

**A Class III Intensive Cultural Resources Survey for the  
South Dakota Game, Fish and Parks  
Rapid City Firearms Range Complex,  
Meade County, South Dakota**

By  
Matthew D. Busch

Contract Investigations Series No. 3902

November 12, 2021

Principal Investigator – David T. Williams, MA, RPA

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A report prepared for South Dakota Department of Game, Fish and Parks,  
Divisions of Parks and Recreation & Wildlife  
By the Archaeological Research Center, Rapid City, South Dakota  
A program of the South Dakota State Historical Society, Department of Education

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## ABSTRACT

South Dakota Game, Fish and Parks (SDGFP) requested the Archaeological Research Center (ARC), a program of the South Dakota State Historical Society, conduct a Class III intensive cultural resources investigation, including a Class I record search and pedestrian survey in advance of construction activities for the proposed Rapid City Firearms Range Complex in Meade County, South Dakota. The project is funded by the U.S. Fish and Wildlife Service through the Wildlife and Sport Fisherman Restoration Program by funds generated through the Pittman-Robertson Restoration Act. Proposed project activities include three primary range development areas. The South End Range development includes a hunter education building with associated green space area, six 50-yard bays, six 100-yard bays, a 200 to 300-yard shooting area with multiple lanes, plus a multiple lane stationary shotgun clay target area. The Long Range is situated adjacent to the South End Range and will include a two-bay 300 to 1,200-yard range with multiple lanes. The North End Range will include eleven 50-yard, three 75-yard, and three 100-yard shooting bays, a versatile training area, plus a multiple lane sporting clay target area. Proposed ancillary support development includes access roads and parking, plus vault toilet structures and storage sheds. Construction within all areas will include varying degrees of earthmoving activities, structural development, plus some electrical and sewage utilities. During the period of October 04–08, 2021, ARC personnel conducted pedestrian survey and subsurface testing within the proposed project area, located in the South Fork Cheyenne Archaeological Region. This document serves as the final comprehensive report detailing fieldwork results.

This investigation resulted in the documentation of five new archaeological sites. New site 39MD1025 is an American Indian stone cairn site of unknown temporal or cultural affiliation. This site is recommended Eligible for National Register of Historic Places (NRHP) listing under Criterion D. New sites 39MD1026, 39MD1027, 39MD1028 are American Indian isolated finds of unknown temporal or cultural affiliation. New Site 39MD1029 is an American Indian isolated find of Archaic or Late Prehistoric temporal affiliation. All four new isolated find sites are recommended Not Eligible for NRHP listing.

As a result of the current survey, and provided the State Historic Preservation Office (SHPO) concurs with the site eligibility recommendations described above, the investigators recommended a Section 106 Finding of No Historic Properties Affected relative to the proposed construction provided 39MD1025 is avoided by proposed ground disturbing activities. It is further recommended that should any evidence of buried cultural resources be encountered during project construction activities, such activities be immediately halted and the SHPO in Pierre, or the ARC in Rapid City be notified immediately in order to determine an appropriate course of action. As a reminder, the information contained herein is protected by state law SDCL 1-20-21.2 and is not for public distribution.



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## INTRODUCTION

South Dakota Game, Fish and Parks (SDGFP) requested the Archaeological Research Center (ARC), a program of the South Dakota State Historical Society, conduct a Class III intensive cultural resources investigation, including a Class I record search and pedestrian survey in advance of construction activities for the proposed Rapid City Firearms Range Complex in Meade County, South Dakota. The project is funded by the U.S. Fish and Wildlife Service (USFWS) through the Wildlife and Sport Fisherman Restoration (WSFR) Program by funds generated through the Pittman-Robertson Restoration Act. Proposed project activities include three primary range development areas (Figure 1; Appendix A). The South End Range development includes a hunter education building with associated green space area, six 50-yard bays, six 100-yard bays, a 200 to 300-yard shooting area with multiple lanes, plus a multiple lane stationary shotgun clay target area. The Long Range is situated adjacent to the South End Range and will include a two-bay 300 to 1,200-yard range with multiple lanes. The North End Range will include eleven 50-yard, three 75-yard, and three 100-yard shooting bays, a versatile training area, plus a multiple lane sporting clay target area. Proposed ancillary support development includes access roads and parking, plus vault toilet structures and storage sheds. Construction within all areas will include varying degrees of earthmoving activities, structural development, plus emplacement of some electrical and sewage utilities.

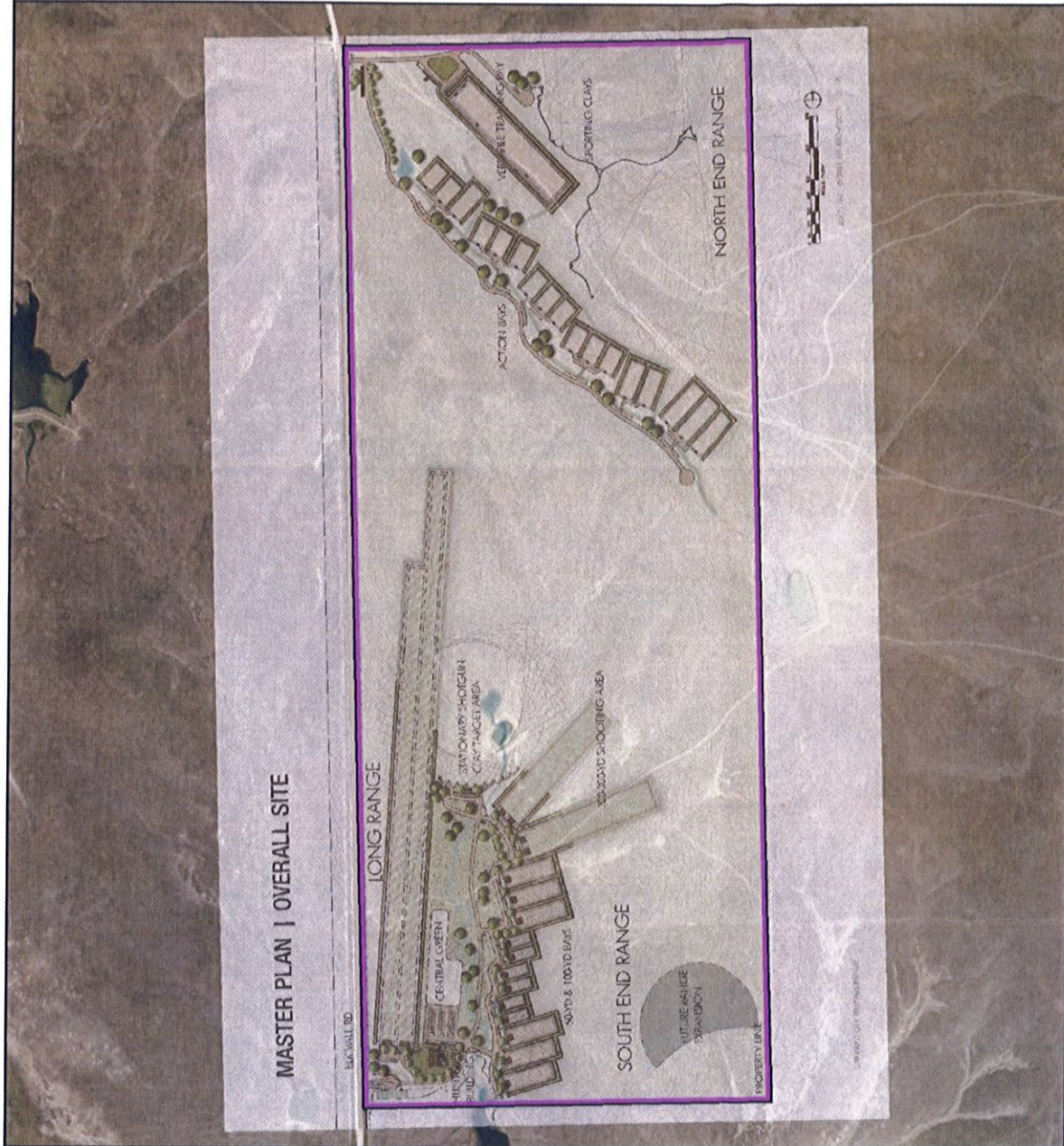
The proposed area of potential effect (APE) covers approximately 146 hectares (ha) (360 acres [ac]) in Section 3 T3N R8E and Section 34, T4N, R8E on the USGS 7.5' Cottonwood Draw Quadrangle in the South Fork Cheyenne Archaeological Region (Figures 2–3; Sundstrom 2019; Winham and Hannus 1990, 1991). During the period of October 04–08, 2021, ARC personnel completed pedestrian survey and subsurface testing within the proposed project area located in the South Fork Cheyenne Archaeological Region. This document serves as the final comprehensive report detailing fieldwork results.

This investigation resulted in the documentation of five new archaeological sites. New site 39MD1025 is an American Indian stone cairn site of unknown temporal or cultural affiliation. This site is recommended Eligible for National Register of Historic Places (NRHP) listing under Criterion D. New sites 39MD1026, 39MD1027, 39MD1028 are American Indian isolated finds of unknown temporal or cultural affiliation. New Site 39MD1029 is an American Indian isolated find of Archaic or Late Prehistoric temporal affiliation. All four new isolated find sites are recommended Not Eligible for NRHP listing.

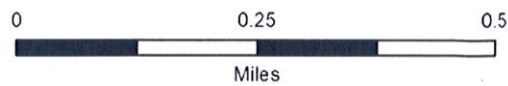
As a result of the current survey, and provided the State Historic Preservation Office (SHPO) concurs with the site eligibility recommendations described above, the investigators recommended a Section 106 Finding of No Historic Properties Affected relative to the proposed construction provided site 39MD1025 is avoided by proposed ground disturbing activities. It is further recommended that should any evidence of buried cultural resources be encountered during project construction activities, such activities be immediately halted and the SHPO in Pierre, or the ARC in Rapid City be notified immediately in order to determine an appropriate course of action. As a reminder, the information contained herein is protected by state law SDCL 1-20-21.2 and is not for public distribution.



# Rapid City Shooting Range, Meade County, South Dakota



 Project Area



1:12,000

Section 3, T3N, R8E

Section 34, T4N, R8E

USGS 7.5' Cottonwood Draw Quadrangle (Contour=10 ft)  
Meade County, South Dakota





## PREVIOUS INVESTIGATIONS

Brian Huot of the ARC completed a Class I cultural resources record search for the above-referenced project on September 28, 2021 (Table 1; see Figures 2–3). The record search includes all historic properties and previous cultural resources surveys documented in and within one mile of the project APE. However, these results do not preclude the presence of cultural resources or previous surveys outside of the one-mile buffer surrounding the APE. Within the APE, no archaeological sites, cultural resources surveys, or structures have been documented. Within one mile of the project area, no cultural resources surveys or archaeological sites have been documented. A single bridge structure determined Not Eligible for listing in the NRHP was previously documented to the south of the project APE.

**Table 1. Record search results in and within one mile of the Rapid City Firearms Complex Range project area, Meade County.**

Within Project Area			
Nothing in project area.			
Within a 1 Mile Radius			
Bridge			
SHPO ID	Name	Eligibility	NR Status
MD00000305	47-210-552	Not Eligible	Not Eligible

## CULTURAL SETTING

The cultural chronology of South Dakota is generally characterized by seven overlapping periods. The presence, duration, and significance of these periods depend largely on geographic location in the state and the extent of previous research in the specific area. The general cultural/chronological periods presented in years before present (B.P.; ca. 1950) include Paleoindian (ca. 12,000–7,500 B.P.); Plains Archaic (ca. 7,500–2,000 B.P.); Late Prehistoric (ca. 2,000–500 B.P.); Plains Woodland (ca. 2,000–1,000 B.P.); Plains Village (ca. 1,000–250 B.P.); Protohistoric (ca. A.D. 1700–1861); and Historic (ca. A.D. 1861 to present). Each of these periods has been, or can be, subdivided into early, middle, and late, as well as into various archaeological phases and cultures (Sundstrom 2019; Winham and Hannus 1990, 1991).

## ENVIRONMENTAL SETTING

The project APE is within the Semiarid Pierre Shale Plains subregion of the Northwestern Great Plains ecoregion (Bryce et al. 1996); physiographically, the region is within the Pierre Hills Section of the Missouri Plateau of the Great Plains (Rothrock 1943). Cretaceous Period Pierre Shale is the most common geologic component visible on the surface. This region is unglaciated and composed of undulating to rolling plains with deeply entrenched, steep-sided, incised stream channels. Locally, these stream channels drain into Elk Creek. Natural shortgrass prairie vegetation in the area may include western wheatgrass, green needlegrass, blue grama, and buffalograss. Land in this region is often utilized for cattle grazing and dryland farming of winter wheat and alfalfa.



