

Navigating Cultural Resources During the Dennehotso Loop Road Improvement Project

*Anjanette Owens, MSOL, MSG,
Navajo DOT*

*Darryl Bradley, PE,
Navajo DOT*

*William Bryce, MA, RPA,
Logan Simpson*

*Drew Spear, PE,
Dibble Engineering*



The N6460/6461 Dennehotso Loop Road Project

- Cultural resources investigations began in 2015
- Bridge replacement (FHWA)
- Loop Road Improvements followed (FHWA OTT)
- Community Outreach
 - 1 chapter meeting
 - 2 in-field meetings



Bridge Replacement (FHWA)

Before

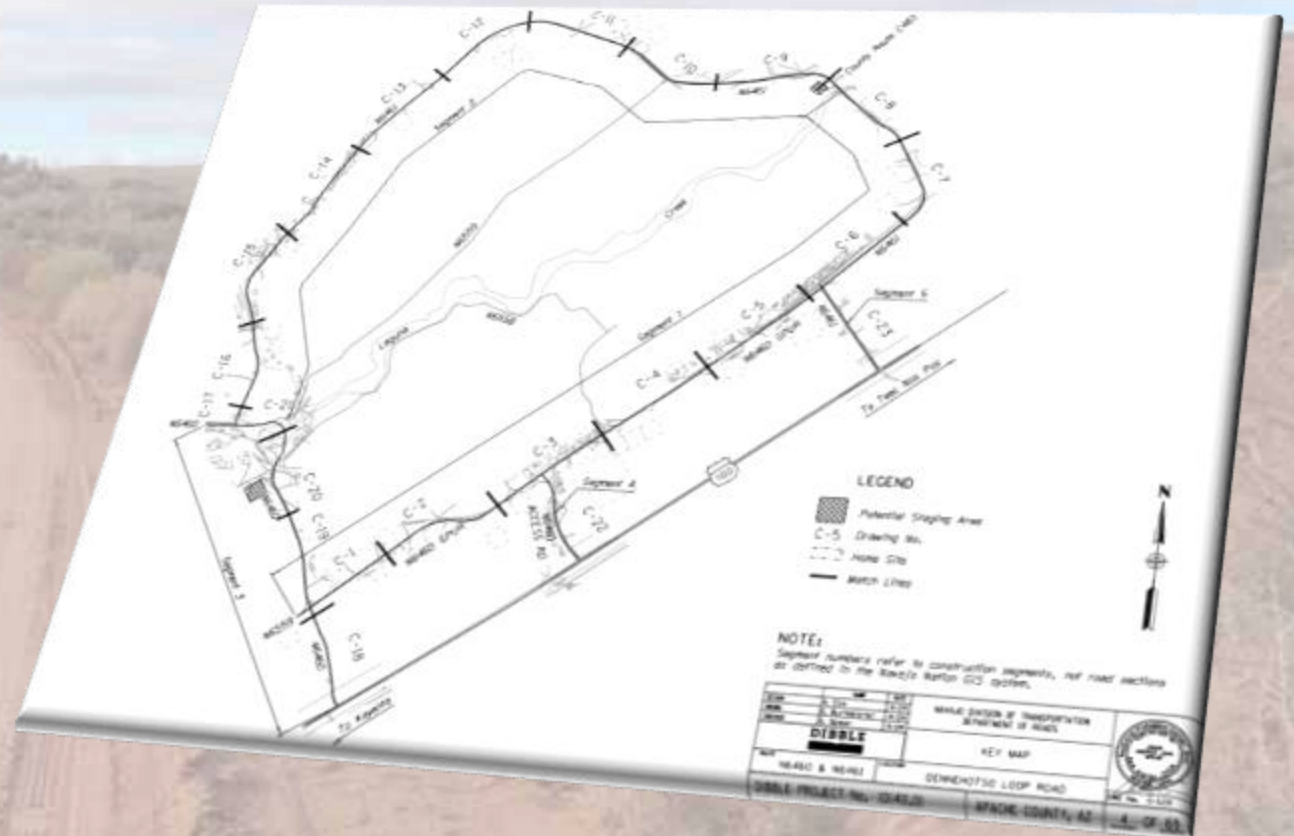
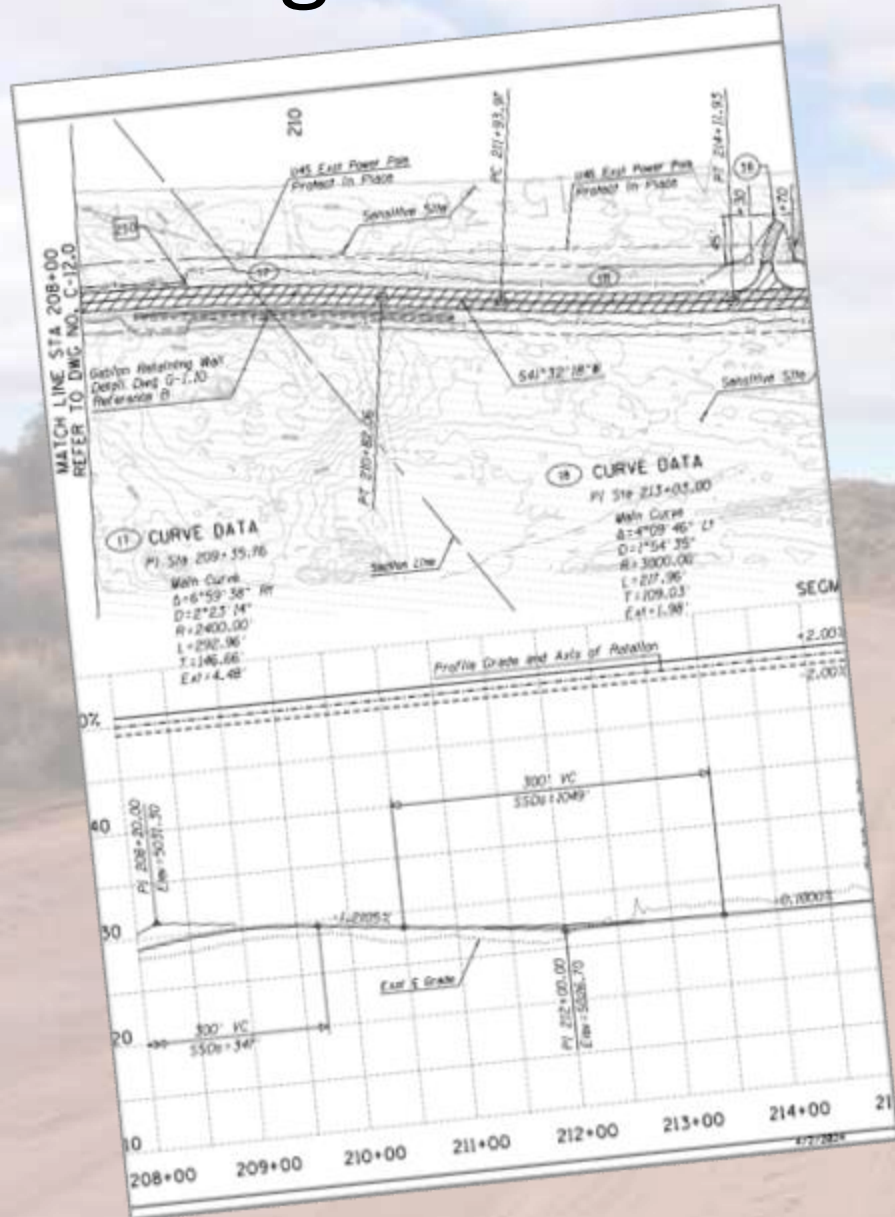


