United States Department of the Interior

National Park Service

Signature of the Keeper

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin Properties

OMB No. 1024-018

RECEIVED 2280

to Complete the National Register of Historic Places Registration Form. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a). 1. Name of Property Strother Field Tetrahedron Wind Indicator Historic name Other names/site number KHRI # 035-311 Name of related Multiple Property Listing World War II-Era Aviation-Related Facilities of Kansas 2. Location Street & number 22215 Tupper Street not for publication City or town Winfield vicinity 67156 State Kansas Code KS County Cowley Code 035 Zip code 3. State/Federal Agency Certification As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this x nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. _ does not meet the National Register Criteria. I recommend that this property In my opinion, the property x meets be considered significant at the following level(s) of significance: Applicable National Register Criteria: x A B x C national statewide local Signature of certifying official/Title Patrick Zollner, Deputy SHPO Kansas State Historical Society State or Federal agency/bureau or Tribal Government In my opinion, the property ___ meets ___ does not meet the National Register criteria. Signature of commenting official Date State or Federal agency/bureau or Tribal Government 4. National Park Service Certification I hereby certify that this property is: entered in the National Register determined eligible for the National Register determined not eligible for the National Register removed from the National Register other (explain:)

Strother Field Tetrahedron Wind Indicator

Name of Property

Cowley County, Kansas
County and State

5. Class	ification			
Ownersh (Check as r	nany boxes as apply.)	Category of Property (Check only one box.)	Number of Resources v (Do not include previously liste	
X	private public - Local public - State public - Federal	building(s) district site structure x object	1 1 Number of contributing listed in the National Re	structures objects Total g resources previously
0 F				<u> </u>
Historic	on or Use Functions gories from instructions.)		Current Functions (Enter categories from instruct	ions.)
Defense:	Air Facility (Runway	wind instrument)	Transportation: Air-Relations instrument)	ed (Runway wind
7. Descri	ption			
Architect	tural Classification gories from instructions.)		Materials (Enter categories from instruct foundation: Concrete I	•
Other: Te	etrahedron object		walls: Metal: Tin	
			roof: N/A	
				nal rotating triangle
			clad with galvani	zed tin.

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Strother Field Tetrahedron Wind Indicator

Name of Property

Cowley County, Kansas
County and State

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources, if applicable. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary

The tetrahedron wind indicator is centrally located between two runways at Strother Field, which is approximately seven miles south of Winfield and seven miles north of Arkansas City in Cowley County, Kansas. The tetrahedron once functioned as a part of the World War II-era Strother Army Air Field in its role in the Battle of Kansas, a highly significant effort to train pilots and test, build, and deliver airplanes to the Pacific front during World War II. The tetrahedron, which retains excellent integrity and is one of just five such objects in Kansas, now serves as a part of a municipal airport and industrial park serving Winfield and Arkansas City.

Elaboration

Strother Field was built with four runways: two parallel runways with a north-south orientation and two perpendicular crosswind runways in a northeast-southwest and northwest-southeast orientation. The eastern north-south runway remains in use; its designation is Runway 17/35 and is 100' wide and 5,506' long. The western north-south runway was abandoned. The southeast-northwest crosswind runway remains in use; its designation is Runway 13/31 and is 75' wide and 3,137 long. The southwest-northeast runway was abandoned.

The tetrahedron is located in its original location, centered midfield between the extant and functioning runways. It is approximately 1,000' from Runway 13/31, 1,000' from Taxiway A which parallels Runway 17/35. This central location at midfield allowed ease of observation for the cadets that were training during World War II.

The tetrahedron is a three dimensional triangular object that measures: 26'10" long, 15' 2" wide, and 15' 2" tall. Constructed on concrete base, the main support shaft runs up into a large bearing inside the tetrahedron, allowing it to move freely and indicate the wind direction. The exterior is covered in galvanized tin and has a paint scheme. One side is white; with a 22" x 12" black square at each light location with green globes. There are a total of eleven green lights; nine along the bottom and two that run up the side. The back of the object has the same black-and-white color scheme. The other side is orange, with 22" x 12" squares at each light location and a red globe. There are a total of 20 red lights; eleven along the top ridge, nine along the bottom, and two up the side.

