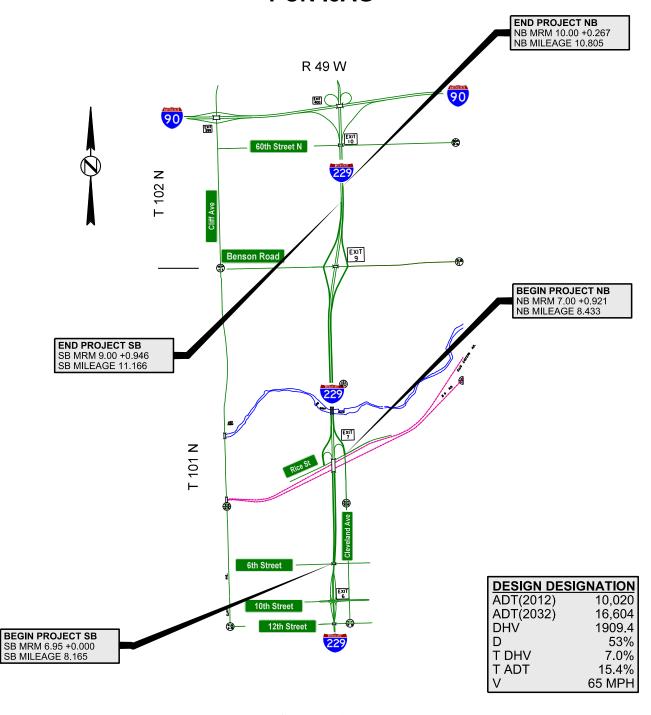
# 000I-271 INTERSTATE 229 MINNEHAHA COUNTY

# FENCE REPLACEMENT & CHAIN LINK FENCE

NB LENGTH: 2.372 MILES SB LENGTH: 3.001 MILES PCN I3AG



# **INDEX OF SHEETS**

Sheet 1 Layout Map

Sheet 2 Index of Sheets

Sheet 3 Estimate of Quantities

Sheet 4 Table of Fence Quantities

Sheets 5 – 8 Plan Notes

Sheet 9 Traffic Control

Sheets 10 & 11 Details for Right-of-Way Fence

Sheets 12 – 19 Standard Plates

# **ESTIMATE OF QUANTITIES**

| Bid Item<br>Number | Item                                       | Quantity | Unit |
|--------------------|--|----------|------|
| 009E0010           | Mobilization                               | Lump Sum | LS   |
| 100E0100           | Clearing                                   | Lump Sum | LS   |
| 110E0600           | Remove Fence                               | 16,714   | Ft   |
| 620E0030           | Type 3 Right-of-Way Fence                  | 11,104   | Ft   |
| 620E0230           | Modified Type 3 Right-of-Way Fence         | 1,764    | Ft   |
| 620E0260           | Modified Type 6 Right-of-Way Fence         | 1,055    | Ft   |
| 620E1020           | 2 Post Panel                               | 96       | Each |
| 620E1030           | 3 Post Panel                               | 6        | Each |
| 620E1110           | Wood Fence Post                            | 129      | Each |
| 621E0160           | 6' Chain Link Fence with Tension Wired Top | 2,791    | Ft   |
| 634E0120           | Traffic Control, Miscellaneous             | Lump Sum | LS   |

