

Minnesota Practice Standard Specification

FENCE

Part I: High Tensile Permanent Electric Wire Fence

1. SCOPE

The work shall consist of furnishing all materials required and installation of the fence at the locations shown on the plans.

High tensile electric wire fence shall have a minimum of one strand of high tensile smooth wire (interior fence only). The minimum number of wires is dependent on the use of the fence.

Barbed wire shall not be used on electric fences because of the safety hazard created by the high capacity energizers needed to charge the heavy gauge wire.

Refer to the standard drawings MN-ECS-016, -019, -020, -021, -023, -024, -026, -027, and -028 attached to this specification.

2. MATERIALS

WIRE

- PERIMETER: 12.5 ga. minimum high tensile, 135,000 psi minimum tensile strength
- INTERIOR: 14 ga. minimum high tensile
- All wire shall have sufficient coating to protect the wire for the minimum life expectancy of 20 years

FASTENERS

STAPLES:

- 1.5 in. minimum length for softwoods
- 1 in. minimum length for hardwoods
- Space shall be left between posts and staples to permit free movement of the wire
- Wire clips will be provided by the post manufacturer's galvanized wire 12 ga. minimum
- Space shall be left between posts and staples to permit free movement of the wire

POSTS

WOOD:

- Red cedar, black locust, tamarack, white cedar, redwood, white oak, osage orange and burr oak may be used without preservative treatment
- All other wood species shall be treated by a method such that complete saturation of the sapwood is obtained
- Wood line posts will be a minimum of 6 ½ ft. long, 4 in. minimum diameter and buried or driven a minimum of 2 ½ ft. into the ground
- Wood "H" type corner brace assembly upright posts have a minimum diameter of 6 in., a minimum length of 8 ft., and are buried or driven 4 ft into the ground. See standard drawings for details
- Wood "H" corner brace assembly horizontal posts have a minimum length of 8 ft. and a minimum diameter of 4 in. See standard drawings for details

STEEL:

- Only new steel posts will be accepted
- Minimum length is 5 ½ ft.

- Minimum density is 1 ¼ pounds per foot of length
- Minimum depth of installation is 1 ½ ft.
- All steel posts will be painted or galvanized and have an anchor plate attached

FIBERGLASS:

- All fiberglass shall have ultraviolet protective coating for the minimum life expectancy of 20 years
- Minimum length is 5 ½ ft.
- Minimum depth of installation is 1 ½ ft.
- Minimum diameter is 7/8 in.
- Written manufacturer's warranty of 20 years accepted for Geotek products

ENERGIZER:

Per manufacturer's recommendations with the following minimum requirements-

- 3 ground rods per energizer
- 6 ft. x ½ in. galvanized rod spacing not less than 10 ft.
- Install ground system 65 ft. from farmstead electrical system ground rods
- One lighting diverters/arrestors per energizer, minimum 65 ft. from earth return rods
- Surge suppressor recommended at plug in location of energizer

BRACES:

Double braces, corners and pull assemblies will be used when six or more high tensile wires are strung on the fence.

Part II: Barbed Wire Fence

1. SCOPE

The work shall consist of furnishing all materials required and installation of the fence at the locations shown on the plans.

Barbed wire fence shall have a minimum of four strands of barbed wire.

Refer to standard drawings MN-ECS-017, -019, -020, -021, -023, -024, -027, and -028 attached to this specification.

2. MATERIALS

WIRE

- 12.5 ga. minimum conventional
- 15.5 ga. minimum high tensile
- 14 ga. or heavier, 2 pt. barbs on approximately 5 in. centers
- All wire shall have sufficient coating to protect the wire for the minimum life expectancy of 20 years

FASTENERS

STAPLES:

- 1.5 in. minimum length for softwoods
- 1 in. minimum length for hardwoods
- Space shall be left between posts and staples to permit free movement of the wire
- Wire clips will be provided by the post manufacturer's galvanized wire 12 ga. minimum

- Space shall be left between posts and staples to permit free movement of the wire

POSTS

WOOD:

- Red cedar, black locust, tamarack, white cedar, redwood, white oak, osage orange and burr oak may be used without preservative treatment
- All other wood species shall be treated by a method such that complete saturation of the sapwood is obtained
- Wood line posts will be a minimum of 6 ½ ft. long, 4 in. minimum diameter and buried or driven a minimum of 2 ½ ft. into the ground
- Wood “H” type corner brace assembly upright posts have a minimum diameter of 6 in., a minimum length of 8 ft., and are buried or driven 4 ft. into the ground. See standard drawings for details
- Wood “H” corner brace assembly horizontal posts have a minimum length of 8 ft. and a minimum diameter of 4 in. See standard drawings for details

STEEL:

- Only new steel posts will be accepted
- Minimum length is 5 ½ ft.
- Minimum density is 1 ¼ pounds per foot of length
- Minimum depth of installation is 1 ½ ft.
- All steel posts will be painted or galvanized and have an anchor plate attached

Part III: Woven Wire Fence

1. SCOPE

The work shall consist of furnishing all materials required and installation of the fence at the locations shown on the plans.

Refer to standard drawings MN-ECS-018, -019, -020, -021, -023, -024, -027, and -028 attached to this specification.

2. MATERIALS

WIRE

BARBED:

- 12.5 ga. minimum conventional
- 15.5 ga. minimum high tensile
- 14 ga. or heavier, 2 pt. barbs on approximately 5 in centers

HIGH TENSILE:

- 12.5 ga. minimum high tensile, 135,000 psi minimum tensile strength

WOVEN WIRE:

- 11 ga. minimum top and bottom wires
- 12.5 ga. minimum line and stay wires
- 12.5 ga. minimum high tensile wire
- Do not mix high tensile and barbed wire
- Do not electrify barbed wire

- All wire shall have sufficient coating to protect the wire for the minimum life expectancy of 20 years
- Wire mesh dimensions for goats and sheep maximum 4 in. x 4 in.

