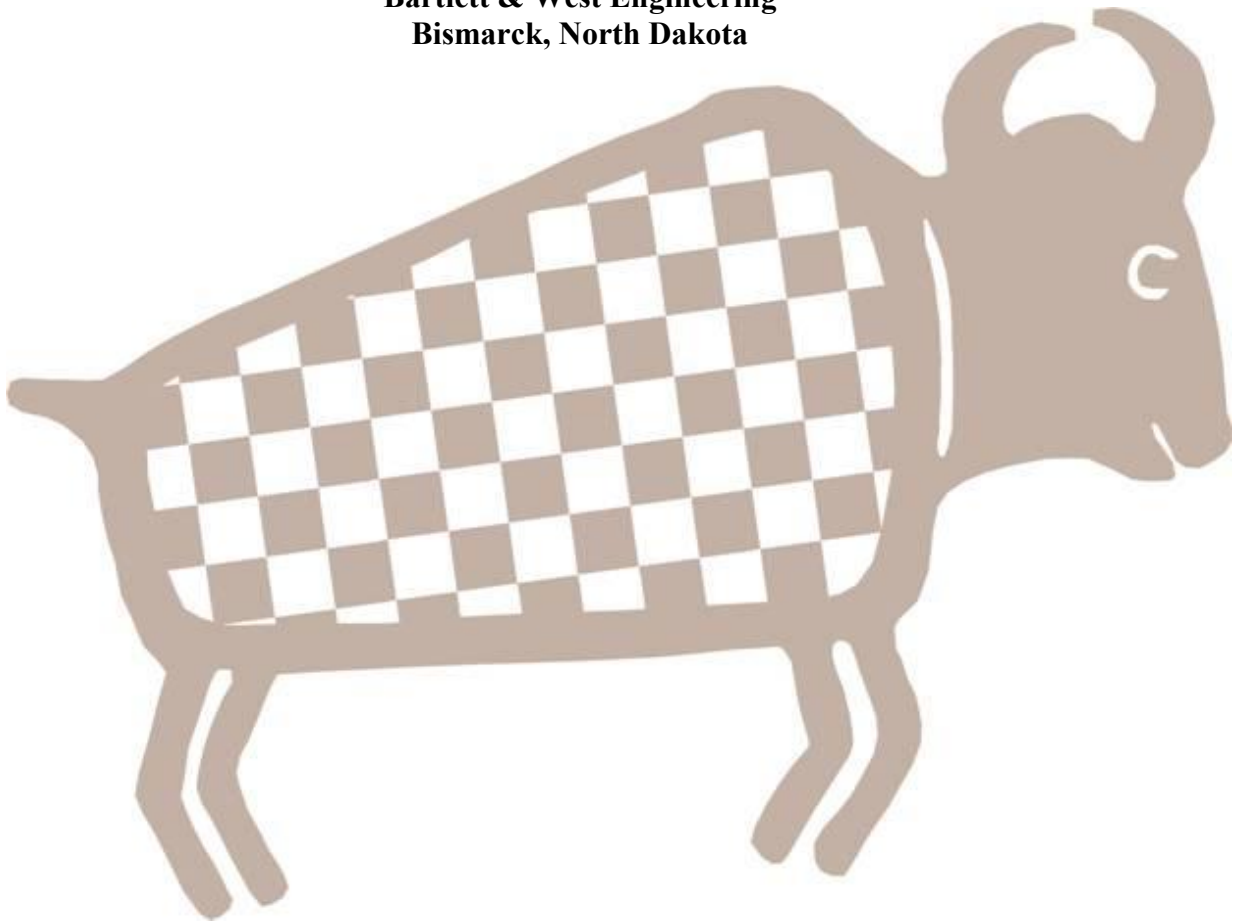


**SITE TESTING PLANS:
SITES 32MZ2303, 32MZ2304 & 32MZ1461
BAKKENLINK PIPELINE**

**Prepared for:
Bartlett & West Engineering
Bismarck, North Dakota**



**Submitted by:
Metcalf Archaeological Consultants, Inc.
Bismarck, North Dakota**

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INTRODUCTION

BakkenLink Pipeline, LLC, intends to construct and operate a crude oil pipeline to move petroleum from the Bakken oil fields in western North Dakota to a railroad transshipment center near Fryburg in southwestern North Dakota. Future expansion plans may include extending the pipeline to the vicinity of Baker, Montana, and tying into the Keystone XL pipeline. In the current construction phase, the pipeline will originate at a collection facility approximately seven miles south of Tioga, pass through Williams, McKenzie, Dunn, Stark, and Billings counties, terminating at Fryburg (Figure 1). Bartlett & West Engineering, the main engineering contractor for the pipeline, contracted with Metcalf Archaeological Consultants, Inc., (MAC) to conduct cultural resources investigations for this undertaking.

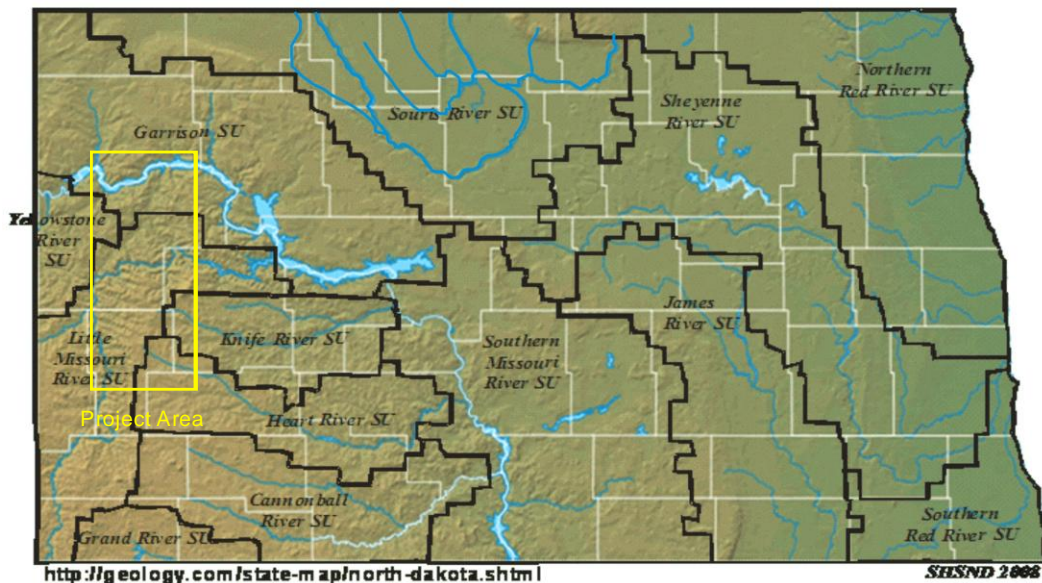


Figure 1: The general location of the proposed BakkenLink Pipeline.

The pipeline crosses portions of the Little Missouri National Grasslands which is administered by the US Forest Service and lands administered by the US Army Corps of Engineers; therefore the Bureau of Land Management (BLM) is the lead federal agency. The Public Service Commission (PSC) is the lead state agency. Cultural resource investigations were undertaken to ensure compliance with the National Historic Preservation Act (NHPA [Public Law 89-665]), as amended, and its implementing regulations (36 CFR Part 800).

The results of the cultural resources investigations to date are reported elsewhere (Kulevsky and Stine 2012). Bartlett & West intends to avoid cultural resources wherever possible. However, avoidance routes are not currently feasible for three: 32MZ2303, 32MZ2304, 32MZ1461, and 32MZ1560. Therefore, Bartlett & West requested that Metcalf Archaeological Consultants, Inc. (MAC) prepare scopes of work to evaluate three of these sites for their eligibility for inclusion on the National Register of Historic Places (NRHP). The sixth site, 32MZ1560, is a segment of the abandoned Highway 85 roadbed that has previously been recommended eligible for inclusion on the NRHP. MAC has recommended that adverse impact to that site can be avoided by recontouring post-construction to restore the grade.

