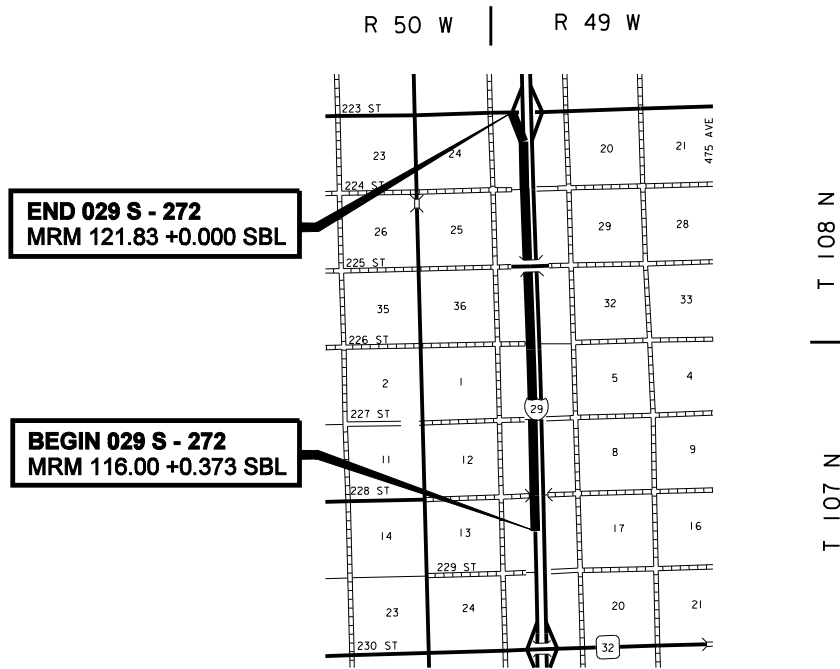
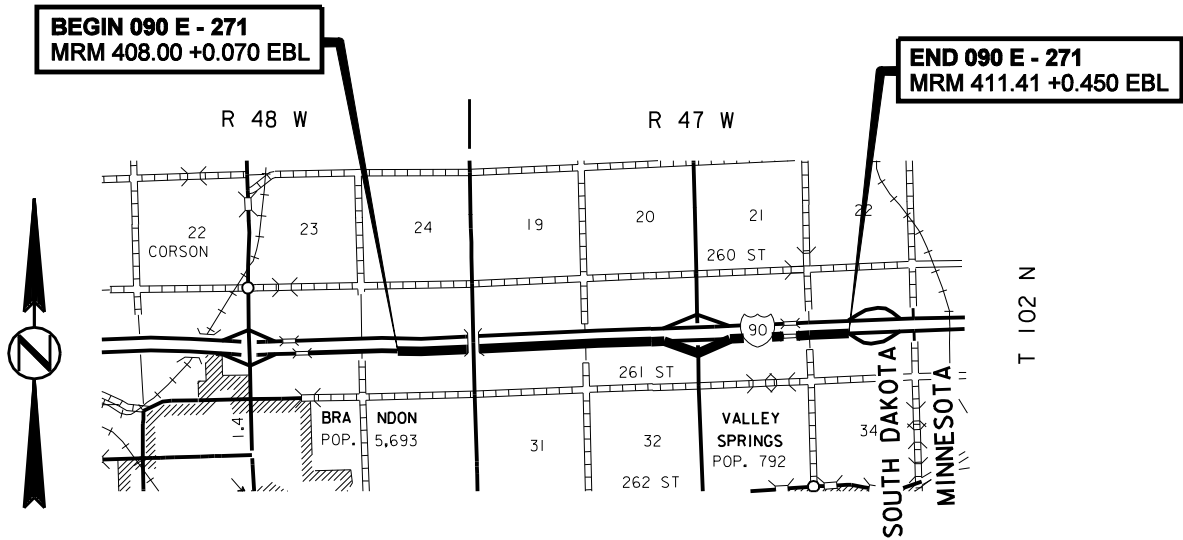


000I-271 & 000I-272 (090 E - 271 & 029 S - 272) MINNEHAHA AND MOODY COUNTIES FENCE REPLACEMENT PCN 10BU & 10C2



Design Designation

I-90 EBL	I-29 SBL
2004 ₁ 6910	2004 ₁ 6465
2024 ₁ 11840	2024 ₁ 10100
DHV ₁ 1680	DHV ₁ 1435
d ₁ 100%	d ₁ 100%
T DHV ₁ 6.7%	T DHV ₁ 8.4%
T ADT ₁ 14.7%	T ADT ₁ 18.5%

**090 E-271 & 029 S-272
MINNEHAHA & MOODY COUNTIES**

INDEX OF SHEETS

Sheet 1	Layout Map
Sheet 2	Index of Sheets
Sheet 3	Estimate of Quantities
Sheets 4 & 5	Table of Fence Quantities
Sheets 6 to 8	Plan Notes
Sheet 9	Traffic Control
Sheets 10 to 17	Details for Right-of-Way Fence

**090 E-271 & 029 S-272
MINNEHAHA & MOODY COUNTIES**

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	090E-271 PCN I0BU QUANTITY	029S-272 PCN I0C2 QUANTITY	TOTAL QUANTITY	UNIT
009E0010	Mobilization	<----- Lump Sum ----->		Lump Sum	LS
100E0100	Clearing	<----- Lump Sum ----->		Lump Sum	LS
110E0600	Remove Fence	19484	28757	48241	Ft
620E0030	Type 3 Right-of-Way Fence	14256	22388	36644	Ft
620E0230	Modified Type 3 Right-of-Way Fence	2535	2255	4790	Ft
620E0300	Special Right-of-Way Fence	2693	4114	6807	Ft
620E1020	2 Post Panel	45	48	93	Each
620E1030	3 Post Panel	34	24	58	Each
620E1110	Wood Fence Post	133	164	297	Each
634E0120	Traffic Control Miscellaneous	<----- Lump Sum ----->		Lump Sum	LS

