

HYDE COUNTY

Application #: _____

Application for Conditional Use Permit (CUP)

Application Fee-\$200.00

Applicant/Owner Name/Address: East River Electric Power Cooperative

211 S. Harth Ave. Madison, SD 57042

Phone #: 605-256-8269 Current Zoning: AG

Legal Description for Requested CUP (attach additional sheets if necessary):

Quarter SW Section 15 Township 110N Range 73W

General Area or Street Address 1050' North of the 211 st section line. Directly across from the WAPA substation.

Reason for Requesting CUP: Please see attached project scope and write up documents for detailed project information.

1. Describe the special circumstances or conditions that exist that requires a CUP: _____

This substation is necessary to convert 230 kV electricity from WAPA's Substation/line to 69 kV that will be delivered to other ERE substations. It will then be converted to 12.47 kV and distributed by Oahe Electric, Central Electric, and Dakota Energy to their membership.

2. Describe how this variance, if approved, would affect neighboring property owners: _____

We currently have a signed purchase agreement and signed plat out for approval on these 5.9 acres proposed for this site. Also easement have been acquired from neighboring landowners for our future new line. Our new line and this substation will add much better electrical reliability to our members we serve in this area through Dakota Energy and Central Electric.

3. What is the purpose/intended use of the proposed project: _____

Please see attached scope and project write up.

4. Additional Information: _____

Attach plans and/or drawings for review by the board. The board may request additional documentation as necessary.

Applicant/Owner Signature: *Jerome Witt*

Date: 2/14/24

Application #: _____

The Hyde County Board of Adjustment takes the following action on the above application number:

_____ **Approved as applied**

_____ **Approved with following the special conditions:** _____

_____ **Denied for the following reasons:** _____

Chairperson, Hyde County Board of Adjustment

Date

Attest by Hyde County Auditor

Date

This permit/application shall automatically expire if the use permitted has not been started within two (2) years of approval or if the use permitted ceases for a period of twelve (12) months. This permit applies to the use of the property and remains valid for any future owners or operators as long as the use of the property does not change.

Official Use Only	
Date Application Filed: _____	Application Fee Receipt # (non-refundable): _____
Dates Published: _____	
Hearing Date: _____	
Notice of Board Action Sent to: Landowner _____	Zoning Administrator: _____
Further Action Required: _____	

HYDE COUNTY

Application #: CUP2024-002

Application for Conditional Use Permit (CUP)

Application Fee-\$200.00

Applicant/Owner Name/Address: East River Electric Power Cooperative
211 S. Harth Ave. Madison, SD 57042

Phone #: 605-258-3289 Current Zoning: AG

Legal Description for Requested CUP (attach additional sheets if necessary):

Quarter SW Section 15 Township 110N Range 73W

General Area or Street Address 1050' North of the 211 st section line. Directly across from the WAPA substation.

Reason for Requesting CUP: Please see attached project scope and write up documents for detailed project information.

1. Describe the special circumstances or conditions that exist that requires a CUP:

This substation is necessary to convert 200 KV electricity from WAPA's Substation/line to 69 KV that will be delivered to other ERPC substations. It will then be converted to 12.47 KV and distributed by Dana Electric, Central Electric, and Dakota Energy to their membership.

2. Describe how this variance, if approved, would affect neighboring property owners:

We currently have a signed purchase agreement and signed plat out for approval on these 5.9 acres proposed for this site. Also easement have been acquired from neighboring landowners for our future new line. Our new line and this substation will add much better electrical reliability to our members we serve in this area through Dakota Energy and Central Electric.

3. What is the purpose/intended use of the proposed project:

Please see attached scope and project write up.

4. Additional Information:

Attach plans and/or drawings for review by the board. The board may request additional documentation as necessary.

Applicant/Owner Signature: *Jerome Wine* Date: 2/14/24


Application #: CUP 2024-002

The Hyde County Board of Adjustment takes the following action on the above application number:

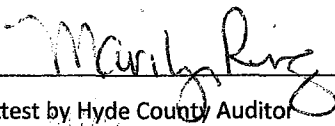
X **Approved as applied**

 Approved with following the special conditions: _____

 Denied for the following reasons: _____



Chairperson, Hyde County Board of Adjustment

3-5-24
Date


Attest by Hyde County Auditor

3-5-2024
Date

This permit/application shall automatically expire if the use permitted has not been started within two (2) years of approval or if the use permitted ceases for a period of twelve (12) months. This permit applies to the use of the property and remains valid for any future owners or operators as long as the use of the property does not change.