After



Design Plans

- Original design plans developed by BIA
- Navajo DOT took ownership
- Hired Dibble Engineering to fully develop design plans
- Once design plans reached 60%, the Area of Potential Effects (APE) is adequately defined to commence technical studies of environmental resources



Cultural Resources Background and Research

A Cultural Resource Inventory of the Proposed Dennehotso Loop Road Improvement Project Dennehotso Chapter, Navajo Nation Apache County, Arizona

Prepared for:
Navajo Division of Transportation
P.O. Box 4620
Window Rock, AZ 86515

Performing Organization:
Ecosystem Management, Inc.
3737 Princeton NE, Suite 150
Albuquerque, New Mexico 87107
(505) 884-8300
FAX (505) 884-8305



Prepared by:
Joanne Eakin and Christine A. Kendrick

Survey Conducted Under:
Navajo Nation Cultural Resources Inventory Permit B

Submitted To:
Navajo Nation Historic Preservation Department
P.O. Box 4950
Window Rock, Arizona 86515

EMI Report Number 1098-
Draft March 2015
Revised November 2015
Final April 2016
Additional Revisions September 2016

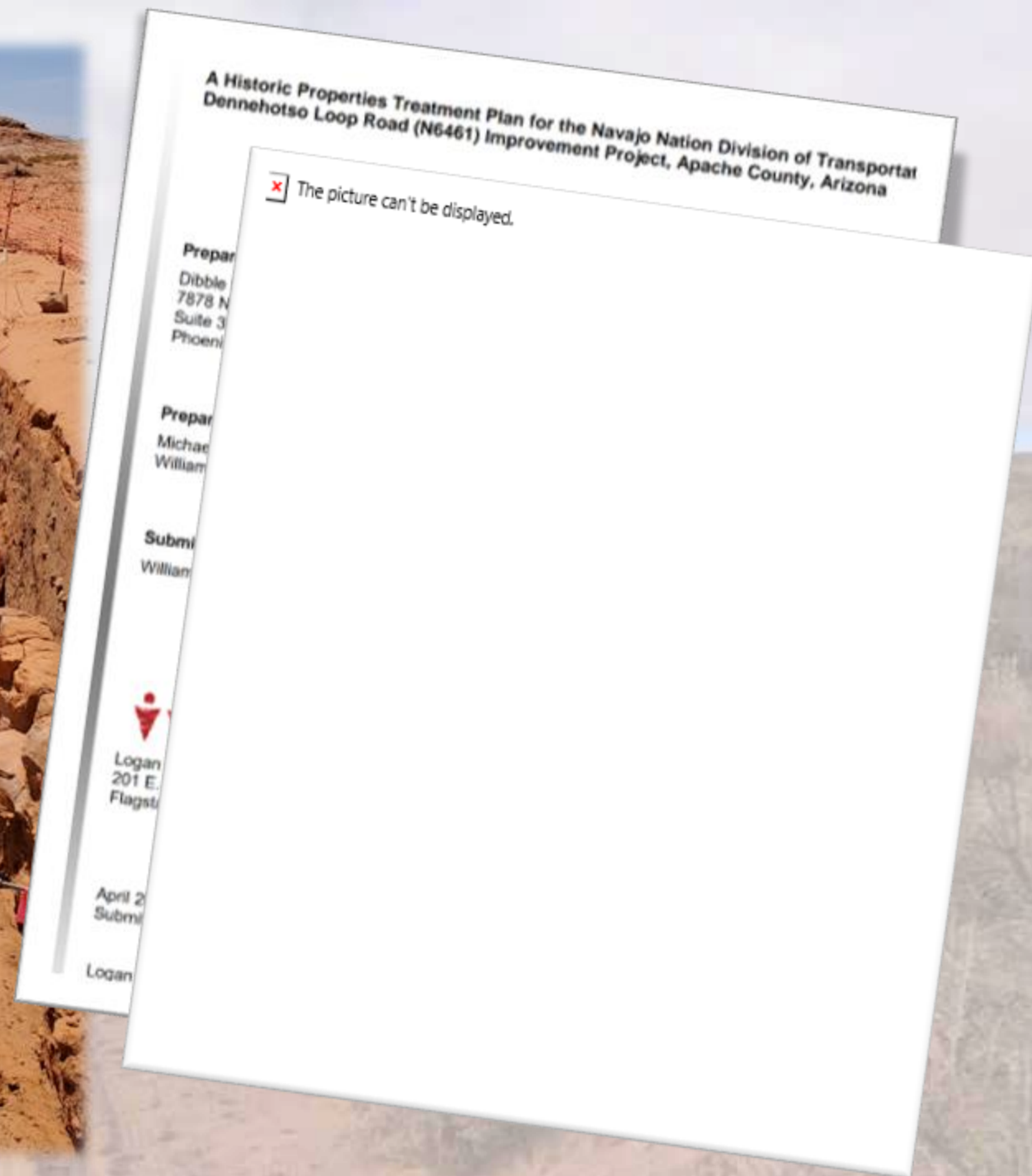
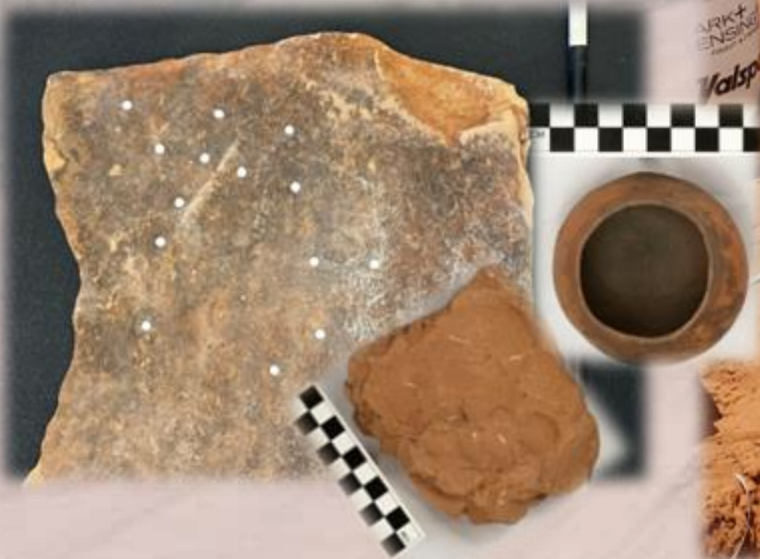
Site Number ^a	Site Type ^a	Cultural/Temporal Affiliation ^a	Eligibility Status, [¶] Criterion/Criteria ^a
AZ-I-15-9 ^a	Historic structure foundation and prehistoric artifact scatter ^a	Anasazi/Pueblo II [↔] (AD 1050-1150) [¶] Navajo/1945-1960 ^a	Eligible, Criterion D ^a
AZ-I-15-15 ^a	Habitation with features and artifact scatter ^a	Anasazi/Pueblo II-III [↔] (AD 1000-1300) ^a	Eligible, Criterion D ^a
AZ-I-15-16 ^a	Habitation with features and artifact scatter ^a	Anasazi/late Pueblo I [↔] (AD 850-950) and [↔] early-to-mid Pueblo III (AD 1150-1250) ^a	Eligible, Criterion D ^a
AZ-I-15-26 ^a	Historic structure foundation and prehistoric artifact scatter ^a	Anasazi/Pueblo II-early Pueblo III [↔] (AD 1040-1220) [¶] Navajo (pre-1970) ^a	Eligible, Criterion D ^a
AZ-I-15-35 ^a	Artifact scatter ^a	Anasazi/mid Pueblo II-III (AD 1070-1300) ^a	Not eligible ^a
AZ-I-15-36 ^a	Habitation with features and artifact scatter [¶] Historic artifact scatter ^a	Anasazi/Pueblo I-III [↔] (AD 750-1300) [¶] Probable Navajo [↔] (AD 1911-1929) ^a	Eligible, Criterion D ^a
AZ-I-15-37 ^a	Habitation with features and artifact scatter ^a	Anasazi/Pueblo II-III [↔] (AD 1050-1300) ^a	Eligible, Criterion D ^a
AZ-I-15-38 ^a	Historic bridge ^a	Euro-American, Navajo (AD 1950-2015) ^a	Not eligible ^a

