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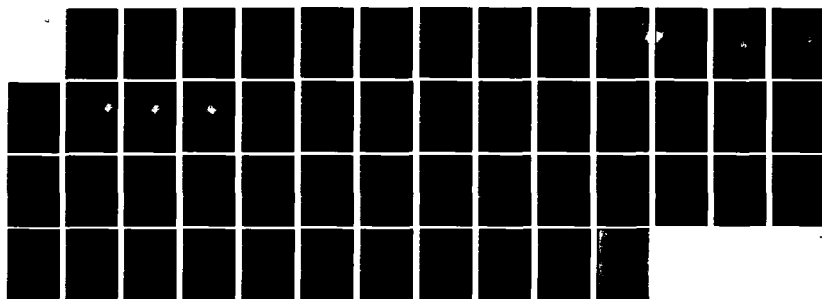
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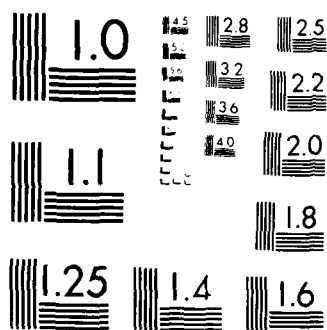
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. <i>16-4142602</i>	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) ARCHEOLOGICAL AND HISTORIC CULTURAL RESOURCES INVENTORY FOR A PROPOSED FLOOD CONTROL PROJECT AT GRAFTON, WALSH COUNTY, NORTH DAKOTA		5. TYPE OF REPORT & PERIOD COVERED Popular Report
7. AUTHOR(s) James C. Dahlberg Michele H. Schreiner Wayne R. Roberson Kent N. Good		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Historical and Archaeological Surveys, Inc. 204 4th Avenue NW Mandan, ND 58554		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Engineer Dist., St. Paul 1135 USPO & Custom House St. Paul, MN 55101		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE October 1983
		13. NUMBER OF PAGES 53 pages
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES See also final report with same title.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) ARCHAEOLOGY FLOOD CONTROL		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A literature and records search and review, pedestrian survey, and shovel testing were completed in September 1981 in the Grafton, North Dakota area. The State Historic Preservation Office recommended data collection about a number of bridges located along the Park River at Grafton. These bridges may be affected by proposed flood control measures. No previously recorded cultural resources sites are located within any areas proposed for flood control measures, and there are no currently listed		

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National Register of Historic Places properties within any of the five proposed flood control plans. One previously unrecorded historic cultural resource site was recorded during conduct of the 1981 survey--Plant View Homestead. This site will be affected by measures proposed in one flood control plan. Shallow subsurface shovel tests were made at the Plant View Homestead, revealing a rubble of cobble-size concrete chunks to a depth of at least 25 cm (9.8 in.). Based on data collected during the spring 1982 revisit to the area, one Burlington Northern railroad bridge was recorded as an architectural/historic cultural resource site. This site lies within an area that potentially will be impacted by measures proposed in three flood control plans.

Historical and Archaeological Surveys, Inc., recommends that the subsurface tests conducted at the Plant View Homestead site are sufficient to determine that this site is not significant, nor is it eligible for inclusion on the National Register of Historic Places; the State Historic Preservation Office has concurred with this determination, and no further work is recommended for this site. The Railroad Bridge site is considered to have the potential for significance, since it represents what may be the only remaining structure of its kind in the Red River Valley. Recommendations concerning the Railroad Bridge site ideally include implementation of flood control measures other than those that would affect the site. If the railroad bridge site cannot be avoided, an appropriate mitigation (to mitigate adverse impact to the site) should be implemented.

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POPULAR REPORT

Archeological and Historic Cultural Resources Inventory for a Proposed
Flood Control Project at Grafton, Walsh County, North Dakota

Contract #DACW37-81-M-2533

Prepared for:

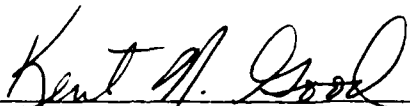
U.S. Army Corps of Engineers
St. Paul District
St. Paul, MN

Prepared by:

HISTORICAL AND ARCHAEOLOGICAL SURVEYS, INC.
204 4th Avenue NW
Mandan, ND 58554

Compiled by:
James C. Dahlberg
Michele H. Schreiner
Wayne R. Roberson

Subcontractor:
Dr. Joe Roberts
Historical Research, Inc.
5406 Penn Avenue South
Minneapolis, MN 55419


Kent N. Good, Principal Investigator

October 1983



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ABSTRACT

A cultural resource inventory of proposed Plan 1, Plan 2, Plan 3, Plan 5, and Plan 6 flood control right-of-way lines and areas at Grafton, North Dakota, was conducted by Historical and Archaeological Surveys, Inc., for the U.S. Army Corps of Engineers, St. Paul District (Contract #DACW37-M-81-2533). Literature and records search and review, pedestrian survey, and shovel testing were completed in September 1981. Historical and Archaeological Surveys, Inc. returned to the Grafton area in spring 1982 in response to State Historic Preservation Office draft report review comments, which recommended data collection about a number of bridges located along the Park River at Grafton. These bridges may be affected by proposed flood control measures.

No previously recorded cultural resource sites are located within any areas proposed for flood control measures, and there are no currently listed National Register of Historic Places properties within any of the five proposed flood control plans. One previously unrecorded historic cultural resource site was recorded during conduct of the 1981 survey--Plant View Homestead. This site will be affected by measures proposed in one flood control plan. Shallow subsurface shovel tests were made at the Plant View Homestead, revealing a rubble of cobble-size concrete chunks to a depth of at least 25 cm (9.8 in.). Based on data collected during the spring 1982 revisit to the area, one Burlington Northern railroad bridge was recorded as an architectural/historic cultural resource site. This site lies within an area that potentially will be impacted by measures proposed in three flood control plans.

Historical and Archaeological Surveys, Inc., recommends that the documentary research conducted for and the subsurface tests conducted at the Plant View Homestead site are sufficient to determine that this site is not significant, nor is it eligible for inclusion on the National Register of Historic Places; the State Historic Preservation Office has concurred with this determination, and no further work is recommended for this site. The Railroad Bridge site is considered to have the potential for significance, since it represents what may be the only remaining structure of its kind in the Red River Valley. Recommendations concerning the Railroad Bridge site ideally include implementation of flood control measures other than those that would affect the site. If the railroad bridge site cannot be avoided, an appropriate mitigation (to mitigate adverse impact to the site) should be implemented.

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1. INTRODUCTION

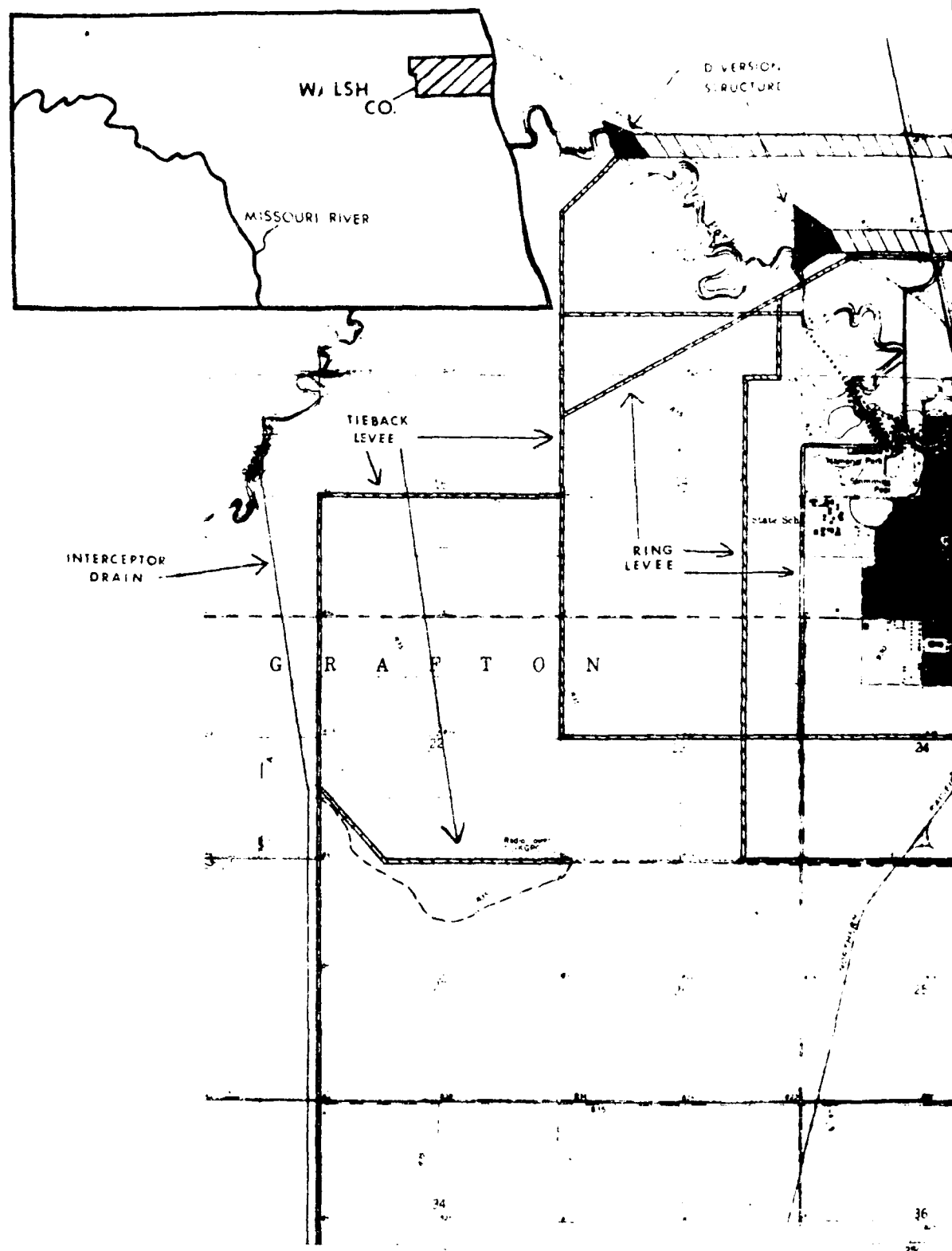
Sponsor of the Grafton Flood Control Project is the St. Paul District, U.S. Army Corps of Engineers (COE). Cultural resource reconnaissance survey was conducted by Historical and Archaeological Surveys, Inc. (HASI)--then of Grand Forks, North Dakota--to assist in COE planning for proposed flood control measures in and around Grafton, North Dakota (Figure 1). HASI subcontracted Historical Research, Inc., (HRI) of Minneapolis, Minnesota, to compile the protohistoric/historic overview sections of this report.

COE flood control goals involve seven types of proposed flood control measures among five alternate plans. Some of the seven types of flood control measures are common to more than one plan, and some right-of-way lines are conterminous (Figures 2 through 6). The seven types of flood control measures include:

- 1) ring levee, 30.5 m (100 ft.) wide survey ROW;
- 2) flood bypass, 152.4 m (500 ft.) wide survey ROW;
- 3) bypass channel, 152.4 m (500 ft.) wide survey ROW;
- 4) interceptor drain, 7.6 m (25 ft.) wide survey ROW;
- 5) tieback levee, 15.2 m (50 ft.) wide survey ROW;
- 6) channel and bridge modification, 15.2 m (50 ft.) survey width on both sides of river channel where proposed, and 61.0 m (200 ft.) survey width at cutoff alignments; and
- 7) ditch modification (McCloud Ditch and associated natural coulees), 15.2 m (50 ft.) on both sides of existing ditch disturbance (30.5 m or 100 ft.) making a total 61.0 m (200 ft.) survey width.

