

Agenda	Yankton County Commission 6:00 PM, Tuesday, April 4, 2023 Commission Chamber Yankton County Government Center
DOCUMENTS WILL BE AVAILABLE AT AUDITOR'S OFFICE FOR REVIEW BEGINNING March 31st. COPIES AVAILABLE FOR \$1.00 PER PAGE	

Meeting chaired by: 01 Call to order: 02 Roll Call:	Don Kettering, Chairman 6:00 PM PLEDGE OF ALLEGIANCE _____ Wanda Howey-Fox _____ Ryan Heine _____ John Marquardt _____ Dan Klimisch _____ Don Kettering
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AGENDA ITEMS

No.	Time	Item Description	Presenter
03	6:00 PM	Abstain Financial Conflict of Interest (SDCL 6-1-17) Non-Financial Interest-Must State Reason for Abstaining	Chairman Kettering
04	6:03 PM	Approval of Agenda Public comment is a time for persons to address this body on any subject. No action may be taken on a matter raised under this item of the agenda until the matter itself has been specifically included on an agenda as an item upon which action will be taken. Each person has up to three minutes to speak. There shall be no personal attacks against the members of this body, county staff, individual, or organizations. The Chair has the authority to enforce this policy. Failure to adhere to these rules may result in forfeiture of the remaining speaking time.	Public Comment
05	6:05 PM	Historic Preservation	Bernie Hunhoff
06	6:10 PM	2023 DOT Joint Weed Spraying Agreement	Jim Liebsch
07	6:15 PM	Certificate of deposits for county money	Commission

08	6:20 PM	Families Feeding Families	Margaret Byfield Julie Auch
		Board of Adjustment	
09	6:30 PM	East River Electric - CUP	Gary Vetter
10	6:35 PM	Article 4 and Maps – First Reading	Gary Vetter
		Regular Session	
11	6:40 PM	Appoint Planning Commission Members	Garry Vetter
12	6:45 PM	Ambulance Administration Job Description	Commission
13	6:50 PM	Strategic Planning	Commission
14	6:55 PM	March 21, 2023 Minutes	Commission
15	7:00 PM	March 2023 Payroll April 4, 2023 Claims	Auditor
16	7:05 PM	Public Comment	
17	7:10 PM	Commissioner Updates	Commission
18	7:15 PM	Executive Session/Poor Relief Issues Pursuant to SDCL 1-25-2 & 28-13 and 28-13-1.3 Items for Next Meeting	State Attorney

Yankton County Planning Commission
Yankton County Board of Adjustment

Applicant

East River Electric

1/27/2023

District type: AG R1-Low R2-Moderate R3-High C-Comm.

LC – Lakeside Commercial RT-Rural Transitional

CUP needed:

Section 507 Section 607 Section 707 Section 807

Section 1805 Section 1905 Section 2503

NOTE:

Conditional Use Permit

Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substation per Article 25 Section 2503. Said property is legally described as Lot 1 of Lewis and Clark Substation addition in the Southwest Quarter of the Southwest Quarter of Section 15, Township 93 North, Range 56 West of the 5th Principal Meridian, Yankton County, South Dakota. E911 address is 206 S. Deer Boulevard, Yankton, South Dakota

PC: Article 18 Section 1805

BOA: Article 19 Section 1905

Planning Commission date:
3/14/2023

Board of Adjustment date:
4/4/2023

Time:
7:05
PM
Time:

Permit Number: CUP-2023-88

Yankton County

 Variance X Conditional Use Rezoning

Owner: East River Electric Power Cooperative, Inc.

Owners Address: 211 S. Harth Ave., Madison, SD 57042

Owners Phone: 6052568269

Applicants Name,
if different from

Owner: Jerae Wire

Applicants

Address: 211 S. Harth Ave., Madison, SD 57042

Job Address: 206 S DEER BLVD, Yankton, 57078

Legal: S60 ACRES SW4

Section,

Township, Range: 15-93-56

Zoning

Classification: R2

Affected Zoning

Ordinance: Section 7072503 Section 7072503

Reason for Request: To install a 60' communication tower on the property owned by East River Electric for internal only system communications for our substation

List Specific Hardships: This SCADA communication tower is an essential accessory to our substation for both monitoring and controlling functions.

SCHEDULED FOR PLANNING COMMISSION ACTION (DATE): 03/14/2023 8:05 PM CST

SCHEDULED FOR BOARD OF ADJUSTMENT ACTION (DATE): _____

Application Fee: \$3 00.00 Check #: 213758068 Receipt #: _____

Jerae Wire

Date: _____

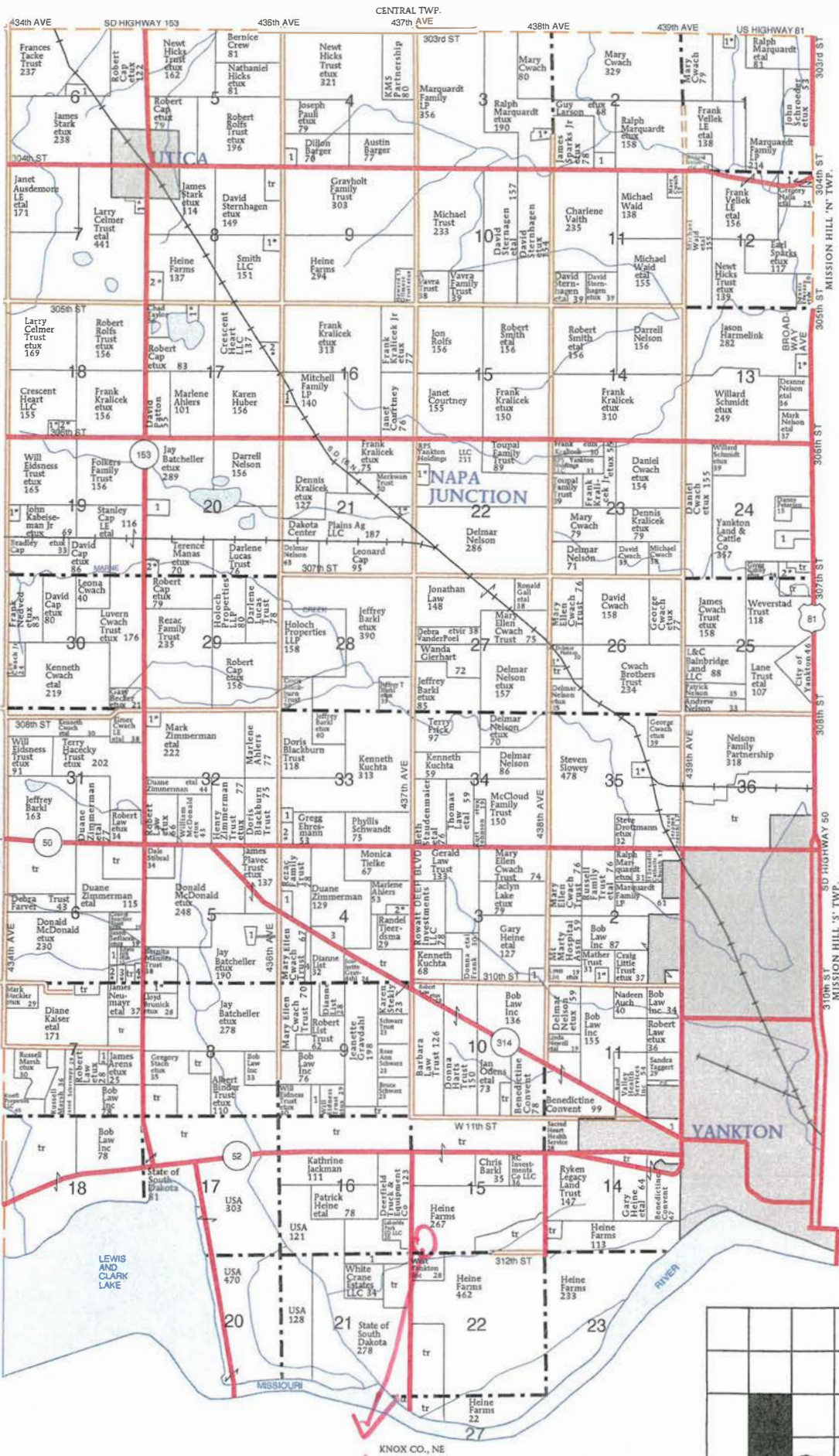
Signature: East River Electric Power 01/27/2023

Site Map



Parcel Number: 09.015.300.200

Site Description: The tower location will be 36'-7" from our south site fence and 16' from our west site fence. Our site fence will be set back 50' from the right of way line on the south side of the property and 80' from the west ROW line.
146' from South Deer Blvd center line
337'-7" from our south property line



UTICA TOWNSHIP

- SECTION 1N**
- 1. Siebrandt, Jacob etux 5
- SECTION 2N**
- 1. Kralicek, Melissa 11
- SECTION 2S**
- 1. Holdahl, Robert etux 5
- SECTION 3N**
- 1. Grate, Leo etux 11
- SECTION 3S**
- 1. Holtzmann Family Trust 7
- SECTION 4N**
- 1. Neved, Mark 7
- SECTION 4S**
- 1. Larson, Robert 8
- 2. Brandt Trust, Merle etal 11
- 3. Zimmerman, Steve 20
- 4. List Trust, Robert 18
- SECTION 5S**
- 1. Batcheller, Jay 8
- SECTION 6N**
- 1. Town of Utica 6
- SECTION 6S**
- 1. Maska, Leann 5
- 2. Olivier, Curtis etux 6
- 3. Loecker, Mark etux 5
- 4. Blaha, Jon etux 5
- SECTION 7N**
- 1. Anthony, Craig etux 10
- SECTION 7S**
- 1. Phillips, Timothy etux 5
- SECTION 8N**
- 1. Christianson, David etux 6
- 2. Hughes, Scott etux 13
- SECTION 8S**
- 1. Fanta, Timothy etux 9
- SECTION 9S**
- 1. Rokahr, Steven 9
- SECTION 11S**
- 1. Hecky Trust, Terrance etux 11
- 2. Affordable Self Storage LLC 8
- SECTION 12N**
- 1. Marquardt Family LP 6
- SECTION 13N**
- 1. Cotton, Jeffrey etux 8
- SECTION 14S**
- 1. Yankton Medical Clinic PC 12
- SECTION 16N**
- 1. Anstine, Rodney etux 7
- SECTION 17N**
- 1. Schenkel, Darrell etux 8
- 2. Tacke, WM etux 13
- SECTION 18N**
- 1. Cap LE, Stanley etal 5
- 2. Cap, Robert etux 7
- SECTION 19**
- 1. Schenkel, Daniel etux 7
- SECTION 20N**
- 1. Yankton Co Sharpshooters Assn 12
- 2. Johnson, Michael etux 9
- SECTION 21N**
- 1. Kralicek, Frank etux 5
- SECTION 21S**
- 1. White Crane Estates LLC 18
- SECTION 22N**
- 1. Taggart, William etux 9
- SECTION 24**
- 1. Marquardt, Doug 13
- 2. Keller, Dallas etux 10
- SECTION 26**
- 1. Barnes, David etux 7
- SECTION 32**
- 1. Zimmerman Trust, Henry etal 12
- SECTION 33**
- 1. Delozier, Darrik 6
- 2. Waddell, Edward etux 8
- SECTION 35**
- 1. Slowey, Steven etux 14

FINDINGS OF FACT – CONDITIONAL USE PERMIT

East River Electric – CUP-2023-88

Are the requirements of Section 1723 met? (signed by owner unless there is a binding purchase agreement then signed by applicant, Variance accompanied by building permit (if applicable), site plan included with building permit,	Yes
Are the requirements of Section 1729 met? (all fees paid at time of application)	Yes
Section 1805:	
1. Did you specifically cite, in the application, the section of the Ordinance under which the conditional use is sought and state the grounds on which it is requested	Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substation per Article 25 Section 2503.
2. Was notice of public hearing given per Section 1803 (3-5)?	Mailed – 3/1/2023 Published – 3/3 & 3/10/2023
3. Attend the public hearing	Yes
4. Planning Commission: Make a recommendation to include: a. Granting of conditional use; b. Granting with conditions; or c. Denial of conditional use	Grant conditional use with the condition applicant provides information regarding the possible hazards of microwaves at the County Commission meeting. Passed 6-0
5. Planning Commission must make written findings certifying compliance with specific rules including: a. Ingress and Egress to proposed structures thereon with particular reference to automotive and pedestrian safety and convenience, traffic flow and control, and access in case of fire or catastrophe:	Ingress/Egress exists
b. Off right-of-way parking and loading areas where required; with particular attention to the items in (A) above and the economic, noise, glare or odor effects of the conditional use on adjoining properties and properties generally in the district;	None required
c. Refuse and service areas, with particular reference to the items in (A) and (B) above;	Refuse and service area present
d. Utilities, with reference to locations, availability, and compatibility;	Utilities present and compatible
e. Screening and buffering with reference to type, dimensions, and character;	Screening to be installed
f. Signs, if any, and proposed exterior lighting with reference to glare, traffic safety, economic effect;	None required
g. Required yards and other open spaces; and	None required. If tower were to collapse, it would fall within the boundaries of the substation
h. General compatibility with adjacent properties and other property in the district and that the granting of the conditional	Is in general compatibility and will not adversely affect public interest

use will not adversely affect the public interest.	
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MEETING (ENTITY): PLANNING COMMISSION REGULAR OR SPECIAL MEETING: Regular
DATE: 3/14/2023 TIME: 7PM LOCATION: COMMISSION CHAMBERS

STAFF ATTENDANCE: Conkling/Vetter

ROLL BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

CALL:

APPROVAL OF MINUTES: MOTION BY: Evans SECOND BY: Hoffman

PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

APPROVAL OF AGENDA: MOTION BY: Hoffman SECOND BY: Evans

PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: **East River Electric – Conditional Use Permit**

ADDRESS/LEGAL: Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substation per Article 25 Section 2503. Said property is legally described as Lot 1 of Lewis and Clark Substation addition in the Southwest Quarter of the Southwest Quarter of Section 15, Township 93 North, Range 56 West of the 5th Principal Meridian, Yankton County, South Dakota. E911 address is 206 S. Deer Boulevard, Yankton, South Dakota

COMMENTS: Jarae Wire – East River Electric
Tim Kellen – neighbor – concerns about microwave signals

MOTION: Approve with the condition that applicant provide information regarding the possible hazards of microwaves at the County Commission meeting
Passed 6-0

APPROVAL: MOTION BY: Barkl SECOND BY: Evans
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: **Frick - Variance**

ADDRESS/LEGAL: Applicant is requesting a variance to minimum lot size in an Agriculture District. Applicant wishes to Replot one previously platted lot into two lots each smaller than 20 acres per Article 18 Section 1807. Said property is legally described as Plat of Lots 1 and 2 of J & P Frick Addition, in the SW1/4 of the SE1/4 of Section 8, and in the NW1/w of the NE1/4 of Section 17, T94N, R55W of the 5th P.M., Yankton County, South Dakota. E911 Address is 30499 SW Jim River Rd, Yankton, South Dakota.

This plat vacates previously platted Lot A of Lot 4 of Schlaefli's 3rd. Addition in the W1/2 of the SE1/4 of Section 8, T94N, R55W of the 5th P.M., Yankton County, SD. Recorded on May 23, 2000, and Recorded in Book S18, Page 183

COMMENTS: Chris Frick – Applicant
Kim Mueller - Applicant

MOTION: Withdrawn by applicant

APPROVAL: MOTION BY: _____ SECOND BY: _____
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: Article 4 and Maps

ADDRESS/LLEGAL: _____

COMMENTS: None

MOTION: Recommend sending to County Commission for approval
Passed 6-0

APPROVAL: MOTION BY: Michael SECOND BY: Weiss
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: Frick - Plat

ADDRESS/LLEGAL: Plat of Lots 1 and 2 of J & P Frick Addition, in the SW1/4 of the SE1/4 of Section 8, and in the NW1/w of the NE1/4 of Section 17, T94N, R55W of the 5th P.M., Yankton County, South Dakota. This plat vacates previously platted Lot A of Lot 4 of Schlaefli's 3rd. Addition in the W1/2 of the SE1/4 of Section 8, T94N, R55W of the 5th P.M., Yankton County, SD. Recorded on May 23, 2000, and Recorded in Book S18, Page 183

COMMENTS: _____

MOTION: Withdrawn by applicant

APPROVAL: MOTION BY: _____ SECOND BY: _____
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: Smit - Plat

ADDRESS/LLEGAL: Plat of Tract A of Katie's Addition, in the SE1/4 of the NE1/4 of Section 17, T96N, R55W of the 5th P.M., Yankton County, South Dakota

COMMENTS: None

MOTION: Approve as presented
Passed 6-0

APPROVAL: MOTION BY: Michael SECOND BY: Evans
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: Discussion on ideas to promote economic development in the county
ADDRESS/LEGAL: _____
COMMENTS: Commissioners shared their suggestions and ideas

MOTION: No action taken

APPROVAL: MOTION BY: _____ SECOND BY: _____
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: Public Comment
ADDRESS/LEGAL: _____
COMMENTS: none

MOTION: Adjourn

APPROVAL: MOTION BY: Michael SECOND BY: Hoffman
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: _____
ADDRESS/LEGAL: _____
COMMENTS: _____

MOTION: _____

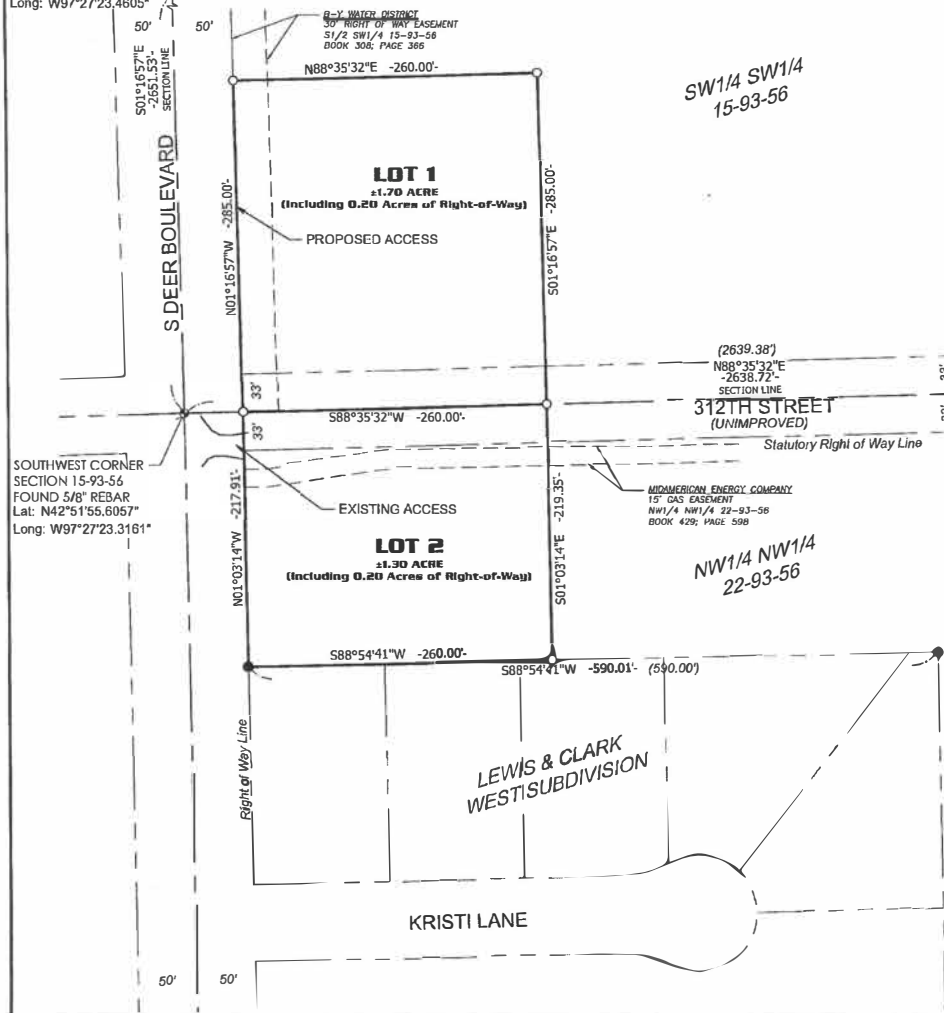
APPROVAL: MOTION BY: _____ SECOND BY: _____
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

22345 - Plat.dwg

PLAT OF LOTS 1 AND 2 OF LEWIS AND CLARK SUBSTATION ADDITION

IN THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 15 AND IN THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 22, TOWNSHIP 93 NORTH, RANGE 56 WEST OF THE 5TH PRINCIPAL MERIDIAN, YANKTON COUNTY, SOUTH DAKOTA.
CONTAINING 3.00 ACRES MORE OR LESS

WEST QUARTER CORNER
SECTION 15-93-56
FOUND 5/8" REBAR
Lat: N42°52'21.8010"
Long: W97°27'23.4605"



SOUTHWEST CORNER
SECTION 15-93-56
FOUND 5/8" REBAR
Lat: N42°51'55.6057"
Long: W97°27'23.3161"

SW1/4 SW1/4
15-93-56

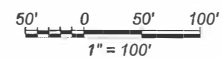
NW1/4 NW1/4
22-93-56

LEWIS & CLARK
WEST SUBDIVISION

KRISTI LANE

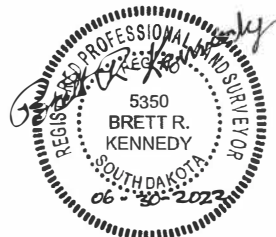


BASIS OF BEARING
UTM 14 North



Legend

- Set 5/8" x 18" Rebar Stamped "KENNEDY 5350".
- Found Corner with CAP Stamped "2919"
- ◆ Section Corner As Noted
- Platted Property Line
- (1323.33) Record Dimension from deed or plat



This survey was performed without the benefit of a Title Report and does not purport to show easements of record, if any.

KEY MAP



- SUBJECT TO
BON HOME-YANKTON ELECTRIC ASSOCIATION, INC.
RIGHT OF WAY EASEMENT
S 60 ACRES OF THE SW1/4 15-93-56
BOOK 347; PAGE 558
- SUBJECT TO
NORTHWESTERN BELL TELEPHONE COMPANY
BURIED EXCHANGE FACILITY EASEMENT
S 60 ACRES OF THE SW1/4 15-93-56
BOOK 239; PAGE 193
- SUBJECT TO
BON HOME-YANKTON ELECTRIC ASSOCIATION, INC.
RIGHT OF WAY EASEMENT
NW1/4 NW1/4 22-93-56
BOOK 347; PAGE 560
- SUBJECT TO
NORTHWESTERN BELL TELEPHONE COMPANY
BURIED EXCHANGE FACILITY EASEMENT
NW1/4 NW1/4 22-93-56
BOOK 239; PAGE 243
- SUBJECT TO
NORTHWESTERN BELL TELEPHONE COMPANY
BURIED EXCHANGE FACILITY EASEMENT
NW1/4 NW1/4 22-93-56
BOOK 239; PAGE 244



East River
Electric

LOTS 1 AND 2
LEWIS AND CLARK SUBSTATION ADDITION
YANKTON COUNTY, SOUTH DAKOTA

REVISION	SCHEDULE

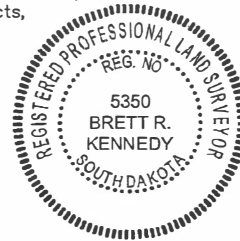
SEI PROJECT # : 22765

SURVEYOR'S CERTIFICATE

I, Brett R. Kennedy, a Registered Land Surveyor of the State of South Dakota, do hereby certify that I did on or before June 20, 2022, survey that parcel of land described as: **LOTS 1 AND 2 OF LEWIS AND CLARK SUBSTATION ADDITION IN THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 15 AND IN THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 22, TOWNSHIP 93 NORTH, RANGE 56 WEST OF THE 5TH PRINCIPAL MERIDIAN, YANKTON COUNTY, SOUTH DAKOTA.**
I also hereby certify that this plat is to the best of my knowledge and belief, in all respects, a true description of said property.

Dated this 30th day of June, 2022.


Brett R. Kennedy, S. 535050



OWNER'S CERTIFICATE

We do hereby certify that we are the owners of all the land included in the above plat and that said plat has been made at our request and in accordance with our instructions for the purpose of locating, marking and platting, and that the development of this land shall conform to all existing applicable zoning, subdivision and erosion and sediment control regulations:

We hereby dedicate to the public for public use forever, the streets, roads, alleys and parks and public grounds, if any, as shown on said plat, including all sewers, culverts, bridges, water distribution lines, sidewalks and other improvements on or under the streets, roads, alleys, parks and public grounds, whether such improvements are shown or not. We also hereby grant easements to run with the land for water, drainage, sewer, gas, electric, telephone or other public utility lines or services under, on or over those strips of land designated hereon as easements.

Dated this ___ day of _____, _____.

By: _____ By: _____ By: _____ By: _____ By: _____
Gary J. Heine, Member Ronald B. Heine, Member Gene G. Heine, Member Thomas Heine, Member Steven M. Heine Revocable Trust
Janet. Heine, Trustee
Member

COUNTY _____
STATE OF _____

On this, the ___ day of _____, _____, before me, the undersigned, a Notary Public, personally appeared Gary J. Heine, Ronald B. Heine, Gene G. Heine, Thomas Heine and Janet M. Heine as Members of Heine Farms S.D., L.L.C., known to me to be the person whose name is subscribed to the foregoing Dedication, and I hereby acknowledge that he/she executed the foregoing instrument.

In witness whereof, I hereunto set my hand and official seal.

My commission expires _____.

Notary Public

Dated this ___ day of _____, _____.

West Yankton, Inc.

COUNTY _____
STATE OF _____

On this, the ___ day of _____, _____, before me, the undersigned officer, appeared _____, for West Yankton, Inc., known to be the person whose name is subscribed to the within instrument and acknowledged to me that h/she, executed the same for the purposes therein contained.

In witness thereof, I have hereunto set my hand and official seal this ___ day of _____, _____.

My commission expires _____.

Notary Public

2 OF 3
BIRTHDAY: 11/22/85
EXPIRES: 11/22/2025
STATE: SD
REGISTRATION NO: 535050

LOTS 1 AND 2
LEWIS AND CLARK SUBSTATION ADDITION
YANKTON COUNTY, SOUTH DAKOTA

Earl River
Electric



CERTIFICATE OF STREET AUTHORITY

The location of existing access roads abutting or approaches entering the State/County/Township Road, is hereby approved. Any changes in the existing access shall require additional approval.

Approved this ___ day of _____, _____.

State/County/Township Road Authority

COUNTY PLANNING COMMISSION APPROVAL

Approval of the final plan of **LOTS 1 AND 2 OF LEWIS AND CLARK SUBSTATION ADDITION IN THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 15 AND IN THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 22, TOWNSHIP 93 NORTH, RANGE 56 WEST OF THE 5TH PRINCIPAL MERIDIAN, YANKTON COUNTY, SOUTH DAKOTA**, is hereby granted by the Yankton County Planning Commission on this ___ day of _____.

Chair, County Planning Commission
Yankton County, South Dakota

COUNTY COMMISSION APPROVAL

I hereby certify that the final plan of **LOTS 1 AND 2 OF LEWIS AND CLARK SUBSTATION ADDITION IN THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 15 AND IN THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 22, TOWNSHIP 93 NORTH, RANGE 56 WEST OF THE 5TH PRINCIPAL MERIDIAN, YANKTON COUNTY, SOUTH DAKOTA** was duly submitted to the Yankton County Board of County Commissioners, and that after due consideration the Board approved said final plan at its meeting held on the ___ day of _____.

Chairman, County Commission
Yankton County, South Dakota

COUNTY AUDITOR CERTIFICATE

I do hereby certify that the above certificate of approval is true and correct including the signature thereon.

Dated this ___ day of _____, _____.

County Auditor
Yankton County, South Dakota

DIRECTOR OF EQUALIZATION

I, the Director of Equalization of Yankton County, South Dakota, do hereby certify that a copy of the above final plan has been filed at my office.

Dated this ___ day of _____, _____.

Director of Equalization Yankton
County, South Dakota

COUNTY TREASURER CERTIFICATE

I, Treasurer of Yankton County, South Dakota, hereby certify that all taxes which are liens upon any land shown in the above plat as shown by the records of my office, have been paid in full.

Dated this ___ day of _____, _____.

Treasurer
Yankton County, South Dakota

REGISTER OF DEEDS

Filed for record this ___ day of _____, _____, at ___ O'clock, ___ M., and recorded in book ___ of plats on page _____.