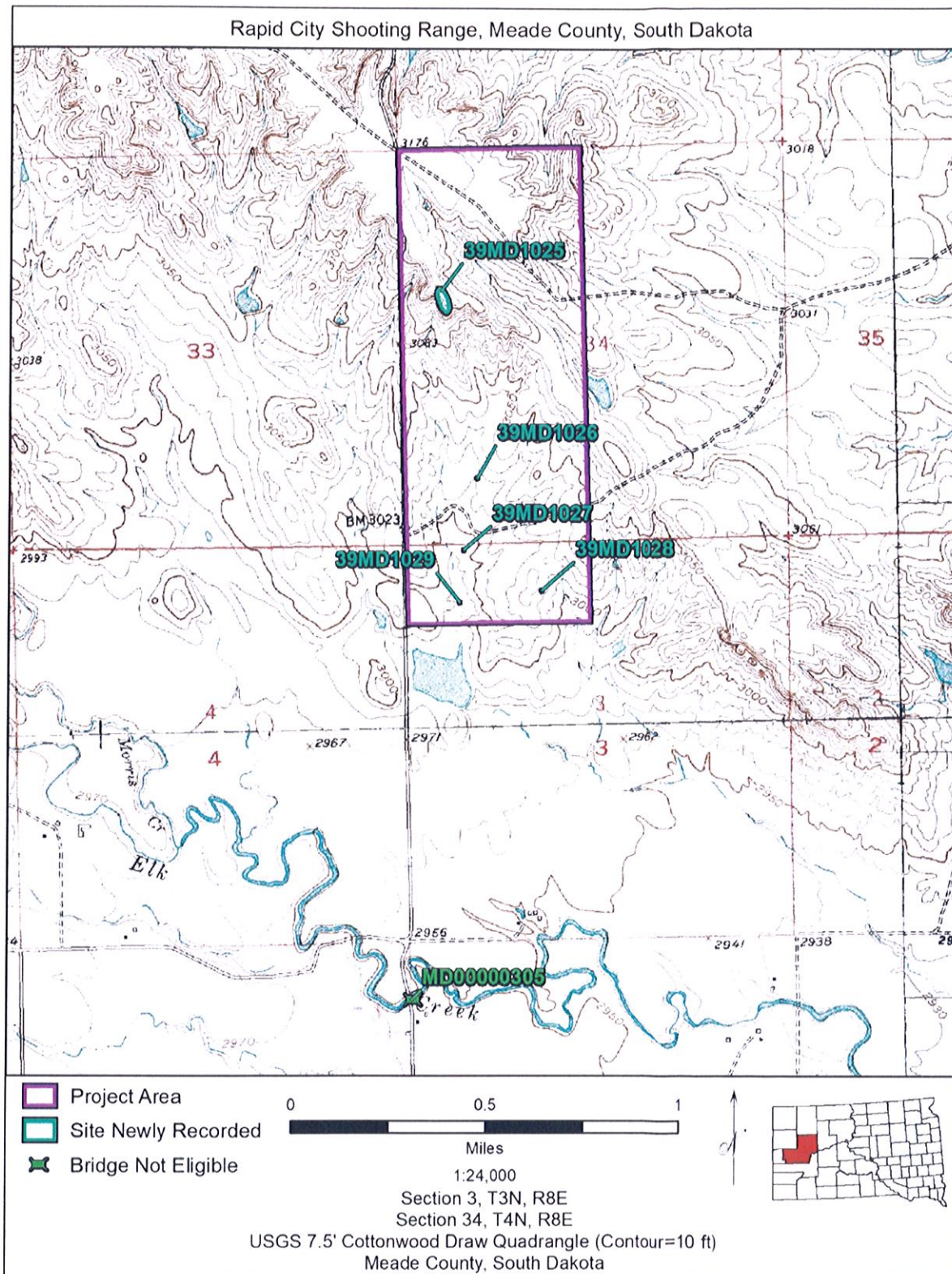


Figure 2. Proposed Rapid City Firearms Range Complex project APE, previously recorded structures, and newly recorded archaeological sites illustrated on USGS 7.5' quadrangle.



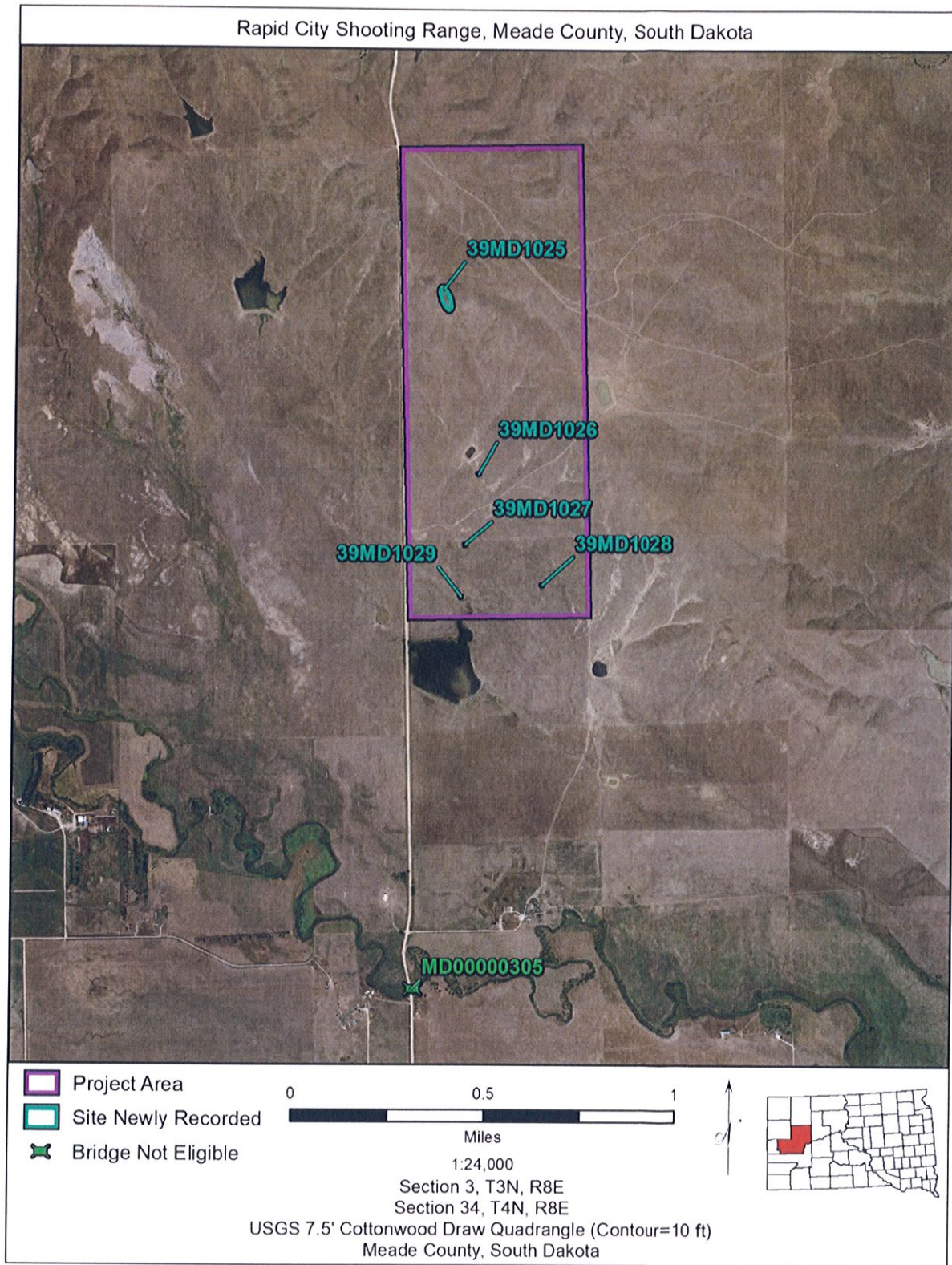


Figure 3. Proposed Rapid City Firearms Range Complex project APE, previously recorded structures, and newly recorded archaeological sites illustrated on 2020 FSA orthophoto.



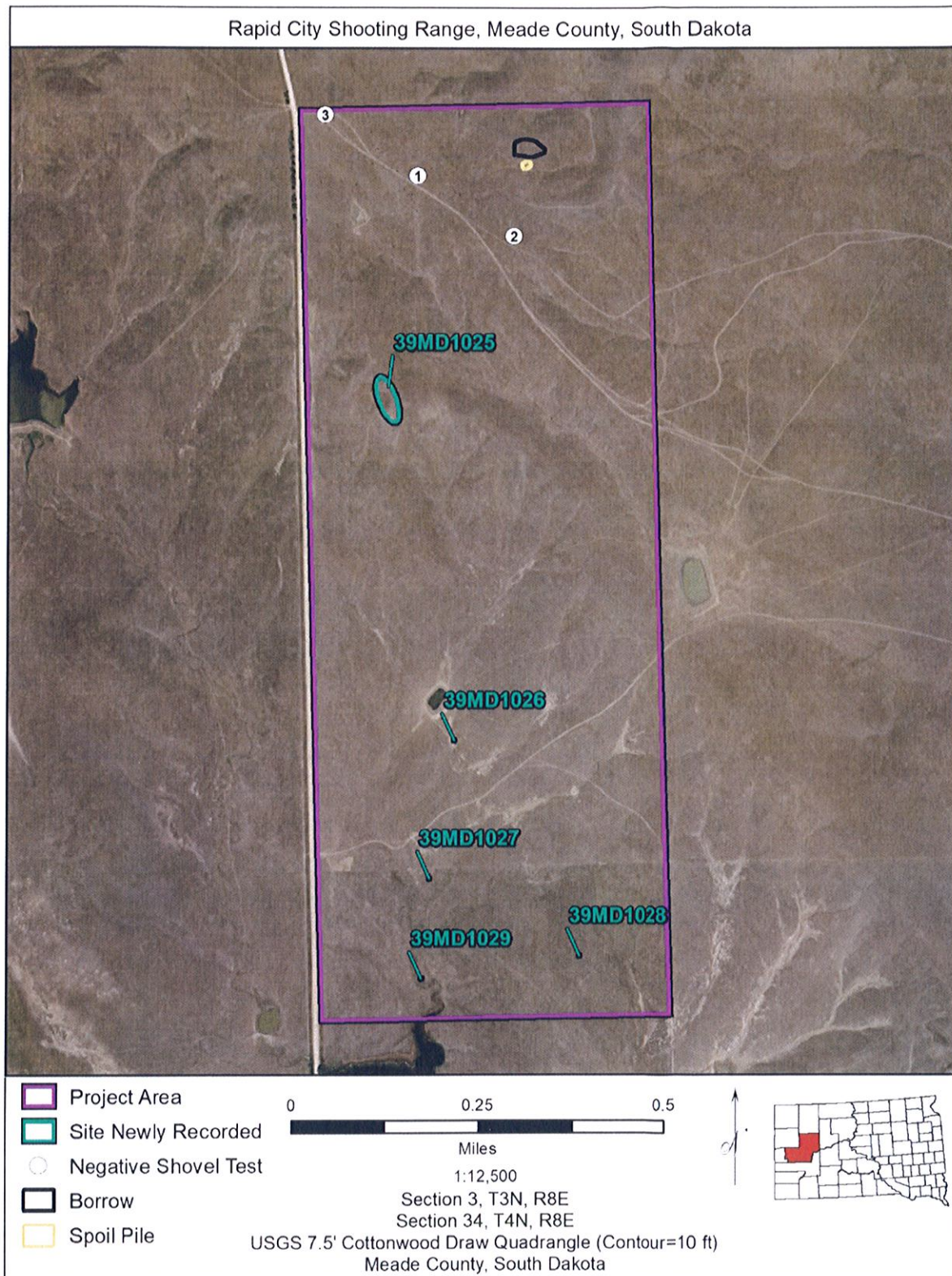


Figure 4. Close-up of proposed Rapid City Firearms Range Complex project APE, newly recorded archaeological sites, shovel tests, and impacts illustrated on 2020 FSA orthophoto.



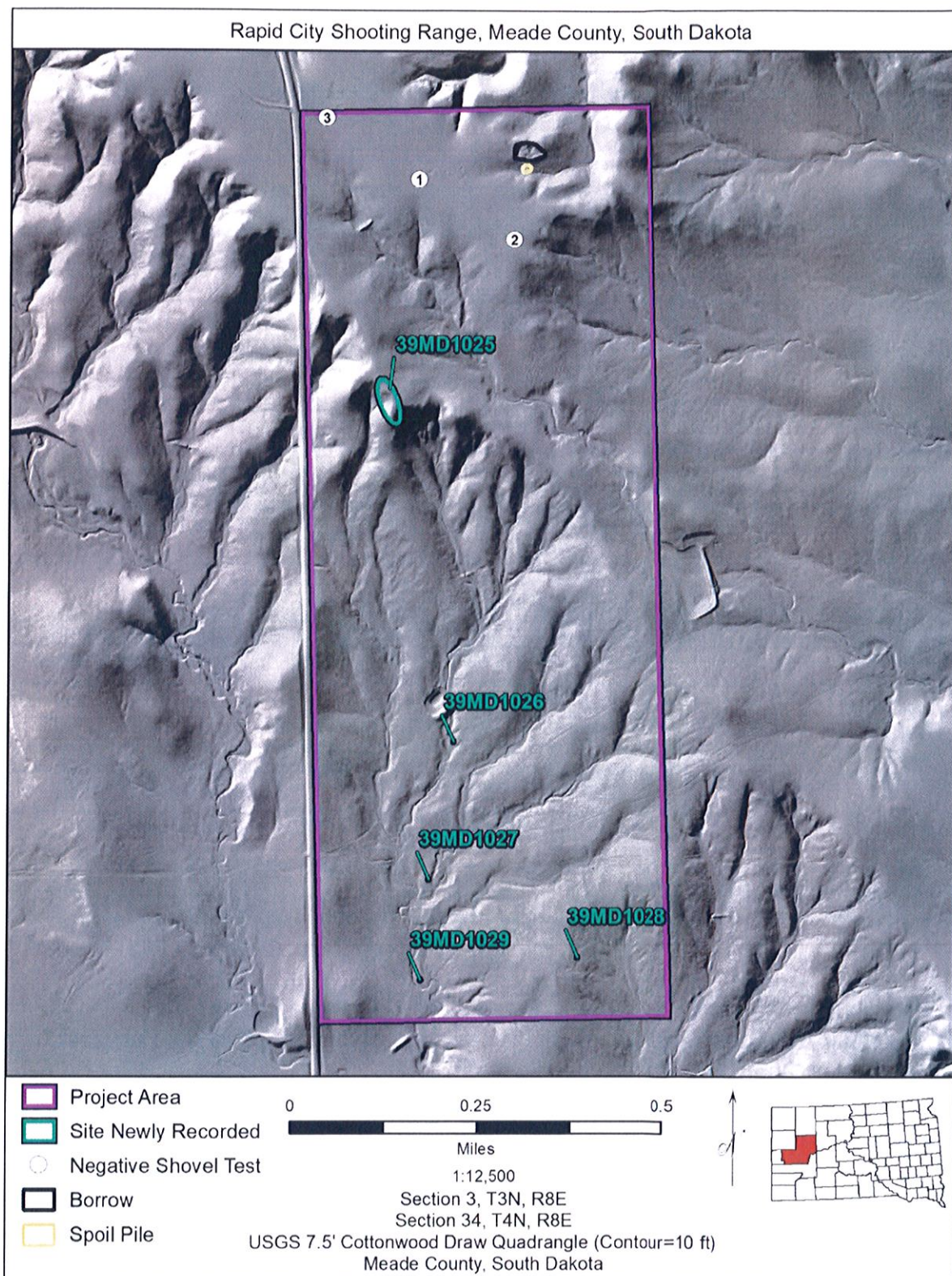


Figure 5. Proposed Rapid City Firearms Range Complex project area, newly recorded archaeological sites, shovel tests, and impacts illustrated on USGS LiDAR imagery.



