

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT 000P-491
US HIGHWAY 16
PENNINGTON COUNTY
FENCE REPAIR (ALONG FOREST SERVICE PROPERTY ONLY)
PCN I87R

INDEX OF SHEETS

| | |
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| 1 | General Layout with Index |
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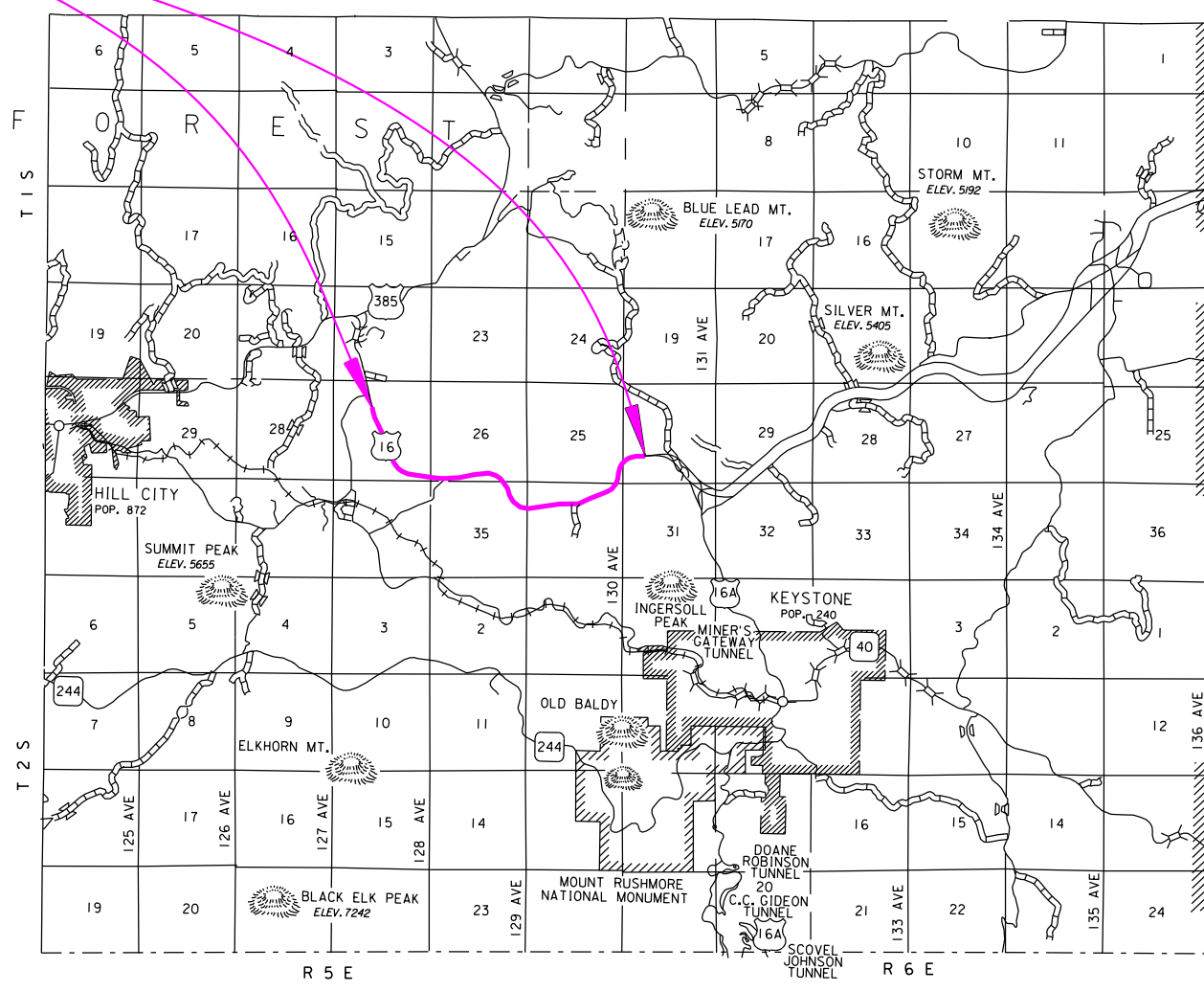
PROJECT
US Highway 16
MRM 46+0.000 to MRM 49.69+0.000



DESIGN DESIGNATION

| | |
|------------|--------|
| ADT (2025) | 6208 |
| ADT (2045) | 9790 |
| DHV | 1604 |
| D | 51% |
| T DHV | 5.7% |
| T ADT | 12.6% |
| V | 55 MPH |

STORM WATER PERMIT
None Required



ESTIMATE OF QUANTITIES

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|-----------------|--------------------------------|----------|------|
| 009E0010 | Mobilization | Lump Sum | LS |
| 110E7802 | Remove Fence for Reset | 33,523 | Ft |
| 620E1020 | 2 Post Panel | 90 | Each |
| 620E1030 | 3 Post Panel | 46 | Each |
| 620E1100 | Steel Fence Post | 1,025 | Each |
| 620E4100 | Reset Fence | 33,523 | Ft |
| 634E0110 | Traffic Control Signs | 32.0 | SqFt |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at <https://dot.sd.gov/doing-business/contractors/standard-specifications>.

A construction schedule will not be required on this project.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will 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 Public ROW.

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

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 not to exceed the duration of the project. Prior to project completion, the waste will 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) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

COMMITMENT S: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor will adhere to the "Special Provision for Fire Plan".

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will 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 will contact the project engineer to determine modifications that will be necessary to avoid utility impacts.

REMOVE AND RESET FENCE

The Contractor will remove and reset the existing right-of-way fence as designated in the plans and/or as directed by the Engineer. The existing fence is Type 2 ROW fence. The fence wire and existing steel posts will be retained for reset. Wood posts will be removed and replaced with steel posts. Furnishing steel posts will be paid for at the contract unit price per each for Steel Fence Post. All costs associated with installation of the fence will be incidental to the contract unit price per foot for Remove and Reset Fence.

Limited Access Security - All barbed wire fence removed during any one working day is to be replaced during the same day. Contractor is responsible for any and all livestock encountered anywhere along the fence being replaced. Control of livestock during the time that any fence is being replaced is the sole responsibility of the Contractor. All costs of this work and any temporary fencing will be incidental to the contract unit price for the various fence items.

The Contractor will coordinate with Becky Knutson to ensure cattle are contained on US Forest Service property:



Becky Knutson
Range Technician
Forest Service
Black Hills National Forest, Mystic Ranger District
p: 605-716-1912
c: 605-430-0821
becky.knutson@usda.gov
8221 Mt. Rushmore Road
Rapid City, SD 57701

CLEARING

Prior to removing and resetting right-of-way fence, the fence alignment will be cleared of all brush and various debris to allow for reset of the fence on the existing alignment

The Contractor is responsible for visiting the project site and determining the amount of work involved with Clearing.

FENCE ALIGNMENT

Where fence is being removed and reset, fence will be installed on the same alignment as existing.

Where fence posts are being replaced, the posts may be adjusted so not to fall in the same hole from removed fence.

It will be the Contractor's responsibility to preserve the existing fence alignment.

GATES, WIDE DEPRESSIONS, AND STREAM CROSSINGS

Prior to submitting a bid, the Contractor will inspect the project site and determine the number of gates, wide depressions, and stream crossings.

