



CONSTRUCTION PLAN

PRACTICE Fence, Livestock Pipeline
 LANDOWNER Sauk County HCC
 ADDRESS 505 Broadway St, Baraboo, WI 53913
 LANDOWNER PHONE NO. 608-355-3245 COUNTY SAUK
 TOWNSHIP Reedsburg T 12 N, R 4e E/W, Sec. 34
 FIELD OFFICE Baraboo TELEPHONE NO. 608-355-3245

DIGGERS HOTLINE

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Before You Dig!

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811

Toll Free
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Not to
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LOCATION MAP

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the SAUK County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities.
 Call Diggers Hotline! Ticket Number _____

CONSTRUCTION DRAWINGS AND SPECIFICATIONS ACCEPTANCE

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued NRCS technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these construction plans or specifications must be approved by the NRCS before installation. I assume all responsibility for negotiations and contract agreements with the construction contractors.

Signed: *[Signature]* Date: 12/22/22
 Designed by: SERGE KOENIG Date: 12/2022
 Checked by: SERGE KOENIG Date: 12/2022
 Approved by: SERGE KOENIG Date: 12/2022

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: _____ Date: _____

Job Approval Class 516 - II

Sheet 1 of 10

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	SHEET NUMBER	WI CONSTRUCTION SPEC. OR JOB SHEET NUMBER
Electric Fence Exterior (4 strand high tensile)	Lin. Ft.	3,850		010. FENCES
Electric Fence Interior (1-2 strand high tensile)	Lin. Ft.	2,190		010. FENCES
1" 125 PDI HDPE Pipe Line conforming to PE 3408 & ASTM-D2239	Lin. Ft.	2,840		015. PLASTIC PIPE CONDUITS

Quantities are estimated to the neat lines and grades of in-place materials shown on the construction plan unless otherwise stated. Truck yardage, loose fill, shrinkage, etc., must be calculated and compensated for by the contractor preparing a bid or constructing the project.



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ESTIMATED QUANTITIES

CLIENT: Sauk County HCC
COUNTY: SAUK

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Drawn _____
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Approved SRK Date 12/2022

File Name
WI-005A

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CONSTRUCTION NOTES

1. ALL UNDERGROUND HAZARDS AND UTILITIES MUST BE INVESTIGATED PRIOR TO CONSTRUCTION. NOTIFICATION OF EFFECTED UTILITY COMPANIES IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTACT DIGGERS HOTLINE AT LEAST THREE DAYS PRIOR TO START OF CONSTRUCTION.
2. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED WITH NRCS PERSONNEL, THE CONTRACTOR, AND THE LANDOWNER PRIOR TO CONSTRUCTION START-UP.
3. THE CONTRACTOR AND/OR LANDOWNER SHALL NOTIFY NRCS AT LEAST 3 DAYS PRIOR TO START-UP OF CONSTRUCTION.
4. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH WISCONSIN NRCS CONSTRUCTION SPECIFICATIONS (ATTACHED TO THIS PLAN).



