

APPENDIX E

**BIOLOGICAL ASSESSMENT AND BIOLOGICAL EVALUATION
SUMMARY**

Summary of Black Hills National Forest and Thunder Basin National Grassland Biological Assessments and Biological Evaluations

This is a summary of the Biological Assessments (BA) and Biological Evaluations (BE) prepared for Black Hills Power's (BHP's) proposed Teckla-Osage-Rapid City (T-O-RC) Transmission Project (the Project). It is a synopsis of the analysis of actions proposed in the Project Draft Environmental Impact Statement (DEIS). The full versions of the BAs and BEs for each of the Black Hills National Forest (BHNF) and Thunder Basin National Grassland (TBNG) which are available in the Project file. The purpose of the BAs and BEs is to determine how the Proposed Action and alternatives to the Proposed Action will affect federally-listed species and sensitive species listed by the Rocky Mountain Region (Forest Service Manual Regional Supplement No. 2600-2011-1 (dated September 6, 2011)). The Project BAs and BEs were prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act of 1973 (19 U.S.C. 1536 (c)), and standards established in Forest Service Manual direction (26762.42) and the Code of Federal Regulations (CFR) (50 CFR §402). The BHNF BA/BE tiers directly to the Final EIS for the Phase II Amendment to the BHNF Forest Plan (USFS 2005).

POTENTIALLY AFFECTED SPECIES

FLORA

Federally-Listed Plant Species

Black Hills National Forest

Based on the United States Fish and Wildlife Service (USFWS) South Dakota Ecological Services Office list of federally-protected species occurrence by county, there are no federally threatened or endangered plant species known to occur in the proposed analysis area. Information provided by the BHNF also indicated there are no known occurrences of federally-listed plant species in the proposed analysis area.

Thunder Basin National Grassland / BLM

Based on the USFWS Wyoming Ecological Services Office list of federally-protected species occurrence by county, one plant species, Ute ladies'-tresses orchid (*Spiranthes diluvialis*, threatened) may occur in Campbell or Weston Counties, Wyoming. Portions of these two counties are included in the analysis area.

Region 2 Sensitive Plant Species

Black Hills National Forest

The BHNF review was completed using a variety of existing and relevant data sources, including peer-reviewed publications, previous EIS' prepared on behalf of the BHNF (i.e., Phase I and Phase II Land Resource Management Plan (LRMP) Amendment Final EIS and associated BA/BE), South Dakota Natural Heritage Database, BHNF monitoring reports, USFS technical reports, Natural Resource Information System data, and other peer reviewed literature. Data and results of all surveys performed in association with the Proposed Action can be found in the T-O-RC Project file.

Thunder Basin National Grassland

The TBNG review was completed using a variety of existing and relevant data sources, including peer-reviewed publications, TBNG Land and Resource Management Plan (LRMP) (USFS 2001), TBNG annual monitoring reports, LANDFIRE GIS vegetation coverage (USGS 2010), Wyoming Game and Fish Department Greater Sage-Grouse Core Areas and lek data, and Wyoming Natural Diversity Database (WYNDD 2012) species occurrences.

The Sensitive Species list for the Rocky Mountain Region was updated in the USFS Rocky Mountain Region Endangered, Threatened, and Sensitive Species (USFS 2012) and Forest Service Manual Regional Supplement No. 2600-2011-1 (dated September 6, 2011). The sensitive plant species that are known to occur on the BHNF and the TBNG, or for which potential habitat occurs, were considered in the evaluation and are presented in **Tables E-1 and E-2**, respectively.

TABLE E-1 REGION 2 SENSITIVE PLANT SPECIES EVALUATED FOR THE BHNF				
SPECIES	SPECIES PRESENT	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED	HABITAT DESCRIPTION
Iowa moonwort <i>Botrychium campestre</i>	No	Yes	Yes	Native, unplowed prairies with thatch, or disturbance (grazing), loess prairie, dunes; 3,700 - 5,000 (10,800) feet elevation.
Slender moonwort <i>Botrychium lineare</i>	No	Yes	Yes	Native grasslands; medium height grass habitat, stream edges forest edges, also upland habitats; 0 -10, 500 feet elevation.
Foxtail sedge <i>Carex alopecoidea</i>	No	Yes	Yes	Wet meadows, wetland margins, streamside, and moist areas; 5,600 - 5,900 feet elevation.
Lesser yellow lady's slipper <i>Cypripedium parviflorum</i> (SYN= <i>C. calceolus</i>)	No	Yes	Yes	Damp mossy woods along streams and bogs; low moist woods and valleys in the Black Hills.
Stream orchid <i>Epipactis gigantea</i>	No	No	No	Valleys near streams; Cascade Creek of the Black Hills.
Groundcedar <i>Lycopodium complanatum</i> (SYN= <i>Diphasiastrum complanatum</i>)	No	Yes	Yes	Woods and thickets.
Large roundleaf orchid <i>Platanthera orbiculata</i> (SYN= <i>Habaneria orbiculata</i>)	No	Yes	Yes	Moist woods of the Black Hills.
Sageleaf willow <i>Salix candida</i>	No	Yes	Yes	Boggy places of the Black Hills.

Appendix E
Biological Assessments and Biological Evaluations

TABLE E-1 REGION 2 SENSITIVE PLANT SPECIES EVALUATED FOR THE BHNF				
SPECIES	SPECIES PRESENT	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED	HABITAT DESCRIPTION
Autumn willow <i>Salix serissima</i>	No	Yes	Yes	Wet meadows; saturated, organic soils of the Black Hills.
Bloodroot <i>Sanguinaria canadensis</i>	No	Yes	Yes	Rich woods of the Black Hills.
Narrowleaf sphagnum <i>Sphagnum angustifolium</i>	No	Yes	Yes	Boggy places of the Black Hills.
Selkirk's violet <i>Viola selkirkii</i>	No	No	No	Cool, shady ravines in the Black Hills.
American cranberrybush <i>Viburnum opulus</i> var. <i>americanum</i>	No	Yes	Yes	Moist woods or thickets; rich wooded ravines in the Black Hills; moist to wetland, fens, marshes, moist woods, and thickets, with paper birch; 4,200 - 4,950 feet elevation.

TABLE E-2 REGION 2 SENSITIVE PLANT SPECIES EVALUATED FOR THE TBNG				
SPECIES	HABITAT REQUIREMENTS	OCCURRENCE IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	RATIONALE IF NOT EVALUATED
Laramie columbine <i>Aquilegia laramiensis</i>	Shady crevices of north facing granite boulders; 6,250-8,000 feet elevation.	No	No	Field visits confirmed no suitable habitat is present [†]
Siberian sea thrift <i>Armeria maritima</i> ssp. <i>sibirica</i>	Alpine moist habitats; 11,900-13,000 feet elevation.	No	No	Field visits confirmed no suitable habitat is present [†]
Barr's milkvetch <i>Astragalus barrii</i>	Dry, calcareous soils and clay hills; cushion plants in badland islands in grassland matrix; 3,700-6,000 feet elevation.	No	Moderate	Evaluated
Iowa moonwort <i>Botrychium campestre</i>	Native, unplowed prairies with thatch, or disturbance (grazing), loess prairie, dunes; 3,700-5,000 (10,800) feet elevation.	No	No	Field visits confirmed no suitable habitat is present [†]

Appendix E
Biological Assessments and Biological Evaluations

TABLE E-2 REGION 2 SENSITIVE PLANT SPECIES EVALUATED FOR THE TBNG				
SPECIES	HABITAT REQUIREMENTS	OCCURRENCE IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	RATIONALE IF NOT EVALUATED
Slender moonwort <i>Botrychium lineare</i>	Native grasslands; medium height grass habitat, stream edges forest edges, also upland habitats; riparian, spruce fir, lodgepole pine, forest meadow, 0-10,500 feet elevation.	No	No	Field visits confirmed no suitable habitat is present [†]
Foxtail sedge <i>Carex alopecoidea</i>	Wet meadows, wetland margins, streamside, and moist areas; associated with sedge/willow communities; 5,600 – 5,900 feet elevation.	No	No	Field visits confirmed no suitable habitat is present [†]
Prairie dodder <i>Cuscuta plattensis</i>	Annual, parasitic on <i>Psoralea</i> , <i>Ambrosia</i> , <i>Grindelia</i> , <i>Solidago</i> , <i>Helianthus</i> spp.; 4,200-4,900 feet elevation.	No	Very Limited	Evaluated
Elliptic spikerush <i>Eleocharis elliptica</i> (SYN= <i>Eleocharis tenuis</i> var. <i>borealis</i>)	Associated with thermal seeps, springs, stock ponds, clonal; 6,200 - 7,250 feet (9,100 feet) elevation.	No	No	Field visits confirmed no suitable habitat is present [†]
Dakota buckwheat <i>Eriogonum visherii</i>	Dry plains, badland outcrops/islands in grassland matrix; 1,900-3,000 feet elevation.	No	Limited	Evaluated
Woolly twinpod <i>Physaria didymocarpa</i> var. <i>lanata</i>	Powder River Basin sandstone outcrops, redbed clay (clinker or scoria)-shale slopes, calcareous substrates, and road cuts, open, shrub-dominated slopes; 3,300-9,000 feet elevation.	No	Moderate	Evaluated
Largeflower triteleia <i>Triteleia grandiflora</i>	Meadows or open woods; grassy areas in sagebrush at edge of aspen, lodgepole pine forests, pinyon-juniper-woodlands to pine forest slopes and hills; 5,600-8,000 feet elevation.	No	Limited	Evaluated
American cranberrybush <i>Viburnum opulus</i> var. <i>americanum</i>	Moist woods or thickets; wetlands, fens, marshes; 4,200-4,950 feet elevation.	No	No	Field visits confirmed no suitable habitat is present [†]

WILDLIFE

Federally-Listed Wildlife Species

Black Hills National Forest

Based on the USFWS South Dakota Ecological Services Office list of federally-protected species occurrence by county, four wildlife species may occur in Pennington County, South Dakota. These four species include the Whooping Crane (*Grus americana*, endangered), Least Tern (*Sterna antillarum*, endangered), Sprague's Pipit (*Anthus spragueii*, candidate), and black-footed ferret (*Mustela nigripes*, endangered, experimental). The Whooping Crane may occur in eastern Pennington County during spring and fall migrations, but would be highly unlikely to occur in habitats associated with the BHNF. The Least Tern nests on sand bars of large, braided prairie rivers and may occur in eastern Pennington County. Sprague's Pipit is a small songbird that nests in open prairies and grasslands with little to no tree and shrub cover. No black-footed ferret populations are known to occur on the BHNF. Based on information provided by the BHNF, none of these federally-listed species are known to occur within the BHNF or within the analysis area.

Thunder Basin National Grassland / BLM

According to the list maintained by the USFWS Wyoming Ecological Service Office, the Greater Sage-Grouse (*Centrocercus urophasianus*, candidate species) is known to occur in Campbell and Weston Counties, Wyoming and has the potential to be affected by the proposed project.

Region 2 Sensitive Wildlife Species

The Sensitive Species list for the Rocky Mountain Region was updated in the USFS Rocky Mountain Region Endangered, Threatened, and Sensitive Species (USFS 2012) and Forest Service Manual Regional Supplement No. 2600-2011-1 (dated September 6, 2011). The sensitive wildlife species that are known to occur on the BHNF and the TBNG or for which potential habitat occurs in the proposed analysis area are presented in **Table E-3**.

TABLE E-3 REGION 2 SENSITIVE WILDLIFE SPECIES CONSIDERED FOR ANALYSIS					
SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Townsend's Big-Eared Bat (<i>Corynorhinus townsendii</i>)	BHNF, TBNG	Dependent on caves and abandoned mines for roosting habitat. Forages over a variety of habitats including coniferous forests, juniper woodlands, deciduous forests, basins, and desert shrublands (WGFD 2010).	BHNF – No TBNG – No	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG - Yes

TABLE E-3 REGION 2 SENSITIVE WILDLIFE SPECIES CONSIDERED FOR ANALYSIS					
SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Hoary Bat (<i>Lasiurus cinerus</i>)	BHNF, TBNG	Deciduous and coniferous woodlands with dense canopy and open understory. Often found along forest edges foraging over water sources. Roosts in tree foliage (Willis and Bingham 2005, NatureServe 2012).	BHNF – No TBNG – No	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG - Yes
Fringed Myotis (<i>Myotis thysanodes</i>)	BHNF, TBNG	Coniferous forests, woodlands, grasslands, and shrublands, although it is probably most common in xeric woodlands, such as juniper, ponderosa pine, and Douglas-fir. Roosts in rock crevices, tree cavities, caves, abandoned mines, and buildings with winter hibernation roosts in caves (WGFD 2010).	BHNF – No TBNG – No	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG - Yes
Spotted Bat (<i>Euderma maculatum</i>)	TBNG	Low deserts and basins and juniper woodlands but occurs primarily in association with canyons, prominent rock features, and permanent water sources. Roosts in cracks and crevices in high cliffs and canyons, it also occasionally roosts in buildings, caves, or abandoned mines (WGFD 2010).	No	Yes	Yes
Black-Tailed Prairie Dog (<i>Cynomys ludovicianus</i>)	BHNF, TBNG	Low relief grasslands and sparse grassy shrublands dominated by blue grama, western wheatgrass and big sagebrush. Soils supporting burrows are fine to medium textured silty clay loam, sandy clay loam and loams (WGFD 2010).	BHNF – No TBNG – Yes	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG - Yes

Appendix E
Biological Assessments and Biological Evaluations

TABLE E-3 REGION 2 SENSITIVE WILDLIFE SPECIES CONSIDERED FOR ANALYSIS					
SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
American Marten (<i>Martes americana</i>)	BHNF	Primarily associated with mature white spruce in the Black Hills. Key habitat elements are relatively dense forests with complex physical structure near the ground, abundant coarse woody debris, and lengthy fire-return intervals (Buskirk 2002).	No	Yes	Yes
Rocky Mountain Bighorn Sheep (<i>Ovis canadensis canadensis</i>)	BHNF, TBNG	Open, grassy areas associated with steep, cliff based escape cover as year round habitat (WGFD 2010).	BHNF – Yes TBNG - No	BHNF – Yes TBNG – No	BHNF – Yes TBNG - No
Swift Fox (<i>Vulpes velox</i>)	BHNF, TBNG	Shortgrass and mixed-grass prairies with gently rolling or level landscapes. Also sagebrush steppe with low-growing vegetation, relatively flat terrain, friable soils, and high den availability (WGFD 2010).	BHNF – No TBNG - Yes	BHNF – No TBNG - Yes	BHNF – No TBNG - Yes
Northern Goshawk (<i>Accipiter gentillis</i>)	BHNF, TBNG	Coniferous and mixed conifer/aspen forest habitat, and forages in a wide variety of forest ages, structural conditions, and successional stages. Nest sites are characterized by high canopy cover, high basal area, large tall trees, and fairly open understories, and typically are on the lower third of slopes (WGFD 2010).	BHNF – Yes TBNG - No	BHNF – Yes TBNG - No	BHNF – Yes TBNG - No
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	BHNF, TBNG	Shortgrass prairies, mixed grasslands, meadows, open sagebrush-grasslands, and agricultural areas. It requires herbaceous cover and conspicuous perches, and avoids areas containing more than 35% shrubs (WGFD 2010).	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes

**TABLE E-3
REGION 2 SENSITIVE WILDLIFE SPECIES CONSIDERED FOR ANALYSIS**

SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Sage Sparrow (<i>Amphispiza belli</i>)	TBNG	Sagebrush specialist. Prairie and foothills shrubland habitat where sagebrush is present. Prefers shrublands with tall shrubs (1 to 2 meters [3 to 6 feet]) and low grass cover, where sagebrush is clumped in a patchy landscape (WGFD 2010).	No	Yes	Yes
Burrowing Owl (<i>Athene cunicularia</i>)	BHNF, TBNG	Open prairie, grassland, desert, and shrub-steppe habitats, and may also inhabit agricultural areas. It depends on mammals, particularly prairie dogs and ground squirrels that dig burrows, which it uses for nesting, roosting, and escape (WGFD 2010).	BHNF – No TBNG – No	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG – Yes
American Bittern (<i>Botaurus lentiginosus</i>)	TBNG	Marshes with open water in the center, gradual slopes, a band of emergent vegetation around the periphery, and idle grassland in the adjacent uplands. Large wetlands, at least 3 hectares (7 acres), with tall, dense emergent vegetation such as cattails, bulrushes, and reeds (WGFD 2010).	No	No	No
Ferruginous Hawk (<i>Buteo regalis</i>)	BHNF, TBNG	Semiarid open country, primarily grasslands, basin-prairie shrublands, and badlands. It requires large tracts of relatively undisturbed rangeland and nests on rock outcrops, the ground, cut banks, cliff ledges, or trees (WGFD 2010).	BHNF – No TBNG – Yes	BHNF – No TBNG – Yes	BHNF – No TBNG – Yes

Appendix E
Biological Assessments and Biological Evaluations

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SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
McCown's Longspur (<i>Calcarius mccownii</i>)	TBNG	Shortgrass prairie and basin prairie shrubland habitats, and also inhabits plowed and stubble fields, grazed pastures, dry lakebeds, and other sparse, bare, dry ground. Prefers 45% to 80% grass cover and 15% to 25% bare ground (WGFD 2010).	Yes	Yes	Yes
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	TBNG	Shortgrass and open mixed-grass prairies. Avoids excessively shrubby areas, although it uses scattered shrubs and other low elevated perches for singing (WGFD 2010).	Yes	Yes	Yes
Greater Sage-Grouse (<i>Centrocercus urophasianus</i>)	TBNG	Large, intact stands of mature sagebrush (<i>Artemisia</i> sp.) with well-developed grass and forb understory and riparian meadows for nesting habitat.	Yes	Yes	Yes
Mountain Plover (<i>Charadrius montanus</i>)	BHNF, TBNG	Low, open habitats such as arid shortgrass and mixed-grass prairies with scattered clumps of cacti and forbs. Nest in large, flat grassland expanses with less than 5% slope; sparse, short vegetation (10 centimeters [4 inches] or less); and bare ground. It is adapted to areas that have been disturbed by prairie dogs, heavy grazing, or fire (WGFD 2010).	BHNF – No TBNG - Yes	BHNF – No TBNG - Yes	BHNF – No TBNG - Yes
Black Tern (<i>Chlidonias niger</i>)	TBNG	Marshes and aquatic areas, and usually prefers marshes or marsh complexes greater than 20 ha (50 ac). Nests in small, loose colonies, generally in areas of still water, with 25% to 75% of the surface covered by emergent vegetation, and well-interspersed with open water (WGFD 2010).	No	No	No

Appendix E
Biological Assessments and Biological Evaluations

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SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Northern Harrier (<i>Circus cyaneus</i>)	BHNF, TBNG	Nests on ground in open wetlands, including marshy meadows, wet, lightly grazed pastures, old fields, freshwater marshes, and tundra. May also utilize dry uplands, including upland prairies, mesic grasslands, drained marshlands, croplands, cold desert shrub-steppe, and riparian woodland (Sibley 2003, Smith et al. 2011).	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	BHNF, TBNG	Riparian obligate species that prefers extensive areas of dense thickets and mature, deciduous, cottonwood gallery forests near water, and requires low, dense, shrubby vegetation for nest sites (WGFD 2010).	BHNF – No TBNG - No	BHNF – No TBNG - No	BHNF – No TBNG - No
Olive-Sided Flycatcher (<i>Contopus cooperi</i>)	TBNG	Primarily montane and northern coniferous forests, often associated with edges and opening associated with water, including wetlands, forest streams, and ponds (Altman and Sallabanks 2000).	No	No	No
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	BHNF, TBNG	Forages in a variety of open habitats from open woodlands and forests to shrub-steppe, grasslands, marshes, and riparian habitats. Nests on cliffs often located near water that are usually proximate to habitats with abundant prey (WGFD 2010).	BHNF – No TBNG – No	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG - Yes

Appendix E
Biological Assessments and Biological Evaluations

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SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	BHNF, TBNG	Nests near large lakes and rivers in forested habitat where both adequate prey (fish, waterfowl and ungulate carcasses) are available and old, large-diameter cottonwood or conifer trees for nesting. Migrating and wintering eagles congregate near areas where concentrations of prey are available, such as carcasses of ungulate species, and spawning areas for kokanee, trout, and other fish (WGFD 2010).	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	BHNF, TBNG	Open pastures and prairies with scattered bushes, hedgerows, and trees (Sibley 2003).	BHNF – No TBNG - Yes	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes
Lewis's Woodpecker (<i>Melanerpes lewis</i>)	BHNF, TBNG	Open or park-like ponderosa pine forests are major breeding habitat. Attracted to burned-out stands of Douglas-fir, mixed conifer, juniper, and riparian and oak woodlands, but is also found in deciduous forests, especially riparian cottonwoods (WGFD 2010).	BHNF – Yes TBNG – No	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG - Yes