# **TABLE OF FENCING QUANTITIES**

| LANE | INTERSTATE 229<br>MRM TO MRM | REMOVE<br>FENCE<br>FT | TYPE 3<br>R/W<br>FENCE<br>FT | MODI-<br>FIED<br>TYPE 3<br>R/W<br>FENCE | MODI-<br>FIED<br>TYPE 6<br>R/W<br>FENCE | 2<br>POST<br>PANEL | PANEL | WOOD<br>FENCE<br>POST | 6' CHAIN<br>LINK<br>FENCE<br>WITH<br>TENSION<br>WIRED<br>TOP<br>FT |
|------|------------------------------|-----------------------|------------------------------|---|---|--------------------|-------|-----------------------|--|
| NB   | 7.921 to 8.141               | 1300                  | 1300                         |   |   | 2                  | 2     |                       |  |
| NB   | 8.141 to 8.196               | 290                   |                              | 290                                     |   | 1                  |       | 21                    |  |
| NB   | 8.196 to Bridge              | 125                   | 125                          |   |   | 3                  |       |                       |  |
| NB   | Bridge to 8.280              | 225                   | 225                          |   |   | 3                  |       |                       |  |
| NB   | 8.280 to 8.369               | 470                   |                              | 470                                     |   | 3                  |       | 34                    |  |
| NB   | 8.369 to 8.810               | 2329                  | 2329                         |   |   | 16                 | 1     |                       |  |
| NB   | 8.810 to 8.833               | 120                   |                              | 120                                     |   | 1                  |       | 9                     |  |
| NB   | 8.833 to 9.000               | 1004                  | 1004                         |   |   | 7                  |       |                       |  |
| NB   | 9.709 to 9.885               | 927                   |                              |   | 927                                     | 5                  | 2     |                       |  |
| NB   | 9.885 to 9.921               | 191                   |                              | 191                                     |   | 1                  |       | 14                    |  |
| NB   | 9.921 to 9.945               | 128                   |                              |   | 128                                     | 1                  |       |                       |  |
| NB   | 9.945 to 10.267              | 1725                  | 1725                         |   |   | 7                  | 1     |                       |  |
|      | <b>I229 NBL TOTALS:</b>      | 8834                  | 6708                         | 1071                                    | 1055                                    | 50                 | 6     | 78                    | -  |
| SB   | 9.946 to 9.417               | 2791                  |                              |   |   |                    |       |                       | 2791   |
| SB   | 8.176 to Bridge              | 125                   | 125                          |   |   | 3                  |       |                       |  |
| SB   | 8.176 to 8.098               | 413                   | 413                          |   |   | 2                  |       |                       |  |
| SB   | 8.098 to 7.978               | 633                   |                              | 633                                     |   | 4                  |       | 46                    |  |
| SB   | 7.978 to 7.745               | 1230                  | 1230                         |   |   | 9                  |       |                       |  |
| SB   | 7.745 to Rice St.            | 105                   | 105                          |   |   | 2                  |       |                       |  |
| SB   | 7.418 to 7.276               | 752                   | 752                          |   |   | 8                  |       |                       |  |
| SB   | 7.276 to 7.265               | 60                    |                              | 60                                      |   | 2                  |       | 5                     |  |
| SB   | 7.265 to 7.000               | 1400                  | 1400                         |   |   | 13                 |       |                       |  |
| SB   | 7.000 to 6.950               | 371                   | 371                          |   |   | 3                  |       |                       |  |
|      | I229 SBL TOTALS:             | 7880                  | 4396                         | 693                                     | •                                       | 46                 | -     | 51                    | 2791   |
|      | TOTALS:                      | 16714                 | 11104                        | 1764                                    | 1055                                    | 96                 | 6     | 129                   | 2791   |

#### **SPECIFICATIONS**

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

#### **COORDINATION BETWEEN CONTRACTORS**

A separate contract for Project 000I-271 Minnehaha County will be awarded to another Contractor for mowing Interstate 229.

The Contractor shall schedule his work so as not to interfere with or hinder the progress of the work performed by other contractors on the above project.

#### **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.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

#### HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all designated option borrow sites provided within the plans.

## **Action Taken/Required:**

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

#### **WASTE DISPOSAL SITE**

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

## **Action Taken/Required:**

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

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 Project 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 and/or 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 and/or 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. The 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.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract 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.

#### **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. Sod cleared from the fence alignment may be disposed of on the interstate ditch back slope. Lumps or clods over 3 inches in diameter shall be broken up.

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 to 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**

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**

Modified Type 3 Right-of-Way Fence shall be installed at wide depressions subject to flooding.

The Contractor shall furnish new 5" x 8' wood 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.

# **MODIFIED TYPE 6 RIGHT-OF-WAY FENCE**

The Contractor shall furnish new posts. Install alternate wood and steel posts at 14' spacing for Modified Type 6 Right-of-Way Fence.

Note specification change for Modified Type 6 Woven Wire Fence to Design No. 832-6-11.