TESTING PLAN

Objectives

There are two objectives of this testing plan(s):

- To determine if sites 32MZ2303, 32MZ2304, and 32MZ1461 are eligible for inclusion in the NRHP.
- To determine the effects of the undertaking on those sites should testing indicate they are eligible.

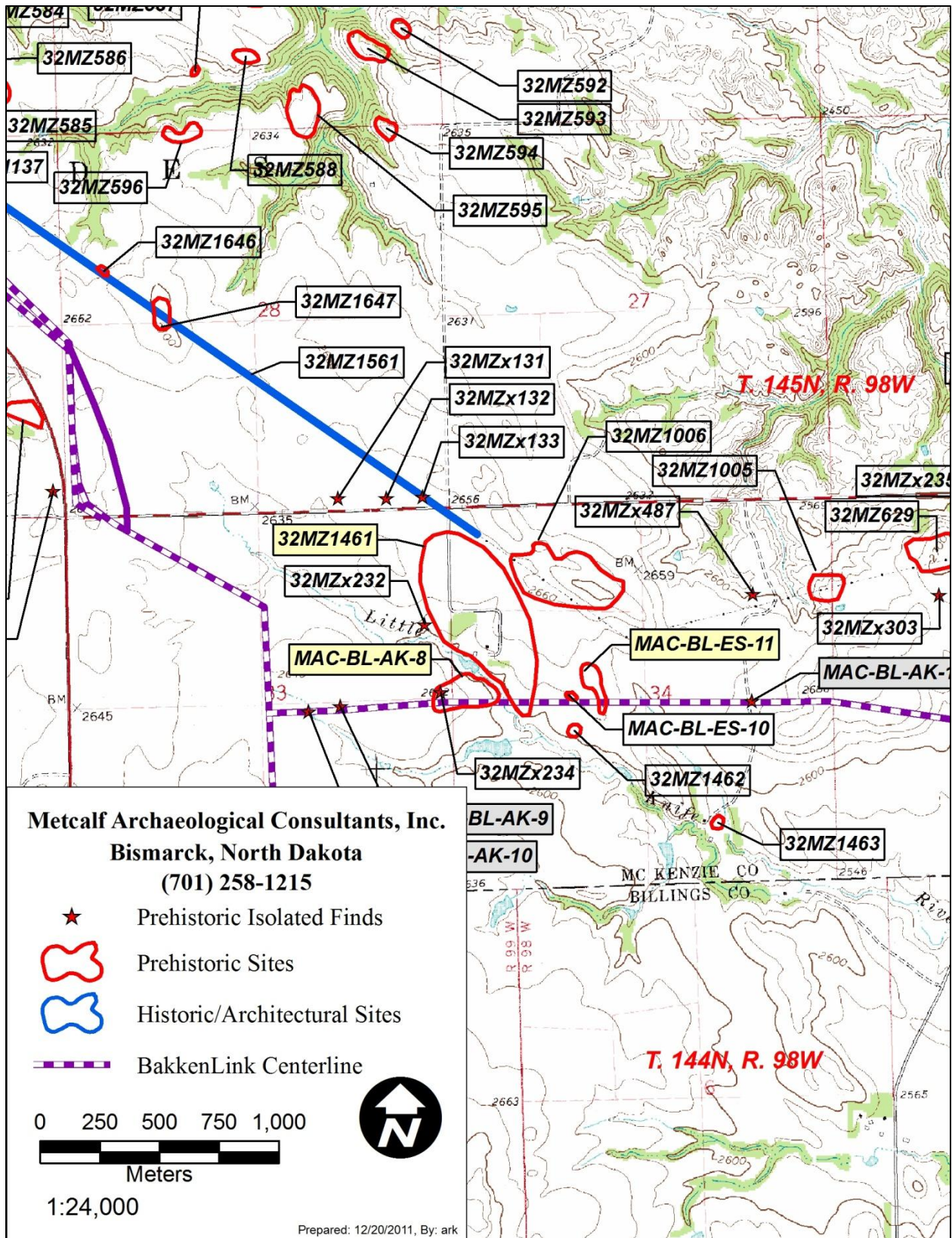
The first objective will be achieved by determining if intact cultural deposits are present and if so, whether they have integrity and satisfy one or more of the criteria necessary for inclusion in the NRHP (36 CFR 60.4). Determination of the second objective will depend upon the first. If a site is determined not to qualify for inclusion in the NRHP, then the recommendation will be a finding of *No Historic Properties Affected* (36 CFR 800.4[d][1]). If a site is determined to qualify for inclusion, then the adverse effects will have to be assessed (36 CFR 800.5).