RESTORATION OF INSLOPES AND DITCHES

Any slope area or ditch that is rutted or otherwise unduly disturbed during fencing operations will be restored and seeded by the Contractor, at no expense to the State.

SURVEY MARKERS

Any survey markers that are damaged or destroyed during construction will be replaced by the Contractor at no additional cost to the State.

TABLE OF ROW FENCE

| Table of Right-of-Way Fence | | | | | | | | | | | |
|-----------------------------|---------|----|-------|---------|-----|------------------------------|----------------|------------------------|-----------------|-----------------|------------------------|
| Direction | | | | | | Remove Fence for Reset | Reset Fence | Steel Fence Post | 2 Post Panel | 3 Post Panel | Barbed Wire Gate |
| MRM | Disp | to | MRM | Disp | E/W | (Ft) | (Ft) | (Each) | (Each) | (Each) | NABI |
| 46.00 | + 0.000 | | 49.69 | + 0.000 | EB | 15643 | 15643 | 478 | 36 | 31 | 4 |
| 46.00 | + 0.000 | | 49.69 | + 0.000 | WB | 17880 | 17880 | 547 | 54 | 15 | 7 |
| Total | | | | | | 33523 | 33523 | 1025 | 90 | 46 | 11 |

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

TRAFFIC CONTROL – GENERAL NOTES

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

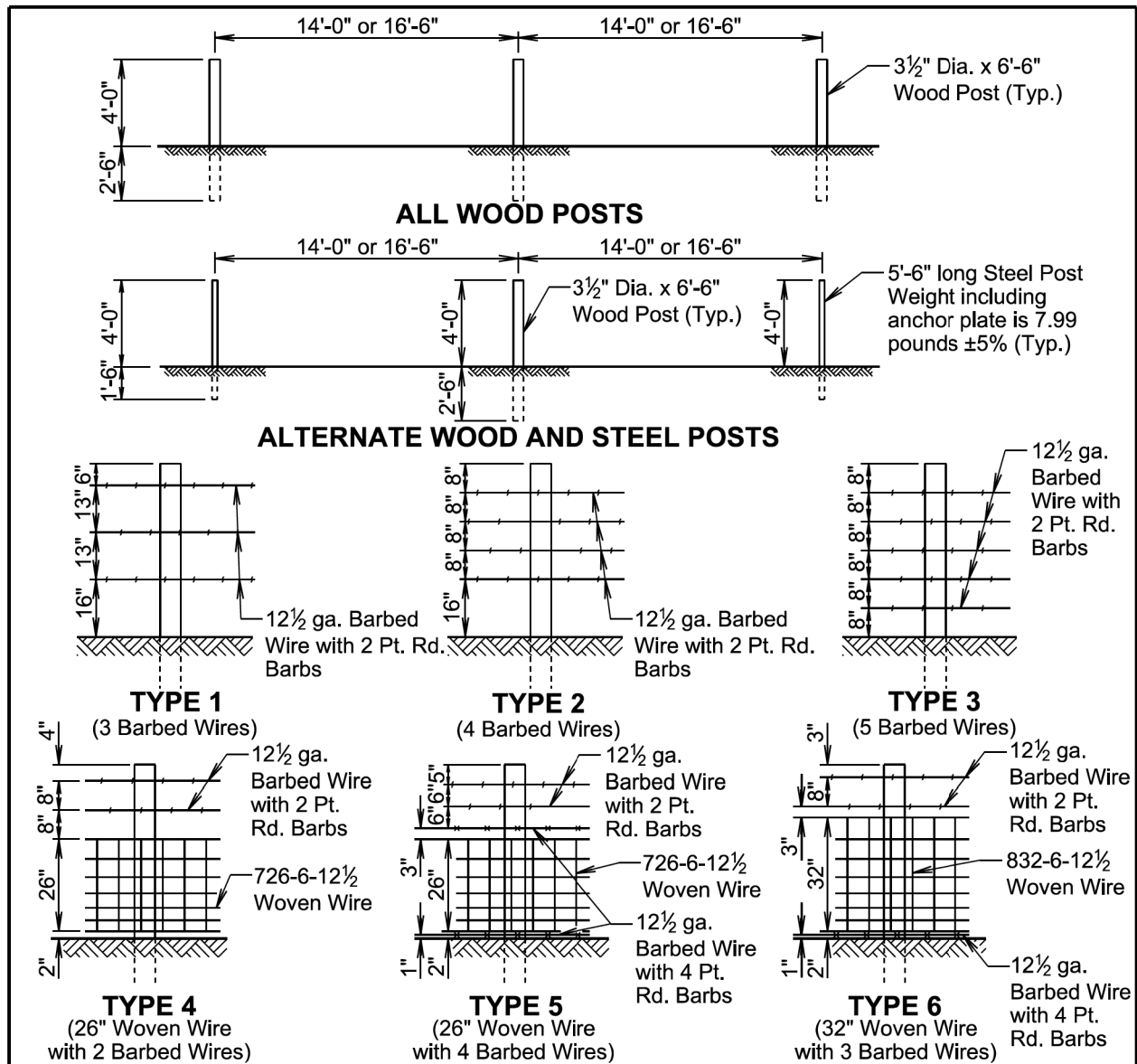
All haul trucks will be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

Vehicles and equipment will not be parked on the shoulder.

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES

| SIGN CODE | SIGN DESCRIPTION | CONVENTIONAL ROAD | | | |
|---|------------------|-------------------|-----------|------------------|-------------|
| | | NUMBER | SIGN SIZE | SQFT PER SIGN | SQFT |
| W20-1 | ROAD WORK AHEAD | 2 | 48" x 48" | 16.0 | 32.0 |
| CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT | | | | | 32.0 |



| TYPE OF FENCE | | LINE POST SPACING | WIRE GAGE | BARBED WIRE | | WOVEN WIRE |
|---------------|------------------------------------|-------------------|-----------|--|---------------------|------------|
| TYPE | DESCRIPTION | | | NUMBER AND SHAPE OF BARBS | STYLE OR DESIGN NO. | |
| 1 | 3 Barbed Wires | 16'-6" | 12½ | 2 Point Round | — | — |
| 2 | 4 Barbed Wires | 16'-6" | 12½ | 2 Point Round | — | — |
| 3 | 5 Barbed Wires | 16'-6" | 12½ | 2 Point Round | — | — |
| 4 | 26" Woven Wire with 2 Barbed Wires | 14'-0" | 12½ | 2 Point Round | 726-6-12½ | 726-6-12½ |
| 5 | 26" Woven Wire with 4 Barbed Wires | 14'-0" | 12½ | 2 wires with 2 Pt. Rd. 2 wires with 4 Pt. Rd. | 726-6-12½ | 726-6-12½ |
| 6 | 32" Woven Wire with 3 Barbed Wires | 14'-0" | 12½ | 2 wires with 2 Pt. Rd. 1 wire with 4 Pt. Rd. | 832-6-12½ | 832-6-12½ |

GENERAL NOTES:

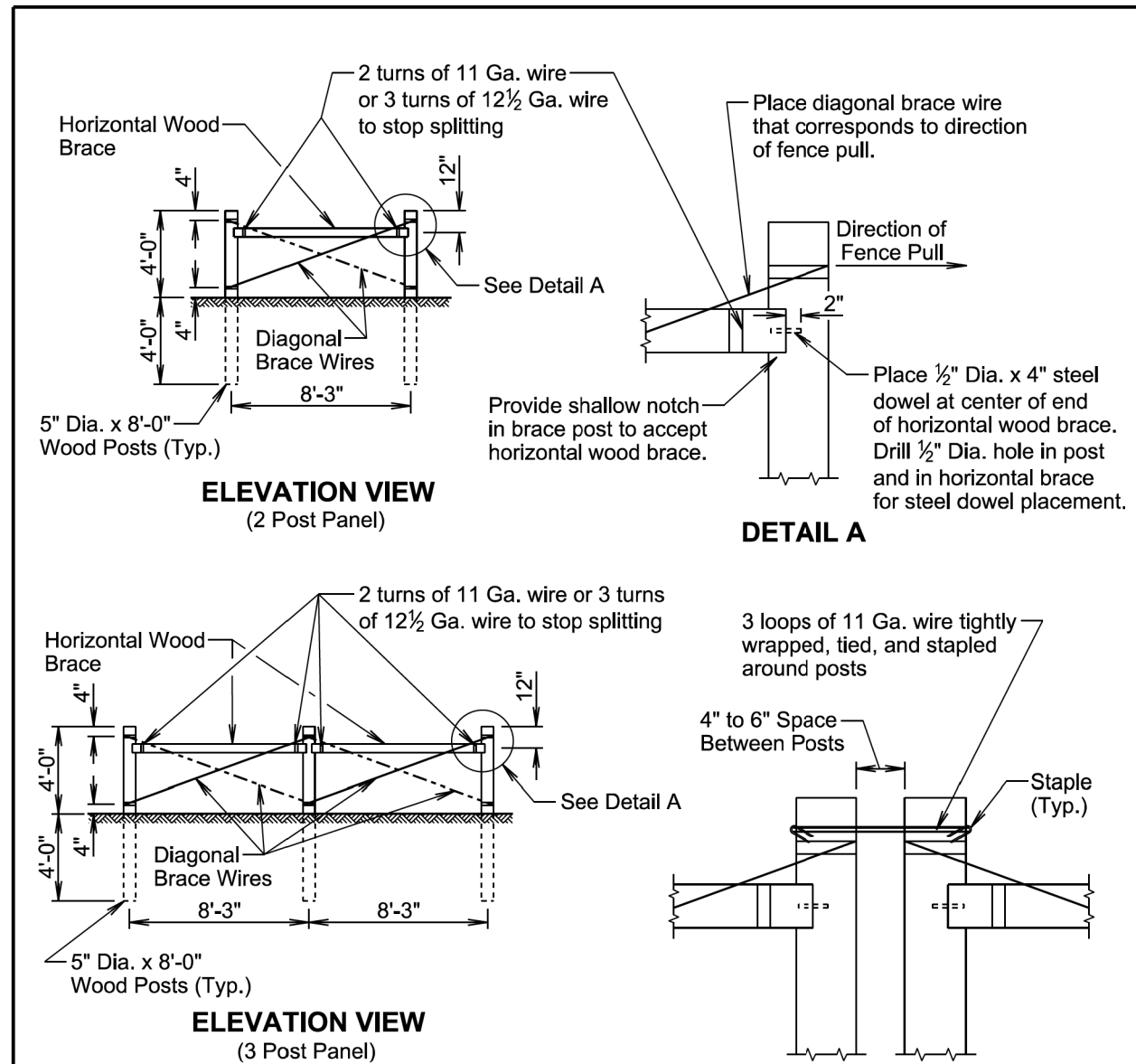
Fence types designated on the plans that are followed by the letter S will have smooth (barbless) wires.

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

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

April 8, 2025

| | | |
|--------------|---------------------------|-------------------------------|
| SDDOT | RIGHT-OF-WAY FENCE | PLATE NUMBER 620.01 |
| | Published Date: 2026 | Sheet 1 of 1 |



GENERAL NOTES:

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

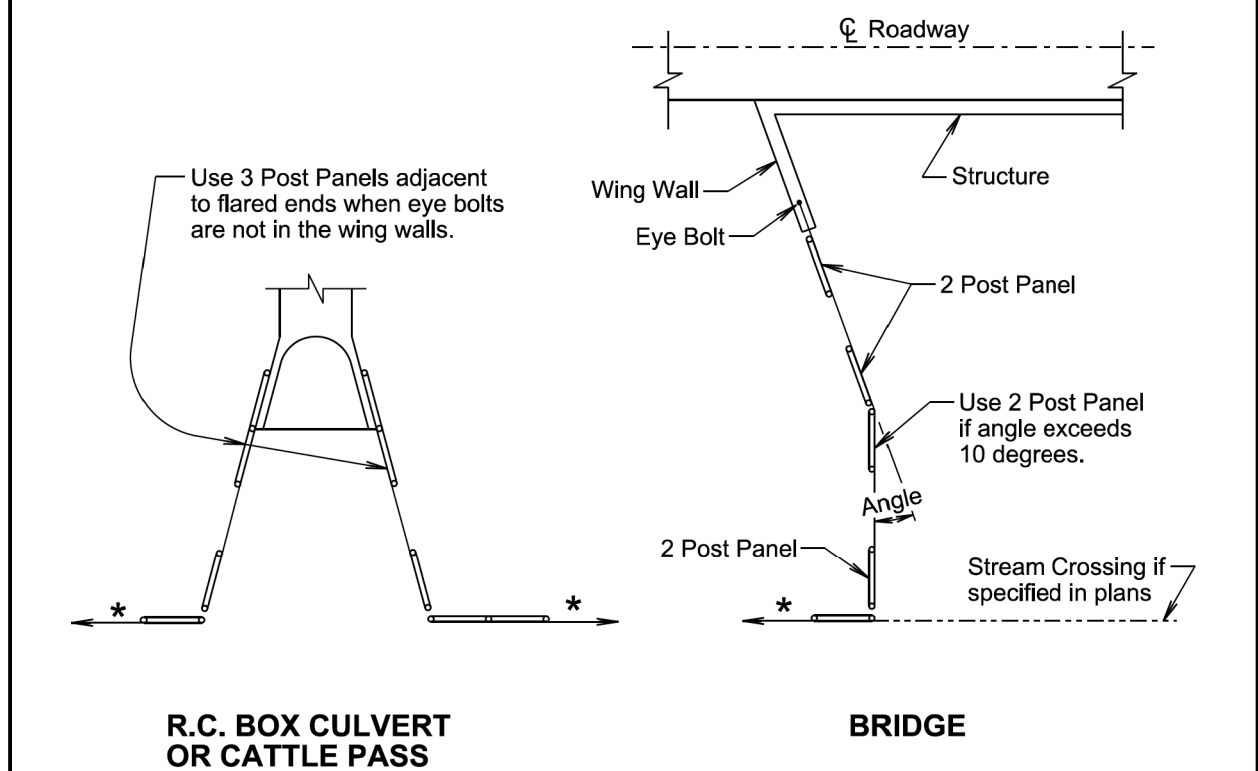
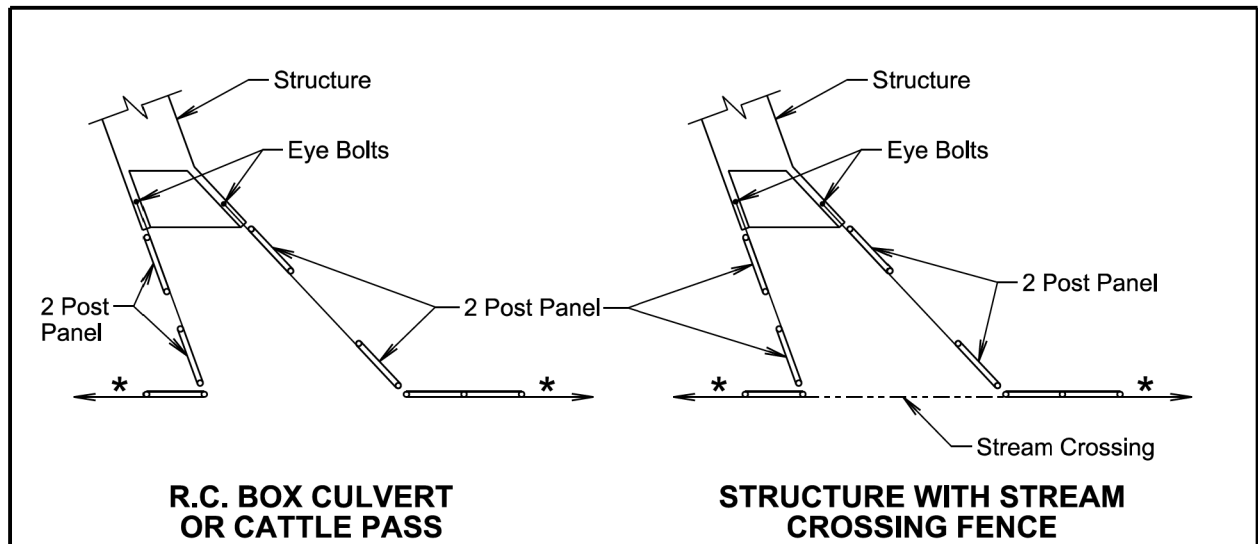
Two Post Panels will be installed at any sharp vertical angle crest points and as directed by the Engineer.