Register of Deeds
Yankton County, South Dakota



Variance, Conditional Use and Rezoning Application
 CUP-2023-88
 Applicant
 Jerae Wire

Fees Paid
 \$300.00

Created
 January 27, 2023

Number
 CUP-2023-88

09.015.300.200 | East River Electric Power Cooperative, Inc. | 206 S DEER BLVD, Yankton, 57078, SD,
 Submitted by Jerae M. Wire on 1/27/2023



Applicant

Jerae Wire

605-256-8269

jwire@eastriver.coop

Parcel search Completed On 1/27/2023 12:57 PM EST by Jerae M. Wire



Earthstar Geographics

Powered by Esri

ParcelID	Address	City	OwnerName	Acres
09.015.300.200			HEINE FARMS (D)	60.000

Draft Building Permit Completed On 1/27/2023 1:38 PM EST by Jerae M. Wire

Upload Draft Building Permit

[Lewis Clark Sub - Stamped.pdf](#)

[Lewis Clark Sub Stamped Tower Foundation Designs.pdf](#)

Submit Completed On 1/27/2023 1:39 PM EST by Jerae M. Wire

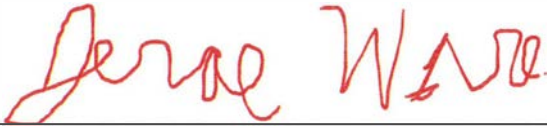
A notification sign shall be posted on the property upon which action is pending at least seven (7) days prior to the hearing date. Such signs shall be placed along all the property's road frontage so as to be visible from the road. If a property does not have a road frontage, then such signs shall be placed upon the closest available right-of-way and upon the property. Said signs shall not be less than one hundred and eighty seven (187) square inches in size. It shall be unlawful for any person to remove, mutilate, destroy or change such posted notice prior to such hearings.

Please pick the sign up from the zoning office on or before eight (8) days prior to the meeting.

Applicant Agreement

Please check the box to confirm you have read and agree to the notices above.

Signature



Date

1/27/2023

Application Submitted Successfully Completed On 1/27/2023 1:39 PM EST by Jerae M. Wire

Your application has been submitted for review. Thank you.

Please click next at the bottom to continue. Thank you

Request Information Completed On 1/27/2023 1:42 PM EST by bconkling

Type of Request

Conditional Use

Fee

\$300.00

Reason for Request

To install a 60' communication tower on the property owned by East River Electric for internal only system communications for our subs

List Specific Hardships

This SCADA communication tower is an essential accessory to our substation for both monitoring and controlling functions.

Applicant Information

Are you the owner of the property?

Yes

Applicant Name

Jerae Wire

Applicant Address

211 S. Harth Ave., Madison, SD 57042

Applicant Phone

6052568269

Owner Information

Owner Name

East River Electric Power Cooperative, Inc.

Owner Address

211 S. Harth Ave., Madison, SD 57042

Owner Phone Number

6052568269

Property Information

Parcel ID Number

09.015.300.200

Legal Description

S60 ACRES SW4

Site Address

206 S DEER BLVD, Yankton, 57078

City

Zip

Section-Township-Range

15-93-56

Zoning District

MD

Zoning Description

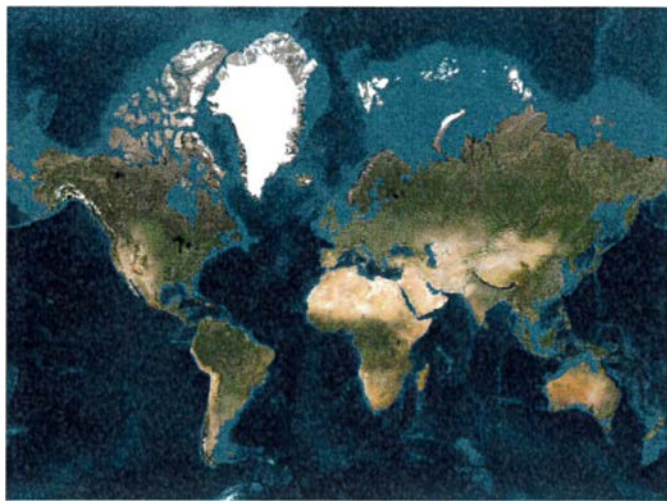
MD

Existing Use of Property

Site Plan Completed On 1/27/2023 1:45 PM EST by bconkling

Map - Mark the location of structures and other necessary information.





Earthstar Geographics

Powered by Esri

Describe the location and use of adjacent structures

The tower location will be 36'-7" from our south site fence and 16' from our west site fence. Our site fence will be set back 50' from the right of way line on the south side of the property and 80' from the west ROW line. 146' from South Deer Blvd center line 337'-7" from our south property line

Upload Site Plan and/or additional plans and documents

[East River Plat.pdf](#)

The screenshot shows a web-based mapping application interface. On the left, there is a 'Map' panel with several layers: 'Sketch Layer', 'Reference Layer', and 'MapProxy'. Below this panel is a vertical toolbar with various icons. The main map area displays a satellite-style view of a property with yellow boundary lines. Several callout boxes with red borders and arrows pointing to specific toolbar icons provide instructions:

- Arrow to select items to move or rearrange**: Points to the selection tool icon.
- Will let you "add text" to the map**: Points to the text tool icon.
- The "draw point" tool will place an X on the map**: Points to the point tool icon.
- Draw rectangle: Click and hold to draw a rectangle, release to finish rectangle**: Points to the rectangle tool icon.
- Draw polygon: Click once on map to start drawing a polygon, click map at each vertex and double click to finish polygon**: Points to the polygon tool icon.
- Draw line: Click once on the map to start drawing a line, click the map at each vertex and double click to finish drawing the line**: Points to the line tool icon.
- Measure: Click once on the map to start measuring, click the map at each vertex and double click to finish. Area can be calculated by drawing a polygon.**: Points to the measure tool icon.
- Zoom In/Zoom Out buttons**: Points to the zoom in and zoom out icons.
- Undo the last edit to the map**: Points to the undo icon.
- Undo all edits to the map**: Points to the redo icon.
- Zoom to initial view**: Points to the home icon.

Planning Review Completed On 1/27/2023 1:49 PM EST by boonkling

Continue with application

Continue

Describe what the applicant is requesting

Applicant wishes to erect a 60' tower for internal communications with their substation, which is a permitted use.

Planning Commission Code Reference

Section 707

Other Planning Commission Code Reference ⓘ

2503

Board of Adjustment Code Reference

Section 707

Other Board of Adjustment Code Reference ⓘ

2503

Please confirm the zoning provided by the applicant. If zoning is incorrect, please enter the correct zoning. It is this field that is printed on the final form to avoid applicant/system error. The correct zoning must be entered.

Zoning Classification ⓘ

R2

Wave Fee

Notes ⓘ

Director Review Completed On 1/27/2023 2:04 PM EST by gvetter

Zoning Director Review

Approve

Payment Completed On 2/1/2023 10:45 AM EST by bconkling

Fees Paid

[VIEW RECEIPT](#)

Fee Name	Recipient	Amount
Fee	Planning and Zoning	\$300.00

Confirmation Data

Payment Method	Online
Confirmation Number	213758068
Amount Paid	\$300.00

Planning Commission Meeting

Planning Commission Meeting Date and Time

March 14th 2023, 7:05 pm CST

Letters to be mailed 10 days prior to the public meeting:

03/04/2023 8:05 PM

Additional instructions for PC email

Return the affidavit 8 days prior to the public meeting:

03/06/2023 8:05 PM

Place your zoning action sign 7 days prior to the public meeting:

03/07/2023 8:05 PM

Date to send email to applicant

02/27/2023

Upload PC Mailing Labels

[er labels modified.pdf](#)

Upload PC Affidavit of Mailing

[3 Mailing affidavit 1320.pdf](#)

Upload PC Notification Letter

[ER Electric NOT Letter.pdf](#)

Upload PC Newspaper Publication

[Legals 3-14-2023.pdf](#)

Permit Number

CUP-2023-88

Receipt Number

Documents

Internal Notes

Documents



**EHRESMANN
ENGINEERING**

4400 West 31st St – Yankton, SD 57078

Phone: (605) 665-7532 Fax: (605) 665-9780

<http://www.ehresmannengineering.com>

E-Mail: e.heine@ehresmannengineering.com

December 5, 2022

Paul Lambert
East River Electric Power Coop
P.O. Box 227
Madison, SD 57042

Subject: 60' Ehresmann Engineering W2400 Stub Tower
Site: Lewis & Clark Sub
Location: Yankton County, SD
EI JO#: 112740

As requested, we have designed and can furnish a 60' Ehresmann Engineering W2400 stub tower to be located in Yankton County, SD. The site will be called Lewis & Clark Sub.

Approximate Coordinates: 42-51-57 N
97-27-20 W

The stub tower will be designed as follows:

- In accordance with the Telecommunications Industry Association TIA-222-G Standard
- 90 mph wind with no ice (Vasd)
- Vult = 116 mph wind
- 50 mph wind with 3/4" ice (Vasd)
- 60 mph wind with no ice (service)
- Structure Class II
- Exposure Category C
- Topographic Category 1

Design loading will be included as outlined on stamped drawing #112740C1.

This tower design standard takes into account several safety factors including load factors and steel strength capacities. Therefore, it is highly unlikely that the tower will fail structurally in a wind event where the design wind speed is exceeded within the range of built-in safety factors.

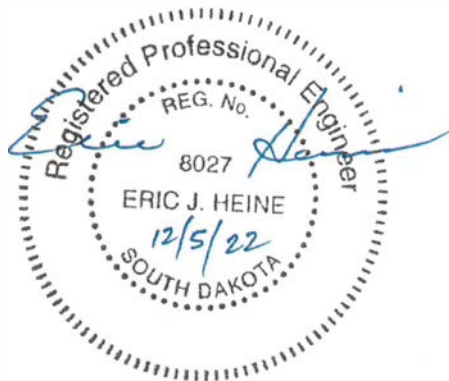
Should the wind speed increase beyond the capacity of the built-in safety factors to the point of failure of one or more structural elements, the most likely location of failure would be within one of the tower sections. For the Lewis & Clark Sub tower this would most likely be in the section from 30' to 40' which is the highest stressed area of the tower. This would result in a buckling mode, where the steel bends beyond its elastic limit (the point where the section does not return to its normal shape when the wind load is removed).

During this local buckling, the tower will buckle at the location of the highest combined stress ratio and "fold over" onto the portion below. Therefore, this would most likely cause the proposed Lewis & Clark Sub tower to collapse upon itself (i.e. within a radius of 0' from the base of the tower).

Please note, all opinions outlined in this letter are valid only if an Ehresmann Engineering tower is furnished and installed.

If you have any questions, please feel free to contact us.

Regards,



Eric Heine, P.E.

NOTES:

- 1. TOWER LEGS SHALL BE 50 KSI, ALL OTHER STEEL SHALL BE ASTM A36 MINIMUM.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF EHRESMANN ENGINEERING AND SHALL NOT BE REPRODUCED OR USED IN WHOLE OR IN PART AS THE BASIS OF THE MANUFACTURE OR SALE OR ITEM(S) WITHOUT WRITTEN PERMISSION.

TOWER DESIGN CRITERIA:

- DESIGN PER TIA-222-G
- 90 MPH WIND & NO ICE (Vasd)
- (Vult = 116 MPH WIND)
- 50 MPH WIND & 3/4' ICE (Vasd)
- 60 MPH WIND & NO ICE (SERVICE)
- STRUCTURE CLASS II
- EXPOSURE CATEGORY C
- TOPOGRAPHIC CATEGORY 1

SITE INFORMATION:

APPROX. COORDINATES: LATITUDE: 42° 51' 57" N
LONGITUDE: 97° 27' 20" W

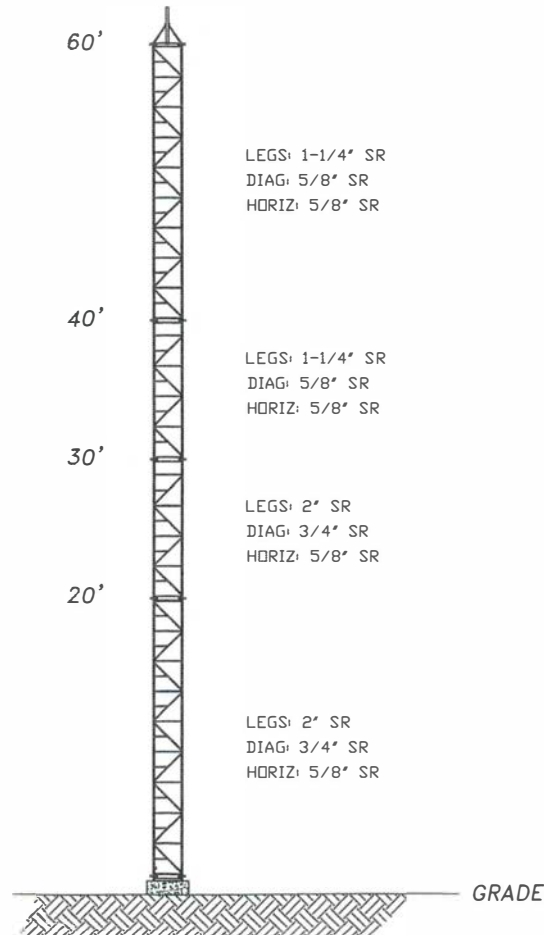
ADDRESS: S. DEER BLVD
YANKTON, SD 57078

COUNTY: YANKTON COUNTY, SOUTH DAKOTA

MAXIMUM BASE MOMENT & FORCES		
MOMENT (FT-KIPS)	SHEAR (KIPS)	AXIAL (KIPS)
39	1.189	2.539

DESIGN LOADING:

ELEV.	ITEM	RAD.	LINE
62'	RY-900A ON TOP MAST MOUNT	—	(1) 1/2"
20'	RY-900A	—	(1) 1/2"

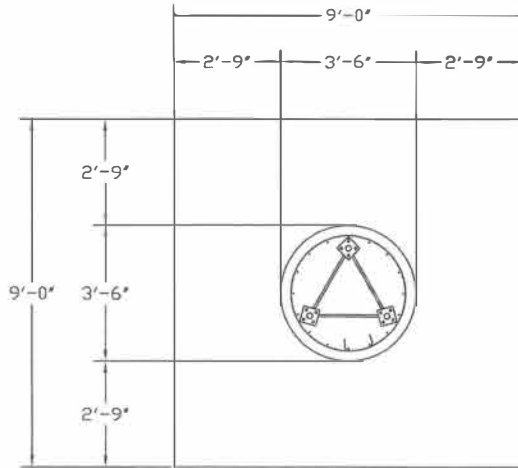


△			NAME	Ehresmann Engineering
△			DRAWN BY:	BJH
△			CHECKED BY:	
△			ENG APPR.	
△			MFG APPR.	
△			G.C.	
△			Site:	LEWIS & CLARK SUBSTATION, SD
△				4400 West 31st Street Yankton, SD 57078 605-665-7632 605-665-9780
△	DRAWING CREATED	07/22/22		
REV	DESCRIPTION	DATE	Job# 112740	
				TITLE: 60' W2400 STUB TOWER
				DWG. NO. 112740C1
				Sheet NO. C1
				Rev. 1A

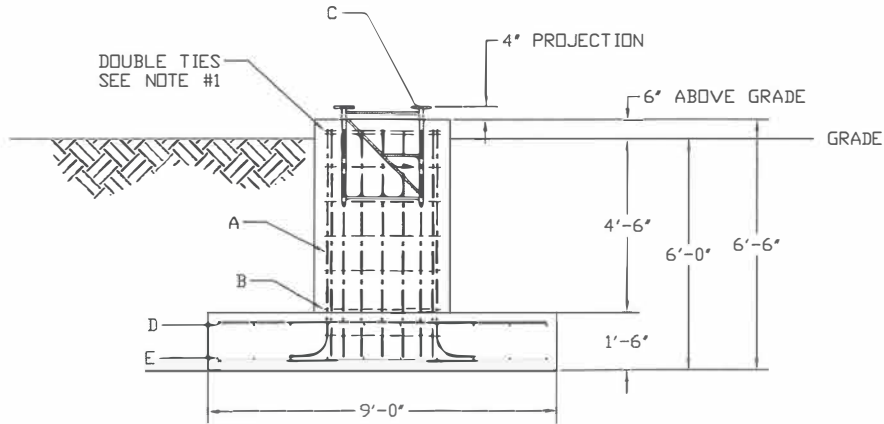
DESIGN REACTIONS

TOTAL SHEAR = 1,189 KIP
 AXIAL LOAD = 2,539 KIP
 QTM = 39 FT KIPS

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PLAN VIEW



ELEVATION VIEW

MATERIAL LIST				
ITEM	QTY	GRADE	DESCRIPTION	
A	12	60	#7 BARS	5'-9" 16' HOOK
B	8	60	#4 BARS	4' HOOKS 10' LAP (STAGGERED) 3'-0"
* C	1	36 MIN.	W2400 HD EMBED	2'-6"
D	20	60	#7 BARS (10) EACH WAY-TOP	8'-6"
E	20	60	#7 BARS (10) EACH WAY-BOTTOM	8'-6"

* SUPPLIED BY EE, ALL OTHER MATERIAL TO BE SUPPLIED BY THE CONTRACTOR.

NOTES:

- LATERAL REINFORCEMENT, CONSISTING OF TWO (2) HORIZONTAL TIES SHALL BE DISTRIBUTED WITHIN 5' OF TOP OF CONCRETE PER ACI 318. THE ENDS OF ALL CIRCULAR TIES SHALL TERMINATE WITH STANDARD HOOKS THAT ENGAGE A LONGITUDINAL COLUMN BAR.
- FOUNDATION DESIGN IS BASED ON SOILS REPORT BY GEOTEK ENGINEERING & TESTING SERVICES, INC. DATED AUGUST 10, 2022; PROJECT NO. 22-DO3. CONTRACTOR TO REVIEW SOILS REPORT FOR POSSIBLE SPECIAL INSTRUCTIONS BY GEOTECHNICAL ENGINEER.
- MINIMUM COMPACTED UNIT WEIGHT OF ALL BACKFILL TO BE 100 PCF.
- 6.28 CUBIC YARDS CONCRETE REQUIRED THIS FOUNDATION.

CONCRETE MIX REQUIREMENTS:

CEMENT: TYPE I/II PORTLAND CEMENT
 28 DAY COMPRESSIVE STRENGTH = 4500 PSI
 MAXIMUM WATER/CEMENT RATIO = 0.45
 SLUMP = 4'-6"
 ENTRAINED AIR CONTENT = 5%-7%

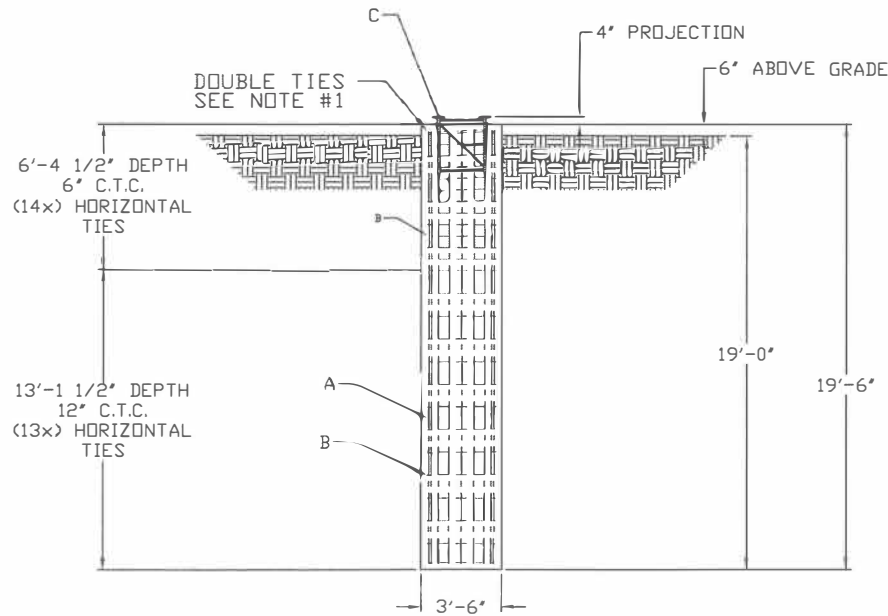


△			NAME	Ehresmann Engineering
△		DRAWN BY:	EJH	
△		CHECKED BY:		
△		ENG APPR.		
△		MFG APPR.		
△		Q.C.		
△		Site:	LEWIS & CLARK	4400 West 31st Street
△		DRAWING CREATED	9/22/22	Yankton, SD 57079
REV	DESCRIPTION	DATE	Job# 112740	605-665-7532 605-665-9780
				TITLE
				60' STUB TOWER PIER/PAD FOUNDATION DESIGN
				DWG NO
				112740 E02
				Sheet NO
				E02
				Rev. 1 A

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF EHRESMANN ENGINEERING AND SHALL NOT BE REPRODUCED OR USED IN WHOLE OR IN PART AS THE BASIS OF THE MANUFACTURE OR SALE OR ITEM(S) WITHOUT WRITTEN PERMISSION.



PLAN VIEW



ELEVATION VIEW

MATERIAL LIST				
ITEM	QTY	GRADE	DESCRIPTION	
A	12	60	#7 BARS	19'-0"
B	27	60	#4 BARS	4' HOOKS 10' LAP (STAGGERED) 3'-0"
* C	1	36 KSI MIN.	W2400 HD EMBED	2'-6"

* SUPPLIED BY EE, ALL OTHER MATERIAL TO BE SUPPLIED BY THE CONTRACTOR.

NOTES:

- LATERAL REINFORCEMENT, CONSISTING OF TWO (2) HORIZONTAL TIES SHALL BE DISTRIBUTED WITHIN 5' OF TOP OF CONCRETE PER ACI 318. THE ENDS OF ALL CIRCULAR TIES SHALL TERMINATE WITH STANDARD HOOKS THAT ENGAGE A LONGITUDINAL COLUMN BAR.
- FOUNDATION DESIGN IS BASED ON SOILS REPORT BY GEOTEK ENGINEERING & TESTING SERVICES, INC. DATED AUGUST 10, 2022; PROJECT NO. 22-003. CONTRACTOR TO REVIEW SOILS REPORT FOR POSSIBLE SPECIAL INSTRUCTIONS BY GEOTECHNICAL ENGINEER.
- 6.95 CUBIC YARDS CONCRETE REQUIRED THIS FOUNDATION.
- STUB TOWER BASE REACTIONS;
MOMENT = 39 FT-KIPS
SHEAR = 1.189 KIPS
AXIAL = 2.539 KIPS



CONCRETE MIX REQUIREMENTS:

CEMENT: TYPE I/II PORTLAND CEMENT
28 DAY COMPRESSIVE STRENGTH = 4500 PSI
MAXIMUM WATER/CEMENT RATIO = 0.45
SLUMP = 6"-8"
ENTRAINED AIR CONTENT = 5%-7%

△		NAME	Ehresmann Engineering
△		DRAWN BY:	EJH
△		CHECKED BY:	
△		ENG APPR.	
△		MFG APPR.	
△		Q.C.	
△		Site:	LEWIS & CLARK SUBSTATION, SD
△			4400 West 31st Street Yankton, SD 57078 605-665-7532 605-665-9780
△	DRAWING CREATED	9/22/22	
REV	DESCRIPTION	DATE	Job# 112740
			TITLE: 60' STUB TOWER PIER TYPE FOUNDATION DESIGN
			DWG. NO. 112740E02A
			Sheet NO E02A Rev. 1A

GENERAL:

Ehresmann Engineering (EE) designs and manufactures steel towers/poles and tower components to the most stringent industry standards, and uses the highest quality materials. However, certain hazards are inherent in tower work. For this reason, it is imperative that erection of towers and installation of tower components be accomplished in a safe and workmanlike manner, and only by experienced and professional contractors. Unless the customer specifies otherwise in writing, or unless otherwise noted in our design documents or on our installation drawings, design of and/or fabrication of items by Ehresmann Engineering shall meet the conditions outlined in these notes.

- All tower designs and/or work shall be in accordance with TIA-222-G, 'Structural Standards for Steel Antenna Tower and Antenna Supporting Structures' or as otherwise specified in writing by the customer.
- Purchasers shall verify the installation is in conformance with all local, state, and federal requirements. This also includes requirements for obstruction marking and lighting.
- Towers, tower components, mounts, foundations or modification materials are not installed in accordance with Ehresmann Engineering installation drawings and specifications, then all designs are considered invalid, and EE disclaims any responsibility for said design and/or certification.
- The purchaser shall be responsible to inspect condition of underground anchors prior to work on towers, and to furnish any and all soil reports, where required.
- All items must be inventoried at the time of delivery to the job site/storage facility. Any shortages reported after this delivery will be the responsibility of the Contractor/Owner.
- Any problems that occur with scheduling, transportation, delivery, foundation installation, erection or any items furnished by EE must be reported immediately to allow EE time to take corrective measures. EE will make every effort to repair/replace necessary items in an expedient manner and/or will pursue corrective measures in the most economical way possible at our discretion. However, under no circumstances will EE pay for or be responsible for any down time or expenses incurred due to down time.
- EE will make every effort to deliver materials at the requested time. However, we cannot and will not be responsible for delays caused by breakdowns, weather and/or other factors out of our control once the materials have left our facility. We strongly suggest that cranes, tower crews, etc., not be scheduled until delivery is verified to be on time. EE will not be responsible for any costs incurred due to these possible delays.
- Any and all permits, licenses, or payment of taxes required for construction are the sole responsibility of the purchaser.
- Manufacturer Assistance: Contractors / Erectors may contact Ehresmann Engineering at (605) 665-7532 for questions on design, materials, or installation regarding items furnished by Ehresmann Engineering.
- Ehresmann Engineering is available, upon request, to supervise installation and/or completion of modifications, or to provide on-site inspection after project completion.

***Please also reference site specific design documents and drawings for additional notes.

Anchor Rod Tightening:

Prior to placing anchor rods in the concrete, it is recommended that an anchor rod rotation capacity test be run with at least one anchor rod. This test may be run in a Skidmore-Wilhelm device or in a mockup of the base plate using a small piece of plate with one hole of equivalent grade, thickness, and finish. The test consists of steps 2 through 12 as outlined below and adapted as necessary for the mock set-up. It is recommended that the nut be rotated at least to the required rotation as given in step 11. After the test, the nuts should be removed and all threads (rod and nut) inspected for damage. Once the anchor rod is removed from the test plate, the nuts shall again be turned onto the rod well past the location of the leveling nut and backed off by one worker using an ordinary wrench with no cheater bar. The threads are considered damaged if more than minimal effort is required to turn the nut. Please note that nuts should be turned onto ALL anchor rods and backed off with minimal effort as outlined above to verify threads of ALL anchor rods and nuts prior to placement in concrete.

Recommended Steps for Anchor Rod Tightening:

- Verify proper position of anchor rods.
- Verify that all nuts can be turned onto the rods well past the elevation of the bottom of the leveling nut and backed off by one worker using an ordinary wrench without a cheater bar.
- If threads of anchor rods were lubricated more than 24 hours before placing the leveling nut or have been wet since they were lubricated, the exposed threads of the anchor rods should be relubricated (Beeswax and toilet-ring wax have been shown to provide good lubrication).
- Place leveling nuts on anchor rods and level.
- Place leveling nut washers.
- Set pole or tower legs.
- Plumb pole or legs and/or level base plates.
- Place top nut washers.
- Threads and bearing surfaces of the top nuts should be lubricated, placed and tightened to the snug-tight condition in a star pattern. Reference TABLE 1 for snug-tight torque values.
- Tighten leveling nuts to the snug-condition (as outlined for top nuts) in a star pattern.
- Mark the reference position of the top nut in the snug-tight condition with a suitable marking on one flat with a corresponding reference mark on the base plate at each bolt. Top nuts should be turned in increments in a star pattern (at least two full tightening cycles) to the appropriate nut rotation specified below.

Anchor Rod Diameter: In.	Nut Rotation from Snug-Tight Condition
less than 1 1/2"	1/3 turn
greater than or equal to 1 1/2"	1/6 turn

- A torque wrench should be used to verify that a torque at least equal to the computed verification torque T_v is required to additionally tighten the leveling nuts and the top nuts. Reference TABLE 1 for verification torque values. An inability to achieve this torque should be interpreted to indicate that the threads have stripped and should be reported to the Engineer of Record.
- Locking nuts are to be installed over all top nuts when tightening is completed.

TABLE 1

ANCHOR ROD DIAMETER (INCHES)	SNUG-TIGHT TORQUE (FT-LBS)	VERIFICATION TORQUE (FT-LBS)
3/4	38-56	188
1	91-136	454
1 1/4	182-272	908
1 1/2	316-474	1581
1 3/4	499-748	2494
2	750-1125	3750
2 1/4	921-1382	4607

VALUES AS SHOWN IN TABLE 1 ARE BASED ON ASTM F1554 GRADE 105 ANCHOR RODS WITH MINIMUM ULTIMATE TENSILE STRENGTH OF 125 KSI FOR ROD DIAMETERS UP TO 2" AND ASTM A615 GR. 75 ANCHOR RODS WITH MINIMUM ULTIMATE TENSILE STRENGTH OF 105 KSI FOR 2 1/4" ANCHOR RODS.