**090 E-271 & 029 S-272
MINNEHAHA & MOODY COUNTIES**

TABLE OF FENCE QUANTITIES

LANE	INTERSTATE 90 MRM TO MRM	REMOVE FENCE Ft	TYPE 3 R/W FENCE Ft	MODIFIED TYPE 3 R/W FENCE Ft	SPECIAL R/W FENCE Ft	2 POST PANEL Each	3 POST PANEL Each	WOOD FENCE POST Each	24' WIRE GATE Each
090 E - 271 PCN IOBU									
EBL	408.07 to 408.37	1267	1267			3	2		
EBL	408.37 to 408.39	106		106				9	
EBL	408.39 to 408.56	898			898	3	4		
EBL	408.57 to 408.61	211			211		5		
EBL	408.61 to 408.63	106		106			2	9	
EBL	408.63 to 408.77	739			739	1			
EBL	408.77 to 408.93	845			845	5			
EBL	408.93 to 409.07	739		739		1	2	54	
EBL	409.07 to 409.27	1056		1056			2	27	
EBL	409.27 to 409.56	1531	1531			4	2	1	
EBL	409.56 to 410.08	2746	2746			7	2		1
EBL	410.08 to 410.18	528	528			1			
EBL	410.18 to 410.19	53		53				5	
EBL	410.19 to 410.55	1901	1901			5	3		
EBL	410.58 to 410.67	475	475			1	1		
EBL	410.67 to 410.69	106		106		1			
EBL	410.69 to 410.87	950	950			2	2		
EBL	410.87 to 410.91	211		211				16	
EBL	410.91 to 411.07	845	845			1	2		
EBL	411.07 to 411.20	686	686			2			
EBL	411.20 to 411.37	898	898			1	3		
EBL	411.37 to 411.40	158		158				12	1
EBL	411.40 to 411.86	2429	2429			7	2		
090 E -271 Totals:		19484	14256	2535	2693	45	34	133	2

**090 E-271 & 029 S-272
MINNEHAHA & MOODY COUNTIES**

LANE	INTERSTATE 90 MRM TO MRM	REMOVE FENCE Ft	TYPE 3 R/W FENCE Ft	MODIFIED TYPE 3 R/W FENCE Ft	SPECIAL R/W FENCE Ft	2 POST PANEL Each	3 POST PANEL Each	WOOD FENCE POST Each	24' WIRE GATE Each
029 S - 272 PCN I0C2									
SBL	121.841 to 121.627	1130			1130	1	3		
SBL	121.627 to 121.362	1400			1400	2			1
SBL	121.362 to 121.929	2286	2286			4	1		
SBL	121.929 to 120.736	1019			1019	1	2		2
SBL	120.736 to 119.865	4599	4599			4	6		
SBL	119.865 to 119.371	2608	2608			7	1		2
SBL	119.371 to 118.694	3575	3575			9	1		
SBL	118.694 to 118.655	206		206		1		17	
SBL	118.655 to 118.364	1537	1537			2	1		
SBL	118.364 to 117.957	2149	2149			3	1		1
SBL	117.957 to 117.850	565			565		4		1
SBL	117.850 to 117.505	1822	1822			4	1		
SBL	117.505 to 117.117	2049		2049		3		147	
SBL	117.117 to 116.874	1283	1283			3	2		
SBL	116.852 to 116.373	2529	2529			4	1		
029 S - 272 Totals:		28757	22388	2255	4114	48	24	164	7
Totals		48241	36644	4790	6807	93	58	297	10

**090 E-271 & 029 S-272
MINNEHAHA & MOODY COUNTIES**

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

COMPLETION DATE

All work shall be completed on or before October 31, 2006.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/demolition debris may not be disposed of within the State ROW.

All construction/demolition debris generated by this project shall be cleaned up and disposed of by the Contractor.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction/demolition debris consisting of concrete, asphalt concrete or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. Seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating No Dumping Allowed.
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

Cost for furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates & signs) and reclamation of the waste disposal site(s) shall be incidental to the contract unit prices for the various items.

RESTORATION OF INSLOPES AND DITCHES

Any slope area or ditch that is rutted or otherwise unduly disturbed during fencing operations shall be restored and seeded by the Contractor, at no expense to the State. Cost for this work shall be incidental to the contract unit prices for the various items.

**090 E-271 & 029 S-272
MINNEHAHA & MOODY COUNTIES**

REMOVE FENCE

The Contractor shall remove the existing right-of-way fence that is to be replaced as designated in the plans and/or as ordered by the Engineer.

Limited Access Security - All fence removed during any one working day is to be replaced during the same day if livestock are being restrained.

CLEARING

Prior to installing right-of-way fence, the fence alignment shall be cleared of all trees, tree branches, tree stumps, brush, vegetation, debris, bladed and leveled to the satisfaction of the Engineer.

Clearing will be paid for at the contract lump sum price. Payment shall be full compensation for labor and equipment necessary to clear the entire line for fence and smooth ground irregularities.

FENCE ALIGNMENT

Where fence is being removed and replaced, fence shall be installed on the same alignment as existing. It shall be the Contractor's responsibility to preserve the fence alignment.

TYPE 3 RIGHT-OF-WAY FENCE

New barbed wire shall be used in fence construction adjacent to farmland. The Contractor shall furnish new posts. Install alternate wood and steel posts at 16'-6" spacing for Type 3 Right-of-Way Fence.

MODIFIED TYPE 3 RIGHT-OF-WAY FENCE

An estimated 4790' of Modified Type 3 Right-of-Way Fence is included in the Estimate of Quantities. The Engineer will determine the actual quantity and locations of Modified Type 3 Right-of-Way Fence to be installed on construction.

Modified Type 3 Right-of-Way Fence shall be installed at wide depressions subject to flooding. See sheet titled FENCING AT WIDE DEPRESSIONS.