The tetrahedron was resided in the mid-1980s, and the lighting was replaced with new conduit, light fixtures, and colored globes. The lights are controlled with a photo cell turning on at dusk, and turning off at sunrise.

The object sits in its original location and operates as it did during the war effort.

Strother Field Tetrahedron Wind Indicator

Name of Property

Cowley County, Kansas

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Applicable National Register Criteria Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)	Areas of Significance
A Property is associated with events that have made a	Military
significant contribution to the broad patterns of our history.	Engineering
B Property is associated with the lives of persons significant in our past.	
C Property embodies the distinctive characteristics of a type, period, or method of construction or	Period of Significance
represents the work of a master, or possesses high artistic values, or represents a significant	1942
and distinguishable entity whose components lack individual distinction.	1942-1945
D Property has yielded, or is likely to yield, information important in prehistory or history.	Significant Dates
important in prematory of matory.	1942-1945
Criteria Considerations Mark "x" in all the boxes that apply.) Property is:	Significant Person (Complete only if Criterion B is marked above.)
A Owned by a religious institution or used for religious purposes.	N/A
B removed from its original location.	Cultural Affiliation N/A
C a birthplace or grave.	
D a cemetery.	Architect/Builder
E a reconstructed building, object, or structure.	U.S. Army Air Corps
F a commemorative property.	-
G less than 50 years old or achieving significance	

Period of Significance (justification)

within the past 50 years.

The period of significance spans the years during which the nominated object was associated with the World War II wartime effort at Strother Army Air Field. The period begins with the construction of the air field in 1942 and ends in 1945 with the end of World War II.

Criteria Considerations (justification)

N/A

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Strother Field Tetrahedron Wind Indicator

Name of Property

Cowley County, Kansas

County and State

Narrative Statement of Significance

(Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

Summary

The Tetrahedron Wind Indicator at Strother Field is nominated to the National Register of Historic Places under Criteria A and C for its statewide significance in the areas of Military and Engineering. It is nominated as part of the *World War II-Era Aviation-Related Facilities of Kansas* multiple property nomination. The multiple property document classifies tetrahedron wind indicators as a subtype of the *Airfield* property type. It also identifies this subtype as a primary resource, one that was significant to the operation of the base during the war.

Elaboration

Strother Army Air Field as a Contributor to World War II Efforts¹

The two city commissions of Winfield and Arkansas City met in February 1941 to approve the construction of a Class 2 airport on 240 acres with one hangar. The airport was to be centrally located, seven and a half miles from each town. In June 1942, the [U. S.] government became interested in the site as a potential flying school. The two cities also agreed to lease approximately 1400 acres of land to the [U. S.] government for one dollar per year, renewable yearly after 25 years. The site was named Strother Army Air Field for Captain Donald Root Strother, the first Cowley County pilot killed in WWII, over Java in February 1942.²

Construction at Strother Field began on May 16, 1942 and was to cost nearly \$9 million. The site eventually included four asphalt runways between 5500 and 5840 feet in length. Four taxiways between 700 and 3500 feet connected the runways. The site contained a multitude of structures that included four storage buildings with wood frames and concrete floors, two instructional buildings, six Link trainer buildings, an officer's' club, service club, theater, chapel, post exchange, bowling alley, gymnasium, swimming pool, a 141-bed hospital and a library. Housing was also built to accommodate 4404 men and officers...The base also had several hangars.

From the beginning, the two cities of Winfield and Arkansas City, with populations of 10,000 and 12,000, were enthusiastic supporters of the field. Local citizens planned events and projects to improve the morale of the station.

Although construction was still in progress, the base was activated on November 1, 1942. Strother Field's initial mission was to provide basic training for fighter pilots. In June 1944 the purpose changed to serve as a tactical training station. With the end of the war in sight, the base was deactivated during the summer of 1945. Flight training ceased and the field was placed on standby status as an auxiliary field to Pratt AAF.