COE cultural resource reconnaissance survey goals at Grafton include:

- 1) inventory of all cultural resources within proposed ROW lines and areas;
- 2) documentary research to obtain historical background data and other information with regard to cultural resources in the Grafton Flood Control Project study area;
- 3) search of pertinent cultural resource site form files and records at the State Historical Society of North Dakota (SHSND) in Bismarck, North Dakota, to determine if any previously recorded cultural resource sites are within proposed ROWS;
- 4) search of National Register of Historic Places (NRHP) files at the State Historic Preservation Office (SHPO) in Bismarck,



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NATIONAL ENGINEERING CENTER
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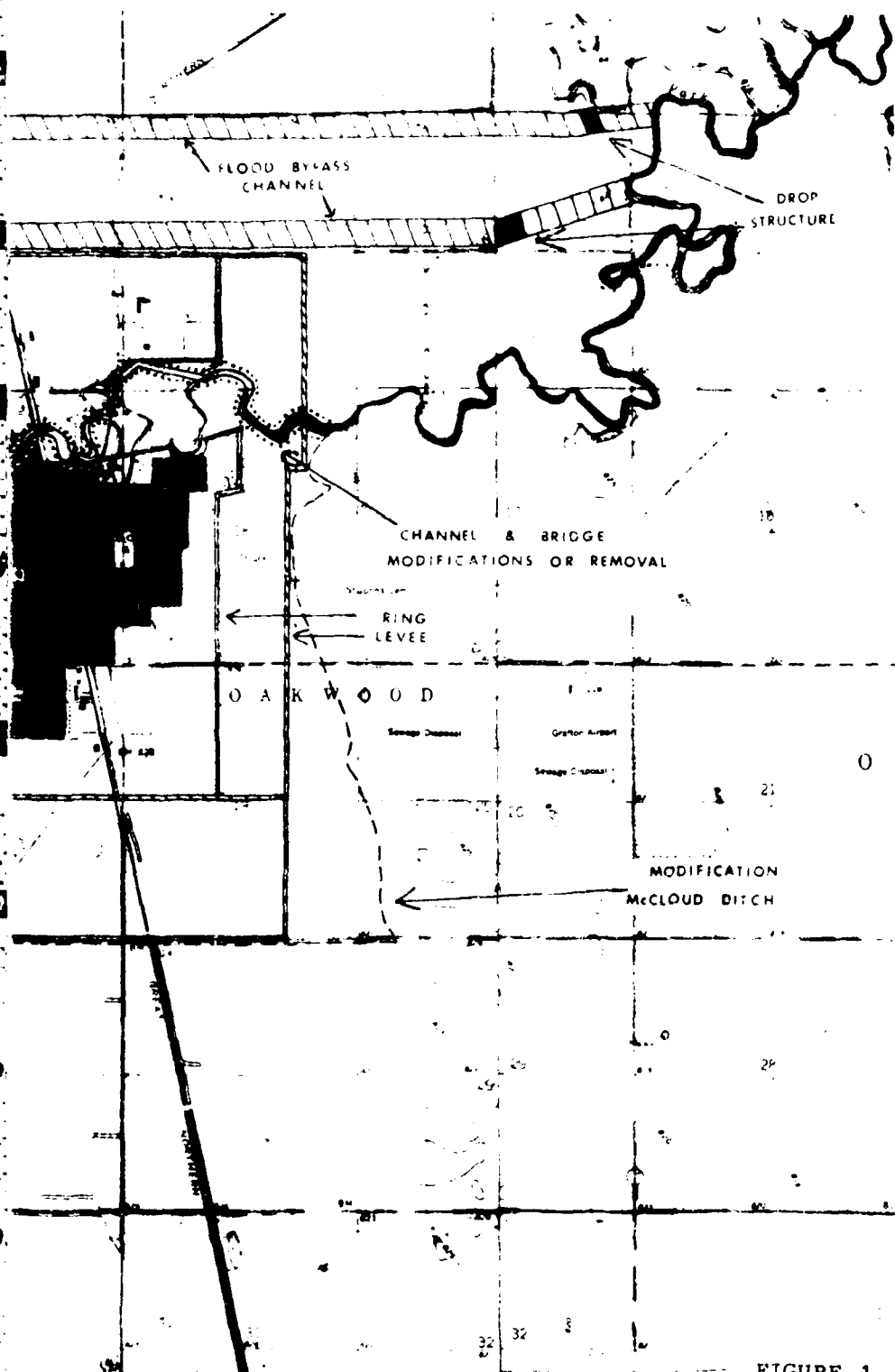


FIGURE 1. Proposed Flood Control Measures in the Grafton, North Dakota, Area (T157N, R53W and R53W), and Walsh County in North Dakota (Source of base map: U.S.G.S. Grafton North Dakota 1960)

Maped, edited, and published by the
 U.S. Army Corps of Engineers
 and the U.S. Geological Survey
 from data and maps supplied from
 1954. The map is a derivative work
 of the U.S. Army Corps of Engineers
 and the U.S. Geological Survey.
 3,000 feet scale.

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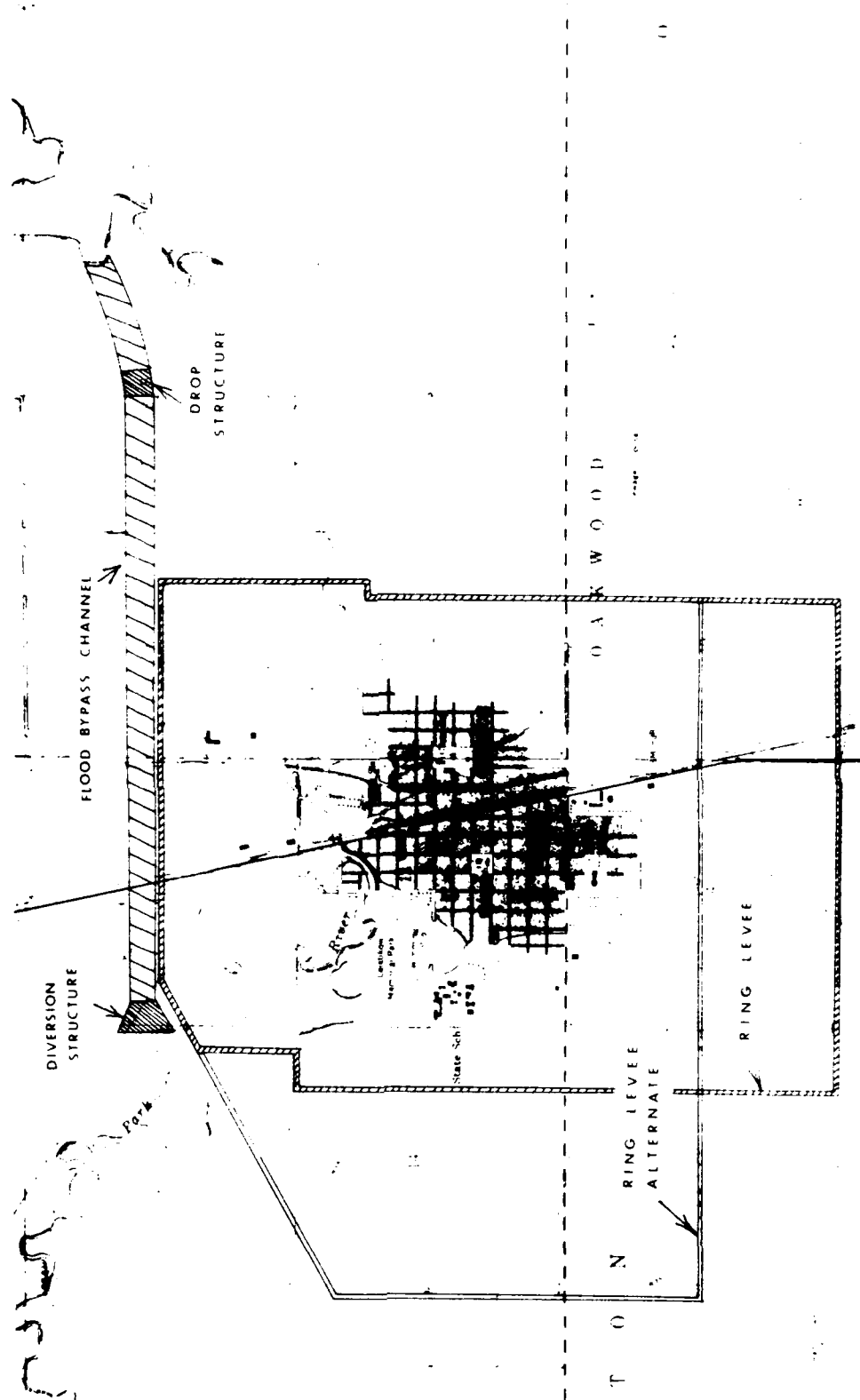
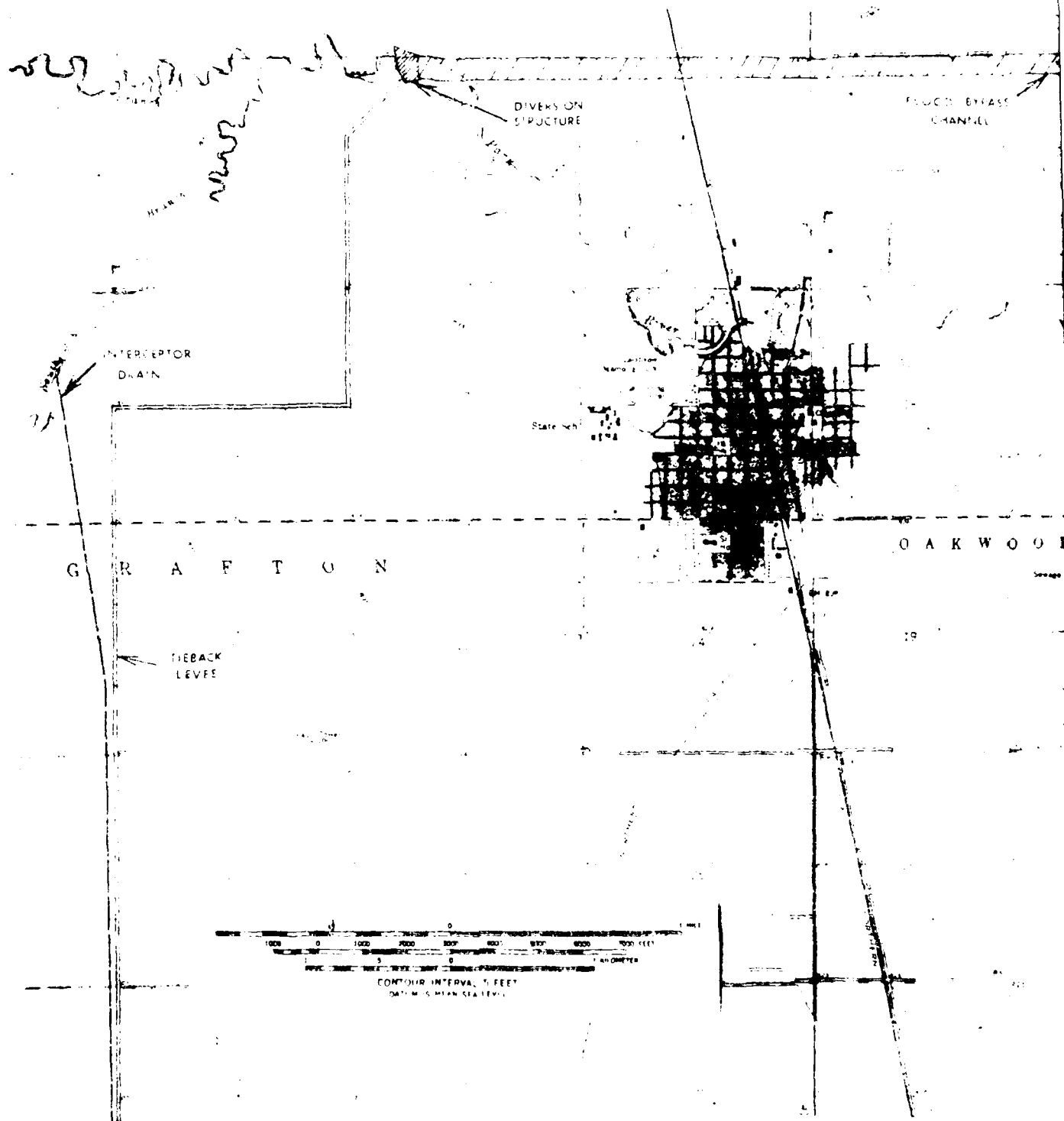
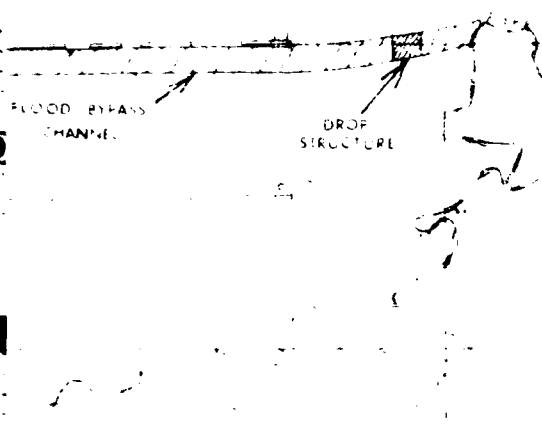


FIGURE 2. Grafton, North Dakota; T152N, R52W and 033E. Flood Control Plan by U.S.G.S. Grafton, North Dakota 1963.