The northern one-third portion of the project APE is characterized by high terrace remnants capped with late Pliocene or early Pleistocene alluvial soils and outwash gravels originating from the Black Hills (Harksen, 1969:24; Wayne et al. 1991:449). Soil units mapped within these upland areas include Nunn clay loam (NcB) and Zigweid-Nihill complex (ZaD) (Table 2).

The southern two-thirds of the APE is characterized by dissected lower ridge slopes extending from below the high terrace towards the Elk Creek flood plain. Landform soils are residuum weathered from shale, with some channeled alluvium soils in drainages. Mapped soil units within this portion of the APE consist of Lismas clay (LbE), sloping Lismas-Winler association (LcD), channeled Lohmiller and Glenberg Soils (Lh), and Pierre clay (PbC) (Table 2).

Table 2 below provides environmental descriptions relative to buried site potential within the project APE. The table combines NRCS soil description data (see Appendix B for soil map and soil unit descriptions) with geological process indicators and buried site potential classification delineated by *A Geoarchaeological Overview of South Dakota and Preliminary Guidelines for Identifying and Evaluating Buried Archaeological Sites* (Artz 2011, Tables 4 and 7).

**Table 2. Environmental descriptions relative to buried site potential within the SDGFP Rapid City Gun Range Complex project area.**

<b>Soil Map Unit</b>	<b>Soil Name</b>	<b>Slope (%)</b>	<b>Description</b>	<b>Landscape</b>	<b>Landform/Sedimentary Environment</b>	<b>Dominant Depositional Process</b>	<b>Buried Site Potential</b>
LbE	Lismas Clay	25-40	Component on hillslopes on uplands. Parent material is residuum weathered from shale.	Upland, Unglaciaded	Hill/ridge	Predominantly erosional	Low
LcD	Lismas-Winler association, sloping	6-15	Components on hillslopes on uplands. Parent material is residuum weathered from shale.	Upland, Unglaciaded	Hill/Ridge	Predominantly erosional	Low
Lh	Lohmiller and Glenberg soils, channeled	0-2	Components on hillslopes on uplands. Parent material is residuum weathered from shale.	Upland, Unglaciaded	Hill/ridge	Predominantly erosional	Low
NcB	Nunn clay loam	0-2	Component on terraces on uplands. Parent material consists of alluvium.	High Terrace	Flats	Predominantly erosional during Holocene	Low

Table 2 continued.

Soil Map Unit	Soil Name	Slope (%)	Description	Landscape	Landform/Sedimentary Environment	Dominant Depositional Process	Buried Site Potential
PbC	Pierre clay	6-15	Component on hillslopes on uplands. Parent material is residuum weathered from shale.	Upland, Unglaciaded	Hill/ridge	Predominantly erosional	Low
ZaD	Zigweid-Nihill complex	6-15	Zigweid on terraces on uplands; Nihill on strath terraces on valleys. Parent material consists of alluvium.	High Terrace	Flats	Predominantly erosional during Holocene	Low

## CURRENT INVESTIGATION

### Field Work and Methodology

An ARC field crew comprised of Matthew Busch, Logan Bullard, Amy Woodruff, and Katherine Lamie conducted pedestrian survey and subsurface testing within the proposed project area during the period of October 04-08, 2021. Survey within the project APE was inventoried using pedestrian transects spaced no more than 15 meters (m) (49.2 feet [ft]) apart, thereby meeting the recommended standards established by the SHPO in Pierre, South Dakota. Subsurface testing was conducted at Principal Investigator (PI) discretion based on pedestrian survey results and assessment of landscape conditions.

Terrain within the project area ranged from nearly level along the high terrace and drainage bottoms to strongly sloping and steep ridge slopes (Figures 6–9). Vegetation primarily consisted of mixed short prairie grasses and pincushion cacti, with some deciduous trees in the road ditches along the western margin of the APE. Ground surface visibility (GSV) averaged 25 percent throughout the survey area. All areas with likelihood for containing intact surface or near-surface cultural components, including drainage cuts and areas deflated of vegetation, were closely examined.

The landscape throughout the project area is mostly unaltered by human activity. Noted disturbances included evidence of previous small-scale borrowing/stockpiling activity (Figure 10), stock dam development, and two-track roads. In particular, the borrow/stockpile area is in the northern portion of the APE along the eastern edge of the high terrace. Natural disturbances included wind and water erosion, and bioturbation in the form of animal burrowing activity and cattle trails. Several depressions that appear to be wallows enlarged by wind erosion are present along the high terrace tread.



Despite the low potential for buried sites (see Table 2), subsurface testing was conducted in the northern APE to assess the character of alluvial soils and potential for buried deposits. A total of three 50 cm diameter shovel tests (ST-01 to ST-03) were excavated across the length of the high terrace. Shovel tests were excavated in 10 cm arbitrary levels to varying depths of 30–50 cmbs based on soil stratigraphy and the presence or absence of cultural materials. All soil matrix from the shovel tests was dry screened through ¼ inch wire mesh.

The pedestrian survey resulted in the documentation of five new archaeological sites, 39MD1025, 39MD1026, 39MD1027, 39MD1028, and 39MD1029 (see Appendix C). Subsurface testing yielded negative results for cultural deposits.

Fieldwork documentation includes GPS mapping, digital photography, and completion of standardized ARC field forms. Mapping data was collected using a CHC LT500 series handheld GPS unit capable of submeter accuracy. Field photographs were taken using a 24.2-megapixel Nikon D330 digital camera. Site information was documented on ARC site visit record and shovel test forms. All field datasets generated during this project are on file at the ARC. Post-field documentation includes a completed site forms for the Archaeological Records Management System database and ARC county site files. Digital photos and photo logs are curated under Multi-media Accession Number 2103R05. No artifacts were collected during survey.



**Figure 6. Overview of southern project area from high terrace. View is to the south. Date: 10/08/2021.**





**Figure 7. Overview of southern project area from high terrace. View is to the east-southeast. Date: 10/08/2021.**



**Figure 8. Overview of project area from southwest corner of APE. View is to the north-northeast. Date: 10/07/2021.**





Figure 9. Overview of northern project area from northeast corner of APE. View is to the west-northwest.  
Date: 10/04/2021.



Figure 10. Overview of borrow/stockpile area within northern APE. View is to the north. Date: 10/04/2021.



## Newly Recorded Archaeological Sites

### 39MD1025

New site 39MD1025 is a cairn site of unknown American Indian cultural or temporal affiliation. This resource is situated at an elevation of 3152 ft (961 m) AMSL along the edge of a high terrace ridge overlooking the Elk Creek stream valley (Figures 11-12). Both the Black Hills and Bear Butte landforms display prominently within the 39MD1025 viewshed. The site measures 98 m north-south by 53 m east-west covering an area of 0.33 ha (0.80 ac). Soils along the high terrace ridge consisted of Zigweid-NiHill complex alluvial outwash deposits. A variety of igneous, metamorphic, and sedimentary materials ranging in size from gravels to large cobbles (and possibly small boulders) are exposed along the ridge crest, particularly along ridge fingers and scarps. Several rodent burrows and back dirt piles in the immediate site vicinity exhibited gravelly soil matrix that indicated very low potential for buried subsurface deposits. Vegetation cover is comprised of short mixed prairie grasses/forbs with sparse prickly pear and pincushion cacti. Ground surface visibility at the time of survey ranged between 25 to 30 percent along the main high terrace ridge and up to 60 percent along the crest of finger ridge protrusions.



Figure 11. Overview of 39MD1025. View is to the southeast. Date: 10/04/2021.



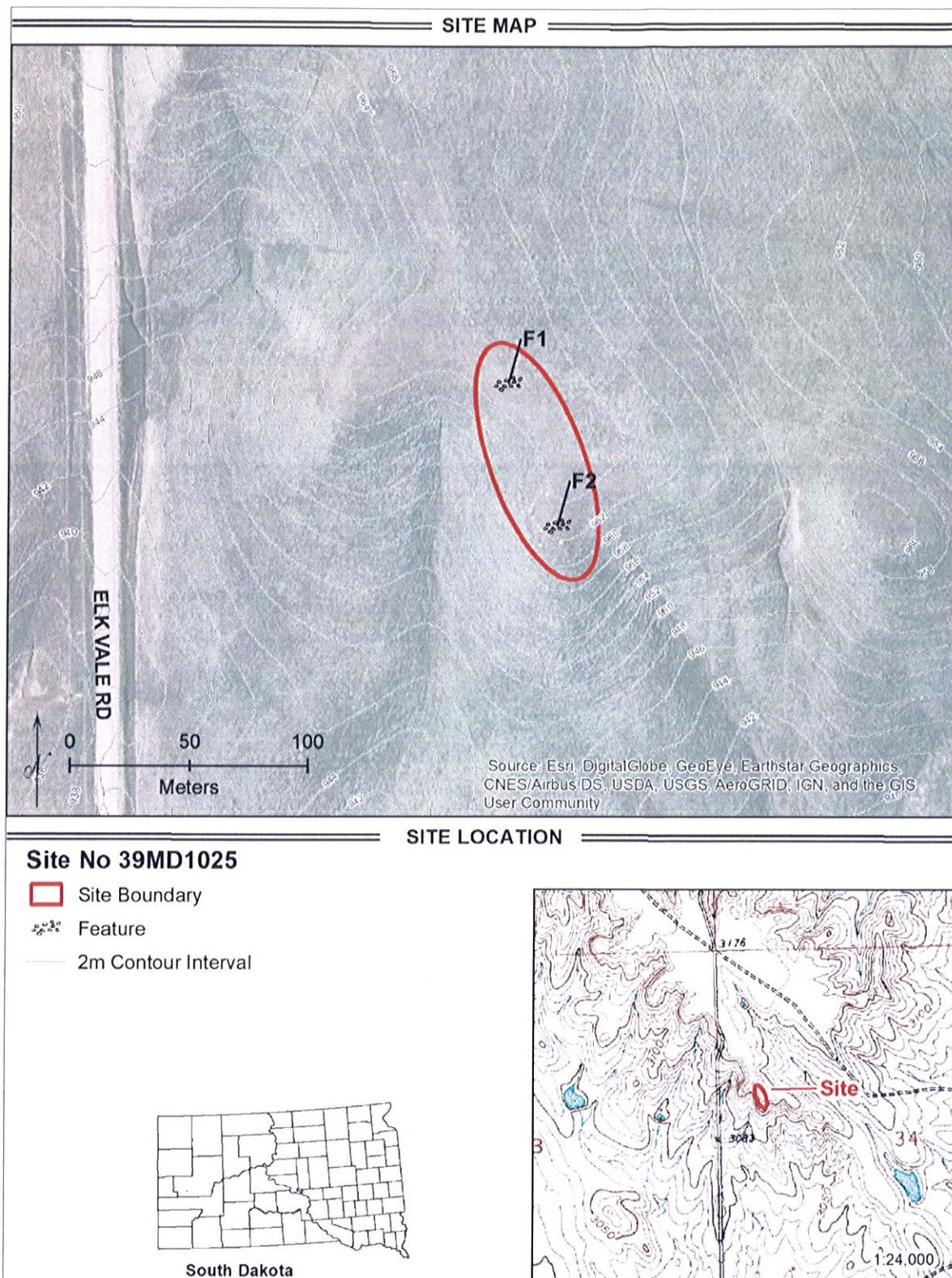


Figure 12. Plan view map of 39MD1025 illustrated on FSA 2020 orthophoto.



Two stone cairn features were documented at 39MD1025 (Table 3; Figures 13–16). Feature 1 is situated along the edge of the high terrace ridge, nearly equidistant within the arc between two finger ridge protrusions. The well-sodded and elongated cairn measures 1.60 x 2.08 m following an east-southeast to west-northwest alignment. The feature reaches an approximate height of 0.15 m and is constructed of 32 visible, lichen encrusted stones. The stones range from large cobble to small boulder in size and are locally available from surrounding outwash deposits. No cultural materials were observed in association with the feature.

Feature 2 is located 62 m south-southeast of Feature 1 at the end of an adjacent protruding finger ridge. The small, disturbed cairn is noticeable as a slight rise in the landscape and measures approximately 0.75 m north-south by 0.90 m east west. The cairn is constructed from an undetermined number of stones that are mostly large cobbles in size. The feature is disturbed by recent four-wheeler traffic resulting in stone displacement. Naturally occurring disturbances include anthill development, prickly pear cactus growth, a possible collapsed rodent burrow forming a shallow depression in the feature center, and potential stone displacement from cattle grazing activity. No cultural materials were observed in association with the feature.

**Table 3. Stone cairn features recorded at 39MD1025.**

<b>Feature</b>	<b>Type</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Height (m)</b>	<b>Comments</b>
1	Cairn	1.60	2.08	~0.15	Extant elongated feature, constructed of 32 visible stone.
2	Cairn	0.90	0.75	-	Disturbed circular-shaped feature

No subsurface testing was conducted at 39MD1025 due to low buried site probability (see Table 2), adequate GSV, and the confirmed presence of low potential cultural bearing soils exhibited by rodent burrowing activity. Despite the level of disturbance at Feature 2, the site retains a high degree of integrity and offers additional research potential relevant to prehistoric cairn utilization sub-contexts identified in the State Plan for Archaeological Resources (Sundstrom 2019:III-50–59). As such, the investigators recommend 39MD1025 Eligible for NRHP listing under Criterion D and that the site be avoided by proposed project activities.