¹ The following summary of Strother AAF is quoted from Susan Jezak Ford, *World War II-Era Aviation-Related Facilities of Kansas* National Register Multiple Property Documentation Form (Topeka: Kansas Historical Society, 2012), F32

² Strother died 13 February 1942, just 68 days after the Japanese attack on Pearl Harbor. Mike (George) Lind, "Strother Army Air Field: A Tale of Two Cities." In *Celebrate Winfield History* (Winfield, KS: Cowley County Historical Society, 2006), 27.

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Strother Field's primary role during the war effort was Basic Flight training for cadets. During this period, Army Air Forces cadets were required to master three flight training phases: Primary, Basic, and Advanced. Upon completion of the three phases, a cadet was usually commissioned as a Second Lieutenant. The nine-week Basic training, provided at Strother Field, required a pilot "to master a much more complex aircraft than the one used in Primary training. One of the more significant challenges would be his introduction to flying the aircraft by the instruments located within his cockpit, and without any visual references to the ground." The Vultee BT-13 was the aircraft used by Strother Field cadets training to become fighter pilots. Early on, there were 20 training aircraft, but this number quickly grew to more than 60 in January 1944 and a total of 235 in May 1944.

Approximately 3,886 cadets graduated basic flight training classes, proceeding to the advanced training phase. Through April 1944, "there were at least thirteen deaths in airplane accidents" at Strother Field.⁶

Strother Field received a new training role in June 1944, that of training P-47 pilots. Pilots of other types of aircraft (P-40s and P-63s) also trained at Strother Field that year. The training mission changed again in March 1945 to include P-47 training for Mexican and Brazillian pilots. Training at the base ended August 8, 1945.

Tetrahedron Wind Indicators

Where there is no airport control tower to aid pilots in navigating winds, it is possible to determine wind direction from visual indicators including wind tetrahedrons, wind tees, and wind socks. Wind tetrahedrons "can swing freely, and align themselves with the wind direction." Tetrahedron wind indicators are placed within runway configurations to alert pilots to wind direction, rotating with the breezes. Some indicators were designed with mechanized controls to point the pilot in the right direction in times of low wind speeds. Newspaper articles from the 1960s suggest that remote controlled wind Ts were favored among pilots over wind socks and tetrahedrons. The ideal situation for pilots was to have a control tower, but many small airports did not have this feature and relied on Ts, tetrahedrons, or windsocks to guide pilots. 9

A review of patent records suggests the earliest tetrahedrons (in the early 20th century) were made of canvas, with a light inside to illuminate the object. Versions of this canvas prototype were still in use at least into the 1950s. ¹⁰ It is likely that the tetrahedrons found at Army Air Fields in Kansas were built with a metal sheathing featuring exterior lights to aid in navigation. Only those at Herington, Liberal, and Strother fields still retain their lighting. The 2008 survey of Army Air Fields in Kansas noted four tetrahedrons – at Garden City, Pratt, Liberal, and Strother Field – although others may be found in remote runway areas that have not yet been surveyed. ¹¹ At the time of this writing, a fifth tetrahedron has been identified in Kansas at the former Herington AAF, which "was one of three satellite fields associated".

³ Lou Thole, Strother Army Airfield (Self-published, 2011), 9. [KSHS: K358 Pam. V. 1, No. 2.]

⁴ Ibid.

⁵ Ibid., 10.

⁶ Ibid., 9-10.

⁷ Ibid., 16-17.

⁸ Federal Aviation Administration, *Pilot's Handbook of Aeronautical Knowledge* (Washington, DC: Government Printing Office, 2009), 13-10. Accessed 1/6/2015 online http://books.google.com/books?id=0l8WO6Drz50C&pg=SA13-PA10#v=onepage&q&f=false

⁹ See, for example, these newspaper articles about the dispute over traffic direction indicators at McNary Field Airport in Oregon: "McNary to Get Larger Windsock as Stop-Gap," (Salem) *Oregon Statesman*, 2 November 1963, 5; and "Traffic Indicator at Airport Still Argued," (Salem) *Oregon Statesman*, 19 November 1963.

