



**U.S. Department of the Interior  
Bureau of Land Management  
San Juan Public Lands  
Columbine Field Office  
P.O. Box 439  
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Bayfield, CO 81122**

# **NELSON RIGHT OF WAY ENVIRONMENTAL ASSESSMENT**

**NEPA NUMBER:** CO-800-2008-0018EA

**CASE FILE/PROJECT NUMBER:** COC-071968

## **LEGAL DESCRIPTION:**

New Mexico Principle Meridian  
T. 41 N., R. 7 W.,  
sec. 11, SW1/4 and  
sec. 14, NW1/4.  
San Juan County, Colorado  
(See attached map)

## **1. INTRODUCTION**

### **BACKGROUND/LOCATION**

The proposed project is located in the Silverton vicinity where much of the land is administered by the Bureau of Land Management (BLM). The area has a long mining history and as a result of that mining effort, there are numerous patented mining claims interspersed within the public lands. This project is a request from the landowner of one such mining claim to obtain a right-of-way (ROW) for a road to his claim. The project area is approximately 4 miles east of Silverton at an elevation of 11,000 feet.

### **PURPOSE AND NEED FOR THE ACTION**

The purpose of the action is to respond to an application by the private landowner for a right-of-way for an access road across BLM land. The need for the access road is so that the proponent can have motorized access to their private property.

## SCOPING /PUBLIC INVOLVEMENT AND ISSUES

The access road project has been listed on the quarterly Schedule of Proposed Actions for the Columbine Public Lands Center since January of 2008. This list is provided on the web site and mailed quarterly to those who have requested it. There has been no public interest expressed in these projects during this time. The BLM has also included San Juan County and the Town of Silverton in scoping efforts. Tribal consultation has been conducted as part of a standardized quarterly notification process. As a result of internal and external scoping, a set of issues was identified that are addressed below in Environmental Consequences sections. The primary issues are: impacts to soils and watershed, impacts to vegetation, impacts to threatened and endangered species, and impacts to cultural resources.

## PLAN CONFORMANCE REVIEW:

The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: San Juan/San Miguel Resource Management Plan

Date Approved: September, 1985

Decision Language: The RMP directs that the public lands in the project area be administered with an emphasis on Livestock Management (Emphasis Area A), and Recreation Management (Emphasis Area C). Both management areas allow lands actions (rights-of-way) when there is a *clear & significant public need*, or when the action will result in minimal adverse impacts (Pages 28 and 36, Record of Decision, September 1985).

Additionally, Page 20, of the Record of Decision (September 1985) directs the BLM to make every reasonable effort to provide *primary* access to private landowners when such access will not cause significant, adverse impacts to other resources. However, *BLM will not grant additional rights-of-way when reasonable access already exists unless there is a compelling public need.*

In this case, there is no other reasonable access route.

## 2. PROPOSED ACTION AND ALTERNATIVES

### DESCRIPTION OF PROPOSED ACTION

The proposed action is to grant a ROW access road across BLM land to provide access to the Silver Crown Lode USMS NO. 5940. The term of the ROW would be for 30 years. Road #21A, is the nearest existing road to the private property. This road is maintained by the County through a Memorandum of Understanding (MOU), between the BLM and the County, whereby the County maintains certain, specific roads on BLM land, and the BLM allows that road maintenance without agreeing that the roads are County owned roads. The BLM right-of-way authorization, if approved, would be issued from a point on the edge of the county maintained road, through the BLM, up to the point at which the road enters the applicant's private property.

The ROW would be approximately 1469 feet long with a total width of 50 feet (approximately 1.68 acres), however the proposed actual construction disturbance would be less: a 10 - 14 foot wide travel surface could require up to 22 feet of construction disturbance (approximately 0.74 acres).

This access would facilitate development of a summer seasonal residence and use of the property, primarily during the snow-free seasons. The cabin is neither part of the BLM proposed action, nor considered a connected action by NEPA standards because it is permitted by another entity and not under BLM jurisdictional control, and could theoretically occur independent of the BLM ROW through alternative access means.

No plowing or winter road maintenance is considered as part of this proposal. Road 21A is not plowed during the winter, limiting access to the ROW for much of the winter season. The applicant would be permitted to conduct routine maintenance, including but not limited to brushing within the road prism, blading, installing drainage as necessary.

The proposed access road construction would likely be performed with a track mounted excavator using native rocky soils, i.e. no soil or gravel would be transported to the project area. However, a tracked loader may be used to transport soils from the cut areas to fill areas and to move cut trees to a storage area on the Silver Crown Lode property. The construction would occur during low times of minimal runoff. No blasting is proposed or anticipated, however if unexpected rock formations require blasting, Federal Lands personnel will be consulted.

Design Criteria:

- Road construction and maintenance would follow all standards in Attachment 1.
- The applicant would be required to install a lockable gate at the junction of Road 21A and the ROW, and keep the gate closed and locked at all times year round. This gate will limit vehicular traffic on the ROW to the applicant and those with specific permission from the applicant, and BLM administrative use.
- The applicant would be required to purchase and remove all designated timber resulting from ROW clearing limits.
- All wood material 8" dbh (diameter at 4'5" from base) or larger would be removed from BLM land.
- All stumps would be removed from BLM lands.
- Tree limbs would be severed from the bole, on the top and all sides from the base of the tree to a 2" diameter top.
- Tree slash and wood smaller than 8" in diameter would be lopped in 6 foot lengths and scattered to lie within 18" of the ground surface. Slash would be scattered outside of the road clearing limits.
- No clearing slash would be placed within 50 feet of stream courses, road drainage ditches or the tram tower located southeast between the beginning of the proposed road and Road 21A.
- No trees would be felled within striking distance of the tram tower located southeast between the beginning of the proposed road and Road 21A.

- The buried tram cable located under the road base of Road 21A along the beginning of the proposed road construction area would either be avoided, or, if disturbance is necessary, would be cut and anchored via mechanical clamps and cable loops to a buried concrete deadman (an historical anchoring method), all designed by a professional engineer.

#### **DESCRIPTION OF OTHER ALTERNATIVE ANALYZED IN DETAIL**

No Action Alternative – Under this alternative, the BLM would deny the application for a ROW. There would be no environmental impacts, and the private landowner would not obtain an access road.

#### **ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL**

This alternative would route the access road from the end of Road 21A, crossing neighboring claims to the south and east. This route would avoid BLM land, and would normally be the route preferred by BLM; however, this route would require crossing a steep ravine, and would create a much higher level of environmental damage than the proposed route. It would also require the proponent to acquire access agreements with multiple other landowners, which is unlikely to occur. For these reasons, this alternative was not analyzed in detail.

### **3. AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES**

There are no designated Wild and Scenic Rivers, Areas of Critical Environmental Concern, wilderness, floodplains, prime farmlands, or parklands in the project area; therefore, there will be no impacts to these resources from any of the alternatives, and these resources are not discussed further.

Executive Order 12898 requires that all federal actions consider the potential of disproportionate effects on minority and low-income populations in the local area of the proposed action. The populations of San Juan County are neither greater than 50% minority nor greater than 50% low-income (*US Census Bureau, 2000*); and therefore, there will be no disproportionate impacts on subject populations.

#### **VEGETATION**

##### Affected Environment:

The project area is closed-crown forested hillside in the Spruce-fir vegetation type. Understory vegetation is very limited and consists primarily of vaccinium. The site shows little evidence of recent spruce or fir regeneration. There is one small area (approximately 0.10 acres) of deadfall near the ROW midpoint.

##### Environmental Consequences:

*Alternative 1:* The No Action alternative would retain the current conditions. There would be no impacts to vegetation.

*Alternative 2:* The proposed action would require timber removal (clearing approximately 25 horizontal feet on either side of center line). Trees to be removed have been tallied by BLM personnel and estimated to be:

<8" diameter at 4'5" from base (dbh):	170 trees
8"-12" dbh	80 trees
12"-18" dbh	65 trees
18"- 24" dbh	30 trees
24"+dbh	20 trees

This translates into a gross volume of approximately 5272 cubic feet. Trees requiring removal would be marked, tallied and measured for a more accurate timber volume once the clearing limit has been slope staked. Additionally, herbaceous and shrubby vegetation on about 0.72 acres would be cleared.

Merchantable timber value would be charged to the proponent, who would then be required to remove all merchantable timber from BLM lands. The proponent has shown interest in utilizing the wood. Slash and small wood would be required to be removed, or lopped and scattered outside the road clearing. Refer to the Design Criteria for details.