Official Use Only	
Date Application Filed: <u>2-15-2024</u>	Application Fee Receipt # (non-refundable): <u>26463</u>
Dates Published: <u>2-22-24 and 2-29-24</u>	
Hearing Date: <u>3-5-2024</u>	
Notice of Board Action Sent to: Landowner <u>✓</u>	Zoning Administrator: <u></u>
Further Action Required: <u>Ø</u>	

Hyde County Auditor

412 Commercial Ave. SE
Highmore, SD 57345
1-605-852-2519
Fax: 1-605-852-3178

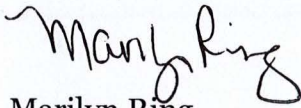
March 7, 2024

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

To whom it may concern:

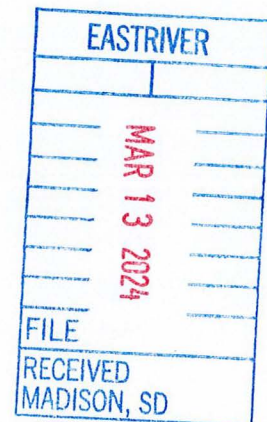
Enclosed please find a copy of the Application for Conditional Use Permit #2024-002. The action that was taken by the Board of Adjustment is on the back of the form. If you have any questions feel free to call 605.852.2519.

Respectfully,



Marilyn Ring
Hyde County Auditor

Enclosure



No

026463

OFFICE OF COUNTY TREASURER

Hyde County, South Dakota

Highmore, S. Dak., March 11, 20 24

Received of East Electric Power Coop.
two hundred and 00/100 Dollars
being money for Zoning/Building (CUP)