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CONSTRUCTION NOTES

CLIENT: Sauk County HCC

COUNTY: SAUK

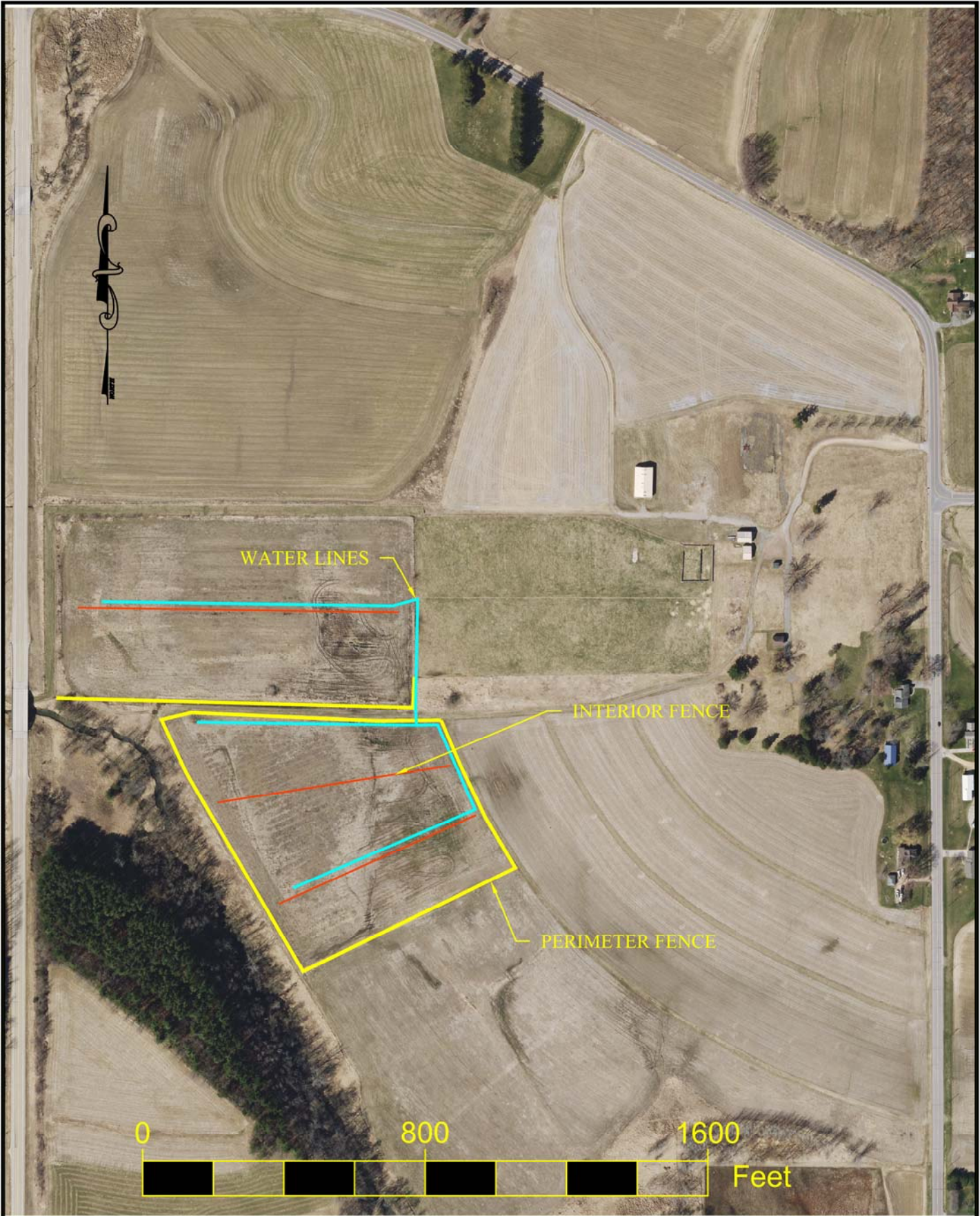
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Drawn _____	
Checked <u>SRK</u>	<u>12/2022</u>
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08/14

