

0001-391

JACKSON, MELLETTE & JONES COUNTIES

PCN i76j

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0001-391

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ESTIMATE OF QUANTITIES

009E0010	Mobilization	Lump Sum	LS
620E1100	Steel Fence Post	50	Each
620E1110	Wood Fence Post	100	Each
620E4000	Repair Fence	251,451	Ft
620E1020	2 Post Panel	16	Each
620E1030	3 Post Panel	29	Each
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

- All bid items are Non-participating

TABLE OF FENCE QUANTITIES

Interstate 90	Repair Fence	2 Post Panels	3 Post Panels
MRM to MRM	FT	Each	Each
130.30 to 201.418 EB	116840	4	12
130.30 to 201.418 WB	134611	12	17
Total	251451	16	29

ESTIMATE OF QUANTITIES

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition, and required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SCOPE OF WORK

The work required for this project includes, but is not limited to, the following items, not listed in order of execution.

1. Set Up Traffic Control
2. Repair Fence on I-90 MRM 130.30 to 201.418
3. Restore and Seed any Disturbed Ground
4. Dispose of Debris
5. Remove Traffic Control

The Contractor is encouraged to inspect the project site prior to bidding to evaluate the extent of work that will be required for construction.

Quantities for this project may be reduced at the discretion of the Department. Reduction in project quantities may occur if the Department is required to repair fence on pastureland prior to the start of this project to ensure livestock cannot get out onto Interstate 90.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site for the disposal of construction/demolition debris generated by this project in accordance with the Standard Specifications for Work Activities Outside the Plan Work Limits. Construction/demolition debris may not be disposed within the State ROW.

RESTORATION OF INSLOPES AND DITCHES

Any slope area or ditch that is rutted or otherwise unduly disturbed by the Contractors equipment during fencing operations, will be restored and seeded by the Contractor at his expense and approved by the Engineer. Cost for this work will be incidental to other contract items. The permanent seed mixture as stated elsewhere in this proposal will be used.

UTILITIES

The Contractor will contact the utility companies that may be involved prior to starting work. It will be the responsibility of the Contractor to coordinate his work with the utility company to avoid damage to existing facilities.

MAINTENANCE OF TRAFFIC

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All construction operations will be conducted in the general direction of traffic movement. Traffic will be maintained on the proper directional set of lanes throughout the project during construction operations. Lane closures will not be allowed on this project. The Contractor will arrange the details of their operation as to cause a minimum of inconvenience and delay to the traveling public.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness. During nights, weekends and other non-working hours, all non-applicable traffic control signs, materials and equipment will be removed from the roadway or ditch will be stored a minimum of 30 feet from the traveled lanes.

All costs for traffic control, including signs, will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

WOOD AND STEEL FENCE POSTS

As determined by the Engineer, some line posts may need to be removed and replaced with new posts in the fence repair areas. The Engineer will determine if a post is suitable to be used or if a new post is to be installed. New wood and steel fence posts will be measured and paid for at the contract unit bid price per post for each item. Payment will be full compensation for labor, equipment and all incidentals to remove and replace the line post.

Care will be taken to maximize the use of existing wood and steel line posts.

NEW BRACE PANELS

The Engineer will determine the locations for replacing and/or installing of the 2-Post Brace Panels and 3-Post Brace Panels. Payment will be made on the actual amount installed and will be paid for at the contract unit price per panel. Such payment will be full compensation for labor, horizontal brace posts, equipment and incidentals necessary to construct the brace panels. The Contractor will be responsible to provide all items necessary to complete the brace panel as shown on the standard plate. Cost for this work will be incidental to the unit bid price per each for "2-Post Panel" and "3-Post Panel".

It is anticipated that the quantities for "2-Post Panel" and "3-Post Panel" will increase on this project, due to the amount of fence buried by snow.

BRACE PANELS LEFT IN PLACE

Brace panels that are left in place through areas of repair fence areas, may need some repair work such as:

1. Replace dowels and reposition brace post.
2. Replace or tighten diagonal tension wire.
3. Align and re-tamp posts.
4. Other incidental work as necessary.

Cost to accomplish the repair work on brace panels will be incidental to other contract items.

REPAIR GATE

As determined by the Engineer, the Contractor will repair access gates in the existing ROW fence. The materials and installation of the brace panels for the wire gates will correspond to the "New Brace Panel" note and the standard plate. Brace panels necessary to complete the gate will be paid for on a per each basis under the corresponding bid item "2-Post Panel" or "3-Post Panel".

The Contractor will be responsible to furnish all other materials necessary to repair the wire gate. Cost for these materials will be included in the bid item "Repair Fence". Payment for the wire gates will be measured as "Repair Fence" and will be full compensation for furnishing all materials, constructing the wire gate as shown on the standard plate, attaching and stretching the existing wires to the brace post panel, labor, equipment and all other incidentals associated with the installation of the wire gate.

REPAIR FENCE

The Engineer will identify areas in need of repair and determine the amount repaired. The repair of R/W fence will consist of splicing and stretching the existing wire and attaching the wire to existing posts and brace panels. Some areas may require the removal and replacement of staples and fasteners to achieve the proper dimensions shown on the standard. The posts will be paid for under the bid item Wood Fence Posts or Steel Fence Posts, whichever is applicable. Cost for splicing, stretching and installing the new wire in the repair area, will be included in the unit bid price for "Repair Fence". All wire, staples, fasteners and miscellaneous items necessary to complete the repair will be furnished by the Contractor. Cost associated with these items will be included in the bid item "Repair Fence".

Existing wood and steel fence line posts that are not at the correct height, will be pulled and reset to the correct height as per the applicable standard plate in these plans. Costs for pulling and resetting these existing wood and steel will be incidental to the unit bid price for "Repair Fence".

Limited Access Security – All fence removed during any one working day is to be reset during the same day if livestock is being restrained. The Contractor will be responsible to coordinate with the adjacent landowners when livestock is present.

All removed fence material will become the property of the Contractor. Disposal of removed material will not be allowed within the R.O.W. and will be disposed of outside the limits of view of the project.

Fence will be repaired to match the fence adjacent to the repair area and according to the applicable Standard Plate included in these plans for this project as approved by the Engineer.

Fence removed will not be measured and paid for. All costs for removing fence will be incidental to other contract bid items.

The Repair Fence bid item will be measured and paid for according to the tables listed elsewhere in these plans, (inclusive of brace panels, number of wires repaired and gates) and will be paid for at the contract unit price per foot under the bid item "Repair Fence". This work will include the repair of all wires in the fence at that location. Such payment will be full compensation for incidental materials, labor and equipment necessary to repair the fence. Field measurement for the areas listed in the plans will not be made. Wood and steel fence posts replaced in these sections will be paid for as noted elsewhere in these plans.

Any fence repaired by the Department prior to the Contractor will be subtracted from the Contract. Any additional areas added by the Engineer will be measured and paid for. The minimum measurement will be 100' for each area regardless of actual measurements. Areas that are greater than 100' in length will be measured and paid for in 100' increments.

The Contractor will be required to repair the fence at locations where livestock will be placed prior to locations where livestock will not be placed. It will be the responsibility of the Contractor to contact the landowners along the project to determine sequencing of fence repair operations.

Permanent Seeding

For information only.

Special Permanent Seed Mixture 1 will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	16
Canada Wildrye	Mandan	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		18

Hand seeding devices approved by the Engineer will be allowed. Following the seeding operations, the area will be raked to the satisfaction of the Engineer.

Mulching (Grass Hay or Straw)

For information only.

