Nevada Power Company and Sierra Pacific Power Company
doing business as (d/b/a) NV Energy

GREENLINK WEST TRANSMISSION PROJECT
UPDATED PRELIMINARY PLAN OF DEVELOPMENT

SEPTEMBER 2020

PREPARED BY:

6100 Neil Road
Reno, NV 89520-0024
(775) 834-3528

Greenlink West Transmission Project

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

Greenlink West Transmission Project

ATTACHMENT B: SUBTATION ARRANGEMENT DRAWINGS
ATTACHMENT C: CONSTRAINT STUDY
ATTACHMENT D: LEGAL DESCRIPTIONS

Greenlink West Transmission Project

1. INTRODUCTION

Nevada Power Company (Nevada Power) and Sierra Pacific Power Company (Sierra Pacific) both doing business as (d/b/a) NV Energy (hereinafter referred to as NV Energy) are submitting this Preliminary Plan of Development ("PPOD") to the U.S. Bureau of Land Management ("BLM"), along with a federal application for authorization to construct, operate and maintain a proposed system of new 525-kV, 345-kV, 230-kV and 120-kV electric transmission facilities.

The project will involve the following components:

- Harry Allen 525-kV Switching Station Expansion
- Northwest 525/230-kV Substation Expansion
- New Amargosa 525/230-kV Collector Station
- New Esmeralda 525/230-kV Collector Station
- New Fort Churchill-Northwest 525-kV Transmission Line (319 miles)
- New Harry Allen-Northwest 525-kV Transmission Line (35 miles)
- New Fort Churchill 525/345/230/120-kV Substation
- Comstock Meadows 345/120-kV Substation Expansion
- New Comstock Meadows-Fort Churchill 345-kV Transmission Line #1 (35 miles)
- New Comstock Meadows-Fort Churchill 345-kV Transmission Line #2 (35 miles)
- Mira Loma 345/120-kV Substation Expansion
- New Fort Churchill-Mira Loma 345/120-kV Transmission Line (45 miles)

Construction of the above facilities is required to achieve to the State of Nevada Renewable Energy Portfolio, State of Nevada Greenhouse Gas Emission Standards, facilitate access to State of Nevada designated renewable energy zones, and increase northern Nevada transmission import capacity required to meet native electric demand and Federal Energy Regulatory Commission requests for service.

Approximately 82 percent of the project will cross land managed by the United States Bureau of Land Management ("BLM"). Therefore NV Energy is required to secure a Right-of-Way (ROW) Grant. In accordance with BLM permit submittal requirements, this PPOD provides the following project details:

- Purpose and Need – Justification for the project
- Project Description – Information on the project components, construction, permitting, and operations, including:
  - Location
  - Facilities
  - Land/Right-of-Way Requirements
  - Construction Activities
  - Operations and Maintenance Activities
  - Required Authorizations

- Environmental Compliance – Identification of the Environmental Compliance Team, an overview of the plan for managing environmental compliance, and environmental protection measures to avoid and/or minimize potential adverse environmental effects.

2. PURPOSE AND NEED

NV Energy is proposing the construction, operation and maintenance of approximately 469 miles of new transmission lines and associated substations between northern and southern Nevada. These facilities are required to achieve the following objectives:

State of Nevada Renewable Energy Portfolio Standard

April 22, 2019 the State of Nevada enacted Senate Bill 358 requiring, in part, each provider of electric service generate, acquire or save electricity from portfolio energy systems or efficiency measures in an amount that is not less than 50 percent of the total amount of electricity sold by the provider to its retail customers in the State of Nevada during calendar year 2030 and each calendar year thereafter.[1] Development of the Greenlink West Transmission Project facilitates access to renewable energy zones identified by the State of Nevada and Bureau of Land Management as described below to achieve the portfolio standard.

State of Nevada Greenhouse Gas Emission Reduction

June 3, 2019 the State of Nevada enacted Senate Bill 254 directing the Department of Conservation and Natural Resources to issue a report that includes a statewide inventory of greenhouse gas emissions in the state; a projection of annual greenhouse gas emissions in the state for the 20 years immediately following the date of the report; and a statement of policies and regulations that could achieve reductions in projected greenhouse gas emissions by electric production sectors that would be required to achieve a statewide reduction of net greenhouse gas emissions of 28 percent, 45 percent and nearly 100 percent by the years 2025, 2030 and 2050 respectively as compared to the level of greenhouse gas emissions in the state in 2005.[2] Development of the Greenlink West Transmission Project facilitates access to renewable energy zones and is necessary to accommodate decommissioning of conventional fossil fuel generation resources.

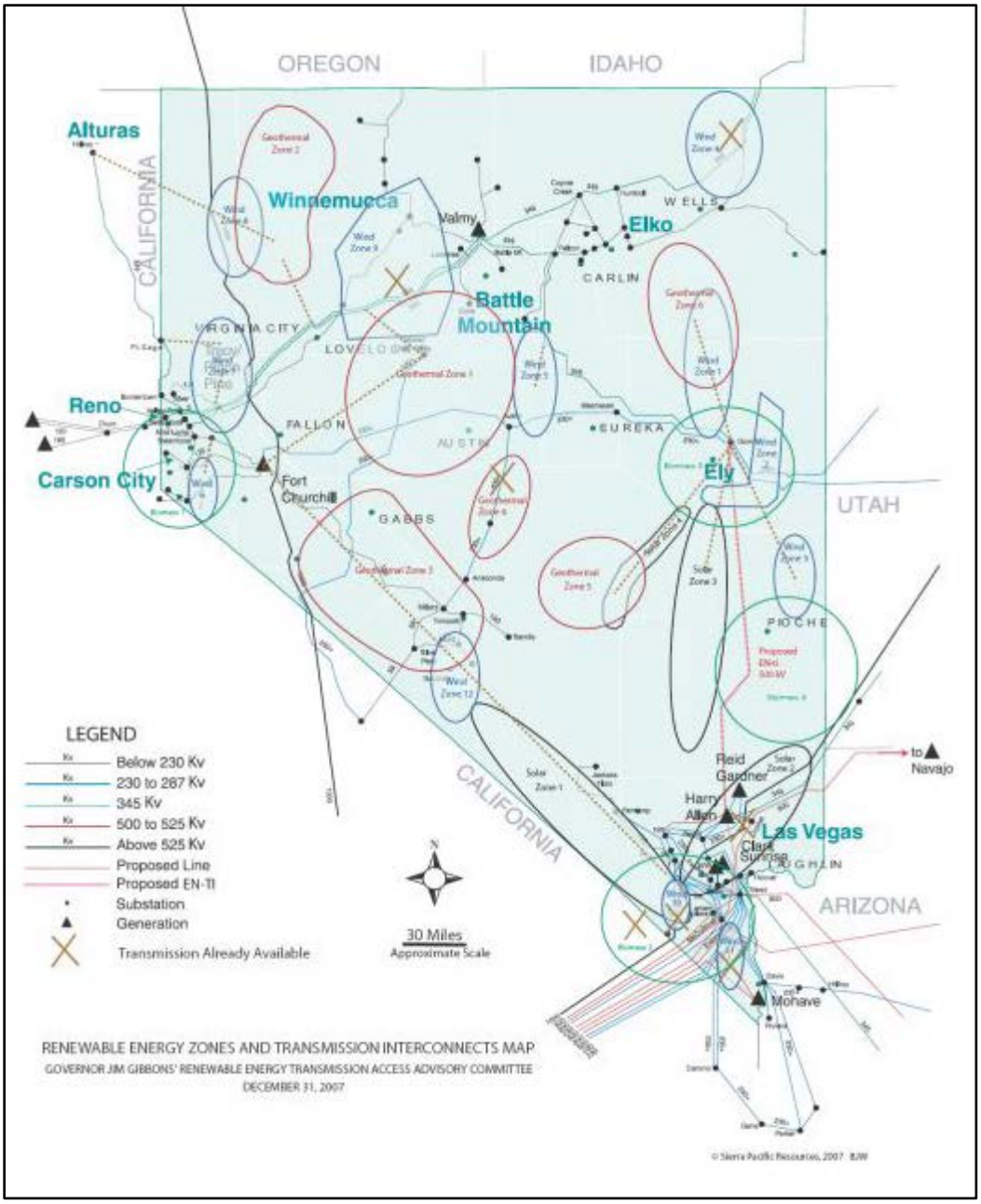
Facilitate Access to State of Nevada Designated Renewable Energy Zones

May 9, 2007 recognizing the potential value of Nevada's abundant and diverse renewable energy resources and lack of transmission access to those remote resources former State of Nevada governor Jim Gibbons signed an Executive Order creating the Renewable Energy Transmission Access Advisory Committee ("RETAAC"). The mission of RETAAC was to propose recommendations for improved access to the grid system by which renewable energy industries can set up and have market access in Nevada and neighboring states. Its purpose was to identify commercially developable locations for renewable energy, rank them based on size and viability

[1] Nevada Revised Statute 704.7821.
[2] Nevada Revised Statute 445B.380.

and compare them to Nevada's energy needs and demand; assess existing and planned transmission access to these resources, and make recommendations for additional transmission lines. RETAAC issued the following recommendations in its Phase I Report.[3]

Figure 1: RETAAC Phase I Renewable Energy Zones



[3] 2008 Status of Energy in Nevada Report; RETAAC Phase I Report; March 5, 2009; page 82

1. The Governor's Office support the construction of a transmission line to connect the state's northern and southern electric grid of sufficient capacity to provide Nevada Power with their non-solar renewable energy requirements from the abundant geothermal and wind resources in northern Nevada and provide Sierra Pacific Power access to the abundant solar resources in southern Nevada.

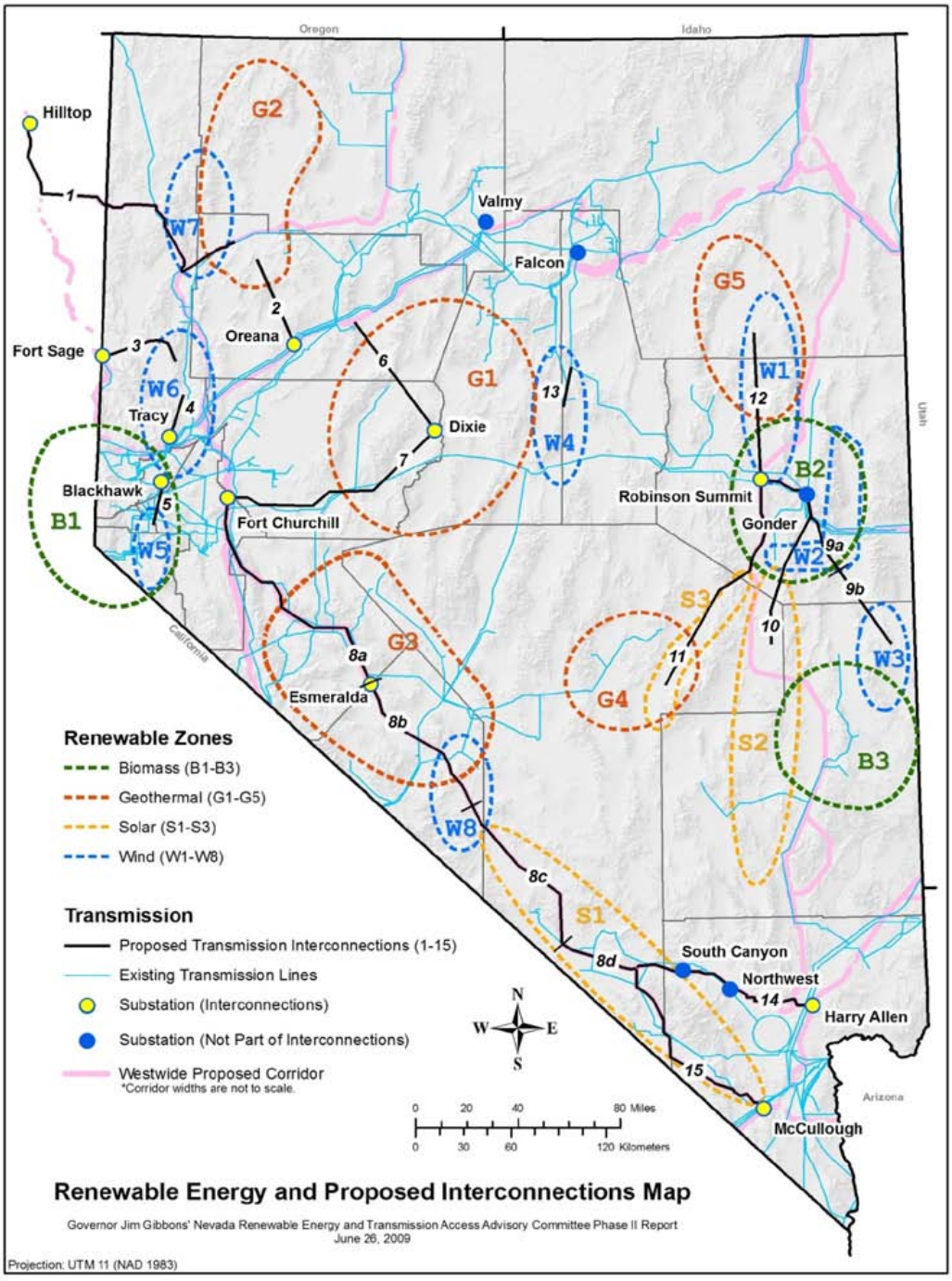
2. Initiate Phase II of the RETAAC to define the environmental and physical feasibility issues, costs and potential financing mechanisms associated with the recommended transmission routes beginning in first quarter 2008 with a completion date of December 31, 2008.