## **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.

#### **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.

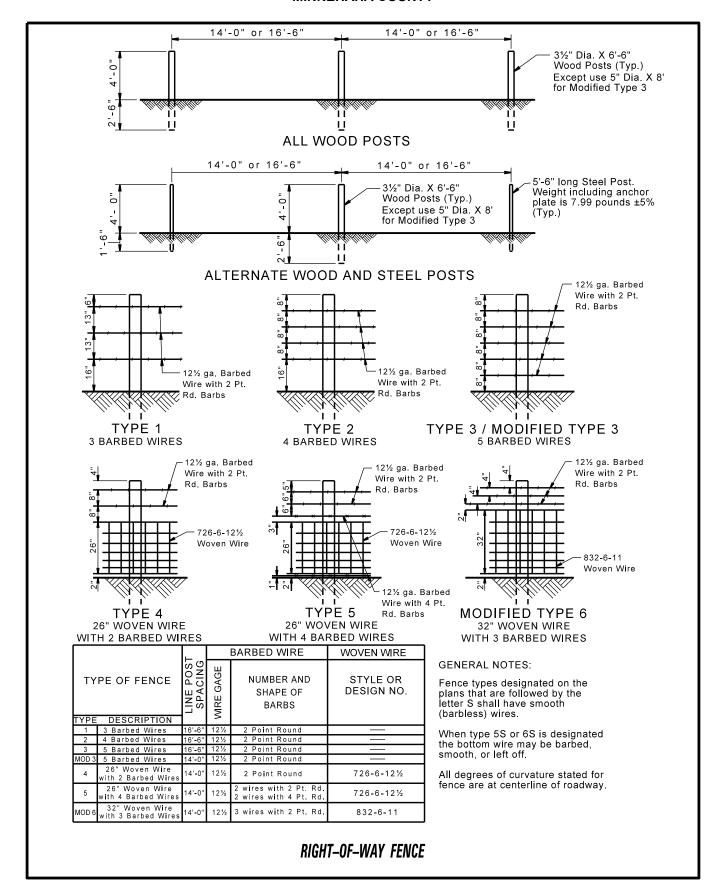
Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

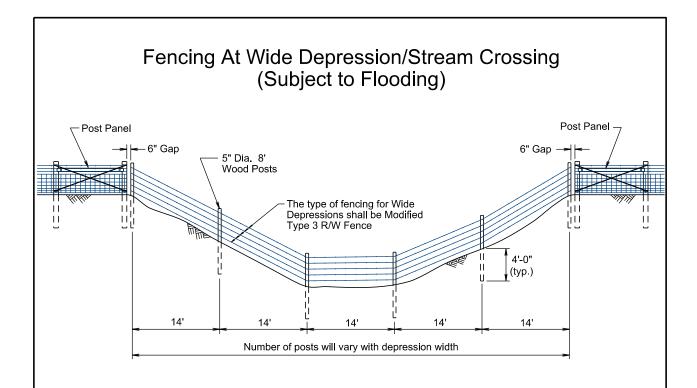
Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and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

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

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

Posted Speed Spacing of Advance Warning Signs Prior to Work (Feet) (M.P.H.) The signs illustrated are not required (A) if the work space is behind a barrier, more than 2 feet behind the curb, or 15 0 - 30 200 35 - 40 45 - 50 55 350 feet or more from the edge of any 500 roadway. 750 60 - 75 1000 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 -WORK should also be placed on the left side SPACE 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. ROAD WORK AHEAD July I, 2005 PLATE NUMBER **GUIDES FOR TRAFFIC CONTROL DEVICES** D 634.01 D WORK BEYOND THE SHOULDER 0 Published Date: 1st Qtr. 2014 Sheet | of |



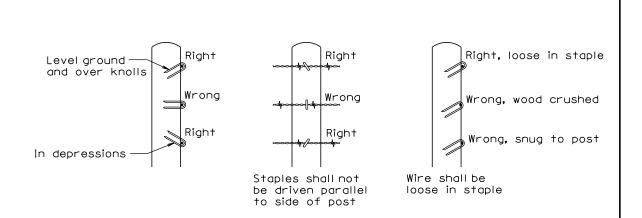


#### **GENERAL NOTES:**

Cost for fencing through stream crossing(s) and/or wide depression(s) shall be included in the contract unit price per foot for Modified Type 3 Right-of-Way Fence.