Credit 161-324.00 Fund

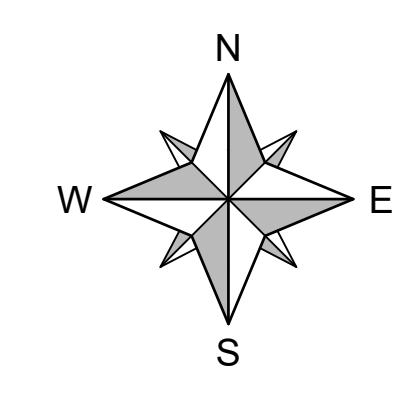
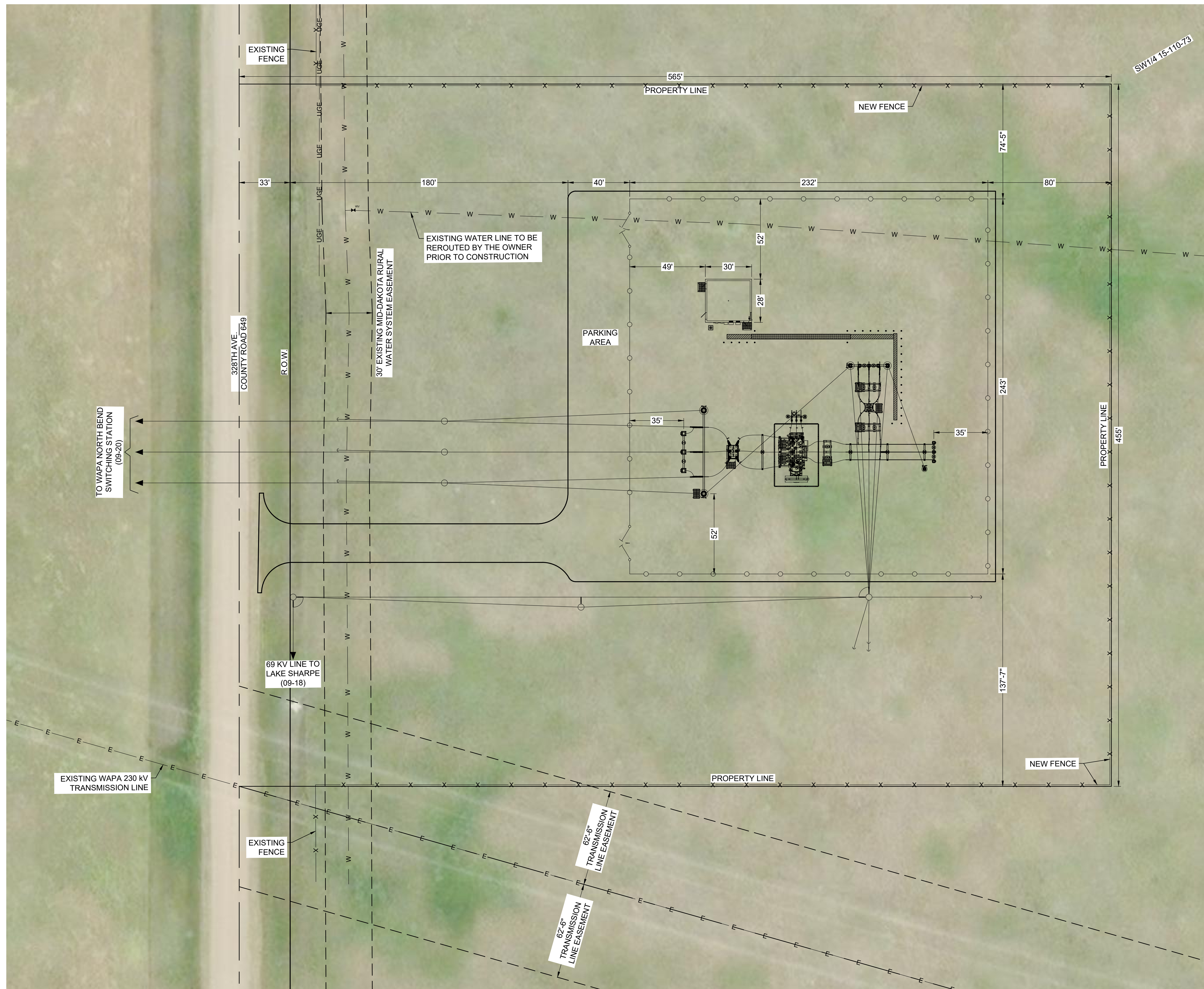
\$ 200.00

By ~~Maureen Hartzell~~ County Treasurer.
, Deputy

Pratt Substation

The Pratt Substation is a new facility required to accommodate planned and projected load growth and to mitigate planning criteria violations. Pratt Substation will be a 230-69kV substation constructed at or near the location of WAPA's North Bend Switching Station (loan code 1005-0205). The substation will feature a 230 kV line terminal, a new 230-69 kV transformer and a 69 kV terminal build for a future ring to provide 69 kV sources for member cooperatives Oahe Electric, Central Electric and Dakota Energy. The 230-69 kV transformer will be rated 36/48/60 MVA and include an LTC. The 69kV yard will initially have a terminal for the Pratt to Lake Sharpe tie line (loan code 805-0005) with future network capabilities for additional 69kV lines for the area to provide better protection coordination, reliability and redundancy in transmission service.