The Contractor shall furnish new 5" x 8' wood posts to replace existing posts. Install wood posts at 14' spacing for Modified Type 3 Right-of-Way Fence. Cost for 5" x 8' wood posts shall be included in the contract unit price per each for Wood Fence Post.

SPECIAL RIGHT-OF-WAY FENCE

New woven and barbed wire shall be used in fence construction adjacent to pastureland. The Contractor shall furnish new posts and barbed wire. **The state will furnish the 12.5 gauge woven wire, which will need to be picked up at the Sioux Falls Area Office.** It is estimated that there are 11,880 feet of woven wire at this site. Furnish cost to the State for Woven Wire; State Furnished is \$0.24 per lineal foot. Install alternate wood and steel posts at 14' spacing for Special Right-of-Way Fence. The Special Right-of-Way fence should be constructed according to Modified Type 6 standard plate specifications.

NEW POST PANELS

Existing post panels shall be replaced. Existing 5 Post and 4 Post Panels shall be replaced with a combination of 2 Post and 3 Post Panels as determined by the Engineer.

The number of 2 Post and 3 Post Panels will be the actual number installed and will be paid for at the contract unit price per each. Payment shall be full compensation for furnishing material, (including posts, brace post, diagonal brace wire, dowels), labor, equipment and incidentals necessary to construct the post panels.

**090 E-271 & 029 S-272
MINNEHAHA & MOODY COUNTIES**

NEW STEEL AND WOOD FENCE POSTS

Included in the estimate of quantities are 1353 Steel Fence Posts, 1353 (3 1/2" x 6'-6") Wood Fence Posts for line fence and 297 (5" x 8') Wood Fence Posts for wide depression fencing. No additional payment will be made for the larger posts used for fencing at wide depressions.

The estimated quantities for new steel and wood fence posts are subject to change during construction. The Contractor will be responsible for ordering the actual quantity of fence posts necessary to complete the work.

Steel Fence Posts and Wood Fence Posts will be paid for at the contract unit price per each for the respective types. Payment shall be full compensation for furnishing new posts.

Payment for installing new steel or wood posts shall be included in the contract unit price per foot for Type 3 Right-of-Way Fence, Modified Type 3 Right-of-Way Fence and Special Right-of-Way Fence.

GENERAL MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

All breakaway sign supports shall comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor shall provide post installation details at the preconstruction meeting for all steel post breakaway sign support assemblies.

Cost for traffic control, including signs, shall be included in the contract lump sum price for Traffic Control Miscellaneous.

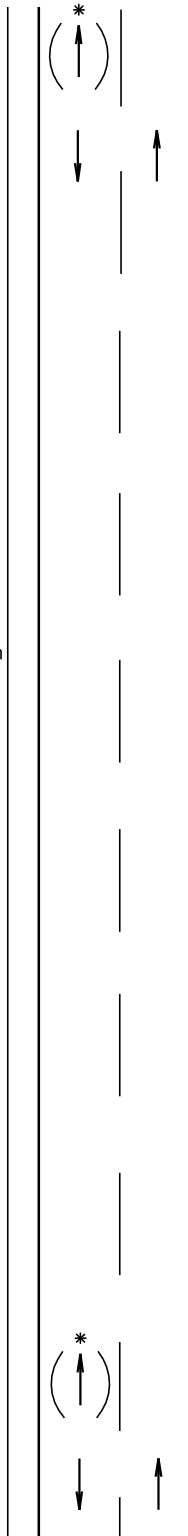
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

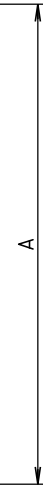
The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000



July 1, 2005

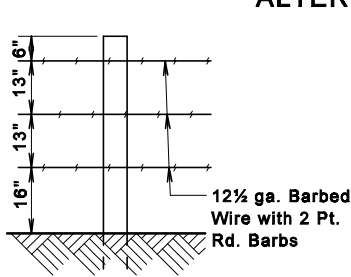
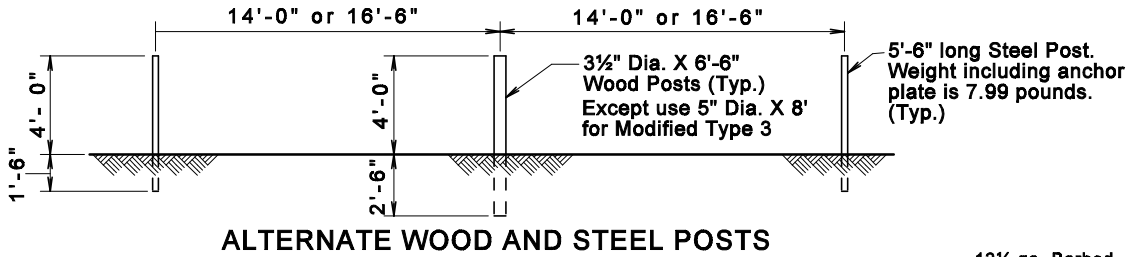
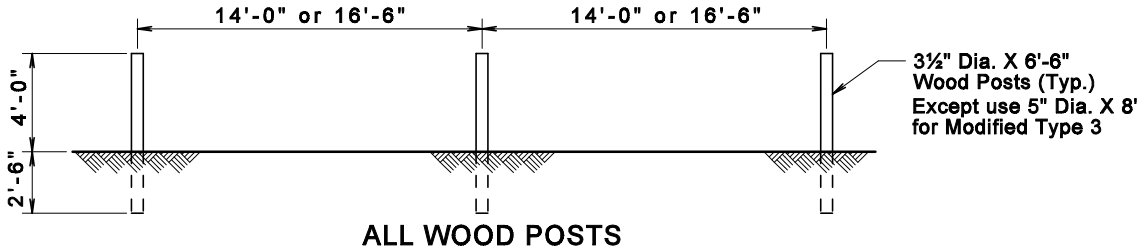
Published Date: 2nd Qtr. 2006.

