



A Touchstone Energy® Cooperative 

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September 1, 2021

Steve Kahl  
Executive Director  
North Dakota Public Service Commission  
600 East Boulevard; Department 408  
Bismarck, ND 58505-0480

Re: Minnkota Power Cooperative, Inc. – Center to Maple River 345-kV Transmission Line - 2021 Structure Replacement Project

Dear Mr. Kahl:

Due to significant structure footing damage incurred from years of frost heave and weathering damage, Minnkota Power Cooperative, Inc. (Minnkota) has determined (through our inspection program) that four of the High Voltage Transmission Line (HVTL) structures need replacement. The existing HVTL was completed in 1970. The structure numbers to be replaced are: #596 - #598 (tangent structures) and structure #643 (dead end structure). The existing (original) aluminum H-frame lattice type structures were built on concrete footings. Because the footings have heaved, the structure is now out of alignment and the misalignment has caused undue stress to the structure's lattice members which could compromise the line during a storm event. Based on Minnkota's experience, it has been determined that the best way of addressing the footing and structural integrity problem is to completely replace the structures. This 345 kV line is a critical part of the Minnkota transmission system as well as the regional grid and as such, its integrity needs to be improved.

The new steel pole H-frame structures will be installed approximately 10' (in line and within the existing right of way) from the existing structure locations with the exception of structure #597. Structure #597 will be moved in line to an alternate location approximately 90 feet east so as not to be located in a wetland. The US Fish and Wildlife Service was consulted and they do not have either owned land or wetland easements within the ROW or the corridor. Structure #597 removal activities will incorporate the use of protective matting to protect the small wetland as shown in the photo in the exhibits.

The FWS on-line IPAC system was also researched to obtain official species list with respect to threatened and endangered species. For both locations (#643 and #596 - #598) species listed as possibly occurring are the Northern Long Eared Bat (NLEB) -Threatened, Piping Plover – Threatened, Red Knot – Threatened, Dakota Skipper – Threatened, and the Whooping Crane – Endangered (wherever found throughout ND). The IPAC searches indicated there were no Critical Habitats present in the project areas. In addition, the nature of the project setting is not conducive to desirable habitat for these species. Therefore, this project will not affect listed species or their habitat. The figures included in the exhibits indicate also that this project will not impact other environmentally sensitive features.

The replacement steel structures will be directly imbedded. This design eliminates the need for poured concrete footings. Once installed, the conductor will be re-attached. For comparative purposes, the change

in conductor attachment height will range from 1 foot (#643) to 9 feet higher (#596) than the existing conductor height.

The replacement HVTL structures will be installed during an outage (September 20<sup>th</sup> through October 1<sup>st</sup>, 2021 and from October 11<sup>th</sup> through the 15<sup>th</sup>, 2021 if needed. Construction activities are expected to have minimal impacts and would be completed in October, 2021.

This submittal is in accordance with North Dakota Century Code 49-22-03 (3)(a)(3)(c). Also, in accordance with North Dakota Century Code 49-22-03 (3)(a)(4)(3), enclosed please find a notarized certification indicating the planned improvement activities for the subject transmission line will not affect any known exclusion or avoidance areas as defined in in North Dakota Administrative Code 69-06-08-02 (1) and (2).

In addition to the certification, location maps and the design specifications for the replacement structures are also enclosed. Please contact me at [tjohnson@minnkota.com](mailto:tjohnson@minnkota.com) or 701-799-1729 if you have any questions or require additional information.

Sincerely,

*Terry Johnson*

Terry Johnson  
Environmental Engineer III

CERTIFICATION OF APPLICANT PURSUANT  
TO N.D. CENTURY CODE 49-22-03(3)(a)(4)  
MINNKOTA POWER COOPERATIVE, INC.

I, Grant Gunderson, a duly authorized agent of Minnkota Power Cooperative, Inc. that has authority to bind the company in these matters, do hereby certify under oath:

1. That the replacement of existing aluminum H-frame lattice structures with direct imbed steel structures as described herein at four locations on the Center to Maple River 345-kV Electrical Transmission line will not affect any known exclusion or avoidance area as defined under the N.D. Administrative Code 69-06-08-02 (1) and (2).
2. That the replacement is to improve the existing electric transmission facility.
3. That Minnkota Power Cooperative, Inc. will comply with all applicable conditions and protections in applicable North Dakota siting laws and rules and commission orders that may apply.

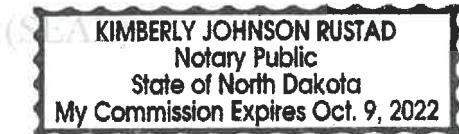
Dated at Grand Forks, North Dakota this day of September 1, 2021.