¹⁰ "Local Tetrahedron Is In Bad Shape – Old Skin Wears Out," *Brownsville (TX) Herald*, 26 May 1950, 4.

¹¹ Ford, F46.

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with the Topeka AAF for final processing of heavy bombardment crews and equipment before being sent overseas." 12

The MPDF identifies tetrahedron wind indicators as primary Army Air Field resources and significant to the operation of a base during World War II. It has identified these resources to have the potential to be individually listed in the National Register.¹³

Significance/Integrity Discussion

Tetrahedrons on World War II air bases, airfields, and auxiliary fields of Kansas that are not associated directly with the B-29 are significant on a statewide level because of their strong association with Kansas' role in the outcome of the war. This Strother Field tetrahedron is significant under Criterion A in the area of Military for its direct association with the federal government's wartime aviation operations from 1942-1945. It is significant under Criterion C for its distinctive tetrahedron shape and engineering that allowed it to consistently portray the correct wind direction and to guide pilots as they landed their aircraft.

The MPDF identifies integrity of design, location, association, and setting as having particular importance for tetrahedrons. While some of the original materials have been replaced, the loss of these original materials is not as important a factor, particularly given the rarity of extant examples of this property type. Just five are known to exist in Kansas. Three (the ones at Strother, Herington, and Liberal) still retain their lighting.

¹³ Ibid., F36.

¹² Ford, E23. The Herington AAF was surveyed in 2008 as part of the effort to document World War II-era airbases, but it appears this tetrahedron was overlooked.

2

Latitude:

Longitude:

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	hedron Wind Indicator		Cowley County, Kansas	
Name of Property	unhinal Dafananaaa		County and State	
	phical References			
	he books, articles, and other s		·	
Office, 2009. A			I Knowledge. Washington, DC: Government Printing e.com/books?id=0l8WO6Drz50C&pg=SA13-	
Documentation	Form. Topeka: Kansas	Historical Society, 20	of Kansas National Register Multiple Property 012. Accessed online 30 December 2013 parIIAirbases_MPDF.pdf>	
). "Strother Army Air Fie al Society, 2006. P. 22-4		es." In <i>Celebrate Winfield History</i> . Winfield, KS: Cowley	
"Local Tetrahedron	Is In Bad Shape – Old S	Skin Wears Out," <i>Bro</i> v	vnsville (TX) Herald, 26 May 1950, 4.	
"McNary to Get Lar	ger Windsock as Stop-G	Sap," (Salem) <i>Oregon</i>	Statesman, 2 November 1963, 5.	
Thole, Lou. Strothe	er Army Airfield. Self-pub	olished, 2011. [KSHS:	K358 Pam. V. 1, No. 2.]	
"Traffic Indicator at	Airport Still Argued," (Sa	alem) <i>Oregon Statesn</i>	nan, 19 November 1963.	
Tupper, Fred, and I		Field Airport/Industria	Park, 1990, updated 2003." Photocopy. Kansas	
	Force <i>Wings Over Kansa</i> terly, Summer and Autur		tate Historical Society, 1959. Reprinted from the Kansa	as
Previous documentat	ion on file (NPS):		Primary location of additional data:	
preliminary determ	ination of individual listing (36	CFR 67 has been	x State Historic Preservation Office	
requested)	the National Degister		Other State agency	
	the National Register ned eligible by the National Re	aister	Federal agency Local government	
	nal Historic Landmark	3	University	
	c American Buildings Survey		Other	
	c American Engineering Reco c American Landscape Surve		Name of repository: Kansas Historical Society	
10. Geographical	Data			
<u> </u>				
Acreage of Proper	ty Less than one acr	<u>e</u>		
	ongitude coordinates O pordinates on a continua			
Latitude/Longitud Datum if other than				
(enter coordinates t	to 6 decimal places)			
1 <u>37.169216</u> Latitude:		3Latitude:	Longitude:	

Latitude:

Longitude:

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Cowley County, Kansas
County and State

Name of Property

Verbal Boundary Description (describe the boundaries of the property)

Located in NE $\frac{1}{4}$ of S 19 T 33 R 4 E of Cowley County KS. A 100-foot radius around the latitude and longitude provide above.