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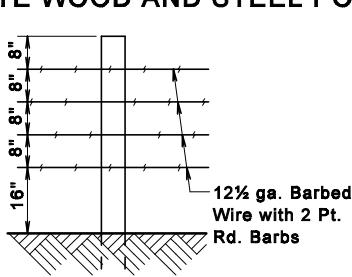
**GUIDES FOR TRAFFIC CONTROL DEVICES
 WORK BEYOND THE SHOULDER**

PLATE NUMBER
 634.01

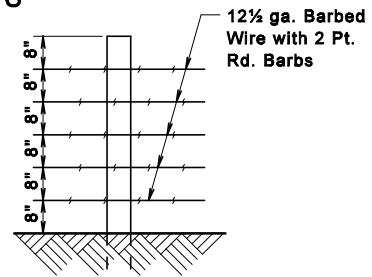
Sheet 1 of 1



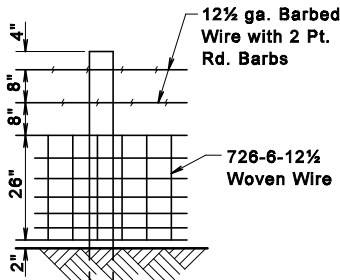
TYPE 1
3 BARBED WIRES



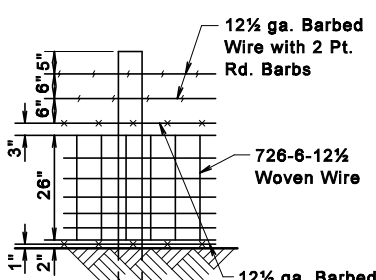
TYPE 2
4 BARBED WIRES



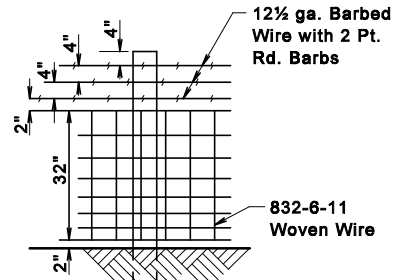
TYPE 3 / MODIFIED TYPE 3
5 BARBED WIRES



TYPE 4
26" WOVEN WIRE
WITH 2 BARBED WIRES



TYPE 5
26" WOVEN WIRE
WITH 4 BARBED WIRES



MODIFIED TYPE 6
32" WOVEN WIRE
WITH 3 BARBED WIRES

TYPE OF FENCE	LINE POST SPACING	BARBED WIRE		WOVEN WIRE	
		WIRE GAGE	NUMBER AND SHAPE OF BARBS	STYLE OR DESIGN NO.	
1	3 Barbed Wires	16'-6"	12 1/2	2 Point Round	---
2	4 Barbed Wires	16'-6"	12 1/2	2 Point Round	---
3	5 Barbed Wires	16'-6"	12 1/2	2 Point Round	---
MOD 3	5 Barbed Wires	14'-0"	12 1/2	2 Point Round	---
4	26" Woven Wire with 2 Barbed Wires	14'-0"	12 1/2	2 Point Round	726-6-12 1/2
5	26" Woven Wire with 4 Barbed Wires	14'-0"	12 1/2	2 wires with 2 Pt. Rd. 2 wires with 4 Pt. Rd.	726-6-12 1/2
MOD 6	32" Woven Wire with 3 Barbed Wires	14'-0"	12 1/2	3 wires with 2 Pt. Rd.	832-6-11

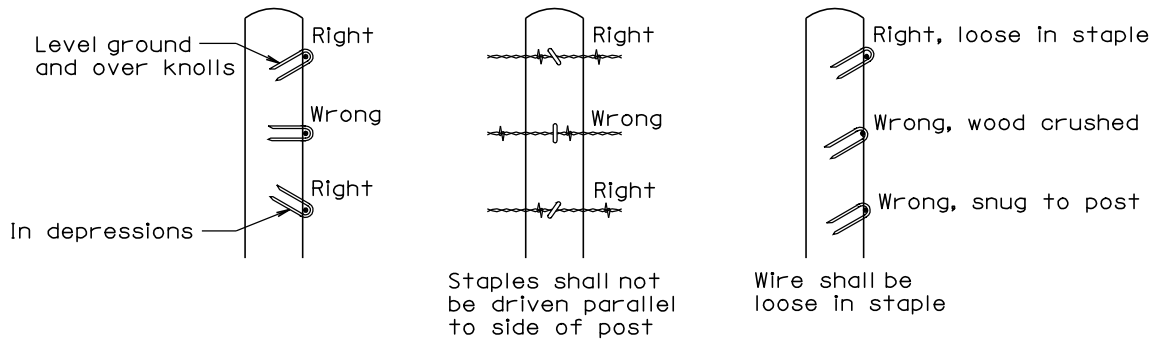
GENERAL NOTES:

Fence types designated on the plans that are followed by the letter S shall have smooth (barbless) wires.

When type 5S or 6S is designated the bottom wire may be barbed, smooth, or left off.

All degrees of curvature stated for fence are at centerline of roadway.

RIGHT-OF-WAY FENCE



STAPLE INSTALLATION

GENERAL NOTES:

The Right-of-Way fence shall consist of barbed wire or a combination of woven wire and barbed wire. The barbed wire and/or woven wire shall be fastened to all wood posts or fastened to alternating wood and steel posts. Only wood posts shall be used for brace panels. Gates shall be of the type designated in the plans or as otherwise directed by the Engineer. Fence shall be constructed conforming to the details on the standard plates and in the plans unless otherwise directed by the Engineer.