Grant Gunderson, P.E., Senior Manager Power Delivery Operations



STATE OF NORTH DAKOTA  
COUNTY OF GRAND FORKS

This instrument was acknowledged before me this 1st day of September, 2021 by Grant Gunderson, P.E., Senior Manager Power Delivery Operations, on behalf of Minnkota Power Cooperative, Inc.



Notary Public

Signature: 

Name *Kimberly Johnson Rustad*  
Notary Public  
State of North Dakota  
My Commission Expires *10/9/2022*

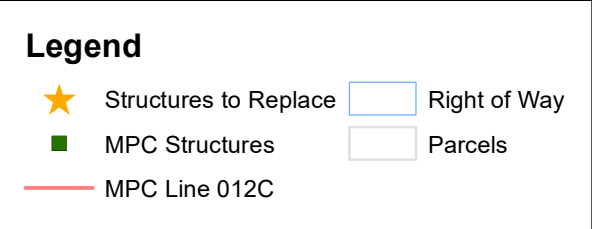
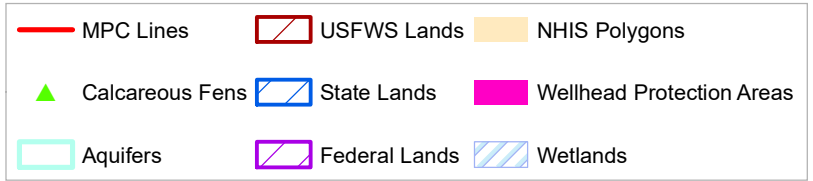
**EXHIBIT 1**

**MAPPING**

# 012C Structure Replacement

STR #: 012C0597 / Valley City Outpost

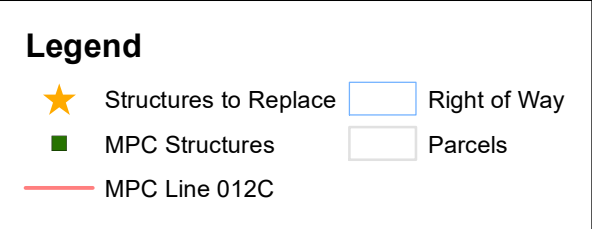
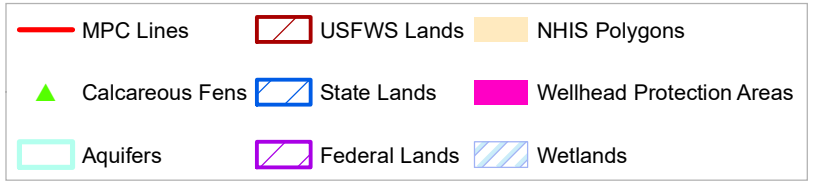
Stutsman County, ND



