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Chapter 2
Proposed Action and Alternatives

2.1 Introduction

This chapter of the DSEIS fully describes: (1) the Proposed Action Alternative to construct and operate a 500kV transmission line, 500/345kV substation, and associated facilities, and (2) an Action Alternative to build the same facilities at an alternative center line location in the same federal energy corridor as the Proposed Action, and (3) the No Action Alternative.

Alternatives considered in this DSEIS are based on issues identified by the BLM and cooperating agencies as well as comments received during the public comment process for the Draft EEC EIS and the comment period for this SEIS. The BLM is required to consider in detail a range of alternatives that are considered "reasonable," usually defined as alternatives that are realistic (not speculative), technologically and economically feasible, and that respond to the purpose of and need for the project.

The Proposed Action would consist of a new substation at Robinson Summit and transmission line and telecommunication facilities that were described and analyzed in the EEC DEIS (i.e., Robinson Summit to Harry Allen (RS-HA) Line #1), as well as an expansion of the existing Falcon Substation on private lands. The Action Alternative to this line would consist of the former EEC Project RS-HA Line #2, which is also located in the Southwest Intertie Project (SWIP) Utility Corridor but along a different center line location than the Proposed Action, approximately 1,800 feet to the east. The facilities and alignment described under the Action Alternative were also described and analyzed in the EEC DEIS (i.e., RS-HA Line #2).

The long-term ROWs needed for the transmission facilities would vary slightly in acreage depending on the alternative below. **Table 2.1-1** provides a description of each transmission line route for a better understanding of the transmission line segment naming. The Proposed Action and Action Alternative routes (including alternative components) are shown on **Figures 2.2-1a** and **b**.

TABLE 2.1-1 TRANSMISSION LINE COMPONENTS

LINE NAME	DESCRIPTION	SEGMENTS INCLUDED
Proposed Action (formerly EEC RS-HA Line #1)	Robinson Summit 500/345kV Substation, 500-kV transmission line and telecommunication facilities mostly within the SWIP Utility Corridor between the Robinson Summit Substation and the existing Harry Allen Substation, loop-in of existing Falcon–Gonder 345KV line at Robinson Summit Substation, 345kV equipment additions at the existing Falcon Substation, and 500kV equipment additions at Harry Allen Substation.	6C, 8, 9B, 9A, 9D, and 11
Action Alternative (formerly EEC RS-HA Line #2)	All of the same facilities as the Proposed Action but an alternate alignment location also mostly within the SWIP Utility Corridor between the Robinson Summit Substation and the Harry Allen Substation.	6C, 8, 9B, 9C, 9D, and 11 9A (alternative) instead of 9C 10 (alternative) instead of 9B, 9C, and 9D

This chapter includes the following:

- **Section 2.2** provides a detailed description of the Proposed Action.
- **Section 2.3** provides a discussion of the Action Alternative at an alternative center line location together with the various component alternatives associated with the overall alternative.
- **Section 2.4** discusses the No Action Alternative and assumes there would be no development of the Proposed Action or Action Alternative and it also serves as the baseline for environmental conditions.
- **Section 2.5** provides descriptions of alternatives that were considered but eliminated from detailed analysis.
- **Section 2.6** summarizes and compares the analyzed alternatives.
- **Section 2.7** provides a summary of the mitigation and monitoring for the action alternatives.

2.1.1 Description of BLM Actions

2.1.1.1 Issuance of ROWs

ROWs issued for 30 years with the option of renewal would be necessary for the operation and maintenance of facilities located on BLM-managed public land. In addition, short-term ROWs would be required from the BLM to accommodate temporary construction activities, such as access roads and material/equipment staging. Long-term ROWs would be issued for:

- Robinson Summit Substation and Telecommunication ROW – Construction and operation of a new 500/345kV substation and access road. The substation would service the proposed 500kV transmission line and the loop-in with the existing Falcon-Gonder 345kV transmission line, as well as include microwave and fiber optic facilities to provide redundant communication pathways within NV Energy's system. This substation would require approximately 108 acres to interconnect the 500kV and 345kV systems and 4 acres for an access road to be widened and upgraded.
- ROW Amendment - For the loop-in with the existing Falcon-Gonder 345kV transmission line.
- Electric Transmission and Telecommunications Facilities ROW - Construction and operation of an electric transmission line, telecommunication (i.e., fiber optic line), and associated facilities to interconnect the existing and planned transmission and telecommunication facilities including substations, fiber optic line (including regeneration stations), and transmission lines.

2.2 ON Line Project – Proposed Action

2.2.1 Electric Transmission Facilities

To connect the northern and southern NV Energy service territories, and to allow for the delivery of renewable resources to market, NV Energy proposes to build approximately 236 miles of transmission line and associated facilities mostly within the SWIP Utility Corridor (**Figures 2.2-1a** and **b**).

Figure 2.2-1a Project Elements

Figure 2.2-1b Project Elements

Specifically, the components of the electric transmission facilities would include:

- Robinson Summit 500/345-kV Substation, approximately 108 acres in size, adjacent to the SWIP Utility Corridor in White Pine County
- One Nevada 500 kV transmission line and telecommunication appurtenances (ON Line), approximately 236 miles in length, between the proposed Robinson Summit Substation and the existing Harry Allen Substation in Clark County
- Falcon-Gonder 345-kV transmission line loop-in at the Robinson Summit 500/345 kV Substation
- Access roads into the Robinson Summit Substation and along the transmission lines
- Expansion to add 345kV series compensation equipment on private property at the existing Falcon Substation in Eureka County
- Addition of 500kV electrical connection equipment within the existing footprint of the Harry Allen Substation in Clark County

2.2.1.1 Transmission System Design

The design, construction, operation, and maintenance of the transmission system would meet or exceed the requirements of the National Electrical Safety Code (NESC), U.S. Department of Labor, Occupational Safety and Health Standards, and NV Energy's requirements for safety and protection of landowners and their property. The electrical characteristics for the proposed transmission line facilities are summarized in **Table 2.2-1**.

TABLE 2.2-1 ELECTRICAL DESIGN CHARACTERISTICS OF THE TRANSMISSION LINE

FEATURE	DESCRIPTION
Line Length	Approximately 236 miles
Type of Structures	Galvanized, painted, or self-weathering Steel: Lattice Guyed-V Lattice Self Supporting Tubular H-frame Tubular Three-Pole (Line Angle and In-line Dead End Structures in Tubular H-frame sections only)
Structure Height	Single-circuit structures 100 to 185 feet
Span Length	Average span 900 to 1,600 feet
Number of Structures per Mile	4 to 6
Right-of-way width	200 feet
ELECTRICAL PROPERTIES	
Nominal Voltage	525,000 volts Alternating Current
Capacity	2,000 Megawatts
Circuit Configuration	Single-circuit with three phases; three conductors per phase
Conductor Size	1,590 kcmil Aluminum Conductor Steel Reinforced (ACSR), 1.5 inch diameter per conductor
Shield Wire Size	7/16" diameter steel or approximately 0.9" diameter fiber optic cable
Ground Clearance of Conductor	Designed to exceed the code minimum requirement at the maximum operating temperature, lowest requirement is 25.8 feet

Three main types of structures would be used for the transmission line, they include steel lattice guyed-V, steel lattice self-supporting, and steel tubular structures. Steel lattice guyed-V structures require one foundation and four anchors per structure (**Figure 2.2-2a**). Steel lattice self-supporting structures require four foundations per structure (**Figures 2.2-2b** to **d**). Steel tubular H-frame structures require two foundations per structure (**Figure 2.2-2e**), and when required at angle and dead-end locations, steel tubular three-pole structures would require three foundations and twelve anchors per structure. Guyed-V foundations would be precast at an offsite concrete manufacturing facility and then transported and buried approximately five feet deep at each structure location. All other structure foundations would be constructed of cast-in-place concrete and range from 3 to 8 feet in diameter and from 12 to 30 feet deep. Depending upon soil type and engineering strength requirements, anchors would be drilled and grouted in small diameter holes (less than one foot in diameter) up to 40 feet deep, or installed in minimum 4-foot diameter excavations ranging from 12 to 20 feet deep.

2.2.1.2 Elements and ROWs

The transmission facilities would consist of an overhead 500-kV transmission line, a new substation, an expansion of an existing substation, an interconnection to an existing substation and new telecommunications facilities to support the transmission facilities (see **Figures 2.2-1a** and **b**). **Tables 2.2-2** and **2.2.-3** summarize acreages associated with short-term and long-term acreages and ROW requirements.

500-kV Transmission Line from the Robinson Summit Substation to the Harry Allen Substation

One new 500kV transmission line would be constructed from the proposed Robinson Summit Substation in White Pine County, Nevada to the existing Harry Allen Substation in Clark County, Nevada to provide an electric transmission connection between northern and southern Nevada. It is proposed that the transmission line would be routed primarily within the SWIP Utility Corridor.

The transmission line would extend south from the Robinson Summit Substation via Segments 6C, 8, 9B, 9A, 9D, and 11 (**Figure 2.2-1b**). This line would deviate slightly from the SWIP Utility Corridor to connect to the Robinson Summit Substation. It would also deviate from the SWIP Utility Corridor in Jakes Valley, near the Cove in the White River Valley, near the crossing of the White River by the southern extent of the Kirch Wildlife Management Area, and near Silver King Pass all along Segment 6C, again at Segment 9A south of Delamar Valley, and then in Segment 11 near the Harry Allen Substation. These deviations primarily result from topographic constraints within the SWIP Utility Corridor. If the line was left at the standard construction line spacing in comparison to the other planned utilities within the SWIP Utility Corridor, environmental impacts and safety risks to construction personnel and equipment would increase due to the difficulty of construction activities in steep terrain and the amount of surface disturbance required for safe installation of the transmission line. The slight deviations from the standard location in the SWIP Utility Corridor mentioned above would reduce these impacts.

The long-term ROW would be 200 feet wide from end point to end point (236 miles) for a total area of 5,721 acres. An additional short-term construction ROW would include approximately 280 miles of access over dirt roads (average width of 20 feet) outside the transmission line long-term ROW that would require widening, other improvements to accommodate the construction equipment, and construction of short spur segments. NV Energy would coordinate with responsible agencies and property owners to acquire approvals (e.g. short-term rights-of-way) to use and, in some cases, to improve these access roads. At a maximum of 30 feet wide, this short-term construction ROW would be about 985 acres. Approximately 4 acres of long-