Cumulative Impacts to Vegetation:

There are several other private access road ROWs (Ogle, Marsh, Blair) and other miscellaneous projects in the Arrastra Gulch area that have been authorized by BLM in the last five years (Cox waterline, Arrastra Gulch dump clean-up). Cumulatively, they would impact less than five acres of forested vegetation. Additionally, vegetation has or will be impacted by development on private lands for cabin sites, which is becoming increasingly popular in the Silverton area, including on the proponent's private land.

While the Arrastra Gulch area has seen some development in recent years, and has seen much historical activity from mining, those activities are restricted to limited sites in the landscape where topography allows road or structure development. On the watershed scale, the amount of vegetation loss is inconsequential.

**WATERSHED**

Affected Environment:

The proposed ROW is in an unnamed drainage to Arrastra Creek, which is in the Cunningham Creek-Animas River watershed (HUC 6 delineation boundary). This watershed encompasses approximately 43 square miles, has a mean annual precipitation of 23-45 inches, and a frost-free period of 40-60 days. Slopes where road construction is planned range from 10-59%. The dominant soil type is Needleton stony loam, which is a well-drained soil with high surface runoff and erosion potential.

Environmental Consequences:

*Alternative 1:* The No Action alternative would retain the current conditions. There would be no impacts to soils or watershed.

*Alternative 2:* This alternative will result in approximately ¼ mile of cut-and-fill mostly along the contour on a relatively steep slope. The planned ROW does not cross any perennial water sources, springs or seeps, although 2-3 ephemeral channels flow across the proposed road location. Some erosion and sediment movement is expected to occur directly after initial construction with subsequent precipitation events, but long-term impacts should be minimal as long as road construction and drainage designs are followed (see Attachment 1). Relatively large distances to perennial water courses combined with moderate to high ground vegetation density will help to buffer sedimentation impacts until soil compaction and stabilization along the ROW occurs.

Cumulative Impacts to Watershed:

A history of hard rock mining and the associated needs (road infrastructure, buildings, operation equipment, tailings piles) in this area have led to significant anthropogenic alterations within this watershed. Acid mine drainage from various mines has negatively impacted water quality and a multitude of private mining claims has resulted in scattered surface and subsurface mineral ownership. The prevalence of sheep grazing within the watershed has resulted in seasonal reductions of upland vegetation, as well as increased pressure on riparian zones. Recreation in the forms of biking, hiking and off-highway travel (motorcycles, ATVs, 4x4s, snowmobiles) are present and increasing, displacing soil and increasing sedimentation where trails and roads are hydrologically connected to watercourses. Additionally, a number of other ROW easements issued by the BLM have further increased the road density within the watershed, amplifying the possibility for sedimentation to occur.

Due to the size and history of this watershed, additional impacts associated with the construction and maintenance of this ROW and future residential development are expected to be relatively minimal and short-term. When comparing the past uses and management history of this watershed to the small-scale nature of this project, combined with the short seasonal use of and limited access to this property, the impacts are hydrologically inconsequential.

**THREATENED and ENDANGERED SPECIES**

Affected Environment:

A Biological Assessment (BA) was conducted to evaluate the potential effects from development of the proposed ROW on federally listed species and candidates for federal listing, that are known to occur or have the potential to occur on San Juan Public Lands, Columbine Field Office. Details of these species' habitat needs can be found in the BA in the project record. Canada lynx is the only listed species with habitat in the project area and therefore is the only species brought forward for further evaluation.

The Colorado Division of Wildlife has documented continued and consistent use of travel corridors used for east-west movement from the Lake City-Creede area to Molas Pass, Red Mountain Pass, and Lizard Head Pass. The proposed ROW is within the Silverton-Lake City Linkage and in a strip of lynx winter foraging habitat that runs parallel to the Animas River Northeast from Silverton.

There are no federally listed flora species or their habitat present in the project area.

Environmental Consequences:

*Alternative 1:* The No Action alternative would retain current conditions. The amount of habitat, its quality, and the amount of disturbance are expected to remain unchanged. There would be no impact to any species.

*Alternative 2:* This proposal would result in the permanent loss of approximately 0.67 acres of lynx winter foraging habitat on BLM lands, all of which is in the Silverton-Lake City linkage. An additional 0.65 acres of winter foraging habitat is likely to be lost in the establishment and maintenance of a summer seasonal residence on the private parcel accessed by this ROW authorization, an interdependent action. Therefore, the effects determination for this proposal is “may affect” the Canada lynx and lynx habitat.

Because the loss of lynx habitat would likely be permanent, is largely situated in a narrow band of suitable lynx habitat within a linkage area that receives frequent use by lynx (Silverton-Lake City linkage), and would result in the removal of additional winter foraging habitat to build a residence, this proposal may slightly decrease the function of the linkage as a corridor for lynx movement. The small scale of the ROW and expected residential development, limited access, and limited summer seasonal use of this property should minimize impacts to Canada lynx using this area. For those reasons, the scale of impact to lynx habitat in the area would be very small, and the degree of impact to lynx using the area is likely to be very small. Nonetheless, due to the permanent loss of habitat, the proposed ROW is “likely to adversely affect” the Canada lynx.

On May 24, 2011, the U.S. Fish and Wildlife Service concurred with the BLM’s determination that implementing Alternative 2 “may affect and is likely to adversely affect” Canada lynx and/or lynx habitat. They determined that although Alternative 2 would adversely affect lynx habitat, the scope and scale of impact would be small and therefore there would be no “take”, as take is defined by the Endangered Species Act. Because there would be no take, implementing Alternative 2 would not jeopardize the continued existence of Canada lynx.

Cumulative Impacts the T&E Species:

Several other projects in the surrounding area have resulted in approximately 4.13 acres of lynx habitat loss (Jaramillo ROW, Arrastra ROWs, Ziesmer ROW, Arrastra dump clean-up, and Eviline Mine clean-up). The loss of this habitat has likely resulted in an incremental reduction of the productivity and carrying capacity of snowshoe hare and, as such, an incremental reduction in the productivity of lynx. This habitat is part of the Silverton-Lake City linkage area, and thus its loss has resulted in an incremental loss of linkage area

effectiveness. Further, indirect impacts from increased human activity and other associated disturbance have likely further reduced the utility of adjacent, undisturbed habitats. It is not expected that development of these projects has resulted in a measurable increase in over-snow recreation and snow compaction. The incremental losses, when added to the loss projected by this proposed action would not be considered substantial when compared to the amount of habitat in the greater Silverton area.

The Sunnyside Land Exchange will result in a net gain of 25.2 acres of lynx habitat. The lynx habitat given away by BLM is almost entirely other lynx habitat, and the habitat gained by the BLM is primarily lynx winter foraging habitat.

Cumulative effects, as defined by the Endangered Species Act, include only those effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. There is no State or tribal land in or near the project area. All actions referred to below concern local and private ownership.

There are many private land parcels in Arrastra Basin. It is possible that those properties could be developed into residences. Each new residence would likely incrementally increase vehicular and pedestrian traffic, snow compaction due to snowmobile use, presence of domestic animals, and altering the landscape on private lands. Disturbance to lynx from increased noise and human presence would add to that created by this project. The increase in lynx-human encounters may lead to temporary or long term avoidance of habitat. The potential for vehicle-caused wildlife mortality due to the increased human development of the immediate area around the town of Silverton, along with this proposal, would add to the danger from vehicles that lynx currently encounter.

Correspondence with Dave Michaelson (*personal communication Nov. 2010*), combined planner for Silverton and San Juan County, revealed that there are currently two outstanding building permits in the county (outside of Silverton town boundaries) and that these are not occurring within the Arrastra basin.

## **BLM SENSITIVE SPECIES**

### Affected Environment:

A Biological Evaluation (BE) was conducted to analyze impacts from the proposed action on Colorado BLM sensitive species. Details of these species' habitat needs can be found in the BE in the project record. The BE determined that the wolverine and the northern goshawk are the only two BLM sensitive species with habitat in the project area. No other BLM sensitive species are known or thought likely to occur in the project area. For this reason, there would be "no impact" to all BLM sensitive species, except wolverine and northern goshawk. This proposal does not affect wetlands or water courses and would not cause water depletions so there would be "no impact" on downstream fish species.

There are no Colorado BLM sensitive plant species or their habitat present in the project area.

