Combined Application for Certificate of Corridor Compatibility and Route Permit

Appendix E

Cultural Resource Inventory Reports

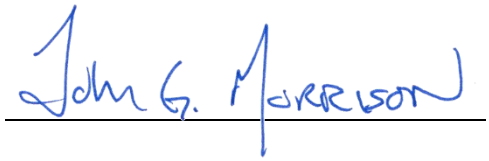
PUBLIC DOCUMENT - NONPUBLIC DATA HAS BEEN EXCISED

JUNIPER
ENVIRONMENTAL CONSULTING

TUNDRA PROJECT EXTRA WORKSPACES:
A CLASS III CULTURAL RESOURCE INVENTORY IN OLIVER COUNTY, NORTH DAKOTA

Prepared For:
Barr Engineering Co.
Bismarck, North Dakota

Principal Investigator:
John G. Morrison



Prepared By:
Andrea Kulevsky and John G. Morrison
Juniper, LLC
Bismarck, North Dakota

Report of Investigation: 839 **November 2023**

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County	TWP	R	SEC	SU
OL	141	83	4, 5, 8	SM
	142	83	32-34	SM

TUNDRA PROJECT EXTRA WORKSPACES:
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November 2023

ABSTRACT

On behalf of Minnkota Power Cooperative, Barr Engineering contacted Juniper, LLC to conduct a cultural resource inventory for additional workspaces related to the Tundra Pipeline Project. In 2022 Juniper conducted a cultural resource inventory of the pipeline right-of-way reported in *Tundra Pipeline Project: A Class III Cultural Resource Inventory in Oliver County, North Dakota* (Kulevsky and Morrison 2023a). In 2023, Barr requested Juniper conduct cultural resource inventories for additional workspaces, laydown areas, and an access road to be used during construction of the pipeline. The proposed additional workspaces (blocks and one road) cover a total of 417 acres, 306 of which were intensively inventoried. The remaining 111 have either been completely disturbed by previous mining activities, as indicated by historic and modern aerial imagery or were previously inventoried in 2008. The project falls under the jurisdiction of the US Department of Energy and is being treated as a federal undertaking.

John G. Morrison, Principal Investigator, Ed Stine, Project Director, and Project Archaeologists William Christensen and Andrea Kulevsky conducted the inventory between August 21 and August 28, 2023. A total of 306 acres was inventoried to the State Historical Society of North Dakota Class III Intensive Pedestrian Inventory standards.

The file search indicates 126 previously recorded cultural resources, and 33 previous cultural resource investigations lie within one mile of the proposed additional workspaces. Six cultural resources lie within or directly adjacent to the inventoried blocks. The mapped boundary of Site 32OL127 lies within Block 5a, however, the site was noted as destroyed in 1968 during mining operations. Sites 32OL960 and 32OL961 [redacted] Juniper concurs with these previous recommendations for site avoidance. Isolated Finds 32OLx441 and 32OLx442 [redacted] and Isolated Find 32OLx505 [redacted] Isolated Finds 32OLx441 and 32OLx442 were not found during the inventory and have been previously recommended *not eligible* for inclusion on the National Register of Historic Places. Isolated Find 32OLx505 was recorded in 2023 but the location was noted as disturbed and unlikely to contain intact significant cultural deposits. The isolated find was also recommended *not eligible* for inclusion on the National Register of Historic Places. No further work or avoidance measures are recommended for the isolated finds as part of this project.

Three new cultural resources were recorded during this inventory: two are isolated finds and one is a prehistoric cultural material scatter. Isolated Finds 32OLx503 and 32OLx504 each consist of solitary pieces of chipped stone flaking debris found in disturbed contexts. Both are recommended *not eligible* for the National Register of Historic Places. Site 32OL1008 is a sparse cultural material scatter and is currently *unevaluated* for the National Register of Historic Places. Juniper recommends that the site be avoided by the proposed undertaking by at least 50'.

Provided Sites 32OL960, 32OL961, and 32OL1008 are avoided by the proposed development, because Isolated Finds 32OLx441, 32OLx442, 32OLx503, and 32OLx504 are recommended *not eligible* for the NRHP, and because the other previously recorded cultural resources will not be impacted by the proposed undertaking, Juniper recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

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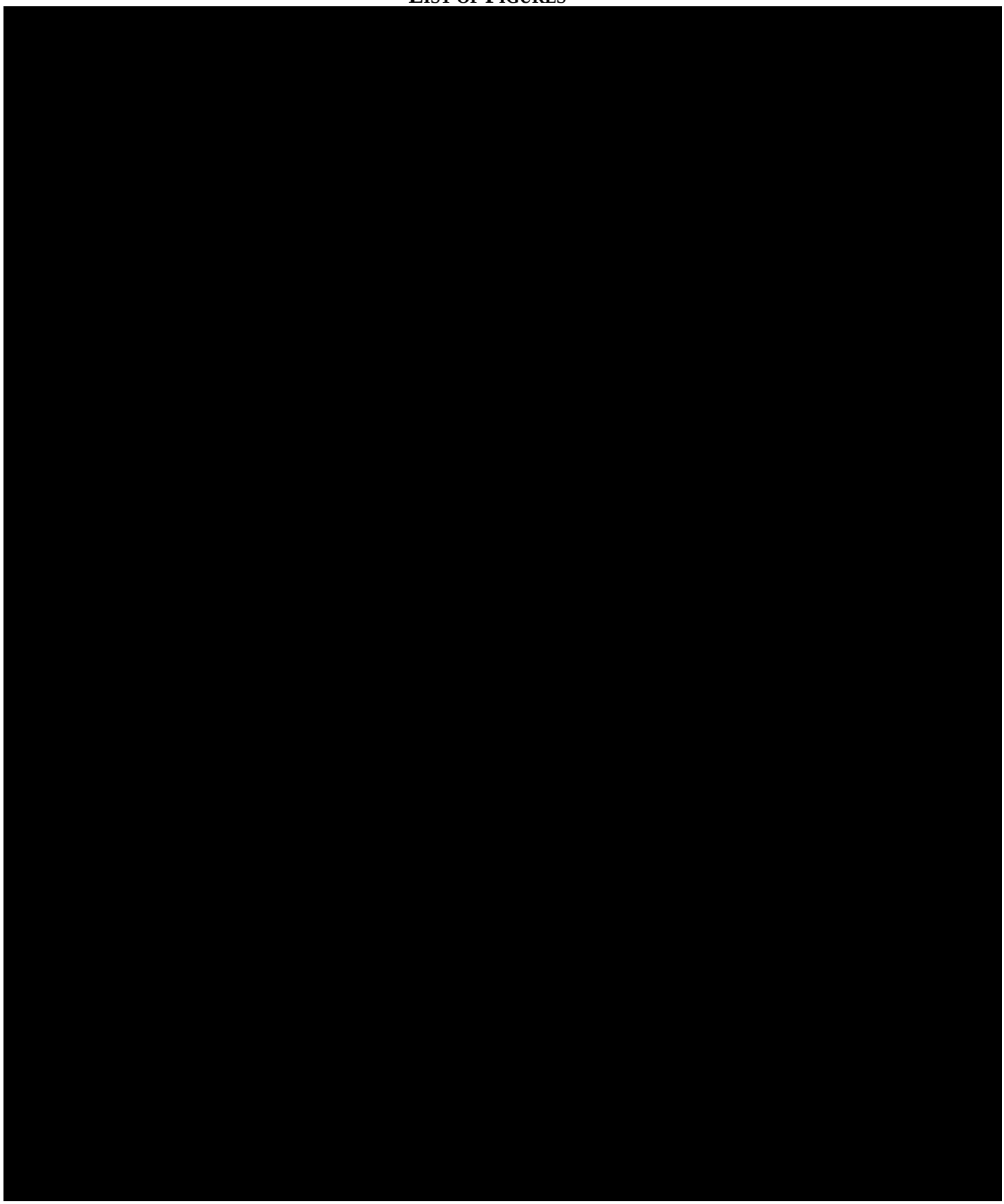

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INTRODUCTION

Barr Engineering Co. (Barr) on behalf of Minnkota Power Cooperative (Minnkota) contracted Juniper, LLC (Juniper), to conduct a Class III Intensive Cultural Resource Inventory for additional workspaces, laydown areas, and an access road to be used during construction the Tundra Carbon Sequestration Pipeline Project (Kulevsky and Morrison 2023a). The project is being developed to move carbon dioxide (CO2) from Minnkota's Milton Young power plant to locations for storing CO2 underground. The project falls under the jurisdiction of the US Department of Energy and is being treated as a federal undertaking.

The proposed undertaking is located in Oliver County in central North Dakota (Figure 1 and Figure 37-Figure 44 in Appendix A). The project covers 417 acres in 13 non-contiguous blocks and an ~4400' long proposed access road (Table 1). Minnkota requested that Blocks 3 and 5 be expanded and that an access road be considered as part of this project after the fieldwork was completed. Block 3 was expanded from 23 to 75 acres, and Block 5 was expanded from 18 to 27 acres. After a review of historic and modern aerial images, Juniper found Blocks 1, 2, 3, and 4 as well as the northernmost 3800' of the access road (103 acres) are located in areas completely disturbed by previous coal mining activities and which have been subsequently reclaimed. These four blocks and access road were not inventoried to State Historical Society of North Dakota (SHSND) Class III Intensive Pedestrian Inventory standards (SHSND 2020).

The original 19 acres of Block 5 were inventoried to State Historical Society of North Dakota (SHSND) Class III Intensive Pedestrian Inventory standards (SHSND 2020). The expanded 8 acres of Block 5 and the southern 600' of the proposed access road lie within areas previously inventoried in 2008. This area is reported in *BNI Coal: A Cultural Resource Inventory of 7,680 Acres in Area C in Oliver County, North Dakota* (Boughton 2008, MS# 10446). Because the current inventory did not find any cultural resources in the inventoried 18 acres of Block 5 and neither did the 2008 inventory it seems unlikely that an additional inventory would encounter significant previously unrecorded cultural resources. The remaining, nine blocks covering 306 acres were inventoried to SHSND Class III Intensive Pedestrian Inventory standards (SHSND 2020).

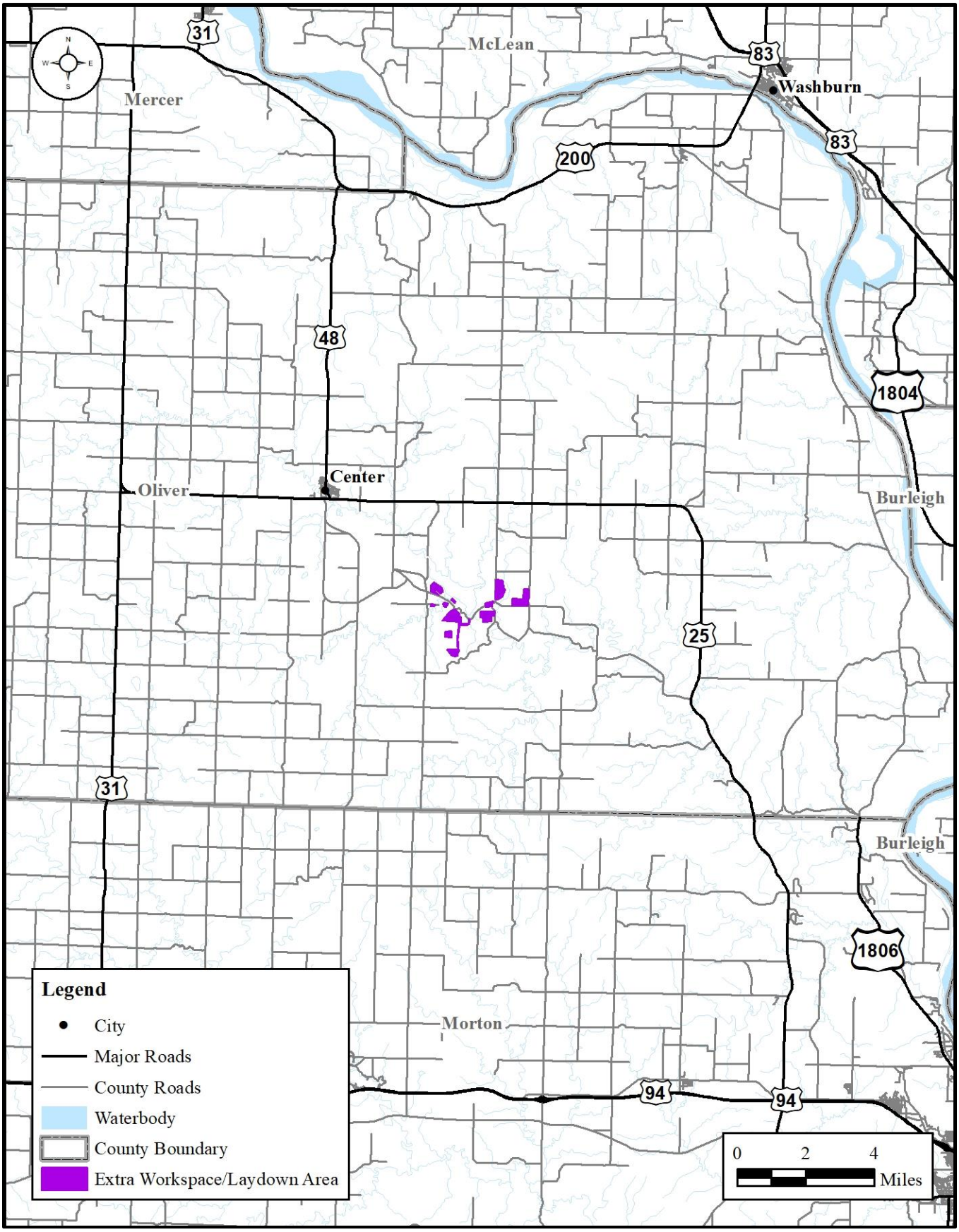


Figure 1: The regional location of the proposed undertaking.

John G. Morrison, Principal Investigator, Ed Stine, Project Director, and William Christensen and Andrea Kulevsky, Archaeological Technicians, conducted the inventory between August 21 and August 28, 2023. The archaeologists were escorted by BNI personnel when they were within the boundaries of BNI's Center coal mine.

A literature review of the area of the proposed undertaking indicates 119 cultural resources and 33 cultural resource investigations have been recorded within one mile of the additional workspaces. Of these, four cultural resources lie within or immediately adjacent to the inventory blocks. Sites 32OL960 and 32OL961 are stone feature sites that abut Block 11, while Isolated Finds 32OLx441 and 32OLx442 lie within Block 11. None of the other previously recorded cultural resources will be impacted by the proposed development.

A discussion of the results of the inventory, including previously recorded cultural resources is included in the RESULTS and SUMMARY AND MANAGEMENT RECOMMENDATIONS sections of this document. It is our understanding that Minnkota intends to follow these management recommendations *pending approval, concurrence, or modification by the agencies involved*. Illustrations, maps, field notes, and photographic records relevant to the undertaking are on file at the Juniper office in Bismarck, North Dakota.

ENVIRONMENTAL SETTING

The proposed developments are located in gently rolling upland plains surrounding the Milton Young Power Plant and Nelson Lake, an impoundment on Square Butte Creek. The proposed development falls within the Southern Missouri River Study Unit (SM #5) as defined in the *North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component* (SHSND 2021: 5.1-5.85).

The SHSND document presents a description/overview of the physiographic and cultural settings of the study unit, along with information on previous research within the study unit. A project specific description of the environmental setting is presented below based on our field observations, our knowledge of the project area, and a review of aerial photographs.

Topography

The project area lies to the west of the Missouri River in central North Dakota. It is part of the Missouri Slope Uplands of the Great Plains physiographic region, a region characterized by rolling to hilly plains. Generally, the project area lies in gently rolling areas with larger ridges, hills, or knolls; and overall, the area is well-drained and features numerous water courses. The most prominent of these is Square Butte Creek. Nelson Lake, an artificial impoundment on Square Butte Creek lies within the general area. Block 7 lies on terraces/bottomlands associated with Square Butte Creek, below the impoundment, while the other blocks are all in upland settings.

Block 5a lies within an area that appears to have been disturbed and reclaimed as the area is unnaturally flat or terraced slopes with spoils or push piles. The block is also planted with modern grasses and trees lacking the diversity of a native setting.

The entire project is underlain by the Paleocene-aged Sentinel Butte Formation, with patches of Quaternary-age Coleharbor Group glacial deposits (Bluemle 2000).

Flora

The vegetation regimes present today are not necessarily the ones that would have been present in the prehistoric past: agriculture, the introduction of non-native species, and modern development have altered the flora mixes in the area (Figure 2-Figure 7). Most of the inventory areas lies within agricultural fields (primarily small grains and canola.) Substantial portions of the project area are covered with alfalfa/hay or are fallow fields with a mixture of native and introduced vegetation. Block 3a appears to be reclaimed mine with just modern grasses, and Block 9 appears to have been previously stripped and reclaimed by construction, with a sparse cover crop planted since then.

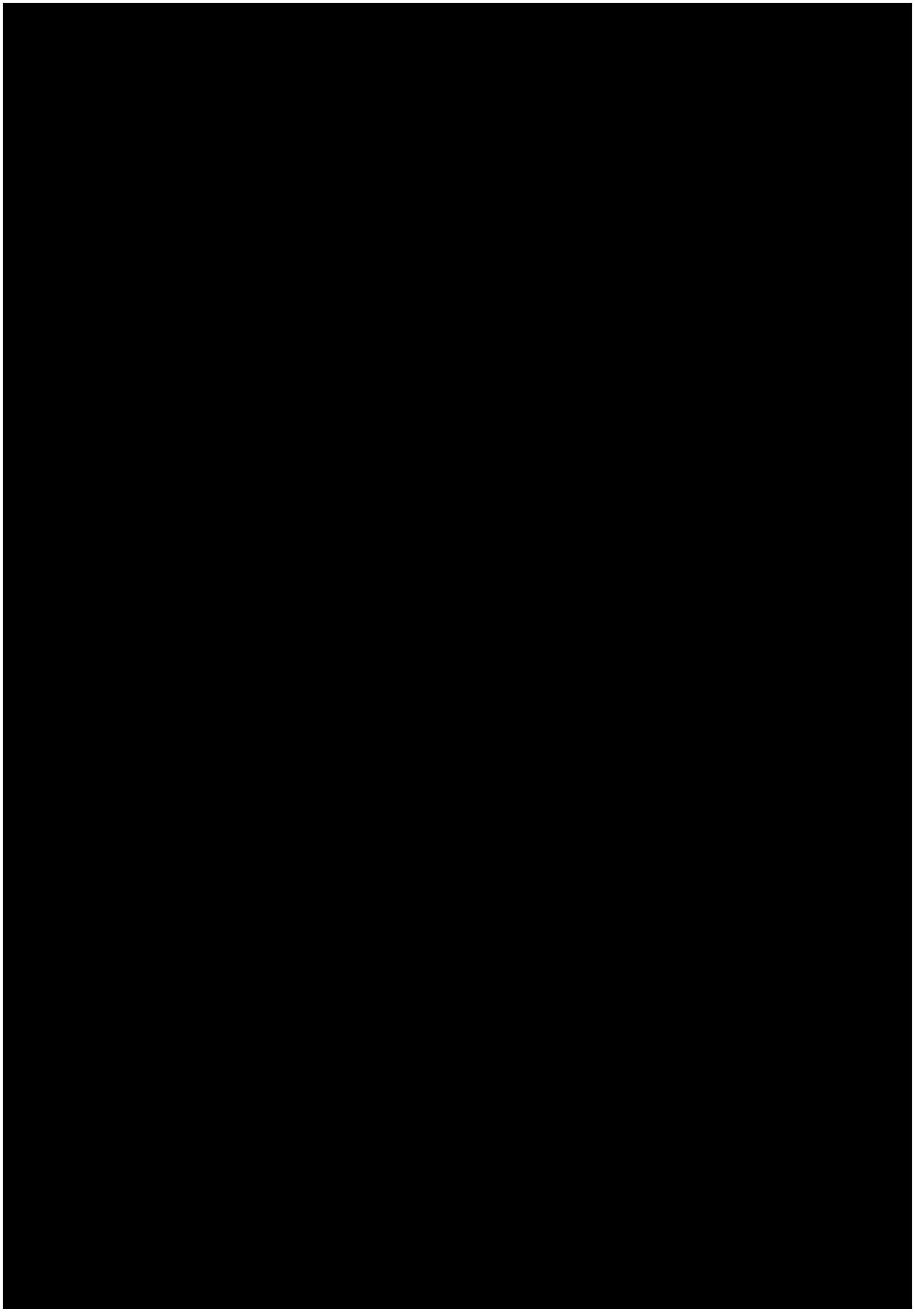
The pasture/grasslands of this area consist of medium-to-tall prairie grassland species including needle grasses (*Tipa* sp.), slender wheat grass (*Agropyron trachycaulum*), needle and thread (*Stipa comata*), and grama grasses (*Bouteloua* sp.). These grasses extend over much of the area where the land has not been tilled or previously developed.

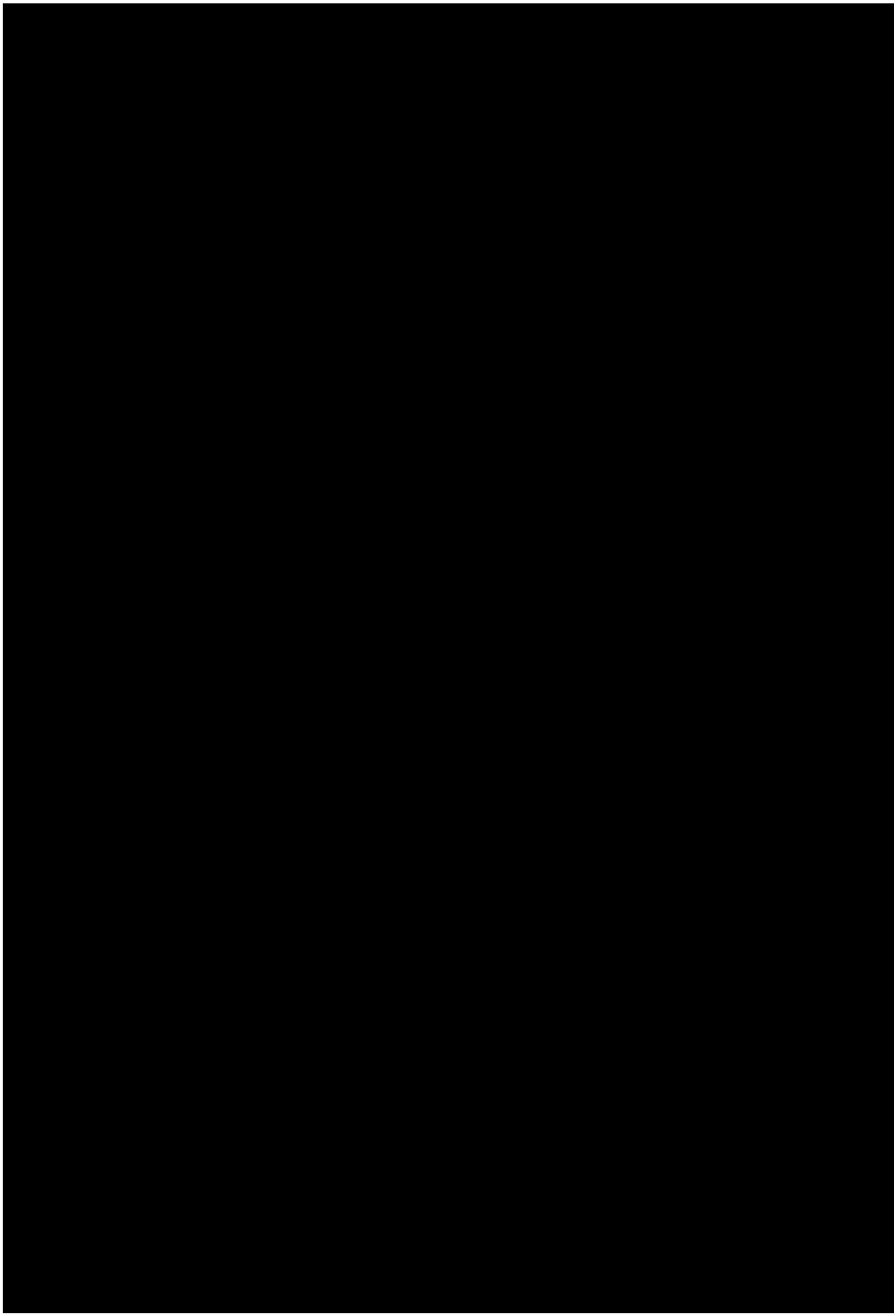
Ground surface visibility (GSV) within the inventory areas averaged 70% in recently plowed/harvested agricultural fields. In grasslands, and some of the reclaimed areas the GSV averaged 35%.