June 12, 2008 governor Gibbons signed an Executive Order creating the second phase of the RETAAC to further the committee's efforts outlined in the RETAAC Phase I Report dated December 31, 2007. The purpose of Phase II was to determine the power potential capacity for each renewable energy zone that is available for commercial development; environmental, land use, and permitting constraints; identify routes that can accommodate immediate construction of transmission lines while avoiding constraint areas; the cost and revenue structure of transmission lines based on supply curves; identify and rank transmission lines that are feasible to build; the possible financing mechanisms to build these transmission lines and collector systems; related policy recommendations. RETAAC Phase II issued the following recommendations in its Final Report.[4]

[4] RETAAC Phase II Report; July 1, 2009

1. RETAAC issued a map showing the State's most economically viable renewable energy zones and the transmission necessary to access the electricity believed to be contained within those zones. See Figure 2.

Figure 2: RETAAC Phase II Renewable Energy Zones



2. Renewable energy access to the Nevada transmission grid is facilitated by providing the state with a robust and reliable statewide transmission system, which serves all load customers from all available and potential generation sources. This is the surest way to promote the access to the grid by renewable energy resources.

3. The tax exempt bond financing mechanism and other such mechanisms, should be encouraged to develop a financing program which can substantially reduce the cost of constructing new transmission lines and facilities and thus enhance their economic feasibility. However; regardless what the driving technical, regulatory, or siting issues are, establishing a mechanism to repay the investment is critical before any plan can move forward with the construction of these transmission lines and associated facilities.

4. The Public Utilities Commission of Nevada, as the primary utility regulatory agency in the state, to the extent possible, should employ flexibility so as to encourage new renewable transmission construction for in state use and export to adjacent states by:
    a. Considering the impacts of local and statewide economic development as an element in the planning and approval of new transmission,
    b. Encouraging flexibility in financing of new transmission construction; and
    c. Considering the requirements of the state's utilities to meet Nevada's Portfolio Standard mandate when evaluating proposed new transmission construction projects.

5. New renewable transmission should be designed and constructed by entities that have the financial capacity, the expertise, and the understanding of local and regional Nevada issues as well as the experience to design, permit, construct and integrate these facilities into the existing grid.

6. The state should create a functional entity, which will serve as a "one stop shop" to assist potential transmission providers in working with local, state, federal agencies and tribal lands in overcoming the permitting and siting constraints and barriers so as to expedite the construction of the required new transmission lines and facilities.

7. The state of Nevada should work with new and existing state and federal statutes, as well as seek additional resources to further the recommendations of this report.

May 28, 2009 the State of Nevada enacted Assembly Bill 387 and directed the Public Utility Commission of Nevada ("Commission") to "designate renewable energy zones and revise the designated renewable energy zones as the Commission deems necessary."

December 21, 2009 the Commission adopted regulations[5] designating renewable energy zones codified in Section 880, Chapter 704 of the Nevada Administrative Code.[6]

[5] Public Utility Commission of Nevada ("Commission"); Order - Docket No. 09-07011; September 28, 2009.
[6] Nevada Administrative Code 704.880.

The proposed Project transmission routes will follow, where feasible, previously identified federal and/or state established transmission corridors. By following the RETAAC recommendations and by using identified existing transmission corridors and available studies, the proposed Project is expected to be consistent with federal and state regulations and would minimize potential impacts related to environmental resources and jurisdictional conflicts. In addition, NV Energy hired a third party contractor to conduct and prepare a routing and constraint study. This study was utilized in developing NV Energy's proposed action (See Attachment C: Constraint Study).

Facilitate Access for Solar Energy Development

July 2012 the Bureau of Land Management issued its Final Programmatic Environmental Impact Statement (PEIS) for Solar Development in Six Southwester States.[7] The document was prepared by the Bureau of Land Management and Department of Energy as co-lead agencies in accordance with the National Environmental Policy Act of 1969. The purpose of the PEIS was to respond in a more efficient and effective manner to the high interest in siting utility-scale solar energy development on public lands and to ensure consistent application of measures to mitigate the potential adverse impacts of such development.

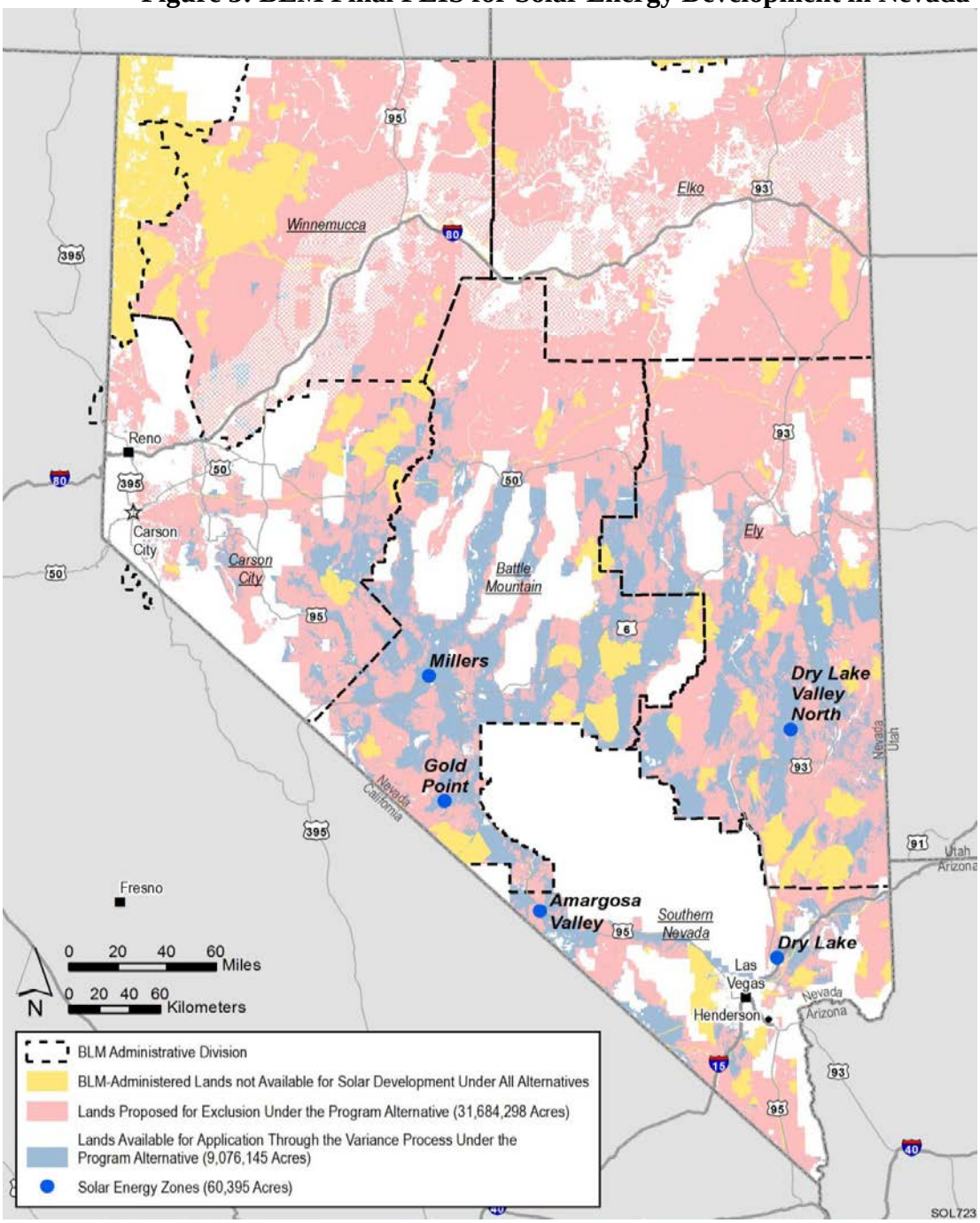
The PEIS identified five solar energy zones ("SEZ") in Nevada including Amargosa, Dry Lake, Dry Lake Valley North, Gold Point and Millers. See Figure 3: BLM Final PEIS for Solar Energy Development in Nevada. As indicated, the Amargosa, Gold Point and Millers SEZ are located in the vicinity of the proposed Amargosa and Esmeralda 525/230-kV Collector Stations. The PEIS identified a potential capacity of up to 7,737 MW of solar energy from the three SEZ.

Table 1: BLM Final PEIS for Solar Energy Development in Nevada

Solar Energy Zone	Developable Land (Acres)	Maximum Output (MW)	
		Photovoltaic	Solar Thermal
Amargosa Valley	8,479	754	1,357
Gold Point	4,596	409	735
Millers	16,534	1,470	2,645
TOTAL	**29,609**	**2,633**	**4,737**

[7] Final Solar Energy Development Programmatic Environmental Impact Statement, United Stated Bureau of Land Management, Information Center.

Figure 3: BLM Final PEIS for Solar Energy Development in Nevada



Greenlink West Transmission Project

Northern Nevada Transmission Import Capacity

The Greenlink West Transmission Project is required to increase northern Nevada transmission import capacity required to meet native electric demand and Federal Energy Regulatory Commission ("FERC") requests for Network Integration Transmission Service ("NITS").[8]

The state of Nevada is facing unprecedented changes in both system growth and resource requirements. By 2031, 1,000 MW of base load generation is planned for retirement in northern Nevada, however, approximately 1,450 MW of new load growth is currently under contract with Sierra, and Nevada Senate Bill 358 increased the renewable portfolio standard ("RPS") to 50 percent by 2030.

While the goal of 50 percent by 2030 may be considered aggressive, NV Energy is striving for an ultimate goal of offering 100 percent renewable energy. Resource diversity and transmission infrastructure each play a key role in allowing NV Energy to achieve these goals. While Nevada has nearly unlimited access to solar resources and abundant geothermal resources, wind and hydro resources are nearly obsolete within the state. Further, while battery technology continues to evolve, NV Energy lacks data demonstrating that energy storage alone can be utilized to accomplish the aggressive renewable goals. A balance must be created between resource types and the availability of those resources as the sun rises and sets through each day. The only way to gain access to diverse renewable resources is through an interconnected western grid and Nevada's participation as a key player.

In addition to achieving the renewable goals, under NV Energy's Open Access Transmission Tariff ("OATT"), NV Energy is obligated to plan for the electric service to all existing and future network customers. Network customers, which take service under Network Integration Transmission Service ("NITS"), are treated with the same priority as NV Energy's native load and pay for transmission service based on their proportionate share of the total system load. NV Energy's native load is the largest network customer. The import limit in northern Nevada is 1,275 MW and is fully reserved based on 150 MW of Transmission Reliability Margin, 600 MW of ON Line allocation and 525 MW of third-party firm reservations. The 525 MW of third-party reservations is forecasted to increase to more than 700 MW within 10 years. Investment in transmission infrastructure is the only possible way to increase the import into northern Nevada to meet this increasing transmission load growth.

[8] Second Amendment to 2018 Integrated Resource Plan; Testimony of Sachin Verma; May 1, 2019; p. 195.

3. PROJECT DESCRIPTION

3.0 LOCATION

The proposed facilities are located in Clark, Nye, Esmeralda, Mineral, Lyon, Storey and Washoe Counties, Nevada (See Attachment A: Project Maps).