Erection / Installation:

When erection items are provided by Ehresmann Engineering, the contractor (person performing the erection or modification) shall comply with the following:

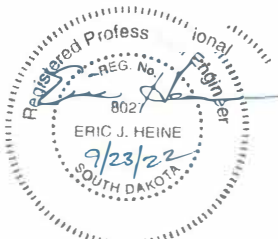
- All structural work shall be performed in relatively calm weather, with wind velocities not exceeding 15 MPH at any height of the tower. Additionally it is recommended that work be completed in accordance with ANSI/TIA-322 and ANSI/ASSE A10.48.
- All structural work shall be performed by a competent and reputable contractor with experience in similar tower work.
- Our drawings indicate the major operations to be performed, but do not show every field condition that may be encountered. Prior to beginning work, the contractor should survey the job thoroughly to eliminate future field problems.
- It is the contractor's sole responsibility to determine the erection procedure and sequence to insure the stability and safety of the tower and adequacy of temporary or incomplete connections during construction.
- All nuts for bearing type connections shall be tightened to a "snug tight" condition as defined by AISC. All nuts for direct tension/fully pre-tensioned or slip critical connections shall be tightened per the "turn-of-the-nut" method in accordance with AISC.
- It shall be the contractor's responsibility to ensure that all practices and procedures used during assembly, installation and erection work required on the tower or foundations do not endanger the safety of any personnel nor the structural integrity of the tower.
- The contractor shall use only safe and workmanlike procedures when modifying a tower.
- The contractor shall not correct any errors in manufacturing or design without special permission and written instructions from Ehresmann Engineering. This means straightening, relocation or reaming of bolt holes, drifting or any other application of force to make the members fit. (This restriction does not apply to diagonal members designed for initial tension or specific draw.) The contractor shall immediately notify Ehresmann Engineering through the appropriate channels to effect correction.
- The contractor shall immediately notify Ehresmann Engineering of any material which is damaged during erection or installation. The contractor shall not correct or substitute any member damaged during installation without written consent and instructions from Ehresmann Engineering.
- The contractor shall refrain from exerting excessive forces on the tower or on modification material during installation. Tower member design does not include stresses due to erection since erection equipment and conditions are unknown. Our design assumes that the services of competent and qualified personnel will be utilized to develop proper procedures and rigging plans. Our design also assumes that competent and qualified personnel will be hired to perform the work.
- All field-punched holes shall be touched up with cold galvanizing. Under no circumstances shall the torching of holes be allowed.
- All factory installed bracing placed within monopole tube sections is to remain in place until erection is complete. Do not remove bracing without prior consultation with EE.

Concrete & Foundation Installation:

- All rebar shall have 3" minimum cover, unless specified otherwise, and shall conform to ASTM A615. Rebar grade to be as specified on site drawings.
- Tie and secure all rebar and anchor bolts/shafts before placing concrete.
- Hook length as specified for vertical bars is from back side of bend. Minimum straight length of hook after bend shall be 12x bar diameter.
- Bending of rebar to be in accordance with ACI-318 latest edition.
- Sides of excavation may need to be braced or sloped back as required for stability and in accordance with all applicable safety regulations.
- Base of excavation shall be clean and free of all debris.
- All excavation, backfill and soil compaction to be completed in accordance with Geotechnical Engineer's recommendations. However, compacted density of all backfill must meet minimum unit weight as specified on site drawings.
- Attention shall be given to final site drainage and compaction of the fill placed around the foundation to minimize surface water infiltration around the foundation.
- Concrete strength and mix values to be listed on site specific foundation drawings. Alternate values may be acceptable and could be dependent on placement methods. However, use of alternate values must be approved by EDR prior to installation. EE will not be responsible for any delays due to request for approval of alternate values. It is the Contractor's responsibility to allow adequate time for approval.
- Use of water reducers may be required for some placement methods to achieve necessary slump and/or flow without exceeding maximum water/cement ratios. It is Contractor's responsibility to utilize proper mix to ensure proper placement of concrete for the method of placement chosen.
- Exposed edges of all foundations to be chamfered 1' x 45°.
- Use steel top and bottom anchor bolt templates provided by EE for proper anchor bolt spacing and placement.
- All concrete work shall be in accordance with ACI 318 (Latest Edition). ACI specifications for "Cold Weather" or "Hot Weather" concreting shall be followed as applicable.

Structural Steel & Hardware:

- All fabricated steel shall have a minimum yield strength of 36 ksi. Use of higher strength steel for some members/items will be noted in design documents or drawings as applicable.
- All fabricated steel shall be hot dip galvanized per ASTM A123.
- All structural fasteners shall be ASTM F3125 Gr. A325 unless specified otherwise.
- U-Bolts to be ASTM A36, A572 Gr. 50, or A193 Gr. B7 depending on size and application. Reference site specific drawings for additional details.
- Step Bolts to be ASTM A449
- All hardware shall be hot dip galvanized per ASTM A153.
- Welded connections shall conform to the latest revision of the American Welding Society, A.W.S. D11.
- All structural components shall be verified for proper assembly by the field crew prior to installation.



	NAME	EJH		Ehresmann Engineering STD TOWER & TOWER FOUNDATION NOTES
	DRAWN BY:	EJH		
	CHECKED BY:			
	ENG APPR.			
	MFG APPR.			
	COMPANY NAME	6/27/22	Q.C.	
	TUBE BRACING NOTE	10/29/19	Site:	
	U-BOLT/STEP-BOLT GR.	10/16/19	LEWIS & CLARK SUBSTATION, SD	4400 West 31st Street Yankton, SD 57078 605-665-7532 605-665-9780
	DRAWING CREATED	09/18/17	DATE	Job# 112740
REV	DESCRIPTION	DATE		

DWG NO	112740N1
Sheet NO	N1
Rev	1A

SPECIAL INSPECTION STATEMENT IN ACCORDANCE WITH IBC SECTION 1704.3

VERIFICATION AND TESTING SHALL BE COMPLETED AS FOLLOWS:

REINFORCED CONCRETE CONSTRUCTION (TOWER FOUNDATION):

- VERIFY PROPER DIMENSIONS AND DEPTH OF FOUNDATION (INCLUDING DEPTH OF DRILLED HOLE PRIOR TO CONCRETE PLACEMENT IF APPLICABLE)
- INSPECTION OF REINFORCING STEEL TO INCLUDE VERIFICATION OF PROPER MATERIAL GRADE, QTY, SIZE AND PLACEMENT
- VERIFY PROJECTION LENGTH OF ANCHOR BOLTS ABOVE TOP OF CONCRETE PRIOR TO CONCRETE SETTING
- VERIFY USE OF APPROVED CONCRETE MIX DESIGN
- VERIFY PROPER CONCRETE SLUMP AND AIR CONTENT BY TESTING AT THE TIME FRESH CONCRETE IS SAMPLED FOR STRENGTH TESTS
- VERIFY PROPER PLACEMENT OF CONCRETE IN ACCORDANCE WITH APPROVED TECHNIQUES.
- VERIFY CONCRETE COMPRESSIVE STRENGTH BY MEANS OF STANDARD TEST CYLINDERS TO BE BROKE AT 7 DAYS AND 28 DAYS MINIMUM.

STRUCTURAL STEEL CONSTRUCTION (TOWER STRUCTURE):

INSPECTION OF HIGH-STRENGTH BOLTED CONNECTIONS:

- VERIFY IDENTIFICATION MARKINGS/GRADE, QTY AND SIZE OF BOLTS, NUTS & WASHERS
- VISUALLY INSPECT SNUG-TIGHT BOLTED JOINTS TO VERIFY ALL PLIES IN CONTACT AND LOCK-WASHERS COMPRESSED
- VERIFY PROPER TIGHTENING OF PRETENSIONED CONNECTIONS USING TURN-OF-NUT METHOD WITH MATCHMARKING

STRUCTURAL OBSERVATION:

- VERIFY PROPER INSTALLATION/ERECTION OF TOWER PER DESIGN SPECIFICATIONS UPON COMPLETION OF INSTALLATION. VERIFICATION TO INCLUDE THE FOLLOWING:
 - ALL SECTIONS PROPERLY ASSEMBLED AND INSTALLED PER MANUFACTURER'S INSTALLATION DETAILS
 - STRUCTURE PLUMB IN ACCORDANCE WITH TIA-222

VERIFICATION OF ALL ITEMS AS OUTLINED ABOVE SHALL BE BASED ON DESIGN SPECIFICATIONS AND INSTALLATION DETAILS AS COMPLETED BY EHRESMANN ENGINEERING.

SPECIAL INSPECTOR SHALL IDENTIFY AND DOCUMENT RESULTS OF ALL INSPECTIONS AND MATERIAL TESTING AS OUTLINED. INSPECTION REPORTS SHALL BE SUBMITTED AS SOON AS POSSIBLE UPON COMPLETION OF INSPECTION BUT NO MORE THAN 5 WORKING DAYS UNLESS OTHERWISE AGREED BY PROJECT OWNER.

DEVIATION OR NON-COMPLIANCE SHALL BE CORRECTED BY CONTRACTOR. ANY DEVIATIONS NOT CORRECTED ARE TO BE CLEARLY IDENTIFIED IN FINAL REPORTS AND EHRESMANN ENGINEERING SHOULD BE NOTIFIED IMMEDIATELY FOR CONSULTATION.

THE PROJECT OWNER OR AN AGENT OF THE OWNER IS RESPONSIBLE FOR SCHEDULING AND FUNDING ALL SPECIAL INSPECTION SERVICES.

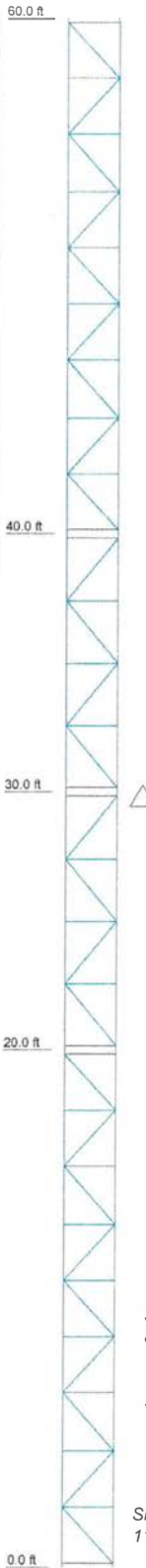
SPECIAL INSPECTIONS REQUIRED:

	CONTINUOUS	PERIODIC
REINFORCED CONCRETE:		
PIER OR PIER/PAD FOUNDATION		X
DEEP PIER DRILLING (IF APPLICABLE)	X	
REINFORCING STEEL		X
CONCRETE PLACEMENT	X	
SAMPLING & TESTING		X
ANCHORS/BOLTS CAST IN CONCRETE		X
SOILS		X
STRUCTURAL STEEL:		
HIGH-STRENGTH BOLTS		X
STRUCTURAL OBSERVATION:		
YES		X



△		NAME	Ehresmann Engineering
△		DRAWN BY:	EJH
△		CHECKED BY:	
△		ENG. APPR.	
△		MFG APPR.	
△		P.C.	
△		Site:	LEWIS & CLARK SUBSTATION, SD
△			4400 West 31st Street Yankton, SD 57078 605-665-7632 605-665-9780
	DRAWING CREATED	9/22/22	
REV	DESCRIPTION	DATE	JOB# 112740
			60' STUB TOWER SPECIAL INSPECTION STATEMENT
			DWC. NO. 112740SI
			Sheet NO SI Rev. 1A

Section	TH	T3	T2	T1
Legs	SR 2			SR 1 1/4
Leg Grade				
Diagonals	SR 3/4			SR 5/8
Diagonal Grade		A572-50		
Top Girts		A36		
Bottom Girts		SR 5/8		
Horizontals		SR 5/8		
Face Width (ft)		2		
# Panels @ (ft)	9 @ 2.19097	8 @ 2.42969	2158	9 @ 2.19097
Weight (lb) 2008 /	506.0	448.7		408.1

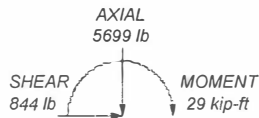


ALL REACTIONS
ARE FACTORED

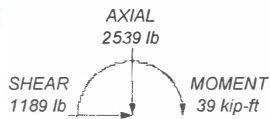
MAX. CORNER REACTIONS AT BASE:

DOWN: 23582 lb
SHEAR: 575 lb

UPLIFT: -22065 lb
SHEAR: 576 lb



TORQUE 0 kip-ft
50 mph WIND - 0.750 in ICE



TORQUE 0 kip-ft
REACTIONS - 90 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
RY-900A	62	RY-900A	20
Top Mast Mount	62		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Yankton County, South Dakota.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 90 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. Weld together tower sections have flange connections.
9. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
10. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
11. Welds are fabricated with ER-70S-6 electrodes.
12. TOWER RATING: 24.3%



Ehresmann Engineering 4400 W 31st St Yankton, SD 57078 Phone: (605) 665-7532 FAX: (605) 665-9780	Job: LEWIS & CLARK SUB, SD - 112740
	Project: 60' W2400 STUB TOWER
	Client: EREP Drawn by: EH App'd:
	Code: TIA-222-G Date: 09/22/22 Scale: NTS
	Path: Dwg No E-1

<p>tnxTower</p> <p>Ehresmann Engineering 4400 W 31st St Yankton, SD 57078 Phone: (605) 665-7532 FAX: (605) 665-9780</p>	Job LEWIS & CLARK SUB, SD - 112740	Page 1 of 25
	Project 60' W2400 STUB TOWER	Date 11:27:44 09/22/22
	Client EREP	Designed by EH

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 60.000 ft above the ground line.

The base of the tower is set at an elevation of 0.000 ft above the ground line.

The face width of the tower is 2.000 ft at the top and 2.000 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Yankton County, South Dakota.

Basic wind speed of 90 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.000 ft.

Nominal ice thickness of 0.750 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 30 °F.

Deflections calculated using a wind speed of 60 mph.

Weld together tower sections have flange connections..

Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..

Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..

Welds are fabricated with ER-70S-6 electrodes..

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

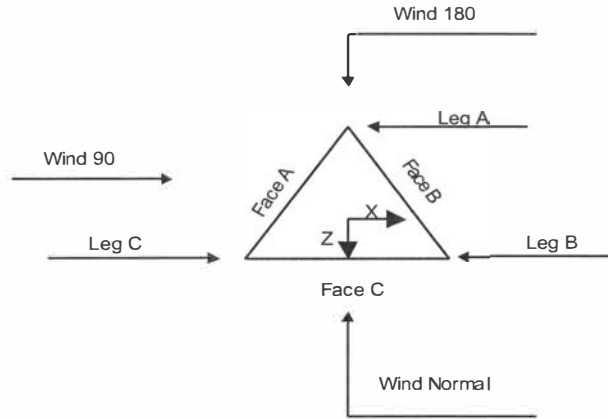
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) √ SR Members Have Cut Ends √ SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retension Guys To Initial Tension Bypass Mast Stability Checks Use Azimuth Dish Coefficients Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA √ SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation Consider Feed Line Torque √ Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

tnxTower Ehresmann Engineering 4400 W 31st St Yankton, SD 57078 Phone: (605) 665-7532 FAX: (605) 665-9780	Job LEWIS & CLARK SUB, SD - 112740	Page 2 of 25
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	Client EREP	Designed by EH



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	60.000-40.000			2.000	1	20.000
T2	40.000-30.000			2.000	1	10.000
T3	30.000-20.000			2.000	1	10.000
T4	20.000-0.000			2.000	1	20.000

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	60.000-40.000	2.191	K Brace Right	No	Yes	1.688	1.688
T2	40.000-30.000	2.430	K Brace Right	No	Yes	1.688	1.688
T3	30.000-20.000	2.430	K Brace Right	No	Yes	1.688	1.688
T4	20.000-0.000	2.191	K Brace Right	No	Yes	1.688	1.688

Tower Section Geometry (cont'd)

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	Client	EREP	Designed by	EH

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 60.000-40.000	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 40.000-30.000	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 30.000-20.000	Solid Round	2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T4 20.000-0.000	Solid Round	2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 60.000-40.000	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 40.000-30.000	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 30.000-20.000	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 20.000-0.000	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 60.000-40.000	None	Flat Bar		A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 40.000-30.000	None	Flat Bar		A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 30.000-20.000	None	Flat Bar		A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 20.000-0.000	None	Flat Bar		A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
T1	0.000	0.000	A36	1	1	1.1	36.000	36.000	36.000

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 60.000-40.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 40.000-30.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 30.000-20.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 20.000-0.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 60.000-40.000	Flange	0.625	4	0.000	0	0.000	0	0.000	0	0.625	0	0.000	0	0.625	0
T2 40.000-30.000	Flange	0.625	4	0.000	0	0.000	0	0.000	0	0.625	0	0.000	0	0.625	0
T3 30.000-20.000	Flange	0.625	4	0.000	0	0.000	0	0.000	0	0.625	0	0.000	0	0.625	0
T4 20.000-0.000	Flange	0.625	4	0.000	0	0.000	0	0.000	0	0.625	0	0.000	0	0.625	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
LDF4-50A (1/2 FOAM)	A	No	Yes	Ar (CaAa)	60.000 - 0.000	1	1	2.370	0.630		0.000
Safety Line 3/8	A	No	Yes	Ar (CaAa)	60.000 - 0.000	1	1	0.375	0.375		0.000
LDF4-50A (1/2 FOAM)	A	No	Yes	Ar (CaAa)	20.000 - 0.000	1	1	2.370	0.630		0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	60.000-40.000	A	0.000	0.000	2.010	0.000	7.400
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
T2	40.000-30.000	A	0.000	0.000	1.005	0.000	3.700
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T3	30.000-20.000	A	0.000	0.000	1.005	0.000	3.700
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T4	20.000-0.000	A	0.000	0.000	3.270	0.000	10.400
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
T1	60.000-40.000	A	1.564	0.000	0.000	14.519	0.000	165.282
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T2	40.000-30.000	A	1.509	0.000	0.000	7.040	0.000	77.855
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T3	30.000-20.000	A	1.459	0.000	0.000	6.841	0.000	73.622
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T4	20.000-0.000	A	1.331	0.000	0.000	19.244	0.000	193.481
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000

Shielding Factor K_a

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	LDF4-50A (1/2 FOAM)	40.00 - 60.00	1.0000	1.0000
	2	Safety Line 3/8	40.00 - 60.00	1.0000	1.0000
T2	1	LDF4-50A (1/2 FOAM)	30.00 - 40.00	1.0000	1.0000
	2	Safety Line 3/8	30.00 - 40.00	1.0000	1.0000
T3	1	LDF4-50A (1/2 FOAM)	20.00 - 30.00	1.0000	1.0000
	2	Safety Line 3/8	20.00 - 30.00	1.0000	1.0000
T4	1	LDF4-50A (1/2 FOAM)	0.00 - 20.00	1.0000	1.0000
	2	Safety Line 3/8	0.00 - 20.00	1.0000	1.0000
T4	3	LDF4-50A (1/2 FOAM)	0.00 - 20.00	1.0000	1.0000

Discrete Tower Loads

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C_{AA} Front	C_{AA} Side	Weight	
			Horz Lateral	Vert						°
RY-900A	A	From Centroid-Face	0.000	0.000	0.0000	62.000	No Ice	2.780	2.780	16.000
			0.000	0.000			1/2" Ice	5.004	5.004	20.800
			0.000	0.000			1" Ice	7.228	7.228	25.600
Top Mast Mount	A	From Centroid-Face	0.000	0.000	0.0000	62.000	No Ice	2.590	2.590	50.000
			0.000	0.000			1/2" Ice	3.880	3.880	77.000
			0.000	0.000			1" Ice	5.170	5.170	104.000
RY-900A	A	From Leg	0.000	0.000	0.0000	20.000	No Ice	2.780	2.780	16.000
			0.000	0.000			1/2" Ice	5.004	5.004	20.800
			0.000	0.000			1" Ice	7.228	7.228	25.600

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation	z	K_z	q_z	A_G	F a c e	A_F	A_R	A_{leg}	Leg %	C_{AA} In Face	C_{AA} Out Face
ft	ft		ksf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
T1 60.000-40.000	50.000	1.094	0.019	42.083	A	0.000	6.472	4.167	64.38	2.010	0.000
					B	0.000	6.472		64.38	0.000	0.000
					C	0.000	6.472		64.38	0.000	0.000
T2 40.000-30.000	35.000	1.015	0.018	21.042	A	0.000	3.199	2.083	65.13	1.005	0.000
					B	0.000	3.199		65.13	0.000	0.000
					C	0.000	3.199		65.13	0.000	0.000
T3 30.000-20.000	25.000	0.945	0.017	21.667	A	0.000	4.532	3.333	73.55	1.005	0.000
					B	0.000	4.532		73.55	0.000	0.000
					C	0.000	4.532		73.55	0.000	0.000
T4 20.000-0.000	10.000	0.85	0.015	43.333	A	0.000	9.151	6.667	72.85	3.270	0.000
					B	0.000	9.151		72.85	0.000	0.000
					C	0.000	9.151		72.85	0.000	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation	z	K_z	q_z	t _z	A_G	F a c e	A_F	A_R	A_{leg}	Leg %	C_{AA} In Face	C_{AA} Out Face
ft	ft		ksf	in	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
T1 60.000-40.000	50.000	1.094	0.006	1.564	47.295	A	0.000	28.433	14.591	51.32	14.519	0.000
						B	0.000	28.433		51.32	0.000	0.000
						C	0.000	28.433		51.32	0.000	0.000
T2 40.000-30.000	35.000	1.015	0.006	1.509	23.556	A	0.000	13.612	7.113	52.25	7.040	0.000
						B	0.000	13.612		52.25	0.000	0.000
						C	0.000	13.612		52.25	0.000	0.000
T3 30.000-20.000	25.000	0.945	0.005	1.459	24.098	A	0.000	14.430	8.196	56.80	6.841	0.000
						B	0.000	14.430		56.80	0.000	0.000

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	Client EREP	Designed by EH

Section Elevation	z	K _Z	q _z	t _z	A _G	F _{a c e}	A _F	A _R	A _{leg}	Leg %	C _{AA} _{In Face}	C _{AA} _{Out Face}
ft	ft		ksf	in	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
T4 20.000-0.000	10.000	0.85	0.005	1.331	47.771	C	0.000	14.430	15.541	56.80	0.000	0.000
						A	0.000	27.523			19.244	0.000
						B	0.000	27.523			56.47	0.000
						C	0.000	27.523			56.47	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation	z	K _Z	q _z	A _G	F _{a c e}	A _F	A _R	A _{leg}	Leg %	C _{AA} _{In Face}	C _{AA} _{Out Face}
ft	ft		ksf	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
T1 60.000-40.000	50.000	1.094	0.009	42.083	A	0.000	6.472	4.167	64.38	2.010	0.000
					B	0.000	6.472			0.000	0.000
					C	0.000	6.472			64.38	0.000
T2 40.000-30.000	35.000	1.015	0.008	21.042	A	0.000	3.199	2.083	65.13	1.005	0.000
					B	0.000	3.199			0.000	0.000
					C	0.000	3.199			65.13	0.000
T3 30.000-20.000	25.000	0.945	0.007	21.667	A	0.000	4.532	3.333	73.55	1.005	0.000
					B	0.000	4.532			0.000	0.000
					C	0.000	4.532			73.55	0.000
T4 20.000-0.000	10.000	0.85	0.007	43.333	A	0.000	9.151	6.667	72.85	3.270	0.000
					B	0.000	9.151			72.85	0.000
					C	0.000	9.151			72.85	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F _{a c e}	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				ksf			ft ²	lb	klf	
T1 60.000-40.000	7.400	436.487	A	0.154	2.758	0.019	1	1	3.676	199.039	0.010	C
			B	0.154	2.758							
			C	0.154	2.758							
T2 40.000-30.000	3.700	215.620	A	0.152	2.764	0.018	1	1	1.816	91.580	0.009	C
			B	0.152	2.764							
			C	0.152	2.764							
T3 30.000-20.000	3.700	449.674	A	0.209	2.566	0.017	1	1	2.611	109.104	0.011	C
			B	0.209	2.566							
			C	0.209	2.566							
T4 20.000-0.000	10.400	906.904	A	0.211	2.559	0.015	1	1	5.276	213.576	0.011	C
			B	0.211	2.559							
			C	0.211	2.559							
Sum Weight:	25.200	2008.684						OTM	18.021 kip-ft	613.298		

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Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				ksf			ft ²	lb	klf	
T1 60.000-40.000	7.400	436.487	A	0.154	2.758	0.019	0.8	1	3.676	199.039	0.010	C
			B	0.154	2.758		0.8	1	3.676			
			C	0.154	2.758		0.8	1	3.676			
T2 40.000-30.000	3.700	215.620	A	0.152	2.764	0.018	0.8	1	1.816	91.580	0.009	C
			B	0.152	2.764		0.8	1	1.816			
			C	0.152	2.764		0.8	1	1.816			
T3 30.000-20.000	3.700	449.674	A	0.209	2.566	0.017	0.8	1	2.611	109.104	0.011	C
			B	0.209	2.566		0.8	1	2.611			
			C	0.209	2.566		0.8	1	2.611			
T4 20.000-0.000	10.400	906.904	A	0.211	2.559	0.015	0.8	1	5.276	213.576	0.011	C
			B	0.211	2.559		0.8	1	5.276			
			C	0.211	2.559		0.8	1	5.276			
Sum Weight:	25.200	2008.684					OTM	18.021	kip-ft	613.298		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				ksf			ft ²	lb	klf	
T1 60.000-40.000	7.400	436.487	A	0.154	2.758	0.019	0.85	1	3.676	199.039	0.010	C
			B	0.154	2.758		0.85	1	3.676			
			C	0.154	2.758		0.85	1	3.676			
T2 40.000-30.000	3.700	215.620	A	0.152	2.764	0.018	0.85	1	1.816	91.580	0.009	C
			B	0.152	2.764		0.85	1	1.816			
			C	0.152	2.764		0.85	1	1.816			
T3 30.000-20.000	3.700	449.674	A	0.209	2.566	0.017	0.85	1	2.611	109.104	0.011	C
			B	0.209	2.566		0.85	1	2.611			
			C	0.209	2.566		0.85	1	2.611			
T4 20.000-0.000	10.400	906.904	A	0.211	2.559	0.015	0.85	1	5.276	213.576	0.011	C
			B	0.211	2.559		0.85	1	5.276			
			C	0.211	2.559		0.85	1	5.276			
Sum Weight:	25.200	2008.684					OTM	18.021	kip-ft	613.298		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				ksf			ft ²	lb	klf	
T1 60.000-40.000	165.282	1344.741	A	0.601	1.803	0.006	1	1	21.168	266.492	0.013	C
			B	0.601	1.803		1	1	21.168			
			C	0.601	1.803		1	1	21.168			
T2	77.855	634.743	A	0.578	1.819	0.006	1	1	9.937	117.852	0.012	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F lb	w klf	Ctrl. Face
ft	lb	lb										
40.000-30.000			B	0.578	1.819		1	1	9.937			
			C	0.578	1.819		1	1	9.937			
T3	73.622	894.748	A	0.599	1.805	0.005	1	1	10.721	114.473	0.011	C
30.000-20.000			B	0.599	1.805		1	1	10.721			
			C	0.599	1.805		1	1	10.721			
T4	193.481	1693.960	A	0.576	1.821	0.005	1	1	20.062	219.205	0.011	C
20.000-0.000			B	0.576	1.821		1	1	20.062			
			C	0.576	1.821		1	1	20.062			
Sum Weight:	510.239	4568.193						OTM	22.503 kip-ft	718.022		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F lb	w klf	Ctrl. Face
ft	lb	lb										
60.000-40.000	165.282	1344.741	A	0.601	1.803	0.006	0.8	1	21.168	266.492	0.013	C
			B	0.601	1.803		0.8	1	21.168			
			C	0.601	1.803		0.8	1	21.168			
T2	77.855	634.743	A	0.578	1.819	0.006	0.8	1	9.937	117.852	0.012	C
40.000-30.000			B	0.578	1.819		0.8	1	9.937			
			C	0.578	1.819		0.8	1	9.937			
T3	73.622	894.748	A	0.599	1.805	0.005	0.8	1	10.721	114.473	0.011	C
30.000-20.000			B	0.599	1.805		0.8	1	10.721			
			C	0.599	1.805		0.8	1	10.721			
T4	193.481	1693.960	A	0.576	1.821	0.005	0.8	1	20.062	219.205	0.011	C
20.000-0.000			B	0.576	1.821		0.8	1	20.062			
			C	0.576	1.821		0.8	1	20.062			
Sum Weight:	510.239	4568.193						OTM	22.503 kip-ft	718.022		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F lb	w klf	Ctrl. Face
ft	lb	lb										
60.000-40.000	165.282	1344.741	A	0.601	1.803	0.006	0.85	1	21.168	266.492	0.013	C
			B	0.601	1.803		0.85	1	21.168			
			C	0.601	1.803		0.85	1	21.168			
T2	77.855	634.743	A	0.578	1.819	0.006	0.85	1	9.937	117.852	0.012	C
40.000-30.000			B	0.578	1.819		0.85	1	9.937			
			C	0.578	1.819		0.85	1	9.937			
T3	73.622	894.748	A	0.599	1.805	0.005	0.85	1	10.721	114.473	0.011	C
30.000-20.000			B	0.599	1.805		0.85	1	10.721			
			C	0.599	1.805		0.85	1	10.721			
T4	193.481	1693.960	A	0.576	1.821	0.005	0.85	1	20.062	219.205	0.011	C
20.000-0.000			B	0.576	1.821		0.85	1	20.062			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			ksf			ft ²	lb	klf	
Sum Weight:	510.239	4568.193	C	0.576	1.821		0.85	1 OTM	20.062 22.503 kip-ft	718.022		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			ksf			ft ²	lb	klf	
T1 60.000-40.000	7.400	436.487	A	0.154	2.758	0.009	1	1	3.676	88.462	0.004	C
			B	0.154	2.758		1	1	3.676			
			C	0.154	2.758		1	1	3.676			
T2 40.000-30.000	3.700	215.620	A	0.152	2.764	0.008	1	1	1.816	40.702	0.004	C
			B	0.152	2.764		1	1	1.816			
			C	0.152	2.764		1	1	1.816			
T3 30.000-20.000	3.700	449.674	A	0.209	2.566	0.007	1	1	2.611	48.491	0.005	C
			B	0.209	2.566		1	1	2.611			
			C	0.209	2.566		1	1	2.611			
T4 20.000-0.000	10.400	906.904	A	0.211	2.559	0.007	1	1	5.276	94.923	0.005	C
			B	0.211	2.559		1	1	5.276			
			C	0.211	2.559		1	1	5.276			
Sum Weight:	25.200	2008.684						OTM	8.009 kip-ft	272.577		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			ksf			ft ²	lb	klf	
T1 60.000-40.000	7.400	436.487	A	0.154	2.758	0.009	0.8	1	3.676	88.462	0.004	C
			B	0.154	2.758		0.8	1	3.676			
			C	0.154	2.758		0.8	1	3.676			
T2 40.000-30.000	3.700	215.620	A	0.152	2.764	0.008	0.8	1	1.816	40.702	0.004	C
			B	0.152	2.764		0.8	1	1.816			
			C	0.152	2.764		0.8	1	1.816			
T3 30.000-20.000	3.700	449.674	A	0.209	2.566	0.007	0.8	1	2.611	48.491	0.005	C
			B	0.209	2.566		0.8	1	2.611			
			C	0.209	2.566		0.8	1	2.611			
T4 20.000-0.000	10.400	906.904	A	0.211	2.559	0.007	0.8	1	5.276	94.923	0.005	C
			B	0.211	2.559		0.8	1	5.276			
			C	0.211	2.559		0.8	1	5.276			
Sum Weight:	25.200	2008.684						OTM	8.009 kip-ft	272.577		

