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Proposal to Readjust the Woodbury County Geodetic Control Network
08-26-2026

A. PURPOSE
The purpose of this estimate is to provide all labor and materials required to readjust the existing Woodbury County geodetic control network. The network readjustment will rely on the National Spatial Reference System (NSRS) 2022 modernization currently being rolled out by the National Geodetic Survey (NGS).

B. INTRODUCTION
The original Woodbury County geodetic control network was installed and measured by Deni Associates in 1998. In 2012 Dan Corbin, Inc. (DCI) conducted a new county-wide GPS survey and least squares network adjustment. The 2012 county-wide GPS survey was adjusted to the latest NGS horizontal datum: NAD 83(NA2011) and NGS vertical datum: NAVD 88. In 2015 DCI published IaRCS Zone 4 coordinates for the network.

NGS has begun a phased rollout of the new NSRS 2022 modernized mapping datums. Once the rollout is complete the new NSRS 2022 horizontal and vertical datums will become the official mapping datums for all geospatial applications in the United States. The new NSRS 2022 mapping datums will replace the existing NGS datums currently in use and all existing NGS datums become obsolete.

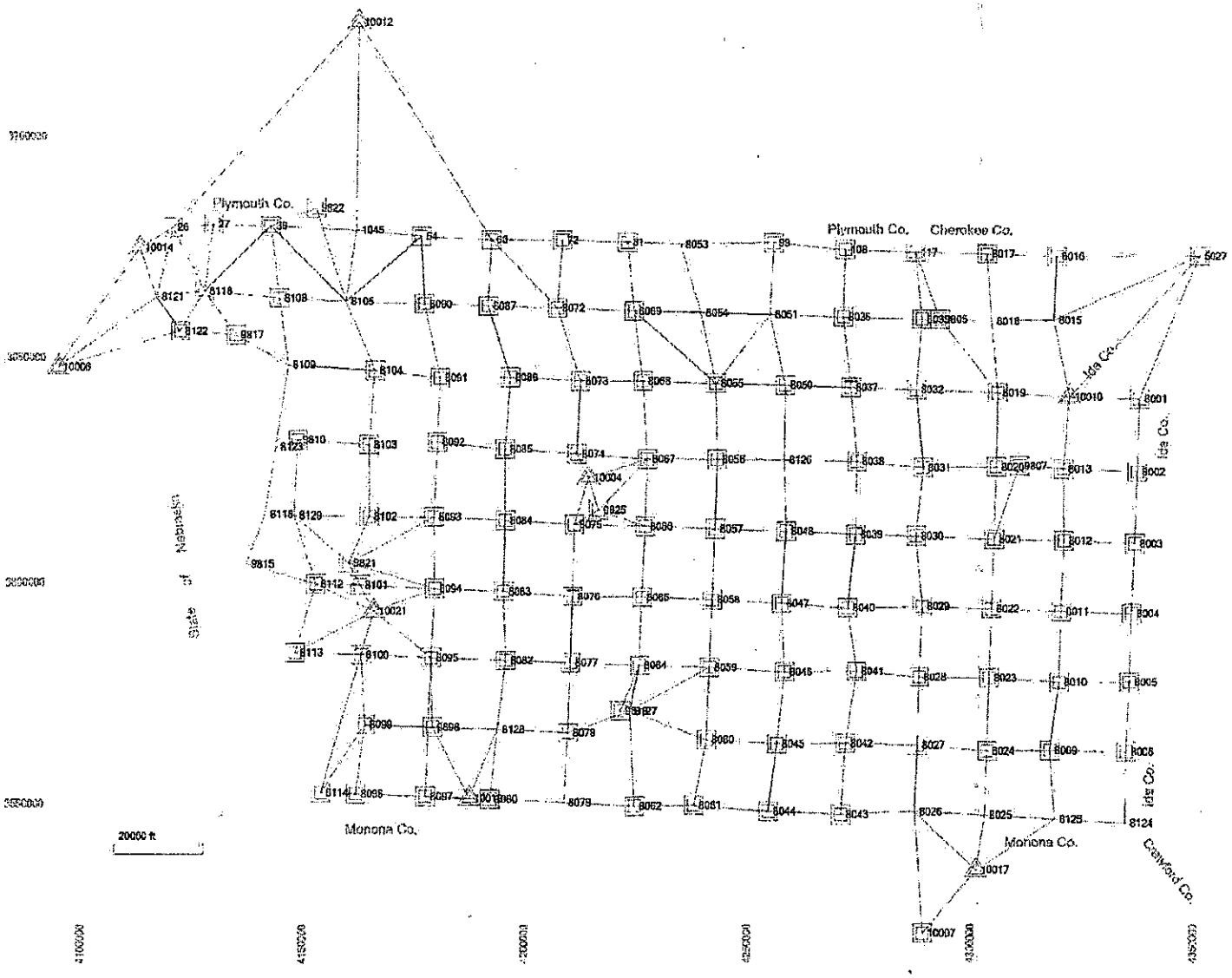
NGS has described three methods for transitioning existing data to the modernized NSRS:

1. **Resurvey:** Return *to the field and collect new observations, relying on geodetic control that has coordinates in the new datum.*
2. **Readjust:** *Using existing observations, re-compute new coordinates based on geodetic control that has been defined in the new datum.*
3. **Transform:** *Take finished products that have coordinates in the old datum and use transformation software to estimate coordinates in the new datum.*

The Woodbury County network existing observations collected in 2012 are available. DCI will use a hybrid of the second method, "**Readjust: Using existing observations…**" to transition the existing Woodbury County control network to the modernized NSRS. This method is less costly and will maintain the accuracy of the 2012 control network.