3.0.0 Route Description

The proposed 525-kV facilities begin at the Fort Churchill 525/345/230/120-kV substation located approximately 10 miles north of Yerington, Nevada in Lyon County, Nevada, traverse approximately 354 miles through portions of Clark, Nye, Esmeralda, Mineral and Lyon Counties and terminate at the Harry Allen 525/230-kV substation approximately 10 miles north of North Las Vegas, Nevada in Clark County, Nevada. The 525-kV transmission line will generally follow U.S. Route 95 and the West-Wide Energy Corridor[9] for most of its length. The proposed 525-kV facilities cross approximately 321 miles of BLM land, 15 miles of private, 11 miles of Department of Defense (DOD) and 5 miles of BIA. (See Attachment A: Project Maps.)

The proposed 345-kV facilities begin at the aforementioned Fort Churchill 525/345/230/120-kV substation, traverse approximately 35 to 45 miles through portions of Lyon, Storey and Washoe Counties and terminate at the existing Comstock Meadows and Mira Loma 345/120-kV substations approximately 12 miles west of Silver Springs and 4 miles south of Reno, Nevada respectively. (See Attachment A: Project Maps).

In order to accommodate new electrical equipment, the existing Harry Allen 525-kV Switching Station, Northwest 525/230-kV Substation, Comstock Meadows 345/120-kV Substation, Mira Loma 345/120-kV Substation will be expanded (See Attachment B: Substation Arrangement Drawings).

See Attachment D for Legal Descriptions of NV Energy's proposed facilities.

[9] Guide to the West Wide Energy Corridor Final Programmatic Environmental Impact Statement (PEIS), 11/2008.

3.1 PROJECT COMPONENTS – TRANSMISSION LINES

3.1.0 Fort Churchill-Harry Allen 525-kV Transmission Line

The Fort Churchill-Harry Allen 525-kV transmission line will include the placement of approximately 1,547 tangent structures, and 70 dead-end and angle structures. Tangent structures will consist of steel pole H-Frame, steel monopole or steel lattice structures and range between 100 feet to 185 feet tall. Dead-end and angle structures will consist of steel three-pole structures and range between 100 feet to 185 feet tall.

The 525-kV transmission line will consist of three phases per circuit, three conductors per phase. Each conductor is 1590 thousand circular mil ("kcmil") aluminum conductor steel reinforced ("ACSR") conductor which is 1.504 inches in diameter. The transmission line will also include two extra high strength steel shield wire which is 7/16 inches in diameter and one all dielectric steel supported fiber optic cable 0.646 inches in diameter for control and operation of the transmission system. The typical distance between structures will be approximately 1,200 to 1,600 feet. The minimum ground clearance for the 525-kV transmission line will be approximately 31 feet at 212 degrees Fahrenheit maximum operating temperature. The line will meet or exceed the requirements of the National Electric Safety Code.

Typical drawings of 525-kV transmission structures to be installed are provided as Figure 4: 525-kV Steel Pole H-Frame Tangent Structure: Figure 5: 525-kV Steel Lattice Tangent Structure: Figure 6: 525-kV Steel Monopole Tangent Structure and Figure 7: 525-kV Steel Three-Pole Dead-End/Angle Structure

3.1.1 Fort Churchill-Comstock Meadows 345-kV Transmission Line #1

The Fort Churchill-Comstock Meadows 345-kV Transmission Line #1 will include the placement of approximately 152 tangent structures and 20 dead-end and angle structures. Tangent 345-kV structures will consist of steel pole H-Frame structures and range between 75 feet to 130 feet tall. Dead-end and angle structures will consist of steel three-pole structures and range between 75 feet to 130 feet tall.

Typical drawings of 345-kV transmission structures to be installed are provided as Figure 8: 345-kV Steel Pole H-Frame Tangent Structure or Figure 9: 345-kV Steel Three-Pole Dead-End/Angle Structure.

The 345-kV transmission line conductor will consist of three phases per circuit, two conductors per phase. Each conductor is 954 kcmil ACSR conductor which is 1.165 inches in diameter. The transmission line will also include one extra high strength steel shield wire which is 0.375 inches in diameter and one optical ground wire fiber optic shield wire which is 0.646 inches in diameter for control and operation of the transmission system. The typical distance between structures will be approximately 1,200 to 1,300 feet. The minimum ground clearance for the 345-kV transmission line will be approximately 26 feet. All of the poles will be electrically grounded through use of ground rods. The line will meet or exceed the requirements of the National Electric Safety Code.

3.1.2 Fort Churchill-Comstock Meadows 345-kV Transmission Line #2

The Fort Churchill-Comstock Meadows 345-kV Transmission Line #2 will include the placement of approximately 132 tangent structures and 22 dead-end and angle structures configured similar to the Fort Churchill-Comstock Meadows 345-kV Transmission Line #1.

3.1.3 Fort Churchill-Mira Loma 345-kV Transmission Line

The Fort Churchill-Mira Loma 345-kV Transmission Line will include the placement of approximately 177 tangent structures and 22 dead-end and angle structures configured similar to the Fort Churchill-Comstock Meadows 345-kV Transmission Line #1.