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FIGURE 3. Grafton, North Dakota; T157N, R52W and R53W. Flood Control Plan 2. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)

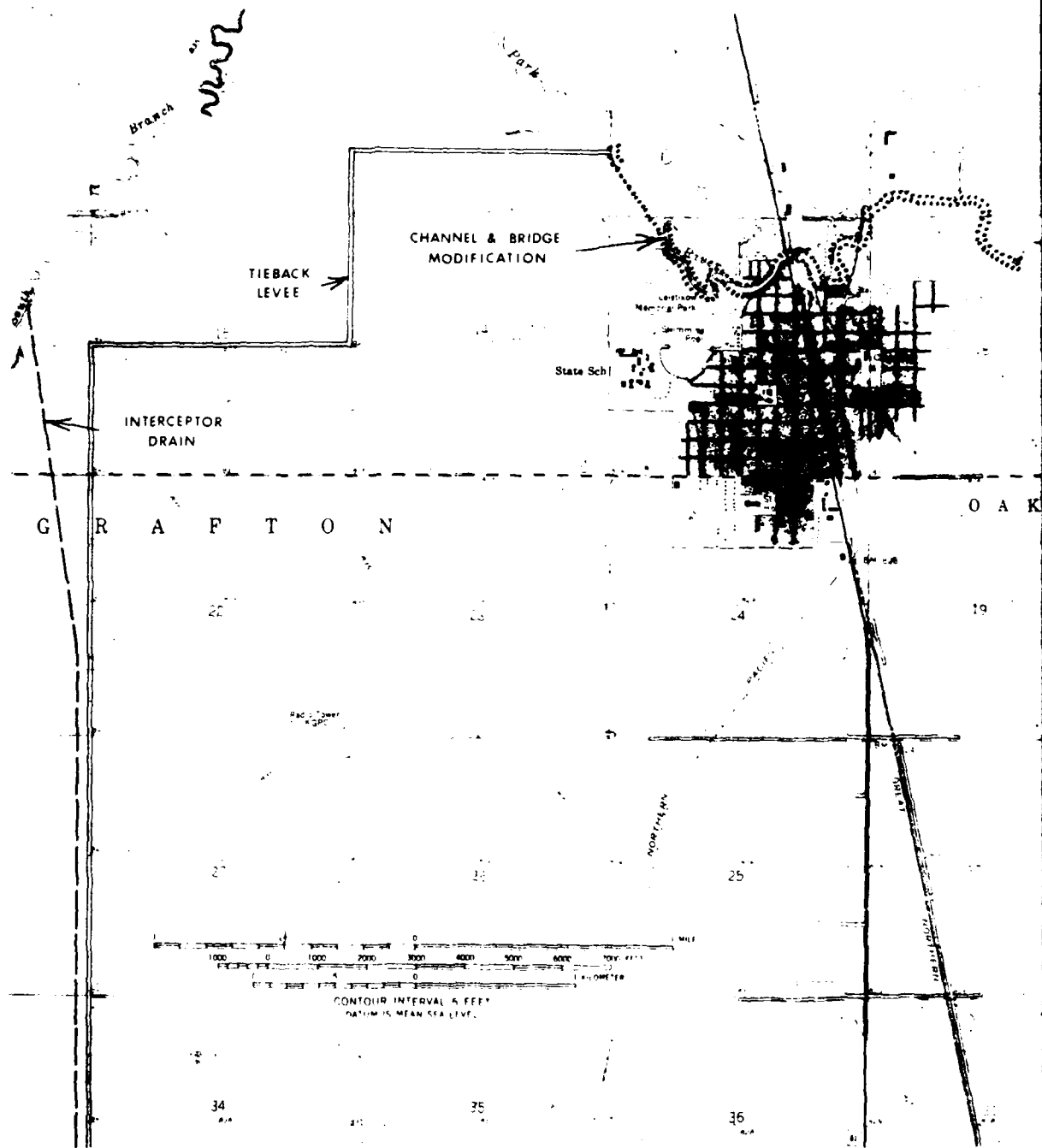


FIGURE 4. Grafton, North Dakota; T157N, R52W and R53W. Flood Control Plan 3. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)

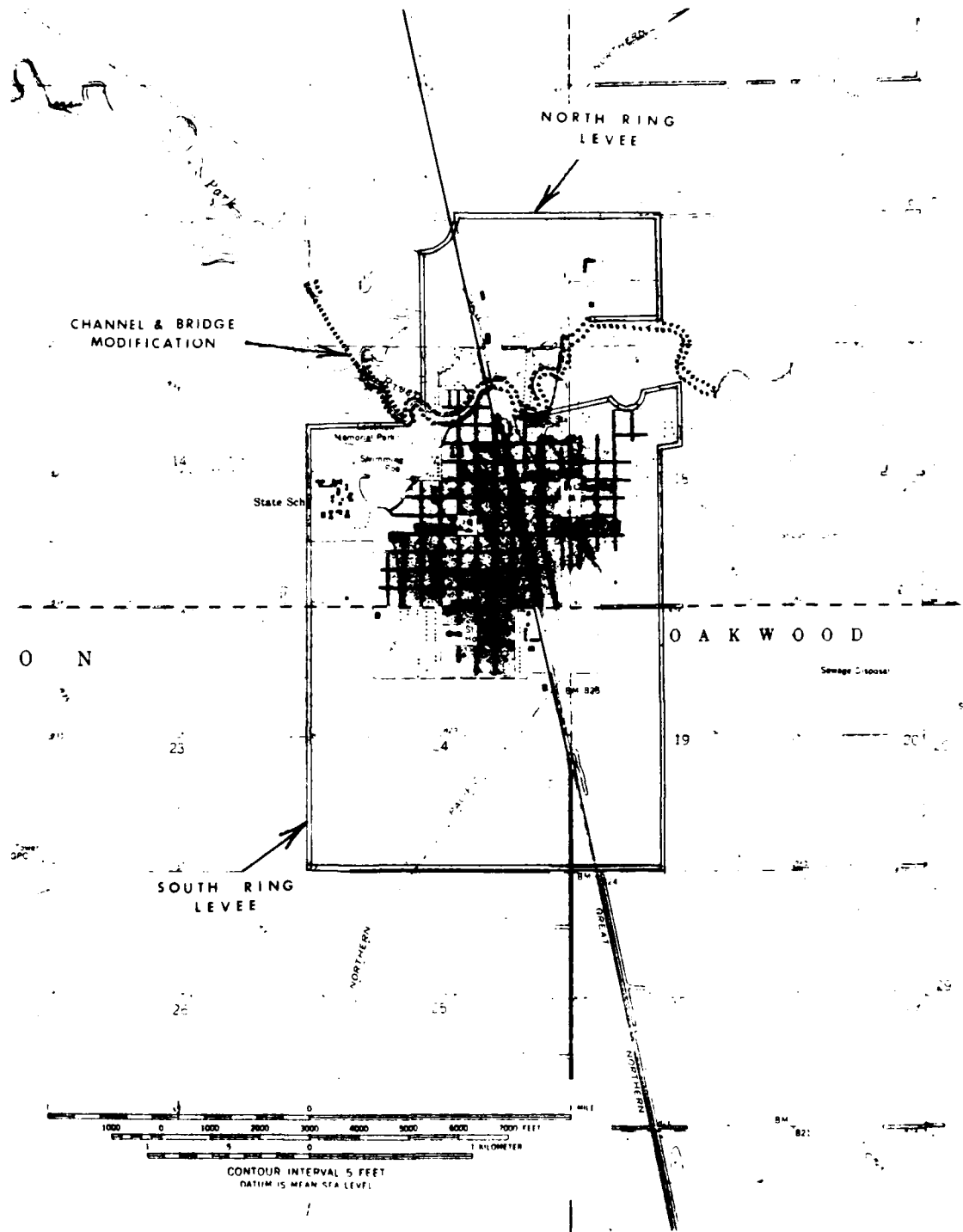


FIGURE 5. Grafton, North Dakota; T157N, R52W and R53W. Flood Control Plan 5. (Source of base map: U.S.G.S. Grafton, North Dakota 1960)

North Dakota, to determine if any currently listed NRHP properties will be affected by any proposed flood control measures; and

- 5) obtaining recommendations from professional archeologists (i.e., from HASI) as to possible future research or other appropriate action with regard to cultural resources in the project study area at Grafton.

Previous archeological and historic studies pertaining to the project area and to the general region were reviewed in various sources (see Section 7.0, List of References). Repositories of these sources include SHSND archives, libraries of the University of North Dakota (UND), and the HASI office library and files. SHSND was consulted about previously recorded cultural resource sites, and the SHPO was consulted about possible NRHP property listings in the Grafton study area during project-related work conducted by HASI in 1981. Data also was obtained from the Walsh County Engineers Office, and from the Burlington Northern Offices in Fargo and Grand Forks, North Dakota, in reference to bridge structures that may exist in and around Grafton. A deeds search was conducted at the Walsh County Courthouse in Grafton, North Dakota, in reference to one of the cultural resource sites recorded during HASI's survey. These latter tasks were completed by HASI in 1982. Data collected from all sources were used in preparation of overviews and in comparative analyses for this project.

Orientation of the literature review was with the city of Grafton and its cultural/environmental setting in relation to the immediate region. General overviews were compiled to give a rounded picture of the study area within the regional context of geography, prehistory, and history. The files of the Walsh County Highway Superintendent were examined in order to obtain data about county bridges in and around the Grafton area, in response to review comments received by HASI about the draft project report. The Burlington Northern Railroad Engineers Office in Fargo was contacted for data about bridges in and around Grafton as well.

While evidence of prehistoric occupations of the general Grafton vicinity have been reported in the form of burial mounds and scattered lithic areas, no such evidence was found in the specific survey area. The lure of free or inexpensive farmland brought early settlers to the Grafton area in the late 1870s. The geographic location of Grafton at a natural crossing of the Park River caused the St. Paul, Minneapolis, Manitoba Railroad (later Great Northern) to route its line through the community in 1881. Grafton since has become a commercial and rail shipping center for the surrounding agriculturally-based communities in this portion of the Red River Valley. The dark, rich soils of the Red River Valley have caused it to become a leading producer of potatoes, sunflowers, sugar beets, pinto beans, and small grains.

Reconnaissance survey was a pedestrian, ground surface examination by archeologists James C. Dahlberg and Wayne Roberson of HASI. Survey was conducted on three days during the period 16 to 23 September 1981.

Related documentary research was being conducted simultaneously by historian subcontractor Joe Roberts (HRI) of Minneapolis, Minnesota. Larry Sprunk (HASI historian) conducted related files search at the SHSND and SHPO, and James C. Dahlberg conducted related prehistoric literature research. This report, with the exception of the protohistoric and historic overview portions of the regional human occupation chapter (Section 3.0), was compiled by James C. Dahlberg, Michele H. Schreiner, and Wayne R. Roberson. The protohistoric and historic overview portions of Section 3.0 were compiled by Dr. Joe Roberts (HRI) under subcontract to HASI; these sections were edited and compiled into final format by HASI personnel.

No previously recorded cultural resource sites are located within any areas proposed for flood control measures, and there are no currently listed National Register of Historic Places properties within any of the five proposed flood control plans. Two cultural resource sites were located and recorded within areas of proposed Grafton flood control measures. These include site 32WA4 (the Plant View Homestead site) and site 32WA5 (the Railroad Bridge site). Site 32WA4 was located and recorded during pedestrian survey conducted by HASI personnel in September 1981. Draft report review comments required that HASI personnel return to the Grafton area in June 1982 to collect data about a number of bridges located along the Park River at Grafton, because these bridges may be affected by proposed flood control measures. Site 32WA5 was recorded by HASI at that time.