FASTENERS

STAPLES:

- 1.5 in. minimum length for softwoods
- 1 in. minimum length for hardwoods
- Space shall be left between posts and staples to permit free movement of the wire
- Wire clips will be provided by the post manufacturers galvanized wire 12 ga. minimum
- Space shall be left between posts and staples to permit free movement of the wire

POSTS

WOOD:

- Red cedar, black locust, tamarack, white cedar, redwood, white oak, osage orange and burr oak may be used without preservative treatment
- All other wood species shall be treated by a method such that complete saturation of the sapwood is obtained
- Wood line posts will be a minimum of 6 ½ ft. long, 4 in. minimum diameter and buried or driven a minimum of 3 ft. into the ground
- Wood “H” type corner brace assembly upright posts have a minimum diameter of 6 in., a minimum length of 8 ft., and are buried or driven 4 ft. into the ground. See standard drawings for details
- Wood “H” corner brace assembly horizontal posts have a minimum length of 8 ft. and a minimum diameter of 4 in. See standard drawings for details

STEEL:

- Only new steel posts will be accepted
- Minimum length is 5 ½ ft.
- Minimum density is 1 ¼ pounds per foot of length
- Minimum depth of installation is 1 ½ ft.
- All steel posts will be painted or galvanized and have an anchor plate attached.

Part IV: Safety Fence

Safety fences are intended to protect humans and animals from hazards such as manure storage facilities. Requirements may be project specific, but at a minimum, a woven wire fence topped with barbed wire that meets the requirements of MN-ECS-18 must be used. Cattle panels topped with barbed wire are also acceptable. Barbed wire or power fences are not acceptable. Refer to MN-ENG-610 at the following link for detailed drawings and instructions for safety fence.

<http://www.mn.nrcs.usda.gov/technical/eng/cadd.html>

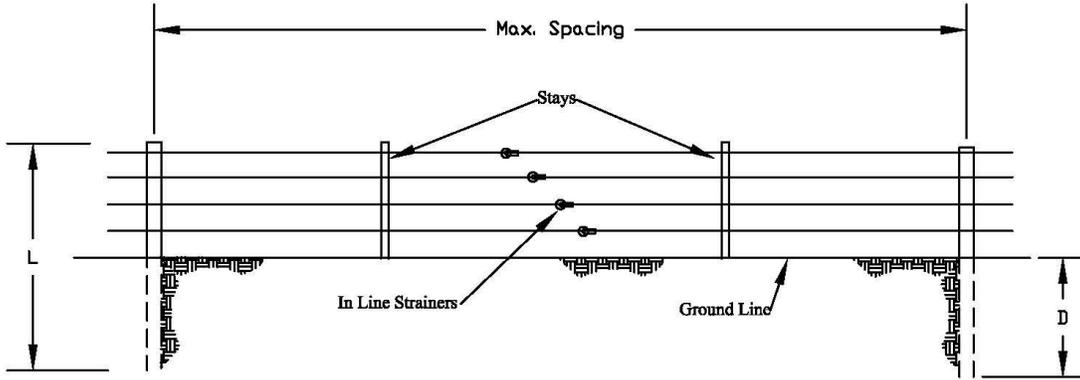
The producer’s insurance company should be consulted to see if they have additional requirements for safety fences. In some cases, a tall chain link fence has been required.

Part V: Fence Standard Drawings

MN-ECS-016 thru -028 attached.

POWER FENCE

50' w/ out stay _____
 100' w/ 1 stay _____
 150' w/ 2 stays _____



POSTS

Wood: L = 6.5 Ft. Min.
 D = 2.5 Ft. Min.
 Dia = 4 In. Min.

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARAC, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

STEEL: L = 5.5 Ft. Min.
 D = 1.5 Ft. Min.
 Standard "T" ≥ 1.25 Lbs/Ft.

ALL STEEL POSTS WILL HAVE AN ANCHOR PLATE ATTACHED AND WILL BE EITHER GALVANIZED OR PAINTED.

FIBERGLASS: L = 5.5 Ft. Min.
 D = 1.5 Ft. Min.
 Dia = 7/8 In. Min.

ALL FIBERGLASS SHALL HAVE ULTRAVIOLET PROTECTIVE COATING FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

WIRE

PERIMETER: 12.5 Ga. Min. HIGH TENSILE
 135,000 Psi. Min. TENSILE STRENGTH

INTERIOR: 14 Ga. Min. HIGH TENSILE

ALL WIRE SHALL HAVE SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

FASTENERS

STAPLES: 1 = 1.5" Min. FOR SOFTWOODS
 L = 1" Min. FOR HARDWOODS
 SPACE SHALL BE LEFT BETWEEN POSTS AND STAPLES TO PERMIT FREE MOVEMENT OF THE WIRE
 WIRE CLIPS WILL BE PROVIDED BY OR GALVANIZED WIRE 12 Ga. Min.

ENERGIZER

PER MANUFACTURERS RECOMMENDATIONS WITH THE FOLLOWING MINIMUM REQUIREMENTS:
 3 GROUND RODS PER ENERGIZER.
 6 Ft. X 1/2 in. , GALVANIZED ROD.
 SPACING NOT LESS THAN 10 FEET.
 65 ft. FROM FARMSTEAD ELECTRICAL SYSTEM GROUND RODS.

LIGHTING DIVERTERS / ARRESTORS

1 PER ENERGIZER, MINIMUM.
 65 Ft. FROM EARTH RETURN RODS.

PERIMETER _____ INTERIOR _____

	PLANNED	APPLIED
# WIRES	_____	_____
LINEAR FEET	_____	_____
FIELD #	_____	_____
CIN	_____	_____

PLANNING ASSISTANCE BY

 Name and Date
 PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS
 YES _____ NO _____