The Contractor will hand mulch all disturbed areas after the completion of hand seeding. Mulch will be free of noxious weed.

i76j REPAIR FENCE EB LANES

MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
131.370		131.414	EB	232		Snow Covered			
131.732		131.758	EB	137		Snow Covered			
133.066		133.115	EB	259		Snow Covered			
133.115		133.437	EB	32	2				
			EB	32	2				
			EB	80	1				
133.437		134.000	EB	2973		Snow Covered			
134.000		134.101	EB	533		Snow Covered		1	
134.187		134.373	EB	982		Snow Covered			
134.920		135.000	EB	422		Snow Covered			
135.000		135.488	EB	2577		Snow Covered			
135.488		135.533	EB	80	2				
135.533		136.000	EB	2466		Snow Covered			
136.000		136.095	EB	502		Snow Covered			
136.405		136.658	EB	1336		Snow Covered			
136.715		136.952	EB	1251		Snow Covered			
137.111		137.180	EB	364		Snow Covered			
137.500		137.894	EB	2080		Snow Covered			
138.015		138.295	EB	1478		Snow Covered			
138.295		138.405	EB	112	2				
138.405		138.490	EB	449		Snow Covered			
138.750		138.778	EB	148		Snow Covered			
139.007		139.300	EB	1547		Snow Covered			
139.454		139.999	EB	2878		Snow Covered			
140.242		140.283	EB	216		Snow Covered			
140.448		140.596	EB	781		Snow Covered			
140.926		141.034	EB	570		Snow Covered			
141.349		141.485	EB	718		Snow Covered			
141.619		142.000	EB	2012		Snow Covered			
142.000		142.113	EB	597		Snow Covered			
142.700		142.850	EB	792		Snow Covered			
142.850		143.563	EB	64	4				
143.563		143.660	EB	512		Snow Covered			
144.190		144.439	EB	1315		Snow Covered			
144.858		145.000	EB	750		Snow Covered			
145.000		145.078	EB	412		Snow Covered			
145.920		146.000	EB	422		Snow Covered			
146.000		146.020	EB	106		Snow Covered			
146.120		146.270	EB	792		Snow Covered			
146.330		146.380	EB	264		Snow Covered			
146.660		146.770	EB	581		Snow Covered			
147.249		147.417	EB	887		Snow Covered			
147.417		147.826	EB	224	2				
147.826		148.000	EB	919		Snow Covered			
148.258		148.370	EB	591		Snow Covered			
148.370		149.000	EB	80	4				
			EB	320	2				
149.000		150.000	EB	64	3				

MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
			EB	64	2				
150.400		150.480	EB	422		Snow Covered			
150.920		151.000	EB	422		Snow Covered			
151.094		151.169	EB	396		Snow Covered			
151.342		151.393	EB	269		Snow Covered			
151.393		151.566	EB	96	2				
151.566		151.630	EB	338		Snow Covered			
151.677		151.716	EB	206		Snow Covered			
153.000		153.035	EB	185		Snow Covered			
153.035		153.555	EB	144	2				
153.555		153.590	EB	185		Snow Covered			
154.282		154.424	EB	750		Snow Covered			
154.683		154.900	EB	1146		Snow Covered			
155.128		155.223	EB	502		Snow Covered			
155.364		155.420	EB	296		Snow Covered			
155.490		155.763	EB	1441		Snow Covered			
156.232		156.493	EB	1378		Snow Covered			
157.427		157.510	EB	438		Snow Covered			
157.880		158.000	EB	634		Snow Covered			
158.245		158.265	EB	106		Snow Covered			
158.662		158.680	EB	95		Snow Covered			
158.765		158.910	EB	766		Snow Covered			
158.950		159.000	EB	264		Snow Covered			
160.495		160.600	EB	554		Snow Covered			
161.078		161.111	EB	174		Snow Covered			
161.790		161.850	EB	317		Snow Covered			
161.850		162.000	EB	112	2				
162.035		162.126	EB	480		Snow Covered			
162.648		162.778	EB	686		Snow Covered			
163.245		163.285	EB	211		Snow Covered			
163.418		163.533	EB	607		Snow Covered			
163.717		163.743	EB	137		Snow Covered			
164.000		165.000	EB	192	2				
165.760		165.990	EB	1214		Snow Covered			
166.000		166.680	EB	3590		Snow Covered			
166.680		166.915	EB	160	2				
166.915		166.980	EB	343		Snow Covered			
167.040		167.213	EB	913		Snow Covered			
167.305		167.800	EB	2614		Snow Covered			
167.890		168.000	EB	581		Snow Covered			
168.000		169.000	EB	5280		Snow Covered			
169.000		169.568	EB	288	1				
			EB	96	2				
169.568		169.812	EB	1288		Snow Covered			
170.150		170.180	EB	158		Snow Covered			
170.560		170.662	EB	539		Snow Covered			
170.662		170.717	EB	96	2				
170.717		170.780	EB	333		Snow Covered			
171.482		171.550	EB	359		Snow Covered			
171.674		171.720	EB	243		Snow Covered			

MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
172.133		172.210	EB	407		Snow Covered			
172.210		173.000	EB	80	2				
173.034		173.075	EB	216		Snow Covered			
174.090		174.170	EB	422		Snow Covered			
174.340		174.528	EB	993		Snow Covered			
174.590		174.640	EB	264		Snow Covered			
175.000		175.050	EB	264		Snow Covered			
175.490		175.720	EB	1214		Snow Covered			
177.119		177.154	EB	185		Snow Covered			
177.720		177.750	EB	158		Snow Covered			
178.175		178.359	EB	972		Snow Covered			
178.610		178.747	EB	723		Snow Covered			
179.192		179.343	EB	797		Snow Covered			
179.398		179.476	EB	412		Snow Covered			
179.728		179.760	EB	169	2	Snow Covered			
180.309		180.452	EB	755		Snow Covered			
180.591		180.616	EB	132		Snow Covered	1		Woven Wire
181.063		181.108	EB	238		Snow Covered			Woven Wire
181.204		181.305	EB	533		Snow Covered			Woven Wire
181.429		181.526	EB	512		Snow Covered			
181.763			EB	110		Snow Covered		7	
182.633		182.813	EB	950		Snow Covered			
182.992		183.200	EB	1098	2	Snow Covered			
183.944		184.067	EB	649		Snow Covered			
184.264		184.399	EB	713		Snow Covered			
184.557		184.592	EB	185		Snow Covered			
184.833		184.869	EB	190		Snow Covered			
185.327			EB	50		Snow Covered		4	
185.622		185.659	EB	195		Snow Covered			
185.747		185.800	EB	280		Snow Covered			
186.058		186.129	EB	375		Snow Covered			
186.206		186.329	EB	649		Snow Covered			
187.029		187.110	EB	428		Snow Covered			
187.203		187.293	EB	475		Snow Covered	2		
188.153		188.297	EB	760		Snow Covered			
188.359		188.529	EB	898		Snow Covered			
188.662		188.701	EB	206		Snow Covered			
189.118		189.452	EB	1764		Snow Covered			
189.773		189.804	EB	164		Snow Covered			
189.878		189.905	EB	143		Snow Covered			
190.180		190.208	EB	148		Snow Covered			
190.403		190.487	EB	444		Snow Covered			
190.724		190.901	EB	935		Snow Covered	1		
190.955		191.000	EB	238		Snow Covered			
191.050		191.152	EB	539		Snow Covered			
191.575		191.606	EB	164		Snow Covered			
193.105		193.175	EB	370		Snow Covered			
193.380		193.675	EB	1558		Snow Covered			
193.800		193.900	EB	528		Snow Covered			
193.970		194.315	EB	1822		Snow Covered			

MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
194.480		194.545	EB	343		Snow Covered			
194.660		195.410	EB	3960		Snow Covered			
195.650		197.180	EB	8078		Snow Covered			
197.340		197.845	EB	2666		Snow Covered			Woven Wire
197.925		198.020	EB	502		Snow Covered			Woven Wire
198.540		198.600	EB	317		Snow Covered			
198.940		199.175	EB	1241		Snow Covered			
199.535		199.795	EB	1373		Snow Covered			
200.295		200.400	EB	554		Snow Covered			
200.775		201.050	EB	1452		Snow Covered			
201.260		201.418	EB	834		Snow Covered			
EB TOTALS				116840			4	12	

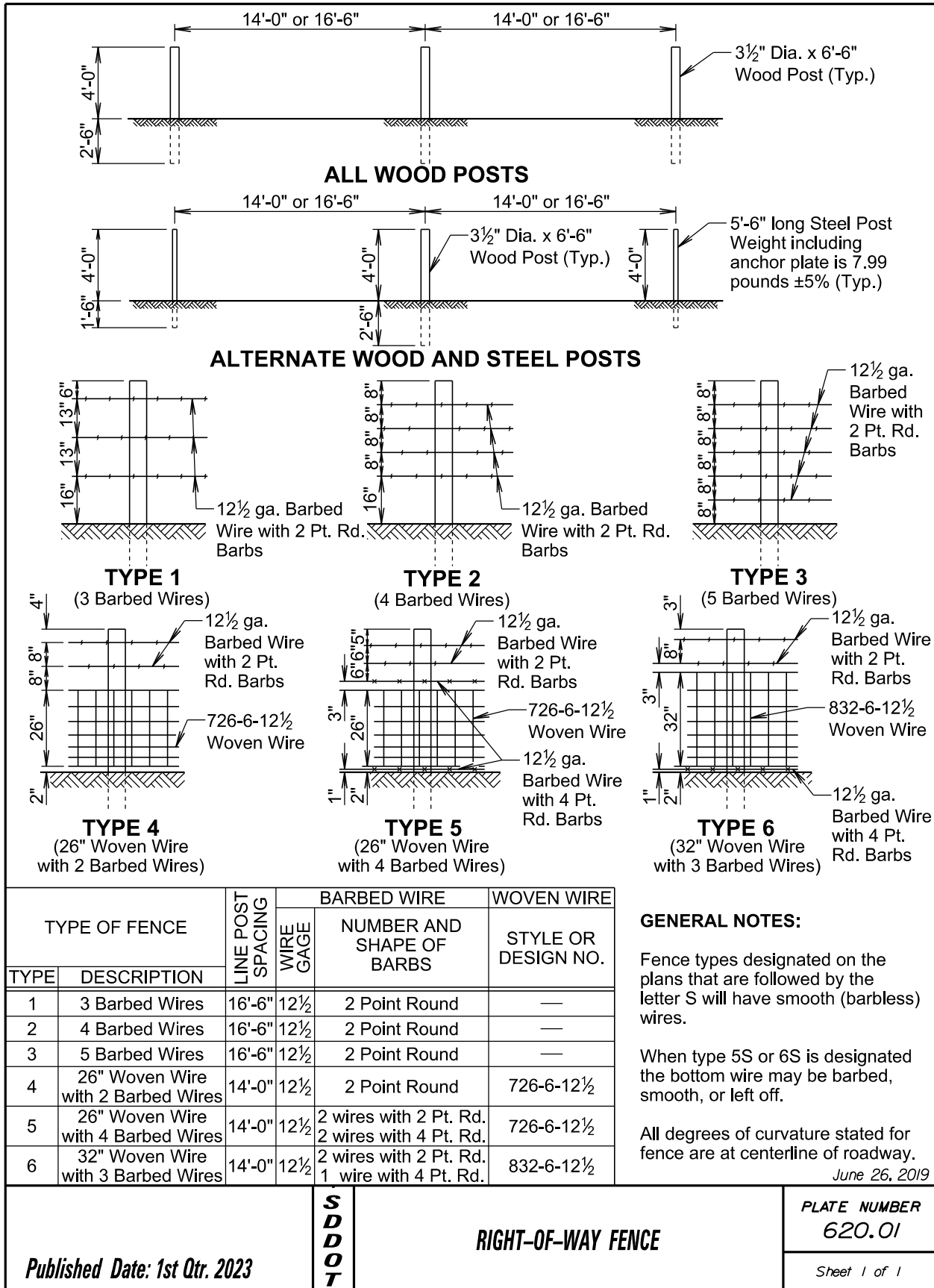
i76j REPAIR FENCE WB LANES

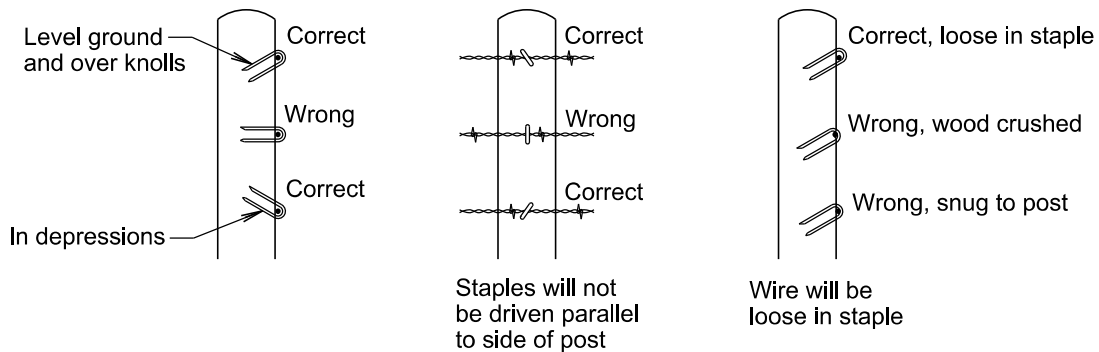
MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
131.770		131.800	WB	16		Snow Covered	1		
132.000		132.200	WB	106		Snow Covered			
133.440		133.555	WB	61		Snow Covered			
133.670		133.840	WB	90		Snow Covered			
134.320		134.415	WB	50		Snow Covered			
134.580		134.978	WB	210		Snow Covered			
135.000		135.120	WB	63		Snow Covered			
135.225		135.534	WB	163		Snow Covered			
135.605		135.930	WB	172		Snow Covered			
135.600			WB	128	1				
136.000		136.282	WB	1489		Snow Covered			
136.282		137.000	WB	160	2				
137.095		137.346	WB	1325		Snow Covered			
137.830		137.890	WB	317		Snow Covered		2	
139.000		139.015	WB	79		Snow Covered			
139.854		139.921	WB	354		Snow Covered			
139.921		141.418	WB	240	2		1		
141.418		141.553	WB	713		Snow Covered			
142.615		142.745	WB	686		Snow Covered			
143.000		143.178	WB	940		Snow Covered			
143.314		143.413	WB	523		Snow Covered			
144.216		144.284	WB	359		Snow Covered			
144.385		144.444	WB	312		Snow Covered			
144.444		145.000	WB	240	2				
145.000		145.042	WB	222		Snow Covered			
145.367		145.494	WB	671		Snow Covered			
145.494		145.770	WB	384	2				
145.770		146.000	WB	1214		Snow Covered			
146.000		146.293	WB	1547		Snow Covered	1		
146.293		145.521	WB	224	1				
146.521		146.655	WB	708		Snow Covered			
146.665		147.22	WB	160	2				
147.220		147.295	WB	396		Snow Covered			
147.295		147.923	WB	480	2				
			WB	432	2				
			WB	256	3				
			WB	192	2				
147.923		147.980	WB	301		Snow Covered			
148.200		148.237	WB	195		Snow Covered			
148.237		148.934	WB	96	2				
148.934		149.000	WB	348		Snow Covered			
149.000		149.038	WB	201		Snow Covered			
149.080		149.160	WB	422		Snow Covered		1	
150.213		150.265	WB	64	4				
150.403		150.470	WB	354		Snow Covered			
150.944		151.000	WB	296		Snow Covered			
151.000		151.073	WB	385		Snow Covered			

MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
151.344		151.406	WB	327		Snow Covered			
151.642		152.000	WB	1890		Snow Covered			
152.022		152.306	WB	1500		Snow Covered		1	
152.623		153.000	WB	1991		Snow Covered			
153.000		153.434	WB	2292		Snow Covered		1	
153.485		153.555	WB	370		Snow Covered			
153.820		154.000	WB	950		Snow Covered			
154.000		154.813	WB	4293		Snow Covered			
154.862		155.000	WB	729		Snow Covered			
155.000		155.060	WB	317		Snow Covered			
155.060		155.553	WB	112	2				
155.553		155.583	WB	158		Snow Covered			
156.000		156.490	WB	2587		Snow Covered			
156.549		156.780	WB	1220		Snow Covered			
156.972		157.000	WB	148		Snow Covered			
157.065		157.090	WB	132		Snow Covered			
157.473		157.503	WB	158		Snow Covered			
157.618		157.732	WB	602		Snow Covered		1	
158.000		158.143	WB	755		Snow Covered			
158.196		158.255	WB	312		Snow Covered			
158.362		158.425	WB	333		Snow Covered			
158.492		158.768	WB	1457		Snow Covered			
158.892		158.946	WB	285		Snow Covered			
158.946		159.000	WB	128	2				
159.232		159.397	WB	871		Snow Covered			
159.464		159.518	WB	285		Snow Covered			
159.518		160.000	WB	45	2				
160.622		160.650	WB	148		Snow Covered			
161.310		161.453	WB	755		Snow Covered			
162.416		162.892	WB	2513		Snow Covered			
163.210		163.356	WB	771		Snow Covered			
163.356		163.530	WB	919		Snow Covered			
163.530		164.000	WB	160	1				
164.375		164.411	WB	190		Snow Covered	1		
165.350		165.415	WB	343		Snow Covered			
165.720		165.845	WB	660		Snow Covered			
165.935		165.960	WB	132		Snow Covered			
166.080		166.164	WB	444		Snow Covered			
166.164		166.325	WB	64	1				
166.325		166.426	WB	533		Snow Covered			
166.426		167.450	WB	96	2				
			WB	96	3				
167.450		167.625	WB	924		Snow Covered			
167.815		167.845	WB	158		Snow Covered		1	
167.845		168.000	WB	128	1				
168.000		168.095	WB	502		Snow Covered			
168.180		168.249	WB	364		Snow Covered			
168.180		168.655	WB	160	1			1	
			WB	48	1				

MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
168.655		168.860	WB	1082		Snow Covered			
169.430		169.825	WB	2086		Snow Covered			
169.825		169.955	WB	80	1				
169.955		170.000	WB	238		Snow Covered			
170.000		170.059	WB	312		Snow Covered			
170.160		170.230	WB	370		Snow Covered			
170.325		170.380	WB	290		Snow Covered			
170.525		170.559	WB	180		Snow Covered			
171.480		171.520	WB	211		Snow Covered			
171.880		172.000	WB	634		Snow Covered		1	
172.000		172.200	WB	1056		Snow Covered			
172.340		172.400	WB	317		Snow Covered			
172.513		173.000	WB	2571		Snow Covered			
173.120		173.223	WB	544		Snow Covered			
173.223		173.485	WB	160	2				
173.485		173.540	WB	290		Snow Covered			
173.600		173.814	WB	1130		Snow Covered			
173.850		174.000	WB	792		Snow Covered			
174.000		174.309	WB	1632		Snow Covered			
174.309		174.451	WB	480	1				
174.451		174.812	WB	1906		Snow Covered			
174.812		175.000	WB	160	1			1	
175.452		175.542	WB	475		Snow Covered			
175.830		175.935	WB	554		Snow Covered			
177.080		177.140	WB	317		Snow Covered			
177.140		177.672	WB	130	2				
177.672		177.820	WB	781		Snow Covered			
178.440		178.545	WB	554		Snow Covered			
178.545		178.790	WB	120	1				
178.790		179.000	WB	1109		Snow Covered			
179.000		179.288	WB	1521		Snow Covered			
179.395		179.439	WB	232		Snow Covered			
179.680		179.743	WB	333		Snow Covered			
180.000		180.095	WB	502		Snow Covered			
180.255		180.335	WB	422		Snow Covered		1	
180.706		180.947	WB	1272		Snow Covered			
181.351		181.550	WB	1051		Snow Covered	1		
181.775		181.795	WB	106		Snow Covered			
181.830		181.926	WB	507		Snow Covered			
181.926		182.000	WB	200	1				
183.025		183.055	WB	158		Snow Covered			
183.350		183.409	WB	312		Snow Covered			
184.233		184.301	WB	359		Snow Covered			
184.355		184.369	WB	74		Snow Covered			
184.369		185.000	WB	160	1		1		
			WB	112	2		1		
185.888		186.172	WB	1500		Snow Covered			
187.000		188.266	WB	6684		Snow Covered	2		
188.789		189.283	WB	2608		Snow Covered			

MRM	to	MRM	Lane	Length	# Broken Wires	Description	2PP	3PP	Notes
189.542		189.624	WB	433		Snow Covered			
190.000		190.159	WB	840		Snow Covered			
190.261		190.409	WB	781		Snow Covered			
190.409		190.541	WB	80	1				
190.410		191.229	WB	4324		Snow Covered	1	1	
191.470		191.699	WB	1209		Snow Covered			
191.752		191.811	WB	312		Snow Covered			
191.945		191.959	WB	74		Snow Covered			
192.000		192.650	WB	50	1				
193.000		195.7	WB	14256		Snow Covered	1	2	
195.760		196.09	WB	1742		Snow Covered	1		
196.350		196.52	WB	898		Snow Covered			
196.640		196.89	WB	1320		Snow Covered		1	
197.015		197.055	WB	211		Snow Covered			
197.111		197.265	WB	813					
197.340		198.203	WB	4557				1	
198.375		198.555	WB	950					
198.655		199.000	WB	1822					
199.325		199.640	WB	1663				1	
199.745		199.800	WB	290					
199.840		201.093	WB	6616					
WB TOTALS				134611			12	17	





STAPLE INSTALLATION

GENERAL NOTES:

The Right-of-Way fence will consist of barbed wire or a combination of woven wire and barbed wire. The barbed wire and/or woven wire will be fastened to all wood posts or fastened to alternating wood and steel posts. Only wood posts will be used for brace panels. Gates will be of the type designated in the plans or as otherwise directed by the Engineer. Fence will 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 will 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 will 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 will be fabricated from zinc coated 14 ga. wire. Two point barbs will be wrapped twice around one main strand at four-inch spacings and the four point barbs will be interlocked and wrapped around both main strands at five-inch 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 will be as stated in AASHTO M281. Woven wire will conform to design and specifications of ASTM A116 and barbed wire will conform to ASTM A121.