**Figure 13. Location overview of Feature 1 cairn at 39MD1025. View is to the south-southwest. Date: 10/08/2021.**



**Figure 14. Close-up of Feature 1 cairn at 39MD1025. View is to the east. Date: 10/08/2021.**





**Figure 15. Location overview of Feature 2 cairn at 39MD1025. View is to the south-southwest.  
Date: 10/04/2021.**



**Figure 16. Close-up of Feature 2 cairn at 39MD1025. View is to the north-northeast.  
Date: 10/04/2021.**



### **39MD1026**

New site 39MD1026 is an American Indian isolated find of unknown cultural or temporal affiliation. The find, designated as PP1, consisted of two chipped stone artifacts and one possible stone tool recorded within a small 1 x 1 m area covering 0.03 ha (0.07 ac). This resource is situated within an intermittent drainage at an elevation of 3015 ft (919 m) AMSL (Figures 17–19). Soils within the site area are comprised of Pierre clay residuum weathered from shale covered by short, mixed prairie grass vegetation. The GSV averages 60 percent within the hardpan, drainage bottom and 40 percent along the adjacent slopes. Gravels and cobbles originating from Black Hills outwash deposits are present throughout the general area, particularly along the drainage bottom. Disturbances within the immediate site vicinity included cattle trails, animal burrowing activity, and water erosion. A stock dam is located upstream from the site.

The chipped stone debris included two gray-colored, very fine-grained quartzite flakes (Figure 20). These items and a possible quartz tool were observed on a hardpan surface along the eastern edge of the drainage. Most quartz materials observed throughout the project area are rounded pebbles or cobbles exhibiting minimal to no breakage. In comparison to other quartz materials, the possible quartz tool is an angular, interior piece of material with no remaining cortex. The item exhibits two irregular sides with sharp edges and two straight sides with worn edges potentially indicating utilization. Despite additional 2 m close interval survey transects, no additional cultural materials or features were observed within a 15 m radius of the find.

Site 39MD1026 is situated within an intermittent drainage and disturbed by periodic water erosion. Current observations suggest the cultural materials are not in a primary or original context. No subsurface testing was conducted due to adequate GSV and low buried site probability (see Table 2). The site possesses little integrity and would offer limited additional research potential to prehistoric lithic procurement and modification activities in the region. As such, the investigators recommend 39MD1026 Not Eligible for NRHP listing. No further work is recommended at the site.





**Figure 17. Overview of 39MD1026. View is to the south. Date: 10/04/2021.**



**Figure 18. Overview of 39MD1026. View is to the east. Date: 10/04/2021.**



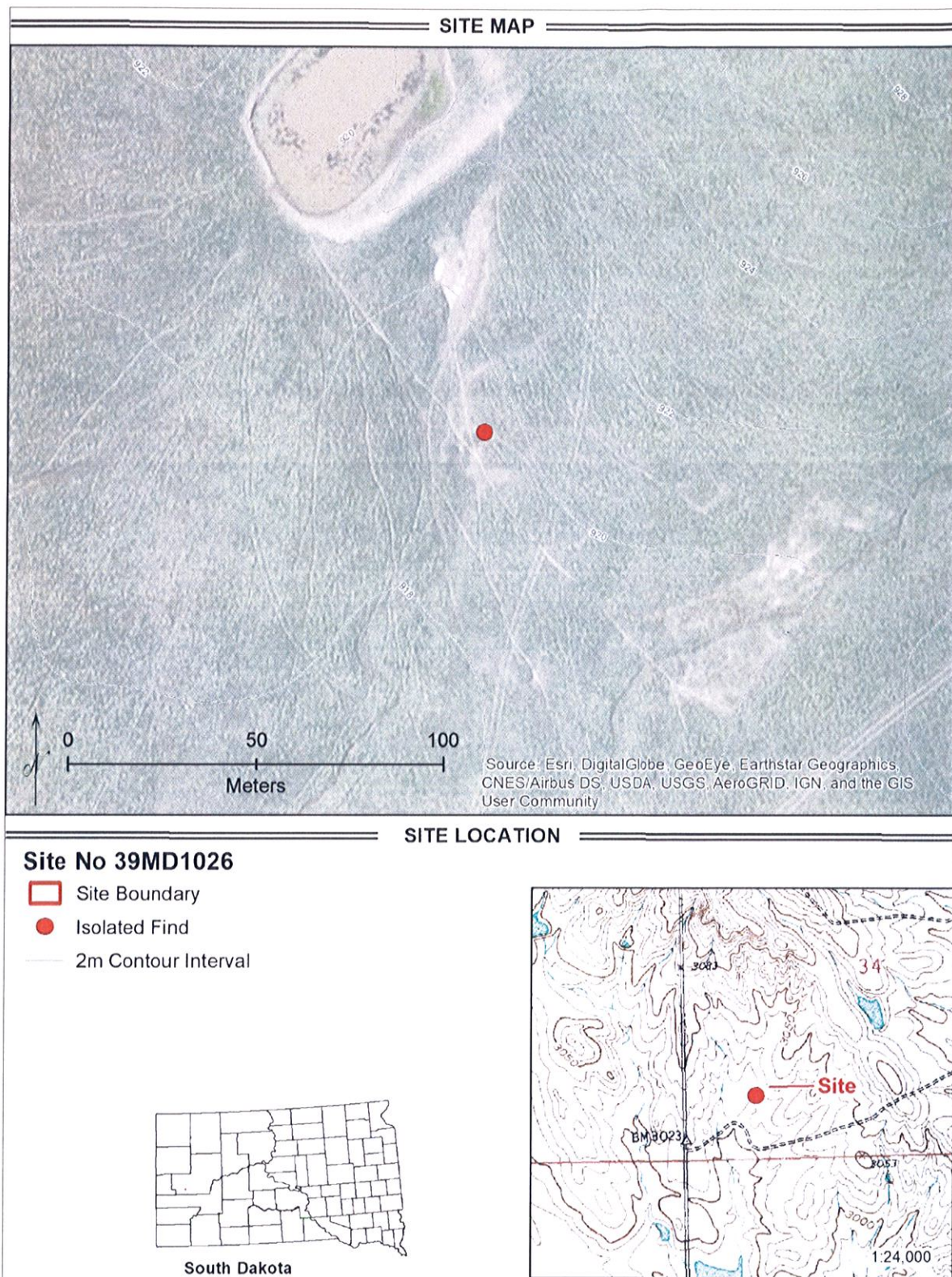


Figure 19. Plan view map of 39MD1026 illustrated on FSA 2020 orthophoto.





Figure 20. Close-up of possible tool (left) and flakes at 39MD1026. Date: 10/04/2021.

### **39MD1027**

New site 39MD1027 is an American Indian isolated find consisting of a single chipped stone artifact of unknown cultural or temporal affiliation. The find, designated as PP1, is situated at an elevation of 2995 ft (913 m) AMSL along a low ridge or knoll between two shallow gullies (Figures 21–23). The site covers an approximate area of 0.03 ha (0.07 ac). Soils are comprised of Pierre clay residuum weathered from shale. Vegetation consisted of short, mixed prairie grasses providing an average GSV of 40 percent. A sparse amount gravels and/or cobbles originating from Black Hills outwash deposits were noted west of the site. Disturbances within the immediate site vicinity included evidence of past water erosion and some animal burrowing activity exhibiting clayey soil back dirt piles.

The chipped stone artifact, designated PP1, is a primary chalcedony flake exhibiting possible utilization along one edge (Figure 24). Locally available chalcedony pebbles and cobbles are present in lag deposits throughout the project area. Close inspection of animal back dirt piles and additional 2 m interval transects yielded negative results for cultural materials or features within a 15 m radius of the find.

Given the site setting and lack of soil development, the potential for buried subsurface materials is very limited. No subsurface testing was conducted due to adequate GSV and low buried site probability (see Table 2). The site possesses little integrity and would offer limited research potential to prehistoric lithic procurement and modification activities in the region. As such, the investigators recommend 39MD1026 Not Eligible for NRHP listing. No further work is recommended at the site.



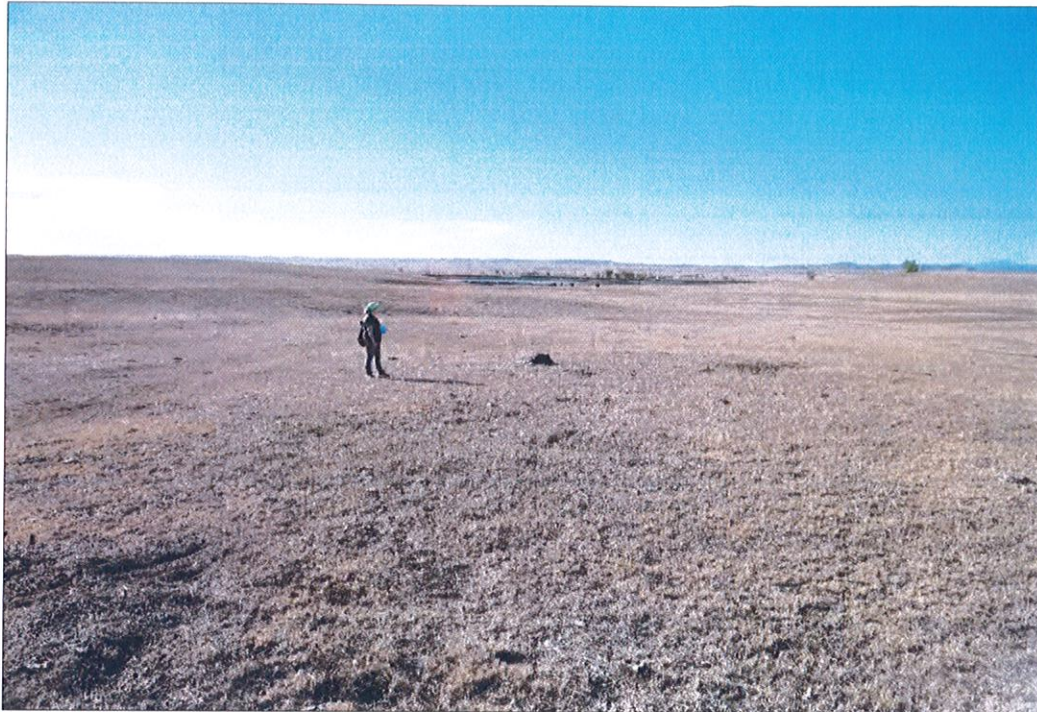


Figure 21. Overview of 39MD1027. View is to the south. Date: 10/07/2021.



Figure 22. Overview of 39MD1027. View is to the west-southwest. Date: 10/07/2021.



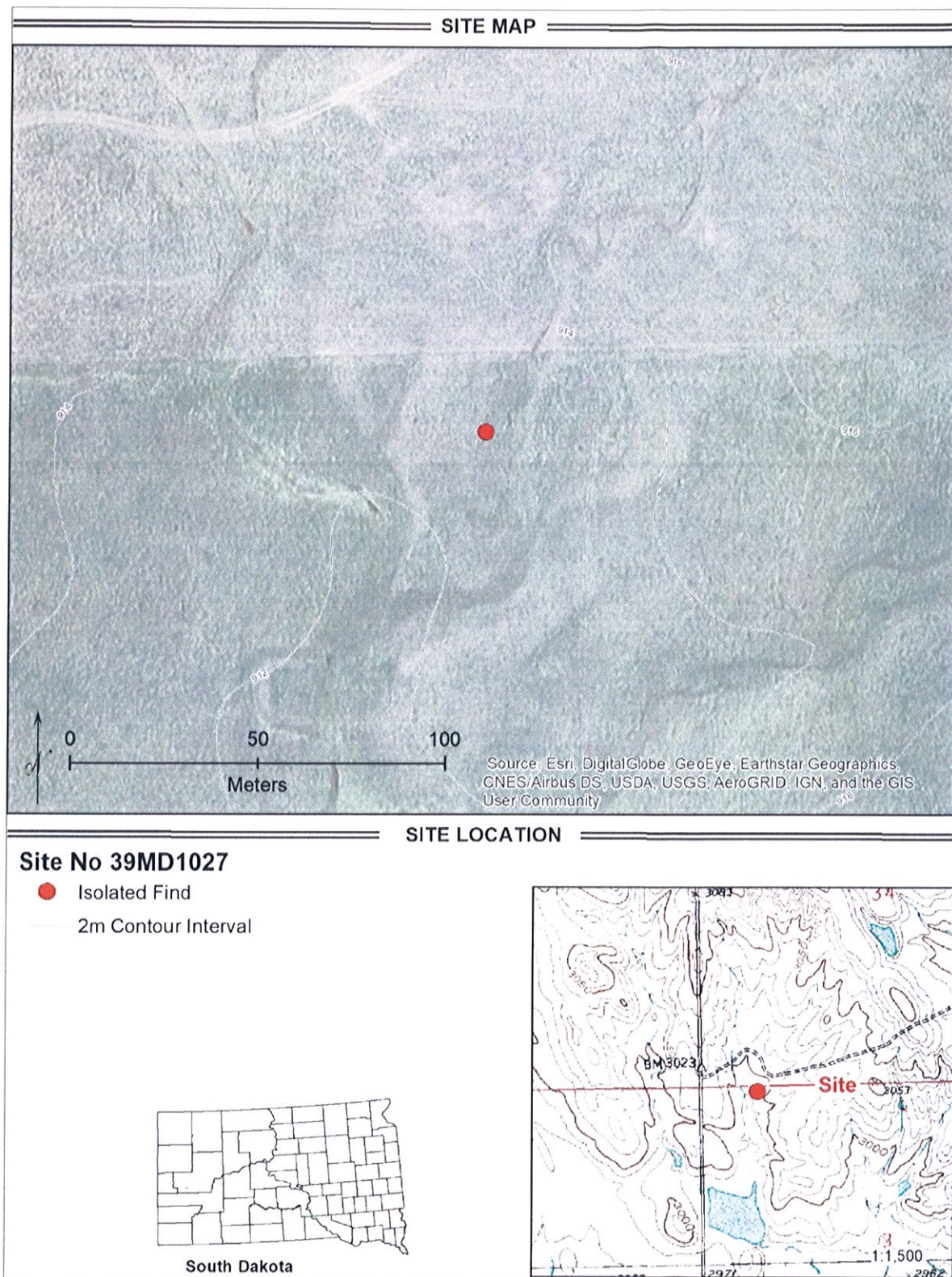


Figure 23. Plan view map of 39MD1027 illustrated on FSA 2020 orthophoto.