Figure 4: 525-kV Steel Pole H-Frame Tangent Structure

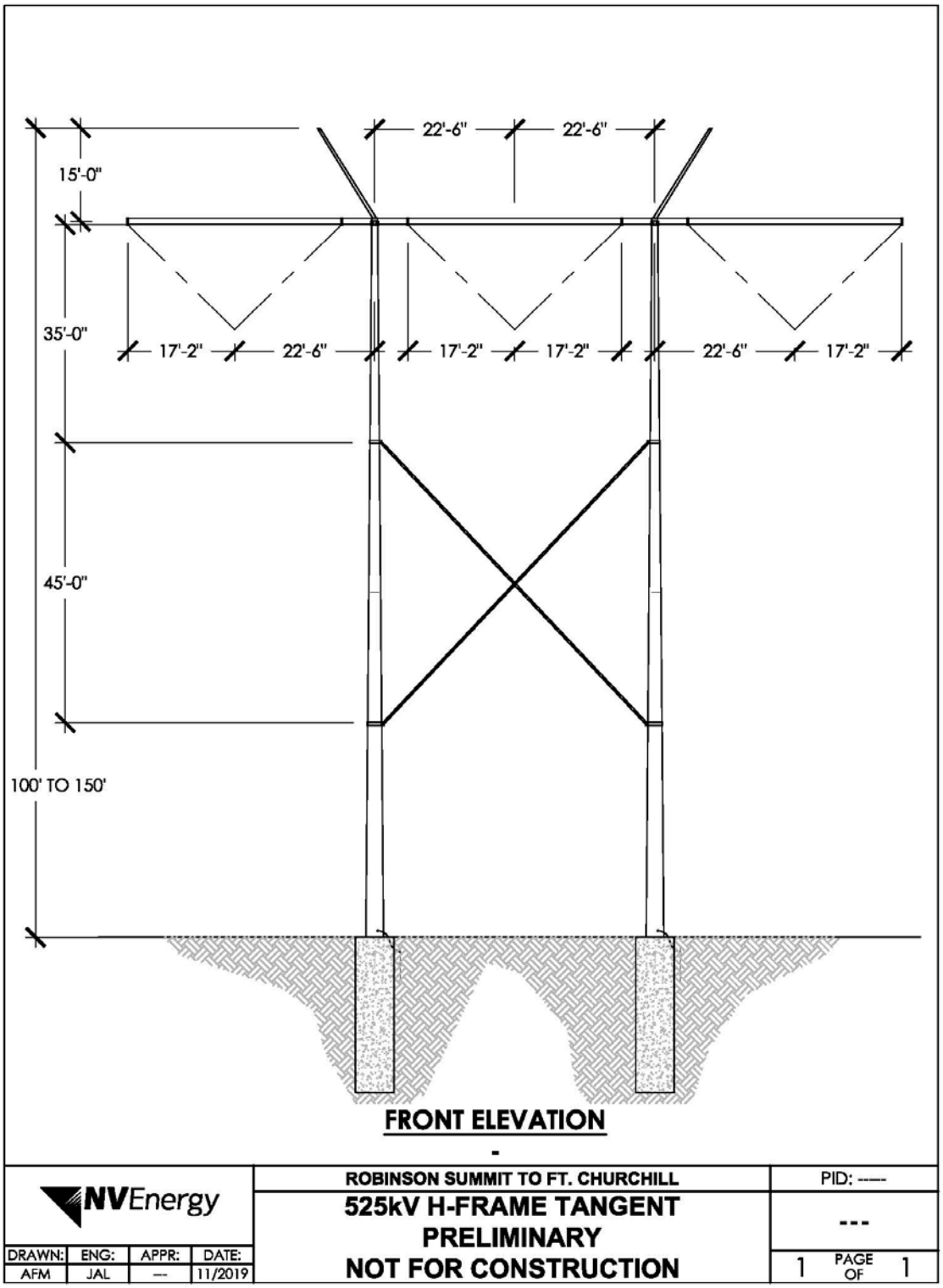


Figure 5: 525-kV Steel Lattice Tangent Structure

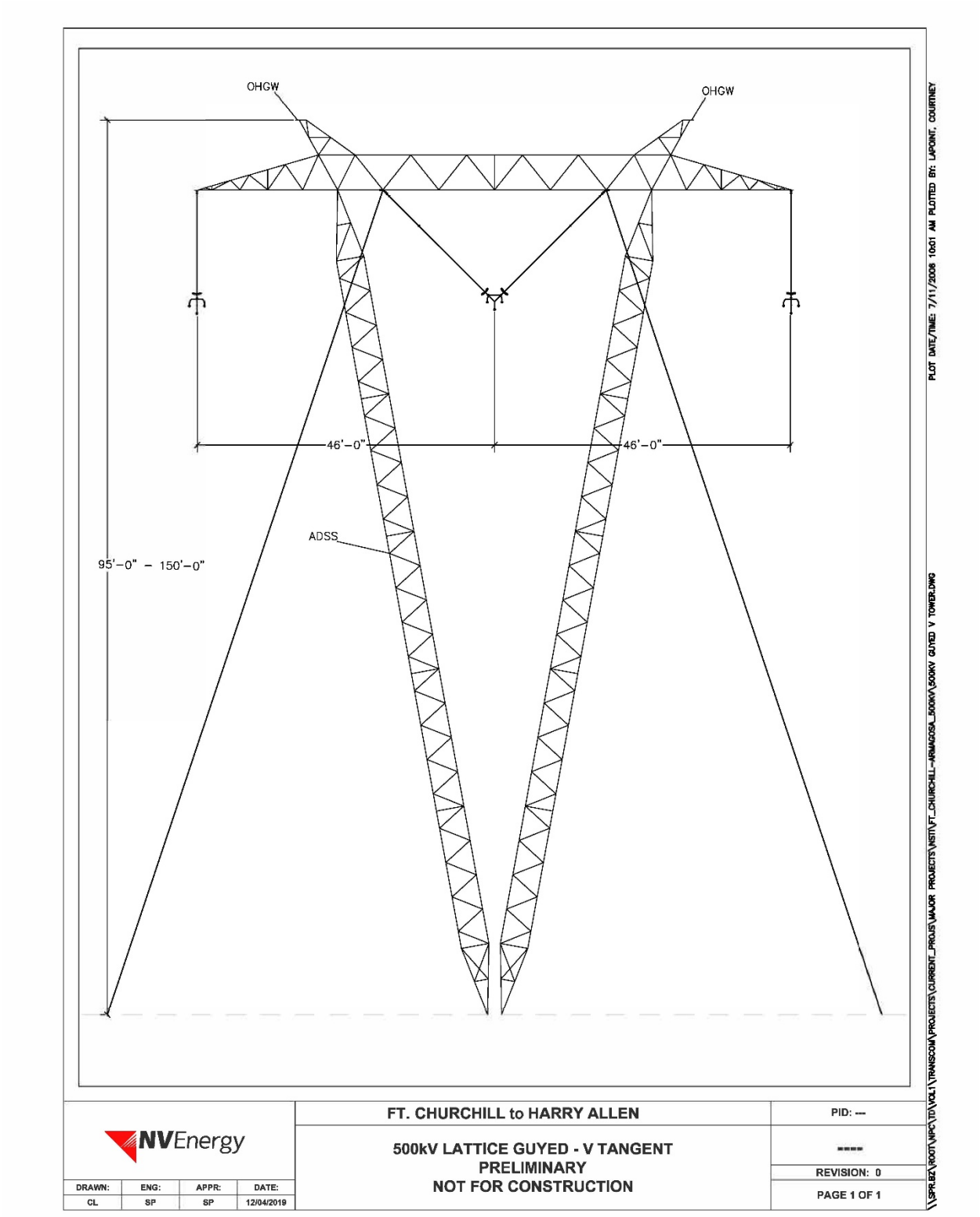


Figure 6: 525-kV Steel Monopole Tangent Structure

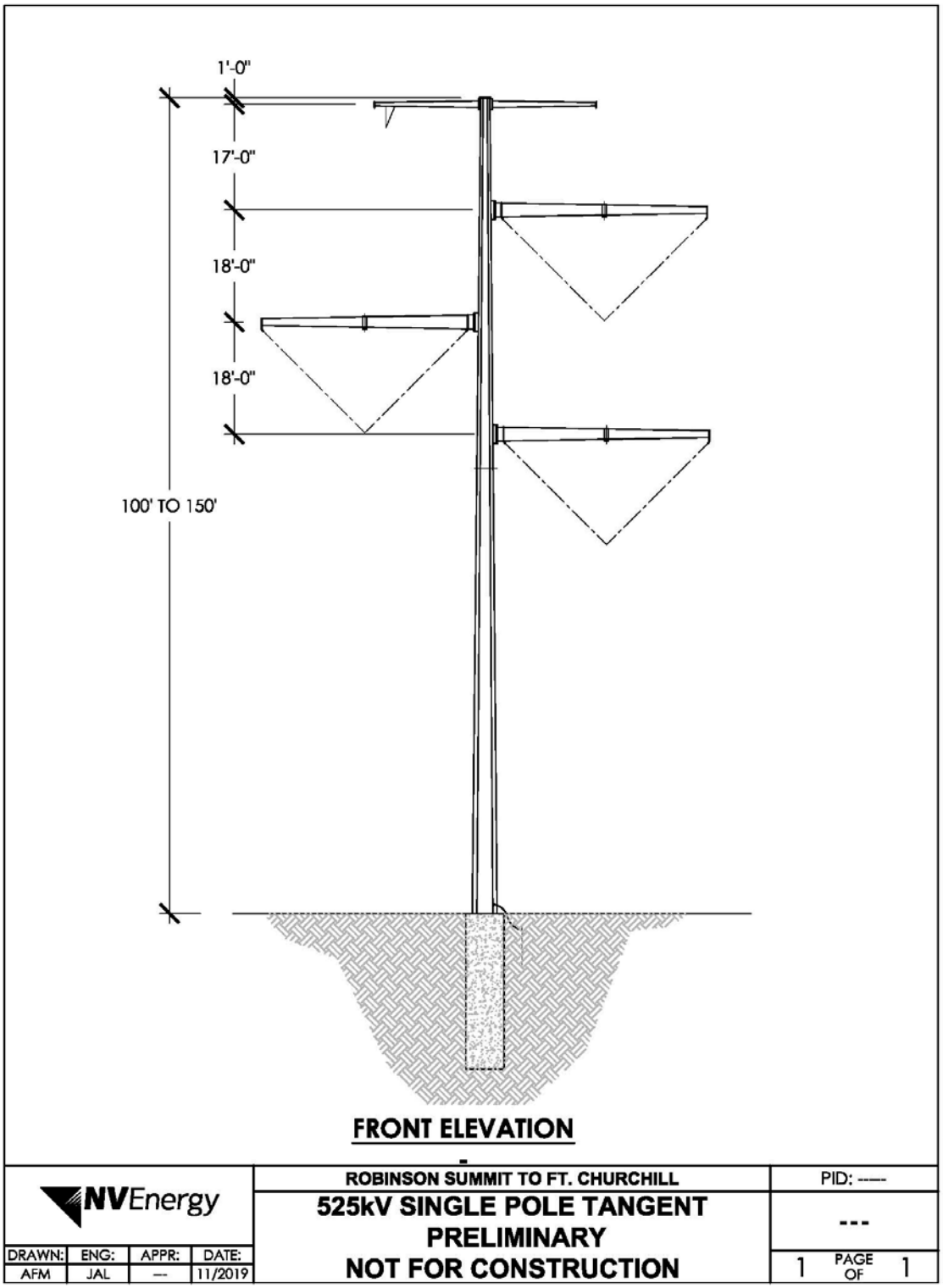


Figure 7: 525-kV Steel Three-Pole Dead-End/Angle Structure

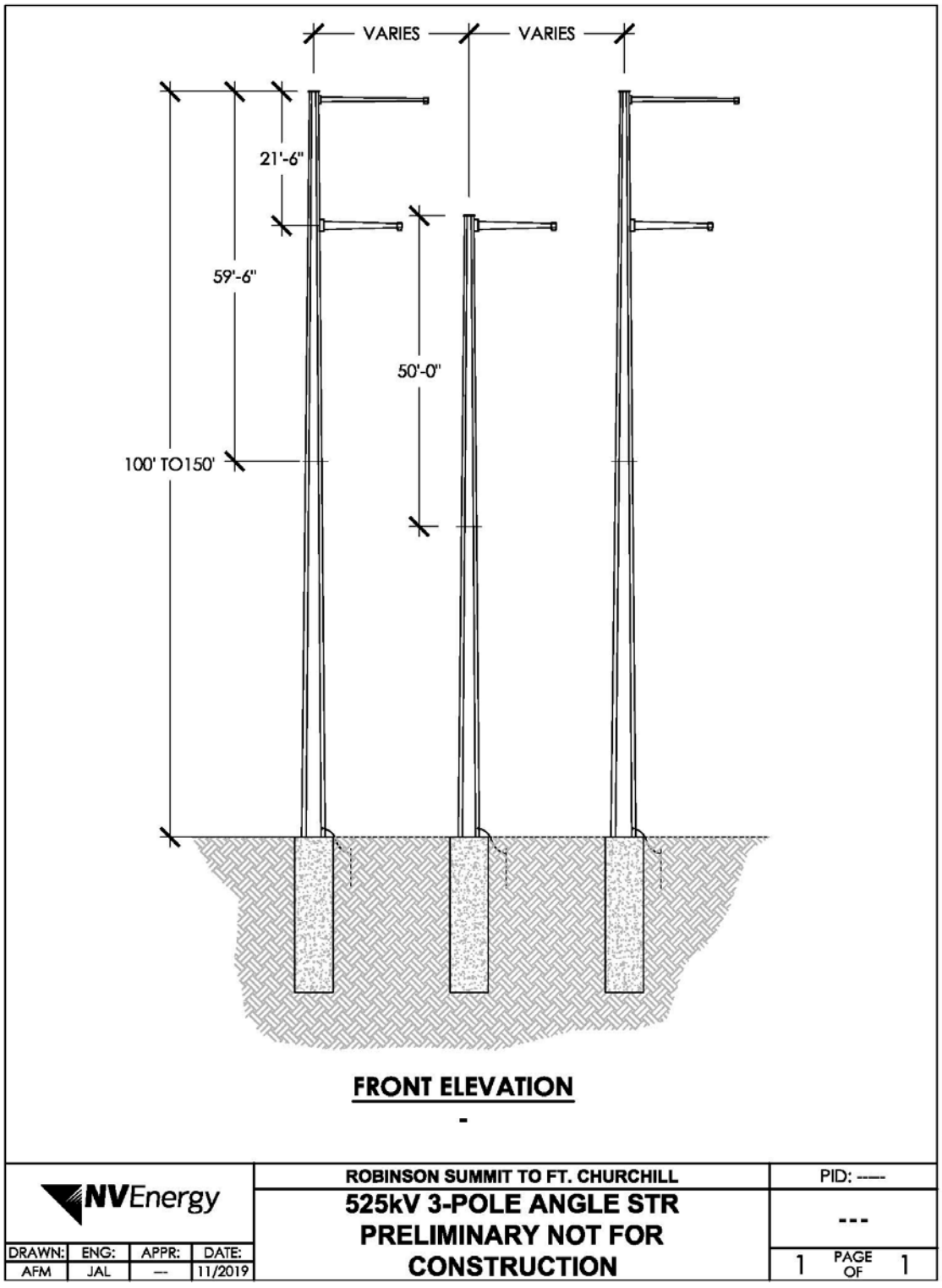


Figure 8: 345-kV Steel Pole H-Frame Tangent Structure

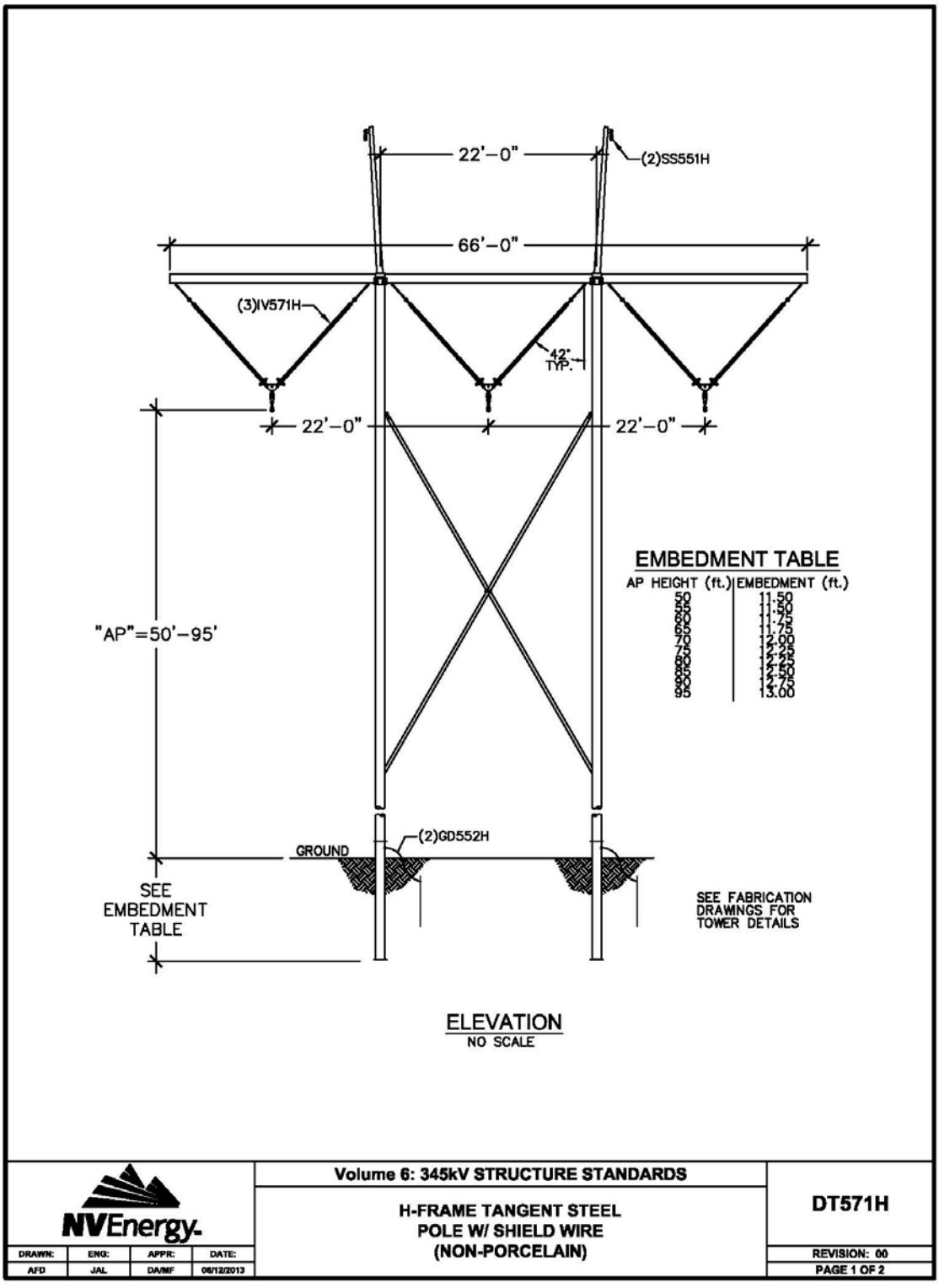
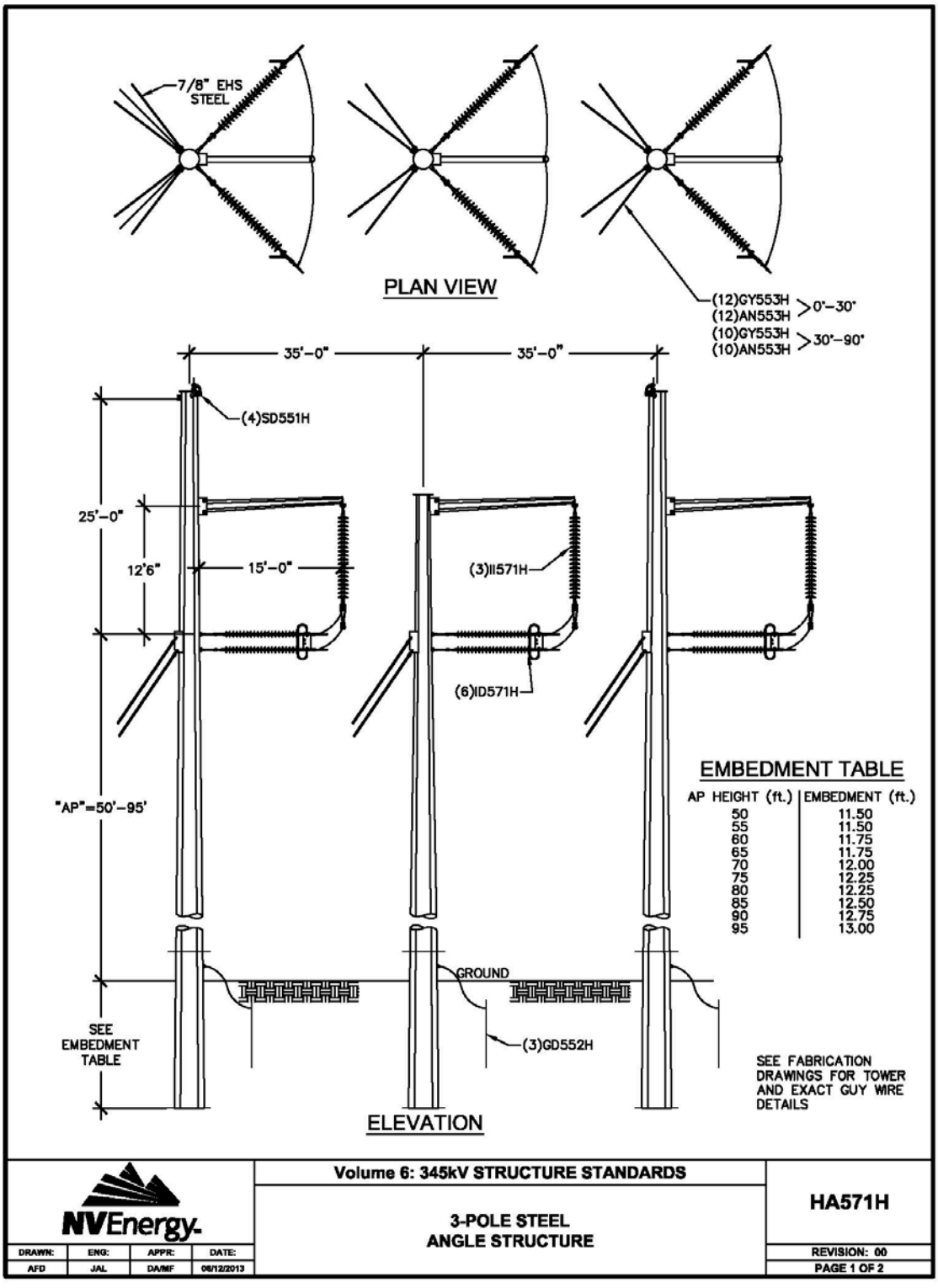