HASI recommended that the documentary research conducted for and the subsurface tests conducted at the Plant View Homestead site are sufficient to determine that this site is not significant, nor is it eligible for inclusion on the NRHP; the SHPO has concurred with this determination, and no further work is recommended for this site. The Railroad Bridge site is considered to have the potential for significance, since it represents what may be the only remaining structure of its kind in the Red River Valley. Recommendations concerning the Railroad Bridge site ideally include implementation of flood control measures other than plans that are likely to affect the site. If the railroad bridge site cannot be avoided, an appropriate mitigation plan should be implemented.

This popular report is a condensed version of the contract Technical Report, which was submitted to the COE. The purpose of this report is to inform interested persons about the archeology, prehistory, and history of the project area and the surrounding region. This report also includes discussions about why and how the work was conducted, and it presents the results of the completed survey. Exact site locations, site forms, site maps, and site photographs, as well as other data of a purely technical nature, have been excluded from this popular report.

2. PREVIOUS ARCHEOLOGICAL AND HISTORIC STUDIES

No previous cultural resource inventories have been conducted in the specific areas surveyed by HASI through conduct of this project. As with all other portions of the Red River Valley, the first archeological work conducted in Walsh County dealt with examination of burial mounds, often built on top of Glacial Lake Agassiz beach strandlines.

Between 1883 and 1906, Henry Montgomery explored 40 mounds in eastern North Dakota, and he observed hundreds more (Montgomery 1906). Six (6) of the 40 excavated mounds were located in Walsh County. Montgomery excavated at least three mounds in the Fordville Mound Group (now referred to as the Fordville-Blasky Mound Group), located near the Forest River and southwest of the Grafton study area. When Montgomery first visited this mound group in 1883, it consisted of 35 mounds and at least 4 artificial ridges, which apparently connected some of the mounds (Montgomery 1906). In about 1909, construction of the Minneapolis, St. Paul, and Sault Ste. Marie Railroad (now Soo Line) through the center of the mound group caused the destruction of many mounds and portions of three of the ridges (Hlady 1950). The remaining features have been excavated by various researchers, including Jenks and Wilford (date unknown), Hewes in 1947, and Dixson and Hlady in 1949 (Hlady 1950). SHSND conducted excavations at a mound (or more properly, a sand dune relic) during the summer of 1981. This mound is situated on Hutterite land south of Grafton and in Walsh County. The feature contained approximately 28 individuals, most of whom were buried by use of the bundle method (Dill 1982).

Cole (1968) recorded 34 occupation and mound sites along the Forest River in Walsh and Grand Forks counties, and The Department of Anthropology and Archaeology, UND, conducted two cultural resource surveys on the Park River. Loendorf and Loendorf (1975) conducted a survey of a proposed dam site on the Middle Branch of the Park River, in 1974; they recorded two scattered lithic sites and an historic farmstead. Two occupation sites were recorded at the Homme Dam, west of Grafton, by UND during 1974 (Carmichael 1974). During this survey, two burial mounds recorded originally by Coles (1968) were revisited (Carmichael 1974). Loendorf and Good (1974) reported four burial mound sites in addition to those recorded by Cole (1968) during a survey conducted by UND along the Forest River in Walsh and Grand Forks counties in 1974.

In 1977, Loendorf tested one of the occupation sites (32WA400) recorded by UND during their 1974 survey in the Homme Reservoir area (Loendorf 1977). Through results of these tests and through other field examination, Loendorf recommended that the site was not eligible for nomination to the NRHP. During the 1981 field season, Hudak conducted archeological investigations for the COE at the Homme Reservoir, and his investigations resulted in confirmation of Loendorf's (1977) recommendations about site 32WA400 (Hudak 1981).

Montgomery's archeological research methods would not meet today's professional standards; however, it should be noted that he was conducting his research at a time when the study of archeology was in its

formative stages. Additionally, Montgomery did collect data, which likely would have been lost to agricultural activities, modern technological and/or improvement activities (i.e., highway and railroad line construction) and pot hunting. As to other researchers who have conducted work in the general area of the Grafton study area, each researcher is an accredited professional and each has reported findings in an acceptable manner.

Montgomery, like most early archeologists, was concerned primarily with discovery and exploration of burial mounds. Lead by such findings, it could be concluded that there are no cultural manifestations other than burial mounds in Walsh and Grand Forks counties. While few in number, more recent studies--i.e., Cole (1968) and Carmichael (1974)--do indicate that other types of cultural manifestations do exist in these counties. However, many mounds have been found along the Forest River and to a lesser extent along the Park River.

3. REGIONAL HUMAN OCCUPATION

3.1 PREHISTORIC OVERVIEW

The Grafton, North Dakota, survey area lies within the Northeastern Periphery spatial archeological subdivision (Wedel 1961). The study area is located between the Middle Missouri subarea (to the west) and the extreme western edge of the Eastern Woodland (to the east). The Park and Forest river valleys, in North Dakota, and the Red and Pembina river valleys, in North Dakota and southwestern Manitoba, are included in the Northeastern Periphery in the general Grafton area.

The prehistory of the Northeastern Periphery is understood poorly, particularly in northeastern North Dakota where professional archeological investigation has been scant. However, considerable archeological work has been conducted in eastern North Dakota and southern Manitoba, including work conducted in the Rock Lake area of the Pembina River in southwestern Manitoba, particularly at and near the Avery site (Hlady 1970); the Jamestown and LaMoure-Oakes areas of the James River Valley (Good et al. 1976; Good et al. 1977a,b; Schneider 1977; Vehik 1976; Wheeler 1963); and areas along the Sheyenne River Valley (Kivett 1948; Hewes 1949; Strong 1940; Wood 1971); as well as work conducted around Devils Lake (Montgomery 1906; Cooper 1947; Mallory 1966). To form a cultural history of the vicinity of the study area, data collected from surrounding regions has been synthesized and combined with findings from the Grafton area. The following discussions are limited to the Northern Great Plains, with an emphasis on sites located in eastern North Dakota. Where necessary, the discussions have been expanded to include archeological findings from western North Dakota, western Minnesota, and southern Manitoba.

The prehistoric culture of the Great Plains has been divided into major categories called periods. These include: Paleo-Indian (at least 10,000 B.C. to 6000 B.C.); Plains Archaic (6000 B.C. to about A.D. 1); Plains Woodland (500 B.C. to A.D. 900); Plains Village (A.D. 900 to A.D. 1780); and Plains Nomadic (A.D. 500 to the historic period). There is growing evidence that late Woodland developments may have been present in the Northeastern Periphery well beyond the aforementioned A.D. 900 date, and they may have existed up to historic times (Syms 1970).

3.1.2 Paleo-Indian

Paleo-Indian (at least 10,000 B.C. to 6000 B.C.) subsistence was based primarily on exploitation of herds of big game animals, popularly referred to as megafauna. Much of this megafauna consisted of presently extinct forms of bison, as well as mammoths and animals which now are extinct in North America (e.g., various species of horses and the camel). Smaller game and plants probably were exploited as well. While settlement was in small, temporary campsites, hunting megafauna was a communal effort, involving large numbers of people. Most Paleo-Indian sites recorded to date have been large kill sites; however, a few small Paleo-Indian campsites have been discovered (Frison 1978).

Artifacts associated with Paleo-Indian sites typically are well-made, consisting of distinctive lanceolate projectile points, knives, choppers, and scrapers. Point types include the fluted Clovis (Llano Complex), Folsom and possibly Midland (Folsom Complex), and a variety of point types such as the Alberta, Plainview, Scotts Bluff, Eden Valley and Hell Gap (Plano Complex). A private collector from Sheyenne, North Dakota--on the Sheyenne River, southwest of the Grafton study area--claims to have found a fluted point on the ground surface near Sheyenne (Schneider 1981). Johnson (1962) states that private collectors have reported Folsom point finds along the James and Upper Sheyenne Rivers and also along the Sheyenne Delta of Lake Agassiz. From Johnson's (1962) descriptions, these latter find areas probably were located east of Enderlin, North Dakota (south of Grafton). In 1978, Michlovic, Moorhead State University, found an Agate Basin point on the surface in the Red River Valley near Glyndon, Minnesota (south and slightly east of Grafton) (Michlovic 1979).

An apparently early type point of the Plano Complex (Alberta point) was found near the Manitoba community of Manitou (Pettipas 1970), located in the Pembina Hills, northwest of the study area. Another Alberta point reportedly was found near the town of Ninette, on the shore of Pelican Lake (Pettipas 1970). This lake, which feeds the Pembina River, is located northwest of the study area. A Hell Gap point was found in the Glenora District, near Rock Lake and on the Pembina River in Manitoba, northwest of the study area (Pettipas 1970).

3.1.2 Plains Archaic

During the Plains Archaic Period (6000 B.C. to about A.D. 1), a decline in big game dependence, probably created by the extinction of the Pleistocene megafauna, brought a shift toward reliance on small game and vegetal food stuffs. Smaller game included deer, antelope, rabbits, birds, reptiles, and mussels. The high incidence of grinding stones and the frequency of fire-cracked rock--probably representing roasting pits--are indicators of increased reliance on floral materials as supplements to meat diets.

Chipped stone artifacts generally were less well-made than those of the Paleo-Indian Period, and include projectile points, knives, and scrapers. Pecked and ground stone axes, milling stones, handstones, and atlatl weights became more numerous during the Plains Archaic Period. Bone awls, needles, tubes, fishhooks, and shell beads also are more in evidence during the Plains Archaic Period. Occupation areas, like those of the Paleo-Indian Period, were small encampments. Some locations show a steady occupation, while others appear to have been seasonal, intermittent occupations, and it was during the Plains Archaic Period that stone circles first made their appearance on the Northwestern Plains (Frison 1978).

The most fully-reported Archaic sites in the Northeastern Plains area belong to the McKean Complex. This complex is represented by the McKean Lanceolate point type and by the stemmed Duncan and Hanna point types. The majority of archeologists also include the large eared

(concave-based and side-notched) Oxbow point type. Husted (1969) believes that the McKean Complex represents spear or lance points left by hunters who moved down from the foothills of the Rockies as the exceedingly dry conditions of the Altithermal improved more than 5,000 years ago.

The first radiocarbon-dated McKean (middle Archaic Period) component in North Dakota was discovered at the Red Fox site, which is located in the southwest corner of the state; occupation "4" at this site has been dated at 3,770 BP $\pm$ 90, in association with Duncan-type projectile points (Syms 1969). The Lightning Spring site, located in the northwest corner of South Dakota, yielded four radiocarbon dates which ranged from 4,190 BP $\pm$ 110 to 3,430 BP $\pm$ 270, and again were in association with Duncan-type projectile points (Keyser 1982).

Recent cultural resource investigations along or near the Little Missouri River in the North Dakota Badlands areas in Dunn, McKenzie, and Billings counties have resulted in location of numerous Archaic components (Leaf 1976; Kuehn 1982; East et al. 1981; Loendorf et al. 1982; Simon and Borchert 1981a,b). An isolated project point found on the surface near Underwood, North Dakota, has been identified as a Hanna point (HASI 1981); Underwood is located just east of the Missouri River and southwest of Grafton.

There is a concentration of McKean Complex points around the shore of Rock Lake in southwestern Manitoba. McKean points have been found at the Lake Shore site, which is located south of the Avery site (Vickers 1949) and north of Grafton. McKean points also were found during excavations at the United Church site, west of the Avery site (MacNeish and Capes 1958). The earliest known occupation of the Avery site appears to be represented by Duncan and Hanna type points. Joyes (1970) tentatively estimates the McKean occupation of the Lake Shore site at 1750 B.C., the McKean occupation of the United Church site is estimated at a slightly later date, and the Duncan-Hanna occupation of the Avery site is estimated at about 1500 B.C. to 1000 B.C. The terminal date of the McKean Complex has been set at about 1000 B.C., or perhaps as late as 600 B.C., in the marginal Canadian Plains (Syms 1970).

Campsites of the McKean-Duncan-Hanna Phase are small, and they apparently were occupied briefly by small groups. At Rock Lake, the small, temporary camps and the inferred bison hunting subsistence pattern would suggest presence of small nomadic bands (Joyes 1970). The McKean-Duncan-Hanna Phase was being replaced by the Pelican Lake Phase over much of the Northern Plains by approximately 1000 B.C. Joyes (1970) believes that the Pelican Lake Phase was indigenous, having grown out of the McKean component, at least in some parts of the plains.