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.

March 31, 2024

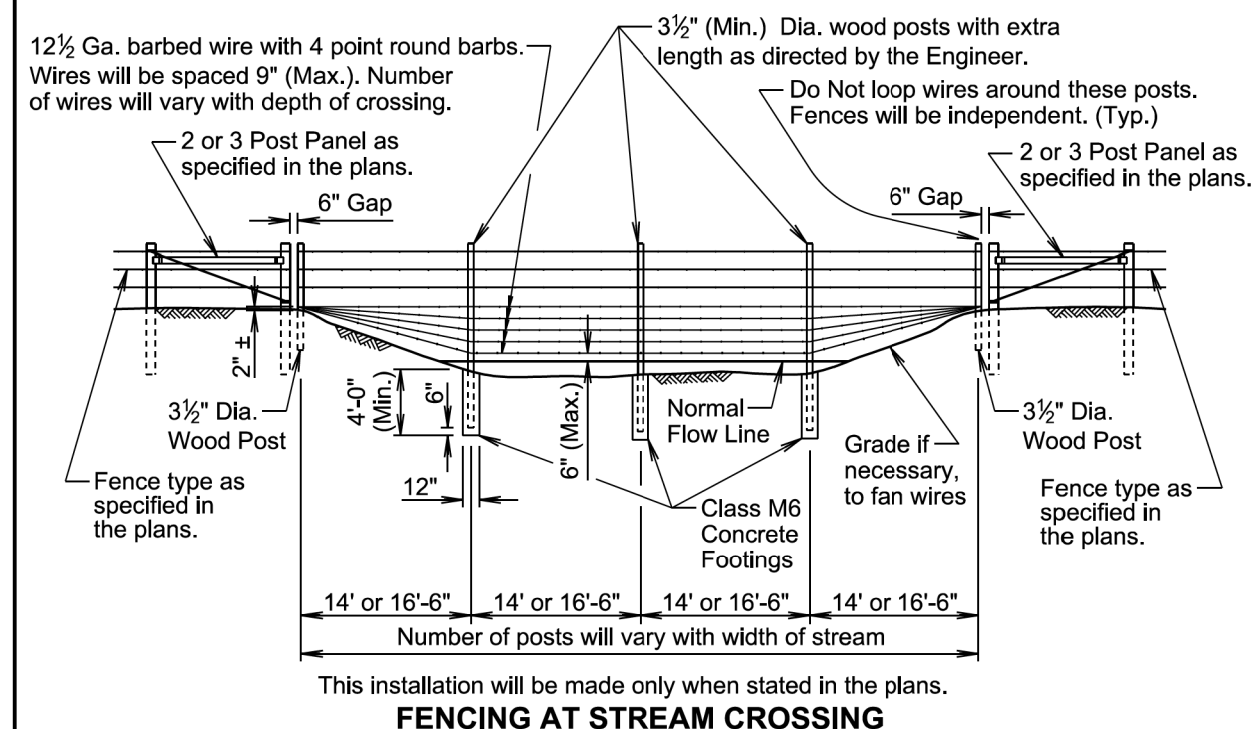
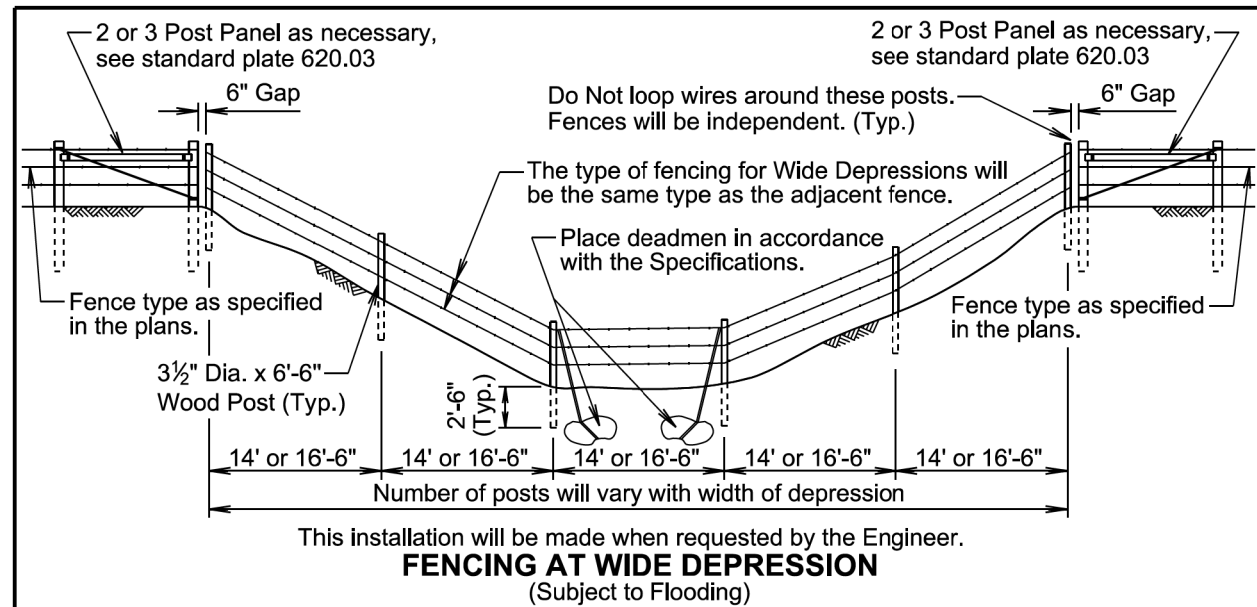
| | | |
|--------------|--|-------------------------------|
| SDDOT | BRACE PANELS AND APPLICATIONS OF BRACE PANELS | PLATE NUMBER 620.03 |
| | Published Date: 2026 | Sheet 1 of 3 |



* 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.