**TABLE E-3
REGION 2 SENSITIVE WILDLIFE SPECIES CONSIDERED FOR ANALYSIS**

SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Long-billed Curlew (<i>Numenius americanus</i>)	BHNF, TBNG	Grassland types ranging from moist meadow grasslands to agricultural areas to dry prairie uplands, usually near water. Prefers a complex of shortgrass prairies, agricultural fields, wet and dry meadows and prairies, and grazed mixed-grass and scrub communities. Nests on the ground in habitat that usually includes: grass less than 30 centimeters (12 inches) high; bare ground; shade; abundant invertebrate prey; and a minimum of 40 hectare (100 acres) of suitable habitat (WGFD 2010).	BHNF – No TBNG – No	BHNF – No TBNG – Yes	BHNF – No TBNG - Yes
Black-backed Woodpecker (<i>Picoides arcticus</i>)	BHNF	Highly associated with ponderosa pine forests that are recently burned or have high infestations of bark beetle. Healthy ponderosa pine forests with dense mature or late successional structure also important (USFS 2010).	Yes	Yes	Yes
Flammulated Owl (<i>Otus flammeolus</i>)	BHNF, TBNG	Semi-arid open oak and ponderosa pine forests with a mix of large old trees, thickets, and openings, and a high diversity of arthropod prey (McCallum 1994a).	BHNF – No TBNG - No	BHNF – Yes TBNG - No	BHNF – Yes TBNG - No
Brewer's Sparrow (<i>Spizella breweri</i>)	TBNG	Sagebrush specialist. Sagebrush shrublands with abundant, scattered shrubs and short grass. May also be found in mountain mahogany, rabbit brush, pinyon-juniper, or bunchgrass grasslands (WGFD 2010).	Yes	Yes	Yes

Appendix E
Biological Assessments and Biological Evaluations

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SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Northern Leopard Frog (<i>Lithobates pipiens</i>)	BHNF, TBNG	In or near permanent water in the plains, foothills, and montane zones comprised of swampy cattail marshes on the plains and beaver ponds in the foothills and montane zones (WGFD 2010).	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG - Yes
Wood Frog (<i>Lithobates sylvaticus</i>)	TBNG	Beaver ponds, slowly moving streams, small lakes, wet meadows, and willow thickets in the montane zones. Populations are usually found around 9,000 feet in elevation (WGFD 2010).	No	No	No
Black Hills Red-bellied Snake (<i>Storeria occipitomaculata pahasapae</i>)	BHNF	Mesic sites such as wetlands, riparian areas, and wet meadows. Hibernacula located within rock fissures (USFS 2000).	Yes	Yes	Yes
Bluehead Sucker (<i>Catostomus discobolus</i>)	TBNG	Mainstream and tributaries of large rivers. Large adults are associated with deep pools, undercut banks, moderate to fast current velocities, and rocky substrates (WGFD 2010).	Yes	Yes	Yes
Mountain Sucker (<i>Catostomus platyrhynchus</i>)	BHNF, TBNG	Cool, clear mountain streams from three to 12 meters in width. May also be found in larger rivers, lakes, and reservoirs (USFS 2005).	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG – No	BHNF – Yes TBNG - No
Lake Chub (<i>Couesius plumbeus</i>)	BHNF, TBNG	Typically found in lakes and streams with cool waters and clean gravel or cobble substrates. Within South Dakota, restricted to Deerfield Reservoir (Isaak et al. 2003).	BHNF – Yes TBNG - Yes	BHNF – Yes TBNG – Yes	BHNF – Yes TBNG - Yes

Appendix E
Biological Assessments and Biological Evaluations

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SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Plains Minnow (<i>Hybognathus placitus</i>)	TBNG	Large, turbid prairie streams and rivers. Prefers slow water and side-pool habitat with sand or silt bottoms. Tolerant of high water temperatures and low oxygen make them able to inhabit intermittent pools (WGFD 2010).	Yes	Yes	Yes
Sturgeon Chub (<i>Hybopsis gelida</i>)	TBNG	Free flowing turbid rivers. Rarely in tributary streams. Typically associated with hard substrates, shallow water, and high current velocity (WGFD 2010).	Yes	Yes	Yes
Finescale Dace (<i>Phoxinus neogaeus</i>)	BHNF, TBNG	Range-wide habitat includes pools of boggy headwaters, creeks and small rivers, lakes and ponds, and often common in beaver ponds usually over silt and near vegetation (USFS 2010). This species has not been reported in the analysis area.	BHNF – No TBNG – Yes	BHNF – No TBNG – Yes	BHNF – No TBNG - Yes
Flathead Chub (<i>Platygobio gracilis</i>)	TBNG	Main channels of sandy, turbid streams with small substrates, deep water, and woody debris (WGFD 2010).	Yes	Yes	Yes

**TABLE E-3
REGION 2 SENSITIVE WILDLIFE SPECIES CONSIDERED FOR ANALYSIS**

SPECIES	FOREST	HABITAT DESCRIPTION	OCCUR IN ANALYSIS AREA	SUITABLE HABITAT PRESENT	ANALYSIS PROVIDED
Cooper's Rocky Mountain Snail (<i>Oreohelix strigosa cooperi</i>)	BHNF	Cooper's snail is found on calcareous soils primarily lowland wooded areas and talus slopes, generally but not always with northern or eastern exposures. Many of the largest colonies are found in ponderosa pine with a partially closed canopy, secondary deciduous tree component, and diverse understories. At some sites, white spruce is common. Riparian woodland communities, often in areas with adjacent steep rocky slope bases, also contain substantial colonies (Frest and Johannes 2002). In contrast to other land snails, Cooper's snail can thrive with little cover and thin litter. <i>Oreohelix</i> have been observed in a variety of litter types in the Black Hills, including coniferous needles litter, deciduous litter and areas of thin litter (Anderson 2005).	Yes	Yes	Yes
Regal Fritillary (<i>Speyeria idalia</i>)	BHNF	Open prairies. In South Dakota, most likely to be found in native tall-grass prairies composed of big bluestem (<i>Andropogon gerardii</i>), western wheatgrass (<i>Pascopyrum smithii</i>), and green needlegrass (<i>Stipa viridula</i>). Continuous prairie greater than 1,000 acres may be required for stable populations (Royer and Marrone 1992).	No	Yes	Yes

DETERMINATIONS SUMMARY

FLORA

Federally-Listed Plant Species

Black Hills National Forest

No federally-listed plant species are known to occur in the South Dakota analysis area for this proposed Project. Therefore, implementation of Alternative 1 (No Action), Alternative 2 (Proposed Action) and Route Alternatives 3b through 3g would have “**no effect**” on federally-listed plant species.

Thunder Basin National Grassland / BLM

The Ute ladies'-tresses orchid is a federally-protected plant species that may occur in the Wyoming analysis area for this project. Implementation of Alternative 1 (No Action) would have “**no effect**” on this species. Implementation of Alternative 2 (Proposed Action) would have little to no direct impacts on this species based on the lack of known occurrences or suitable habitat in the analysis area. Indirect effects that could occur under implementation of Alternative 2 but are unlikely based on the lack of known occurrences or suitable habitat in the analysis area include potential habitat degradation from increased invasive and noxious weeds and erosion-related sedimentation. Implementation of Alternative 2 “**may affect, but is not likely to adversely affect**” this species, based on discountable effects. Route Alternative 3a would result in the same impacts and determinations for this species as the Proposed Action.

Region 2 Sensitive Plant Species

Under Alternative 1 (No Action), there would be no new or different impacts on sensitive plant species occurring or potentially occurring on the BHNG or TBNG. Under Alternative 2 (Proposed Action), there would be the potential for various direct and indirect effects on sensitive plant species on the BHNF and TBNG. Potential effects could include direct injury or removal as part of surface disturbing activities; alteration or removal of suitable habitats; reduced survivability and habitat suitability caused by increases the spread and establishment of noxious weed species; and the increased risk of wildfire. All of the Route Alternatives would result in the same impacts and determinations for these species as the Proposed Action

Table E-4 presents the determinations by alternative for the sensitive plant species that were analyzed in the BHNF BE. **Table E-5** presents the determinations by alternative for the sensitive plant species that were analyzed in the TBNG BE.

TABLE E-4 DETERMINATIONS FOR SENSITIVE PLANT SPECIES ON THE BHNF			
SPECIES	ALTERNATIVE 1	ALTERNATIVE 2	ROUTE ALTERNATIVES 3B - 3G
Iowa moonwort (<i>Botrychium campestre</i>)	No Impact	MAII	MAII
Slender moonwort (<i>Botrychium lineare</i>)	No Impact	MAII	MAII
Foxtail sedge (<i>Carex alopecoidea</i>)	No Impact	MAII	MAII

TABLE E-4 DETERMINATIONS FOR SENSITIVE PLANT SPECIES ON THE BBNF			
SPECIES	ALTERNATIVE 1	ALTERNATIVE 2	ROUTE ALTERNATIVES 3B - 3G
Lesser yellow lady's slipper (<i>Cypripedium parviflorum</i>) (SYN= <i>C. calceolus</i>)	No Impact	MAII	MAII
Groundcedar (<i>Lycopodium complanatum</i>) (SYN= <i>Diphasiastrum complanatum</i>)	No Impact	MAII	MAII
Large roundleaf orchid (<i>Platanthera orbiculata</i>) (SYN= <i>Habaneria orbiculata</i>)	No Impact	MAII	MAII
Sageleaf willow (<i>Salix candida</i>)	No Impact	MAII	MAII
Autumn willow (<i>Salix serissima</i>)	No Impact	MAII	MAII
Bloodroot (<i>Sanguinaria canadensis</i>)	No Impact	MAII	MAII
Narrowleaf sphagnum (<i>Sphagnum angustifolium</i>)	No Impact	MAII	MAII
American cranberry bush (<i>Viburnum opulus</i> var. <i>americanum</i>)	No Impact	MAII	MAII

MAII – May adversely impact individuals but is not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.

TABLE E-5 DETERMINATIONS FOR SENSITIVE PLANT SPECIES ON THE TBNG			
SPECIES	ALTERNATIVE 1	ALTERNATIVE 2	ROUTE ALTERNATIVE 3A
Barr's milkvetch (<i>Astragalus barrii</i>)	No Impact	MAII	MAII
Prairie dodder (<i>Cuscuta plattensis</i>)	No Impact	No Impact	No Impact
Dakota buckwheat (<i>Eriogonum visherii</i>)	No Impact	No Impact	No Impact
Woolly twinpod (<i>Physaria didymocarpa</i> var. <i>lanata</i>)	No Impact	MAII	MAII
Largeflower Triteleia (<i>Triteleia grandiflora</i>)	No Impact	No Impact	No Impact

MAII – May adversely impact individuals but is not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.

WILDLIFE

Federally-Listed Wildlife Species

Black Hills National Forest

No federally-listed wildlife species are expected to occur in the South Dakota analysis area. Based on the lack of occurrence in the analysis area and the lack of designated critical habitat in the analysis area, implementation of Alternative 1, Alternative 2 or Route Alternative 3 b through 3g would have “**no effect**” on federally-listed wildlife species in South Dakota.

Thunder Basin National Grassland / BLM

The Greater Sage-grouse is listed as a candidate species and was the only federally-listed wildlife species evaluated for potential effects in the Wyoming analysis area. Impacts to Greater Sage-grouse as the result of implementation of the Proposed Action could include loss of habitat, disturbance from construction related activities, injury or mortality, increased risk of avian-powerline collision, increased potential for spread and establishment of noxious weeds, habitat fragmentation, and increased predation. While construction of the Proposed Action may impact individual Greater Sage-grouse, the Proposed Action would not likely impact population trends observed throughout the Powder River Basin or the analysis area. The Proposed Action has reduced potential impacts to Greater Sage-grouse through the use of general mitigation measures, Greater Sage-grouse species specific mitigation measures, and routing through the least amount of Core Area and incorporating a low number of leks within four miles. However, because the Proposed Action would occur in occupied Greater Sage-grouse habitat outside of the Core Area, and because of the currently declining trends of Greater Sage-grouse populations on NFS lands and across northeastern Wyoming, the Proposed Action would likely jeopardize the continued existence of Greater Sage-Grouse as a Candidate Species if mitigation efforts are not applied. However, mitigation efforts described above and in **Appendix B** will reduce impacts of the Proposed Action to the point that the Proposed Action will not contribute to a net loss in habitat for sage grouse, or contribute to the direct, indirect, or cumulative impacts.

Route Alternative 3a (Fiddler) was designed to avoid disturbance-related impacts to two Greater Sage-grouse leks (Upton Fairview and Jessee leks) and to rouse that use these leks and the surrounding habitats. Route Alternative 3a is a proposed one- mile deviation north of the Proposed Action. Implementation of this Alternative would increase the distance between construction, operation and maintenance activities and these two occupied leks, thus reducing the potential for disturbance and potential impacts on the Greater Sage-grouse.

Region 2 Sensitive Wildlife Species

Effects determinations were assigned to BHNF and TBNG sensitive wildlife species determined to have the potential to occur in the analysis area or to be affected by the proposed project. These determinations considered implementation of Forest Plan direction, as well as project design features and mitigation measures. **Table E-6** presents the effects determinations for BHNF and TBNG sensitive wildlife species by alternative.

**TABLE E-6
DETERMINATIONS FOR SENSITIVE WILDLIFE SPECIES ON THE BHNF AND TBNG**

Species Name	Forest	Alternative 1	Alternative 2	Route Alternatives 3a - 3g
Townsend's Big-Eared Bat (<i>Corynorhinus townsendii</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Hoary Bat (<i>Lasiurus cinereus</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Fringed Myotis (<i>Myotis thysanodes</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Spotted Bat (<i>Euderma maculatum</i>)	TBNG	No Impact	MAII	MAII

Appendix E
Biological Assessments and Biological Evaluations

**TABLE E-6
DETERMINATIONS FOR SENSITIVE WILDLIFE SPECIES ON THE BHNF AND TBNG**

Species Name	Forest	Alternative 1	Alternative 2	Route Alternatives 3a - 3g
Black-Tailed Prairie Dog (<i>Cynomys ludovicianus</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
American Marten (<i>Martes americana</i>)	BHNF	No Impact	MAII	MAII
Rocky Mountain Bighorn Sheep (<i>Ovis canadensis canadensis</i>)	BHNF	No Impact	MAII	MAII
Swift Fox (<i>Vulpes velox</i>)	BHNF TBNG	No Impact No Impact	No Impact MAII	No Impact MAII
Northern Goshawk (<i>Accipiter gentilis</i>)	BHNF	No Impact	MAII	MAII
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Sage Sparrow (<i>Amphispiza belli</i>)	TBNG	No Impact	MAII	MAII
Burrowing Owl (<i>Athene cunicularia</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Ferruginous Hawk (<i>Buteo regalis</i>)	BHNF TBNG	No Impact No Impact	No Impact MAII	No Impact MAII
McCown's Longspur (<i>Calcarius mccownii</i>)	TBNG	No Impact	MAII	MAII
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	TBNG	No Impact	MAII	MAII
Greater Sage-Grouse (<i>Centrocercus urophasianus</i>)	TBNG	No Impact	MAII	MAII
Mountain Plover (<i>Charadrius montanus</i>)	BHNF TBNG	No Impact No Impact	No Impact MAII	No Impact MAII
Northern Harrier (<i>Circus cyaneus</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	BHNF	No Impact	No Impact	No Impact
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Lewis's Woodpecker (<i>Melanerpes lewis</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Long-billed Curlew (<i>Numerius americanus</i>)	BHNF TBNG	No Impact No Impact	No Impact MAII	No Impact MAII
Black-backed Woodpecker (<i>Picoides arcticus</i>)	BHNF	No Impact	MAII	MAII
Flammulated Owl (<i>Otus flammeolus</i>)	BHNF	No Impact	MAII	MAII

Appendix E
Biological Assessments and Biological Evaluations

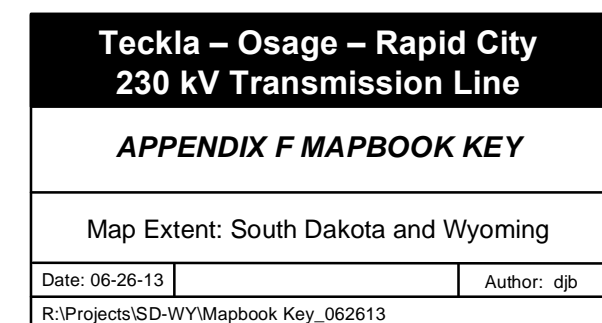
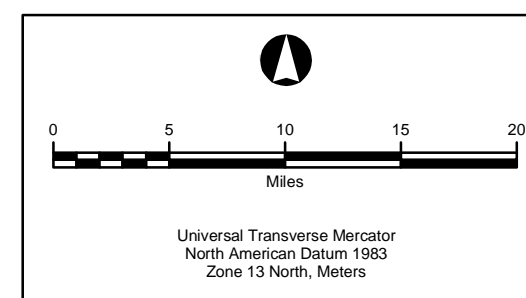
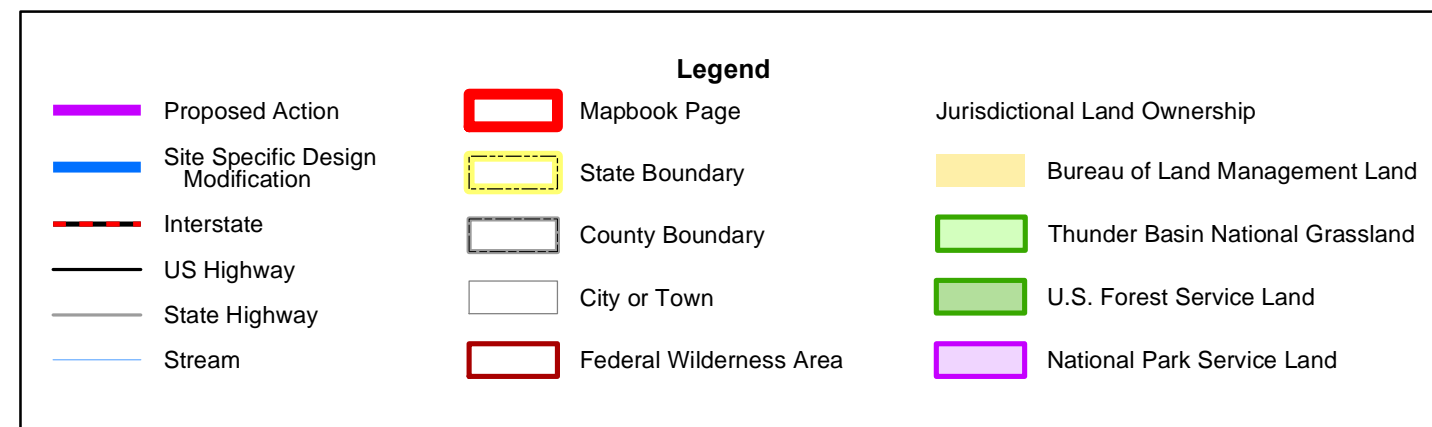
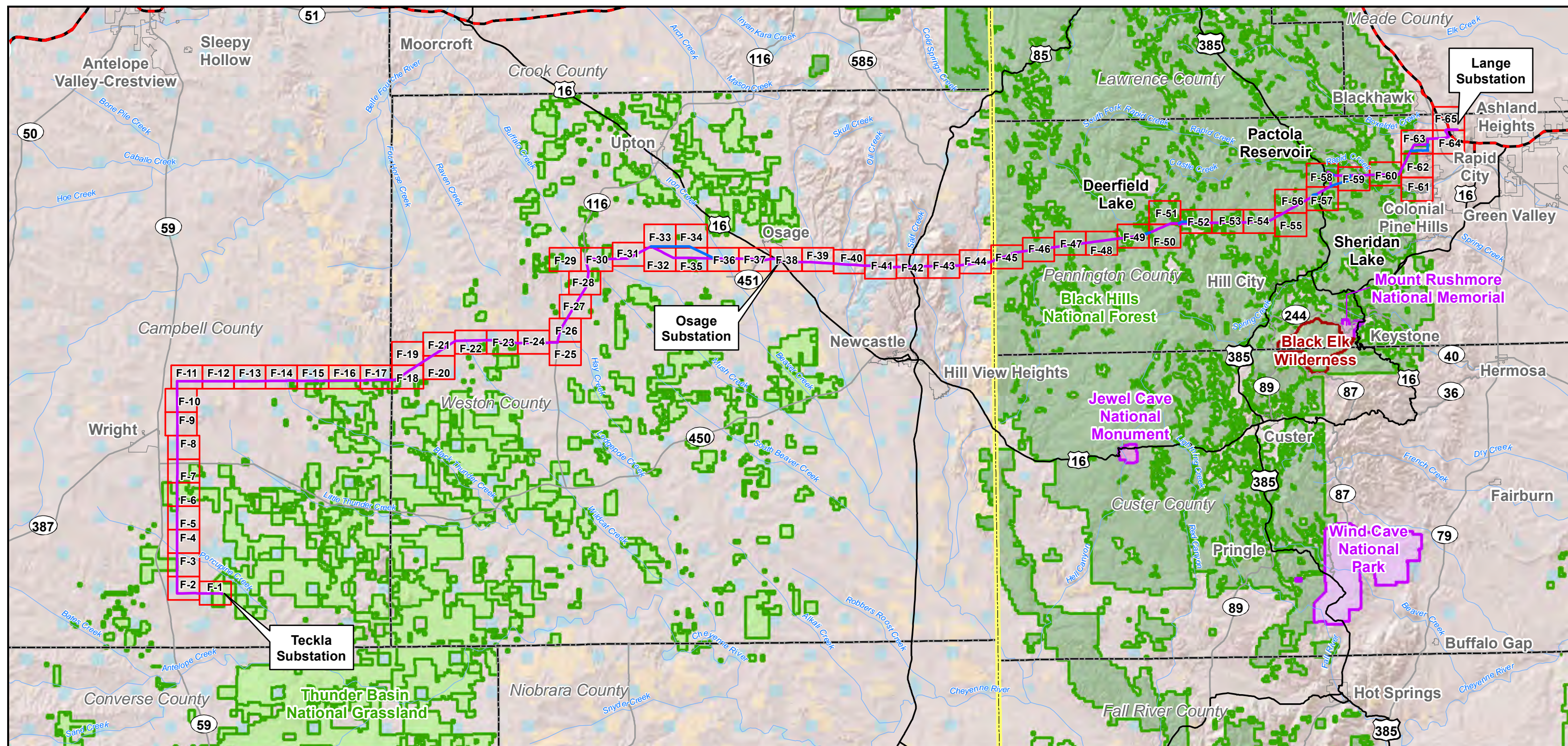
**TABLE E-6
DETERMINATIONS FOR SENSITIVE WILDLIFE SPECIES ON THE BHNF AND TBNG**