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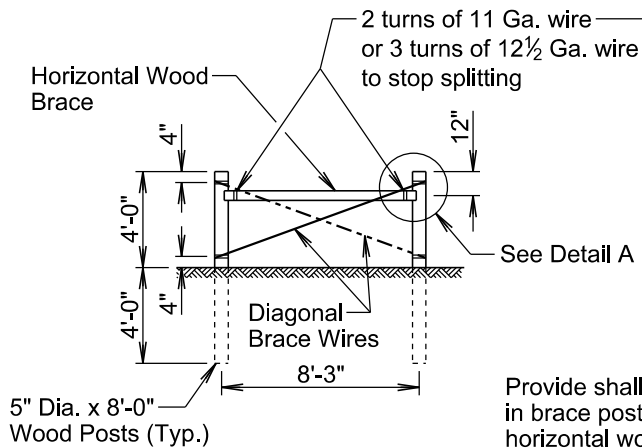
Published Date: 1st Qtr. 2023

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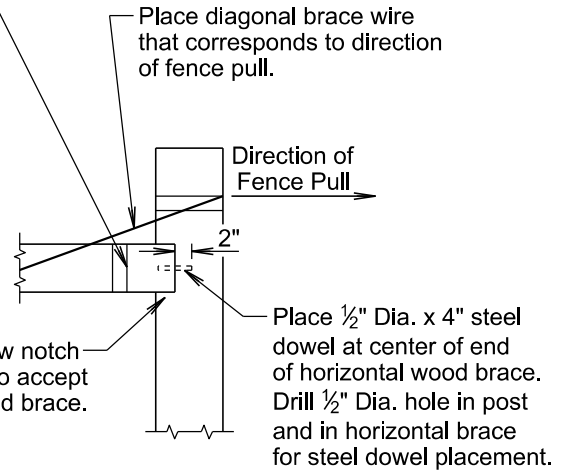
**STAPLE INSTALLATION AND GENERAL
RIGHT-OF-WAY FENCE NOTES**

**PLATE NUMBER
620.02**

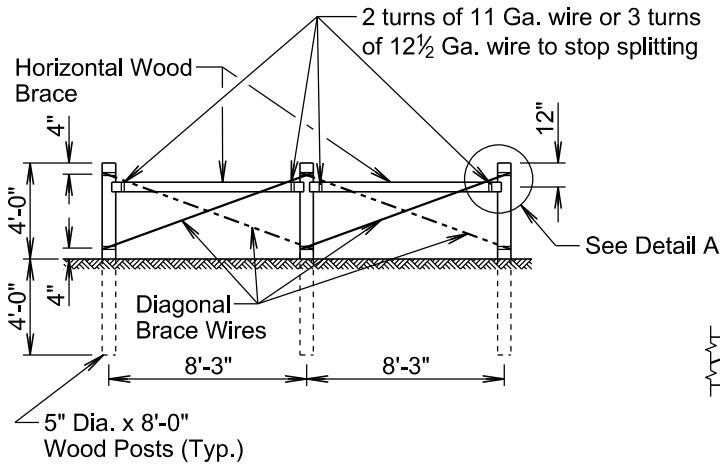
Sheet 1 of 1



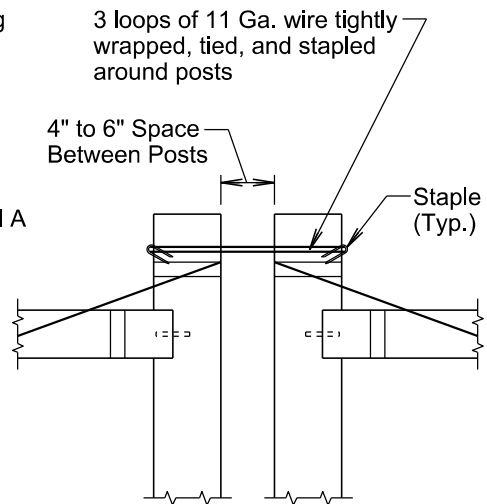
ELEVATION VIEW
(2 Post Panel)



DETAIL A



ELEVATION VIEW
(3 Post Panel)



DETAIL B

GENERAL NOTES:

Two Post Panels will be installed at least every 1320' between corners.

Two Post Panels will be installed at any sharp vertical angle crest points and as directed by the Engineer.

Horizontal wood braces will consist of 4" dia. x 8' wood posts or rough 4" x 4" x 8' timbers.

Diagonal brace wires will be fabricated with 4 strands of 9 Ga. galvanized wire twisted tight. The diagonal brace wires will be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

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**BRACE PANELS AND
APPLICATIONS OF BRACE PANELS**

PLATE NUMBER
620.03

Sheet 1 of 3

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.

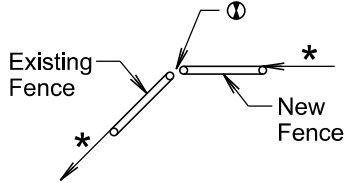
GENERAL NOTE:

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.

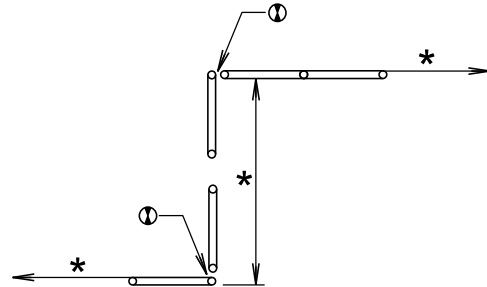
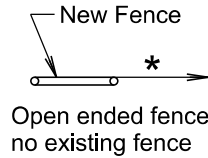
** Fence lengths greater than 1320' and less than 2640' place 2 Post Panel approximately at midpoint.

① See Detail B on Sheet 1 of 3.

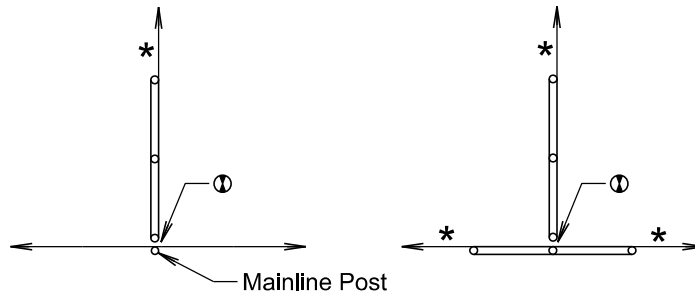


BEGIN OR END FENCE

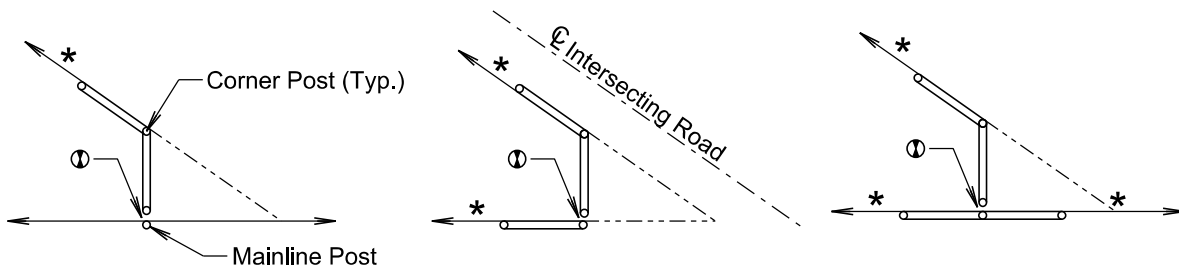
(Where new fence ties into existing fence)



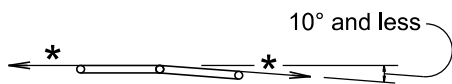
SHORT JOGS IN FENCE



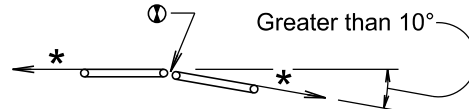
CROSS FENCE



SHARP ANGLES IN CROSS FENCE



Additional fence panel is NOT required when an angle in the mainline fence is 10° and less.



