Appendix H

Project Detail Maps (Structures and Access Roads)

Teckla-Osage-Rapid City 230kV Transmission Line Construction Plan

Best Management Practices, Design Criteria, Mitigation Measures, and Resource Protection Measures to be implemented during the construction phase of the BHP Transmission Line Project include but are not limited to the following list. Additional measures are outlined in Appendix B and D of the Final EIS.

1.0 DESIGN CRITERIA AND MITIGATION

Wetlands, Streams, and WIZ

- Consultation with the BHNF Mystic Ranger District hydrologist and botanist would take place prior to any and all stream crossings and/or improvements to identify site-specific design requirements, and/or mitigation measures and to limit number of stream crossings, identify roads and trails that are candidates for use as access roads due to prior disturbance, or location in less sensitive areas.
- Within 100 feet of the delineated wetland no vegetation would be cut unless the overhead vegetation would interfere with the transmission line or safety requirements of the transmission line. The only trees that would be removed from wetland areas are those conifers or hardwoods that pose a threat to the power line and only with site-specific consultation from USFS personnel prior to removal. New construction spur roads would be located out of riparian areas and wetlands.
- Keep heavy equipment out of streams, swales, and lakes, except to cross at designated points, build crossings, or do restoration work, or if protected by at least 1 foot of packed snow or 2 inches of frozen soil. Keep heavy equipment out of streams during fish spawning, incubation, and emergence periods.
- Do not excavate earth material from, or store excavated earth material in, any stream, swale, lake, wetland, or WIZ
- Keep ground vehicles out of wetlands unless protected by at least 1 foot of packed snow or 2 inches of frozen soil. Do not disrupt water supply or drainage patterns into wetlands
- All construction areas would be a minimum of 100 feet from wetlands.
- Structures would not be placed in wetlands and would be located at least 100 feet away from wetland boundaries including springs; no structures in wetlands; no dredge or fill activities in wetlands, including springs, These measures apply to all wetlands in the Project Area, regardless of whether each individual wetland meets the regulatory definition of "jurisdictional wetland."
- Site-specific consultation would occur for access road or trails in areas of wetlands, streams, springs and riparian areas through BHP/contractor coordination with Black Hills National Forest watershed/wetlands personnel.
- USFS Watershed Conservation Practices for water features and forest plan direction would be followed.
- Equipment service and refueling would be away from ephemeral, intermittent and perennial

streams, wetlands, springs, and riparian areas. Equipment staging areas would be at least 300 feet from riparian areas. There would be no construction within 100 feet of drainages and wetlands. BMPs would be implemented to contain sediments and pollutants and disturbed areas would be reclaimed and/or revegetated to maintain water quality.

- To minimize ground disturbance of the landscape, the alignment of any cross-country route would follow the landform contours in designated areas where practicable, providing that such alignment does not impact other resources. To the extent practicable, avoid driving down, through or across streams, draws, arroyos and ravines.
- To minimize the amount of sensitive features disturbed in designated areas, poles would be placed so as to avoid sensitive features such as, but not limited to, riparian areas, cultural resource sites of significance, and watercourses and/or to allow conductors to clearly span the features, within limits of standard pole design. If the sensitive features cannot be completely avoided, poles would be placed so as to minimize the disturbance.
- Cutting and thinning of vegetation in bottoms and low areas would be minimized and work would be limited to periods of low flows or dry channel to the extent practicable.
- In the event that some vegetation within a stream corridor may need to be cut, it should be limited to conifer species (ponderosa pine and spruce) that will attain any kind of tree height that might threaten power lines; hardwoods such as birch, aspen, oak should be limited removal due to the fact they do not grow as tall; and riparian shrubs (willows, birch, etc.) should not be cut.
- In the event that riparian vegetation does need to be cut, site specific consultation with the affected unit hydrologist, botanist, and wildlife biologist should occur prior to vegetation removal to develop site specific requirements and/or mitigation measures.
- When approved, cutting within riparian corridors should be limited to hand-felling, unless equipment use is site specifically approved by the hydrologist.
- At a minimum, a 100 foot WIZ buffer should be applied to protect streams courses, ponds, wetlands, springs, fens and other water bodies from disturbance associated with transmission line construction and maintenance activities that could impair stream function, increase sedimentation and affect riparian/aquatic species habitat. No vegetative treatment within the WIZ is recommended to maintain multi-layered riparian vegetation structure, ensure lake/stream shading, and to maintain important wildlife habitat features. Consider larger buffer widths along perennial and intermittent streams (e.g., South Fork Castle Creek, Slate Creek and Rapid Creek).
- Limit corridor disturbance, particularly in or near AMZs, surface waters, shallow groundwater, unstable areas, hydric soils, or wetlands.
- Prohibit log land, decking areas and mechanical slash piling within riparian areas unless the integrity of the riparian area can be protected (e.g., frozen, snow-covered ground conditions).
- Do not permit sidecasting within the AMZ. Avoid or minimize excavated materials from entering waterbodies or AMZs.
- Plan and locate surface water crossings to limit the number and extent to those that are necessary to provide the level of access needed to meet resource management objectives as described in the RMOs.
- Use suitable surface drainage and roadway stabilization measures to disconnect the road from the waterbody to avoid or minimize water and sediment from being channeled into surface waters

and to dissipate concentrated flows.

- Use suitable measures to avoid, minimize, or mitigate damage to the waterbody and banks when transporting materials across the waterbody or AMZ during construction activities.
- Minimize the number of stream crossings to the extent practicable.
- Design and locate crossings to minimize disturbance to the waterbody.
- Locate stream crossings where the channel is narrow, straight, and uniform, and has stable soils and relatively flat terrain to the extent practicable.
    - Select a site where erosion potential is low.
    - Orient the stream crossing perpendicular to the channel to the extent practicable.
    - Keep approaches to stream crossings to as gentle a slope as practicable.
    - Consider natural channel adjustments and possible channel location changes over the design life of the structure.
- Design the crossing to pass a normal range of flows for the site.
    - Design the crossing structure to have sufficient capacity to convey the design flow without appreciably altering streamflow characteristics.
    - Install stream crossings to sustain bankfull dimensions of width, depth, and slope and maintain streambed and bank resiliency and continuity through the structure.
- Bridge, culvert, or otherwise design road fill to prevent restriction of flood flows.
    - Use site conditions and local requirements to determine design flood flows.
    - Use suitable measures to protect fill from erosion and to avoid or minimize failure of the crossing at flood flows.
    - Use suitable measures to provide floodplain connectivity to the extent practicable.
- Use suitable measures to avoid or minimize scour and erosion of the channel, crossing structure, and foundation to maintain the stability of the channel and banks.
- Consider low-water crossings on roads with low traffic volume and slow speeds, and where water depth is safe for vehicle travel.
- Consider using temporary crossings on roads that provide short-term or intermittent access to avoid, minimize, or mitigate erosion, damage to streambed or channel, and flooding.
    - Design and install temporary crossings suitable for the expected users, loads, and timing of use.
    - Design and install temporary crossing structures to pass a design storm determined based on local site conditions and requirements.
    - Install and remove temporary crossing structures in a timely manner as needed to provide access during use periods and minimize risk of washout.
    - Use suitable measures to stabilize temporary crossings that must remain in place during high runoff seasons.
    - Monitor temporary crossings regularly while installed to evaluate condition.
    - Remove temporary crossings and restore the waterbody profile and substrate when the need for the crossing no longer exists.
- Design and construct all stream crossings and other in-stream structures to provide for passage of flow and sediment, withstand expected flood flows, and allow free movement of resident aquatic life.
- Modify mechanical vegetation treatment prescriptions and operations in the AMZs as needed to maintain ecosystem structure, function, and processes.

- Use yarding systems or mechanical treatments that avoid or minimize disturbance to the ground and vegetation consistent with project objectives.
- Conduct equipment operations in a manner that maintains or provides sufficient ground cover to meet land management plan desired conditions, goals, and objectives to minimize erosion and trap sediment.
- Conduct operations in a manner that avoids or minimizes introduction of excess slash or other vegetative debris into the AMZ and waterbodies; damage to streambanks, shorelines, and edges of wetlands; and adverse effects to floodplain functioning.
- Retain trees as necessary for canopy cover and shading, bank stabilization, and as a source of large woody debris within the AMZ.
- Avoid felling trees into streams or waterbodies.
- Locate transportation facilities for mechanical vegetation treatments, including roads, landings, and main skid trails, outside of the AMZ to the extent practicable.
- Evaluate options for routes that must cross waterbodies and choose the one (e.g., specified road vs. temporary road vs. skid road or trail) that avoids or minimizes adverse effects to soil, water quality, and riparian resources to the greatest extent practicable.
- Do not use drainage bottoms as turn-around areas for equipment during mechanical vegetation treatments.
- Use suitable measures to disperse concentrated flows of water from road surface drainage features to avoid or minimize surface erosion, gully formation, and mass failure in the AMZ and sediment transport to the waterbody.
- Remove unauthorized debris from waterbodies using techniques that will limit disturbance to bed and banks, riparian areas, aquatic-dependent species, and the waterbody unless significant damage would occur during its removal or leaving it in meets desired conditions for the waterbody.

2.0 REFUELING AND SERVICING

- Use suitable measures around vehicle storage, storage and refueling areas, chemical storage and use areas, and waste dumps to fully contain spills and avoid or minimize soil contamination and seepage into groundwater.
- Allow temporary refueling and servicing only at approved locations, located well away from AMZ, groundwater recharge areas, and water bodies

3.0 EROSION PREVENTION AND CONTROL

- Consult with the Forest Service before reconstruction, realignment, and construction of existing and spur roads. Road construction locations will be flagged on the ground for Forest Service review.
- Adjust operations in the AMZ to avoid, minimize, or mitigate detrimental soil impacts where they are occurring.
- Use suitable mitigation or restoration measures on areas in the AMZ that show signs of unacceptable erosion or those with high potential for erosion due to mechanical operations in the AMZ.Use provisions in the timber sale contract or land stewardship contract to implement and enforce erosion control on the project area.