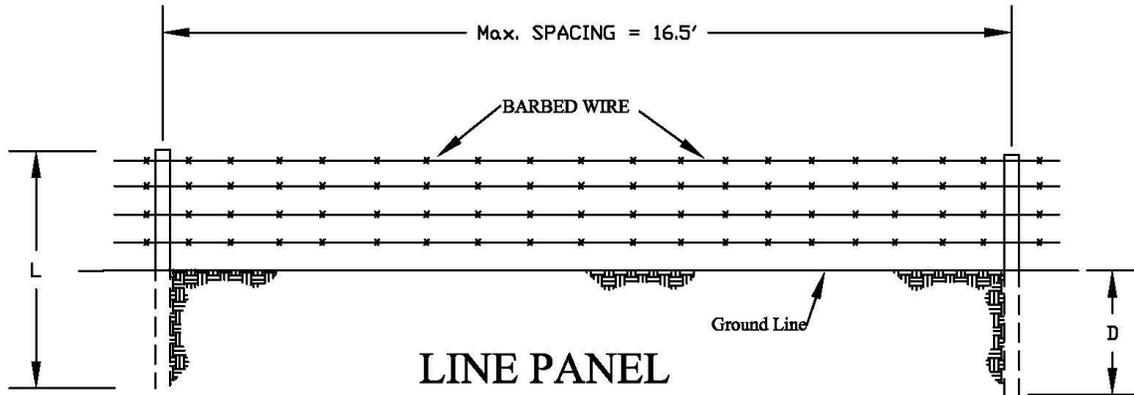
CERTIFIED BY:

 Name and Date

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MN-ECS-016
 4-11

BARBED WIRE FENCE



POSTS

Wood: L = 7 Ft. Min.
 D = 3 Ft. Min.
 Dia = 4 In. Min.

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARAC, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

STEEL: L = 5.5 Ft. Min
 D = 1.5 Ft. Min
 Standard "T" ≥ 1.25 lbs/ft.

ALL STEEL POSTS WILL HAVE AN ANCHOR PLATE ATTACHED AND WILL BE EITHER GALVANIZED OR PAINTED.

FASTENERS

STAPLES: L = 1.5" Min. FOR SOFTWOODS
 L = 1.0" Min. FOR HARDWOODS

SPACE SHALL BE LEFT BETWEEN POSTS AND STAPLES TO PERMIT FREE MOVEMENT OF THE WIRE

WIRE CLIPS WILL BE PROVIDED BY MANUFACTURER OR GALVANIZED WIRE 12 Ga. Min.

WIRE

BARBED: 12.5 Ga. Min. CONVENTIONAL
 15.5 Ga. HIGH TENSILE

14 Ga. OR HEAVIER TWO POINT BARBS ON APPROXIMATE 5 in. CENTERS

ALL WIRE SHALL HAVE SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

PERIMETER _____ INTERIOR _____

	PLANNED	APPLIED
# WIRES	_____	_____
LINEAR FEET	_____	_____
FIELD #	_____	_____
CIN	_____	_____

PLANNING ASSISTANCE BY

 Name and Date

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS
 YES _____ NO _____

CERTIFIED BY:

 Name and Date

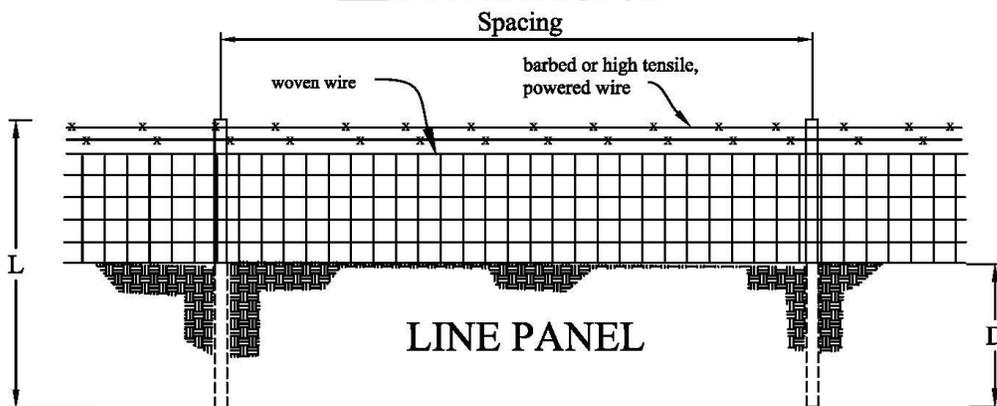
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MN-ECS-017
 4-11

WOVEN WIRE FENCE

_____ High Tensile Woven Max. Spacing 25'

_____ Standard Woven Max. Spacing 16.5'



POSTS

WOOD: L= 7 Ft. Min.
D= 3 Ft.Min.
Dia= 4 In. Min.

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

STEEL: L= 5.5 Ft. Min.
D= 1.5 Ft. Min.
Standard "T" > 1.25 Lbs./ Ft.

ALL STEEL POSTS WILL HAVE AN ANCHOR PLATE ATTACHED AND WILL BE EITHER GALVANIZED OR PAINTED.

FASTENERS

STAPLES: L= 1.5 In. Min. FOR SOFTWOODS
L= 1 In. Min. FOR HARDWOODS

SPACE SHALL BE LEFT BETWEEN POSTS AND STAPLES TO PERMIT FREE MOVEMENT OF THE WIRE.

WIRE CLIPS: WILL BE PROVIDED BY MANUFACTURERS OR GALVANIZED WIRE 12 Ga. Min.

WIRE

BARBED: 12.5 Ga. CONVENTIONAL
15.5 Ga. HIGH TENSILE
14 Ga. OR HEAVIER TWO POINT BARBS ON APPROX. 5 In. CENTERS.

HIGH TENSILE: 12.5 Ga. Min.
135,000 Psi Min. TENSILE STRENGTH

WOVEN: 11 Ga. Min. TOP & BOTTOM WIRES
12.5 Ga. Min. LINE & STAY WIRES
12.5 Ga. Min. HIGH TENSILE
DO NOT MIX BARBED AND HIGH TENSILE WIRE.
DO NOT ELECTRIFY BARBED WIRE.