Environmental Consequences:

*Alternative 1:* The no action alternative would retain current conditions. The amount of habitat, its quality, and its capability to support wolverine and northern goshawk are expected to remain unchanged under the no action alternative. Therefore the no action alternative would have “no impact” on wolverine and northern goshawk.

*Alternative 2:*

The proposed action will remove approximately 0.72 acres of habitat that could be used by wolverine, if individuals were present, and as foraging habitat for northern goshawk. This development will not result in a loss of known nests or nesting habitat for goshawk. This loss of habitat is considered very small, approximately 0.01 percent of a typical 5,000 acre goshawk foraging area. This loss of habitat is much less than 0.01 percent of a typical wolverine home range (35-245 mi<sup>2</sup>). Furthermore, the substantial human recreation use in the Arrastra basin, especially during snow-free seasons, makes it unlikely that wolverine would depend on this area for survival. The amount of disturbance likely to be generated by the new access road and resulting house construction represents, in terms of heavy equipment operation and chainsaw use, a very small change from the frequent disturbance by motorized vehicle use on the nearby Road 21A.

In view of the size of habitat lost relative to these two species home ranges, the remote possibility individuals may be present, and the current amount of disturbance already in the vicinity, the proposed action “may adversely impact individuals, but is not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability rangewide” for the North American wolverine and northern goshawk.

Cumulative Impacts to Sensitive Species:

Cumulative effects include snowmobile activity, hiking, off-highway vehicle, passenger vehicle use, biking, snowshoeing, building of structures, and minor road construction. However, it is expected to be an area of high use for all activities noted. There are many private land parcels near the project, including several mining claims adjacent to the property being accessed via the proposed action. However, correspondence with Dave Michaelson (*personal communication Nov. 2010*), combined planner for Silverton and San Juan County, revealed that there are currently two outstanding building permits in the county (outside of Silverton town boundaries) and that these are not occurring within the Arrastra basin. As such, it is unlikely that nearby parcels will be developed into residences in the foreseeable future.

**CULTURAL RESOURCES**

Affected Environment:

Archaic, Puebloan, and Ancestral Puebloan sites are not well represented or documented in the area around the analysis area. While the San Juan Mountains were certainly used by these early groups at least seasonally, only one early Ancestral Puebloan projectile point has been discovered near the analysis area, but still several miles away. There is more evidence

of the protohistoric/historic Ute and possibly Navajo use of the area but none within the analysis area. Evidence of historic occupation in the area, however, is strongly reflected in the archival and archaeological record and includes mining and mining related activities, seasonal resource procurement activities such as hunting and plant gathering, and remains of logging, ranching, and herding activities. The historic period occupation in the analysis area is affiliated with European-American, Ute, possibly Navajo, and Hispanic-American cultures.

The analysis area and the Area of Potential Effect (APE) for this cultural assessment are the same and is defined as the extent of the proposed road length and ROW width (50 feet) of the Duane Nelson access road across BLM administered lands, totaling approximately 2.02 acres and approximately 0.3 acres of a proposed cabin building site located on the Silver Crown Load #5940 (private property) for which the access road is being constructed. In total, the APE is 2.32 acres. While the proposed construction site on the private land was included in the cultural survey, the cabin is neither part of the BLM proposed action, nor considered a connected action by NEPA standards because it could theoretically occur independent of the BLM ROW, and is not under BLM control.

One existing 154 acre, site specific, survey SJ98018e, was located within the APE boundary along with a follow-up Level II documentation of one of the sites located within this survey (SJ05048) were completed within the last 12 years. This inventory and detailed recording were both associated with cultural resource management and Section 110 of the National Historic Preservation Act (NHPA).

ROW's granted across public lands are considered undertakings under Section 106 of the National Historic Preservation Act construction and improvements associated with the road within that ROW are subject to compliance requirements under Section 106 and underwent standard cultural resources inventory and evaluation procedures. During Section 106 review, a cultural resource assessment (SJ10033) based upon existing archaeological information (a Class I inventory) and new archaeological information collected vis-à-vis new intensive survey (a Class III inventory) were completed for the ROW following the procedures and guidance outlined in the revised BLM *Handbook of Guidelines and Procedures for Identification, Evaluation, and Mitigation of Cultural Resources* (BLM, 1998).

The Class I work was completed August 4, 2010 while the Class III inventory was conducted August 9, 2010. The Class I inventory was conducted using the Columbine Field Office cultural resource inventory/site overlays and GIS database; and the COMPASS site database maintained by the Colorado State Historic Preservation Office (SHPO) and SHPO GIS database. Additionally, Historic Indices, General Land Office maps, and Mineral Surveys, and Master Title Plats were also researched for the area. National Register eligibility was derived from the COMPASS database and Colorado State site forms located at the Columbine Field Office. The results of the assessments of the analysis area are summarized below. Copies of the cultural resource assessments are in the Columbine Field Office archaeology files.

Fifty-one cultural resources have been identified within and surrounding the APE, associated with the only intensive survey conducted within the analysis area. Of this number, 44 are sites and 7 are isolated finds and all are associated with the historic mining of the Silverton Mining District. Twenty-three of the known sites are eligible and twenty-one are not eligible for the National Register of Historic Places (NRHP). The majority of the sites in the general region of the APE consist of historic features associated with the high elevation mineral exploration and extraction. The results of previous inventories, specific geologic characteristics, and known history demonstrate the APE is characterized by a low to moderate site density.

Environmental Consequences:

The goal of a cultural resource analysis for authorization of the ROW for access to the Silver Crown Lode is to identify and protect historic properties from impacts related to road construction, maintenance, and use. Preservation of National Register listed and eligible sites are the preferred cultural resource management objective. The effects of a proposed project are taken into consideration for cultural resources that are eligible or potentially eligible for the NRHP. Cultural resources considered to be ineligible for inclusion in the NRHP may not warrant further consideration of effects from the proposed project. The recording of this class of cultural resources has exhausted their data potential, and effectively mitigated any impacts that may occur to them.

Road construction has the potential to directly affect historic properties via ground disturbance from heavy machinery to blade and grade the motorized road prism, create drainage features, removal of trees and brush, and creation of turnouts and other related modifications. Such ground disturbance can result in the total destruction or damage and displacement of surface and subsurface artifacts and features degrading site integrity and research potential. Operating equipment in wet conditions can cause tire rutting and can form new intermittent drainages within a site, resulting in increased erosion and soil deflation within a site. Soil erosion and compaction within a site can result in a loss of artifacts and research potential. Road maintenance and improvement (new sign, gate, and culvert installation) activities within site boundaries can directly affect sites by reducing site integrity, and damaging or displacing site features and artifacts.

Motorized use has the potential to directly affect historic properties via ground disturbance from frequent and concentrated motorized travel within sites and motorized travel through sites in wet conditions. Such ground disturbance can result in the damage and displacement of artifacts and features can occur, degrading site integrity and research potential. Directly and indirectly, construction of a new road near existing standing architecture can bring new attention to these existing cultural resources and increase the potential for damage via displacement and collection of artifacts, and damage to architectural features, potentially degrading site context/integrity and research potential. Indirectly, slash piles of cut trees/limbs could inadvertently catch fire and, if placed too near wooden cultural resources, could cause them to catch fire partially damaging or totally destroying them.

*Alternative 1:* The No Action alternative would retain the current conditions. Though there is one eligible site and one isolated find located within the APE of Alternative 1 as there

would be no road construction or maintenance, or related activities, there would be no new direct or indirect impacts to historic properties within the analysis area. This alternative would result in no effect to historic properties.

*Alternative 2:* The proposed action alternative could directly impact historic properties via road construction, tree removal, road maintenance, gate installation, and motor vehicle use. General impacts associated with these activities have been discussed in the cultural environmental consequences section of this document. Road construction could result in the adverse effect to eligible historic properties with standing architecture within the APE (Area of Potential Effect) and ROW of the road. A currently downed, but stable, tram cable connected to a series of historic tram towers could be dislodged from the connecting Road 21A roadbed by construction activities and could cause the collapse of at least one, if not several tram towers eligible to the National Register of Historic Places (NRHP).

Additionally, though unlikely, if a tree was felled so that it were to fall up slope or to the side for the purposes of clearing the APE for road construction, it is possible the tall tree(s) could land on the tram tower nearest the APE causing it's damage or collapse. Indirect impacts to historic properties could result from the piling of slash cut via road construction that could inadvertently catch fire and burn. If one of these slash piles were to be placed too close to the tram tower nearest the APE it could potentially cause the historic property to catch fire causing the tower to be possibly partially or totally damaged.