- effect.
- 



Treatment Plan (2019)

- Ground Penetrating Radar
- Phase I Data Testing
- Phase II Data Recovery
- Laboratory Analyses



Tribal Authorization Act (TAA)

The Navajo DOT obtaining Rights-of-way

GENERAL LAND DEVELOPMENT DEPARTMENT

P.O. BOX 69 • ST. MICHAELS, AZ 86511

PHONE: (928) 871-6490 • WWW.GLDD.ORG

Tribal Access Authorization (TAA) Checklist

Pursuant to RDCJIN-17-20 and 25 CFR 169.4 (b) (3) (iii) the Tribal Authorization Access is authorized to wholly owned and operated Navajo Nation entities

☐

Cover Letter/ Scope of Work

- i. Provide the name of the project and define the intent of your proposal
 - i. Include the total acreage and miles on Tribal Trust and Fee lands
 - ii. Include the construction schedule and where the current term stands (new, renewal, expired, amendment, etc.)
- ii. Assign who will be responsible for construction, operation, maintenance, upgrades to infrastructure and/or utilities.
- iii. If applicable, include funding sources and what waivers are requested for the project (valuation, bonds, insurance, etc.)

☐

Legal Land Survey

- i. A legal land survey with the legal description stamped by a Register Land Surveyor
 - i. For each section indicate the affected acreage and the accompanying developments
 - ii. Convey ingress and egress

☐

Shapefile

- i. A shapefile (KML/KMZ or layer file) that depicts the utility line or corridor on Tribal Trust and Fee lands. The digital map layer should separate all corridor accompaniments

☐

Chapter Resolution

- i. Resolution in support, not approval, of the proposed undertaking from all respective chapters that the project will be constructed in

☐

Grazing Permittee Consents

- i. An official Field Clearance Checklist listing all grazing permit holders is required. All sections of the Checklist must be filled out to be deemed sufficient
- ii. Use the Consent Form to gather consent from valid grazing permit holders, and the form must be signed by the respective Grazing Official. If there are no valid grazing permittees a signed Consent Form from the Grazing Official is still required

Navajo Nation Environmental Compliance Forms

☐

Biological Resource Compliance Form (BRCF) from the Navajo Nation Department of Fish & Wildlife. If granted Conditional Approval, a Representative's signature is required