Right-of-Way fence on Interstate Projects shall be constructed one foot within the Interstate Right-of-Way lines except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

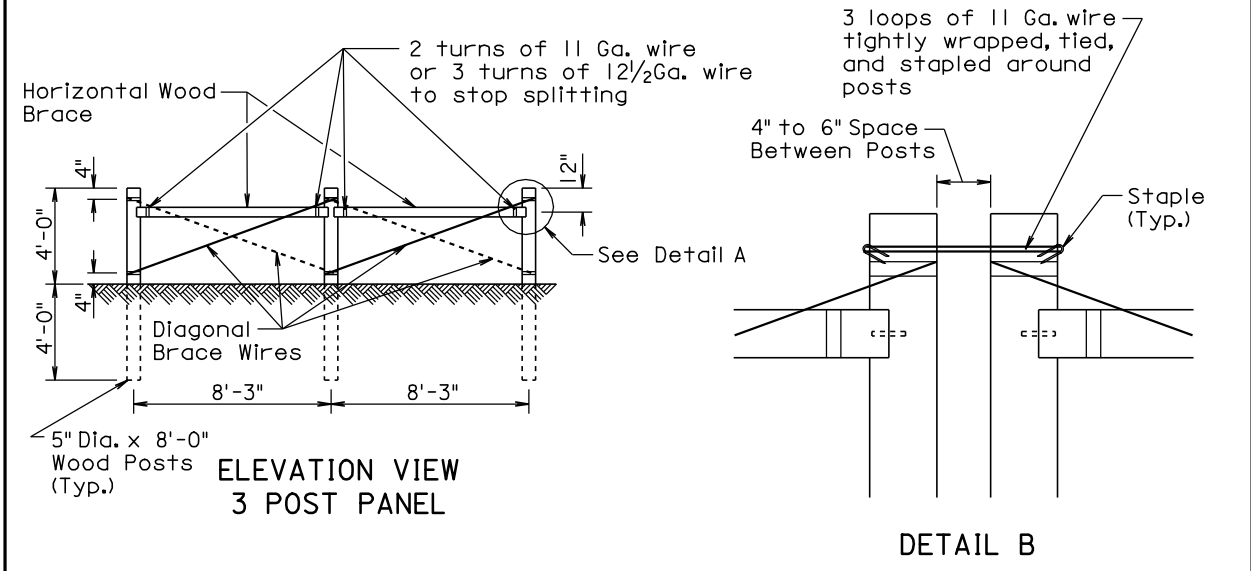
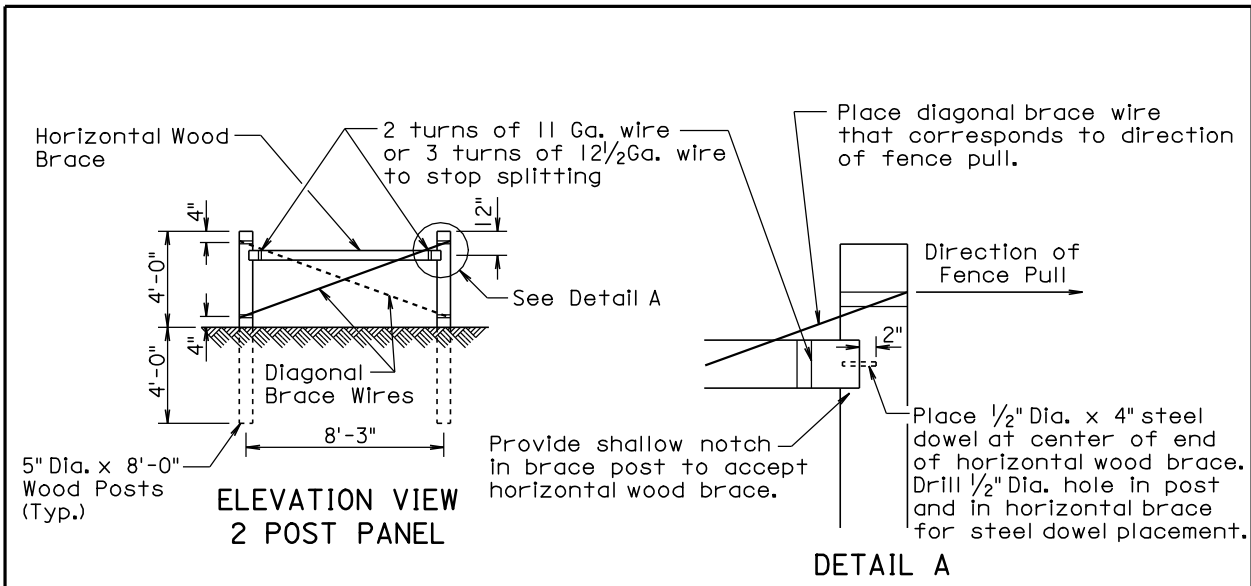
Right-of-Way fence other than on Interstate Projects shall be constructed within one foot of the Right-of-Way on the Landowner's side except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

Barbs shall be fabricated from zinc coated 14 ga. wire. Two point barbs shall be wrapped twice around one main strand at 4" spacings and the four point barbs shall be interlocked and wrapped around both main strands at 5" spacings.

The gages of wire and wood post lengths and sizes are the minimum acceptable unless otherwise specified in the plans. The tolerances for steel posts shall be as stated in AASHTO M281. Woven wire shall conform to design and specifications of ASTM A116 and barbed wire shall conform to ASTM A121.

December 23, 2004

<p><i>Published Date: 2nd Qtr. 2006.</i></p>	<p>S D D O T</p>	<p>STAPLE INSTALLATION AND GENERAL RIGHT-OF-WAY FENCE NOTES</p>	<p>PLATE NUMBER 620.02</p>
			<p>Sheet 1 of 1</p>



GENERAL NOTES:

- Two Post Panels shall be installed at least every 1320' between corners.
- Two Post Panels shall be installed at any sharp vertical angle crest points and as directed by the Engineer.
- Horizontal wood braces shall consist of 4" dia. x 8' wood posts or rough 4" x 4" x 8' timbers.
- Diagonal brace wires shall be fabricated with 4 strands of 9 Ga. galvanized wire twisted tight. The diagonal brace wires shall be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

December 23, 2004

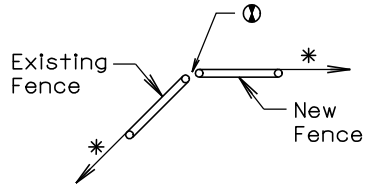
<p>S D D O T</p> <p><i>Published Date: 2nd Qtr. 2006.</i></p>	<p>BRACE PANELS AND APPLICATIONS OF BRACE PANELS</p>	<p>PLATE NUMBER 620.03</p>
		<p>Sheet 1 of 3</p>

SPACING OF 2 POST PANELS WITHIN CURVES	
DEGREE OF CURVE	SPACING OF 2 POST PANEL
less than 3°15'	** 1320'
3°15' and greater	**At P.C., P.T., and at every 1320' between P.C. and P.T.