Approximately 2.32 acres within the analysis area met the definition of the APE. The area surveyed for the project included a total 100 foot corridor along the road and 50 foot buffer around the building site on private land for a total of 4.69 acres intensively surveyed, meaning 100% of the APE was intensively surveyed.

A total of two features of one linear site and one isolated find were identified within the APE. Within the APE, the site is considered to be eligible for the NRHP. Only one eligible site was identified and reviewed to determine if it could be affected by the proposed road construction on BLM lands. Specifically, two features (a tram tower and tram station), part of a larger linear site, were identified and recorded within the survey area and only one feature really has the potential to be affected by the proposed project. Thus the results indicated the need to avoid one feature of the site and to create a mitigation measure for a portion of the site (a tram cable buried under Road 21 A road base) that might not be able to be avoided. If the avoidance and mitigation measures are met (See Design Criteria section) then the proposed action (Alternative 2) should have no adverse effect to historic properties.

No Traditional Cultural Properties (TCP's), sacred sites or traditional use areas have been identified within the proposed analysis area.

Cumulative Impacts to Cultural Resource:

The proposed construction of a cabin on the Silver Crown Lode is a reasonably foreseeable action that was included with the cultural survey and report for the proposed action. No historic properties were identified as having the potential to be affected by the proposed building site.

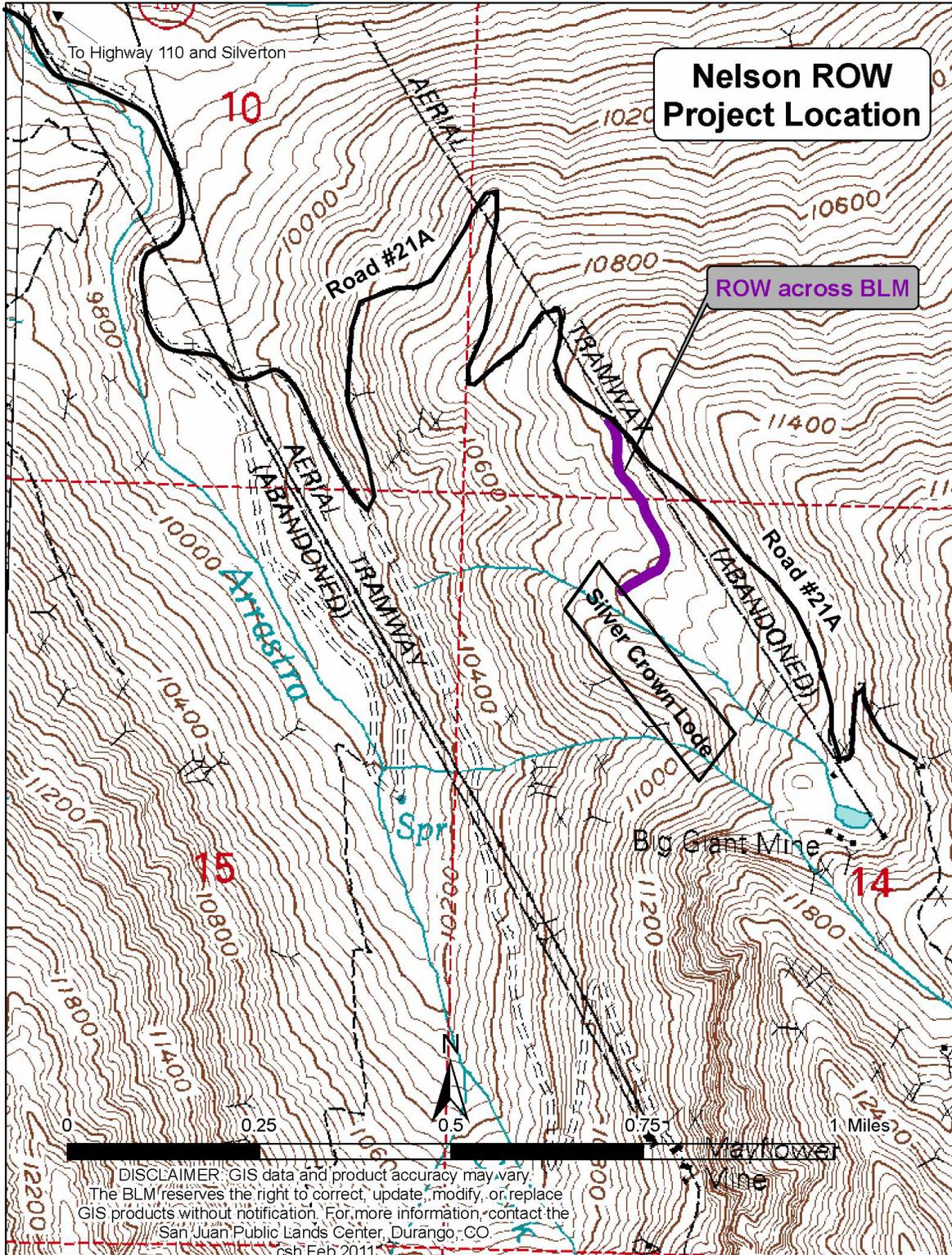
Activities and actions other than those related to the Nelson ROW that have, are, or will be occurring in the analysis area could impact cultural resources. These include such things as recreational use, heritage tourism, commercial outfitter-guide activities, and livestock grazing activities. Typically, planned federal undertakings such as abandoned mine reclamation or Right-of-Way authorizations, and outfitter-guide special use permits require a cultural resource clearance which would require mitigation of negative impacts to cultural resources. However, unforeseen or unregulated activities have greater potential for impacting cultural resources. For example, recreational campfires could result in the burning of fire-sensitive sites such as significant historic wooden structures and features. Illegal artifact collection occurs and can be exacerbated by increased public access from heritage tourism and commercially permitted and general public recreational use. Livestock grazing, such as sheep grazing could pose a threat to cultural resources by diminishing site integrity and eligibility through the trampling and mixing of artifacts and depositional surfaces within site boundaries. Natural erosion accelerated by human activities could expose or wash artifacts away.

While not yet officially designated as a National Historic Landscape or National Register District, the analysis area encompasses portions of larger historic mining landscapes and districts that are important at local, regional, and national levels of historic significance. These isolated incidences cumulatively have the potential to adversely impact the integrity and significance of these larger cultural landscapes as a whole. While, the cumulative impacts to the landscape as a whole are substantial, the contribution of the action being considered is inconsequential when compared to the impacts that have already occurred.

## **PREPARERS:**

<u>Name</u>	<u>Title</u>
Lynn Wodell	BLM Realty Specialist
Cam Hooley	Environmental Coordinator
Gary Ferdinando	Engineer
Amy Wise	Archaeologist
Eric Herchmer	Hydrologist
Chris Schultz	Biologist
Beth Vance	Forester

# LOCATION MAP



**Attachment 1- Duane Nelson Right-of-Way Road Standards**

**A. Construction Plans**

1. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the plan of development which is approved and made part of the grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all stipulations and approved plan(s) of development, shall be made available on the right-of-way area during construction, operation, and termination. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
2. The holder shall complete and submit a plan of development that describe in detail the construction, operation, maintenance, and termination of the right-of-way. The degree and scope of these plans will vary depending upon (1) the complexity of the right-of-way or its associated improvements and/or facilities, (2) the anticipated conflicts that require mitigation, and (3) additional technical information required by the authorized officer. The plans will be reviewed, and if appropriate, modified and approved by the authorized officer.
3. The holder shall contact the authorized officer at least seven (7) days prior to the anticipated start of construction and/or any surface disturbing activities. The authorized officer may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the right-of-way. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the right-of-way, shall also attend this conference to review the stipulations of the grant including the plans of development.
4. The authorized officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.
5. The holder shall not initiate any construction or other surface disturbing activities on the right-of-way without the prior written authorization of the authorized officer. Such authorization shall be a written notice to proceed issued by the authorized officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.
6. Where slope stabilization requires significant terrace or bench construction, the holder shall include engineering drawings for this work to be reviewed, and where appropriate, modified and approved by the authorizing officer.