Field Methodology

To achieve the above listed objectives, each site will be investigated using a combination of shovel or auger probes and one by one meter excavation units. All probes and excavation units will be excavated into underlying pre-Holocene deposits. Fill from both the probes and the units will be processed through ¼ inch screen over tarps. In addition, a constant volume water screen sample of 10 liters will be collected from each level of the one by one meter units and processed through fine mesh screen. Placement of the excavation units will be determined by the results of the shovel probing. Standard field documentation, profiles, logs, and photographs will be maintained and will note depths, stratigraphy, locations, and recovered artifact counts and descriptions. One wall of each one by one meter unit will be profiled and photographed. The locations of all probes and one by one units will be mapped using handheld GPS units. The overall condition and environment of the sites will be photodocumented. Upon completion of excavation, probes and units will be backfilled.

32MZ2303 (temp #MAC-BL-AK-8)

The site is a sparse lithic scatter with medium-dense concentrations located along the south side of the Little Knife River across from 32MZ1461 (Map 1; Figure 2). The site extends across a series of benches onto the uplands flanking the river valley. Parts of the site are eroded but aside from these eroded areas, ground surface visibility is poor and cultural material is potentially much denser than observed. The site extends to the west into Section 33 which is enrolled in the Conservation Reserve Program so surface visibility here is poor and the western site boundary is essentially unknown. The site area includes previously documented isolate 32MZx234.



Map 1: The location of 32MZ1461, 32MZ2303 (MAC-BL-AK-8), and 32MZ2304 (MAC-BL-ES-11) depicted on the Grassy Butte SW (1974) USGS 7.5' quadrangle map.