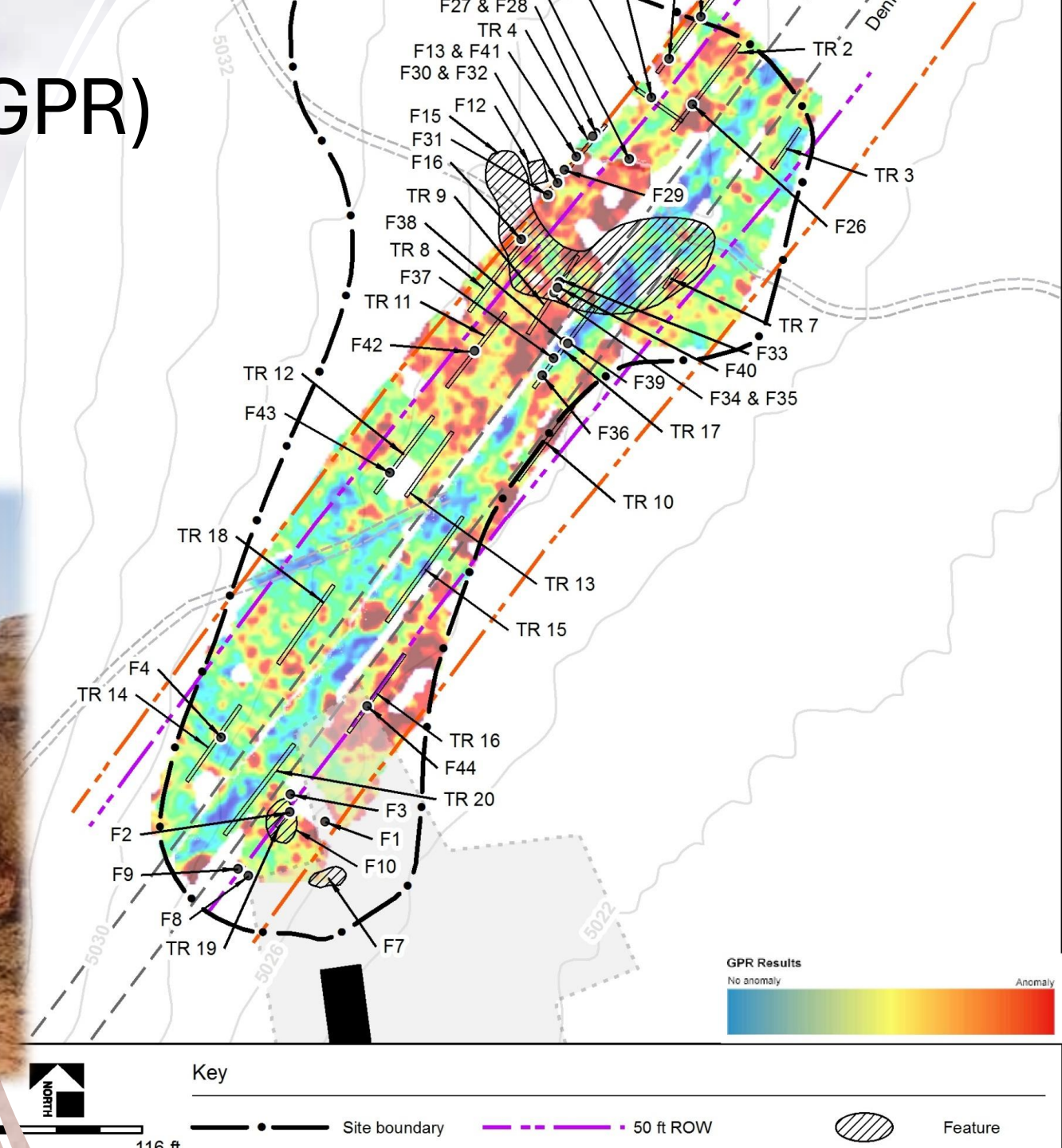
☐

Cultural Resource Compliance Form (CRCF), Archeological Inventory Report (AIR) Form from the Navajo Nation Heritage & Historic Preservation Department

- i. All acreages and locations surveyed must correspond with scope of work, as noted on the BRCF and CRCF

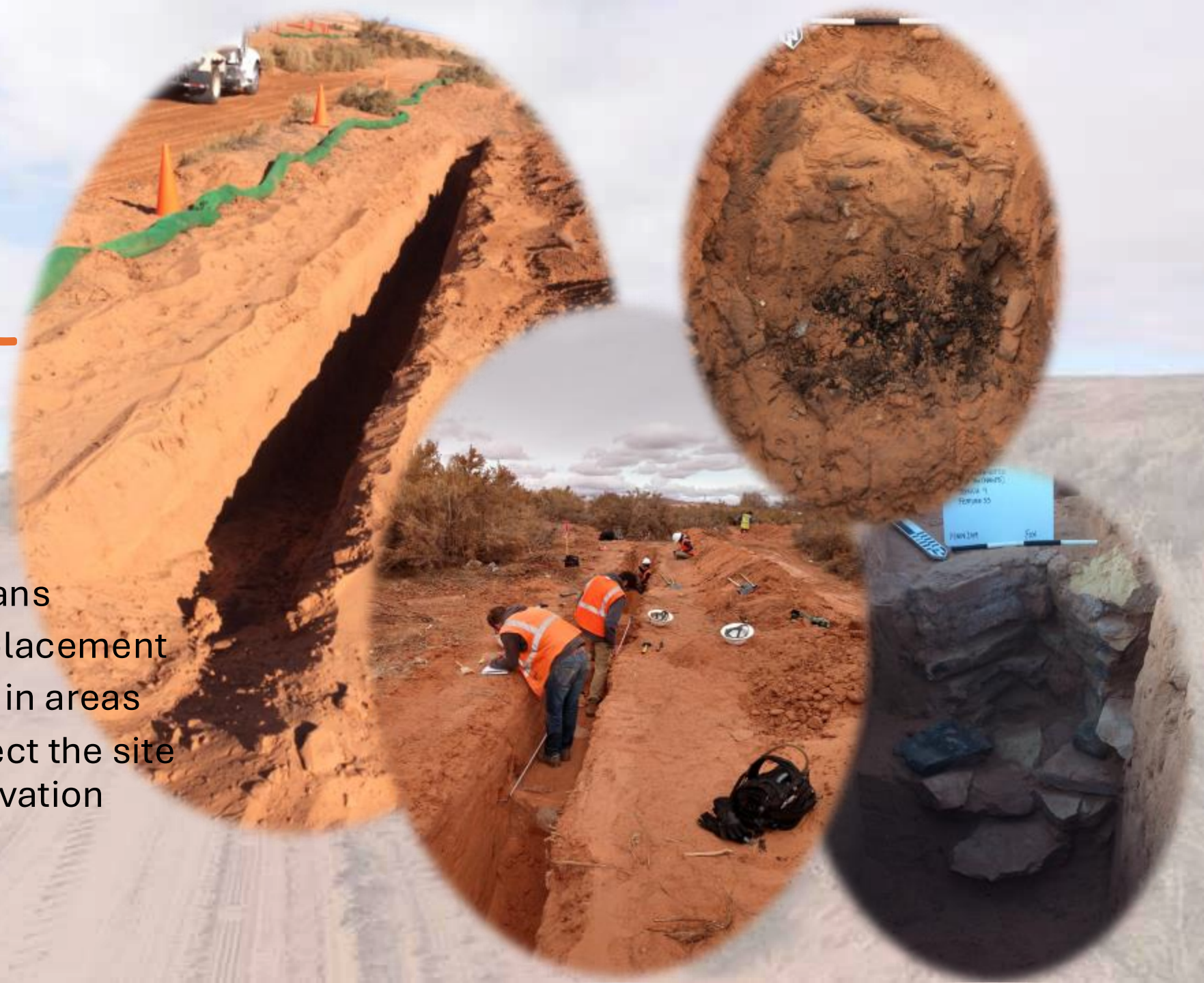
Notice: Although not required for an application to be deemed complete additional documents (e.g. Environmental Assessment) may be requested upon review