# 012C Structure Replacement

STR #: 012C0643 / Valley City Outpost

Stutsman County, ND



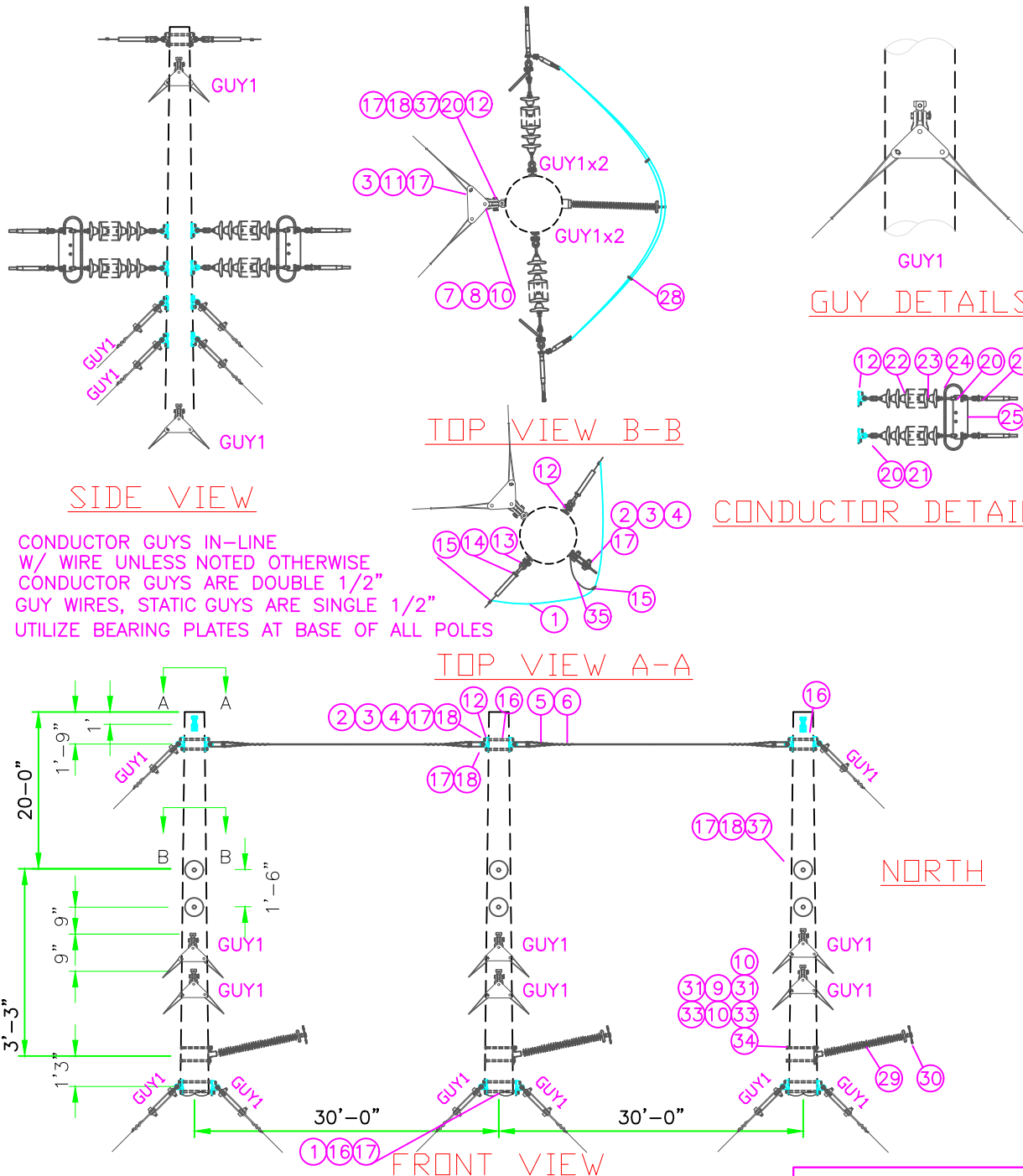
**EXHIBIT 2**

**REPLACEMENT STRUCTURE DETAIL**

**T345-56 345-1S - REPLACING #596 - #598**

**TS-345 DI 3 Pole – REPLACING #643**





CONDUCTOR GUYS IN-LINE  
W/ WIRE UNLESS NOTED OTHERWISE  
CONDUCTOR GUYS ARE DOUBLE 1/2"  
GUY WIRES, STATIC GUYS ARE SINGLE 1/2"  
UTILIZE BEARING PLATES AT BASE OF ALL POLES

(A) SEE DWG. NO. T345-23 "WOOD POLE GROUNDING"

\* CORONA RINGS TO BE INSTALLED IN OPPOSITE DIRECTION OF JUMPERS.