ALL WIRE SHALL HAVE SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

PERIMETER _____ INTERIOR _____

32" WOVEN W/ 2 BARB OR 2 HT POWERED _____
36" WOVEN W/ 1 BARB OR 1 HT POWERED _____

PLANNED APPLIED

LINEAR FEET _____
FIELD # _____
CIN _____

PLANNING ASSISTANCE BY:

Name and Date

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

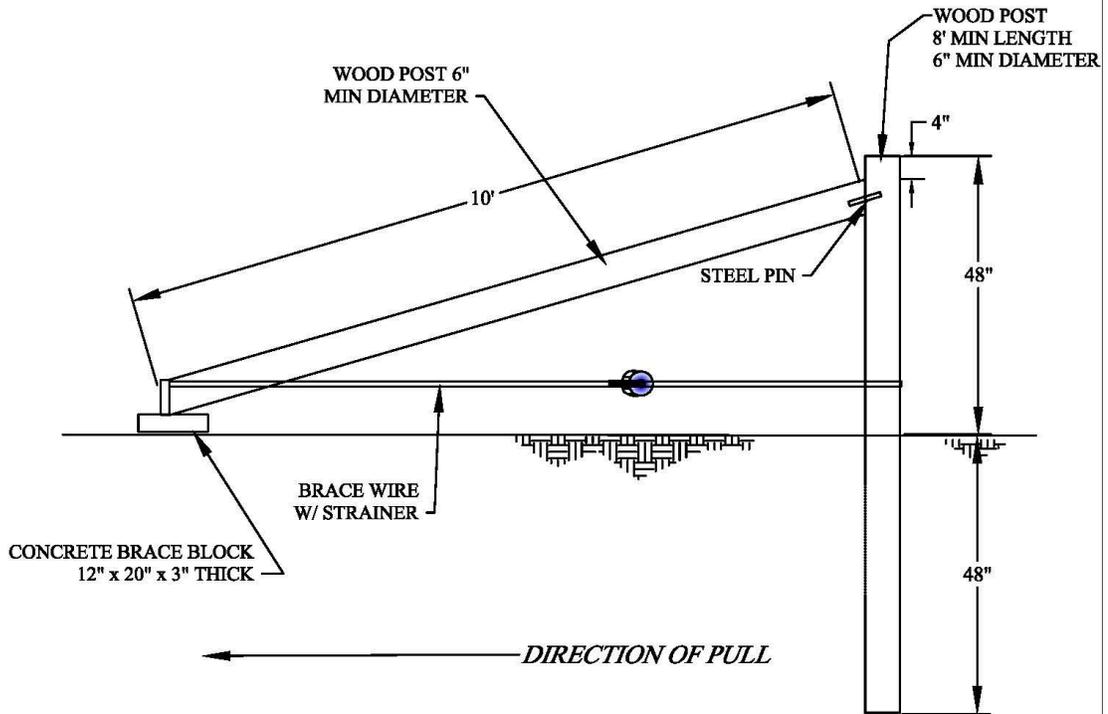
YES _____ NO _____

CERTIFIED BY:

Name and Date

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) MN-ECS-018 252-1166 for utility locations 48 hours prior to the start of excavation work." 6-12

DIAGONAL END BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAY.

BRACING IS REQUIRED WHERE THE FENCE ENDS AND ON HINGED SIDES OF GATE OPENINGS

BRACE WIRE

ONE COMPLETE LOOP OF 12.5 Ga. HIGH TENSILE WIRE

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

YES _____ NO _____

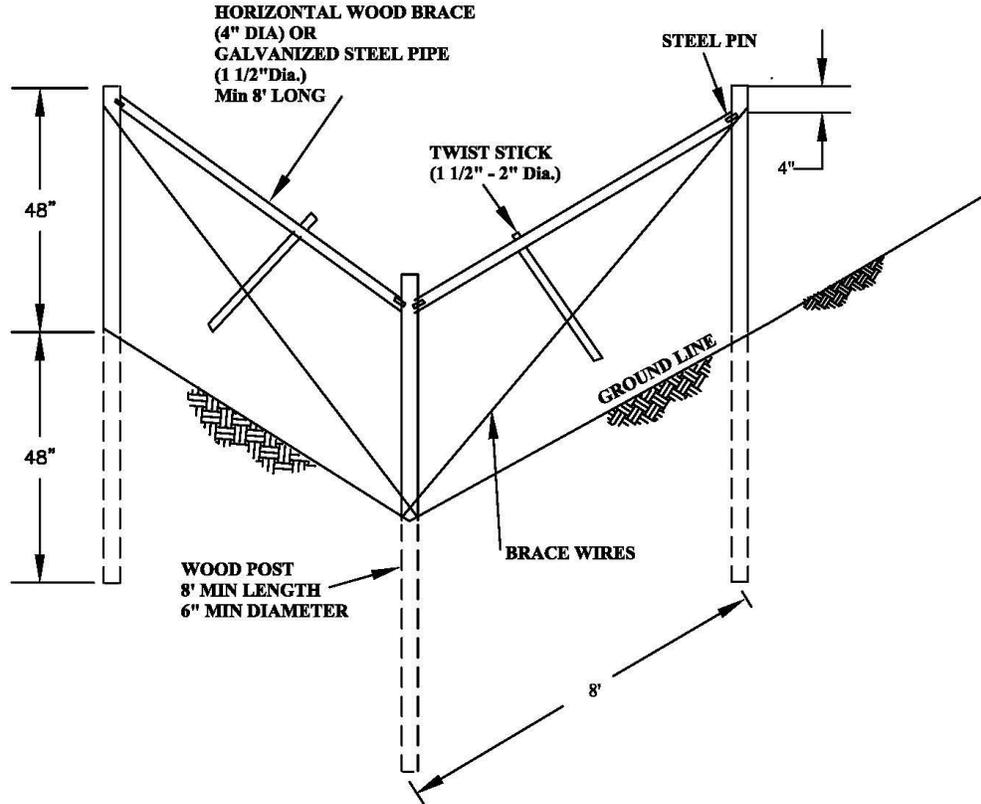
CERTIFIED BY:

_____ Name and Date

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work."

MN-ECS-019
5-06

CORNER BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAY.

BRACE WIRE

2 COMPLETE LOOPS OF 9 Ga. WIRE OR 1 COMPLETE LOOP OF 12.5 Ga. HIGH TENSILE WIRE.

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

CORNERS ARE REQUIRED AT ALL POINTS WHERE THE FENCE ALIGNMENT CHANGES 15 DEGREES OR MORE.

