



Board of Supervisors Memorandum

October 5, 2021

General Fund Ending Fund Balance Contingency Transferred to the Department of Transportation for Paving of a Permanent Access Road to the Bravo Leon Cemetery

Background

Enclosed is a September 20, 2021 memorandum from the Transportation Director regarding the cost associated with the Bravo Leon cemetery Access Road.

The Leon Cemetery has been the subject of several news articles related to growth conflicts in the Vail area between new subdivisions and the historic cemetery. Based on concerns expressed by those in the area, I instructed the Department of Transportation and Real Property Services to develop a permanent legal access to the Leon Cemetery accomplished through dedications or donations of easements and/or rights of way from development land owners in the area.

The cost of the improvement is approximately \$233,000. Given this is not the improvement of an existing roadway, it is appropriate to pay for the cost through the County's General Fund since the benefits are primarily related to permanent access to a historic cemetery.

Recommendation

I recommend the Board of Supervisors authorize the use of General Fund Ending Balance Contingency Funds for paving of a permanent access road to the Bravo Leon Cemetery.

Sincerely,

A handwritten signature in black ink, appearing to read "C.H. Huckelberry", is written over a large, stylized flourish that extends downwards and to the right.

C.H. Huckelberry
County Administrator

CHH/anc – September 27, 2021

Attachment

c: Jan Leshar, Chief Deputy County Administrator
Carmine DeBonis, Jr., Deputy County Administrator for Public Works
Yves Khawam, PhD, Assistant County Administrator for Public Works
Michelle Campagne, Director, Finance and Risk Management
Ana Olivares, Director, Transportation Department

TO: C.H. Huckelberry
County Administrator

DATE: September 20, 2021



FROM: Ana M. Olivares, P.E.
Director

SUBJECT: Bravo Leon Cemetery Access Road

On August 3, 2021, Linda Mayro, Director of Office of Sustainability and Conservation provided a report regarding the review and recommendation on establishing public access to the cemetery from the nearest public roads. The report recommended the least time consumptive, least costly, and simplest method to establish public access would be to use the current alignment of the Regional Wastewater Reclamation Department (RWRD) wastewater treatment access road easement that was established to access the lift station for Rancho del Lago. This alignment also extends north through privately owned undeveloped lots to Vail Ranch Road.

Real Property has moved forward with working with the Developers to dedicate the needed right of way to Pima County and the Transportation Department (DOT) has refined the access road design, cost estimate and schedule for construction. Once the access road becomes a public access, DOT will take on the maintenance responsibility; therefore, as we refined the design of the access road we added features to lessen the need for maintenance. The recent rains in the area have demonstrated a need for erosion protection improvements for the new roadway where it crosses the washes.

Below is a table with the current estimated costs in comparison to the estimated land acquisition and road construction costs provided in the August 3rd report.

Items of Work	Estimated Costs from Aug 3, 2021 Report	Estimated Costs Refined Design Sept 2021
Land Acquisition	\$49,590	\$0
Haul RAP to Site	\$8,532	\$13,595
Clear and Grub	\$2,406	\$2,406
Prepare Road Base	\$5,445	\$5,446
Mix RAP and Finish Grade	\$5,692	\$5,692
Compaction	\$1,476	\$1,476
Single Chip Seal (by JOC)	\$43,335	-
Double Chip Seal (JOC)	-	\$62,836
Stabilized Surface Treatment (JOC)	-	\$59,016
Concrete Cutoff Walls (JOC)	-	\$52,560
Sub-Total	\$116,476	\$203,027
Construction Contingency (15%)	-	\$30,454
Total	\$116,476	\$233,481

C.H. Huckelberry, County Administrator
SUBJECT: Bravo Leon Cemetery Access Road
September 20, 2021
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The new construction cost estimate is attached and as can be seen by the table above, the biggest difference between the early August construction estimate and the new estimate is the addition of the Stabilized Surface Treatment and Concrete Cutoff Walls. Since the first review and estimate, this area has received a significant amount of rain and it demonstrated how easily the access road erodes in certain areas (pictures attached). In order to protect the new access road from future erosion, approximately 1,400 feet of stabilized surface treatment, and 400 feet of concrete cutoff walls are recommended. This totals about 46% of the 3,900 feet of access road.