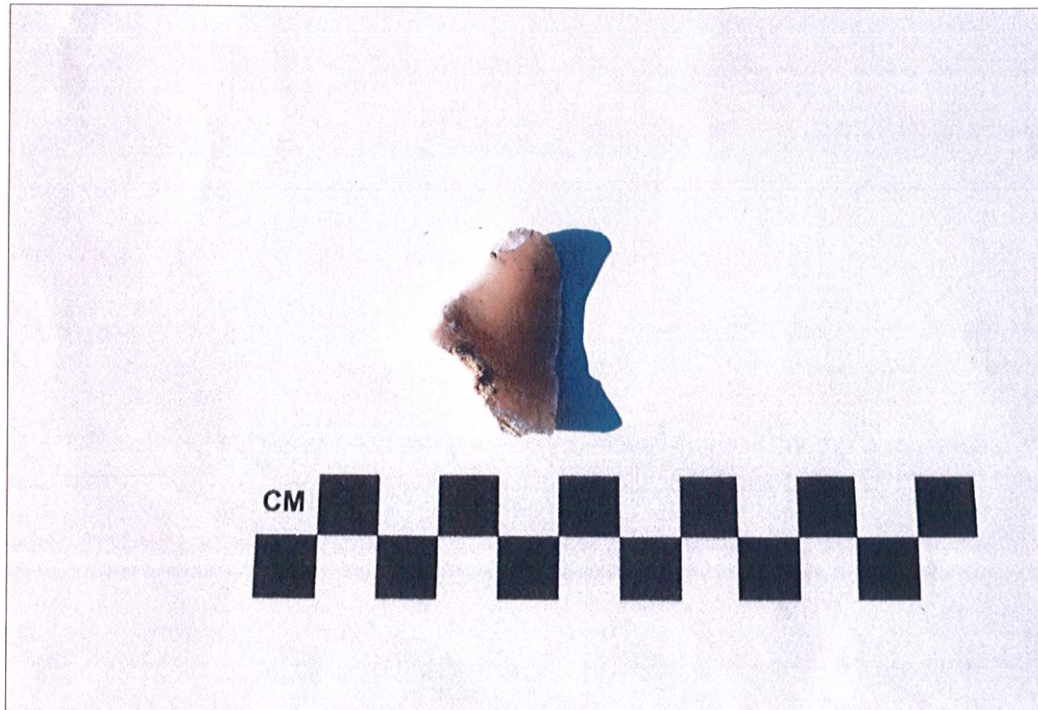


Figure 24. Close-up of chalcedony flake at 39MD1027. Date: 10/07/2021.

### **39MD1028**

New site 39MD1028 is an American Indian isolated find of unknown cultural or temporal affiliation. The find, designated as PP1, consisted of a single chipped stone artifact observed on a ridge slope at an elevation of 3021 ft (921 m) AMSL (Figures 25–27). Soils are comprised of Pierre clay residuum weathered from shale with vegetation cover that consisted of short, mixed prairie grasses affording an average GSV of 40 percent. Very few gravels and cobbles were present in the immediate site vicinity. Noted disturbances included animal burrowing activity exhibiting clayey soils in back dirt piles along the adjacent ridge crest and slopes.

The chipped stone artifact is a patinated, broken chalcedony flake (Figure 28). Lag deposits containing locally available chalcedony materials were noted throughout the project area, the nearest observed within an intermittent drainage located 100m to the east. Additional survey at 2 m transect intervals and close inspection of animal back dirt piles within a 15 m radius of the find yielded negative results for cultural materials or features.

No subsurface testing was conducted at 39MD1028 due to adequate GSV, the lack of soil development, and low buried site probability (see Table 2). The site possesses little integrity and would offer limited additional research potential to prehistoric lithic procurement and modification activities in the region. As such, the investigators recommend 39MD1028 Not Eligible for NRHP listing. No further work is recommended at the site.





**Figure 25. Overview of 39MD1028. View is to the southeast. Date: 10/07/2021.**



**Figure 26. Overview of 39MD1028. View is to the north-northwest. Date: 10/07/2021.**



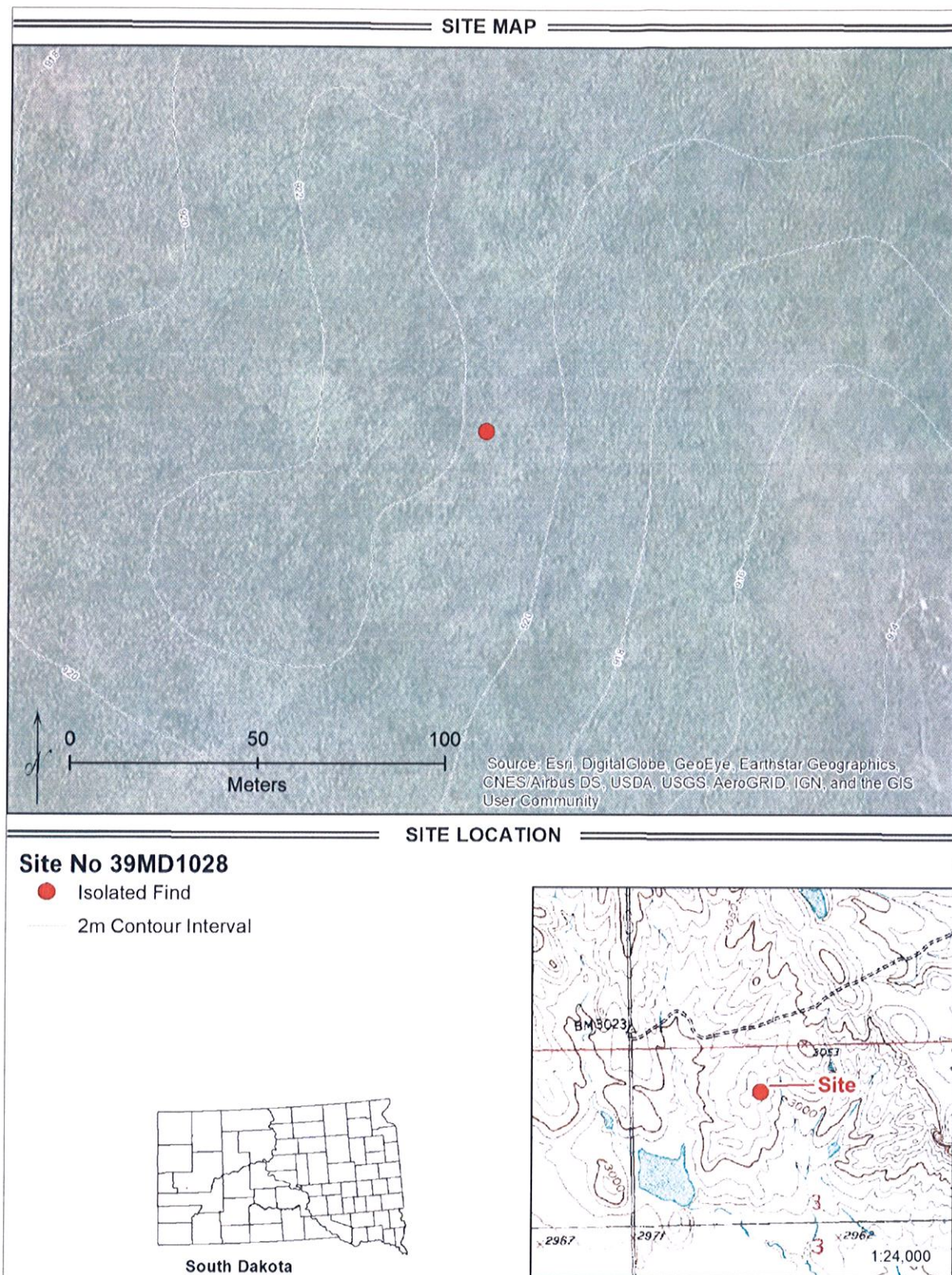


Figure 27. Plan view map of 39MD1028 illustrated on FSA 2020 orthophoto.



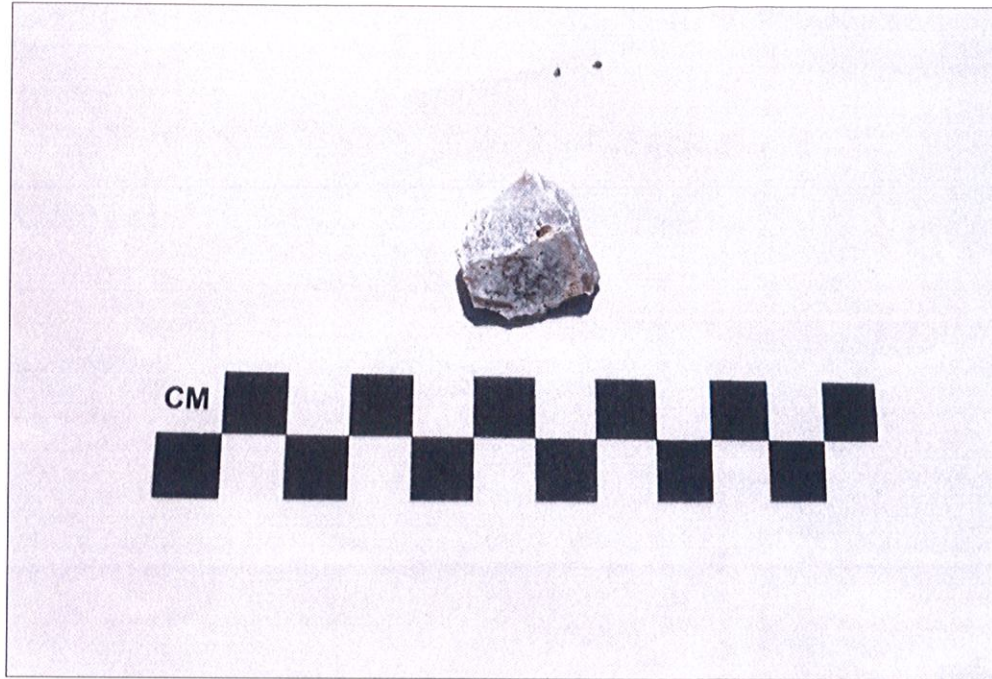


Figure 28. Close-up of chalcedony flake at 39MD1028. Date: 10/07/2021.

### **39MD1029**

New site 39MD1029 is an American Indian isolated find of Archaic or Late Prehistoric period temporal affiliation. The find, designated as PP1, consisted of an incomplete projectile point observed in an intermittent drainage at an elevation of 2985 ft (910 m) AMSL (Figures 29–31). Soils along the drainage floodplain are comprised of channeled Lohmiller and Glenberg residuum weathered from shale. Vegetation consisted of short, mixed prairie grasses affording an average GSV of 50 percent. Disturbances at the site location appear limited to periodic water erosion within the intermittent drainage floodplain.

The incomplete projectile point is manufactured from a semi-translucent brown chalcedony (Figure 32). The point is missing the blade tip, plus a portion of the lower blade and majority of basal hafting elements. The maximum dimensions of the point measure 3.5 cm in length by 2.3 cm in width and exhibits corner or side-notching with a triangular-shaped blade. The incomplete point lacks sufficient attributes to provide a specific cultural affiliation, however the form, available dimensions, and craftsmanship of the item suggests an Archaic or Late Prehistoric period temporal affiliation.

Survey at 2 m transect intervals yielded negative results for additional cultural deposits within a 15 m radius of the find. The setting within an intermittent drainage suggests site context is most likely disturbed by fluvial processes. No subsurface testing was conducted at 39MD1029 due to adequate GSV, the lack of soil development, and low buried site probability (see Table 2). The site possesses little integrity and offers limited additional research potential to prehistoric resource procurement activities in the region. As such, the investigators recommend 39MD1029 Not Eligible for NRHP listing. No further work is recommended at the site.





**Figure 29. Overview of 39MD1029. View is to the north-northwest. Date: 10/07/2021.**



**Figure 30. Overview of 39MD1029. View is to the south-southeast. Date: 10/07/2021.**



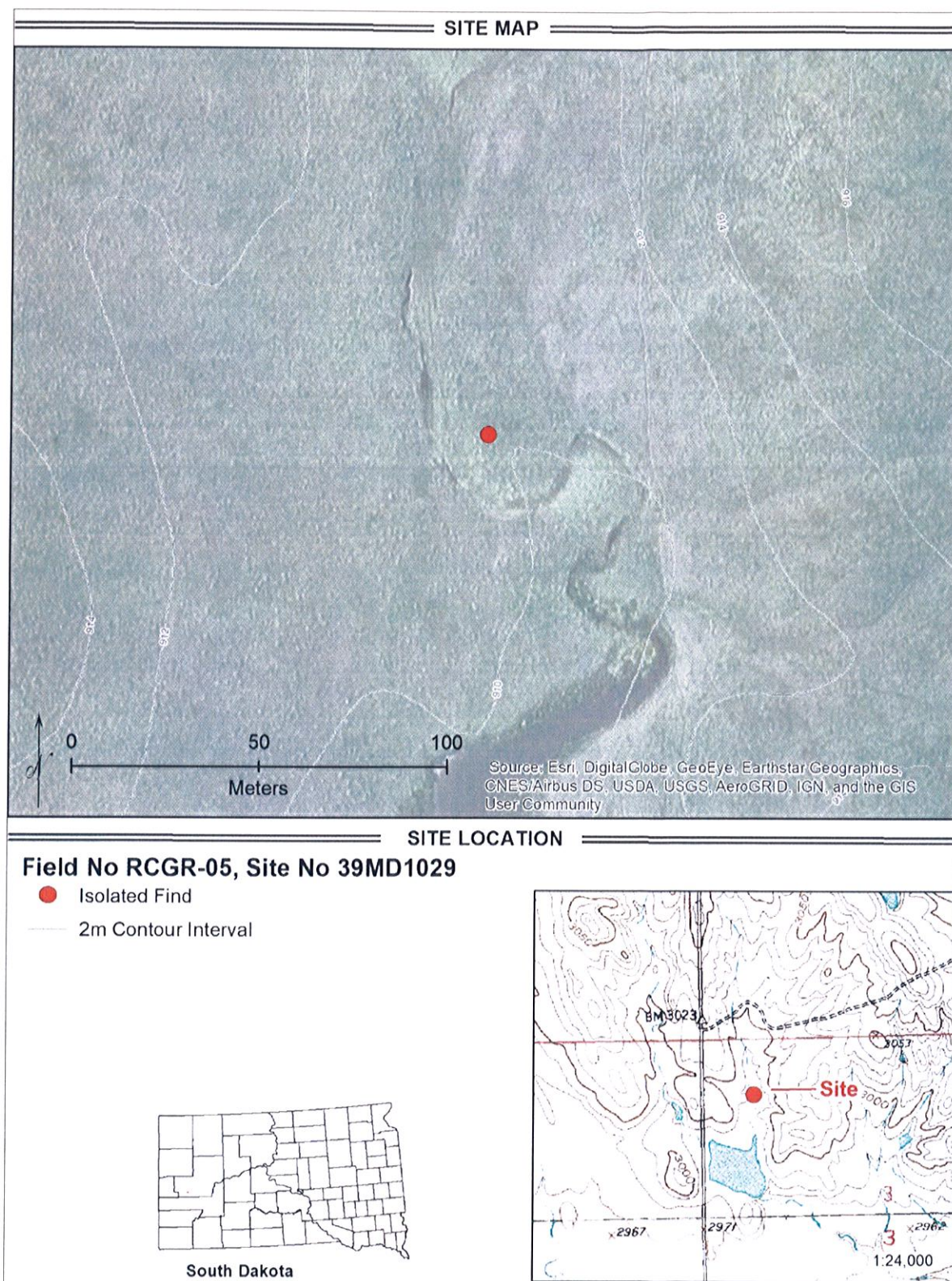


Figure 31. Plan view map of 39MD1028 illustrated on FSA 2020 orthophoto.