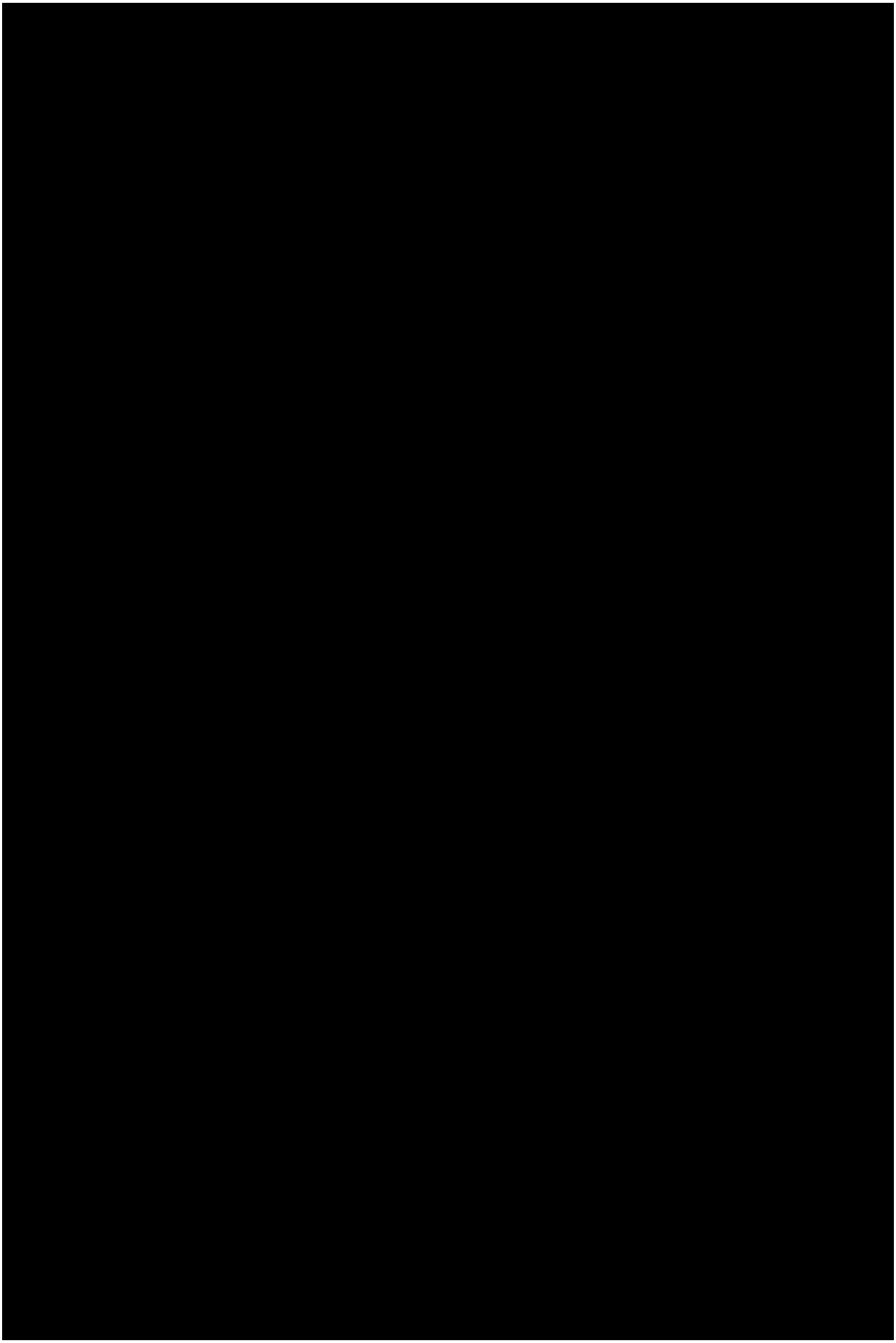
Fauna

The types and distribution of faunal species in the project area today do not necessarily reflect those of the past. The combination of floral diversity and the various waterbodies and their associated ecosystems provided habitats for many kinds of animals. The region would have been home to diverse large and small mammals as well as some birds, amphibians, and reptiles. In the past, people would have commonly encountered bison (*Bison bison*), elk (*Cervus canadensis*), antelope (*Antilocapra americana*), moose (*Alces alces*) as well as mule and white tail deer (*Odocoileus sp.*). In addition, wolf (*Canis lupus*), coyote (*Canis latrans*), jack rabbit (*Lepus* sp.), badger (*Taxidea taxus*), beaver (*Castor canadensis*), and prairie dog (*Cynomys ludovicianus*) would have been present, as well as raptors, songbirds, and game birds.

Square Butte Creek and its tributaries would have provided homes to various species of fish (northern pike, perch, and suckers), different types of waterfowl, (ducks, geese, etc.,) amphibians, and reptiles. The various wetlands and smaller bodies of water would have also provided significant habitat for waterfowl in the project area. These water sources would have also served to draw in and concentrate the faunal resources.







RESEARCH GOALS AND EVALUATION OF RESEARCH

Following the mandated policies implementing the National Historic Preservation Act (NHPA PL 89-665, as amended; 16 USC 470), the proposed additional workspaces were inventoried to locate and identify any cultural resources within them.

The goal of this inventory was to allow Minnkota, Barr, the North Dakota State Historic Preservation Office (ND SHPO), US Department of Energy, and other involved Federal agencies to plan the proposed development to avoid significant cultural resources. The methods employed for this inventory greatly decrease the potential that the project proponents would encounter situations that would require testing or mitigation of cultural resources within the inventory areas prior to construction. The overall goal of the inventory has been achieved, as the newly recorded resource can be avoided by the project and the previously recorded cultural resources do not appear to lie within the inventoried areas.

LITERATURE REVIEW

Juniper conducted a literature review of the archives at the State Historical Society of North Dakota site and manuscript files on August 9, 2023, for a one-mile radius around the proposed project. The file search indicates 119 cultural resources and 33 cultural resource investigations lie within the study area (Table 3 and Table 4 in Appendix B). Three previously recorded cultural resources lie within the project area. [redacted]. All five were reviewed as part of this inventory and are discussed in the RESULTS and SUMMARY AND MANAGEMENT RECOMMENDATIONS sections of this document. None of the other previously recorded cultural resources will be impacted by the proposed development.

Most of the previous cultural resources investigations in the area are related to energy development, i.e., coal mine development, wind power development, and transmission/distribution lines. A smattering of other research involves surface water management projects, telecom lines and wind fences. Two previous inventories covered large tracts of land overlapping portions of the current project area. These two inventories are reported in *BNI, A Cultural Resource Inventory Conducted in Sec. 4,5, & 8 T141N, R83W, Oliver County, North Dakota* (Peterson and Brownell 1992, MS# 5838) and *BNI Coal: A Cultural Resource Inventory of 7,680 Acres in Area C in Oliver County, North Dakota* (Boughton 2008, MS# 10446). The project area covered by the 1992 Peterson and Brownell report used pedestrian transects spaced 20 meters apart which does not meet the current inventory standards (Peterson and Brownell 1992:3, MS# 5838). The spacing combined with the age of the report indicated that the current inventory should be conducted in areas that had not been disturbed by prior mining activities. The Boughton 2008 report does not discuss how the project area was inventoried (i.e., no discussion of transect spacing or other field methods) but was likely inventoried using transects spaced further apart than would meet the current 2020 SHSND standards. These overlapping areas were not excluded from the current inventory. The results of these inventories, however, suggested that the proposed developments were unlikely to encounter significant previously unrecorded cultural resources.

FIELD METHODS

Juniper archaeologists John G. Morrison (Principal Investigator), Ed Stine (Project Director) and William Christensen and Andrea Kulevsky (Archaeological Technicians) conducted the Class III Cultural Resource Inventory between August 21 and August 28, 2023. Project archaeologists conducted the Class III Intensive Pedestrian Inventory by walking parallel pedestrian transects spaced no more than 15 meters apart to cover the blocks and identify cultural resources. A total of 306 acres were inventoried to SHSND Class III Intensive Pedestrian Cultural Resource Inventory standards (SHSND 2020).

Special attention was paid to areas of increased ground surface visibility and exposures of subsurface sediments, including but not limited to cut banks, rodent burrows, ant mounds, areas of sparse vegetation, and erosional features.

When an artifact or feature was encountered during the survey, the location was marked with a pin flag and the area around the artifact or feature was intensively inspected to locate any other associated artifacts or features. Based on the number and types of artifacts or features noted during the search, the grouping was determined to be either an isolated find, site lead, or a site using the following criteria:

> *An isolated find is considered to be a location of five or fewer artifacts and identified by the archaeologist(s) as representing an area of very limited past activity may be recorded as an isolated find. In all cases of identifying a location of an isolated find the archaeologist(s) should consider whether the location has good or better potential to contain buried artifacts. In such cases consideration should be given to recording the location as a site lead (SHSND 2020).*

A site lead is defined using one of two criteria, with considerations:

> *(1) A location reported by a landowner or other non-professional as containing cultural resources. These locations are considered to be site leads until such time as a qualified archaeologist or architectural historian can determine whether the site is an isolated find or site.*
>
> *(2) A location consisting of five or fewer surface visible artifacts is in the professional judgment of the archaeologist(s) likely to be only a limited surface expression of a former occupation where most of the artifacts are not visible (i.e., still buried).*
>
> *Consideration should be given by the principal investigator, the lead agency and the SHPO as to whether a site lead location should be examined more closely, possibly by subsurface investigations prior to a determination of No Historic Properties Affected or No Adverse Effect (SHSND 2020).*

Sites are defined as such:

> *A cultural resource site is defined as a location of past human activity that took place over 50 years ago and left physical traces of the activity in the form of (1) an intact cultural feature (2) six or more artifacts found within about 60 m of each other, and/or (3) an intact subsurface cultural deposit regardless of the number of artifacts (SHSND 2020).*

After the resource was adequately defined, the appropriate site, site lead, or isolated find forms and other documentation were completed. The additional documentation included plotting the resource on a USGS 7.5' topographic map, photographing the resource, and generating a sketch map. The locations of the cultural resources and other items of interest encountered during the inventory were recorded using a Trimble R1 GNSS receiver (sub meter accuracy) connected to an iPad unit running TerraFlex software.

RESULTS

Juniper identified one new site and two isolated finds as well as reviewed the locations of five previously recorded cultural resources during the inventory of the nine blocks to Class III standards.

Previously Recorded Isolated Find

Isolated Finds 32OLx 441 and 32OLx442

Isolated Finds 32OLx 441 and 32OLx442 were identified during a previous inventory reported in *Tundra Well Location: A Class III Cultural Resource Inventory in Oliver County, North Dakota* (Pace 2022, MS# 19701). [redacted] Both are single pieces of Knife River flint (KRF), chipped stone flaking debris found in an agricultural field. Both were previously recommended *not eligible* for the National Register of Historic Places (NRHP), with no further work or avoidance.

Isolated Find 32OLx505

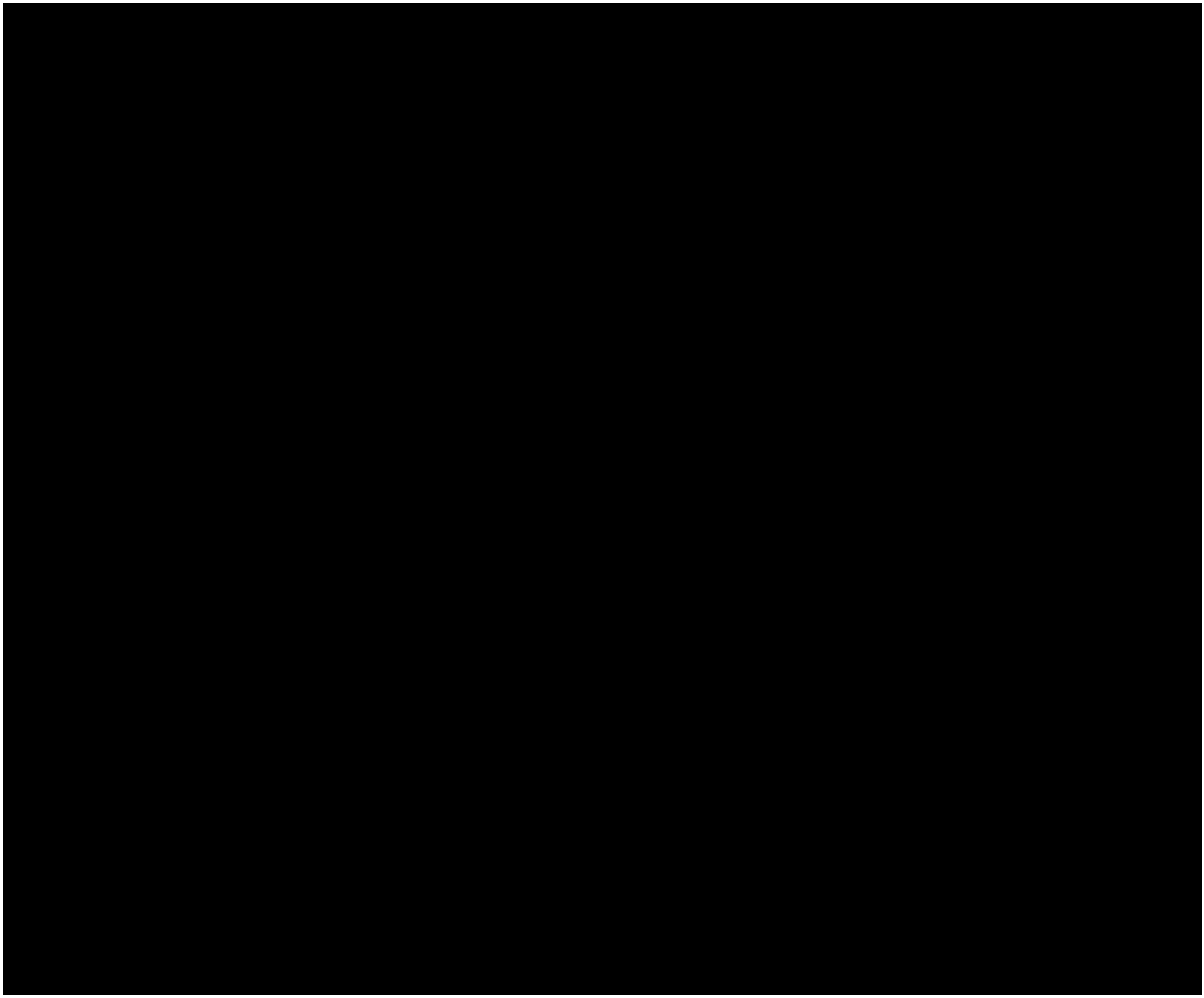
Isolated Find 32OLx505 consists of a moderately patinated tertiary KRF flake recorded as part of another Juniper project and reported in *Milton Young Transmission Line Reroute: A Class III Cultural Resource Inventory in Oliver County, North Dakota* by Kulevsky and Morrison (2023). No other cultural material was located on the landform. [redacted] Based on aerial photographs, mining activities at the location began sometime after 1971 but prior to 1995 (Figure 11-Figure 12). Development included mines, ponds, roads, and pits, in the area surrounding the isolated find. The area has since been reclaimed, creating a relatively steep slope, overlooking Square Butte Creek. Reclamation of the area is ongoing, as is the industrial use of the area.

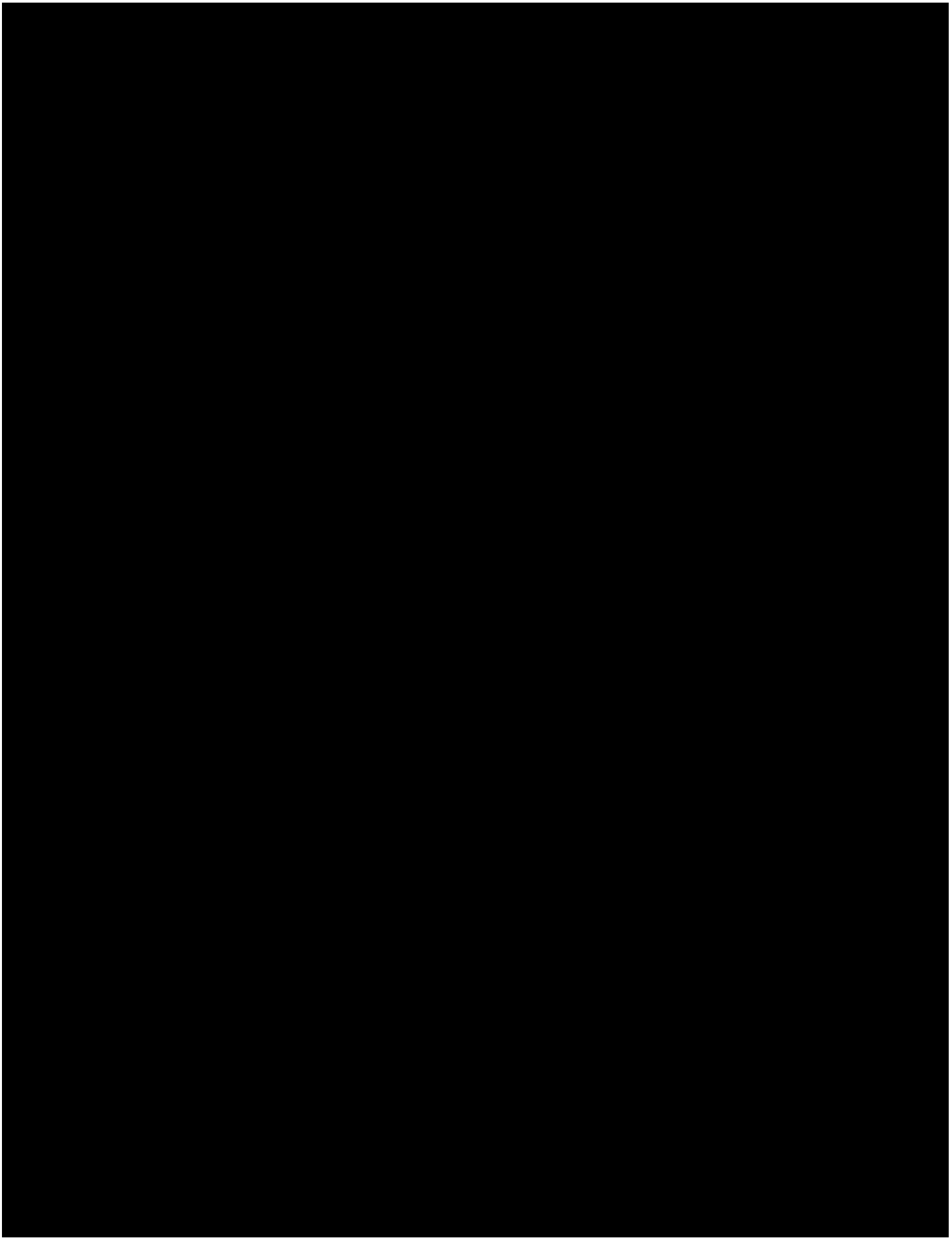
Excavations of shovel test probes and test excavation units at six nearby archaeological sites, 32OL326, 32OL327, 32OL328, 32OL329, 32OL330, and 32OL332 were conducted in 1992 (Peterson 1992, MS#5829). [redacted] Excavations at Site 32OL330, the closest site, recovered cultural materials at an interface approximately 5-7cm (less than 3") below the natural ground surface (Peterson 1992, MS#5829). This provides a reference for potential cultural deposits in the area. At the time of those excavations, the six sites were in undisturbed native prairie and not in agricultural fields or mining areas.

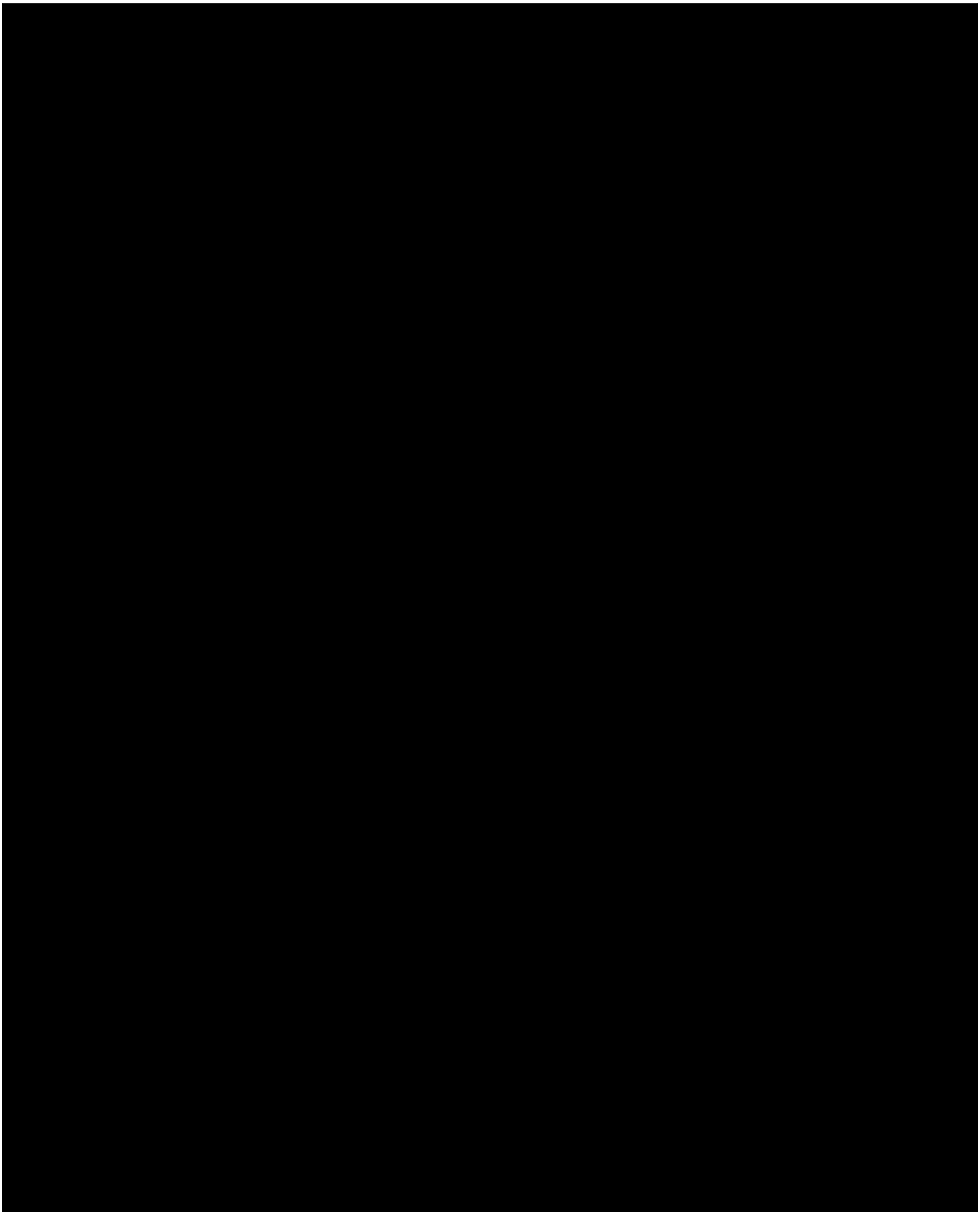
The landform of Isolated Find 32OLx505 had been disturbed by agriculture and mining. Plowing in the area of the isolated find would have disturbed the topmost 6-8" (~20cmbs), which would have churned the potential cultural interface with the sediments above and below.

A cutface along the edge of the knoll displays only a few centimeters of Holocene soils (i.e., the sod layer) overlying Pleistocene subsoils, indicating that the Holocene deposits in this area are no longer intact. The entire landform appears to have been part of reclamation efforts.

These observations demonstrate that the flake in this setting is in a secondary context and not *in-situ*. Shovel investigation probes (SIP) were not excavated because the flake lies in a significantly disturbed secondary context, with no potential for intact cultural deposits (Figure 9-Figure 13). Isolated Find 32OLx505 is recommended *not eligible* for inclusion on the NRHP, with no further work or avoidance needed.