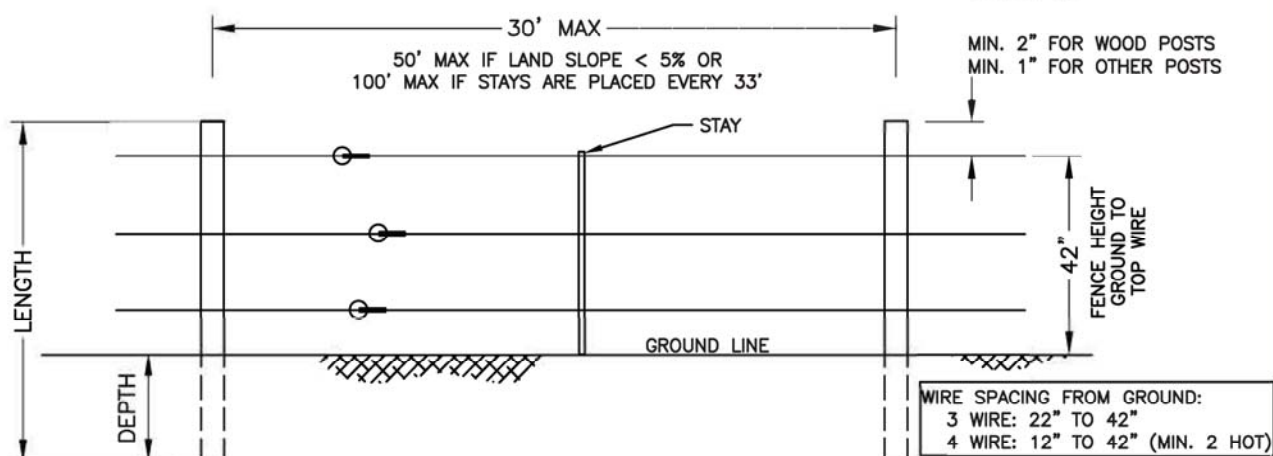
Sheet **3** of **10**



	PLAN VIEW	Designed <u>SRK</u> Date <u>12/2022</u>		File Name <u>WI-002</u>
		Drawn _____		Date <u>08/14</u>
		Checked <u>SRK</u> Date <u>12/2022</u>		
		Approved <u>SRK</u> Date <u>12/2022</u>		
CLIENT: <u>Sauk County HCC</u>	COUNTY: <u>SAUK</u>	Sheet <u>4</u> of <u>10</u>		

HIGH TENSILE PERMANENT ELECTRIC FENCE

CATTLE, EXTERIOR



LINE POSTS

WOOD:

DIA. = 4" MIN, 2.5" FOR OSAGE ORANGE
 DEPTH = 2' MIN
 MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 2"

ALL WOOD SPECIES EXCEPT RED CEDAR, WHITE CEDAR, TAMARACK, OSAGE ORANGE, BLACK LOCUST, AND WHITE OAK SHALL BE TREATED BY A METHOD LISTED IN WI CONSTRUCTION SPEC. #10-FENCES.

STEEL:

STANDARD "1" POST MIN 1.25 LBS/FT, 1-3/8" X 1-3/8" X 1/8"
 DEPTH = 1.5'
 MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 1"

ALL STEEL POSTS WILL HAVE AN ANCHOR PLATE AND BE STUDDED

ALL STEEL POSTS WILL BE PAINTED WITH A WEATHER RESISTANT PAINT FOR STEEL, ENAMELED AND BAKED, OR HOT DIP GALVANIZED

ALL STEEL POSTS WILL BE ROLLED FROM HIGH CARBON STEEL

FIBERGLASS:

DIA. = 7/8" MIN FOR ROUND POSTS OR 1" FOR T-POST
 DEPTH = 1.5'
 MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 1"

POSTS SHALL BE DURABLE FOR THE LIFE OF THE FENCE

PLASTIC/COMPOSITE:

DIA. = 1" MIN
 DEPTH = 1.5'
 MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 1"

POSTS SHALL BE DURABLE FOR THE LIFE OF THE FENCE

POSTS SHALL BE UV PROTECTED FOR THE LIFE OF THE FENCE

WIRE

12.5-GAUGE GALVANIZED WIRE, 140,000 PSI MIN. TENSILE STRENGTH WITH A 20 YEAR SUPPLIER'S WARRANTY OR SUPPLIER DOCUMENTATION THAT THE WIRE WILL REMAIN DURABLE FOR THE PRACTICE LIFESPAN.