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Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F lb	w klf	Ctrl. Face
ft	lb	lb										
T1 60.000-40.000	7.400	436.487	A	0.154	2.758	0.009	0.85	1	3.676	88.462	0.004	C
			B	0.154	2.758		0.85	1	3.676			
			C	0.154	2.758		0.85	1	3.676			
T2 40.000-30.000	3.700	215.620	A	0.152	2.764	0.008	0.85	1	1.816	40.702	0.004	C
			B	0.152	2.764		0.85	1	1.816			
			C	0.152	2.764		0.85	1	1.816			
T3 30.000-20.000	3.700	449.674	A	0.209	2.566	0.007	0.85	1	2.611	48.491	0.005	C
			B	0.209	2.566		0.85	1	2.611			
			C	0.209	2.566		0.85	1	2.611			
T4 20.000-0.000	10.400	906.904	A	0.211	2.559	0.007	0.85	1	5.276	94.923	0.005	C
			B	0.211	2.559		0.85	1	5.276			
			C	0.211	2.559		0.85	1	5.276			
Sum Weight:	25.200	2008.684						OTM	8.009 kip-ft	272.577		

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Leg Weight	1471.738					
Bracing Weight	536.947					
Total Member Self-Weight	2008.684					
Total Weight	2115.884			-0.018	0.000	
Wind 0 deg - No Ice		0.000	-742.934	-24.499	0.000	0.000
Wind 30 deg - No Ice		371.467	-643.400	-21.219	-12.240	-0.022
Wind 60 deg - No Ice		643.400	-371.467	-12.259	-21.201	-0.038
Wind 90 deg - No Ice		742.934	0.000	-0.018	-24.480	-0.043
Wind 120 deg - No Ice		643.400	371.467	12.222	-21.201	-0.038
Wind 150 deg - No Ice		371.467	643.400	21.182	-12.240	-0.022
Wind 180 deg - No Ice		0.000	742.934	24.462	0.000	0.000
Wind 210 deg - No Ice		-371.467	643.400	21.182	12.240	0.022
Wind 240 deg - No Ice		-643.400	371.467	12.222	21.201	0.038
Wind 270 deg - No Ice		-742.934	0.000	-0.018	24.480	0.043
Wind 300 deg - No Ice		-643.400	-371.467	-12.259	21.201	0.038
Wind 330 deg - No Ice		-371.467	-643.400	-21.219	12.240	0.022
Member Ice	2559.508					
Total Weight Ice	5275.739			-0.034	0.000	
Wind 0 deg - Ice		0.000	-843.918	-28.745	0.000	0.000
Wind 30 deg - Ice		421.959	-730.854	-24.898	-14.355	-0.022
Wind 60 deg - Ice		730.854	-421.959	-14.389	-24.864	-0.038
Wind 90 deg - Ice		843.918	0.000	-0.034	-28.710	-0.044
Wind 120 deg - Ice		730.854	421.959	14.321	-24.864	-0.038
Wind 150 deg - Ice		421.959	730.854	24.830	-14.355	-0.022
Wind 180 deg - Ice		0.000	843.918	28.676	0.000	0.000
Wind 210 deg - Ice		-421.959	730.854	24.830	14.355	0.022
Wind 240 deg - Ice		-730.854	421.959	14.321	24.864	0.038
Wind 270 deg - Ice		-843.918	0.000	-0.034	28.710	0.044
Wind 300 deg - Ice		-730.854	-421.959	-14.389	24.864	0.038

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Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Wind 330 deg - Ice		-421.959	-730.854	-24.898	14.355	0.022
Total Weight	2115.884			-0.018	0.000	
Wind 0 deg - Service		0.000	-330.193	-10.899	0.000	0.000
Wind 30 deg - Service		165.096	-285.956	-9.441	-5.440	-0.010
Wind 60 deg - Service		285.956	-165.096	-5.459	-9.422	-0.017
Wind 90 deg - Service		330.193	0.000	-0.018	-10.880	-0.019
Wind 120 deg - Service		285.956	165.096	5.422	-9.422	-0.017
Wind 150 deg - Service		165.096	285.956	9.404	-5.440	-0.010
Wind 180 deg - Service		0.000	330.193	10.862	0.000	0.000
Wind 210 deg - Service		-165.096	285.956	9.404	5.440	0.010
Wind 240 deg - Service		-285.956	165.096	5.422	9.422	0.017
Wind 270 deg - Service		-330.193	0.000	-0.018	10.880	0.019
Wind 300 deg - Service		-285.956	-165.096	-5.459	9.422	0.017
Wind 330 deg - Service		-165.096	-285.956	-9.441	5.440	0.010

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp

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Comb. No.	Description
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	60 - 40	Leg	Max Tension	23	3571.964	-0.023	-0.005
			Max. Compression	2	-3932.149	-0.004	0.002
			Max. Mx	8	-3065.045	0.026	-0.004
			Max. My	16	-3429.266	-0.010	0.024
			Max. Vy	8	192.733	-0.002	-0.004
			Max. Vx	2	-175.039	-0.004	0.002
		Diagonal	Max Tension	20	483.764	0.000	0.000
			Max. Compression	24	-486.847	0.000	0.000
			Max. Mx	28	114.760	0.004	0.000
			Max. My	37	5.268	0.000	-0.000
			Max. Vy	28	5.586	0.000	0.000
			Max. Vx	37	-0.021	0.000	0.000
		Horizontal	Max Tension	8	35.679	0.000	0.000
			Max. Compression	5	-34.458	0.000	0.000
			Max. Mx	26	3.311	0.003	0.000
			Max. Vy	26	-5.559	0.000	0.000
			Max. Vx	36	0.000	0.000	0.000
			Top Girt	Max Tension	14	68.596	0.000
		Bottom Girt	Max. Compression	2	-67.171	0.000	0.000
			Max. Mx	26	0.181	0.003	0.000
			Max. Vy	26	-5.559	0.000	0.000
			Max. Vx	36	0.000	0.000	0.000
			Max Tension	10	145.548	0.000	0.000
			Max. Compression	22	-142.275	0.000	0.000
T2	40 - 30	Leg	Max Tension	23	6591.906	-0.009	0.005
			Max. Compression	2	-7110.682	0.001	0.031
			Max. Mx	20	5611.305	0.036	0.005
			Max. My	24	-6192.065	0.012	0.034
			Max. Vy	8	307.939	-0.036	-0.007
			Max. Vx	16	267.170	0.024	-0.027
		Diagonal	Max Tension	20	637.729	0.000	0.000
			Max. Compression	24	-640.888	0.000	0.000
			Max. Mx	38	422.174	0.004	0.000
			Max. My	35	8.006	0.000	-0.000
			Max. Vy	38	-5.337	0.000	0.000
			Max. Vx	35	0.020	0.000	0.000
		Horizontal	Max Tension	24	23.474	0.000	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T3	30 - 20	Top Girt	Max. Compression	21	-25.165	0.000	0.000	
			Max. Mx	26	4.620	0.003	0.000	
			Max. Vy	26	5.312	0.000	0.000	
			Max. Vx	36	0.000	0.000	0.000	
			Max Tension	22	155.206	0.000	0.000	
			Max. Compression	10	-157.056	0.000	0.000	
			Max. Mx	26	1.723	0.003	0.000	
			Max. Vy	26	5.312	0.000	0.000	
			Max. Vx	36	0.000	0.000	0.000	
			Max Tension	10	115.006	0.000	0.000	
			Max. Compression	23	-113.507	0.000	0.000	
			Max. Mx	26	2.498	0.003	0.000	
		Max. Vy	26	5.312	0.000	0.000		
		Max. Vx	36	0.000	0.000	0.000		
		Bottom Girt	Max Tension	10	115.006	0.000	0.000	
			Max. Compression	23	-113.507	0.000	0.000	
			Max. Mx	26	2.498	0.003	0.000	
			Max. Vy	26	5.312	0.000	0.000	
			Max. Vx	36	0.000	0.000	0.000	
			Leg	Max Tension	7	10529.283	0.024	-0.019
				Max. Compression	2	-11370.656	-0.004	0.018
				Max. Mx	20	6174.283	0.079	0.005
				Max. My	24	-6194.073	0.034	0.072
				Max. Vy	20	-316.100	0.022	0.004
				Max. Vx	2	-354.521	-0.004	0.018
				Diagonal	Max Tension	12	863.897	0.000
		Max. Compression			16	-867.012	0.000	0.000
		Max. Mx			38	567.111	0.005	0.000
		Max. My			35	15.741	0.000	-0.000
		Max. Vy			38	-5.943	0.000	0.000
		Max. Vx			35	-0.018	0.000	0.000
		Horizontal	Max Tension	16	48.730	0.000	0.000	
			Max. Compression	13	-47.537	0.000	0.000	
			Max. Mx	26	8.106	0.003	0.000	
			Max. Vy	26	-5.092	0.000	0.000	
			Max. Vx	36	0.000	0.000	0.000	
			Top Girt	Max Tension	22	138.314	0.000	0.000
		Max. Compression		11	-138.214	0.000	0.000	
		Max. Mx		26	3.597	0.003	0.000	
		Max. Vy		26	-5.092	0.000	0.000	
		Max. Vx		36	0.000	0.000	0.000	
		Bottom Girt		Max Tension	24	288.966	0.000	0.000
Max. Compression	12		-288.326	0.000	0.000			
Max. Mx	26		2.795	0.003	0.000			
Max. Vy	26		-5.092	0.000	0.000			
Max. Vx	36		0.000	0.000	0.000			
T4	20 - 0		Leg	Max Tension	7	22067.113	0.050	-0.068
		Max. Compression		2	-23581.261	0.000	0.000	
		Max. Mx		36	12021.610	-0.221	-0.093	
		Max. My		32	12620.689	0.033	0.240	
		Max. Vy		36	-1571.335	0.000	0.000	
		Max. Vx		32	1707.283	0.000	0.000	
		Diagonal	Max Tension	5	1332.747	0.000	0.000	
			Max. Compression	24	-1337.978	0.000	0.000	
			Max. Mx	28	700.064	0.004	0.000	
			Max. My	37	-55.041	0.000	-0.000	
			Max. Vy	28	-5.383	0.000	0.000	
			Max. Vx	37	0.011	0.000	0.000	
		Horizontal	Max Tension	24	122.164	0.000	0.000	
			Max. Compression	28	-156.895	0.000	0.000	
			Max. Mx	26	-65.068	0.002	0.000	
			Max. Vy	26	-4.559	0.000	0.000	
			Max. Vx	36	0.000	0.000	0.000	
			Top Girt	Max Tension	24	300.957	0.000	0.000
		Max. Compression		12	-302.643	0.000	0.000	
		Max. Mx		26	3.256	0.002	0.000	

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Bottom Girt	Max. Vy	26	-4.559	0.000	0.000
			Max. Vx	36	0.000	0.000	0.000
			Max Tension	35	938.531	0.000	0.000
			Max. Compression	7	-181.932	0.000	0.000
			Max. Mx	26	810.602	0.002	0.000
			Max. Vy	26	-4.559	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	23562.345	347.971	-482.969
	Max. H _x	18	23562.345	347.971	-482.969
	Max. H _z	28	-12648.781	-1376.704	1065.978
	Min. Vert	7	-22065.214	-370.674	492.669
	Min. H _x	29	-14897.655	-1389.030	998.027
Leg B	Min. H _z	16	20518.173	337.191	-572.431
	Max. Vert	10	23562.344	-549.156	-74.326
	Max. H _x	36	-12648.790	1587.527	667.730
	Max. H _z	27	-6504.468	1136.434	742.392
	Min. Vert	23	-22065.217	568.500	90.439
Leg A	Min. H _x	8	20518.174	-627.263	-18.493
	Min. H _z	14	12201.040	-12.267	-124.489
	Max. Vert	2	23581.633	227.253	527.790
	Max. H _x	22	12220.519	342.572	475.175
	Max. H _z	24	20537.464	327.134	578.226
	Min. Vert	15	-22050.761	-223.631	-552.432
	Min. H _x	10	-10502.078	-354.979	-485.343
	Min. H _z	32	-12615.470	-234.818	-1725.201

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	2115.884	0.000	0.000	-0.018	0.000	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	2539.061	0.000	-1188.695	-39.379	-0.000	0.000
0.9 Dead+1.6 Wind 0 deg - No Ice	1904.296	0.000	-1188.695	-39.326	-0.000	0.000
1.2 Dead+1.6 Wind 30 deg - No Ice	2539.061	594.347	-1029.440	-34.106	-19.678	-0.035
0.9 Dead+1.6 Wind 30 deg - No Ice	1904.296	594.347	-1029.440	-34.059	-19.655	-0.035
1.2 Dead+1.6 Wind 60 deg - No Ice	2539.061	1029.440	-594.347	-19.700	-34.084	-0.060
0.9 Dead+1.6 Wind 60 deg - No Ice	1904.296	1029.440	-594.347	-19.671	-34.043	-0.060
1.2 Dead+1.6 Wind 90 deg - No Ice	2539.061	1188.695	0.000	-0.022	-39.356	-0.069
0.9 Dead+1.6 Wind 90 deg - No Ice	1904.296	1188.695	0.000	-0.017	-39.309	-0.069

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Load Combination	Vertical lb	Shear ₁ lb	Shear ₂ lb	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.6 Wind 120 deg - No Ice	2539.061	1029.440	594.347	19.656	-34.084	-0.060
0.9 Dead+1.6 Wind 120 deg - No Ice	1904.296	1029.440	594.347	19.638	-34.043	-0.060
1.2 Dead+1.6 Wind 150 deg - No Ice	2539.061	594.347	1029.440	34.061	-19.678	-0.035
0.9 Dead+1.6 Wind 150 deg - No Ice	1904.296	594.347	1029.440	34.026	-19.654	-0.035
1.2 Dead+1.6 Wind 180 deg - No Ice	2539.061	-0.000	1188.695	39.334	0.000	-0.000
0.9 Dead+1.6 Wind 180 deg - No Ice	1904.296	-0.000	1188.695	39.292	0.000	-0.000
1.2 Dead+1.6 Wind 210 deg - No Ice	2539.061	-594.347	1029.440	34.061	19.678	0.035
0.9 Dead+1.6 Wind 210 deg - No Ice	1904.296	-594.347	1029.440	34.026	19.655	0.035
1.2 Dead+1.6 Wind 240 deg - No Ice	2539.061	-1029.440	594.347	19.656	34.084	0.060
0.9 Dead+1.6 Wind 240 deg - No Ice	1904.296	-1029.440	594.347	19.638	34.043	0.060
1.2 Dead+1.6 Wind 270 deg - No Ice	2539.061	-1188.695	-0.000	-0.022	39.356	0.069
0.9 Dead+1.6 Wind 270 deg - No Ice	1904.296	-1188.695	-0.000	-0.017	39.309	0.069
1.2 Dead+1.6 Wind 300 deg - No Ice	2539.061	-1029.440	-594.347	-19.701	34.084	0.060
0.9 Dead+1.6 Wind 300 deg - No Ice	1904.296	-1029.440	-594.347	-19.671	34.043	0.060
1.2 Dead+1.6 Wind 330 deg - No Ice	2539.061	-594.347	-1029.440	-34.106	19.678	0.035
0.9 Dead+1.6 Wind 330 deg - No Ice	1904.296	-594.347	-1029.440	-34.060	19.654	0.035
1.2 Dead+1.0 Ice+1.0 Temp	5698.915	0.000	0.000	-0.038	-0.000	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	5698.915	0.000	-843.918	-29.113	-0.000	0.000
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	5698.915	421.959	-730.854	-25.218	-14.537	-0.022
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	5698.915	730.854	-421.959	-14.576	-25.179	-0.038
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	5698.915	843.918	0.000	-0.038	-29.075	-0.044
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	5698.915	730.854	421.959	14.499	-25.179	-0.038
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	5698.915	421.959	730.854	25.141	-14.537	-0.022
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	5698.915	-0.000	843.918	29.036	0.000	0.000
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	5698.915	-421.959	730.854	25.141	14.537	0.022
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	5698.915	-730.854	421.959	14.499	25.179	0.038
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	5698.915	-843.918	-0.000	-0.039	29.075	0.044
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	5698.915	-730.854	-421.959	-14.576	25.179	0.038
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	5698.915	-421.959	-730.854	-25.218	14.537	0.022
Dead+Wind 0 deg - Service	2115.884	-0.000	-330.193	-10.942	-0.000	-0.000
Dead+Wind 30 deg - Service	2115.884	165.096	-285.956	-9.479	-5.462	-0.010
Dead+Wind 60 deg - Service	2115.884	285.956	-165.096	-5.480	-9.460	-0.017
Dead+Wind 90 deg - Service	2115.884	330.193	-0.000	-0.019	-10.924	-0.019

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Load Combination	Vertical lb	Shear _y lb	Shear _z lb	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 120 deg - Service	2115.884	285.956	165.096	5.443	-9.460	-0.017
Dead+Wind 150 deg - Service	2115.884	165.096	285.956	9.442	-5.462	-0.010
Dead+Wind 180 deg - Service	2115.884	0.000	330.193	10.905	0.000	-0.000
Dead+Wind 210 deg - Service	2115.884	-165.096	285.956	9.441	5.462	0.010
Dead+Wind 240 deg - Service	2115.884	-285.956	165.096	5.443	9.460	0.017
Dead+Wind 270 deg - Service	2115.884	-330.193	0.000	-0.019	10.924	0.019
Dead+Wind 300 deg - Service	2115.884	-285.956	-165.096	-5.480	9.460	0.017
Dead+Wind 330 deg - Service	2115.884	-165.096	-285.956	-9.479	5.462	0.010

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.000	-2115.884	0.000	-0.000	2115.884	-0.000	0.000%
2	0.000	-2539.061	-1188.695	-0.000	2539.061	1188.695	0.000%
3	0.000	-1904.296	-1188.695	-0.000	1904.296	1188.695	0.000%
4	594.347	-2539.061	-1029.440	-594.347	2539.061	1029.440	0.000%
5	594.347	-1904.296	-1029.440	-594.347	1904.296	1029.440	0.000%
6	1029.440	-2539.061	-594.347	-1029.440	2539.061	594.347	0.000%
7	1029.440	-1904.296	-594.347	-1029.440	1904.296	594.347	0.000%
8	1188.695	-2539.061	0.000	-1188.695	2539.061	-0.000	0.000%
9	1188.695	-1904.296	0.000	-1188.695	1904.296	-0.000	0.000%
10	1029.440	-2539.061	594.347	-1029.440	2539.061	-594.347	0.000%
11	1029.440	-1904.296	594.347	-1029.440	1904.296	-594.347	0.000%
12	594.347	-2539.061	1029.440	-594.347	2539.061	-1029.440	0.000%
13	594.347	-1904.296	1029.440	-594.347	1904.296	-1029.440	0.000%
14	0.000	-2539.061	1188.695	0.000	2539.061	-1188.695	0.000%
15	0.000	-1904.296	1188.695	0.000	1904.296	-1188.695	0.000%
16	-594.347	-2539.061	1029.440	594.347	2539.061	-1029.440	0.000%
17	-594.347	-1904.296	1029.440	594.347	1904.296	-1029.440	0.000%
18	-1029.440	-2539.061	594.347	1029.440	2539.061	-594.347	0.000%
19	-1029.440	-1904.296	594.347	1029.440	1904.296	-594.347	0.000%
20	-1188.695	-2539.061	0.000	1188.695	2539.061	0.000	0.000%
21	-1188.695	-1904.296	0.000	1188.695	1904.296	0.000	0.000%
22	-1029.440	-2539.061	-594.347	1029.440	2539.061	594.347	0.000%
23	-1029.440	-1904.296	-594.347	1029.440	1904.296	594.347	0.000%
24	-594.347	-2539.061	-1029.440	594.347	2539.061	1029.440	0.000%
25	-594.347	-1904.296	-1029.440	594.347	1904.296	1029.440	0.000%
26	0.000	-5698.915	0.000	-0.000	5698.915	0.000	0.000%
27	0.000	-5698.915	-843.918	-0.000	5698.915	843.918	0.000%
28	421.959	-5698.915	-730.854	-421.959	5698.915	730.854	0.000%
29	730.854	-5698.915	-421.959	-730.854	5698.915	421.959	0.000%
30	843.918	-5698.915	0.000	-843.918	5698.915	-0.000	0.000%
31	730.854	-5698.915	421.959	-730.854	5698.915	-421.959	0.000%
32	421.959	-5698.915	730.854	-421.959	5698.915	-730.854	0.000%
33	0.000	-5698.915	843.918	0.000	5698.915	-843.918	0.000%
34	-421.959	-5698.915	730.854	421.959	5698.915	-730.854	0.000%
35	-730.854	-5698.915	421.959	730.854	5698.915	-421.959	0.000%
36	-843.918	-5698.915	0.000	843.918	5698.915	0.000	0.000%
37	-730.854	-5698.915	-421.959	730.854	5698.915	421.959	0.000%
38	-421.959	-5698.915	-730.854	421.959	5698.915	730.854	0.000%
39	0.000	-2115.884	-330.193	0.000	2115.884	330.193	0.000%
40	165.096	-2115.884	-285.956	-165.096	2115.884	285.956	0.000%
41	285.956	-2115.884	-165.096	-285.956	2115.884	165.096	0.000%
42	330.193	-2115.884	0.000	-330.193	2115.884	0.000	0.000%
43	285.956	-2115.884	165.096	-285.956	2115.884	-165.096	0.000%
44	165.096	-2115.884	285.956	-165.096	2115.884	-285.956	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
45	0.000	-2115.884	330.193	-0.000	2115.884	-330.193	0.000%
46	-165.096	-2115.884	285.956	165.096	2115.884	-285.956	0.000%
47	-285.956	-2115.884	165.096	285.956	2115.884	-165.096	0.000%
48	-330.193	-2115.884	0.000	330.193	2115.884	-0.000	0.000%
49	-285.956	-2115.884	-165.096	285.956	2115.884	165.096	0.000%
50	-165.096	-2115.884	-285.956	165.096	2115.884	285.956	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	4	0.0000001	0.0000001
3	Yes	4	0.0000001	0.0000001
4	Yes	4	0.0000001	0.0000001
5	Yes	4	0.0000001	0.0000001
6	Yes	4	0.0000001	0.0000001
7	Yes	4	0.0000001	0.0000001
8	Yes	4	0.0000001	0.0000001
9	Yes	4	0.0000001	0.0000001
10	Yes	4	0.0000001	0.0000001
11	Yes	4	0.0000001	0.0000001
12	Yes	4	0.0000001	0.0000001
13	Yes	4	0.0000001	0.0000001
14	Yes	4	0.0000001	0.0000001
15	Yes	4	0.0000001	0.0000001
16	Yes	4	0.0000001	0.0000001
17	Yes	4	0.0000001	0.0000001
18	Yes	4	0.0000001	0.0000001
19	Yes	4	0.0000001	0.0000001
20	Yes	4	0.0000001	0.0000001
21	Yes	4	0.0000001	0.0000001
22	Yes	4	0.0000001	0.0000001
23	Yes	4	0.0000001	0.0000001
24	Yes	4	0.0000001	0.0000001
25	Yes	4	0.0000001	0.0000001
26	Yes	4	0.0000001	0.0000001
27	Yes	4	0.0000001	0.0000001
28	Yes	4	0.0000001	0.0000001
29	Yes	4	0.0000001	0.0000001
30	Yes	4	0.0000001	0.0000001
31	Yes	4	0.0000001	0.0000001
32	Yes	4	0.0000001	0.0000001
33	Yes	4	0.0000001	0.0000001
34	Yes	4	0.0000001	0.0000001
35	Yes	4	0.0000001	0.0000001
36	Yes	4	0.0000001	0.0000001
37	Yes	4	0.0000001	0.0000001
38	Yes	4	0.0000001	0.0000001
39	Yes	4	0.0000001	0.0000001
40	Yes	4	0.0000001	0.0000001
41	Yes	4	0.0000001	0.0000001
42	Yes	4	0.0000001	0.0000001
43	Yes	4	0.0000001	0.0000001
44	Yes	4	0.0000001	0.0000001
45	Yes	4	0.0000001	0.0000001

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46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	60 - 40	0.802	39	0.0959	0.0085
T2	40 - 30	0.412	39	0.0833	0.0079
T3	30 - 20	0.252	39	0.0631	0.0077
T4	20 - 0	0.128	39	0.0498	0.0073

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
62.000	RY-900A	39	0.802	0.0959	0.0085	165195
20.000	RY-900A	39	0.128	0.0498	0.0073	23948

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	60 - 40	2.887	2	0.3454	0.0240
T2	40 - 30	1.483	2	0.2997	0.0233
T3	30 - 20	0.906	2	0.2270	0.0231
T4	20 - 0	0.461	2	0.1792	0.0223

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
62.000	RY-900A	2	2.887	0.3454	0.0240	45852
20.000	RY-900A	2	0.461	0.1792	0.0223	6655

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Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria
T1	60	Leg	A325N	0.625	4	37.508	20708.699	0.002 ✓	1	Bolt Tension
T2	40	Leg	A325N	0.625	4	892.845	20708.699	0.043 ✓	1	Bolt Tension
T3	30	Leg	A325N	0.625	4	1647.830	20708.699	0.080 ✓	1	Bolt Tension
T4	20	Leg	A325N	0.625	4	2631.950	20708.699	0.127 ✓	1	Bolt Tension

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio P _u / φP _n
T1	60 - 40	1 1/4	20.000	2.191	84.1 K=1.00	1.227	-3932.150	32911.801	0.119 ¹ ✓
T2	40 - 30	1 1/4	10.000	2.430	93.3 K=1.00	1.227	-7110.680	29221.600	0.243 ¹ ✓
T3	30 - 20	2	10.000	2.430	58.3 K=1.00	3.142	-11370.700	110252.000	0.103 ¹ ✓
T4	20 - 0	2	20.000	2.191	52.6 K=1.00	3.142	-23581.301	115494.000	0.204 ¹ ✓

¹ P_u / φP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio P _u / φP _n
T1	60 - 40	5/8	2.967	2.812	151.2 K=0.70	0.307	-486.847	3032.710	0.161 ¹ ✓
T2	40 - 30	5/8	3.147	2.983	160.4 K=0.70	0.307	-640.888	2694.930	0.238 ¹ ✓
T3	30 - 20	3/4	3.147	2.885	129.2 K=0.70	0.442	-867.012	5941.580	0.146 ¹ ✓
T4	20 - 0	3/4	2.967	2.719	121.8 K=0.70	0.442	-1337.980	6552.880	0.204 ¹ ✓

¹ P_u / φP_n controls

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Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	5/8	2.000	1.896	101.9 K=0.70	0.307	-34.458	5753.070	0.006 ¹ ✓
T2	40 - 30	5/8	2.000	1.896	101.9 K=0.70	0.307	-25.165	5753.070	0.004 ¹ ✓
T3	30 - 20	5/8	2.000	1.833	98.6 K=0.70	0.307	-47.537	5960.740	0.008 ¹ ✓
T4	20 - 0	5/8	2.000	1.833	98.6 K=0.70	0.307	-156.895	5960.740	0.026 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	5/8	2.000	1.896	101.9 K=0.70	0.307	-67.171	5753.070	0.012 ¹ ✓
T2	40 - 30	5/8	2.000	1.896	101.9 K=0.70	0.307	-157.056	5753.070	0.027 ¹ ✓
T3	30 - 20	5/8	2.000	1.833	98.6 K=0.70	0.307	-138.214	5960.740	0.023 ¹ ✓
T4	20 - 0	5/8	2.000	1.833	98.6 K=0.70	0.307	-302.643	5960.740	0.051 ¹ ✓