The Pelican Lake Phase is represented most commonly by large corner-notched points, but it is associated with large unnotched points on some occasions. Both point types are pre-bow; however, atlatls or spear throwers appear to have been in use throughout this phase (Reeves 1970). Another isolated project point found on the surface near Underwood was identified as a Pelican Lake Phase point (HASI 1981). Fourteen

(14) Pelican Lake Phase points were recovered from the Avery site (Joyes 1970). Joyes (1970) estimates that the Pelican Lake Phase occupation of the Avery site occurred between 500 B.C. and A.D. 1. Pelican Lake Phase points also have been reported from the Calf Mountain and Shewfelt sites in Manitoba. Both these sites are situated in the Pembina Mountains and north of the Grafton study area.

Pelican Lake Phase peoples appear to have been specialized big game hunters, who concentrated on bison. No ceramics have been found in association with Pelican Lake Phase sites, and campsites from this phase are not extensive (i.e., they suggest occupations by small groups). There is evidence that associates some people of the Pelican Lake Phase with habitation in tipi or tipi-like structures (Reeves 1970). Joyes (1970) theorizes that these people existed in nomadic bands, which probably coalesced into large groups for seasonal bison hunts. Pelican Lake Phase people definitely had developed the technique of taking bison in pounds and jumps (Reeves 1970).

At least three radiocarbon dates are known for Pelican Lake occupations of the Head-Smashed-In Bison Jump in southeastern Alberta. The Long Creek site in southeastern Saskatchewan (northwest of Grafton) contains a large Pelican Lake component, which was dated at around 700 B.C. (Wettlaufer and Mayer-Oakes 1960). A Pelican Lake component also is present at the Mortlach site in south-central Saskatchewan (Wettlaufer 1955). Michlovic (1981a) found evidence of a buried Archaic component while testing a site on the Red River, near Hendrum, Minnesota; Hendrum is located south and slightly east of Grafton. Subsequent excavation at the site revealed presence of an Oxbow or Oxbow-like point associated with a fire stain that dated in excess of 4,000 years before present (Michlovic 1981b). Michlovic (1979) believes that the Oxbow Phase of the Archaic Period represents eastern affiliations, at least in that portion of the Red River Valley.

3.1.3 Plains Woodland

Very little is known about the Plains Woodland Period, which existed from approximately 500 B.C. to A.D. 900. The most visible Woodland traits in the Northeastern Periphery are burial mounds and the physical remains indicative of the introduction of ceramic vessels. There is growing evidence that Plains Woodland peoples supplemented their diets of wild game (predominantly deer and bison) and wild vegetal food stuffs with cultivated crops. Remains of semi-permanent house structures suggest a semi-permanent way of life.

Although the area Woodland peoples left in coming to the plains area is not understood clearly, various human populations and associated events may have occurred in and around the area during the Plains Woodland Period. The following is a presentation of various theories and archeological evidence about the Woodland Period; however, it does not include archeological interpretations.

Archeological evidence of occupation by early Woodland Period (500 B.C. to A.D. 1) peoples is totally lacking west of the Red River; rather,

it appears that the Mississippi River forms the main western boundary of the early Woodland movement (Syms 1977). An early Woodland component is reported, however, at the Graham Lake Mound site I in west-central Minnesota (Johnson 1969).

The earliest dated burial mound in North Dakota (site 32BA1, Mound A) was found north of Valley City (Kivett 1948, Hewes 1949), which is located southwest of Grand. This mound has a radiocarbon date of A.D. 90 ± 150 (Neuman 1975). Joyes (1970) suggests that projectile points associated with site 32BA1 represent the Besant Phase, and recent research has placed the site in the Sonota Burial Complex (Neuman 1975). Whether the manufacturers of Besant tools also are responsible for construction of Sonota Complex burial mounds has not been determined definitely. A discussion of the Besant Phase, and the Sonota and Arvilla burial complexes is provided below.

The Besant Phase, which appears to be restricted geographically to the Northern Plains, first began to appear in the Middle Missouri Region in or about A.D. 1 (Neuman 1975). This phase is characterized by side-notched points of greatly varying sizes. A marked preference for use of Knife River flint in manufacture of these points and in manufacture of associated tools is noted (Reeves 1970). The Besant Phase is viewed as a time of great transition in the Northern Plains. It is during this time period, and in apparent association with Besant point types, that pottery first appeared in the region, and sometime between A.D. 1 and A.D. 800, the atlatl was replaced by the bow and arrow on the Northern Plains (Reeves 1970).

The source of the Besant Phase is not understood clearly. Reeves (1970) believes it to be a separate Plains-adapted cultural tradition, which had been resident in the Northeastern Periphery since late Archaic or early Woodland times (1000 B.C. to 500 B.C.); Husted and Mallory (1967) favor the Boreal Forest of the north. The hypothesized termination date for the Besant Phase is around A.D. 900 (Reeves 1970).

A radiocarbon date of A.D. 300 ± 50 was taken from a hearth, apparently associated with a Besant point, at the Sunday Sage site in the North Dakota Badlands (Simon and Borchert 1981b). The Besant Phase is well-represented at the Avery site, where this occupation has been estimated at A.D. 300 to A.D. 500 (Joyes 1970). Joyes (1970) believes that Besant type points at the Avery site are associated with Avery Corded pottery ware and that the Besant Phase may be derived from the Woodland tradition cultures to the southeast. He also hypothesizes that the apparent scarcity of Besant pottery on the northwestern Plains may be the result of a population, which gradually discontinued making pottery as they moved farther out onto the plains.

There is some evidence to indicate that--compared to human population during the Pelican Lake Phase--there may have been an increase in human population in the Northern Plains during Besant times (Joyes 1970). In southwestern Manitoba, "Besant Phase campsites appear to represent fairly lengthy or repeated occupations by moderately large groups. Nomadic bands were probably the rule as far as social organization was

concerned, with seasonal multi-band groupings for communal bison hunts" (Joyes 1970). Apparently nothing is known about Besant Phase habitation structures in southwestern Manitoba. In Alberta, tipi rings have been associated with both summer and winter campsites of Besant tool makers (Reeves 1970). At the Mortlach site (Wettlaufer 1955), in south-central Saskatchewan, a post-mold pattern was found which is very similar to those from a Woodland-type structure at the LaRouche site on the Missouri River in central South Dakota (Hoffman 1968).

The Sonota Complex is based primarily on observations and analyses of excavated materials from a number of apparently related burial mound sites. The majority of these sites are located in North Dakota, South Dakota, and southern Manitoba. Neuman (1975) defines the complex as displaying: 1) an important emphasis on bison use; 2) a predominance of tools made from Knife River flint; 3) upright bones in village and kill sites; 4) small burial mounds containing numerous bison remains, as well as multiple bundle burials; and 5) a distinctive variation of corner-notched projectile points that subsume Besant and Samantha side-notched types.

Long, domed mounds characteristic of the Sonota Complex average 22.9 m (75 ft.) in diameter, 0.8 m (2.5 ft.) to 0.9 m (3.0 ft.) in height, with rectangular central pits lined or partially lined with logs. Burial goods include distinctive pottery types, diagnostic corner-notched projectile points, graveurs, knives and worked flakes. Occasional offerings include obsidian scrapers and bifaces, beads made from exotic materials, bear canines, imitation bear canines, and a shell thunderbird (Neuman 1975).

Among Sonota Complex sites recorded in North Dakota are 32BA1 (near Valley City); the Schmidt Mound site (32MO20, south of Bismarck); and the Boundary Mounds site (32SI1), Alkire Mound (32SI200), and Porcupine Creek Component (32SI6, an occupation site), all located on the Missouri River and north of the North Dakota/South Dakota border. Other sites assigned to the Sonota Complex, including the Stelzer Village site, are located along the Missouri River near Mobridge and south of Pierre, South Dakota (Neuman 1975). A series of Sonota Complex sites in the Killarney Locality of the Pembina Valley region in southern Manitoba (northwest of Grafton) have been reported by Syms (1977), along with the Richards Kill and Richards Village sites in southwestern Manitoba. Syms (1977) also places the High Butte site (32ME13), in Mercer County, and the Indian Hill site (32M222), near Williston but located in McKenzie County, in the Sonota Complex.

Dates for the Sonota Complex cluster between 100 B.C. and A.D. 1000 at one standard deviation, and 1 A.D. to 800 A.D. if the central dates are considered (Syms 1977). Neuman (1975) and Syms (1977) basically agree that the Sonota Complex reflects derivations transmitted westward by Woodland Hopewellian societies, known primarily from sites recorded east and southeast of the north-central Plains. One factor in the diffusion that Neuman (1975) sees as being both directly and indirectly transmitted is the accessibility of the Sonota people to Knife River flint and grizzly bear teeth. Joyes (1970) apparently sees a direct

relationship between what now is referred to as the Sonota Complex and the Besant Phase. Neuman (1975) points to parallels in the two cultures, such as similar subsistence bases and contemporaneous site dates, but apparently does not feel they represent the same people. Syms (1977) places the Sonota Complex and the Besant "Horizon" into what he terms the early Village, as opposed to middle Woodland, Configuration. Based on what he perceives as differences in projectile point morphology, choice of raw materials, and categories of tools, Syms (1977) believes that Sonota and Besant represent separate units.

The Arvilla Complex is based solely on the consistent, re-occurring patterns of a number of burial mound sites in a geographic area extending from the St. Croix River Valley in east-central Minnesota, west to the Red River Valley, north along that river to the Pembina Plain, and to the Winnipeg area (Johnson 1973). Some of the mounds at the Fordville Mounds site along the Forest River in Walsh County have been placed in the complex, as well as the Arvilla Mounds on the Turtle River in Grand Forks County (Johnson 1973). The Fordville Mounds site is located southwest of Grafton, while the Arvilla Mound site is situated south of Grafton.

Major traits of the Arvilla Complex include: 1) linear and circular mounds; 2) subsurface burial pits; 3) frequent use of yellow and red ocher; 4) flexed and disarticulated primary and bundled secondary burials; 5) associated utilitarian and ornamental grave goods, dominated by bone and shell artifacts, prairie side-notched and broad side-notched projectile points, blade side scrapers of brown chalcedony, and mortuary vessels of St. Croix-stamped or Blackduck ware (Johnson 1973). The Arvilla Complex contains an artifact assemblage that is northern, and the intrusion of marine trade goods of southern origin should not obscure that fact (Johnson 1973). No single trait is restricted to this complex; it is the particular, consistent, re-occurring combination of the above traits that makes it distinctive. The Arvilla Complex developed rapidly about 500 A.D. to 600 A.D. and disappeared in the southern portion of its geographic area by A.D. 900; however, it may have continued for several centuries in the Red River Basin in Manitoba (Johnson 1973). Syms (1979) believes that the Arvilla Complex persisted until approximately A.D. 1400.

There is growing evidence that Woodland or Woodland-like traditions persisted in the Northeastern Periphery possibly to historic times; these peoples probably lived in Plains-adapted, localized groups. Michlovic (1979, 1981a,b) has discovered ample evidence of late Woodland manifestations in the Red River Valley region of Minnesota, and similar evidence has been found along the James River (Good et al. 1977a). However, there presently is scant archeological data pertaining to specific lifeways of these people, and few, if any, attempts have been made to synthesize available data.

3.1.4 Plains Village

People of the Plains Village Period (A.D. 900 to A.D. 1750) exploited the Middle Missouri subarea. Subsistence patterns included

cultivation of maize, squash, and beans in the Missouri bottom, and bison hunting on the upland grasslands (Ahler et al. 1979). Plains Village people lived for much of the year in earthlodge villages, most usually located along the Missouri River.

There is relatively little archeological evidence of Middle Missouri Tradition or Coalescent Tradition influences on the Northeastern Plains Periphery; however, this may reflect the scant amount of archeological work performed in the region to date. Since no village sites have been recorded in the Grafton area, a few of the village sites which have been investigated in the Northeastern Periphery along with their possible relationship with the Grafton area are discussed below.

Syms (1979) theorizes that a separate, strongly Mississippian-influenced burial complex developed on the northeastern Plains, immediately west of the Arvilla Complex, at about A.D. 900. Syms terms this the Devils Lake-Sourisford Burial Complex (DL-S Burial Complex). This complex is confined to an arc on the northeastern Plains between the Aspen Parkland and the Missouri Coteau. The greatest concentration of sites occurs in the region of Devils Lake, and in the Sourisford Locality of southwest Manitoba. Most of the finds from the Devils Lake region were from excavations performed by Montgomery (1906); other sites assigned by Syms (1979) to the DL-S Burial Complex are the Star, Sims and Calf Mountain mound sites on the Pembina River in Canada, northwest of Grafton. It should be mentioned that Johnson (1973) tentatively assigned these three sites to the Arvilla Complex.