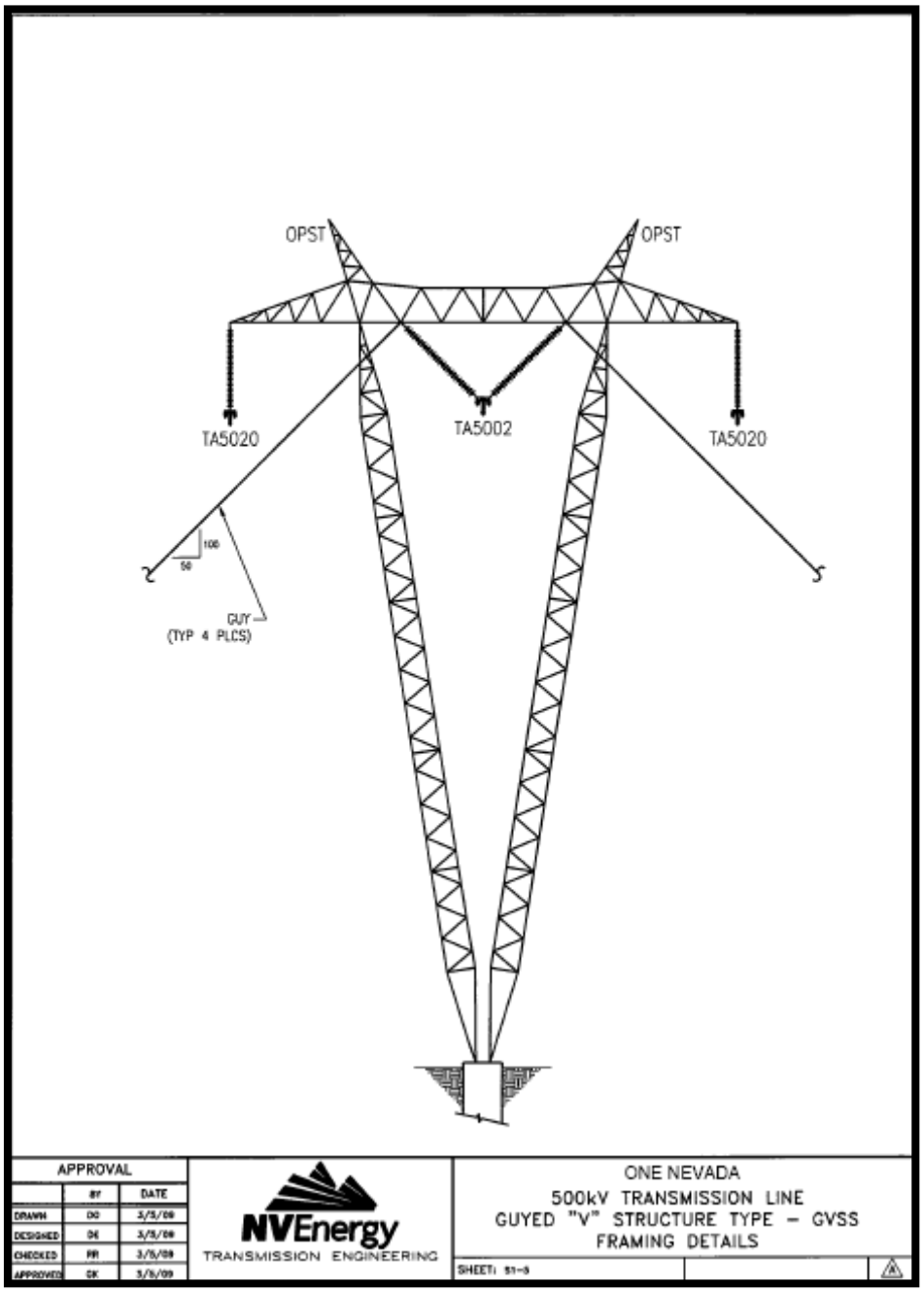

Figure 2.2-2a Steel Lattice Guyed V Structure

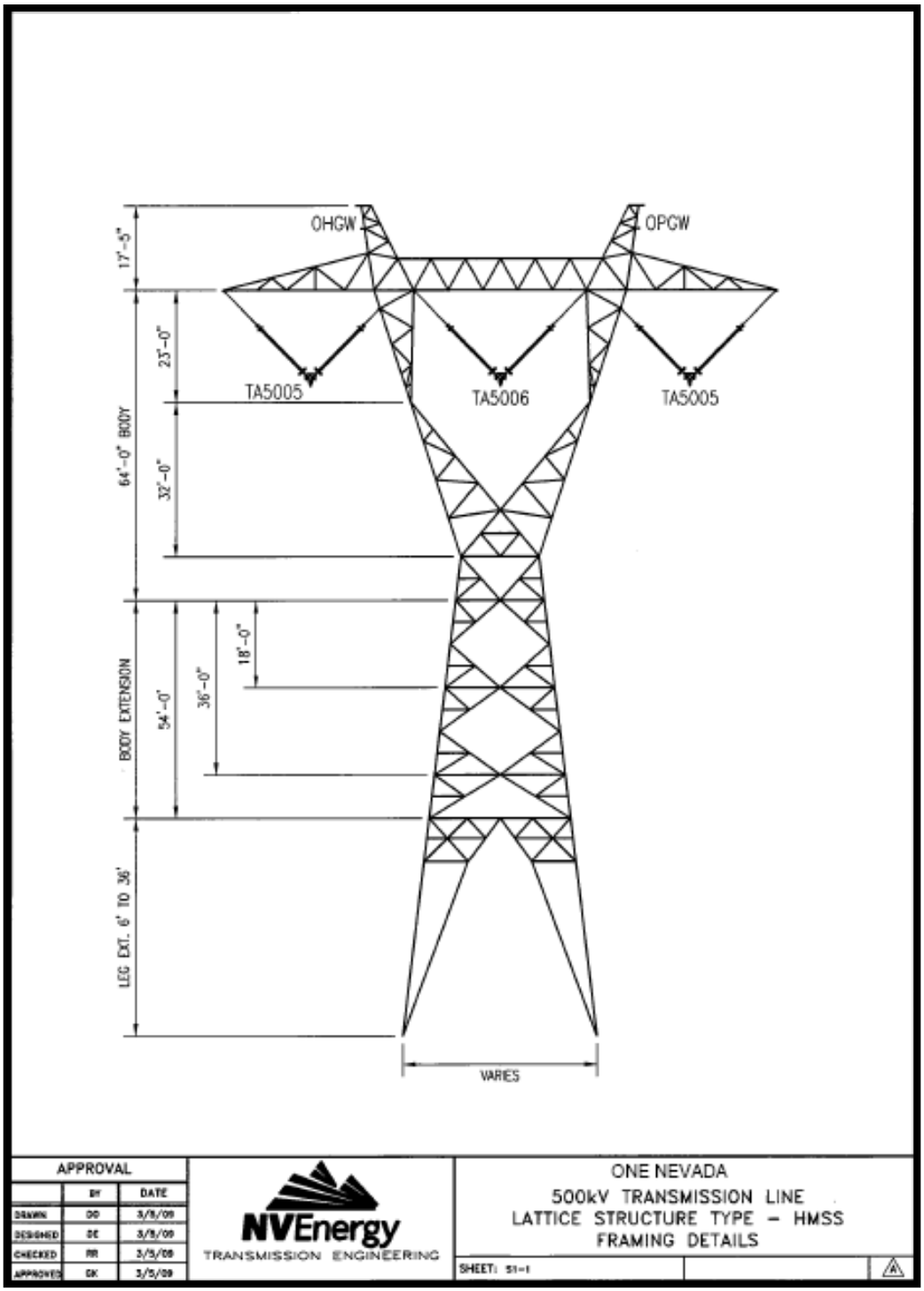

Figure 2.2-2b Steel Lattice Self-Supporting Structure

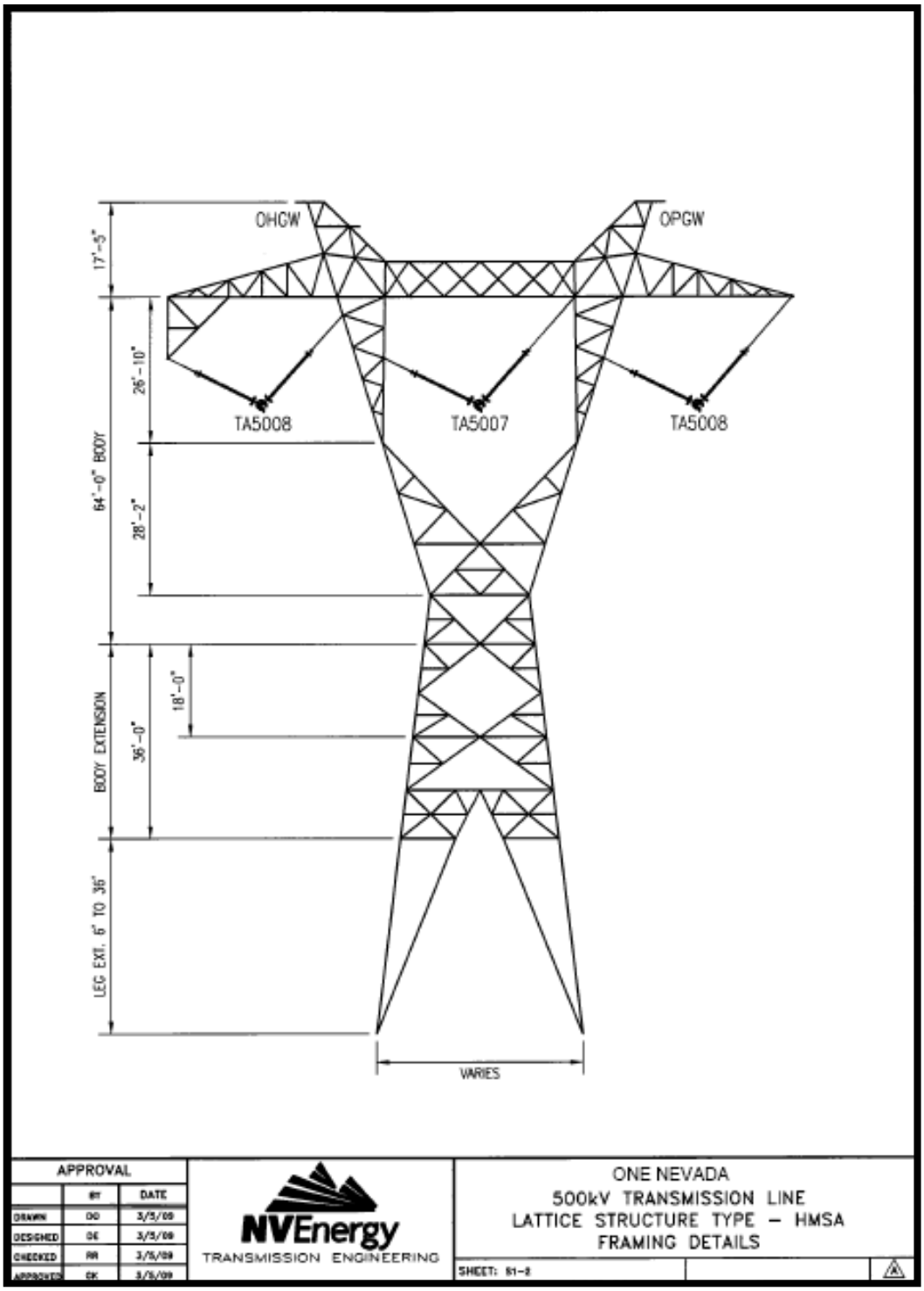

Figure 2.2-2c Steel Lattice Self-Supporting Structure

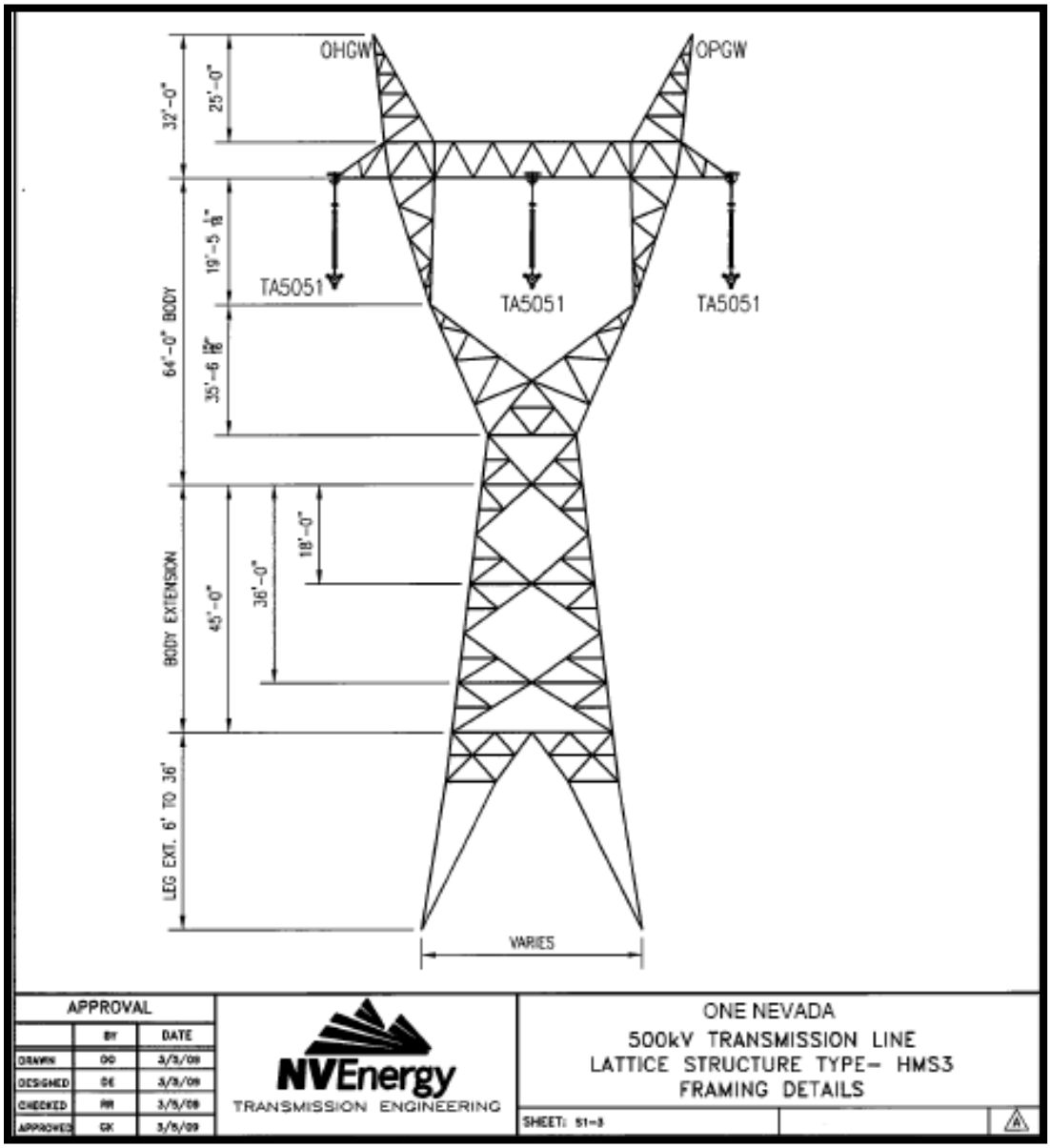

Figure 2.2-2d Steel Lattice Self-Supporting Structure

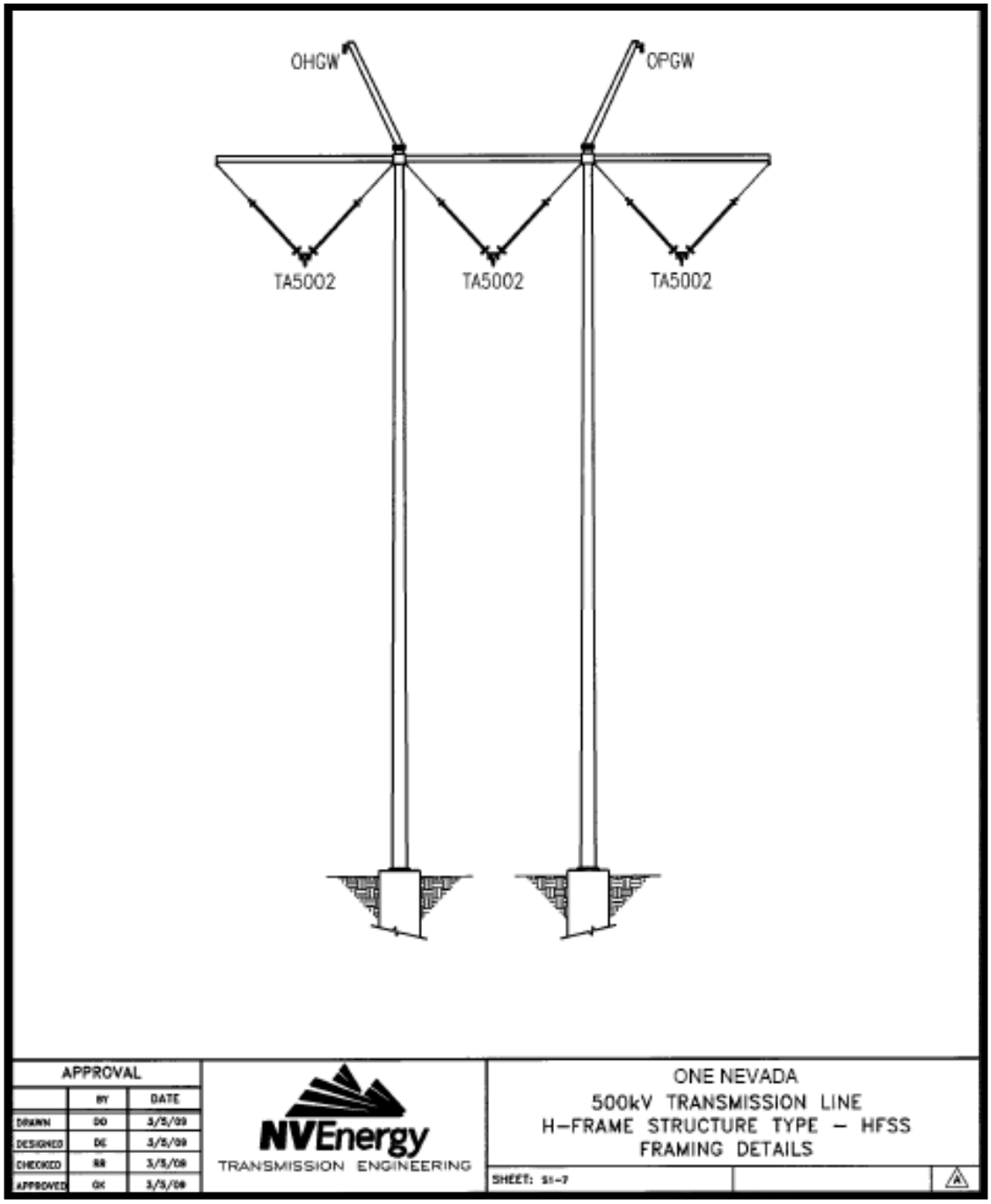

Figure 2.2-2e Steel Tubular H-Frame Structure

term ROW would be required for fiber optic regeneration sites along the ROW (40 acres for short-term construction ROW). Long-term power distribution ROWs for fiber optic sites would be approximately 60 acres, although actual permanent disturbance within the ROW for structures would be less than 1 acre. Transmission tower designs and footprints would be the same as above (see **Figures 2.2-2a-e**).

The height of and spacing between each tower would be determined based on detailed engineering and be dependent on the type of tower used and the terrain. Typically, single-circuit steel H-frame and lattice towers would both be 100-185 feet tall. On flat terrain each tower would have a long-term disturbance footprint of 66 x 66 feet (0.1 acres). In rough terrain each tower would have a long-term disturbance footprint of 200 x 220 feet (1 acre). For impact analysis purposes, it was estimated that average span lengths between structures would measure approximately 1,050 feet, resulting in an average of five structures per mile.

TABLE 2.2-2 DISTURBANCE ASSOCIATED WITH SHORT-TERM LAND USE REQUIREMENTS

FEATURE	DESCRIPTION	ACREAGE (approximate)	ESTIMATED NUMBER
LAND TEMPORARILY REQUIRED WITHIN THE LONG-TERM ROW			
Structure Site Work Area	200 x 220 feet (flat) - 1.0 acre 200 x 440 feet (rough) - 2.0 acres	746* 374	933
Temporary Access Roads in the ROW	within 200 foot wide ROW	487	Centerline Access
Wire-Pulling and Tensioning Sites	200 feet wide x 700 feet long 3.2 acres per site	307	79
Wire-Splicing Sites	200 feet x 100 feet – 0.5 acre (site on average every 3 miles)	39	79
Guard Structures	200 feet x 100 feet – 0.5 acre	unknown	unknown
Construction Staging Areas on the ROW	within 200 foot wide ROW, typically within wire-pulling and tensioning and /or wire-splicing sites	see above	see above
LAND TEMPORARILY REQUIRED OUTSIDE THE LONG-TERM ROW			
Short-term construction Area surrounding Robinson Summit Substation	200 foot buffer around expansion area	41	N/A
Short-term Access Roads outside the ROW	Access roads needing improvement and construction of short spur roads for access – maximum 30 feet wide	785	216 miles
Construction/Material Yards	Locations described below – 40 acres each – on private land or within existing ROW	120 acres	3
Concrete Batch Plant Sites	Locations unknown at this time – 5 to 40 acres each (to be situated on private land)	25 to 200	approx. 5

*Includes structure sites within desert tortoise habitat that would be permanent disturbance.

TABLE 2.2-3 LONG-TERM LAND USE REQUIREMENTS

FEATURE	DESCRIPTION	ACREAGE (approximate)	ESTIMATED NUMBER
Robinson Summit Substation ROW, plus access road	Substation footprint and access road (approx. 50 feet wide by 0.5 miles long)	108	N/A
Transmission Line /Fiber Optic Line ROW	200 foot wide by 236 miles	5,721	N/A
Structure Base	66 feet x 66 feet (flat) - 0.1 acre 200 x 240 feet (rough) - 1.0 acres	50 434	933
Long-term Access Roads (includes improvements to existing access, centerline access, and spur roads)	Only needed within desert tortoise habitat (20 feet wide)	199	N/A