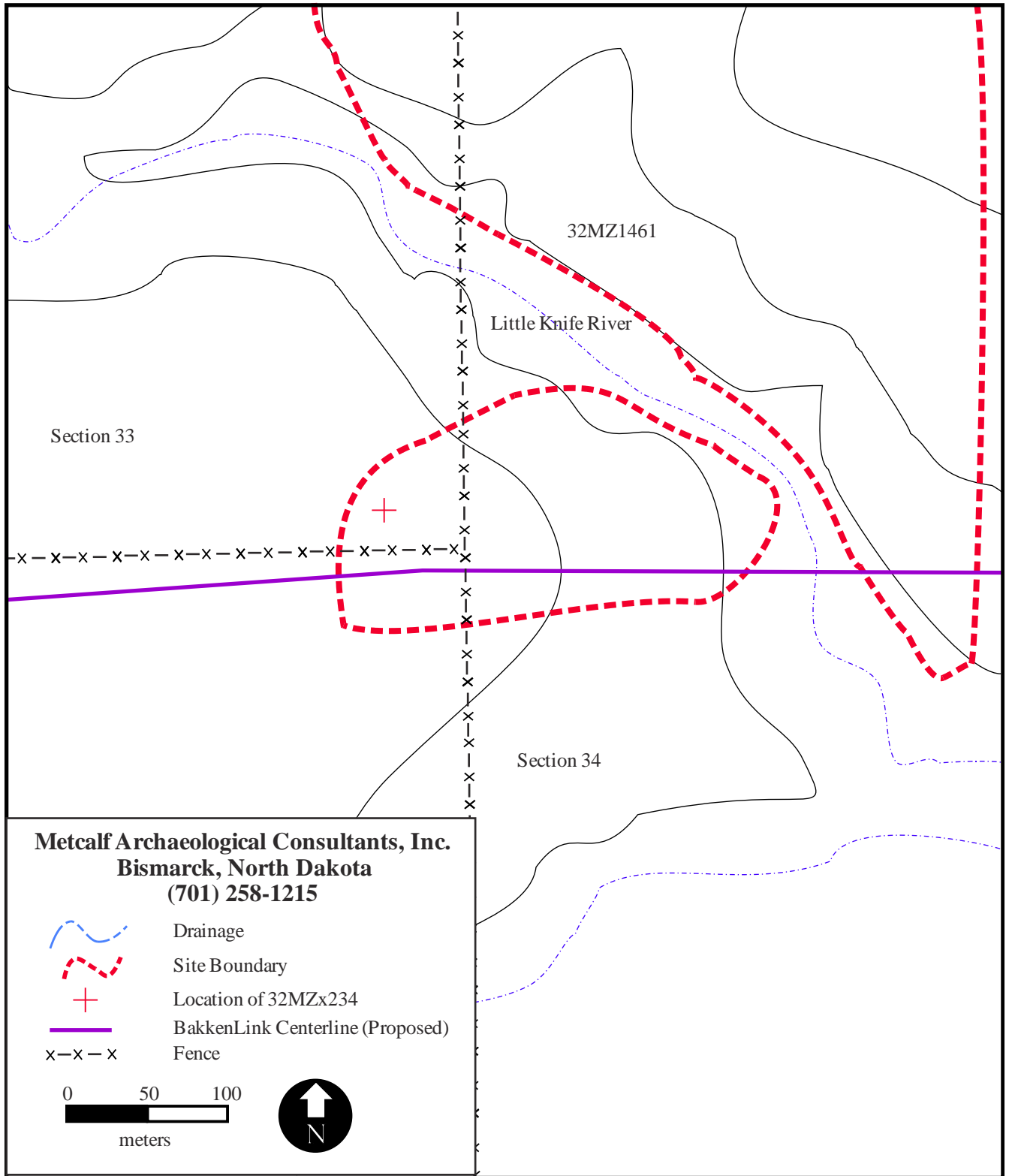


Figure 2: Sketch of 32MZ2303 (MAC-BL-AK-8).

Approximately 75 artifacts were identified in an area of approximately seven acres. Almost all of the artifacts are on Knife River Flint (KRF), though one high quality Tongue River silicified sediment (TRSS) utilized flake was observed. Tools include one stage 4/5 biface, one core, and the TRSS utilized flake. The majority of flakes are tertiary, however primary and secondary flakes were also present.

Erosion and utility line construction has affected the integrity of portions of the site so overall, the integrity is fair. The site spans the width of the 60-meter-wide APE and extends along approximately 260 meters of its length so construction cannot avoid impacting the site. Because of the size of the site, testing will be largely restricted to the APE corridor. Investigations will be weighted towards the 30 meter-wide construction right-of-way, though, depending on the results of the probes, some shovel probes *will* be placed and some excavation units *may* be placed within the 60 meter-wide APE. MAC proposes to excavate 45 to 50 shovel probes and two to three excavation units. Generally, probes will be placed at 10 meter intervals across the APE. The placement of excavation units will be based on the results of the probes.

32MZ2304 (Temp #MAC-BL-ES-11)

This large, sparse lithic scatter is situated on the crest and south and east slopes of a subdued ridge/spur and extends north and south of the APE (Map 1; Figure 3). Observed artifacts include 56 tertiary flakes, 31 secondary flakes, four primary flakes, 17 core/core fragments and six tools on KRF, along with a secondary and a tertiary porcellanite flake. The tools consist of two utilized flakes, one scraper, one early stage biface fragment and one late stage biface fragment. Neither biface fragment is diagnostic. Most of the KRF is moderately to heavily patinated. The site is one of at least six similar lithic scatters along the Little Knife River. The site area has been plowed but it is unknown if intact deposits exist beneath the plow zone.