MIN. 900 LBS. BREAKING STRENGTH

ALL WIRE SHALL MEET ASTM A854

FASTENERS

ALL WIRES SHALL BE ATTACHED TO EACH LINE POST

STAPLES SHALL BE 9-GAUGE, GALVANIZED STEEL OR HEAVIER.

RECOMMENDED LENGTH: 1.75" MIN. FOR SOFTWOODS
 1" MIN. FOR HARDWOODS

USE BARBED STAPLES FOR WOOD POSTS

USE INSULATED MANUFACTURER'S CLIPS TO FASTEN WIRES TO STEEL POSTS

USE MANUFACTURER'S CLIPS OR 14-GAUGE WIRE TO FASTEN WIRES TO FIBERGLASS AND PLASTIC/COMPOSITE POSTS

STAPLES, WIRES, AND CLIPS SHOULD ALLOW FREE MOVEMENT OF THE HIGH TENSILE FENCE WIRE

NOTES

BRACES ARE REQUIRED AT ALL CORNERS, GATES, PULL AND END ASSEMBLIES. SEE BRACE DETAILS.

ALL ELECTRIC FENCES SHALL BE GROUNDED AND ALL ENERGIZERS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SEE ENERGIZER DETAILS.

REFER TO WI CONSTRUCTION SPEC #10-FENCES FOR MORE SPECIFIC INFORMATION

Fence Length = 3850 FT.



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EXTERIOR FENCE

CLIENT: Sauk County HCC
 COUNTY: SAUK

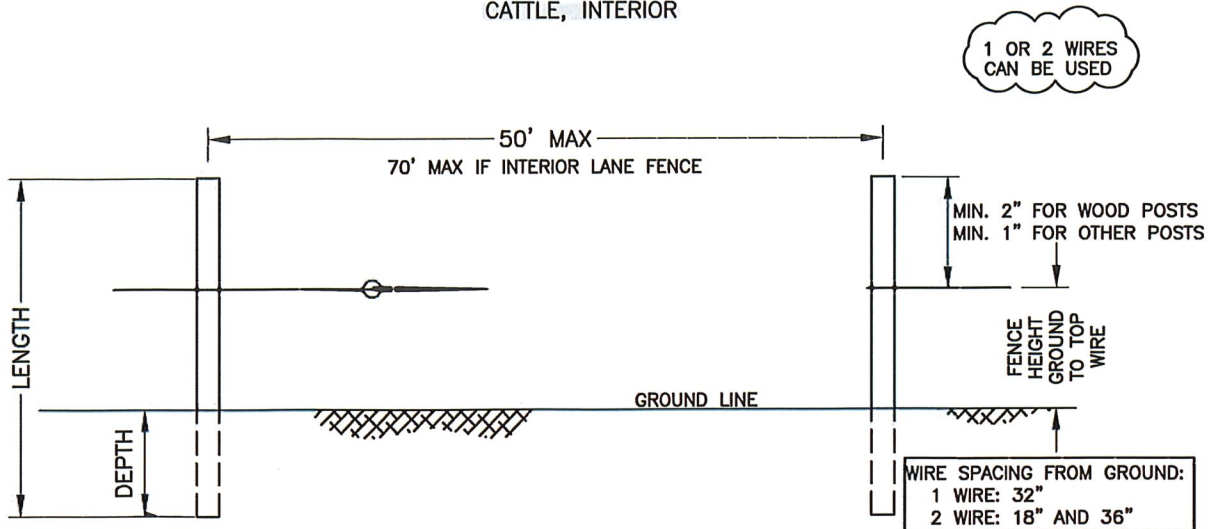
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 Approved SRK 12/2022

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 WI-710

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HIGH TENSILE PERMANENT ELECTRIC FENCE CATTLE, INTERIOR



POSTS

WOOD:

DIA. = 4" MIN, 2.5" FOR OSAGE ORANGE
DEPTH = 2' MIN
MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 2"

ALL WOOD SPECIES EXCEPT RED CEDAR, WHITE CEDAR, TAMARACK, OSAGE ORANGE, BLACK LOCUST, AND WHITE OAK SHALL BE TREATED BY A METHOD LISTED IN WI CONSTRUCTION SPEC. #10-FENCES.