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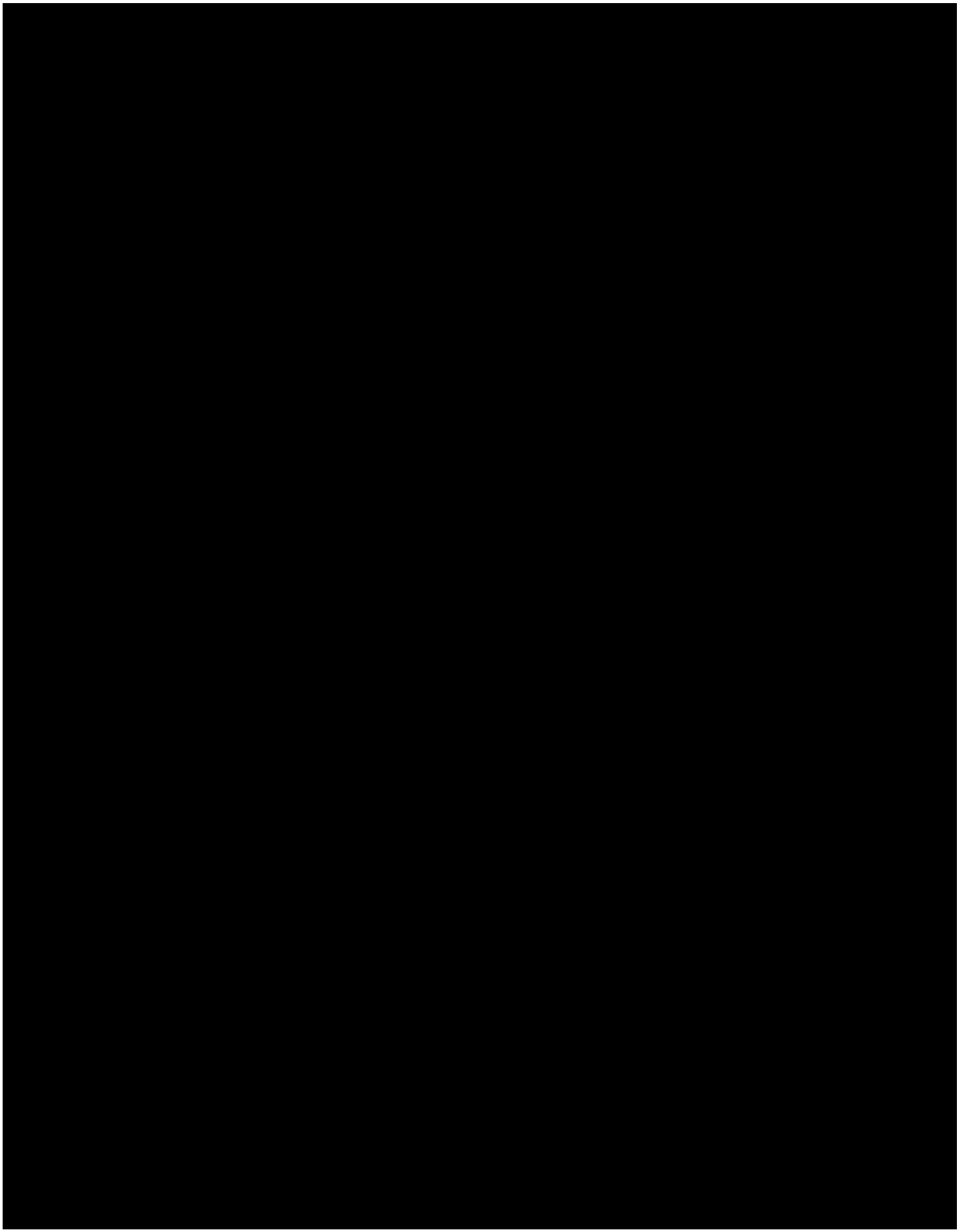


Newly Recorded Isolated Find

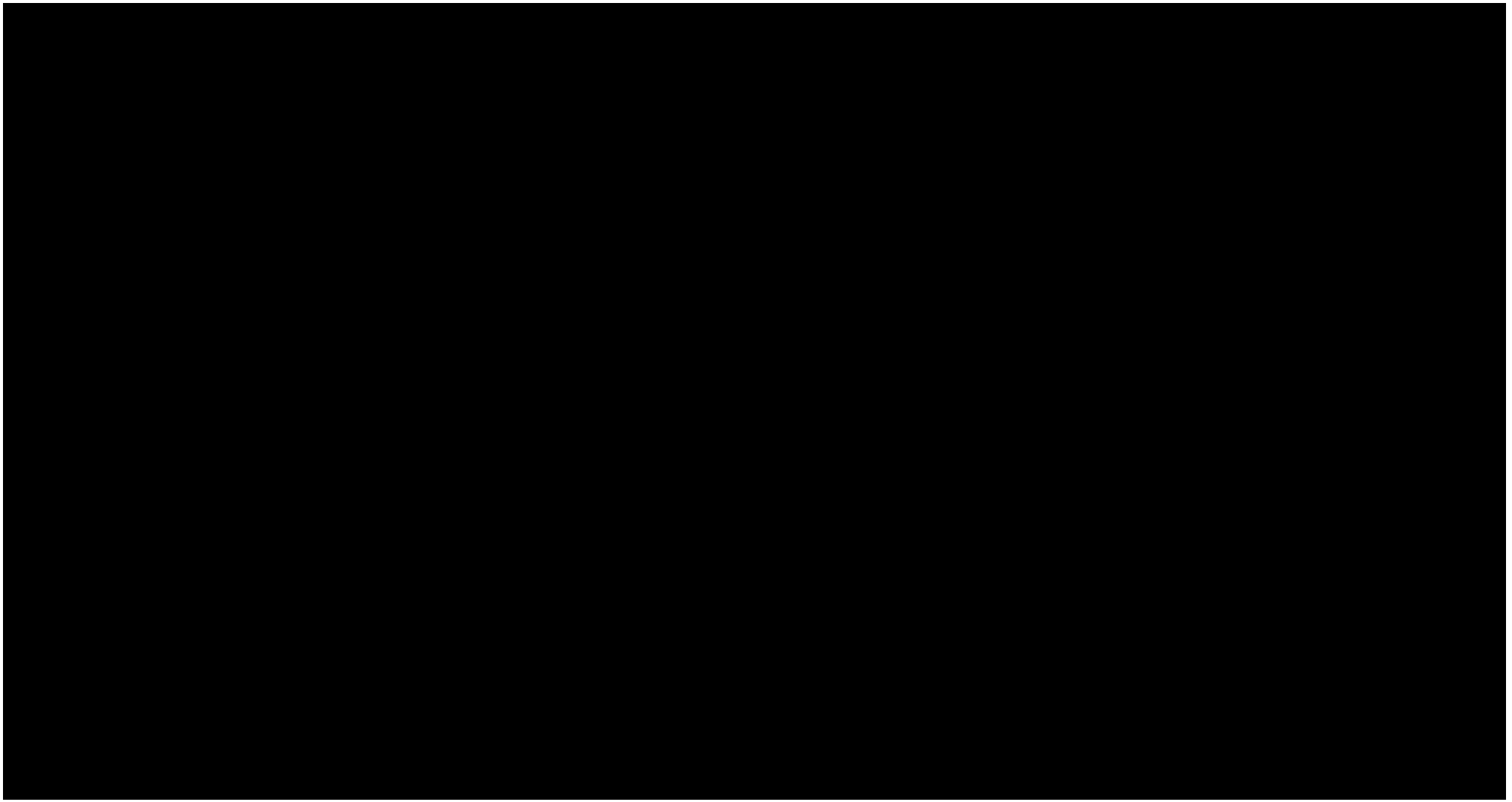
Isolated find 32OLx503

Isolated find 32OLx503 consists of a small flake of KRF [redacted] The flake was identified in the back dirt of a rodent burrow on a slope of a larger knob. The back dirt of this rodent burrow and other rodent disturbances in the immediate vicinity were inspected for additional cultural materials. No additional cultural materials were identified. The visible soil profiles in the burrows indicate that the soils are thin, and slope has little to no intact Holocene deposition. This area has also been impacted by agricultural use as first observed in the 1957, then in the 1971, and the 1995 aerial photographs (Figure 16-Figure 18). The 2003 aerial photograph of the location indicates agricultural activity has ceased and this area is now fallow pasture.

Excavations of shovel test probes and test excavation units at six nearby archaeological sites, 32OL326, 32OL327, 32OL328, 32OL329, 32OL330, and 32OL332 were conducted in 1992 (Peterson 1992, MS#5829). [redacted] Excavations at Site 32OL328, the closest site, recovered cultural materials at an interface ~15-17cm (~6") below the natural ground surface (cmbs) (Peterson 1992:59, MS#5829). This provides a reference for potential cultural deposits in the area. At the time of those excavations, the six sites were in undisturbed native prairie and not in agricultural fields or mining areas.

The landform of Isolated Find 32OLx503 had been disturbed by agriculture. Plowing in the area of the isolated find would have disturbed the topmost 6-8" (~20cmbs), which would have churned the potential cultural interface with the sediments above and below. The 38 years of plowing would have also deflated the natural ground surface to some degree. The profiles displayed in the rodent burrows indicate that there are less than 10cm of Holocene soils (i.e., the sod layer) overlying Pleistocene subsoils, indicating that the Holocene deposits in this area are no longer intact.

These observations demonstrate that the flake in this setting is not *in-situ*. Shovel investigation probes (SIPs) were not excavated because the flake lies in a significantly disturbed context, with no potential for intact cultural deposits. Isolated Find 32OLx503 is recommended *not eligible* for inclusion on the NRHP. No further work at this location is recommended.



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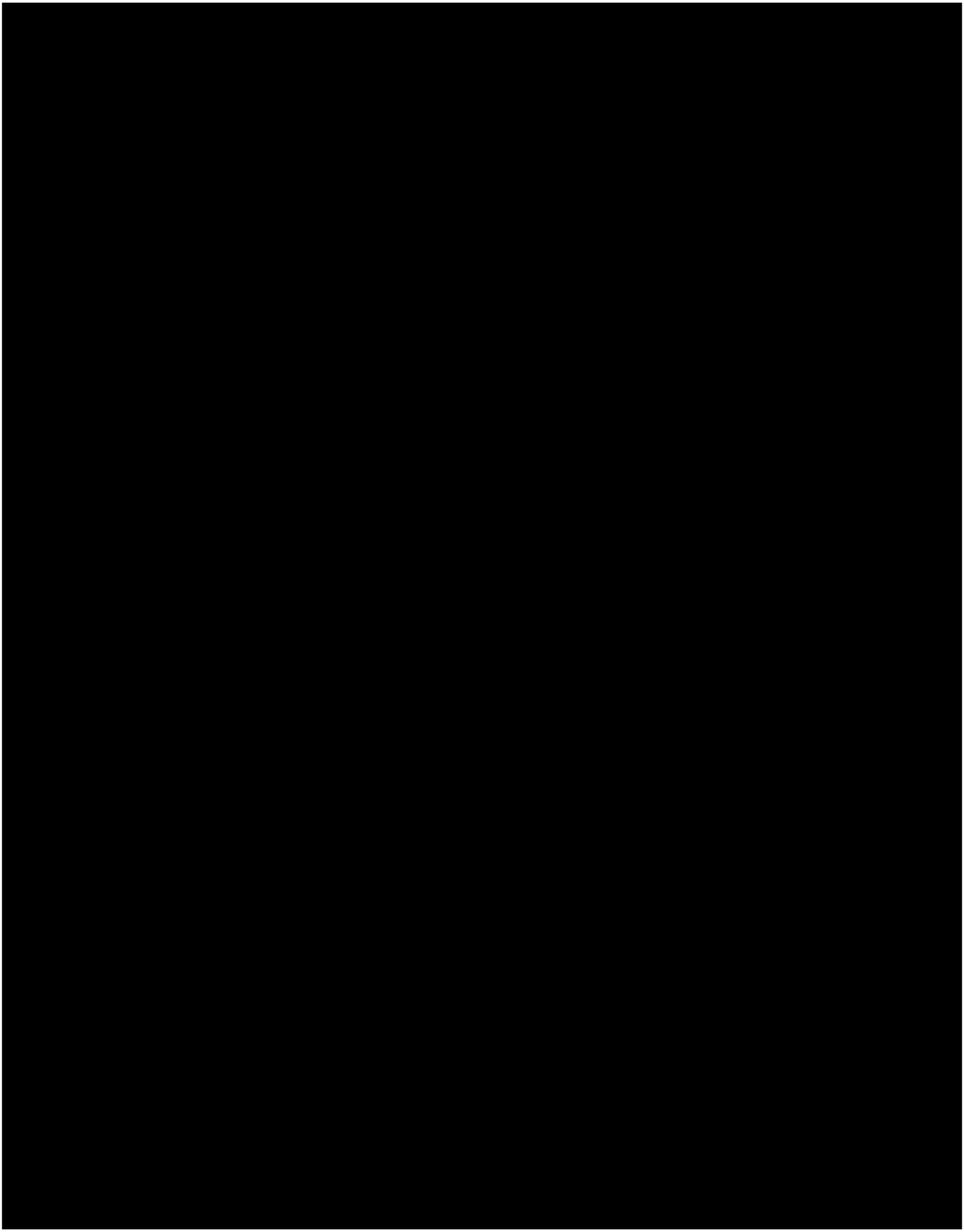
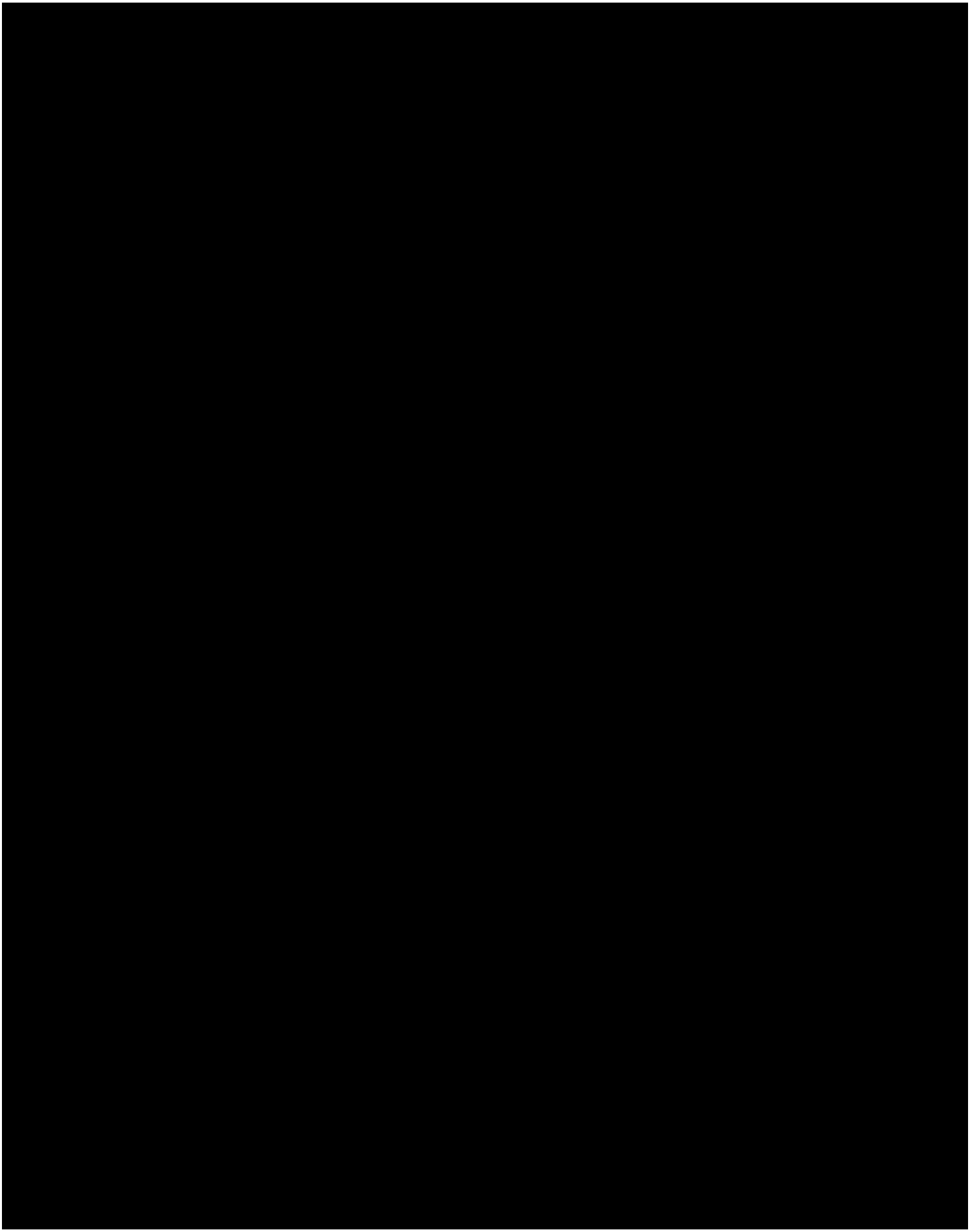
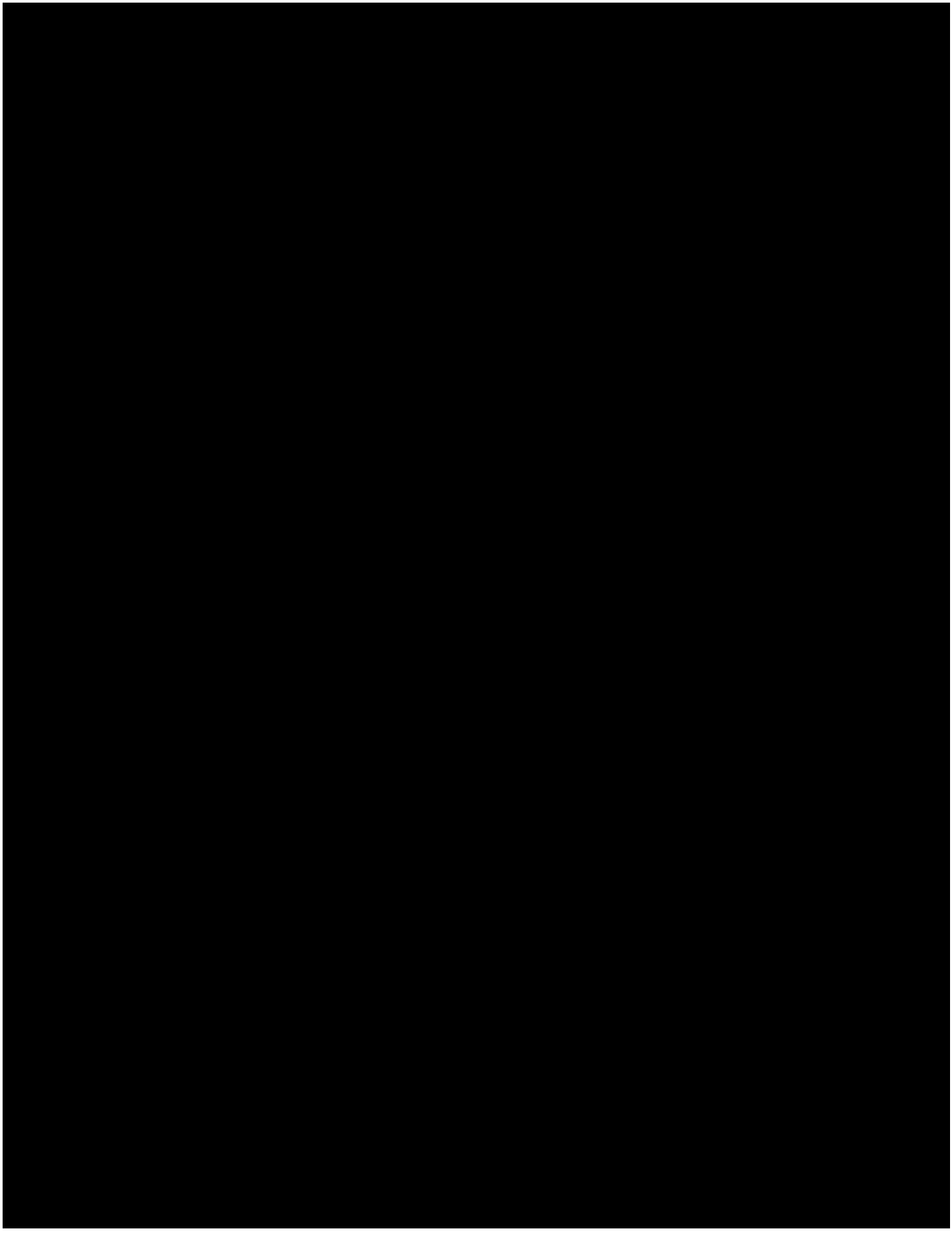






Isolated Find 32OLx504

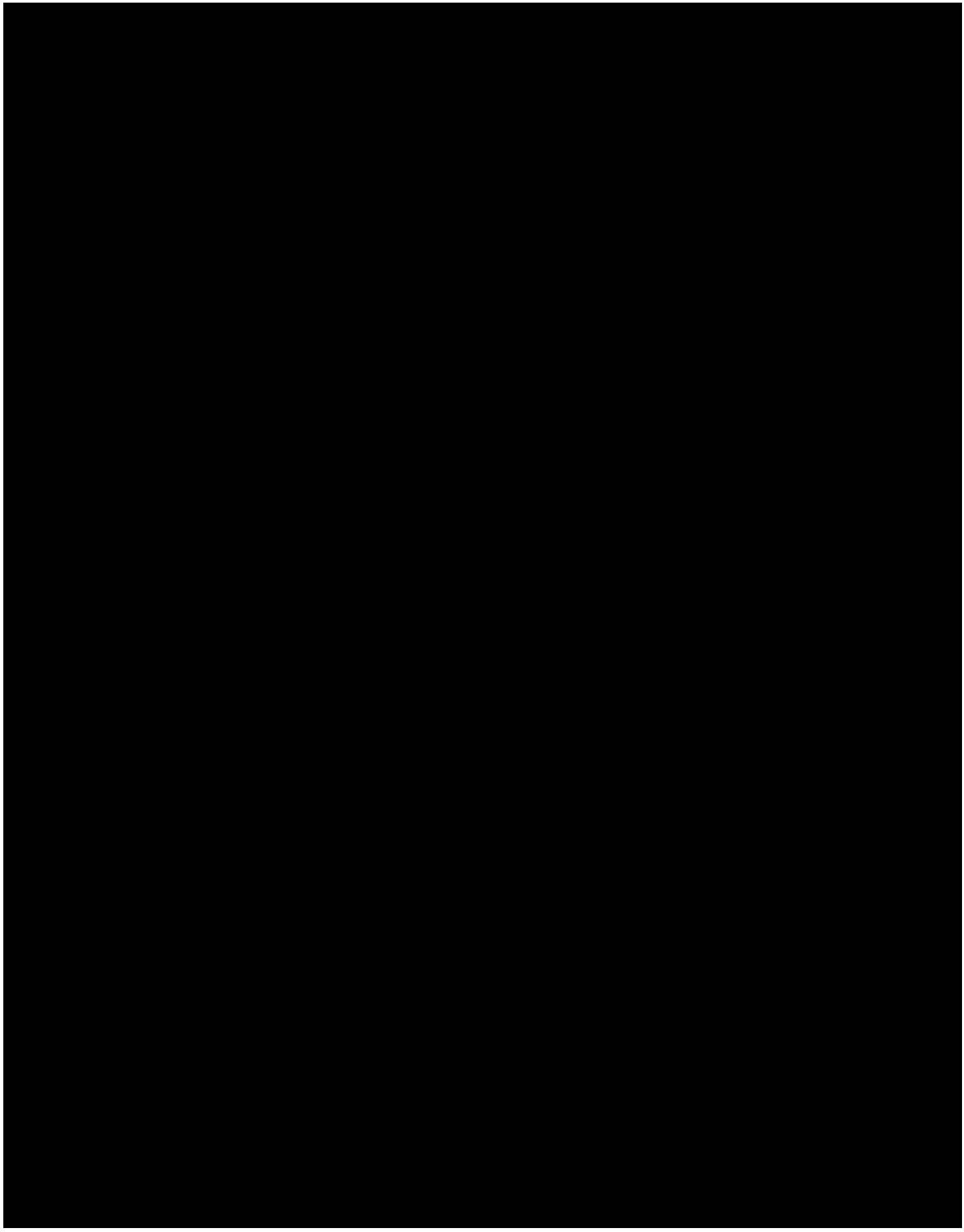
Isolated Find 32OLx504 is small KRF flake identified in Block 7 (Figure 19-Figure 24 and Figure 37-Figure 44 in Appendix A). It was found in an agricultural field of recently harvested canola. GSV was approximately 40% or better across the field. [redacted] Based on the field observations, aerial photography, and LiDAR imagery, [redacted] Because of the distance and the location on different landforms, the relationship between the two resources is unknown.

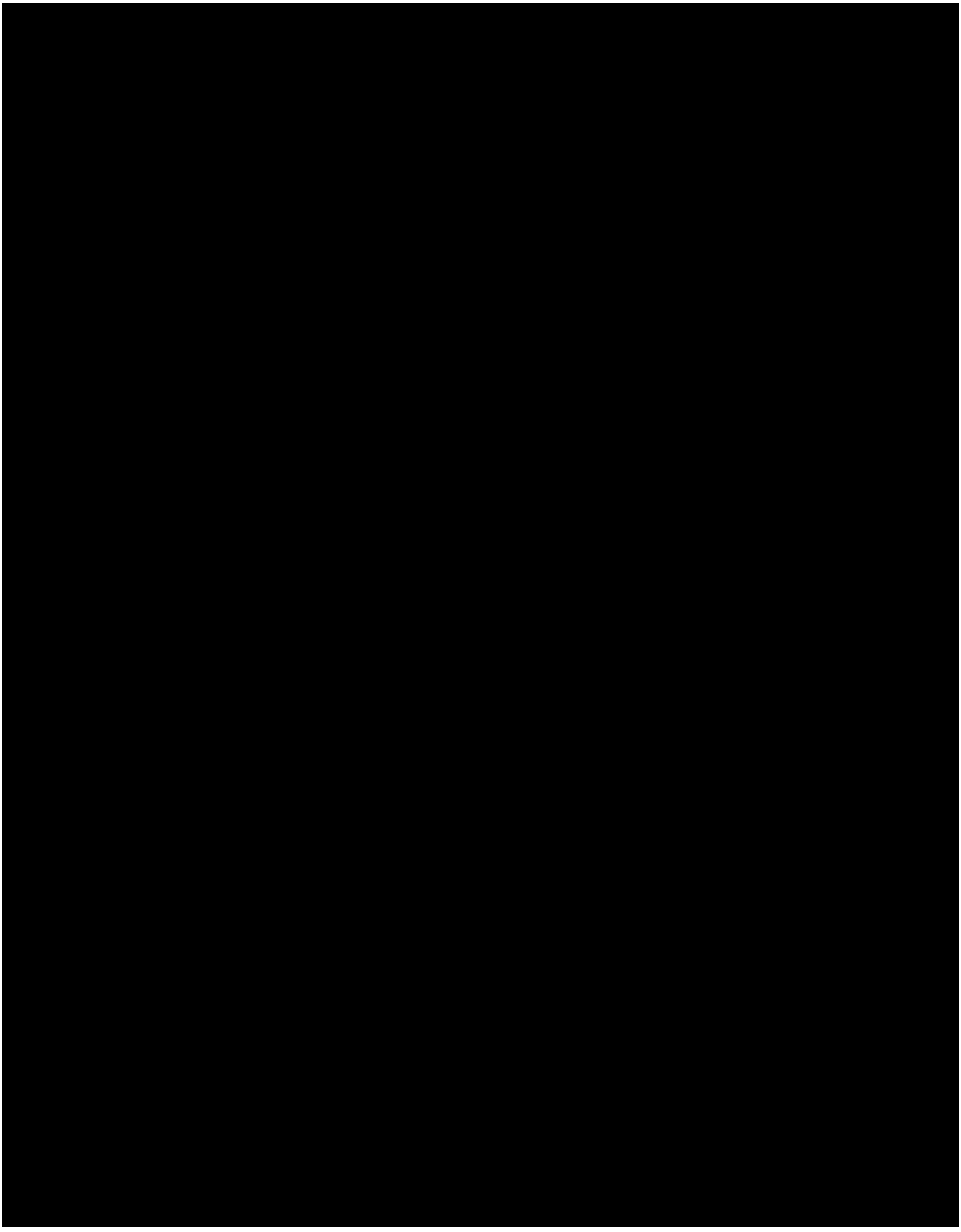
Gravels and small cobbles are present in the field, indicating the Holocene deposits have been significantly disturbed as the underlying Pleistocene sediments have been churned into the overlying Holocene sediments. Because of the mixing of the sediments, it is unlikely that there are intact cultural deposits and that do not have a surficial expression.