June 26, 2019

| | | | |
|-----------------------------|----------------------------------|---|------------------------|
| Published Date: 2026 | S D D O T | BRACE PANEL APPLICATIONS AT STRUCTURES | PLATE NUMBER 620.04 |
| | | | Sheet 1 of 1 |



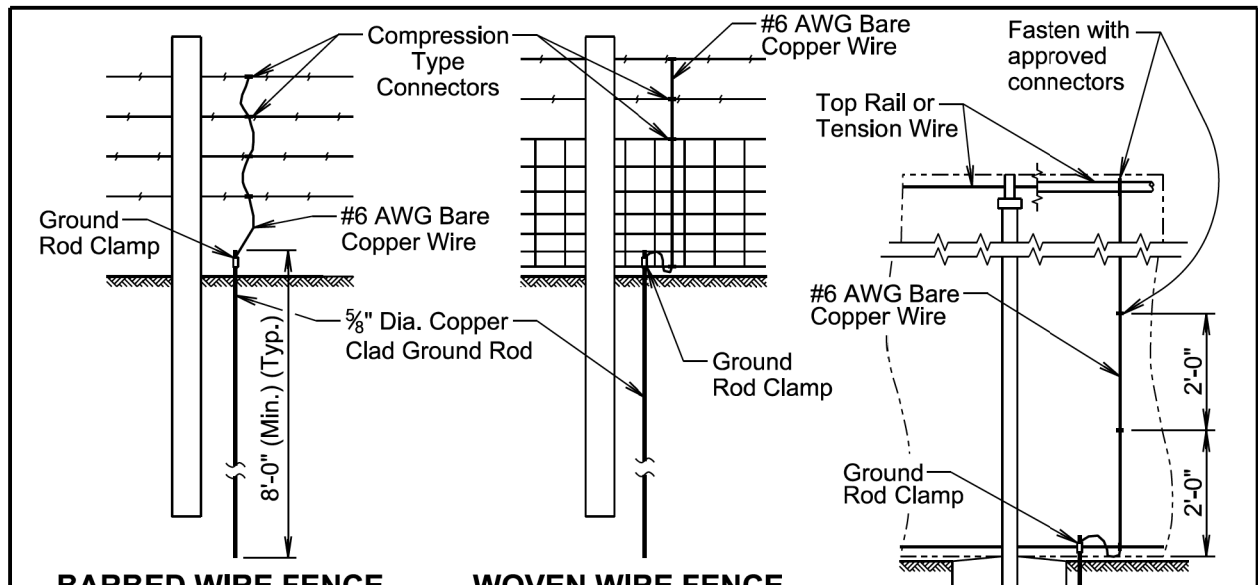
GENERAL NOTES:

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.

June 26, 2019

| | | | |
|-----------------------------|----------------------------------|---|------------------------|
| Published Date: 2026 | S D D O T | FENCING AT WIDE DEPRESSION(S) AND STREAM CROSSING(S) | PLATE NUMBER 620.10 |
| | | | Sheet 1 of 1 |



BARBED WIRE FENCE **WOVEN WIRE FENCE**

GENERAL NOTES:

Details shown on this standard plate will apply to all types of Right-of-Way fence constructed with all wood posts or chain link fence.

Continuous fence in urban areas will be grounded at maximum intervals of 500 feet. Continuous fence in rural areas will be grounded at maximum intervals of 1000 feet. There will be a ground at a maximum of 100 feet from a gate in each adjacent section of fence.

Fence placed under a power line will be grounded with three grounds. One ground will be placed directly below the crossing and the other two will be placed 25 feet to 50 feet away, one on each side.

One ground will be placed directly below each telephone or cable crossing.

Ground rods will be located on the post side of the fence and will be as close as possible to the post and fence.

The cost of furnishing and placing all materials for grounding will be incidental to the contract unit price per foot for the respective Right-of-Way fence or chain link fence contract item.

The approximate quantities of materials per each installation of a ground are:

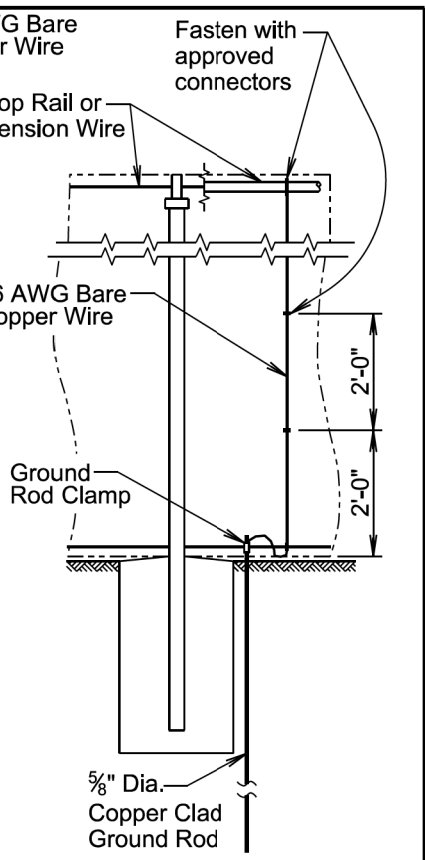
- 1 ground rod clamp.
- 1 5/8" diameter x 8' long copper clad ground rod
- 1 #6 AWG bare copper wire; 7' long for Right-of-Way fence or 10' long for chain link fence.

Compression type or other type of connectors:

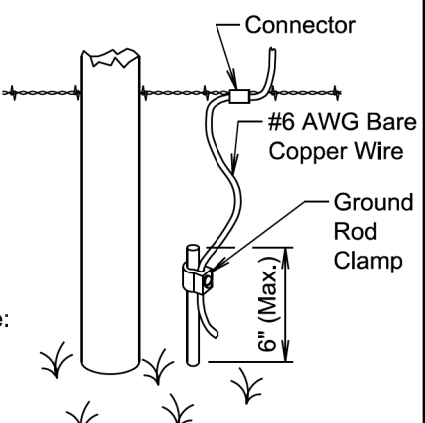
26" woven wire will have a total of two connectors, one secured to the top and one secured to the bottom.
 32" woven wire will have a total of three connectors, one secured to the top, one secured to the middle, and one secured to the bottom.

One connector will be used for each strand of barbed wire.

A minimum of 3 connectors will be installed on chain link fence, the connectors will be placed vertically at every 2-foot increment and connectors will be placed on the top and bottom tension wires or top rail.