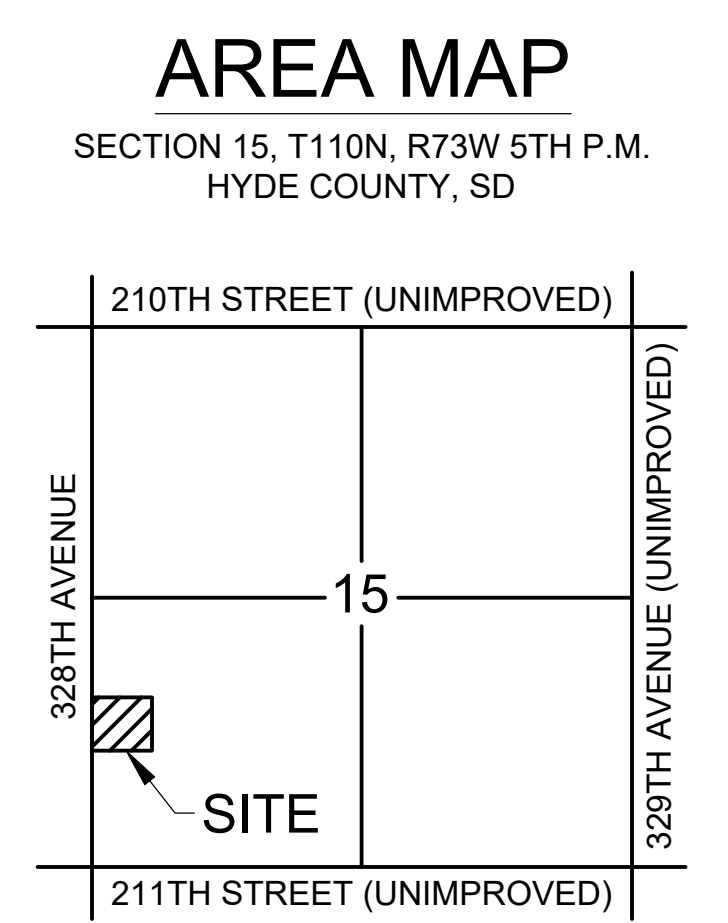




LEGEND

	CHAINLINK FENCE
	PROPERTY LINE
	FENCE
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	UNDERGROUND WATER

- NOTES**
1. SUBSTATION LOT MUST BE SET BACK A MINIMUM DEPTH OF 50' FROM ANY ADJACENT ROAD RIGHT OF WAY, 25' FROM SIDE PROPERTY LINES AND 50' FROM REAR PROPERTY LINE.



REV	DATE	DESCRIPTION	CHKD
0	1/9/2024	SUBSTATION CONSTRUCTION - IFC	ROK

PCP FILE	SHEET	DWG NO.
ERTYPLT.CTB	1 OF 1	PRTKA01

PRATT SUBSTATION
SITE PLAN



Project Scope of Work

Pratt Substation

3/22/2023

Project Description

A new 230 – 69 kV supply substation with a single autotransformer to support Oahe Electric system. The high side is designed as a radial tie to WAPA North Bend substation, and a single 69 kV transmission line brought into a deadend on the lowside. The ultimate arrangement consists of ability to build out the entire 69 kV ring and add a future 69 kV transmission line.

Member Co-Op

Dakota Energy

Location

TBD 328rd St, Holabird, SD, 57540

GPS Coordinates: 44°19'37.56"N, 99°36'9.85"W

Major Equipment

- (1) 230GrdY/132.8 – 69GrdY/39.8 – 12.47 kV, 36/48/60 MVA autotransformer
- (1) 230 kV circuit breaker, 1200 A rated, 1200:5 MR CTs, 40 kA
- (1) 230 kV GOAB disconnect switch, vertically mounted, 2000 A
- (6) 230 kV station class arresters, 180 kV duty cycle, 144 kV MCOV
- (3) 230 kV PT
- (1) 69 kV circuit breaker, 2000 A rated, 2000:5 MR CTs, 40 kA
- (1) 69 kV GOAB disconnect switch, horizontally mounted, 1200 A, whips
- (2) 69 kV GOAB disconnect switch, horizontally mounted, 1200 A
- (6) 69 kV station class arrester, 60 kV duty cycle, 48 kV MCOV
- (6) 69 kV PT
- (3) 12.47 kV tertiary station class arrester, 18 kV duty cycle, 15.3 kV MCOV
- (3) 13.2 kV tertiary PTs



- (1) 12.47 kV connected tertiary SSVT (AC study to determine kVA rating for general and ultimate arrangements)
- (5) 25 kV tertiary fused disconnect switches
- (1) 125 VDC battery bank, 60 cells (DC study to determine Ah rating for general and ultimate arrangements, 24 hour run time)
- (1) Battery charger (DC study to determine A rating for general and ultimate arrangements)
- (1) Pre-cast control building (sized for ultimate build out)

Bus Design

Avian protection is required for 25 kV and below equipment bushings, insulators, cutouts, switches, and jumpers. Bus study shall be used to determine span supports, insulators, and support fittings. EHV connectors shall be used on 230 kV bus.