- Establish designated areas for equipment staging and parking to minimize the area of ground disturbance.
- Work with the contractor to locate landings, skid trails, and slash piles in suitable sites to avoid, minimize, or mitigate potential for erosion and sediment delivery to nearby waterbodies.
- Develop an erosion control and sediment plan that covers all disturbed areas including skid trails and roads, landings, cable corridors, temporary road fills, water source sites, borrow sites, or other areas disturbed during mechanical vegetation treatments, as well as borrow, stockpile, fueling, and staging areas used during construction activities.
- Maintain the natural drainage pattern of the area wherever practicable.
- Apply soil protective cover on disturbed areas where natural revegetation is inadequate to prevent accelerated erosion before the next growing season.
- Control, collect, detain, treat, and disperse stormwater runoff from disturbed areas.
- Divert surface runoff around bare areas with appropriate energy dissipation and sediment filters.
- Apply soil protective cover on disturbed areas where natural revegetation is inadequate to prevent accelerated erosion during construction or before the next growing season.
    - Maintain the natural drainage pattern of the area wherever practicable.
    - Control, collect, detain, treat, and disperse stormwater runoff from the site.
    - Divert surface runoff around bare areas with appropriate energy dissipation and sediment filters.
    - Stabilize steep excavated slopes.
- Install sediment and stormwater controls before initiating surface-disturbing activities to the extent practicable.
- Schedule, to the extent practicable, construction activities to avoid direct soil and water disturbance during periods of the year when heavy precipitation and runoff are likely to occur.
    - Limit the amount of exposed or disturbed soil at any one time to the minimum necessary to complete construction operations.
    - Limit operation of equipment when ground conditions could result in excessive rutting, soil puddling, or runoff of sediments directly into waterbodies.
- Install suitable stormwater and erosion control measures to stabilize disturbed areas and waterways before seasonal shutdown of project operations or when severe or successive storms are expected.
- Maintain erosion and stormwater controls as necessary to ensure proper and effective functioning.
    - Prepare for unexpected failures of erosion control measures.
    - Implement corrective actions without delay when failures are discovered to prevent pollutant discharge to nearby waterbodies.
- Routinely inspect construction sites to verify that erosion and stormwater controls are implemented and functioning as designed and are appropriately maintained.
- Obtain Clean Water Act (CWA) 402 stormwater discharge permit coverage from the appropriate State agency or the U.S. Environmental Protection Agency (EPA) when more than 1 acre of land will be disturbed through construction activities.
- To reduce siltation in construction areas (e.g., marshaling yards, tower sites, spur roads from existing access roads) where ground disturbance is substantial, surface preparation (including

decompaction, redistribution of topsoil, etc.), redistribution of coarse woody debris, and reseeding would occur. The method of restoration could normally consist of loosening the soil surface, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches. BHP may prepare a revegetation plan in consultation with the USFS for disturbance on National Forest. The plan would specify disturbance types and their appropriate revegetation techniques to be applied for all Proposed Action work areas, access roads, and all sidecast materials. Techniques could include reseeding native or other acceptable vegetation species. The plan would include management and maintenance procedures approved by the USFS for ongoing use of access roads and temporary work areas.

- Erosion and sediment control measures would conform to applicable federal and state regulations.
- In construction areas disturbance would be limited to overland travel where feasible to minimize changes in the original contours. Large rocks and vegetation may be moved within these areas to allow vehicle access. Restoration could include reseeding (if required). Methods would be detailed in a USFS-approved revegetation plan.
- Ground disturbance would be limited to that necessary to safely and efficiently install the proposed facilities.
- Site-prepare, drain, decompact, revegetate, and close temporary and intermittent use roads and other disturbed sites within one year after use ends. Provide stable drainage that disperses runoff into filter strips and maintains stable fills. Do this work concurrently. Stockpile topsoil where practicable to be used in site restoration. Use certified local native plants as practicable; avoid persistent or invasive exotic plants.
- Minimize soil compaction by reducing off-road vehicle passes, by skidding on snow, frozen or dry soil conditions, or by off-ground logging systems.
- Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with the purpose of specific operations, local topography and climate. (Regional WCP Handbook Standard 9).
- Reclaim roads and other disturbed sites when use ends, as needed, to prevent resource damage. (Regional WCP Handbook Standard 12).
- Initiate revegetation as soon as possible, not to exceed 6 months after termination of ground-disturbing activities. Revegetate all disturbed soils with native species in seed/plant mixtures that are noxious weed free. On areas needing immediate establishment of vegetation, non-native, non-aggressive annuals (e.g., wheat, oats, rye) or sterile species may be used while native perennials are becoming established, or when native species are not available (e.g., during drought years or years when wildfires burn large acreages in the United States). Other aggressive non-native perennials (e.g., smooth brome, timothy) will not be used. Seed will be tested for noxious weeds. If mulches are used they are to be noxious-weed free. Weed-free alfalfa seed may be used only when native legume seed is not available and only when there is extensive disturbance associated with road construction or mine reclamation where topsoil is no longer available.
- Stabilize, scarify or recontour temporary roads, constructed skid trails and landings prior to seeding.
- When ground disturbing or vegetation management occur, use vegetative buffer strips or barriers to reduce sediment. Determine buffer width between stream and roads or trails using the equation in Appendix J of the Forest-wide Standards and Guidelines.

- When construction of maintenance level 1 roads, temporary roads, skid trails and landings occur, install structures to divert runoff when needed. Routinely inspect temporary roads to verify that erosion and stormwater controls are implemented, functioning, and appropriately maintained. Maintain erosion and stormwater controls as necessary to ensure proper and effective functioning.
- Use suitable construction techniques to create stable fills.
    - Use full bench construction techniques or retaining walls where stable fill construction is not possible.
    - Avoid incorporating woody debris in the fill portion of the road prism.
    - Leave existing rooted trees or shrubs at the toe of the fill slope to stabilize the fill.
    - Avoid use of road fills for water impoundment dams unless specifically designed for that purpose.
- Identify and locate waste areas before the start of operations.
    - Deposit and stabilize excess and unsuitable materials only in designated sites.
    - Do not place such materials on slopes with a risk of excessive erosion, sediment delivery to waterbodies, mass failure, or within the AMZ.
    - Provide adequate surface drainage and erosion protection at disposal sites.
- BHP would train field personnel in spill prevention, control, and countermeasure procedures, and use totally enclosed containers to dispose of hazardous and non-hazardous waste. Hazardous materials would not be drained onto the ground or into streams or drainage areas. Additionally, BHP would ensure that hazardous and non-hazardous wastes are transported to facilities that are authorized to accept such wastes. Furthermore, should a hazardous material spill occur, all contaminated soil would be removed and disposed of properly.
- In construction areas disturbance would be limited to overland travel where feasible to minimize changes in the original contours. Large rocks and vegetation may be moved within these areas to allow vehicle access.

4.0 GROUND-BASED SKIDDING AND YARDING OPERATIONS

- Avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources during ground-based skidding and yarding operations by minimizing site disturbance and controlling the introduction of sediment, nutrients, and chemical pollutants to waterbodies.
- Use ground-based yarding systems only where physical site characteristics are suitable to avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources.
- Create new roads and skid trail where re-use of existing ones would exacerbate soil, water quality, and riparian resource impacts.
- Design and locate skid trails and skidding operations to minimize soil disturbance to the extent practicable.
- Locate skid trails outside of the AMZ to the extent practicable.
- Limit the grade of constructed skid trails on geologically unstable, saturated, highly erodible, or easily compacted soils.
- Perform skidding or yarding operations when soil conditions are such that soil compaction, displacement, and erosion would be minimized.

- Suspend skidding or yarding operations when soil moisture levels could result in unacceptable soil damage.
- Avoid skidding logs in or adjacent to a stream channel or other waterbody to the extent practicable.
- Skid across streams only at designated locations.
- Use suitable measures at skid trail crossings to avoid or minimize damage to the stream channel and streambanks.
- Directionally fell trees to facilitate efficient removal along predetermined yarding patterns with the least number of passes and least amount of disturbed area. Directionally fell trees away from streambanks, shorelines, and other waterbody edges.
- Remove logs from wet meadows or AMZs using suitable techniques to minimize equipment operations in the sensitive area and minimize dragging the logs on the ground.
- Winch or skid logs upslope, away from waterbodies.
- Use suitable measures to stabilize and restore skid trails after use.
- Reshape the surface to promote dispersed drainage.
- Install suitable drainage features.
- Mitigate soil compaction to improve infiltration and revegetation conditions.
- Apply soil protective cover on disturbed areas where natural revegetation is inadequate to prevent accelerated erosion before the next growing season.
- Use suitable measures to promote rapid revegetation.
- Use suitable measures in compliance with local direction to prevent and control invasive species.
- If machine piling of slash is done, conduct piling to leave topsoil in place and to avoid displacing soil into piles or windrows.

5.0 CABLE AND AERIAL YARDING OPERATIONS

- Use cable or aerial yarding systems on steep slopes where ground-based equipment cannot operate without causing unacceptable ground disturbance.
- Locate cable corridors to efficiently yard materials with the least soil damage.
- Use suitable measures to minimize soil disturbance when yarding over breaks in slope.
- Fully suspend logs to the extent practicable when yarding over AMZs and streams.
- Postpone yarding operations when soil moisture levels are high if the specific type of yarding system results in unacceptable soil disturbance and erosion within cable corridors.

6.0 LANDINGS

- Minimize the size and number of landings as practicable to accommodate safe, economical and efficient operations.
- Locate landings outside the AMZ and as far from waterbodies as reasonably practicable based on travel routes and environmental considerations. Avoid locating landings near any type of likely flow or sediment transport conduit during storms, such as ephemeral channels and swales, where practicable.
- Avoid placing landings where skidding across drainage bottoms is required.
- Design roads and trail approaches to minimize overland flow entering the landing.

- Use suitable measures as needed to restore and stabilize landings after use.
- Remove all logging machinery refuse (e.g., tires, chains, chokers, cable, and miscellaneous discarded parts) and contaminated soil to a proper disposal site.
- Install suitable drainage features.
- Mitigate soil compaction to improve infiltration and revegetation conditions.
- Apply soil protective cover on disturbed areas where natural revegetation is inadequate to prevent accelerated erosion before the next growing season.
- Use suitable measures to promote rapid revegetation.

7.0 WINTER LOGGING

- Consider using snow-roads and winter harvesting in areas with high-water tables, sensitive riparian conditions, or other potentially significant soil erosion and compaction hazards.
- Mark existing culvert locations before plowing, hauling, or yarding operations begin to avoid or minimize damage from plowing or logging machinery. Ensure all culverts and ditches are open and functional during and after logging operations.
- Plow any snow cover off roadways to facilitate deep-freezing of the road grade before hauling. Manage hauling to avoid or minimize unacceptable damage to the road surface.
- Restore crossings to near pre-road conditions to avoid or minimize ice dams when use of the snow-road is no longer needed. Use suitable measures to cross streams (See Wetlands, Streams, and WIZ section).
- Conduct winter logging operations when the ground is frozen or snow cover and depth is adequate to avoid or minimize unacceptable rutting or displacement of soil.
- Suspend winter operations if ground and snow conditions change such that unacceptable soil disturbance, compaction, displacement, or erosion becomes likely.
- Mark AMZ boundaries and stream courses before the first snow in a manner that will be clearly visible in heavy snows.
- Avoid leaving slash in streams or AMZs to the extent practicable.
- Install and maintain suitable erosion control on skid trails before spring runoff.

8.0 SLOPES STEEPER THAN 40%

- No ground-based, mechanized equipment/vehicle operations should occur on slopes over 40%.
- Equipment traverse across short, isolated steep segments is permissible with site-specific Timber Sale Administer approval for the logging phase; and/or the Engineering Representative for Construction phase after site-specific stability exams have been completed. This may also require consultation with the BHNF Hydrologist or other Watershed personnel.
- Skidding is not permitted on slopes greater than 40%. It is estimated that there are 29 acres of the ROW that are steeper than 40%. These areas will have the trees lopped or scattered or be removed with the use of a line machine or helicopter.