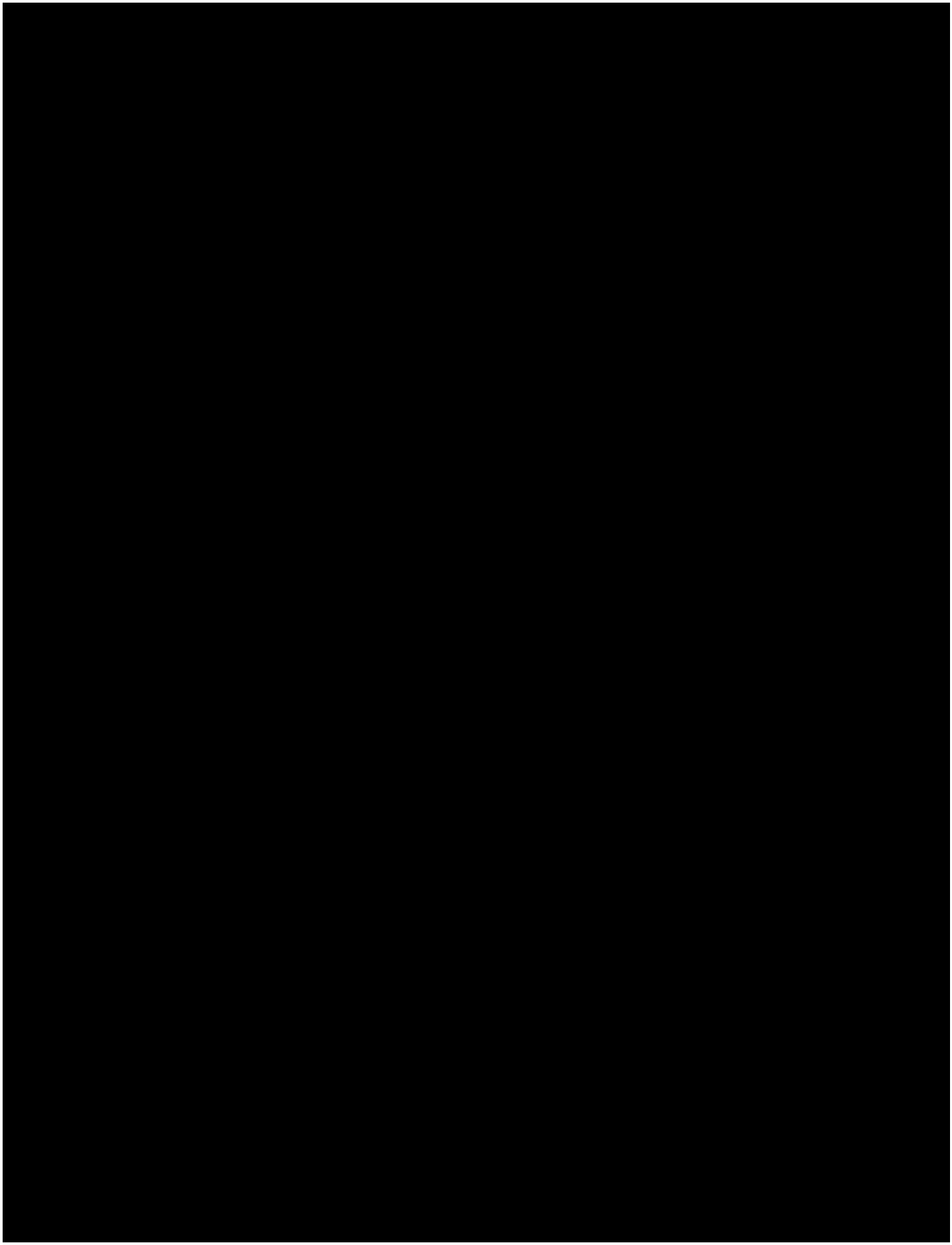
Excavations of shovel test probes and test excavation units at six nearby archaeological sites, 32OL326, 32OL327, 32OL328, 32OL329, 32OL330, and 32OL332 were conducted in 1992 (Peterson 1992, MS#5829). Site 32OL328 is the closest and lies 4000' to the southwest. Excavations at Site 32OL328, the closest site, recovered cultural materials at an interface ~15-17cmbs (~6") (Peterson 1992:59, MS#5829). Four of the other excavated sites in the area noted a cultural context less than 10cmbs. This provides a reference for potential cultural deposits in the area. At the time of those excavations, the six sites were in undisturbed native prairie and not in agricultural fields or mining areas.

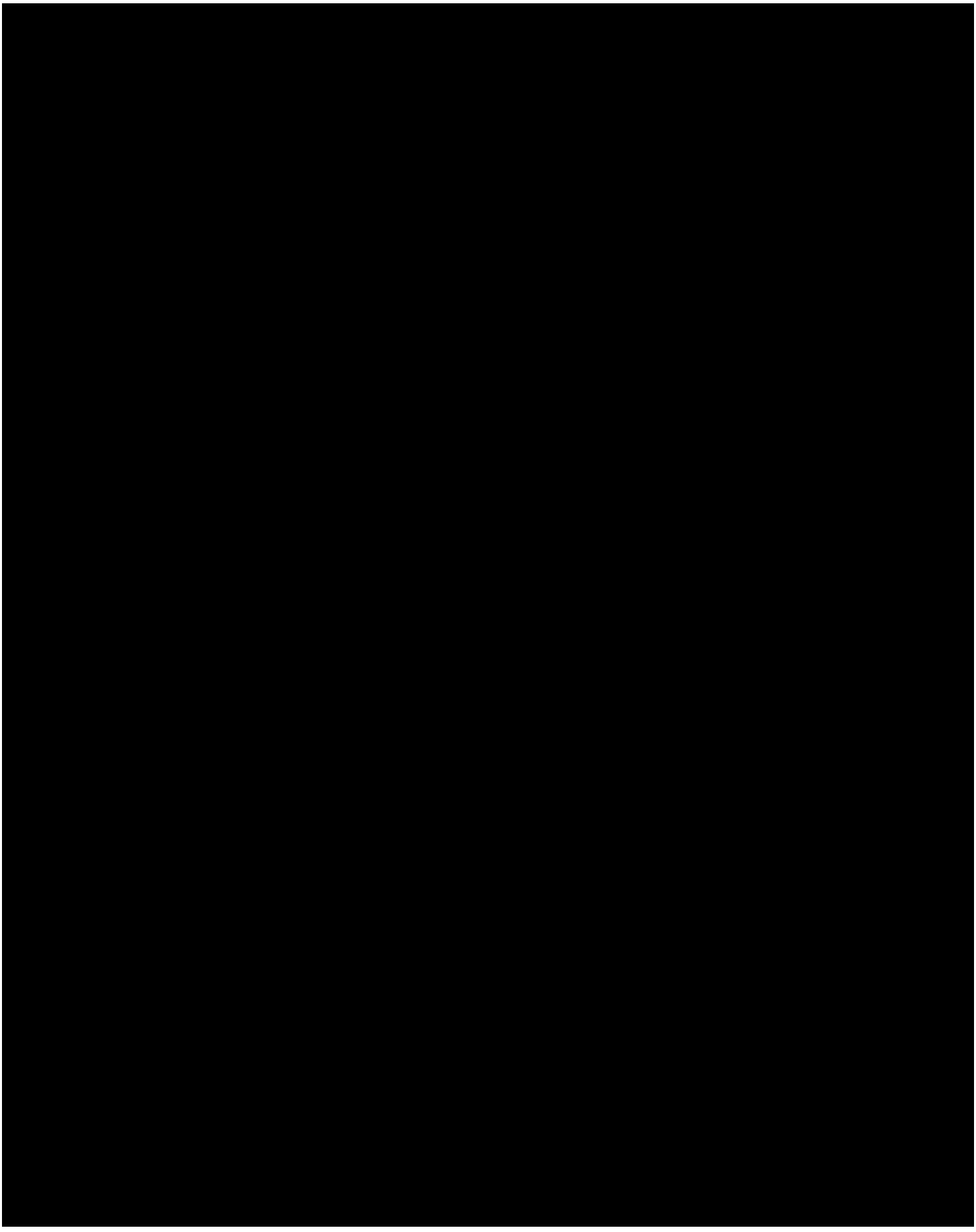
The landform of Isolated Find 32OLx503 had been disturbed by agriculture since 1957 based on aerial photography. Plowing in the area of the isolated find would have disturbed the topmost 6-8" (~20cmbs), which would have churned the potential cultural interface with the sediments above and below. The 66 years of plowing would have also deflated the natural ground surface to some degree. These observations demonstrate that the flake in this setting is in a secondary context and is not *in-situ*. Shovel investigation probes (SIPs) were not excavated because the flake lies in a significantly disturbed context, with no potential for intact cultural deposits. Isolated Find 32OLx504 is recommended *not eligible* for inclusion on the NRHP. No further work at this location is recommended.

[redacted]









Previously Recorded Site

32OL127

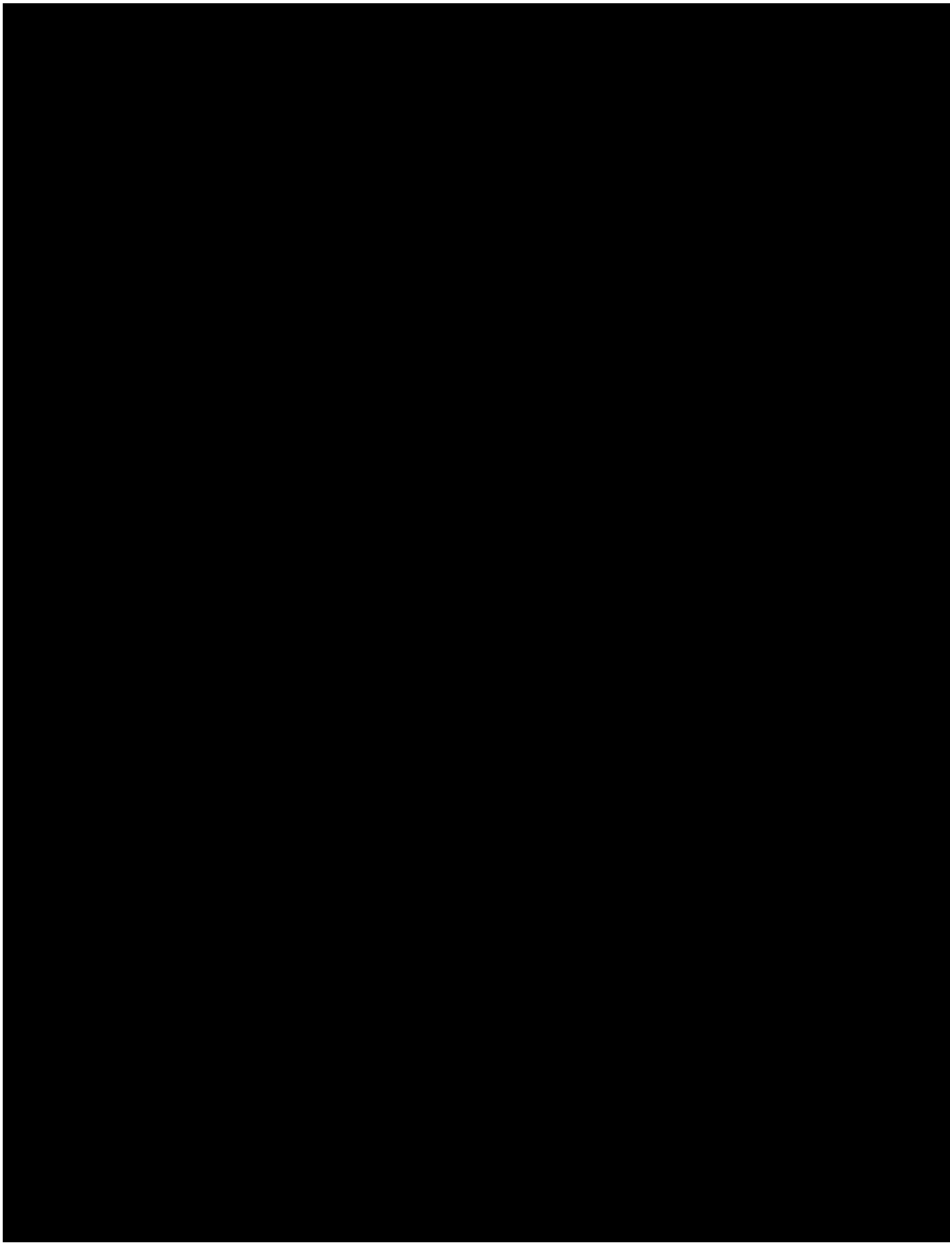
Site 32OL127 was recorded as two rock cairns and two stone circles [redacted] by Sperry in April 1968 and revised by Dill in 1977 [redacted] The form notes that the site was mapped and tested by Sperry prior to being destroyed by mine development in April of 1968. The form also notes that Sperry's records refer to the site as 32OL105, but it was not formally recorded with the ND SHPO until Dill assigns the site number 32OL127 in 1977.

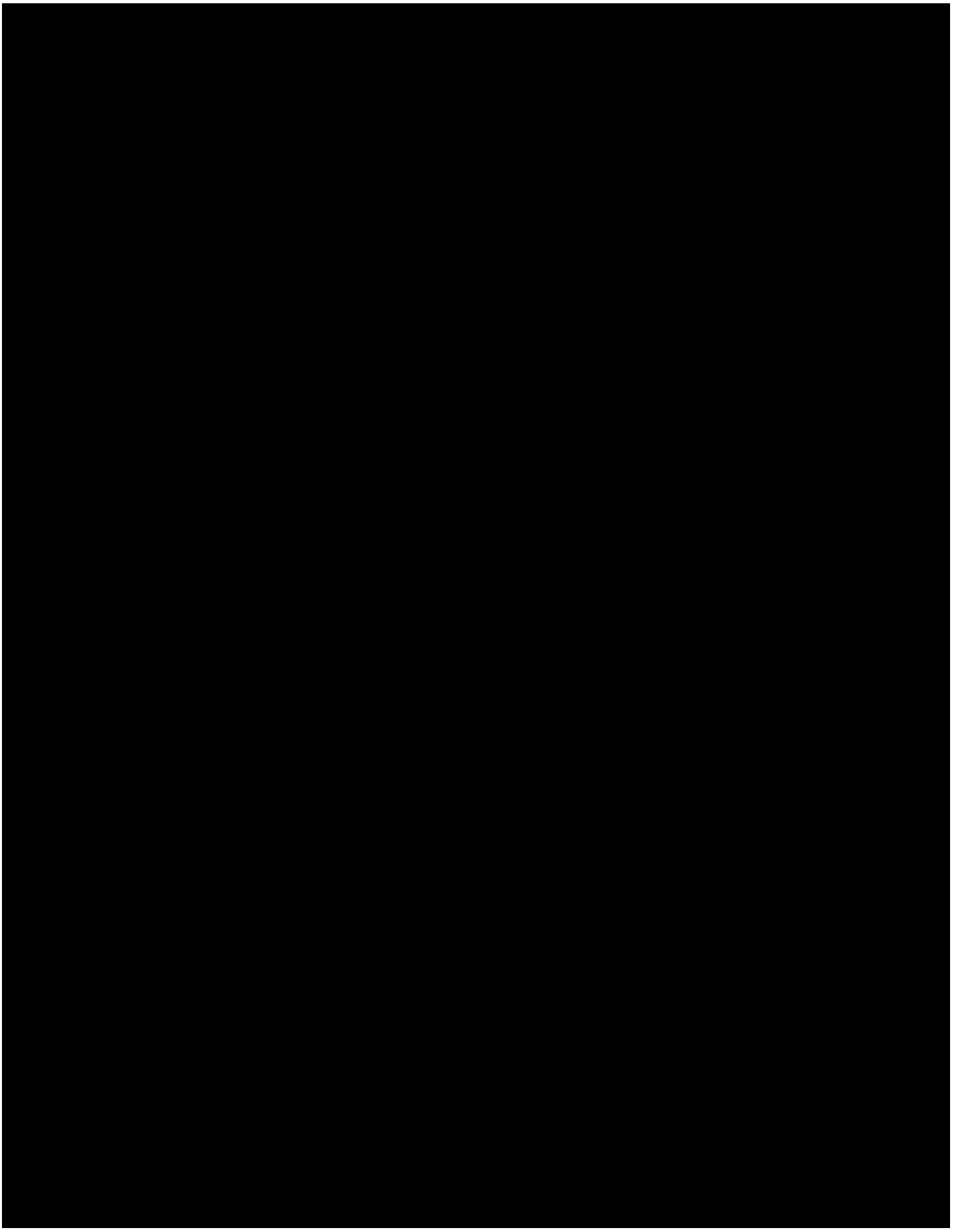
Because the site was destroyed by mine development in 1968, the site is recommended *not eligible* for inclusion on the NRHP. No further work or avoidance measures at this site location is recommended.

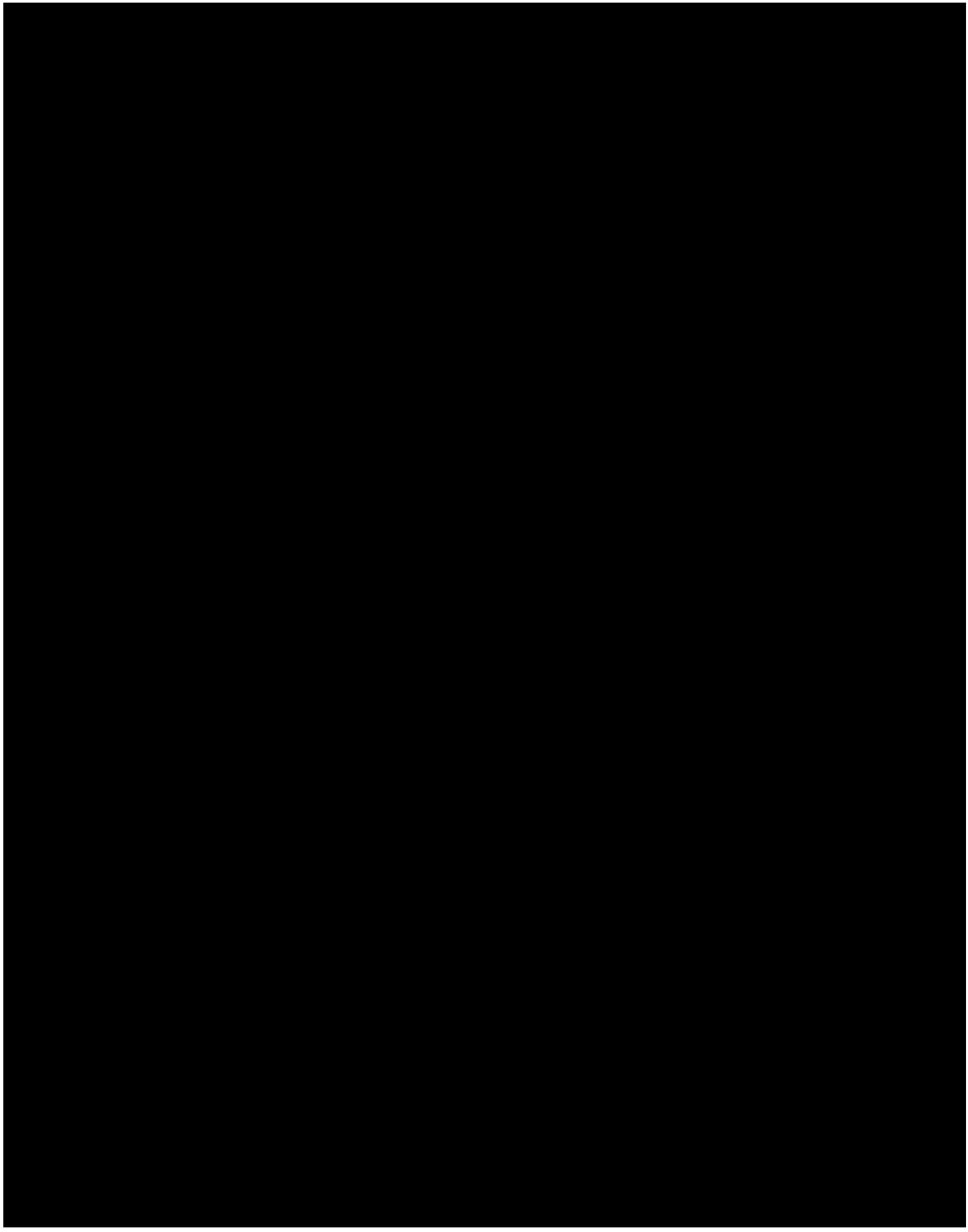
32OL960 and 32OL961

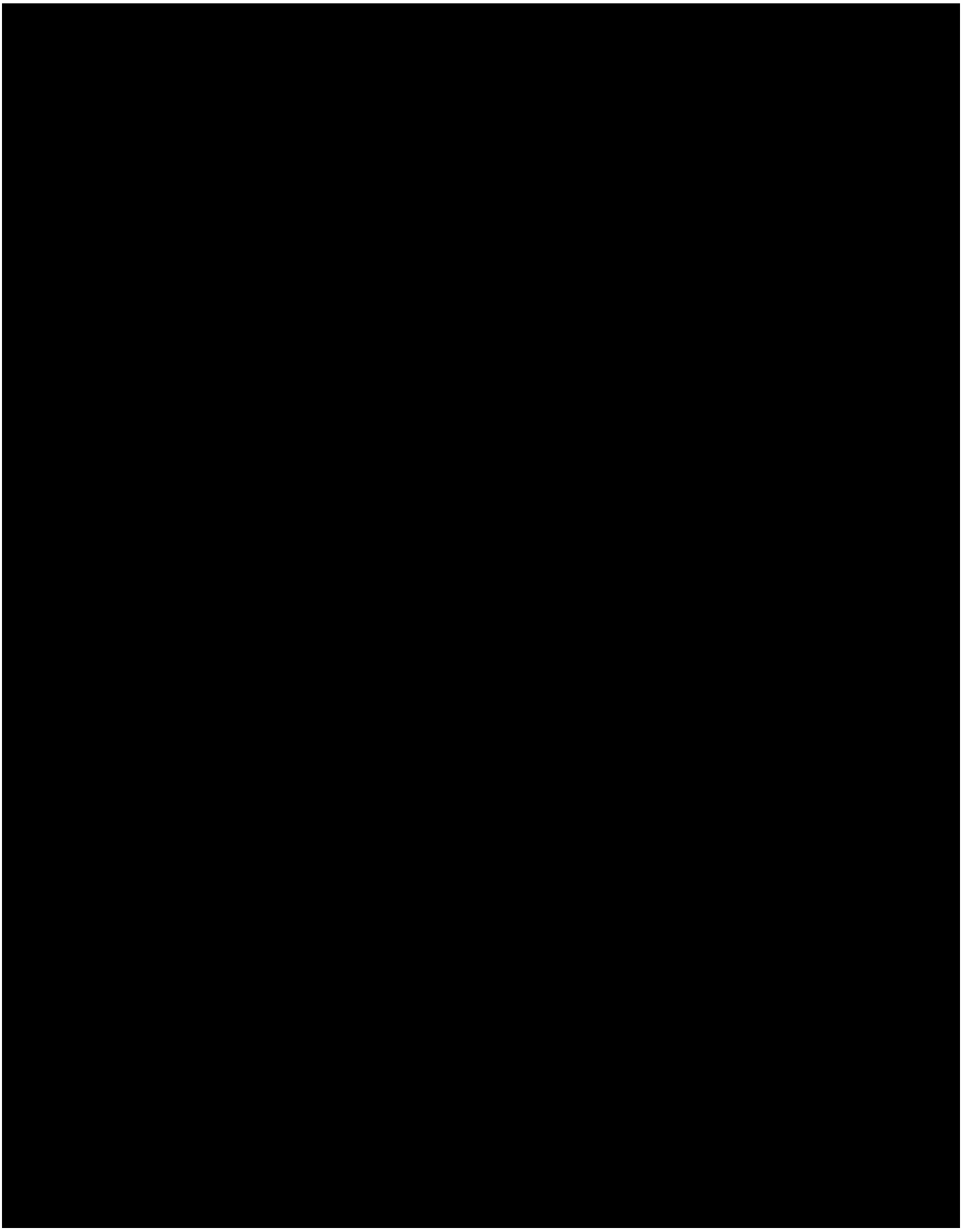
Both sites consist of single stone features recorded by Juniper archaeologists in 2022 during an inventory [redacted] This inventory is reported in *Tundra Well Location: A Class III Cultural Resource Inventory in Oliver County, North Dakota* (Pace 2022, MS# 19701). [redacted]

Juniper recommends that the previous management recommendations be implemented for this project and the sites are avoided by at least 50' during the development [redacted]









Newly Recorded Site

32OL1008

Site 32OL1008 is a sparse cultural material scatter [redacted] The artifact assemblage is comprised of four KRF flakes and one Plains Side Notched projectile point. The flakes are from the middle stages of core reduction (n=3) and late stage of tool thinning or finishing (n=1).