230 kV Bus

- All insulators and spacing shall be to 230 kV
 - 16' phase spacing for switches with arcing horns
- 2" Schedule 40 Aluminum alloy bus – 6063-T6 (1217 A summer rating)

230 kV Jumpers

- Single 477 ACSR "Hawk" (568 A summer rating)

69 kV Bus

- All insulators and spacing shall be to 69 kV
 - 10' phase spacing for switches with arcing horns
- 4" Schedule 40 Aluminum alloy bus – 6063-T6 (2534 A summer rating)

69 kV Jumpers

- Parallel 1272 AAC "Narcissus" per phase (2010 A combined summer rating) to switches, breakers, transformer
- Single 477 ACSR "Hawk" (568 A summer rating) to transformer, PTs
- Single 4/0 AAC (331 A summer rating) to arresters



12.47 kV Bus

- All insulators and spacing shall be to 15 kV
- 2" Schedule 40 Aluminum alloy bus – 6063-T6 (1217 A summer rating)

12.47 kV Jumpers

- Single 477 ACSR "Hawk" (568 A summer rating) to transformer
- Single #1/0 ACSR "Raven" (209 A summer rating) to PTs, SSVT, switches

AC Station Service

- Primary station service will be fed from SSVT on the autotransformer tertiary and secondary station service will be from distribution cooperative. Transfer switches will be installed to choose between primary/secondary station service feed and a portable generator.
- AC study to be completed to properly size the transformers and equipment for general and ultimate arrangements.

Site Work

- The substation site area will be 219' x 243' with two gates. A gravel parking pad will be provided on the south side of the substation with one driveway off the road per site plan.
- Conduit fill and cable trench fill calculations to be performed and wireway systems sized to meet requirements of ultimate build out.
- High resistivity rock added or replaced shall be 4" depth minimum and extend 5' beyond the fence and gate swing.

Civil/Structural

- Steel structures shall be built to minimum heights required by RUS and NESC standards for the following structures. Structures and foundations shall be built for consideration in both general and ultimate arrangements.
 - (1) 230 kV H-frame single bay deadend
 - (1) 230 kV 3-phase voltage transformer stand
 - (1) 230 kV 3-phase bus support – single leg
 - (1) 69 kV H-frame double bay deadend (ultimate)



- (3) 69 kV switch stands – double leg
- (3) 69 kV 3-phase bus supports – single leg
- (2) 69 kV 3-phase voltage transformer stand
- (1) 12.47 kV tertiary PT/SSVT stand
- (8) switch platforms for switches, breakers, and building
- (1) oil containment
- (1) static mast

Protection and Control

- Two (2) transmission line panels will each utilize a line protection package containing an SEL 411L/421 relay pair and breaker control switches. These panels will provide the following protections:
 - Current differential scheme (if applicable)
 - Step Distance scheme
 - Communication assisted tripping schemes and DTT (if applicable)
 - Backup overcurrent protection
 - Breaker Failure
 - Sync check for breaker closing
 - Breaker Reclosing
 - Hot-Line Tagging
 - Manual breaker tripping and closing.
 - The panel will include the following for one of the breakers on the line:
 - Hot-Line Tag control switch
 - Reclose Enable/Disable control switch
 - Breaker Failure Lockout Relay
 - Auto/Manual Sync selector switch
 - Local/Supervisory selector switch
 - Trip/Close control switch
- One (1) Transformer protection panel will utilize transformer protection package containing an SEL 387/387E relay pair and breaker control switches. This panel will provide the following protections on the transformer and the 230kV bus.
 - Differential protection zone around the transformer.



- Differential protection zone around the transformer and 230kV breaker(s).
- Overcurrent protection on primary and secondary windings.
- Overvoltage and overcurrent protection on the tertiary winding (if applicable).
- One (1) Bus differential protection panel will utilize two (2) SEL-487B relays and breaker control switches. This panel will provide the following protections on the south 69kV bus.
 - Differential protection
 - Backup overcurrent protection
 - The panel will include the panel cutout provisions for one of the future line breakers adjacent to the bus:
 - Hot-Line Tag control switch
 - Reclose Enable/Disable control switch
 - Breaker Failure Lockout Relay
 - Auto/Manual Sync selector switch
 - Local/Supervisory selector switch
 - Trip/Close control switch
- Manual tripping for all breakers will be handled via RTU and local control switches.