### LIST OF MATERIALS

DWG REF	QUANTITY	DESCRIPTION	STOCK NO.
1	6	PLATE, BEARING, A1895.10, HUGHES	727-570-282C
2	8	LINK, GUY, 3/8"x3"x6" CC HOLE, 15/16" HOLES, 38,000 LB/PR, HUGHES 3165	727-450-208C
3	44	ROLLER, GUY, 2-1/2" W/15/16" HOLE, HUGHES 28086, J-6290	727-450-213E
4	8	BOLT, MACHINE, 7/8 IN. X 3 IN., W/ NUT	727-090-069E
5	4	DEADEND GUY GRIP, 3/8 IN. PREFORMED, PLP GDE-1107, FARGO FWDE-1107	727-330-151E
6	30	WIRE, GUY, 3/8 IN E.H.S., "B" COATING, 7 STRD, ASTM-A363, LB FOR STATIC WIRE, 3.66 FT/LB, 273 LBS-FT (2,500 FT/REEL)	727-290-108C
7	40	TRIPLE HOLE GUY PLATE, 3/4" THICK, ONE 1-1/16" HOLE, TWO 15/16" HOLES, 38,000 LBS, HUGHES AS2355-E	727-450-210J
8	20	BOLT, MACHINE, 1" X 4", HUGHES B104-2, W/ NUT	727-090-071E
9	3	NUT, SQUARE, 1" GALV., CAT. NO. J8565-1 JOSLYN, HUGHES N100	727-530-270E
10	26	NUT, M-F LOCK, 1 IN., -8585 JOSLYN	727-530-270C
11	40	BOLT, MACHINE, 7/8" X 4", HUGHES B84-2, W/ NUT	727-090-069E
12	40	DEADEND TEE, 6" C.C. 15/16" MTG. HOLES, 60,000 LB. ULT. STR., HUGHES 2817R4.5-15-17	727-450-200A
13	4	SHACKLE, ANCHOR, 30,000 LB, 5/8" BOLT, AS-25-L-BNK ANDERSON, BT3024 BNK JOSLYN	727-770-485E
14	4	DEADEND BODY, GUY WIRE, 3/8", CAT. NO. E4514.12, ALCOA	727-330-148E
15	6	CLAMP, PARALLEL GROOVE, ANDERSON ST-4	727-210-095C
16	10	7/8" X REQ'D LENGTH MACHINE BOLT	727-090-XXXJ
17	80	7/8" M-F LOCK NUT	727-530-269E
18	52	EXTRA 7/8" SQUARE NUT	727-530-269J
19	0	CLIP, GROUND WIRE, 7/8" BOLT SIZE, STK #2727.8, HUGHES BROS	727-410-185C
20	44	SHACKLE, ANCHOR, 80,000 LB, 1" BOLT, HUBBELL AS60-BNK	727-770-490C
21	12	EYE, BALL, 50K, HUBBELL: 909462000	727-250-489E
22	240	INSUL, SUSPENSION, 10", 40,000 LB, GRAY, CAT.#61236H-70 LAPP	727-490-250E
23	12	LINK, EXT, SOCKET CLEVIS, 7/8" PIN 50,000 LB, HUBBELL HSC110501BNK	727-730-506A
24	6	CORONA RING, HUBBELL TCR-4781-47	727-490-XXXJ
25	6	PLATE, YOKE, RECT, 40K ULT PER CONDUCTOR HUBBELL 929333002	727-570-288E
26	12	DEADEND ASSEMBLY, COMPRESSION, 1272 KCMIL 45/7 ACSR, ALCOA E33161EHV	727-330-143J
27	120	CONDUCTOR, ALUM-CODE BLACK, 1272 45/7 ACSR. LB BITTERN .697 FT/LB(NEW), 1.434 LBS. PER FT	727-290-100E
28	12	SUBCONDUCTOR SPACER FOR 345 KV, 1272 MCM 45/7 ACSR, 18" SEP., PREFORMED #CGTS-0117	727-490-266C
29	3	INSULATOR, POST, 3.0" ROD, 2 HOLE BLADE W/ GAIN BASE AND CORONA RING, HUBBELL P300099S002A	727-XXX-XXXJ
30	3	CLAMP, JUMPER, W/ YOKE PLATE, 2.00" TO 2.48" CLAMPING RANGE, HUBBELL JLC24818357 W/ 1272 ARMOR ROD	727-XXX-XXXJ
31	6	1" X REQ'D LENGTH MACHINE BOLT, W/ NUT	727-090-XXXJ
32	0	CLIP, GROUND WIRE, 1" BOLT SIZE, STK #2727.10, HUGHES BROS.	727-410-XXXJ
33	6	WASHER, CURVED, 4X4X3/8", FOR 1" BOLT, CAT. NO. CW100-3/8, HUGHES	727-770-543C
34	3	WASHER, SPRING, 1 IN., STK #2702.10, HUGHES BROS.	727-810-XXXJ
35	2LB	COND. COPPER, #4 BARE, STRANDED, 7.76 FT./LB., 1289 LBS./FT., (25#/REEL)	726-206-009E
36	0	5/8" X REQ'D LENGTH MACHINE BOLT, W/ NUT	727-090-XXXJ
37	30	BOLT, MACHINE, 7/8" X 18" WITH NUT, HOT DIPPED GALVANIZED HEX BOLT HEAD & HEX NUT, GRADE A325	727-090-170C
38	0	WASHER, SPRING, 5/8", CAT. NO. J-3540, JOSLYN	727-810-525E
39	0	NUT, M-F LOCK, 5/8", J-8583	727-530-268E

TS-345-3 POLE 345KV DUCTILE IRON DEAD END			
MINNKOTA POWER COOPERATIVE, INC. GRAND FORKS, NORTH DAKOTA			
FOR CONSTRUCTION	JRL	5/10/14	
REVISIONS	BY	DATE	DRAWN BJL DATE 7/27/21 DWG. NO. 345D-WPE-DI

**EXHIBIT 3**

**PHOTO OF EXISTING STRUCTURE 597**



PHOTO OF EXISTING STRUCTURE 597