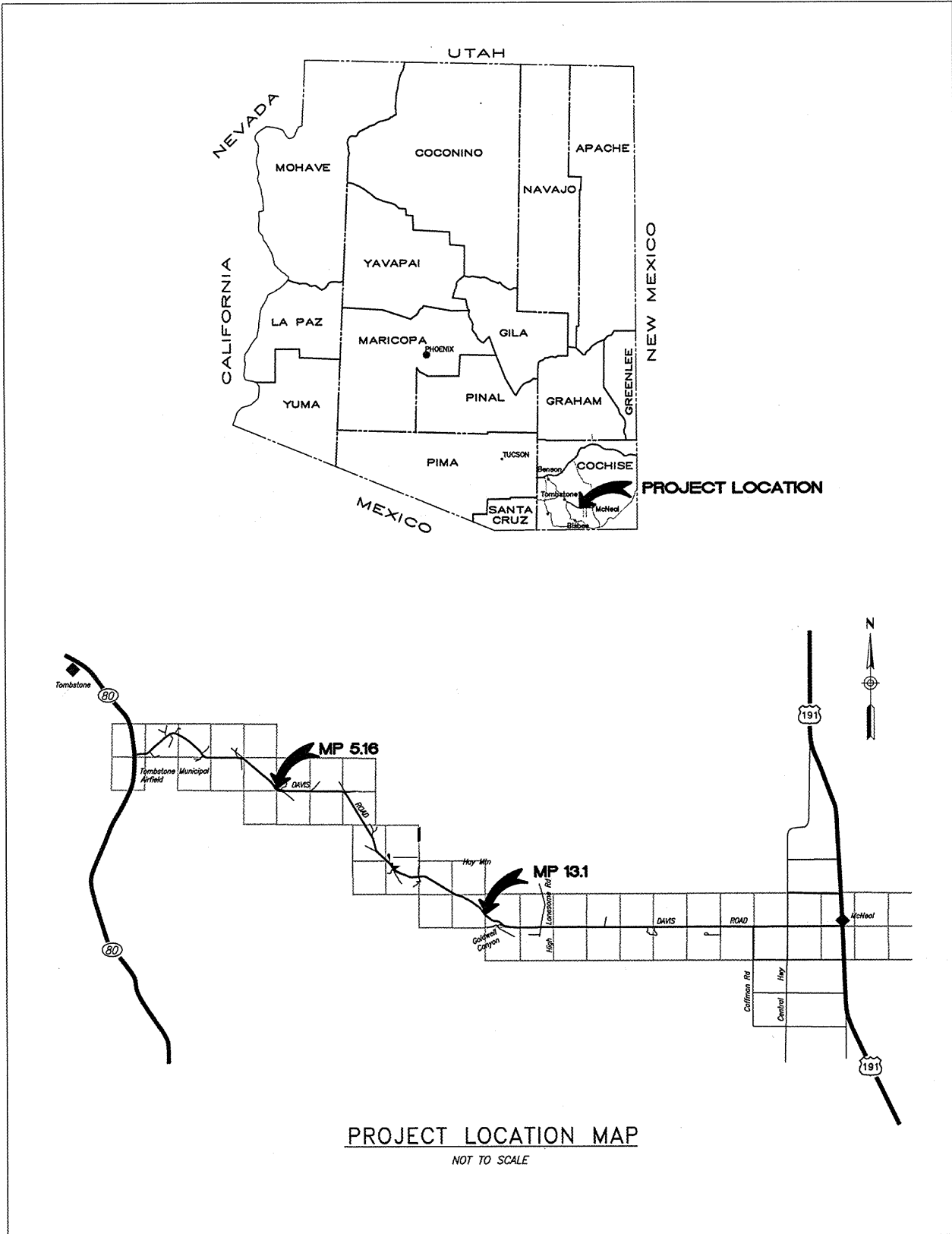
Estimated cost is \$5,758,973 for construction. Cochise County is requesting \$2,865,973 to add to the previously received \$2,893,000 received from a CDS request award.

Itemized Estimate

Please see cost estimate spreadsheet at the end of this report for details.



Vicinity Map





Safety

A single fatality did occur at MP5 in 2021. The pavement at these areas will be widened from 24' to 40' to mitigate single vehicle road accidents precipitated by running off the roadway edge. Drainage improvements will assist with access through this section of road. Construction of a new pavement and base will improve the overall traffic flow i.e. objects intruding into the roadway, safe shoulders to exit off the roadway for emergencies and oversized loads, and all weather traffic flow.