Additional fence panel is required when an angle in the mainline fence is greater than 10°.

ANGLES IN MAINLINE FENCE

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BRACE PANELS AND APPLICATIONS OF BRACE PANELS

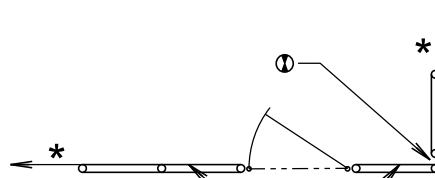
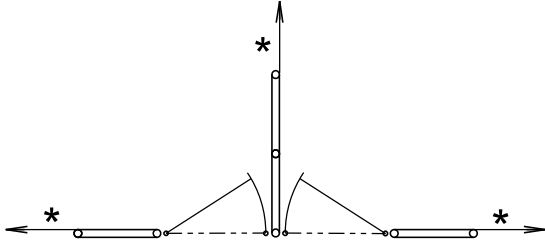
PLATE NUMBER
620.03

Sheet 2 of 3

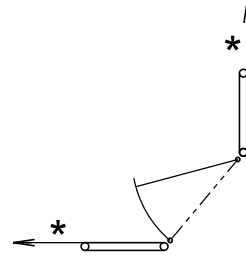
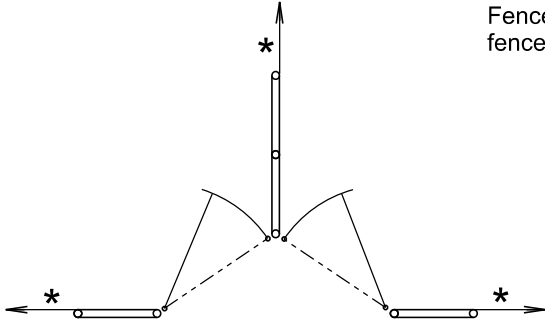


ENTRANCE

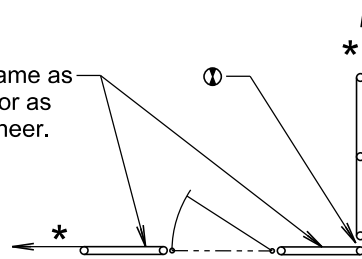
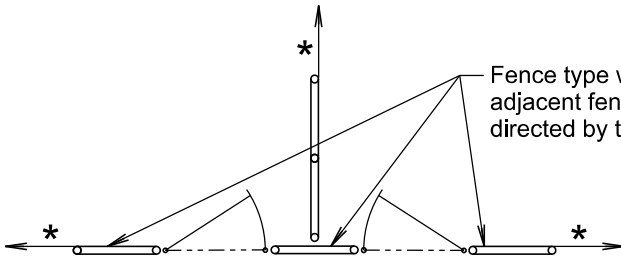
(Not on corner)



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



Fence type will 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.

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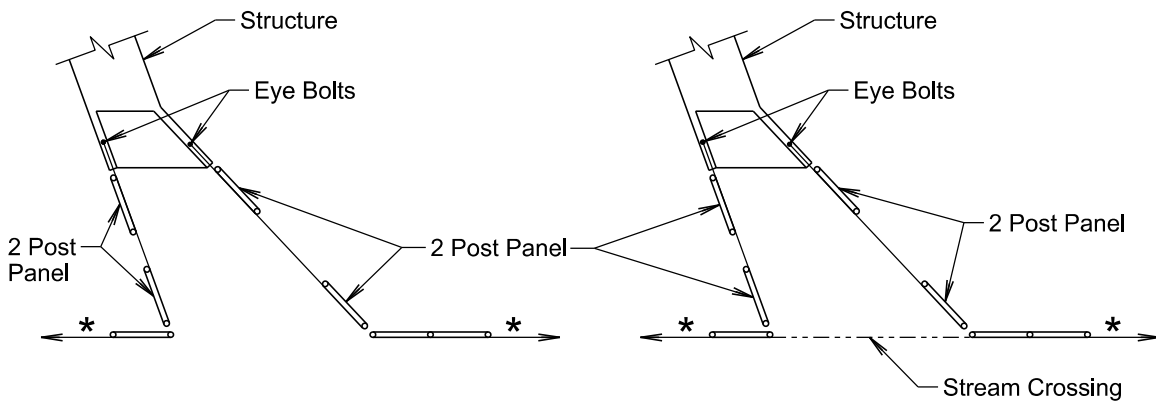
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**BRACE PANELS AND
APPLICATIONS OF BRACE PANELS**