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	5/8	2.000	1.896	101.9 K=0.70	0.307	-142.275	5753.070	0.025 ¹ ✓
T2	40 - 30	5/8	2.000	1.896	101.9 K=0.70	0.307	-113.507	5753.070	0.020 ¹ ✓
T3	30 - 20	5/8	2.000	1.833	98.6 K=0.70	0.307	-288.326	5960.740	0.048 ¹ ✓
T4	20 - 0	5/8	2.000	1.833	98.6 K=0.70	0.307	-181.932	5960.740	0.031 ¹ ✓

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¹ $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	1 1/4	20.000	2.191	84.1	1.227	3571.960	55223.301	0.065 ¹ ✓
T2	40 - 30	1 1/4	10.000	2.430	93.3	1.227	6591.910	55223.301	0.119 ¹ ✓
T3	30 - 20	2	10.000	2.430	58.3	3.142	10529.300	141372.000	0.074 ¹ ✓
T4	20 - 0	2	20.000	2.191	52.6	3.142	22067.100	141372.000	0.156 ¹ ✓

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	5/8	2.967	2.812	216.0	0.307	483.764	9940.200	0.049 ¹ ✓
T2	40 - 30	5/8	3.147	2.983	229.1	0.307	637.729	9940.200	0.064 ¹ ✓
T3	30 - 20	3/4	3.147	2.885	184.6	0.442	863.897	14313.900	0.060 ¹ ✓
T4	20 - 0	3/4	2.967	2.719	174.0	0.442	1332.750	14313.900	0.093 ¹ ✓

¹ $P_u / \phi P_n$ controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	5/8	2.000	1.896	145.6	0.307	35.679	9940.200	0.004 ¹ ✓
T2	40 - 30	5/8	2.000	1.896	145.6	0.307	23.474	9940.200	0.002 ¹ ✓
T3	30 - 20	5/8	2.000	1.833	140.8	0.307	48.730	9940.200	0.005 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	20 - 0	5/8	2.000	1.833	140.8	0.307	122.164	9940.200	0.012 ¹ ✓ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	5/8	2.000	1.896	145.6	0.307	68.596	9940.200	0.007 ¹ ✓
T2	40 - 30	5/8	2.000	1.896	145.6	0.307	155.206	9940.200	0.016 ¹ ✓
T3	30 - 20	5/8	2.000	1.833	140.8	0.307	138.314	9940.200	0.014 ¹ ✓
T4	20 - 0	5/8	2.000	1.833	140.8	0.307	300.957	9940.200	0.030 ¹ ✓ ✓

¹ P_u / φP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	60 - 40	5/8	2.000	1.896	145.6	0.307	145.548	9940.200	0.015 ¹ ✓
T2	40 - 30	5/8	2.000	1.896	145.6	0.307	115.006	9940.200	0.012 ¹ ✓
T3	30 - 20	5/8	2.000	1.833	140.8	0.307	288.966	9940.200	0.029 ¹ ✓
T4	20 - 0	5/8	2.000	1.833	140.8	0.307	938.531	9940.200	0.094 ¹ ✓ ✓

¹ P_u / φP_n controls

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Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	60 - 40	Leg	1 1/4	1	-3932.140	32911.801	11.9	Pass
		Diagonal	5/8	11	-486.847	3032.710	16.1	Pass
		Horizontal	5/8	15	-34.458	5753.070	0.6	Pass
		Top Girt	5/8	6	-67.171	5753.070	1.2	Pass
		Bottom Girt	5/8	7	-142.275	5753.070	2.5	Pass
T2	40 - 30	Leg	1 1/4	63	-7110.680	29221.600	24.3	Pass
		Diagonal	5/8	71	-640.888	2694.930	23.8	Pass
		Horizontal	5/8	73	-25.165	5753.070	0.4	Pass
		Top Girt	5/8	64	-157.056	5753.070	2.7	Pass
		Bottom Girt	5/8	67	-113.507	5753.070	2.0	Pass
T3	30 - 20	Leg	2	91	-11370.600	110252.000	10.3	Pass
		Diagonal	3/4	102	-867.012	5941.580	14.6	Pass
		Horizontal	5/8	104	-47.537	5960.740	0.8	Pass
		Top Girt	5/8	94	-138.214	5960.740	2.3	Pass
		Bottom Girt	5/8	98	-288.326	5960.740	4.8	Pass
T4	20 - 0	Leg	2	123	-23581.301	115494.000	20.4	Pass
		Diagonal	3/4	131	-1337.980	6552.880	20.4	Pass
		Horizontal	5/8	135	-156.895	5960.740	2.6	Pass
		Top Girt	5/8	125	-302.643	5960.740	5.1	Pass
		Bottom Girt	5/8	129	938.531	9940.200	9.4	Pass
Summary								
Leg (T2)							24.3	Pass
Diagonal (T2)							23.8	Pass
Horizontal (T4)							2.6	Pass
Top Girt (T4)							5.1	Pass
Bottom Girt (T4)							9.4	Pass
Bolt Checks							12.7	Pass
RATING =							24.3	Pass

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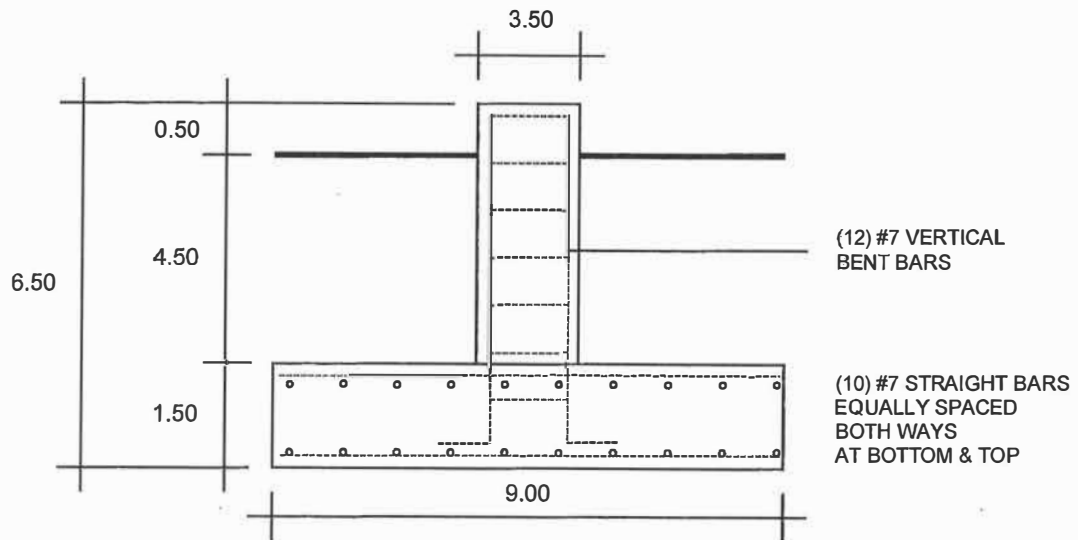
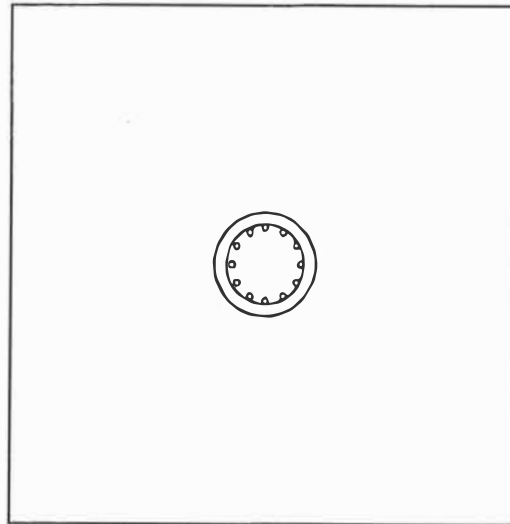
Revision:0
Site: LEWIS & CLARK SUB, SD
Engineer: EH

MAT FOUNDATION

Design Standard: ANSI/TIA-222-G
Concrete Design per: ACI 318
Concrete (F'c): 4.50 (ksi)
Cement Type: GU
Steel (Fy): 60.00 (ksi)
Rebars: American
Concrete Volume: 6.28 (yd³)
Water table: 8.00 (ft)
Frost Depth: 5.83 (ft)

Tower Reactions:

Download: 2.54 (Kips)
Moment: 39.00 (Kipsft)
Shear: 1.19 (Kips)



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Contract: 112740

Revision: 0

Project: MAT FOUNDATION

Site: LEWIS & CLARK SUB, SD

Date and Time: 9/22/2022 2:39:43 PM

Engineer: EH

MAT FOUNDATION ANALYSIS

ANALYSIS VALUES FOR CONCRETE AND STEEL:

Concrete Strength (F'c) : 4.50 (ksi)
 Steel Reinforcement Yield : 60.00 (ksi)
 Concrete Weight per Unit Volume : 140.06 (pcf)

SOIL PROPERTIES:

Layer #	Depth	Density	Submerged Density	Angle of Shearing Resistance	Allowable Net Bearing Pressure	Cohesion	Type of Soil
	(ft)	(pcf)	(pcf)		(psf)	(psf)	
1	5.00	100.00	38.00	0.0	0.00	1000.00	CLAY
2	9.50	100.00	38.00	0.0	2500.00	0.00	SAND

Depth of water below grade : 8.00 (ft)
 Footing Assumed to be Completely Un-Submerged
 Frost Depth : 5.83 (ft)
 Dead Weight Factor for Soil & Concrete : 0.90
 Extension of Pier Above Grade : 0.50 (ft)

Footing Designed According to : ANSI/TIA-222-G
 Rebars : American

LOADING FACTORED AS PER ANSI/TIA-222-G

DOWNLOAD SHEAR (Kips)	MOMENT (Kips)	MOMENT (Kipsft)	TOTAL LOADING
2.54	1.19	39.00	Load Case 1 - Maximum Moment and matching Axial and Shear
5.70	0.84	29.00	Load Case 2 - Maximum Axial and matching Moment and Shear

ALLOWABLE SOIL BEARING PRESSURE (NET) : 2500.00 (psf)
 ULTIMATE SOIL BEARING PRESSURE (SAFETY FACTOR = 2.00) : 5000.00 (psf)
 FACTORED SOIL BEARING PRESSURE : 3750.00 (psf)

SUPERSTRUCTURE : MONOPOLE

PIER SIZE: 3.50 (ft) ROUND
 MAT WIDTH: 9.00 (ft)
 MAT THICKNESS: 1.50 (ft)
 MAT DEPTH BELOW GRADE: 6.00 (ft)
 Soil resists overturning from top of non-battered pad

MAX. NET BEARING PRESSURE: 656.06 (psf) Load Case: 1
 % BEARING = 100 * 656.06 / 3750.00 = 17.49%
 OVERTURNING MOMENT: 46.73 (Kipsft) Load Case: 1
 RESISTING MOMENT: 234.85 (Kipsft) Load Case: 1
 % OVERTURNING = 100 * 46.73 / 234.85 = 19.90%

PAD CAPACITY (ONE-WAY SHEAR): Vc = 153.45 (Kips) Vf = 6.08 (Kips) Load Case: 1
 % ONE-WAY SHEAR = 3.96
 PAD CAPACITY (TWO-WAY SHEAR): Vc = 501.05 (Kips) Vf = 16.21 (Kips) Load Case: 2
 % TWO-WAY SHEAR = 3.24

COLUMN CAPACITY

COLUMN REINFORCEMENT: 12-#7 PERCENTAGE: 0.52 %
 MINIMUM REINFORCEMENT IN COMPRESSION REQUIRED BY CODE: 0.50 %
 MAXIMUM DOWNLOAD: 34.28 (Kips) MAXIMUM MOMENT: 607.41 (Kipsft)
 APPLIED MOMENT AT TOP OF PAD = Mt + Shear * H = 39.00 + 1.19 * 5.00 = 44.95 (Kipsft)
 % COLUMN REINF. = 100 * 44.95 / 607.41 = 7.40%

PAD RESISTANCE IN BENDING

BENDING MOMENT: 1.69 (Kipsft) PER 1 FOOT Load Case: 1

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 Site: LEWIS & CLARK SUB, SD
 Engineer: EH

PAD REINFORCEMENT: 10-#7 Area of Steel: 6.00 (in²)
 REQUIRED REINFORCEMENT: 0.26 (in²)
 MINIMUM REINFORCEMENT: 3.50 (in²)
 % MAT REINFORCING = 100 * 0.26 / 6.00 = 4.31%

MAXIMUM PERCENTAGE UTILIZED = 19.90%

DETAILS OF CALCULATION:

WEIGHT OF CONCRETE (Wc):	23.75 (Kips)	x 0.90	= 21.38 (Kips)
WEIGHT OF SOIL ON PAD (Ws):	32.12 (Kips)	x 0.90	= 28.91 (Kips)
WEIGHT OF WEDGE OF SOIL (Ws1):	0.00 (Kips)	x 0.75	= 0.00 (Kips)
WEIGHT OF 2 CORNER CONES OF SOIL (Ws2):	0.00 (Kips)	x 0.75	= 0.00 (Kips)
WEIGHT OF 2 SIDE WEDGES OF SOIL (Ws3):	0.00 (Kips)	x 0.75	= 0.00 (Kips)
DOWNLOAD FROM STRUCTURE			= 2.54 (Kips)

Note: For calculation of Overturning Moment the Download was divided by applied dead weight factor and then multiplied by factor of: 0.90

TOTAL VERTICAL FORCE (Pv): = 52.82 (Kips)

OVERTURNING MOMENT (Mov)

Mov = Moment from Tower + Shear x Height
 Mov = 39.00 + 7.73 = 46.73 (Kipsft)

RESISTING MOMENT (Mres)

Mres = (Wc + Ws) x PadWidth / 2 + Ws1 x D1 + Ws2 x D2 + Ws3 x D3 + Download x (0.5 x PadWidth - Offset)
 Distance from edge of pad to centre of gravity of wedge, D1 = 0.00 (ft)
 Distance from edge of pad to centre of gravity of corner cones, D2 = 0.00 (ft)
 Distance from edge of pad to centre of gravity of side wedges, D3 = 0.00 (ft)
 Mres = (21.38 + 28.91) x 4.50 + 0.00 x 0.00 + 0.00 x 0.00 + 0.00 x 0.00 + 1.73 x (4.50 - 0.00)
 Mres = 234.05 (Kipsft)

COUNTERACTING MOMENT (Ms)

Ms = Ws1 x L1 + Ws2 x L2 + Ws3 x L3
 Distance from centre of pad to centre of gravity of wedge, L1 = 0.00 (ft)
 Distance from centre of pad to centre of gravity of corner cones, L2 = 0.00 (ft)
 Distance from centre of pad to centre of gravity of side wedges, L3 = 0.00 (ft)
 Ms = 0.00 x 0.00 + 0.00 x 0.00 + 0.00 x 0.00 = 0.00 (Kipsft)

Total Moment (Mt) = Moment from Tower + Shear x Height + Download x Offset - Ms
 Total Moment (Mt) = 39.00 + 7.73 + 0.00 - 0.00 = 46.73 (Kipsft)

Eccentricity E = Mt / Pv = 46.73 / 52.82 = 0.885 (ft)

Maximum pressure along diagonal axis

Ecc <= PadWidth / (6 * SQRT(2))
 Maximum Pressure = Pv / PadWidth² + (1 + SQRT(2) x 6 x Ecc / PadWidth)
 Maximum Pressure = 52.82 / 9.00² + (1 + SQRT(2) x 6 x 0.885 / 9.00)
 Maximum Gross Pressure = 1196.04 (psf)
 Overburden Pressure = 539.98 (psf)
 Maximum Net Pressure = 656.06 (psf)

Maximum pressure along parallel axis

Ecc <= PadWidth / 6
 Maximum Pressure = (Pv / PadWidth²) x (1 + 6 x Ecc / PadWidth)
 Maximum Pressure = (52.82 / 81.00) x (1 + 6 x 0.885 / 9.00)
 Maximum Gross Pressure = 1036.81 (psf)
 Overburden Pressure = 539.98 (psf)
 Maximum Net Pressure = 496.82 (psf)

ONE-WAY SHEAR

d1 = Depth of Pad - Clear Cover - Bar Size
 d1 = 18.000 - 3.000 - 0.874 = 14.126 (in)

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$V_c = 2 \times \Phi \times \text{SQRT}(F'c) \times \text{PadWidth} \times d_l$
 $V_c = 2 \times 0.75 \times \text{SQRT}(4500.01) \times 108.00 \times 14.126 / 1000 = 153.45 \text{ (Kips)}$
 $V_f = (0.5 \times P_1 + P_2 - P_3) \times \text{Pad Width} \times B_w$
 $B_w = \text{Distance from edge of pad to face of column} - d_l$
 $B_w = 4.500 - 1.750 - 1.177 = 1.573 \text{ (ft)}$
 $P_1 = \text{Triangular pressure at length of } B_w = 902.38 \text{ (psf)}$
 $P_2 = \text{Rectangular pressure at length of } B_w = 134.43 \text{ (psf)}$
 $P_3 = \text{Overburden pressure at length of } B_w = 134.43 \text{ (psf)}$
 $P_1 + P_2 = \text{Maximum Gross Pressure}$
 $V_f = (451.19 + 134.43 - 539.98) \times 9.00 \times 1.57 / 1000 = 0.65 \text{ (Kips)}$

TWO-WAY SHEAR

Vc shall be lesser of:

a) $V_c = (2 + 4 / \beta) \times \Phi \times \text{SQRT}(F'c) \times B_o \times d_l$
 b) $V_c = (2 + 40 \times d_l / B_o) \times \Phi \times \text{SQRT}(F'c) \times B_o \times d_l$
 c) $V_c = 4 \times \Phi \times \text{SQRT}(F'c) \times B_o \times d_l$
 $B_o = \text{PI} \times (\text{PierSize} + d_l) = 176.33 \text{ (in)}$
 a) $V_c = (2 + 4 / 1.0) \times 0.75 \times \text{SQRT}(4500.01) \times 176.33 \times 14.13 / 1000 = 751.57 \text{ (Kips)}$
 b) $V_c = (2 + 40 \times 14.1 / 176.33) \times 0.75 \times \text{SQRT}(4500.01) \times 176.33 \times 14.13 / 1000$
 c) $V_c = 4.0 \times 0.75 \times \text{SQRT}(4500.01) \times 176.33 \times 14.13 / 1000 = 501.05 \text{ (Kips)}$

Note: Instead of calculating Vf as the pressure from Pad acting on area of pad minus area below pier we will use maximum vertical force plus the pier weight (from top of pier to the bottom of the pad) in dry condition with corresponding load factor.

$V_f = 2.54 + 1.20 \times 8.76 = 16.21 \text{ (Kips)}$

REINFORCEMENT OF PAD

Bending Moment $M_{pad} = (L_{bend} - C_3 / 3) \times C_3 \times (Q_{max} / 2)$
 $L_{bend} = (\text{PadWidth} - \text{PierSize}) / 2 = (9.00 - 3.50) / 2 = 2.75 \text{ (ft)}$
 $Q_{max} = \text{LoadFactor} \times \text{Gross Pressure} - \text{Pressure of Soil on Pad} =$
 $= 1.00 \times 1036.81 - 0.90 \times 599.98 = 496.82 \text{ (psf)}$
 $Q_{min} = \text{LoadFactor} \times \text{Minimum Pressure} - \text{Pressure of Soil on Pad} =$
 $= 1.00 \times 267.56 - 0.90 \times 599.98 = 0.00 \text{ (psf)}$
 Rectangular Pressure, $Q_{med} = Q_{max} - (Q_{max} - Q_{min}) \times L_{bend} / L_1$
 $L_1 = \text{Length of positive pressure} = 9.00 \text{ (ft)}$
 $Q_{med} = 496.82 - (496.82 - 0.00) \times 2.75 / 9.00 = 345.02 \text{ (psf)}$
 Triangular Pressure, $Q_{max} - Q_{med} = 496.82 - 345.02 = 151.81 \text{ (psf)}$
 $M_{pad} = (2.75 - 0.00) \times 0.00 \times (496.82 / 2) = 0.00 \text{ (Kipsft) PER 1 FOOT}$
 Formula for Rho (square equation), where $K_u = M_{pad} / (d^2) :$
 $F_y \times \text{Rho} - K_u / \text{Phi} - \text{Phi} \times F_y^2 \times \text{Rho}^2 / (1.7 \times \text{Phi} \times F'c) = 0$
 Solving the equation using Newton-Ralphson Method, $\text{Rho} = 0.00003$
 Required area of steel: $\text{Rho} \times d_l \times \text{PadWidth} = 0.00003 \times 14.13 \times 108.00 = 0.04 \text{ (in}^2\text{)}$
 Minimum Area of Steel: $0.0018 \times 108.00 \times 18.00 = 3.50 \text{ (in}^2\text{)}$
 Area of Steel in pad 10-#7 10 x 4165.67 = 6.00 (in^2)

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File: C:\Users\Trump\Documents\TSFoundation Jobs\112740-LEWIS & CLARK SUB, SD - PIER.out
Contract: 112740
Project: PIER FOUNDATION
Date and Time: 9/22/2022 11:56:16 AM

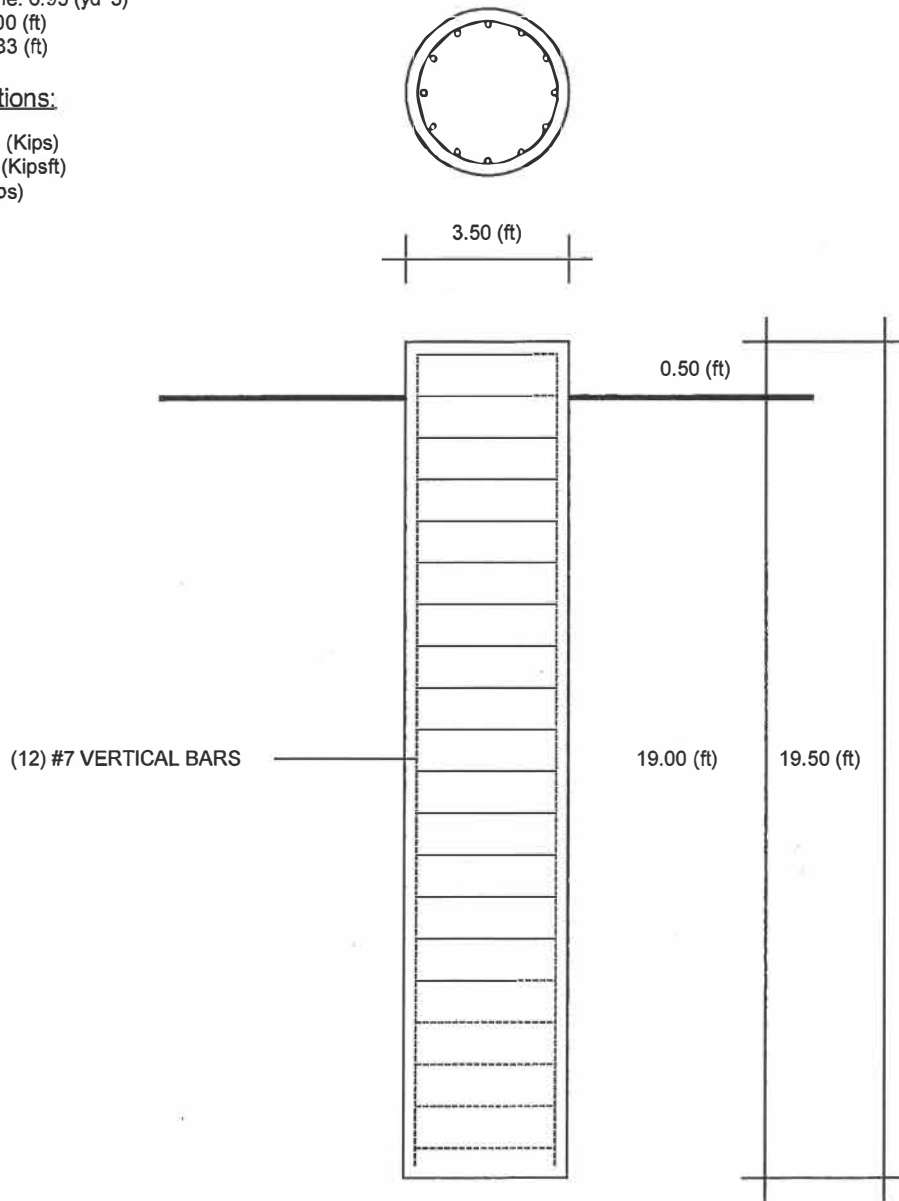
Revision: 0
Site: LEWIS & CLARK SUB, SD
Engineer: EH

CAISSON FOUNDATION

Design Standard: ANSI/TIA-222-G
Concrete Design per: ACI 318
Concrete (F_c): 4.50 (ksi)
Cement Type: GU
Steel (F_y): 60.00 (ksi)
Rebars: American
Concrete Volume: 6.95 (yd³)
Water table: 8.00 (ft)
Frost Depth: 5.83 (ft)

Tower Reactions:

Download: 2.54 (Kips)
Moment: 39.00 (Kipsft)
Shear: 1.19 (Kips)



TS Foundation - v 2.0.1.5 Foundation Analysis Program

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4400 W 31st St, Yankton, SD 57078

File: C:\Users\Trump\Documents\TSFoundation Jobs\112740-LEWIS & CLARK SUB, SD - PIER.out

Contract: 112740

Revision: 0

Project: PIER FOUNDATION

Site: LEWIS & CLARK SUB, SD

Date and Time: 9/22/2022 11:55:05 AM

Engineer: EH

CAISSON FOUNDATION ANALYSIS

DESIGN VALUES FOR CONCRETE, STEEL AND SOIL PROPERTIES:

Concrete Strength (F'c) : 4.50 (ksi)
 Steel Reinforcement Yield : 60.00 (ksi)
 Concrete Weight per Unit Volume : 140.06 (pcf)

Soil Properties

Layer #	Depth (ft)	Density (pcf)	Submerged Density (pcf)	Rankine Passive Pressure	Allowable Net Bearing Pressure (psf)	Cohesion of Soil (psf)	Skin Friction Download (psf)	Skin Friction Uplift (psf)	Uplift Bearing Pressure (psf)	Type of Soil
1	5.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	SAND
2	4.50	115.00	53.00	2.882	0.00	0.00	500.00	500.00	0.00	SAND
3	5.00	115.00	53.00	2.882	2400.00	0.00	460.00	460.00	0.00	SAND
4	16.50	115.00	53.00	3.254	2400.00	0.00	960.00	960.00	0.00	SAND

Depth of water below grade : 8.00 (ft)
 Frost Depth : 5.83 (ft)
 Depth of top soil ignored for cohesion : 0.98 (ft)
 Extension of Caisson Above Grade : 0.50 (ft)

Foundation Designed According to : ANSI/TIA-222-G
 Rebars : American

LOADING FACTORED AS PER ANSI/TIA-222-G

DOWNLOAD SHEAR (Kips)	SHEAR MOMENT (Kipsft)	TOTAL LOADING
2.54	1.19	39.00

Load Case 1 - Maximum Moment and matching Axial and Shear

ALLOWABLE SOIL BEARING PRESSURE (NET) : 2400.00 (psf)
 ULTIMATE SOIL BEARING PRESSURE (SAFETY FACTOR = 3.00) : 7200.00 (psf)
 FACTORED SOIL BEARING PRESSURE : 5400.00 (psf)

SUPERSTRUCTURE : MONOPOLE

CAISSON DEPTH (ft)	DIAMETER (ft)	BELL DIAMETER (ft)	BELL HEIGHT (ft)	BELL SLOPED HEIGHT (ft)	ANGLE	VOLUME (yd^3)
19.00	3.50	N/A	N/A	N/A	0.00	6.95

Min. Depth required for lateral pressure : 9.51 (ft)
 % LATERAL PRESSURE = 50.08%
 Download Capacity : 125.09 (Kips)
 % DOWNLOAD = 2.03%
 Center of Rotation (COR) below grade : 6.97 (ft)
 Maximum bending moment : 45.60 (Kipsft)
 Depth below grade to maximum moment : 5.21 (ft)

SHEAR FORCES AND MOMENTS ALONG CAISSON

Depth below Grade (ft)	Shear Force (Kips)	Moment (Kipsft)
0.00	3.17	39.64
1.27	3.17	40.81
2.26	3.17	41.98
3.24	3.17	43.15
4.22	3.17	44.32
5.21	0.99	45.60
5.54	-3.57	45.60
6.52	-18.95	24.96
7.50	-18.32	38.90
8.49	-5.11	4.19

File: C:\Users\Trump\Documents\TSFoundation Jobs\112740-LEWIS & CLARK SUB, SD - PIER.out

Contract: 112740

Revision: 0

Project: PIER FOUNDATION

Site: LEWIS & CLARK SUB, SD

Date and Time: 9/22/2022 11:55:05 AM

Engineer: EH

9.51 0.00 0.00

COLUMN CAPACITY

CAISSON REINFORCEMENT: 12-#7 PERCENTAGE: 0.52 %
 MINIMUM REINFORCEMENT IN COMPRESSION REQUIRED BY CODE: 0.50 %
 MAXIMUM DOWNLOAD: 84.37 (Kips) MAXIMUM MOMENT: 669.26 (Kipsft)
 APPLIED MOMENT = 45.60 (Kipsft)
 % COLUMN REINF. = 100 * 45.60 / 669.26 = 6.81%

MAXIMUM PERCENTAGE UTILIZED = 50.08%

DETAILS OF CALCULATION:

CALCULATION OF DOWNLOAD CAPACITY

Soil Bearing Capacity = $\Phi \times \text{BottomArea} \times \text{SafetyFactor} \times \text{AllowableBearingCapacity}$
 Soil Bearing Capacity = $0.75 \times 9.621 \times 3.00 \times 2400.00 = 51.95$ (Kips)
 Download resistance due to Skin Friction/Adhesion, Drf
 Layer # 2 $\text{PI} \times 4.50 \times 3.50 \times 500.00 = 24.74$ (Kips)
 Layer # 3 $\text{PI} \times 5.00 \times 3.50 \times 460.00 = 25.29$ (Kips)
 Layer # 4 $\text{PI} \times 4.50 \times 3.50 \times 960.00 = 47.50$ (Kips)
 Sum of Skin Friction/Adhesion for entire shaft = 97.52 (Kips)
 Drf = $\Phi \times \text{SkinResistance} = 0.75 \times 97.52 = 73.14$ (Kips)
 Total Download Capacity = 125.09 (Kips)

AFFIDAVIT OF MAILING

I, Jerac Wire, hereby certify that on the 24th day of March, 20 23, I mailed by first class mail, postage prepaid, a true and correct copy of the Notice of Public Hearing to all owners of real property lying within a 1,320 feet radius of the proposed project to the most recent address of the recipient known to your Affiant.