Figure 32. Close-up of incomplete projectile point at 39MD1029. Date: 10/07/2021.

### Subsurface Testing Results

Investigators excavated a total of three shovel tests (ST-01 to ST-03) along the high terrace within the northern project area. Despite the low probability for buried sites (see Table 2), subsurface testing was conducted to assess the character of alluvial soils and their potential for buried deposits. The three tests were spaced at 240 m intervals across the length of the high terrace and excavated in 10 cm arbitrary levels to varying depths of 30–50 cmbs based on soil stratigraphy and the presence or absence of cultural materials.

All units yielded negative results for shallow subsurface cultural deposits and the presence of buried soil horizons. Soil profiles were consistent in texture and structure for ST-01 and ST-03. Both units were excavated within the mapped limits of Nunn clay loam soils and exhibited a clay loam horizon with blocky to prismatic structure extending beyond the maximum depths (30–40 cmbs) of excavation. Unit ST-02 was excavated near the mapped boundary between Nunn clay loam soils and Zigweid-Nihill complex soils. By comparison, the profile for ST-02 was significantly different, and exhibited a higher silt content and a granular structure between 0–30 cmbs above a clay loam horizon similar to the other units.

Soil profiles suggest any potential cultural manifestations across the high terrace would most likely be shallow, near surface deposits. No additional subsurface testing was conducted based the absence of cultural deposits and soil stratigraphy indicating the absence of buried, cultural-bearing soil horizons.





Figure 33. Location overview of ST-01 within Rapid City Firearms Complex Range project area. View to the south. Date: 10/08/2021.



Figure 34. Close-up of ST-01 within the Rapid City Firearms Complex Range project area. View to the north. Date: 10/08/2021.





Figure 35. Location overview of ST-02 within the Rapid City Firearms Complex Range project area. View to the south. Date: 10/08/2021.



Figure 36. Close-up of ST-02 within the Rapid City Firearms Complex Range project area. View to the north. Date: 10/08/2021.





Figure 37. Location overview of ST-03 within the Rapid City Firearms Complex Range project area. View to the west. Date: 10/08/2021.



Figure 38. Close-up of ST-02 within the Rapid City Firearms Complex Range project area. View to the north. Date: 10/08/2021.



Table 4. Shovel test results for the proposed Rapid City Firearms Complex Range project area, Meade County.

ST No.	Results	Depth (cmbs)	Munsell	Color	Texture	Structure	Comments	UTMs (Zone 13)	
								Easting	Northing
01	Negative	0-4	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Granular	Desiccation cracks extending total depth of unit; gravels <15% of soil volume, ranging up to 3.5 cm in size in all levels; calcium carbonate masses starting at 30 cmbs.	647794.76	4903525.87
		4-40	10YR 4/2	Dark Grayish Brown	Silty Clay	Blocky to Prismatic			
02	Negative	0-3	10YR 4/2	Dark Grayish Brown	Silt Loam	Granular	Desiccation cracks extending total depth of unit; gravels ~15% of soil volume between 0-10 cmbs, ranging up to 9.0 cm in size; gravel size and volume decreases significantly at 10-20 cmbs and continued with depth; calcium carbonate masses starting at 40 cmbs.	648002.00	4903397.97
		3-15	10YR 4/2	Dark Grayish Brown	Silty Clay Loam	Granular			
		15-30	10YR 3/1	Very Dark Gray	Silty Clay Loam	Granular			
		30-50	10YR 4/2	Dark Grayish Brown	Clay Loam	Blocky			
03	Negative	0-3	10YR 3/2	Very Dark Grayish Brown	Silty Clay Loam	Granular	Desiccation cracks extending total depth of unit; gravels <15% of soil volume between 0-10 cmbs, ranging up to 7.0 cm in size; gravel decreasing in size and volume with depth; calcium carbonate masses starting at 30 cmbs.	647595.54	4903656.47
		3-30	10YR 2/2	Very Dark Brown	Clay Loam	Blocky			



## **CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS**

The current investigation resulted in the survey of the proposed SDGFP Rapid City Gun Range Complex project area, Meade County, South Dakota. Proposed project activities include three primary range development areas. The South End Range development includes a hunter education building with associated green space area, six 50-yard bays, six 100-yard bays, a 200 to 300-yard shooting area with multiple lanes, plus a multiple lane stationary shotgun clay target area. The Long Range is situated adjacent to the South End Range and will include a two-bay 300 to 1,200-yard range with multiple lanes. The North End Range will include eleven 50-yard, three 75-yard, and three 100-yard shooting bays, a versatile training area, plus a multiple lane sporting clay target area. Proposed ancillary support development includes access roads and parking, plus vault toilet structures and storage sheds. Construction within all areas will include varying degrees of earthmoving activities, structural development, plus some electrical and sewage utilities. The project is funded by the USFWS through the WSFR Program by funds generated through the Pittman-Robertson Restoration Act. The project APE covered 146 ha (360 ac) in the South Fork Cheyenne Archaeological Region. The Class III inventory and documentation of new archaeological sites took place during the period of October 04 – 08, 2021. ARC personnel conducted pedestrian survey and subsurface .

This investigation resulted in the documentation of five new archaeological sites. New site 39MD1025 is an American Indian stone cairn site of unknown temporal or cultural affiliation. This site is recommended Eligible for NRHP listing under Criterion D. New sites 39MD1026, 39MD1027, 39MD1028 are American Indian isolated finds of unknown temporal or cultural affiliation. New Site 39MD1029 is an American Indian isolated find of Archaic or Late Prehistoric temporal affiliation. All four new isolated find sites are recommended Not Eligible for NRHP listing.

As a result of the current survey, and if the SHPO concurs with the site eligibility recommendations described above, the investigators recommended a Section 106 Finding of No Historic Properties Affected relative to the proposed construction provided site 39MD1025 is avoided by proposed ground disturbing activities. It is further recommended that should any evidence of buried cultural resources be encountered during project construction activities, such activities be immediately halted and the SHPO in Pierre, or the ARC in Rapid City be notified immediately in order to determine an appropriate course of action. As a reminder, the information contained herein is protected by state law SDCL 1-20-21.2 and is not for public distribution.

## **STATE PLAN**

The intensive cultural resources survey conducted for the proposed SDGFP Rapid City Gun Range Complex project resulted in the inventory of 146 ha (360 ac) of terrain in the South Fork Cheyenne Archaeological Region. The investigation documented five new Prehistoric sites.



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Winham, R. Peter, and L. Adrien Hannus (continued)

- 1991 *South Dakota State Plan for Archaeological Resources: 1900-1991 UPDATE*. Archeology Laboratory, Augustana College, Sioux Falls, South Dakota. Submitted to the South Dakota Historic Preservation Center, Vermillion. Copies available from the Archaeological Research Center, Rapid City, South Dakota.



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**SD STATE ARCHAEOLOGICAL RESEARCH CENTER****Site No** 9MD1025

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<b>County</b>	Meade	<b>Site Name</b>	
<b>Other No</b>	RCGR-01	<b>NR Status</b>	Eligible
<b>Map Reference</b>	Cottonwood Draw	<b>Owner</b>	Private
<b>Arch. Region</b>	SOUTH FORK CHEYENNE	<b>Topo pos</b>	RIDGE CREST
<b>Vegetation</b>	MIXED GRASS	<b>Substrate</b>	SILT
		<b>Land Use</b>	PASTURE
<b>UTM centroid:</b>	<b>coord. system:</b> NAD 83	<b>zone</b>	13 / 647732 E/ 4903052 N
<b>Surf. visibility</b>	25 %	<b>Site elevation</b>	961 m <b>Condition</b> Extant
<b>Site Dim. N-S</b>	98 m	<b>E-W</b>	53 m; <b>Area</b> 0.33 ha; <b>Depth</b> 10 cm
<b>Nearest Water Type</b>	INTERMITTENT STREAM	<b>Name</b>	Unnamed
<b>Distance</b>	38 m	<b>Elevation</b>	950 m <b>Direction</b> SW <b>Bank</b> L

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**LOCATIONS**

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Legal Locations	Section	Twp	Rq
SWNW	34	4N	8E

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**COMPONENTS**

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Site Type	Time Period	Cultural Affiliation
Cairn		American Indian

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**COMMENTS**

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**Comments/site description (i.e. artifacts/features observed)**

New site 39MD1025 is a cairn site of unknown American Indian cultural or temporal affiliation. Site consists of two prehistoric rock cairns (Feature 1 and Feature 2) overlooking Elk Creek, with a viewshed that includes Black Hills and Bear Butte. Feature 1 is an undisturbed and well-sodded, elongated cairn measuring 1.60 x 2.08 m following an east-southeast to west-northwest alignment. The feature reaches an approximate height of 0.15 m and is constructed of 32 visible, lichen encrusted stones. Feature 2 is a small, disturbed cairn measuring approximately 0.75 m north-south by 0.90 m east west. The cairn is constructed from an undetermined number of stones that are mostly large cobbles in size. The feature is disturbed by recent four-wheeler traffic resulting in stone displacement. Naturally occurring disturbances appear to include anthill development, prickly pear cactus growth, a possible collapsed rodent burrow forming a shallow depression in the feature center, and potential stone displacement from cattle grazing activity. No cultural materials were observed in association with the features. Despite the level of disturbance at Feature 2, the site retains a high degree of integrity and offers additional research potential relevant to prehistoric cairn utilization sub-contexts identified in the State Plan for Archaeological Resources (Sundstrom 2019:III-50-59). As such, the investigators recommend 39MD1025 Eligible for NRHP listing and that the site be avoided by proposed project activities.

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## SD STATE ARCHAEOLOGICAL RESEARCH CENTER

Site No **9MD1025**

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### Evaluation/collection methods

Pedestrian survey at 15m intervals, GPS recordation, digital photos, ARC Site Visit Record form. No collection.

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Owner name/address/attitude **Private/Positive**

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Prepared by **Matthew D. Busch/Logan Bullard**

Date **10/05/2021**

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Project **SDGFP Rapid City Gun Range Complex**

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SD STATE ARCHAEOLOGICAL RESEARCH CENTER  
Field No RCGR-01, Site No 39MD1025

SITE MAP

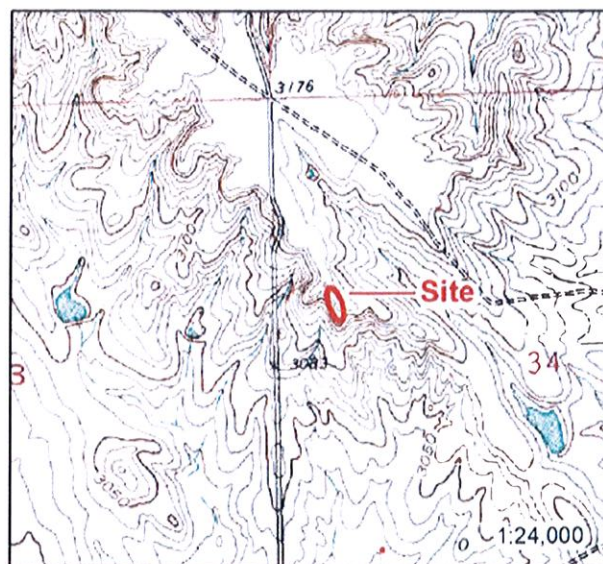


SITE LOCATION

-  Site Boundary
-  Feature
-  2m Contour Interval



South Dakota





# SD STATE ARCHAEOLOGICAL RESEARCH CENTER

Site No **9MD1026**

<b>County</b>	Meade	<b>Site Name</b>	
<b>Other No</b>	RCGR-02	<b>NR Status</b>	Not eligible
<b>Map Reference</b>	Cottonwood Draw	<b>Owner</b>	GFP
<b>Arch. Region</b>	SOUTH FORK CHEYENNE	<b>Topo pos</b>	GULLY
<b>Vegetation</b>	MIXED GRASS	<b>Substrate</b>	CLAY
		<b>Land Use</b>	PASTURE
<b>UTM centroid:</b>	<b>coord. system:</b> NAD 83	<b>zone</b>	13 / 647877 E/ 4902329 N
<b>Surf. visibility</b>	60 %	<b>Site elevation</b>	919 m
		<b>Condition</b>	Disturbed
<b>Site Dim. N-S</b>	1 m	<b>E-W</b>	1 m;
		<b>Area</b>	0 ha;
		<b>Depth</b>	10 cm
<b>Nearest Water Type</b>	INTERMITTENT STREAM		<b>Name</b> Unnamed
<b>Distance</b>	150 m	<b>Elevation</b>	918 m
		<b>Direction</b>	W
		<b>Bank</b>	L

## LOCATIONS

Legal Locations	Section	Twp	Rg
SWSW	34	4N	8E

## COMPONENTS

Site Type	Time Period	Cultural Affiliation
Isolated Find		American Indian

## COMMENTS

### Comments/site description (i.e. artifacts/features observed)

New site 39MD1026 is an American Indian isolated find of unknown cultural or temporal affiliation. The find, designated as PP1, consisted of two chipped stone artifacts and one possible stone tool recorded within a small 1 x 1 m area. Artifacts include two gray-colored, fine-grained Black Hills quartzite flakes and one possible clear quartz tool observed within an intermittent drainage. Despite 2 m close interval survey transects, no additional cultural materials or features were observed within a 15 m radius of the find. The site is situated within an intermittent drainage and disturbed by periodic water erosion. Current observations suggest the cultural materials are not in a primary or original context. Investigators recommend 39MD1026 Not Eligible for NRHP listing. No further work is recommended at the site.