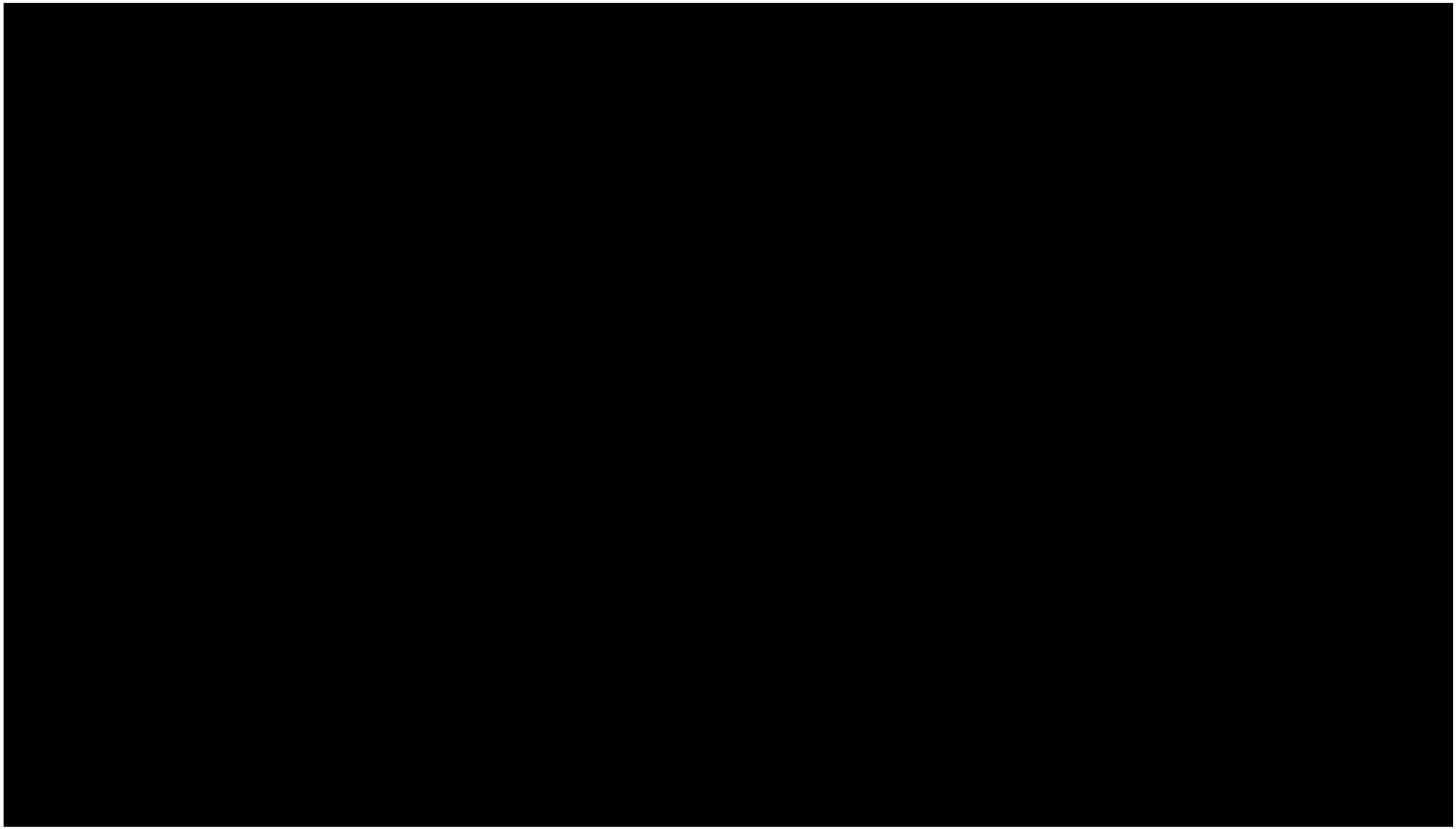
[redacted]

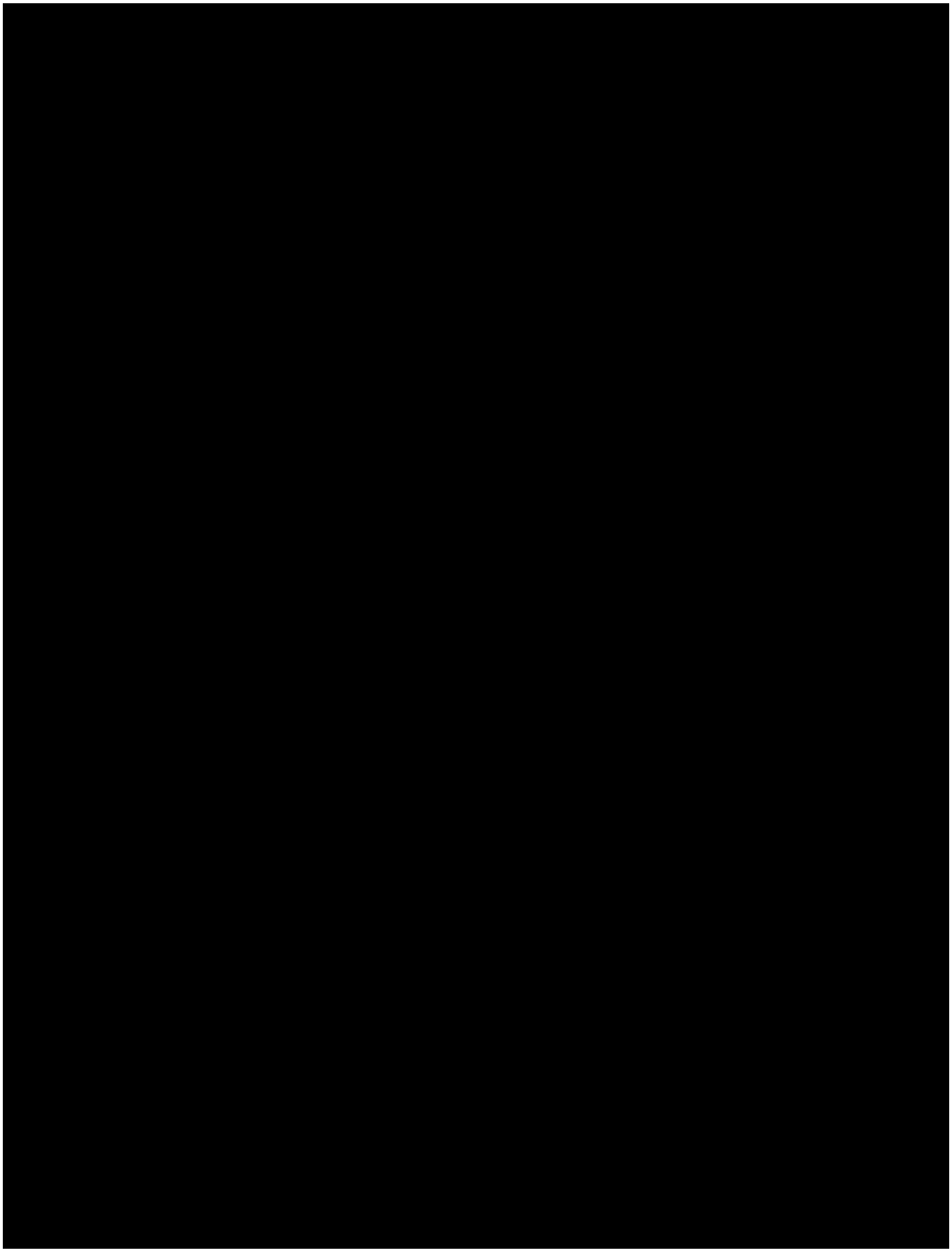
Excavations of shovel test probes and test excavation units at six nearby archaeological sites, 32OL326, 32OL327, 32OL328, 32OL329, 32OL330, and 32OL332 were conducted in 1992 (Peterson 1992, MS#5829). [redacted] Excavations at Site 32OL328, the closest site, recovered cultural materials at an interface ~15-17cmbs (~6") (Peterson 1992:59, MS#5829). Four of the other excavated sites in the area noted a cultural context less than 10cmbs. This provides a reference for potential cultural deposits in the area. At the time of those excavations, the six sites were in undisturbed native prairie and not in agricultural fields or mining areas. The landform of Site 32OL1008 had been disturbed by agriculture since 1957 based on aerial photography. Plowing in the area of the isolated find would have disturbed the topmost 6-8" (~20cmbs), which would have churned most of the potential cultural interface with the sediments above and below. The 66 years of plowing would have also deflated the natural ground surface to some degree. These observations demonstrate that the cultural materials in this setting are in a secondary context and not *in-situ*. The greater number of artifacts suggests that additional materials may be present and may be *in-situ*.

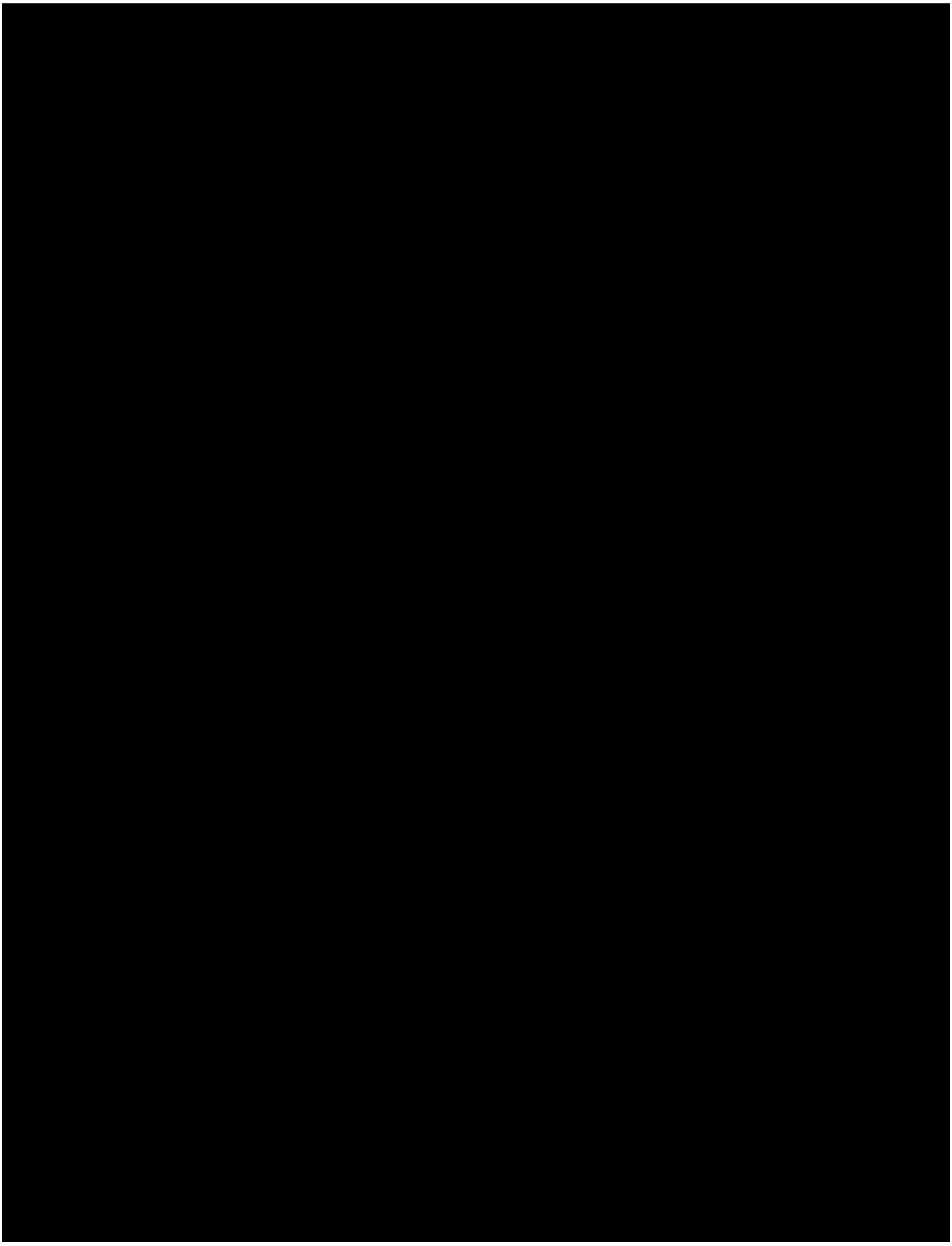
Site 32OL1008 retains some aspects of integrity including location, design, setting, workmanship, materials, feeling, and association. The integrity of the site has been impacted by the use of the area for agriculture and the modern industrial development of the larger region including but not limited to the impoundment of the creek to form Nelson Lake, the development of the power plant, mining, and installation of power transmission lines. Because the site retains some aspects of integrity it is currently *unevaluated* for the NRHP and should be avoided by the proposed development [redacted]

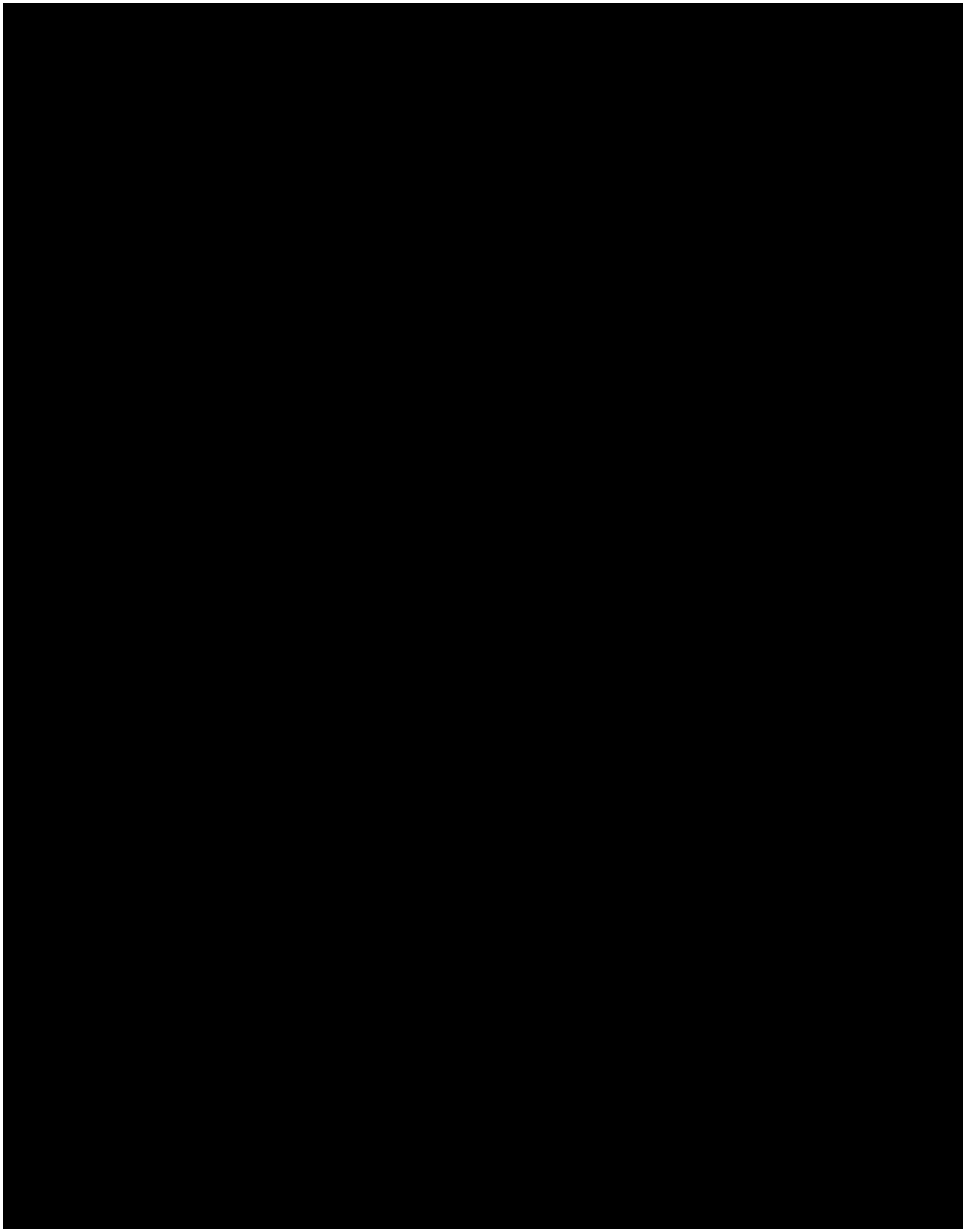
Site 32OL1008 lies ~141m (~464') from Isolated Find 32OLx504. Based on the field observations, aerial photography, and LiDAR imagery, Site 32OL1008 [redacted] The relationship between the two resources is unknown and given the dearth of cultural materials any connection is tenuous at best.

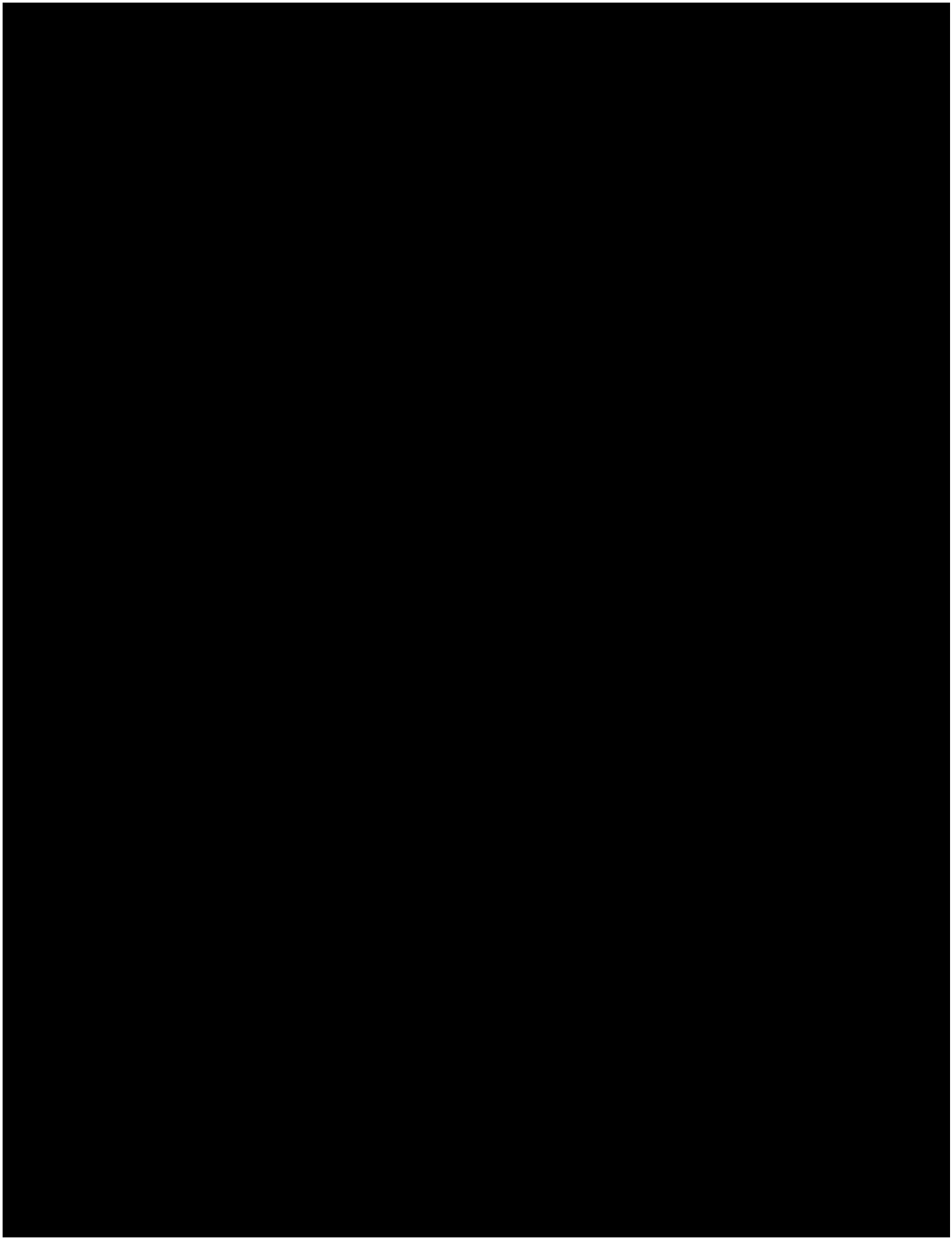
Juniper recommends that the site be avoided by 50' during the development [redacted]. If the proposed development needs to impact the site area, the site should be evaluated for inclusion to the NRHP using traditional archaeological methods.

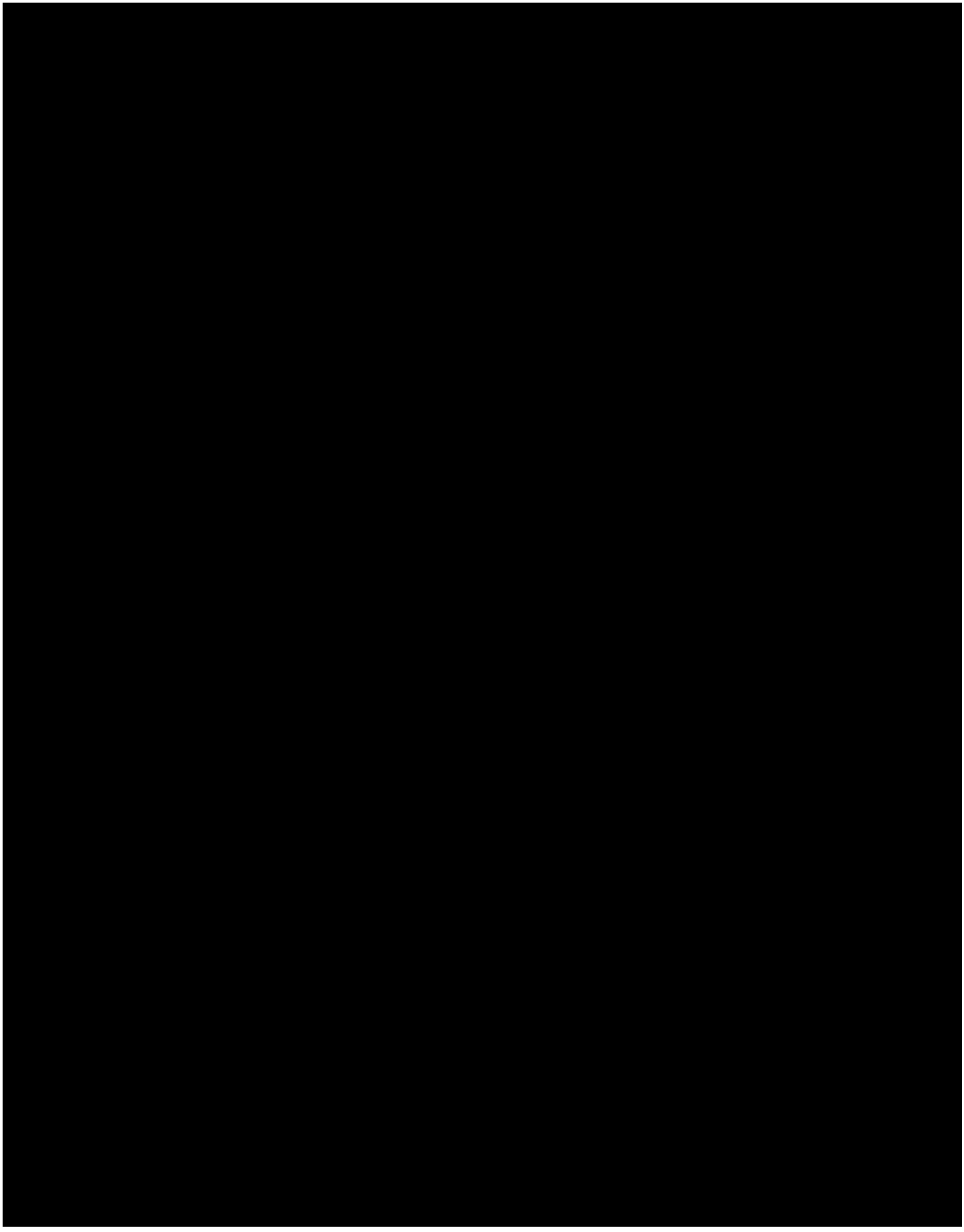


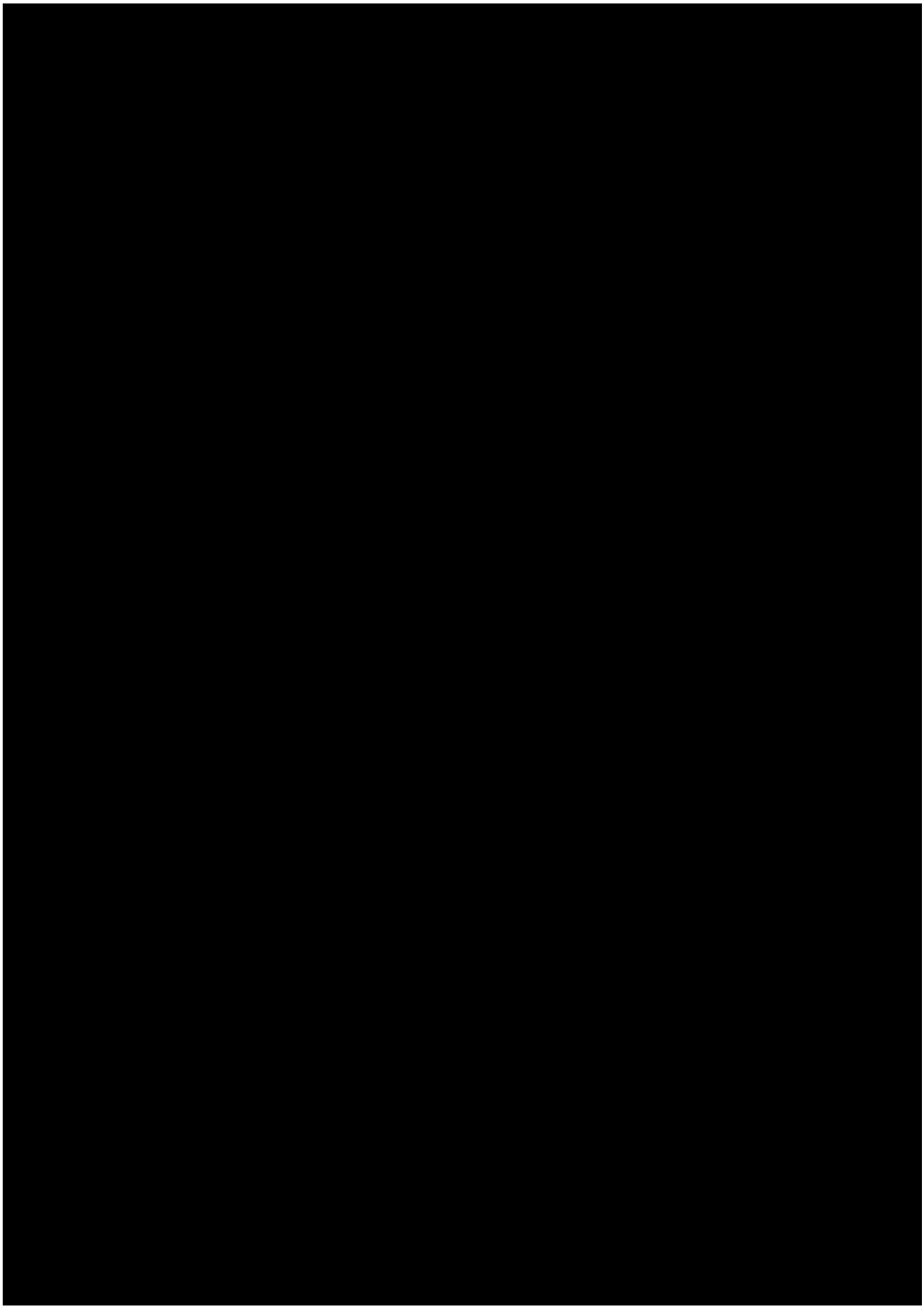












SUMMARY AND MANAGEMENT RECOMMENDATIONS

On behalf of Minnkota, Barr contacted Juniper to complete a cultural resource inventory of the proposed Tundra Pipeline Project (Kulevsky and Morrison 2023). In 2023, Barr requested Juniper conduct cultural resource inventories for additional workspaces and laydown areas to be used during construction of the pipeline. The proposed additional workspaces cover 417 acres. Of these, 306 were inventoried to SHSND Class III standards. Approximately 8 acres (the expansion of Block 5 and the southern extent of the proposed access road lie within areas previously inventoried in 2008. The remaining 103 acres have been disturbed by previous mining activities, as indicated by historic and modern aerial imagery. The project falls under the jurisdiction of the US Department of Energy and is being treated as a federal undertaking.