STEEL:

STANDARD "T" POST MIN 1.25 LBS/FT, 1-3/8" X 1-3/8" X 1/8"
DEPTH = 1' FOR SINGLE WIRE, 1.5' MIN FOR MULTI WIRE
MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 1"

ALL STEEL POSTS WILL HAVE AN ANCHOR PLATE AND BE STUDDED

ALL STEEL POSTS WILL BE PAINTED WITH A WEATHER RESISTANT PAINT FOR STEEL, ENAMELED AND BAKED, OR HOT DIP GALVANIZED

ALL STEEL POSTS WILL BE ROLLED FROM HIGH CARBON STEEL

FIBERGLASS:

DIA. = 7/8" MIN FOR ROUND POSTS OR 1" FOR T-POST
DEPTH = 1' FOR SINGLE WIRE, 1.5' MIN FOR MULTI WIRE
MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 1"

POSTS SHALL BE DURABLE FOR THE LIFE OF THE FENCE

PLASTIC/COMPOSITE:

DIA. = 1" MIN
DEPTH = 1' FOR SINGLE WIRE, 1.5' MIN FOR MULTI WIRE
MIN. LENGTH= FENCE HEIGHT + POST DEPTH + 1"

POSTS SHALL BE DURABLE FOR THE LIFE OF THE FENCE

POSTS SHALL BE UV PROTECTED FOR THE LIFE OF THE FENCE

WIRE

12.5-GAUGE GALVANIZED WIRE, 140,000 PSI MIN. TENSILE STRENGTH WITH A 20 YEAR SUPPLIER'S WARRANTY OR SUPPLIER DOCUMENTATION THAT THE WIRE WILL REMAIN DURABLE FOR THE PRACTICE LIFESPAN.

MIN. 900 LBS. BREAKING STRENGTH

ALL WIRE SHALL MEET ASTM A854

FASTENERS

ALL WIRES SHALL BE ATTACHED TO EACH LINE POST

STAPLES SHALL BE 9-GAUGE, GALVANIZED STEEL OR HEAVIER.

RECOMMENDED LENGTH: 1.75" MIN. FOR SOFTWOODS
1" MIN. FOR HARDWOODS

USE BARBED STAPLES FOR WOOD POSTS

USE INSULATED MANUFACTURER'S CLIPS TO FASTEN WIRES TO STEEL POSTS

USE MANUFACTURER'S CLIPS OR 14-GAUGE WIRE TO FASTEN WIRES TO FIBERGLASS AND PLASTIC/COMPOSITE POSTS

STAPLES, WIRES, AND CLIPS SHOULD ALLOW FREE MOVEMENT OF THE HIGH TENSILE FENCE WIRE

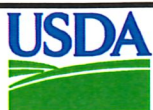
NOTES

IF THE 1-WIRE ELECTRIC FENCE IS TEMPORARY, A BRACE IS NOT REQUIRED AT CORNERS, GATES, PULLS, AND ENDS. OTHERWISE, BRACES ARE REQUIRED AT ALL CORNERS, GATES, PULL AND END ASSEMBLIES. SEE BRACE DETAILS.

ALL ELECTRIC FENCES SHALL BE GROUNDED AND ALL ENERGIZERS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SEE ENERGIZER DETAILS.

REFER TO WI CONSTRUCTION SPEC #10-FENCES FOR MORE SPECIFIC INFORMATION

Fence Length = 2190 FT.