Metering

- One (1) metering panel will utilize a total of one (1) Nexus 1500 meter to meter the 69kV bus.

Phasing

- Phasing per the following (Based on the transformer):
 - A – H3, X3
 - B – H2, X2
 - C – H1, X1

Communications

Substation



- Communications to this facility will be via fiber optic connections to WAPA North Bend and to East River Lake Sharpe substations. Fiber optic cables will be brought into the substation control building and terminate into a patch panel, then interface to equipment in the East River communications rack
- 2-2" conduit will be provided from the new control building past the west side of the parking area for connection to WAPA's North Bend and 2-2" conduit will be provided from the control building to 10' past the substation fence on the south side of the fence for connection to OPGW on the Lake Sharpe line and a future fiber connection. These conduits will provide diverse pathways for the fiber optic communications cables into the substation.
- Two communications racks shall be provided with 4" cable management on each side of the racks

IT

- Rack space accommodations for 20 Rack Units of comm equipment.

SCADA

- Two (2) Supervisory Panels will each utilize the following:
 - SEL Axion RTU
 - Collect hardwired alarms and status points for SER time precision data.
 - Relay trips, 52A status of breaker(s), Lockout Relay trips, Breaker Failure trips, Relay Hardware Alarms, Transformer device trips, and control house alarms.
 - Send hardwired commands to relays for SCADA breaker control.
 - Manual breaker tripping
 - SEL-3610 Port Server
 - Send and receive data and commands that do not need SER time precision.



- DNP data from relays
- Send and receive remote bit data to and from relays.
 - Communicate with SEL-2414 in transformer(s).
- SEL-3610 Remote Access Server
 - Allow restricted access to relays to pull event records.
- SEL-2100 Logic Processor
 - Communicate with SEL-2505s in breaker(s)
 - Communicate with SEL-2505 in transformer (if applicable)
- SEL-2440 DPAC
 - Monitor relay and breaker DC circuits.
- SEL-2407 GPS clock
- **AMI – Member Supplied**
- N/A
- **Load Management – Owner Supplied**
- N/A

NERC/CIP Requirements

- Not BES due to feed from WAPA being radial but card reader and camera provisions will be installed on building. Two holes and conduits by each walk in door for keycard/camera outside and a hole at each corner of building for outdoor cameras.

Local Building Code/Permitting Requirements

- County Planning and Zoning
 - Permitted Use as Public Utility Facility
 - Plat Approval
 - Address Assignment with sheriff's department
- County Road Highway Department
 - Approach Permit

Schedule

- Purchase Agreement Signed: 2/7/2024
- Substation TOPO / Plat: Prior to 3/17/2024
- Line Route TOPO: Prior to 3/31/2024