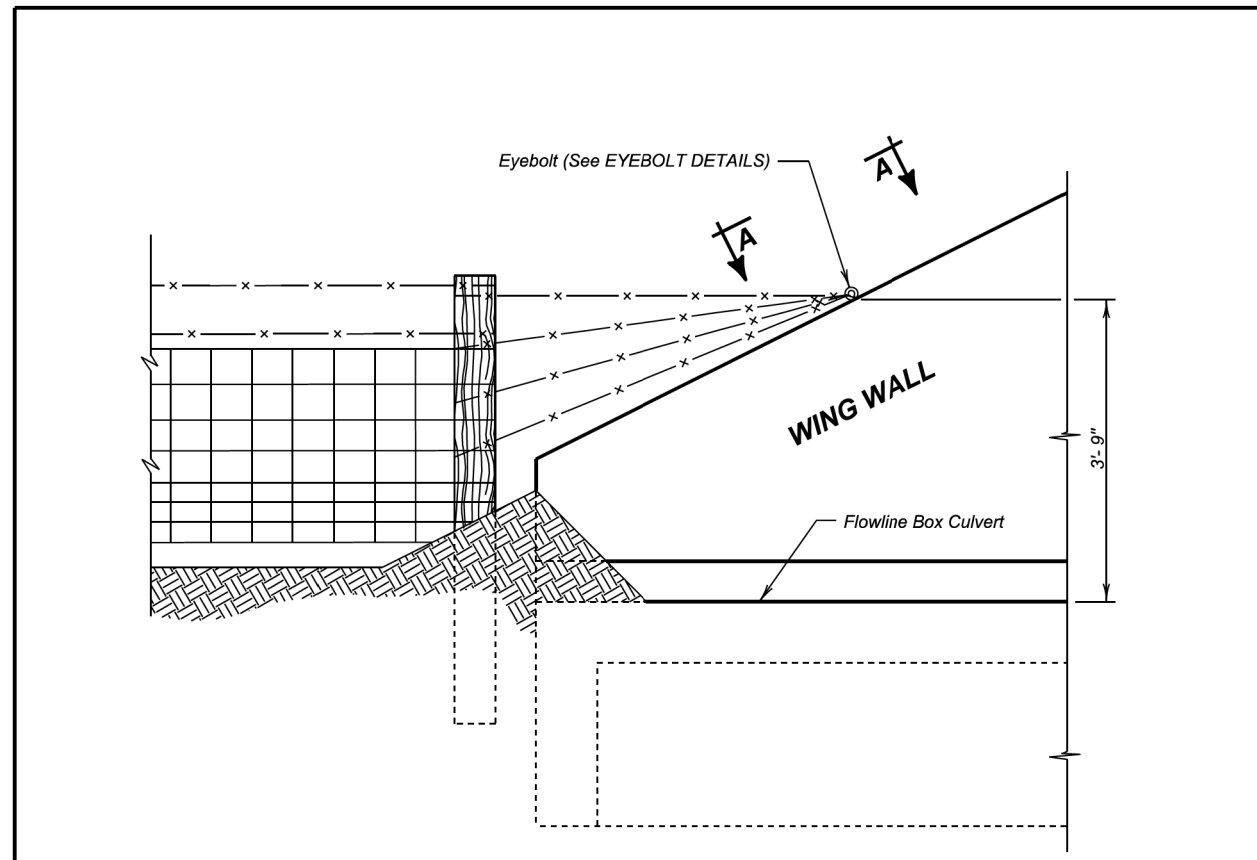
CHAIN LINK FENCE



GROUND ROD DETAIL

June 26, 2019

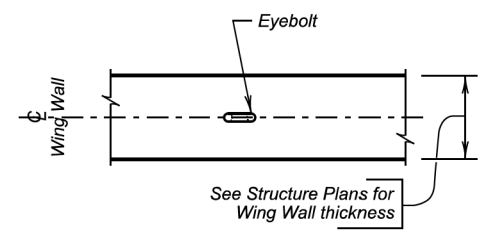
| | | |
|----------------------------------|------------------------|------------------------|
| S D D O T | FENCE GROUNDING | PLATE NUMBER 620.11 |
| | | Sheet 1 of 1 |
| Published Date: 2026 | | |



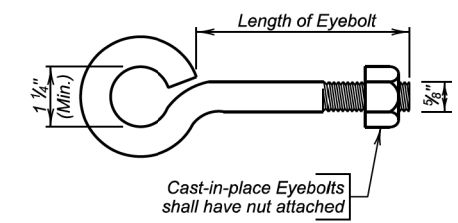
DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

1. The fence and post details shown are for illustrative purpose only. The fence shall be as specified elsewhere in the plans.
2. Eyebolts shall be placed on all of the box culvert wing walls.
3. Eyebolts shall be 5/8 inch diameter and shall conform to ASTM A307.
4. Eyebolts, nuts, and concrete inserts shall be galvanized in accordance with AASHTO M232 (ASTM A153). Concrete inserts of corrosion resistant material need not be galvanized.
5. Cast-in-place eyebolts shall have a nut attached, be 4 1/2 inches (Min.) in length and shall be embedded such that the eye of the bolt is flush with the concrete surface. (See Eyebolt Details) As an alternate, cast-in-place concrete inserts, capable of developing the full strength of the 5/8 inch diameter threaded eyebolt, may be used and shall be set in the concrete in accordance with the manufacturer's recommendations. The eyebolt shall be of sufficient length to develop its full strength. The eye of the eyebolt shall be flush with the concrete surface.
6. The cost for furnishing and installing eyebolts and/or concrete inserts shall be incidental to various contract items.