The Class I Literature Review noted 126 previously recorded cultural resources lie within one mile of these additional workspaces. Six previously recorded cultural resources lie within or directly adjacent to the inventory blocks (Table 2). Site 32OL127 is a stone feature site recorded by Sperry in 1968 just prior to its destruction by mining activities. Because the site has been destroyed and no longer exists, no further work or avoidance measures are recommended. Sites 32OL960 and 32OL961 [redacted] and should not be directly impacted by this project using the management recommendations presented in a previous report related to this undertaking (Pace 2022:15, MS# 19701). Previously recorded Isolated Finds 32OLx441 and 32OLx442 [redacted] and were not found during the current inventory. These isolated finds have been previously recommended *not eligible* for the NRHP. Nothing Juniper archaeologists observed contradicts these previous recommendations.

Three new cultural resources were recorded during this inventory: two are isolated finds and one is a prehistoric cultural material scatter. Isolated Finds 32OLx503 and 32OLx504 each consist of solitary pieces of chipped stone flaking debris found in disturbed contexts. Both are recommended *not eligible* for the NRHP with no further work or avoidance recommendations. Site 32OL1008 is a sparse cultural material scatter and is currently *unevaluated* for the NRHP. Juniper recommends that the site be avoided by the proposed undertaking by at least 50' following the previous recommendations for this project.

[redacted]

Provided Sites 32OL960, 32OL961, and 32OL1008 are avoided by the proposed development, because Isolated Finds 32OLx441, 32OLx442, 32OLx503, 32OLx504, and 32OLx505 are recommended *not eligible* for the NRHP and because the other previously recorded cultural resources will not be impacted by the proposed undertaking, Juniper recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

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Kulevsky, Andrea and John G. Morrison

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2023b *Milton Young Transmission Line Reroute: A Class III Cultural Resource Inventory in Oliver County, North Dakota*. Produced by and available at the Juniper, LLC office in Bismarck, ND.

Pace, Rebecca

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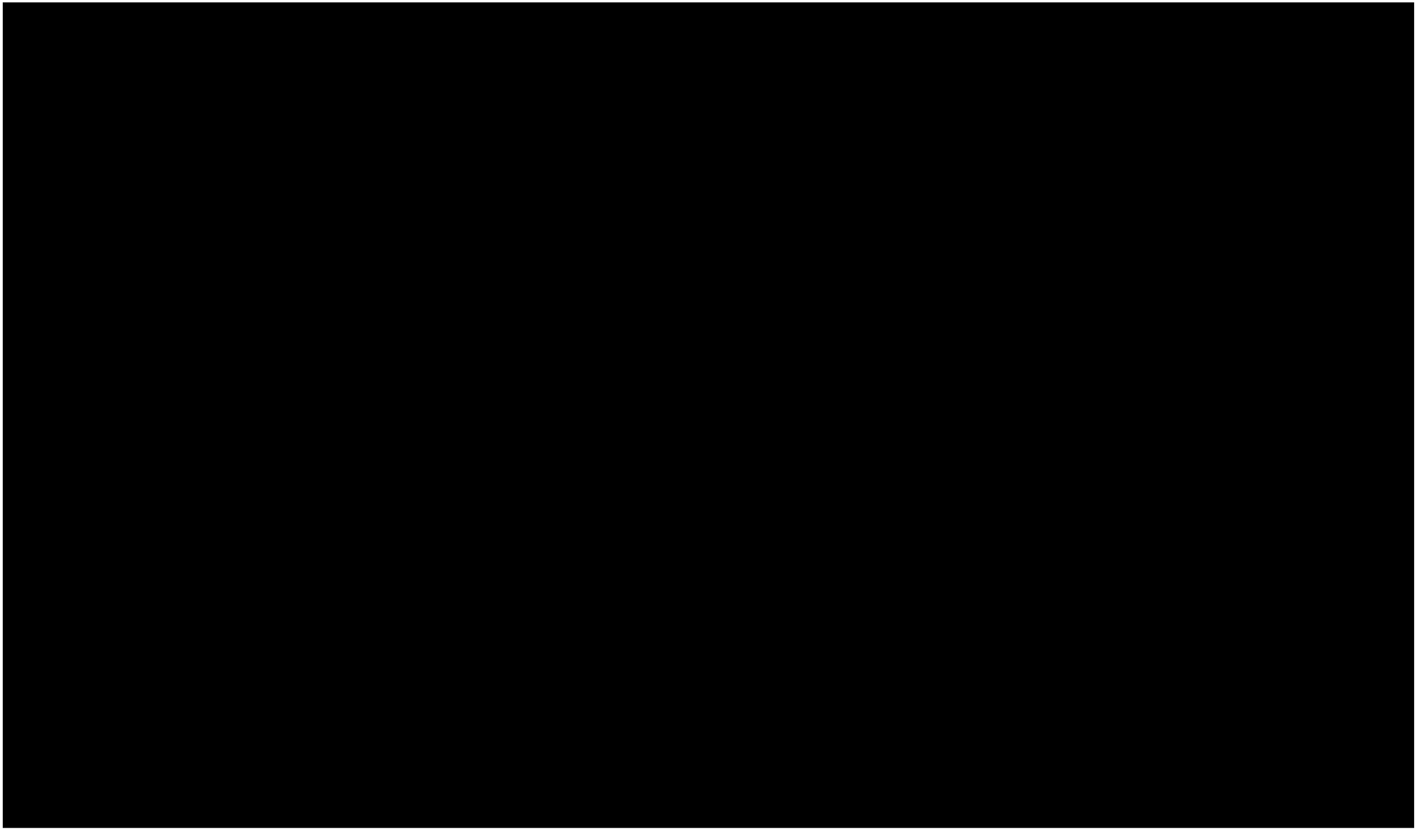
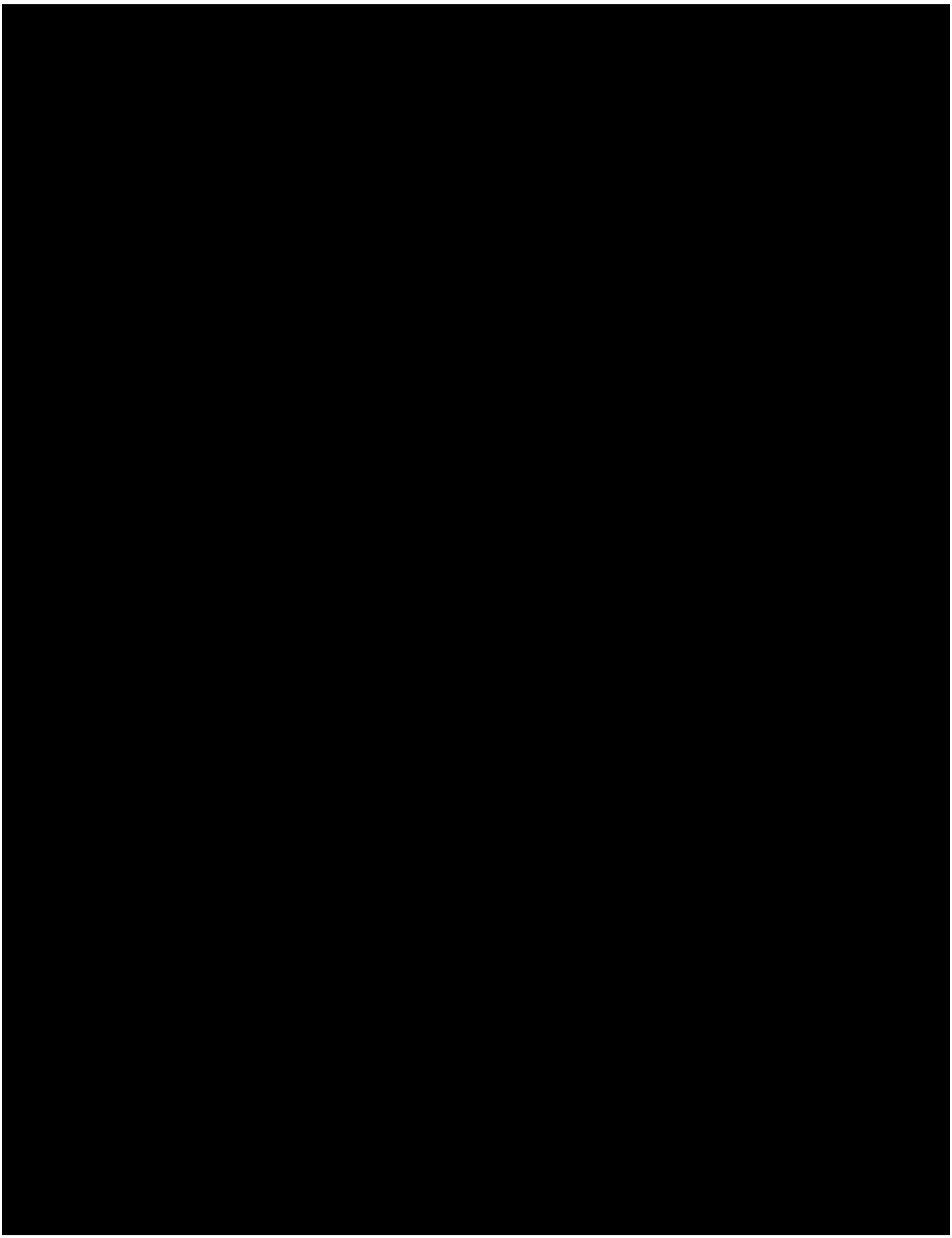
2018 *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects, Revised Edition*. Produced by and available at the Division of Archaeology and Historic Preservation, State Historical Society of North Dakota, Bismarck, ND.

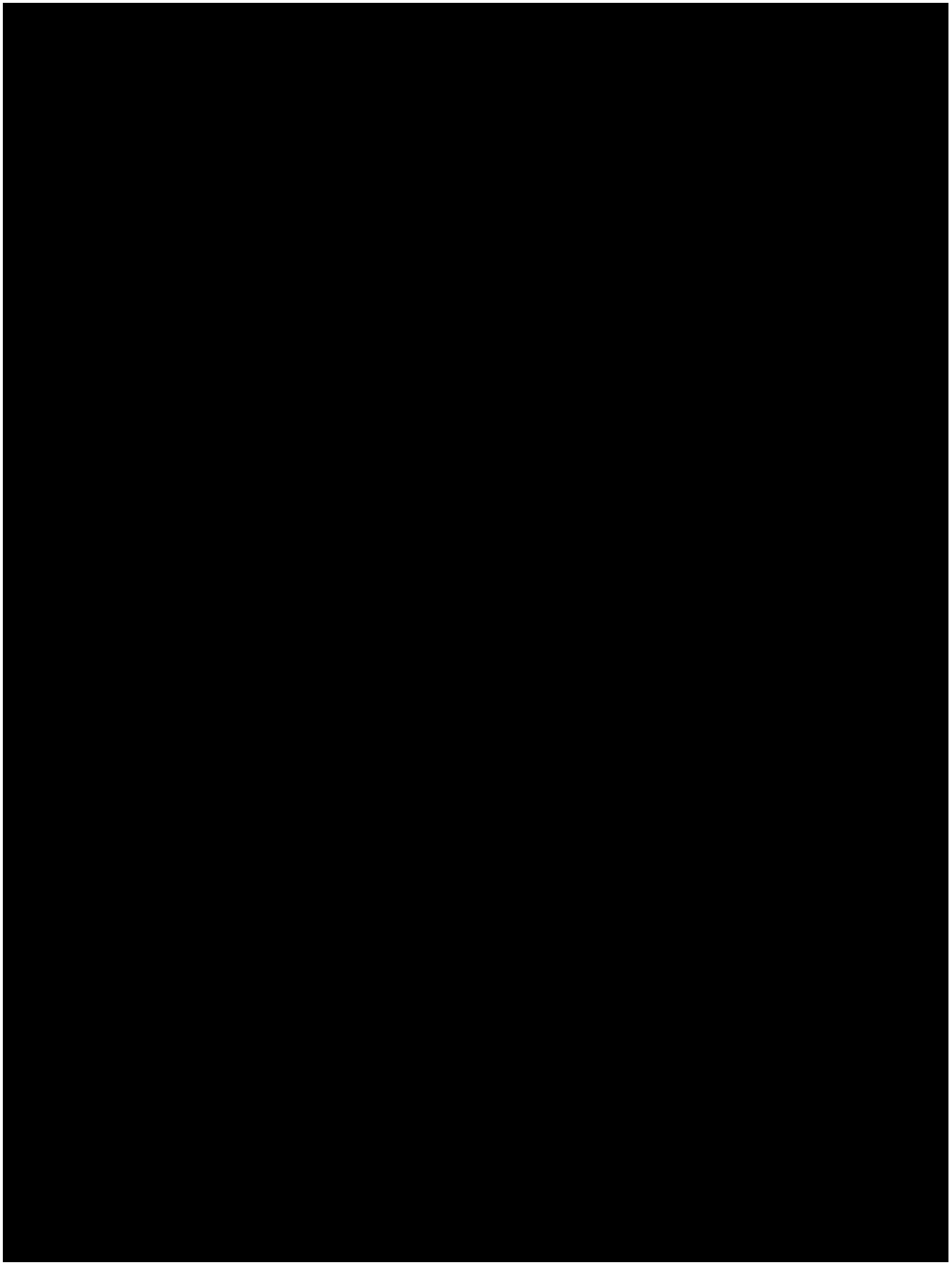
2016 *The North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component.* Produced by and available at the Archaeology and Historic Preservation Division, State Historical Society of North Dakota, Bismarck, ND.

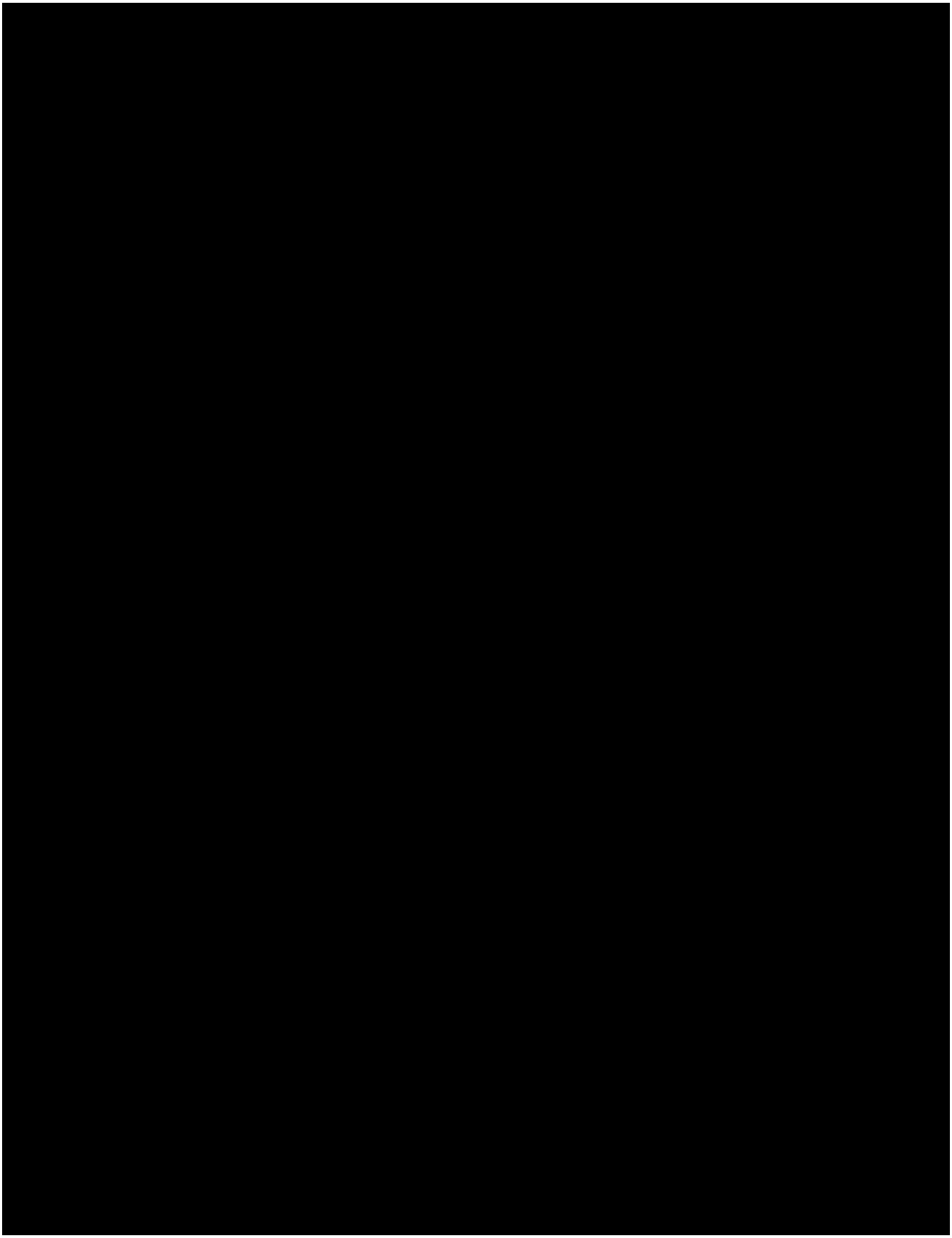
APPENDIX A
PROJECT MAPS

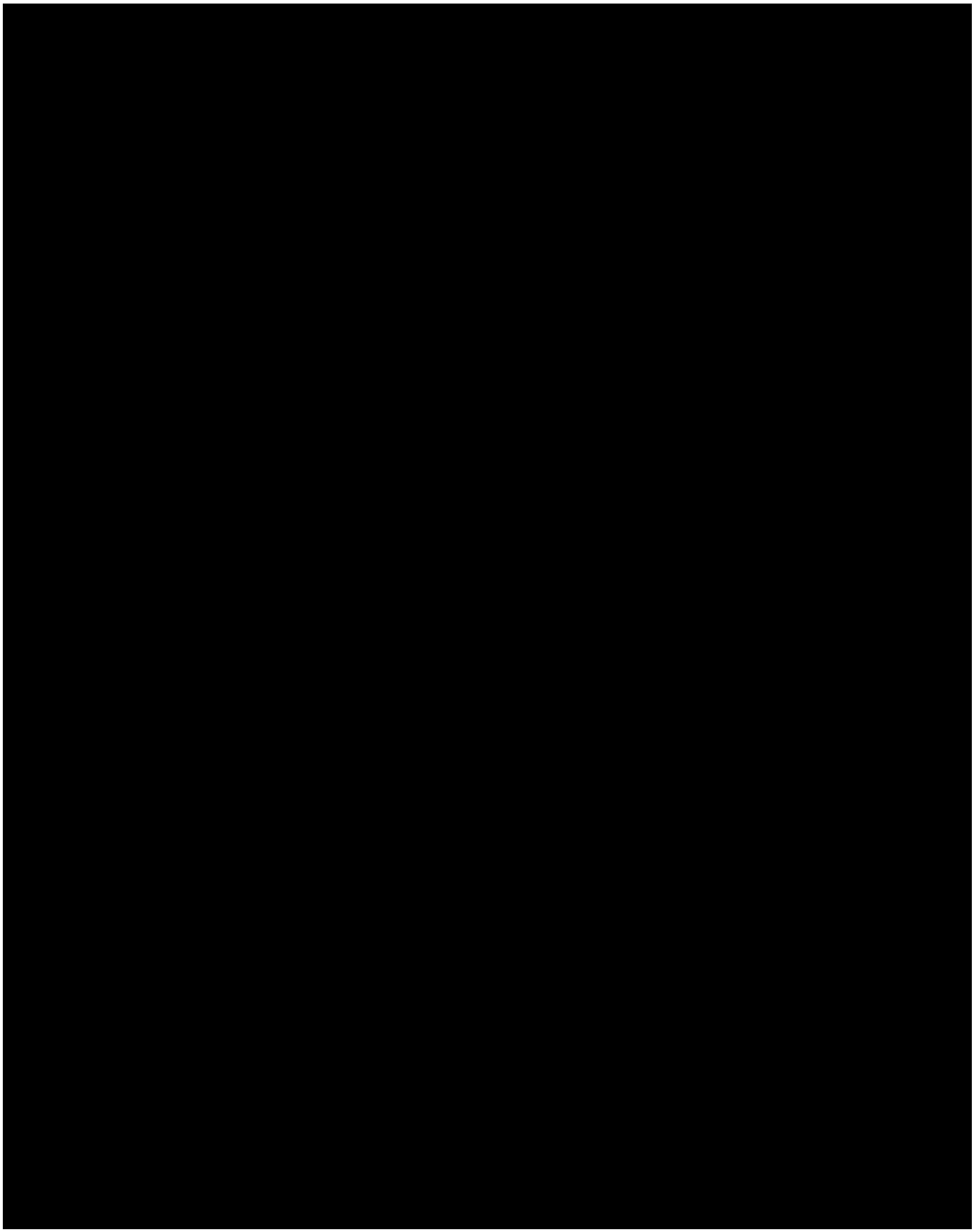


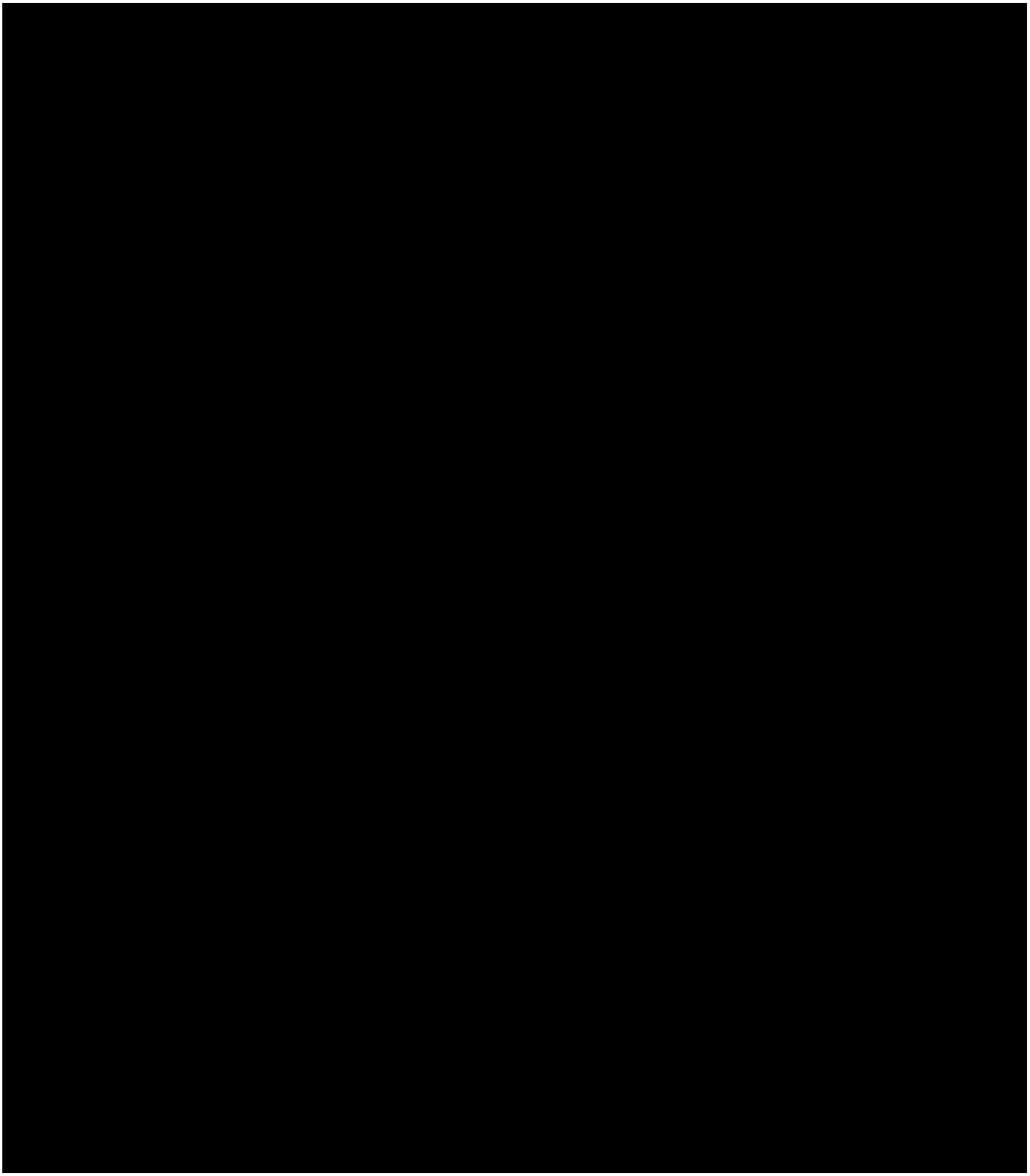
APPENDIX B
LITERATURE REVIEW











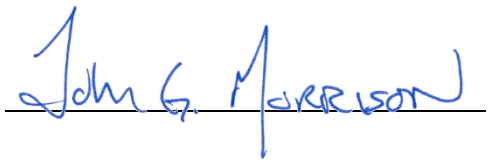
PUBLIC DOCUMENT - NONPUBLIC DATA HAS BEEN EXCISED

JUNIPER
ENVIRONMENTAL CONSULTING

MILTON YOUNG TRANSMISSION LINE REROUTE:
A CLASS III CULTURAL RESOURCE INVENTORY IN OLIVER COUNTY, NORTH DAKOTA

Prepared For:
Barr Engineering Co.
Bismarck, North Dakota

Principal Investigator:
John G. Morrison



Prepared By:
Andrea Kulevsky and John G. Morrison
Juniper, LLC
Bismarck, North Dakota

Report of Investigation: 841 **December 2023**

315 E. Broadway Ave., Bismarck, ND 58501 | O: (701) 223-6306 | C: (701) 400-3575 | Juniper, LLC

Manuscript Data Record Form

1. Manuscript Number:
2. SHPO Reference #:
3. Author(s): Andrea Kulevsky and John G. Morrison
1. Title: Milton Young Transmission Line Reroute: A Class III Cultural Resource Inventory in Oliver County, North Dakota
2. Report Date: December 2023
3. Number of Pages: 32
4. Type I, T, E, O: I
5. Acres: 102
6. Legal Location(s) with Historic Context Study Unit(s):

County	TWP	R	SEC	SU
OL	141	83	4, 5, and 8	SM

MILTON YOUNG TRANSMISSION LINE REROUTE:
A CLASS III CULTURAL RESOURCE INVENTORY IN OLIVER COUNTY, NORTH DAKOTA

Prepared For:
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John G. Morrison

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Juniper, LLC
Bismarck, North Dakota

December 2023

ABSTRACT

On behalf of Minnkota Power Cooperative, Barr Engineering contacted Juniper to conduct a cultural resource inventory of the proposed Milton Young Transmission Line Reroute. The project covers approximately 3.2 miles of rerouted/upgraded transmission lines. Of these lengths, approximately 0.4 miles cover lands extensively disturbed by the Milton Young Power Plant and were not inventoried. The remaining 2.8 miles of the transmission line passes over relatively intact lands and some reclaimed/developed lands outside of the Milton Young Power Plant. This portion of the transmission line was inventoried for cultural resources using a 300' wide corridor centered on the proposed centerline of the transmission line. The developed and reclaimed areas were included for ease of access to the undisturbed area and to minimize the need for driving within the active mining operation. The US Department of Agriculture, Rural Utilities Service (USDA RUS) is the lead agency for this undertaking.