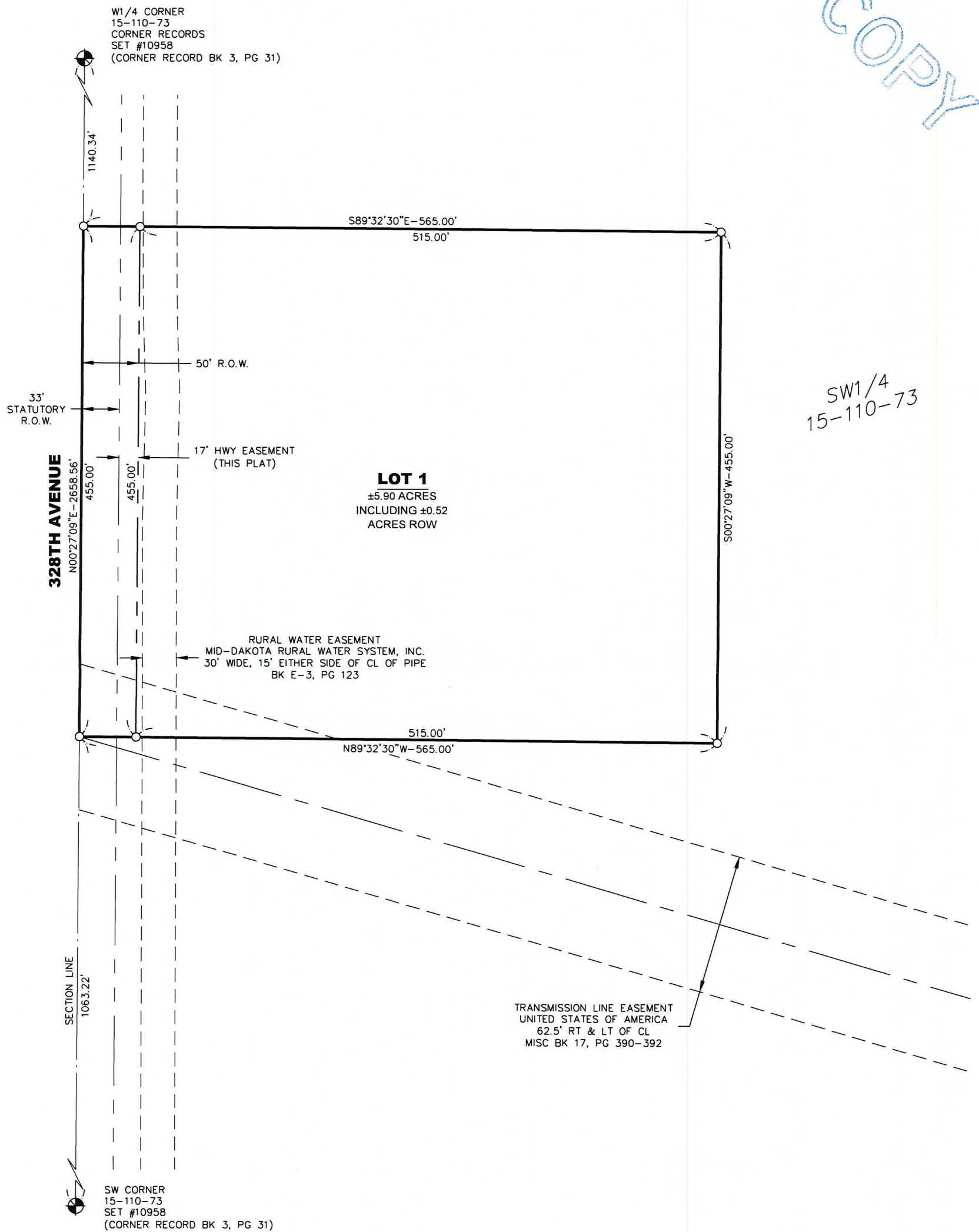


- Transmission & substation design March-July 2024.
- ROW and substation purchase March-May 2024.
- RUS Approval September 2024.
- Grading, foundations, and below grade work for substation October-November 2024.
- Transmission & substation above grade construction December 2024-March 2025.
- Commissioning April-May 2025.
- In service date May 2025.

PLAT OF LOT 1 PRATT SUBSTATION ADDITION

IN THE SW1/4 OF SECTION 15, TOWNSHIP 110 NORTH, RANGE 73 WEST OF
THE 5TH P.M., HYDE COUNTY, SOUTH DAKOTA
CONTAINING ±5.90 ACRES

COPY

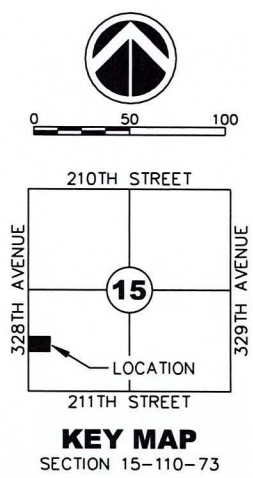


SW1/4
15-110-73



LEGEND

- EXISTING EASEMENT LINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- CENTER LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- PLATTED PROPERTY LINE
- FOUND MONUMENT
- SET 5/8" X 18" CAPPED REBAR
- FOUND SECTION CORNER
- PREVIOUSLY PLATTED DIMENSION



GENERAL NOTES:

1. BASIS OF BEARINGS FOR THIS DRAWING IS UTM WITH NAD83 DATUM, ZONE 14, US FOOT.
2. RESEARCH OF EXISTING EASEMENTS OF RECORD WAS NOT PERFORMED.

DGR ENGINEERING
1300 S. HIGHLINE AVENUE
SIOUX FALLS, SD 57110
(605) 339-4157 office
(605) 339-4175 fax
dgr.com