7. The holder shall obtain the services of a licensed professional engineer to locate, survey, design, and construct the proposed road as directed by the authorized officer. The road design shall be based on the (1) width, (2) maximum grade, and (3) design speed of the road.
8. The holder shall submit standard or typical cross sections of the road to be constructed, maintained, or reconstructed as directed by the authorized officer. The cross sections should include, but are not limited to, the proposed road width, ditch dimensions, cut and fill slopes, and typical culvert installation.
9. As directed by the authorized officer, surfacing shall be designed to accommodate anticipated loading and traffic volumes and shall provide for future maintenance.
10. The holder shall submit a plan of development that describes in detail the construction, operation, maintenance, and termination of the right-of-way and its associated improvements and/or facilities. The plan shall include drawings in sufficient detail to enable a complete evaluation of all proposed structures, facilities, and landscaping to ensure compliance with the requirements of the grant and to ensure visual compatibility with the site. These drawings shall be the construction documents and must show dimensions, materials, finishes, etc. to demonstrate compliance with all requirements. The plans will be reviewed and, if appropriate, modified and approved by the authorized officer.
11. No signs or advertising devices shall be placed on the premises or on adjacent public lands, except those posted by or at the direction of the authorized officer.

**B. Cultural/Pesticides/Weeds/Survey Monuments**

1. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.
2. Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the holder shall obtain from the authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer. Emergency use of pesticides shall be approved in writing by the authorized officer prior to such use.

3. The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods.
4. In order to prevent the introduction or potential spread of noxious weeds, permittee shall be required to furnish San Juan Public Lands representative with proof of weed-free equipment. The Right-of-Way holder will be required to clean all equipment (equipment that operates off existing roads) prior to every entry to the area. The cleaning shall remove all dirt and plant parts and material that may carry noxious weed seeds into the work area. Only equipment inspected, prior to any work being done, by a San Juan Public Lands representative will be allowed to operate within the area.
5. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

C. **Traffic Rules and Use Restrictions**

The Right-of-Way (ROW) holder and its agents, employees, and contractors shall comply with all traffic rules and use restrictions imposed by the BLM, including, but not limited to the following.

1. The Right-of-Way holder is required to construct the Nelson ROW road to the required road standards prior to use by full size vehicles.
2. Temporary traffic control signs, flagging, and warning devices for road construction, operation, or maintenance conducted under this permit shall comply with Part 6 of the Manual on Uniform Traffic Control Devices.
3. Snow removal is not authorized under this permit.

4. The ROW holder will be restricted from using the BLM road at the time it is determined that unacceptable road damage has occurred. Use may resume at such time as the road conditions improve and, if necessary, the road promptly repaired. Unacceptable road damage occurs on native surface roads when a maximum of 4-inch ruts occurs for a ten foot length. No blading of material off the road running surface, such as into adjacent vegetation or trees, or over fill slopes will be allowed. When the ROW is no longer needed the road corridor shall obliterated and seeded.

**D. Staking**

1. The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.
2. The holder shall mark the exterior boundaries of the right-of-way with a stake and/or lath at 25 foot intervals. The intervals may be varied at the time of staking at the discretion of the authorized officer. The tops of the stakes and/or laths will be painted and the laths flagged in a distinctive color as determined by the holder. The survey station numbers will be marked on the boundary stakes and/or laths at the entrance to and the exit from public land. Holder shall maintain all boundary stakes and/or laths in place until final cleanup and restoration is completed and approved by the authorized officer. The stakes and/or laths will then be removed at the direction of the authorized officer.
3. The holder shall survey and clearly mark the centerline and/or exterior limits of the right-of-way prior to any surface disturbing activity, as determined by the authorized officer.
4. Cut and fill slope stakes shall be set as directed by the authorized officer.

**E. Clearing**

1. Clearing and grubbing is required on all sections of the road. All clearing and grubbing shall be confined to a clearing width identified upon completion of the construction stakes (slope stakes). Clearing limits shall be at a minimum the top of the cut and at the toe of the fill or 4 feet from the shoulders, whichever is the greater. The clearing limits shall be marked when the road is slope staked. Branches of all trees extending over the roadbed must be trimmed to give a clear height of 14 feet above the roadbed. All vegetative debris shall be disposed of by scattering outside the roadway, or hauled offsite. The slash (tree tops and limbs less than 5 inches in diameter) shall be disposed of by scattering outside of the clearing limits. All trees within the clearing limits shall be cut and limbed. Trees shall not be knocked down with dozer or trackhoe. All merchantable trees shall be paid for by the right-of-way holder prior to cutting. No clearing slash shall be placed within 50 feet of the tram tower located near the beginning of the road.

2. Suitable topsoil material removed in conjunction with clearing and stripping shall be conserved in stockpiles within the right-of-way).
3. Material encountered on the project and needed for select borrow, surfacing, riprap, or other special needs shall be conserved.
4. Excess excavated, unsuitable, or slide materials shall be disposed of as directed by the authorized officer.
5. Clearing and grubbing debris shall not be placed or permitted to remain in or under any embankment sections. Clearing and grubbing debris may be placed under waste material with a minimum of 3 feet of cover as directed by the authorizing officer.
6. Prior to any operations, the holder shall enter into a timber sale contract with the Bureau for timber designated for cutting on the right-of-way.
8. The holder shall cut and deck all timber located within the right-of-way as directed by the authorized officer.
9. The holder shall clear and remove all roots, woody plants and other vegetative materials from the surfaces to be covered by embankments and disturbed by excavation. Clearing shall be accomplished without mixing topsoil with vegetation. Cleared vegetative materials shall be disposed of as directed by the authorized officer; excess mineral materials shall be stockpiled for disposal by the United States or used in construction in accordance with 43 CFR 2801.1-1(d).
10. Earthwork areas shall be cleared of vegetation and the topsoil stockpiled for future rehabilitation. Prior to fill construction, the existing surface shall be sloped to avoid sharp banks and allow equipment operations. No fills shall be made with water saturated soils. Materials shall be placed in uniform layers not to exceed. Construction equipment shall be routed evenly over the entire width of the fill to obtain a thorough compaction.
11. Holder shall disturb and remove only the minimum amount of soils and vegetation necessary for the construction of structures and facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.

**F. Road Construction Requirements**

The proposed ROW road shall be constructed per the following road design standards. All materials shall conform to the enclosed conditions. The permit holder shall furnish all materials and labor necessary to complete the maintenance and construction requirements.

## Nelson ROW EA

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Modifications and exceptions to these requirements must be approved in writing by the BLM. The following conditions shall be implemented in accordance with the requirements of road reconstruction, monitoring and mitigation measures applicable to the area.

1. Construction activity and surface disturbance will be prohibited during the period from September 1 to July 1 or other time from first to last snow for the protection of natural resources. Any exceptions to this requirement must have prior written approval from the authorized officer.
2. The holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.
3. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
4. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the authorized officer in advance of excavation. All waste material resulting from construction or use of the site by holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the authorized officer in advance of use.
5. The holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the authorized officer. The holder's representative shall be available for communication with the authorized officer within a reasonable time when construction or other surface disturbing activities are underway.

A San Juan Public Lands representative shall be designated as the point of contact for this project. A Right-of-Way holder's representative shall be designated, in writing, for this project for on the ground activities. Specific authorities for the permit holder's representative shall be noted in the designation letter.

San Juan Public Lands representative:

Gary Ferdinando  
[gferdinando@fs.fed.us](mailto:gferdinando@fs.fed.us)  
970-882-6808  
No cell phone available.