VIEW A - A

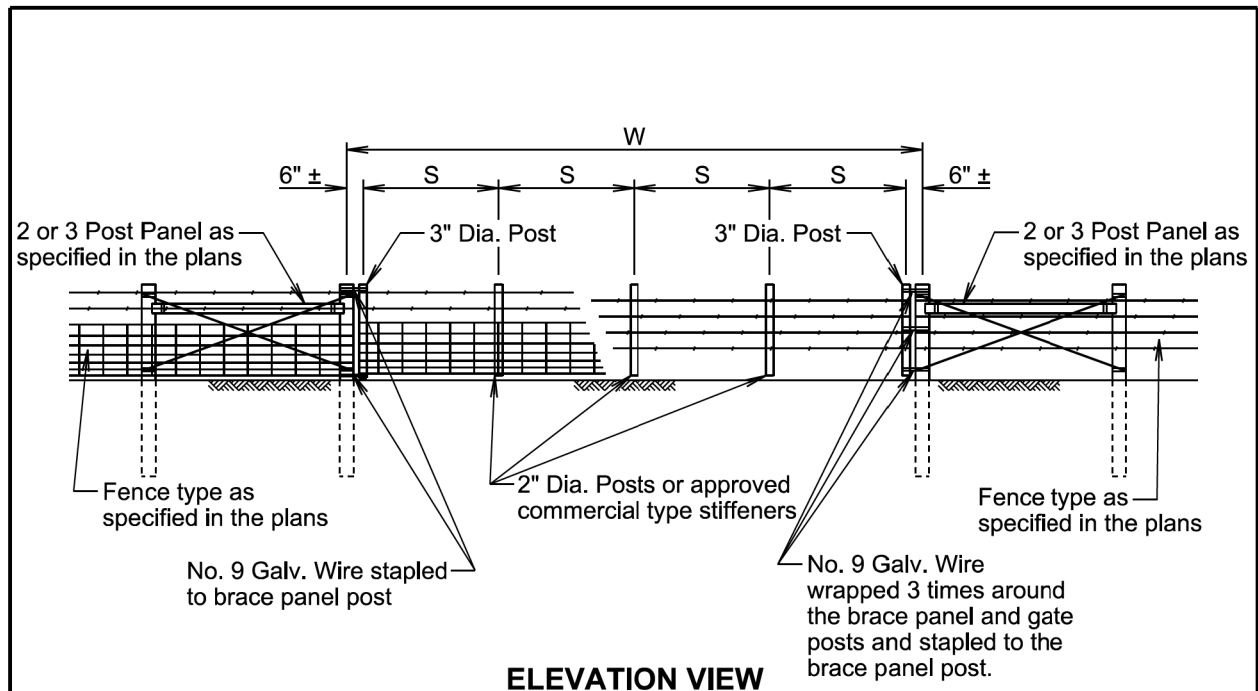


EYEBOLT DETAILS

December 23, 2012

| | | |
|----------------------------------|---|------------------------|
| S D D O T | FENCE ANCHORS FOR BOX CULVERT WING WALLS | PLATE NUMBER 620.16 |
| | | Sheet 1 of 1 |
| Published Date: 2026 | | |

Plotting Date: 5/11/2026



| 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.

June 26, 2019

| | | | |
|-----------------------------|----------------------------------|-------------------|-------------------------------|
| Published Date: 2026 | S D D O T | WIRE GATES | PLATE NUMBER 620.20 |
| | | | Sheet 1 of 1 |

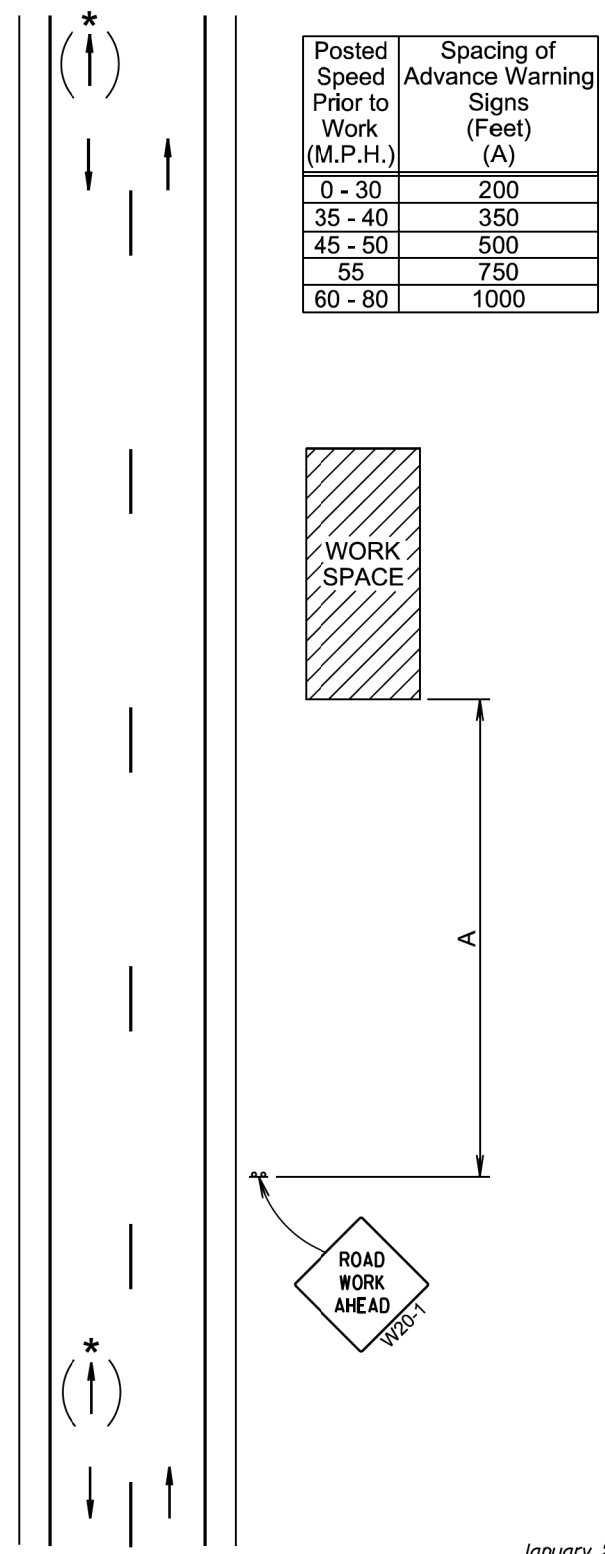
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

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.

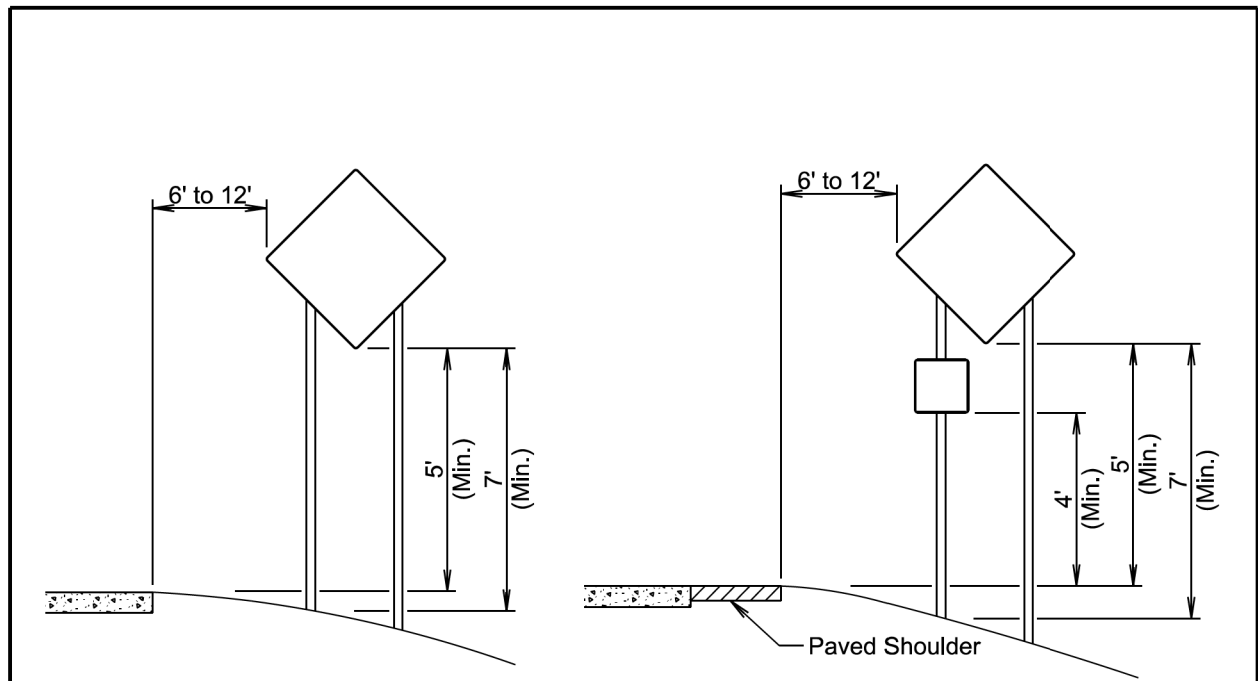
* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

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.