Ed Stine, Project Director, and Project Archaeologists William Christensen and Andrea Kulevsky conducted the inventory on August 23-24, 2023. A total of 102 acres was inventoried to the State Historical Society of North Dakota Class III Intensive Pedestrian Inventory standards.

The Class I Literature Review indicates 75 cultural resources, and 16 cultural resource investigations have been previously recorded within one mile of the project. None of these previously recorded cultural resources lie within or are directly adjacent to the inventoried corridor.

One new cultural resource was recorded during this inventory, Isolated Find 32OLx505 is a single piece of chipped stone flaking debris located on the edge of previously developed and reclaimed lands. The isolated find is recommended *not eligible* for the National Register of Historic Places with no further work or avoidance measures.

Because Isolated Find 32OLx505 is recommended *not eligible* for the National Register of Historic Places, and because none of the previously recorded cultural resources will be impacted by the proposed undertaking, Juniper recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

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INTRODUCTION

Barr Engineering Co. (Barr) on behalf Minnkota Power Cooperative (Minnkota) contracted Juniper, LLC (Juniper), to conduct a Class III Intensive Cultural Resource Inventory for the Milton Young Transmission Line reroute. The project covers approximately 3.2 miles of rerouted/upgraded transmission lines (Figure 1 and Figure 10-Figure 16 in Appendix A). Approximately 0.4 miles of the route cross lands extensively disturbed by the Milton Young Power Plant. These areas were not included in the inventory. The remaining 2.8 miles of the transmission line was inventoried to State Historical Society of North Dakota (SHSND) Class III Intensive Pedestrian Inventory standards using a 300' wide corridor centered on the proposed centerline of the transmission line (SHSND 2020). This portion of the transmission line crosses relatively intact and some reclaimed/developed lands outside of the Milton Young Power Plant (Figure 10-Figure 16 in Appendix A). The developed and reclaimed areas were included for ease of access to the undisturbed area and to minimize the need for driving within the active mining operation. A total of 102 acres (2.8 miles) were inventoried SHSND Class III standards (SHSND 2020). The US Department of Agriculture, Rural Utilities Service (USDA RUS) is the lead agency for this undertaking.

The Class I Literature Review indicates 75 cultural resources, and 16 cultural resource investigations have been previously recorded within one mile of the project area. None of these previously recorded cultural resources lie within or directly adjacent to the inventoried corridor.

Ed Stine, Project Director, and William Christensen and Andrea Kulevsky, Archaeological Technicians, conducted the inventory on August 23-24, 2023. One new cultural resource was recorded during the inventory, Isolated Find 32OLx505. The discussion of the newly recorded cultural resource is included in the RESULTS and SUMMARY AND MANAGEMENT RECOMMENDATIONS sections of this document. It is our understanding that Minnkota intends to follow these management recommendations pending approval, concurrence, or modification by the agencies involved. Illustrations, maps, field notes, and photographic records relevant to the undertaking are on file at the Juniper office in Bismarck, North Dakota.

ENVIRONMENTAL SETTING

The proposed developments are located in gently rolling upland plains surrounding the Milton Young Power Plant and south of Nelson Lake, an impoundment on Square Butte Creek. The proposed development falls within the Southern Missouri River Study Unit (SM #5) as defined in the *North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component* (SHSND 2021: 5.1-5.85).

The SHSND document describes and presents an overview of the physiographic and cultural settings of the study unit, along with information on previous research within the study unit. A project specific description of the environmental setting is presented below based on our field observations, our knowledge of the project area, and a review of aerial photographs.

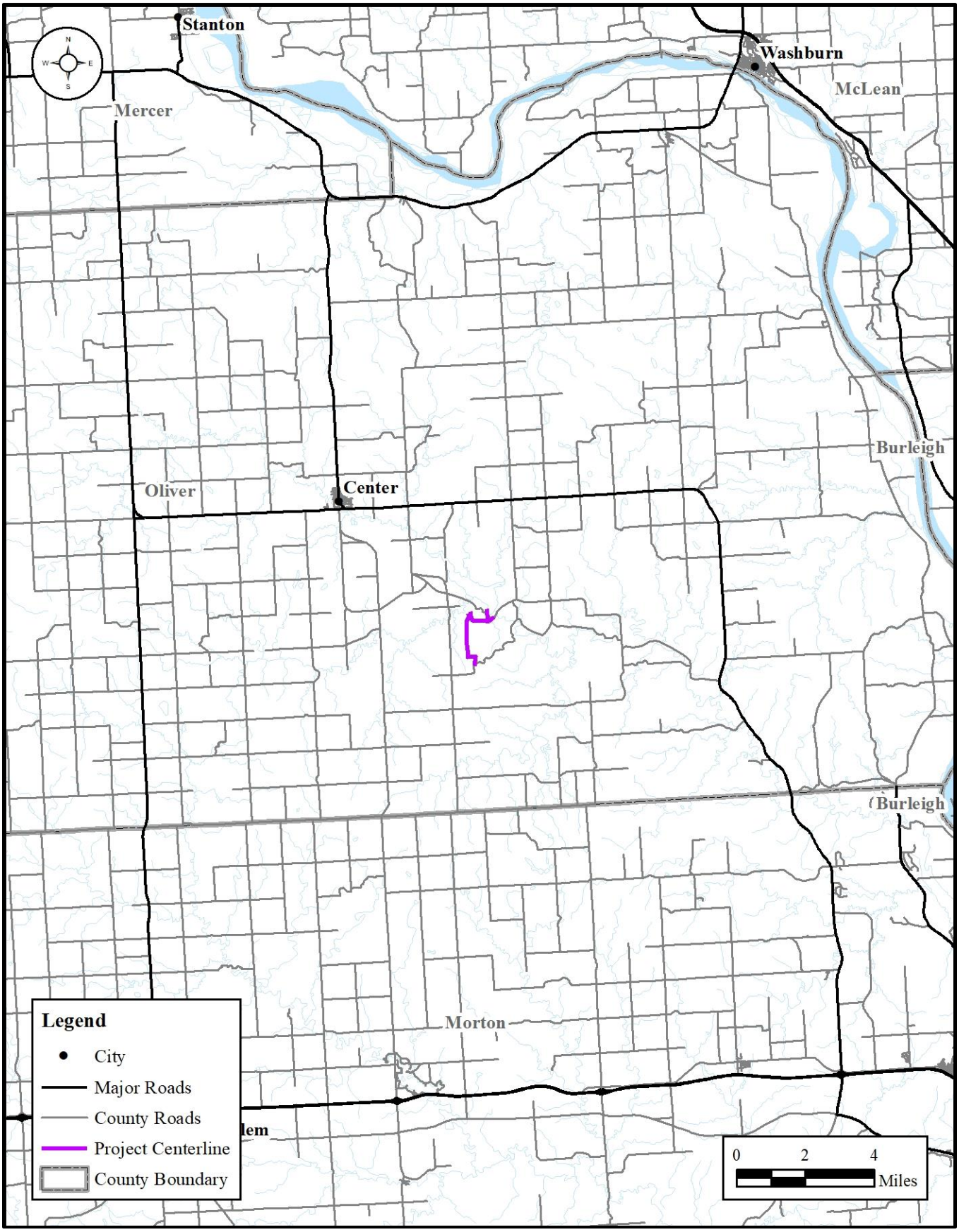


Figure 1: The regional location of the proposed undertaking.

Topography

The project area lies to the west of the Missouri River in central North Dakota. It is part of the Missouri Slope Uplands of the Great Plains physiographic region, an area characterized by rolling to hilly plains. Square Butte Creek, Nelson Lake, and Hagel Creek are the largest waterbodies within the general area. Generally, the inventory corridor lies on the gently rolling terrain dotted with larger hills and knolls between the two creeks south of the lake. The topography of the area has been significantly altered by mining and the associated development of the power plant (Figure 11-Figure 16 in Appendix A). The inventory corridor is underlain by the Paleocene-aged Sentinel Butte Formation, with patches of Quaternary-age Coleharbor Group glacial deposits (Bluemle 2000).

Flora

The vegetation regimes present today are not necessarily the ones that would have been present in the prehistoric past: agriculture, the introduction of non-native species, and modern development have altered the flora mixes in the area (Figure 2 - Figure 5). Most of the inventory corridor lies within agricultural fields (primarily small grains and canola). Substantial portions of the project area are covered with alfalfa/hay or are fallow fields with a mixture of native and introduced vegetation.

The pasture/grasslands of this area consist of medium-to-tall prairie grassland species including needle grasses (*Tipa* sp.), slender wheat grass (*Agropyron trachycaulum*), needle and thread (*Stipa comata*), and grama grasses (*Bouteloua* sp.). These grasses extend over much of the area where the land has not been tilled or previously developed.

Ground surface visibility (GSV) within the inventory corridor averaged 70% in recently plowed/harvested agricultural fields. In pasture and native prairie, GSV averaged 35%.

Fauna

As with vegetation, the types and distribution of fauna in the project area today do not necessarily reflect those of the past. The combination of floral diversity and the various waterbodies and their associated ecosystems provided habitats for many kinds of animals. The region would have been home to diverse large and small mammals as well as some birds, amphibians, and reptiles. In the past, people would have commonly encountered bison (*Bison bison*), elk (*Cervus canadensis*), antelope (*Antilocapra americana*), moose (*Alces alces*) as well as mule and white tail deer (*Odocoileus sp.*). In addition, wolf (*Canis lupus*), coyote (*Canis latrans*), jack rabbit (*Lepus* sp.), badger (*Taxidea taxus*), beaver (*Castor canadensis*), and prairie dog (*Cynomys ludovicianus*) would have been present, as well as raptors, songbirds, and game birds.

Rivers, creeks, and other waterbodies would have provided homes to various species of fish (northern pike, perch, and suckers), different types of waterfowl, (ducks, geese, etc.,) amphibians, and reptiles. The various wetlands and smaller bodies of water would have also provided significant habitat for waterfowl in the project area. These water sources would have also served to draw in and concentrate the faunal resources.

[redacted]

[redacted]

RESEARCH GOALS AND EVALUATION OF RESEARCH

Following the mandated policies implementing the National Historic Preservation Act (NHPA PL 89-665, as amended; 16 USC 470), the proposed project corridor was inventoried to locate and identify any cultural resources within the corridor.

The goal of this inventory was to allow Minnkota, Barr, USDA RUS, the North Dakota State Historic Preservation Office (ND SHPO), and other involved agencies to plan the proposed development to avoid significant cultural resources. The methods employed for this inventory greatly decrease the potential that the project proponents would encounter situations that would require testing or mitigation of cultural resources within the inventory corridors prior to construction. The overall goal of the inventory has been achieved, as the newly recorded resource is recommended *not eligible* for the National Register of Historic Places (NRHP).

LITERATURE REVIEW

Prior to field work, Juniper conducted a literature review of the archives at the State Historical Society of North Dakota site and manuscript files for a one-mile radius around the proposed project. The file search indicates 75 cultural resources and 16 cultural resource investigations lie within the study area (Table 1 and Table 2 in Appendix B). No known cultural resources lie within or abut the inventory corridor. No known previously recorded cultural resources will be impacted by the proposed development.

Most of the previous cultural resources investigations in the area are related to energy development, i.e., coal mine development, wind power development, and transmission/distribution lines. A smattering of other research involves surface water management projects, telecom lines and wind fences. Two previous inventories covered large tracts of land overlapping the current project area. These two inventories are reported in *BNI, A Cultural Resource Inventory Conducted in Sec. 4,5, & 8 T141N, R83W, Oliver County, North Dakota* (Peterson and Brownell 1992, MS# 5838) and *BNI Coal: A Cultural Resource Inventory of 7,680 Acres in Area C in Oliver County, North Dakota* (Boughton 2008, MS# 10446). The project area covered by the 1992 Peterson and Brownell report used pedestrian transects spaced ~20 meters apart which does not meet the current inventory standards (Peterson and Brownell 1992:3, MS# 5838). The spacing combined with the age of the report indicated that the current inventory should be conducted in areas that had not been disturbed by prior mining activities. The Boughton 2008 report does not discuss how the project area was inventoried (i.e., no discussion of transect spacing or other field methods) but was likely inventoried using transects spaced further apart than would meet the current 2020 SHSND standards. These overlapping areas were not excluded from the current inventory. The results of these inventories, however, suggested that the proposed developments were unlikely to encounter significant previously unrecorded cultural resources.

FIELD METHODS

Juniper archaeologists Ed Stine (Project Director) and William Christensen and Andrea Kulevsky (Archaeological Technicians) conducted the Class III Cultural Resource Inventory on August 23-24, 2023. Project archaeologists conducted the Class III Intensive Pedestrian Inventory by walking zig-zag transects spaced no more than 15 meters apart covering the corridor to identify cultural resources. A total of 102 acres were inventoried to SHSND Class III Intensive Pedestrian Cultural Resource Inventory standards (SHSND 2020).

Special attention was paid to areas of increased ground surface visibility and exposures of subsurface sediments, including but not limited to cut banks, rodent burrows, ant mounds, and erosional features.

When an artifact or feature was encountered during the survey, the location was marked with a pin flag and the area around the artifact or feature was intensively inspected to locate any other associated artifacts or features. Based on the number and types of artifacts or features noted during the search, the grouping was determined to be either an isolated find, site lead, or a site using the following criteria:

> *An isolated find is considered to be a location of five or fewer artifacts and identified by the archaeologist(s) as representing an area of very limited past activity may be recorded as an isolated find. In all cases of identifying a location of an isolated find the archaeologist(s) should consider whether the location has good or better potential to contain buried artifacts. In such cases consideration should be given to recording the location as a site lead (SHSND 2020).*

A site lead is defined using one of two criteria, with considerations:

> *(1) A location reported by a landowner or other non-professional as containing cultural resources. These locations are considered to be site leads until such time as a qualified archaeologist or architectural historian can determine whether the site is an isolated find or site.*
>
> *(2) A location consisting of five or fewer surface visible artifacts is in the professional judgment of the archaeologist(s) likely to be only a limited surface expression of a former occupation where most of the artifacts are not visible (i.e., still buried).*
>
> *Consideration should be given by the principal investigator, the lead agency and the SHPO as to whether a site lead location should be examined more closely, possibly by subsurface investigations prior to a determination of No Historic Properties Affected or No Adverse Effect (SHSND 2020).*

Sites are defined thusly:

> *A cultural resource site is defined as a location of past human activity that took place over 50 years ago and left physical traces of the activity in the form of (1) an intact cultural feature (2) five or more artifacts found within about 60 m of each other, and/or (3) an intact subsurface cultural deposit regardless of the number of artifacts (SHSND 2020).*

After the resource was adequately defined, the appropriate site, site lead, or isolated find forms and other documentation were completed. The additional documentation included plotting the resource on a USGS 7.5' topographic map, photographing the resource, and generating a sketch map. The locations of the cultural resources and other items of interest encountered during the inventory were recorded using a Trimble R1 GNSS receiver (sub meter accuracy) connected to an iPad unit running TerraFlex software.

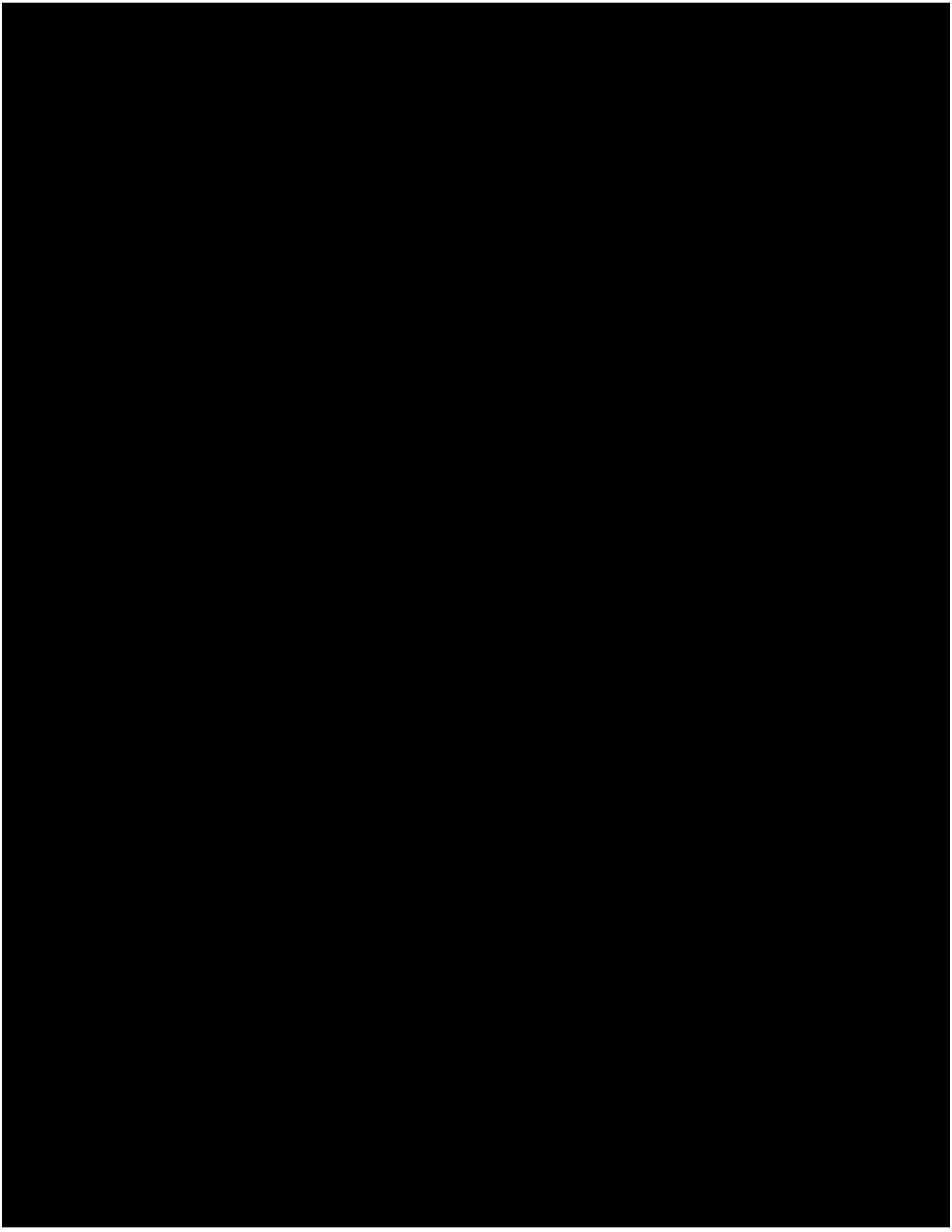
RESULTS

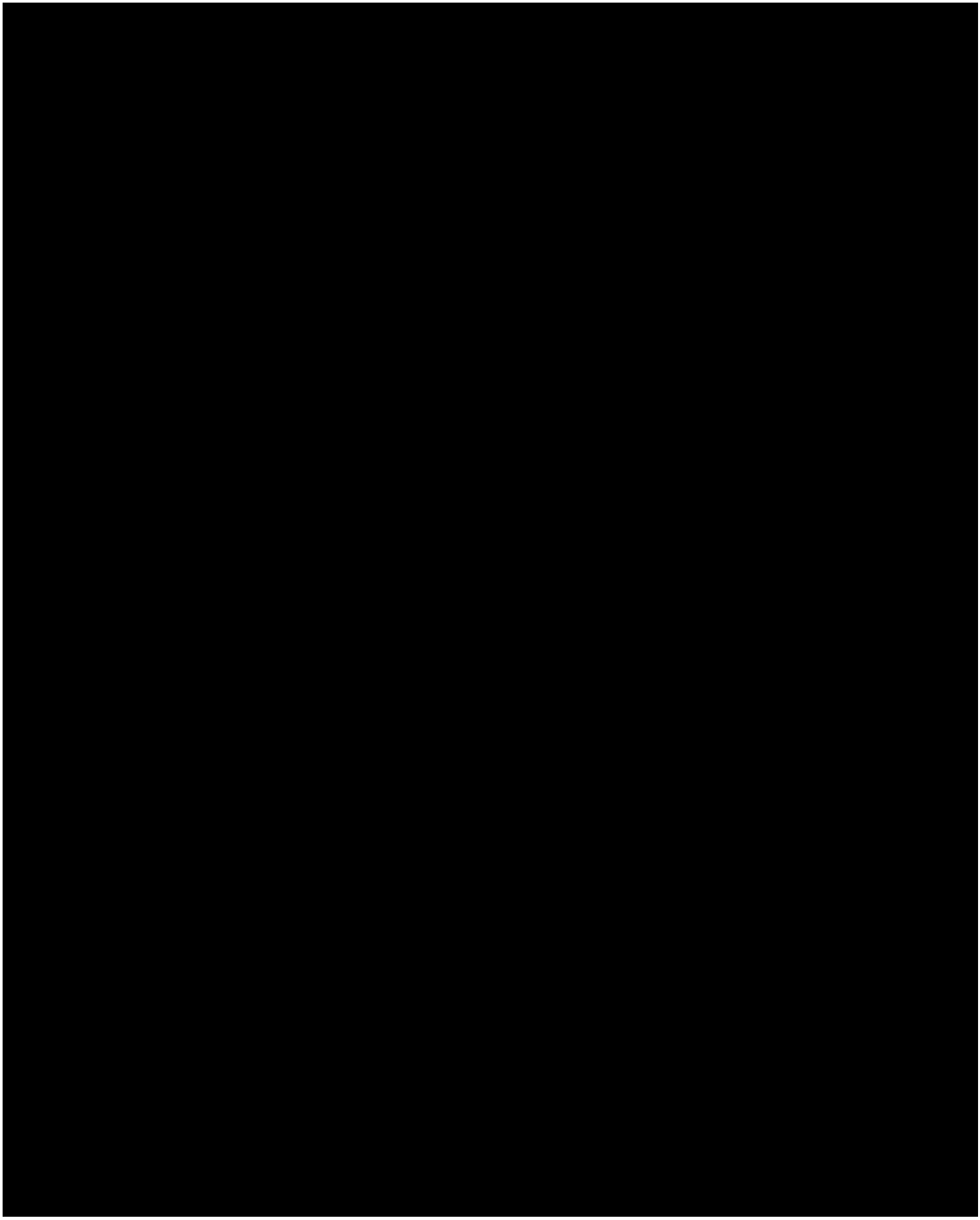
Juniper identified one new cultural resource, an isolated find, during the inventory. None of the previously recorded cultural resources lie within the inventoried corridor.

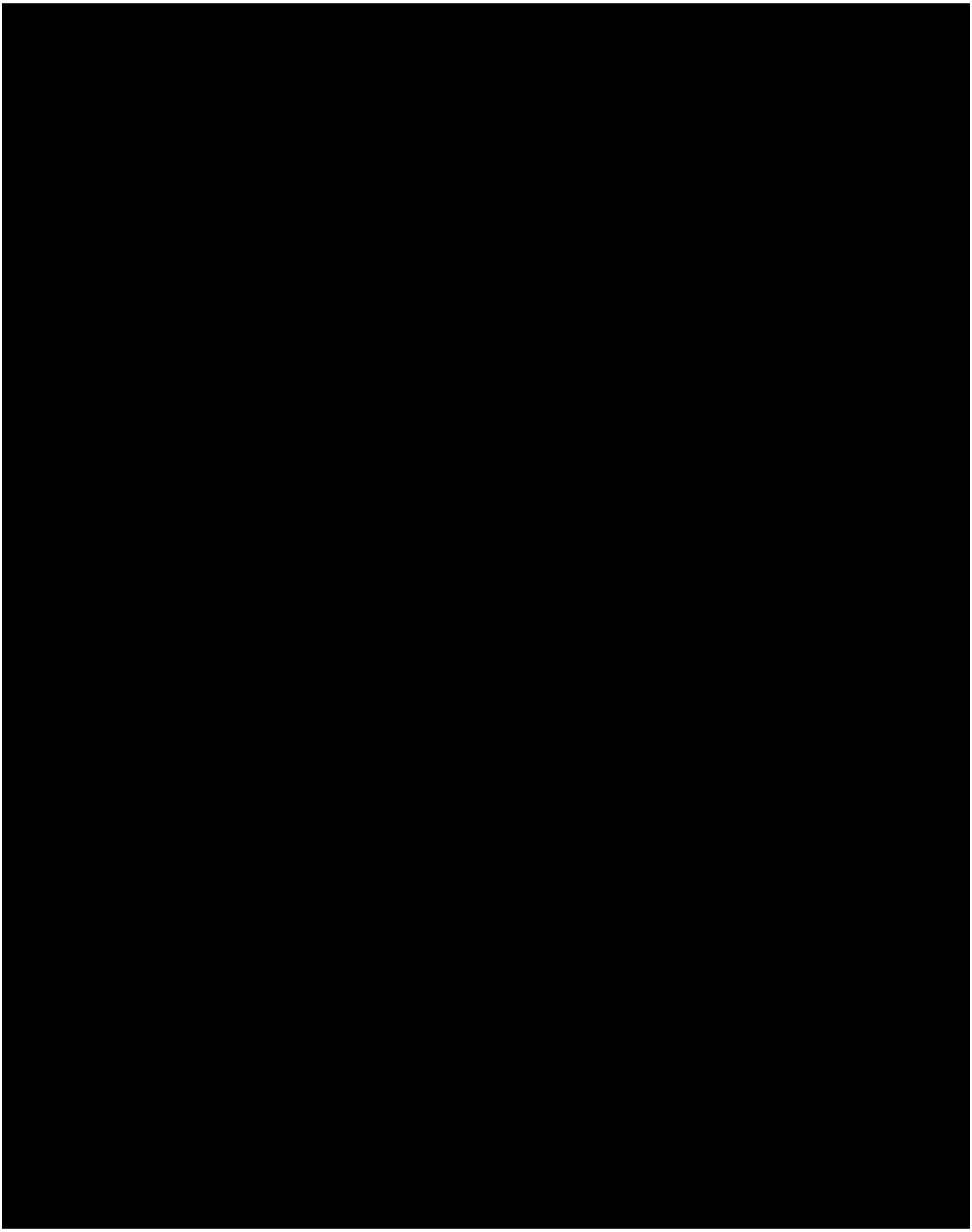
Isolated Find 32OLx505

Isolated Find 32OLx505 consists of a moderately patinated tertiary knife river flint (KRF) flake [redacted] No other cultural material was located on the landform. [redacted] The development has since been reclaimed creating the appearance of a relatively steep upland overlooking Square Butte Creek. A cutface along the edge of the knoll indicates only a few centimeters of Holocene soils overlying Pleistocene subsoils suggests the area is no longer intact. Isolated Find, 32OLx505 is recommended to be *not eligible* for inclusion on the NRHP, with no further work or avoidance.