The proposed erosion protection improvements were reviewed with Regional Flood Control District (RFCD) and agree they are appropriate for this access road. These improvements will increase upfront construction costs; however, they are anticipated to minimize future maintenance costs, although monitoring of the roadway will be needed after significant storm events. DOT will continue to seek input from RFCD when construction of the roadway begins.

A double chip seal instead of a single chip seal is also recommended to better support the heavier vehicles typical of rural areas. Being able to acquire the land by dedication instead of purchase results in an estimated cost savings of \$49,590, which helps offset the erosion protection costs.

The future maintenance costs for the refined design are estimated at \$7,000/year. In comparison, should the erosion protection improvements not be constructed, approximately 46% of the new access road would be washed away during a storm event and have to be reconstructed (haul RAP, prepare new base, finish grade, compact and chip seal). At an estimated cost of \$41,000 per storm event, the total cost could increase significantly in a year with multiple storm events.

This access road can be constructed in late November to early December, when the pavement repair work in the southeast area commences and RAP becomes available. As you know, construction of this access road was not budgeted in our fiscal year 2022 adopted budget. Additionally, DOT does not use public funds to improve non-public roads. Given the presence of the historic cemetery, there is a broader non-transportation public interest in establishing the proposed public road; therefore \$233,481 of General Fund funding is requested for road construction. The DOT will establish this roadway into our maintenance system and budget for the maintenance in future years.

Please let me know if you have any questions or need additional information.

AMO:dg

Attachment

c: Carmine DeBonis, Jr., Deputy County Administrator
Yves Khawam, PhD, Assistant County Administrator
Kathryn Skinner, Deputy Director

Leon Cemetery Access Road Construction Cost Estimate

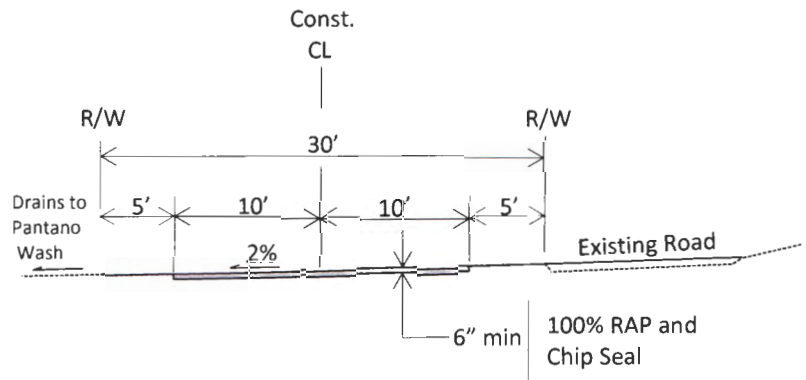
7-15-2021
rev 9-7-21

Alignment "A" (see map on page 2)

R/W width = 30'

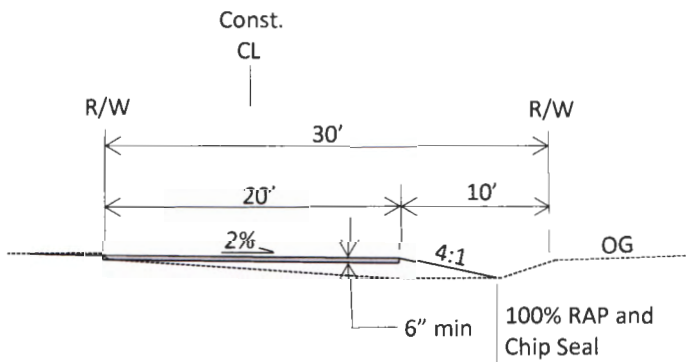
Length = 3,900' approx.