Regeneration Stations	Less than 1 acre per site for equipment enclosure, fenced area, and primary and backup power supplies approximately every 40 to 60 miles	4	4

Minimum conductor height above the ground for the 500kV line would comply with NESC and NV Energy standards. The exact height of each structure would be governed by topography and requirements for conductor clearance.

Single-circuit tangent structures would have one cross arm with two “I” string and one “V” string insulator assemblies, or three “V” string insulator assemblies suspended from the cross arm. Single-circuit dead-end structures would have six horizontal insulator assemblies installed in tension with the conductor on each side of the cross arm and three “I” or “V” string assemblies suspended from the cross arm to support jumper connectors.

Overhead shield wires or steel encased fiber optic cables are required to protect the 500kV transmission line from lightning. Two overhead shield wires, either 7/16-inch diameter stranded steel cable or approximate 9/10-inch diameter fiber optic cable, would be installed on the top of all structures. Current from lightning strikes would be transferred through the shield wires and structures into the ground via buried ground rods, counterpoise, or another type of grounding system.

Telecommunications Facilities

Fiber optic communications cables would be installed within one or both of the shield wires along the transmission line. These cables would be supported by the transmission structures and strung along with the transmission cables during construction.

Fiber optic regeneration stations require an equipment enclosure, fenced area, and primary and backup power supplies approximately every 40 to 60 miles generally within the 200 foot transmission line ROW to transmit the signals over long distances. Fiber optic regeneration stations would be less than 1 acre in size. New electric power distribution would be required for

the fiber optic regeneration stations. Electric power distribution locations for these sites would be selected based on availability from the local providers.

Structure Site Work Areas in the ROW

An area of about 200 by 220 feet (approximately 1 acre) would be required at each structure site for the construction of foundations and the assembly and erection of the structures. Where topography requires, work areas would be expanded to up to 200 by 440 feet (approximately 2 acres). These expanded work areas for rough terrain would be partially cleared and graded to accommodate the safe operation of heavy equipment and cranes. The actual work area may not always be centered on the structure but may be positioned ahead or back along the ROW line as the terrain dictates to maximize access and minimize grading.

Temporary Access Roads in the ROW

Temporary access roads (outside desert tortoise habitat) would include: a ROW centerline access road, utilization of existing roads without improvements, utilization of existing roads with improvements, or the creation of new roads in the ROW as required to access all structure sites, wire pulling and tensioning sites, wire splicing sites, guard structures, fiber optic regeneration sites, etc. Temporary access roads would originate from existing public access roads and provide connection to construction areas and the centerline access road. Utilization of existing roads including any required improvements would be described in detail in the final Construction, Operation, and Maintenance (COM) Plan.

