

2021 BLM, TAOS FIELD OFFICE NETWIRE FENCE REPLACEMENT SPECIFICATIONS

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Work covered by the Task Order Documents.
 2. Geotechnical data.
 3. Specification formats and conventions.

1.2 WORK COVERED BY TASK ORDER

- A. Project Identification: Taos Field Office Netwire Fence Replacement Construction
1. Project Location: Work identified in this contract will be located in North Taos County in the state of New Mexico.
- B. The Work consists of the following:
1. Furnishing all labor, equipment, supplies, and materials required to, remove approximately 15.39 miles of netwire fence, and construct approximately 15.39 miles of new wildlife friendly, four-strand barbed wire fence, and build bid items in accordance with the Specifications, Drawings, Maps, and Work Data Sheets. Vehicle traffic along fence lines is allowed within 15 feet of each side of the fence. No scalping of soil along fence line is allowed, however, brush may be removed with equipment. Contractor is responsible for complete removal and recycle of the old fence materials (steel and wood posts, stays and all wire) from the lands involved herein. Contractor may broker their own agreement with the allottee to place old fence materials on the allottee private land instead of taking them to local dumps. Clearing of fence lines is minimal and does not have a line item, all trees and brush that require cutting shall be cut at ground level and carried 10 to 15 feet of the fence lines and lain down. All equipment shall be washed of soil and vegetative material before mobilization to the construction site. Additionally, all equipment shall be washed clean of all soil and vegetative material between construction locations. This washing and cleaning process is required to prevent the spread of noxious and invasive weeds. The contractor shall provide a written work schedule at the prework meeting, and update it monthly, or as requested by the Contracting Officer Representative (COR). The contractor shall provide a written safety and fire plan acceptable to the Contracting Officer prior to construction. Personal Protective Equipment (PPE) such as hardhats, work gloves, and traffic safety vests shall be used according to OSHA and other safety regulations.
 2. **There are active grazing allotments/pastures on both sides of the fence work area. Care must be taken to only take down fence that can be replaced that same day.**

GEOTECHNICAL DATA

- C. Geotechnical Data: No Geotechnical Information Maps are included in this contract. Determination of actual subsurface soil conditions at the project site shall be Contractor's responsibility.

END OF SECTION 01100

SECTION 02000 - WIRE FENCES AND GATES

PART 2 - GENERAL

2.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2.2 SUMMARY

- A. Section Includes:
 - 1. Metallic-coated-steel, welded-wire fences.
 - 2. Wire gates.
- B. Product Data: For each type of product.

PART 3 - PRODUCTS

3.1 MATERIALS

- A. Barbed Wire: A strand of two 12-1/2 gauge galvanized wires twisted together with 2-point barbs of 14 gauge wire spaced 4" apart. Wire and barbs shall be zinc-coated steel, with a zinc coating of at least 0.28 oz/ft² of coated surface area. The minimum breaking strength of each wire shall be 950 lb-force. The barbed wire shall conform to ASTM A 121.
- B. Barbless Wire: A strand of two 12-1/2 gauge, galvanized wires twisted together. Wire shall be zinc coated steel wire of at least 0.28 oz per square foot of coated surface area. The minimum breaking strength of each wire shall be 950 lb-force. The barbless wire shall conform to ASTM A 121
- C. Wire Fence Stays: 36" twisted wire fence stays manufactured from smooth galvanized 9-1/2 gauge (minimum) wire. ASTM A 121.
- D. Steel Angle Iron Upright Post: Uprights shall consist of angles with a nominal size 2 1/2" by 2 1/2" by 1/4" weighing approximately 4.10 lb/ft prior to fabrication. Total length shall be 7' per post. Uprights shall be furnished with the necessary holes and galvanized hardware for the required assembly (See section 2. MATERIALS F. Fasteners). All posts shall be cleaned of all loose scale prior to finishing, and painted solid green (Federal Standard 595B with one or more coats of weather resistant, air drying or baking paint or enamel. The steel posts shall be in conformance with ASTM, "Specification for Steel Fence Posts and Assemblies, Hot Wrought," ASTM A36/A36M.

