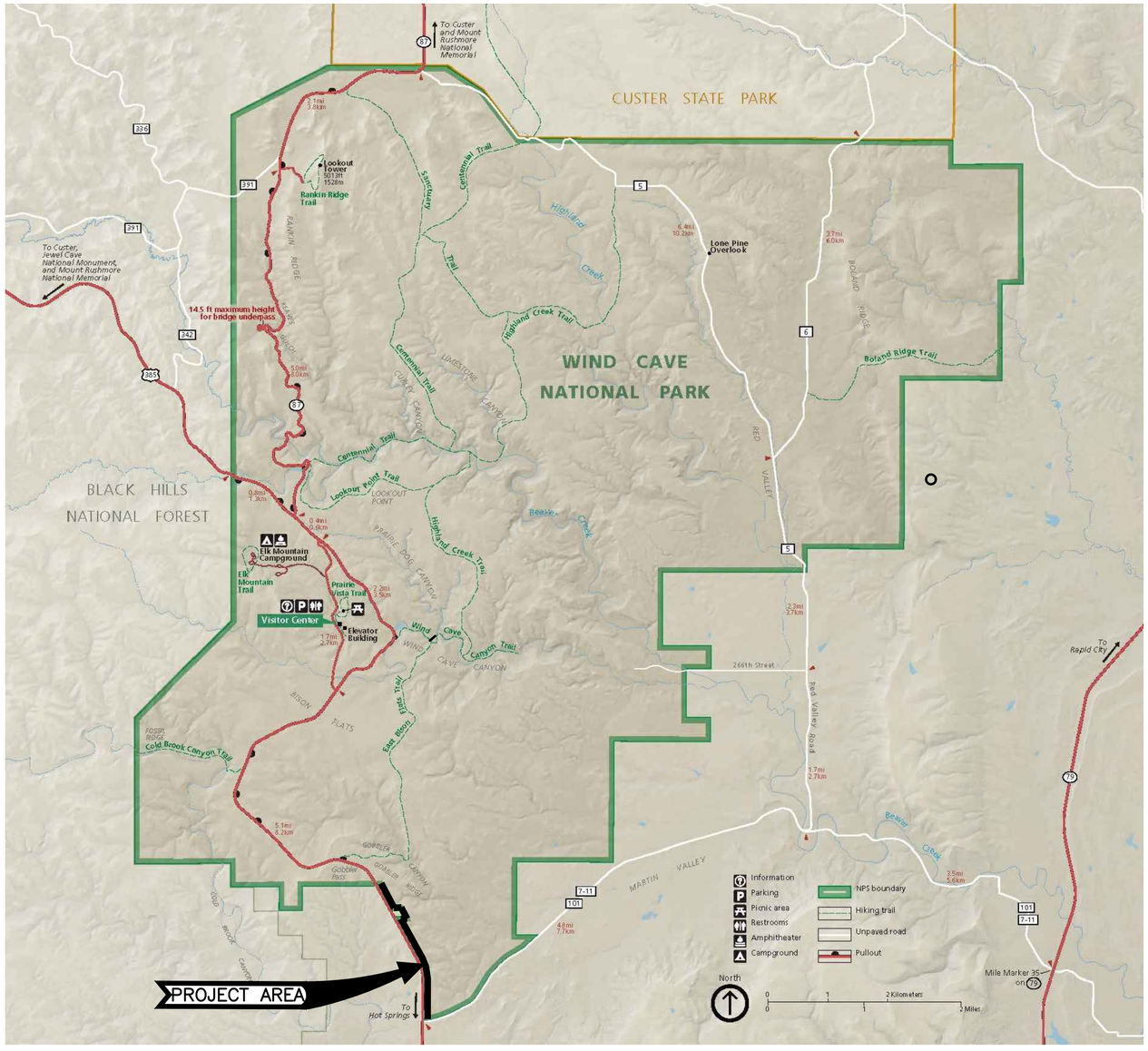
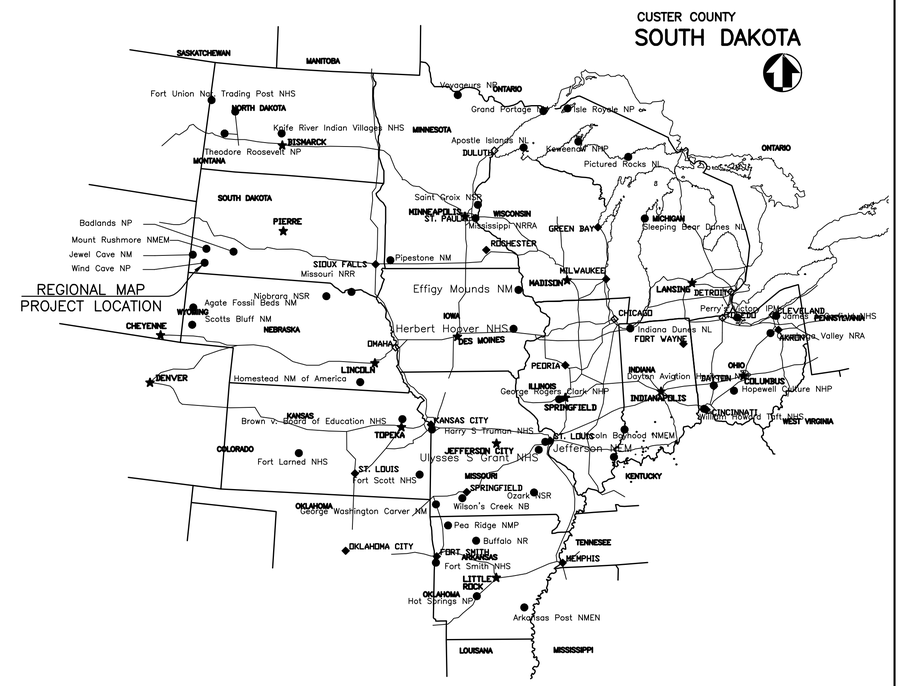
WIND CAVE NATIONAL PARK

BOUNDARY FENCE REPLACEMENT – U.S. HIGHWAY 385





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BASE BID AND BID ADDITIVES 1 AND 2 :

BASE BID: PROVIDE ALL MATERIALS, EQUIPMENT, AND LABOR TO REMOVE EXISTING FENCE AND CONSTRUCT NEW FENCE TO THE LIMITS SHOWN IN THESE CONSTRUCTION DOCUMENTS FOR A TOTAL LENGTH APPROXIMATELY 5335 LINEAR FEET.

BID OPTION 1: PROVIDE ALL MATERIALS, EQUIPMENT, AND LABOR TO REMOVE EXISTING FENCE AND CONSTRUCT NEW FENCE BEGINNING AT BASE BID TERMINATION AND CONTINUE TO LIMITS SHOWN IN THESE CONSTRUCTION DOCUMENTS FOR A TOTAL LENGTH APPROXIMATELY 1290 LINEAR FEET.

BID OPTION 2: PROVIDE ALL MATERIALS, EQUIPMENT, AND LABOR TO REMOVE EXISTING FENCE AND CONSTRUCT NEW FENCE BEGINNING AT BID OPTION 1 TERMINATION AND CONTINUE TO LIMITS SHOWN IN THESE CONSTRUCTION DOCUMENTS FOR A TOTAL LENGTH APPROXIMATELY 2010 LINEAR FEET.

BASIC DATA:

PMIS – 255316

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

QUALITY DESIGN CERTIFICATION

☐ Prepared in Accordance with Design Development (Title I) _____ Drawing No.
OR
☐ Variance from Design Development (Title I) Approved by Superintendent on _____ Date
OR
☒ Construction Drawing Not Preceded by Design Development (Title I)

4/10/2026
Project Manager — Date

CONSTRUCTION DRAWINGS

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
INTERIOR REGIONS 3, 4, AND 5

TITLE OF DRAWING
COVER
LOCATION WITHIN PARK
US HIGHWAY 385 AND 7–11 ROAD
NAME OF PARK
WIND CAVE NATIONAL PARK

REGION: MWR | COUNTY: CUSTER | STATE: SOUTH DAKOTA

DRAWING NO. 387 / 80048

PKG. NO. 25 / 53 / 16

SHEET 1 OF 10

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THESE PLANS, REFERENCED STANDARDS AND SPECIFICATIONS, AND GENERAL CONDITIONS IN THE CONTRACT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINATION OF ALL FINAL QUANTITIES AND METHODS IN ORDER TO CONDUCT THE WORK PRIOR TO SUBMITTING THEIR BID.
3. PROVIDE ALL SUBCONTRACTORS WITH ALL THE NECESSARY CONSTRUCTION DOCUMENT SHEETS AND INFORMATION APPLICABLE TO THEIR AREA OF WORK AS WELL AS WORK INFLUENCED BY OR INFLUENCES WORK BY OTHER TRADES.
4. ENSURE THAT ALL REQUIRED COORDINATION IS DONE BEFORE BEGINNING ANY CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL REQUIRED AUTHORIZATION FROM CONTRACTING OFFICER AND REPRESENTATIVE, PARK STAFF POINT OF CONTACT, AND FULLY ACKNOWLEDGE PRIOR TO COMMENCING WORK ON SITE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL INSPECTION CRITERIA AND SCHEDULES.
6. THE CONTRACTOR SHALL NOT EXCAVATE, REMOVE OR OTHERWISE DISTURB ANY MATERIAL, WHICH INCLUDES TREES, UNDERGROWTH, OR NATURAL LANDFORMS, WHICH IS LOCATED OUTSIDE THE NEW FENCE ALIGNMENT, ESTABLISHED FOR THIS PROJECT, EXCEPT WHERE SUCH EXCAVATIONS OR REMOVAL IS PROVIDED IN THE CONTRACT, PLANS, OR SPECIFICATIONS.
7. THE CONTRACTOR SHALL IDENTIFY AND PROTECT FROM DAMAGE ANY SURVEY AND BOUNDARY MARKERS WHICH WILL BE ENCOUNTERED WITHIN THE WORK AREA.
8. ALL PROPERTY DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING AT THE CONTRACTORS EXPENSE. THIS PERTAINS TO CONSTRUCTED ELEMENTS, AS OWNED BY NPS, OR OTHER ENTITY. SEE SITE RESTORATION NOTES FOR ACCEPTABLE CONDITION OF LEAVING THE NATURAL VEGETATED LANDSCAPE. PHOTO DOCUMENT EXISTING CONDITIONS AND REVIEW WITH PARK CONTRACTING OFFICER REPRESENTATIVE (COR) TO AVOID MIS-IDENTIFICATION OF PRE-EXISTING DAMAGE AS CONSTRUCTION ACTIVITY CAUSED.
9. ALL WORK AND ALL MATERIALS FURNISHED SHALL BE IN CONFORMITY WITH THE REQUIREMENTS IN THE CONTRACT DOCUMENTS.
10. THE SPECIFICATIONS, NOTES AND PLANS CALL ATTENTION TO CERTAIN REQUIRED FEATURES OF THE CONSTRUCTION BUT DO NOT IMPLY TO COVER ALL MEANS AND METHODS OF CONSTRUCTION.
11. ALL WORK SHALL BE ACCOMPLISHED TO THE HIGHEST QUALITY CRAFTSMANSHIP INDUSTRY STANDARDS FOR EACH RESPECTIVE TRADE.
12. ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND REGULATIONS.
13. APPARENT ERRORS, DISCREPANCIES OR OMISSIONS ON THE DRAWINGS SHALL BE BROUGHT TO THE CONTRACTING OFFICER'S ATTENTION AS SOON AS THE DISCREPANCY OR OMISSION IS FOUND. CONTRACTOR SHALL NOT PROCEED WITH WORK AT THE DISCREPANCY OR OMISSION PRIOR TO RECEIVING DIRECTION FROM THE COR.
14. ALL COMMUNICATION REQUESTING CLARIFICATION, DIRECTION AND OR REQUEST FOR INFORMATION (RFI) SHALL BE IN WRITTEN FORM. SUBMIT ALL COMMUNICATION REQUESTS TO COR AND ONLY WRITTEN RESPONSES FROM THE CO OR COR WILL BE CONSIDERED APPROVED/AUTHORIZED.
15. THE GOVERNMENT WILL NOT BE RESPONSIBLE TO PAY FOR ANY UN-APPROVED MATERIALS NOR MATERIALS NOT INCORPORATED INTO THE SCOPE OF THE PROJECT WORK.
16. AFTER COMPLETION OF CONSTRUCTION, PERFORM SITE CLEANUP OPERATION TO REMOVE ALL TRASH, DEBRIS, EXCESS MATERIALS AND EQUIPMENT FROM THE PARK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW THE PROJECT SITE CLEAN FOR FINAL ACCEPTANCE. ALL TRASH AND DEBRIS SHALL BE LAWFULLY DISPOSED OF. NO BURYING OR BURNING OF TRASH, DEBRIS, OR SURPLUS MATERIALS SHALL BE ALLOWED.
17. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING AREAS DURING CONSTRUCTION OF THE PROPOSED FENCE WORK. NPS STAFF RESERVE THE RIGHT TO PROCEED WITH INDEPENDENT WORK ACTIVITY IN CLOSE PROXIMITY AT THE SAME TIME THE CONTRACTOR IS PERFORMING THE WORK OF THE CONTRACT; HOWEVER, CONFLICT WITH IMPEDING PROGRESS SHALL BE AVOIDED.