Figure 9: 345-kV Steel Three-Pole Dead-End/Angle Structure



3.2 PROJECT COMPONENTS – SUBSTATIONS

3.2.0 Harry Allen 525-kV Switching Station Expansion

The Harry Allen 525-kV Switching Station will be expanded to the south of the existing substation (See Attachment B: Substation Arrangement Drawings). The proposed expansion will also require the construction of one transmission line getaway. All substation expansion and transmission line realignment work will be within existing switching station boundaries. Construction is scheduled to begin in 2029. The Harry Allen 525-kV Switching Station expansion will contain the following new electrical equipment:

- One 525-kV line terminal
- Three 525-kV 63-kA breakers
- Three 525-kV coupling capacitor voltage transformers ("CCVT")
- Instrument transformers
- Switches, service transformers and associated bus work and hardware

3.2.1 Northwest 525/230-kV Substation

The existing Northwest 525/230-kV Substation will be expanded to the west of the existing substation and require an area of approximately 16 acres (See Attachment B: Substation Arrangement Drawings). The proposed substation will also require the construction of two transmission line getaways. All substation and transmission line realignment work will be on private property. Construction is scheduled to begin in 2029. The Northwest 525/230-kV Substation expansion will contain the following new electrical equipment:

- Two 525-kV line terminals
- Seven 525-kV 63-kA breakers
- Two 525-kV 75-MVAR shunt reactors
- One 525-kV 455-MVAR series capacitors
- Three 525-kV coupling capacitor voltage transformers ("CCVT")
- Instrument transformers
- New control enclosure to accommodate new protection panels
- New telecommunications infrastructure including fiber optic cable for control and operation of the transmission system
- Switches, service transformers and associated bus work and hardware.

3.2.2 Amargosa 525/230-kV Collector Station

The new Amargosa 525/230-kV Collector Station will be constructed approximately 24.5 miles west of Indians Springs, Clark County, Nevada and require an area of approximately 50 acres (See Generic Collector Substation Conceptual Layout in Attachment B: Substation Arrangement Drawings). The proposed substation will also require the construction of two transmission line getaways. All substation and transmission line realignment work will be on public lands. Construction is scheduled to begin in 2029. The Amargosa 525/230-kV Substation expansion will contain the following new electrical equipment:

- Two 525-kV line terminals
- Eight 525-kV 63-kA breakers
- Four 525-kV 75-MVAR shunt reactors
- One 525-kV 455-MVAR series capacitors
- Fifteen 525-kV coupling capacitor voltage transformers ("CCVT")
- Instrument transformers
- New control enclosure to accommodate new protection panels
- New telecommunications infrastructure including fiber optic cable for control and operation of the transmission system
- Switches, service transformers and associated bus work and hardware.

3.2.3 Esmeralda 525/230-kV Collector Station

The new Esmeralda 525/230-kV Collector Station will be constructed approximately 28.5 miles west of Tonopah, Nye County, Nevada and require an area of approximately 40 acres (See Generic Collector Substation Conceptual Layout in Attachment B: Substation Arrangement Drawings). The proposed substation will also require the construction of two transmission line getaways. All substation and transmission line realignment work will be on public lands. Construction is scheduled to begin in 2029. The Esmeralda 525/230-kV Substation expansion will contain the following new electrical equipment:

- Two 525-kV line terminals
- Eight 525-kV 63-kA breakers
- Four 525-kV 75-MVAR shunt reactors
- One 525-kV 455-MVAR series capacitors
- Fifteen 525-kV coupling capacitor voltage transformers ("CCVT")
- Instrument transformers
- New control enclosure to accommodate new protection panels
- New telecommunications infrastructure including fiber optic cable for control and operation of the transmission system
- Switches, service transformers and associated bus work and hardware.

3.2.4 Fort Churchill 525/345/230/120-kV Substation

The new Fort Churchill 525/345/230/120-kV substation will be constructed approximately 1600 feet west of the existing Fort Churchill 230/120-kV substation and will require an area of approximately 122 acres (See Attachment B: Substation Arrangement Drawings). The proposed substation will also require the construction of one new 500-kV getaway, three new 345-kV getaways and realignment of one existing 230-kV transmission line and six existing 120-kV transmission getaways (See Attachment B: Substation Arrangement Drawings). All Substation and transmission line realignment work will be on lands owned by NV Energy. Construction is scheduled to begin in 2024. The Fort Churchill substation will contain the following new electrical equipment:

- One 525-kV line terminal
- Two 525/345-kV 600 MVA transformers
- Two 525-kV 75 MVAR shunt reactors
- One 525-kV 455 MVAR series capacitor
- Two 345/230-kV 300 MVA transformers
- Two 345/120-kV 280 MVA transformers
- Seven 525-kV 63 kA Breakers
- Seventeen 345-kV 63 kA Breakers
- Four 230-kV 63 kA Breakers
- Eighty-nine coupling capacitor voltage transformers (“CCVT”)
- Instrument transformers
- Six new control enclosures to accommodate new protection panels
- Switches, service transformers and associated bus work and hardware
- New telecomm infrastructure including fiber optic cable and microwave antennae tower for control and operation of the transmission system

3.2.5 Comstock Meadows 345/120-kV Substation Expansion

Work at the existing Comstock Meadows 345/120-kV substation will be within the existing boundaries (See Attachment B: Substation Arrangement Drawings) and entail the construction of two 345-kV transmission line getaways. Construction is scheduled to begin in 2024. The Comstock Meadows 345/120-kV substation expansion will contain the following new electrical equipment:

- Two 345-kV line terminals
- Four 345-kV 40 kA breakers
- Instrument transformers
- Switches, service transformers and associated bus work and hardware
- New telecomm infrastructure including fiber optic cable for control and operation of the transmission system

3.2.6 Mira Loma 345/120-kV Substation Expansion

Work at the existing Mira Loma 345/120-kV substation will be within the existing boundaries (See Attachment B: Substation Arrangement Drawings) and entail the construction of one 345-kV transmission line getaway. Construction is scheduled to begin in 2024. The Mira Loma 345/120-kV substation expansion will contain the following new electrical equipment:

- Two 345-kV line terminals
- Four 345-kV 40 kA breakers
- Instrument transformers
- Switches, service transformers and associated bus work and hardware
- New telecomm infrastructure including fiber optic cable for control and operation of the transmission system

3.3 PROJECT COMPONENTS – TELECOMMUNICATONS

3.3.0 Fort Churchill-Harry Allen Fiber Optic Cable

NV Energy will install an all dielectric self-supporting ("ADSS") fiber optic cable as a component of the Fort Churchill-Harry Allen 525 kV transmission line as described in Article 3.1 for control and operation of the transmission system. In addition, NV Energy will construct new microwave radio facilities to provide a diverse and redundant telecommunications path pursuant to North American Electric Reliability Corporation reliability standards.

The proposed Greenlink West microwave radio facilities include the following:

Table 2: Greenlink West Microwave Facilities

Site	Northing	Easting	Scope	Area
Angel Peak	36 19 05.53	-115 34 28.21	Existing	0.00
Spotted Range	36 37 57.53	-115 58 38.45	Greenfield	0.15
Amargosa	36 24 49.72	-116 25 16.64	Greenfield	0.15
Sawtooth	36 56 03.80	-166 51 04.90	Greenfield	0.15
Gold Mountain	37 17 58.87	-117 15 40.83	Greenfield	0.15
Montezuma	37 42 03.17	-117 23 00.85	Greenfield	0.15
Esmeralda	37 56 32.04	-117 43 49.08	Substation	0.00
Pilot Peak	38 20 34.07	-117 58 24.87	Greenfield	0.15
TV Hill	38 27 27.62	-118 45 56.41	Existing	0.00
TOTAL				**0.90**

The ADSS fiber optic cables will require a total of seven optical amplifier sites, each site approximately 0.7 acres for a total area of approximately 5 acres. The proposed optical amplifier and microwave radio sites will also require electric distribution service. NV Energy will optimize the location of optical amplifier sites to minimize the length and impact of distribution electric service. Construction is scheduled to begin in 2024.

3.4 LAND/RIGHT-OF-WAY REQUIREMENTS

3.4.0 Permanent (Operations & Maintenance)

NV Energy will require a permanent 200 foot wide right-of-way along the length of the proposed 525-kV transmission lines and 160 foot wide right-of-way along the length of the proposed 345-kV transmission lines. The transmission lines will be centered within the proposed right-of-way.

3.4.1 Temporary (Construction)

In order to accommodate construction activities, NV Energy will require a 600-foot-wide temporary right-of-way (1,200 feet in areas with steep terrain) for the proposed 525-kV and 345-kV transmission lines. Access to the new right-of-way for construction of structures and lines stringing will be achieved by new and existing access roads. Each of these is discussed below.

Existing Access Roads: Access for Project construction will be achieved primarily via existing roads. In some cases, existing improved and unimproved dirt roads will require widening or other improvements to accommodate construction equipment. Three types of existing access roads will be used for access. These are described below and will be discussed in more detail in the construction operations maintenance plan once an agency preferred alternative is selected.

- **Paved Roads:** Paved roads are expected to be accessible under any conditions by all construction equipment and are not expected to require either maintenance or improvement.