9.0 SOILS

- Soil moisture operating requirements limit ground-based mechanized equipment and vehicle operations to dry or frozen conditions and to avoid soil disturbing actions during periods of heavy rain, snowmelt, or other wet conditions.
- Dry soil conditions: soil cannot be rolled into 3 mm threads or larger without breaking or crumbling (i.e., soil is below the plastic limit).
- Frozen conditions: at least 2 inches of frozen soil or at least 1 foot of packed snow is present.
- Low productivity soils have a surface soil (A horizon) thinner than one inch, topsoil organic material less than 2%, or effective rooting depth less than 15 inches after vegetation clearing. On top of these soils 80-90% of the fine logging slash (less than 3 inches in diameter) will be retained.
- On soils with topsoil thinner than 1 inch, topsoil organic matter less than 2 percent, or effective rooting depth less than 15 inches, retain 90 percent or more of the fine (less than 3 inches in diameter) logging slash in the stand after each clearcut and seed-tree harvest, and retain 50 percent or more of such slash in the stand after each shelterwood and group-selection harvest, considering existing and projected levels of fine slash.

10.0 SENSITIVE PLANTS

Ground disturbance would be avoided to the extent possible within 50 feet of BHNF target plant species. BHNF target plant occurrences would be flagged to ensure that these “no disturbance” areas are visible to project personnel. If ground-disturbing activities cannot be avoided in these areas, a Forest Service botanist or biologist would be consulted to ensure minimal impact.

11.0 WILDLIFE MITIGATION

All bat roost/mines/caves within 500 feet of tree removal operations will be surveyed for potential habitat prior to the start of tree clearing operations. If habitat is identified, the BHNF wildlife biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to not potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1- October 31) rather than the hibernation season (November 1- March 31) so as not to disturb the hibernating bats.

Timber removal and construction activities within Rocky Mountain bighorn sheep lambing areas would be restricted from April 1 through June 15.

Timber removal and construction activities within established big game winter range would be restricted from December 15 until May 15.

Active raptor nests would be avoided while active. Timing and disturbance buffers would be maintained around identified raptor nests using USFWS- recommended spatial and temporal buffers for construction-related activities. Similarly, timing and disturbance buffers would be maintained around Bald Eagle winter roost areas. The distance may be reduced where forest characteristics or topography reduce the

line-of-site distance from the nest, based on site-specific analysis. Similarly, timing and disturbance buffers would be maintained around Bald Eagle winter roost areas, in season. Consultation with SDGFP and FS biologist would be conducted prior to implementing changes in timing and disturbance buffers. New nests, signs of nest building, or where raptors are defensive
(attacking) would be immediately reported to the FS wildlife biologist and SDGFP prior to commencement of work.

12.0 SCENERY

To reduce visual contrast, preserve low growing shrub vegetation up to five feet in height and tree removal within the ROW would be limited to the minimum required area that is necessary to meet Federal Regulatory Commission (FERC) Standards, to ensure proper clearances and safe operation, and to provide safe access for construction, line inspection and maintenance operations.

To reduce potential impacts on scenery and reduce visual contrast in the residential area along SD Highway 44 in the Hisega area and in the area of concentrated recreational activity east of Pactola Reservoir where high impacts to sensitive viewers would occur, preserve low growing trees and shrubs up to 25 feet in areas of the ROW, but outside the conductor path and where clearing is not necessary for proper clearances, safe operation, and safe access for construction, line inspection, and maintenance operations.

13.0 CULTURAL SITES

All cultural avoidance buffer areas will be marked prior to any tree removal. The BHNF may require an on-site cultural resource monitor during tree removal and construction activities in areas determined to be culturally sensitive. No vegetation clearing or other disturbances within the 100 feet (30 m) site avoidance buffer. Vehicle and road restrictions may include: no road improvements within the avoidance buffer; vehicle traffic should be limited to rubber-tired vehicles; vehicles should not leave the established road. Access is permitted on established roads only. Specific buffer avoidance measures are listed on the attached map narratives.

14.0 FORESTRY BEST MANAGEMENT PRACTICES (BMP'S)

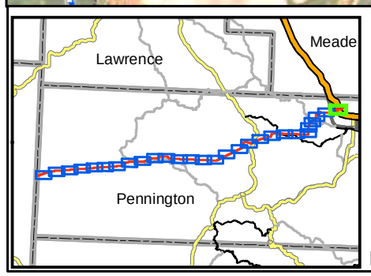
The state of South Dakota has adopted BMP's to prevent pollution and minimize environmental impacts during and after a timber harvest. BMP's are practices, actions, or activities that limit soil disturbance and prevent pollution of surface and ground water resources. All spur roads will be designed and built to exceed BMP standards to minimize erosion and sediment entering surface water.

There will be harvesting within stream side management zones (SMZ). Directional falling will be used to prevent trees from falling into waterways. Mechanized equipment will not be operated on stream banks. Whenever possible the operator will reach into the SMZ and carefully cut the tree and lift the tree as far as possible from stream.

Construction Access Roads

MAJOR ROADS
- State Highway
- County Road

PRELIMINARY ACCESS ROADS
- Existing ROW/Overland Travel
- Existing road - may need improved
- Overland Travel - Outside ROW
- New Spur Road



BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 1 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

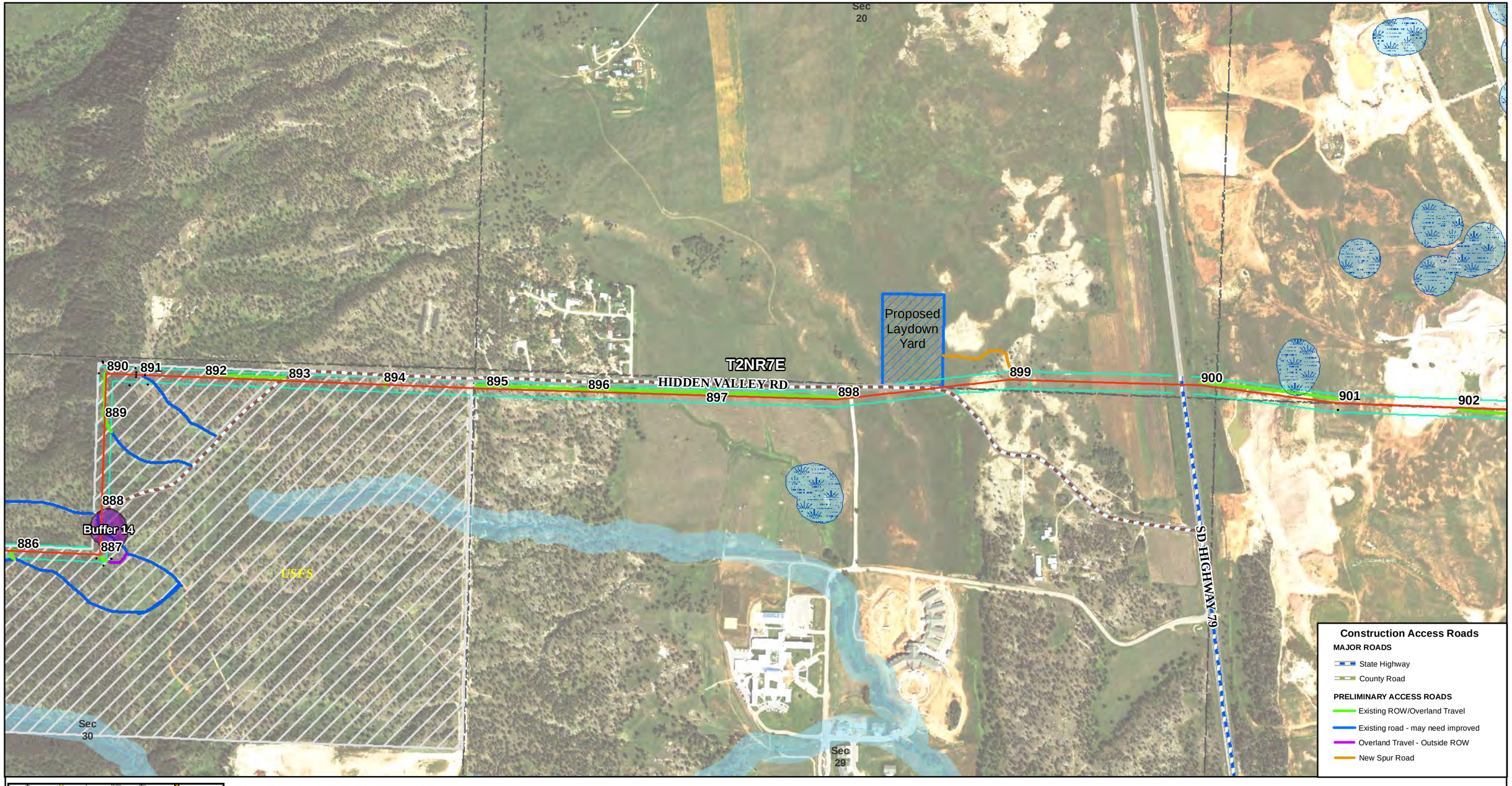
Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

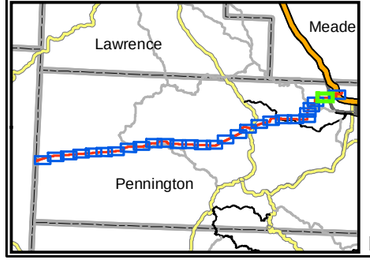
Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 1

Poles and hardware would be delivered to the Lien laydown yard via Sturgis Road and Hidden Valley Road. This laydown yard is situated immediately adjacent to the ROW. Equipment would exit the laydown yard and follow Hidden Valley Road, Sturgis Road, West Chicago Road, and Deadwood Avenue and enter the ROW at structure 914. Construction would progress east to Lange substation and structure 924 generally within the ROW. Equipment would then backtrack to structure 914 and continue west to structure 913. At structure 913, the equipment would backtrack to Deadwood Avenue and take Universal Drive and access the ROW at structure 909 via a private drive. Construction would progress east within the ROW to structure 912 and south to structure 906. Equipment would backtrack to Universal drive and access the ROW at structure 904 and 905 via a private drive. Access to structures 900-903 will occur on private property as agreed to by the property owner.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