A true and correct copy of the Notice of Public Hearing notification letters are attached as Exhibit #1 or #2.

A true and correct copy of the mailing list for owners of real property is attached as Exhibit #1A or #2A.

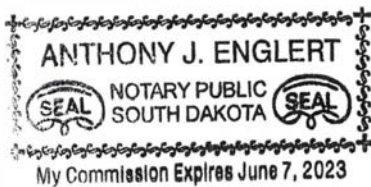
Dated the 24th day of March, 20 23.

Jerac Wire
(Name)
Affiant

Subscribed and sworn to before me this 24 day of MARCH, 20 23.

A. J. Englert
Notary Public - South Dakota
My commission expires: June 7, 2023

(SEAL)



NOTIFICATION

March 20, 2023

East River Electric
211 S. Harth Ave.,
Madison, SD 57042

Dear Yankton County Property Owner:

The Yankton County Zoning Ordinance requires written notification describing a specific action be sent to the owners of real property lying within 1,320 feet of the property on which the below described action is proposed. The notice shall be given to each owner of record by depositing such notice in the United States Post Office not less than 10 days prior to the hearing date. Therefore, you are hereby notified. Please take a moment to review the notice of public hearing described below.

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held before the Yankton County Board of Adjustment, Yankton County, South Dakota, at 6:30 P.M. on the 4th day of April, 2023 at the Yankton County Government Center, Commissioners Chambers, 321 West Third St., Yankton, South Dakota.

Said hearing is to consider the following:

Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substation per Article 25 Section 2503. Said property is legally described as Lot 1 of Lewis and Clark Substation addition in the Southwest Quarter of the Southwest Quarter of Section 15, Township 93 North, Range 56 West of the 5th Principal Meridian, Yankton County, South Dakota. E911 address is 206 S. Deer Boulevard, Yankton, South Dakota

The application may be reviewed at the Zoning Administrators office, Yankton County Government Center, 321 West Third St., Yankton, S.D. or online at the Yankton County Website.

Sincerely,
Jerae Wire
East River Electric

Petitioner

ADAM, ROGER P (D)
109 VIOLET DR
YANKTON SD 57078

ADAM, ROLAND A (D)
317 S DEER BLVD
YANKTON SD 57078

BAKLEY, DEVIN W (D)
3710 STACI LN
YANKTON SD 57078

BGB LLC (D)
309 WEST SUMMIT ST
PAGE NE 68766

BGB LLC (D)
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PAGE NE 68766

BRIGHTWAY ELECTRIC LLC (D)
PO BOX 216
YANKTON SD 57078

BRYAN, ANDREW D (D)
3711 KRISTI LN
YANKTON SD 57078

CORBIT, LANCE W (D)
3704 STACI LN
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500 LARCH LN
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YANKTON SD 57078

DOLEJSI, WANDA L (D)
1109 CEDAR ST
YANKTON SD 57078

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101 VIOLET DR
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GUTHMILLER, KEVIN D (D)
105 VIOLET DR
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HAAS, TIMOTHY A (D)
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YANKTON SD 57078

HEILMAN, THOMAS L (D)
3708 STACI LN
YANKTON SD 57078

HEINE FARMS (D)
PO BOX 477
YANKTON SD 57078

HEIRIGS, JOHN F (D)
760 LA VIESTA DR
DAVENPORT FL 33837

HENDERSON, GREGORY W (D)
3708 KRISTI LN
YANKTON SD 57078

HENDRIX, BRADIE A TRUST (D)
3702 STACI LN
YANKTON SD 57078

HINKER, DUSTIN ROBERT (D)
110 VIOLET DR
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K CONSTRUCTION LLC (D)
1603 LOCUST ST
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200 FORESTVIEW DR
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% RANDY SKILLIN
639 E MCKINLEY
FRESNO CA 93728

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3702 KRISTI LN
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3707 STACI LN
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PEPPER, SARA L (D)
107 VIOLET DR
YANKTON SD 57078

PETERSEN, AARON (D)
313 DEER BLVD
YANKTON SD 57078

PETERSEN, AARON (D)
PO BOX 1097
YANKTON SD 57078

RYKENS RV PARK INC (D)
31120 435 AVE
YANKTON SD 57078

SCHULTE, LEON K (D)
3711 STACI LN
YANKTON SD 57078

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11707 ASTER WAY
WOODBURY MN 55125

SOMER, HAL L (D)
3709 STACI LN
YANKTON SD 57078

SOPHECK, SENG (D)
2405 WEST CITY LIMITS RD #314
YANKTON SD 57078

WALTERS, NICK (D)
612 KENNEDY ST
VERMILLION SD 57069

~~WEBER, MICHAEL (D)
500 KIRBY ST
YANKTON SD 57078~~

WECHSLER, TIMOTHY J (D)
3703 KRISTI LN
YANKTON SD 57078

WENTZ, CHELSEA J (D)
3704 KRISTI LN
YANKTON SD 57078

WEST YANKTON INC (D)
PO BOX 477
YANKTON SD 57078

WEYDERT, NICHOLAS J (D)
3707 KRISTI LN
YANKTON SD 57078

WHITE CRANE ESTATES LLC (D)
PO BOX 805
LAUREL NE 68745

WISE, LAURIE A (D)
106 VIOLET DR
YANKTON SD 57078

~~ZIEGLER, MARY L (D)
5821 HALFMOON WAY
LAS VEGAS NV 89108~~

~~ZIEGLER, WM (D)
201 EAST 23 ST
YANKTON SD 57078~~

AFFIDAVIT OF MAILING

I, Jesse Wire, hereby certify that on the 1st day of March, 2023, I mailed by first class mail, postage prepaid, a true and correct copy of the Notice of Public Hearing to all owners of real property lying within a 1,320 feet radius of the proposed project to the most recent address of the recipient known to your Affiant.

A true and correct copy of the Notice of Public Hearing notification letters are attached as Exhibit #1 or #2.

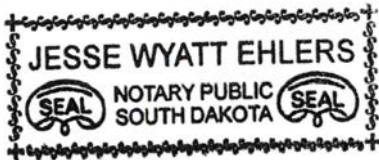
A true and correct copy of the mailing list for owners of real property is attached as Exhibit #1A or #2A.

Dated the 1st day of March, 2023.

Jesse Wire

(Name)
Affiant

Subscribed and sworn to before me this 1st day of March, 2023.



(SEAL)

Jesse Wyatt Ehlers

Notary Public - South Dakota
My commission expires: October, 21, 2028

NOTIFICATION

February 27, 2023

East River Electric
211 S. Harth Ave.,
Madison, SD 57042

Dear Yankton County Property Owner:

The Yankton County Zoning Ordinance requires written notification describing a specific action be sent to the owners of real property lying within 1,320 feet of the property on which the below described action is proposed. The notice shall be given to each owner of record by depositing such notice in the United States Post Office not less than 10 days prior to the hearing date. Therefore, you are hereby notified. Please take a moment to review the notice of public hearing described below.

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held before the Yankton County Planning Commission, Yankton County, South Dakota, at 7:05 P.M. on the 14th day of March, 2023 at the Yankton County Government Center, Commissioners Chambers, 321 West Third St., Yankton, South Dakota.

Said hearing is to consider the following:

Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substation per Article 25 Section 2503. Said property is legally described as Lot 1 of Lewis and Clark Substation addition in the Southwest Quarter of the Southwest Quarter of Section 15, Township 93 North, Range 56 West of the 5th Principal Meridian, Yankton County, South Dakota. E911 address is 206 S. Deer Boulevard, Yankton, South Dakota

The application may be reviewed at the Zoning Administrators office, Yankton County Government Center, 321 West Third St., Yankton, S.D. or online at the Yankton County Website.

Sincerely,
Jerae Wire
East River Electric

Petitioner

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YANKTON SD 57078

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5821 HALFMOON WAY
LAS VEGAS NV 89108~~

~~ZIEGLER, WM (D)
201 EAST 23 ST
YANKTON SD 57078~~

Yankton County, South Dakota

Receipt

Paid by
Jerae Wire
jwire@eastriver.coop

Payment number
Date paid
Payment method

213758068
February 1, 2023 10:39 AM
Online

\$300.00 paid on February 1, 2023

Variance, Conditional Use and Rezoning Application

Application ID: 90593

Description	Amount
Fee	\$300.00

PROVAL OF APPLICATION 01-2017-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineers recommendation with qualifications, the application, and staff report are available at https://danr.sd.gov/public or contact Ron Duval for this information, or other information at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to approve the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at https://danr.sd.gov/public or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by March 13, 2023.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at https://danr.sd.gov/public or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by March 13, 2023.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled, and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition. Published once at the total approximate cost of \$42.24 and can be viewed free of charge at www.sd-publicnotices.com.

Published March 3, 2023.

NOTICE OF HEARING OF THE YANKTON COUNTY PLANNING COMMISSION RECOMMENDATION OF PROPOSED AMENDMENTS OF ARTICLE 4 AND RE-ADOPTION OF AMENDED ZONING MAP TO BE SUPERSEDED AND REPLACED FOR YANKTON COUNTY ORDINANCE 2020

A public hearing will be held before the Yankton County Planning Commission on the 14th day of March 2023 beginning at 7:15 p.m. in the Commission Chambers, Yankton County, South Dakota, to consider recommendation to amend Article 4 and Re-Adopt Amended Zoning Map for Yankton County Ordinance 2020 to be superseded and replaced.

The complete text and map of this proposed amendment referred to above is on file with the Yankton County Auditor Office and Yankton County Planning Office. The document may be inspected, reviewed, or examined by any interested party by contacting (605) 260-4447.

BEVERAGES

NOTICE IS HEREBY GIVEN that an application has been received by the Board of City Commissioners of the City of Yankton, South Dakota, for a Special Events RETAIL (on-sale) Liquor License for 3 days, April 14-16, 2023 from SDJCI Seate, (Cindy Crooks, President) dba SDJCI Senate, NFAA, 800 Archery Lane, Yankton, South Dakota.

NOTICE IS FURTHER GIVEN that a Public Hearing upon the application will be held on Monday, March 13th, 2023 at 7:00 p.m. in the City of Yankton Community Meeting Room at the Technical Education Center, 1200 West 21st Street, Yankton, South Dakota, where any person or persons interested in the approval or rejection of the above application may appear and be heard.

Dated at Yankton, South Dakota this 27th day of February, 2023.

AI Vireack Financial OFFICER

Published once at the total approximate cost of \$15.04 and can be viewed free of charge at www.sd-publicnotices.com.

Published March 3, 2023.

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held before the Yankton County Planning Commission, Yankton County, South Dakota, at 7:05 P.M. on the 14th day of March 2023 at the Yankton County Government Center, Commissioners Chambers, 321 West Third St., Yankton, South Dakota. Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substitution per Article 25 Section 202. Said property is legally described as Lot 1 of Lewis and Clark Substation addition in the Southwest Quarter of the Southwest Quarter of Section 15, Township 93 North, Range 56 West of the 5th Principal Meridian, Yankton County, South Dakota. E911 address is 206 S, Deer Boulevard, Yankton, South Dakota

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held before the Yankton County Planning Commission, Yankton County, South Dakota, at 7:10 P.M. on the 14th day of March 2023 at the Yankton County Government Center, Commissioners Chambers, 321 West Third St., Yankton, South Dakota. Applicant is requesting a variance to minimum lot size in an Agriculture District. Applicant wishes to replant one planted non-conforming lot into two lots each smaller than 20 acres per Article 18 Section 1807. Said property is legally described as Plat of Lots 1 and 2 of 8 & P Field Addition, in the SW1/4 of the SE1/4 of Section 8, and in the NW1/4 of the NE1/4 of Section 17, T94N, R55W of the 5th P.M., Yankton County, South Dakota. E911 address is 30499 SW Jim River Rd, Yankton, South Dakota. This plat vacates previously platted Lot A of Lot 4 of Schlaeflis 3rd. Addition in the W1/2 of the SE1/4 of Section 8, T94N, R55W of the 5th P.M., Yankton County, SD. Recorded on May 23, 2000, and Recorded in Book S18, Page 183

Published twice at the total approximate cost of \$38.60 and can be viewed free of charge at www.sd-publicnotices.com.

Published March 3 & 10, 2023.

STATE OF SOUTH DAKOTA COUNTY OF YANKTON IN CIRCUIT COURT

IST JUDICIAL CIRCUIT

IN THE MATTER OF THE PETITION OF: Patrick Allan Ernster

FOR A CHANGE OF NAME TO: Pat Allen Ernster

FILE NO: 66CIV23-18

NOTICE OF HEARING FOR ADULT NAME CHANGE

NOTICE IS HEREBY GIVEN a Verified Petition for Adult Name Change has been filed by Patrick Allan Ernster the object and prayer of which is to change Petitioner's name

publicnotices.com

Published February 10, 17, 24 & March 3, 2023.

BASKETBALL

SUMMIT LEAGUE MEN'S TOURNAMENT... SOUTHWESTERN MEN'S TOURNAMENT... NEB. STATE GIRLS TOURNAMENT...

NEB. STATE GIRLS TOURNAMENT

March 4 at Lincoln... NEB. STATE GIRLS TOURNAMENT... CLASS C2...

NEB. BOYS' DISTRICT FINALS

Monday, Feb. 27... NEB. BOYS' DISTRICT FINALS... CLASS C2...

SUMMIT LEAGUE WOMEN

March 7 at Sioux Falls... SUMMIT LEAGUE WOMEN... CLASS C2...

SPORTS DIGEST

Bucks Host Aberdeen Central In SoDak 16... Neb. Boys' Pairings Set

CALENDAR

Friday, March 3... BASKETBALL, MEN'S Summit League Tour...

CROSSWORD

By THOMAS JOSEPH... ACROSS 45 Neigh 1 Back biter 5ayer

DOWN 12 Un-escorted 1 Travel aid 13 Quick kisses 14 Summit goals 15 Young foxes 17 Revue segment 18 Chef's need 20 Long-snouted fish 22 Make fun of 23 Holiday events 26 Stylishly quaint 28 Prelude 29 Sticks 31 Owms 32 Puts away 33 Mexican coin 34 Bounders 36 Thick slice 38 Distast 40 African lilies 43 Cherry card 44 Pageant crown

MMU's Schleis, Wiebelhaus Among Leaders In Heptathlon At NIAA Meet

BROOKINGS—Mount Marty seniors Mason Schleis and Seth Wiebelhaus rank third and eighth after the opening day of heptathlon competition at the NIAA Indoor Track and Field Championships, Thursday at the Sanford-Jackrabrit Athletic Complex in Brookings. Cole Wilson of Keiser leads the event with 3,049 points, followed by Dakota State's Treshawn Roberts (2,897) and Schleis (2,733). Wiebelhaus ended the first day with 2,594 points. Schleis ranked first in the long jump (22-4 1/2), third in the 60-meter dash (7.13), sixth in the high jump (6-2) and 12th in the shot put (32-1 1/4). Wiebelhaus ranked first in the shot put (37-0 1/2), eighth in the high jump (5-11 1/2), ninth in the long jump (20-5) and 12th in the 60 (7.38). The heptathlon concludes today (Friday) with the 60-meter hurdles, pole vault and 1,000-meter run. In the men's 1600 relay prelims, Mount Marty's Devon Breckenridge, Schleis, Nathaniel Kroepenske and Nathan Simmons finished 17th out of 19, clocking a 3:20.52. The MMU women's 1600 relay team was disqualified in its prelim. MMU has several athletes competing in prelims today.

USD's Larkins Named First-Team All-Summit

SIOUX FALLS—South Dakota sophomore point guard Grace Larkins is one of six players named first-team all-Summit League as voted on by the conference's coaches, media and sports information directors. In addition, Larkins is one of five players named to the all-defensive team. They are the first honors for Larkins, who hails from Altoona, Iowa. Larkins is the first player in Summit League history to rank in the top five in points, rebounds, assists and steals. In fact, she is currently top three in all four categories. She led the Summit with 89 assists in 18 conference games while averaging 18.3 points, 8.7 rebounds and 2.1 steals. Defensively, Larkins grabbed more defensive rebounds than any player in Summit play. She also compiled the third-most steals and seventh-most blocks. Larkins is the eighth Coyote to earn first-team honors in 12 seasons inside the Summit League. South Dakota has had at least one first-team pick in 11 of 12 seasons. Larkins is the third Coyote to be named to the all-defensive team in the last two seasons. South Dakota featured the Defensive Player of the Year for five consecutive seasons from 2018-22.

be held Mar. 9-11 in Watertown. Parkston finished its season 16-1.

Published February 10, 17, 24 & March 3, 2023.

SCOREBOARD

Table with columns for various sports events, dates, and scores. Includes categories like REGION 5A, REGION 4B, REGION 4A, REGION 3B, REGION 3A, REGION 2B, REGION 2A, REGION 1B, REGION 1A, CLASS B, CLASS C, CLASS D, CLASS E, CLASS F, CLASS G, CLASS H, CLASS I, CLASS J, CLASS K, CLASS L, CLASS M, CLASS N, CLASS O, CLASS P, CLASS Q, CLASS R, CLASS S, CLASS T, CLASS U, CLASS V, CLASS W, CLASS X, CLASS Y, CLASS Z.

YESTERDAY'S ANSWER

Table with crossword puzzle answers for the previous day. Includes words like Slalom, Moolah, Choir, Past due, Clinoc cost, Wrong, Utter, Grounds, Maneuver, Michael, Monty, Pythnon, Competed, Eye stop, Important, Trouble times, Mediocre.

CRYPTOQUOTE

One letter stands for another. In this sample, A is used for the three L's, X for the two O's, etc. Single letters, apostrophes, the length and formation of the words are all hints. Each white the code letters are different. XUIJ UH SKJ IXEPJY IEY PWKUL XERJ UH SKJ KEMJG.

RULSEY KAVE

Yesterday's Cryptquote: SOMEONE ASKED ME, IF I WERE STRANDED ON A DESERT ISLAND, WHAT BOOK WOULD I BRING: "HOW TO BUILD A BOAT." — STEVEN WRIGHT

ARTICLE 4
OFFICIAL ZONING MAP AND BOUNDARY
INTERPRETATION

Section 401 General

The County is hereby divided into zones, or districts, as shown on the Official Zoning Map, which, together with all explanatory matter thereon, is hereby adopted by reference and declared to be a part of this Ordinance. The Official Zoning Map shall be identified by the signature of the Chairman of the County Commissioners, attested by the Auditor, and bearing the seal of the County, under the following words: "This is to certify that this is the Official Zoning Map referred to in Section 401 of Ordinance ~~No. 16~~ 2020 of "Yankton County, South Dakota," together with the date of the adoption of this Ordinance.

Section 403 Zoning Map Changes

If, in accordance with the provisions of this Ordinance, changes are made in the district boundaries or other matter portrayed on the Official Zoning Map, such changes shall be entered on the Official Zoning Map promptly after the amendment has been approved by the County Commissioners, with an entry on the Official Zoning Map as follows: "on [date], by official action of the Yankton County Commission, the following [change] changes were made in the Official Zoning Map: [brief description of nature of change]," which entry shall be signed by the Chairman of the Commission and attested by the Auditor. No amendment to this Ordinance which involves matters portrayed on the Official Zoning Map shall become effective until after such change and entry has been made on said map.

No changes of any nature shall be made in the Official Zoning Map or matters shown thereon except in conformity with the procedures set forth in this Ordinance.

Any unauthorized change of whatever kind by any person or persons shall be considered a violation of this Ordinance and punishable as provided under Section 2303.

Regardless of the existence of purported copies of the Official Zoning Map which may, from time to time, be made or published, the Official Zoning Map which shall be located in the office of the Zoning Administrator shall be the final authority as to the current zoning status of land and water areas, buildings, and other structures in the County.

Section 405 Zoning Map Replacement

In the event that the Official Zoning Map becomes damaged, destroyed, lost or difficult to interpret because of the nature or number of changes and additions, the Yankton County Commission may, by resolution, adopt a new Official Zoning Map,

boundaries.

YANKTON COUNTY



Official Zoning Map

Legend

- RAILROAD
- STREAM
- US & STATE HIGHWAY
- ROAD
- CITY LIMIT
- TOWNSHIP
- PARCEL
- LAKE
- ZONING CLASSIFICATIONS
 - AGRICULTURE
 - COMMERCIAL
 - ETJ
 - LAKE SIDE COMMERCIAL
 - HIGH DENSITY RESIDENTIAL
 - LOW DENSITY RESIDENTIAL
 - MODERATE DENSITY RESIDENTIAL
 - PUBLIC
 - PLANNED UNIT DEVELOPMENT
 - RURAL TRANSITIONAL

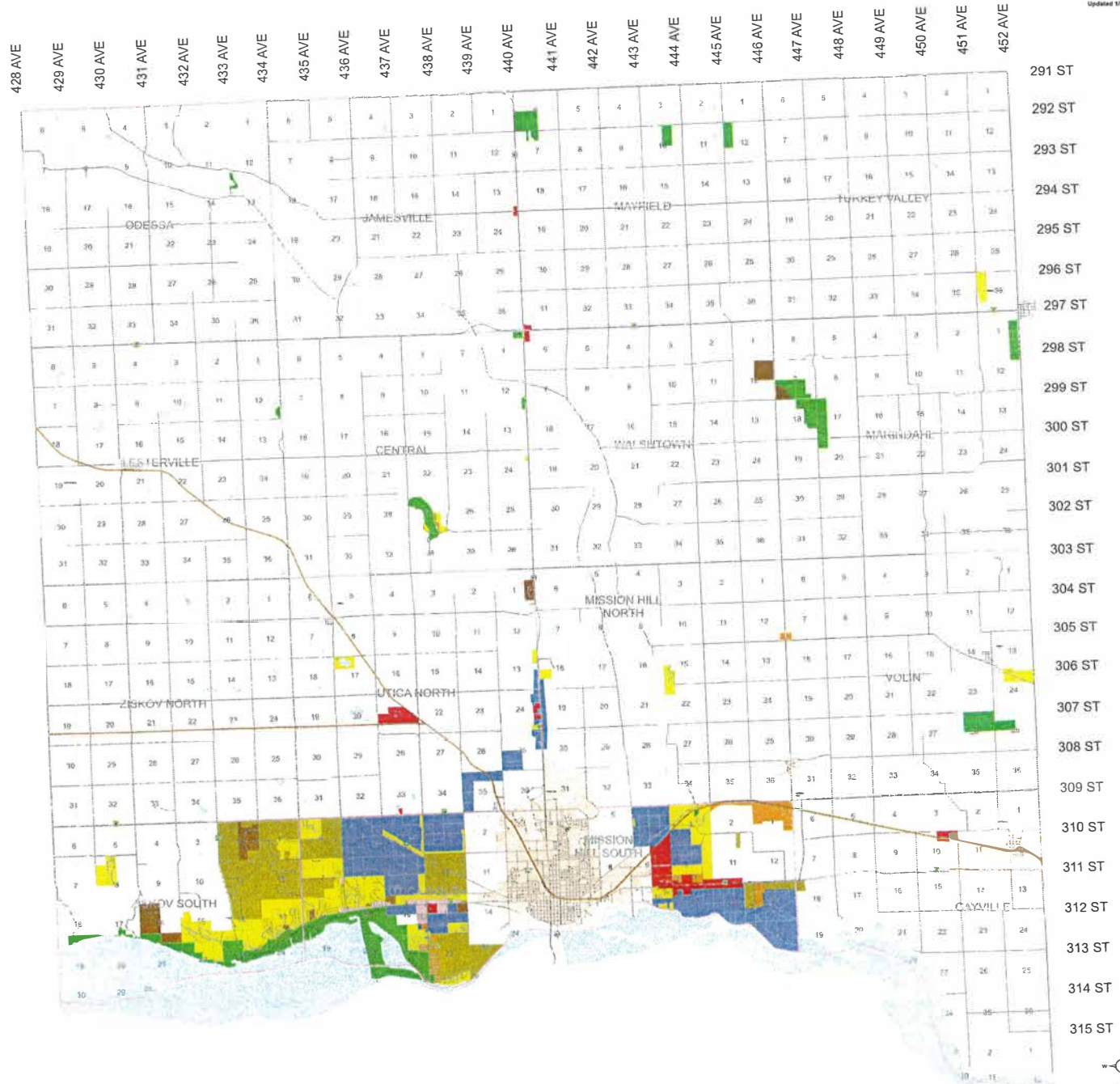
This is to certify that this Official Zoning Map 2020 referred to in Section 401, adopted 12/15/2023, supersedes and replaces the Official Zoning Map 2020 adopted February 18, 2020 as part of Ordinance 2020 of Yankton County, South Dakota.