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

YES _____ NO _____

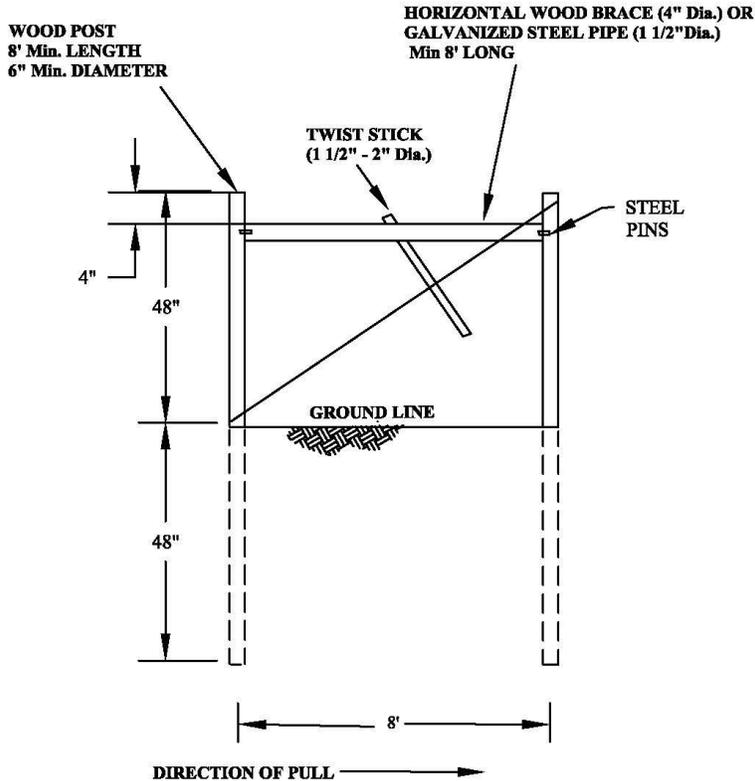
CERTIFIED BY:

Name and Date

MN-ECS-020
5-06

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800)

END BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAY.

BRACE WIRE

2 COMPLETE LOOPS OF 9 Ga. WIRE OR 1 COMPLETE LOOP OF 12.5 Ga. HIGH TENSILE WIRE.

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

BRACING IS REQUIRED WHERE THE FENCE ENDS AND ON HINGED SIDES OF GATE OPENINGS

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS:

YES _____ NO _____

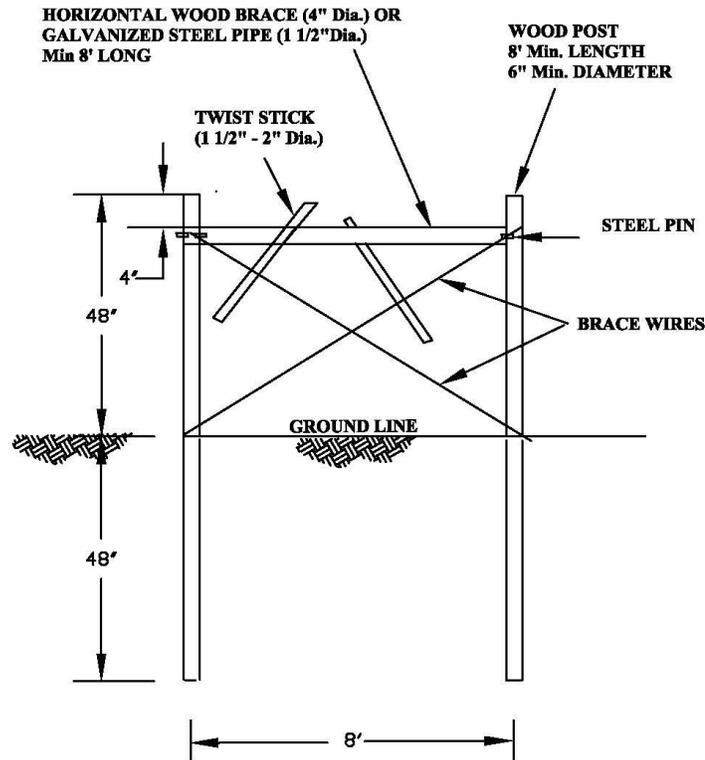
CERTIFIED BY:

_____ Name and Date

MN-ECS-021
5-06

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work."

PULL BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAY.

PULL ASSEMBLIES ARE REQUIRED IN STRAIGHT SECTIONS OF THE FENCE SO THAT THE MAXIMUM DISTANCE BETWEEN BRACES DOES NOT EXCEED:

- 330 Ft. WOVEN WIRE FENCE
- 660 Ft. BARB WIRE FENCE
- 1320 Ft. HIGH TENSILE WOVEN WIRE
- 2640 Ft. POWER FENCE

BRACE WIRE

2 COMPLETE LOOPS OF 9 Ga. WIRE OR 1 COMPLETE LOOP OF 12.5 Ga. HIGH TENSILE WIRE.

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

YES _____ NO _____

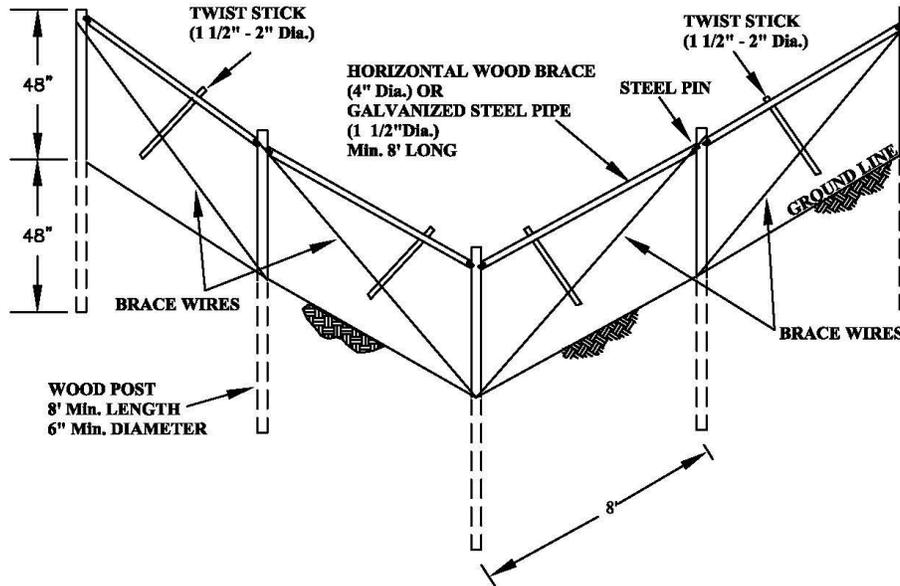
CERTIFIED BY:

Name and Date

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work."