GENERAL SITE HOUSEKEEPING:

1. DO NOT BURN DEMOLISHED OR UNUSED SURPLUS MATERIALS. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT UNDISTURBED PARK AREAS, ROADS, AND PUBLIC RIGHT-OF-WAY OR PROPERTIES. DO NOT ALLOW TRASH AND DEBRIS TO STOCKPILE UNTIL CONCLUSION OF THE PROJECT. SCHEDULE PERIODIC REMOVALS.
2. IDENTIFY WITH COR THE AVAILABLE OPEN SITE AREA AND CONSOLIDATE FIELD SET UPS AND MATERIAL STORAGE TO MINIMIZE IMPACTS TO THE SURROUNDING BLACK HILLS ECOLOGY.

VEHICLE AND EQUIPMENT REQUIREMENTS, LIMITATIONS, AND TRANSPORTATION TO PROJECT SITE:

1. ALL VEHICLES AND EQUIPMENT ACCESSING WIND CAVE NATIONAL PARK SHALL BE IN PROPER WORKING ORDER WITH NO VISIBLE SIGN OF FUEL OR FLUID LEAK OR INAPPROPRIATE DISCHARGE. THE COR AND PARK STAFF RESERVE THE RIGHT TO REFUSE ENTRY OR REQUIRE REMOVAL OF ANY VEHICLE OR EQUIPMENT DEMONSTRATING DISREPAIR OR MALFUNCTION AT ANY POINT DURING THE PROJECT.
2. ALL VEHICLES AND EQUIPMENT SHALL BE OF A SIZE AND MANEUVERABILITY AS LIMITED BY NPS WHICH WILL BE STRICTLY ENFORCED. SEE ACCESS NOTES ON SHEET L0.2 AND SPECIFICATIONS SECTION 01 10 00 FOR EQUIPMENT LIMITATIONS. AVOID OVERRUN INTO UNDISTURBED ADJACENT AREAS. ALL DAMAGE TO PAVEMENT, STRUCTURES, PARK ASSETS, STATE HIGHWAY, OR PRIVATE PROPERTIES SHALL BE REPAIRED, REPLACED, OR RESTORED TO EXISTING CONDITIONS OR BETTER AT NO ADDITIONAL COST TO THE GOVERNMENT.
3. THE CONTRACTOR SHALL SUBMIT TO THE CO/COR FOR WRITTEN APPROVAL THEIR PROPOSED PROTOCOL FOR TRANSPORTING AND STORING FUEL AND OTHER FLAMABLE MATERIALS AND MEANS OF REFUELING AND SPILL CONTAINMENT PRIOR TO BEING ALLOWED ON SITE. ALL FUEL CONTAINERS SHALL BE METAL AND SELF-CLOSING WITH PRESSURE VENTILATION AT A MINIMUM.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REASONABLE PROTECTION OF ALL EXISTING AMENITIES WITHIN THE IMMEDIATE AREA OF ACTIVE EQUIPMENT USE TO AVOID MARRING OR OTHER IMPACT DAMAGES.
5. THE CONTRACTOR SHALL AVOID PARKING OR IDLING EQUIPMENT WITHIN TALLGRASS COVER REACHING THE UNDERCARRIAGE OF EQUIPMENT AS IT IS PRONE TO IGNITING WILDFIRES. GRASS TRIMMING WILL BE ACCEPTABLE TO PROVIDE CLEARANCE BETWEEN VEGETATION AND VEHICLE UNDERCARRIAGES.
6. CONTRACTOR SHALL AVOID PARKING OR IDLING EQUIPMENT ALONG RIDGES OF BUTTES, ADJACENT TO DROP OFFS, EROSIVE CUTS, OR OTHER LANDFORMS THAT ARE AT RISK OF UNDERMINING OR FAILING UNDER THE WEIGHT OF EQUIPMENT.
7. THE CONTRACTOR SHALL HAVE A STRATEGY FOR NAVIGATING THE SITE WHICH WILL ATTEMPT TO LIMIT THE EXTENT OF SITE DAMAGE TO THE GREATEST EXTENT REASONABLY POSSIBLE WHICH WILL PRIORITIZE DEDICATING HAUL ROUTES AND CONCENTRATING STAGING AREAS AS DIRECTED ON SHEET L0.2. LIMITS OF CONSTRUCTION AND DISTURBANCE WITHIN NPS LANDS SHALL BE A CORRIDOR 50' MAXIMUM FROM EXISTING FENCE ALIGNMENT INTO THE PARK. NO STAGING OR UTILIZING HIGHWAY RIGHT OF WAY
8. THE COR RESERVES THE RIGHT TO REQUIRE RELOCATION OF ANY PARKED OR IDLING EQUIPMENT PLACING THE PARK LANDSCAPE AT RISK. THE COR ADDITIONALLY RESERVES THE RIGHT TO REQUIRE ADDITIONAL PROTECTION MEASURES BE PROVIDED AT NO ADDITIONAL COST TO THE GOVERNMENT IF CONSTRUCTION PRACTICES PROVE TO PLACE THE LANDSCAPE AMENITIES OR WILDLIFE AT RISK TO DAMAGE OR CONTRACTOR PROACTIVE PROTECTION EFFORTS PROVE TO BE INSUFFICIENT.

WILDLIFE AWARENESS AND WORKER SAFETY:

1. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE POTENTIAL WILDLIFE WHICH MAY BE ENCOUNTERED WITHIN THE NATIONAL PARK. HEED ALL INSTRUCTIONS FROM THE COR AS RELAYED FROM PARK STAFF DIRECTING ANY MEASURES OR PRECAUTIONS TO LIMIT INCIDENTS WHICH MAY RESULT IN INJURY TO WORKERS OR WILDLIFE.
2. BISON ARE PREVALENT WITHIN THE PARK AND ROAM WITHOUT RESTRICTION THROUGHOUT. DO NOT APPROACH OR TAUNT ANY BISON AND REMAIN VIGILANT TO CEASE WORK OR TEMPORARILY MOVE FROM THE IMMEDIATE AREA IF BISON APPEAR INTENT ON MIGRATING NEAR OR THROUGH THE WORK AREA. CONSULT WITH PARK NATURAL RESOURCE SPECIALISTS DURING PRE-CONSTRUCTION CONFERENCE, WEEKLY SITE MEETINGS, OR AT ANY TIME NEW STAFF ARRIVES ON SITE TO LEARN SPATIAL DISTANCE TO KEEP AND INDICATING SIGNS TYPICALLY EXHIBITED BY BISON THAT SERVE AS A WARNING.
3. RATTLESNAKES ARE PREVALENT IN THE AREA AND MAY BE ENCOUNTERED. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES BY CONSULTING WITH PARK NATURAL RESOURCE SPECIALISTS HABITAT AND BEHAVIORS TO REMAIN VIGILANT. SNAKES, ALONG WITH ALL WILDLIFE WITHIN THE NATIONAL PARK ARE CONSIDERED NATURAL RESOURCES AND THE CONTRACTOR SHALL NOT INTENTIONALLY HANDLE, INJURE, OR KILL ANY WILDLIFE ENCOUNTERED.
4. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO CONTAIN INTENDED WILDLIFE (BISON SPECIFICALLY) WITHIN THE PARK. ALL POINTS OF ACCESS THROUGH THE EXISTING FENCE MUST BE ADEQUATELY CLOSED AND SECURED WHEN WORKERS ARE NOT PHYSICALLY PRESENT AT THAT IMMEDIATE LOCATION. NO PORTIONS OF NEW FENCE CONSTRUCTION AND EXISTING FENCE REMOVALS SHALL LEAVE ANY OPENINGS WHEN NOT PHYSICALLY PRESENT ON THE IMMEDIATE SITE. SEE INSTALLATION NOTES FOR FURTHER CONTENT REGARDING FENCE AND ACCESS MANAGEMENT.

PROJECT MOBILIZING AND PROGRESSING THROUGH THE PROJECT

1. THE PROJECT SHALL BE CONDUCTED TO PROVIDE ENCLOSURE OF THE NATIONAL PARK FOR WILDLIFE CONTAINMENT AND MANAGEMENT PURPOSES. THE CONTRACTOR SHALL ENSURE CO/COR ACCEPTABLE CLOSURE OF ALL UNATTENDED ACCESS POINTS AND POINT OF TERMINATION EACH WORK DAY.
2. THE CONTRACTOR SHALL SUBMIT A PLAN DEPICTING MATERIALS AS WELL AS MEANS AND METHODS PROPOSED FOR TEMPORARY SECURING OPENINGS IN THE BOUNDARY FENCE (EXISTING OR NEW) WHEN WORKERS ARE NOT ACTIVELY INSTALLING NEW FENCE OR ACCESSING THE SITE. PROVIDE TO THE CONTRACTING OFFICER AS AN INFORMATIONAL SUBMITTAL FOR WRITTEN APPROVAL OR REJECTION OF THE PROPOSED SUBMITTAL.
3. FOR DESIGN ORIENTATION PURPOSES, THE EXISTING FENCE LINE IS BEING UTILIZED AS A STATIONING DATUM TO CALL OUT DISTANCES OR SPECIFIC POINTS ALONG THE ALIGNMENT. STATION POINTS ALONG THE EXISTING FENCE ALIGNMENT ARE USED IN NOTATIONS AND REFERENCE POINTS WITHIN THESE DOCUMENTS AS A MEANS PRIMARILY FOR ORIENTATION.
4. THE NEW FENCE LINE WILL BE SET WITHIN 1-FOOT FROM THE EXISTING FENCE LINE INTO THE NATIONAL PARK TO AVOID ENCROACHMENT ONTO HIGHWAY RIGHT OF WAY. CHANGES IN ALIGNMENT GREATER THAN FOLLOWING THE CURRENT ALIGNMENT DUE TO TOPOGRAPHIC INFLUENCES SHALL BE REVIEWED WITH THE COR AND APPROVED IN WRITING BEFORE COMMENCING WITH THE DEVIATION TO EXISTING ALIGNMENT.