The Wood Fence Posts used in stream crossing(s) and/or wide depression(s) shall be 5" x 8' Wood Fence Posts. The designated fencing location(s) for the stream crossing(s) and/or wide depression(s) will be directed by the Engineer.

Cost for furnishing and installing the 5" x 8' Wood Fence Posts in stream crossing(s) and/or wide depression(s) shall be included in the contract unit price per each for Wood Fence Post.



#### 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.

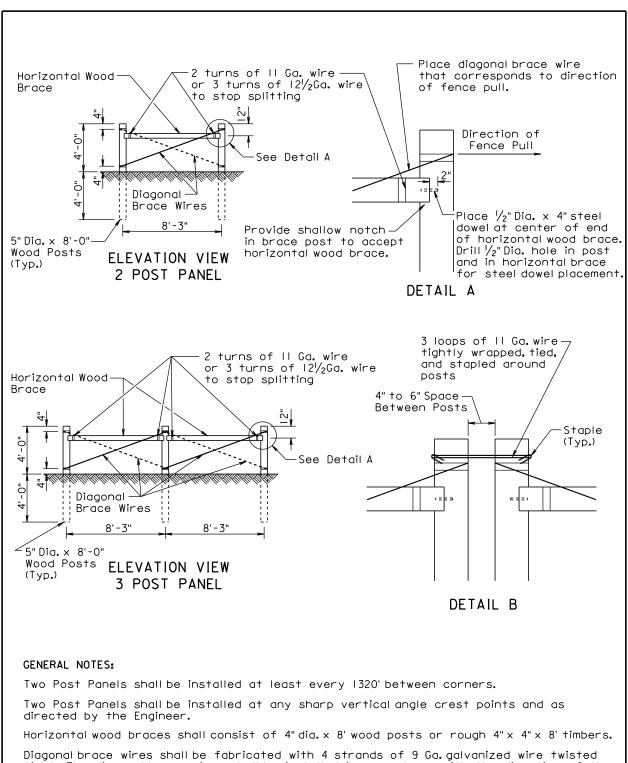
Right-of-Way fence on Interstate Projects shall be constructed one foot within the Interstate Right-of-Way lines except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

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 Al16 and barbed wire shall conform to ASTM Al21.

|                               |             |                                 | December 23, 2004      |
|-------------------------------|-------------|---------------------------------|------------------------|
|                               | S<br>D<br>D | STAPLE INSTALLATION AND GENERAL | PLATE NUMBER<br>620.02 |
| Published Date: 1st Qtr. 2014 |             | RIGHT-OF-WAY FENCE NOTES        | Sheet I of I           |