Species Name	Forest	Alternative 1	Alternative 2	Route Alternatives 3a - 3g
Brewer's Sparrow (<i>Spizella breweri</i>)	TBNG	No Impact	MAII	MAII
Northern Leopard Frog (<i>Lithobates pipiens</i>)	BHNF TBNG	No Impact No Impact	MAII MAII	MAII MAII
Black Hills Red-bellied Snake (<i>Storeria occipitomaculata pahasapae</i>)	BHNF	No Impact	MAII	MAII
Bluehead Sucker (<i>Catostomus discobolus</i>)	TBNG	No Impact	No Impact	No Impact
Mountain Sucker (<i>Catostomus platyrhynchus</i>)	BHNF	No Impact	MAII	MAII
Lake Chub (<i>Couesius plumbeus</i>)	BHNF TBNG	No Impact No Impact	MAII No Impact	MAII No Impact
Plains Minnow (<i>Hybognathus placitus</i>)	TBNG	No Impact	No Impact	No Impact
Sturgeon Chub (<i>Hybopsis gelida</i>)	TBNG	No Impact	No Impact	No Impact
Finescale Dace (<i>Phoxinus neogaeus</i>)	BHNF TBNG	No Impact No Impact	No Impact No Impact	No Impact
Flathead Chub (<i>Platygobio gracilis</i>)	TBNG	No Impact	No Impact	No Impact
Cooper's Rocky Mountain Snail (<i>Oreohelix strigosa cooperi</i>)	BHNF	No Impact	MAII	MAII
Regal Fritillary (<i>Speyeria idalia</i>)	BHNF	No Impact	MAII	MAII

MAII – May adversely impact individuals but is not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing.

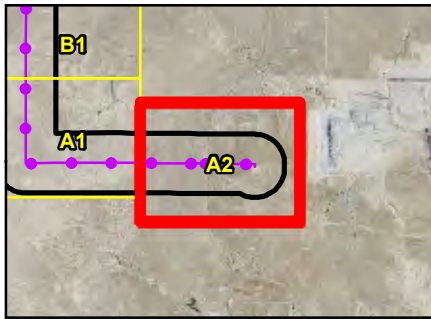
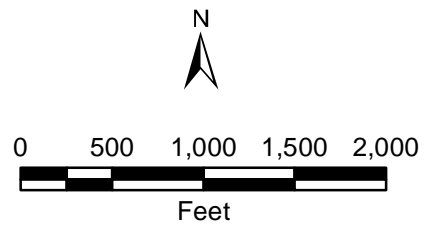
APPENDIX F

**MAPS OF PROPOSED PROJECT
AND ALTERNATIVES**



Teckla – Osage – Rapid City
230 kV Transmission Line

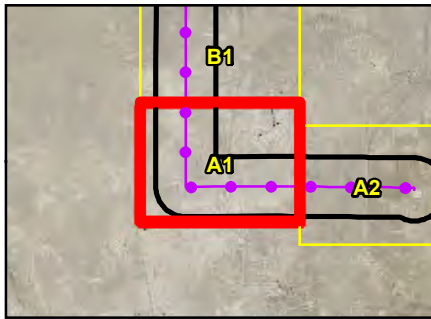
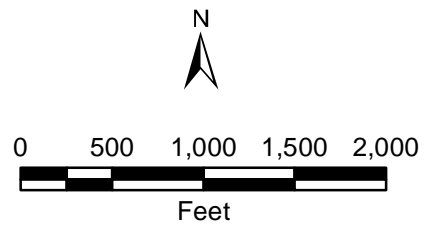
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- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



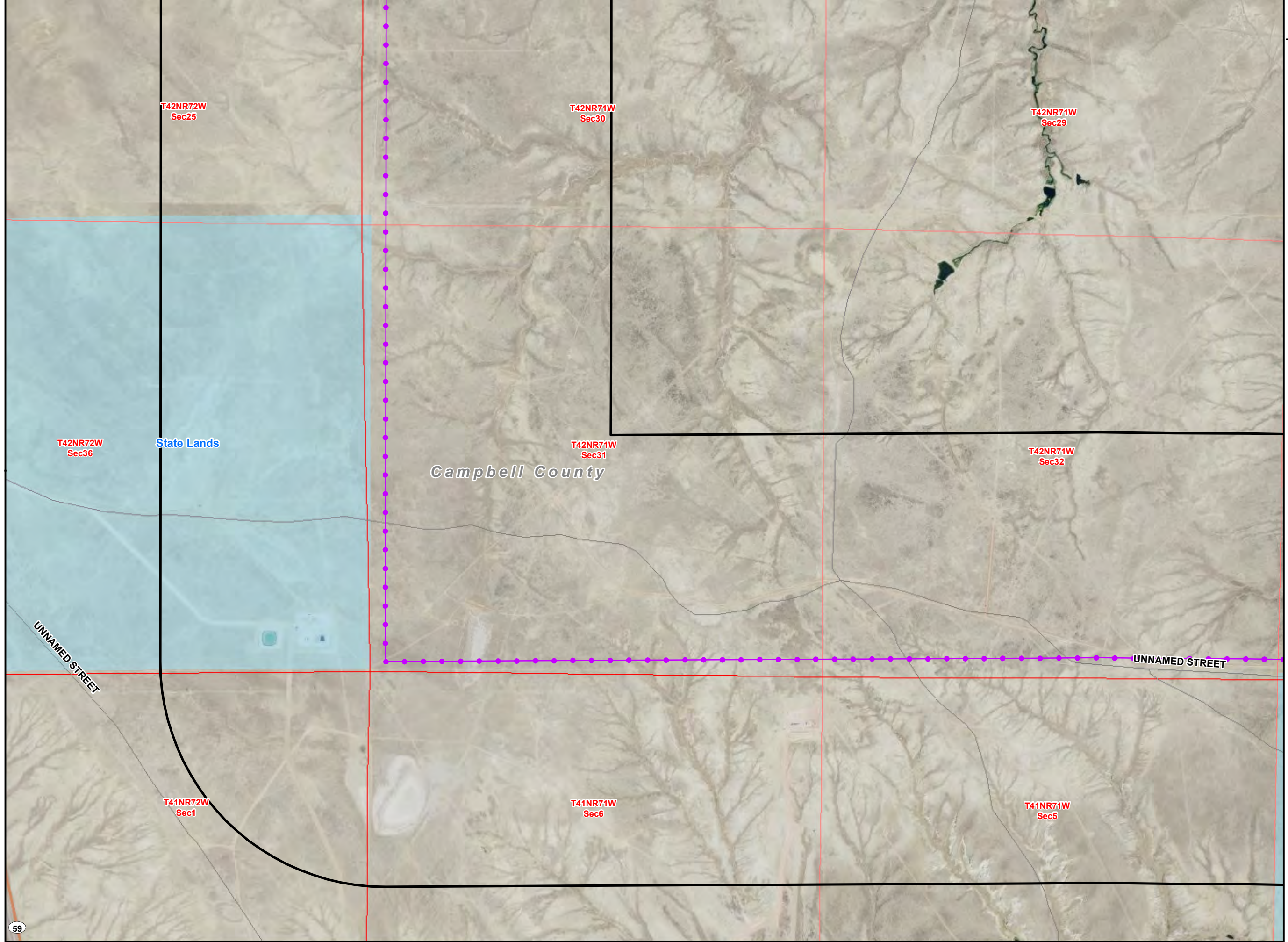
Local Inset Map
Figure F-1
C-647
06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

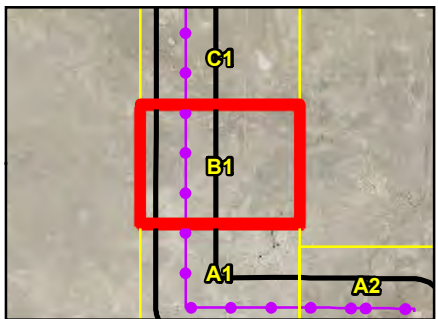
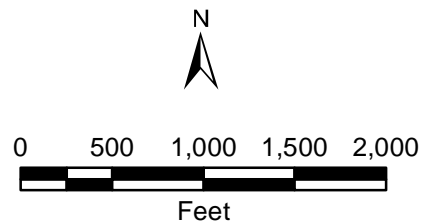


Local Inset Map
Figure F-2
C-648 06-26-13



Teckla – Osage – Rapid City
230 kV Transmission Line

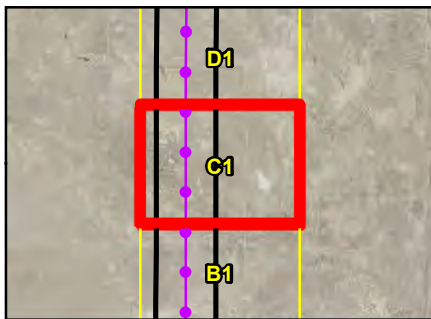
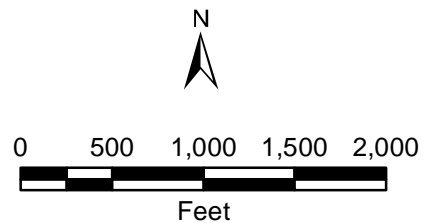
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-3
C-649
06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

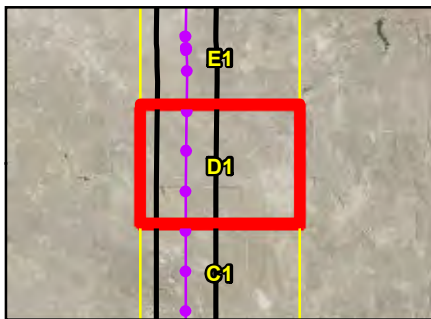
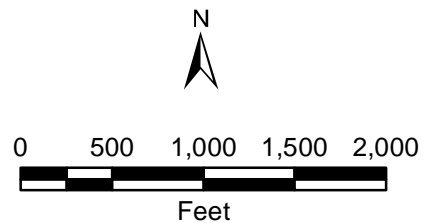
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- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
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 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
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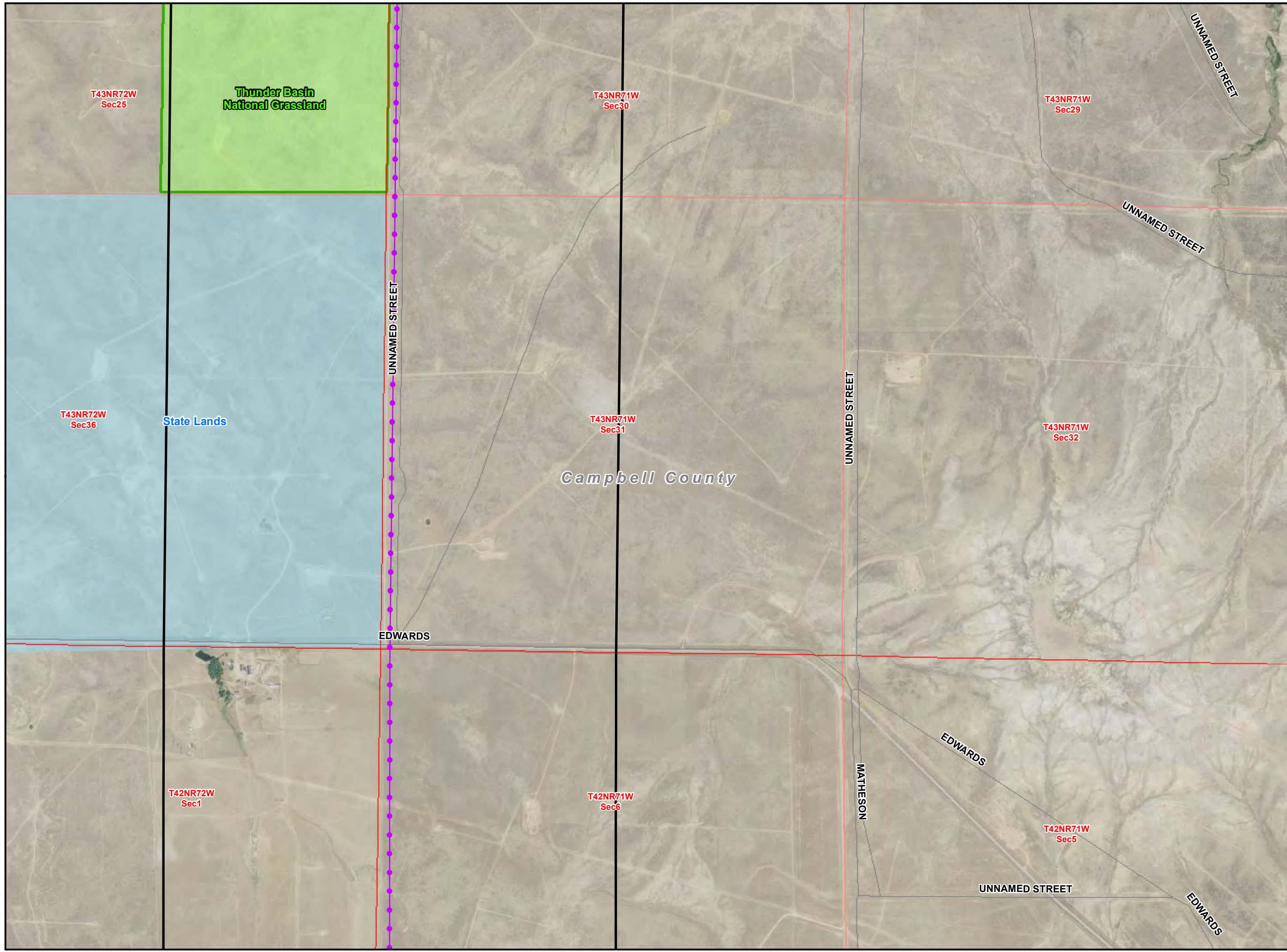
Local Inset Map
Figure F-4
C-650 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

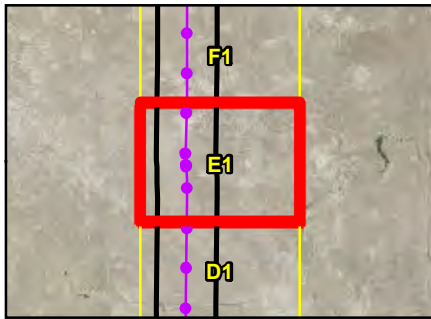
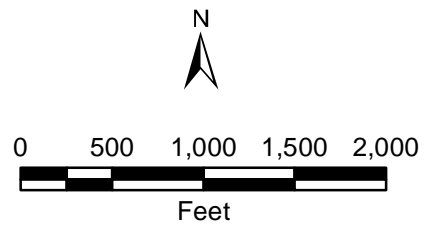


Local Inset Map
Figure F-5
C-651 06-26-13



Teckla – Osage – Rapid City
230 kV Transmission Line

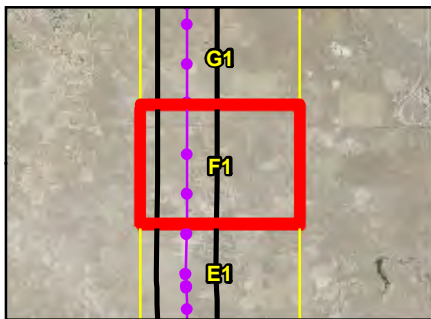
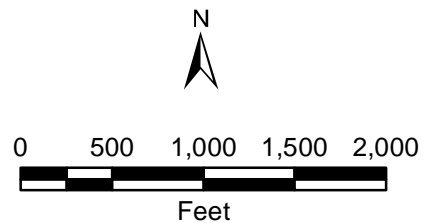
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
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 - Overland Travel Not In ROW
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



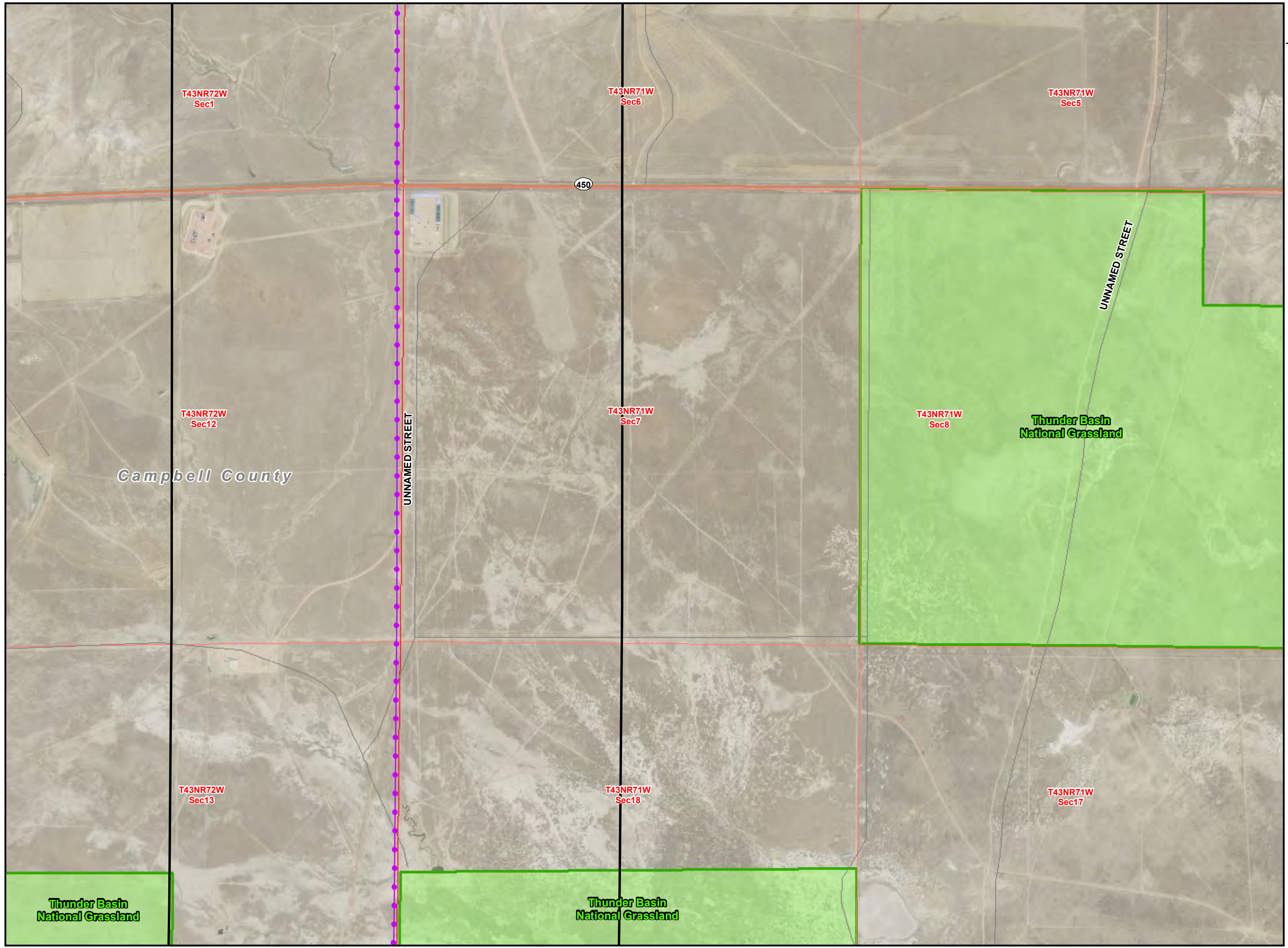
Local Inset Map
Figure F-6
C-652 06-26-13