Temporary Wire-Pulling and Tensioning Sites in ROW

Each of the temporary wire-pulling and tensioning sites would be about 200 feet by 700 feet (approximately 3.2 acres), every 2 to 4 centerline miles along the ROW. These temporary areas may extend outside the ROW at angle points.

Temporary Wire Splicing Sites in ROW

Temporary wire splicing sites would be about 200 feet by 100 feet (approximately 0.5 acre) in size, every 2 to 4 miles along the ROW, or as may be required.

Temporary Guard Structures in ROW

Temporary guard structure sites would be about 200 by 100 feet (approximately 0.5 acre) adjacent to existing roads/electrical lines or other facilities requiring protection during wire pulling.

Temporary Construction Staging Areas on the ROW

Temporary construction staging areas in the ROW would generally be located at areas designated for pulling and tensioning sites or at designated splice sites. In some cases temporary construction staging areas could act as construction yards, helicopter fly yards, concrete batch plants, or accommodate other construction requirements.

Temporary Access Roads outside the ROW

Temporary access roads (outside desert tortoise habitat) would involve utilization of existing roads without improvements where possible, utilization of existing roads with improvements as necessary, or the creation of new roads outside the ROW as required to access the temporary centerline access road, all structure sites, wire pulling and tensioning sites, wire splicing sites, guard structures, etc. Temporary access roads would originate from existing off ROW public access roads and provide connection to construction areas and a centerline access road. Utilization of existing roads, including descriptions of any required improvements, would be described in detail in the final COM Plan.

Temporary Construction/Material Yards outside the ROW

Three temporary construction yards have been identified for the project, located outside the ROW: 1) on private property within an existing gravel yard in Ely; 2) on private property in Caliente; and 3) on BLM land authorized for use by NV Energy at its existing Crystal Substation (N-61363) in Clark County. Construction yards would receive and store equipment, materials, and could provide an area for temporary office space to administer construction. The yards would be used to receive and issue substation, transmission line, and fiber optic line materials as necessary for construction of the project facilities. These sites would be returned as close as possible to their original condition after use.

Temporary Concrete Batch Plant Sites

Concrete batch plant sites would generally be located outside the ROW on private land at locations with good access to the public road system. Concrete batch plant sites would store concrete materials, concrete batching facilities, concrete transportation equipment, and could also act as construction yards. In general, concrete construction crews would report to the batch plant sites. Concrete batch plant sites would typically be situated on private land and would be 5 to 40 acres in size, located about every 50 miles on private land along the ROW. Concrete materials would be obtained through purchases from private contractors and mixed concrete would be hauled from the batch plant sites to the structure foundation construction sites within the ROW.

Robinson Summit Substation

A new 500/345kV substation would be constructed near the SWIP Utility Corridor approximately 20 miles northwest of Ely along U.S. Highway 50. The selection of the final location of the Robinson Summit Substation is dependent upon topography and the final design of the electric transmission system. The new Robinson Summit Substation would require a long-term ROW of approximately 108 acres to interconnect the 500kV and 345kV systems. A 200-foot microwave tower would also be installed. This substation would be accessible via permanent improvements and widening (to approximately 50 feet) an existing access road that connects to U.S. Highway 50. This access road would be approximately 0.5 mile in length, resulting in approximately 3 acres of disturbance. The access road would be graveled or paved with asphalt to provide a suitable surface for long-term use.

Falcon – Gonder 345kV Loop Into Robinson Summit 500/345kV Substation

The existing Falcon-Gonder 345kV transmission line would be looped into the Robinson Summit Substation to interconnect NV Energy's northern and southern electrical systems for the first time. The existing 160-foot wide Falcon-Gonder transmission line ROW would require an amendment to the ROW grant to accommodate the loop-in. The loop-in of the Falcon-Gonder line into the substation would require the installation of two single circuit 345kV transmission lines a distance of approximately 0.5 mile from the existing line into the substation, creating two parallel 160-foot wide ROWs. Each 160-foot wide transmission line ROW, approximately 0.5-mile in length, would require a 10-acre ROW grant amendment, thus totaling 20 acres. The loop-in would essentially create two segments of the line formerly referred to as the Falcon-Gonder line. Once the loop-in is constructed, the two segments would be called the Falcon to Robinson Summit and the Robinson Summit to Gonder 345kV transmission lines, respectively.

Harry Allen Substation

The existing ROW for the Harry Allen 500kV substation, located about 20 miles northeast of Las Vegas, would be adequate to accommodate the additional equipment to support the proposed transmission line. No expansion would be required. The new substation interconnection

components (i.e., A-frame, circuit breakers, relays, etc.) would be installed within the existing disturbed footprint of the operating substation.

Falcon Substation Upgrade

The existing company-owned Falcon 345kV Substation located in Boulder Valley approximately 40 miles northeast of Battle Mountain would require an approximate 7-acre expansion of the existing fenced boundary to facilitate development of the ON Line Project. Of the 7 acres required for the expansion, 4 acres would be on NV Energy property and 3 acres would be obtained from the adjacent private landowner.

2.2.1.3 Construction Activities

Construction of the ON Line facilities would take approximately 21 to 24 months to complete depending upon seasonal constraints and time of year when the Notice to Proceed is issued by BLM. Prior to construction, permitting, major equipment procurement and much of the facility design would take place.

Electric transmission and substation construction would involve simultaneous construction of the Robinson Summit Substation, Falcon–Gonder 345kV loop into the Robinson Summit Substation, the 236-mile transmission line, telecommunication facilities, and upgraded electrical work at the Harry Allen and Falcon Substations. Construction is required to commence no later than January 2011 for a 24 month construction period to meet an in-service date of December 2012. The in-service date is required to comply with contractual requirements for delivery of new renewable energy resources.

One Nevada 500-kV Transmission Line

Construction of the 236-mile transmission line between the new Robinson Summit Substation and the existing Harry Allen Substation would be performed in the following sequence of activities: pre-construction engineering surveys (months prior to construction); construction mobilization, including locating and establishing material yards, construction yards, and concrete batch plant sites, construction surveying and staking of the centerline, access roads, and work areas; construction of access roads; installing foundations and anchors; assembling and erecting the structures; installing ground rods and counterpoise; installing conductors, shield wires, and fiber optic cables; cleanup and site reclamation.

Site Preparation and Mobilization

All the activities described below would be fully described in the COM Plan that would be completed and approved prior to release of a Notice to Proceed for any portion of construction.

Land surveying on public and private lands would occur as pre-construction activities across the entire project, in advance of the start of construction. These surveys would mark authorized boundaries for all project components including the substation and transmission boundaries (permanent and temporary), angle points, individual transmission structures, guard structure and splice sites, telecommunication regeneration sites, access roads, etc.

Construction boundaries would be generally marked at 200 to 400 foot intervals with painted lathes or colored survey ribbons (flagging) and signs (as required). Closer intervals may be marked as needed. Flagging and signs would be maintained until final cleanup and/or reclamation is completed, after which they would be removed. At a minimum, reference stakes for all angle stations would be set on the ROW with stakes for each structure prior to construction.

Pre-construction soil testing activities would take place along the ROW in advance of the start of construction. These surveys would test soil at numerous locations. Short-term access would be required to facilitate these surveys. Also, all short-term major material yards, construction yards, construction staging areas, wire stringing and tensioning sites, and concrete batch plant sites located outside of the environmental study area would be identified and surveyed for the COM Plan.

Construction Mobilization

Construction mobilization activities outside of the ROW include the contractor obtaining local construction permits and mobilization of their labor force and the necessary equipment to accomplish the construction of the substation, transmission, and fiber optic lines to the jobsite. Also during mobilization and other pre-construction activities, contractor-required off-ROW material storage yards, construction yards, and concrete batch plant sites would be located and established.

Construction Support in ROW

Construction support in the transmission line right-of-way would comprise a variety of activities occurring during different stages of construction. These activities include dust control; storm water and wastewater management; erosion control; and management of hazardous substances. These various activities are described in further detail below.

Dust Control

Water application by truck would be the primary means of dust abatement at areas impacted by construction and near sensitive receptors. Areas of higher erosion or poor soils, outside of desert tortoise habitat, may require application of a palliative dust reducing agent. Any application of palliative or other dust reducing agent, other than water must first be approved by BLM. Speed limits on project designated access roads would be set and strictly enforced. Gravel or other similar material would be used where dirt access roads intersect the paved roadways to prevent mud and dirt track-out. All paved roads would be kept clean of objectionable amounts of mud, dirt, or debris, as necessary.

Helicopters may be used for a portion of the construction to string conductors, transport materials, workers and equipment, and to erect structures. Helicopters would fuel at pre-determined locations identified on and off the ROW. Helicopter landing and fueling areas would be watered as necessary for safety and dust abatement.

Stormwater/Wastewater Management and Erosion Control

During construction, stormwater would be managed according to the stormwater permit issued by the State of Nevada to the project. In general, construction erosion control would consist of best management practices (BMPs), including techniques such as hay bales, silt fences, and revegetation, to minimize or prevent soils exposed during construction from becoming sediment carried off the site.

Wastewater would be generated during construction from:

- concrete loads emptied from trucks
- washing of exteriors of construction equipment and vehicles to remove accumulated dirt

Wastewater from concrete truck washdown and cleaning of construction equipment would be managed such that there would be no discharge offsite or discharge to surface waters.

Following construction, erosion control would include revegetation in addition to the aforementioned techniques.

Construction Utilities

Generally, no new electric power distribution, temporary water, sewer, or communications would be required for construction of any of the transmission line or substation facilities. Temporary construction power would be provided by small, portable on-site generators. Temporary water would be imported in water trucks from existing sources. Sewer would be provided by temporary portable facilities. Communications would be provided by existing cellular telephone providers and through existing 800 MHz radio communication facilities.

Short-term construction yards, major material yards, and concrete batch plant sites would all require electric power distribution, water, sewer, and communications. Locations for these sites would be selected based on the availability of these services from local providers.

Mineral Material Borrow Areas

All borrow material would be obtained from existing private suppliers. No new off-site borrow areas would need to be opened specifically for construction of the transmission line.

Concrete Batch Plant Sites

Due to the remote location of the ROW, commercial concrete would generally not be available over most of the transmission line route. Construction of concrete foundations could require temporary concrete batch plants be established at locations along the transmission line route. In general most of the batch plant sites would be located outside of the ROW at locations with good access to the public road system and local utility infrastructure. The location of the batch plant sites would also be dictated by haul times to the actual construction sites. These batch plant sites would require fencing, gravel surfacing, and portable office space.

Access Road Construction

Equipment access is required to every transmission structure. The project would utilize existing transmission line access roads both inside and outside of the ROW wherever practical to minimize the construction of new roads. It is anticipated that some of the existing dirt roads would require both upgrading and maintenance during construction to provide safe access to structure sites and to maintain adequate level of service to other public users. In areas where existing access roads do not provide adequate access to construction sites, roads would be improved and/or new roads would be built. New roads would consist of either short spur roads from existing roads to construction sites, longer linear roads to connect the ROW to existing access roads, and/or a centerline access road that connects one structure to the next between other access roads. New spur roads would be located within the ROW whenever practical and would be located to minimize visual impacts. The number of new spur roads would be held to a minimum, consistent with their intended use (e.g., structure construction or conductor stringing and tensioning). A Construction Road Plan would be provided on the structure location drawings submitted with the final COM Plan.

All new and improved roads would be constructed by the construction contractor. In areas of steep terrain, the road would be built so that there would be approximately 20 feet of travel way and the total disturbed width of the road (toe of fill to top of cut) would vary depending on the terrain (i.e., greater in steep terrain, less in flatter terrain). In flat terrain the road would be built so that there would be approximately 20 feet of travel way with a 2-foot berm of salvaged topsoil on one or both sides of the road.