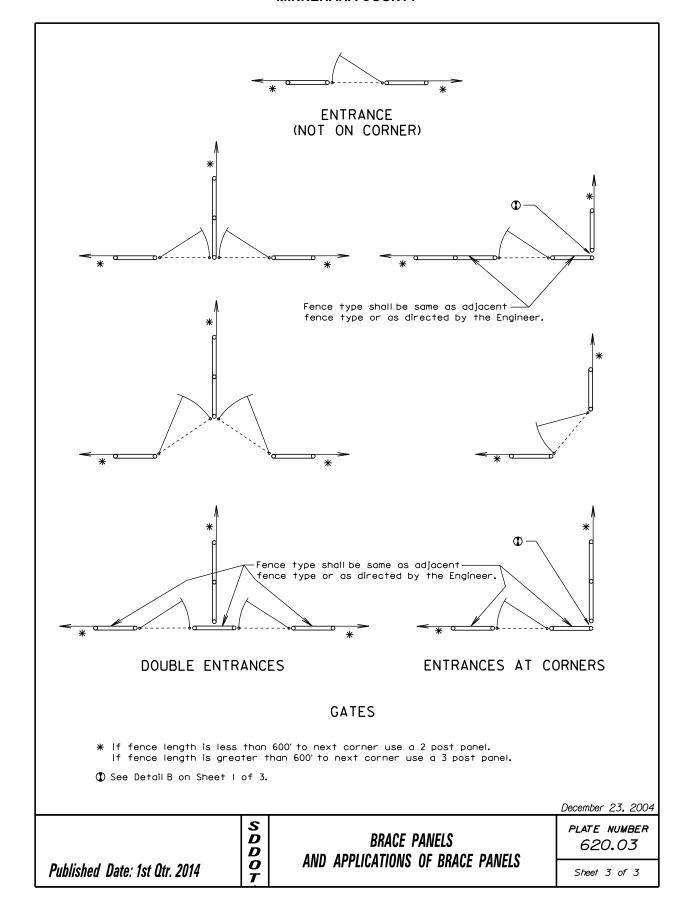


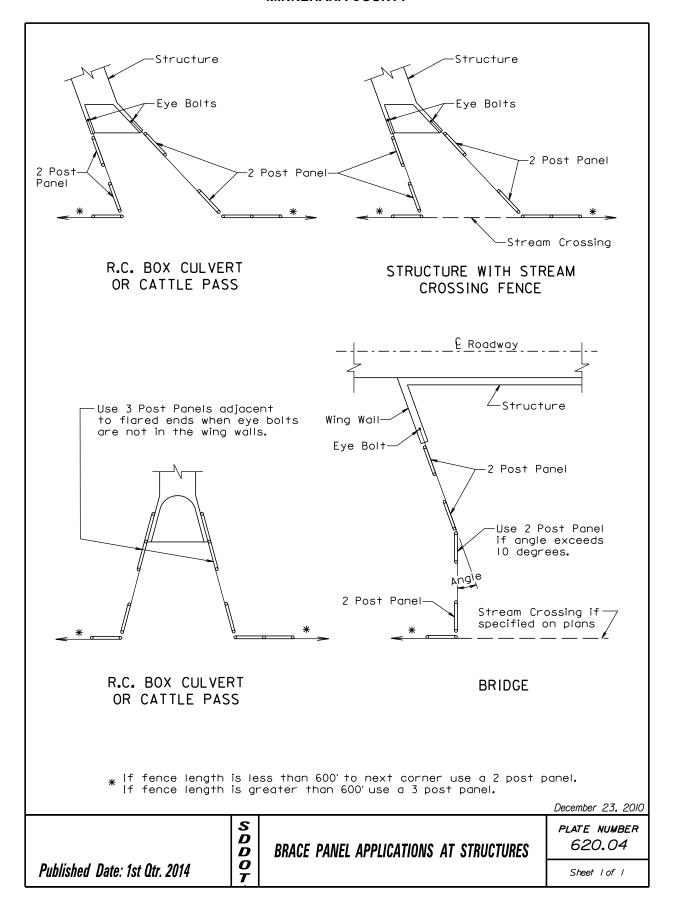
Diagonal brace wires shall be fabricated with 4 strands of 9 Ga.galvanized wire twisted tight. The diagonal brace wires shall be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

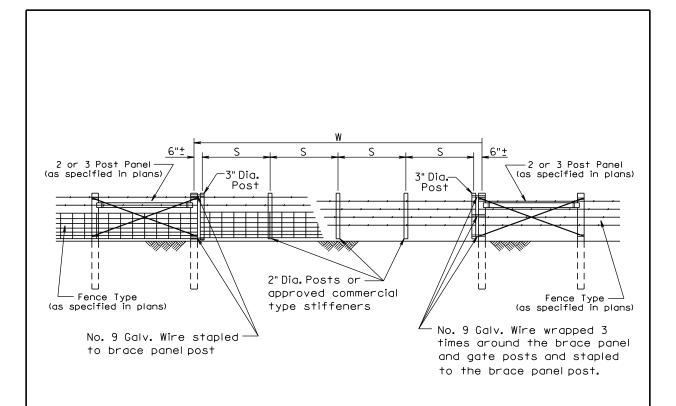
Published Date: 1st Qtr. 2014

S D BRACE PANELS
AND APPLICATIONS OF BRACE PANELS
Sheet 1 of 3

# GENERAL NOTE: SPACING OF 2 POST PANELS WITHIN CURVES All degrees of curvature stated for fence are DEGREE OF CURVE SPACING OF 2 POST PANEL at centerline of roadway. less than 3°15' \*\* 1320' \*At P.C., P.T., and at every 1320' between P.C. and P.T. 3°15' and greater 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 I of 3. New Fence Existing Fence Open ended fence New no existing fence Fence SHORT JOGS IN FENCE BEGIN OR END FENCE (where new fence ties into existing fence) Mainline Post CROSS FENCE Corner Post (Typ.) **(** Mainline Post SHARP ANGLES IN CROSS FENCE Greater 10° and less than 10° Additional fence panel is NOT required when Additional fence panel is required when an angle in the mainline fence is 10° and less. an angle in the mainline fence is greater than 10°. ANGLES IN MAINLINE FENCE December 23, 2004 S PLATE NUMBER **BRACE PANELS** D 620.03 D AND APPLICATIONS OF BRACE PANELS 0 Published Date: 1st Qtr. 2014 Sheet 2 of 3