**Teckla – Osage – Rapid City
230 kV Transmission Line**

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

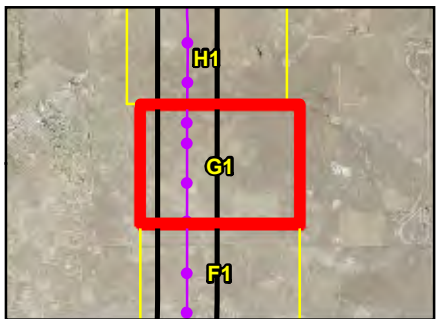
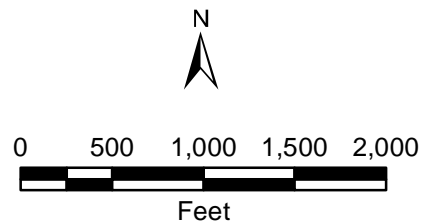


Local Inset Map
Figure F-7
C-655 06-26-13



**Teckla – Osage – Rapid City
230 kV Transmission Line**

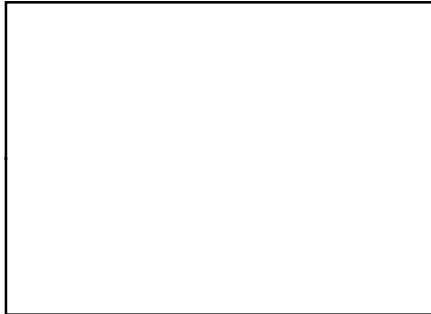
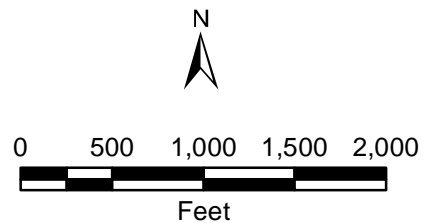
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
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 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



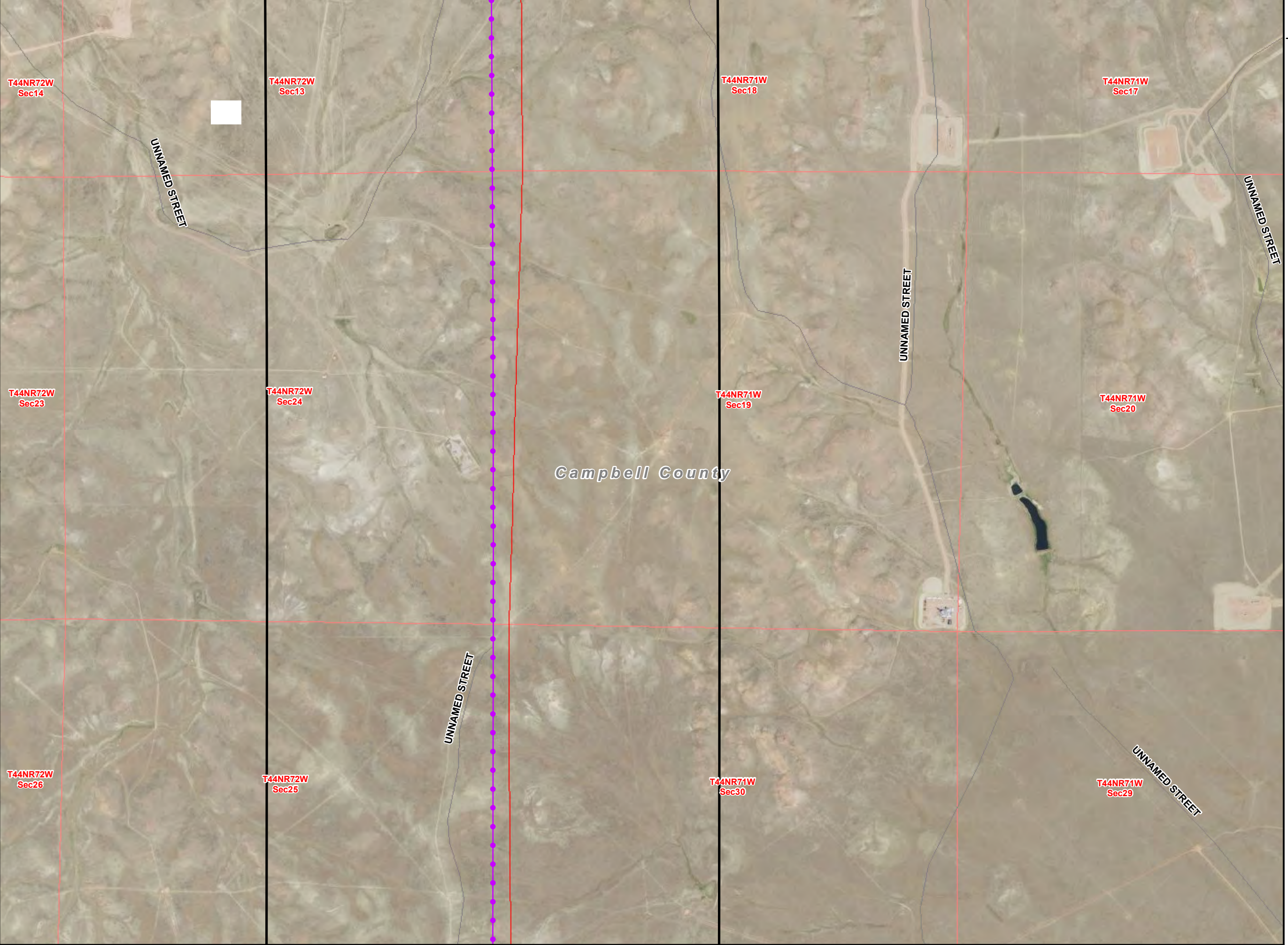
Local Inset Map
Figure F-8 C-654 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
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 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-9 C-655 06-26-13



Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
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 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

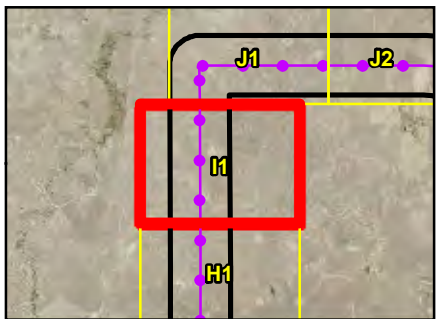
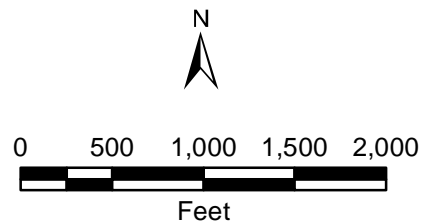
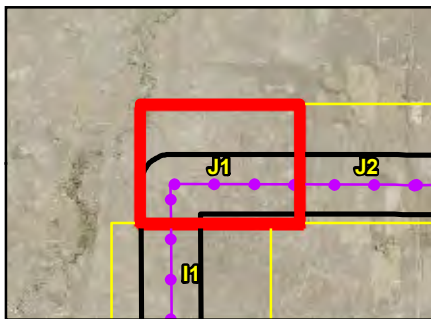
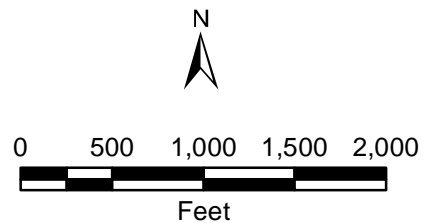


Figure F-10 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-11
C-657 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

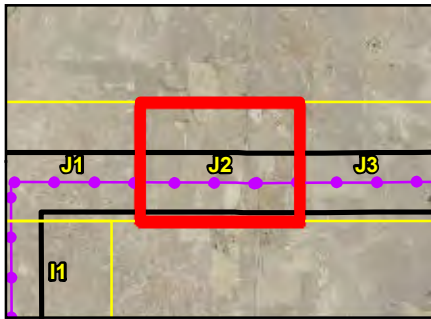
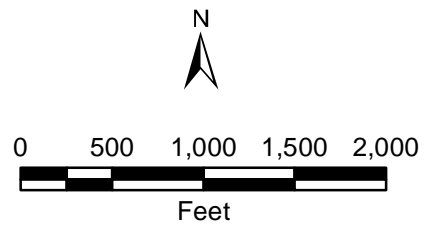
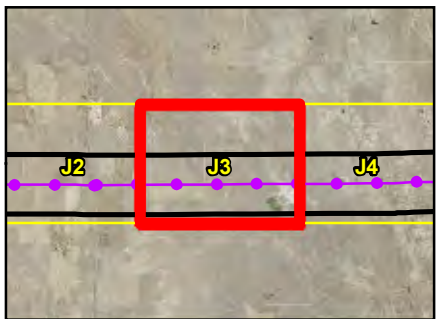
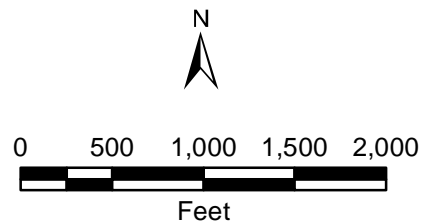


Figure F-12 C-658 06-26-13

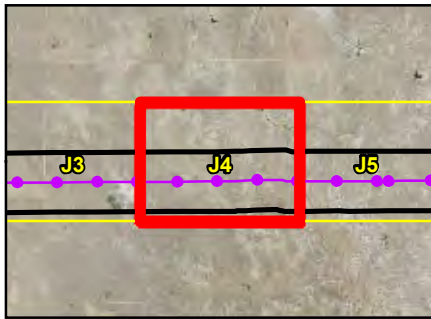
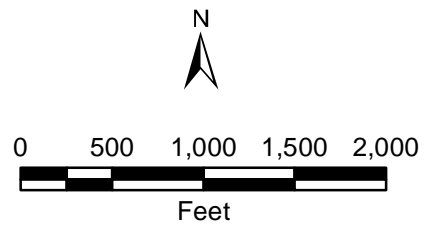
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



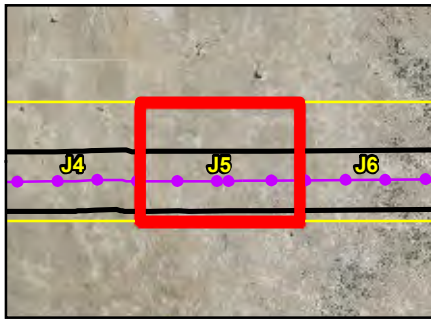
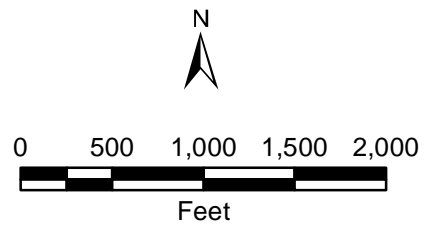
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



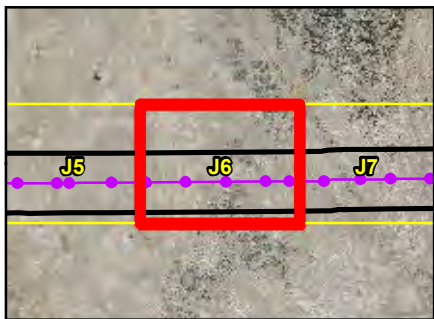
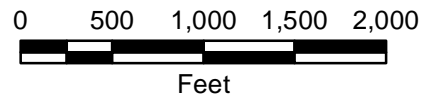
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

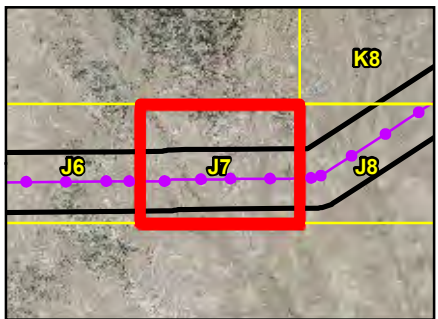
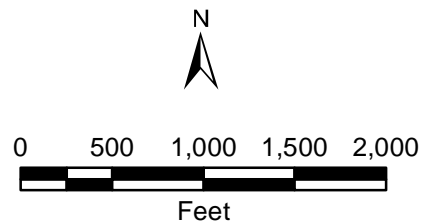
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-16
C-662 06-26-13

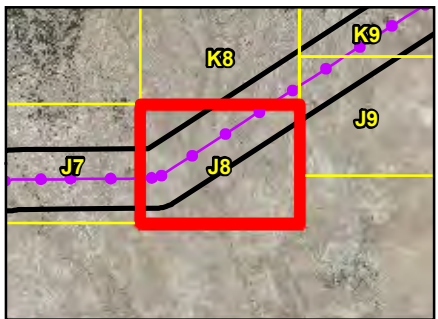
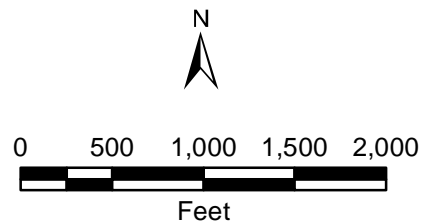
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

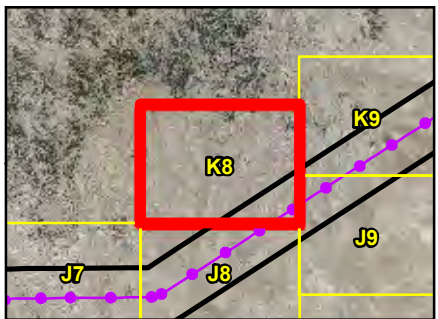
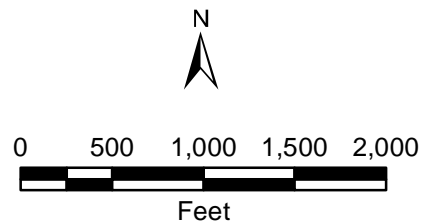
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-18
C-664 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

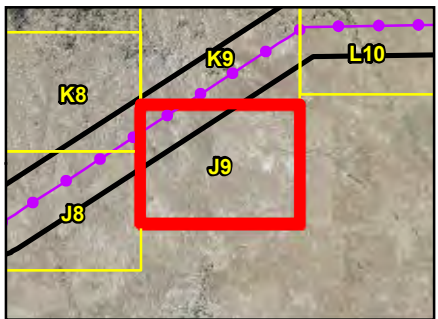
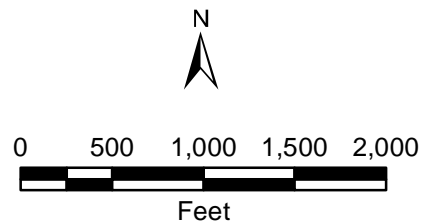
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



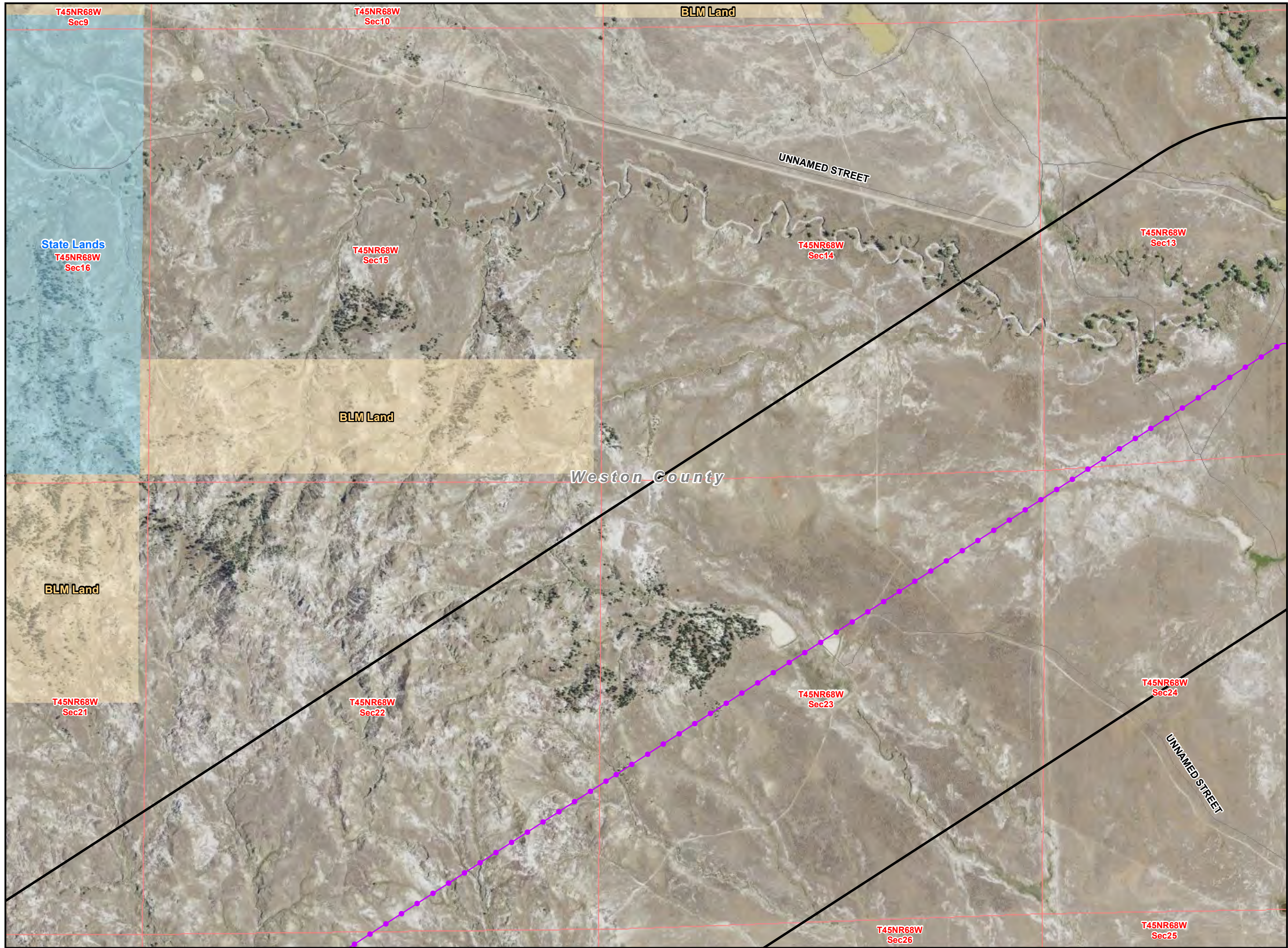
Local Inset Map
Figure F-19
C-665 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

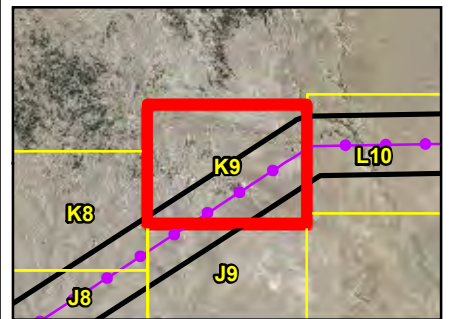
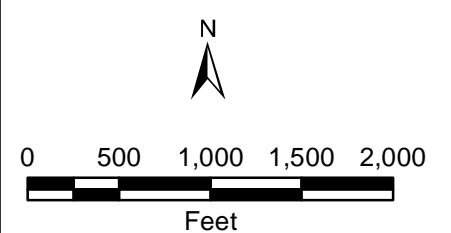


Local Inset Map
Figure F-20
C-666 06-26-13



Teckla – Osage – Rapid City 230 kV Transmission Line

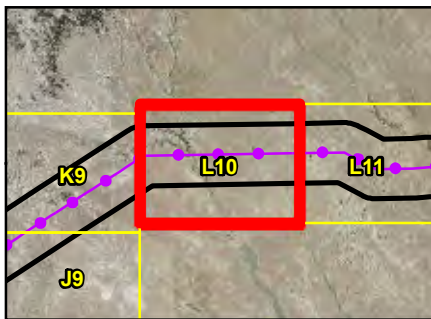
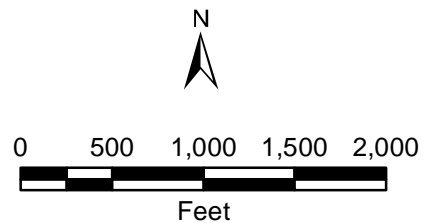
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-21
C-667
06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

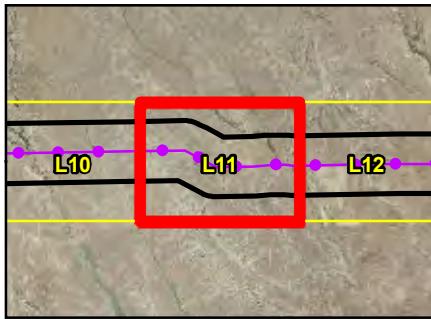
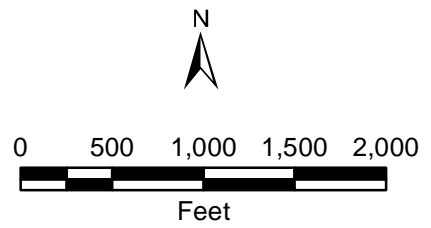
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