Freight Movement/Economic Vitality

Davis Rd sees an average of 34 oversized load freight traffic each month. In addition, this segment has at least 80 trucks (FHWA Vehicle Classification 6 through 13) pass through per day. The roadway improvements will improve the structural strength of the roadway to properly endure the stress of all the freight traffic passing over as well reduce the cost to the County for maintaining this segment of road. The expansion of shoulders will also relieve law enforcement from needing to shut down this segment to local traffic to allow the oversized loads to pass through. The addition of arch culverts will help to allow traffic to travel unimpeded by flood waters. The biggest concern is the unknown traffic volume increase and load increase from the International Port of Entry Expansion in Douglas, on schedule to open in 2028. Considering the studies and projections from IPOE expansion, this segment of Davis Road will be at the center of the growing freight movement that will pass through Cochise County in the coming years.

System Preservation and Improvement

Reconstruction of this segment will improve the facility and bring it up to standard for the loads that constantly pass over this segment of road. Davis Road has multiple projects over multiple phases that aim to increase safety, drainage, and overall improvement to the roadway throughout Davis Road beyond this project. These upgrades will also put Cochise County in a great position to be ahead on future projects, with the amount of Right-of-Way acquired and Douglas IPOE opening 2028, the road will eventually (20-30 years) be improved into a 4-lane divided highway.