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INTERIOR FENCE

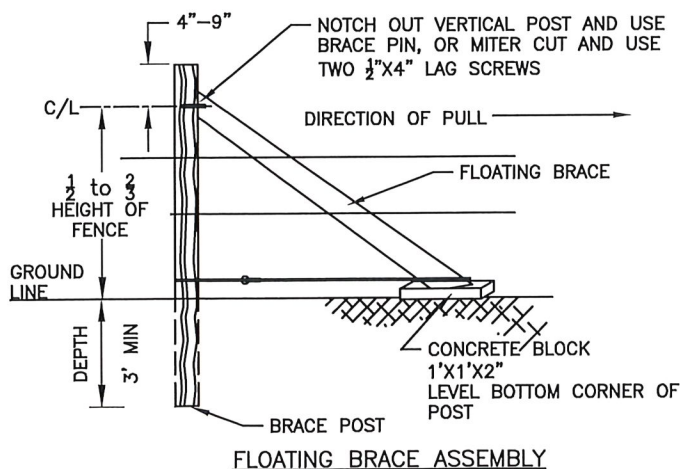
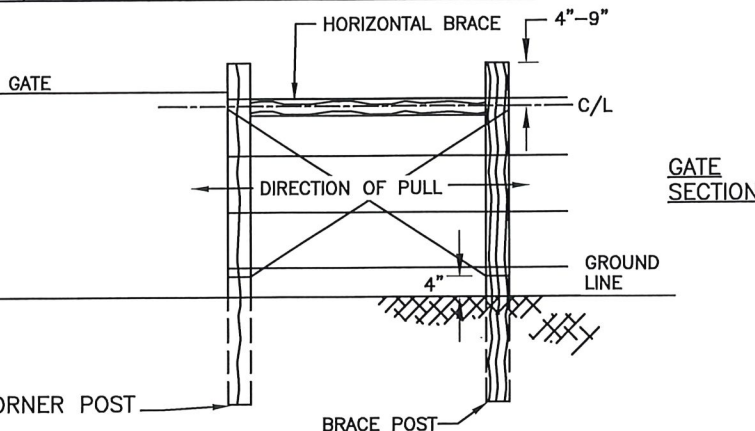
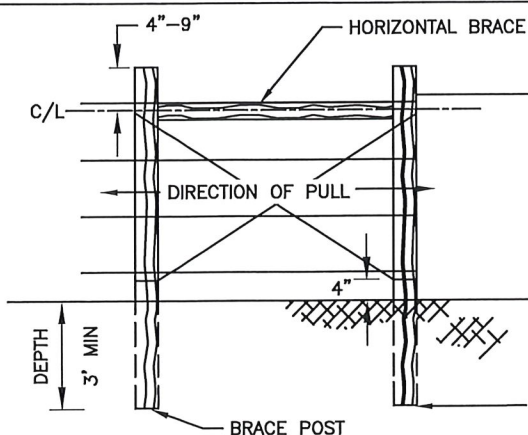
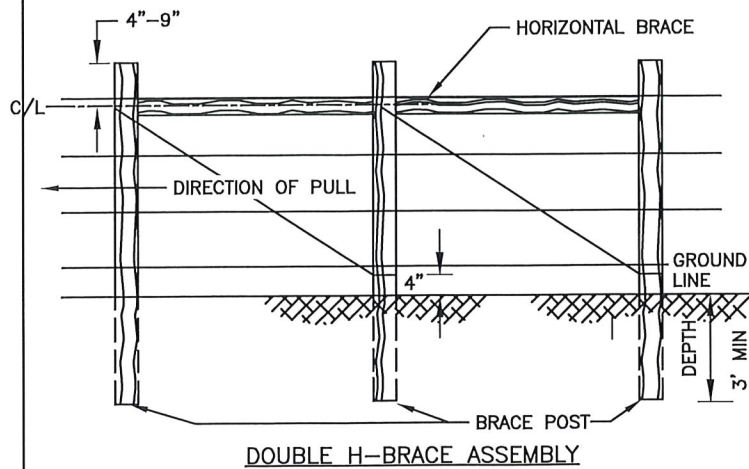
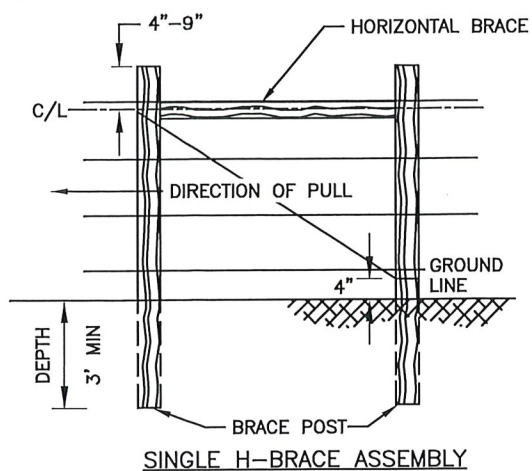
CLIENT: Sauk County HCC
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POSTS