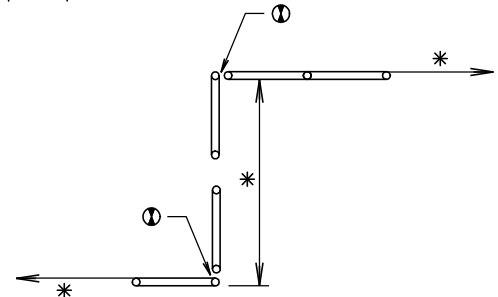
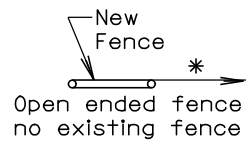
GENERAL NOTE:

All degrees of curvature stated for fence are at centerline of roadway.

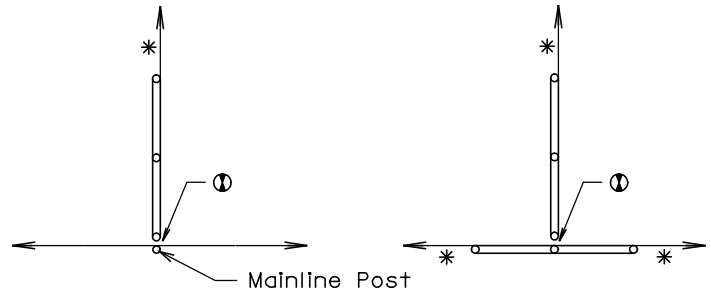
- * If fence length is less than 600' to next corner use a 2 post panel.
- If fence length is greater than 600' to next corner use a 3 post panel.
- ** Fence lengths greater than 1320' and less than 2640' place 2 Post Panel approximately at midpoint.
- ① See Detail B on Sheet 1 of 3.



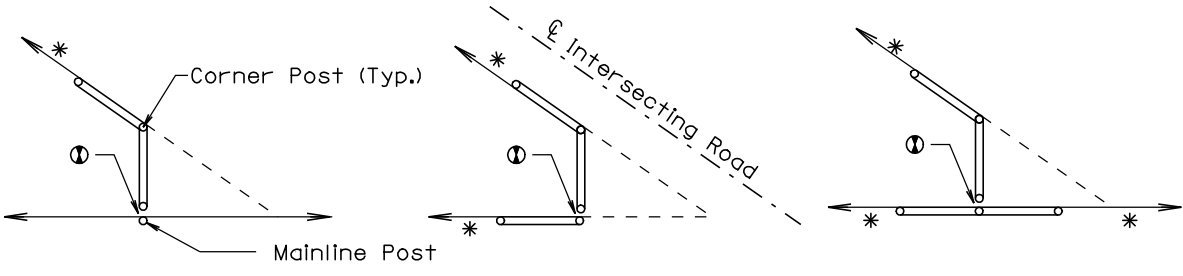
BEGIN OR END FENCE
(where new fence ties into existing fence)



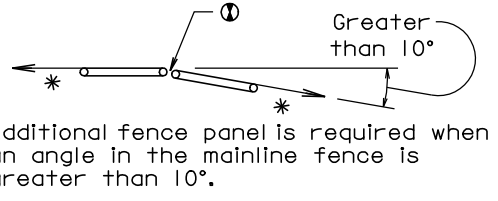
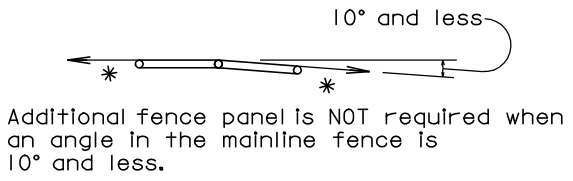
SHORT JOGS IN FENCE



CROSS FENCE



SHARP ANGLES IN CROSS FENCE



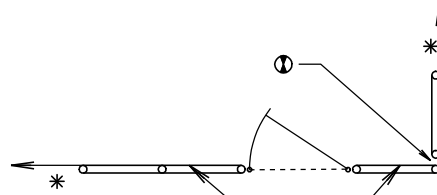
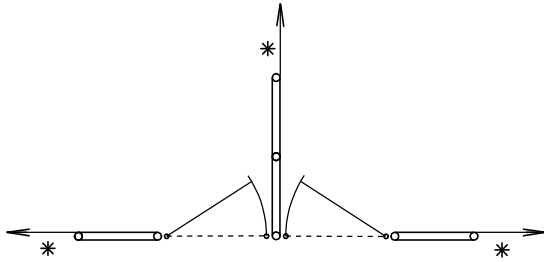
ANGLES IN MAINLINE FENCE

December 23, 2004

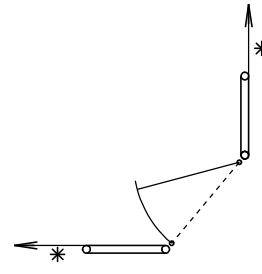
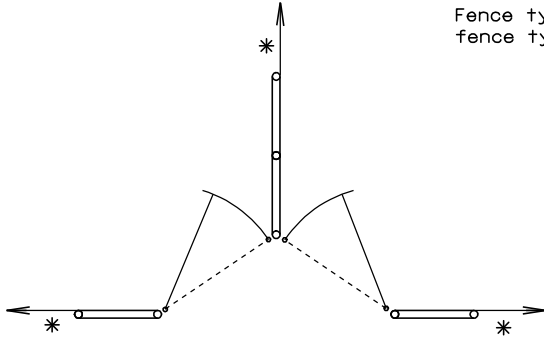
SDOT	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
	<i>Published Date: 2nd Qtr. 2006.</i>	Sheet 2 of 3