MATERIALS SPECIFICATIONS:

THE FOLLOWING MATERIAL SPECIFICATIONS ARE THE MINIMUM LEVEL OF PERFORMANCE THAT THE FINISHED INSTALLED FENCE SHALL CONSIST OF. THE CONTRACTOR SHALL PROVIDE ALL PROPOSED MATERIALS TO BE PROCURED AND INSTALLED AS INFORMATIONAL SUBMITTALS FOR CO/COR WRITTEN ACCEPTANCE, CONDITIONS OF ACCEPTANCE, OR REJECTION OF THE MATERIAL. ANY PROPOSED SUBSTITUTION OF MATERIAL OR LEVEL OF PERFORMANCE DIFFERENT FROM WHAT IS NOTED HERE SHALL RECEIVE CONTRACTING OFFICER WRITTEN APPROVAL IN ORDER TO PROCEED.

NO MATERIALS PROPOSED OR PROVIDED WHICH ARE OF A LOWER GRADE OF PERFORMANCE AND DURABILITY THAN WHAT IS EXPLICITLY SPECIFIED HEREIN WILL BE ACCEPTED. ANY INSTALLED MATERIALS NOT MEETING THESE SPECIFICATIONS SHALL BE REJECTED. ALL REJECTED MATERIAL, IF PRESENT, SHALL BE REMOVED AND REPLACED WITH MATERIAL MEETING THE SPECIFICATIONS CITED HEREIN THESE DOCUMENTS. AT NO ADDITIONAL COST TO THE GOVERNMENT

ROUND STEEL POSTS (FENCING POSTS - NOT INCLUSIVE OF WATER CROSSING CASING PIPE SPECIFIED IN THESE DOCUMENTS):

A. OPTION 1: ASTM A-53-94, GRADE B, TYPE E OR TYPE S, SCHEDULE 40, MINIMUM WALL THICKNESS 0.154 INCHES, HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123-89A. SEE PART D BELOW REGARDING SHOP TAPPING HOLES IN PIPE AND DETERMINE TIMING OF GALVANIZING PRE OR POST HOLE TAPPING.

B. OPTION 2: STAINLESS STEEL-40 PIPE MANUFACTURED FROM COLD FORMED STEEL MEETING ASTM A569 WITH MINIMUM YIELD STRENGTH OF 50,000 PSI, MINIMUM WALL THICKNESS 0.0130 INCHES, AND FINISHED WITH THREE PART COATING SYSTEM OF HOT DIPPED GALVAINIZNG WITH 1-OUNCE ZINC PER SQUARE FOOT IN ACCORDANCE WITH ASTM A90, A CHROMATE CONVERSION COATING, AND AN ORGANIC CLEAR COATING. (NOTE - OPTION OF STEEL IS PROVIDED FOR CONTRACTOR MEANS AND METHODS PROVIDED THE EQUIVALENCY OF CORROSION RESISTANCE IS PROVIDED IN MATERIAL SELECTION)

C. POST MINIMUM OUTSIDE DIAMETER OF 2.375 INCHES AND 10.5 FEET IN LENGTH.

D. PIPE SHALL RECEIVE A TOTAL OF (9) NINE 1/4-INCH THRU-HOLE BEGINNING 6-INCHES FROM TOP END OF PIPE AND 12" SPACING FOR HOLES 2 THROUGH 9. HOLES TO BE TAPPED PRIOR TO THE GALVANIZATION PROCESS. SCHEDULE 40 STEEL SHALL UNDERGO A HOT DIPPED GALVANIZED PROCESS POST-SHOP TAPPING HOLES. STAINLESS STEEL WILL NOT BE REQUIRED TO UNDERGO GALVANIZATION.

U-CHANNEL POSTS:

A. U-CHANNEL POSTS SHALL BE HEAVY DUTY 10-FOOT LONG POSTS IN COMPLIANCE WITH ASTM A-1075-12, GRADE 60 STEEL, 60 KSI YIELD STRENGTH MINIMUM AND 90 KSI TENSILE STRENGTH MINIMUM. U-CHALLEL TO BE 3.0 LBS/FT

B. U-CHANNEL POSTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123-89A.

C. USE OF U-CHANNEL POSTS SHALL BE LIMITED TO WHERE SHOWN ON PLANS OR AS APPROVED BY THE CONTRACTING OFFICER. ALL OTHER POSTS SHALL BE ROUND PIPE POSTS AS SPECIFIED. INSTALLED U-CHANNEL POSTS IN PORTIONS OF FENCE IN LIEU OF ROUND STEEL PIPE NOT APPROVED BY CO SHALL BE REMOVED AND REPLACED WITH ROUND PIPE AT NO ADDITIONAL COST TO THE GOVERNMENT.

WOVEN WIRE:

A. WOVEN WIRE SHALL BE HIGH STRENGTH STEEL WIRE UTILIZING FIXED KNOTS TO SECURE THE VERTICAL STAY WIRES AND HORIZONTAL LINE WIRES TOGETHER IN A RIGID MANNER. HINGED KNOTS ARE NOT ACCEPTABLE. WOVEN WIRE SHALL BE COMPOSED OF 9 HORIZONTAL WIRES SPACED 5 TO 7 INCHES APART TO TOTAL A ROLL HEIGHT OF 49-INCHES.VERTICAL STAY WIRES SHALL BE SPACED 6-INCHES APART.

B. MINIMUM SIZE FOR HORIZONTAL AND VERTICAL WIRES IS 12.5 GAUGE. HORIZONTAL WIRE MINIMUM TENSILE STRENGTH 178,000 PSI AND VERTICAL WIRES MINIMUM TENSILE STRENGTH 124,000 PSI.

C. WOVEN WIRE TO HAVE A GALVANIZED COATING WITH MINIMUM 0.85 OUNCES OF ZINC PER SQUARE FOOT OF SURFACE AREA.

D. WIRE ROLES TO BE 350-FEET IN LENGTH MINIMUM.

E. ACCEPTABLE WOVEN WIRE INCLUDE, 'STAY-TUFF ST820' BY STAY-TITE FENCE, NEW BRAUNFELS, TX <OR> 'SOLIDLOCK' FIXED KNOT CATTLE FENCE949-6-12-1/2 BY BEKAERT OF MARIETTA, GA <OR> CO APPROVED EQUAL MEETING THE SALIENT CHARACTERISTICS LISTED.

TIE WIRE:

A. TIE WIRES TO SECURE WOVEN WIRE TO POSTS SHALL BE A MINIMUM 13 GAUGE WIRE WITH MINIMUM TENSILE STRENGTH OF 70,000 PSI. TIE WIRE FINISH TO BE GALVANIZED DULLED FINISH.

H-BRACE WIRE:

A. H-BRACE WIRE USED TO CROSS TIE VERTICAL AND HORIZONTAL STEEL PIPES SHALL BE A MINIMUM 9 GAUGE LOW CARBON GALVANIZED WIRE WITH 1200 LB. BREAKING STRENGTH.

STEEL LIVESTOCK PANELS:

A. STEEL LIVESTOCK PANELS, 48" HEIGHT MINIMUM X VARIABLE LENGTH FOR USE WHERE ADDITIONAL FENCE MESH SUPPORT IS NEEDED (STEEP SLOPES, DRAINAGE OR EROSIVE CUTS, IRREGULAR LANDFORMS WHERE WOVEN WIRE IS INSUFFICIENT TO PROVIDE STABILE SPANNING ENCLOSURE). MATERIAL TO BE ONE-PIECE WELDED CONSTRUCTION GALVANIZED STEEL 4-GAGE WIRE RESISTANT TO SAG OR COLLAPSE WITH OPENINGS NO GREATER THAN 6".

AIRCRAFT CABLE:

A. AIRCRAFT CABLE RUNNING ALONG TOP OF FENCE SHALL BE 3/8" DIAMETER 7 X19 GALVANIZED MEETING FEDERAL SPECIFICATIONS RR-W-410E. FASTEN TO POST WITH METAL CLIP (NO PLASTIC) MANUFACTURED SPECIFICALLY TO RECEIVE CABLE.

CONCRETE MIX:

A. WHERE REQUIRED TO ANCHOR POSTS, CONCRETE SHALL BE 4000 PSI PRE-BLENDED MIXTURE OF CEMENT AND AGGREGATES FOR GENERAL STRUCTURAL USES, REQUIRING ONLY THE ADDITION OF WATER. COMPLIES WITH ASTM C39 (STRENGTH), C138 (UNIT WEIGHT), AND C143 (SLUMP). BASIS OF DESIGN IS 'QUICKRETE' HIGH STRENGTH CONCRETE MIX OR EQUIVALENT. USE OF CONCRETE IS SOLELY TO MITIGATE UNSUITABLE GROUND CONDITIONS DUE TO SOILS AND WHERE SHOWN IN DETAILS SUCH AS ABUTMENTS TO SPANNING FENCE STRUCTURES. BASED ON EXISTING FENCE INSTALLATION, DIRECT POUNDED POSTS APPEAR SUCCESSFUL AND CONCRETE ANCHORING IS NOT READILY EVIDENT; HOWEVER, DOES NOT RULE OUT POTENTIAL FOR NEED.

NPS ACCESS GATE STRUCTURE:

A. PROVIDE A SHOP DRAWING SUBMITTAL WHICH IDENTIFIES ALL MATERIALS AND SHOP FABRICATED GATE STRUCTURE, DIMENSIONS, AND J-HANGER BOLTS. FRAME SHALL BE 2" DIAMETER TUBE STEEL FRAME MEETING ASTM A-53-94, GRADE B, TYPE E OR TYPE S, SCHEDULE 40, MINIMUM WALL THICKNESS 0.154 INCHES, GALVANIZED IN ACCORDANCE WITH ASTM A123-89A. CHAIN LINK MESH INFILL OF GATE PANELS SHALL BE 9 GA GALVANIZED STEEL MESH. GALVANIZED J-HANGER BOLTS AND HINGES SHALL BE HEAVY DUTY A36 GRADE STEEL.

BOUNDARY SURVEYING REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BOUNDARY FIELD STAKING THROUGH THE SERVICES OF A SOUTH DAKOTA LICENSED SURVEYOR TO FIND AND MARK THE BOUNDARY LINE OF THE PARK TO US HIGHWAY 385, WHICH IS ADMINISTERED BY THE STATE OF SOUTH DAKOTA, IN ORDER TO DEMONSTRATE SUFFICIENTLY THAT THE ENTIRETY OF THE NEW BOUNDARY FENCE IS LOCATED ON NPS LAND.
2. THE CONTRACTOR SHALL CONDUCT BEFORE WORK COMMENCES FIELD STAKING WITH WOOD LATHE THE BOUNDARY LINE MARKED AT 100-YARD INTERVALS MINIMUM (OR LINE OF SIGHT AS NECESSARY FOR CONSISTENT VISUAL CONFIRMATION DURING WORK).
3. THE NEW NPS FENCE LINE SHALL BE INSTALLED AT AN OFFSET OF 6-INCHES INTO NPS LAND FROM THE SURVEYED BOUNDARY ALIGNMENT.
4. ANY CONFLICTING SITE CONDITIONS WHICH MAY OBSTRUCT THIS SPECIFIC OFFSET SHALL BE BROUGHT TO THE ATTENTION OF THE COR PRIOR TO COMMENDING WITH THE WORK IN ORDER TO MAKE A DETERMINATION OF MANNER TO PROCEED.
5. UPON COMPLETION OF THE PROJECT, DEMONSTRATE BASED ON FIELD STAKING THAT THE FENCE HAS BEEN FULLY CONSTRUCTED ON NPS LAND. THE CONTRACTOR SHALL PROPOSE THE MEANS AND METHODS FOR CONDUCTING THE DOCUMENTED VERIFICATION AND SUBMIT TO THE COR FOR APPROVAL.
6. ANY PORTION OF THE FENCE INSTALLATION THAT ENCROACHES OVER THE BOUNDARY ONTO STATE OF SOUTH DAKOTA RIGHT-OF-WAY SHALL BE REMOVED AND REINSTALLED ON NPS LAND AT NO ADDITIONAL EXPENSE TO THE GOVERNMENT.