While Syms (1979) lists numerous traits shared by the DL-S Burial Complex and the Arvilla Complex, he suggests that differences between the two complexes outweigh similarities. He indicates that Arvilla Complex burials had much lower frequencies of mortuary vessels, all of which represent distinctly different late middle Woodland and late Woodland-type pottery. Syms (1979) also states that Arvilla Complex burials contain items such as copper awls and ornaments, barbed harpoons, and distinctive types of pipes, which are rare or non-existent in DL-S burial mounds. Distinctive burial goods associated with the DL-S Burial Complex include miniature, smooth mortuary vessels, sometimes decorated with incised thunderbird designs and/or raised lizzards or salamanders; welk shell (marine snail) masks/gorgetts; "cigar holder-shaped" tubular pipes; and engraved stone tablets (Syms 1979).

People who constructed DL-S mounds were nomadic bison hunters who moved in a seasonal cycle involving wintering in the Aspen Parkland and sheltered valleys, and summering on the plains. Syms (1979) believes that they may have practiced some horticulture during the spring and fall. According to Syms's cyclical theory, complex-associated mounds in the Devils Lake vicinity would represent spring burials of persons who had died during the winter; this corresponds with people and bison migrating from sheltered, wooded areas out onto the open plains. Syms (1979) continues that the DL-S Burial Complex consisted of Siouian group(s), influenced by Mississippian and Middle Missouri developments, living during the period A.D. 900 to A.D. 1400, and he also states that remnants of traits of the complex persisted into protohistoric and historic periods.

The only village site that Syms (1979) has assigned tentatively to the DL-S Burial Complex to date is the Hendrickson III site (32SN403), located on the James River, south of Grafton (Good et al. 1977b). This site has a fortification ditch surrounding three circular house depressions, and two circular and two square-to-rectangular depressions are situated outside the ditch. This is the only fortified village site of this type recorded in the James River Valley, and three radiocarbon dates from the site have been averaged to provide a date of A.D. 1421. Based on results of site testing (Good et al. 1977b), it has been suggested that the site is related temporally and culturally to the early Extended Variant of the Coalescent Tradition (Good et al. 1977b, Schneider 1977).

An unfortified village of earth-covered, circular lodges (site 32SN3) was excavated during the summers of 1952 to 1954 (Wheeler 1963). The site was situated west of Jamestown, but has since been inundated by waters from the Jamestown Dam. Wheeler (1963) placed the site within the Statsman Focus which he believes to represent the early Historic Period, dated circa A.D. 1750 to 1800. This date is subject to speculation, since it is based on a few pieces of metal with suspect site association. Ceramic sherds from this site have been identified tentatively as early Hidatsa (Wheeler 1963).

The Biesterfeldt site (32RM1) is a large fortified earthlodge village situated on the Sheyenne River, southwest of Devils Lake. The site was excavated under the direction of William Strong in 1938; Strong's artifact and feature descriptions were published two years later (Strong 1940). Wood (1955) analyzed the ceramic collection from the site in 1954, and in 1971, the Smithsonian Institution published Wood's evaluation (Wood 1971). Site 32RM1 was placed on the NRHP on 2 August 1980.

Strong (1940) identified the site as a late 18th century Cheyenne village; he relied heavily on ethnohistorical documentation to develop this identification (Hayden 1862; Riggs 1863 in Wood 1971). Archeological evidence was found at Biesterfeldt to indicate that village inhabitants possessed horses (Strong 1940); this corresponds with Chippewa tradition, which contends that the Cheyenne village on the Sheyenne River (which was attacked by the Chippewa) included many horses (Tyrrell 1916). After excavation of the site in 1938, Strong (1940) stated that "vegetal remains have not yet been identified but consist of what appears to be maize, numerous seeds, and a considerable amount of birchwood." Wood (1971), however, states that no such material was available in the collection when he analyzed it in 1954. Wood (1971) indicates that Strong (1940) was "led to identify Biesterfeldt as Cheyenne based on circumstantial evidence alone." Wood does concede that "the Cheyenne occupied the Sheyenne River at the time the site is dated." Since no other lodge villages have been found on the Sheyenne River to date, Wood (1971) indicates that Strong (1940) was lead to choose "the most economical solution to its [the site's] identity."

Wood (1971) states that there can be no doubt that the Biesterfeldt site is part of the Post Contact Coalescent of the Plains Village Pattern; "it is a protohistoric village of sedentary, village dwelling

horticulturalists and hunters. . .superficially all but identical to those of contemporary Mandan, Hidatsa, and Arikara settlements." While Strong (1940) stated that Biesterfeldt ceramics are related to Woodland or "northeastern type," Wood (1971) contends that Biesterfeldt pottery is "closely related to those of the Arikara and other sedentary Missouri River tribes."

3.1.5 Plains Nomadic

At least on the Northwestern Plains, a shift from the Plains Archaic subsistence pattern of smaller game exploitation to a pattern of big game hunting marked the advent of the Plains Nomadic Period (A.D. 500 to historic times). Introduction of the bow and arrow and increased numbers of bison were instrumental in bringing about this change. Plains Nomadic projectile points typically are small and side-notched. Presence of stone circles (generally believed to represent tipi dwellings) traditionally is regarded as indicative of Plains Nomadic culture; however, there is considerable evidence that more sedentary peoples (i.e., Plains Woodland and Plains Village people) also used tipis during hunts.

The Avonlea Phase is represented by small, delicate projectile points. First appearing as corner-notched points, perhaps at such sites as Head-Smashed-In in Alberta (Reeves 1970), they apparently were soon replaced by the more familiar Avonlea Phase side-notched points (Kehoe 1966). A gradual transition from atlatl to bow and arrow is not represented by Avonlea points, which may suggest that this transition was very rapid on the Plains or that it took place elsewhere--possibly in the Rocky Mountains (Reeves 1970). It is possible that Besant peoples were introduced to the bow and arrow by Avonlea peoples (Reeves 1970), but in contrast to the Besant Phase, Avonlea peoples rarely used Knife River flint (Syms 1977).

While pottery rarely is associated with Avonlea Phase sites, Joyes (1970) believes that simple-stamped Truman Plains Rim ware may be representative of the Avonlea component at the Avery site (north of Grafton). Syms (1977) rejects this statement, because he suggests that stratigraphic control was lacking during investigation of the Avery site. Elsewhere, Avonlea ceramics are characterized by fabric-impressed, bossed or punctated, concoidal vessels, and possibly dentate-stamped and cord-marked sherds (Kehoe 1959). Very little is known about the Avonlea burial system. There is no remaining evidence of Avonlea burial mounds, and in the Powder River area of Wyoming and Montana, Avonlea burials are characterized by primary pit burials with many ornamental and utilitarian grave goods (Reeves 1970). Avonlea peoples apparently were very dependent on bison, as attested to by the large number of bison kill sites containing Avonlea points (Joyes 1970). While most of these kill sites were pounds, a few have been reported to represent actual jumps (Davis 1966). Avonlea campsites appear to be fairly small, temporary camps of nomadic tribes people. Seasonally, these people appeared to be settled in multi-band groups in order to hunt bison communally (Joyes 1970). Although Reeves (1970) suggests use of the tipi, little is known about Avonlea habitation structures.

The origin of the Avonlea Phase is not understood clearly at this time. Kehoe (1966) points to the one-time caribou-driving Athabascans to the north, while Hustel and Mallory (1967) suggest an affiliation with peoples of the Middle Missouri region. Reeves (1970) suggests that the Avonlea Phase is a Plains-adapted culture, which followed the Pelican Lake Phase.

Avonlea sites have a broad distribution on the Northern Plains, occurring quite frequently in eastern Montana, and southern and central Saskatchewan. Evidence of Avonlea occupation also is present in northern North Dakota and southern Manitoba. The Avonlea Phase is well-represented at the Avery site (Joyes 1970), which appears to be the only Avonlea Phase site recorded with any proximity to the Grafton area. The Avonlea Phase has initial dates of A.D. 90 ± 120 at the Head-Smashed-In site in Alberta (Reeves 1970) and A.D. 210 ± 60 at the Gull Lake site in southwestern Saskatchewan (Kehoe 1966). Reeves (1970) suggests an initial date for the Avonlea Phase in the Upper Missouri-Black Hills and southwestern Manitoba areas at A.D. 400 to A.D. 500, with a termination date of A.D. 650 to A.D. 700 in southwestern Manitoba, but as late as A.D. 900 in the Upper Missouri-Black Hills areas. These dates indicate that Besant and Avonlea phases were at least partially contemporary.

While there apparently is no record of Avonlea Phase cultural manifestations in the Red River Valley, small prairie and side-notched projectile points (found abundantly in association with plains areas farther west and north) also have been found on both sides of the Red River. No tipi ring sites have been recorded in the Red River Valley, which may be misleading since most of the Red River Valley was cleared years ago for cultivation. Fist-sized stones, used for construction of tipi ring features, are relatively rare in the Red River Valley, and those that are present generally represent glacial deposits. Tipi ring features have been recorded along the Sheyenne and James river valleys and around Devils Lake (Vehik and Vehik 1977; Good et al. 1977a; Schneider 1977). While nomadic hunters were present in eastern North Dakota and western Minnesota, people representing the pure Plains Nomadic likely were more numerous farther west in North Dakota and on the high plains in general.

3.2 PROTOHISTORIC PERIOD

The cultural sequence of the protohistoric period (about 1600 A.D. to 1738 A.D.) in the general Grafton area is virtually impossible to reconstruct, because there is almost no recorded data. Since first contact between native peoples in the region and Europeans occurred with the LaVerendrye Expedition of 1738, it is logical to assume that European trade goods had traveled to the Red River Valley by that time. Cartier's first trading voyage to the present site of Montreal occurred in 1534 (Folwell 1956), over 200 years before first white contact in the general project area. Although Indian trade was of small consequence through the 16th century, the French began to establish trading posts in French Canada and they began to explore westward into the Great Lakes region early in the 17th century. French explorer, Jean Nicolet, was the first European known to make documented contact with an indigenous people of

the Upper Midwest. He met the Winnebago at the head of Green Bay in 1634 (Folwell 1956), over 100 years before the Verendrye Expedition. The study area region connects by water to the fur-trading routes through Pembina (located in present North Dakota) and Fort Snelling (located in present Minnesota), so trade would have been practicable directly or through Indian contacts. However, it is more likely that Indian contacts were used, given the distances involved. While indirect contact was possible, there is no evidence (material or documentary) to aid in reconstruction of the actual sequence of events in the region during the protohistoric period.

By using the evidential base from the east for the period 1600 to 1738, researchers have been able to construct a sequence of tribal movement and distribution that does pertain to the study area. The Red River Valley experienced the same general movement of tribes from east to west as did lands farther east. The protohistoric period was characterized by tribes shifting into the Red River Valley from territories farther east. The abundant game of the study area region attracted tribes, while violent pressure exerted by better-armed tribes to the east forced some tribes to move westward.

The pattern of movement can be illustrated with representative examples. In the 1630s, the Huron, Petuns, and Ottawa were forced east into Wisconsin by the Iriquois, whose territories were being encroached on by Europeans. By 1670, these tribes had been pushed out of Wisconsin by the Dakota. The Dakota suffered a similar fate in the 18th century. In the 1730s, the Wisconsin Chippewa (who had been contacts for Dakota furs going out through Green Bay) began losing this role as the Dakota established direct relations with the French and undertook to drive the Chippewa out of northern Wisconsin and Minnesota. The ensuing war was won by the better-armed Chippewa, and by the time of the American Revolution, the Dakota had been defeated and they had been forced west and south out of Wisconsin (Hickerson 1962).

The effects of these westward pressures were felt first in the Red River Valley in the 17th century, when the Cheyenne of south-central Minnesota were pushed into North Dakota by the better-armed Chippewa and Dakota. The Dakota were routed in turn, when the Teton and Yanktonai tribes were forced out of Minnesota by the Chippewa. By the time of LaVerendrye's 1738 expedition, the Dakota had begun moving into North Dakota (Robinson 1966).