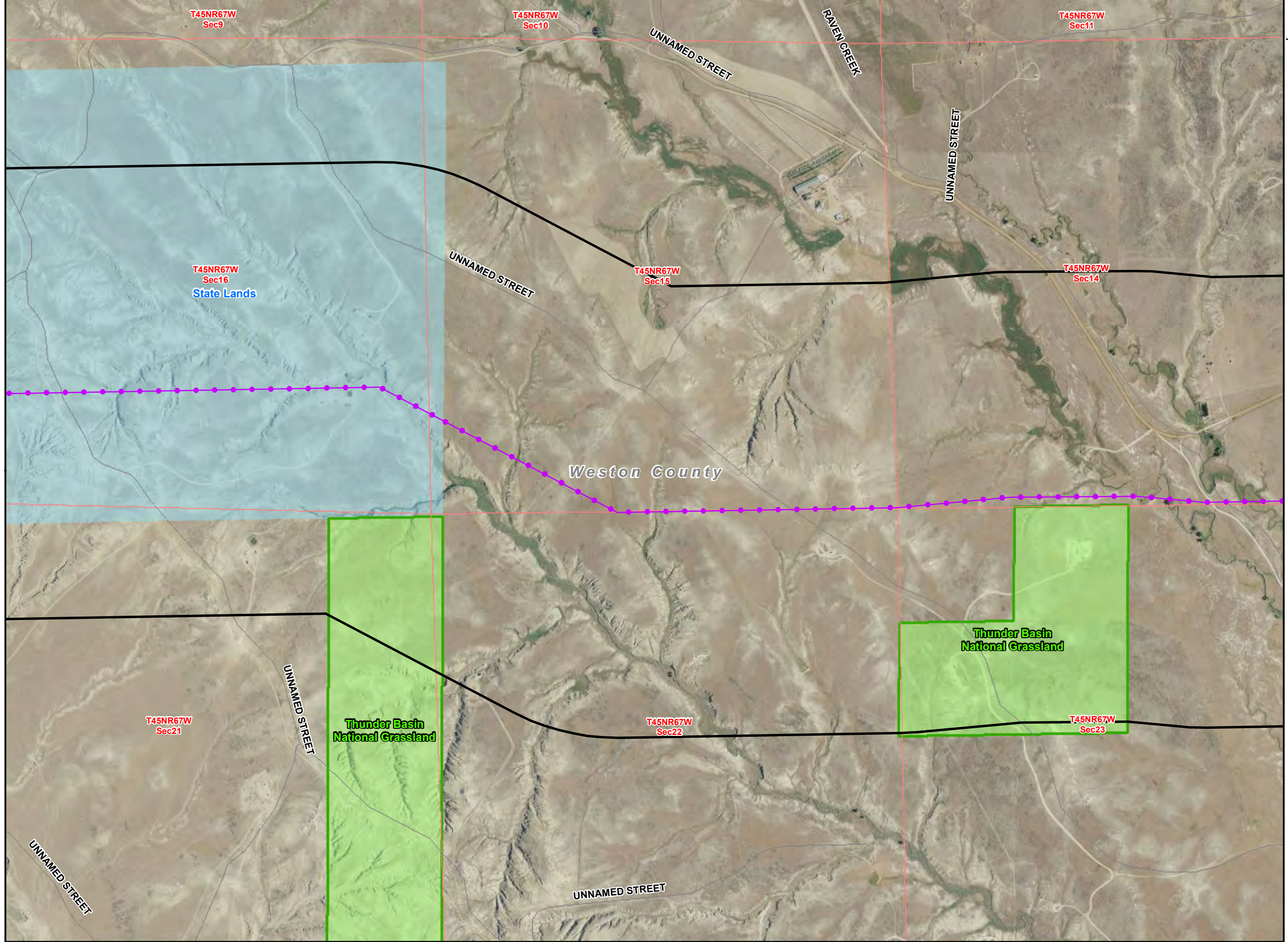
Teckla – Osage – Rapid City
230 kV Transmission Line

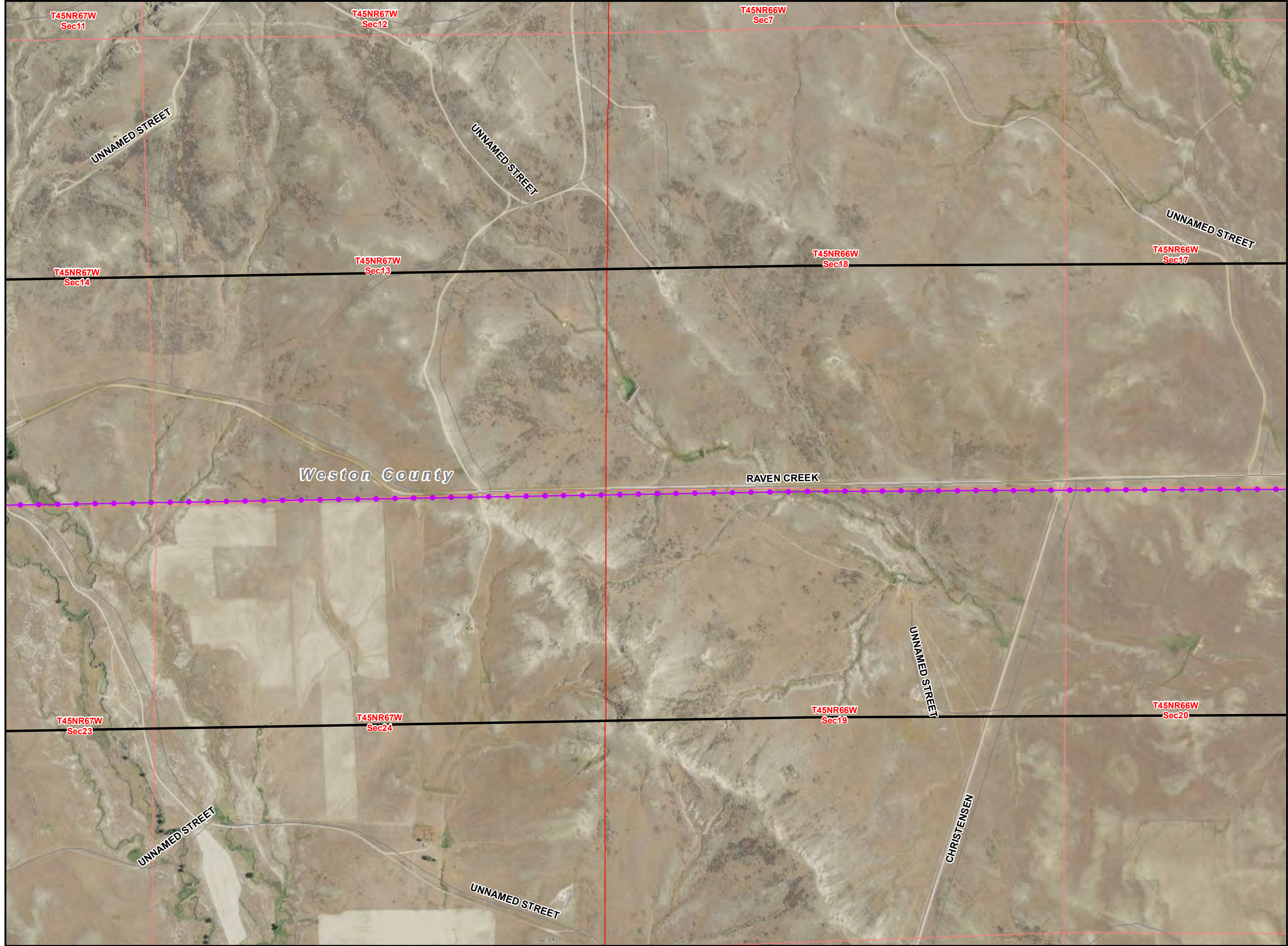
LEGEND

- Existing Substation
- Point of Interest
- Proposed Action
- Site Specific Design Modification
- 1/2 Mile Buffer
- Existing ROW/ Overland Travel
- Overland Travel Not In ROW
- Existing Road- May Need To Be Improved
- New Spur Road
- Interstate
- US Highway
- State Highway
- Major Road
- Railroad
- Stream
- State Boundary
- County Boundary
- City or Town
- Major Water Body
- Township/ Range Boundary
- Section Boundary
- Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



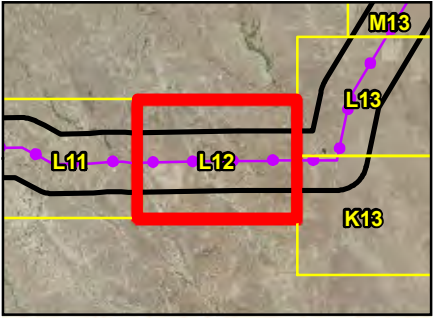
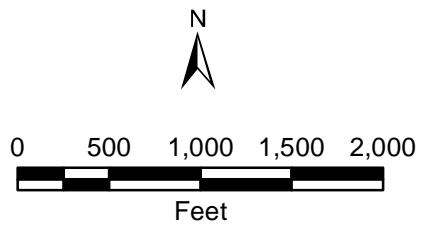
Local Inset Map
Figure F-23
C-669 06-26-13



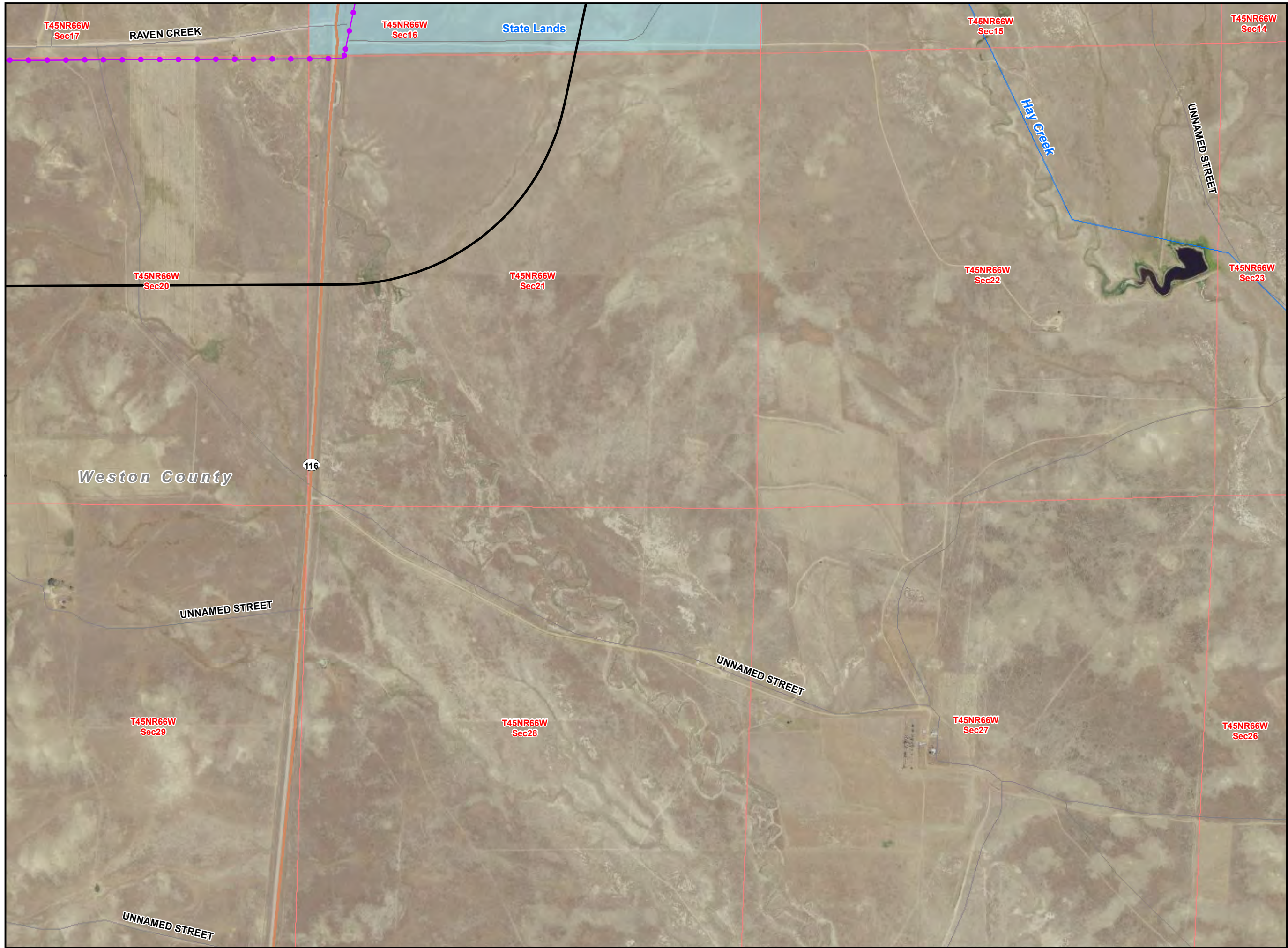


**Teckla – Osage – Rapid City
230 kV Transmission Line**

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

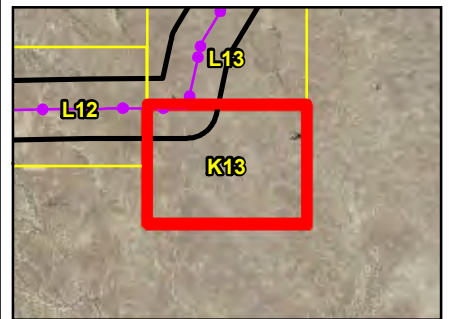
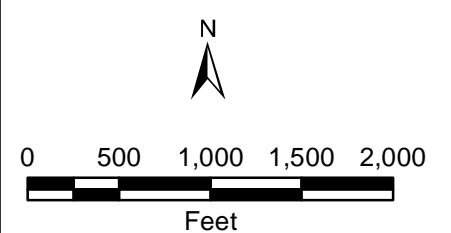


Local Inset Map
Figure F-24
C-670 06-26-13



Teckla – Osage – Rapid City 230 kV Transmission Line

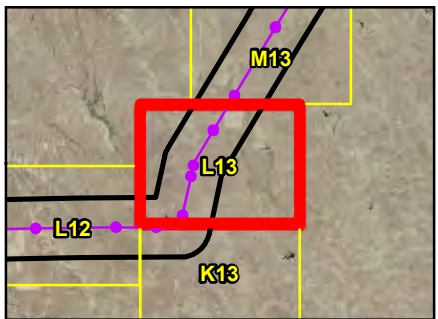
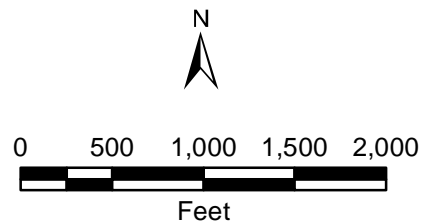
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



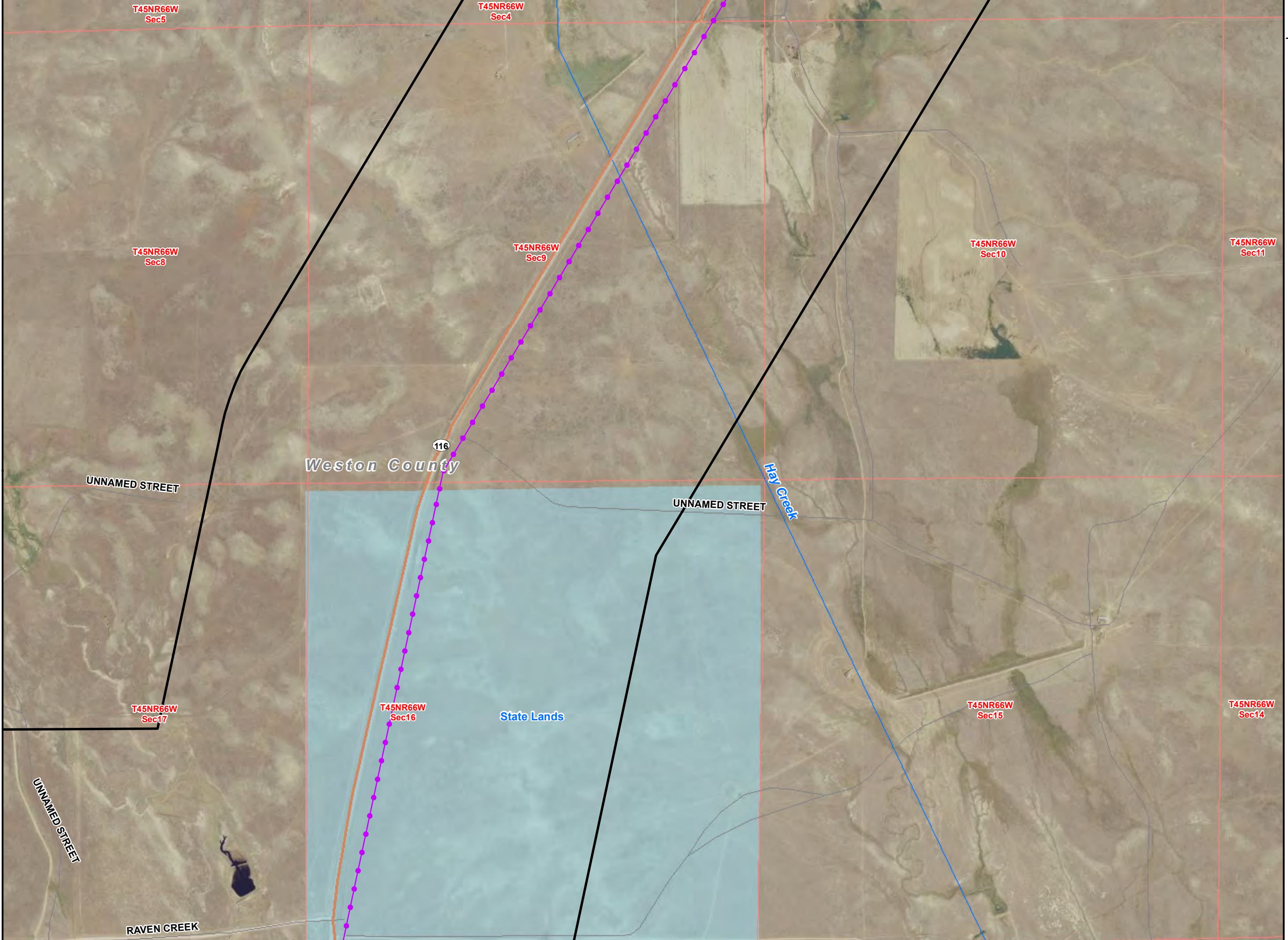
Local Inset Map
Figure F-25
C-671 06-26-13

**Teckla – Osage – Rapid City
230 kV Transmission Line**

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

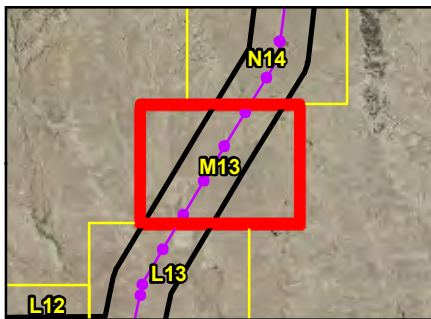
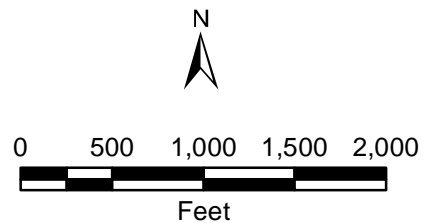


Local Inset Map
Figure F-26
C-672 06-26-13



**Teckla – Osage – Rapid City
230 kV Transmission Line**

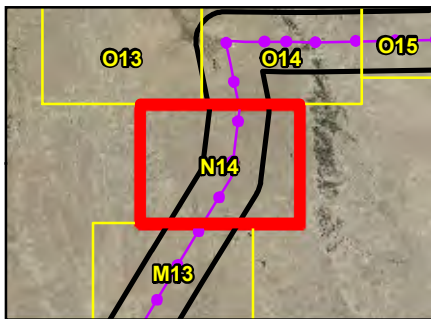
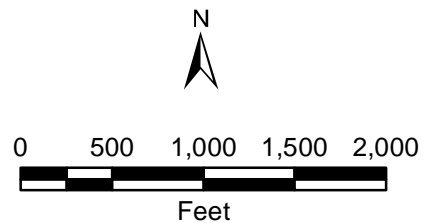
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-27 C-673 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

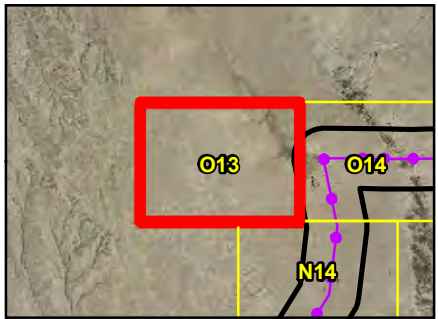
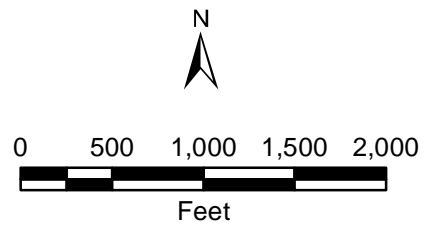
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-28
C-674 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