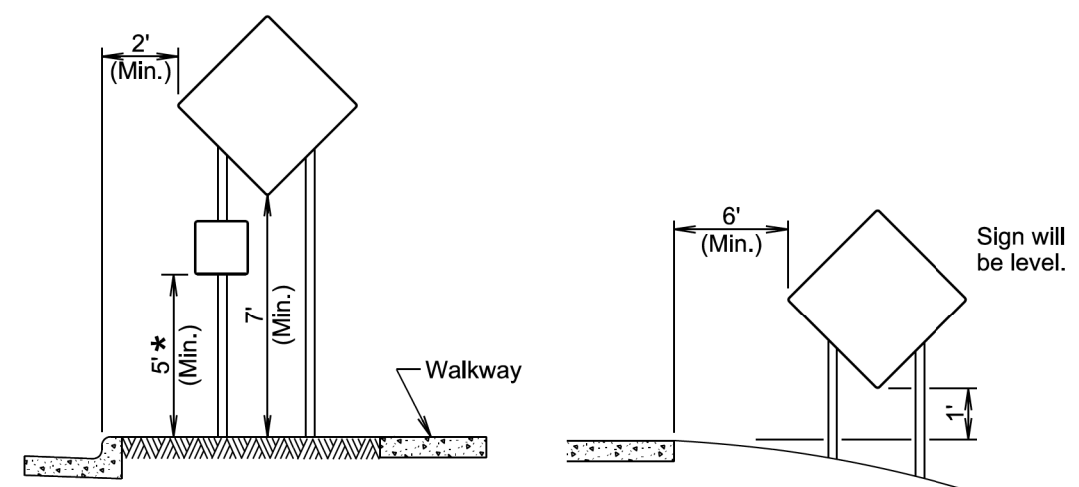
January 22, 2021

| | | | |
|-----------------------------|----------------------------------|---------------------------------|-------------------------------|
| Published Date: 2026 | S D D O T | WORK BEYOND THE SHOULDER | PLATE NUMBER 634.01 |
| | | | Sheet 1 of 1 |



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



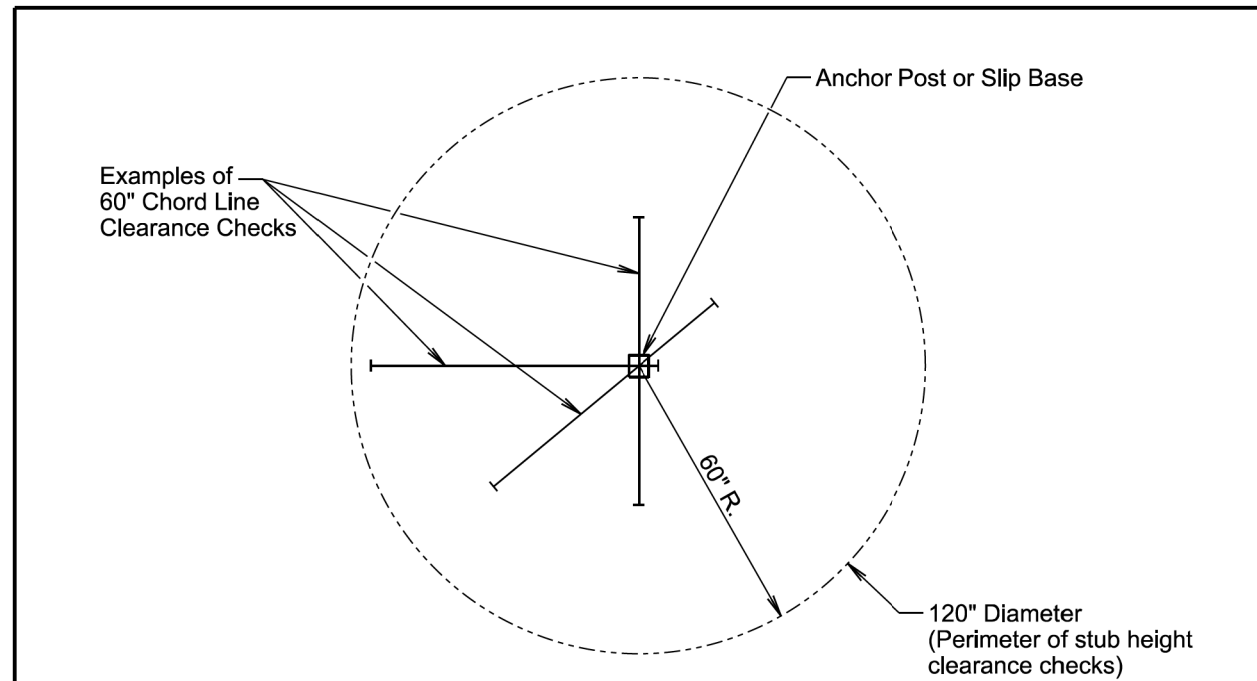
URBAN DISTRICT

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

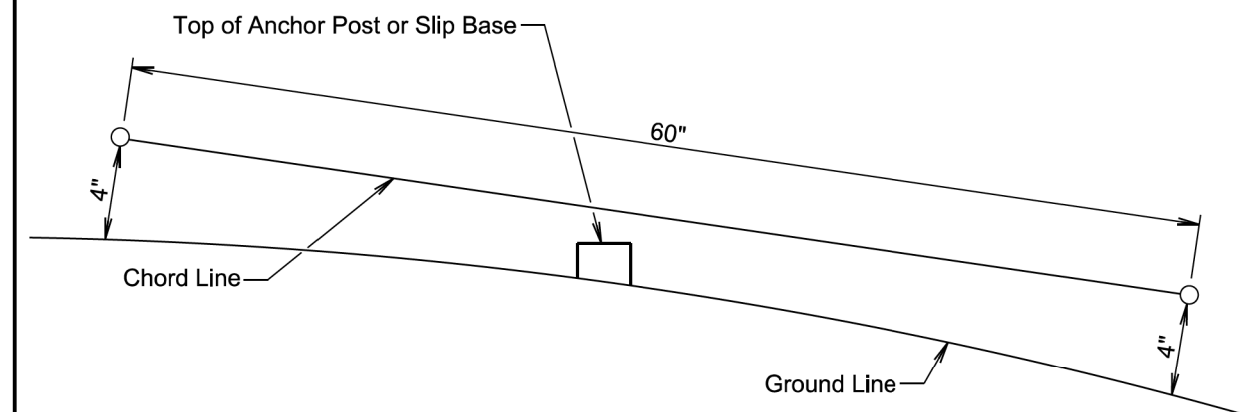
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

| | | | |
|----------------------|-----------------------|---|------------------------|
| Published Date: 2026 | S D D O T | CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing) | PLATE NUMBER 634.85 |
| | | | Sheet 1 of 1 |



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

- The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.
- At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.
- The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

| | | | |
|----------------------|-----------------------|----------------------------------|------------------------|
| Published Date: 2026 | S D D O T | BREAKAWAY SUPPORT STUB CLEARANCE | PLATE NUMBER 634.99 |
| | | | Sheet 1 of 1 |