MN-ECS-022
5-06

DOUBLE CORNER BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAY.

BRACE WIRE

2 COMPLETE LOOPS OF 9 Ga. WIRE OR 1 COMPLETE LOOP OF 12.5 Ga. HIGH TENSILE WIRE.

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

CORNERS ARE REQUIRED AT ALL POINTS WHERE THE FENCE ALIGNMENT CHANGES 15 DEGREES OR MORE.

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

YES _____ NO _____

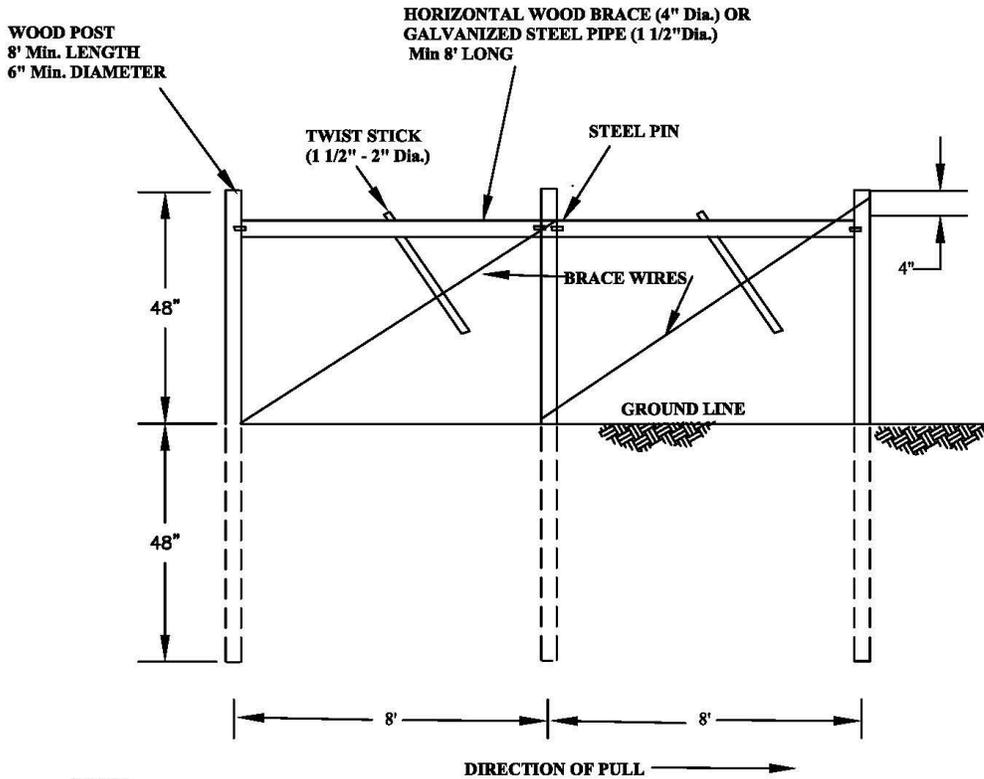
CERTIFIED BY:

Name and Date

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work."

MN-ECS-023
5-06

DOUBLE END BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAY.

BRACE WIRE

2 COMPLETE LOOPS OF 9 Ga. WIRE OR 1 COMPLETE LOOP OF 12.5 Ga. HIGH TENSILE WIRE.

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

BRACING IS REQUIRED WHERE THE FENCE ENDS AND ON HINGED SIDES OF GATE OPENINGS

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

YES _____ NO _____

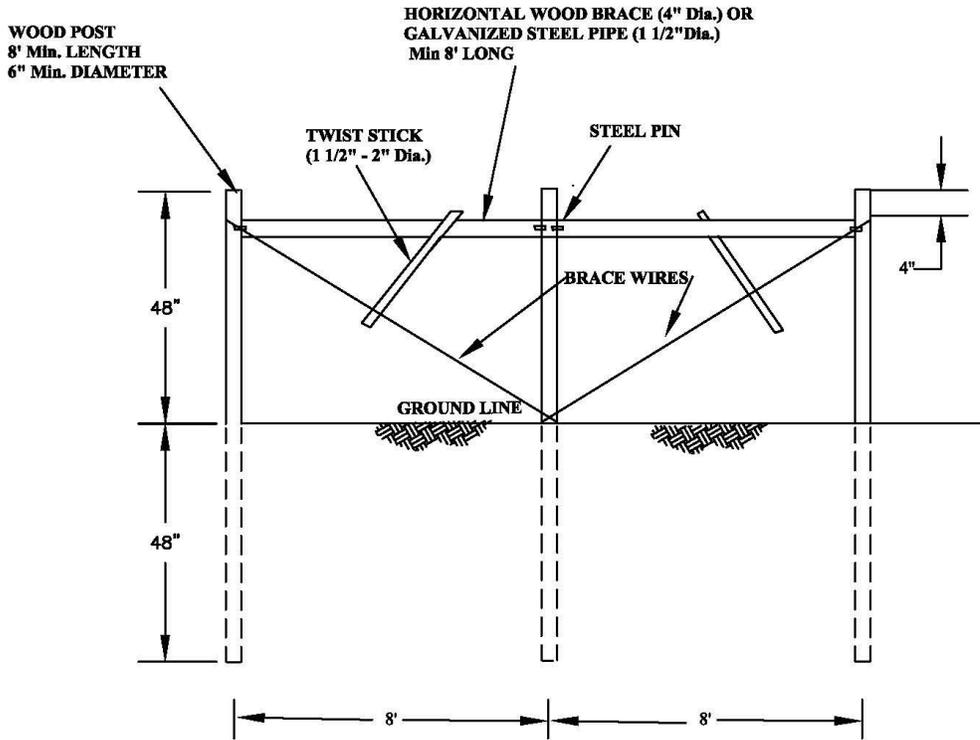
CERTIFIED BY:

Name and Date

MN-ECS-024
5-06

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work."