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- E. Steel Angle Iron Brace Post: Braces shall be factory new and consist of angles nominal size 2” by 2” by ¼” weighing approximately 3.19 lb/ft prior to fabrication. Total length shall be 7’ per post. Braces shall be furnished with the necessary holes and galvanized hardware for the required assembly (See section 2. MATERIALS F. Fasteners). All posts shall be cleaned of all loose scale prior to finishing, and painted solid green (Federal Standard 595B with one or more coats of weather resistant, air drying or baking paint or enamel. The steel posts shall be in conformance with ASTM, "Specification for Steel Fence Posts and Assemblies, Hot Wrought," ASTM A36/A36M.
- F. Fasteners: 0.50” Nuts, and 0.50 by 1.5” bolts required. All bolts and nuts shall be new and conform to grade 5 ASME B 18 2 1, ASME B 18 2 2, and ASME B 18 21 1 respectively.
- G. Steel Fence SPEC Posts: All t-posts shall be factory new 5’6” steel fence posts, 8” silver painted top with the remainder being green “T” bar type, with a welded or riveted anchor plate. Furnish with clip type wire fasteners (punched tabs for fastening wires are not acceptable). Steel posts shall be manufactured from wrought, rail, or new billet steel, and shall have a minimum weight of 1.33 lb/linear ft. The anchor plates shall weigh a minimum of 0.67 pounds +5 percent, and be a minimum of 18 square inches in area. The steel fence posts shall conform to ASTM A 702. SPEC t-post.
- H. Steeples/Staples: New bright-finish or galvanized 9 gauge with slash-cut points 1-1/2” long designed for outdoor use and shall conform to ASTM F1667.
- I. Wooden gate posts: Juniper (Cedar) wood posts 48” length and 3” minimum diameter. Acceptable Wood Gate Posts: A slight bend in one plane is acceptable. Basis for Rejection: Posts are not acceptable when sweep causes a straight line joining the center of the top to the center of the butt to fall outside the body of the post, or at a point 2 inches or more from the center of the post. Posts that are charred, twisted, rotted, or excessively bent are not acceptable. Seasoning checks are not acceptable.
- J. Sacked concrete: 80 lbs. sacks ASTM C 404.

PART 4 - EXECUTION

4.1 EXAMINATION

- A. Examine areas and conditions for site clearing, construction layout, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

4.2 PREPARATION

- A. Prior to fence construction activities, the Contractor shall attend a site meeting with the COR to discuss extents of ground disturbance on site. Contractor shall stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 1320 feet or line of sight between stakes. The Contractor shall be responsible for ensuring adequate access to the site to facilitate earthwork, hauling of materials, and proper fence construction. Extents of allowable ground

disturbance will be indicated by BLM personnel prior to commencing earthwork activities. Indicate locations of utilities, underground structures, benchmarks, and property monuments. Contractor is solely responsible for OneCall process and utility locates and protection of existing utility resources. No construction will be allowed on site until the OneCall process is complete and the Contracting Officer's Representative (COR) has an email verifying the OneCall process is complete.

4.3 FENCE INSTALLATION

- A. Install fences according to contract maps and drawings.
- B. Post Excavation for brace panels: Drill or hand-excavate holes for posts in firm, undisturbed soil. Excavate holes to a diameter of not less than 10" and a depth of not less than 39", with 3" of concrete below the bottom of the post. Angle iron posts may be drilled to a diameter of approximately 3" excavated into solid rock to a depth of 36" and then the rock and debris packed back into the excavation hole with concrete. Angle iron posts and braces may not be cut less than the 7' prescribed amount. All above ground portions of brace posts shall be no more than 48" with 36" below ground. Concrete for braces must be poured at least equal with existing soil surface. All brace angle iron posts shall be constructed with a 16" by 16" by 16" cube of concrete. All brace bolts and nuts shall be tightened with a mechanical advantage such as wrenches or socket and driver. Pipe and wood braces are not allowed.
- C. Post Setting: Set posts plumb and at indicated spacing and depth into firm, undisturbed soil, see 4.3 B .
 - 1. Verify that structure posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with mechanical devices while setting in concrete.
- D. Line posts (t-posts)
 - 1. Mechanically Driven Posts (t-posts): Drive into soil to a depth of 18". Protect post top to prevent distortion. Twisted or bent t-posts are not acceptable. Where conditions prohibit the mechanical driving of t-posts, it shall be permissible to drill a hole 18" deep and 1 1/2" to 3" in diameter to receive the t-post without spade. In this instance the post hole must be securely packed with cutting material that was excavated by drilling. In situations where the prescribed wire height is greater than 4" from lengths designated in the work data sheet, due to topography between t-posts, a "Deadman" shall be used to maintain proper wire height and to prevent t-posts from being pulled out and suspended in midair and be installed at no additional cost. A "Deadman" is properly constructed when a rock of 50 lbs. or greater is hung from the four strands of barbed and barbless wire or t-posts driven in at a 45 degree angle greater than 24" depth and the four strands of barbed and barbless wire are attached to the t-post used as a "Deadman". "Deadmen" are not bid items and should be included in the cost per foot of fence. In hill top situations where the prescribed wire height is not maintained, an additional t-post must be installed at no additional cost. Additional hill top t-posts are not bid items and should be included in the cost per foot of fence.
 - 2. Space line posts uniformly at 16'-6" on center. Curved t-post lines between braces are not acceptable. Additionally, t-posts more than 12" out of straight line between braces will not be accepted and must be placed back into a straight line.