In areas where new roads would be constructed, environmental resource monitors would conduct surveys for sensitive environmental resources prior to construction. Environmentally sensitive areas would be staked and/or flagged to prevent the contractor from entering or disturbing these sensitive areas during construction. Meandering roads may be required in specific areas due to terrain and geologic conditions.

After line construction, all new and improved roads identified as temporary disturbance on the drawings, outside of potentially suitable and critical desert tortoise habitat, would be restored in compliance with the Restoration Plan included in the COM Plan.

Structure Site Clearing

The following section contains descriptions of typical construction-related activities associated with structure construction and clearing. Structure site clearing (removal of brush) would be kept to a minimum. Grading of structure sites and work areas would only be performed as required to provide a flat working surface such that maintenance and construction cranes or other major equipment can work safely.

Typical Structure Site and Work Area

At each structure site, work areas are required to facilitate the safe operation of equipment and construction operations. Typical work areas in flat terrain are about 200 feet wide by 220 feet wide (1 acre). When practicable, access within the work area would be by overland travel with minimal to no grading required in the work site. In other work areas vegetation would only be cleared to the extent necessary. After line construction, all work areas identified as temporary disturbance on the structure location drawings would be restored in compliance with the Restoration Plan included in the COM Plan.

Structure Site and Work Area in Steep/Rough Terrain

Work areas would vary depending on the site conditions. Where topography dictates, work areas would be expanded to 200 feet wide by 440 feet long (2 acres) and would be partially cleared and graded to accommodate the safe operation of heavy equipment and cranes by construction and maintenance crews. Following construction, portions of the site not required for maintenance would be restored in compliance with the Restoration Plan included in the COM Plan. In steep terrain, a crane pad would be required for maintenance of the structure. This crane pad and the access road to the structure would remain after construction. Extensive grading along steep slopes may be required to accommodate some structure sites.

Vegetation Clearing

In addition to vegetation clearing at structure sites, in forested areas trees would be removed along the ROW to allow construction vehicle access, for wire stringing locations, and as needed for electrical clearances under and to the side of the transmission line conductors. Tree removal for electrical clearance would be selective and would not include every tree in the 200 foot wide ROW. Generally, trees over 15 feet in height within conductor low sag areas would be removed to provide the code required clearances. Tree removal would be conducted to allow for a minimum ten-year growth period.

Foundation Installation

Excavations for foundations would be made with vehicle-mounted augers, backhoes, and other power equipment. In rocky and cemented soil areas, the foundation holes may be excavated by drilling and blasting, or special rock anchors or piles may be installed. In extremely sandy areas, soil stabilization by water or a gelling agent may be used prior to excavation. In areas with a

high water table, holes may need to be shored and/or dewatered prior to the installation of concrete.

After excavations are completed, the required cast-in-place or precast concrete footings would be installed. The cast-in-place concrete footing would be installed by placing reinforcing steel and a stub or anchor bolts into the foundation hole and encasing it in concrete. The precast concrete footings would be cast off site at a precast concrete facility, trucked to the structure site, lowered into an approximate 5 foot deep excavation, and backfilled with native material. Foundation excavation and installation would require access to the site by a power auger or drill, track excavators, a crane, material trucks, and ready-mix trucks using the access roads indicated on the structure location drawings submitted with the COM Plan.

Guyed-V and guyed tubular three pole structures require the installation of anchors and guy wires to support the structure loads. Depending upon soil type and engineering strength requirements, anchors would be drilled and grouted in small diameter holes (less than 1 foot in diameter) up to 40 feet deep, or installed in minimum 4-foot diameter excavations ranging from 12 to 20 feet deep.

Foundation and anchor excavations would not be left open for extended periods of time or unfenced. Excavations would be covered and/or fenced where practical to protect the public and wildlife. Soil removed from foundation excavations would be used as backfill, road fill, or spread within the structure work area to blend with the natural terrain. Salvaged top soil would be placed over regraded areas.

Structure Assembly and Erection

Structure components and associated hardware would be shipped to each structure site or helicopter fly yard by truck. Steel members would be assembled by hand with the assistance of pneumatic tools and cranes into subsections of convenient size and weight. The assembled subsections would be hoisted into place by a large crane and then fastened together to form a complete structure, or flown as assembled units from the helicopter fly yards to designated structure sites. Helicopter fly yards would be generally located every 5 miles.

Conductor Installation

After the structures are erected, insulators, hardware, and stringing sheaves would be delivered to each structure site. The structures would then be rigged with insulator strings and stringing sheaves at each ground wire and conductor position. To protect the public and other existing facilities during wire installation, guard structures would be erected adjacent to existing highways, railroads, power lines, structures, and other obstacles. Guard structures normally consist of wood H-frame structures placed on either side of an obstacle. These structures prevent ground wire, conductor, or equipment from falling onto an existing obstacle. Most guard structures would be identified on the structure location drawings, however due to varying construction techniques, some guard structures may not be identified until construction is in progress. Equipment for erecting guard structures includes augers, line trucks, pole trailers, and cranes. Guard structures may not be required for small roads or protection may be accommodated by line trucks suspending cross arms or pulleys. On other occasions, other safety measures such as barriers, flagmen, or other traffic control would be used to provide the required protection.

Next, a pilot line would be pulled (strung) from structure to structure and threaded through the stringing sheaves at each structure. This pilot line is normally pulled by a helicopter. After the pilot line is pulled from one end of the wire pull to the other, a larger diameter, stronger line

would then be attached to the pilot line and strung. This is called the pulling line and it is attached to a tensioner (breaking equipment) on one end and a power puller on the other. The pulling line is attached to the ground wire, fiber optic cable, and conductors to install each in a controlled tension manner (**Figure 2.2-3**). This process would be repeated until the ground wire, fiber optic cable, and conductor would be pulled through all sheaves.

After the ground wire, fiber optic cable, and conductor are pulled through all sheaves, each would be properly tensioned and then lifted from the sheaves and dead ended or clipped into the line hardware. Conductor would be spliced together using implosive sleeve devices which are installed with pressure provided by an explosive chord. Implosive dead ends and compression jumpers would be installed at all dead end and line angle towers. Implosive-type sleeves would also be installed at all wire splice locations (approximately every 10,000 feet).

As described earlier, work areas for tensioning equipment and pulling equipment typically would be approximately 200 feet by 700 feet. However, construction in the steep and rough terrain could require larger, less symmetrical pulling and tensioning sites. To the extent possible, typical pulling and tensioning sites needed for this transmission line would be identified on the structure location drawing submitted with the final COM Plan. Once construction starts, it is probable some of the pulling and tensioning sites may be relocated. This relocation may be required to accommodate changing construction techniques, or material and design changes. Overall, the total number of pulling sites identified in the COM Plan would not be expected to increase.

Structure Grounding

Prior to conductor installation, structure footing resistance along the route would be measured. When the resistance to remote earth for each transmission structure is greater than 20 ohms, counterpoise (grounds) are required to lower the resistance to 20 ohms or less. Counterpoise consists of galvanized steel or copperweld cable buried a minimum of 12 inches deep, extending from one or more structure legs for approximately 200 feet, within the ROW. In some cases ground rods or other more advanced grounding methods may be used in lieu of counterpoise.

Restoration and Final Clean Up

Throughout the project, good housekeeping practices would be continually observed in the yards and along the ROW. Trash would be continually picked up and stored in closed containers and empty reels and blocking would be returned to yards and then removed from the project. After the conductor has been installed, the contractor would begin reclamation of the ROW and access roads. Areas to be restored would be re-graded back to natural contours and top soil restored. Final restoration and reseeding would be in accordance with permit requirements and the COM Plan.

Construction Workforce and Equipment Requirements

The transmission and telecommunication facility work would be performed by one or more prime contractors and the substation work would be performed by multiple prime contractors. In addition, each prime contractor would likely employ multiple subcontractors to supplement their own workforce. During peak construction periods, approximately 500 workers would be employed. The peak construction period would be expected to last about 18 months of the approximate 24-month transmission line project.

Because the construction work would be contracted, the geographic region of the work force is not yet known. Local and out-of-town labor would depend on the local labor market conditions,

contractor's labor force availability, construction status, and time of year. Local labor could comprise 10 to 20 percent of the total workforce and out-of-town labor would comprise the rest of the workforce. It is assumed this workforce would move with construction along the ROW and find temporary housing in communities within a reasonable commuting distance to the ROW.

Vehicle and equipment requirements would include a variety of heavy equipment like bulldozers, backhoes, vehicle-mounted augers, concrete trucks, and cranes. Specialized equipment to install structures and conductors would also be used, including: line trucks, a tensioner, ground wire trucks, puller trucks, pole trailers, and helicopters.

2.2.1.4 Substation Design and Construction

Construction of the new Robinson Summit 500/345kV Substation, expansion of the existing Falcon Substation, and additions inside the existing Harry Allen 500kV Substation are required to facilitate the power transmission associated with the new 500kV transmission line.

In the proposed substation development and expansion areas, the ground would be cleared, graded and compacted according to the civil engineering plan for these facilities. The surfaces would be slightly sloped and other civil design features such as ditches, culverts and rip-rap would be installed where required for adequate drainage to facilitate the safe construction, operation, and maintenance of these facilities. The stockpiled topsoil and organic material would be placed on undeveloped and graded cut-and-fill slopes.

Robinson Summit Substation

Approximately 108 acres of land would be permanently required for the Robinson Summit Substation development, including the access road. The site identified for substation facilities in the original SWIP ROW grant encroaches on the western half of the designated SWIP Utility Corridor. As described in the original Plan of Development and the DEIS for the EEC Project, NV Energy has proposed the site for the Robinson Summit Substation approximately 1/4 - 1/2 mile west of the SWIP ROW grant location to more level ground outside the designated SWIP Utility Corridor. Major equipment installed at the substation would include control enclosures, two 500/345kV autotransformers, two 500kV shunt reactors, one 345kV shunt reactor, 345kV series compensation equipment, 500kV and 345kV circuit breakers and switches, and associated electrical appurtenances and telecommunication equipment. The layout of the substation facilities would facilitate the ability to accommodate future expansion requirements within the fenced substation area.

Interconnection with NV Energy's northern electric system would be accomplished by looping the existing Falcon – Gonder 345kV transmission line into the Robinson Summit Substation. Installation of two 345kV line terminals would be required at the Robinson Summit Substation creating the Falcon – Robinson Summit and the Robinson Summit - Gonder 345kV transmission lines to control the flow of power into the northern electric system. In addition, 345kV series capacitors and shunt reactors would be installed on the Falcon terminal side of the Falcon – Robinson Summit 345-kV transmission line to reduce the impedance and electrical losses associated with operation of this line.

Figure 2.2-3 Basic Wire Handling Equipment

After grading is complete, fencing would be installed around the perimeter of the substation for security and to restrict unauthorized persons and wildlife from entering. Reinforced concrete footings and foundations would then be constructed to support structures and equipment. Buried conduit and/or a pre-cast concrete trench system would be installed throughout the substation for electrical control cables. A ground grid consisting of buried cables approximately 12 inches below grade would also be installed to ensure that all equipment, structures, and fence components are properly grounded. Gravel or a road base type material would be installed over the substation pad to provide electrical isolation for workers, a suitable working and drive surface, to inhibit weed growth, and to reduce fugitive dust. Primary drive paths within the substation may be paved with asphalt to provide a durable surface for long-term use.

Steel structures would be erected on the concrete footings to support switches, electrical buswork, and other equipment, as well as termination structures for the incoming and outgoing transmission lines. Structures would be fabricated from tubular steel and galvanized or painted with a non-reflective finish. Major equipment would be set by crane and either bolted or welded to the foundations to resist seismic forces. Oil spill containment basins would be installed around all major oil-filled equipment and if the containment area was ever used, the oil would be removed and properly disposed of according to approved practices. Control cables would be installed throughout the substation from equipment back to a central control enclosure. The control equipment would be set to the proper settings and tested before the substation is energized.