- **Dirt Roads that will not require improvements:** These roads are graded roads (some segment of which may be graveled) that are used relatively frequently and should be accessible under most weather conditions. These roads will not need improvement for construction access, but they will be maintained as required (typically light grading) to keep the road in acceptable condition for both construction use and for other users. Such maintenance activity will not increase the currently existing profile of the road nor increase surface disturbance.

- **Dirt Roads that may require improvements:** These include minimally improved and unimproved dirt roads and two-track roads that will need improvements to safely accommodate construction equipment.

- Normal running width on the access roads requiring improvement will be approximately 25 feet . A 100 feet wide environmental survey corridor will be established for all roads requiring improvement. Improvements that will be required on these roads will include vegetation removal, curve widening, road-bed widening, surface improvement by blading and pushing rocks to either side, and installation of natural drainage crossings, water bars, and other erosion protection measures.

New Access Roads: NV Energy will construct new access roads from existing access roads and/or between adjacent structure sites to access structure sites for the proposed transmission line in areas of flat terrain and low vegetation. The new access roads will accommodate all equipment necessary to construct the structure foundations, structures, conduct stringing, including track and rubber tired vehicles. New access roads designated as permanent will be graded

In areas where vegetation removal is necessary, vegetation will be trimmed by hydro-axing (a lawnmower-type machine) to about 3 to 6 inches above grade, leaving the stems and root systems intact to allow for regrowth. In the event, roads become impassible it may become necessary to bring in fill or gravel. The new access roads will be an average width of 25 feet in most areas. Most construction work will be conducted within the 600 foot study corridor (1,200 feet in areas with steep terrain). .

Transmission Structure Work Areas

In order to accommodate construction equipment and activities, temporary work pads measuring 200 feet by 250 feet in size will be needed for each structure. As summarized in Table 3: Temporary Disturbance Areas, the transmission structure work areas will disturb a total area of approximately 2,004 acres on public land and 455 acres on private land.

Pull Sites and Other Construction Yards

Approximately 274 pull sites and other construction yards including staging areas, concrete batch plants and material yards will be necessary for installing conductor and construction logistics. As summarized in Table 1: Temporary Disturbance Areas, pull sites and other construction areas will temporarily disturb a total area of approximately 7,140 acres on public land and 2,450 acres on private land.

Substations

Expansion of the existing Harry Allen 525-kV Switching Station, Northwest 525/230-kV substations and construction of the new Amargosa 525/230-kV and Esmeralda 525/230-kV substations will require as summarized in Table 3: Temporary Disturbance Areas, approximately 100 acres on public land and 6 acres on private land.

Table 3: Temporary Disturbance Areas

Workspace	Area Required	Total Approximate Acreage of Temporary Disturbance[10]	
		Private	Public
Structure Work Areas	2,142 sites x 200 feet x 250 feet	455	2,004
Pulling Sites and Construction Yards	274 sites x 35 acres	2,450	7,140
Access and Spur Roads	2,016,960 linear feet public 464,640 linear feet private x 25 feet wide[11]	267	1,158
Optical Amplifier Sites	7 sites x 250 feet x 125 feet		5
Microwave Sites	6 sites x 65 feet x 100 feet		1

[10] The temporary right-of-way is inclusive of the permanent right-of-way.
[11] Access road width is approximate.

Northwest Substation		6	10
Amargosa Collector Station			50
Esmeralda Collector Station			40
Total		**3,178**	**10,408**

3.4.2 Permanent (Operation)

After project construction has been completed, NV Energy will require a permanent 200 feet wide right-of-way on BLM land for the 525-kV transmission line and 160 foot right-of-way for the 345-kV lines in order to conduct operations and maintenance activities. A breakdown of required permanent disturbance areas is presented in Table 4: Permanent Disturbance Areas.

Table 4: Permanent Disturbance Areas

Workspace	Area Required	Total Approximate Acreage of Permanent Disturbance	
		Private	Public
Structure Work Areas	2,142 sites x 100 feet x 100 feet	91	401
Access and Spur Roads	2,016,960 linear feet public 464,640 linear feet private x 25 feet wide[12]	267	1,158
Optical Amplifier Sites	7 sites x 250 feet x 125 feet		5
Microwave Sites	6 new sites x 65 feet x 100 feet		1
Northwest Substation		6	10
Amargosa Collector Station			50
Esmeralda Collector Station			40
Total		**364**	**1665**

[12] Access road width is approximate.

3.5 CONSTRUCTION METHODS

Transmission Line

Construction of the transmission line structures and installation of conductor of the line will occur as follows:

Step 1 – Mobilization and Staging

A crew of 25 to 50 workers will mobilize to the site approximately one week prior to the start of work. During this time, they will transport equipment and construction materials to designated construction staging areas.

Step 2 – Preconstruction Surveying and Staking

The initial activity prior to construction is the engineering survey and staking of project facilities. This will include surveying and marking structure locations, anchor sites, staging and material yards (if known), wire pulling sites, access roads, and substation locations. In addition, signs, flags, and/or fencing will be used to delineate project features, such as access, work areas and sensitive resource areas.

Once the project area is staked, preconstruction plant and wildlife surveys will occur if required prior to beginning ground clearing. Additional staking may be required just prior to construction to refresh previously installed stakes and flagging and/or delineate any sensitive resource areas identified during the preconstruction field surveys.

Step 3 – Access Road Construction

Construction personnel will use numerous existing access roads to transport materials and equipment to and from the transmission line corridor, substations, and staging areas. The following types of access roads will be used during construction:

1) Existing paved roads
2) Existing dirt/gravel roads that do not require improvements
3) Existing dirt/gravel roads that require improvements (e.g., widening, blading, or importation of materials to accommodate construction equipment).
4) New access roads

The project would utilize existing access roads wherever practical; however, creation of new roads and upgrading existing roads may be required to ensure that equipment is able to access the right-of-way and delivery vehicles are able to access the laydown areas and structure sites. Upon completion of construction, those access roads that are not necessary for the operation and maintenance of the transmission lines would be restored to pre-construction conditions.

Permanent access roads utilized during construction, operation and maintenance would be graded to a maximum width of 25 feet . Roads may need to be widened at some locations to allow for curve widening, cut-and-fill on side slopes, side casting, or other surface improvements. Other areas along existing access roads may cut and filled to provide the proper grade for equipment access, and wire setup sites at some of the angle points. Spur roads, off of the main access roads would be constructed to structure pad sites, as necessary. Many of these spur roads would also be

permanent, as they would provide access the pad sites during operation and maintenance activities. New access roads and spur roads would require a certain degree of flexibility in their routing and construction as they would be subject to meandering to avoid difficult terrain and potentially sensitive habitat or species. In areas of rough terrain, new access roads created along steep slopes would most likely exceed the average 25 foot width. The width needed for these "side-hill roads" would vary and would be determined based upon the engineering and safety constraints. The width of these types of access roads would be determined during the engineering phase of the project.

Temporary access roads and spur roads would be cleared primarily by a mower or hydro-axe but may also include blading, tree removal, and bridge/culvert construction. As much as possible, clearing would be performed in a manner that leaves the root systems intact in order to encourage regrowth and minimize erosion. In rough terrain, side slopes would be cut and filled using grading equipment, and rocks or other obstructions would be bladed to allow for passage of rubber-tired vehicles. If rocks cannot be removed with heavy equipment, they may need to be blasted with explosives. Temporary work areas, spur roads, and access roads that are not necessary for the operation and maintenance of the transmission lines would be reclaimed and reseeded after construction.

Where possible, drainages would be crossed at grade. In areas where this type of crossing is not feasible, appropriate drainage facilities (i.e., culverts, wing ditches, etc.) would be designed and constructed and the appropriate permits would be obtained.

Specific actions would be implemented to reduce the impacts of the construction of the access roads. Measures to mitigate impacts, such as the installation of water bars and dips to control erosion would be included. In addition, measures would be taken to minimize impacts in specific locations and during certain periods of the year. Areas considered sensitive could be avoided altogether and the use of the roads during heavy rains or high wind events could be limited to help mitigate impacts during construction. Access road needs would be determined after design and engineering requirements are finalized.

Step 4 – Right-of-Way Preparation

In order to establish sufficiently sized work areas, pull sites, and staging areas, some vegetation clearing and grading will be conducted. In all temporary work locations, vegetation removal will be minimized to the extent possible. Because the structure sites and the structure stringing sites require a fairly flat surface, the areas may be graded, and soil may be imported to achieve the necessary elevation. In order to accommodate construction equipment and activities, temporary work pads measuring 200 feet by 250 feet in size will be needed for each structure. Each pull site will include a work area measuring 35 acres and will be cleared of vegetation and graded (as necessary) for use.

Step 5 – Structure Installation

Holes for structures will be excavated using augers or other back-hoe type equipment. Holes for 345 kV structures will be two to three feet in diameter and 10 to 21 feet deep. Holes for 525 kV tangent structures will be three to four feet in diameter and 15 to 30 feet deep. Holes for 525 kV dead end structures will be approximately six to eight feet in diameter and 12 to 40 feet deep. Dimensions will vary subject to structure loading and soil conditions. Additionally, holes for guy

wire anchors[13] will be excavated as necessary. Blasting may be required in rocky areas where normal excavation methods are unable to meet project excavation specifications.

Dead end and angle structure pier foundations would be constructed of cast-in-place concrete. Excavation for foundations would be made with track or truck-mounted augers capable of excavating the proper size hole. Should rocky areas be encountered, foundation holes may be excavated by rock drills. Foundation holes would be covered during construction to protect the public and wildlife while left unattended (i.e., overnight, weekends, holidays, weather delays, etc.). If practical, temporary fencing would be used. Prior to the drilling commencement, the first six inches of topsoil would be removed and stockpiled for use in the restoration process. Soil removed from foundation holes during the drilling process would be stockpiled in the work area and segregated from the topsoil. This stockpiled soil would be spread evenly on the right-of-way or used to backfill holes.

Materials, including structure materials, insulators, hardware, and guy wire anchors, will be delivered to the project site via flatbed truck, and will be assembled on site using a crane or other heavy construction equipment. Crews will attach insulators, travelers, and hardware to the cross arm to form a complete unit. After this step has been completed, the assembled transmission structures will be placed into the excavated holes using a large mobile crane or helicopter. The structure pole bases will be buried in the ground, and native soil will be used to fill the holes (imported soil will be used if native material is unsuitable for compaction). At three-pole structures, guy wires to support the structures may be used to plumb the structures.

Step 6 – Conductor Installation

As mentioned previously, the conductor will consist of three phase, three conductor bundle-bundled 1590 kcmil ACSR or two conductor bundle 954 kcmil ACSR. Approximately 187 pull sections will be required, with pulling or tensioning sites on either end. The conductor will be installed onto new transmission structures by a sock line (a small cable used to pull conductor) attached to the other end of the new conductor and pulled into the travelers using the pulling equipment staged at the pulling sites or by helicopters.

Once the conductor is pulled into place, conductor tensions between the structures will be adjusted to a pre-calculated level. The line will be installed with a minimum ground clearance of 31 feet for 525-kV and 26 feet for 345-kV construction. The new conductor will then be clipped into the end of each insulator on each structure, the travelers will be removed, spacer/dampers, vibration dampers and other hardware will be installed. Shield wire installation and all-dielectric self-supporting fiber optic cable will be accomplished in a similar manner.

[13] Guy wire anchors fasten a high-tensioned cable to the ground to give the transmission structure increased stability.

Step 7 – Site Cleanup and Demobilization

Surplus materials, equipment, and construction debris will be removed at the completion of construction activities. All man-made construction debris will be removed and disposed of as appropriate at permitted landfill sites. Cleared vegetation will either be shredded and spread over the right-of-way as mulch and erosion control or disposed of off-site, depending on agency agreements. Rocks removed during access road grading and foundation excavation will be redistributed over the right-of-way to match adjacent site conditions.

Step 8 – Restoration and Reclamation

Once construction has been completed, existing and permanent access roads will remain improved. Designated temporary work areas, access roads and spur roads may be reclaimed as stipulated to preconstruction conditions. Areas within the right-of-way disturbed by construction activities will be recontoured, decompacted, and seeded. BLM-approved seed mixes will be applied to these disturbed areas. NV Energy will attempt to close or restrict vehicle access to areas that have been seeded until the reclamation success criteria have been satisfied.

Harry Allen, Northwest, Amargosa, Esmeralda and Fort Churchill Substations

The expansion of the existing Harry Allen and Northwest Substations and construction of the new Amargosa, Esmeralda Collector Stations and Fort Churchill Substation will be conducted using the following methods:

Step 1 – Site Preparation

Work at the proposed substation sites will begin by clearing existing vegetation and grading level pads for installation of the stations.