The APE crosses approximately 30 meters of the southern end of the site. MAC proposes to place 15 to 20 shovel probes and one to two one by one meter units within portion of the site crossed by the APE. Placement of the probes and units will be weighted towards the 30 meter-wide construction corridor, some shovel probes *will* be placed and some excavation units *may* be placed within the 60 meter APE corridor. Generally, probes will be placed at 10 meter intervals; location of the test units will be based on the results of the shovel probes.

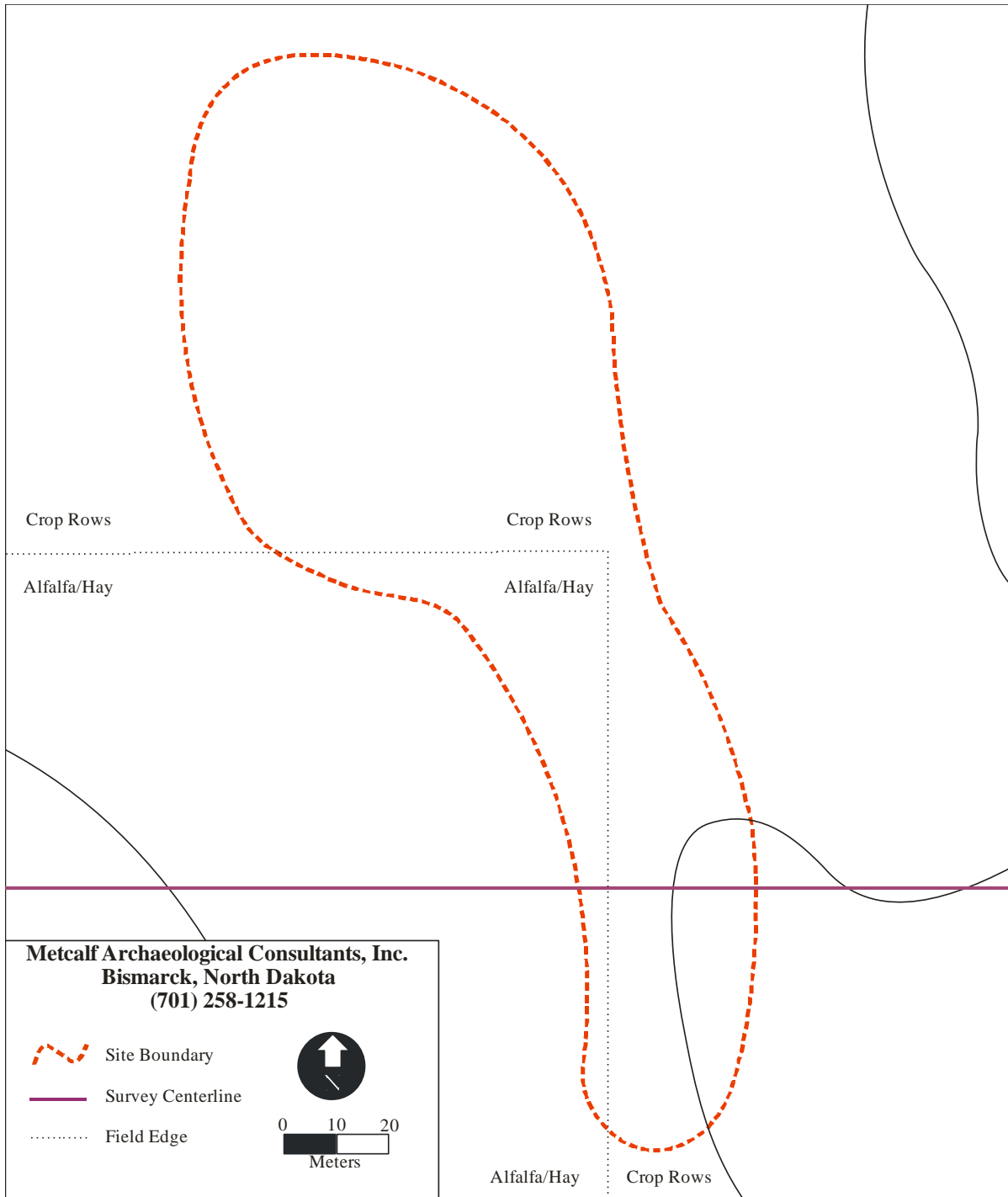


Figure 3: Sketch of 32MZ2304 (MAC-BL-ES-11).