Right of Way Holder Point of Contact:

Duane Nelson  
503-550 5504 or  
Mark Mackey  
Engineer Mountain  
970-387-0500

6. The San Juan Public Lands and Right-of-Way holder's representative shall schedule and attend a pre-work meeting before any road construction/reconstruction or ground disturbing activities begin. The meeting should also be attended by any permit holder's subcontractors that will be working on the project. Coordination meetings to discuss site operations, maintenance and reclamation shall be scheduled on at least an annual basis until the site is reclaimed, unless otherwise authorized by the BLM.
7. In an emergency, appropriate action shall be taken by the ROW holder and the BLM shall be promptly notified. If the ROW road is impacted by the emergency actions, rehabilitation of the road may be required.
8. During clearing and construction operations, if subsurface cultural resource artifacts or materials are exposed, or active raptor nests are discovered, operations shall be halted and the BLM shall be notified.
9. During surveying, clearing, and construction operations, the operator shall protect and preserve all land survey monuments. Records of found corners and monuments shall be furnished to the BLM. Any corners or monuments destroyed during activities shall be replaced by the operator. All survey work and corner/monument setting shall be under the direction of a Registered Land Surveyor. (RLS)
10. Project approval is contingent upon compliance with all applicable federal, state, county and local regulations.
11. Before project activities can begin, road designs must be reviewed and approved on the ground by the San Juan Public Lands representative. To complete this requirement, the completed designs must be furnished to the BLM, and the centerline staked on the ground. After final acceptance of the design is made by the BLM the road must be slope staked and approved by the BLM prior to construction.
12. The Right-of-Way holder shall employ any cleaning methods necessary to ensure that any equipment, including transportation and construction equipment, are free of noxious weed material before coming onto BLM land. New infestations of noxious weeds caused from the construction or operation of the ROW road shall be eradicated by the ROW holder. Additional noxious weed management guidance can be obtained from the BLM. Seed certification tags from the seed bags used for revegetation shall be submitted to the BLM within 1 month following seed application. When straw, mulch or gravel is needed for construction, operation or reclamation activities, these materials must be certified to be weed-free, and a copy of the certification must be provided to the BLM representative. The right-of-way holder representative shall ensure compliance with all specifications.
13. The operator shall take all necessary precautions for the protection of the work and safety of the public and employees during construction of the road.

G. Road Construction Design Standards

Roads must be located, surveyed, designed, and constructed to the design standards listed below. The design standards define the safety requirements and traffic characteristics that govern the selection of design elements and standards for a road or section of a road. To ensure travel safety and the protection of Federal resources, the Nelson ROW road must be constructed to the required standard. The Nelson ROW Road shall be designed and staked under the supervision of a registered engineer per the following road design standards. In addition, road design standards and elements shall meet the requirements of the American Association of State Highway and Transportation Officials (AASHTO) Publication “*A Policy on Geometric Design of Highways and Streets*.”

1. Design speed of 15 mph.
2. A plan and profile showing road alignment and profile and drainage crossings details shall be provided to the BLM. The plan and profile shall identify grade, alignment, stationing, clearing limits, turnout locations, culvert locations and special design sections (if any exist). Cross sections with road templates sections shall be provided to the BLM.
3. Travel width shall be adequate to accommodate the design vehicles and construction equipment. This travel width is generally 10-12 feet plus widening for off tracking (curve widening) and turnouts. Turnout widths shall be 8 feet or as needed for design vehicle and shall be 50 feet in length with an additional 25 foot tapers at the ends. The road shall be constructed per the attached drawings.
4. Minimum horizontal curve radius shall be 50 feet. Curve widening shall be designed in accordance with AASHTO procedures.
5. The maximum road grade shall be less than 8%, except for short pitches up to 12 % for 300 feet or less, unless approved by the BLM.
6. Turnouts shall be a maximum of 1500 feet apart or as needed for safety.
7. Cut slopes and fill slopes shall be designed by a geotechnical engineer.
8. Drainage shall be provided for the entire road length. Armored rolling water dips and armored grade dips shall be used for the drainage structures. Roadside ditches shall not be needed and road may be insloped but not outsloped. A gravel surface is required for the armoring of the dips. The depth of the surfacing in the dips shall be one foot in depth with 3 inch minus crushed aggregate for the full width of the road and transition 25 feet both directions. The dips shall be constructed per the attached drawings. The dips shall be located per the attached drainage structure spacing chart.

9. All suitable excavated material is to be used in the construction of embankments, subgrades and backfill for structures. All soil material and fragmented rock removed in excavation shall be used as directed in the approved plan. Excess cut material shall not be wasted unless identified in the approved plan. Roadbed material shall not be placed when the materials or the surface are frozen or too wet for satisfactory compaction. All fills shall be placed using layer placement method. Compaction shall be achieved by operating the construction equipment over the embankment material. Fill material shall be placed in horizontal layers not exceeding 12" prior to compacting, except when the material contains rock more than 9" in diameter, in which case layers may be of sufficient thickness to accommodate the material involved. Compaction equipment shall be operated over the full width of each layer until visible deformation of the layer ceases.
10. All disturbed areas, including cut and fill slopes, shall be revegetated with the required seed mix. The permit holder shall furnish and apply the seed mix identified by the BLM.
11. After the road survey and design are completed. The BLM shall review the design prior to acceptance.
12. After the design is accepted by the BLM, the road shall be slope staked and the clearing limits shall be marked by the permit holder.
13. The BLM shall inspect all construction work to insure compliance with the specifications design and drawings.
14. A road closure gate shall be installed at or near the beginning of the ROW road. The gate shall be constructed per the attached drawing. H-braces shall be installed on both sides of the gate and barrier rocks of sufficient size shall be placed outside the H-braces to prevent vehicles from driving around the gate. Object marker panels shall be placed on both sides (front and back). The gate will be locked at all times.

#### **H. Seed Mix/Mulch**

1. The holder shall prepare a seedbed by (scarifying the disturbed area) (distributing topsoil uniformly) (disking the topsoil) as directed by the authorized officer.
2. The holder shall mulch disturbed areas designated by the authorized officer. The type of mulch shall meet one of the following requirements:
  - (a) Straw used for mulching shall be from oats, wheat, rye, or other approved grain crops, and free from noxious weeds (must be certified weed free) or other objectionable material as determined by the authorized officer. Straw mulch shall be suitable for placing with mulch blower equipment.
  - (b) Hay shall be of approved herbaceous mowings, free from noxious weed or other objectionable material as determined by the authorized officer. Hay shall be suitable for placing with mulch blower equipment.

(c) Wood cellulose fiber shall be natural or cooked wood cellulose fiber, shall disperse readily in water, and shall be nontoxic. The homogeneous slurry or mixture shall be capable of application with power spray equipment. A colored dye that is noninjurious to plant growth may be used when specified. Wood cellulose fiber shall be packaged in new, labeled containers.

3. The holder shall seed all disturbed areas, using an agreed upon method suitable for the location. Seeding shall be repeated if a satisfactory stand is not obtained as determined by the authorizing officer upon evaluation after the two growing seasons.
4. The holder shall revegetate all disturbed areas with the seed mixture(s) listed below. The seed mixture(s) shall be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There shall be no primary or secondary noxious weed seed in the seed mixture. Seed shall be tested and the viability testing of seed shall be done in accordance with State law(s) and within xx months prior to purchase. Commercial seed shall be either certified or registered seed. The seed mixture container shall be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area. (Smaller/heavier seeds have a tendency to drop to the bottom of the drill and are planted first. The holder shall take appropriate measures to ensure this does not occur.) Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre noted below are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of the second growing season after seeding. The authorized officer is to be notified a minimum of 5 working days prior to seeding of the project.

Seed Mixture

Any change from this formula needs to be approved by the BLM.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Bulk Pounds Per Acre Seeding Rate</u>
Mountain Brome	Bromus marginatus	15
Alsike Clover	Trifolium hybridum	5
Western Yarrow	Achillea lanulosa	3
Big Bluegrass	Poa ampla	2
Slender Wheatgrass	Agropyron trachycaulum	<u>10</u>

Total: 35 lbs/acre PLS

Pure Live Seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture equals portion of seed mixture that is PLS.

**I. Road Maintenance Requirements**

1. All maintenance work shall be performed annually at a minimum or more often if needed. Such work shall include final blading to remove ruts and other irregularities that would prevent normal road surface runoff, and final clearing of drainage ditches and culverts to insure satisfactory functioning of the road drainage systems.
2. Remove slides, boulders, fallen timber, overhanging brush and other material obstructing safe road sight distance as requested by the BLM during periods of use.
3. Replace fills and surfacing lost or worn out and/or which have been compressed below the original grade and cross section.
4. Keep drainage channels, ditches, cattleguards, and culverts clear of debris and functioning as intended.
5. Repair fences, gates, culverts, bridges and other road structures damaged by the Right-of-Way holder's operations. Repair shall be to original or better condition.
6. Blade and shape surface and shoulders to maintain the original cross section and provide a suitable running surface. Earth and debris from side ditches, slides, or other sources shall not be left on the road or mixed into the surfaced portions of the roads. Blading must not undercut banks nor shall gravel or other selected surfacing material be bladed off the surfaced width. Material from slides or other sources requiring removal from the road shall be deposited in locations approved by the San Juan Public Lands representative.
7. When requested by the BLM, roadbeds will be watered to reduce dust and provide for a safe passage of vehicles.
8. Special sites and/or segments of road softened, compressed, or otherwise damaged as a result of the permitted traffic will be repaired per BLM specifications.