E. Wire

1. Wire: Stretch wire tightly and securely attach to steel posts with standard wire clips after the concrete has properly cured over 24 hours. Wire is correctly stretched when it is springy to the touch and does not sag more than 2" from a straight line between clips on t-posts, stay thread area, or braces wire wraps. Minimum wire tension per double wire strand is 150 pounds. Clips are properly installed when both ends wrap a minimum of one (1) time around each strand of wire at the t-post. Terminate wire at each end panel, corner post, stress panel, or single metal posts. Wrap wire around the post two times and tie off by wrapping around the incoming wire a minimum of four times. Kinked wire is not acceptable and must be spliced. Wire may be spliced with the terminal ends wrapped around the opposing strand a minimum of four times. Breakaways for drainage crossing shall be constructed from a single strand of 12-1/2 gauge galvanized wire per strand of barbed or barbless wire.

4.4 GATE INSTALLATION (Wire Gate Assembly includes 2 End Panels and 1 Wire Gate)

- A. Install gates according to contract drawings. The default gate width is always 16.5'. Juniper wood posts, 3" minimum diameter, shall be placed at each end of the wire gate and the wire shall be attached to the stays in the same manner as terminating wire at an angle iron upright post and shall be galvanized steel steepled. Operating gate side posts loop fasteners shall be constructed of barbless wire. A wire gate shall have a minimum of two twisted wire stays between the two juniper wood posts at either end. The wire loop used to hold the gate to provide articulation and access shall be held firmly in place by galvanized wire.

4.5 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that gate has enough tension to operate accurately and securely without forcing or binding. Gates that cannot be closed and fastened without mechanical advantage or any one strand sag beyond 6", shall be rejected for payment.

PART 5 - MEASUREMENT AND PAYMENT

5.1 METHOD OF MEASUREMENT

- A. Units: The work described in this section will be paid by the foot for each type of fence as measured along the ground surface next to the completed fence using Global Positioning Systems (GPS) and Geographic information System (GIS), including distance across gate openings. If a discrepancy of more than 10% is suspected between the as built fence distances and the amounts listed on the maps, the contractor and COR may measure the distance by chain steel, measuring tape, or hip (string) chain. The quantities of end panels, stress panels, corner panels, and gates will be paid for by the actual number of each item constructed and shall include cost for material and labor of required amount of concrete.

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B. BASIS OF PAYMENT

1. Payment: Prices and payment will be full compensation for all the work described in this section. Payment will be made under:

<u>Pay Item installed</u>	<u>Description</u>	<u>Pay Unit</u>
1	Fence Removal	Linear Foot
2	Barbed Wire Fence (4 strand)	Linear Foot
3	Angle Iron Corner Panel	Each
4	Angle Iron 3 Brace Corner Panel	Each
5	Angle Iron End Panel	Each
6	Angle Iron Stress Panel	Each
7	Barbed Wire Gate Assembly (4 Wire)	Each

WORK DATA SHEET

WIRE FENCES AND GATES

Fence type: 4-Twisted Strand Wire Fence

Type of top wire: Barbed Wire

Type of intermediate wires: Barbed Wire

Type of bottom wire: Barbless Wire

Wire locations/dimensions in inches (spacing):

D: 12"

C: 8"

B: 6"

A: 16"

Total fence wire height: 42"

Line post (t-post) spacing (L): 16'6"

Type of Stays: 36" twisted wire stays

Stay spacing (I): 16'6"

Brace Panels (corner, stress, and end panels): see drawings.

Length of wire gate wood posts (H₁): 3" minimum diameter juniper species 48" tall

Length of steel posts (H₂): 5'6"

Depth of steel posts in ground (h₂): 1'6"

All gates: 16'6" (See Drawing for Gate Assembly Requirements)

END OF SECTION 323116