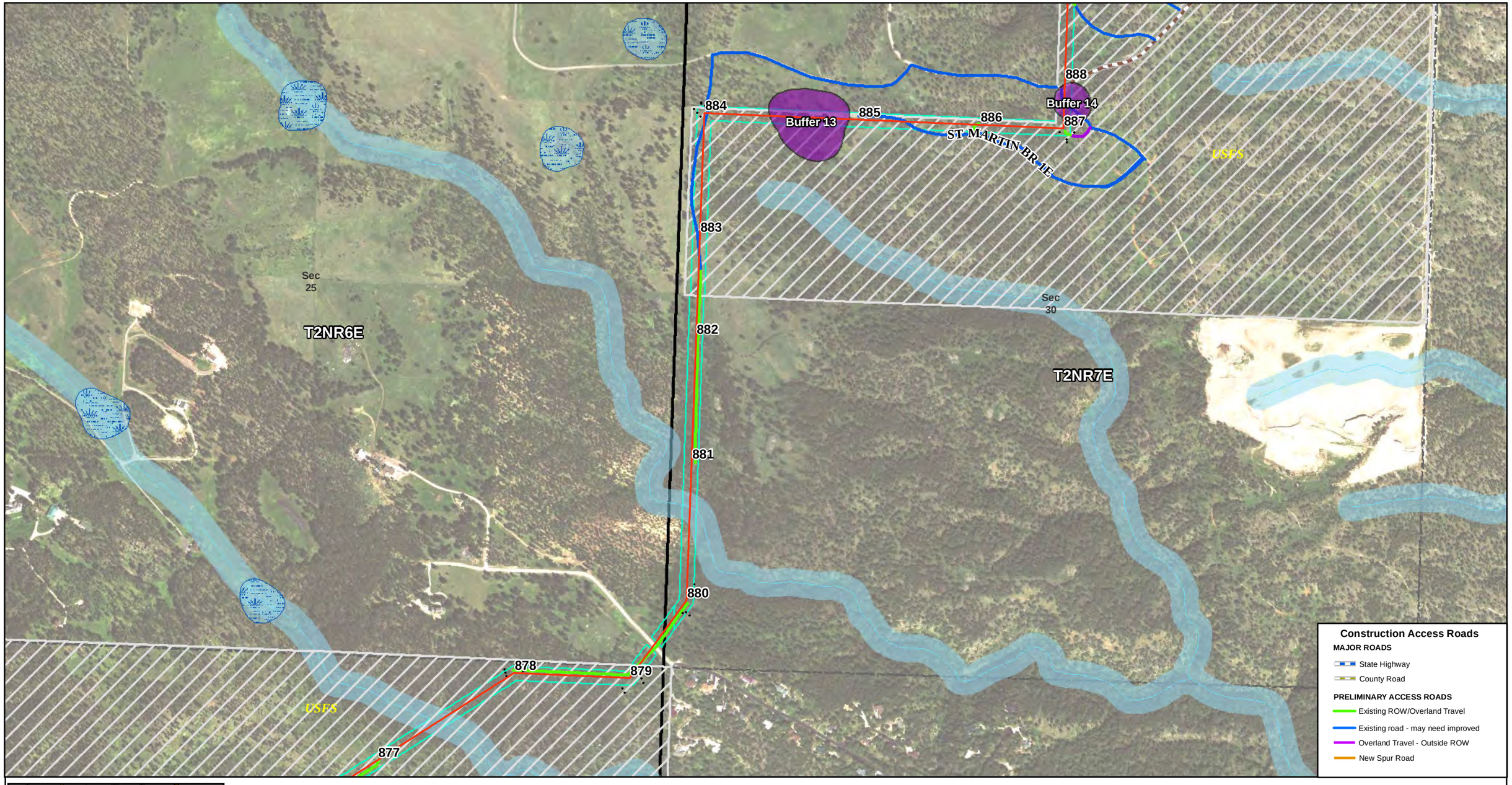
Date: 4/22/2016

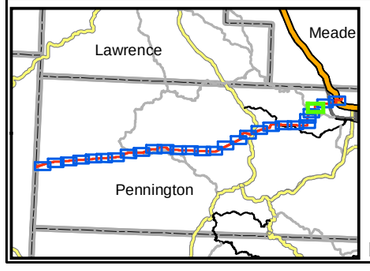
Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 2

From structure 900, equipment would backtrack to Sturgis Road and Hidden Valley Road to the Lien laydown yard. Construction of structure 899 would occur via overland travel from the laydown yard. From here, construction would progress west from structure 898 to 895 within the ROW. Equipment would access structure 894 via Hidden Valley Road. Equipment would then travel west on Hidden Valley Road accessing the ROW at structure 893, continuing west to structure 892. Equipment would then backtrack to Hidden Valley Road where 2 existing roads, St Martin BR 1D (553.1D) and St Martin BR 1F (553.1F) would be used to access structures 891 to 889. Equipment would then backtrack to Hidden Valley Road continuing west and accessing the ROW at structure 888. From structure 888, equipment would take St Martin BR 1B (553.1B) to near structure 887, where overland travel would access structure 887.

Construction between structure 895 and 887 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 3 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

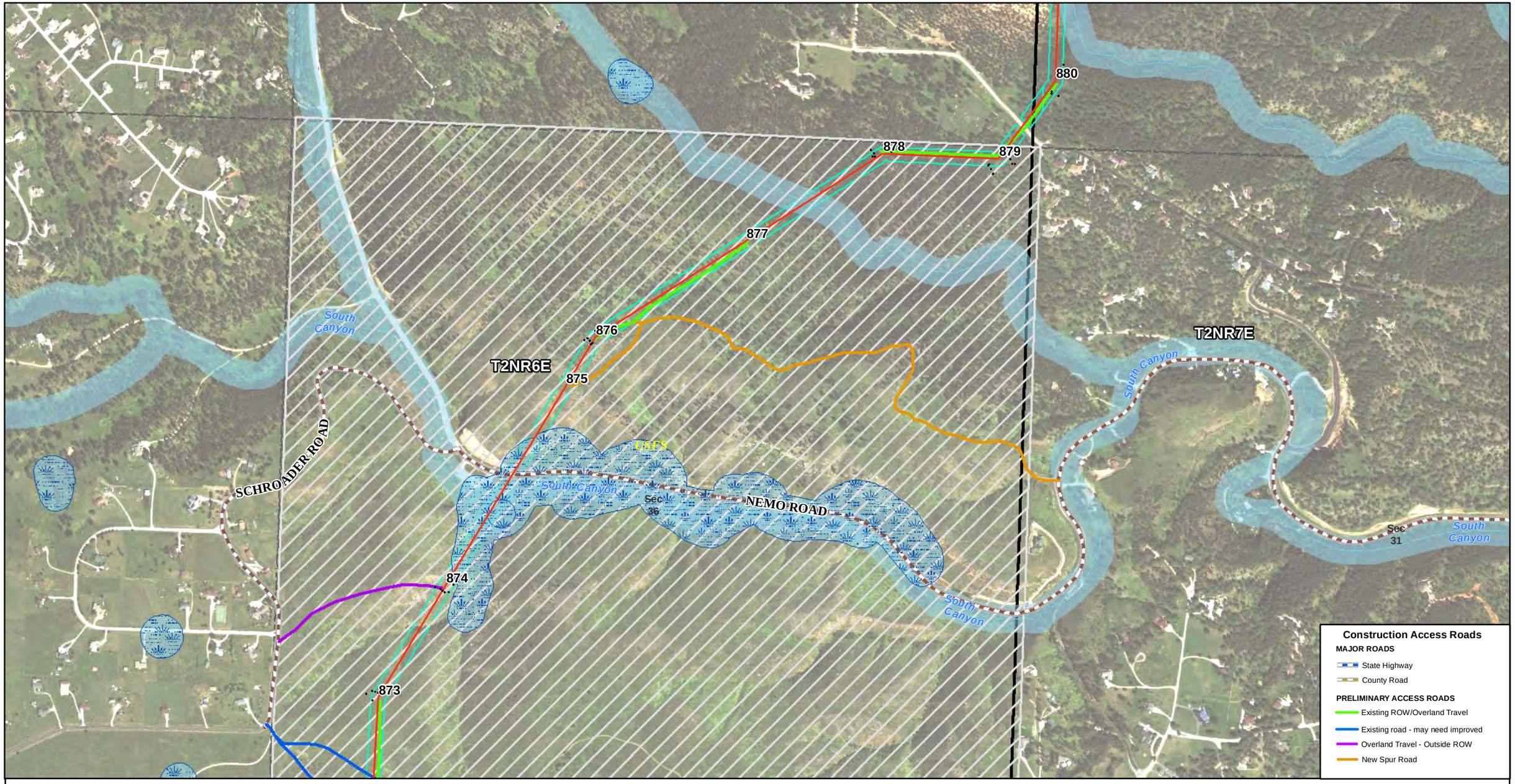
Map 3

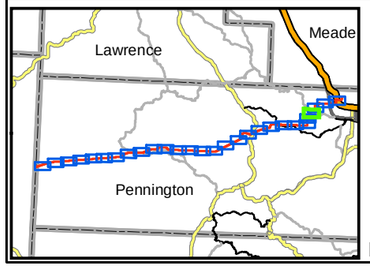
From structure 887, crews would backtrack to St Martin BR 1B and take St Martin BR 1E to structures 886 and 885. Crews would then backtrack to Hidden Valley Road following Hidden Valley Road west to an existing road until just north of structure 884 where a two-track road goes due south, intercepting the ROW at structure 884. Crews would follow this existing two-track south to structures 883-881. Following construction at structure 881, crews would backtrack to Sturgis Road, than take South Canyon/Nemo Road to Wide View Road and Sun Ridge Road intersecting the ROW at the end of Sun Ridge Road. From here, crews would access structures 880-878 within the ROW.

Construction between structures 887 and 882 as well as 879 and 878 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

Between structures 888 and 884, there are two cultural resource avoidance buffers (buffers 13 and 14) with the following restrictions:

Buffer 13	SD	Alpine must mark the avoidance buffer prior to work. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within the avoidance buffer.
Buffer 14	SD	Alpine must mark the avoidance buffer prior to work. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within the avoidance buffer. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within avoidance buffer. Vehicles may use the access road through the site with the following stipulations: no road improvements within avoidance buffer; vehicle traffic should be limited to rubber-tired vehicles; vehicles should not leave the established road or turn-around/parking area; and road should not be used in conditions that may cause rutting, such as when muddy.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