3.3 HISTORIC INDIAN PERIOD

The Red River Valley is an environmental transition zone between the forests and plains, and its prehistoric and historic Indian inhabitants participated both in forest and plains economies. At the time of the LaVerendrye expedition in 1738, the Red River Valley was inhabited and/or used by the Cheyenne, Yanktonai Dakota, and the Cree; the Cheyenne were forced out of the area by 1800 (Robinson 1966). The Canadian Cree, whose territory included a small corner of north-eastern North Dakota, had adapted their basic forest culture to the plains by 1738. For all practical purposes, the Cree had become two tribes by this time--the Cree of the Woods and the Cree of the Plains.

The Chippewa were the last tribe to migrate from the east into the Red River Valley. Like the Cree, they are of Algonquin linguistic stock, and the Chippewa learned to adapt to their new environment by learning from the Cree. The forest Chippewa had focused on use of the canoe, fish, wild rice, and maple sugar; they did not use horses, and they hunted with a long bow. On the plains, the Chippewa acquired horses and began using short bows. Their forest dwellings had been comprised of saplings covered with bark. On the plains, the Chippewa followed the buffalo, and lived in tipis which were suited to frequent movement.

The Dakota who moved onto the plains from the forests adapted to the plains in much the same way as had the Cree. The Santee followed forest ways, while the Tetons adapted to a nomadic Great Plains culture. The Yanktonai adopted a culture that exploited both the forest and the plains (Robinson 1966).

3.4 HISTORIC EURO-AMERICAN PERIOD

The historic Euro-American Period began in the study area region in about 1738, with the arrival of the LaVerendrye Expedition. This period has been divided into two distinct phases: 1) 1738 to about 1878, characterized by exploration and fur-trading; and 2) about 1878 to present, characterized by removal of indigenous peoples, agricultural settlement, and urban development. Various historic developments in the region of the study area are discussed below.

3.4.1 Fur-Trading Era

During the period 1738 to 1818, the study area region was a small part of the overall struggle for the continent. France, England, and America sent representatives into the Upper Midwest; initially to explore and then to trade. This period was characterized by frequent warfare, both in Europe and on the North American continent. The study area was claimed by France between 1671 and 1763, although there is no record of French settlement there. The British controlled the area from 1763 to 1818, and the region was owned by America following the Louisiana Purchase in 1803. The fur trade, however, remained firmly under British control until the War of 1812 finally established American control in the region and drove the British into Canada. An American military presence, such as Fort Snelling--established in 1819 in present St. Paul, Minnesota, on the fur trade route to the southeast--was required to keep them there.

The Red River Valley was unorganized from 1821 to 1834, part of Michigan Territory from 1834 to 1836, part of Wisconsin Territory from 1836 to 1838, and part of Iowa Territory from 1838 to 1846. The valley was unorganized again from 1846 until 1849, part of Minnesota Territory from 1849 until 1858, and part of Dakota Territory from 1858 until 1889. In 1889, the western Red River Valley became part of the state of North Dakota.

The explorers who made first contact in the Red River Valley left behind valuable documentation about the Indian tribes and geography of

the region. Among the more notable of these are LaVerendrye (in the area in 1738), his sons (in the area in 1742), Jonathan Carver (in the area in 1768), Zebulon Pike (in the area in 1805), and Stephen Long (in the area in 1823).

From the late 17th century to the time of agricultural settlement in the late 1870s, the fur trade was the chief Euro-American occupation in the region of the study area. It also became a chief preoccupation of Indian tribes in the region. The French began operating out of their Canadian settlements in the 1670s, and continued their involvement after the British took possession of the territory in 1763. The first actual post in the area was established in 1797, when Charles Chaboillez built a British post for the North West Company at Pembina (Kelsey 1951), north and slightly east of Grafton. The Red River was a vital link in the transportation system used to carry furs out from Pembina to Mendota (at the confluence of the Minnesota and Mississippi rivers in the present St. Paul/Minneapolis area of Minnesota). The transportation system followed the Red River south to the Boix de Sioux, which connects with the Minnesota River, and that river was traveled east to the Mississippi River.

Following establishment of the Pembina post, the North West Company moved quickly to monopolize trade in the Red River Valley by sending several young men to the region to establish posts. One of these young men, Alexander Henry, set posts up at Grand Forks and at the confluence of the Park and Red rivers in 1800 or 1801, but these posts were very short-lived (Coues 1897).

The period 1800 to about 1878 is basically undocumented for the region, except for Henry's brief description of the area around the mouth of the Park River. He found the water in the Park River "a perfect brine," and his description of the buffalo crossing at the mouth of the Park River indicates that the region was excellent buffalo country (Coues 1897). According to Henry, "The ground on both sides [of the Red River] has been beaten as hard as a pavement and the numerous roads leading to the river a foot deep are surprising. When I consider the hard sod through which these tracks are beaten, I am naturally at a loss and bewildered in attempting to form any idea of the numerous herds of buffalo which must have passed here" (Harold Printing Co. 1909). It is likely that such a region would have drawn white and mixed-blood fur trappers and buffalo hunters, as well as Indians. If so, none of these people left any record of their activities. The missions in the region were headquartered in Fargo; there was no attempt to establish missions in the study area region prior to agricultural settlement.

As fur trade developed in the Red River Valley, traders had to do something to augment the unreliable water route from Pembina to Mendota. Beginning in 1817, they began using two-wheeled wooden carts (usually pulled by oxen and commonly referred to as the Red River oxcarts) to haul goods and furs by land. One of these oxcart trails crossed the Park River at Grafton; however, given the amount of cultivation and urban development along this route, there is scant likelihood that any evidence of this trail remains and HASI's 1981 and 1982 reconnaissance surveys detected no evidence of the old trail.

3.4.2 Agricultural Settlement

The first Euro-Americans to settle permanently near the Grafton area were French Canadians, who began settling along the Park River in April 1878 (Berg 1976). These French Canadians soon were joined by primarily first-generation immigrant Norwegians, who became the largest ethnic group to immigrate to the Red River Valley. Other groups that entered what is now Walsh County include English, Irish, Scots, Germans, and Swedes (Berg 1976).

The greatest influx of people into the Red River Valley area took place between 1879 and 1886. This era became known as the Great Dakota Boom. The two developments most responsible for this boom were improvements in flour milling and construction of railroads. New-process flour milling made Minneapolis the flour milling center of the United States and created a market, and Railroad construction made the Red River Valley the chief supplier of that market (Robinson 1966).

Wheat exhausted the ground very quickly, however, even the enormously fertile ground of the Red River Valley. This tendency ensured that the region soon would turn to a more diversified agriculture, which resulted in making the area less vulnerable to fluctuations in wheat prices.

HASI's cultural resource inventory located the remains of a building (site 32WA4), which apparently was associated with agricultural settlement of the area. The land containing the site currently is owned by Beulah Swenson. Deed title transfer examination, conducted at the Walsh County Courthouse in Grafton, revealed that this property was homesteaded originally by Charles Bjorken on 31 October 1881. Benjamin J. Johnson owned the land from 5 May 1905 until 31 May 1925. Benjamin Johnson served as mayor of Grafton from 1907 to 1909; the Johnson family home was in Grafton, and Benjamin owned land outside of Grafton.

With the beginning of agricultural settlement in the late 1870s, the Park River crossing at what came to be Grafton was as important to settlers as it had been to oxcart drivers. Early in 1881, the St. Paul, Minneapolis, and Manitoba Railroad (later known as the Great Northern Railroad) announced its plans to extend its line from Grand Forks north. After some debate, it was decided to cross the Park River on land claimed by Thomas Cooper. The area claimed was described as an "old Indian trail" (Dudley 1900). The railroad's choice of Grafton was "by reason of its desirability as a point for crossing the Park River" (Harold Printing Co. 1909). On 21 December 1881, the first train arrived at Grafton (Berg 1976). The growth of Grafton from that time to the present was phenomenal.

Whether a railroad bridge had been constructed across the Park River at Grafton when the first train arrived at the settlement late in 1881 is not known. However, by the end of the following year (1882), the Great Northern Railroad had expanded northward from Grafton to the United States/Canadian border. Review of an early county atlas (Andreas 1884) revealed that a Great Northern Railroad bridge was in place across the

Park River in 1884; this bridge was located at approximately the same location as site 32WA5. The bridge illustrated on the Andreas (1884) map also is depicted on an 1884 plat map of Grafton (Sanborn 1884). Whether the bridge constructed across the Park River in 1907 (32WA5) replaced the original railroad bridge (built in about 1881) or whether it replaced a later bridge is not clear. It can be stated that site 32WA5, built in 1907, was constructed at the location of the original Great Northern Railroad Park River crossing. A more detailed description of site 32WA5 is provided in the investigation results section (Chapter 5.0).

Walsh County was organized in 1881, and it was named for George H. Walsh--the mayor of Grand Forks. The county was formed of the two northern tiers of townships from Grand Forks County and the two southern tiers of townships from Pembina County. The town of Grafton, presently the county seat, was incorporated in the same year (Andreas 1884).

4. FIELD METHODS

The city of Grafton is in Walsh County, North Dakota, on the Park River, approximately 24.1 km (15 mi.) upstream from the confluence of the Park River with the Red River (Figure 1, Section 1.0). The flat prairie of the Grafton area is on the first terrace and the floodplain of the Park River, whose flood average is about 14 m (45.9 ft.) wide as it passes through the city, and this area is subject to flooding.

Seven proposed flood control goals have been combined previously in six flood control plans at Grafton. The five plans involved in HASI's CRR cultural resource project at Grafton are delineated on Figures 2 through 6 in Section 1.0. CRR Plan 4 was not included in HASI's contracted survey areas. The seven types of proposed flood control included in the five flood control plans at Grafton include:

- 1) ring levee, 30.5 m (100 ft.) survey width;
- 2) flood bypass, 152.4 m (500 ft.) survey width;
- 3) bypass channel, 152.4 m (500 ft.) survey width;
- 4) interceptor drain, 7.6 m (25 ft.) survey width;
- 5) tieback levee, 15.2 m (50 ft.) survey width;
- 6) channel and bridge modification, 15.2 m (50 ft.) survey width on both sides of the river channel where proposed, and 61.0 m (200 ft.) survey width at cutoff alignments; and
- 7) ditch modification (McCloud Ditch and associated natural coulees), 15.2 m (50 ft.) survey width on both sides of existing ditch disturbance (30.5 m or 100 ft.), making a total 61.0 m (200 ft.) survey width.

Survey conditions were generally good, since many of the ROWs were along or on top of existing roadways or through plowed fields. ROW lines that followed the riverbanks, natural coulees, or the existing McCloud Ditch did contain somewhat dense vegetation, and these areas were surveyed more strenuously. The two cultural resource sites located and recorded through conduct of this project (sites 32WA4 and 32WA5) were easily visible.

Topsoil of the Grafton area is dark sandy loam to a depth of as much as 40.0 cm (16 in.), where soil grades into a lighter clayey loam and into sandy clays with gravels. In some places along the riverbank, topsoil has a higher content of humus and sand, and it is not so thick a layer above the more clayey subsoil. This stratigraphic data was obtained through analysis of the McCloud Ditch cutbank and through analysis of results of shovel tests conducted in the Leistikow City Park.

Method of reconnaissance was by pedestrian survey, and pedestrian survey in all cases was conducted through use of the transect method.

Survey personnel were spaced out with the least 15 ft. apart and the zig-zag courses effected a maximum of 100 ft. wide scope of view, allowing each person to identify and estimate the area of search. Transsects were not repeated, but the survey was designed to detect cultural anomalies.

Shovel tests were conducted at sites 32WA4, 32WA5, and 32WA6, revealing a depth of silted material of 1.5 ft. at site 32WA4, 1.5 ft. or (2.5 ft.) at site 32WA5, and 1.5 ft. at site 32WA6. The very sparse debris in the silted material consisted of the single foundation of a fence post, a few iron wire-bound nails, sherds of low quality, and a few small pieces of water-paste-altered earthenware. The debris was located within 1.5 ft. of the foundation feature. A shovel test was also conducted at two places in the stream bed, but no debris was observed. These tests were conducted to gauge the depth of possible cultural deposits, and to determine the degree of surface scatter of recent historical debris in this vicinity. The debris at this location consisted of modern clothes washer/dryer bodies and parts. This locale was not recorded as a cultural resource site because of the recent nature of the debris encountered, and because the locale does not appear to be the site of the washing facility. Additionally, results of shovel tests in this area indicate that the observed debris was not superimposed over an earlier dump area.