Harry Allen Substation

The existing ROW for the Harry Allen 500kV substation would be adequate to accommodate the additional equipment to support the proposed transmission line. No expansion would be required. The new substation interconnection components, including two 500kV reactors, circuit breakers and switches, and associated electrical appurtenances and telecommunication equipment would be installed within the existing disturbed footprint of the operating substation. The construction processes and activities would be similar to those described above for the Robinson Summit Substation development.

Falcon Substation Upgrade

The existing company-owned Falcon 345kV Substation would require expansion to facilitate development of the ON Line Project. New components to be installed at this substation include one 345kV reactor, 345kV series compensation, 345kV circuit breakers, switches, and associated electrical appurtenances and telecommunication equipment. An approximate 7-acre expansion of the existing fenced boundary would be needed to accommodate this additional equipment (**Figure 2.2-1a**). The construction processes and activities would be similar to those described above for the Robinson Summit Substation development.

2.2.1.5 Telecommunications Design and Construction

The fiber optic, microwave, and mobile radio telecommunications system described below would facilitate operational control and monitoring of the Robinson Summit Substation and transmission facilities. The telecommunications system would include a fiber optic line approximately 236 miles long to be installed within one or both shield wires on the 500kV transmission line structures and microwave and mobile radio facilities to be installed at the Robinson Summit Substation.

Fiber Optic Line Design and Construction

A fiber optic cable would be installed within one or both of the shield wires on the 236-mile 500kV transmission line structures. The fiber count contained within the fiber optic cable is dependent upon the electric transmission control and monitoring requirements. The fiber optic cable requires splice points approximately every two to four miles along the transmission line route. At splice points, the fiber optic cable would be terminated at the top of the structure and routed down the structure to a splice box near or buried at ground line. Optical regeneration stations would also be required approximately every 40 to 60 miles. Two to four regeneration stations would be built within or adjacent to the transmission line ROW. Each of the regeneration stations would require a fenced area of approximately 60 feet by 80 feet, a control enclosure approximately 15 feet by 20 feet, an emergency power generator, a propane tank, vehicle access, and commercial power from the local electric utility. The proposed regeneration stations would generally be sited in close proximity to existing electric distribution lines to minimize the distance required for new service lines.

Microwave and Mobile Radio Design and Construction

Microwave and mobile radio telecommunications equipment would also be installed at the Robinson Summit Substation. The microwave tower would be approximately 200 feet tall to connect with NV Energy's existing microwave communication system. An approximate 15 feet by 20 feet communication enclosure would also be required within the proposed Robinson Summit Substation development.

2.2.1.6 Operations, Maintenance, and Abandonment

The electric transmission lines, telecommunication facilities and substations would be operated 24 hours per day, 7 days per week. The electric substations would be visited regularly to perform routine maintenance and ensure they are functioning correctly. Vegetation would be trimmed as-needed under and along the transmission line ROW to minimize potential interference with the transmission lines.

Workforce and Equipment Requirements

Planned operations and maintenance on transmission lines would consist of an annual helicopter or vehicle line patrol by two linemen. It would probably take two days per year to patrol the proposed transmission lines. Additional unscheduled patrols may be required by ATV, truck, or bucket truck, if issues are encountered. Unplanned operations and maintenance may be required to correct failures. These are normally site-specific issues (e.g., damaged insulator on one structure, erosion around foundation, post fire inspection, etc.). Whatever labor and equipment is required to fix the problem would be dispatched. Unplanned maintenance could involve 40 to 80 worker days on average per year. NV Energy would notify the respective BLM district office of such occurrences, and coordinate any necessary ROW authorization amendments or consultations as required.

Planned operations and maintenance on the substations would consist of numerous equipment testing and maintenance requirements on all major equipment such as transformers, reactors, and breakers receive annual inspections (operation verification, visual inspections, infrared inspections, etc.). More intensive inspections and tests are conducted on major equipment every three to five years (oil samples, switch alignment, and manufacturer scheduled maintenance). Based on the proposed project scope, workforce requirements could total 200 to 400 worker days per year.

Access and Traffic

The electric transmission line would be inspected from the ground or the air on an annual basis. Ground inspections would be conducted generally following the centerline travel route used for construction. This path may also be utilized for required maintenance or repair.

Access to the Robinson Summit Substation would be from US-50 over an existing dirt road that would be widened and improved from the highway to the substation site. The road would be surfaced with asphalt or gravel to provide a durable surface for long-term use.

Access to the Falcon Substation and Harry Allen Substation would be from existing paved and gravel roads already constructed to these operating substations.

Abandonment

The new electric transmission and telecommunications facilities would be integrated into NV Energy's existing electric transmission and telecommunications systems. The facilities would be operated and maintained for the foreseeable future. If at some point these facilities were no longer needed as part of the electric system, then the transmission towers and lines would be removed and the area restored.

2.2.2 Environmental Protection Measures and Best Management Practices

Activities under the Proposed Action and Action Alternative would include environmental protection measures that are an integral part of the Proposed Action. These measures follow BMPs established by the BLM for the construction, operation, and maintenance of ON Line Project and other related facilities in this region (**Appendix 2A, Best Management Practices**). These BMPs would be followed to avoid or minimize the potential for adverse environmental effects resulting from project-related activities.

BMPs are described for the following activities:

- Air pollution prevention
- Landscape preservation and impact avoidance
- Erosion and sediment control
- Utility construction
- Biological resources
- Cultural resources
- Paleontological resources
- Noxious and invasive weed management
- Reclamation (site restoration, revegetation)
- Visual resources
- Water pollution prevention and monitoring
- Noise prevention
- Hazardous material storage, handling, and disposal, and safety measures
- Socioeconomics

In addition to the BMPs, to ensure public health and safety, NV Energy would comply with Federal Aviation Administration (FAA) permit requirements for project components that may present aviation hazards. The FAA is the oversight agency that determines aerial marking requirements for aviation hazards.

The COM Plan would detail the methods and procedures to be used in the construction of the electric transmission, substation and telecommunications facilities. The COM Plan would incorporate site-specific stipulations, terms, and conditions in order to satisfy all construction requirements, as well as operational, maintenance, and abandonment/restoration requirements associated with lands administered by the Ely and Southern Nevada District Offices of the BLM where project features would be located.

Further, the following Management Actions taken from the Ely RMP (BLM 2008a) would be implemented for fish and wildlife and special status species habitat.

General Wildlife Habitat Management (Aquatic and Terrestrial)

WL-4: Mitigate all discretionary permitted activities that result in the loss of aquatic and priority wildlife habitats by improving 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis.

WL-6: Where appropriate, restrict permitted activities in big game calving/fawning/ kidding/lambing grounds and crucial summer range from April 15 through June 30.

WL-7: Where appropriate, restrict permitted activities in crucial winter range from November 1 through March 31.

Desert Bighorn Sheep Habitat

WL-13: Where appropriate, restrict permitted activities within occupied desert bighorn sheep habitat from March 1 through May 31 and from July 1 through August 31.

Special Status Species Habitat

SS-4: Where appropriate, restrict permitted activities from May 1 through July 15 within 0.5 mile of raptor nest sites unless the nest site has been determined to be inactive for at least the previous 5 years.

Mojave Desert Scrub Habitat

SS-33: Implement the following management actions for desert tortoise habitat.

Within desert tortoise ACECs: If fence construction occurs during the tortoise active season, a qualified tortoise biologist will be onsite during construction of the tortoise-proof fence to ensure that no tortoises are harmed. If the fence is constructed during the tortoise inactive season, a qualified tortoise biologist will thoroughly examine the proposed fence line and burrows for the presence of the tortoises no more than three days before construction. Any desert tortoises or eggs found in the fence line will be relocated offsite by the biologist in accordance with approved protocol (Desert Tortoise Council 1994, 1999 *in* BLM 2008a). Tortoise burrows that occur immediately outside of the fence alignment that can be avoided by fence construction activities will be clearly marked to prevent crushing.

- Within desert tortoise ACECs: Projects will require fencing, unless determined by the BLM authorized officer and U.S. Fish and Wildlife Service that the project should not be fenced. In accordance with current specifications, fencing will consist of 1-inch horizontal by 2-inch vertical mesh. The mesh will extend at least 18 inches aboveground and, where feasible, 6 to 12 inches belowground. In situations where it is not feasible to bury the fence, the lower 6 to 12 inches of the fence will be bent at a 90 degree angle towards potentially approaching tortoises and covered with cobble or other suitable material to ensure that tortoise or other animals cannot dig underneath.

- Within desert tortoise ACECs: Tortoise fencing will be inspected on a quarterly basis, and any repairs completed within 72 hours from March 1 through October 31, and within 7 days from November 1 through February 28/29. The operator will inspect the fencing at least on a quarterly basis and after major precipitation events to ensure zero ground clearance. Monitoring and maintenance will include regular removal of trash and sediment accumulation and restoration of zero ground clearance between the ground and the bottom of the fence, including re-covering the bent portion of the fence if not buried. The operator will perform maintenance when needed including removing trash, sediment accumulation, and other debris. Fencing will be removed upon termination and reclamation of the project, or when it is determined by the BLM authorized officer and U.S. Fish and Wildlife Service that the fence is no longer necessary.
- Within desert tortoise ACECs: During surface-disturbing activities, tortoise burrows will be avoided whenever possible. If a tortoise is found onsite during project activities, which may result in take of the tortoise (i.e., in harm's way), such activities will cease until the tortoise moves, or is moved, out of harm's way. The tortoise will be moved by a qualified tortoise biologist. All workers also will be instructed to check underneath all vehicles before moving such vehicles and within stockpiled materials. Tortoises often take cover under vehicles and construct burrows in stockpiled material.
- Within desert tortoise ACECs: The BLM authorized officer will approve the selected consulting firm/biologist to be used by the applicant to implement the terms and conditions of the permit issued by the BLM. Any biologist and/or firm not previously approved will submit a curriculum vitae and be approved by the BLM authorized officer. Other personnel may assist with implementing terms and conditions that involve tortoise handling, monitoring, or surveys, only under direct field supervision of the approved, qualified biologist.
- Within desert tortoise ACECs: Tortoises and nests that are found will be handled and relocated by a qualified tortoise biologist in accordance with U.S. Fish and Wildlife Service-approved protocol. Burrows containing tortoises or nests will be excavated by hand, with hand tools, to allow removal of the tortoise or eggs. Desert tortoises moved during the tortoise inactive season or those in hibernation, regardless of date, will be placed into an adequate burrow; if one is not available, one will be constructed in accordance with Desert Tortoise Council protocol. During mild temperature periods in the spring and early fall, tortoises removed from the site will not necessarily be placed in a burrow. Tortoises and burrows will only be relocated to federally managed lands. If the responsible federal agency is not the BLM, verbal permission, followed by written concurrence, will be obtained before relocating the tortoise or eggs to lands not managed by the BLM.
- Desert tortoises moved in the winter (i.e., November 1 through February 28/29), or those in hibernation, regardless of date, will be placed into an adequate burrow; if one is not available, one will be constructed utilizing the protocol for burrows in Section B.5.f. of the U.S. Fish and Wildlife Service-approved guidelines (U.S. Fish and Wildlife Service 1994 *in* BLM 2008a).
- All projects in desert tortoise habitat will be reviewed by the BLM's wildlife staff to ensure that appropriate measures have been incorporated into the BLM authorization (e.g., material site, land sale, or off-highway vehicle event) to minimize the potential take of desert tortoise or loss of habitat.

- A BLM representative(s) will be designated and will be responsible for overseeing compliance with terms and conditions of all permitted activities and reporting requirements. The designated representative will provide coordination among the permittee, project proponent, the BLM, and the U.S. Fish and Wildlife Service.