32MZ1461

This scatter is situated on a terrace of the Little Knife River. In 1981, this site was recorded as an isolated find consisting of two heavily patinated Knife River Flint (KRF) flakes. In 1999, the resource was updated and turned into a site. At that time, chipped stone was observed across an area covering approximately 52 acres. Artifacts included debitage from all stages of both core and tool reduction-production. Tools comprised bifaces, cores, and rejected and exhausted cores. Additionally, buried lithics and faunal material, primarily bison, were observed in a cutbank of a small tributary of the Little Knife River. No diagnostic artifacts were observed. The geomorphological setting of the site as well as the buried cultural strata suggests that intact cultural deposits may be present.

The undertaking crosses approximately 85 meters at the southern end of the site, adjacent to the Little Knife River (Map 1; Figure 4). When revisited, MAC personnel investigated only a small portion of the site as the undertaking crosses only the extreme southern end of the site. MAC personnel observed approximately two dozen flakes within the undertaking area of potential effects (APE), including a concentration of approximately one dozen flakes along the centerline adjacent to the Little Knife River. No artifacts were observed in the banks of the river, but the banks were overgrown and lacked good visibility. MAC proposes to place 25 to 35 shovel probes and two to three one by one meter units within the undertaking corridor which is 85 meters long and 60 meters wide within the site. The placement of the probes and units will emphasize evaluation of the resource within the 30 meter wide construction corridor. Generally, probes will be placed at 10 meter intervals across the APE. Location of the test units will be based on the results of the shovel probes.

Laboratory Methodology

Laboratory techniques and artifact analyses (lithics and ceramics) will follow acceptable professional standards. The analysis of the lithics and ceramics will be set up to facilitate comparisons with the results of other studies in the surrounding region (SHSND 2008).

The analysis of the lithic artifacts, including debitage, cores and tools, will focus on the morphological and technological attributes indicative of tool manufacturing, maintenance, and use (Ahler 1994). All lithic material and debitage will be coded and analyzed following Ahler's 1994 typology and descriptive attributes. Projectile points will be classified typologically to assist chronological determinations (SHSND 2008). Other typologies and descriptive factors may be employed, if applicable, and if they contribute to the understanding of the overall procurement, production, and use of the lithic material at the site (cf. Andrefsky 2005, 2006; Kooyman 2000; Odell 1996, 2004, 2009).

Analysis of ceramic artifacts will focus on those morphological and technological attributes indicative of manufacture and use. The ceramics will be typed according to commonly accepted typologies and nomenclature to facilitate chronological determinations (Johnson 1980; Swenson 2003; Krause 2007).

Topics to be addressed through the analysis include age, function, and applicable research questions as outlined in the SHSND (2008: 1.21-1.41).

If recovered, faunal remains will be analyzed according to standard zooarchaeological procedure (Reitz and Wing 1999). Floral remains are not anticipated but if recovered, will be analyzed according to standard archaeobotanical procedures.