- Assists in identifying areas for subsurface investigations
- How well did, or didn't, it work?
 - Missed features



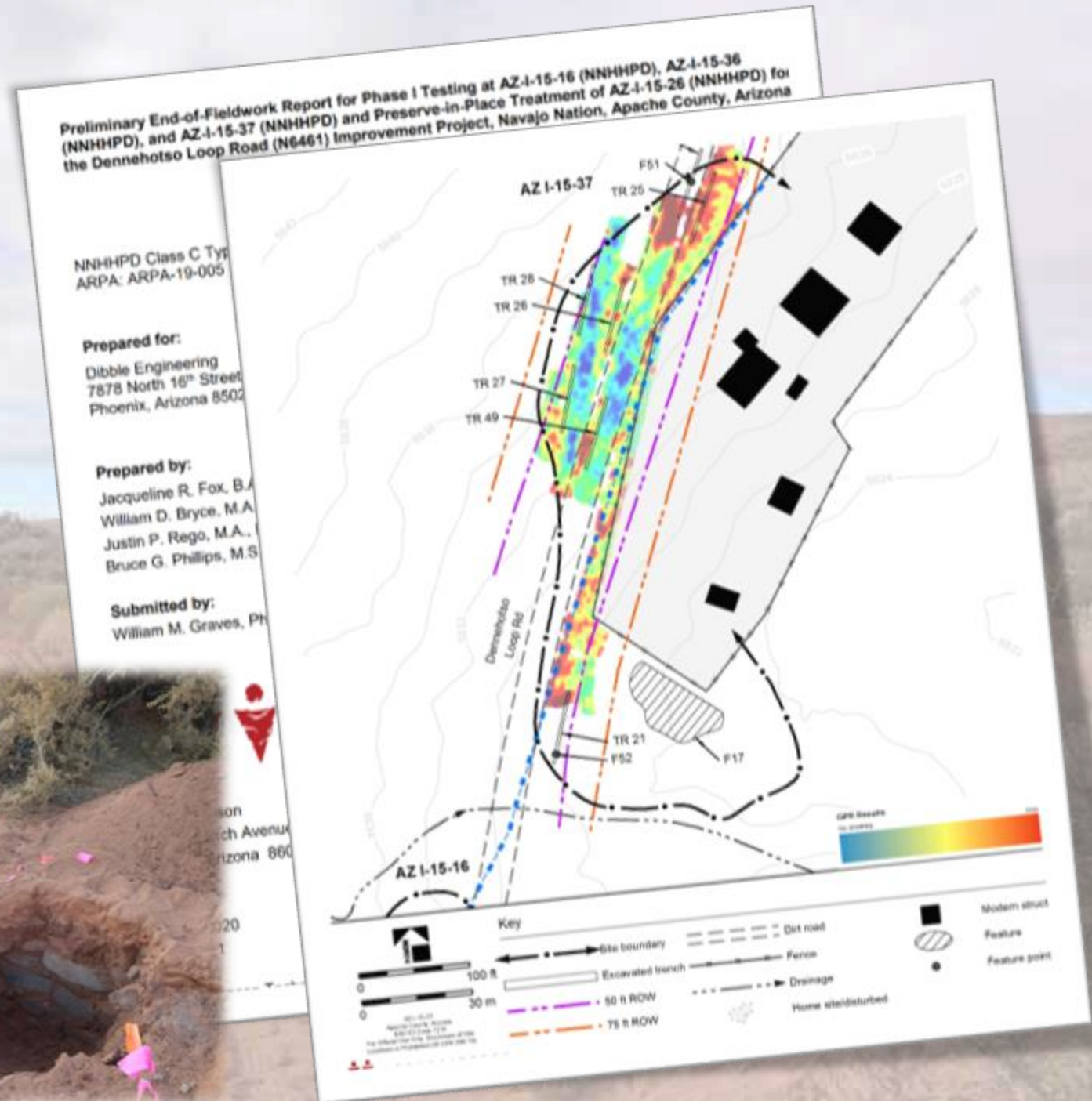
Phase I Data Testing (2019)

- What is it
- What was identified
- Lessons learned
- Modifying the design plans
 - Adjusting roadbed placement
 - Restricting roadbed in areas
 - Gabion wall to protect the site rather than full excavation