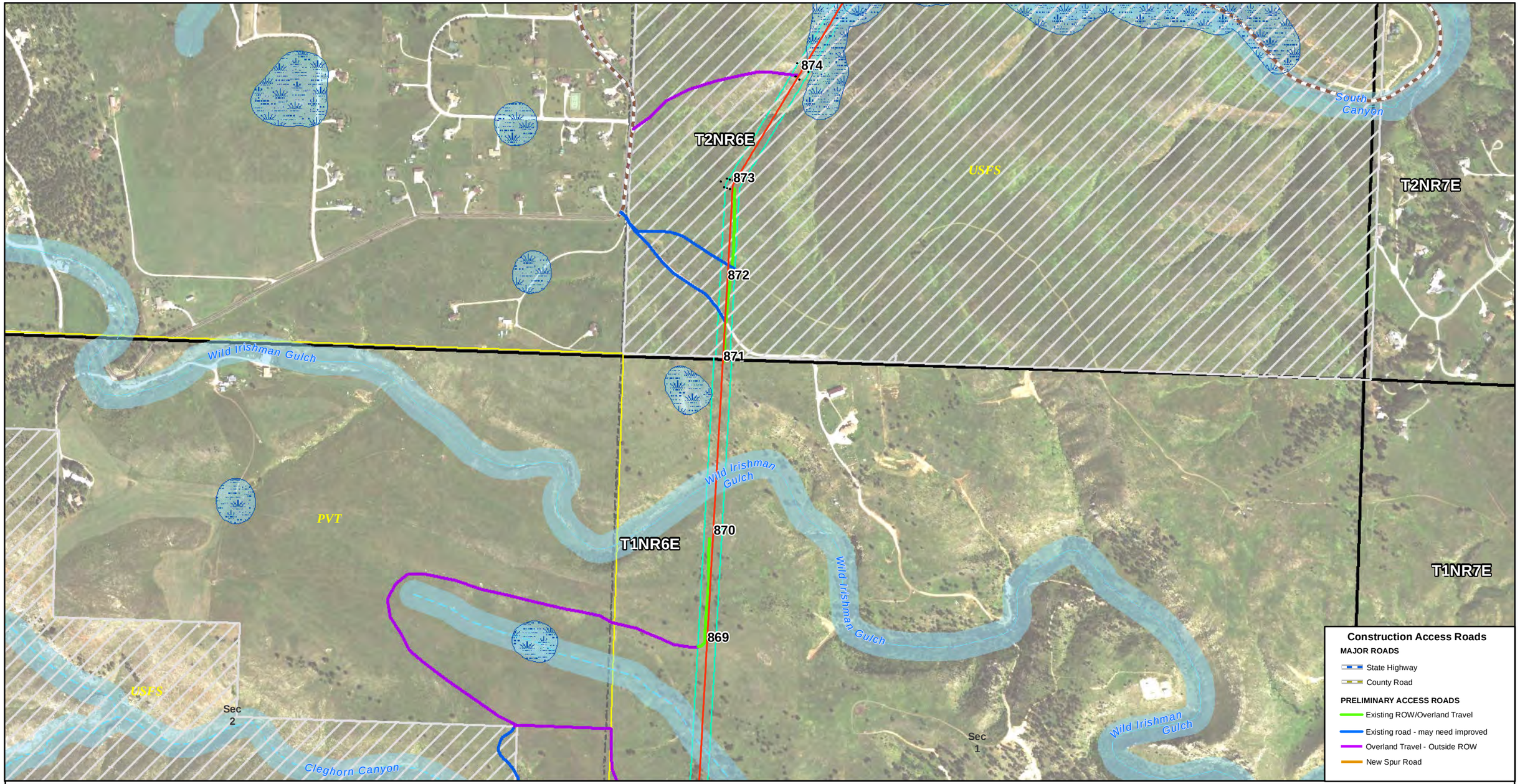
Date: 4/22/2016

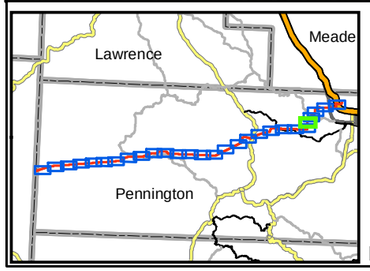
Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 4

From structure 878, crews would backtrack to South Canyon/Nemo Road and travel southwest approximately 0.5 mile exiting South Canyon Road onto an existing dirt road on private property. Upon entering National Forest land, a combination of overland travel and construction of a new temporary road would be required to access structures 877-875. Crews would then backtrack to South Canyon Road following it west to Schroader Road, then follow Schroader Road to a point west of structure 874. Crews would then access structure 874 via overland travel.

Construction between structures 878 and 874 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

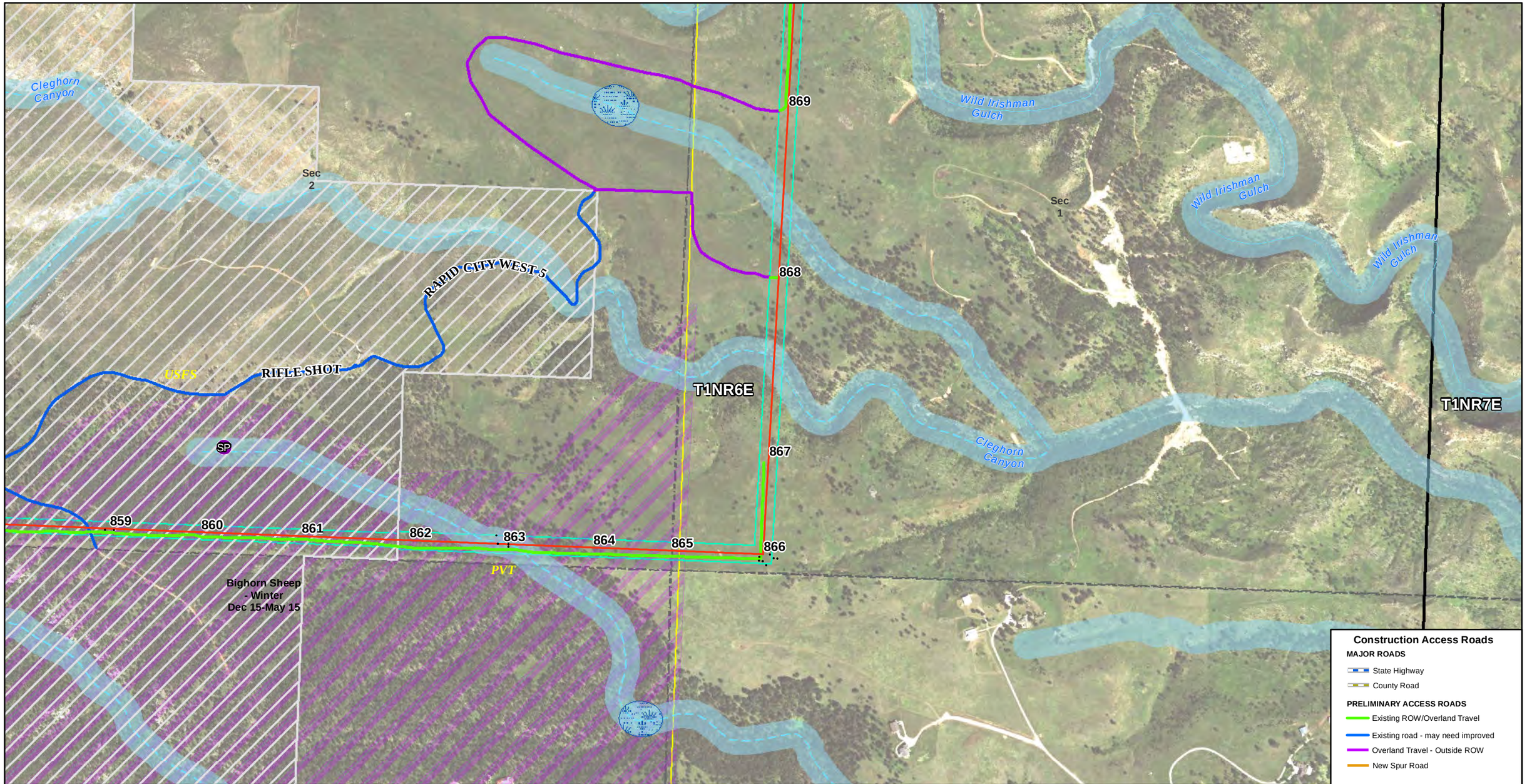
Date: 4/22/2016

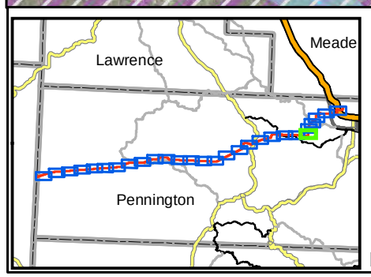
Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 5

Crews would backtrack to Schroader Road, following it south to Wild Irishman BR 1A (199.1A) and an un-named road to access the ROW and structures 873-871. At this point, crews would backtrack to South Canyon Road into Rapid City, picking up HWY 44 and traveling west to NFSR 199.

Construction between structures 874 and 871 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 6 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

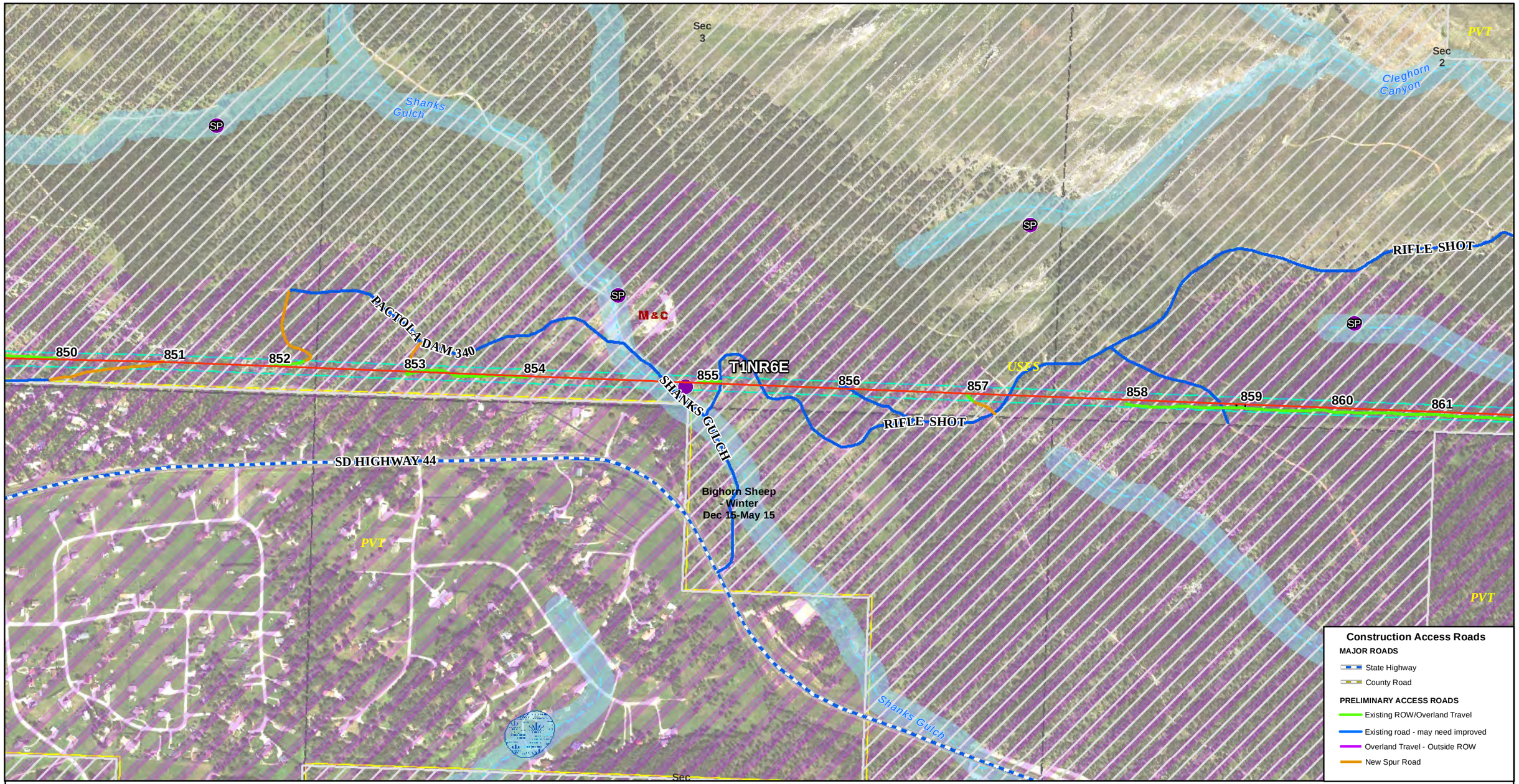
Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 6

After leaving HWY 44 on Shanks Gulch (203), crews would follow it to Rifle Shot Road (395) to Rapid City West 5 (U210005) until it meets private property. At this point, crews would use overland travel on private property to access structures 870-868. Crews would then backtrack to Rifle Shot Spur 1A (395.1A) and use it to access the ROW near structure 859. Crews would then work east within the ROW to structure 867 and west to structure 858.