EXISTING FENCE DEMOLITION REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND LAWFUL DISPOSAL OF ALL EXISTING FENCE REMOVALS WITHIN THE SCOPE OF WORK IDENTIFIED WITHIN THESE DOCUMENTS. NO MATERIALS SHALL BE BURIED, BURNED, OR DISPOSED OF WITHIN THE PARK.
2. ALL CUTTING OF METAL POSTS SHALL BE BY SAW BLADE OR METHOD WHICH DOES NOT PRODUCE SPARKS. HOT WORK SHALL NOT BE PERMITTED WHICH INCLUDES TORCH, GRINDING WHEEL, OR OTHER SPARK EMITTING TOOL FOR REMOVALS OF THE FENCE LINE.
3. U-CHANNEL POST REMOVAL: ALL U-CHANNEL POSTS SHALL BE EXTRACTED FROM THE GROUND IN THEIR ENTIRETY UNLESS THEY ARE EMBEDDED IN CONCRETE. CONCRETE EMBEDDED U-CHANNEL POSTS SHALL BE ALLOWED TO BE FLUSH CUT AT GRADE WITH CONCRETE AND EMBED TO BE ALLOWED TO REMAIN BELOW GRADE. BY SLEDGE OR OTHER METHOD, POUND DOWN ANY REMNANT POST FROM PROJECTING ABOVE GRADE.
4. ROUND STEEL POST REMOVAL: ALL STEEL ROUND POSTS SHALL BE REMOVED BY EXTRACTION IN THEIR ENTIRETY IF SOIL EMBEDDED OR FLUSH CUT AT GRADE IF EMBEDDED IN CONCRETE. CONCRETE EMBEDDED ROUND PIPE SHALL BE ALLOWED TO REMAIN BELOW GRADE. NO HOT WORK (SPARK OR FLAME EMITTING) IS PERMITTED IN CUTTING PIPE. BY SLEDGE OR OTHER METHOD, POUND DOWN ANY REMNANT POST FROM PROJECTING ABOVE GRADE.
5. TO ASSIST THE NPS IN DOCUMENTING RECYCLING, THE CONTRACTOR SHALL BE REQUESTED TO RECORD TOTAL WEIGHT AND/OR QUANTITIES OF METAL OR OTHER APPLICABLE MATERIALS WHICH ARE DIVERTED FROM LANDFILLS TO RECYCLING FACILITIES. PROVIDE DOCUMENTATION IN THE FORM OF RECEIPT COPY DOCUMENTING WEIGHT FROM RECYCLING FACILITY RECEIVING MATERIAL.

NEW FENCE INSTALLATION REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS, EQUIPMENT, AND PERSONNEL REQUIRED TO PERFORM THE SCOPE OF WORK AS DEFINED WITHIN THESE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. THE FINISHED PRODUCT SHALL MEET THE MATERIALS AND DETAILS TO THE LEVEL OF FINISH WITHIN THESE CONSTRUCTION DOCUMENTS.
2. ANY NECESSARY DEVIATION FROM ALIGNMENT OR DETAIL DUE TO TOPOGRAPHY, GEOLOGY, OR OTHER CO/COR DETERMINED JUSTIFIED INFLUENCES SHALL BE ADDRESSED WITH THE CO/COR FOR DIRECTION TO PROCEED PRIOR TO COMMENCING WITH WORK FALLING OUTSIDE THE SCOPE OF WORK PROVIDED WITHIN THESE DOCUMENTS.
3. ROUND PIPE LINE POST SPACING: 16'-0" MAX.
4. U-CHANNEL POST LINE SPACING: 12'-0" MAX. AND ONLY WHERE ALLOWED BY THESE DOCUMENTS OR CO/COR WRITTEN APPROVAL.
5. SINGLE H-BRACE LOCATIONS: LOCATE SINGLE H-BRACE STRUCTURES AT THE FOLLOWING LOCATIONS:
   - WHERE SPLICE BETWEEN ROLLS OF WOVEN WIRE MESH ARE TO BE TIED OFF (DETAIL 4/L2.1)
   - WHERE ABRUPT CHANGES IN GRADE OCCUR, PLACE A SINGLE H-BRACE AT TOP AND BOTTOM OF SLOPE. (DETAIL 2/L2.3)
   - AT LATCH SIDE OF GATES (DETAIL 4/L2.2)
   - WHERE DEFLECTION CHANGE IN ALIGNMENT OCCURS AND IS LESS THAN 3'-0" OR 22° CHANGE IN ANGLE (DETAIL 2/L2.1)
   - ALONG IN-LINE POST ALIGNMENTS ACROSS OPEN GROUND WHERE OTHER STRUCTURES ARE INSTALLED A SPACING NO GREATER THAN 500' APART (ASSUME WIRE MESH ROLL LENGTH PROVIDED BY MANUFACTURER WILL DICTATE SPACING AND REQUIREMENT OF H-BRACE AT SPLICE; HOWEVER NO GREATER THAN 500 LINEAR FEET).
   - OTHER LOCATIONS WHERE TERRAIN OR STABILITY OF FENCE INSTALLATION WARRANTS.
6. DOUBLE H-BRACE LOCATIONS: LOCATE DOUBLE H-BRACE STRUCTURES AT THE FOLLOWING LOCATIONS:
   - WHERE DEFLECTION IN FENCE ALIGNMENT OCCURS GREATER THAN 3'-0" OR 22° CHANGE IN ANGLE (DETAIL 2/L2.1)
   - WHERE 90° CORNERS OCCUR (3/L2.1)
   - AT GATES - BOTH HINGE AND FREE ENDS (DETAIL 1/L2.2)
   - OTHER LOCATIONS WHERE TERRAIN OR STABILITY OF FENCE INSTALLATION WARRANTS AND A SINGLE H-BRACE SOLUTION IS INSUFFICIENT TO PROVIDE NECESSARY STABILITY.
7. GATE STRUCTURES: LOCATE WHERE SHOWN ON SITE PLANS.
8. DRAINAGE CROSSINGS OR OTHER CUSTOMIZED INSTALLATIONS RESPONDING TO SPECIFIC LANDFORM CONDITIONS AS NOTED AND DETAILED WITHIN THESE CONSTRUCTION DOCUMENTS OR AS APPROVED BY CO IN WRITING DUE TO CHANGING SITE OR UNFORESEEN CONDITIONS.

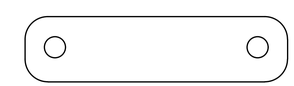
SITE RESTORATION REQUIREMENTS :

1. THE CONTRACTOR SHALL TAKE CARE AND MONITOR THAT DISTURBANCE TO THE SITE (VEGETATION, SOILS, TOPOGRAPHY) IS MANAGED AND KEEP WITHIN THE MINIMUM EXTENTS REASONABLY ACHIEVABLE.
2. PROVIDE NON-COMPACTED BACKFILL WITH SOILS ON SITE BY FINE RAKING IN RUTS OR OTHER DISTURBANCES CAUSED BY EQUIPMENT TRACK OR OTHER EQUIPMENT AND CONSTRUCTION ACTIVITY. NO SUPPLEMENTAL SEEDING IS REQUIRED NOR CONDUCTED. ALLOW THE NATIVE VEGETATION SPECIES HEAL THE LANDSCAPE POST DEMOBILIZATION.
3. AS A MEANS OF FIRE PREVENTION, IT WILL BE ACCEPTABLE TO USE A STRING TRIMMER TO CUT VEGETATION WITHIN VEHICULAR STAGING AND ALL FIELD WELDING AREAS IN ORDER TO AVOID CONTACT BETWEEN VEGETATION AND HEATED ENGINE COMPONENTS. CUT TO A HEIGHT NO LESS THAN 4-INCHES AND PRESERVE THE ROOT CROWN OF THE PLANT AT SOIL ELEVATION.
4. SUBMIT ANY OTHER PROPOSED MEANS OF SITE RESTORATION TO THE COR/CO FOR APPROVALS.

WIRE TYING TOOL FOR CONSIDERATION:
IT IS ENCOURAGED THAT THE CONTRACTOR ESTABLISH AN EFFICIENCY IN METHODS FOR INSTALLING AND TYING OFF FENCE MESH. THE FOLLOWING IS NOT A REQUIREMENT OF THE CONTRACTOR TO PROVIDE OR UTILIZE AND IS PROVIDED FOR CONVENIENCE OF CONSIDERATION ONLY:

NPS STAFF PERFORMING FENCE CONSTRUCTION EFFORTS HAVE DEVELOPED A SIMPLISTIC TOOL FOR WRAPPING TIE WIRE TO THE WOVEN WIRE MESH.

SHOP CUT 1/8" STEEL BAR STOCK, 1-INCH WIDE X 3 1/2-INCH LONG WITH 1/4-INCH HOLE TAPPED EACH END AND SHOP EASE AND GRIND ENDS TO A RADIUS FOR EASE OF HAND USE:



FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
CADD
TECH. REVIEW: ——
DATE: 04–10–2026

SUB SHEET NO. L0.1

TITLE OF SHEET
GENERAL NOTES

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108
80048

PMIS NO. 255 316 ——

SHEET 2 OF 10

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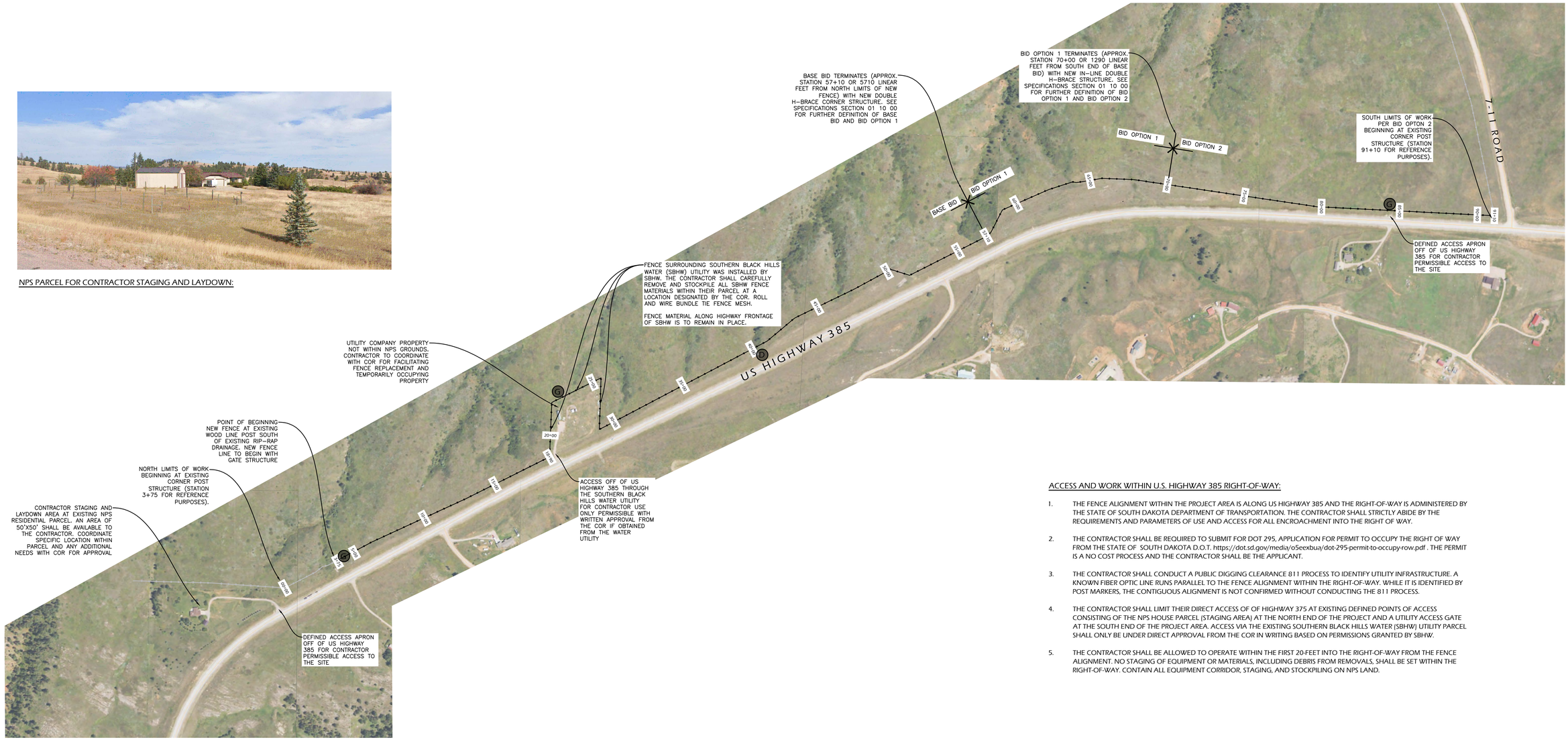
NPS PARCEL FOR CONTRACTOR STAGING AND LAYDOWN:



ACCESS AND WORK WITHIN U.S. HIGHWAY 385 RIGHT-OF-WAY:

1. THE FENCE ALIGNMENT WITHIN THE PROJECT AREA IS ALONG US HIGHWAY 385 AND THE RIGHT-OF-WAY IS ADMINISTERED BY THE STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION. THE CONTRACTOR SHALL STRICTLY ABIDE BY THE REQUIREMENTS AND PARAMETERS OF USE AND ACCESS FOR ALL ENCROACHMENT INTO THE RIGHT OF WAY.
2. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT FOR DOT 295, APPLICATION FOR PERMIT TO OCCUPY THE RIGHT OF WAY FROM THE STATE OF SOUTH DAKOTA D.O.T. https://dot.sd.gov/media/o5eexbua/dot-295-permit-to-occupy-row.pdf . THE PERMIT IS A NO COST PROCESS AND THE CONTRACTOR SHALL BE THE APPLICANT.
3. THE CONTRACTOR SHALL CONDUCT A PUBLIC DIGGING CLEARANCE 811 PROCESS TO IDENTIFY UTILITY INFRASTRUCTURE. A KNOWN FIBER OPTIC LINE RUNS PARALLEL TO THE FENCE ALIGNMENT WITHIN THE RIGHT-OF-WAY. WHILE IT IS IDENTIFIED BY POST MARKERS, THE CONTIGUOUS ALIGNMENT IS NOT CONFIRMED WITHOUT CONDUCTING THE 811 PROCESS.
4. THE CONTRACTOR SHALL LIMIT THEIR DIRECT ACCESS OF OF HIGHWAY 375 AT EXISTING DEFINED POINTS OF ACCESS CONSISTING OF THE NPS HOUSE PARCEL (STAGING AREA) AT THE NORTH END OF THE PROJECT AND A UTILITY ACCESS GATE AT THE SOUTH END OF THE PROJECT AREA. ACCESS VIA THE EXISTING SOUTHERN BLACK HILLS WATER (SBHW) UTILITY PARCEL SHALL ONLY BE UNDER DIRECT APPROVAL FROM THE COR IN WRITING BASED ON PERMISSIONS GRANTED BY SBHW.
5. THE CONTRACTOR SHALL BE ALLOWED TO OPERATE WITHIN THE FIRST 20-FEET INTO THE RIGHT-OF-WAY FROM THE FENCE ALIGNMENT. NO STAGING OF EQUIPMENT OR MATERIALS, INCLUDING DEBRIS FROM REMOVALS, SHALL BE SET WITHIN THE RIGHT-OF-WAY. CONTAIN ALL EQUIPMENT CORRIDOR, STAGING, AND STOCKPILING ON NPS LAND.

STATIONING NOTES:

1. AS A MEANS OF IDENTIFYING DISTANCES AND KEY POINTS ALONG THE EXISTING AND PROPOSED FENCE ALIGNMENT, A STATIONING METHOD IS BEING USED AS NOTATED ON THIS AND OTHER SITE PLAN DRAWINGS. THIS METHOD IS INTENDED AS A COMMUNICATION AND EXTENTS OF PROGRESS COMPLETION TOOL ONLY. THE STATIONS ARE NOMINAL DISTANCES AS TOPOGRAPHY AND AERIAL ACCURACY MAY NOT REFLECT ACTUAL DISTANCE
2. THE STATIONING METHOD (XX+XX) IS MEASURING FOOT DISTANCES FROM THE POINT OF BEGINNING WITH THE FIRST PAIR OF NUMBERS BEING INCREMENTS OF 100'S AND SECOND PAIR AS DISTANCE BETWEEN EACH HUNDRED FOOT INCREMENT. EXAMPLES: 1+00 READS AS 100', 10+00 READS AS1000', AND 5+25 READS AS 525 FEET.
3. STATIONING INDICATED ON THIS OVERALL SITE PLAN (SCALE 1:200) AND ENLARGED SITE PLANS (SCALE 1:100) ARE NOTED IN INCREMENTS OF 500' '.

LEGEND NOTES:

THE FOLLOWING NOTATIONS ON THE ENLARGED SITE PLAN SHEETS IDENTIFY PROPOSED NEW STRUCTURES (TERM TO MEAN CORNER OR IN-LINE BRACES, GATES, DRAINAGE CROSSINGS, OTHER) GREATER THAN TYPICAL IN-LINE SINGLE POSTS. EXISTING STRUCTURES IDENTIFIED WITH BEST INFORMATION AVAILABLE BY NPS IN PHOTOGRAPHIC IMAGERY.

NEW STRUCTURES NECESSARY IN ORDER TO PROVIDE A STABILIZED INSTALLATION ARE PER INSTALLATION NOTES ON L0-1, DETAILS ON L2 SHEETS, OR AS FIELD CONDITIONS WARRANT. VARIANCES IN THE TOPOGRAPHY, GEOLOGY, UNFORESEEN CONDITIONS, OR OTHER MAY REQUIRE FIELD ADJUSTMENT DETERMINATIONS WHICH MAY REQUIRE ADDITIONAL STRUCTURES GREATER THAN SINGLE POSTS THAN INITIALLY ESTIMATED TO BE INSTALLED OR ADJUSTMENT TO FENCE ALIGNMENT. COMMUNICATE ANY VARIANCES WITH CO/COR TO RECEIVE CO/COR WRITTEN DETERMINATION OR APPROVAL OF FIELD MODIFICATIONS.

LEGEND:

- G — NEW PERMANENT SWING GATE
- D — NEW DRAINAGE/EROSION CROSSING
- P1 — PHOTOGRAPH IDENTIFIER (ON THE FOLLOWING SHEETS)

200 0 200 400

2 OVERALL SITE PLAN
1" = 200'-0"

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
CADD
TECH. REVIEW: --
DATE: 04-10-2026

SUB SHEET NO. L0.2

TITLE OF SHEET
ACCESS-STAGING AND OVERALL SITE PLAN

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108 / 80048
PMIS NO. 255 316 --
SHEET 3 OF 10

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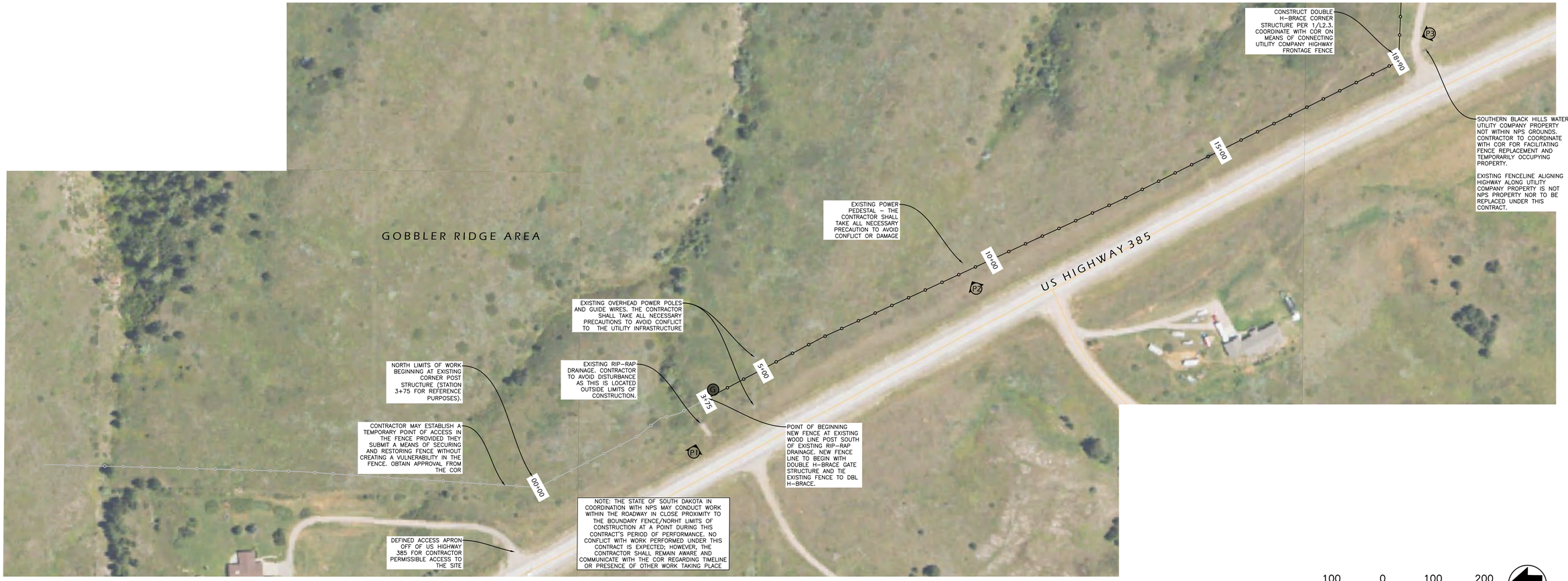
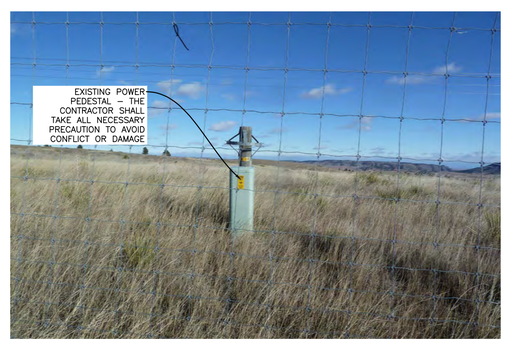


1 FENCE ALIGNMENT PLAN - STATION 00+00 TO 18+90

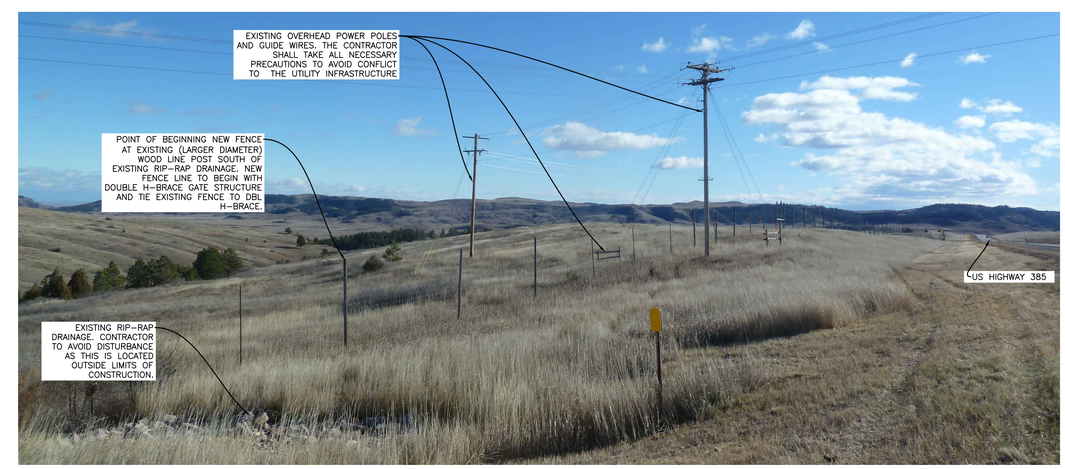
1" = 100-0"

100 0 100 200

P3 LOOKING NORTH AT UTILITY COMPANY INTERSECTING NPS FENCE APPROX. STA. 18+90



P2 EXISTING POWER PEDESTAL APPROX. STA. 10+00



P1 NEW FENCE NORTH POINT OF BEGINNING APPROX. STA. 3+75

REPRESENTATIONAL PHOTOGRAPHS:
THE FOLLOWING PHOTOGRAPHS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND DO NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE SITE PRIOR TO SUBMITTING THEIR BID. THESE PHOTOS DO NOT CAPTURE THE TOTALITY OF THE PROJECT AREA; HOWEVER THEY PROVIDE A REPRESENTATIONAL EXAMPLE OF THE EXISTING FENCE CONSTRUCTION THAT IS TO BE REMOVED AND THE TERRAIN THE CONTRACTOR SHALL BE EQUIPPED TO NAVIGATE IN ORDER TO PERFORM THE WORK.