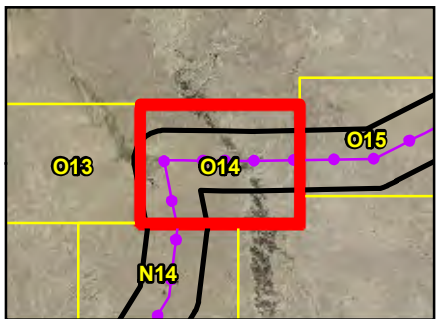
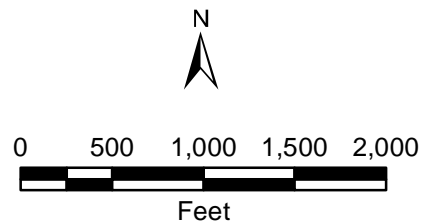
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



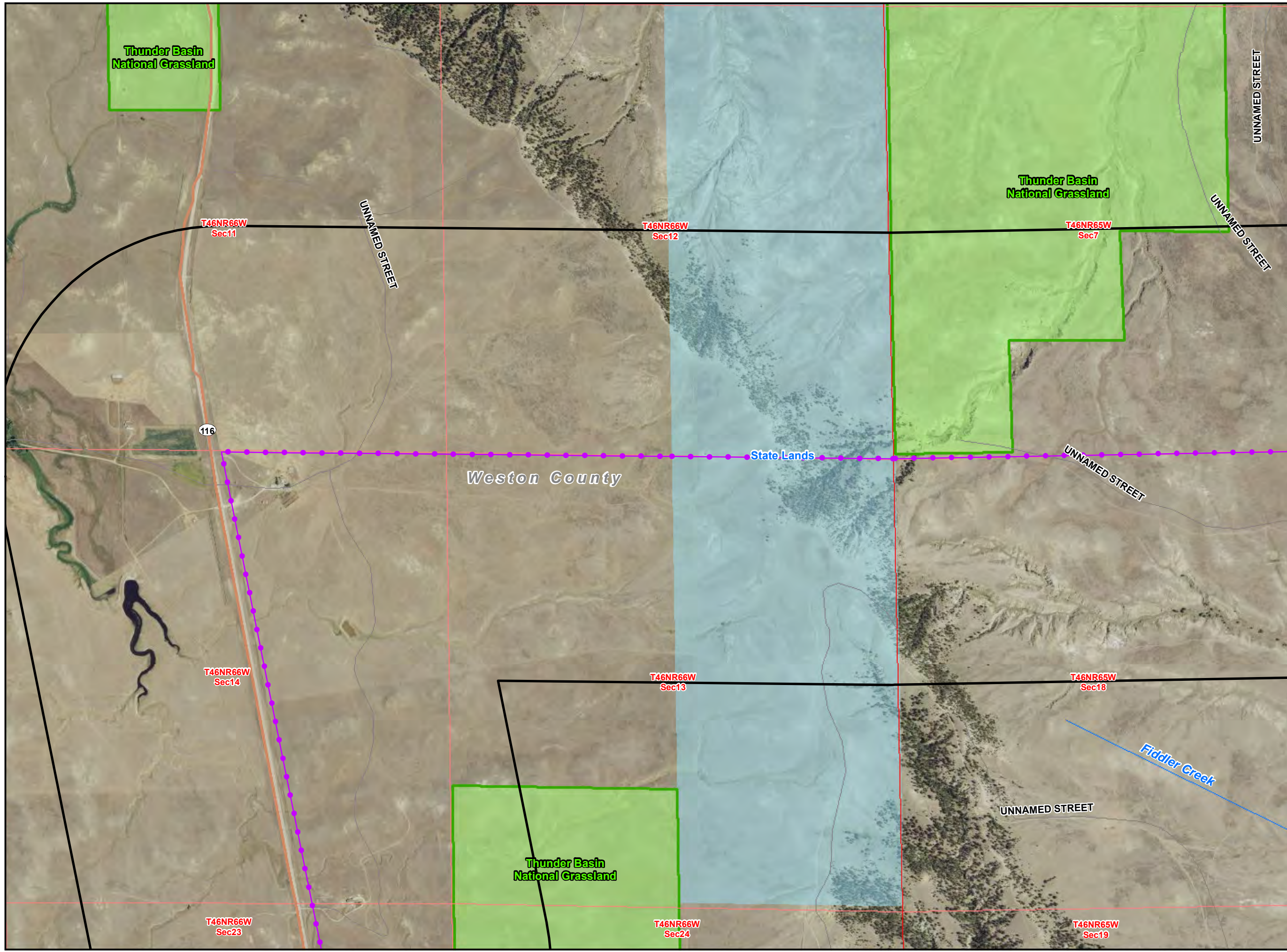
Local Inset Map
Figure F-29
C-675 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

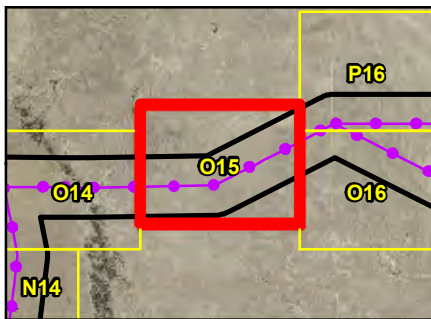
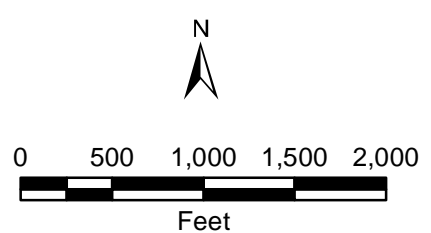


Local Inset Map
Figure F-30
C-676 06-26-13



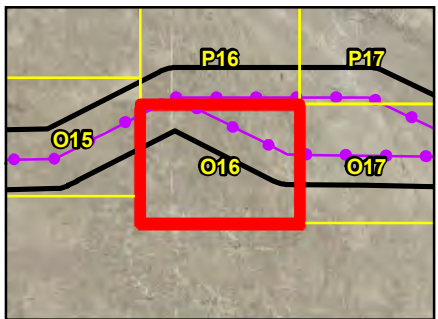
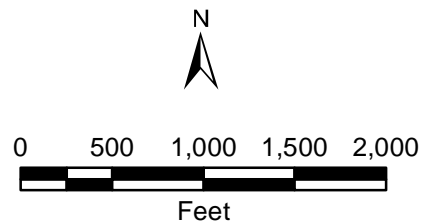
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
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 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

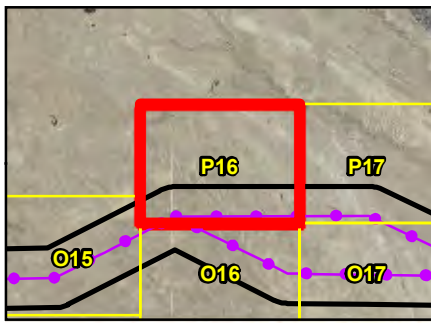
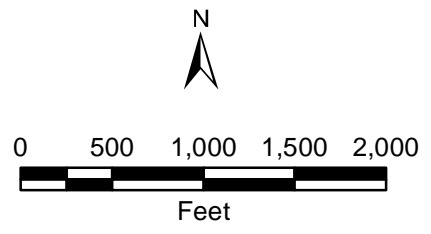
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
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 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



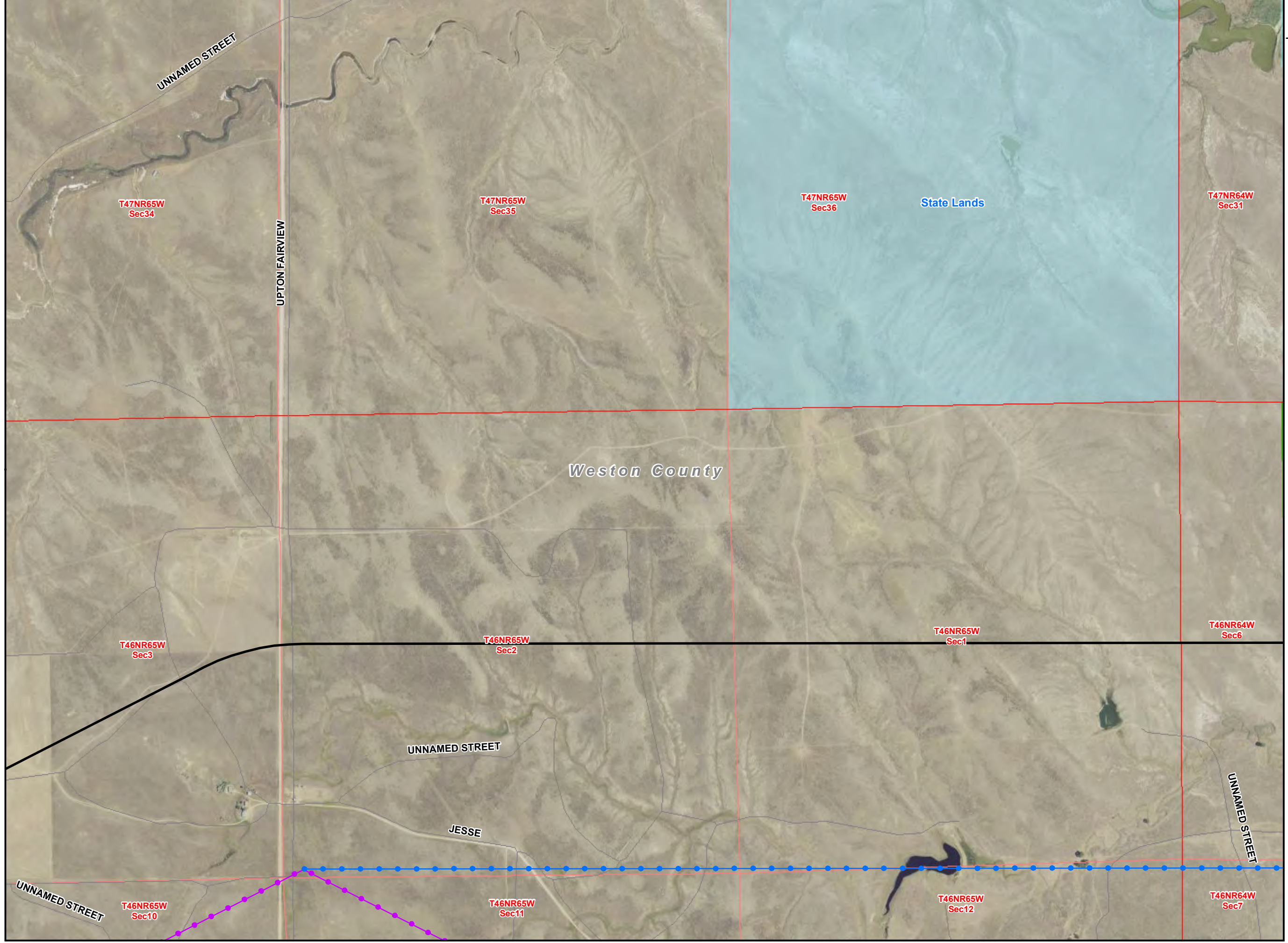
Teckla – Osage – Rapid City
230 kV Transmission Line

LEGEND

- Existing Substation
- Point of Interest
- Proposed Action
- Site Specific Design Modification
- 1/2 Mile Buffer
- Existing ROW/ Overland Travel
- Overland Travel Not In ROW
- Existing Road- May Need To Be Improved
- New Spur Road
- Interstate
- US Highway
- State Highway
- Major Road
- Railroad
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- State Boundary
- County Boundary
- City or Town
- Major Water Body
- Township/ Range Boundary
- Section Boundary
- Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

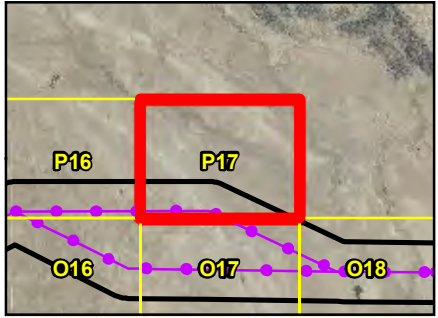
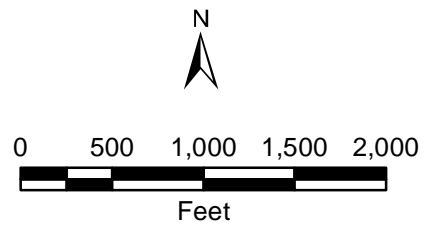


Local Inset Map
Figure F-33
C-679 06-26-13



**Teckla – Osage – Rapid City
230 kV Transmission Line**

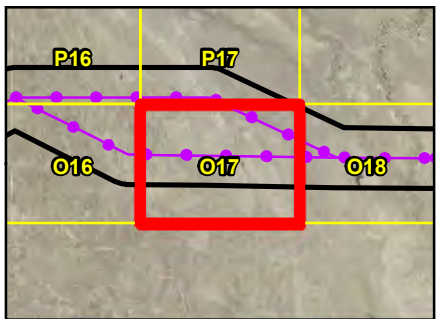
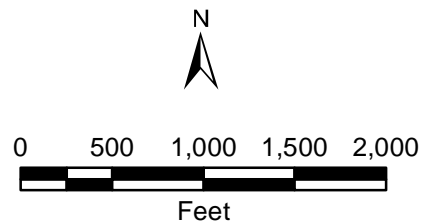
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-34 C-680 06-26-13

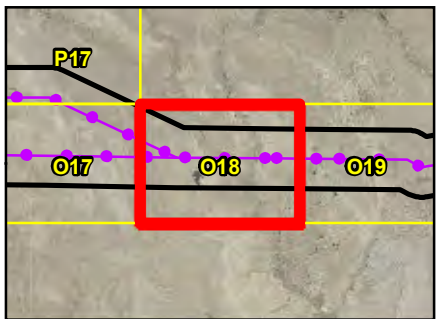
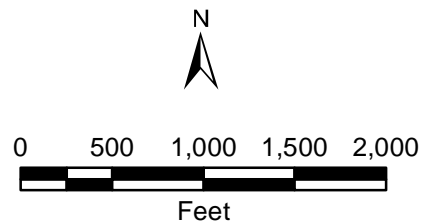
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



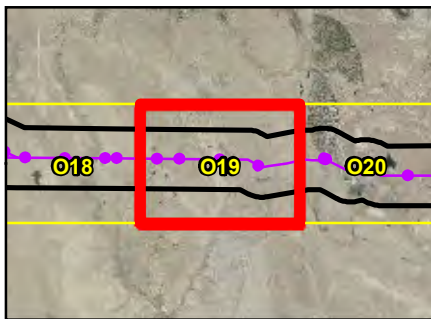
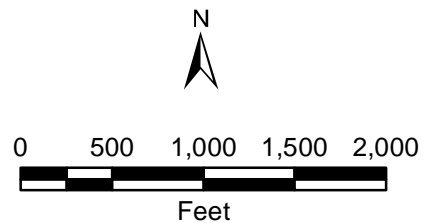
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

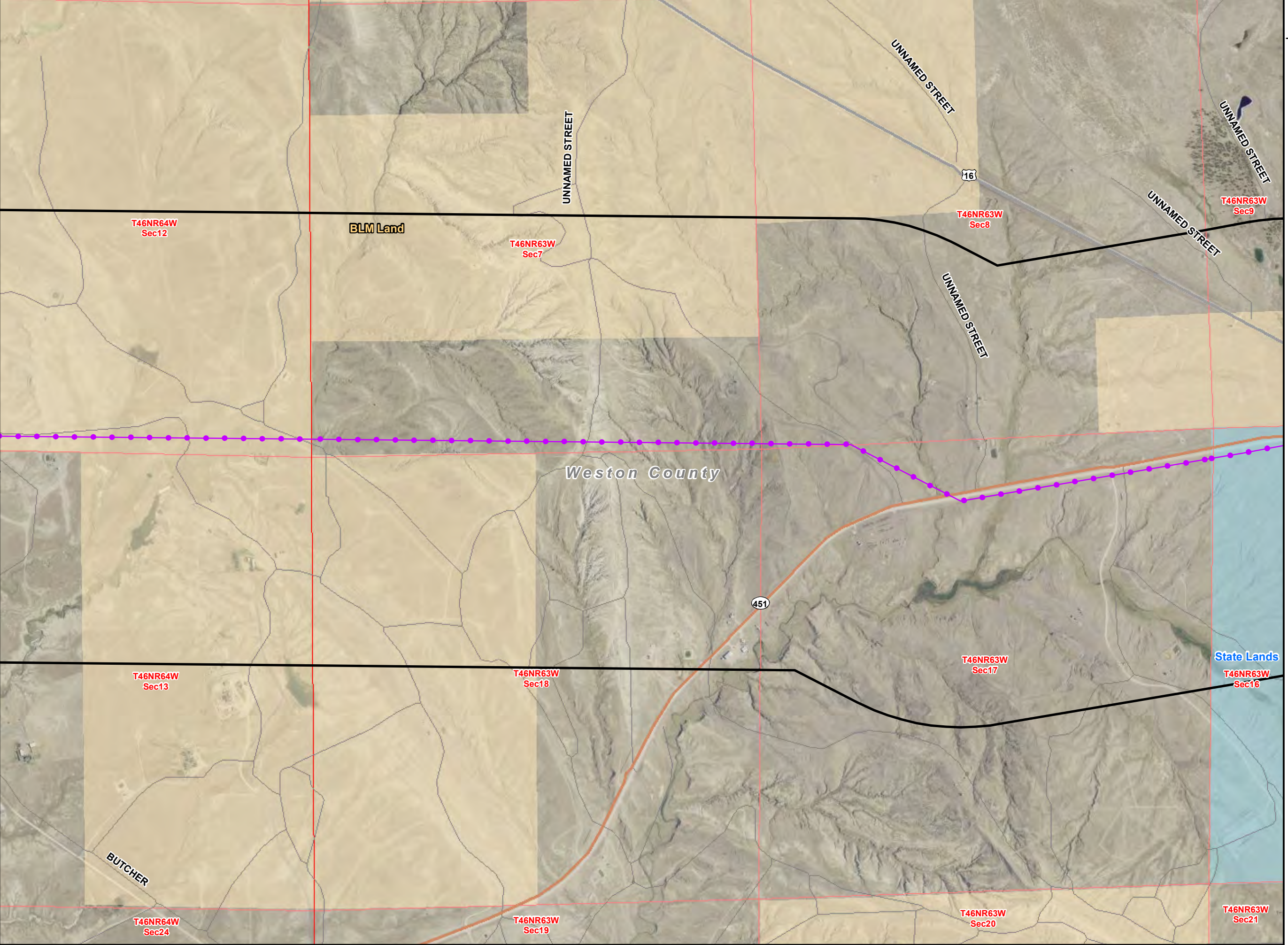


Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

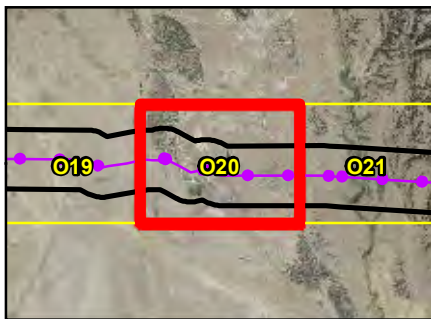
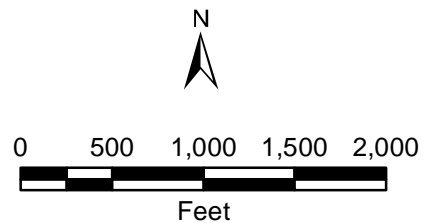


Local Inset Map
Figure F-37
C-683 06-26-13



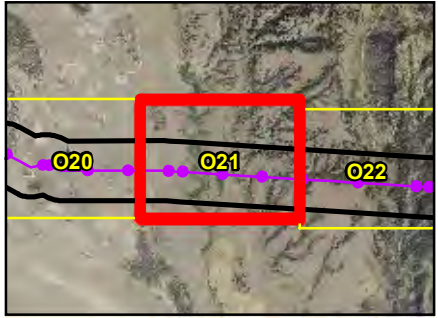
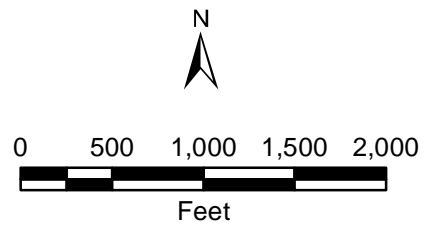
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
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 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

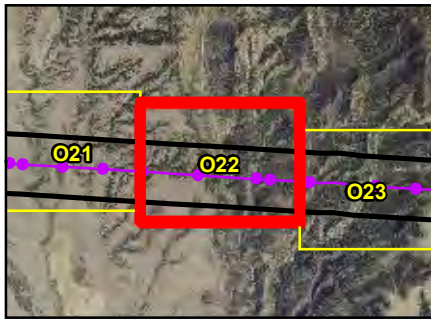
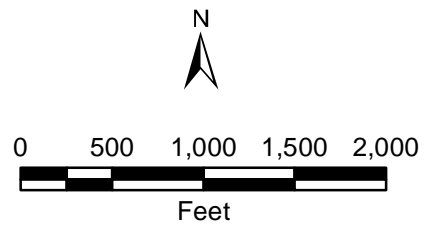
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-39
C-685 06-26-13