Construction between structures 862 and 858 would be subject to big game and bighorn sheep winter range timing restrictions. No construction or road construction between 12/15 and 5/15.



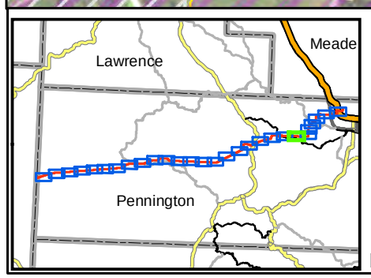
Construction Access Roads

MAJOR ROADS

- State Highway
- County Road

PRELIMINARY ACCESS ROADS

- Existing ROW/Overland Travel
- Existing road - may need improved
- Overland Travel - Outside ROW
- New Spur Road



BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas

- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission

- Project centerline and structure number/location

WETLAND

- Wetlands and Fens -100 foot buffer
- Springs

STREAMS

- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

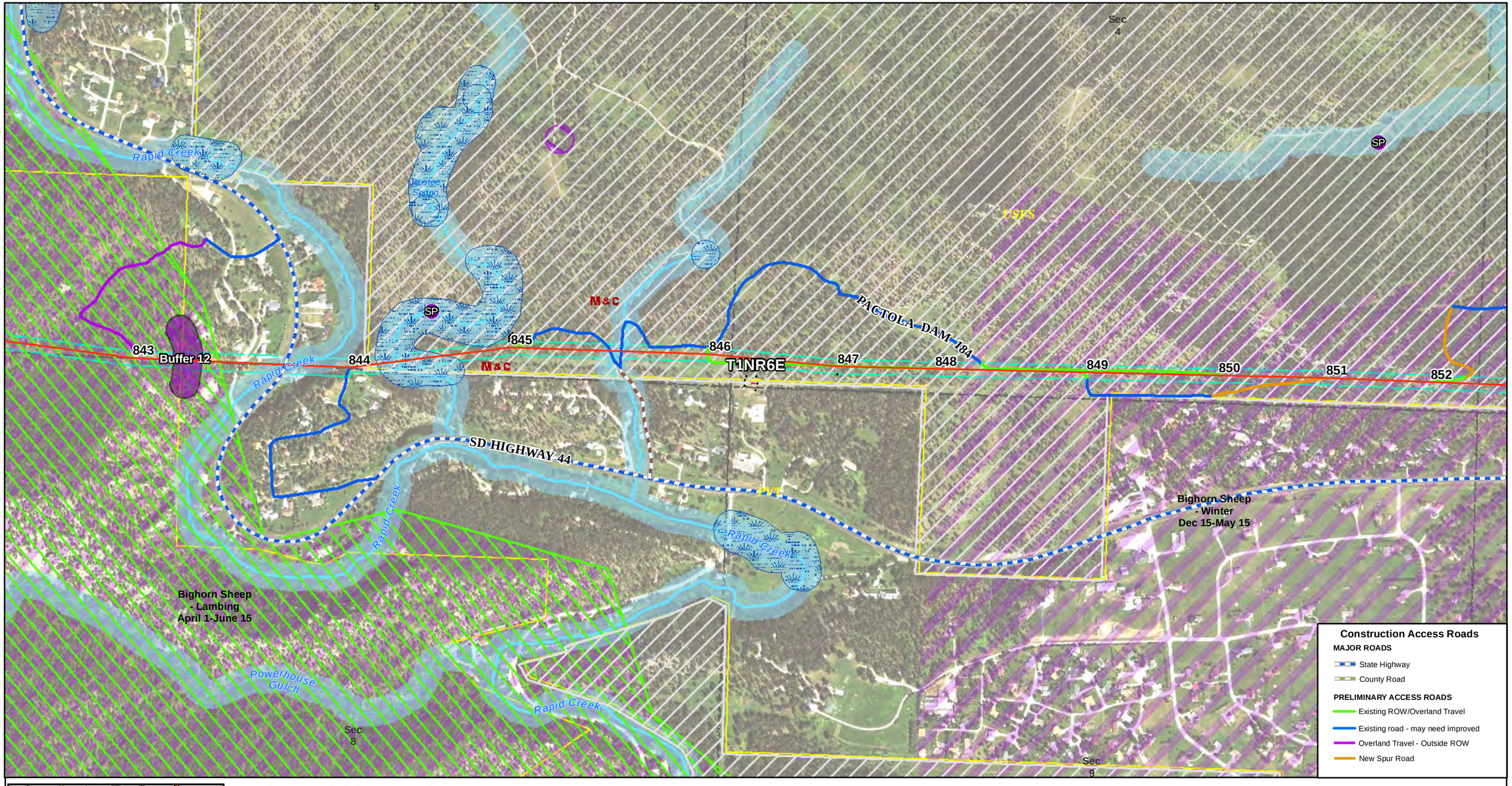
Map 7

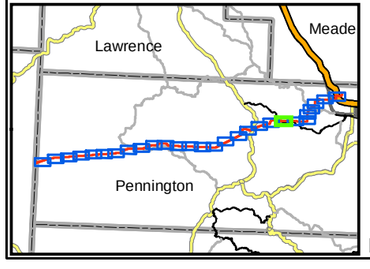
Crews would then backtrack to Rifle Shot Road (395), accessing structure 857 via a short spur road into the ROW. Crews would then backtrack to Rifle Shot Road, accessing structure 856 via Pactola Dam 341 Road (U200341). Crews would then backtrack to Rifle Shot Road traveling west to the ROW near structure 855, accessing structure 855 within the ROW. Crews would backtrack to Shanks Gulch Road, then follow Pactola Dam 341 Road northwest to a point north of structure 853. From here a small spur road would be used to access structures 853 and 854 within the ROW. Crews would then backtrack to Pactola Dam Road following it to a point north of structure 852 where a spur road would be used to access the ROW and structure 852.

Construction between structures 858 and 852 would be subject to big game and bighorn sheep winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

To reduce potential impacts on scenery and reduce visual contrast in the residential area along SD Hwy 44 in the Hisega area and in the area of concentrated recreation activity east of Pactola Reservoir where high impacts to sensitive viewers would occur, preserve low growing trees and shrubs up to 25-feet in height in areas within the ROW, but outside the conductor path and where clearing is not necessary for proper clearances, safe operation and safe access for construction, line inspection, and maintenance operations.

All bat roost/mines/caves within 500 feet of construction activities will be surveyed for potential habitat prior to construction. If habitat is identified, the BHNF biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to NOT potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1 – October 31) rather than the hibernation season (November 1 – March 31) so as not to disturb hibernating bats.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