NOTE:
THE CONTRACTOR SHALL FOLLOW THE EXISTING ALIGNMENT TO THE GREATEST EXTENT POSSIBLE. ANY DEVIATIONS FROM ALIGNMENT SHALL TAKE PLACE ON NPS LAND AND NOT ENCROACH OFF PROPERTY. ACCEPTABLE DEVIATIONS FROM EXISTING ALIGNMENT AREA AS SHOWN OR FIELD DETERMINED WITH THE COR'S APPROVAL AS NECESSARY TO PROPERLY CONSTRUCT THE FENCE.

EXISTING FENCE LINE AS SHOWN ARE PROVIDED AS LANDMARKS AND TO INFORM THE EXTENT OF THE SCOPE OF WORK. THE CONTRACTOR IS RECOMMENDED TO REVIEW THE ALIGNTMENT PRIOR TO THE BID AND FOLLOW THE METRICS ON SHEET L0-1 FOR FREQUENCY OF FENCE STRUCTURES OTHER THAN LINE POSTS ARE TO BE PLACED. THE EXISTING FENCE STRUCTURES IN PLACE DOES NOT DIRECTLY TRANSLATE TO QUANTITIES OF NEW IN-LINE AND CORNER STRUCTURES REQUIRED TO COMPLETE THE WORK.

LEGEND:

- G NEW PERMANENT SWING GATE
- D NEW DRAINAGE/EROSION CROSSING
- P1 PHOTOGRAPH IDENTIFIER

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
CADD
TECH. REVIEW: --
DATE: 04-10-2026

SUB SHEET NO. L1.1

TITLE OF SHEET
FENCE ALIGNMENT SITE PLAN
STATION 00+00 TO 18+90

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108 / 80048
PMIS NO. 255 / 316 / --
SHEET 4 OF 10

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P4 EXISTING NORTHEAST CORNER AND GATE SURROUNDING UTILITY COMPANY PARCEL APPROX. STA. 22+20

P5 BRUSH REMOVAL AND INCORPORATE SUPPLEMENTAL RIGID LIVESTOCK PANELING INTO NEW FENCE APPROX. STA. 40+00

P6 EXISTING RIP-RAP AND STORM PIPE EXTENDING INTO NPS BOUNDARY APPROX. STA. 51+50

1 FENCE ALIGNMENT PLAN - STATION 18+90 TO 55+00

1" = 100'-0"

100 0 100 200

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LEGEND:

- G NEW PERMANENT SWING GATE
- D NEW DRAINAGE/EROSION CROSSING
- P1 PHOTOGRAPH IDENTIFIER

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
BADD
TECH. REVIEW: --
DATE: 04-10-2026

SUB SHEET NO. L1.2

TITLE OF SHEET
FENCE ALIGNMENT SITE PLAN
STATION 18+90 TO 55+00

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108 80048
PMIS NO. 255 316 --
SHEET 5 OF 10

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1 FENCE ALIGNMENT PLAN - STATION 55+00 TO 80+OO

1" = 100'-0"

P7 SURVEY MARKER CORNER POST AT SOUTHERN LIMITS OF BASE BID APPROX. STA. 57+10

100 0 100 200

REPRESENTATIONAL PHOTOGRAPHS:

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LEGEND:

- G NEW PERMANENT SWING GATE
- D NEW DRAINAGE/EROSION CROSSING
- P1 PHOTOGRAPH IDENTIFIER

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

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TECH. REVIEW: --
DATE: 04-10-2026

SUB SHEET NO. L1.3

TITLE OF SHEET
FENCE ALIGNMENT SITE PLAN
STATION 55+00 TO 80+00

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108 / 80048
PMIS NO. 255 316 --
SHEET 6 OF 10

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1 FENCE ALIGNMENT PLAN - STATION 80+00 TO 91+10

1" = 100'-0"

P9 LOCATION OF SOUTH EXITING/NEW ACCESS GATE APPROX. STA. 84+60

P10 SOUTH FENCE TERMINATION AT CORNER TO 7-11 ROAD APPROX. STA. 91+10

100 0 100 200

REPRESENTATIONAL PHOTOGRAPHS:
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LEGEND:

- G NEW PERMANENT SWING GATE
- D NEW DRAINAGE/EROSION CROSSING
- P1 PHOTOGRAPH IDENTIFIER

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
CADD
TECH. REVIEW: --
DATE: 04–10–2026

SUB SHEET NO. L1.4

TITLE OF SHEET
FENCE ALIGNMENT SITE PLAN
STATION 80+00 TO 91+10

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108 / 80048
PMIS NO. 255 316 --
SHEET 7 OF 10

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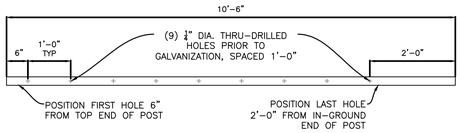
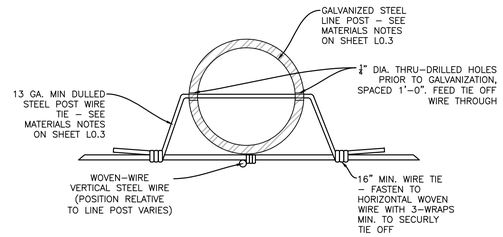


TYPICAL STEEL PIPE POST – 2.375" MIN O.D. X 10'-6" MIN. SEE MINIMUM LEVEL OF PERFORMANCE SPECIFICATIONS, SHEET L0.1

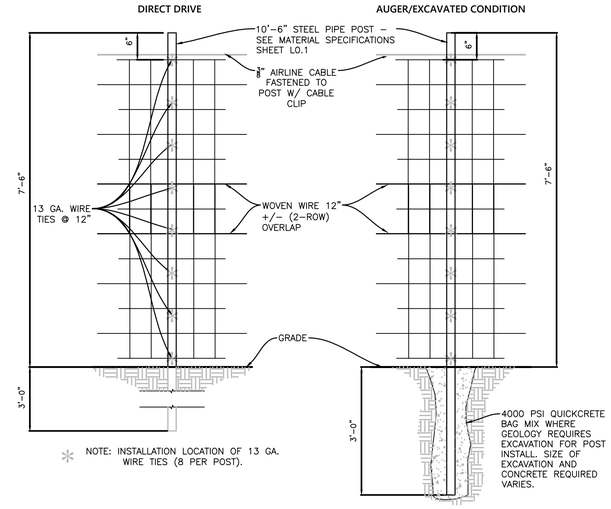
ACCESS GATE STEEL PIPE POST – 2.875" MIN O.D. X 10'-6" MIN. SEE MINIMUM LEVEL OF PERFORMANCE SPECIFICATIONS, SHEET L0.1. PROVIDE SAME HOLE SPACING AS TYP. IN LINE POST.

1 / L2.1 TYPICAL STEEL PIPE FENCE POST
NO SCALE

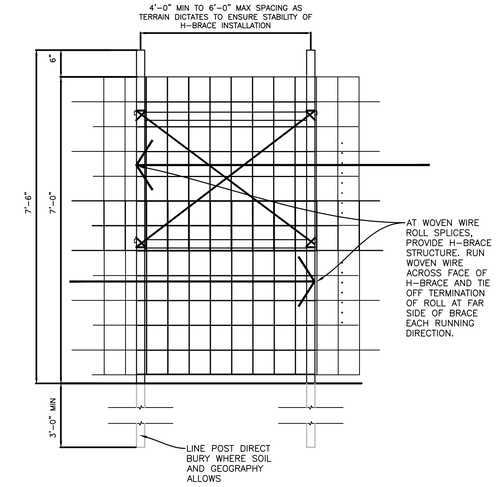
INSTALLATION EXAMPLE WHICH NEWLY INSTALLED WORK SHALL BE EVALUATED FOR ACCEPTANCE OF WORK



2 / L2.1 TYPICAL WOVEN WIRE TO POST TIE OFF
NO SCALE



3 / L2.1 TYPICAL STEEL POST INSTALLATION
NO SCALE



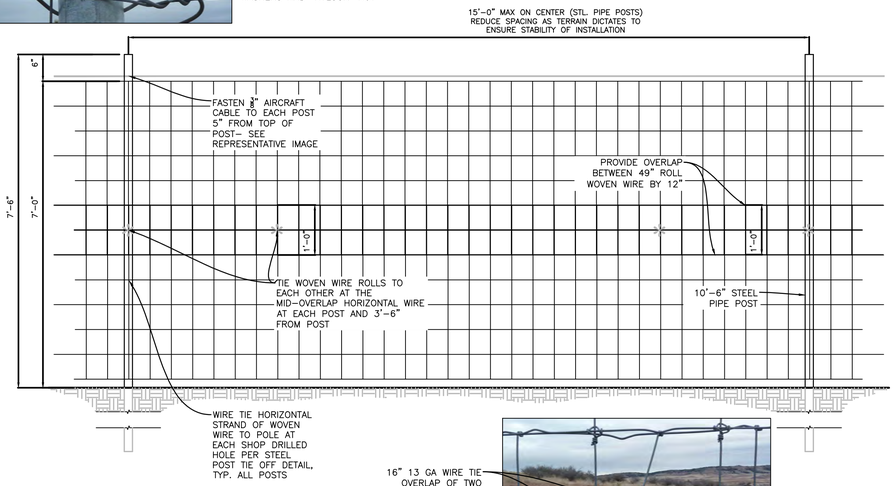
4 / L2.1 WOVEN WIRE ROLL SPLICE H-BRACE
NO SCALE

TOP CABLE INSTALLATION EXAMPLE WHICH NEWLY INSTALLED WORK SHALL BE EVALUATED FOR ACCEPTANCE OF WORK

FIELD DRILL ⅜" THRU-HOLE PERPENDICULAR TO WOVEN MESH TIE OFF HOLES.

FASTEN CABLE WITH MANUFACTURED STEEL CLIP INTENDED FOR CABLING USE.