Phase I End of Field Report

- Methods used
- Any deviations from the HPTP
- Results
- Recommendations



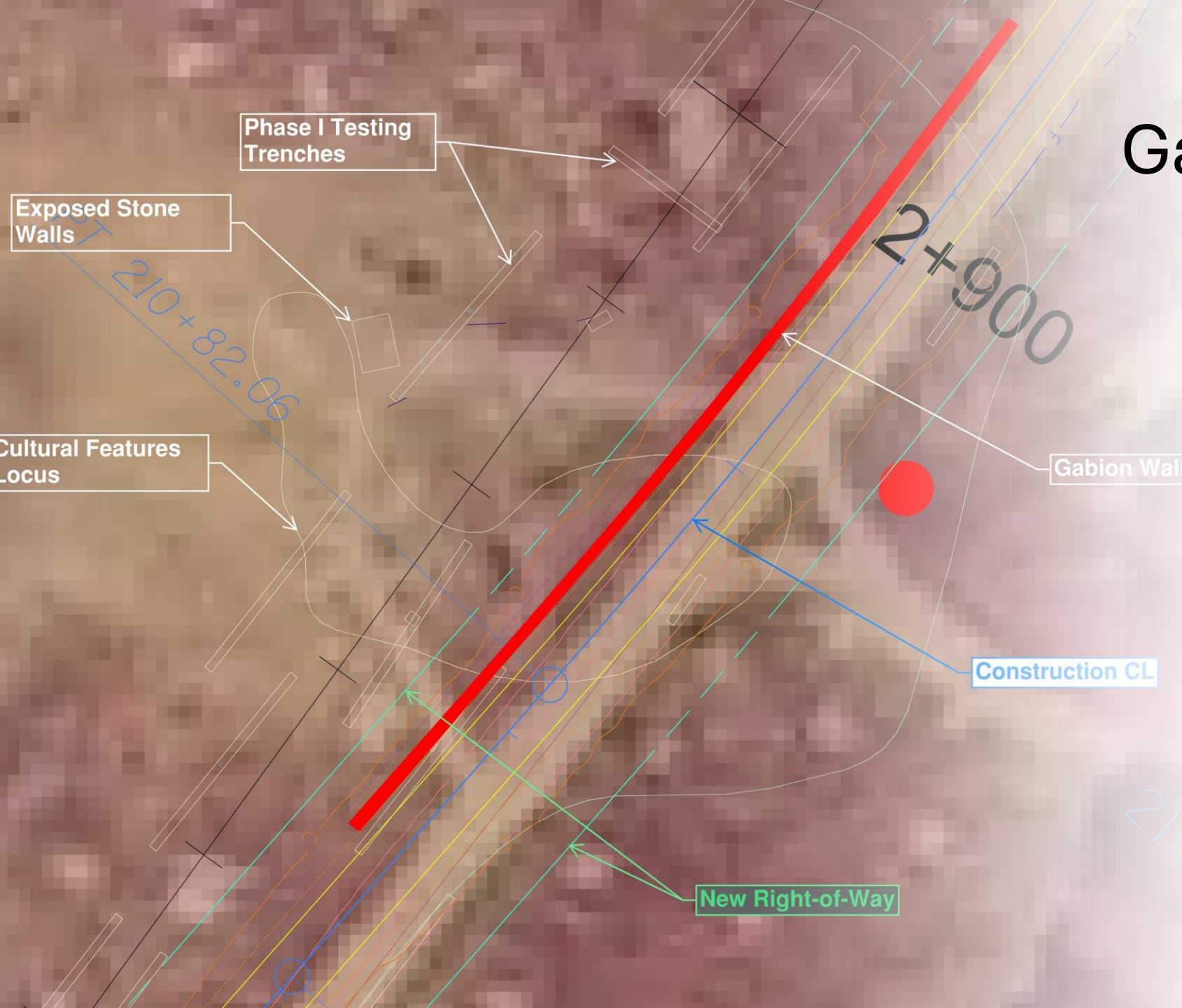
Design to Avoid or Minimize Impacts



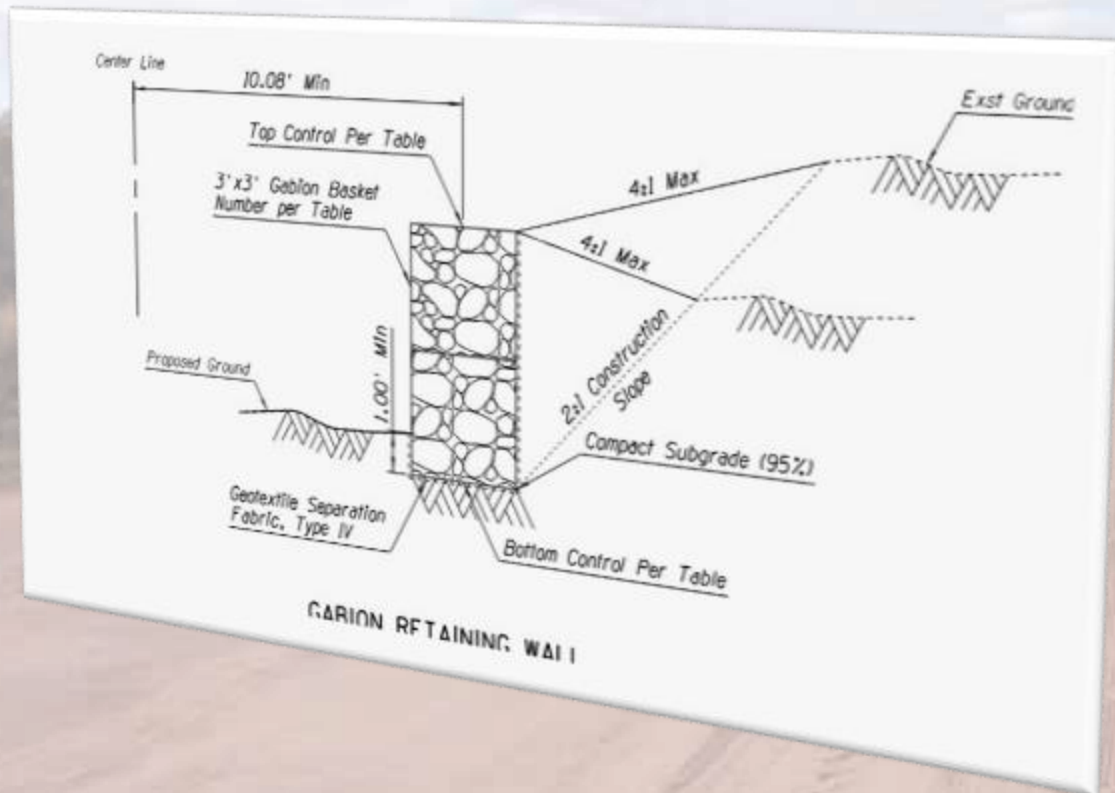
- Original alignment placement over exposed masonry features
- Alignment moved back to existing road and grade was raised to avoid cutting into ground
- Reverse curves added to minimize impacts
- Roadside ditches still cut into site because mound with exposed features was 15' +/- higher than road