Step 2 – Fencing

Once the pads are prepared, the sites will be secured with chain-link fencing. Holes for the structure footings and underground utilities will then be excavated; the footings and underground utilities will be installed, including electrical conduits and additions to the ground grid; and the excavations will be backfilled. Aboveground structures and equipment will then be installed.

Step 3 – Graveling

Once the equipment is installed, medium gray gravel, 2 inches wide or less, will be spread over the sites to a depth of approximately 4 inches.

3.5.0 Personnel

During peak construction periods it is anticipated that as many as 250 personnel will be deployed including construction and support personnel, inspectors, surveyors, project managers, and environmental inspectors.

3.5.1 Equipment

Table 3: Typical Construction Equipment presents a list of the typical equipment and their uses for construction of this type of project.

3.5.2 Schedule

NV Energy has a planned in-service date of December 31, 2026, for the project and will take approximately two years to complete.

3.6 OPERATIONS AND MAINTENANCE ACTIVITIES

3.6.0 Methods

Once the new facilities are operational, NV Energy operations and maintenance personnel will conduct annual inspections of the lines and substations. Annual inspections will be conducted by helicopter, all-terrain vehicles, or line trucks. The inspections will include visual review of the line along the access roads.

Approximately every 10 years, NV Energy personnel will conduct structure-climbing inspections. These inspections consist of accessing the structure using four-wheel drive vehicles on the access roads and the right-of-way. NV Energy personnel will then climb structures to inspect the hardware, condition of the structures, and insulators.

Aside from annual inspections, NV Energy personnel will also need to access the line in the event maintenance of a structure is required or under emergency conditions. Under these circumstances, the line would be accessed by line trucks using existing access roads or by helicopter.

Table 5: Typical Construction Equipment

Equipment	Use
¾-ton and 1-ton pickup trucks	Transport construction personnel
2-ton flat bed trucks; flat bed boom truck	Haul and unload materials
Rigging truck	Haul tools and equipment
Mechanic truck	Service and repair equipment
Aerial bucket trucks	Access poles, string conductor, and other uses
Shop vans	Store tools
Bulldozer	Grade access roads and pole sites and reclamation
Road grader	Construct, maintain, and upgrade roads
Compactor	Construct access roads
Truck mounted digger or backhoe	Excavate
Small mobile cranes (12 tons)	Load and unload materials
Large mobile cranes (75 tons)	Erect structures

Transport	Haul poles and equipment
Drill rig with augers	Excavate and install fences
Puller and tensioner	Pull conductor and wire
Cable reel trainers	Transport cable reels and feed cables into conduit
Semi tractor-trailers	Haul structures and equipment
Splice trailer	Store splicing supplies and air condition manholes
Take-up trailers	Install conductor
Equipment	**Use**
Air compressors	Operate air tools
Air tampers	Compact soil around structure foundations
Dump truck	Haul excavated materials and import backfill
Fuel and equipment fluid truck	Refuel and maintain vehicles
Water truck	Suppress dust and fire
Winch truck	Install and pull sock line and conductors into position
Helicopter	Transport equipment and personnel, erect structure, pull conductor sock-line and hard-line

3.7 REQUIRED AUTHORIZATIONS

Table 4: Required Permits and Authorizations provide a list of the permits that must be obtained prior to construction and operation of the project.

Table 6: Required Permits and Authorizations

Agency	Permit/Authorization	Action Requiring Permit Approval or Review
BLM and affected land managing agencies, (e.g., BOR, DOD, USFS, BIA, USFWS)	Right-of-Way Grant	Obtaining temporary right-of-way on public land
	National Environmental Policy Act compliance	Issuance of a Right-of-Way Grant
	Section 106 of the National Historic Preservation Act compliance (if required)	Any activity that may affect prehistoric or historic resources eligible for the National Register of Historic Places and issuance of a Special Use Authorization
	Endangered Species Act of 1973 as amended (16 USC 1531 et seq.)	Endangered Species Act Section 7 consulatation/compliance by Federal land managing agencies and lead agency.

Agency	Permit/Authorization	Action Requiring Permit Approval or Review
Federal Aviation Administration (FAA and DOD)	FAA Act of 1958 (PL 85-726) (14 CFR 77)	Section 1101 Air Space Permit for air space construction clearance
Nevada Division of Environmental Protection, Bureau of Water Pollution Control	National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit Waiver	Stormwater discharge associated with construction activities disturbing 1 or more acres
Nevada Division of Environmental Protection, Bureau of Air Pollution Control, County Air Permits	Surface Area Disturbance Permit	Construction activities disturbing 5 or more acres (Washoe and Clark County Air permits are required for disturbance of 1 acre or more)
Nevada Department of Transportation (NDOT)	NDOT Highway Permit for Occupancy	Required when crossing Highways with electrical facilities
Nevada Public Utility Commission	Permit to Construct	Constructing facilities at 200-kV or above
Nevada State Lands	Nevada State Lands Easement	Construction of new electrical facilities on State Lands
County Special Use Permits	Special Use Permit	Construction of new electrical facilities
Union Pacific Railroad	Railroad Crossing License	Construction of electrical facilities with railroad Right of Way

4. ENVIRONMENTAL COMPLIANCE

4.0 ENVIRONMENTAL COMPLIANCE MANAGEMENT

As the applicant and owner of the Greenlink West Transmission Project, NV Energy has the responsibility to construct, operate, and maintain the transmission line and associated facilities in compliance with all federal, state, and local regulations and permits, and in accordance with stipulations and conditions included in the BLM Right-of-Way Grant. In addition to the permit requirements, NV Energy has committed to several environmental protection measures that are designed to avoid and/or minimize potential adverse effects to the environment.

NV Energy will designate an Environmental Compliance Team to monitor construction activities and track compliance with the measures listed in this document, the BLM Right-of-Way Grant, and other permits. The Environmental Compliance Team for the project and their respective responsibilities are identified in Table 5. NV Energy will also rely on the expertise of an on-site Environmental Inspector during construction to ensure compliance with all project requirements on an as-needed basis.

Table 7: Environmental Compliance Team

Name	Position	Responsibilities
Matt Johns	Project Manager	Project Management
Lee Simpkins	Environmental Manager	Permit Coordination
		Agency Coordination
		Compliance Reporting
Randal Cagle	Land Resources Manager	Property Owner Notification
Terry Saunders	Construction Administrator	Construction Oversight

NV Energy will maintain a compliance documentation system describing the compliance levels to track, document, and enforce successful implementation of all environmental protection measures, permit requirements, and other conditions. The compliance levels and their descriptors are identified in Table 6: Compliance Levels.

Table 8: Compliance Levels

Level	Description
Compliance	Identifies an action in conformance with all project requirements
Notification	Identifies an action preceding a noncompliance; similar to a "fix-it" notice
Noncompliance	Identifies an action that does not comply with one or more project requirements, and includes formal documentation of the action and efforts to correct the noncompliance
Stop Task Order	Identifies a noncompliance action in writing that resulted in an adverse effect(s) to a sensitive resource or a third repeated noncompliance; issued only by the Project Manager, Construction Foreman, or BLM Compliance Manager

The BLM's compliance team will be notified of all Noncompliance and Stop Task Order reports issued during construction of the project.

4.1 ENVIRONMENTAL PROTECTION MEASURES

NV Energy has committed to implementing the environmental protection measures listed in this section, which are divided into 11 categories: General, Soil Disturbance, Blasting, Storm Water Management, Noxious Weeds, Vegetation, Water Features, Wildlife and Sensitive Species, Cultural and Paleontological Resources, Hazardous Materials and Waste, Air Quality, and Fire Prevention and Response.

4.1.0 General Measures

1. The limits of the temporary work areas will be marked with staking and/or flagging. All environmentally sensitive areas, if any, will be fenced for avoidance.

2. Prior to construction, all construction personnel will be instructed on the protection of sensitive biological, cultural, and paleontological resources that have the potential to occur on site.

3. NV Energy will limit construction in residential areas to between daylight and dusk, seven days a week, subject to government entity requirements.

4. All construction vehicle movement will be restricted to the right-of-way, pre-designated access roads, and public roads.

5. Smoking will only be permitted in paved or cleared areas. All cigarettes will be thoroughly extinguished and disposed of in a trash receptacle.

6. Non-specular conductors will be installed to reduce visual impacts.

7. All existing roads will be left in a condition equal to or better than their preconstruction condition.

4.1.1 Soil Disturbance

8. In areas where significant grading will be required for temporary construction, topsoil (where present) will be stockpiled and segregated for later reapplication.

9. Construction will be prohibited when the soil is too wet to adequately support construction equipment, unless topsoil is removed and stockpiled. Construction may proceed in this case.

4.1.2 Blasting

10. At a minimum, all explosive storage facilities will be weather-resistant, fire-resistant, bullet-resistant, and theft-resistant.

11. Potential rockslide/landslide areas will be avoided to the maximum possible and a blasting geologist will be consulted prior to blasting in these areas.

12. Blasts will be designed to minimize ground vibrations that can cause slope instability and impacts to wells and/or springs.

13. Blasting within 500 feet of wells and/or springs will be avoided to the maximum extent possible.

14. Prior to blasting activities, all underground utilities will be located and marked to determine their location in relation to the right-of-way. NV Energy and/or its contractor will perform pre- and post-blast inspections of existing structures that may sustain damage due to blasting operations.

15. NV Energy and/or its contractor will take proper precautions to minimize or avoid damaging structures or utilities located within 150 feet of blasting operations. Precautions may include rippling the charge detonations further apart or reducing the amount of charge material that detonates simultaneously.

16. To prevent or minimize the amount of rock particles cast into the air following detonation, blasting mats will be used.

17. A signaling system will be used to alert individuals of an impending blast. The signaling system will include the following components:

    - A warning signal: 5 minutes prior to the blasting signal, a 1-minute series of long audible signals will be sounded at the blast site
    - A blasting signal: 1 minute prior to the blast, a series of short, audible signals will be sounded at the blast site
    - An all-clear signal: a prolonged, audible signal will be sounded at the blast site following the post-blast inspection of the blast area

    To inform construction personnel of the signaling protocol, signs explaining the protocol will be posted at the staging areas and other appropriate locations.

18. If any damage to structures occurs due to blasting operations, NV Energy and/or its contractor will repair the damage as quickly as possible after becoming aware of the damage. In the event of damage to any water supply systems, NV Energy and/or its contractor will provide an alternative water source until the original water supply system is restored.

4.1.3 Storm Water Management

19. NV Energy will apply for a Stormwater Permit. NV Energy will develop a Stormwater Pollution Prevention Plan (SWPPP) that incorporates Best Management Practices (BMPs), typically in the form of straw waddles, down gradient from disturbed project areas and around spoil and stock piles.

4.1.4 Noxious Weeds

20. Prior to preconstruction activities, NV Energy personnel will identify all noxious weeds present on the land to be included in the Right-of-Way Grant and provide this information to the BLM. A determination will be made by the BLM of any noxious weeds that require flagging for treatment. NV Energy will treat the noxious weeds as required by the BLM.

21. All gravel and/or fill material will be certified as weed-free.

22. All off-road equipment will be cleaned (power or high-pressure cleaning) of all mud, dirt, and plant parts prior to initially moving equipment onto public land. Equipment will be cleaned again if it leaves the project site prior to reentry.

23. Disturbances to areas infested with noxious weeds will be avoided to the extent possible.

24. Any equipment or vehicles used in an area infested with noxious weeds will be thoroughly cleaned before they are moved to a new location.

25. As soon as work is completed, temporary disturbed areas will be seeded with an appropriate seed mix approved by the BLM to establish ground cover by native species.

26. The project area will be monitored annually for 3 years to identify new infestations of noxious weeds within the Right-of-Way. Any new infestations will be treated using methods approved by the BLM.

4.1.5 Vegetation

27. Wherever possible, vegetation will be left in place. Where vegetation must be removed, it will be cut at ground level to preserve the root structure and allow for potential resprouting.

28. All temporary construction areas, including stringing sites and structure pads that have been disturbed, will be recontoured and restored as required by the landowner or land management agency. The method of restoration typically will consist of seeding or revegetating with native plants (if required), installing cross drains for erosion control, and placing water bars in the road. Seed will be certified as weed-free and will consist of a seed mix approved by the BLM.