Boundary Justification

A 100 foot radius around the tetrahedron will more than encompass the size of the structure. It is located in a grass field between the runways where no structures will be constructed.

11. Form Pr	epared By		
name/title	Shawn M. McGrew/Manager		
organization	Strother Field Commission	date	
street & num	ber 22193 Tupper Street/P.O. Box 747	telephone (620)22	1-9280
city or town	Winfield	State KS	zip code 67156
e-mail	manager@strotherfield.com		
Property Ov	vner: The Cities of Arkansas City and Winfield		
name	The Cities of Arkansas City and Winfield DBA/ Doing Busin	ness As Strother Field	Commission
street & num	ber 22193 Tupper Street/PO Box 747	telephone (620) 22	21-9280
city or town	Winfield	state KS, 67156	zip code

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management. U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

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Strother Field Tetrahedron Wind Indicator

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Additional Documentation

Submit the following items with the completed form:

Photographs

Submit clear and descriptive photographs. The size of each digital image must be 1600x1200 pixels (minimum), at 300 ppi (pixels per inch) or larger. Key all photographs to a sketch map or aerial map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log.

Photograph Log

Name of Property:	Strother Field Tetrahedron Wir	nd Indicator
City or Vicinity:	Winfield	
County: Cowley		State: Kansas
Photographer:	Shawn McGrew	
Date Photographed:	4/1/2014	

Description of Photograph(s) and number, include description of view indicating direction of camera:

1 of 4: Photo is taken from the North, 2 of 4: Photo is taken from the East, 3 of 4: Photo is taken from the South, 4 of 4: Photo is taken from the West.

Figures

Strother Field Tetrahedron Wind Indicator

Name of Property

Figure 1: Contextual Aerial Image, Google Earth, 2014.

Cowley County, Kansas
County and State



Strother Field Tetrahedron Wind Indicator Name of Property

Figure 2: Close-in Aerial Image, Google Earth, 2014.

Cowley County, Kansas
County and State



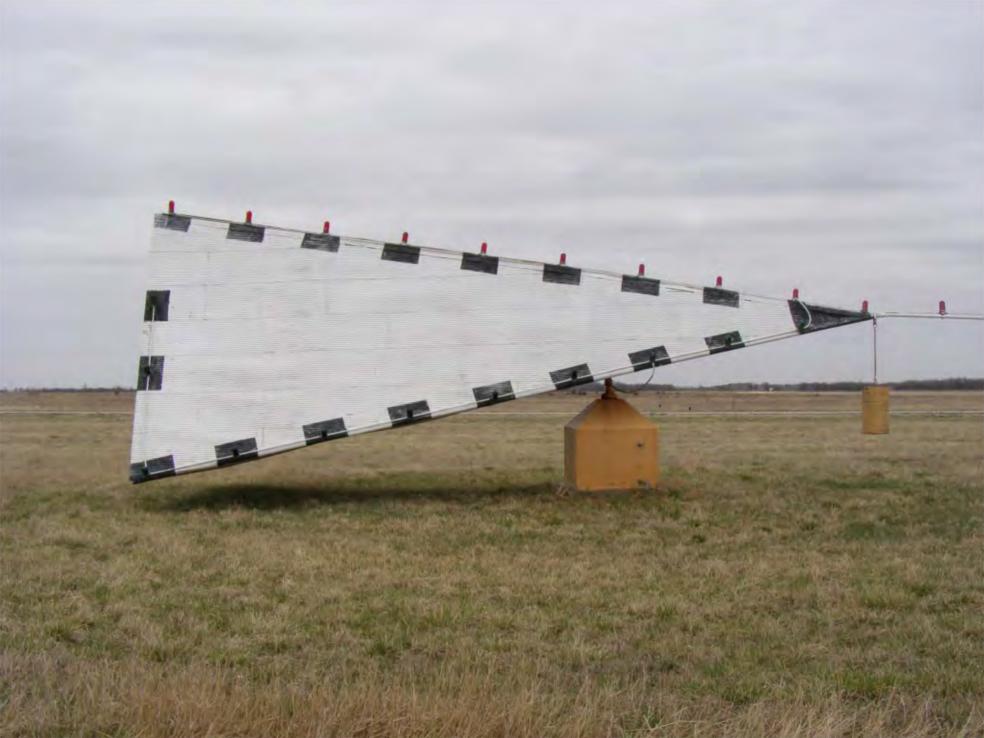
Strother Field Tetrahedron Wind Indicator Name of Property