Don Kettering
Chair

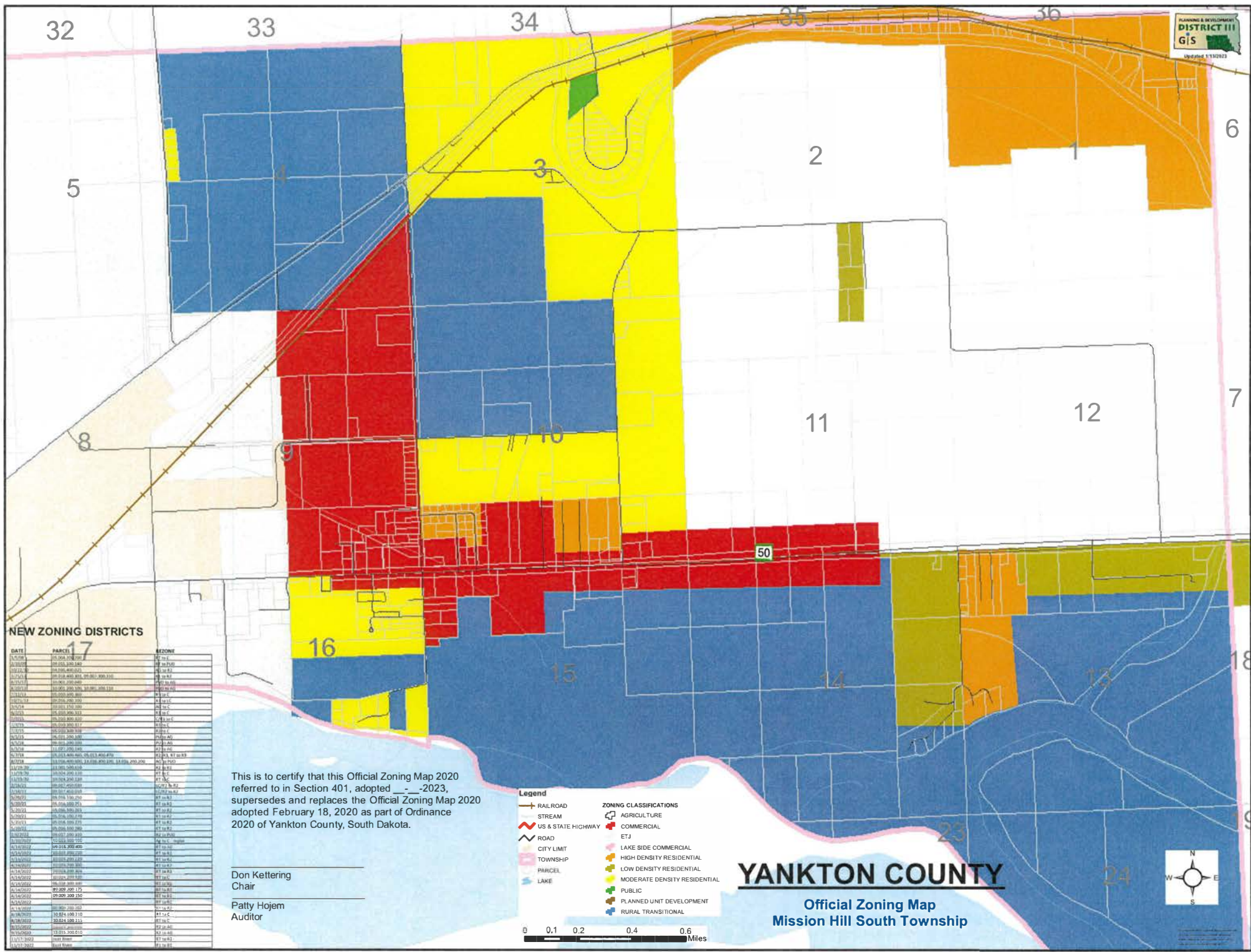
Patty Hojem
Auditor

NEW ZONING DISTRICTS

DATE	PARCEL	REZONE
3/5/08	05.004.200.200	RT to C
3/10/09	09.015.300.140	RT to PUD
10/27/10	04.016.400.015	AG to R2
3/25/11	09.018.400.303, 09.007.300.310	R1 to R2
8/15/12	10.001.200.040	PUD to AG
8/28/12	10.001.200.100, 10.001.200.110	PUD to AG
7/27/13	05.010.300.360	R1 to C
10/25/13	09.016.200.100	RT to LC
3/4/14	10.021.150.100	AG to C
6/2/15	05.010.300.113	R1 to C
7/2/15	05.010.200.130	C/R3 to C
7/7/15	05.010.200.317	R3 to C
7/7/15	05.010.300.116	R3 to C
9/7/15	06.111.300.100	PUI to AG
4/5/16	06.021.200.100	PUI to AG
5/8/16	11.027.400.145	R1 to AG
8/7/16	05.013.400.450, 05.013.400.470	R2, R3, RT to R3
8/7/16	13.016.400.600, 13.016.300.100, 13.016.200.200	AG to PUD
11/9/16	11.001.300.650	R2 to R1
11/9/16	10.024.300.110	AG to C
11/9/16	10.024.200.120	RT to C
3/18/17	09.017.450.099	LC/ R2 to R2
2/2/18	09.017.450.010	LC/ R2 to R2
5/20/21	05.016.100.750	R1 to R2
5/20/21	05.016.100.255	RT to R2
5/20/21	05.016.100.145	RT to R2
5/20/21	05.016.100.270	R1 to R2
5/20/21	05.016.100.275	RT to R2
5/20/21	05.016.100.140	RT to R2
1/6/2022	09.017.100.310	R2 to PUD
3/1/2022	10.033.300.100	AG to C, repat
4/14/2022	09.016.300.400	RT to AG
4/14/2022	10.024.300.110	RT to R2
4/14/2022	10.024.200.220	RT to R2
4/14/2022	10.024.200.300	RT to R2
4/14/2022	10.024.200.304	RT to R2
4/14/2022	10.024.200.130	RT to C
4/14/2022	06.018.300.300	RT to R2
4/14/2022	09.009.200.175	RT to R2
4/14/2022	09.009.200.150	RT to R2
4/14/2022	09.016.150.100	RT to R2
4/14/2022	09.009.200.102	RT to R2
8/18/2022	10.024.100.110	RT to C
8/18/2022	10.024.100.215	RT to C
9/15/2022	13.014.300.600	R3 to AG
9/15/2022	13.015.100.010	R3 to AG
11/7/2022	East River	RT to R2
11/27/2022	East River	R1 to R2



Map created by GIS Department
Updated 1/13/2023



NEW ZONING DISTRICTS

DATE	PARCEL	REZONE
11/15/2019	001 010 000 000	R1
11/15/2019	001 010 000 001	R1
11/15/2019	001 010 000 002	R1
11/15/2019	001 010 000 003	R1
11/15/2019	001 010 000 004	R1
11/15/2019	001 010 000 005	R1
11/15/2019	001 010 000 006	R1
11/15/2019	001 010 000 007	R1
11/15/2019	001 010 000 008	R1
11/15/2019	001 010 000 009	R1
11/15/2019	001 010 000 010	R1
11/15/2019	001 010 000 011	R1
11/15/2019	001 010 000 012	R1
11/15/2019	001 010 000 013	R1
11/15/2019	001 010 000 014	R1
11/15/2019	001 010 000 015	R1
11/15/2019	001 010 000 016	R1
11/15/2019	001 010 000 017	R1
11/15/2019	001 010 000 018	R1
11/15/2019	001 010 000 019	R1
11/15/2019	001 010 000 020	R1
11/15/2019	001 010 000 021	R1
11/15/2019	001 010 000 022	R1
11/15/2019	001 010 000 023	R1
11/15/2019	001 010 000 024	R1
11/15/2019	001 010 000 025	R1
11/15/2019	001 010 000 026	R1
11/15/2019	001 010 000 027	R1
11/15/2019	001 010 000 028	R1
11/15/2019	001 010 000 029	R1
11/15/2019	001 010 000 030	R1
11/15/2019	001 010 000 031	R1
11/15/2019	001 010 000 032	R1
11/15/2019	001 010 000 033	R1
11/15/2019	001 010 000 034	R1
11/15/2019	001 010 000 035	R1
11/15/2019	001 010 000 036	R1
11/15/2019	001 010 000 037	R1
11/15/2019	001 010 000 038	R1
11/15/2019	001 010 000 039	R1
11/15/2019	001 010 000 040	R1
11/15/2019	001 010 000 041	R1
11/15/2019	001 010 000 042	R1
11/15/2019	001 010 000 043	R1
11/15/2019	001 010 000 044	R1
11/15/2019	001 010 000 045	R1
11/15/2019	001 010 000 046	R1
11/15/2019	001 010 000 047	R1
11/15/2019	001 010 000 048	R1
11/15/2019	001 010 000 049	R1
11/15/2019	001 010 000 050	R1
11/15/2019	001 010 000 051	R1
11/15/2019	001 010 000 052	R1
11/15/2019	001 010 000 053	R1
11/15/2019	001 010 000 054	R1
11/15/2019	001 010 000 055	R1
11/15/2019	001 010 000 056	R1
11/15/2019	001 010 000 057	R1
11/15/2019	001 010 000 058	R1
11/15/2019	001 010 000 059	R1
11/15/2019	001 010 000 060	R1
11/15/2019	001 010 000 061	R1
11/15/2019	001 010 000 062	R1
11/15/2019	001 010 000 063	R1
11/15/2019	001 010 000 064	R1
11/15/2019	001 010 000 065	R1
11/15/2019	001 010 000 066	R1
11/15/2019	001 010 000 067	R1
11/15/2019	001 010 000 068	R1
11/15/2019	001 010 000 069	R1
11/15/2019	001 010 000 070	R1
11/15/2019	001 010 000 071	R1
11/15/2019	001 010 000 072	R1
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11/15/2019	001 010 000 074	R1
11/15/2019	001 010 000 075	R1
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11/15/2019	001 010 000 078	R1
11/15/2019	001 010 000 079	R1
11/15/2019	001 010 000 080	R1
11/15/2019	001 010 000 081	R1
11/15/2019	001 010 000 082	R1
11/15/2019	001 010 000 083	R1
11/15/2019	001 010 000 084	R1
11/15/2019	001 010 000 085	R1
11/15/2019	001 010 000 086	R1
11/15/2019	001 010 000 087	R1
11/15/2019	001 010 000 088	R1
11/15/2019	001 010 000 089	R1
11/15/2019	001 010 000 090	R1
11/15/2019	001 010 000 091	R1
11/15/2019	001 010 000 092	R1
11/15/2019	001 010 000 093	R1
11/15/2019	001 010 000 094	R1
11/15/2019	001 010 000 095	R1
11/15/2019	001 010 000 096	R1
11/15/2019	001 010 000 097	R1
11/15/2019	001 010 000 098	R1
11/15/2019	001 010 000 099	R1
11/15/2019	001 010 000 100	R1

This is to certify that this Official Zoning Map 2020 referred to in Section 401, adopted __-__-2023, supersedes and replaces the Official Zoning Map 2020 adopted February 18, 2020 as part of Ordinance 2020 of Yankton County, South Dakota.

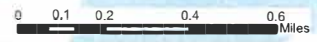
Don Kettering
Chair

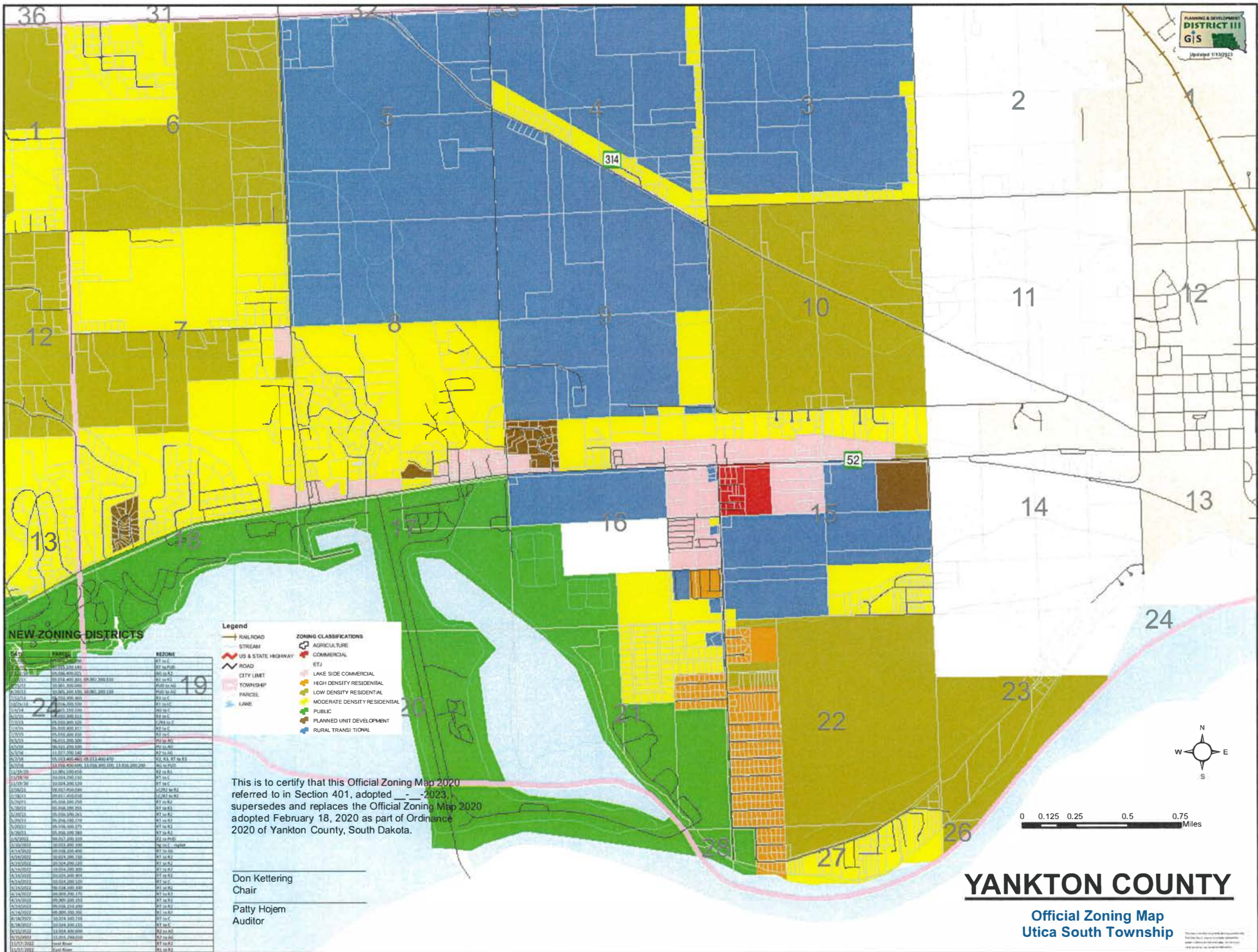
Patty Hojem
Auditor

Legend

- RAILROAD
- STREAM
- US & STATE HIGHWAY
- ROAD
- CITY LIMIT
- TOWNSHIP
- PARCEL
- LAKE
- AGRICULTURE
- COMMERCIAL
- ETJ
- LAKE SIDE COMMERCIAL
- HIGH DENSITY RESIDENTIAL
- MODERATE DENSITY RESIDENTIAL
- PUBLIC
- PLANNED UNIT DEVELOPMENT
- RURAL TRANSITIONAL

YANKTON COUNTY
Official Zoning Map
Mission Hill South Township





NEW ZONING DISTRICTS

PARCEL #	REZONE
001000001	R1
001000002	R1
001000003	R1
001000004	R1
001000005	R1
001000006	R1
001000007	R1
001000008	R1
001000009	R1
001000010	R1
001000011	R1
001000012	R1
001000013	R1
001000014	R1
001000015	R1
001000016	R1
001000017	R1
001000018	R1
001000019	R1
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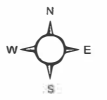
- Legend**
- RAILROAD
 - STREAM
 - US & STATE HIGHWAY
 - ROAD
 - CITY LIMIT
 - TOWNSHIP
 - PARCEL
 - LAKE
- ZONING CLASSIFICATIONS**
- AGRICULTURE
 - COMMERCIAL
 - ETA
 - LAKE SIDE COMMERCIAL
 - HIGH DENSITY RESIDENTIAL
 - LOW DENSITY RESIDENTIAL
 - MODERATE DENSITY RESIDENTIAL
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 - PLANNED UNIT DEVELOPMENT
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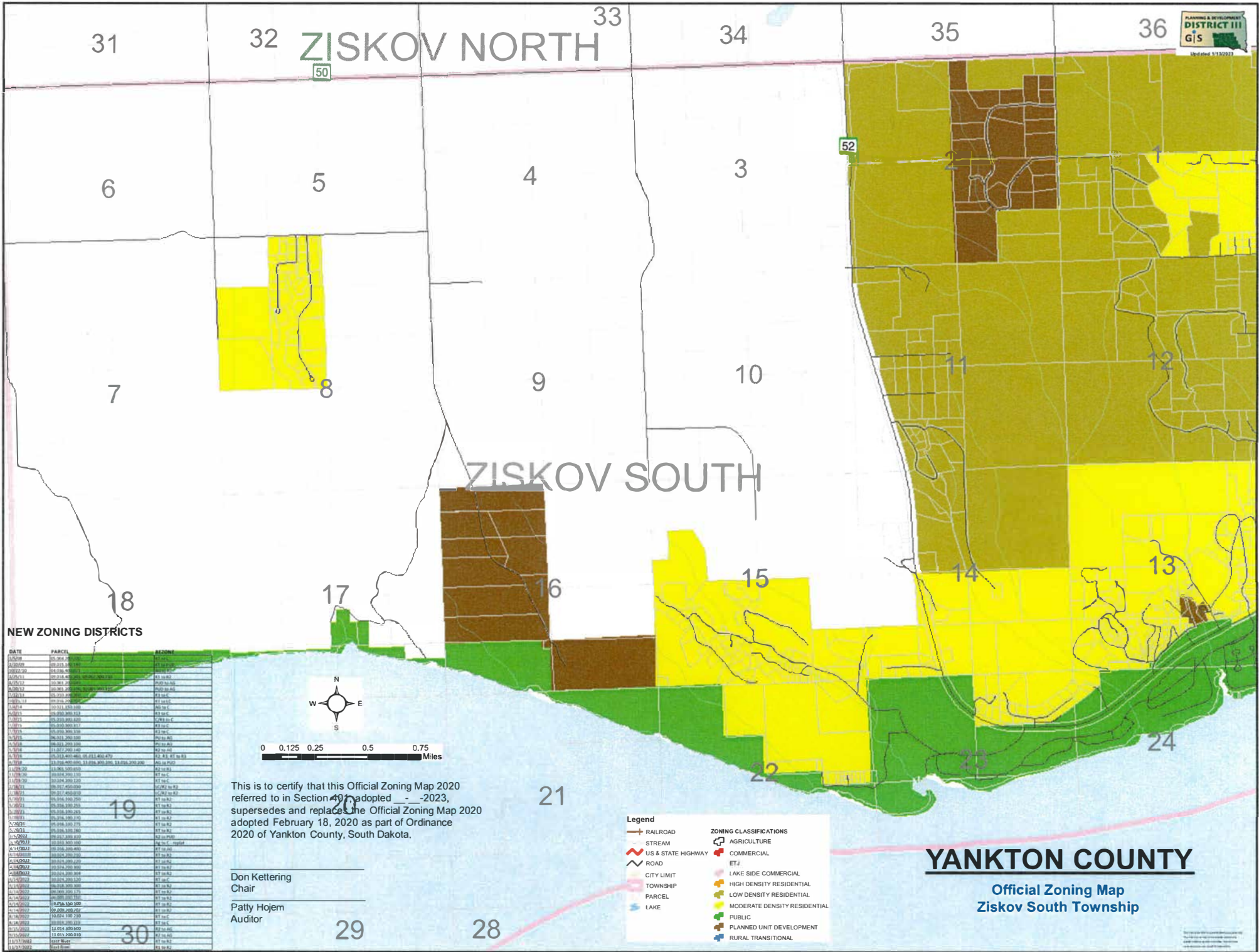
This is to certify that this Official Zoning Map 2020 referred to in Section 401, adopted --, 2023, supersedes and replaces the Official Zoning Map 2020 adopted February 18, 2020 as part of Ordinance 2020 of Yankton County, South Dakota.

Don Kettering
 Chair

Patty Hojem
 Auditor

YANKTON COUNTY
 Official Zoning Map
 Utica South Township





NEW ZONING DISTRICTS

DATE	PARCEL	RE ZONE
11/20/19	001.010.000.010	R1
11/20/19	001.010.000.011	R1
11/20/19	001.010.000.012	R1
11/20/19	001.010.000.013	R1
11/20/19	001.010.000.014	R1
11/20/19	001.010.000.015	R1
11/20/19	001.010.000.016	R1
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11/20/19	001.010.000.020	R1
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11/20/19	001.010.000.022	R1
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11/20/19	001.010.000.148	R1
11/20/19	001.010.000.149	R1
11/20/19	001.010.000.150	R1

This is to certify that this Official Zoning Map 2020 referred to in Section 407 adopted - -2023, supersedes and replaces the Official Zoning Map 2020 adopted February 18, 2020 as part of Ordinance 2020 of Yankton County, South Dakota.

Don Kettering
Chair

Patty Hojem
Auditor

Legend

- RAILROAD
- STREAM
- US & STATE HIGHWAY
- ROAD
- CITY LIMIT
- TOWNSHIP
- PARCEL
- LAKE

ZONING CLASSIFICATIONS

- AGRICULTURE
- COMMERCIAL
- ET/J
- LAKE SIDE COMMERCIAL
- HIGH DENSITY RESIDENTIAL
- LOW DENSITY RESIDENTIAL
- MODERATE DENSITY RESIDENTIAL
- PUBLIC
- PLANNED UNIT DEVELOPMENT
- RURAL TRANSITIONAL

YANKTON COUNTY
Official Zoning Map
Ziskov South Township

MEETING (ENTITY): PLANNING COMMISSION REGULAR OR SPECIAL MEETING: Regular
DATE: 3/14/2023 TIME: 7PM LOCATION: COMMISSION CHAMBERS

STAFF ATTENDANCE: Conkling/Vetter

ROLL BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

CALL:

APPROVAL OF MINUTES: MOTION BY: Evans SECOND BY: Hoffman

PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

APPROVAL OF AGENDA: MOTION BY: Hoffman SECOND BY: Evans

PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: **East River Electric – Conditional Use Permit**

ADDRESS/LEGAL: Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substation per Article 25 Section 2503. Said property is legally described as Lot 1 of Lewis and Clark Substation addition in the Southwest Quarter of the Southwest Quarter of Section 15, Township 93 North, Range 56 West of the 5th Principal Meridian, Yankton County, South Dakota. E911 address is 206 S. Deer Boulevard, Yankton, South Dakota

COMMENTS: Jarae Wire – East River Electric
Tim Kellen – neighbor – concerns about microwave signals

MOTION: Approve with the condition that applicant provide information regarding the possible hazards of microwaves at the County Commission meeting
Passed 6-0

APPROVAL: MOTION BY: Barkl SECOND BY: Evans
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: **Frick - Variance**

ADDRESS/LEGAL: Applicant is requesting a variance to minimum lot size in an Agriculture District. Applicant wishes to Replot one previously platted lot into two lots each smaller than 20 acres per Article 18 Section 1807. Said property is legally described as Plat of Lots 1 and 2 of J & P Frick Addition, in the SW1/4 of the SE1/4 of Section 8, and in the NW1/w of the NE1/4 of Section 17, T94N, R55W of the 5th P.M., Yankton County, South Dakota. E911 Address is 30499 SW Jim River Rd, Yankton, South Dakota.

This plat vacates previously platted Lot A of Lot 4 of Schlaefli's 3rd. Addition in the W1/2 of the SE1/4 of Section 8, T94N, R55W of the 5th P.M., Yankton County, SD. Recorded on May 23, 2000, and Recorded in Book S18, Page 183

COMMENTS: Chris Frick – Applicant
Kim Mueller - Applicant

MOTION: Approve as presented
Passed 6-0

APPROVAL: MOTION BY: Michael SECOND BY: Evans
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: **Discussion on ideas to promote economic development in the county**
ADDRESS/LEGAL: _____
COMMENTS: Commissioners shared their suggestions and ideas

MOTION: No action taken

APPROVAL: MOTION BY: _____ SECOND BY: _____
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: **Public Comment**
ADDRESS/LEGAL: _____
COMMENTS: none

MOTION: Adjourn

APPROVAL: MOTION BY: Michael SECOND BY: Hoffman
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

AGENDA ITEM: _____
ADDRESS/LEGAL: _____
COMMENTS: _____

MOTION: _____

APPROVAL: MOTION BY: _____ SECOND BY: _____
PLANNING: BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

COMMENTS:

MOTION:

APPROVAL:
PLANNING:

MOTION BY: _____ SECOND BY: _____

BARKL EVANS KETTERING MICHAEL NELSON WEISS HOFFMAN

2010 Legal and Public Notices

NOTICE OF APPLICATION NO. 8717-3 to Appropriate Water... Notice is given that Coulson Laird Co., c/o Tom Coulson, 1205 W 11th St, Yankton SD 57078 has filed an application for a water permit to appropriate an additional 0.67 cubic feet of water per second (cfs) from the Missouri River located in the W 1/2 SE 1/4 Section 14 for irrigation of an additional 38.57 acres located in the S 1/2 NW 1/4, N 1/2 SW 1/4 Section 14; all in T93N-R55W. The applicant will utilize an existing Missouri River diversion point authorized by Water Permit No. 6889-3. This application, if approved, and No. 6889-3 combined, will authorize a total of 2.00 cfs for irrigation of 95.57 acres. The applicant is requesting a diversion rate greater than the statutory limit of 1 cfs per 70 acres. This site is located approximately 2 miles east of Yankton.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8717-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's recommendation with qualifications, the application, and qualifications are available at https://dair.usd.gov/public or contact Ron Duval for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at https://dair.usd.gov/public or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 or call (605) 773-3352. The applicant's mailing address is given above. In contesting the Chief Engineer's recommendation, the applicant must also file a petition. A petition filed by either an interested person or the applicant must be filed by March 13, 2023.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at https://dair.usd.gov/public or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by March 13, 2023.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to no hearing held before the Water Management Board. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled, and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Published once at the total approximate cost of \$42.24 and can be viewed free of charge at www.sd-publicnotices.com.

Published March 3, 2023.

2010 Legal and Public Notices

The public is invited to attend the hearing and to present comments and testimony regarding proposed amendments re-adoption of amended Zoning Map for Yankton County Ordinance 2020. At the conclusion of the hearing, the Yankton County Planning Commission may recommend adoption Yankton County Ordinance No.23-ZN-01.

Dated this 1st day of March, 2023

ATTEST: Gary Vetter - Development Services Director

Published twice at the total approximate cost of \$35.42 and can be viewed free of charge at www.sd-publicnotices.com.

Published March 3 & 10, 2023.

NOTICE OF HEARING UPON APPLICATION FOR SALE OF ALCOHOLIC BEVERAGES

NOTICE IS HEREBY GIVEN that an application has been received by the Board of City Commissioners of the City of Yankton, South Dakota, for a Special Events RETAIL (on-sale) Liquor License for 3 days, April 14-16, 2023 from SDJCI Senate, (Cindy Crooks, President) dba SDJCI Senate, NFAA, 800 Archery Lane, Yankton, South Dakota.

NOTICE IS FURTHER GIVEN that a Public Hearing upon the application will be held on Monday, March 13th, 2023 at 7:00 p.m. in the City of Yankton Community Meeting Room at the Technical Education Center, 1200 West 21st Street, Yankton, South Dakota, where any person or persons interested in the approval or rejection of the above application may appear and be heard.

Dated at Yankton, South Dakota this 27th day of February, 2023.

At Viewec Financial Officer

Published once at the total approximate cost of \$15.04 and can be viewed free of charge at www.sd-publicnotices.com.

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held before the Yankton County Planning Commission, Yankton County, South Dakota, at 7:05 P.M. on the 14th day of March 2023 at the Yankton County Government Center, Commissioners Chambers, 321 West Third St., Yankton, South Dakota. Applicant is requesting a Conditional Use Permit to construct a wireless tower for internal communications with their substitution per Article 25 Section 2503. Said property is legally described as Lot 1 of Lewis and Clark Substation addition in the Southwest Quarter of the Southwest Quarter of Section 15, Township 93 North, Range 56 West of the 5th Principal Meridian, Yankton County, South Dakota. E911 address is 206 S. Deer Boulevard, Yankton, South Dakota

NOTICE OF PUBLIC HEARING

Notice is hereby given that a public hearing will be held before the Yankton County Planning Commission, Yankton County, South Dakota, at 7:10 P.M. on the 14th day of March 2023 at the Yankton County Government Center, Commissioners Chambers, 321 West Third St., Yankton, South Dakota. Applicant is requesting a variance to minimum lot size in an Agriculture District. Applicant wishes to replot one platted non-conforming lot into two lots each smaller than 20 acres per Article 18 Section 1807. Said property is legally described as Plat of Lots 1 and 2 of J & P Frick Addition, in the SW1/4 of the SE1/4 of Section 8, and in the NW 1/4 of the NE1/4 of Section 17, T94N, R55W of the 5th P.M., Yankton County, South Dakota. E911 address is 30499 SW Jim River Rd, Yankton, South Dakota. This plat vacates previously platted Lot A of Lot 4 of Schlaeflis 3rd. Addition in the W1/2 of the SE1/4 of Section 8, T94N, R55W of the 5th P.M., Yankton County, SD. Recorded on May 23, 2000, and Recorded in Book S18, Page 183

Published twice at the total approxi-

2010 Legal and Public Notices

from Patrick Allan Ernster to Pat Allen Ernster. On the 21st day of March, 2023, at the hour of 10:00 a.m. said verified petition will be heard by this Court before the Honorable Judge David Knoff President, at the Court Room in the Yankton County Courthouse, City of Yankton, Yankton County, South Dakota, or as soon thereafter as is convenient for the court. Anyone may come and appear at that time and place and show reasons, if any why said name should not be changed as requested. Dated this 3rd day of February, 2023 at Yankton, South Dakota

Attest: Jessica Hall Clerk of Court, Deputy

ATTEST: Jody Johnson Clerk of Court

Published four times at the total approximate cost of \$68.00 and can be viewed free of charge at www.sd-publicnotices.com.

Published February 10, 17, 24 & March 3, 2023.

SCOREBOARD

Table with 4 columns: Team Name, Score, Opponent, Score. Includes sections for Summit League Men's and Women's, Neb. State Girls' and Boys' Tournaments, and S.D. SoDak 16.

Girls' SoDak 16: Cougars Race Past Raiders To Reach State Class B Tournament

SALEM — Viborg-Hurley's Coral Mason registered a 16 point, 16 rebound double-double as the No. 3 Cougars defeated the No. 14 Lyman Raiders in Class A SoDak 16 action Thursday. Denae Mach added 15 points and six rebounds for V-H, while Estelle Lee and Shelby Lyons registered 13 points apiece. Charley Nelson dished out five assists for the Cougars. Mak Scott led the Raiders with 12 points, with Jordyn Scott adding 10 points. Viborg-Hurley, 20-3, advanced to the Class B Girls State Tournament, to be held Mar. 9-11 in Huron. Lyman finished its season 14-8.

Class A: Sisseton 59, Parkston 46

VOLGA — The Sisseton Redmen got 22 points from Krista Langager as they defeated the Parkston Trojans in Class A SoDak 16 action Thursday. Hannah Levenson added 19 points for Sisseton. Faith Oakley led Parkston with 15 points, while Mya Thuringer registered 11 points. Abby Hohm added 10 points. Sisseton, 20-2, advanced to the Class A State Tournament, to be held Mar. 9-11 in Watertown. Parkston finished its season 16-7.