[redacted]







SUMMARY AND MANAGEMENT RECOMMENDATIONS

Barr, on behalf of Minnkota, contracted Juniper to conduct a Class III Intensive Cultural Resource Inventory for the Milton Young Transmission Line reroute. The project covers approximately 3.2 miles of rerouted/upgraded transmission lines. Approximately 0.4 miles of the route cross lands extensively disturbed by the Milton Young Power Plant and were not inventoried for cultural resources. The remaining 2.8 miles of the transmission line crosses relatively intact and some reclaimed/developed lands outside of the Milton Young Power Plant and were inventoried to SHSND Class III standards using a 300' wide corridor centered on the proposed centerline of the transmission lines. The developed and reclaimed areas were included for ease of access to the undisturbed area and to minimize the need for driving within the active mining operation. A total of 102 acres were inventoried to SHSND Class III standards (SHSND 2020). The USDA RUS is the lead agency for this undertaking.

The file search indicates 75 cultural resources located within one mile of the proposed project area(s). None are within or immediately adjacent to the project area.

Juniper archaeologists conducted the inventory on August 23-24, 2023, and recorded one new cultural resource. Isolated Find 32OLx505, a KRF flake, lies on a heavily eroded surface. Based on the observations of nearby cutfaces and a review of aerial photographs there is little to no possibility of significant intact buried cultural deposits on the landform. Isolated Find, 32OLx505 is recommended to be *not eligible* for inclusion on the NRHP, with no further work or avoidance.

Because newly recorded Isolated Find, 32OLx505 is recommended to be *not eligible*, and because no other new or previously recorded cultural resources will be impacted by the proposed undertaking, Juniper recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

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Bluemle, John P.

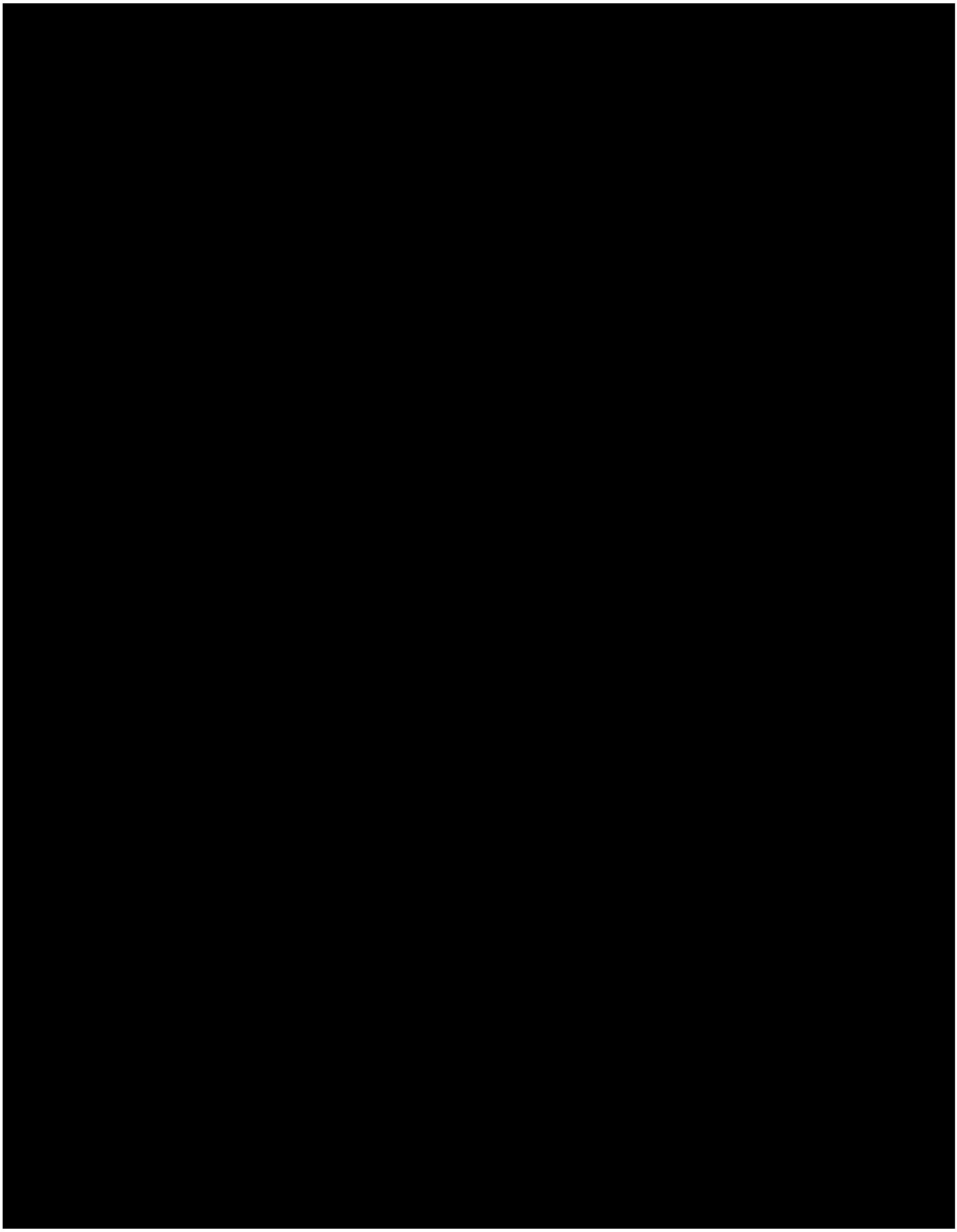
2000 *The Face of North Dakota Third Edition*. Educational Series # 26, North Dakota Geological Survey, Bismarck.

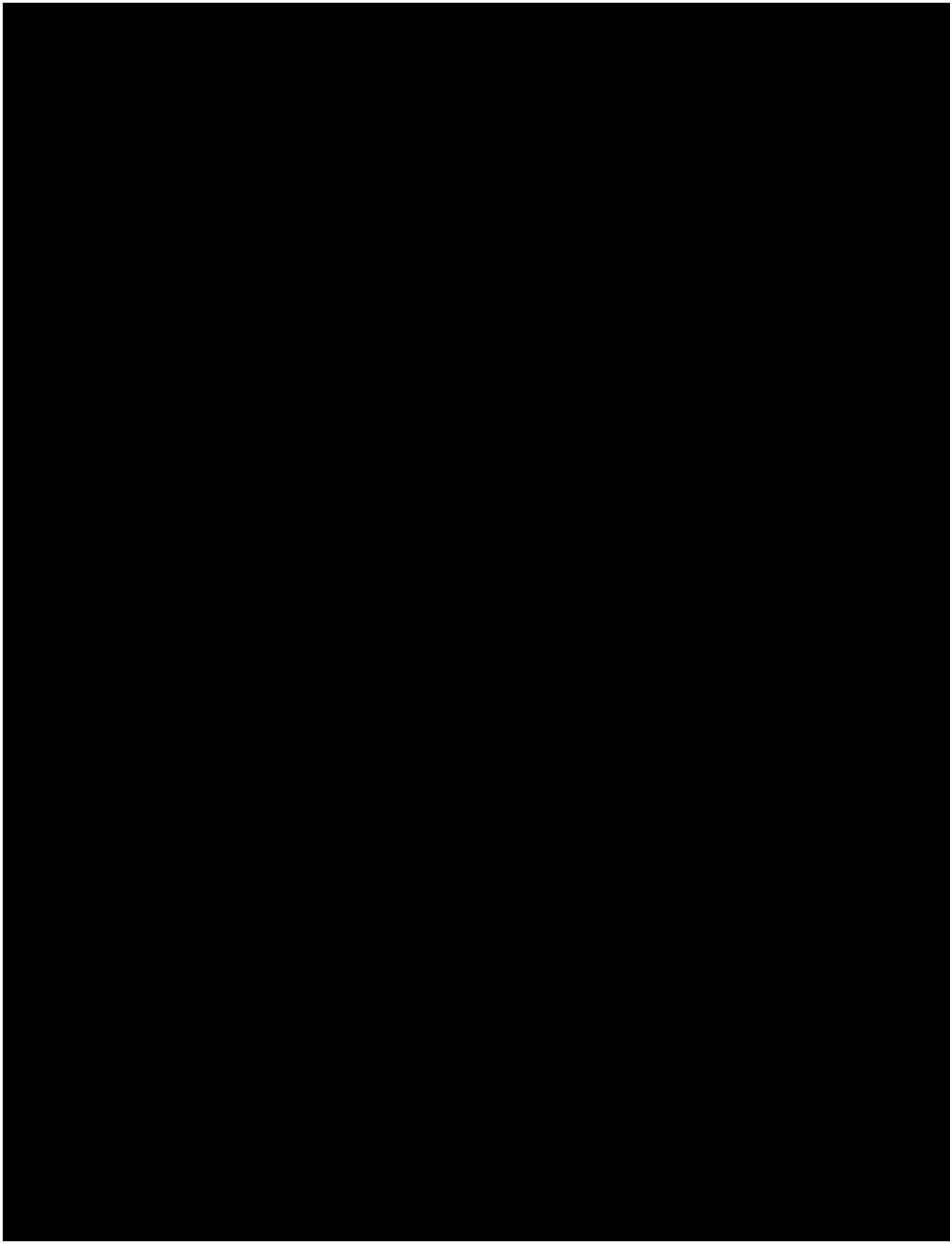
State Historical Society of North Dakota (SHSND)

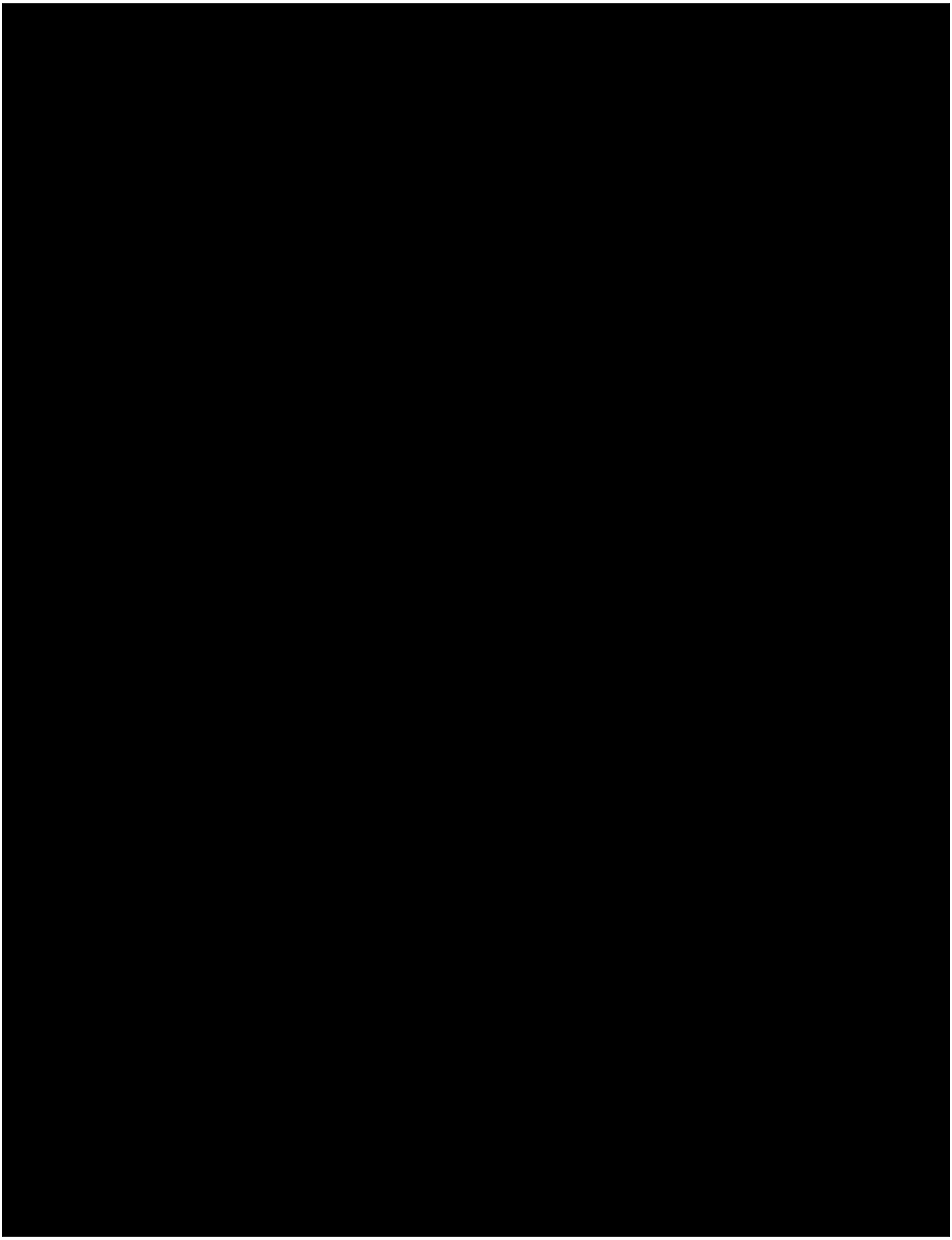
2018 *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects, Revised Edition*. Produced by and available at the Division of Archaeology and Historic Preservation, State Historical Society of North Dakota, Bismarck, ND.

2016 *The North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component.* Produced by and available at the Archaeology and Historic Preservation Division, State Historical Society of North Dakota, Bismarck, ND.

APPENDIX A
PROJECT MAPS







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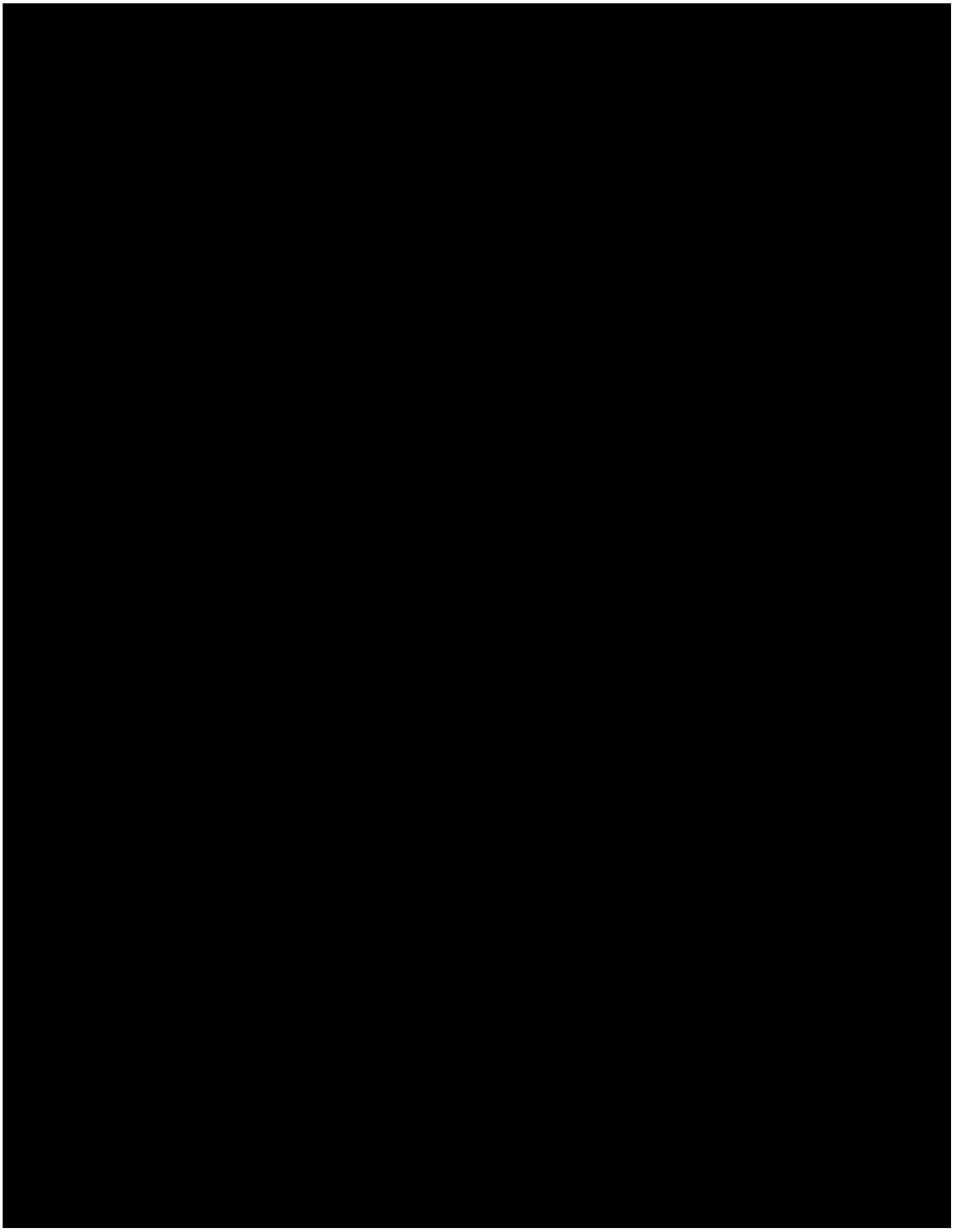

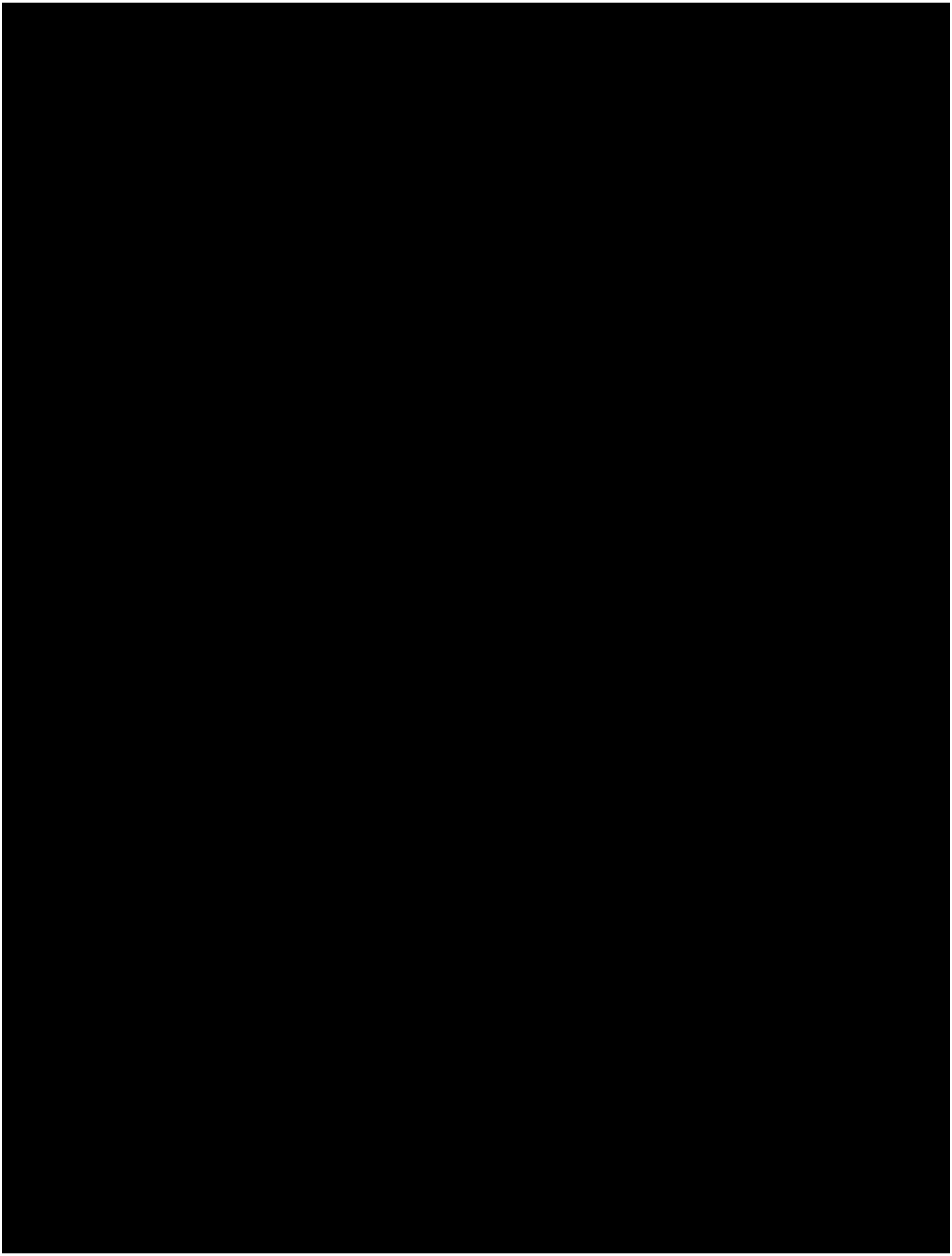

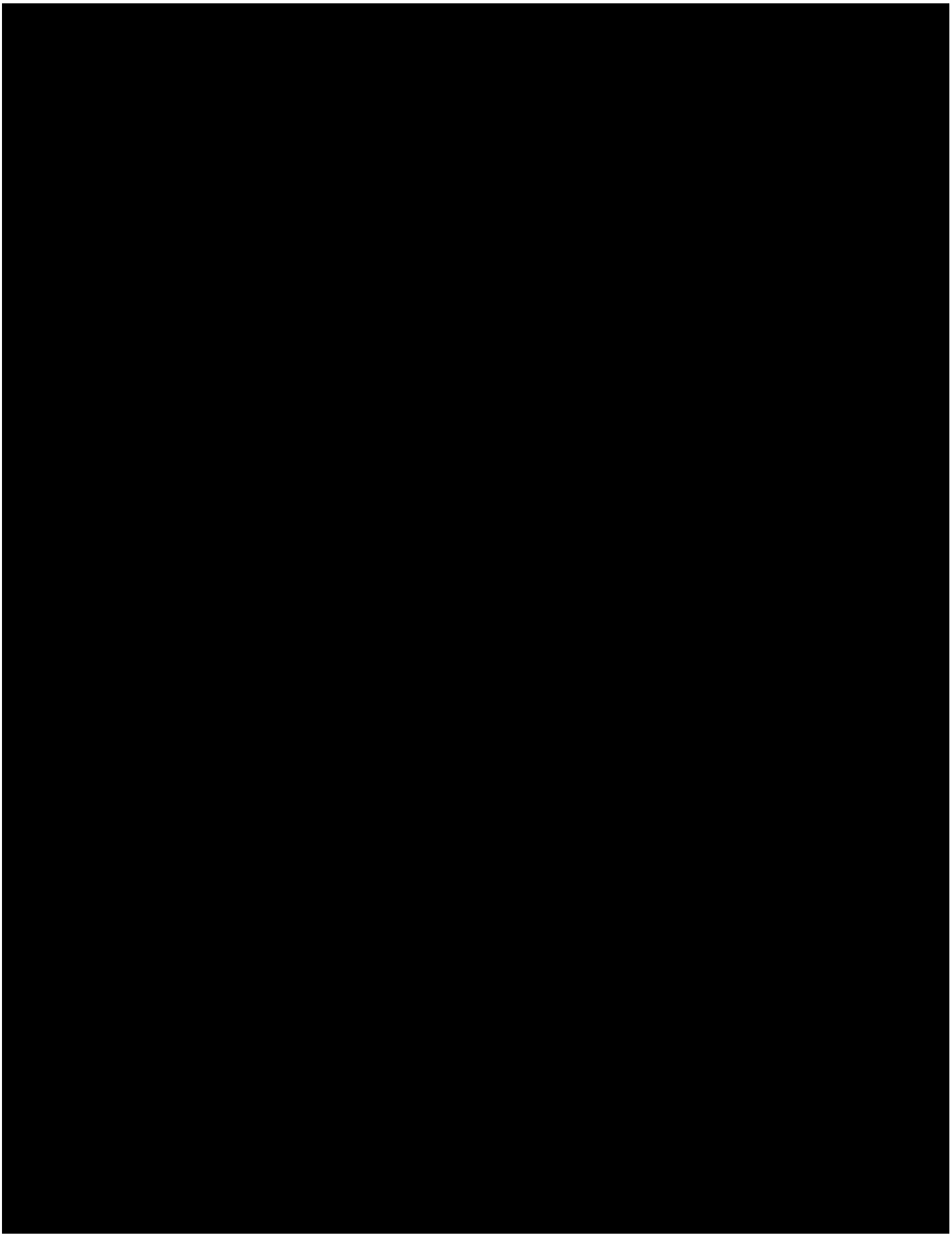

APPENDIX B
LITERATURE REVIEW