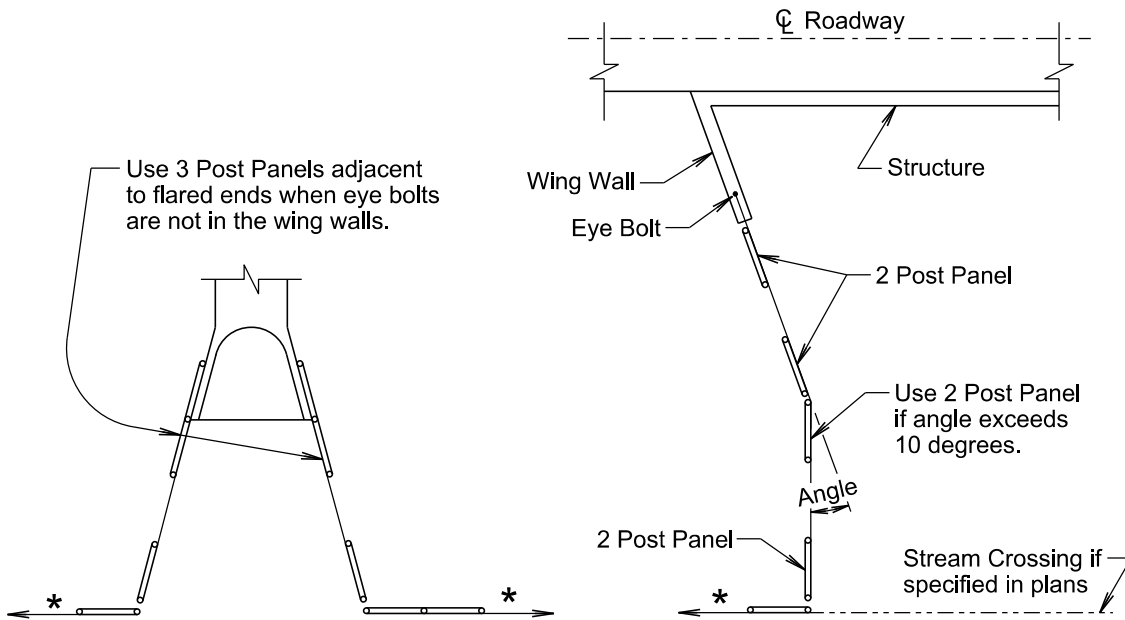
PLATE NUMBER
620.03

Sheet 3 of 3



**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.

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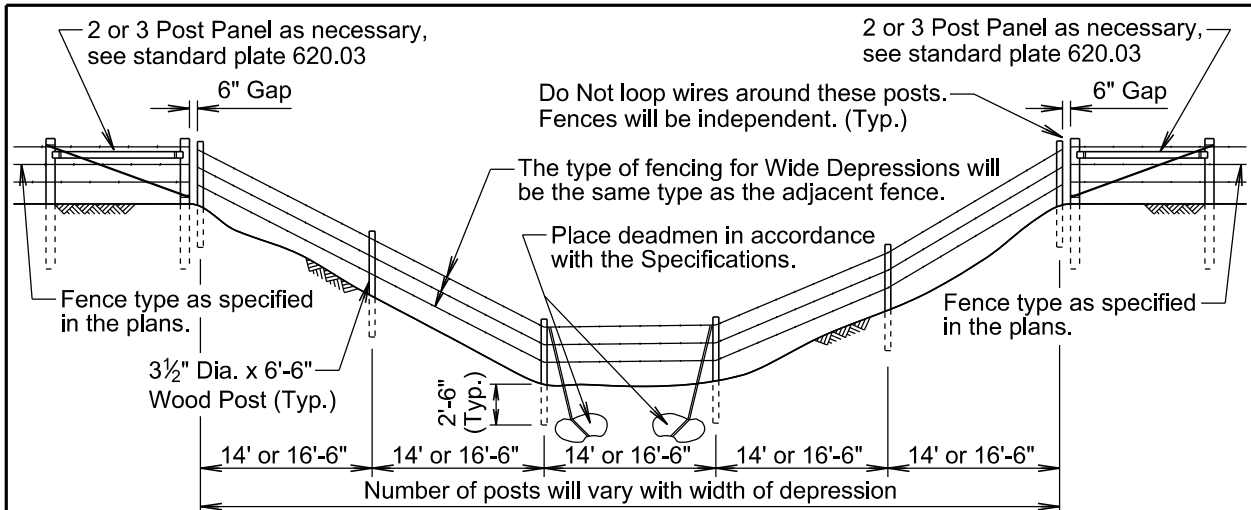
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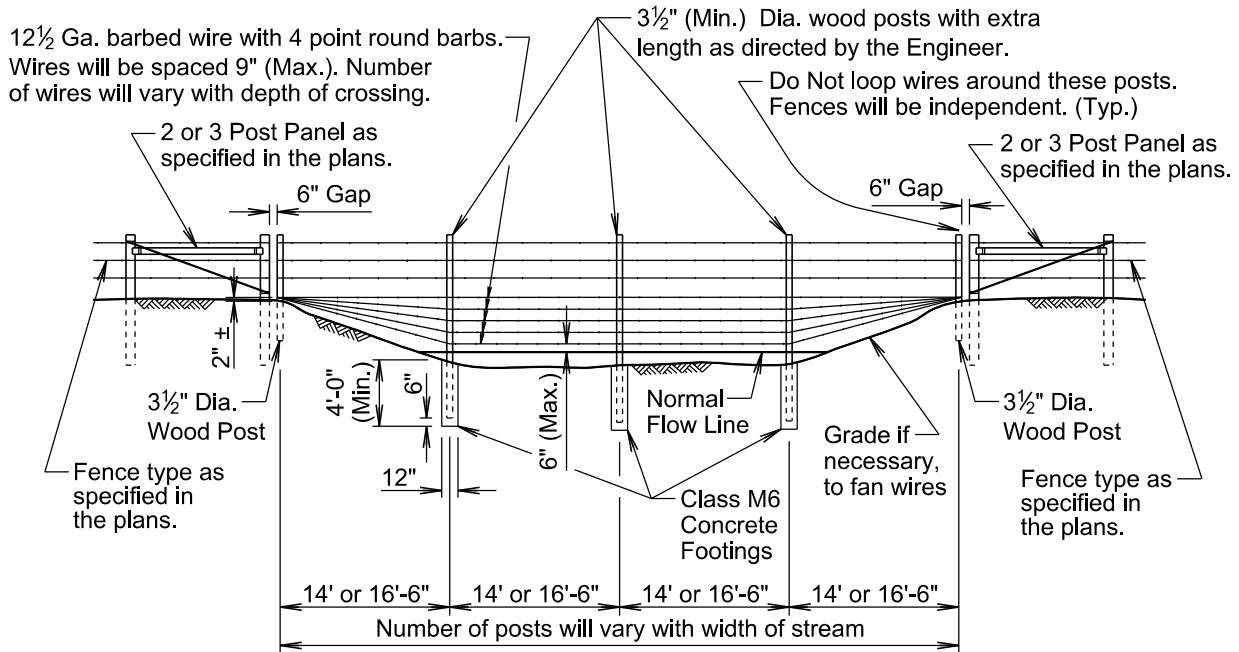
BRACE PANEL APPLICATIONS AT STRUCTURES

PLATE NUMBER
620.04

Sheet 1 of 1



This installation will be made when requested by the Engineer.
FENCING AT WIDE DEPRESSION
 (Subject to Flooding)



This installation will be made only when stated in the plans.
FENCING AT STREAM CROSSING

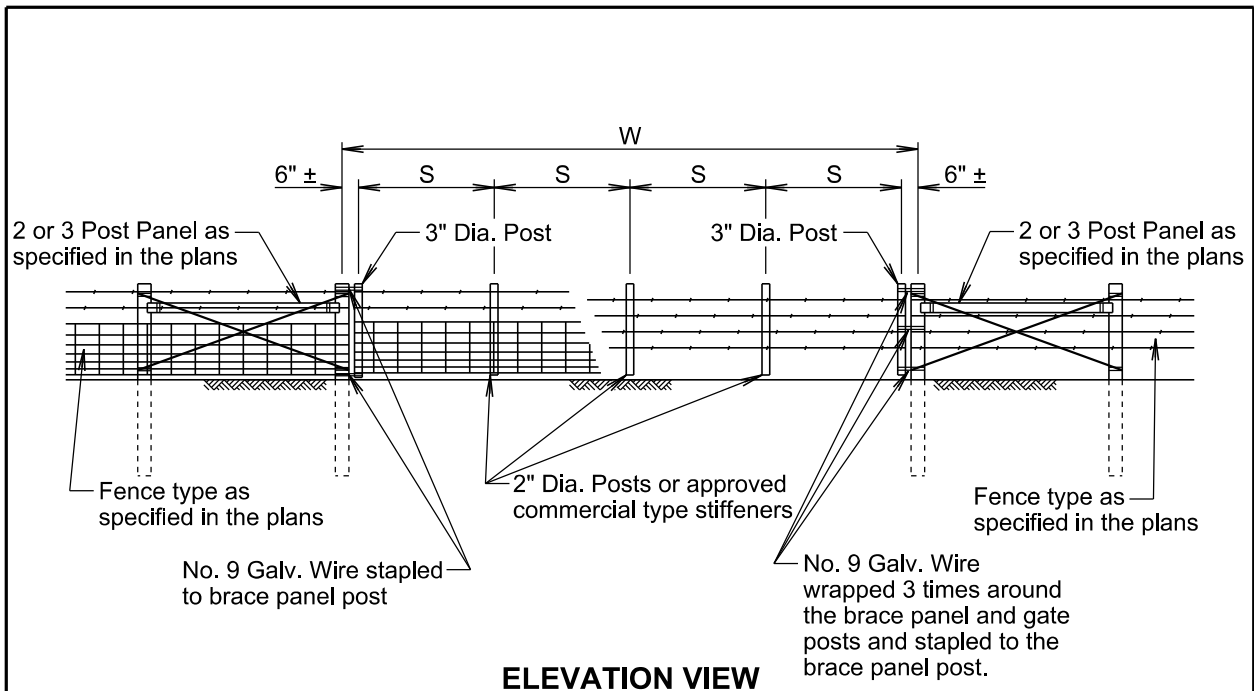
GENERAL NOTES:

There will be no extra payment for the additional work and materials required to construct the fencing at the wide depression(s) and/or the fencing at the stream crossing(s). The deadmen will be paid for in accordance with 620.5 A of the Specifications.