WOOD:

DIA. = 5" MIN
LENGTH = 8' MIN, 7' FOR DOUBLE H-BRACE
DEPTH = 3' MIN

HORIZONTAL OR DIAGONAL BRACE

WOOD:

DIA. = 3" MIN FOR HIGH TENSILE WIRE
LENGTH = 7' HORIZONTAL, 8' DIAGONAL

STEEL:

HORIZONTAL BRACES MUST MEET ASTM A702 AND ASTM A499 AND HAVE A MINIMUM COATING THICKNESS OF 1 MIL.

ALL WOOD SPECIES EXCEPT RED CEDAR, WHITE CEDAR, TAMARACK, OSAGE ORANGE, BLACK LOCUST, AND WHITE OAK SHALL BE TREATED BY A METHOD LISTED IN WI CONSTRUCTION SPEC. #10-FENCES.

TENSION WIRE

2 COMPLETE LOOPS OF 9-GUAGE SMOOTH WIRE OR 12-GUAGE DOUBLE STRAND WIRE, OR A SINGLE LOOP OF 12.5 GAUGE HIGH TENSILE SMOOTH WIRE

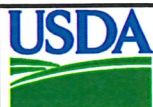
REFER TO WI CONSTRUCTION SPEC #10-FENCES FOR MORE SPECIFIC INFORMATION

NOTES:

USE A SINGLE H-BRACE OR FLOATING BRACE WHEN THE POSTS CAN BE SET OR DRIVEN INTO THE GROUND 3' OR MORE. OTHERWISE, USE A DOUBLE H-BRACE.

H-BRACE OR FLOATING DIAGONAL BRACE IS REQUIRED ON ALL CORNERS, ENDS AND GATES.

CORNER ASSEMBLY SHALL BE USED WHENEVER THE HORIZONTAL ALIGNMENT CHANGES MORE THAN 15 DEG. AND OR WHERE VERTICAL ALIGNMENT CHANGE IS MORE THAN 15 DEG. (30 DEG. CHANGE FOR HIGH TENSILE FENCE ONLY).



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BRACES— ELECTRIC FENCES

CLIENT: SAUK COUNTY HCC

COUNTY: SAUK

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Drawing Name
701-11B

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MANAGED GRAZING PLAN Watering System

*Use 2 (25-50 gallon) tanks where needed.

*Run the pipeline system according to plan view map.

*Pipeline must be 1" diameter with minimum pressure rating of 125 psi. All pipe must withstand the pressure it will be subjected to, including hydraulic transients, internal pressures and external pressures. As a safety factor against surge or water hammer, the highest working pressure should not exceed 72% of the pressure rating of the pipe.

*Plastic pipe must conform to the ASTM D2239 HDPE pipe based on Controlled Inside Diameter specification with minimum 125 PSI rating. If used above ground it must be made of material with 2 percent carbon black and be designated with code letter "C" in the material cell classification as defined in ASTM D 3350 to provide ultraviolet resistance.