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

#### **GENERAL NOTES:**

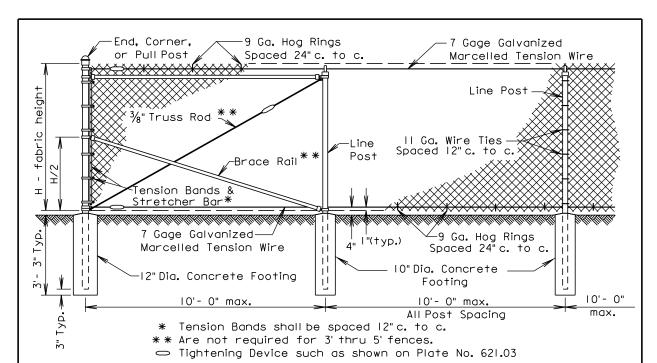
Creosote treatment of the gate posts will not be accepted.

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

|                               | S<br>D<br>D | WIRE GATES | PLATE NUMBER<br>620.20 |
|-------------------------------|-------------|------------|------------------------|
| Published Date: 1st Qtr. 2014 | <b>O</b>    |            | Sheet Lof L            |



| Component              | End, Corner           | & Pull Post          | Line Post             |               |             | Top & Brace Rail      |                      |
|------------------------|-----------------------|----------------------|-----------------------|---------------|-------------|-----------------------|----------------------|
| Type of<br>Fabrication | Round Pipe<br>Nominal | Roll Formed<br>Steel | Round Pipe<br>Nominal | "C" Section   |             | Round Pipe<br>Nominal | Roll Formed<br>Steel |
| Size                   | 3.00" O. D.           | 3.5" × 3.5"          | 2.50" O. D.           | 1.875"×1.625" | 2.25"×1.70" | 1.625" O. D.          | 1.625"x1.25"         |
| Weight<br>(lb./ ft.)   | 5.79 or<br>4.64       | 5.14                 | 3.65 or<br>3.12       | 2.34          | 3. 43       | 2.27 or<br>1.84       | 1.35                 |

#### GENERAL NOTES:

Specific details of manufacture of component parts of the complete fence construction shall be subject to the approval of the Engineer. Commercially available items produced specifically for the use intended shall be used wherever possible in the construction of the fence.

"H" (Height of Fabric) shall be as shown on the Plans. Fabric is available in the the following heights; 36", 42", 48", 60", 72", 84", 96", 108", 120", & 144". Fabric heights 60 inches and under shall be knuckled at both selvages. Fabric heights 72 inches and over shall be knuckled at one selvage and twisted at the other selvage.

Chain Link Fabric shall be 2"mesh, No. 9 gage galvanized wire securely fastened to Tension Wire, Line Post, Rails, Braces and Stretcher Bars spaced as shown hereon.

Fence may be constructed with either Round Pipe, "C" Section, "H" Beam, or roll Formed Steel components as shown in the table above. Line post may be Round Pipe, "C" Section, or "H" Beam. The Corner Post and Rails shall be either Round Pipe or Roll Formed Steel. The type of components used shall have prior approval by the Engineer before construction.

All post shall have a means to securely hold the top tension wire in postion and allow for the removal and replacement of a post without damaging the top tension wire.

Where fence must cross small bodies of water (such as drainage areas or ponds) that could freeze during the winter, use II gage Hog Rings. Provide only two ties per Tension Wire and Top Rail between line posts.

\*\*March 31, 2000\*\*

|                               | S<br>D<br>D | CHAIN LINK FENCE WITH TENSION WIRED TOP | PLATE NUMBER<br>621.02 |
|-------------------------------|-------------|---|------------------------|
| Published Date: 1st Qtr. 2014 | 0<br>7      |   | Sheet Lof L            |