Gabion Wall Layout

- Gabion Wall located outside roadway clear zone
- Temporary backslope of 2:1 for construction was designed



Wall Testing and Construction



- Gabion Wall control points provided for Phase II data recovery
- Trench was to the same line and elevation for the bottom of the gabion wall
- After data recovery efforts, the trench was backfilled and compacted
- Roadway contractor currently digging to the same control points in preparation to construct the gabion wall without damaging the archaeological site

GABION RETAINING WALL CONTROL POINTS					
REFERENCE	STATION	OFFSET	BOTTOM ELEV	TOP ELEV	# GABIONS
A	43+40	20.00' Lt	5025.64	5031.64	2
	46+40	20.00' Lt	5024.57	5030.57	2
B	208+50	18.50' Rt	5028.96	5031.96	1
	209+90	18.50' Rt	5028.54	5034.54	2
	210+60	18.50' Rt	5027.74	5033.74	2
	211+50	18.50' Rt	5027.30	5030.30	1

Phase II Data Recovery (2021)

- Further design adjustments to avoid archaeological sites
 - Shifting south to avoid AZ-I-15-16
- Data recovery necessary at only one archaeological site
 - Restriction and addition of gabion wall to minimize data recovery efforts and protect majority of the archaeological site



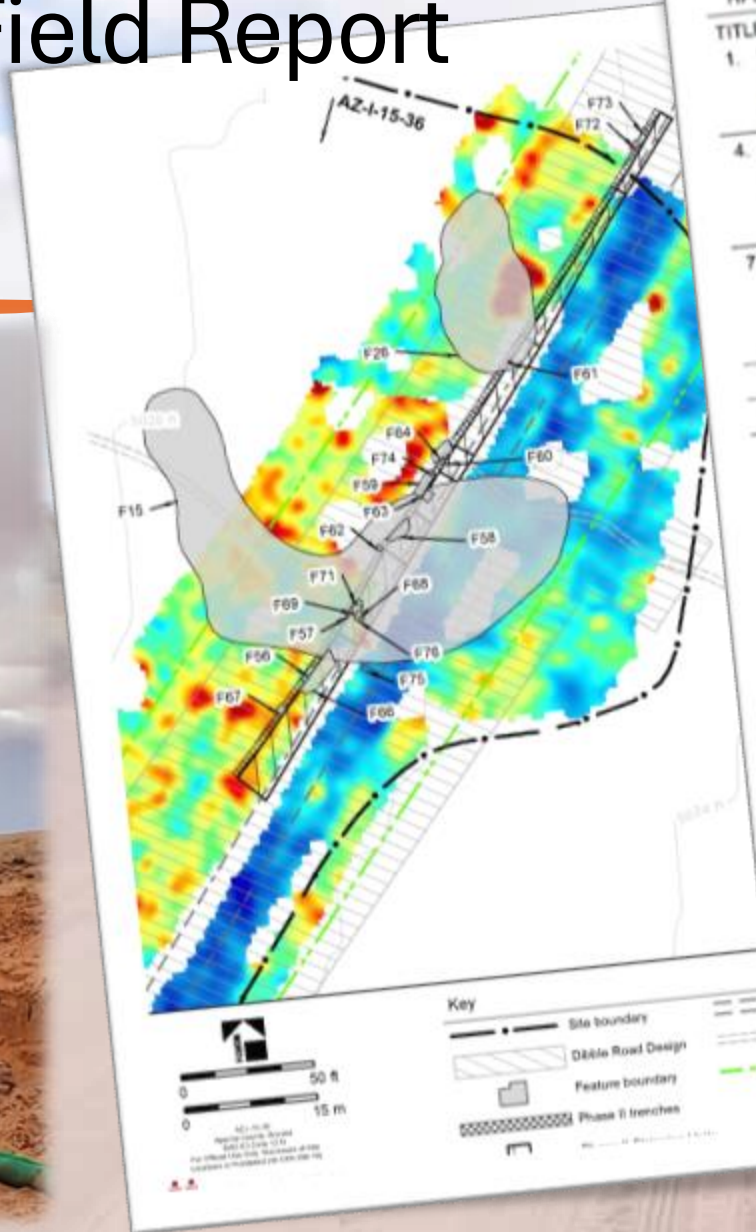
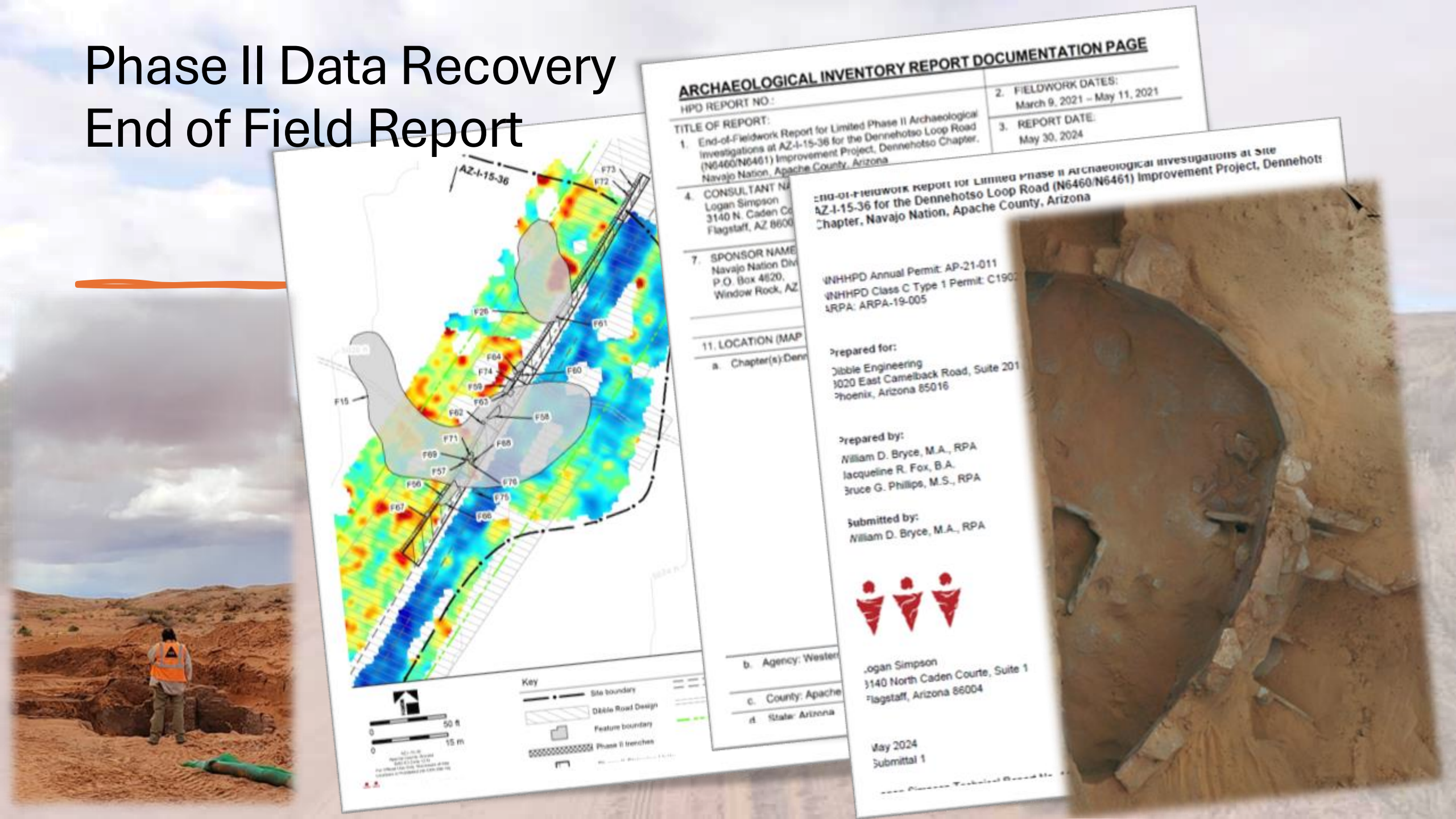
Structures and Features within the Gabion Wall Trench