*Protect the pipe by placing it under perimeter and/or cross fences. Where pipelines cross heavy traffic area or dissect a pasture, they shall be buried to a depth of 8-12 inches. Winterizing of the pipeline system shall be done prior to freezing temperatures. This can be done by blowing out the system to remove any water within the pipeline or equivalent method.

*Provide slack in laying pipe to allow for thermal expansion/contraction of pipe.
(Approximately 3%)

*Valves or unions shall be installed at low point in the pipeline so that the line can be drained as needed.

*The system needs a minimum pressure of 40 psi in order to supply the sufficient amount of water for livestock. A pressure tank with minimum pressure of 40 psi and upper limit pressure of at least 60 psi is adequate. Higher pressure tank ratings are OK as long as they do not exceed 72% of the pressure rating of the pipe.

*Consult with a professional (plumber or well-driller) if necessary to look over existing system.



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Water Line System

CLIENT: Sauk County HCC
COUNTY: SAUK

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Pressure tank, Switch



Polyethylene(PE) Plastic pipe



Quick Disconnect Coupler



Quick Disconnect Coupler



Quick Coupler with hose and tank(float valve in tank)



Shut-off Valve, In-line Drain



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Water Line System

CLIENT: Sauk County HCC
COUNTY: SAUK

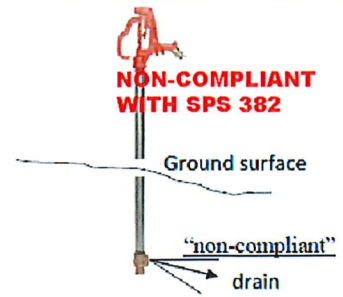
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The Wisconsin Department of Natural Resources (DNR) and the Wisconsin Department of Safety and Professional Services (DSPS) regulates the installation of yard hydrants. SPS 382.40(8)(e)2. Wisconsin Administrative Code (Post 9/1/2001) prohibits the installation of a yard hydrant with a below ground discharge commonly referred to as "stop and waste" type control valve. These can be made code compliant with the installation of water distribution compliant plumbing, bringing the outlet to above ground.



Many manufacturers produce models that are code compliant and there are several options.

CANISTER SANITARY YARD HYDRANT

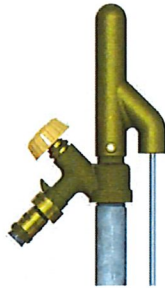
This type of "sanitary" yard hydrant collects the drain-down water in an enlarged chamber that is evacuated when the handle is in the full open position following the manufacturers' instructions. Consult the manufacturer's specifications on the minimum water pressure available before selecting this type of product, which is dependent on pressure to create vacuum.



CODE COMPLIANT

HEATED SANITARY YARD HYDRANT

This type of "sanitary" yard hydrant relies on an electric heated "dipstick" to keep the hydrant from freezing.



CODE COMPLIANT

REMOVABLE SANITARY YARD HYDRANT

This style of "sanitary" yard hydrant utilizes a "worm" thread and o-ring seals. This type is easily removed and installed for each use in freezing temperatures.



CODE COMPLIANT

VACUUM BREAKER

A hose connection vacuum breaker is required on all NEW and EXISTING yard hydrants connected to the pipeline system. Choose a vacuum breaker that is self-draining or loosen the vacuum breaker during the winter to prevent freezing conditions from bursting the hydrant. The maximum allowable water height above the vacuum breaker is 10 feet, otherwise the vacuum breaker may fail. Look for ASSE 1011 or 1052, stamping or a backflow protected hydrant.



SAMPLE VACUUM BREAKS

NOTE:

THERE MAY BE OTHER CODE COMPLIANT YARD HYDRANT OPTIONS. IT IS THE LANDOWNER'S RESPONSIBILITY TO ENSURE THE SELECTED YARD HYDRANT MEETS WISCONSIN DSPS CODE 382 AND NR CODE 812.



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Hydrant

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