SS-40: Outside of designated corridors, above-ground facilities will not be constructed within 0.25 mile of greater sage-grouse leks. No new roads will be constructed within 0.25 mile of greater sage-grouse leks. Exceptions may be granted by the authorized officer, in consultation with Nevada Department of Wildlife, if the project can be designed so that it will not affect breeding activity nor degrade the integrity of the habitat associated with the lek, or if the lek has been inactive for at least 5 consecutive years or the habitat has changed such that there is no likelihood that the lek will become active.

SS-41: Where appropriate (i.e. visible from actual lek), restrict permitted activities from March 1 through May 15 within 2 miles of an active greater sage-grouse lek.

SS-42: Where appropriate, restrict permitted activities from November 1 through March 31 within greater sage-grouse winter range. (Within identified winter habitat, site specific surveys may be conducted to confirm winter use and habitat.)

SS-43: Survey all proposed ground disturbing activities in suitable pygmy rabbit habitat utilizing the appropriate protocol. Surveys will be completed by a qualified biologist approved by the Ely District Office.

Resource-specific mitigation measures are described in Chapter 4, Environmental Consequences.

2.2.3 Proposed Action Summary

Table 2.2-4 summarizes the estimated acres of disturbance (short-term and long-term) for the Proposed Action.

TABLE 2.2-4 ESTIMATED ACRES OF DISTURBANCE FOR PROPOSED ACTION

PROJECT ELEMENTS	DISTURBANCE	
	SHORT-TERM	LONG-TERM
Robinson Summit Substation, includes 50-ft wide access road	149	108
Falcon-Gonder 345kV Loop-in	9	<1
Segment 6C (structures)	566	186
Segment 8 (structures)	212	21
Segment 9A (structures)	52	28
Segment 9B (structures)	42	4
Segment 9D (structures)	0	78
Segment 11 (structures)	0	153
Falcon Substation Expansion	7	7
Other Transmission Line Components (e.g. Access roads - in and out of the ROW, Fiber Optic Regeneration Sites and Electric Power Service, Material/Construction Yards)	Approx. 2,300	203*

*199 acres for access roads in desert tortoise habitat

2.3 Action Alternative

The Action Alternative would consist of all of the same facilities as described under the Proposed Action, however, the 500kV transmission line and associated facilities would follow a parallel route alignment approximately 1,800 feet to the east within the SWIP Utility Corridor. The transmission line segments of the Action Alternative include 6C, 8, 9B, 9C, 9D and 11. Alternative segments of the Action Alternative include segments 9A instead of 9C as well as Segment 10 instead of 9B, 9C and 9D. Alternative segments 9A and 10 deviate from the SWIP Utility Corridor. The linear distance of the Action Alternative would be shorter than the Proposed Action by about 2 miles, for a total length of 234 miles. The facilities and alignment described under the Action Alternative were described and analyzed in the EEC Project DEIS (i.e., RS-HA Line #2). **Table 2.3-1** summarizes the estimated acres of disturbance (short-term and long-term) for the Action Alternative.

TABLE 2.3-1 ESTIMATED ACRES OF DISTURBANCE FOR ACTION ALTERNATIVE

PROJECT ELEMENTS	DISTURBANCE	
	SHORT-TERM	LONG-TERM
Robinson Summit Substation, includes 50-ft wide access road	149	108
Falcon-Gonder 345kV Loop-in	9	<1
Segment 6C (structures)	566	186
Segment 8 (structures)	214	21
Segment 9A (Alternative) (structures)	53	29 + 13 acres of access roads in tortoise habitat
Segment 9B (structures)	42	4
Segment 9C (structures)	33	12
Segment 9D (structures)	0	78
Segment 10 (Alternative) (structures)	90	148 + 68 acres of access roads in tortoise habitat
Segment 11 (structures)	0	157
Falcon Substation Expansion	7	7
Other Transmission Line Components (e.g. Access roads, Fiber Optic Regeneration Sites and Electric Power Service, Material/Construction Yards)	Approx. 2,300	202*

*198 acres for access roads in desert tortoise habitat using Segment 9C

SWIP Utility Corridor Alternatives

To address the topographic and construction constraints in a section of the SWIP Utility Corridor that may result in a "bottleneck-type" compression of transmission line spacing between ROWs, two SWIP Utility Corridor alternatives are proposed for the Action Alternative (see **Figure 2.2-1b**).

Alternative Segment 9A

Similar to the Proposed Action, from the southern terminus of Segment 9B, the Action Alternative would deviate from the SWIP Utility Corridor and be routed along Segment 9A. The line would then rejoin Segment 9D and proceed to Segment 11. This alternative would increase the distance of the Action Alternative by just over 2 miles, for a total length of 236 miles, similar to the Proposed Action.

Alternative Segment 10

From the southern terminus of Segment 8, the Action Alternative would deviate from the SWIP Utility Corridor and follow Segment 10 around the Delamar Mountains Wilderness Area and rejoin the SWIP Utility Corridor at the beginning of Segment 11. This alternative would increase the distance of the Action Alternative by approximately 10 miles, for a total length of 244 miles.

2.4 No Action Alternative

NEPA regulations require the No Action Alternative to be included in the alternatives analysis of an EIS (Section 1502.14(d)). Under the No Action Alternative, BLM would not approve the ROW; therefore the proposed transmission line, telecommunications facilities, and substation would not be constructed or operated as described in the Proposed Action or Action Alternative. The No Action Alternative would not be responsive to NV Energy's needs. The Robinson Summit Substation and the high-voltage transmission line would not be built, which would eliminate the ability to cost-effectively transport renewable energy between the northern and southern service territories of the NV Energy system, nor generally share power resources between these service territories in northern and southern Nevada. The existing conditions and trends in the Project Area would continue (Chapter 3 - Affected Environment). The project purpose and need, as described in **Sections 1.2** and **1.3**, would not be met.

2.5 Alternatives Considered but Eliminated from Detailed Analysis

In areas where the Proposed Action deviates from the SWIP Utility Corridor, the SWIP Utility Corridor itself was considered, however some areas of the corridor (four areas along Segment 6C, Segment 9C, and one area along Segment 11) were eliminated due to topographical constraints. Topographic constraints included inaccessible mountain peaks, the steep sides of mountain ridges, and a wide portion of a reservoir. Locating the Proposed Action outside the SWIP Utility Corridor in some areas avoids these topographical constraints and significantly lessens the environmental impacts to construct, operate, and maintain the transmission facilities. Also, worker safety is greatly improved by avoiding high-risk work environments (e.g., crane operation on steep hillsides).

Further, there is a Section 368 corridor (#18-224) along the west side of Nevada that could be utilized to connect the north and south service areas, however this west corridor would not provide the needed access of renewable projects in east and northeast Nevada into the system.

2.6 Comparison of Alternatives and Summary of Impacts

2.6.1 Comparison of Alternatives

Table 2.6-1 below compares and summarizes the environmental impacts of the Proposed Action and Action Alternative.

TABLE 2.6-1 COMPARISON SUMMARY OF IMPACTS FROM PROPOSED ACTION AND ACTION ALTERNATIVE

IMPACT		PROPOSED ACTION (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9A, 9B, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9B, 9C, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9A, 9B, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 10, AND 11)
Water Resources					
Acreage of wetlands impacts	ST	0	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
	LT	0	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Number of perennial streams spanned		2	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Geology and Minerals					
Potential effects on topography		Minor	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Number of mining, oil, gas, and/or geothermal claims potentially impacted		0	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Paleontological Resources					
Potential to encounter paleontological resources		Low to High, depending on area Robinson Summit Substation area has high potential	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Soils					
Acreage Disturbed (short-term includes 200-foot ROW and proposed disturbance outside ROW)	ST	6,550	6,435	6,485	6,625
	LT	789	770	788	875
Air Quality					
Would NAAQS be exceeded?		No	No	No	No
Vegetation					
Five vegetation types with the most acreage permanently impacted, plus winterfat		• Creosote – 144 • Douglas rabbitbrush - 13 • Joshua Tree - 10 • Pinyon juniper - 17 • Wyoming sagebrush - 26 • Winterfat - 7	• Creosote – 152 • Douglas rabbitbrush – 12 • Joshua Tree - 10 • Pinion-juniper – 18 • Wyoming sagebrush – 26 • Winterfat – 6	• Creosote – 144 • Douglas rabbitbrush – 12 • Joshua Tree - 10 • Pinion-juniper – 18 • Wyoming sagebrush – 26 • Winterfat – 6	• Creosote – 95 • Douglas rabbitbrush – 12 • Joshua Tree - 35 • Pinion-juniper – 21 • Wyoming sagebrush – 26 • Winterfat – 3
Noxious and Non-native, invasive weed risk assessment		Low to moderate, depending on area Areas of moderate risk: Robinson Summit Substation, Segment 11	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

IMPACT	PROPOSED ACTION (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9A, 9B, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9B, 9C, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9A, 9B, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 10, AND 11)
Special status plant species observation locations that could be impacted	Segments 6C and 9B	Segments 6C, 9B, and 9C	Same as Proposed Action	Segment 6C
Wildlife Resources, Including Special Status Wildlife, Fisheries, and Aquatic Species				
Number of potentially occupied greater sage-grouse leks within 2 miles (includes active, inactive, and unknown leks)	6	7	7	7
Pygmy rabbit observation locations that could be impacted	Segment 6C	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Areas of pronghorn antelope range impacted	Segments 6C, 8, and 9B, excluding higher elevations	Same as Proposed Action	Same as Proposed Action	Segments 6C, 8, and north portion of 10, excluding higher elevations
Impacts to fisheries and aquatic resources	None to negligible	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Acres of desert tortoise habitat impacted long-term	430 acres	428 acres	430 acres	480 acres
Areas of mule deer crucial winter range impacts	Portions of Segments 6C and 8	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Raptor nesting areas within 2 miles	Ferruginous hawk: Segment 6C and nest observations along Segment 8	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action, with additional nest observations along Segment 10
Range Resources				
Number of Allotments Impacted	27	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Number of Herd Management Areas (HMAs) Impacted	1	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Cultural Resources				
Number of and Additional Projected Acres of NRHP-Eligible Sites impacted	3 sites + 204 acres	3 sites + 198 acres	3 sites + 198 acres	13 sites + 152 acres
Native American Concerns				
Number of Places of Cultural and/or Geographic Interest to Tribes potentially impacted	5	4	5	3
Land Use				
Acres of BLM lands affected by the project	5,789	5,790	5,834	6,028

IMPACT		PROPOSED ACTION (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9A, 9B, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9B, 9C, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 9A, 9B, 9D, AND 11)	ACTION ALTERNATIVE (INCLUDES ROBINSON SUMMIT AND FALCON SUBSTATIONS, AND SEGMENTS 6C, 8, 10, AND 11)
Acres of private, state or other agency lands affected by the project		38	13	13	13
Special Designation Areas (SDAs)					
Number of SDAs with project components within their boundary		3	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Recreation					
Overall impact to recreation		Short-term, negligible to major Long-term, negligible to minor	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Visual Resources					
Developments potentially not consistent with BLM Visual Resource Management Classification designation		None	Same as Proposed Action	Same as Proposed Action	Segment 10
Noise					
Noise impacts to nearest residence	ST	Minor	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
	LT	Negligible	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Socioeconomics					
Peak fiscal impact to local government	ST	Sales Tax Revenue - Major	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
	LT	Property Tax Revenue - Minor	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Employment	ST	Moderate	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
	LT	None	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Environmental Justice					
Disproportionate effects to minority or low income populations		None to negligible	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Hazardous Materials and Solid Waste					
Anticipated environmental effects from use of hazardous materials		Negligible	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Transportation					
Impacts to transportation	ST	Minor to moderate	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
	LT	Negligible	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

2.7 Monitoring and Mitigation

2.7.1 Water Resources

Additional mitigation measures are not required.

2.7.2 Geology and Minerals

Additional mitigation measures are not required.