C. SCOPE OF SERVICES
New static GNSS field observations will be collected on four existing Woodbury County geodetic control network monuments. The four existing network monuments will be selected by DCI and located near the extents of the Woodbury County network. The static GNSS observations will be processed, constrained to the CORS network and submitted to NGS for inclusion in the national adjustment. Once the NSRS 2022 datums have been released by NGS, the existing 2012 countywide network will be readjusted to geodetic control points defined in the new 2022 datum. Passive NGS control marks included in the existing 2012 network and defined in the new 2022 datum will also be evaluated for inclusion in the new 2022 network adjustment.

The GNSS field observations and 2022 network readjustment will be performed under the direct supervision of Gary G. Brown P.L.S., a duly licensed Land Surveyor in the State of Iowa.



Woodbury County
2012 GNSS Network Vectors

This document was prepared by Dan Corbin, Inc. for use by Woodbury County, Iowa.

D. Static GNSS Field Observations (Late 2026)
Four (4) existing Woodbury County network monuments will be selected and occupied with new GNSS observations.

- Monuments previously included in the 2012 network and near the periphery of the existing network will be selected by DCI for inclusion.
- Static observations will be collected with survey-grade GNSS receivers.
- Minimum 4-hour simultaneous network observations will be collected.
- GNSS observations will be post processed using nearby CORS and precise orbits.
- 3D RMS values will be computed for quality assurance.
- Observations will be submitted to NGS as OPUS Shared Solutions.

Four (4) New GNSS Observations. **$6,801**

E. NATRF2022 & NAPGD2022 Network Readjustment (Early 2027, Pending NGS Release)
Readjust the Woodbury County network using the existing 2012 GNSS observations and re-compute new coordinates based on the above four network monuments that have been defined in the new 2022 datum. Readjustment incorporates:

- North American Terrestrial Reference Frame 2022(NATRF2022)
  - New Horizontal Datum to be released by NGS
- North American-Pacific Geopotential Datum of 2022(NAPGD2022)
  - New Vertical Datum to be released by NGS
- International Foot
  - New Unit of Measure (replaces the US Survey Foot)
- Least squares network adjustment
  - PLS Certification by Gary G. Brown, P.L.S.
- Project deliverables
  - 2022 Iowa State Plane Coordinates: Iowa Zone 4, SIOX.
  - Network adjustment summary including adjustment statistics. (pdf)
  - Map of network points and vectors. (pdf)
  - AutoCAD drawing with point locations. (dwg)
  - XYZ point listing including geographic coordinates. (xls)

Network Readjustment. **$5,963**

F. Modernized Monument Records (2027)
Republish the Monument Records from the 2012 Woodbury Co. GPS Report with the new NATRF2022 horizontal and NAPGD vertical point coordinate data, including geographic coordinates and mapping attributes. Republish monument records with the existing field ties from the 2012 report. Provide one hard copy and one digital copy.
Cost **$3,600**

G. TERMS AND CONDITIONS
The services performed for this project will be invoiced as the work is completed.
The costs provided in this contract are good faith estimates. DCI will not exceed these costs without previous consent from the Client. In the event the scope of service does change and require additional work; all additional work will be invoiced at an hourly rate of $175/hr.

Payment terms are as follows: Net 15 days – 1.5% per month on all accounts over 15 days unless otherwise specified by the Client at the time of contract.

The costs in this Proposal are valid for 120 days from the date hereof and become binding if signed and delivered by both parties during that period.

H. LIMITATION OF DAMAGES
In the event of the breach of this Agreement by either party, it's agents or employees, or any claim of damages by one party against the other, based on any legal or equitable claim, the parties agree that the amount of damages that may be recovered by any party shall be limited to a sum no greater than the total amount of the payments to be made pursuant to this Agreement.

I. SAVING CLAUSE
Should any provisions of this contract be deemed unenforceable by a court of law, all the other provisions shall remain in effect.

J. DELIVERY SCHEDULE – SCOPE OF SERVICES
This proposal is based on the best currently available delivery schedule provided by NGS. In the event NGS changes the modernization delivery schedule and/or changes the scope of their modernization services; DCI may reevaluate the proposal delivery schedule and incorporate changes to the scope of services listed in this proposal.

Dan Corbin, Inc.
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Cedar Falls, IA 50613
Email: dcorbin54@gmail.com

By: Dan Corbin
Dan Corbin, President

Date 8/26/2026

Woodbury County

By: _____
Woodbury County

Date 9/1/26