### Evaluation/collection methods

Pedestrian survey at 15m intervals, GPS recordation, digital photos, ARC Site Visit Record form. No collection.

**Owner name/address/attitude** Private/Positive

**Prepared by** Matthew D. Busch/Logan Bullard

**Date** 10/06/2021



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SD STATE ARCHAEOLOGICAL RESEARCH CENTER

Site No 9MD1026

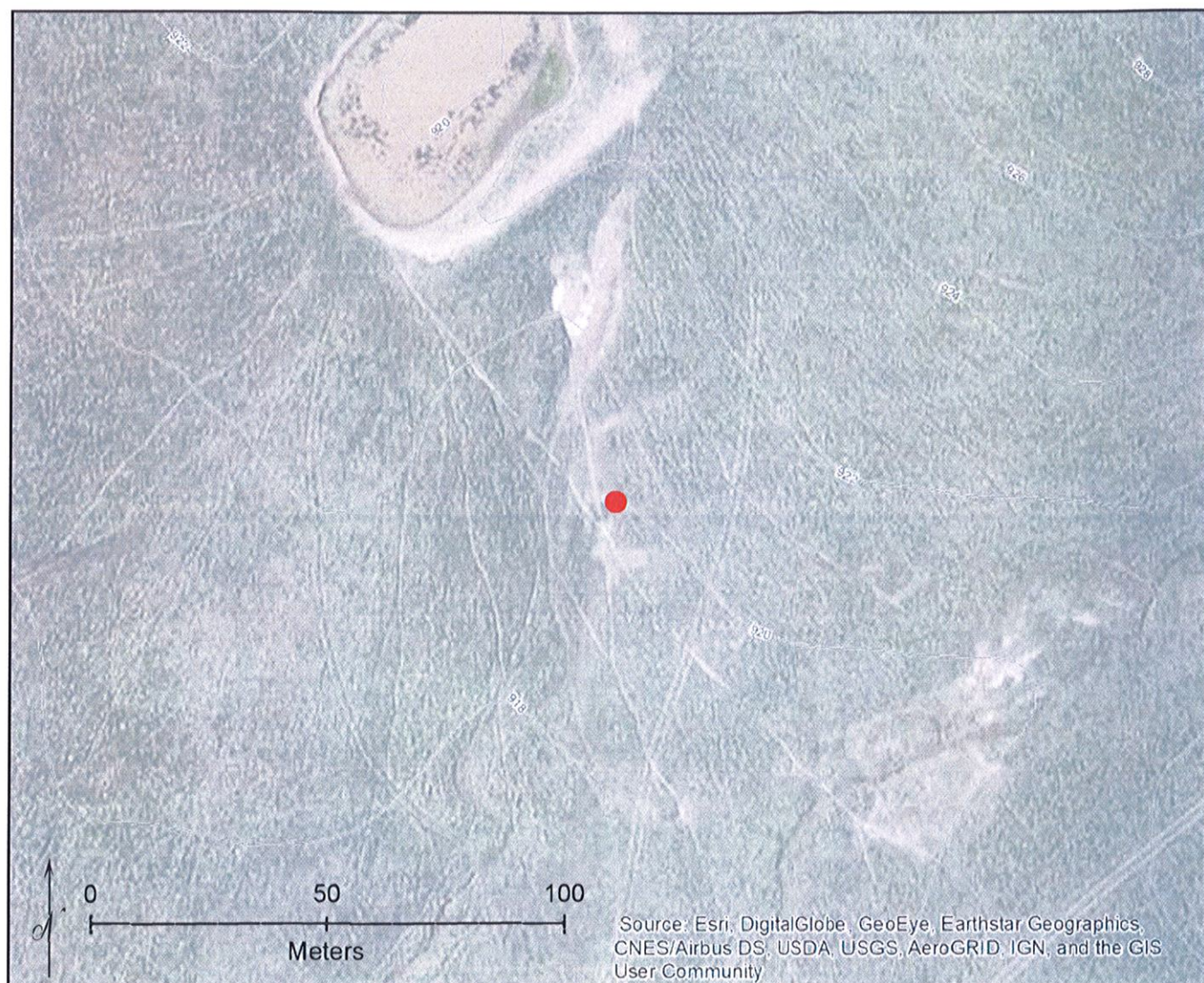
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Project SDGFP Rapid City Gun Range Complex

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## SITE MAP

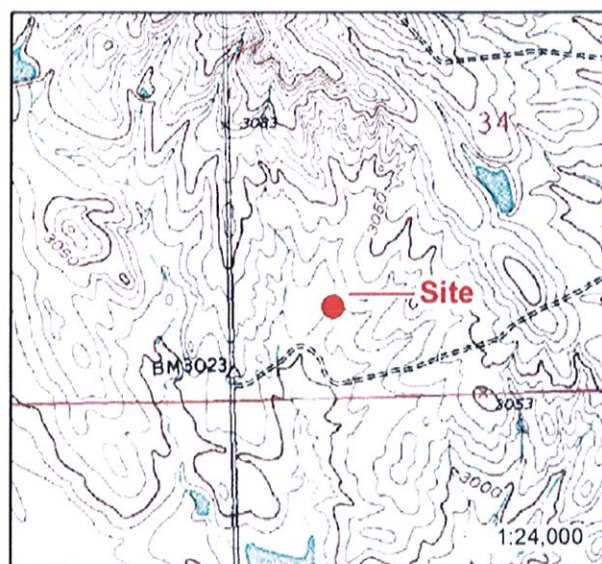


## SITE LOCATION

- Isolated Find
- 2m Contour Interval



## South Dakota





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**SD STATE ARCHAEOLOGICAL RESEARCH CENTER****Site No** 9MD1027

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<b>County</b>	Meade	<b>Site Name</b>	
<b>Other No</b>	RCGR-03	<b>NR Status</b>	Not eligible
<b>Map Reference</b>	Cottonwood Draw	<b>Owner</b>	Private
<b>Arch. Region</b>	SOUTH FORK CHEYENNE	<b>Topo pos</b>	GULLY
<b>Vegetation</b>	MIXED GRASS	<b>Substrate</b>	CLAY
		<b>Land Use</b>	PASTURE
<b>UTM centroid:</b>	<b>coord. system:</b> NAD 83	<b>zone</b>	13 / 647824 E/ 4902037 N
<b>Surf. visibility</b>	40 %	<b>Site elevation</b>	913 m <b>Condition</b> Disturbed
<b>Site Dim. N-S</b>	1 m	<b>E-W</b>	1 m; <b>Area</b> 0 ha; <b>Depth</b> 10 cm
<b>Nearest Water Type</b>	INTERMITTENT STREAM	<b>Name</b>	Unnamed
<b>Distance</b>	60 m	<b>Elevation</b>	912 m <b>Direction</b> W <b>Bank</b> L

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**LOCATIONS**

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<b>Legal Locations</b>	<b>Section</b>	<b>Twp</b>	<b>Rg</b>
NWNW	3	3N	8E

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**COMPONENTS**

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<b>Site Type</b>	<b>Time Period</b>	<b>Cultural Affiliation</b>
Isolated Find		American Indian

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**COMMENTS**

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**Comments/site description (i.e. artifacts/features observed)**

New site 39MD1027 is an American Indian isolated find consisting of a single chipped stone artifact of unknown cultural or temporal affiliation. The item was observed on surface of a low knoll between two shallow gullies. The chipped stone artifact, designated PP1, is a primary chalcedony flake exhibiting possible utilization along one edge. Close inspection of animal back dirt piles and additional 2 m interval transects yielded negative results for cultural materials or features within a 15 m radius of the find. No subsurface testing was conducted due to adequate GSV and the lack of soil development. Investigators recommend 39MD1026 Not Eligible for NRHP listing. No further work is recommended at the site.

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**Evaluation/collection methods**

Pedestrian survey at 15m intervals, GPS recordation, digital photos, ARC Site Visit Record form. No collection.

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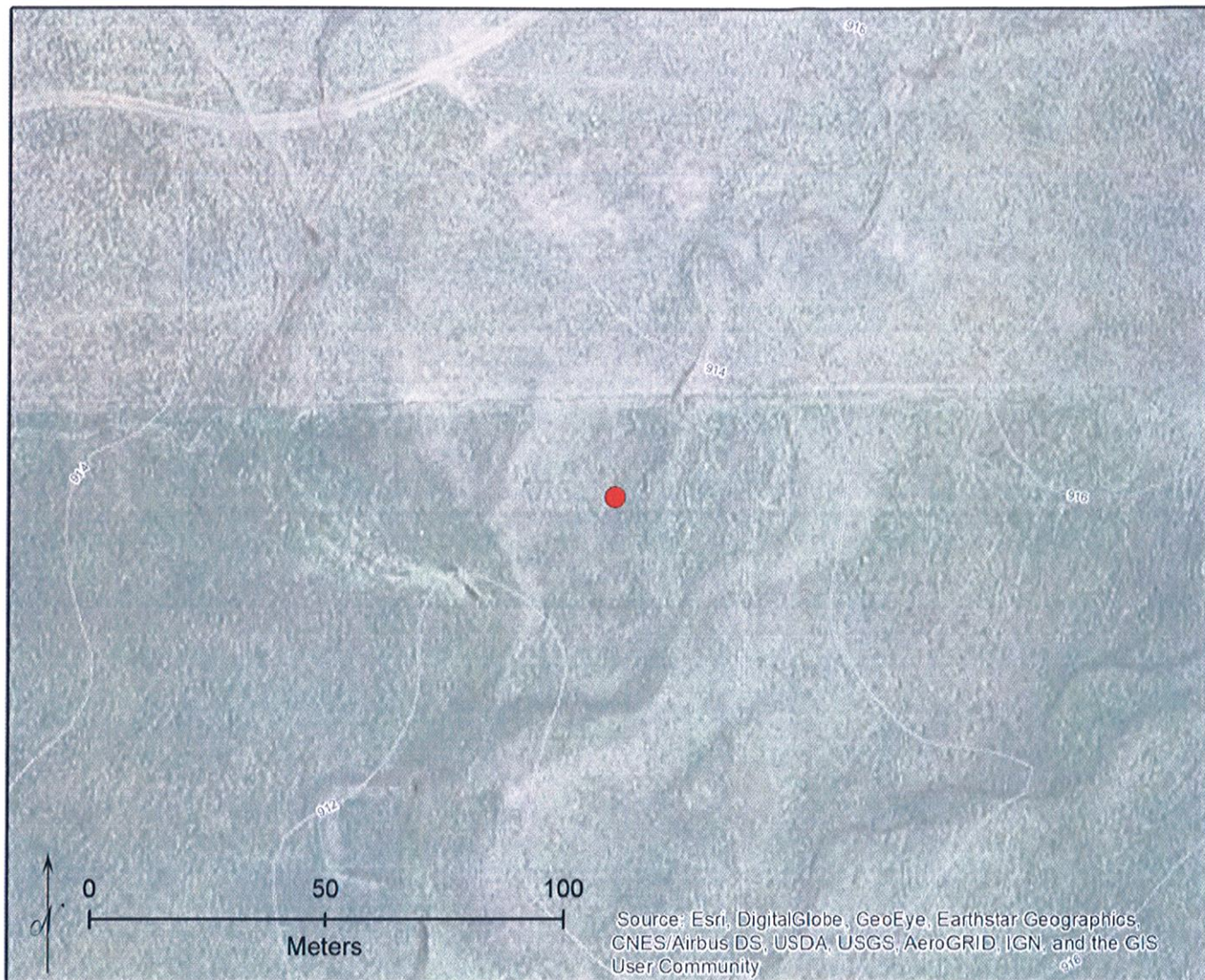
**Owner name/address/attitude** Private/Positive**Prepared by** Matthew D. Busch/Amy Woodruff**Date** 10/07/2021**Project** SDGFP Rapid City Gun Range Complex

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SD STATE ARCHAEOLOGICAL RESEARCH CENTER  
Field No RCGR-03, Site No 39MD1027

SITE MAP

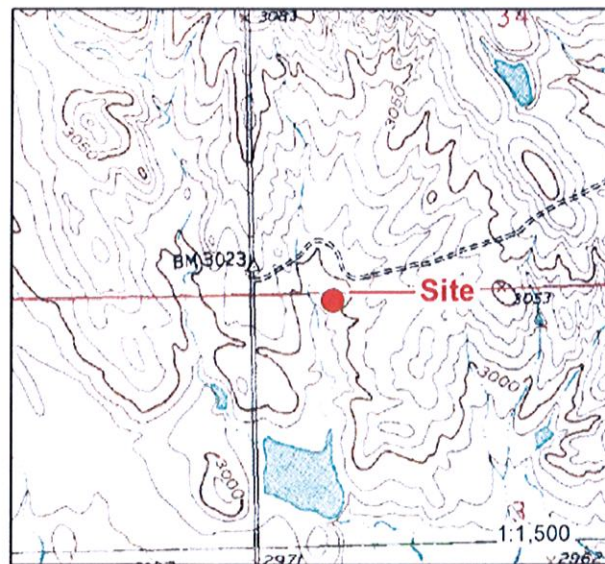


SITE LOCATION

- Isolated Find
- 2m Contour Interval



South Dakota





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**SD STATE ARCHAEOLOGICAL RESEARCH CENTER****Site No** 9MD1028

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<b>County</b>	Meade	<b>Site Name</b>	
<b>Other No</b>	RCGR-04	<b>NR Status</b>	Not eligible
<b>Map Reference</b>	Cottonwood Draw	<b>Owner</b>	Private
<b>Arch. Region</b>	SOUTH FORK CHEYENNE	<b>Topo pos</b>	RIDGE SLOPE
<b>Vegetation</b>	MIXED GRASS	<b>Substrate</b>	CLAY
		<b>Land Use</b>	PASTURE
<b>UTM centroid:</b>	<b>coord. system:</b> NAD 83	<b>zone</b>	13 / 648146 E/ 4901872 N
<b>Surf. visibility</b>	40 %	<b>Site elevation</b>	921 m <b>Condition</b> Extant
<b>Site Dim. N-S</b>	1 m	<b>E-W</b>	1 m; <b>Area</b> 0 ha; <b>Depth</b> 10 cm
<b>Nearest Water Type</b>	INTERMITTENT STREAM	<b>Name</b>	Unnamed
<b>Distance</b>	92 m	<b>Elevation</b>	916 m <b>Direction</b> E <b>Bank</b> R

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**LOCATIONS**

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Legal Locations	Section	Twp	Rg
NENW	3	3N	8E

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**COMPONENTS**

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Site Type	Time Period	Cultural Affiliation
Isolated Find		American Indian

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**COMMENTS**

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**Comments/site description (i.e. artifacts/features observed)**

New site 39MD1028 is an American Indian isolated find of unknown cultural or temporal affiliation. The find, designated as PPI, consisted of a single chalcedony tertiary flake observed on an east-facing ridge slope. Additional survey at 2 m transect intervals and close inspection of animal back dirt piles within a 15 m radius of the find yielded negative results for cultural materials or features. No subsurface testing was conducted due to adequate GSV and the lack of soil development. Investigators recommend 39MD1028 Not Eligible for NRHP listing. No further work is recommended at the site.