Roadway width = 20'



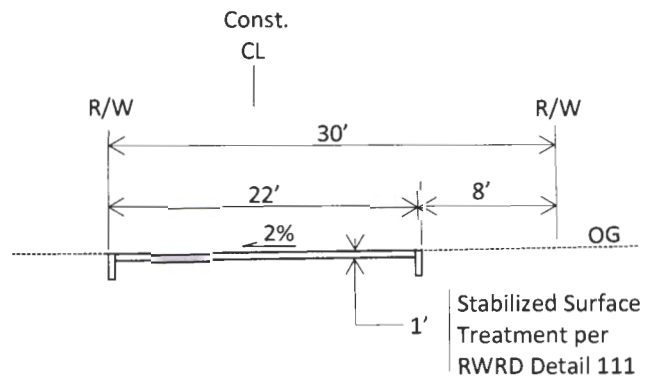
At-Grade Section

(North of Pumping Station) (Looking North) (1100' Total)



Fill Section

South of Pumping Station (looking north) (1400' Total)



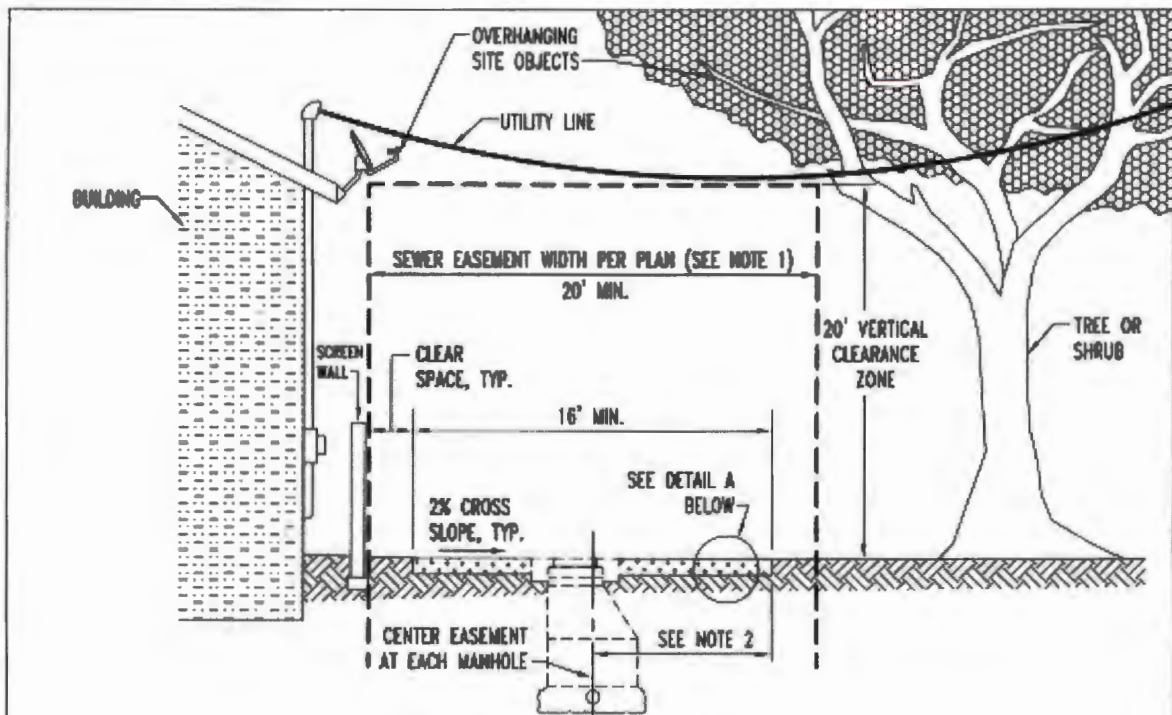
Wash Crossing Section

Where shown on plan (1400' Total)