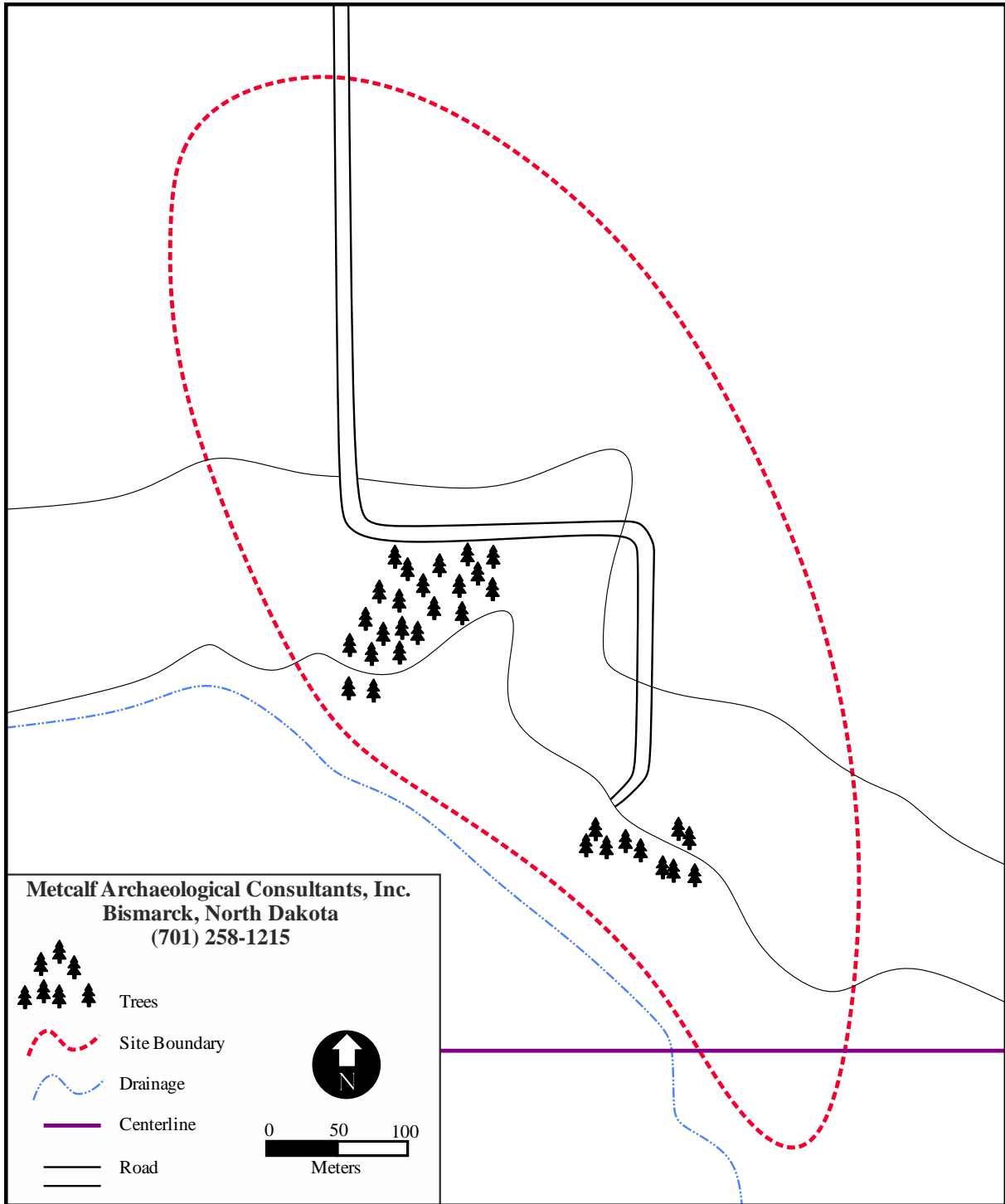


Figure 4: Sketch of 32MZ1461.

Reporting

MAC will prepare a report that documents the results of the program. This report will be prepared in consultation with the State Historic Preservation Officer to ensure that it complies with the Secretary of Interior's Standards and Guidelines for archaeological documentation (http://www.nps.gov/history/local-law/arch_stnds_7.htm). MAC will provide a draft copy for review. Upon receipt of comments, MAC will prepare a final copy that incorporates those comments.

Curation

The sites are on private land and the artifacts will be returned to the landowners on completion of the project. If a particular site proves to be National Register eligible, MAC will determine whether the private owner(s) are willing to donate the collection to an appropriate curation facility, in which case, MAC will employ cataloging and curation procedures that conform to the selected repository.

Professional Qualifications

The Project Director will meet or exceed the Secretary of the Interior's Professional Qualification Standards (http://www.nps.gov/history/local-law/arch_stnds_9.htm).

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