Measurement and payment for the fencing at the wide depression(s) and/or the fencing at the stream crossing(s) will be at the contract unit price per foot for the corresponding Right-of-Way fence contract item.

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<i>Published Date: 1st Qtr. 2023</i>	S D D O T	FENCING AT WIDE DEPRESSION(S) AND STREAM CROSSING(S)	PLATE NUMBER 620.10
			<i>Sheet 1 of 1</i>



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 will be of the same type as specified for the adjacent Right-of-Way fence.
- All costs for furnishing and constructing the wire gate(s) will be incidental to the contract unit price per foot for the respective Right-of-Way fence contract item.

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<i>Published Date: 1st Qtr. 2023</i>	S D D O T	WIRE GATES	<i>PLATE NUMBER 620.20</i>
			<i>Sheet 1 of 1</i>

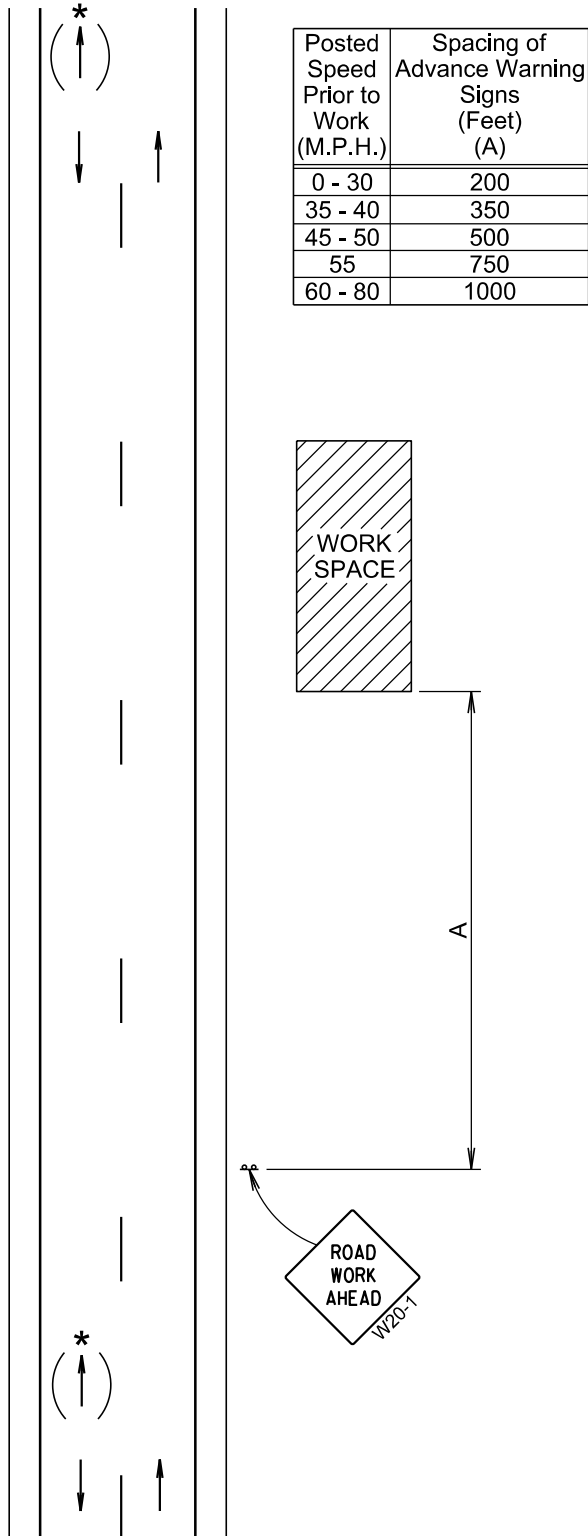
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will 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.

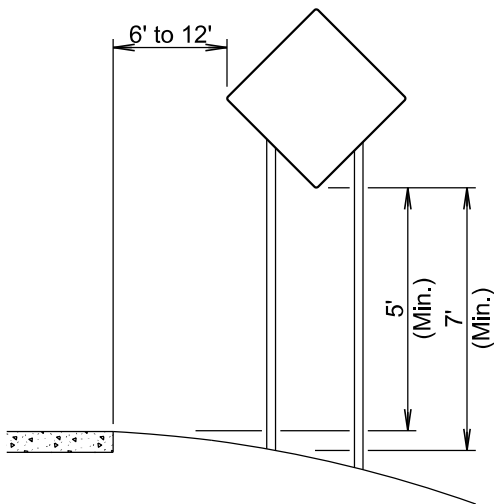
* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

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.

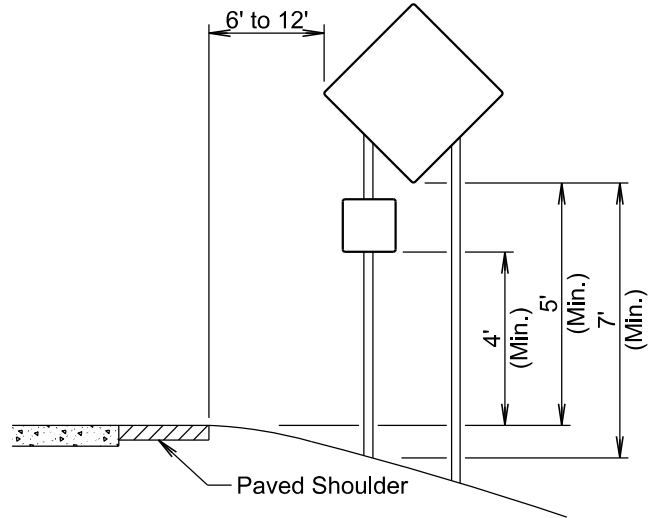


January 22, 2021

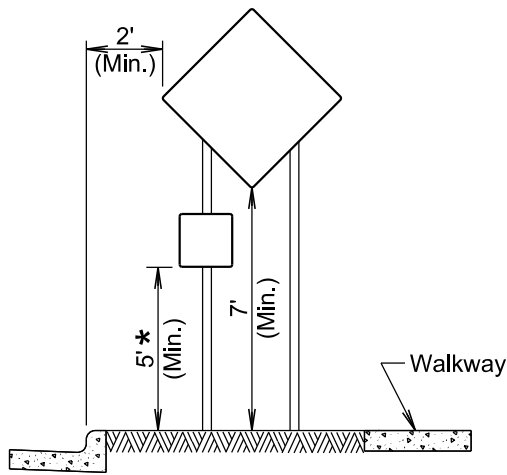
<i>Published Date: 1st Qtr. 2023</i>	S D D O T	WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
			Sheet 1 of 1



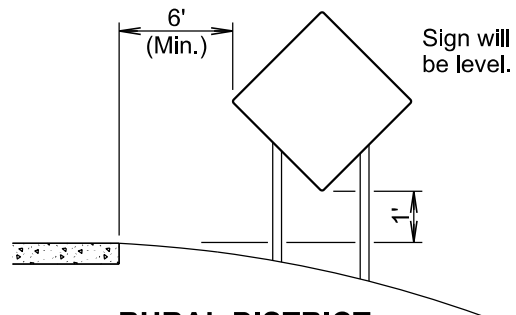
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT



RURAL DISTRICT 3 DAY MAXIMUM
(Not applicable to regulatory signs)

* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 1st Qtr. 2023

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CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

PLATE NUMBER
634.85

Sheet 1 of 1