Cultural material specimens were not collected from the Plant View Homestead site (32WA4), from the Railroad Bridge site (32WA5), or from any other area during the Grafton Flood Control Project cultural resource survey. The few artifacts observed at site 32WA4 were not diagnostically important and they offered little possibility for temporal affinity analyses, and no cultural materials were observed in association with the bridge feature recorded as site 32WA5.

5. INVESTIGATION RESULTS

No cultural resources located within the study area are currently listed on the NRHP or on the State Historic Sites Registry. No previously recorded cultural resource sites were situated within the Grafton Flood Control Project survey width, nor will any previously recorded cultural resource sites be affected directly or indirectly by proposed flood control measures. Two cultural resource sites were recorded by HASI archaeologists during reconnaissance survey: the Plant View Homestead site (32WA4) and the Railroad Bridge site (32WA5). Each of these sites are discussed separately in sections 5.1 and 5.2, which are provided below.

An area of modern refuse was observed within the Lechukew Day Park; however, shovel tests conducted in this area revealed that the refuse area was not the original location of observed materials and that revealed that the observed materials are not superimposed over a "dump site." Therefore, the refuse locale was not recorded as a cultural resource site.

Initial study area pedestrian reconnaissance was conducted in September 1981. HASI returned to the Grafton area in spring 1982, in response to draft report review comments. The spring 1982 reconnaissance was conducted primarily to examine bridges in the Grafton area, which appeared likely to be affected measures proposed in three flood control plans. The Railroad Bridge site (32WA5) was recorded as a result of this 1982 reconnaissance visit; the remaining five bridges located within the Grafton area were examined and related documentary research was conducted about them. Since none of the bridges in the Grafton area will be affected by proposed flood control measures (according to information gained by HASI at the time of receipt of draft report review comments) and since only the Railroad Bridge (site 32WA5) is architecturally significant, the remaining five bridges were not recorded as cultural resource sites. Each of these five bridges is described briefly, however, in section 5.3 below.

5.1 PLANT VIEW HOMESTEAD SITE (32WA4)

The Plant View Homestead site (32WA4) is an Euro-American historic homestead site, which is comprised of one feature (rectangular foundation remains) and a very sparse associated cultural material scatter. The foundation is 11 m (36 ft.) north to south by 5 m (16.4 ft.) east to west, and it is covered with eolian silt and prairie grasses. The site area (approximately 120 sq. m) is defined by this one feature and the sparse scatter of cultural materials. These cultural materials include small fragments of metal (i.e., pieces of wire nails), sherds of brown bottle glass, and white-paste-glazed earthenware sherds. No abandoned agricultural implement parts or any other features were observed in the vicinity of the foundation, and no cultural materials were collected from the site. Potential natural vegetation in the area of the site is prairie grasses and forbs. Presently, grasses and introduced weeds grow on the site, which stands as an island of vegetation in the plowed field.

The area around the site's one feature has been disturbed thoroughly by cultivation (plowing), and the cultural materials scattered in the area have been disturbed and mixed. Culturally sterile soil was noted at least to approximately 35 or (14 in.) of topsoil turned over for cultivation. Three shovel tests conducted within the rectangular, unplowed site area (i.e., the area containing the site's one feature) revealed that the concrete rubble comprising the foundation did not extend below the surface of organic loam soil. It is very unlikely that the structure that the foundation presumably supported had a cellar, because the rubble comprising the foundation was not sunken or mounded; rather, it is as level as the surrounding field. A piece of strap iron was found protruding from the rubble, but no other artifacts were noted during conduct of shovel tests. Soil in the site area, as determined by contact of the shovel with it, is a dark organic loam to a depth of about 35 or (14 in.), where it grades into a lighter soil with a greater percentage of clay and sand.

Site 32WA4 is on the first terrace of the Park River, but apparently has not been flooded in recent times. Cultural integrity of the site has been affected, however, by cultivation and removal of the structure presumably once supported by the apparent foundation feature.

The land containing site 32WA4 currently is owned by Beulah Swenson. Deed title transfer examination, conducted at the Walsh County Courthouse in Grafton, revealed that this property was homesteaded originally by Charles Bjorken on 31 October 1881. Benjamin J. Johnson owned the land from 5 May 1905 until 31 May 1925. Benjamin Johnson served as mayor of Grafton from 1907 to 1909; the Johnson family home was in Grafton, and Benjamin owned land in Section 7.

Since the integrity of site 32WA4 has been altered extensively, the site does not retain extant architectural features that may have provided the site with architectural significance, and the site is not associated with historically important events, the site has been determined not significant and not eligible for inclusion on the NRHP. The site apparently is associated with a former mayor of Grafton (Benjamin J. Johnson); however, it is very unlikely that any further important or interpretative information could be gained by additional research conducted at or about the site. Therefore, no further cultural resource work is recommended for this site.

5.2 RAILROAD BRIDGE SITE (32WA5)

The Railroad Bridge site, 32WA5) was recorded by HASI in June 1982 in response to draft report review comments. This site is a railroad bridge (a total 52.9 m or 173.6 ft. long) that spans the Park River. The bridge is a plate steel span bridge that was built in 1907 for or by the Great Northern Railroad Company (Burlington Northern Engineers Office 1982). The superstructure of the bridge consists of three sections of steel plate, two of which measures approximately 18.5 m (60.7 ft.) and the third measures about 15.2 m (49.9 ft.). The width between the plates is 4.72 m (15.5 ft.), and a 0.5 m (1.6 ft.) wide, wooden walkway is located on either side of the railroad tracks. The bridge is supported by

two cut sandstone block abutments, and two cut sandstone block piers. Each abutment consists of four courses of cut sandstone blocks, which are adhered by concrete mortar. These abutments measure 10.0 m (32.8 ft.) in length (east-west), 0.71 m (2.3 ft.) in width (north-south), and are 1.1 m (3.6 ft.) high. The piers contained within the Park River channel also are constructed of four courses of cut sandstone blocks, and adhered by concrete mortar. The piers measure 6.1 m (20.0 ft.) in length (east-west), 1.3 m (4.3 ft.) in width (north-south), and are approximately 1.1 m (3.6 ft.) high (Burlington Northern Engineers Office 1982).

Early in 1881, the St. Paul, Minneapolis, and Manitoba Railroad (later known as the Great Northern Railroad) announced its plans to extend its line north from Grand Forks. After some delay, it was decided to cross the Park River on land claimed by Thomas Turner, located in the NE 1/4 of Section 13, T157N, R53W. The land claimed was described as an "old Indian trail" (Dudley 1900). The railroad's choice of Grafton was "by reason of its desirability as a point for crossing the Park River" (Harold Printing Co. 1909). On 21 December 1881, the first train arrived at Grafton (Berg 1976).

Review of an early county atlas (Andreas 1884) revealed that a Great Northern Railroad bridge was in place across the Park River in 1884; this bridge was located at approximately the same location as site 32WA5. The bridge illustrated on the Andreas (1884) map also is depicted on an 1884 plat map of Grafton (Sanborn 1884). Whether the bridge constructed across the Park River in 1907 (32WA5) replaced the original railroad bridge (built in about 1881) or whether it replaced a later bridge is not clear. It can be stated that site 32WA5, built in 1907, was constructed at the location of the original Great Northern Railroad Park River crossing.

This bridge may be the last steel plate, span railroad bridge with cut sandstone block piers and abutments remaining in existence in the Red River Valley. The bridge was built 75 years ago, and it represents a presently rare example of an architectural style and design that once was somewhat common (Burlington Northern Engineers Office 1982). Additionally, the bridge structure is in excellent condition, i.e., the integrity of this site apparently has not been altered by natural or other disturbances. Therefore, HASI determined that this site is architecturally significant and eligible for inclusion on the NRHP.

5.3 BRIDGES IN THE GRAFTON AREA

Five bridges, additional to the Railroad Bridge recorded as site 32WA5, were identified along the Park River. Each of these bridges is discussed briefly below.

Bridge 1 - This structure is situated across the Park River on Kittson Avenue, and within the city limits of Grafton. The first known structure at this location was a foot bridge, built between 1907 and 1914 (Sanborn 1907, 1914). The foot bridge was replaced by the present structure in 1916 (Walsh County Engineers Office 1982). The present structure is a 24 m (77 ft.) long pony truss, through-bridge, with a wood plank wearing surface and concrete float slab abutments.

Bridge 2 - This structure is situated across the Park River on Hill Avenue (U.S. Highway 81), and within the city limits of Grafton. A bridge is known to have existed at this location as early as 1893 (D.W. Ensign and Co. 1893), and the present structure was built in or around 1970 (Markuson 1982). The bridge has a concrete deck, abutments, and piers.

Bridge 3 - This bridge was recorded as site 32WA5, and it is discussed above in Section 5.2.

Bridge 4 - This structure is situated across the Park River on Wakeman Avenue, and within the city limits of Grafton. The first known structure at this location was built at least as early as 1884 (Sedgwick 1884). The present structure was built in 1929 (Walsh County Engineers Office 1982), and it is a 27 m (88 ft.) long pony truss, through-bridge. The bridge has a concrete wearing surface, and concrete float slab abutments. This structure is slated to be replaced in the spring of 1983 (Markuson 1982).

Bridge 5 - This structure is a railroad bridge, situated across the Park River in the NE1/4 NE1/4 NE1/4 of Section 13, T157N, R53W, and within the city limits of Grafton. The first known structure at this location was a Northern Pacific Railroad bridge, built at least as early as 1893 (D.W. Ensign and Co. 1893). The present structure was built in 1955 (Burlington Northern Engineers Office 1982), and it is constructed completely of treated timber logs.

Bridge 6 - This structure is situated across the Park River on Burgamott Avenue, and within the city limits of Grafton. The first known structure at this location was built at least as early as 1893 (D.W. Ensign and Co. 1893), and the present structure was built in 1925 (Walsh County Engineers Office 1982). The present bridge is a 22 m (70 ft.) long, pony truss, through-bridge; it has a concrete wearing surface, and it has concrete float slab abutments.

As indicated in the introduction to the present chapter, with the exception of bridge 3 (the Railroad Bridge site, 32WA5), none of the bridges across the Park River in the Grafton area are architecturally significant; the SHPO verbally concurred with this determination (Bailey 1982). Additionally, information obtained by HASI at the time of receipt of draft report review comments indicated that none of the six bridges in the Grafton area will be affected by proposed flood control measures. Therefore, only bridge 3 (the Railroad Bridge site, 32WA5) was recorded as a cultural resource site.

6. EVALUATION AND CONCLUSIONS

No previously recorded cultural resource site is currently listed NADP or North Dakota State Historic Sites. However, the site will be affected directly or indirectly by any flood control project, and the flood control plan requires removal of the bridge. The site is not currently recorded by HASI in the National Historic Register. The site is an historic railroad bridge, and it is a significant site in railroad history.

The integrity of site 32WA5 has been altered by the flood control project. The site does not retain exterior architectural features that are representative of the site with architectural significance, and the site is not a nationally historically important structure. Therefore, the site is not a nationally significant and not eligible for inclusion on the NRHP. The site apparently is associated with a former mayor of Grafton, Edmond H. Johnson; however, it is very unlikely that any further historical or interpretative information could be gained by additional research conducted at or about the site.

Site 32WA5 may be the last steel plate, span railroad bridge with cut sandstone block piers and abutments remaining in existence in the Red River Valley. The bridge was built 75 years ago, and it represents a presently rare example of an architectural style and design that once was somewhat common (Burlington Northern Engineers Office 1992). Additionally, the bridge structure is in excellent condition, i.e., the integrity of this site apparently has not been altered by natural or other disturbances. Therefore, HASI determined that this site is architecturally significant and eligible for inclusion on the NRHP.

As indicated in the investigation results chapter (Section 5.0), with the exception of the Railroad Bridge site (32WA5), none of the bridges across the Park River in the Grafton area are architecturally significant; the SHPO verbally concurred with this determination (Bailey 1982). Additionally, information obtained by HASI at the time of receipt of draft report review comments indicated that none of the six bridges in the Grafton area will be affected by proposed flood control measures. Therefore, only bridge 3 (the Railroad Bridge site, 32WA5) was recorded as a cultural resource site.

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