DOUBLE PULL BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAY.

BRACE WIRE

2 COMPLETE LOOPS OF 9 Ga. WIRE OR 1 COMPLETE LOOP OF 12.5 Ga. HIGH TENSILE WIRE.

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

PULL ASSEMBLIES ARE REQUIRED IN STRAIGHT SECTIONS OF THE FENCE SO THAT THE MAXIMUM DISTANCE BETWEEN BRACES DOES NOT EXCEED:

- 330 Ft. WOVEN WIRE FENCE
- 660 Ft. BARB WIRE FENCE
- 1320 Ft. HIGH TENSILE WOVEN WIRE
- 2640 Ft. POWER FENCE

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS:

YES _____ NO _____

CERTIFIED BY:

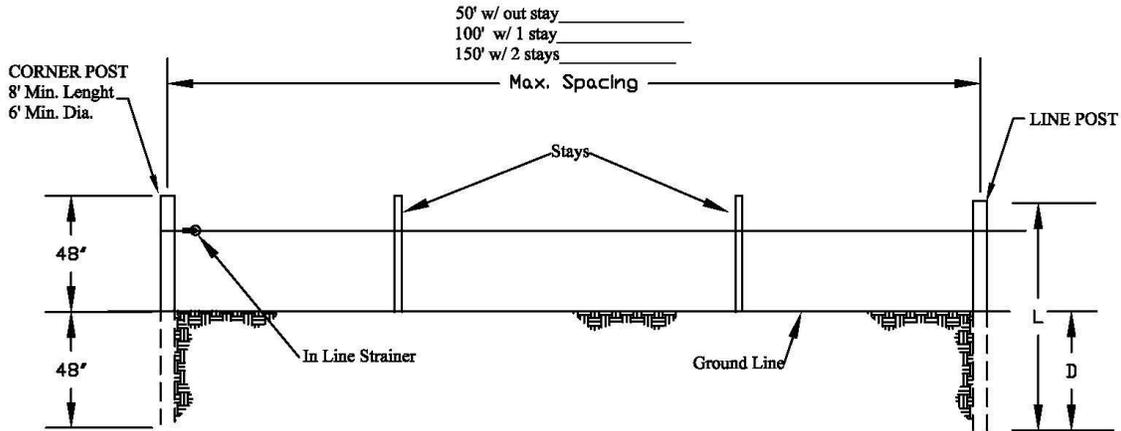
_____ Name and Date

MN-ECS-025
5-06

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POWER FENCE - INTERIOR

Single End Post - Single Wire



LINE POSTS

Wood: L = 6.5 Ft. Min.
 D = 2.5 Ft. Min.
 Dia = 4 In. Min.

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARAC, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

STEEL: L = 5.5 Ft. Min.
 D = 1.5 Ft. Min.
 Standard "T" \geq 1.25 Lbs/Ft.

ALL STEEL POSTS WILL HAVE AN ANCHOR PLATE ATTACHED AND WILL BE EITHER GALVANIZED OR PAINTED.

FIBERGLASS: L = 5.5 Ft. Min.
 D = 1.5 Ft. Min.
 Dia = 7/8 In. Min.

ALL FIBERGLASS SHALL HAVE ULTRAVIOLET PROTECTIVE COATING FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

INTERIOR: 14 Ga. Min. HIGH TENSILE

ALL WIRE SHALL HAVE SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

ENERGIZER

PER MANUFACTURERS RECOMMENDATIONS WITH THE FOLLOWING MINIMUM REQUIREMENTS:
 3 GROUND RODS PER ENERGIZER.
 6 Ft. X 1/2 In., GALVANIZED ROD.
 SPACING NOT LESS THAN 10 FEET.
 65 Ft. FROM FARMSTEAD ELECTRICAL SYSTEM GROUND RODS.