FASTEN CLIP TO POST WITH GRADE 8 3 ⅜" THRU-BOLTS WITH FLAT WASHERS AND 'NYLOCK' NUT

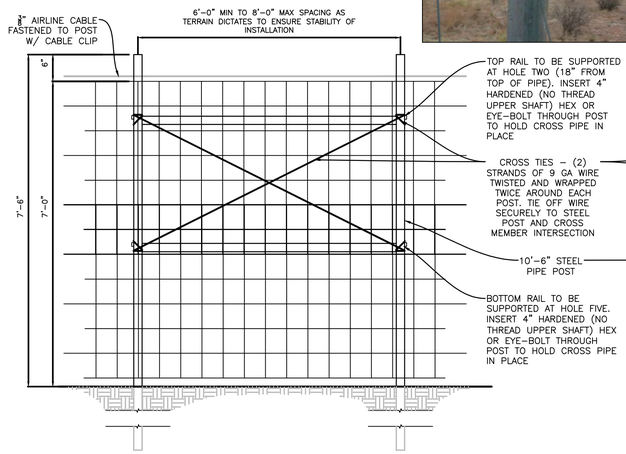


16" 13 GA WIRE TIE OVERLAP OF TWO WOVEN WIRE ROLLS AT MIDPOINT HORIZONTAL WIRE – 4 WRAPS PER EACH TIE OFF POINT MIN.

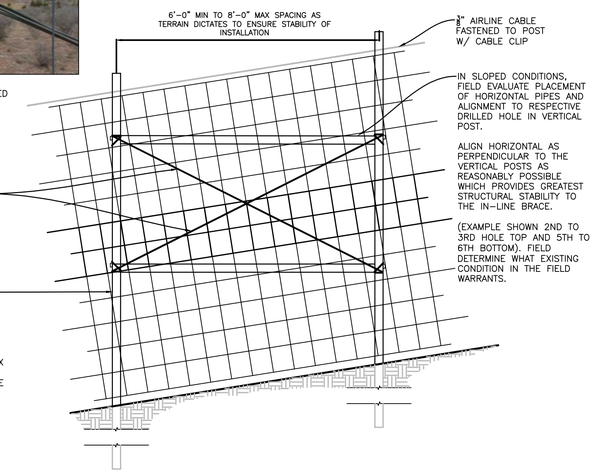
WOVEN WIRE ROLL OVERLAP INSTALLATION EXAMPLE WHICH NEWLY INSTALLED WORK SHALL BE EVALUATED FOR ACCEPTANCE OF WORK

5 / L2.1 TYPICAL IN-LINE FENCE INSTALLATION – LEVEL TERRAIN
NO SCALE

H-BRACE WIRE TIE OFF INSTALLATION EXAMPLE WHICH NEWLY INSTALLED WORK SHALL BE EVALUATED FOR ACCEPTANCE OF WORK



EVEN TERRAIN IN-LINE BRACE



SLOPED TERRAIN IN-LINE BRACE

6 / L2.1 TYPICAL IN-LINE SINGLE H-BRACE CONDITION
NO SCALE

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
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TECH. REVIEW: --
DATE: 04-10-2026

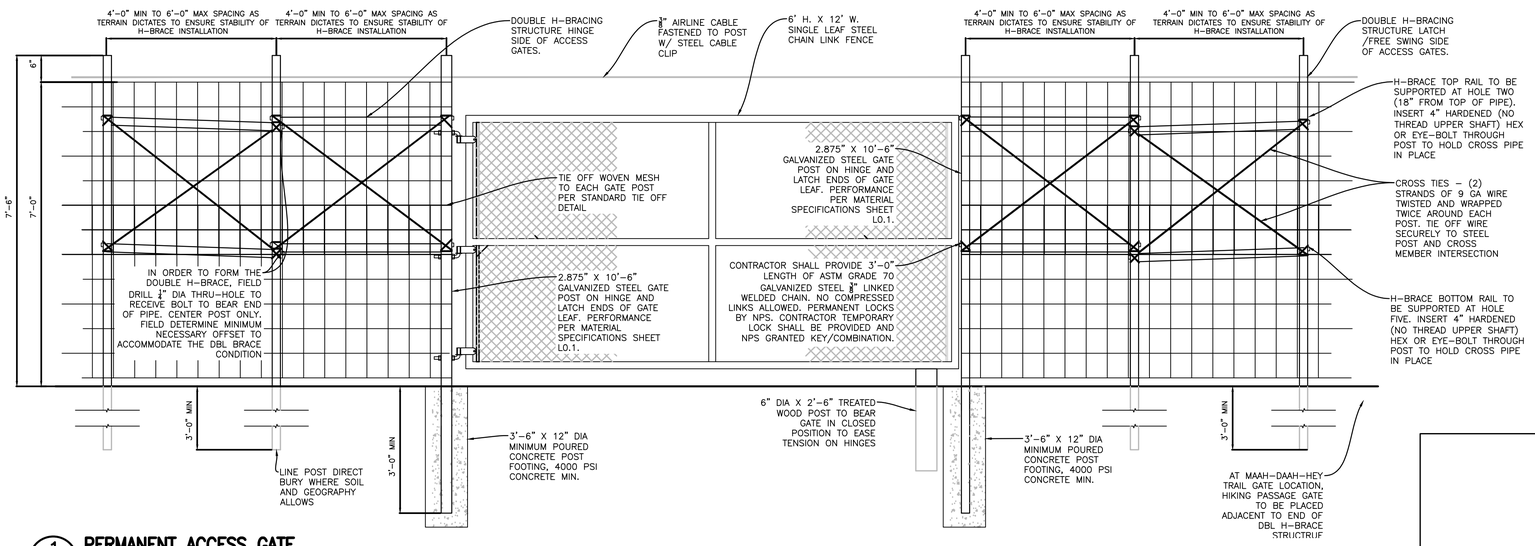
SUB SHEET NO. L2.1

TITLE OF SHEET
CONSTRUCTION DETAILS

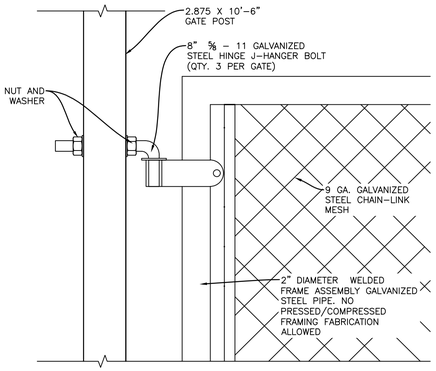
WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

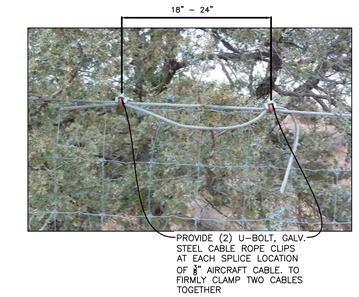
DRAWING NO. 108 / 80048
PMIS NO. 255 / 316 / --
SHEET 8 OF 10

3/17/2026 10:49:22 AM C:\Users\tlbeck\Desktop\Wind Cave Fence Replacement\AutoCAD\WICA HWY 385 FENCE_L2-1.dwg

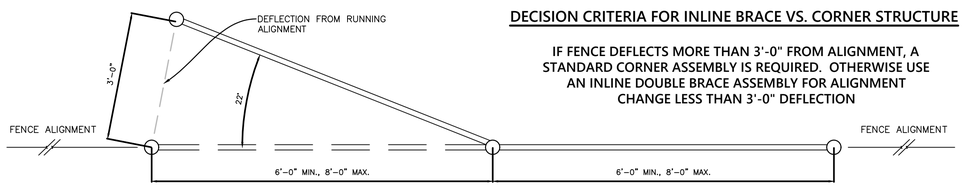


1 L2.2 PERMANENT ACCESS GATE
NO SCALE





2 L2.2 TYPICAL AIRCRAFT CABLE SPLICE
NO SCALE



DECISION CRITERIA FOR INLINE BRACE VS. CORNER STRUCTURE

IF FENCE DEFLECTS MORE THAN 3'-0" FROM ALIGNMENT, A STANDARD CORNER ASSEMBLY IS REQUIRED. OTHERWISE USE AN INLINE DOUBLE BRACE ASSEMBLY FOR ALIGNMENT CHANGE LESS THAN 3'-0" DEFLECTION

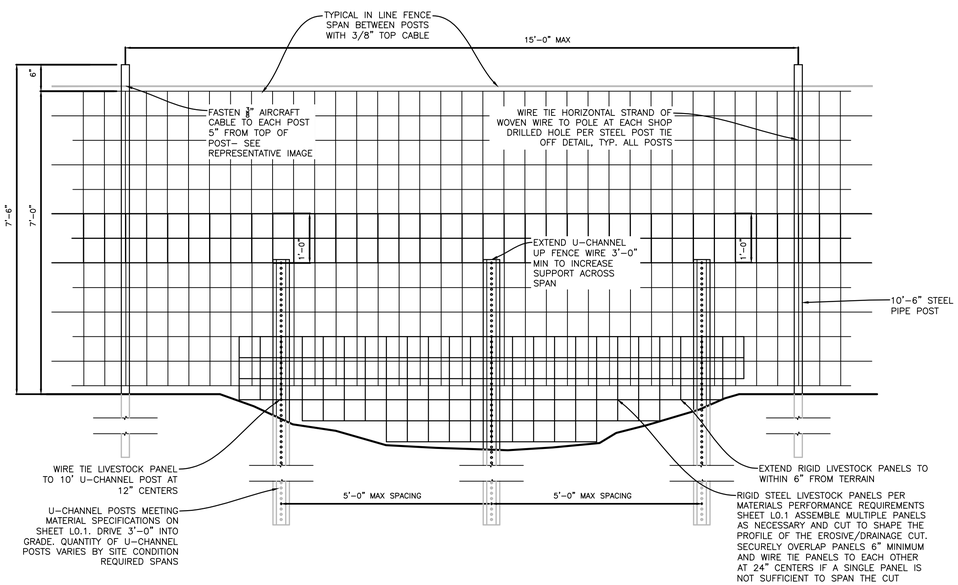
3 L2.2 INLINE OR CORNER BRACING DETERMINATION CRITERIA
NO SCALE

DOUBLE H-BRACE WIRE CENTER POST INSTALLATION EXAMPLE WHICH NEWLY INSTALLED WORK SHALL BE EVALUATED FOR ACCEPTANCE OF WORK

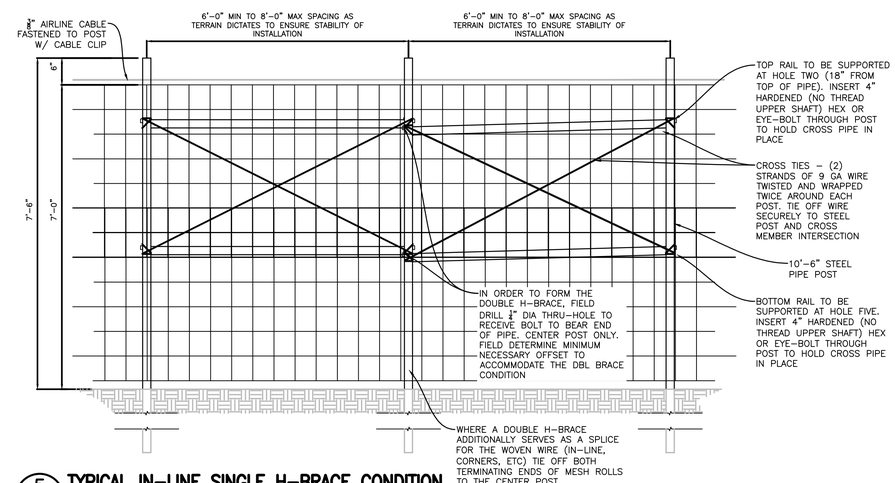
DECISION CRITERIA FOR INLINE DOUBLE H-BRACE

WHERE FENCE ALIGNMENT HAS RUN ALONG SUITABLE TERRAIN WHERE A SINGLE H-BRACE, CORNER, OR GATE HAS NOT BEEN INSTALLED TO ESTABLISH FENCE STABILITY, DOUBLE H-BRACE SHALL BE INSTALLED NO GREATER THAN 700 LINEAR FEET OF UNINTERRUPTED FENCE RUN.