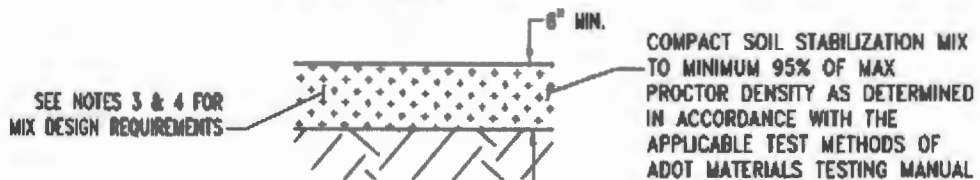
Access Road Alignment "A" (Previously referred to as Easement "A")

- 1. Fidelity Trust 10756 (Rancho del Lago Master Association)
- 2. Lago del Oro Golf, LLC
- 3. Fidelity Trust 60508 (Richmond American)
- 4. Title Security Trust 201903S (2 platted lots - Pepper Viner)






SECTION A-A
(SEE DETAILS S.D. RWRD 109 & 110)
N.T.S.



A STABILIZED SURFACE TREATMENT
N.T.S.

NOTES:

1. FOR MINIMUM SEWER EASEMENT WIDTHS AND OTHER REQUIREMENTS SEE THE DESIGN STANDARDS, SUBSECTION 7.1.
2. THE EDGE OF THE STABILIZED SURFACE SHALL BE 6" MINIMUM FROM THE CENTER OF EACH MANHOLE.
3. MIX DESIGN FOR STABILIZED SURFACE TREATMENTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE FIELD ENGINEER UNLESS PROVIDED ON THE PLANS.
4. MIX DESIGN SHALL BE CERTIFIED BY AN ARIZONA REGISTERED GEOTECHNICAL ENGINEER AND SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
 - BASED ON SITE-SPECIFIC SOILS, USE ONE OF THE FOLLOWING APPROVED STABILIZING AGENTS:
 - HYDRATED LIME SLURRY (HLS), HLS AND FLY ASH, OR PORTLAND CEMENT;
 - PASS 100% THROUGH THE 3 INCH SIEVE;
 - SHALL NOT CONTAIN DELETERIOUS MATERIALS; AND
 - MINIMUM COMPRESSIVE STRENGTH OF 600-800 PSI.
 SUBMIT ALL TESTING TO THE FIELD ENGINEER. (COMPACTION AND STRESS TESTS)

ISSUED:	STANDARD DETAIL SEWER EASEMENT TYPICAL SECTION		DETAIL NO.
7/02			RWRD 111
REVISED:			SHEET 1 OF 1
10/15			

Elements, Sequence and Duration of Work

(100% RAP and Chip Seal) + (Stabilized Surface Treatment)

1. Stockpile 3,800 cu yds of RAP (AC millings) from nearby pavement preservation project (TBD - Rancho Del Lago, or Camino Loma Alta, or Mary Ann Cleveland, or Colossal Cave Rd) along access road to minimize efforts to spread RAP on access road.
2. Spread RAP with loader and grader. Add water to grading operation.
3. Finish grading (2% cross-slope)
4. Compaction effort to achieve 95% theoretical maximum density using pneumatic roller.
5. Stabilized Surface Treatment, Concrete Cut-Off Walls and Chip seal by JOC.
6. Overall construction duration approximately 3 weeks.

Future Maintenance

Patch chip seal on an as needed basis and grade shoulders every 6 months.

Cost Estimates

(100% RAP and Chip Seal) + (Stabilized Surface Treatment)