LIGHTING DIVERTERS / ARRESTORS

1 PER ENERGIZER, MINIMUM.
 65 Ft. FROM EARTH RETURN RODS.

	PLANNED	APPLIED
LINEAR FEET	_____	_____
FIELD #	_____	_____
CIN	_____	_____

PLANNING ASSISTANCE BY

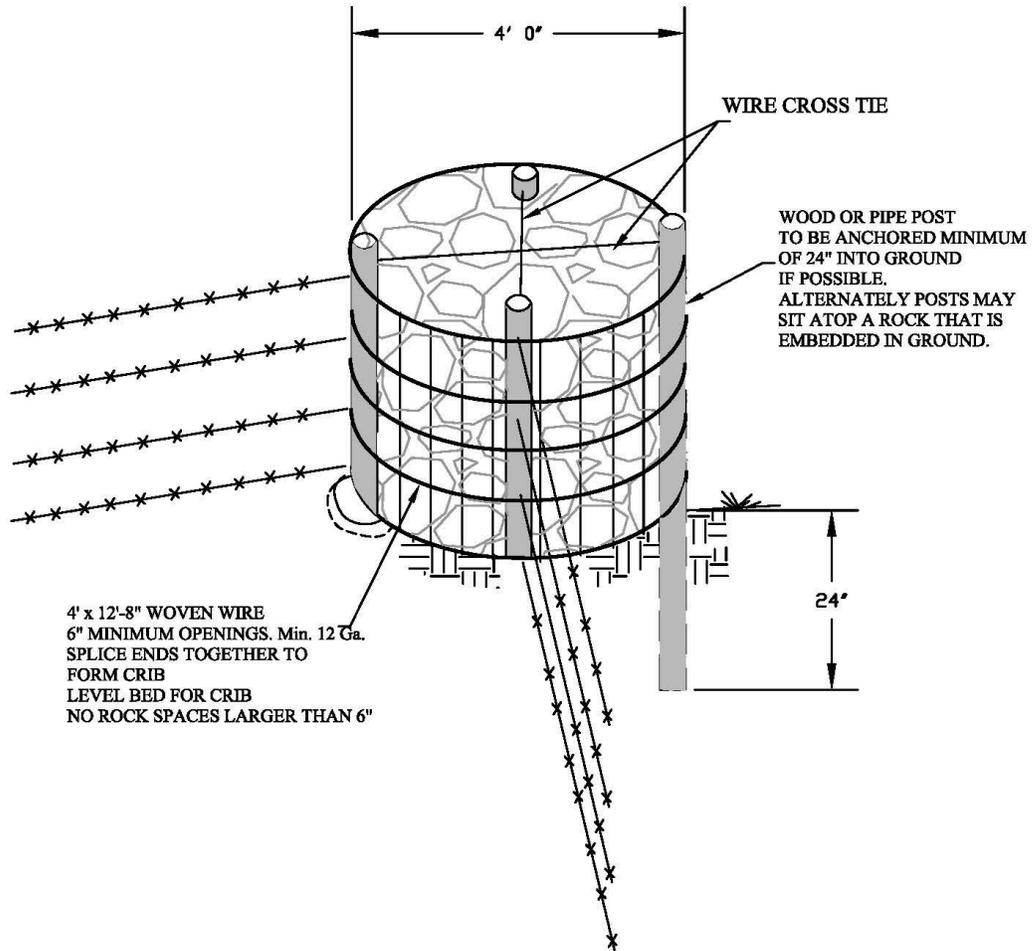
 Name and Date
 PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS
 YES _____ NO _____

CERTIFIED BY:

 Name and Date

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work."

WIRE FENCE CRIB



ROCK CRIB CORNER POST

PLANNING ASSISTANCE BY

Name and Date

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

YES _____ NO _____

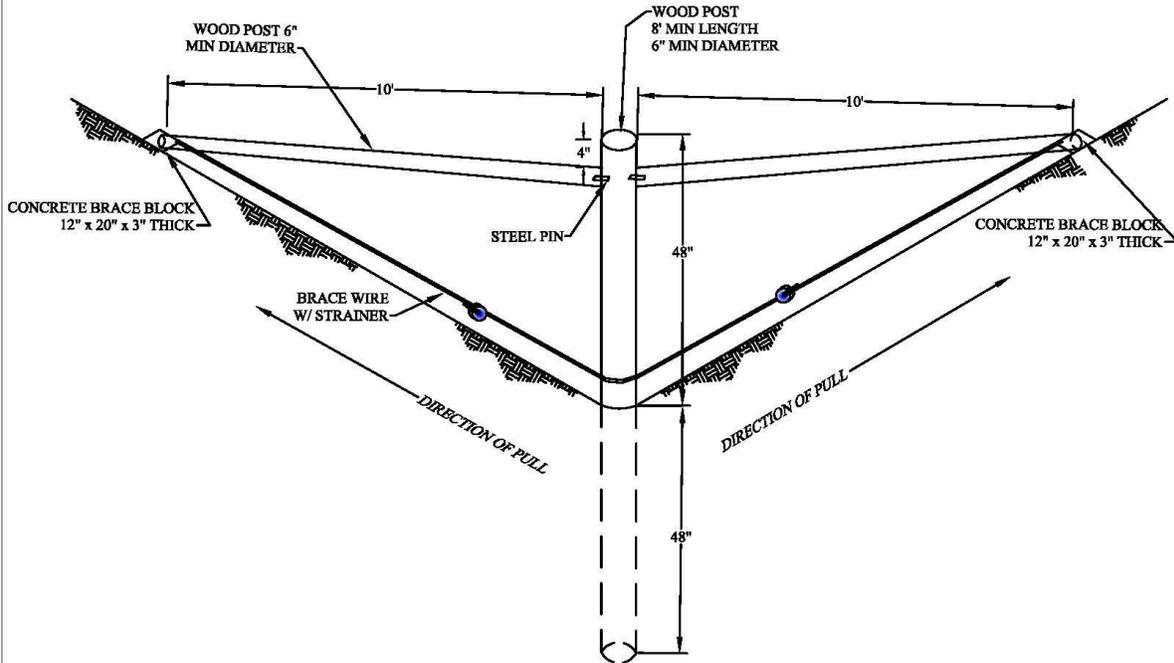
CERTIFIED BY:

Name and Date

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MN-ECS-027
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DIAGONAL CORNER BRACE ASSEMBLY



POSTS

ALL WOOD POSTS EXCEPT RED CEDAR, BLACK LOCUST, TAMARACK, WHITE CEDAR, REDWOOD, WHITE OAK, AND BURR OAK SHALL BE TREATED BY A METHOD SUCH THAT COMPLETE SATURATION OF THE SAPWOOD IS OBTAINED.

USED RAILROAD TIES OR HIGHLINE POLES IN SOUND CONDITION MAY BE UTILIZED FOR POSTS IF FREE FROM CRACKING OR DECAJ.

BRACE WIRE

ONE COMPLETE LOOP OF 12.5 ga. HIGH TENSILE WIRE

ALL WIRE SHALL HAVE A SUFFICIENT COATING TO PROTECT THE WIRE FOR THE MINIMUM LIFE EXPECTANCY OF 20 YEARS.

CORNERS ARE REQUIRED AT ALL POINTS WHERE THE FENCE ALIGNMENT CHANGES 15 DEGREES OR MORE.

PRACTICE MEETS MN NRCS STANDARDS AND SPECIFICATIONS

YES _____ NO _____

CERTIFIED BY:

Name and Date

"State law and NRCS policy require that the excavator contact Gopher State One Call at (800) 252-1166 for utility locations 48 hours prior to the start of excavation work."

MN-ECS-028
5-06