MBB: USD's Perrott-Hunt And Kamateros Appear On All-Summit

SIoux FALLS — South Dakota guard Krux Perrott-Hunt and forward Tassos Kamateros were named to the all-Summit League honorable mention team as announced by the league Thursday afternoon. The awards were voted on by the league's coaches, media, and sports information directors. It's the second-straight year that both Perrott-Hunt and Kamateros appear on the all-Summit awards list. Perrott-Hunt was a second team selection while Kamateros received honorable mention last season. The Coyotes are the No. 6 seed in the upcoming Summit League Tournament in Sioux Falls. South Dakota begins the tournament against No. 3 North Dakota State Sunday night at 8:30 p.m. inside the Sanford PREMIER Center. First Team All-Summit League: Max Abrams, Oral Roberts (Sr., G), Trenton Massner, Western Illinois (Sr., G), Zeke Mayo, South Dakota State (So., G), Grant Nelson, North Dakota State (Jr., F), Andrew Rohde, St. Thomas (Fr., G), Connor Vanover, Oral Roberts (Sr., F)

Table with 4 columns: Team Name, Score, Opponent, Score. Includes sections for S.D. SoDak 16, S.D. Boys' Regions, and S.D. Girls' Regions.

SPORTS DIGEST

Bucks Host Aberdeen Central In SoDak 16

The Yankton Bucks (15-5) are the fourth seed in the Class AA boys' basketball SoDak 16, and will host Aberdeen Central on Saturday at 2 p.m. Doors will open at 1 p.m. No passes will be honored. The winner of Saturday's game will advance to the South Dakota State Class AA Boys' Basketball Tournament, March 16-18 in Rapid City.

Neb. Boys' Pairings Set

LINCOLN, Neb. — The Nebraska School Activities Association announced times and venues for the Boys Basketball State Championships Mar. 8-11 in Lincoln. In the Class C2 bracket, the Cedar Catholic Trojans, 22-4, are the No. 4 seed and play No. 5 seed Elk Horn Valley, 23-2, in the quarterfinals Mar. 9 at 10:45 a.m. at the Devaney Center. The Wynot Blue Devils, 22-4, earned the No. 1 seed in the Class D2 bracket and will play No. 8 seed Paxton, 17-5, in the quarterfinals Mar. 9 at 9 a.m. inside Pinnacle Bank Arena. Also in Class D2, the No. 7 seed Santee Warriors, who earned a trip to the state tournament for the first time in school history, will play No. 2 seed Shelton at 6 p.m. Mar. 9 in the Devaney Center. Semifinals in Class C2 will all be played at Devaney on Friday. Championship games will be played at Pinnacle Bank Arena, with third place games at Lincoln Southeast High School.

USD's Larkins Named First-Team

BROOKINGS — Mount Marty seniors

CROSSWORD

Crossword puzzle grid with clues for Across and Down. Clues include '45 Neigh', '1 Back biter', '6 Gem unit', '11 Find item', '12 Un-escorted', '13 Quick aid', '2 Poem of praise', '3 Prevented intruders', '15 Young foxes', '17 Revue segment', '18 Chef's need', '20 Long-snouted fish', '22 Make fun of', '23 Holiday events', '26 Stylishly quaint', '28 Prelude', '29 Sticks', '31 Owls', '32 Puts away', '33 Mexican coin', '34 Bounders', '36 Thick slice', '38 Distant', '40 African lilies', '43 Cherry'.

Yesterdays answer

Grid for yesterday's crossword puzzle answers. Includes words like 'TROY', 'AROUSE', 'AMAS', 'TAVERN', 'BADTASTE', 'HEMETHAN', 'ROOMS', 'SITOLE', 'ABU', 'SITNOW', 'POSIT', 'RAKES', 'TEENY', 'SCIMITAR', 'SALOON', 'GONE', 'AVALON', 'ANTE', 'LATENS', 'SKIDD'.

ARTICLE 4
OFFICIAL ZONING MAP AND BOUNDARY
INTERPRETATION

Section 401 General

The County is hereby divided into zones, or districts, as shown on the Official Zoning Map, which, together with all explanatory matter thereon, is hereby adopted by reference and declared to be a part of this Ordinance. The Official Zoning Map shall be identified by the signature of the Chairman of the County Commissioners, attested by the Auditor, and bearing the seal of the County, under the following words: "This is to certify that this is the Official Zoning Map referred to in Section 401 of Ordinance ~~No. 16~~ 2020 of "Yankton County, South Dakota," together with the date of the adoption of this Ordinance.

Section 403 Zoning Map Changes

If, in accordance with the provisions of this Ordinance, changes are made in the district boundaries or other matter portrayed on the Official Zoning Map, such changes shall be entered on the Official Zoning Map promptly after the amendment has been approved by the County Commissioners, with an entry on the Official Zoning Map as follows: "on [date], by official action of the Yankton County Commission, the following [change] changes were made in the Official Zoning Map: [brief description of nature of change]," which entry shall be signed by the Chairman of the Commission and attested by the Auditor. No amendment to this Ordinance which involves matters portrayed on the Official Zoning Map shall become effective until after such change and entry has been made on said map.

No changes of any nature shall be made in the Official Zoning Map or matters shown thereon except in conformity with the procedures set forth in this Ordinance.

Any unauthorized change of whatever kind by any person or persons shall be considered a violation of this Ordinance and punishable as provided under Section 2303.

Regardless of the existence of purported copies of the Official Zoning Map which may, from time to time, be made or published, the Official Zoning Map which shall be located in the office of the Zoning Administrator shall be the final authority as to the current zoning status of land and water areas, buildings, and other structures in the County.

Section 405 Zoning Map Replacement

In the event that the Official Zoning Map becomes damaged, destroyed, lost or difficult to interpret because of the nature or number of changes and additions, the Yankton County Commission may, by resolution, adopt a new Official Zoning Map,

which shall supersede the prior Official Zoning Map.

The new Official Zoning Map may correct drafting or other errors or omissions in the prior Official Zoning Map, but no such correction shall have the effect of amending the original Official Zoning Map or any subsequent amendment thereof.

The new Official Zoning Map shall be identified by the signature of the Chairman of the County Commission, attested by the Auditor, and bearing the seal of the County, under the following words:

“This is to certify that this Official Zoning Map supersedes and replaces the Official Zoning Map adopted [date of adoption of map being replaced] as part of Ordinance ~~No. 16~~ 2020 of “Yankton County, South Dakota.”

Unless the prior Official Zoning Map has been lost, or has been totally destroyed, the prior map or any significant parts thereof remaining shall be preserved, together with all available records pertaining to its adoption or amendment.

Section 407 Rules for Interpretation of District Boundaries

Where uncertainty exists as to the boundaries of districts as shown on the Official Zoning Map, the following rules shall apply:

1. Boundaries indicated, as approximately following the centerlines of right-of-ways, roads, highways, or alleys shall be construed to follow such centerlines;
2. Boundaries indicated as approximately following platted lot lines shall be construed as following such lot lines;
3. Boundaries indicated, as approximately following city limits shall be construed as following such city limits;
4. Boundaries indicated, as following railroad lines shall be construed to be midway between the main tracks;
5. Boundaries indicated as following shore lines shall be construed to follow such shore lines, and in the event of change in the shore line shall be construed as moving with the actual shore line; boundaries indicated as approximately following the center line of streams, rivers, canals, lakes, or other bodies of water shall be construed to follow such center lines;
6. Boundaries indicated as parallel to or extensions of features indicated in subsections 1 through 5 above shall be so construed. The scale of the map shall determine distances not specifically indicated on the Official Zoning Map; and



















Where physical or cultural features existing on the ground are at variance with those shown on the Official Zoning Map, or in other circumstances not covered by subsections 1 through 6 above, the Planning Commission shall interpret the district

boundaries.

YANKTON COUNTY

Official Zoning Map

Legend

-  RAILROAD
-  STREAM
-  US & STATE HIGHWAY
-  ROAD
-  CITY LIMIT
-  TOWNSHIP
-  PARCEL
-  LAKE
- ZONING CLASSIFICATIONS**
-  AGRICULTURE
-  COMMERCIAL
-  ETJ
-  LAKE SIDE COMMERCIAL
-  HIGH DENSITY RESIDENTIAL
-  LOW DENSITY RESIDENTIAL
-  MODERATE DENSITY RESIDENTIAL
-  PUBLIC
-  PLANNED UNIT DEVELOPMENT
-  RURAL TRANSITIONAL

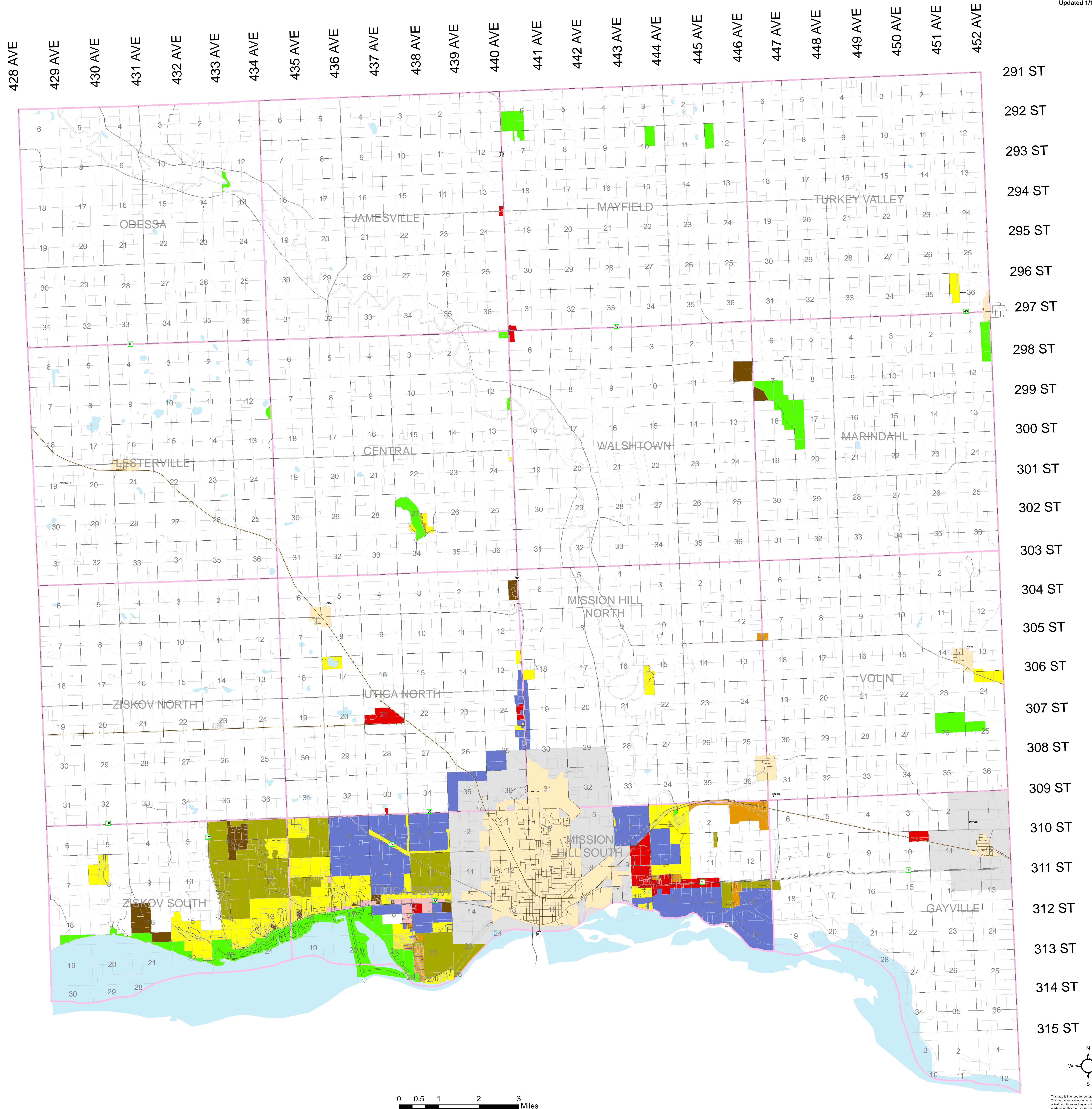
This is to certify that this Official Zoning Map 2020 referred to in Section 401, adopted __-__-2023, supersedes and replaces the Official Zoning Map 2020 adopted February 18, 2020 as part of Ordinance 2020 of Yankton County, South Dakota.

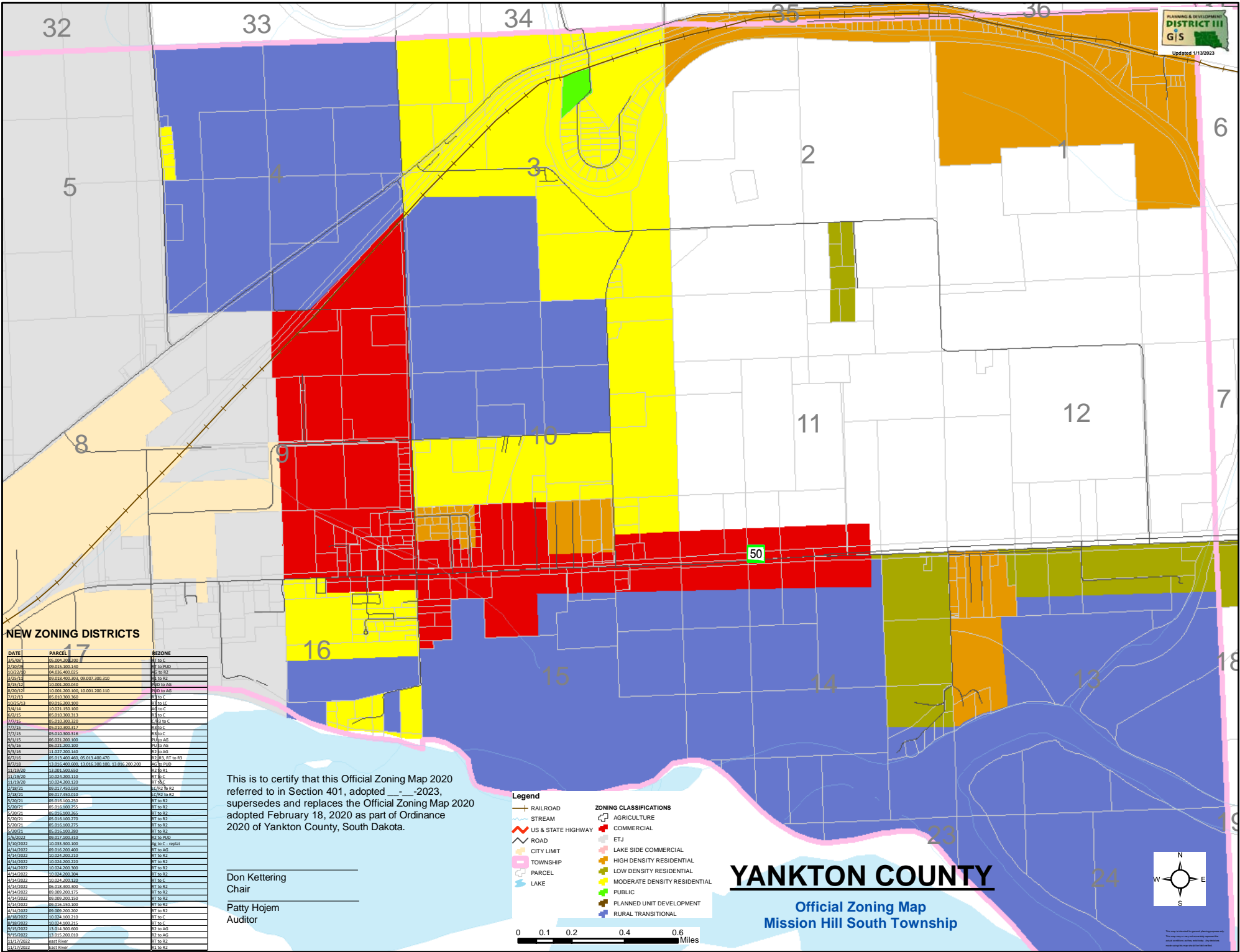
Don Kettering
Chair

Patty Hojem
Auditor

NEW ZONING DISTRICTS

DATE	PARCEL	REZONE
3/5/08	05.004.200.200	RT to C
2/10/09	09.015.100.140	RT to PUD
10/22/10	04.036.400.025	AG to R2
3/25/11	09.018.400.303, 09.007.300.310	R1 to R2
8/15/12	10.001.200.040	PUD to AG
8/20/12	10.001.200.100, 10.001.200.110	PUD to AG
7/12/13	05.010.300.360	R3 to C
10/25/13	09.016.200.100	RT to LC
3/4/14	10.021.150.100	AG to C
6/2/15	05.010.300.313	R3 to C
7/7/15	05.010.300.320	C/R3 to C
7/7/15	05.010.300.317	R3 to C
7/7/15	05.010.300.316	R3 to C
9/1/15	06.021.200.100	PU to AG
4/5/16	06.021.200.100	PU to AG
5/3/16	11.027.200.140	R2 to AG
6/7/16	05.013.400.460, 05.013.400.470	R2, R3, RT to R3
8/7/18	13.016.400.600, 13.016.300.100, 13.016.200.200	AG to PUD
11/19/20	13.001.500.650	R2 to R1
11/19/20	10.024.200.110	RT to C
11/19/20	10.024.200.120	RT to C
2/18/21	09.017.450.030	LC/R2 to R2
2/18/21	09.017.450.010	LC/R2 to R2
5/20/21	05.016.100.250	RT to R2
5/20/21	05.016.100.255	RT to R2
5/20/21	05.016.100.265	RT to R2
5/20/21	05.016.100.270	RT to R2
5/20/21	05.016.100.275	RT to R2
5/20/21	05.016.100.280	RT to R2
1/6/2022	09.017.100.310	R2 to PUD
3/10/2022	10.033.300.100	Ag to C - replat
4/14/2022	09.016.200.400	RT to AG
4/14/2022	10.024.200.210	RT to R2
4/14/2022	10.024.200.220	RT to R2
4/14/2022	10.024.200.300	RT to R2
4/14/2022	10.024.200.304	RT to R2
4/14/2022	10.024.200.120	RT to C
4/14/2022	06.018.300.300	RT to R2
4/14/2022	09.009.200.175	RT to R2
4/14/2022	09.009.200.150	RT to R2
4/14/2022	09.016.150.100	RT to R2
4/14/2022	09.009.200.202	RT to R2
8/18/2022	10.024.100.210	RT to C
8/18/2022	10.024.100.215	RT to C
9/15/2022	13.014.300.600	R2 to AG
9/15/2022	13.015.200.010	R2 to AG
11/17/2022	east River	RT to R2
11/17/2022	East River	R1 to R2





NEW ZONING DISTRICTS

DATE	PARCEL	REZONE
1/2/2018	05.004.200.200	RT to C
1/2/2018	05.016.100.140	RT to R2
1/2/2018	04.036.400.035	RT to R2
1/2/2018	05.018.400.203, 05.027.300.110	RT to R2
1/2/2018	10.001.200.000	RT to AG
1/2/2018	10.001.200.100, 10.001.200.110	RT to AG
7/2/2015	05.010.300.300	RT to C
1/2/2015	05.020.300.315	RT to C
1/2/2015	10.021.150.100	RT to C
1/2/2015	05.030.300.113	RT to C
7/2/2015	05.030.300.320	C to RT to C
7/2/2015	05.030.300.317	RT to C
7/2/2015	05.030.300.316	RT to C
1/2/2015	06.021.200.100	RT to AG
1/2/2015	06.021.200.100	RT to AG
5/2/2016	11.027.200.140	RT to AG
5/2/2016	05.019.400.400, 05.019.400.470	R2 to R2, RT to R2
5/2/2016	11.016.400.400, 11.016.300.100, 11.016.200.100	R2 to R2
11/29/2016	11.001.600.600	R2 to R1
11/29/2016	10.024.100.110	RT to C
11/29/2016	10.024.100.120	RT to C
5/28/2021	09.037.400.030	C to R2 to R2
5/28/2021	09.037.400.010	C to R2 to R2
5/28/2021	09.037.400.010	C to R2 to R2
5/28/2021	09.016.100.240	RT to R2
5/28/2021	09.016.100.205	RT to R2
1/2/2021	05.016.100.260	RT to R2
1/2/2021	05.016.100.270	RT to R2
1/2/2021	05.016.100.275	RT to R2
5/20/2021	05.016.100.280	RT to R2
5/20/2021	09.037.100.110	R2 to PUD
1/2/2022	10.033.100.100	RT to C - rezone
1/2/2022	09.016.100.400	RT to AG
1/2/2022	10.024.100.004	RT to R2
1/2/2022	10.024.100.120	RT to R2
1/2/2022	10.024.100.130	RT to R2
1/2/2022	06.018.100.100	RT to R2
1/2/2022	09.009.100.175	RT to R2
1/2/2022	09.009.100.150	RT to R2
1/2/2022	09.009.100.100	RT to R2
1/2/2022	09.009.100.202	RT to R2
1/2/2022	10.024.100.210	RT to R2
1/2/2022	10.024.100.215	RT to R2
1/2/2022	11.014.100.600	R2 to AG
1/2/2022	11.014.100.610	R2 to AG
11/17/2022	6411 River	RT to R2
11/17/2022	East River	R1 to R2

This is to certify that this Official Zoning Map 2020 referred to in Section 401, adopted _____2023, supersedes and replaces the Official Zoning Map 2020 adopted February 18, 2020 as part of Ordinance 2020 of Yankton County, South Dakota.

Don Kettering
Chair

Patty Hojem
Auditor

Legend

- RAILROAD
- STREAM
- US & STATE HIGHWAY
- ROAD
- CITY LIMIT
- TOWNSHIP
- PARCEL
- LAKE

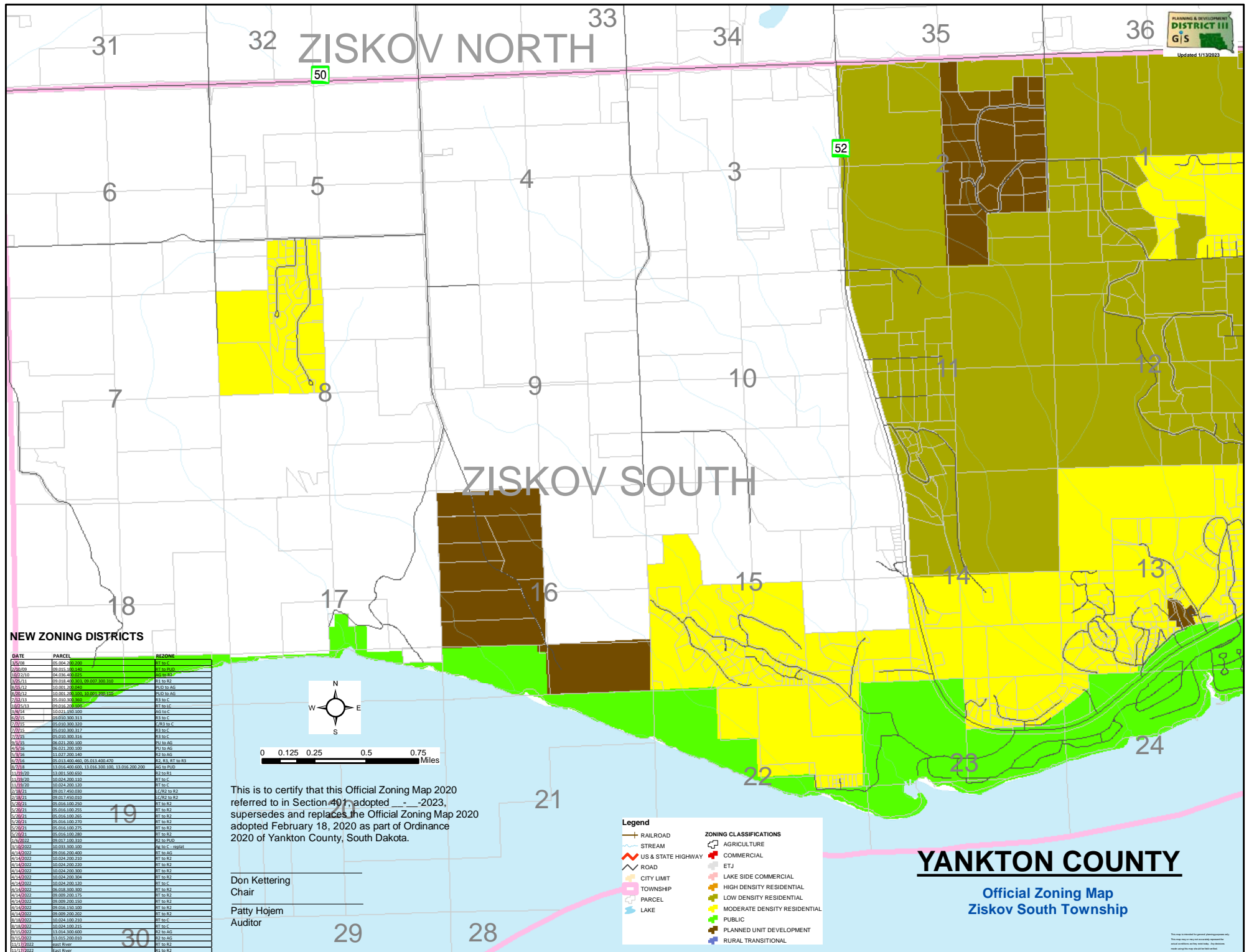
ZONING CLASSIFICATIONS

- AGRICULTURE
- COMMERCIAL
- ETJ
- LAKE SIDE COMMERCIAL
- HIGH DENSITY RESIDENTIAL
- MODERATE DENSITY RESIDENTIAL
- PUBLIC
- PLANNED UNIT DEVELOPMENT
- RURAL TRANSITIONAL

YANKTON COUNTY
Official Zoning Map
Mission Hill South Township



This map is intended for general informational purposes only. It does not constitute a warranty, representation, or contract. The user assumes all responsibility for the use of this map.



NEW ZONING DISTRICTS

DATE	PARCEL	REZONE
1/26/08	05.004.700.200	RT to C
1/26/08	05.016.100.100	R2 to RT
6/29/10	04.036.400.005	AG to R2
1/25/11	09.018.400.001, 09.007.900.010	R1 to R2
6/12/12	10.001.200.000	RUD to AG
6/26/12	10.001.200.000, 10.001.200.110	RUD to AG
7/20/13	05.010.200.000	R3 to C
6/25/13	05.016.100.005	RT to C
3/26/14	10.021.400.100	AG to C
5/2/15	05.030.300.313	R3 to C
7/21/15	05.030.300.320	C to R3 to C
7/21/15	05.030.300.317	R3 to C
7/21/15	05.030.300.314	R3 to C
8/4/15	06.021.300.100	R1 to AG
1/15/16	06.021.300.100	R1 to AG
5/28/16	11.027.300.140	R2 to AG
5/27/16	05.019.400.400, 05.013.400.470	R2, R3, RT to R3
6/2/16	11.016.400.000, 11.016.300.100, 11.016.200.100	R2 to PUD
11/29/20	11.001.600.600	R2 to R1
11/29/20	10.024.100.110	RT to C
11/29/20	10.024.100.120	RT to C
5/18/21	09.017.400.000	C to R2 to R2
5/18/21	09.017.400.010	C to R2 to R2
5/26/21	05.016.100.200	RT to R2
5/26/21	05.016.100.205	RT to R2
5/26/21	05.016.100.206	RT to R2
5/26/21	05.016.100.270	RT to R2
5/26/21	05.016.100.275	RT to R2
5/26/21	05.016.100.280	RT to R2
1/20/22	09.017.100.110	R2 to PUD
6/10/22	10.033.100.100	R3 to C - Ingot
4/14/22	09.016.100.400	RT to AG
4/14/22	10.024.100.100	RT to R2
4/14/22	10.024.100.120	RT to R2
4/14/22	10.024.100.300	RT to R2
4/14/22	10.024.100.304	RT to R2
4/14/22	10.024.100.120	RT to C
4/14/22	06.018.100.300	RT to R2
4/14/22	09.009.100.175	RT to R2
4/14/22	09.009.100.150	RT to R2
4/14/22	09.009.100.100	RT to R2
4/14/22	09.009.100.200	RT to R2
4/14/22	10.024.100.210	RT to C
6/21/22	10.024.100.115	RT to C
6/21/22	11.014.100.600	R2 to AG
6/21/22	11.015.100.010	R2 to AG
11/17/22	0411 River	RT to R2
11/17/22	East River	R1 to R2



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Don Kettering
Chair
Patty Hojem
Auditor

Legend

RAILROAD	AGRICULTURE
STREAM	COMMERCIAL
US & STATE HIGHWAY	ETJ
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TOWNSHIP	LOW DENSITY RESIDENTIAL
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LAKE	PUBLIC
	PLANNED UNIT DEVELOPMENT
	RURAL TRANSITIONAL

YANKTON COUNTY
Official Zoning Map
Ziskov South Township