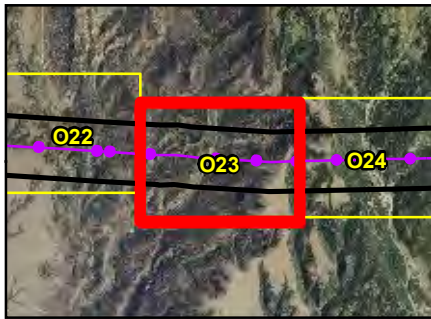
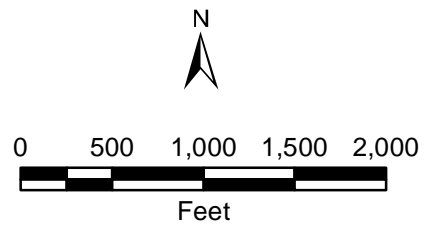
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

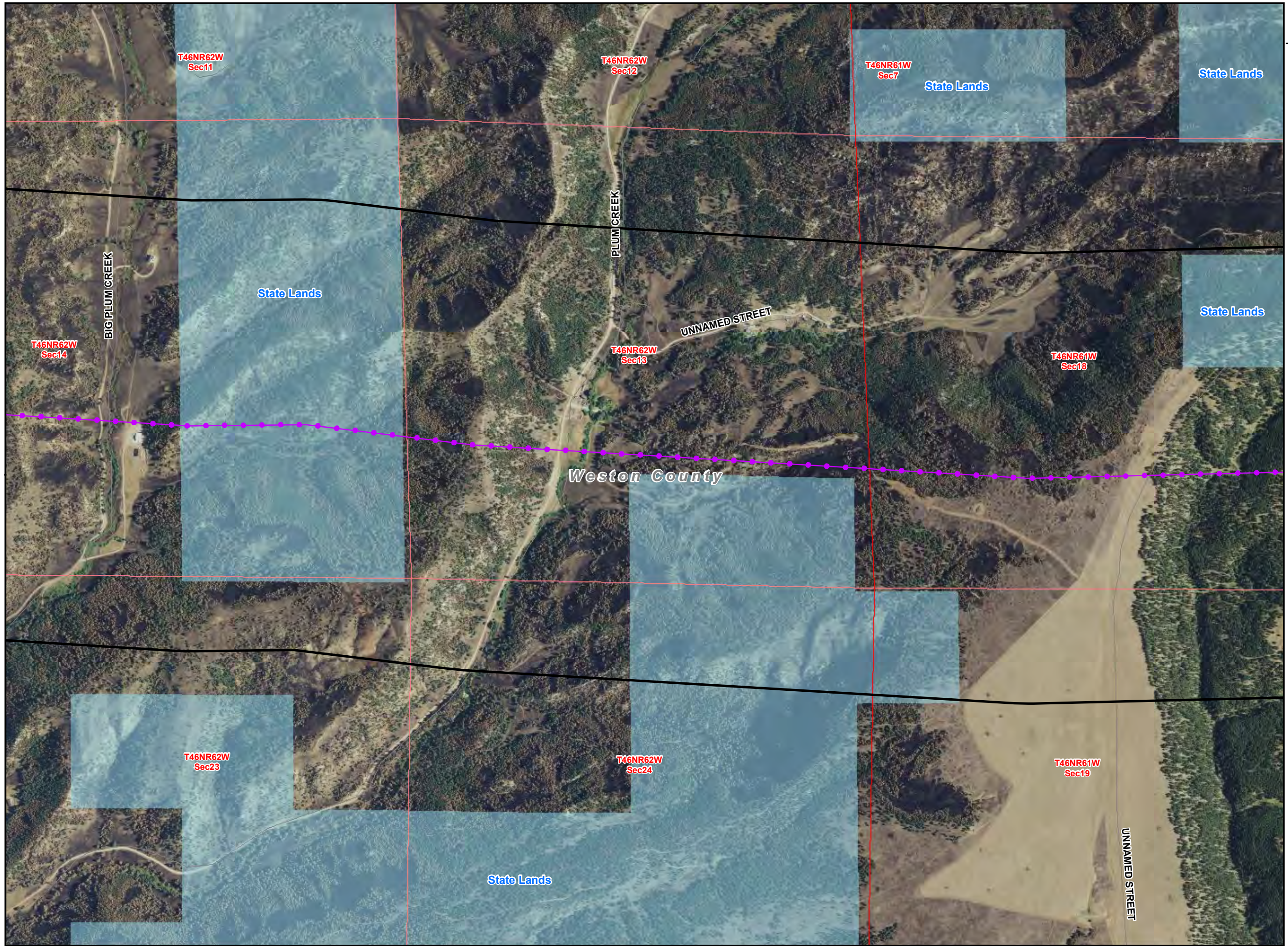


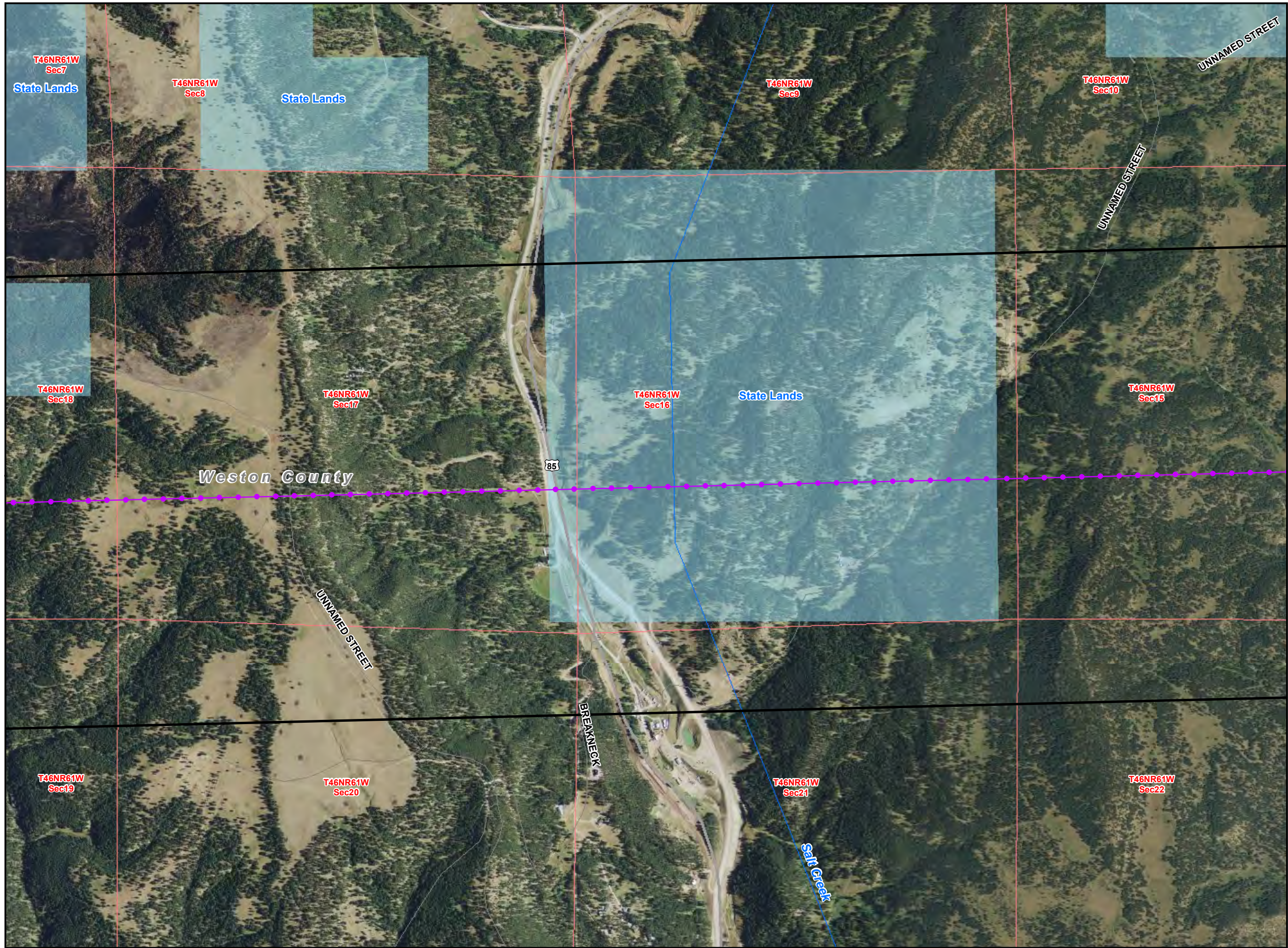
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
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 - Railroad
 - Stream
 - State Boundary
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 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



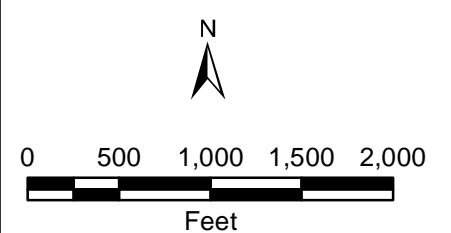
Local Inset Map
Figure F-41
C-687 06-26-13



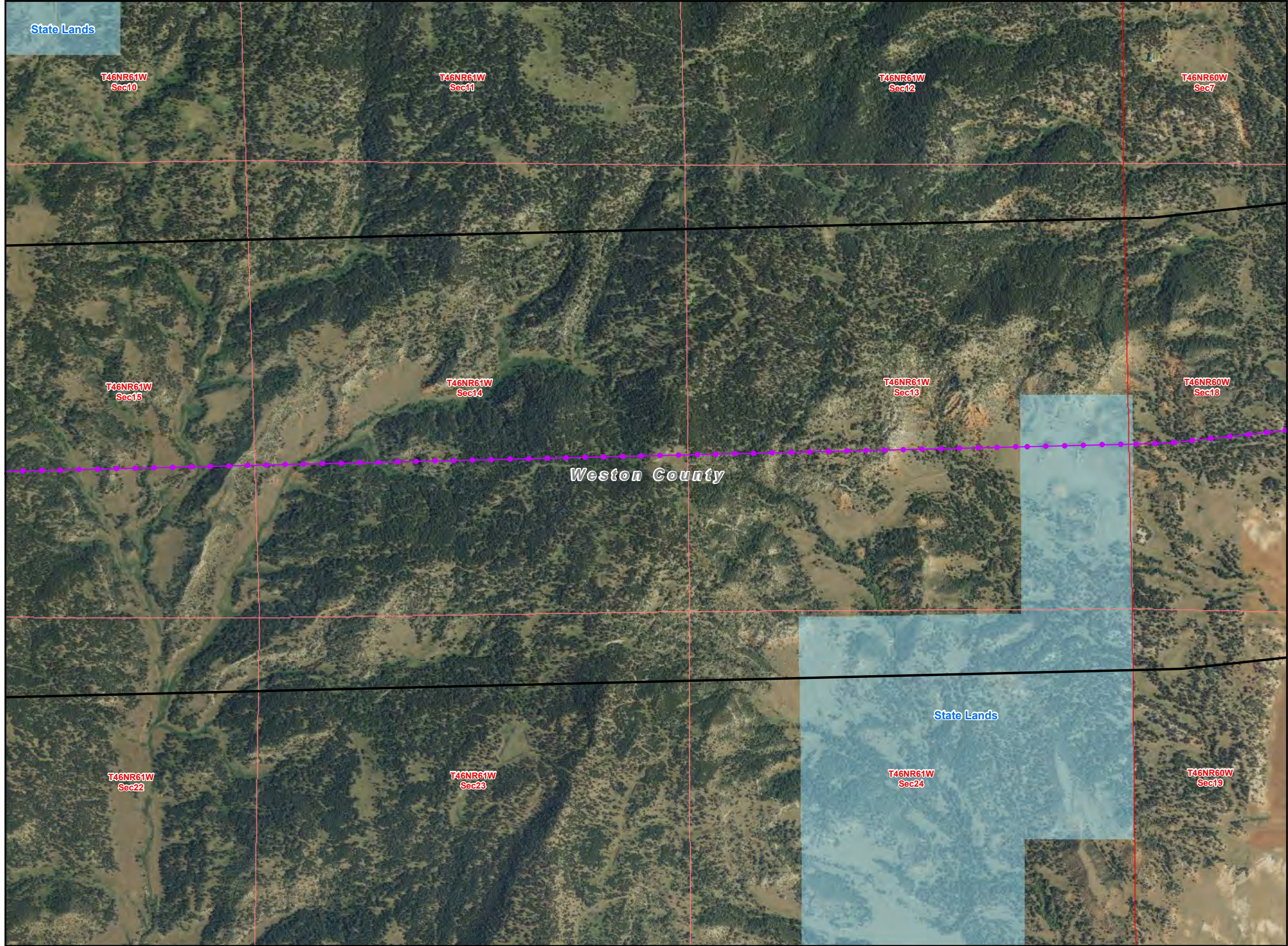


**Teckla - Osage - Rapid City
230 kV Transmission Line**

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

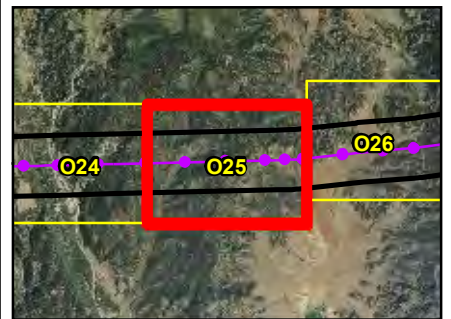
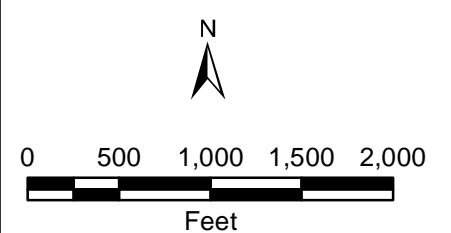


Local Inset Map
Figure F-42
C-688 06-26-13



**Teckla - Osage - Rapid City
230 kV Transmission Line**

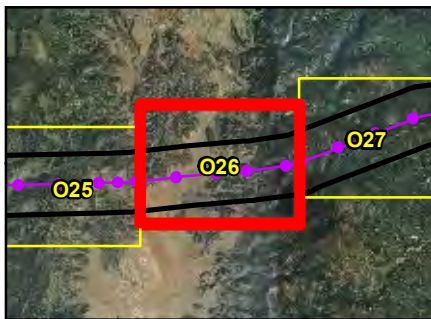
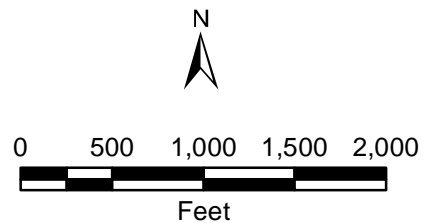
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-43 C-689 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

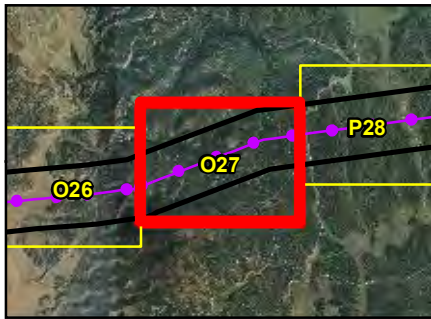
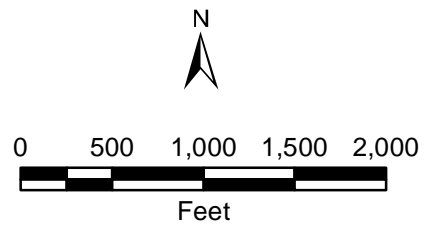
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-44
C-690 06-26-13

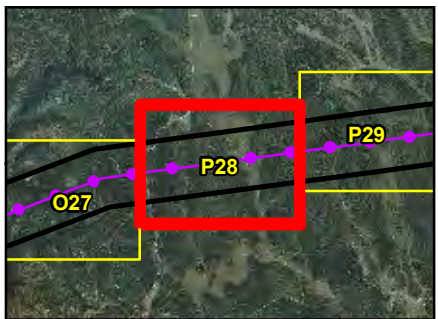
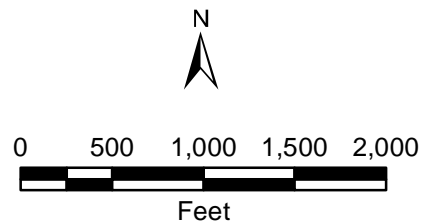
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
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 - State Highway
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 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

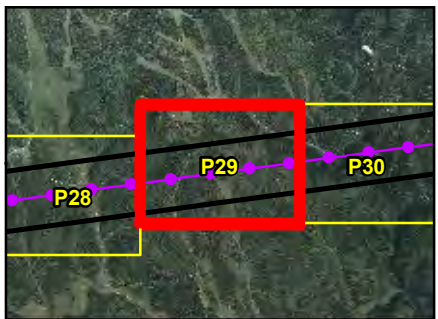
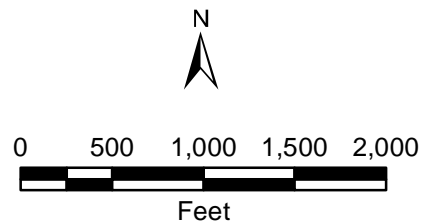
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-46
C-692 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

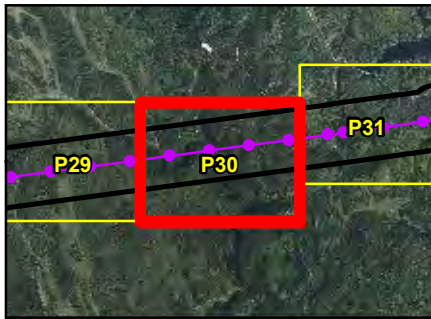
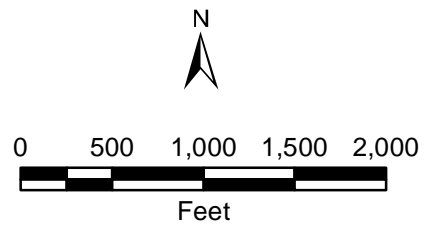
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-47
C-693 06-26-13

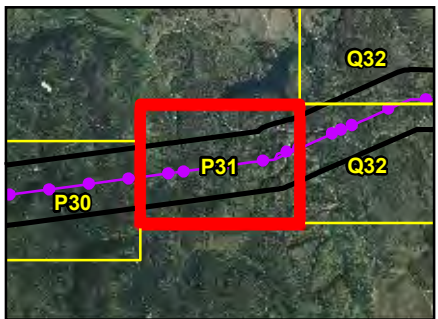
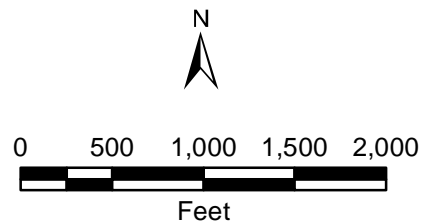
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
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 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

