RYAN'S TRAIL ROAD REDESIGN

Yufei Cheng

McKenzie Moten

Parker Schrandt

Trevor Snipes



Figure 1: Ryan's Trail [1]

PRESENTATION AGENDA

Project Background
Project Understanding
Scope and Schedule
Staffing and Engineering Services
Constraints and Criteria
Acknowledgements

PROJECT BACKGROUND

Purpose: Upgrade Existing Roadway

Location: Ryan's Trail, Coconino County, AZ

Client:
Dianne McDonnell



Figure 2: Location of Ryan's Trail in Arizona [2]

SNIPES 3

PROJECT BACKGROUND

Project Location

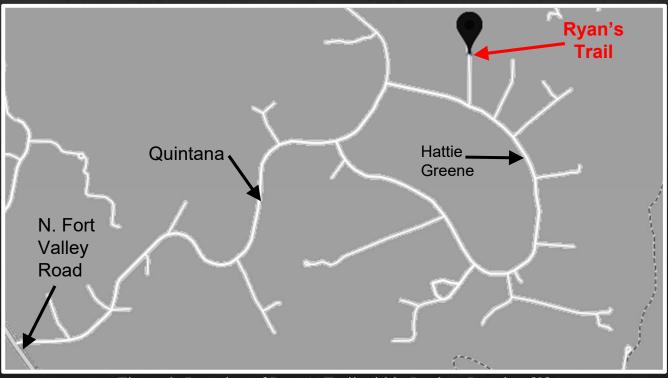


Figure 3: Location of Ryan's Trail within Lockett Ranches [2]

SNIPES 4

PROJECT UNDERSTANDING

EXISTING CONDITIONS



Figure 4: Existing Culvert



Figure 5: Crushed Cinder



Figure 6: Well System

CHENG 5

SCOPE OF SERVICES

1. Site Investigation

- 1.1 Blue-Stake
- 1.2 Gather Equipment
- 1.3 Field Surveying
- 1. Site Map
- 2. Conceptual Design
 - 3.1 Existing Design Analysis
 - 3.2 Road Improvement Alternatives



Figure 7: Field Surveying [3]

SCOPE OF SERVICES

4. Hydrology

- 4.1 Watershed analysis
- 4.2 Culvert design

4. Life Cycle Cost Analysis

- 5.1 Feasibility report
- 5.2 50% Report



Figure 8: Culverts [4]

SCOPE OF SERVICES

6. Final Design

- 6.1 Final Report
- 6.2 Final Presentation

7. Project Management

- 7.1 Website
- 7.2 Project Challenges



Figure 9: Asphalt [5]

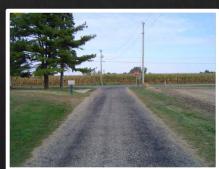


Figure 11: Chip Seal [7]



Figure 10 : Improved Gravel [6]

SCHRANDT 8

SCHEDULE Task Name Duration Start Finish 1/7 | 1/14 | 1/21 | 1/28 | 2/4 | 2/11 | 2/18 | 2/25 | 3/4 | 3/11 | 3/18 | 3/25 | 4/1 | 4/8 | 4/15 | 4/22 | 4/29 | 5/6 | 5/13 Fri 1/19/18 Tue 1/30/18 Site Investigation 8 days Mon 1/22/18 Site Visit 2 days Fri 1/19/18 Mon 1/22/18 Mon 1/29/18 Blue Stake 6 days Meetings and Consultations Tue 1/30/18 Tue 1/30/18 1 day Field Surveying 2 days Fri 1/26/18 Tue 1/30/18 Site Map Tue 1/30/18 Fri 2/16/18 13 days Conceptual Design Tue 1/23/18 Tue 3/6/18 31 days Existing Design Analysis 20 days Tue 1/23/18 Mon 2/19/18 Meetings and Consultations 1 day Fri 2/16/18 Mon 2/19/18 Material Concept Disscussion Tue 1/23/18 Mon 2/19/18 2 days Road Improvement Alternatives Thu 2/15/18 Tue 3/6/18 14 days Wed 3/7/18 Thu 3/15/18 Hydrology 7 days Watershed Analysis Wed 3/7/18 Mon 3/12/18 4 days Meetings and Consultations Tue 3/13/18 Tue 3/13/18 1 day Culvert Design 4 days Mon 3/12/18 Thu 3/15/18 Life Cycle Cost Analysis Mon 3/26/18 Fri 4/13/18 15 days Feasibility Report 2.5 days Mon 3/26/18 Wed 3/28/18 50% Report 4/13 12 days Wed 3/28/18 Fri 4/13/18 Final Design Fri 4/13/18 Fri 5/4/18 16 days Final Presentation Fri 4/13/18 Wed 5/2/18 13.5 days Meetings and Consultations 0.5 days Thu 5/3/18 Thu 5/3/18 Final Report Fri 5/4/18 Fri 5/4/18 0.5 days **Project Management** Wed 1/31/18 Mon 5/7/18 70 days 24 5/7 Website 9.1 days Wed 3/14/18 Mon 5/7/18 Project Challenges Analysis Wed 1/31/18 Tue 2/6/18 5 days CHENG 9

Figure 12: Schedule Critical Path

STAFFING & COST

Staffing Hours and Cost of Services						
	Project Manager (60%)	Design Engineer (55%)	Drafter (40%)	Survey Crew (60%)	Technician (50%)	Total for Services
Pay Rate (\$\$/hr)	\$ 55.00	\$ 45.00	\$ 35.00	\$ 60.00	\$ 20.00	\$ 215.00
<u>Task Breakdown</u>						
1. Site Investigation	24	15	8	25	0	72
2. Site Map	0	0	10	10	0	20
3. Conceptual Design	30	60	30	0	0	120
4. Hydrology	18	25	5	0	20	68
5. Life Cylce Cost Analysis	45	50	0	0	0	95
6. Final Design	20	40	10	0	10	80
7. Project Management	35	20	0	0	45	100
Subtotal (hr)	172	210	53	25	75	535
<u>odbtotal (III)</u>	112	210	33	25	15	333
Subtotal Pay (\$\$)	\$ 9,460.00	\$ 9,450.00	\$ 1,855.00	\$ 1,500.00	\$ 1,500.00	\$ 23,765
Benefits (% compensation)	\$ 5,676.00	\$ 5,197.50	\$ 742.00	\$ 900.00	\$ 750.00	\$ 13,266
Profit Margin (\$\$)	\$ 1,395.35	\$ 1,104.65	\$ 872.09	\$ 1,046.51	\$ 581.40	\$ 5,000
Overhead (\$\$)	\$ 2,790.70	\$ 2,209.30	\$ 1,744.18	\$ 2,093.02	\$ 1,162.80	\$ 10,000
<u>Total (\$\$)</u>	\$ 19,322.05	\$ 17,961.45	\$ 5,213.27	\$ 5,539.53	\$ 3,994.20	\$ 54,000

Figure 13: Staffing and Cost

SCHRANDT 10

CONSTRAINTS AND CRITERIA

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Photo by: McKenzie Moten



Figure 14: Client's Property [1]

ACKNOWLEDGEMENTS

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