OTHER LOCATONS OF DOUBLE H-BRACE LOCATION SHALL BE AS SHOWN ON THE DRAWINGS, DEFINED ON SHEET L0.1, OR WHERE TERRAIN DICTATES.



4 L2.2 EROSIVE CUT SPAN RIGID LIVESTOCK PANEL SUPPORT WHERE WARRANTED ALONG ALIGNMENT SITE CONDITIONS
NO SCALE



5 L2.2 TYPICAL IN-LINE SINGLE H-BRACE CONDITION
NO SCALE

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
CADD
TECH. REVIEW: --
DATE: 04-10-2026

SUB SHEET NO. L2.2

TITLE OF SHEET
CONSTRUCTION DETAILS

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108 / 80048
PMIS NO. 255 / 316 / --
SHEET 9 OF 10

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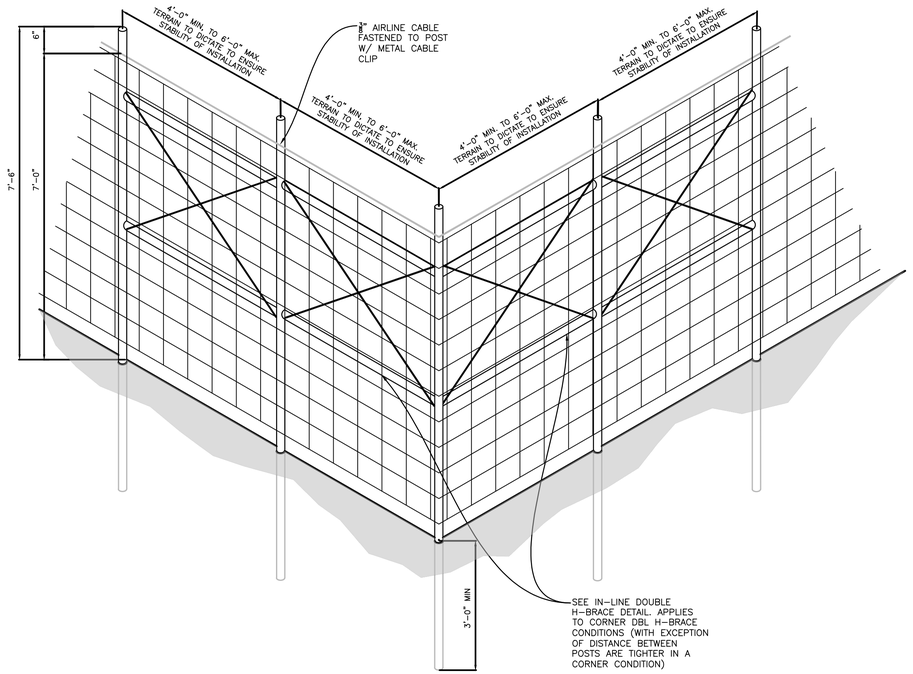
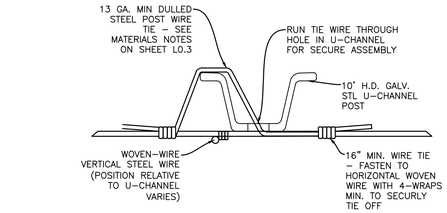


1 L2.3 **CORNER DOUBLE H-BRACE DETAIL**
NO SCALE

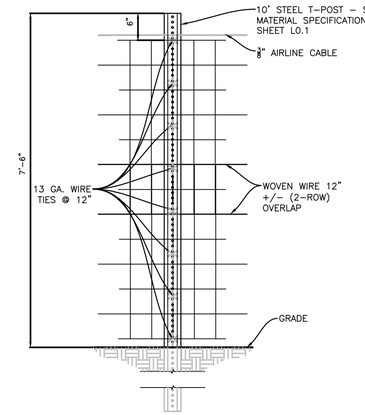


CROSS SECTION

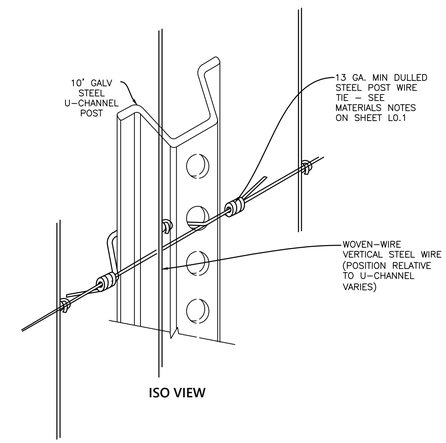
NOTE:
1. THE USE OF U-CHANNEL POSTS IN LIEU OF STEEL PIPE WILL BE ALLOWED UNDER LIMITED CIRCUMSTANCES ONLY WHERE SHOWN WITHIN THESE CONSTRUCTION DRAWINGS OR AS APPROVED BY THE CONTRACTING OFFICER IN WRITING. ACCEPTED USE MUST HAVE SPECIFIC REASON DUE TO TERRAIN OR OTHER SITE CONTEXT INFLUENCE THAT WARRANTS ITS USE.

2. USE OF U-CHANNEL POSTS FOR CONTRACTOR CONVENIENCE ALONE WILL NOT BE APPROVED.

3. ANY INSTALLED U-CHANNEL POSTS NOT INDICATED IN THE CONSTRUCTION DRAWINGS OR APPROVED BY THE CO IN WRITING WILL BE REJECTED AND REPLACED WITH STEEL PIPE AT NO ADDITIONAL COST TO THE GOVERNMENT.



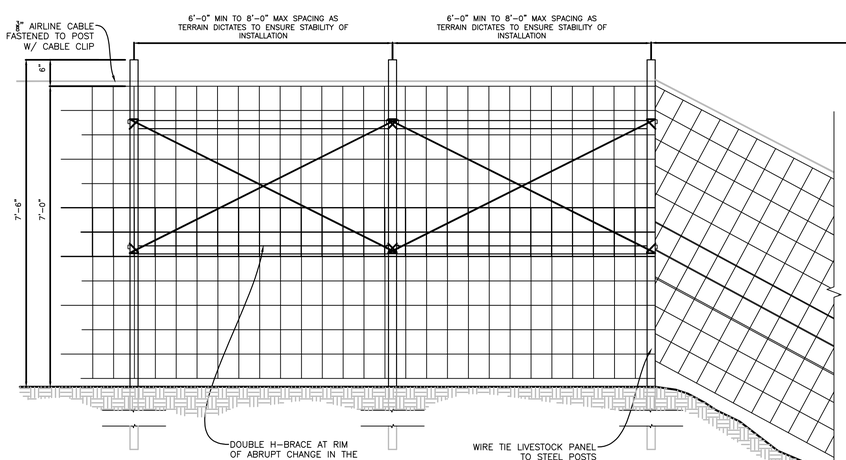
* NOTE: INSTALLATION LOCATION OF 13 GA. WIRE TIES (8 PER POST). LOCATED AT THE INTERSECTIONS OF THE TOP AND BOTTOM WOVEN-WIRE STRANDS, AND 7 ADDITIONAL TIES EVENLY SPACED ALONG FULL HEIGHT OF 7' FENCE ON EACH STEEL U-CHANNEL POST

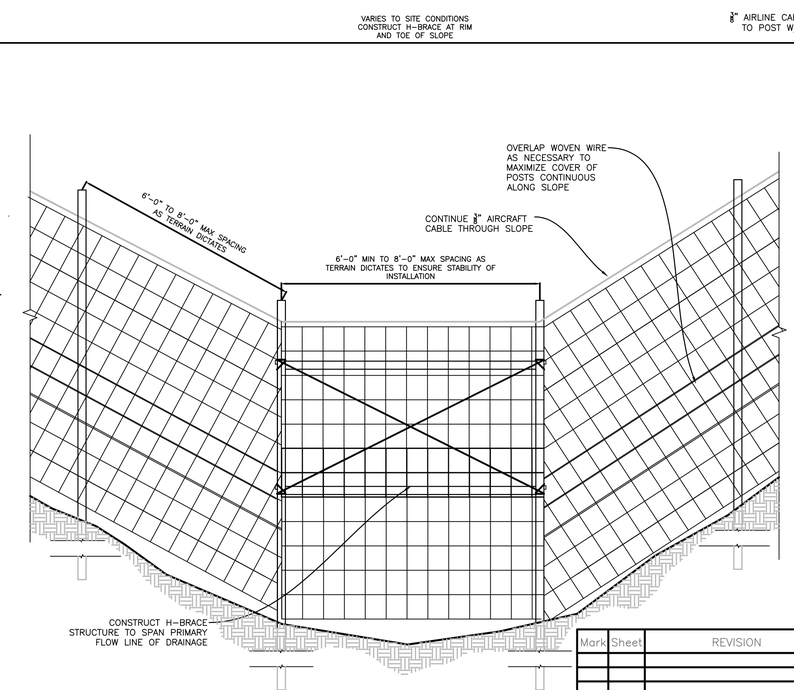


ISO VIEW

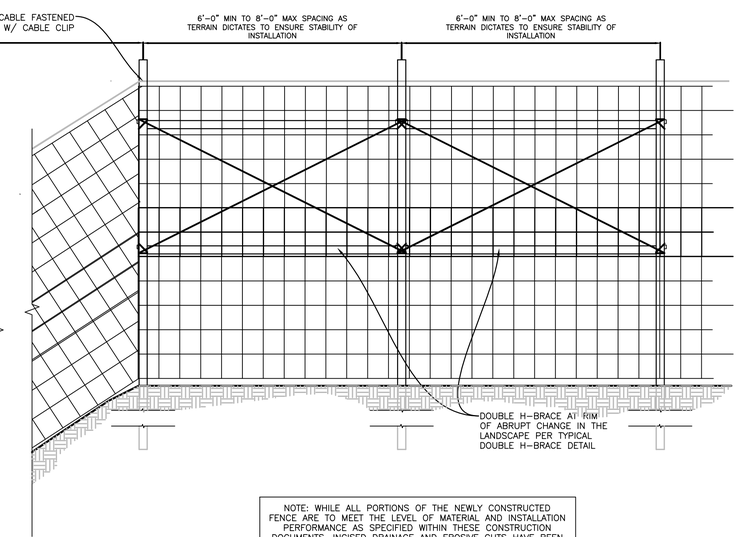
2 L2.3 **U-CHANNELL POST DETAILS**
NO SCALE

3 L2.3 **NOT USED**





4 L2.3 **DRAINAGE SPAN**
NO SCALE



NOTE: WHILE ALL PORTIONS OF THE NEWLY CONSTRUCTED FENCE ARE TO MEET THE LEVEL OF MATERIAL AND INSTALLATION PERFORMANCE AS SPECIFIED WITHIN THESE CONSTRUCTION DOCUMENTS, INCISED DRAINAGE AND EROSIVE CUTS HAVE BEEN IDENTIFIED AS PARTICULAR POINTS OF WILDLIFE ESCAPE FROM THE PARK. ENSURE SOUND INSTALLATION PRINCIPLES IN ALL NEW FENCE INSTALLATION.

FOR CONSTRUCTION

Mark	Sheet	REVISION	Date	Initial

DESIGNED: TLB
CADD
TECH. REVIEW: --
DATE: 04-10-2026

SUB SHEET NO. L2.3

TITLE OF SHEET
CONSTRUCTION DETAILS

WIND CAVE NATIONAL PARK
HOT SPRINGS, SD

DRAWING NO. 108 / 80048
PMIS NO. 255 316 --
SHEET 10 OF 10

4/1/2026 2:58:52 PM G:\WRS\WRS\Hydrology\Grant Drive - PDO\1-WIC HWY 385 FENCE\Drawings\WICA HWY 385 FENCE_L2.3.dwg