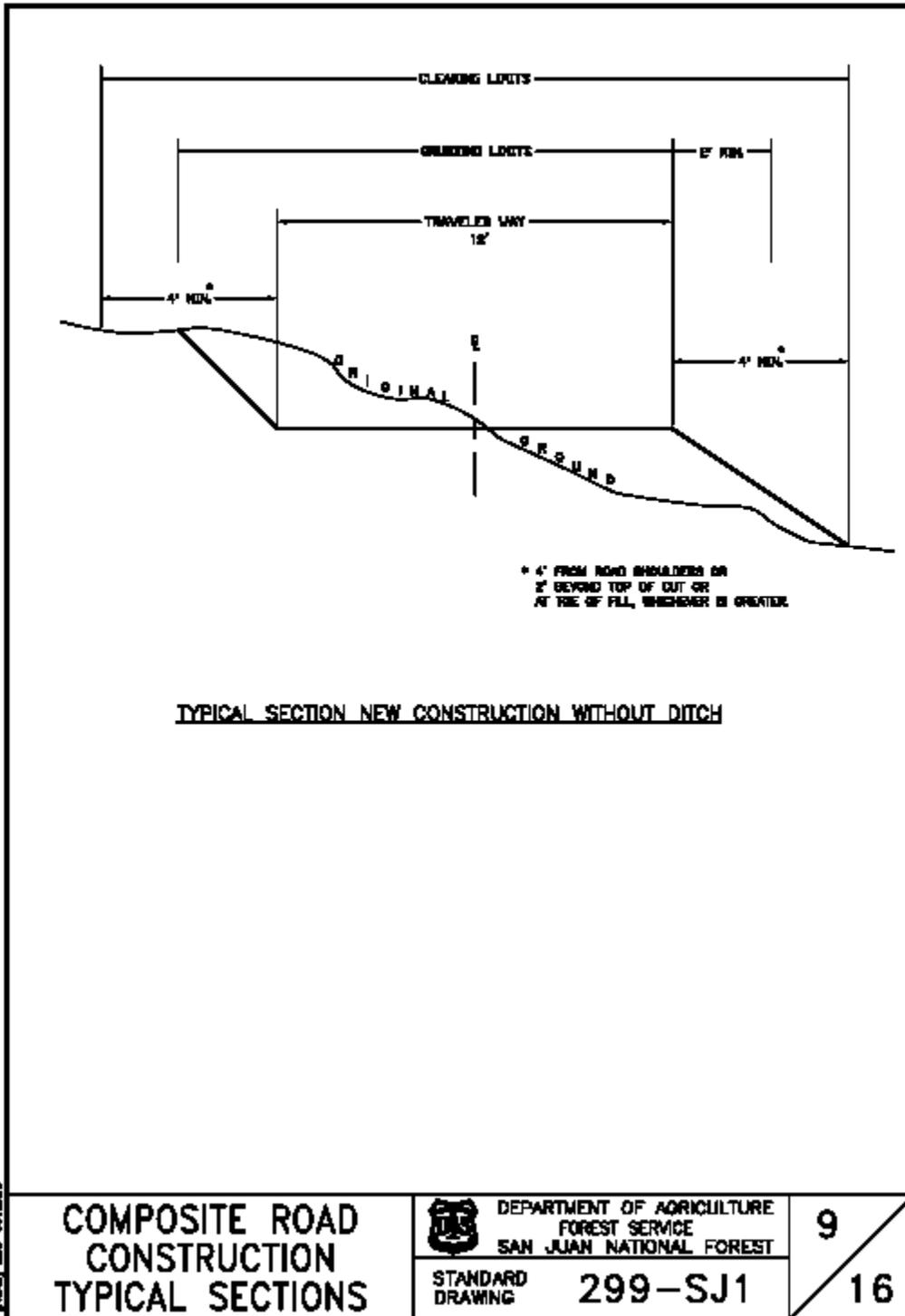
**J. Fire**

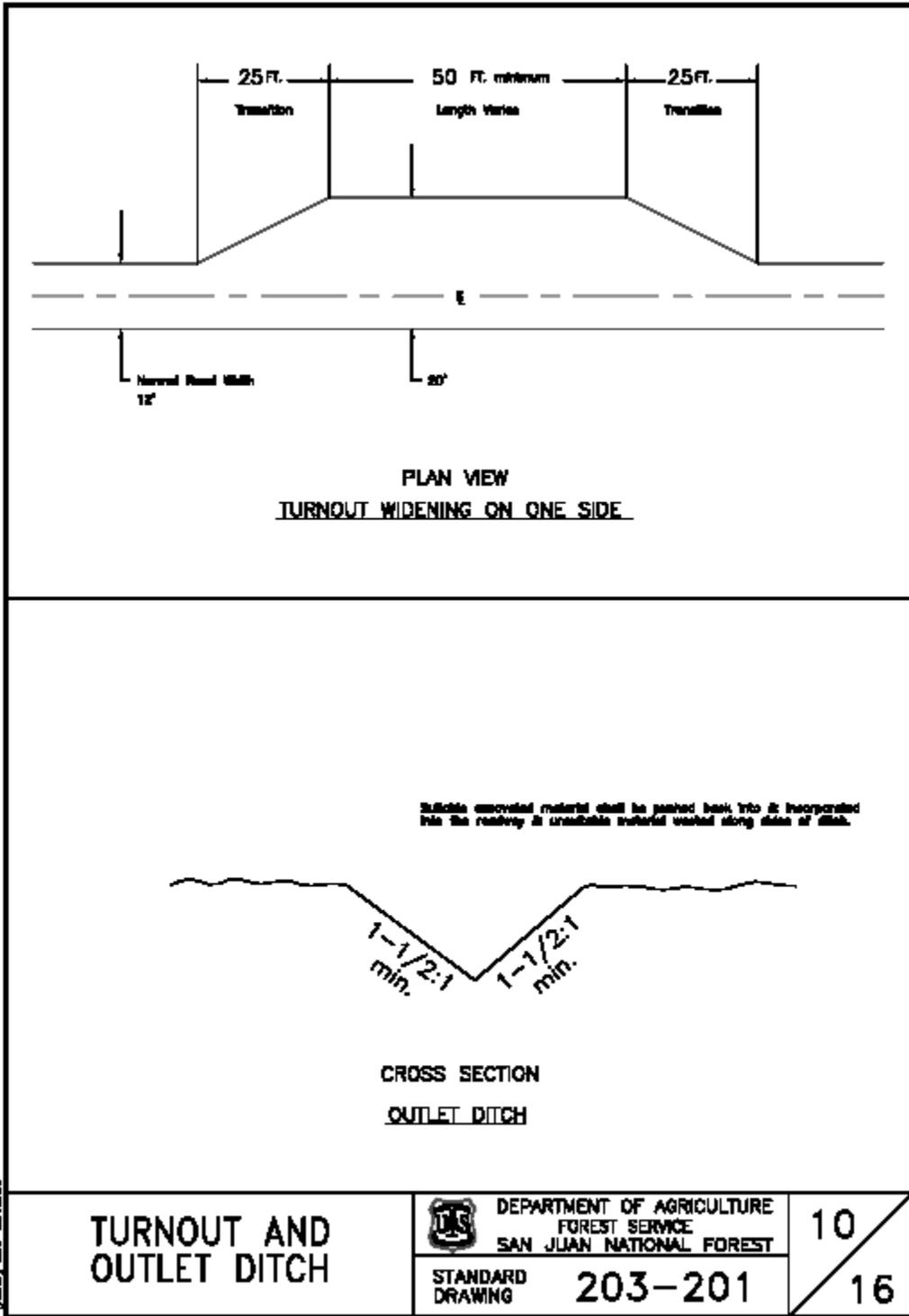
1. The holder shall prepare a fire prevention and suppression plan, which shall be reviewed, modified and approved, as appropriate, by the authorized officer. The holder shall take into account such measures for prevention and suppression of fire on the right-of-way and other public land used or traversed by the holder in connection with operations of the right-of-way. Project personnel shall be instructed as to individual responsibility in implementation of the plan.