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2010011	CLEARING AND GRUBBING	ACRE	17	\$4,000.00	\$ 68,000
2020007	REMOVAL OF MISCELLANEOUS CONCRETE	L. SUM	1	\$5,000.00	\$ 5,000
2020041	REMOVAL OF PIPE	L.FT.	194	\$30.00	\$ 5,820
2020029	REMOVE OF ASPHALTIC CONCRETE PAVEMENT	SQ. YD.	14,464	\$2.00	\$ 28,928
2020034	REMOVAL OF SIGNS	L. SUM	1	\$500.00	\$ 500
2020087	REMOVE BITUMINOUS PAVEMENT (MILLING) (4")	SQ. YD.	14,338	\$4.00	\$ 57,352
2020101	REMOVE FENCE	L.FT.	12,299	\$1.50	\$ 18,449
2030301	ROADWAY EXCAVATION	CU.YD.	10,804	\$10.00	\$ 108,040
2030401	DRAINAGE EXCAVATION	CU.YD.	30,661	\$16.00	\$ 490,576
2030501	STRUCTURAL EXCAVATION	CU.YD.	2,953	\$10.00	\$ 29,530
2030506	STRUCTURE BACKFILL	CU.YD.	3,006	\$50.00	\$ 150,300
2040001	RESHAPING AND GRADING EXISTING IMPROVEMENTS	L. SUM	1	\$25,000.00	\$ 25,000
3030022	AGGREGATE BASE, CLASS 2	CU.YD.	8,524	\$50.00	\$ 426,200
4010101	PORTLAND CEMENT CONCRETE (FOR UTILITY CROSSING)	SQ. YD.	424	\$90.00	\$ 38,160
4040125	FOG COAT	TON	9	\$500.00	\$ 4,500
4040163	BLOTTER MATERIAL	TON	22	\$40.00	\$ 880
4090003	ASPHALTIC CONCRETE (MISCELLANEOUS STRUCTURAL)	TON	10,321	\$137.00	\$ 1,413,977
5010011	PIPE, CORRUGATED METAL, 24"	L.FT.	173	\$100.00	\$ 17,300
5014024	FLARED END SECTION, 24" (C-13.25)	EACH	5	\$1000.00	\$ 5,000
5030605	CATCH BASIN (C-15.80)	EACH	1	\$2,500.00	\$ 2,500
6011140	F-SHAPE BRIDGE CONCRETE BARRIER & TRANSITION	L.FT.	282	\$125.00	\$ 35,250
6012020A	MP5 PRE-CAST BRIDGE (ARCH STRUCTURE)	EACH	1	\$600,000.00	\$ 600,000
6012020B	MP13 PRE-CAST BRIDGE (ARCH STRUCTURE)	EACH	1	\$400,000.00	\$ 400,000
7015010	TEMPORARY CONCRETE BARRIER (INSTALLATION & REMOVAL)	L.FT.	250	\$10.00	\$ 2,500
7015020	TEMPORARY IMPACT ATTENUATORS (INSTALLATION & REMOVAL)	EACH	2	\$1,500.00	\$ 3,000
7015042	TEMPORARY PAINTED MARKING (STRIPE)	L.FT.	42,392	\$0.25	\$ 10,598
7015052	OBLITERATE PAVEMENT MARKING (STRIPE)	L.FT.	13,280	\$1.00	\$ 13,280
7015090	SPECIALTY SIGNS (WITH TYPE II SHEETING)	SQ.FT.	48	\$20.00	\$ 960
7016020	TEMPORARY CONCRETE BARRIER (IN USE)	LF-DY	33,750	\$0.30	\$ 10,125
7016021	TEMPORARY IMPACT ATTENUATORS (IN USE)	EA-DY	270	\$45.00	\$ 12,150
7016030	BARRICADE (TYPE II, VERTICAL PANEL, TUBULAR MARKER)	EA-DY	7,500	\$0.40	\$ 3,000
7016031	BARRICADE (TYPE III, HIGH LEVEL FLAG TREES)	EA-DY	600	\$0.70	\$ 420
7016033	PORTABLE SIGN STANDS (SPRING TYPE)	EA-DY	6,720	\$1.55	\$ 10,416
7016035	WARNING LIGHTS (TYPE A)	EA-DY	6,480	\$0.35	\$ 2,268
7016037	WARNING LIGHTS (TYPE C)	EA-DY	7,500	\$0.35	\$ 2,625
7016051	TEMPORARY SIGN (TYPE II) (LESS THAN 10 SQ FT) (ORANGE FLUOR)	EA-DY	5,280	\$0.80	\$ 4,224
7016052	TEMPORARY SIGN (TYPE II) (GREATER THAN 10 SQ. FT.) (ORANGE FLU)	EA-DY	1,320	\$0.80	\$ 1,056
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
7016075	FLAGGING SERVICES (CIVILIAN)	HOUR	80	\$40.00	\$ 3,200
7016078	FLAGGING SERVICES (LOCAL ENFORCEMENT OFFICER)	HOUR	20	\$180.00	\$ 3,600
7030095	MILEPOST MARKER (S-10)	EACH	4	\$250.00	\$ 1,000
7060015	PAVEMENT MARKER, RAISED, TYPE D	EACH	97	\$4.00	\$ 388
7080001	PERMANENT PAVEMENT MARKING (PAINTED) (WHITE)	L.FT.	22,905	\$0.75	\$ 17,179
7080011	PERMANENT PAVEMENT MARKING (PAINTED) (YELLOW)	L.FT.	22,905	\$0.75	\$ 17,179
8050003	SEEDING (CLASS II)	ACRE	13	\$4,000.00	\$ 52,000
8101021	EROSION CONTROL (WATTLES) (9")	L.FT.	15,350	\$2.50	\$ 38,375
9010001	MOBILIZATION	L.SUM	1	\$287,500	\$ 287,500
9021011	TEMPORARY FENCE	L.FT./DAY	8400	\$0.25	\$ 2,100
9030011	BARBED WIRE FENCE (TYPE 1)	L.FT.	14,339	\$5.00	\$ 71,695
9030100	FENCE GATE, TYPE 1, SINGLE (14')	EACH	3	\$500.00	\$ 1,500
9030105	FENCE GATE, TYPE 2	EACH	1	\$150.00	\$ 150
9030111	FLOOD GATE (FOR ITEM 9030012)	L.FT.	717	\$5.00	\$ 3,585
9050001	GUARD RAIL, W-BEAM, SINGLE FACE	L.FT.	1,450	\$15.00	\$ 21,750
9050026	GUARD RAIL TERMINAL (TYPE B) (SKT-350 OR X-LITE)	EACH	8	\$2,200.00	\$ 17,600
9050430	THRIE-BEAM GUARD RAIL TRANSITION SYSTEM	EACH	8	\$1,000.00	\$ 8,000
9080502	CONCRETE FORD WALL (3' CUT-OFF WALL)	L.FT.	610	\$20.00	\$ 12,200
9080503	CONCRETE FORD WALL (5' CUT-OFF WALL)	L.FT.	414	\$30.00	\$ 12,420
9090521	SURVEY MARKER TYPE A (MAG DET. 120-1)	EACH	26	\$300.00	\$ 7,800
9130001	RIPRAP (DUMPED)	CU. YD.	385	\$100.00	\$ 38,500
9160001	EMBANKMENT CURB	L.FT.	1,450	\$6.00	\$ 8,700
9170001	EMBANKMENT SPILLWAY	L.FT.	63	\$30.00	\$ 1,890
9230001	PROVIDE ON-THE-JOB TRAINING	HOUR		\$0.80	\$ -
9240170	CONTRACTOR QUALITY CONTROL	L.SUM	1	\$75,000.00	\$ 75,000
9240010	FORCE ACCOUNT (ARCHEOLOGIST)	L.SUM	1	\$6,500.00	\$ 6,500
9240111	MISCELLANEOUS WORK (FIBER OPTIC CONCRETE PROTECTIVE CAP)	L.FT.	215	\$30.00	\$ 6,450
9240112	FORCE ACCOUNT (BIOLOGIST)	L.SUM	1	\$5,000.00	\$ 5,000
9250001	CONSTRUCTION SURVEYING AND LAYOUT	L.SUM	1	\$70,000	\$ 70,000
SUBTOTAL					\$ 4,799,144
5% ALLOWANCE FOR UNIDENTIFIED ITEMS					\$ 239,957
15% CONSTRUCTION ENGINEERING					\$ 719,872
TOTAL					\$ 5,758,973