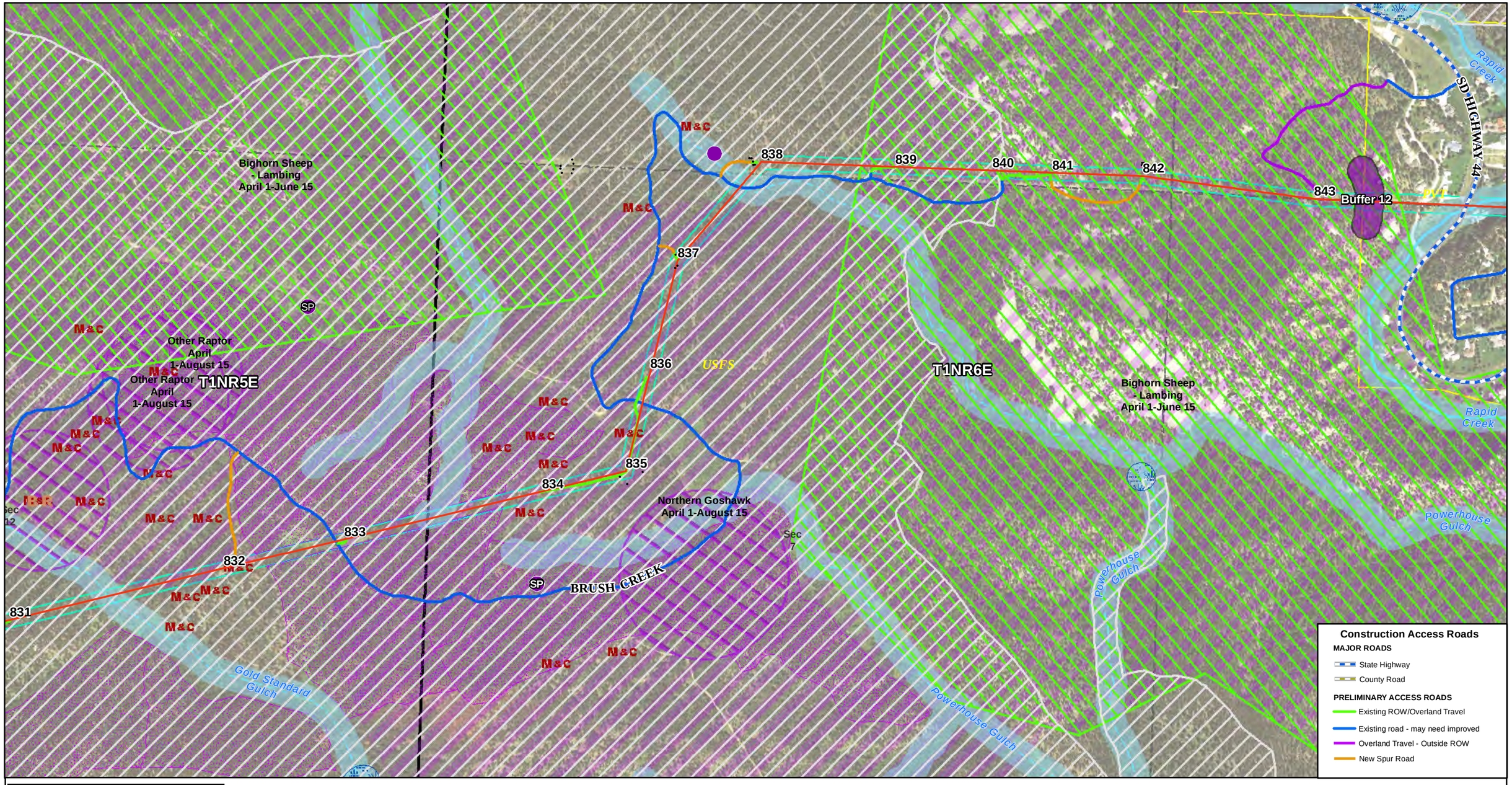
Map 8

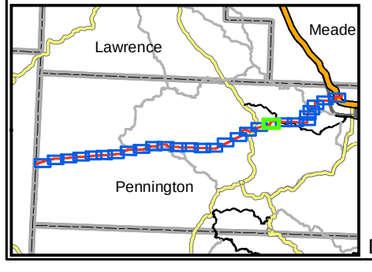
From structure 852, crews would backtrack to Hwy 44 and travel west to Log Porch Road (173) following it to Pactola Dam 184 Road. Crews would follow Pactola Dam 184 Road east to structure 846 travelling down the ROW to structure 848. Crews would then either follow the ROW to structure 850 or backtrack to Pactola Dam 184 Road following it to the ROW west of structure 849. After completing structure 850, crews would backtrack to structure 849 and travel south to the existing transmission line ROW, following it east approximately 0.25 miles where a spur road would be used to access structure 851. From here, crews would backtrack to Pactola Dam 253 Road, taking it west to structure 845. Crews would then backtrack to HWY 44 taking it west to Big Bend Road and following Big Bend Road to structure 844.

Construction between structures 852 and 844 would be subject to big game and bighorn sheep winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

To reduce potential impacts on scenery and reduce visual contrast in the residential area along SD Hwy 44 in the Hisega area and in the area of concentrated recreation activity east of Pactola Reservoir where high impacts to sensitive viewers would occur, preserve low growing trees and shrubs up to 25-feet in height in areas within the ROW, but outside the conductor path and where clearing is not necessary for proper clearances, safe operation and safe access for construction, line inspection, and maintenance operations.

All bat roost/mines/caves within 500 feet of construction activities will be surveyed for potential habitat prior to construction. If habitat is identified, the BHNF biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to NOT potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1 – October 31) rather than the hibernation season (November 1 – March 31) so as not to disturb hibernating bats.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

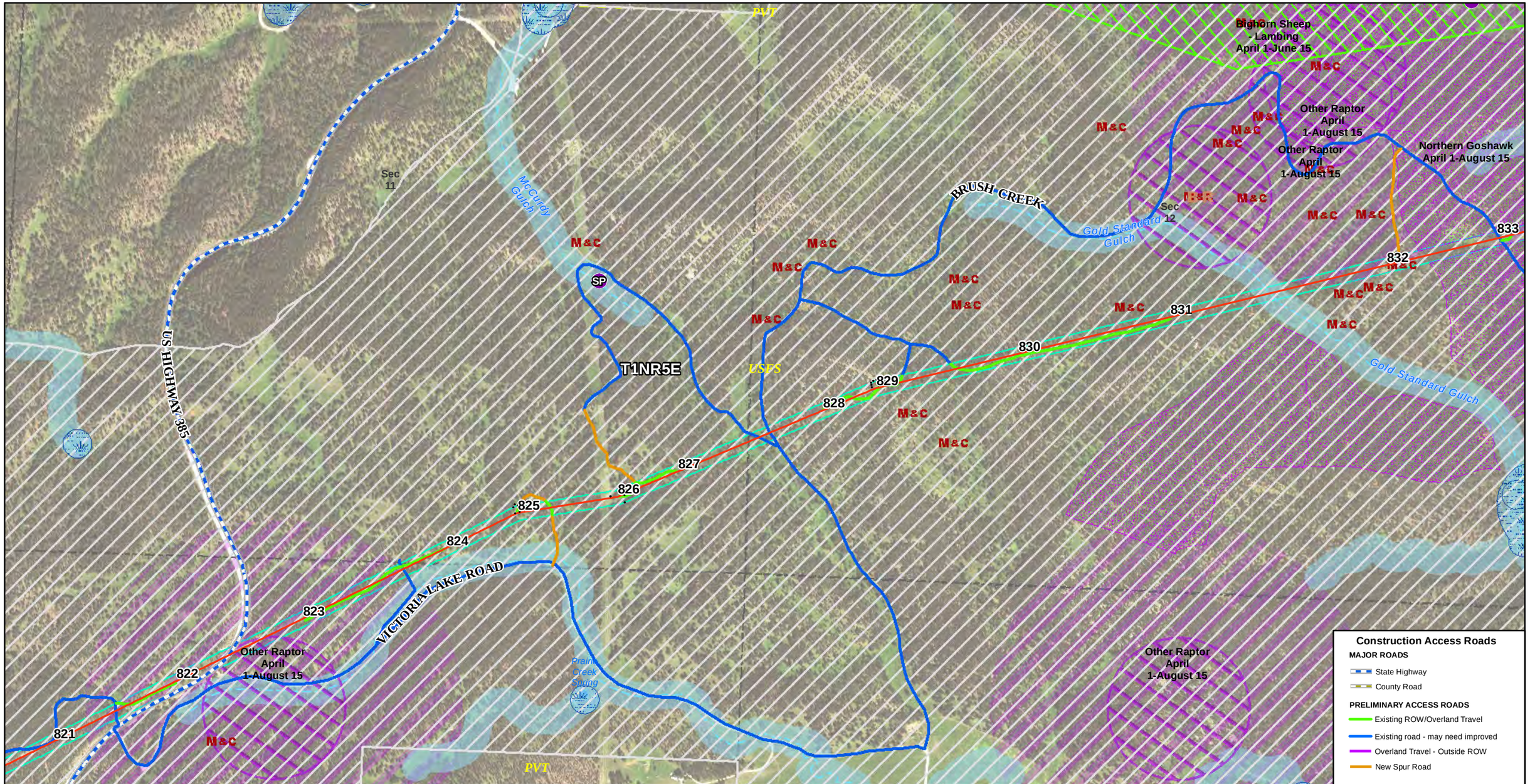
Notes:

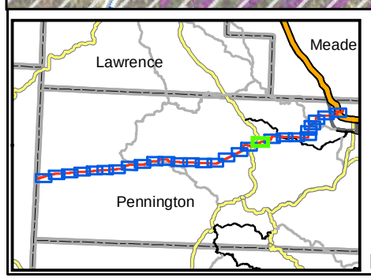
Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 9 and 10

Following construction at 844, crews would backtrack to HWY 44 and follow it northwest to Chipmunk Lane and follow it through private property to an old road entering National Forest land and continue to structure 843. Crews would then backtrack to HWY 44 following it northwest to HWY 385 and follow HWY 385 south to Victoria Lake Road (159). Crews would follow Victoria Lake Road east to Pactola Dam 229 Road (U200229) following it to the ROW and accessing structures 823 and 824. Crews would then backtrack to Victoria Lake Road following it east to a new spur road to structure 825. Crews would backtrack to Victoria Lake Road and continue east to YMCA/Brush Creek Road (772.1) and follow it to McCurdy Gulch Road BR1B (165.1B) and to Pactola Dam 260 Road. Crews would follow that south and utilize overland travel and new spur road to the ROW accessing structures 826 and 827. Crews would then backtrack the way they came to YMCA/Brush Creek Road following it north and east to Pactola Dam 78 Road and Pactola Dam 269 Road accessing structures 828 and 829. Crews would backtrack on Pactola Dam 269 to Pactola Dam 270 Road accessing structures 830 and 831 within the ROW. Crews would then backtrack to YMCA/Brush Creek Road following it east to a point north of structure 832 where a spur road would be required to reach structure 832. Crews would again backtrack to YMCA/Brush Creek Road and continue east to the ROW and structure 833. Crews would continue on YMCA/Brush Creek Road to Brush Creek BR.1B Road until it intersects the ROW. From here crews would work west to structures 834 and 835 and east to structure 836 within the ROW. Crews would then backtrack to Brush Creek BR.1C Road and continue north and east to a point west of structure 837 where a spur road will be required to reach structure 837. Crews would backtrack and continue north on Brush Creek BR.1C to a point near structure 838 where a short spur road will be required to access structure 838. Crews would backtrack to Brush Creek BR.1C following it east to structure 839 then continue east on Brush Creek BR.1C to structure 840. Crews would then follow the ROW to structure 841. From structure 841 a spur road would be required to access structure 842. Crews would then backtrack to Victoria Lake Road and Hwy 385. From here, crews would use Pactola Dam 281 Road to access the ROW and structure 822.

Construction between structures 844 and 839 would be subject to big horn sheep lambing area timing restrictions. No construction or road construction between 4/1 and 6/15.

Construction between structures 843 and 822 would be subject to big game and bighorn sheep winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

This area involves two stream crossings on an intermittent tributary to Prairie Creek. These are associated with areas between structures 823-824 and structure 825. Access routes U200229 Pactola Dam 229 has been identified as needing relocation as part of current USFS timber sale planning associated with the upcoming Prairie Timber Sale in this same area. The route current follows the intermittent, protected stream. The second is an access road to structure 825. Consult with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream crossing and utilize applicable BMPs as described in sections 1-14 above.

Buffer 12	SD	Alpine must mark the avoidance buffer prior to work. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within the avoidance buffer. Vehicles may use the access road through the site with the following stipulations: no road improvements within avoidance buffer; vehicle traffic should be limited to rubber-tired vehicles; vehicles should not leave the established road or turn-around/parking area; and road should not be used in conditions that may cause rutting, such as when muddy.