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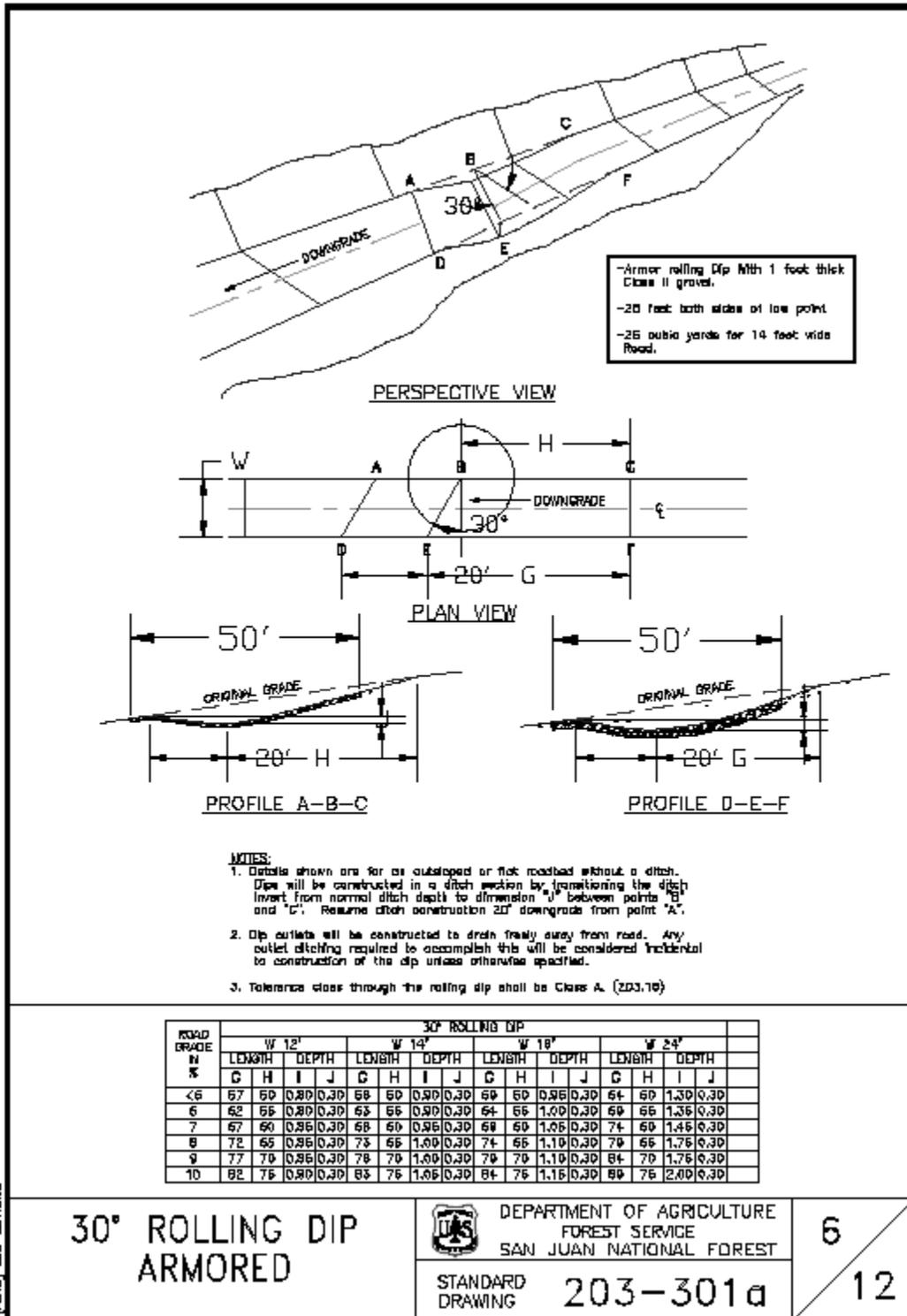
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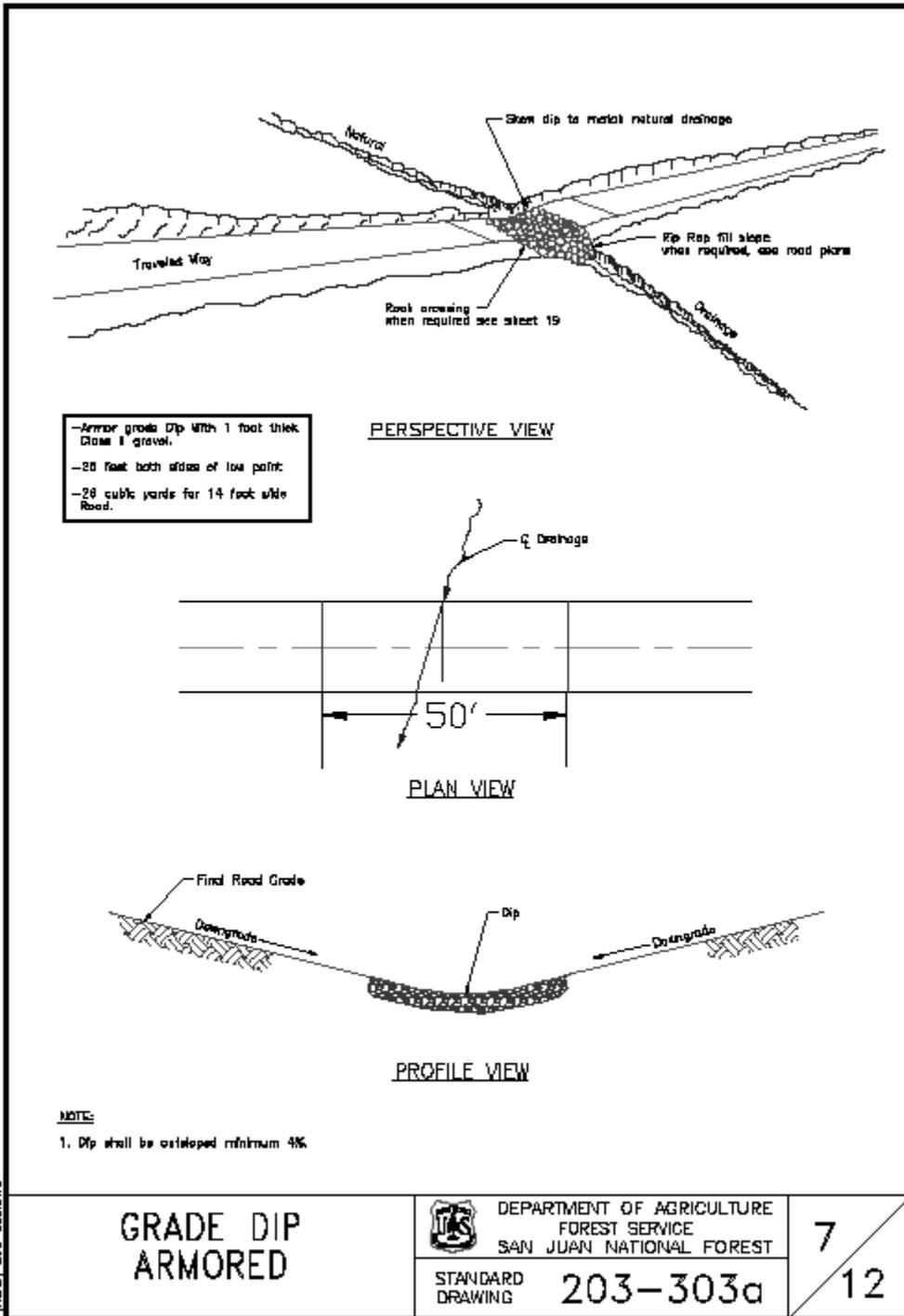
2. During construction, operation, maintenance, and termination of the right-of-way, vehicles, gas-powered equipment, and flues shall be equipped with spark arrestors approved by the authorized officer.
3. During conditions of extreme fire danger, operations shall be limited or suspended in specific areas, or additional measures may be required by the authorized officer.





Nelson ROW EA





[ROAD] 203-303.DWG

**DRAINAGE STRUCTURE SPACING (in feet)**

SOIL TYPE		ROAD GRADIENT (percent slope)							
<u>ASTM</u>	<u>DESCRIPTION</u>	<u>2</u>	<u>4</u>	<u>6</u>	<u>8</u>	<u>10</u>	<u>12</u>	<u>15</u>	<u>20</u>
SM	Silty Sand Sands	1225	610	410	305	245	205	165	120
CL	Silty Clays Gravelly Clays	1500	900	600	450	360	300	240	180
GM	Sandy Silty Grvl Silty Gravel	1350	970	720	540	435	360	300	220
GC	Clayey Gravel	1400	1200	830	625	500	415	335	250