Cowley County, Kansas
County and State

Figure 3: Aerial of Tetrahedron Location











UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATIO	N
PROPERTY Strother Field Te	etrahedron Wind Indicator
MULTIPLE World War II-Era NAME:	Aviation-Related Facilities of Kansas
STATE & COUNTY: KANSAS, Cow	nley
DATE RECEIVED: 2/27/15 DATE OF 16TH DAY: 4/14/15 DATE OF WEEKLY LIST:	
REFERENCE NUMBER: 15000143	
REASONS FOR REVIEW:	
OTHER: N PDIL: N	LANDSCAPE: N LESS THAN 50 YEARS: N PERIOD: N PROGRAM UNAPPROVED: N SLR DRAFT: N NATIONAL: N
COMMENT WAIVER: N	
ACCEPTRETURN	REJECT 4/14 DATE
ABSTRACT/SUMMARY COMMENTS: a water	surviver of waterer
RECOM./CRITERIA	
REVIEWER Cloen was	DISCIPLINE
TELEPHONE	DATE
DOCUMENTATION see attached c	comments Y/N see attached SLR Y/N
If a nomination is returned	to the nominating authority, the
nomination is no longer unde	



phone: 785-272-8681 fax: 785-272-8682 cultural_resources@kshs.org

Kansas Historical Society

February 23, 2015

Paul Loether, National Register Chief National Register of Historic Places National Park Service 1201 Eye Street, N. W. 8th Floor (MS 2280) Washington, DC 20005

Re: National Register documents - New Nomination

Dear Mr. Loether:

Please find enclosed the following National Register documents:



- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- The enclosed disk #1 contains the true and correct copy of the nomination.

Girl Scout Little House – Ashland, Clark County, Kansas (new nomination)

- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- o The enclosed disk #1 contains the true and correct copy of the nomination.

Strother Field Tetrahedron Wind Indicator – Cowley County, Kansas (new nomination)

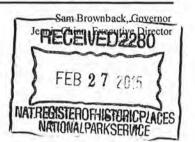
- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- o The enclosed disk #1 contains the true and correct copy of the nomination.

Bown-Corby School – Marion, Marion County, Kansas (new nomination)

- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- o The enclosed disk #1 contains the true and correct copy of the nomination.

Washington School – Independence, Montgomery County, Kansas (new nomination)

- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- The enclosed disk #1 contains the true and correct copy of the nomination.



• Hermit's Cave on Belfry Hill - Morris County, Kansas (new nomination)

- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- o The enclosed disk #1 contains the true and correct copy of the nomination.

Fix Farmstead – Wabaunsee County, Kansas (new nomination)

- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- o The enclosed disk #1 contains the true and correct copy of the nomination.

• The Parsonian Hotel - Parsons, Labette County, Kansas (new nomination)

- Enclosed: Signed copy of the document and 2 disks with a PDF of the nomination, mapping file, and photographs
- The enclosed disk #1 contains the true and correct copy of the nomination.

Please do not hesitate to contact me if you have any questions. I may be reached at 785-272-8681 ext. 216 or smartin@kshs.org.

Sincerely yours,

Squal Went

Sarah J. Martin

National Register Coordinator

Enclosures