2.7.3 Paleontological Resources

1. Paleontologists may make the determination, based on accumulation of information being learned from inspection and the evaluation of spoil piles and previous grading within areas of high sensitivity, that areas formerly determined high potential are actually low or undetermined where monitoring may be reduced.
2. Upon encountering scientifically significant paleontological resources, salvage of bone will be conducted with additional field staff and in accordance with modern paleontological techniques.
3. Fossils collected during the project will be prepared to a reasonable point of identification.
4. A report documenting the results of the monitoring and salvage activities and the significance of the fossils will be prepared.
5. Fossils collected during this work, along with the itemized inventory of these specimens, will be deposited in a museum repository for permanent curation and storage.

2.7.4 Soils

1. Ensure that soils are salvaged and there is placement of growth medium on sites ready for immediate reclamation to minimize the need for stockpiling the material. The underlying subsoil material will remain in place or be used elsewhere.
2. Design access roads to fit the terrain by avoiding unstable slopes and highly erodible conditions to the extent practicable to protect soils and prevent excessive sedimentation. These protective measures include, but are not limited to, mulch, matting, or slope length shortening (State of Nevada 1994).
3. When soils are wet, construction, operation, and maintenance activities will be restricted so as to properly support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep over a distance of 100 feet or more in wet or saturated soils). This standard will not apply in areas with silty soils, which easily form depressions even in dry weather. Where the soil is deemed too wet, one or more of the following measures will apply:
    - Re-route all construction or maintenance activities around the wet areas so long as the route does not cross into sensitive resource areas.
    - If wet areas cannot be avoided, implement BMPs for use in these areas during construction and improvement of access roads, and their subsequent reclamation. This includes use of wide-track or balloon-tire vehicles and equipment, or other weight dispersing systems approved by the appropriate

resource agencies. It also may include use of geotextile cushions, pre-fabricated equipment pads, and other materials to minimize damage to the substrate where determined necessary by resource specialists.

- Limit access of construction equipment to the minimum amount feasible, remove and separate topsoil in wet or saturated areas and stabilize subsurface soils with a combination of one or more of the following: grading to dewater problem areas, utilize weight dispersion mats, and maintain erosion control measures such as surface filling and back-dragging. After construction is complete, re-grade and re-contour the area, replace topsoil, and reseed to achieve the required plant densities.

4. Vegetation will be cleared and the construction ROW will be graded only to the extent necessary. Vegetation within the ROW will be cut or scraped at or near the ground level. Except for the area to be excavated, the vegetative root system and subsurface soils will be left intact to the greatest extent practicable. This will help stabilize the soils within the ROW during construction. ROW boundaries will be clearly staked or flagged and no disturbances are allowed beyond the limits.

2.7.5 Air Resources

1. Construction staging areas will not be placed within 500 feet of residences.
2. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard, which is the distance from the top of the truck bed in the material being hauled.
3. Sweep streets of visible soil material carried onto adjacent paved public streets.

Mobile and Stationary Source Controls:

1. Reduce construction-related trips of workers and equipment, and unnecessary idling from heavy equipment.
2. Prohibit any tampering with engines to increase horsepower, and require continuing adherence to manufacturer's recommendations.
3. If practicable, lease new, clean equipment meeting the most stringent of applicable Federal or State Standards.
4. Require low sulfur diesel he1 (4 5 parts per million), if available.
5. Locate diesel engines, motors, and equipment as far as possible from residential areas and sensitive receptors (schools, daycare centers, and hospitals).

2.7.6 Vegetation, Including Noxious and Non-Native, Invasive Weeds and Special Status Plants

1. Safely store salvageable cacti and yucca in temporary plant storage sites; plant salvage from areas of permanent disturbance will be moved once, and replanted during revegetation/reclamation activities.
2. Site-specific and targeted special status plant surveys will be conducted during the appropriately timed survey window, prior to final siting of electric transmission line structures and temporary use areas. If communities of special status plant species are present at a given structure location or temporary use area, all efforts to relocate that

structure or temporary use area will be made to avoid such plants to the extent practicable. If relocating a specific structure or temporary use area is not feasible due to operational constraints and requirements, the individuals and/or community of special status plants to be impacted will be transplanted to an approved location through appropriate and close coordination with the BLM.

3. Locate temporary use areas at least 0.5 mile away from winterfat dominated sites whenever reasonable. Where reasonable, strive to locate temporary access roads outside winterfat dominated sites.

4. In portions of the project area adjacent to populations of Las Vegas buckwheat, new long-term disturbance would consist only of the centerline access road and ground-level structure foundation and anchor areas. All other disturbance (e.g., wire stringing sites and other staging and temporary use areas) would be limited to within the existing SWIP Utility Corridor.

2.7.7 Wildlife, Including Special Status Wildlife, Migratory Birds, Fisheries, and Aquatic Species

1. Banded Gila Monster Mitigation Measures

Banded Gila monsters can occur within the southern portion of the Project Area in southern Lincoln and northern Clark Counties. Measures provided by NDOW in a November 1, 2007 publication entitled *Gila Monster Status, Identification and Reporting Protocol for Observations* will be followed by the Proponent and their private contractors so as to minimize impacts on the Gila monster associated with the ON Line Project:

- Live Gila monsters found in harm's way on the construction site will be captured and then detained in a cool, shaded environment (<85°F) by the project biologist or equivalent personnel until a NDOW biologist can arrive for documentation, marking, and obtaining biological measurements and samples prior to releasing. Despite that a Gila monster is venomous and can deliver a serious bite, its relatively slow gate allows for it to be easily coaxed or lifted into an open bucket or box carefully using a long handled instrument such as a shovel or snake hook (*Note: it is not the intent of NDOW to request unreasonable action to facilitate captures; additional coordination with NDOW will clarify logistical points*). A clean 5-gallon plastic bucket with a secure, vented lid; an 18"x 18"x 4" plastic sweater box with a secure, vented lid; or, a tape-sealed cardboard box of similar dimension may be used for safe containment. Additionally, written information identifying the mapped capture location, Global Positioning System (GPS) coordinates in Universal Transverse Mercator (UTM) using the North American Datum (NAD) 83 Zone 11. Date, time, and circumstances (e.g. biological survey or construction) and habitat description (vegetation, slope, aspect, substrate) will also be provided to NDOW.

- Injuries to Gila monsters may occur during excavation, blasting, road grading, or other construction activities. In the event a Gila monster is injured, it should be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Rehabilitation or euthanasia expenses will not be covered by NDOW. However, NDOW will be immediately notified of any injury to a Gila monster and which veterinarian is providing care for the animal. If an animal is killed or found dead, the carcass will be immediately frozen and transferred to NDOW with a complete written description of the discovery and circumstances, date, time, habitat, and mapped location (GPS coordinates in UTM using NAD 83 Z 11).

- Should NDOWs assistance be delayed, biological or equivalent acting personnel on site should detain the Gila monster out of harm's way until NDOW personnel can respond. The Gila monster should be detained until NDOW biologists have responded. Should NDOW not be immediately available to respond for photo-documentation, a digital (5 megapixle or higher) or 35mm camera will be used to take good quality images of the Gila monster in situ at the location of live encounter or dead salvage. The pictures will be provided to NDOW along with specific location information including GPS coordinates in UTM using NAD 83 Z 11, date, time, and habitat description. Pictures will show the following information: (1) Encounter location (landscape with Gila monster in clear view); (2) a clear overhead shot of the entire body with a ruler next to it for scale (Gila monster should fill camera's field of view and be in sharp focus); (3) a clear, overhead close-up of the head (head should fill camera's field of view and be in sharp focus).

2. Avian Wildlife Mitigation Measures

For a complete list of protected birds see 50 C.F.R. 10.13.

A. Greater Sage-Grouse

In order to minimize the possibility of disruption of mating strategies of greater sage-grouse, the Proponent will employ the following:

- No construction activities will occur during the period from March 1 through May 15 within two miles of active greater sage-grouse leks. However, construction traffic can proceed through the area during this period, outside the 0.25 mile no surface occupancy area around leks, except from 2 hours before sunrise until 10:00 am.
- Modified tower design, including H-frame structures and perch deterrents, will be used in locations within two miles of known active leks and in areas of combined nesting, wintering, and summer brooding habitat. The final placement of modified structures would be determined based on current data and identified in the COM Plan. Within identified winter habitat, site specific surveys may be conducted to confirm winter use and habitat.

B. Migratory Birds

- Land disturbing construction and vegetation clearing activities will be scheduled outside of the breeding season (March 15 through July 30 - in upland desert habitats and ephemeral washes containing upland species and March 1 through August 30 - in riparian and higher elevation areas). Where construction is required during the breeding season, the area impacted will be surveyed for nests prior to construction. If no nests are found, construction could proceed. Project area surveys will be done to ensure 100 percent coverage. Methods will be selected based on the plant community and/or topography. Field notes and reports will thoroughly describe methodology and rationale for use and archived.
- If active migratory bird nests (i.e. contains eggs or young) are encountered during the surveys, land disturbing construction activities will be avoided while the birds are allowed to fledge. An appropriate construction avoidance buffer area, to be determined for the species and in conjunction with the BLM, will apply to all active nests for migratory bird species.

C. Western Burrowing Owls and Ground Nesting Species

- Surveys are to include burrowing owls and other ground nesting species. If active nests containing eggs and/or young were to be found, then an appropriately-sized buffer area will be established, marked and avoided during construction so that egg laying, incubation, and the rearing of young continues until such time as the young fledge.
- For construction activities from October 1 to March 14, the wildlife biologist will collapse all burrows, holes, crevices, or other cavities on the construction site only after thoroughly inspecting them for inhabitants, in accordance with agency protocols. This will discourage burrowing owls from potentially occupying the burrows, holes, crevices before and during construction activities.
- If burrowing owls are observed during surveys after March 15, the wildlife biologist will be notified. The wildlife biologist will rely on behavioral observations to determine their breeding status. Should breeding behavior be observed, the wildlife biologist assumes that an active nest is present and the area will be avoided until the young fledge. This ensures that any eggs or young are not abandoned due to project activities. The owl's total nesting cycle takes a minimum of 74 days, during which time construction activity needs to cease within the buffer area on the site. Generally, owl eggs may be laid between mid-March to the end of May, and young may be present from mid-April through August. (Adapted from USFWS recommendations.)

D. Raptors

- Raptor nests within the project area will be identified during pre-construction surveys for migratory and ground-nesting birds. All active raptor nests will be avoided. Known raptor nest sites need to be checked two to five days prior to construction activities in a given area. If an active raptor nest site is discovered, construction activities will be restricted within 0.5 miles of the active nest site from May 1 through July 15.

3. Big Game Mitigation Measures

- Within the BLM Southern Nevada District, construction activities will be restricted within occupied desert bighorn sheep habitat from March 1 through May 31 and from July 1 through August 31.

2.7.8 Range

Additional mitigation measures are not required.

2.7.9 Cultural Resources

Additional mitigation measures are not required.

2.7.10 Native American Concerns

Additional mitigation measures are not required.

2.7.11 Land Use and Realty

Additional mitigation measures are not required.

2.7.12 Special Designations

Additional mitigation measures are not required.

2.7.13 Recreation

1. Construction schedules will be coordinated with permitted recreation activities to avoid conflicts.

2.7.14 Visual

Additional mitigation measures are not required.

2.7.15 Noise

Construction staging areas will be placed no closer than 500 feet of residences. The schedule for all project construction activity is to preclude the use of heavy equipment, including those with the largest construction noise producing capability, between 10 PM and 7 AM within 2 miles of sensitive receptors.

2.7.16 Socioeconomics

Additional mitigation measures are not required.

2.7.17 Environmental Justice

Additional mitigation measures are not required.

2.7.18 Hazardous & Solid Waste

Additional mitigation measures are not required.

2.7.19 Transportation

NV Energy will coordinate with NDOT and utilize proper signage and traffic controls to avoid potential impacts to roadway conditions due to construction of the ON Line Project.

2.8 Preferred Alternative

At this time the BLM has not selected an agency preferred alternative.