4.1.6 Water Features

29. All construction vehicles and equipment staging or storage and all construction activities will be located at least 100 feet away from any streams, wetlands, and other water features unless such features are adequately protected.

4.1.7 Wildlife and Sensitive Species

30. Prior to construction (inclusive of right-of-way clearing and access road construction), biological surveys of the right-of-way and the access roads will be conducted. Potential habitat for listed species identified during the preconstruction survey will be fenced for avoidance. If avoidance is infeasible, consultation with appropriate jurisdictional agencies will be conducted prior to work in the area(s).

31. Excavations left open overnight will be covered or fenced to prevent livestock or wildlife from falling in. All covers will be secured in place and strong enough to prevent livestock or wildlife from falling in.

32. If a sensitive plant or animal species is identified during construction, work near the sensitive species will be halted, and a qualified biologist familiar with the biology and species likely to be encountered in the project area will be consulted to determine an appropriate buffer and other protective measures. The appropriate resource agencies will be notified of the discovery within 24 hours. If avoidance is infeasible, consultation with the jurisdictional resource agency will be conducted prior to continuing work in the immediate area of the species. Any federal- or state-listed species discovered on public land will also be reported to the BLM.

33. Structures will be constructed to conform to those practices described in the Suggested Practices for Raptor Protection on Power Lines Manual developed by the Edison Electric Institute.

4.1.8 Cultural and Paleontological Resources

34. An initial intensive cultural resource inventory survey will be conducted prior to construction. Unevaluated cultural sites will be tested to determine their eligibility status. Wherever possible, NV Energy will avoid cultural sites identified as eligible for inclusion on the National Register

of Historic Places. Where avoidance is not possible, a treatment plan will be developed through consultation between the BLM, State Historic Preservation Office (SHPO), and applicable tribes.

35. Prior to construction, NV Energy and/or its contractors will train workers and individuals involved with the project regarding the potential to encounter historic or prehistoric sites and objects, proper procedures in the event that cultural items or human remains are encountered, prohibitions on artifact collection, and respect for Native American religious concerns. As part of this training, all construction personnel will be instructed to inspect for paleontological and cultural objects when excavating or conducting other ground-disturbing activities.

36. If potential resources are found, work will be halted immediately within a minimum distance of 300 feet from the discovery, and a professional archaeologist (holding a valid Cultural Resources Permit from Nevada BLM) will be mobilized to the site to evaluate the find. Any potential resources will not be handled or moved. The professional archaeologist will then determine whether the find needs to be evaluated by a paleontologist or Native American representative. The appropriate specialist(s) will then make a determination of the significance of the find and the steps to be followed before proceeding with the activity. Any cultural and/or paleontological resource discovered during construction on public or federal land will be reported immediately to the BLM. Work will not commence until the BLM issues a notice to proceed. The BLM will notify and consult with SHPO and appropriate Tribes on eligibility and suitable treatment options. If significant resources are discovered, they will be recovered, transported, and stored at an approved curation facility that meets the standards specified in Title 36 of the Code of Federal Regulations (CFR) Part 79.

37. If human remains are encountered during project construction, all work within 300 feet of the remains will cease, and the remains will be protected. If the remains are on land managed by the BLM, BLM representatives will be immediately notified. If the remains are Native American, the BLM will follow the procedures set forth in 43 CFR Part 10, Native American Graves Protection and Repatriation Regulations. If the remains are located on state or private lands, the Nevada SHPO and the BLM will be notified immediately. Native American human remains discovered on state or private lands will be treated under the provisions of the Protection of Indian Burial Sites section of the Nevada Revised Statutes (NRS) in Chapter 383. The Nevada SHPO will consult with the Nevada Indian Commission and notify the appropriate Native American tribe. Procedures for inadvertent discovery are listed under NRS 383.170.

4.1.9 Hazardous Materials and Waste

38. All construction vehicles will be maintained in accordance with the manufacturers' recommendations. All vehicles will be inspected for leaks prior to entering the jobsite. All discovered leaks will be contained with a bucket or absorbent materials until repairs can be made.

39. All hazardous waste materials will be properly labeled in accordance with Title 40 of the CFR Part 262. A list of hazardous materials expected to be used during construction of the project is presented in Table 7: Hazardous Materials Proposed for Project Use.

Table 9: Hazardous Materials Proposed for Project Use

Hazardous Material	
2-Cycle Oil	Lubricating Grease
ABC Fire Extinguisher	Mastic Coating
Acetylene Gas	Methyl Alcohol
Air Tool Oil	North Wasp and Hornet Spray (1,1,1-Trichloro-ethane)
Antifreeze	Oxygen
Automatic Transmission Fluid	Paint
Battery Acid	Paint Thinner
Bee Bop Insect Killer	Petroleum Products
Canned Spray Paint	Prestone II Antifreeze
Chain Lubricant (Methylene Chloride)	Puncture Seal Tire Inflator
Connector Grease	Safety Fuses
Contact Cleaner 2000	Safety Solvent
Eye Glass Cleaner (Isopropyl Alcohol)	Starter Fluid
Gas Treatment	Wagner Brake Fluid
Gasoline	WD-40
Insulating Oil	Diesel Fuel

41. Hazardous material storage, equipment refueling, and equipment repair will be conducted at least 100 feet away from streams or other water features.

42. Spilled material of any type will be cleaned up immediately. A shovel and spill kit will be maintained on site at all times to respond to spills.

43. All sanitary wastes will be collected in portable, self-contained toilets at all construction staging areas and other construction operation areas and managed in accordance with local requirements.

4.1.10 Air Quality

44. Driving speeds will be limited to 25 miles per hour on unpaved roads and on the right-of-way.

45. All areas subject to ground disturbance will be watered as needed to control dust.

46. Public streets will be swept if visible soil material is tracked onto them by construction vehicles.

47. Excavation and grading activities will be suspended when winds (instantaneous gusts) exceed 50 miles per hour and visible dust that creates a health hazard to neighboring property owners and/or visibility impacts to vehicular traffic persists.

4.1.11 Fire Prevention and Response

48. NV Energy will designate a Fire Marshal (NV Energy Fire Marshal), who will coordinate with the BLM's fire management representative, as necessary.

49. The Fire Marshal will be responsible for the following tasks:

- Conducting regular inspections of tools, equipment, and first aid kits for completeness.
- Conducting regular inspections of storage areas and practices for handling flammable fuels to confirm compliance with applicable laws and regulations.
- Posting smoking and fire rules at centrally visible locations on site.
- Coordinating initial response to contractor-caused fires within the right-of-way.
- Conducting fire inspections along the right-of-way.
- Ensuring that all construction workers and subcontractors are aware of all fire protection measures.
- Remaining on duty and on site when construction activities are in progress and during any additional periods when fire safety is an issue, or designating another individual to serve in this capacity when absent.
- Reporting all wildfires in accordance with the notification procedures described below.
- Initiating and implementing fire suppression activities until relieved by agency or local firefighting services in the event of a project-related fire. Project fire suppression personnel and equipment, including water tenders, will be dispatched within 15 minutes from the time that a fire is reported.
- Coordinating with the NV Energy Project Manager regarding current fire conditions potential and fire safety warnings from the BLM and communicating these to the contractor's crews.

50. The NV Energy's Construction Foreman or Fire Marshal will immediately notify firefighting services of any fires on site. A list of emergency fire contacts for the project area is presented in Table 8: Emergency Fire Contacts.

Table 10: Emergency Fire Contacts

CALL 911 FIRST		
Department		**Phone Number**
BLM	**Sierra Front Interagency Dispatch Center**	(775) 883-3535 for Emergencies
	(Fire Management Office)	(775) 883-5995 for Administration

51. Contractors will be notified to stop or reduce construction activities that pose a significant fire hazard until appropriate safeguards are taken.

52. If an accidental fire occurs during construction, immediate steps to extinguish the fire (if it is manageable and safe to do so) will be taken using available fire suppression equipment and techniques. Fire suppression activities will be initiated by NV Energy and/or its contractor until relieved by agency or local firefighting services.

53. Smoking will only be permitted in designated cleared areas and will be prohibited while walking or working in areas with vegetation or while operating equipment. In areas where smoking is permitted, all burning tobacco and matches will be completely extinguished and discarded in ash trays, not on the ground.

54. "NO SMOKING" signage and fire rules will be posted at construction staging areas, helicopter fly yards, and key construction sites during the fire season.

55. Fire suppression equipment will be present in areas where construction tools or equipment have the potential to spark a fire.

56. Extra precautions will be taken when fire danger is considered to be high.

57. All field personnel will be instructed regarding emergency fire response. The contractors will receive training on the following:

    - Initial fire suppression techniques
    - Fire event reporting requirements
    - Methods to determine if a fire is manageable
    - Fire control measures to be implemented by field crews on site
    - When the worksite should be evacuated
    - How to respond to wildfires in the vicinity
    - How to maintain knowledge of and plans for evacuation routes

58. All flammable material, including dead vegetation, dry grasses, and snags (fallen or standing dead trees), will be cleared a minimum of 10 feet from areas of equipment operation that may generate sparks or flames.

59. No open burning, campfires, or barbeques will be allowed along the right-of-way; at construction staging areas, helicopter fly yards, and substations; on access roads; or in any other project-related construction areas.

60. All welding or cutting of power line structures or their component parts will be approved by the NV Energy's Construction Foreman or Administrator. Approved welding or cutting activities will only be performed in areas cleared of vegetation a minimum of 10 feet around the area. Welding or cutting activities will cease one hour before all fire response personnel leave a construction area to reduce the possibility of welding activities smoldering and starting a fire. Welder vehicles will be equipped with fire suppression equipment.

61. All internal combustion engines, both stationary and mobile, will be equipped with approved spark arresters that have been maintained in good working condition. Light trucks and cars with factory-installed (type) mufflers in good condition may be used on roads cleared of all vegetation with no additional equipment required. Vehicles equipped with catalytic converters are potential fire hazards and will be parked on cleared areas only.

62. The use of torches, fuses, highway flares, or other warning devices with open flames will be prohibited. NV Energy and its contractors will only use electric or battery-operated warning devices on site.

63. Equipment parking areas, small stationary engine sites, and gas and oil storage areas will be cleared of all extraneous flammable materials. “NO SMOKING” signs will be posted in these areas at all times.

64. Fuel tanks will be grounded.

65. NV Energy and the contractors will provide continuous access to roads for emergency vehicles during construction.

66. All motorized vehicles and equipment will be equipped with the following fire protection items:

    - One long handled round point shovel
    - One ax or Pulaski fire tool
    - One 5-pound ABC Dry Chemical Fire Extinguisher
    - One 5-gallon water backpack (or other approved container) full of water or other extinguishing solution
    - Hard hat, work gloves, and eye protection

67. Project construction worksites will include the following equipment:

    - Power saws, if required for construction, equipped with an approved spark arrester and accompanied by one 5-pound ABC Dry Chemical Fire Extinguisher and a long-handled, round-point shovel when used away from a vehicle.
    - Fuel service trucks with one 35-pound capacity fire extinguisher charged with the necessary chemicals to control electrical and fuel fires.
    - At least two long-handled, round-point shovels and two 5-pound ABC Dry Chemical Fire Extinguishers at wood cutting, welding, or other construction work sites that have a high risk of starting fires.
    - At least one radio and/or cellular telephone to contact fire suppression agencies or the project management team.
    - Backpumps filled with water (two at each wood-cutting site, one at each welding site, and two at each tower installation or construction site, or any activity site at risk of igniting fires).

68. During periods of increased fire danger, a fire suppression vehicle will be available in the construction area or stationed near high-risk construction work sites and will be equipped with the following items:

    - One water tank with a minimum capacity of 500 gallons
    - 250 feet of 0.75-inch heavy-duty rubber hosing
    - One pump with a discharge capacity of at least 20 gallons per minute. (The pump will have fuel capacity to operate for at least a 2-hour period.)
    - One tool cache (for fire use only) containing at a minimum:
        - Two long handled round point shovels
        - Two axes or Pulaski fire tools
        - One chainsaw of 3.5 (or more) horsepower with a cutting bar of at least 20 inches in length

69. If a fire is unmanageable, field crews will evacuate and call “911” or the district dispatch for the area (see Table 8: Emergency Fire Contacts). All fires will be reported to the jurisdictional fire agency, regardless of size and action taken.

ATTACHMENT A: PROJECT MAPS

ATTACHMENT B: SUBSTATION ARRANGEMENT DRAWINGS

ATTACHMENT C: CONSTRAINT STUDY

ATTACHMENT D: LEGAL DESCRIPTIONS