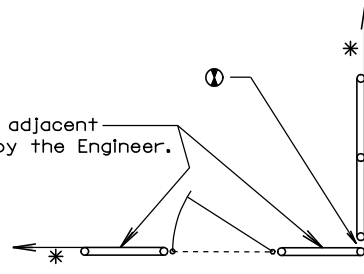
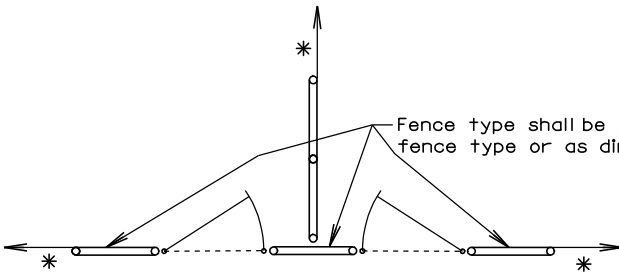
ENTRANCE
 (NOT ON CORNER)



Fence type shall be same as adjacent
 fence type or as directed by the Engineer.



Fence type shall be same as adjacent
 fence type or as directed by the Engineer.



DOUBLE ENTRANCES

ENTRANCES AT CORNERS

GATES

* If fence length is less than 600' to next corner use a 2 post panel.
 If fence length is greater than 600' to next corner use a 3 post panel.

① See Detail B on Sheet 1 of 3.

December 23, 2004

Published Date: 2nd Qtr. 2006.

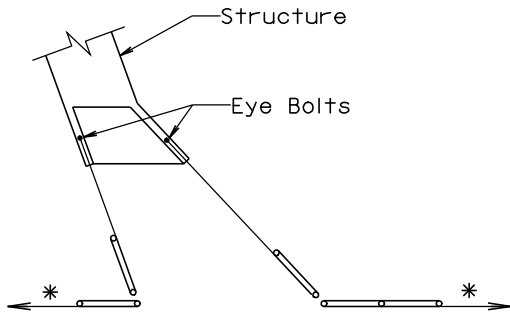
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**BRACE PANELS
 AND APPLICATIONS OF BRACE PANELS**

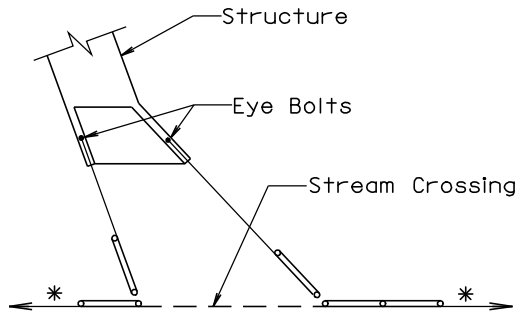
PLATE NUMBER
 620.03

Sheet 3 of 3

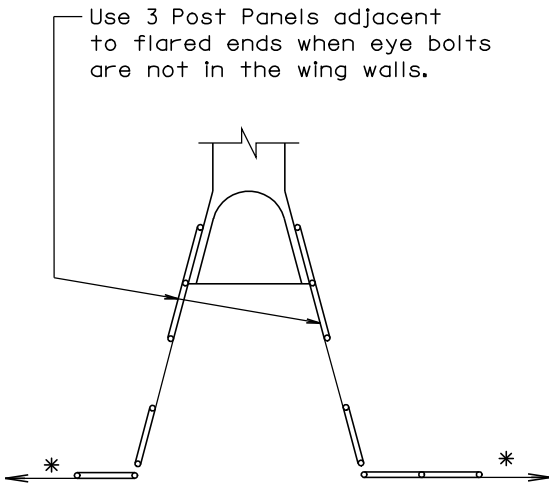
Plotting Date: 03-APR-2006



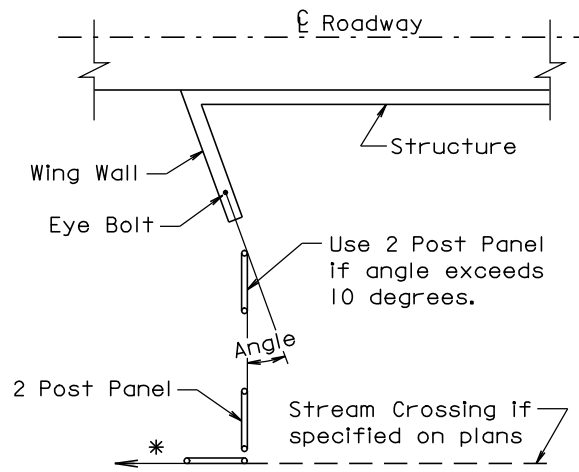
R.C. BOX CULVERT
 OR CATTLE PASS



STRUCTURE WITH STREAM
 CROSSING FENCE



R.C. BOX CULVERT
 OR CATTLE PASS



BRIDGE

* If fence length is less than 600' to next corner use a 2 post panel.
 * If fence length is greater than 600' use a 3 post panel.