The Previously Missed Structure in the Road



Phase II Data Recovery End of Field Report



ARCHAEOLOGICAL INVENTORY REPORT DOCUMENTATION PAGE	
HPD REPORT NO.:	2. FIELDWORK DATES: March 9, 2021 – May 11, 2021
TITLE OF REPORT: 1. End-of-Fieldwork Report for Limited Phase II Archaeological Investigations at AZ-I-15-36 for the Dennehotso Loop Road (N6460/N6461) Improvement Project, Dennehotso Chapter, Navajo Nation, Apache County, Arizona	3. REPORT DATE: May 30, 2024
4. CONSULTANT NAME: Logan Simpson 3140 N. Caden Court Flagstaff, AZ 86004	END-OF-FIELDWORK REPORT FOR LIMITED PHASE II ARCHAEOLOGICAL INVESTIGATIONS AT SITE AZ-I-15-36 FOR THE DENNEHOTSO LOOP ROAD (N6460/N6461) IMPROVEMENT PROJECT, DENNEHOTSO CHAPTER, NAVAJO NATION, APACHE COUNTY, ARIZONA
7. SPONSOR NAME: Navajo Nation Division P.O. Box 4820, Window Rock, AZ	WNHHPD Annual Permit: AP-21-011 WNHHPD Class C Type 1 Permit: C1902 ARPA: ARPA-19-005
11. LOCATION (MAP): a. Chapter(s): Dennehotso	Prepared for: Dibble Engineering 1020 East Camelback Road, Suite 201 Phoenix, Arizona 85016
	Prepared by: William D. Bryce, M.A., RPA Jacqueline R. Fox, B.A. Bruce G. Phillips, M.S., RPA
	Submitted by: William D. Bryce, M.A., RPA
b. Agency: Western	
c. County: Apache	
d. State: Arizona	
	Logan Simpson 3140 North Caden Court, Suite 1 Flagstaff, Arizona 86004
	May 2024 Submittal 1



Construction

- Amount
 - \$18,832,820.00
- Award contract
 - Date: August 13, 2024
- Notice to Proceed
 - Date: September 16, 2024



Project Timeline



Uncertainties

- Miscommunication
- Fiber line
- Waterline
- Discoveries

Damage Assessment for Unsanctioned Fiber Optic Line Installation Within Historic Properties AZ-I-15-26(NNHHPD), AZ-I-15-36(NNHHPD), and AZ-I-15-37(NNHHPD) Along I-6461, the Dennehotso Loop Road, Dennehotso Chapter, Western Agency, Navajo Nation, Apache County, Arizona

Prepared for:

Noble Engineering
878 North 16th Street, Suite 300
Phoenix, Arizona 85020

Prepared by:

Zachary Cooper, MBA, M.A., RPA
William D. Bryce, M.A., RPA
Jale Kraai, B.A.

Submitted by:

William D. Bryce, M.A., RPA



Logan Simpson
1140 North Caden Court, Suite 1
Flagstaff, Arizona 86004

February 2022
Submittal 1

Logan Simpson Technical Report No. 145102d



Uncertainties

- Cemeteries
- Fire
- Forestry
- Weather



Acknowledgements

We thank the following for this opportunity and the completion of the Dennehotso Loop Road Improvement Project:

- The Navajo Nation
- The Dennehotso Chapter
- Navajo DOT
- Navajo Nation Heritage & Historic Preservation Department
- Navajo Nation Fish & Wildlife Department
- Navajo Environmental Protection Agency
- Navajo Forestry Department
- Navajo Tribal Utility Authority
- Frontier Communications
- Federal Highway Administration Office of Tribal Transportation
- Bureau of Indian Affairs
- Dibble Engineering
- Dibble CM
- Logan Simpson
- BGP Consulting
- Past Peoples Consulting
- Ecosystem Management
- Dinetahdoo Cultural Resource Management
- Carrizo Archaeology Group
- Casey's Backhoe Service
- FNF Construction