1. Pavement preservation contractor (TBD) to haul RAP to site (assume project distance = 5.5 miles one way, 0.5 hours/round trip)
 - $(12 \text{ cu yds/trip}) \times (16 \text{ trips/day}) \times (4.94 \text{ days}) \times (4 \text{ dump trucks}) = 3,800 \text{ cu yds (loose)}$
 - $4 \text{ dump trucks} - (4 \text{ trucks}) \times (39.52 \text{ hours}) \times (\$60 \text{ per hour}) = \$9,485$
 - $4 \text{ dump truck drivers} - (4 \text{ drivers}) \times (39.52 \text{ hours}) \times (\$26 \text{ per hour}) = \$4,110$
 - Total cost to haul RAP to site = \$13,595
2. Clear and Grub Access Road R/W (0.1 acre along Rolling Water Drive & 0.1 acre along north end of access road) (assume 25 mile haul route for disposal – 1.5 hour round trip)
 - Total area to clear and grub = 0.2 acre
 - Loader – $(8 \text{ hours}) \times (\$88.74 \text{ per hour}) = \710
 - Loader operator – $(8 \text{ hours}) \times (\$18.84 \text{ per hour}) = \151
 - 2 dump trucks – $(\$2.53 \text{ per mile}) \times (250 \text{ miles}) \times (2) = \$1,265$
 - 2 dump truck drivers – $(8 \text{ hours}) \times (\$17.43 \text{ per hour}) \times (2) = \280
 - Total cost to clear and grub = \$2,406
3. Prepare roadway subbase (Grade access road from Vail Ranch Road to Rolling Water Drive)
 - $(3900') \times (30') / 9 = 13,000 \text{ sq yds}$
 - Grader – $(16 \text{ hours}) \times (\$88.74 \text{ per hour}) = \$1,420$
 - Grader operator – $(16 \text{ hours}) \times (\$18.84 \text{ per hour}) = \302
 - Pneumatic Roller – $(16 \text{ hours}) \times (\$74.80 \text{ per hour}) = \$1,197$
 - Pneumatic Roller operator – $(16 \text{ hours}) \times (\$17.44 \text{ per hour}) = \279

- 2 Water Trucks – ($\$3.38$ per mile) \times (250 miles) \times (2) = $\$1,690$
- 2 Water Truck drivers – (16 hours) \times ($\$17.44$ per hour) \times (2) = $\$558$
- Total cost to grade roadway subbase = $\$5,446$

4. Spread RAP and finish grading

- Grader – (16 hours) \times ($\$88.74$ per hour) = $\$1,420$
- Grader operator – (16 hours) \times ($\$18.84$ per hour) = $\$302$
- Loader – (16 hours) \times ($\$88.74$ per hour) = $\$1,420$
- Loader operator – (16 hours) \times ($\$18.84$ per hour) = $\$302$
- 2 Water Trucks – ($\$3.38$ per mile) \times (250 miles) \times (2) = $\$1,690$
- 2 Water Truck drivers – (16 hours) \times ($\$17.44$ per hour) \times (2) = $\$558$
- Total cost to spread RAP and finish grade = $\$5,692$

5. Compaction

- Pneumatic Roller – (16 hours) \times ($\$74.80$ per hour) = $\$1,197$
- Pneumatic Roller operator – (16 hours) \times ($\$17.44$ per hour) = $\$279$
- Total cost of compaction effort = $\$1,476$

6. Stabilized Surface Treatment (by JOC)

- $(1400') \times (20') / 9 = 3,112$
- Mix Design by Geotechnical Engineer $\$3,000$
- Cost of Stabilized Surface – (3,112 sq yds) \times ($\$18.00$ per sq yd) = $\$56,016$
- Total Cost of Stabilized Surface $\$59,016$

7. Concrete Cut-Off Walls (by JOC)

- $(400') \times (3 \text{ locations}) = 1200 \text{ ft}$
- Total cost of Concrete Cut-Off walls – (1200 ft) \times ($\$43.80$ per foot) = $\$52,560$

8. Chip Seal (by JOC)

- $(3900') \times (20') / 9 = 8,667 \text{ sq yds}$
- Total cost of chip seal – (8,667 sq yds) \times ($\$7.25$ per sq yd) = $\$62,836$

Total Cost = $\$203,027$

Future Maintenance Cost Estimates

Patch chip seal as needed and grade shoulders every 6 months. $(\$3,500) \times (2 \text{ times per year}) =$
 $\$7,000$ per year