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**Evaluation/collection methods**

Pedestrian survey at 15m intervals, GPS recordation, digital photos, ARC Site Visit Record form. No collection.

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**Owner name/address/attitude** Private/Positive**Prepared by** Matthew D. Busch/Amy Woodruff**Date** 10/07/2021**Project** SDGFP Rapid City Gun Range Complex

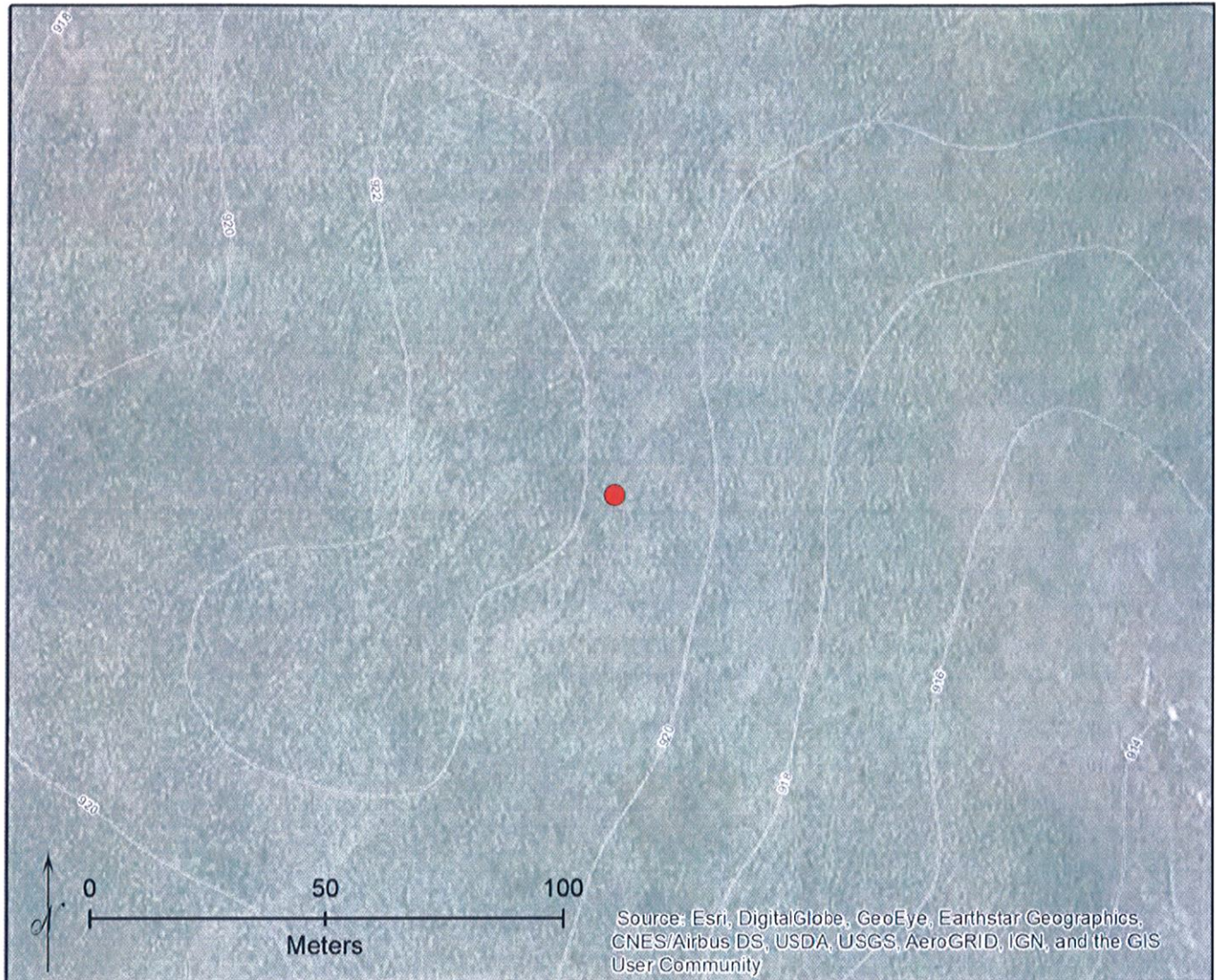
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# SD STATE ARCHAEOLOGICAL RESEARCH CENTER

Field No RCGR-04, Site No 39MD1028

## SITE MAP



## SITE LOCATION



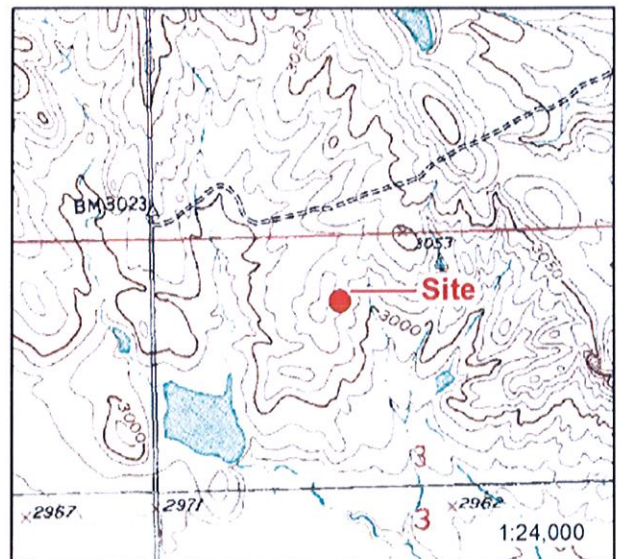
Isolated Find



2m Contour Interval



South Dakota





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**SD STATE ARCHAEOLOGICAL RESEARCH CENTER****Site No** 9MD1029

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<b>County</b>	Meade	<b>Site Name</b>	
<b>Other No</b>	RCCR-05	<b>NR Status</b>	Not eligible
<b>Map Reference</b>	Cottonwood Draw	<b>Owner</b>	Private
<b>Arch. Region</b>	SOUTH FORK CHEYENNE	<b>Topo pos</b>	GULLY
<b>Vegetation</b>	MIXED GRASS	<b>Substrate</b>	CLAY
		<b>Land Use</b>	PASTURE
<b>UTM centroid:</b>	<b>coord. system:</b> NAD 83	<b>zone</b>	13 / 647808 E/ 4901823 N
<b>Surf. visibility</b>	50 %	<b>Site elevation</b>	910 m <b>Condition</b> Disturbed
<b>Site Dim. N-S</b>	1 m	<b>E-W</b>	1 m; <b>Area</b> 0 ha; <b>Depth</b> 10 cm
<b>Nearest Water Type</b>	INTERMITTENT STREAM	<b>Name</b>	Unnamed
<b>Distance</b>	3 m	<b>Elevation</b>	909 m <b>Direction</b> W <b>Bank</b> L

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**LOCATIONS**

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<b>Legal Locations</b>	<b>Section</b>	<b>Twp</b>	<b>Rg</b>
NWNW	3	3N	8E

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**COMPONENTS**

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<b>Site Type</b>	<b>Time Period</b>	<b>Cultural Affiliation</b>
Isolated Find		American Indian

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**COMMENTS**

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**Comments/site description (i.e. artifacts/features observed)**

New site 39MD1029 is an American Indian isolated find of Archaic or Late Prehistoric period temporal affiliation. The find, designated as PP1, consisted of an incomplete, brown chalcedony projectile point observed within an intermittent drainage. The point is missing the blade tip, plus a portion of the lower blade and majority of basal hafting elements. The maximum dimensions of the point measure 3.5 cm in length by 2.3 cm in width and exhibits side or corner-notching with a triangular-shaped blade. Survey at 2 m transect intervals yielded negative results for additional cultural deposits within a 15 m radius of the find. The setting within an intermittent drainage suggests site context is most likely disturbed by fluvial processes. No subsurface testing was conducted at 39MD1029 due to adequate GSV and the lack of soil development. Investigators recommend 39MD1029 Not Eligible for NRHP listing. No further work is recommended at the site.

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**Evaluation/collection methods**

Pedestrian survey at 15m intervals. GPS recordation, digital photos, ARC Site Visit Record form. No collection.

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**SD STATE ARCHAEOLOGICAL RESEARCH CENTER**

**Site No** **9MD1029**

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**Owner name/address/attitude** Private/Positive

**Prepared by** Matthew D. Busch/Amy Woodruff

**Date** 10/07/2021

**Project** SDGFP Rapid City Gun Range Complex

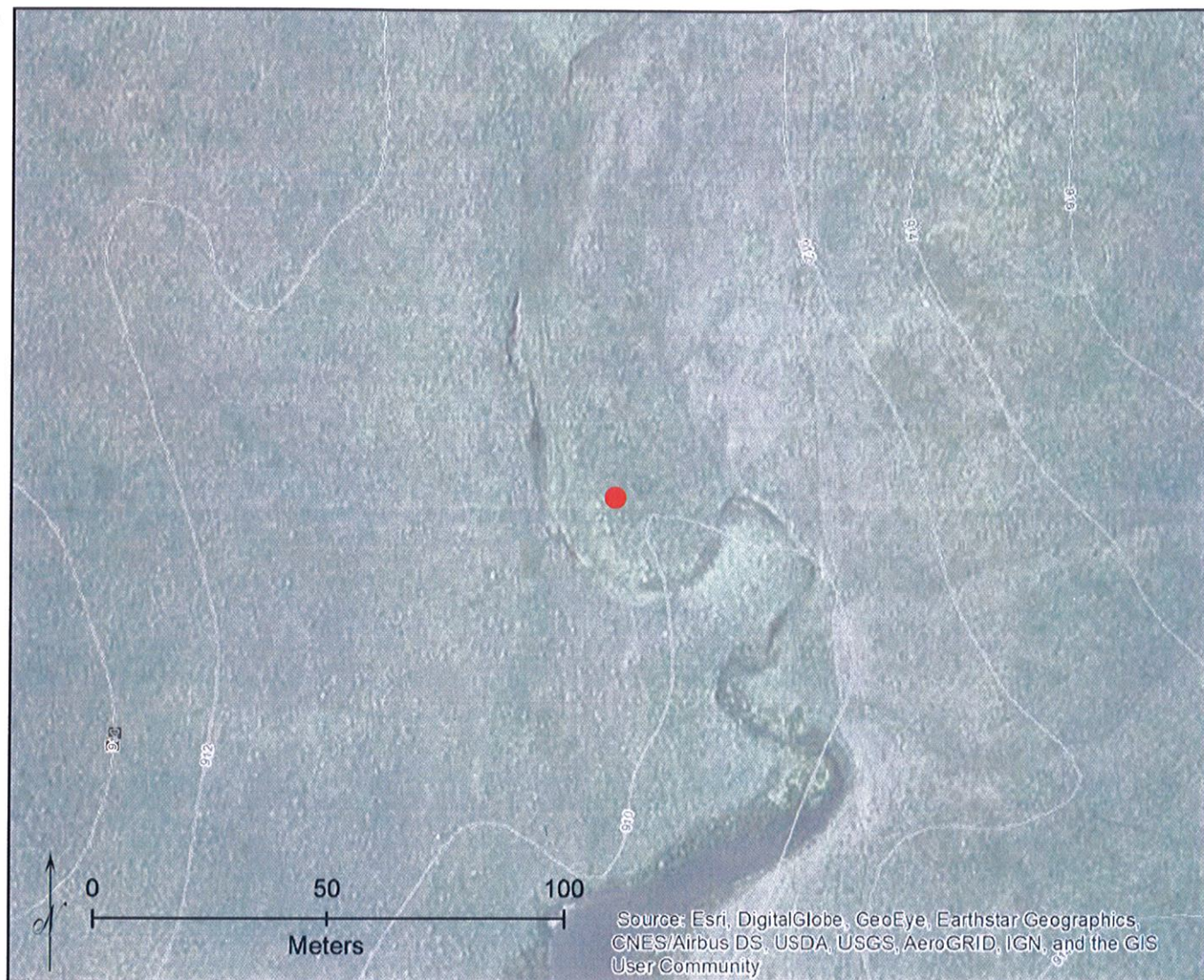
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# SD STATE ARCHAEOLOGICAL RESEARCH CENTER

Field No RCGR-05, Site No 39MD1029

## SITE MAP



## SITE LOCATION

- Isolated Find
- 2m Contour Interval



South Dakota