March 31, 2000

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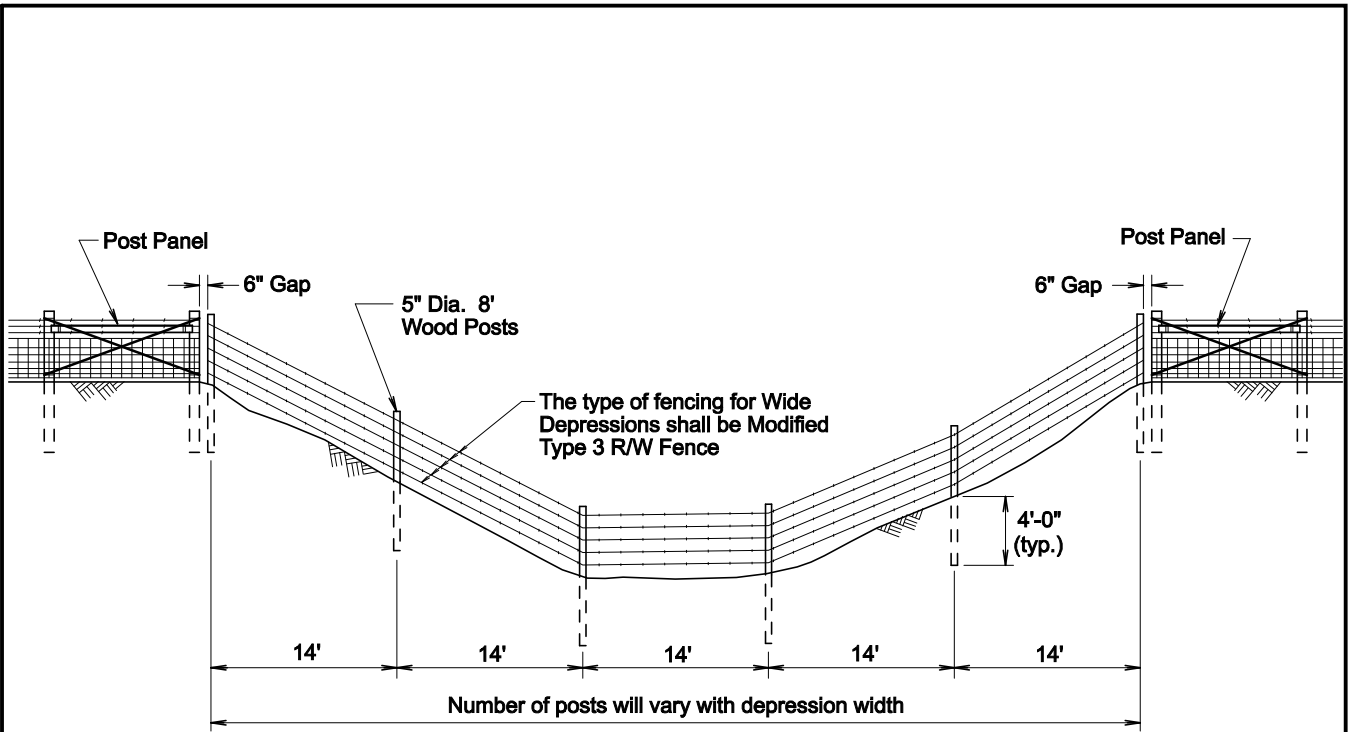
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BRACE PANEL APPLICATIONS AT STRUCTURES

PLATE NUMBER
 620.04

Sheet 1 of 1

Plotting Date: 03-APR-2006



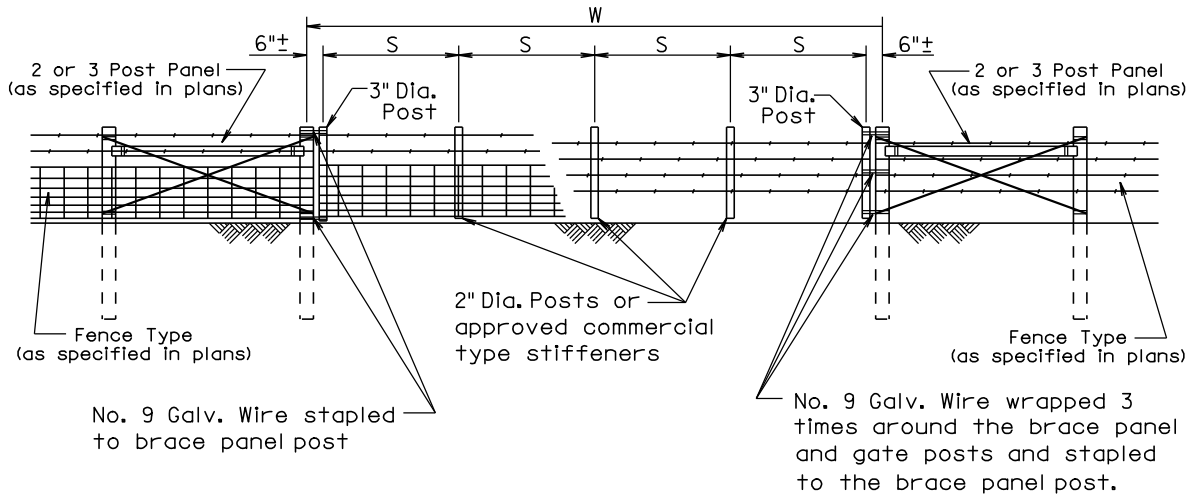
Fencing At Wide Depression (Subject to Flooding)

GENERAL NOTES:

There will be no extra payment for the additional work and materials required to construct the stream crossing(s) and/or depression fencing(s).

Measurement and payment for these stream crossing(s) and or depression fencing(s) shall be at the contract unit price per foot for the respective type of Right-of-Way fence.

FENCING AT WIDE DEPRESSIONS



W Gate Width (ft.)	S Post Spacing
16	3 @ 5'-0" ±
20	4 @ 4'-9" ±
24	4 @ 5'-9" ±
30	5 @ 5'-10" ±
40	6 @ 6'-6" ±

GENERAL NOTES:

Creosote treatment of the gate posts will not be accepted.

The type of fencing in the gate shall be of the same type as specified for the adjacent Right-of-Way fence.

All costs for furnishing and constructing the wire gate(s) shall be incidental to the contract unit price per Ft for the respective Right-of-Way fence bid item.

March 31, 2000

	<p>WIRE GATES</p>	<p>PLATE NUMBER 620.20</p>
		<p>Sheet 1 of 1</p>

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