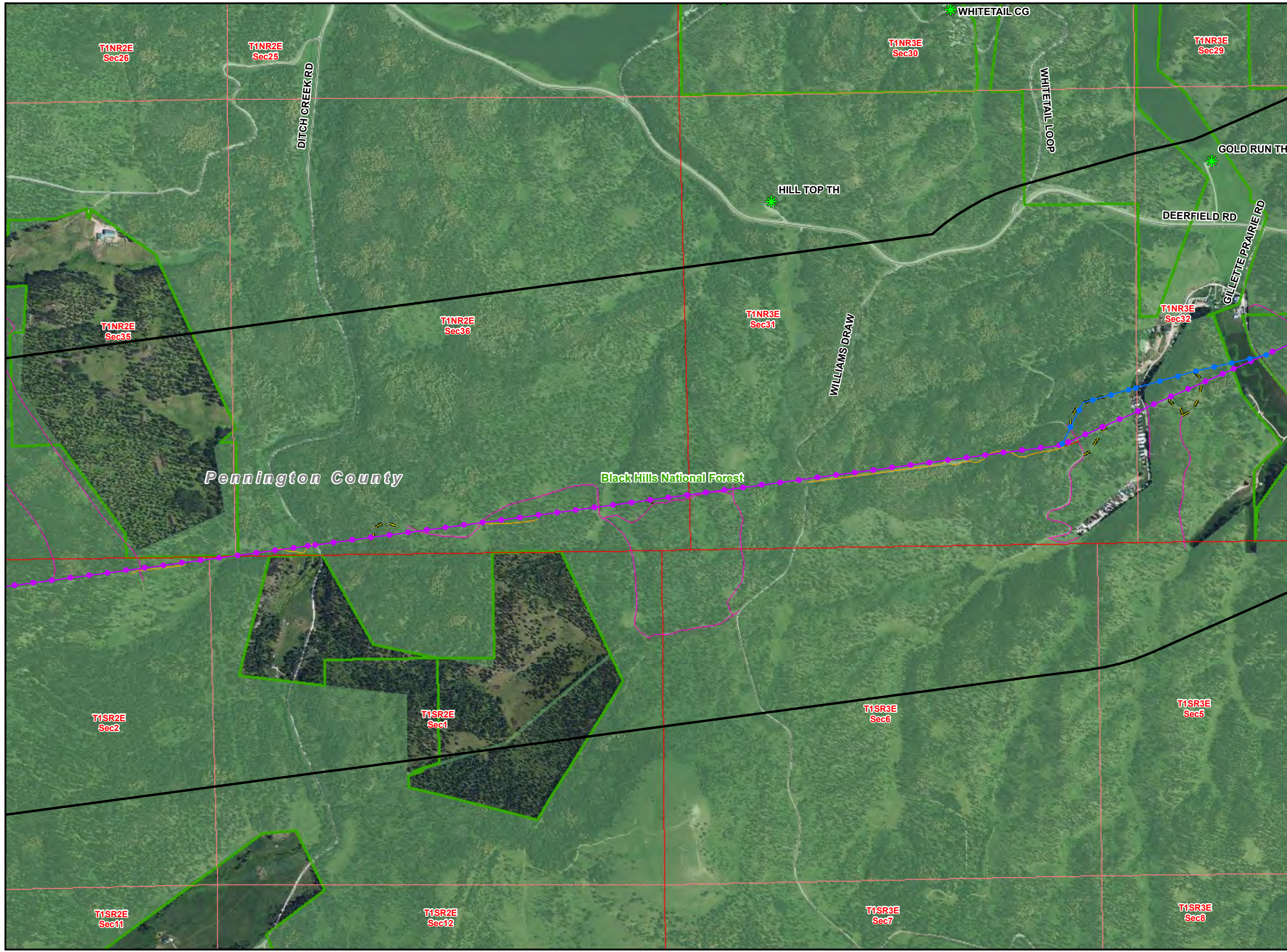


Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
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 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

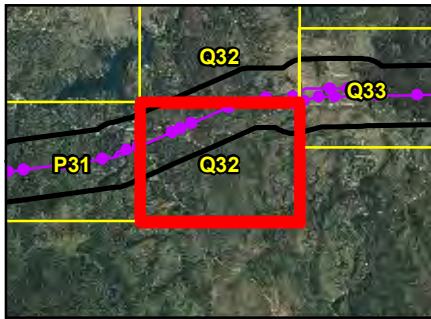
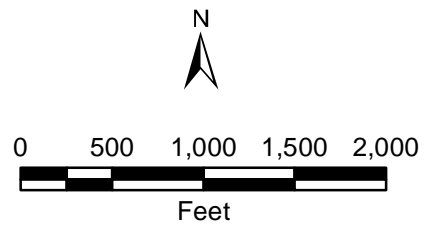


Local Inset Map
Figure F-49
C-695 06-26-13



Teckla – Osage – Rapid City
230 kV Transmission Line

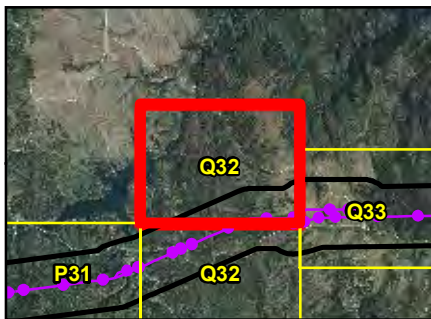
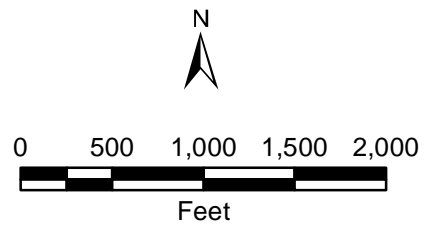
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



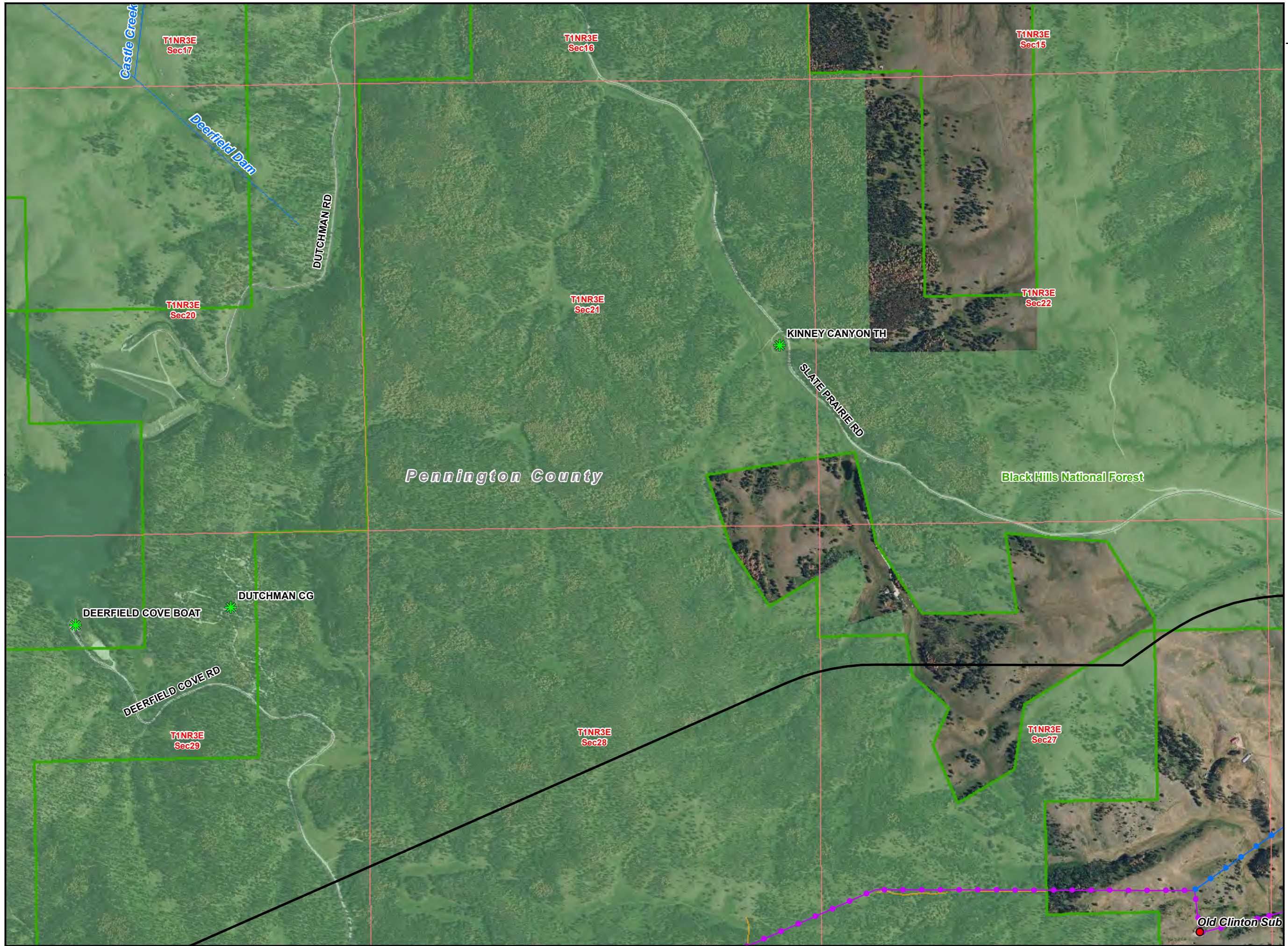
Local Inset Map
Figure F-50
C-696 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
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 - State Boundary
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 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

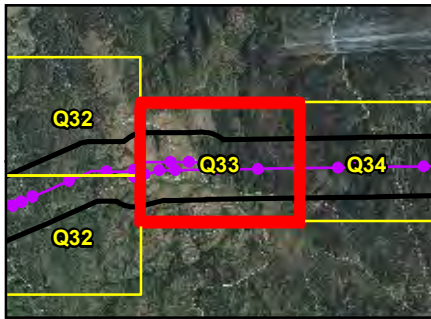
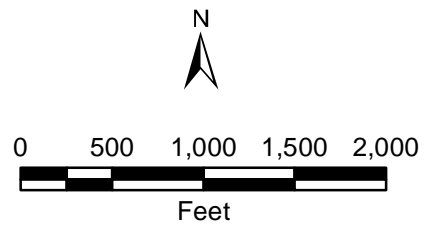


Local Inset Map
Figure F-51
C-697 06-26-13



Teckla – Osage – Rapid City
230 kV Transmission Line

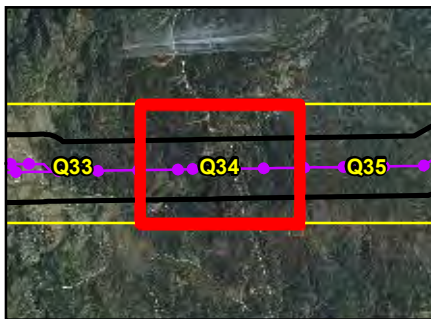
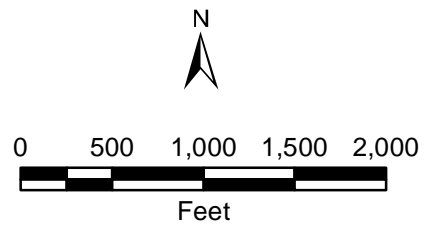
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
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 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-52
C-698 06-26-13

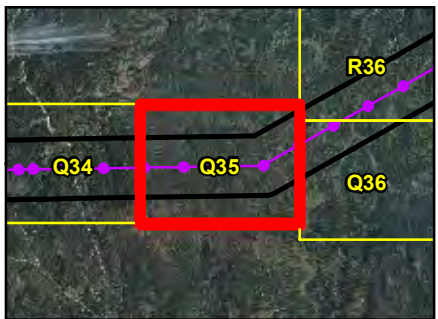
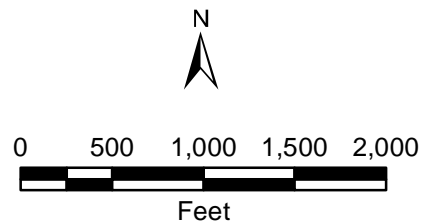
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



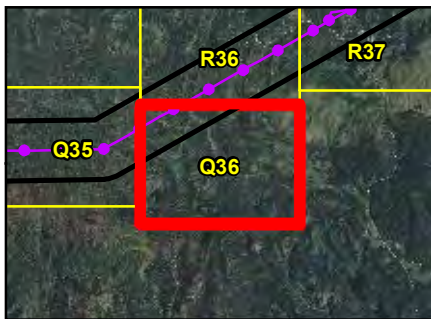
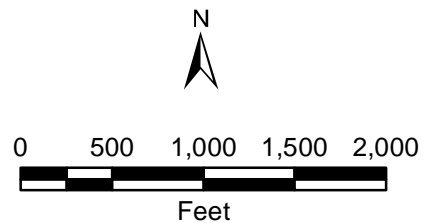
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



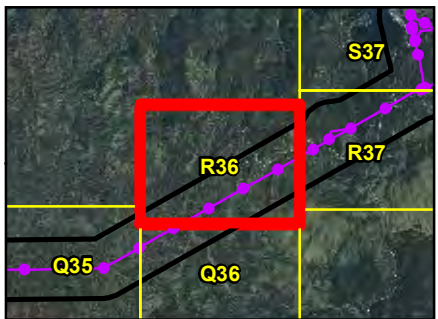
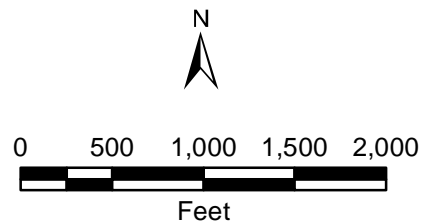
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
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 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

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 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land

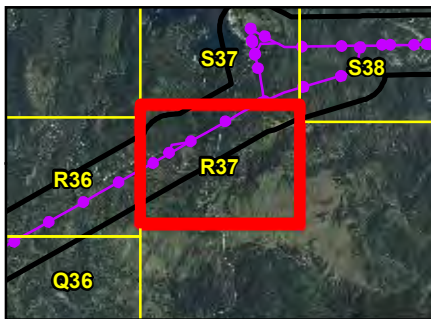
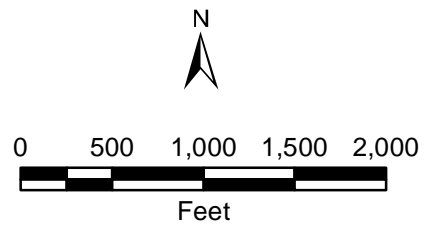


Local Inset Map
Figure F-56
06-26-13



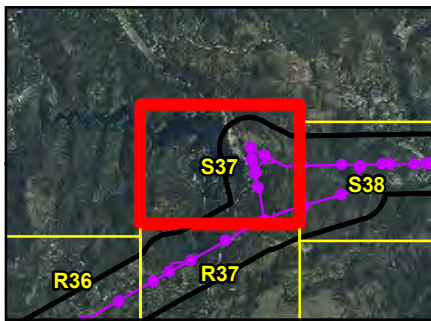
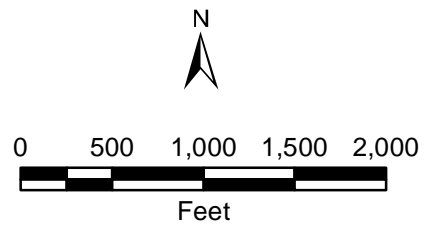
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
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 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



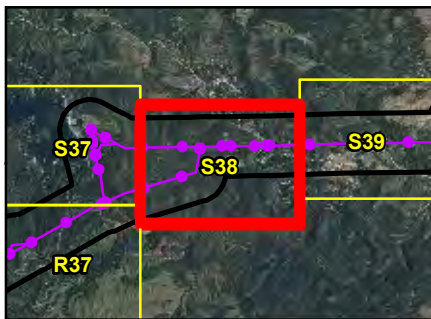
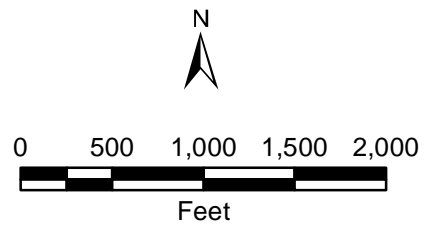
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
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 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

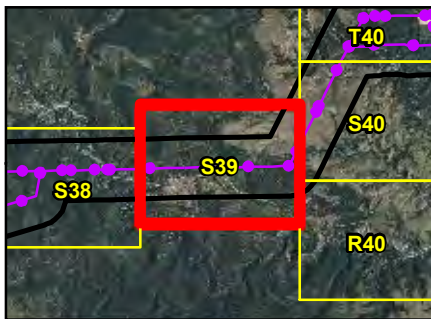
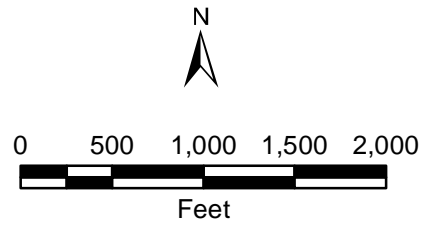
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
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 - New Spur Road
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 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-59
C-705 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

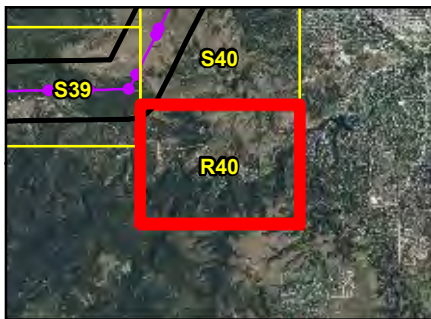
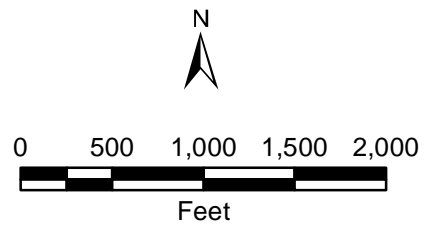
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-60
C-708
06-26-13

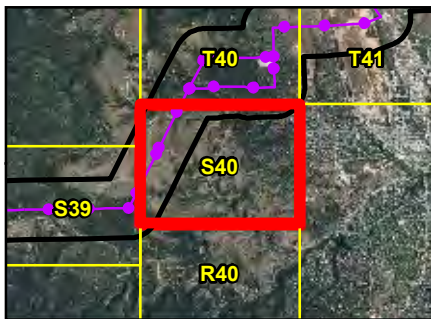
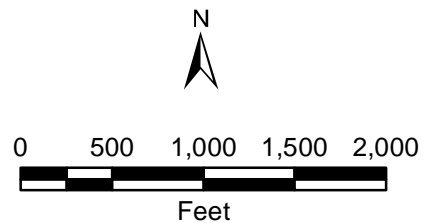
Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
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 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Teckla – Osage – Rapid City
230 kV Transmission Line

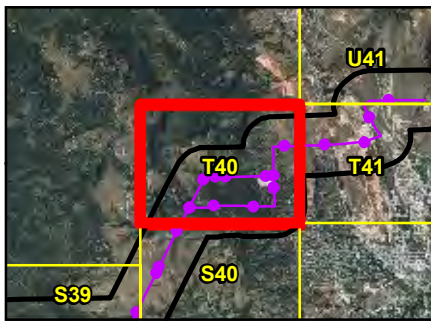
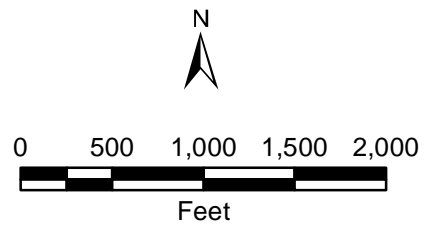
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
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 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-62
06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

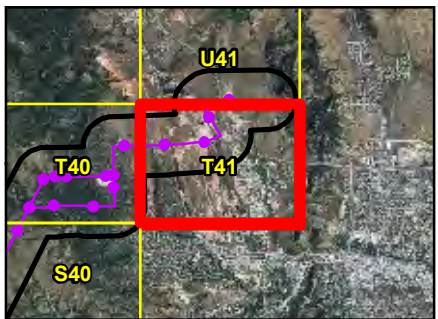
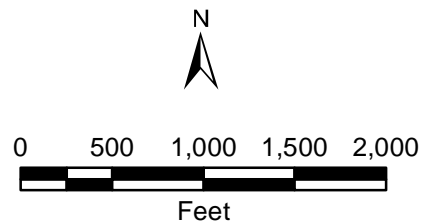
- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
 - US Highway
 - State Highway
 - Major Road
 - Railroad
 - Stream
 - State Boundary
 - County Boundary
 - City or Town
 - Major Water Body
 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



Local Inset Map
Figure F-63
C-709 06-26-13

Teckla – Osage – Rapid City
230 kV Transmission Line

- LEGEND**
- Existing Substation
 - Point of Interest
 - Proposed Action
 - Site Specific Design Modification
 - 1/2 Mile Buffer
 - Existing ROW/ Overland Travel
 - Overland Travel Not In ROW
 - Existing Road- May Need To Be Improved
 - New Spur Road
 - Interstate
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 - State Highway
 - Major Road
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 - Township/ Range Boundary
 - Section Boundary
 - Jurisdictional Land Ownership
 - Bureau of Land Management Land
 - U.S. Forest Service Land
 - Thunder Basin National Grassland
 - State Land



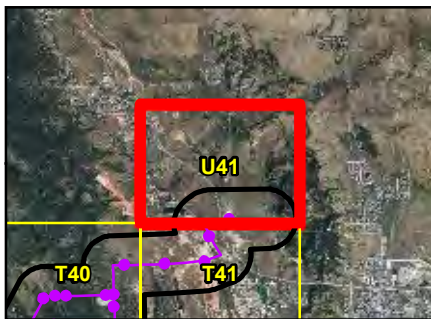
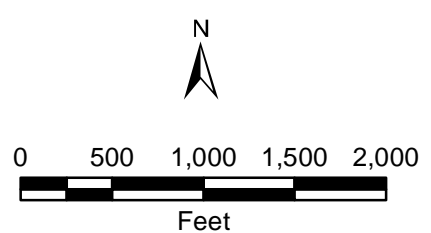
Local Inset Map
Figure F-64
C-710
06-26-13



Teckla – Osage – Rapid City
230 kV Transmission Line

LEGEND

- Existing Substation
- Point of Interest
- Proposed Action
- Site Specific Design Modification
- 1/2 Mile Buffer
- Existing ROW/ Overland Travel
- Overland Travel Not In ROW
- Existing Road- May Need To Be Improved
- New Spur Road
- Interstate
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- Major Road
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- Township/ Range Boundary
- Section Boundary
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- Bureau of Land Management Land
- U.S. Forest Service Land
- Thunder Basin National Grassland
- State Land



Local Inset Map
Figure F-65
06-26-13