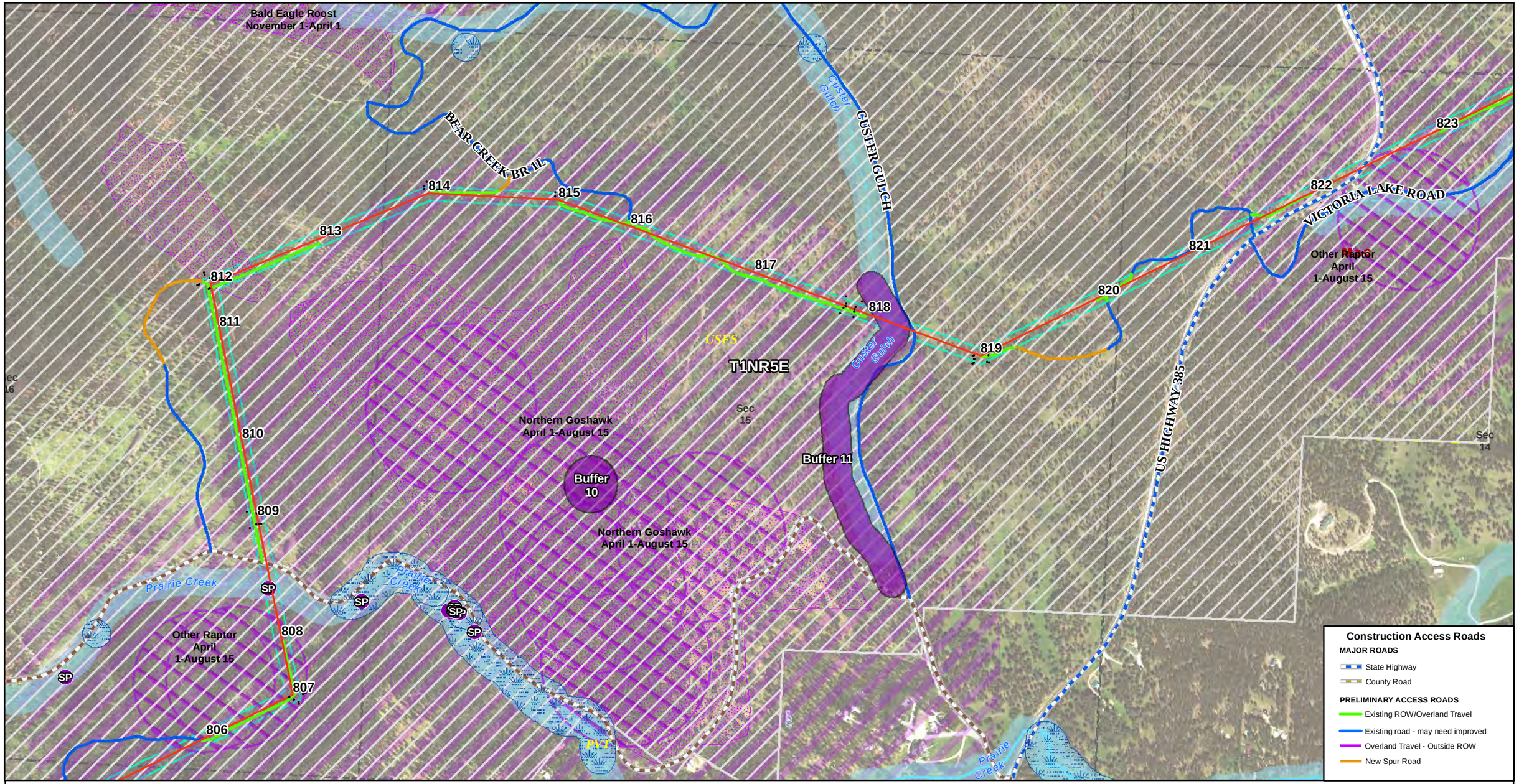
The spur road to structure 825 would not be used in wet conditions. If wet, wetland matting would be used to cross the drainage.

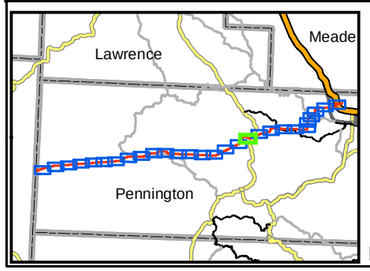
Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structures 838-833, structure 832 and the spur road to it, structures 824-821.

To reduce potential impacts on scenery and reduce visual contrast in the residential area along SD Hwy 44 in the Hisega area and in the area of concentrated recreation activity east of Pactola Reservoir where high impacts to sensitive viewers would occur, preserve low growing trees and shrubs up to 25-feet in height in areas within the ROW, but outside the conductor path and where clearing is not necessary for proper clearances, safe operation and safe access for construction, line inspection, and maintenance operations.

All bat roost/mines/caves within 500 feet of construction activities will be surveyed for potential habitat prior to construction. If habitat is identified, the BHNF biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to NOT potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1 – October 31) rather than the hibernation season (November 1 – March 31) so as not to disturb hibernating bats.

Sensitive plants are located adjacent to Brush Creek Road and McCurdy Gulch Roads. All vehicles and construction equipment shall stay on the improved road surfaces in these locations.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 11 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 11

From structure 822, crews would continue west on Victoria lake Road 159 to structures 821 and 820 via existing road and the ROW, then accessing structure 819 via existing road and new spur road. Crews would then backtrack to HWY 385, following it west to Custer Gulch Road. Crews would follow Custer Gulch Road (258) to Custer Gulch BR 1A (258.1A) and Custer Gulch BR 1C (258.1C) where a small spur road would access the ROW and structure 814. Crews would then backtrack to Custer Gulch BR 1C accessing the ROW at structure 816. Crews would then travel in the ROW to structures 815 and 817. Crews would then backtrack to Custer Gulch Road and take Edelweiss Mountain Road west until it intercepts the ROW. Crews would either access structures 809-813 via the ROW or continue west to an un-named road, following it north and utilizing a new spur road to access the ROW at structure 812. Crews would then backtrack to Edelweiss Mountain Road following it west to Crossover BR 1C (251.1C), taking this road to the ROW near structure 801. From here, crews would utilize the existing road in the ROW traveling east to the intersection with Silver City 145 Road (U190145), following it to access the ROW at structure 806, following the ROW to structures 807 and 808.

Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structures 819-813 and structures 810-805.

Construction between structures 823 and 806 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

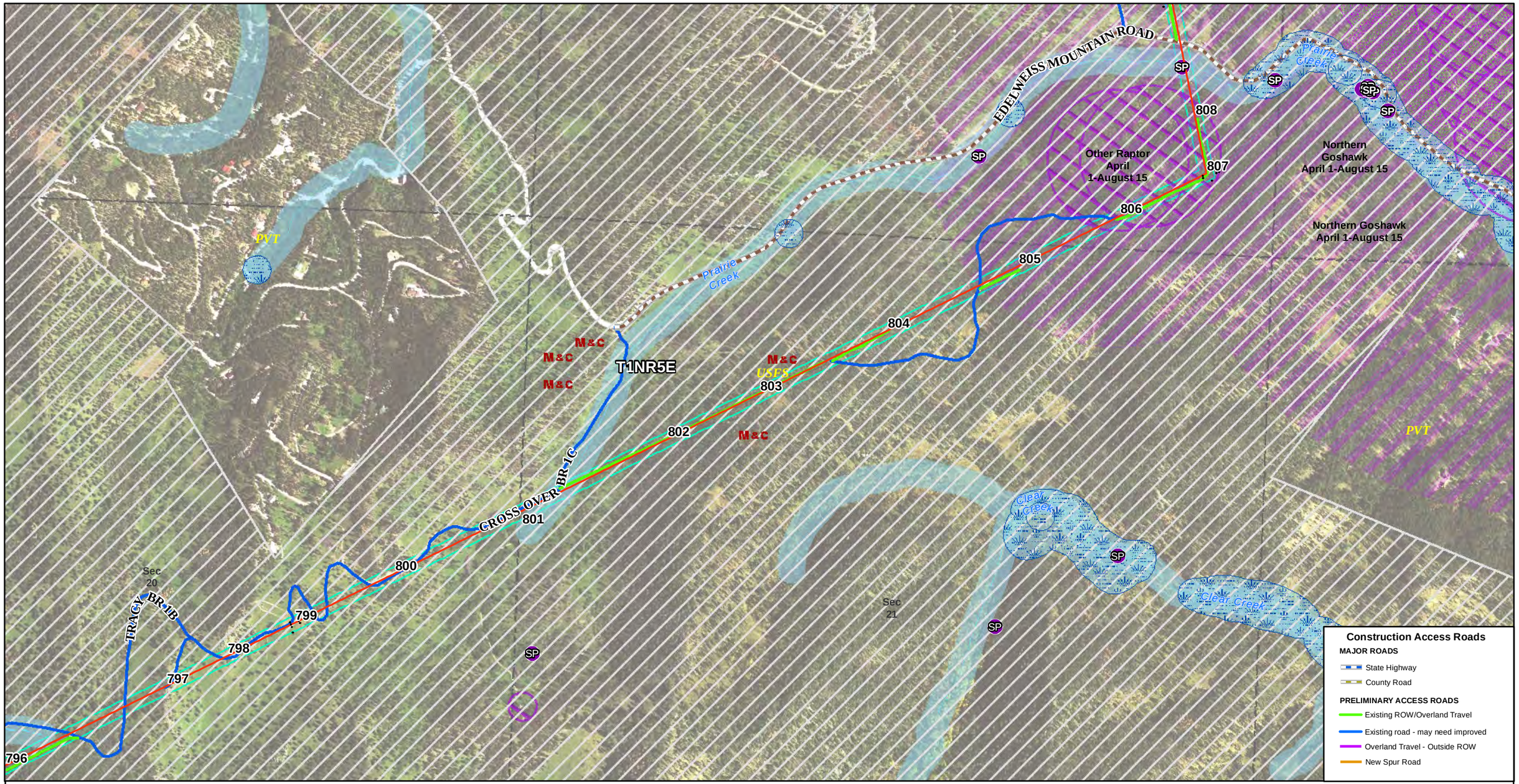
Sensitive plants, stream buffer, wetlands, and fens are located adjacent to Edelweiss Mountain Road. All vehicles and construction equipment shall stay on the improved road surfaces in these locations.

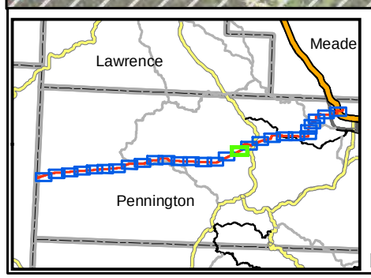
To reduce potential impacts on scenery and reduce visual contrast in the residential area along SD Hwy 44 in the Hisega area and in the area of concentrated recreation activity east of Pactola Reservoir where high impacts to sensitive viewers would occur, preserve low growing trees and shrubs up to 25-feet in height in areas within the ROW, but outside the conductor path and where clearing is not necessary for proper clearances, safe operation and safe access for construction, line inspection, and maintenance operations.

Between Custer Gulch Road and structure 818 there is a culturally sensitive area with the following mitigation measure.

Buffer 11	SD	Alpine must mark the avoidance buffer prior to work. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within the avoidance buffer.

All bat roost/mines/caves within 500 feet of construction activities will be surveyed for potential habitat prior to construction. If habitat is identified, the BHNF biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to NOT potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1 – October 31) rather than the hibernation season (November 1 – March 31) so as not to disturb hibernating bats.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 12 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 12

Access to structure 805 would again use Cross Over BR 1C (251.1C), taking this road to the ROW near structure 801. From here, crews would utilize the existing road in the ROW traveling east within the ROW to structures 802-804 and continue to the intersection with Silver City 145 Road, following it to access the ROW at structure 805. Crews would then backtrack to Cross Over BR 1C and Tracy BR.1B Road using it to access structures 801-798. From structure 798 crews would access structure 797 via an existing two track.

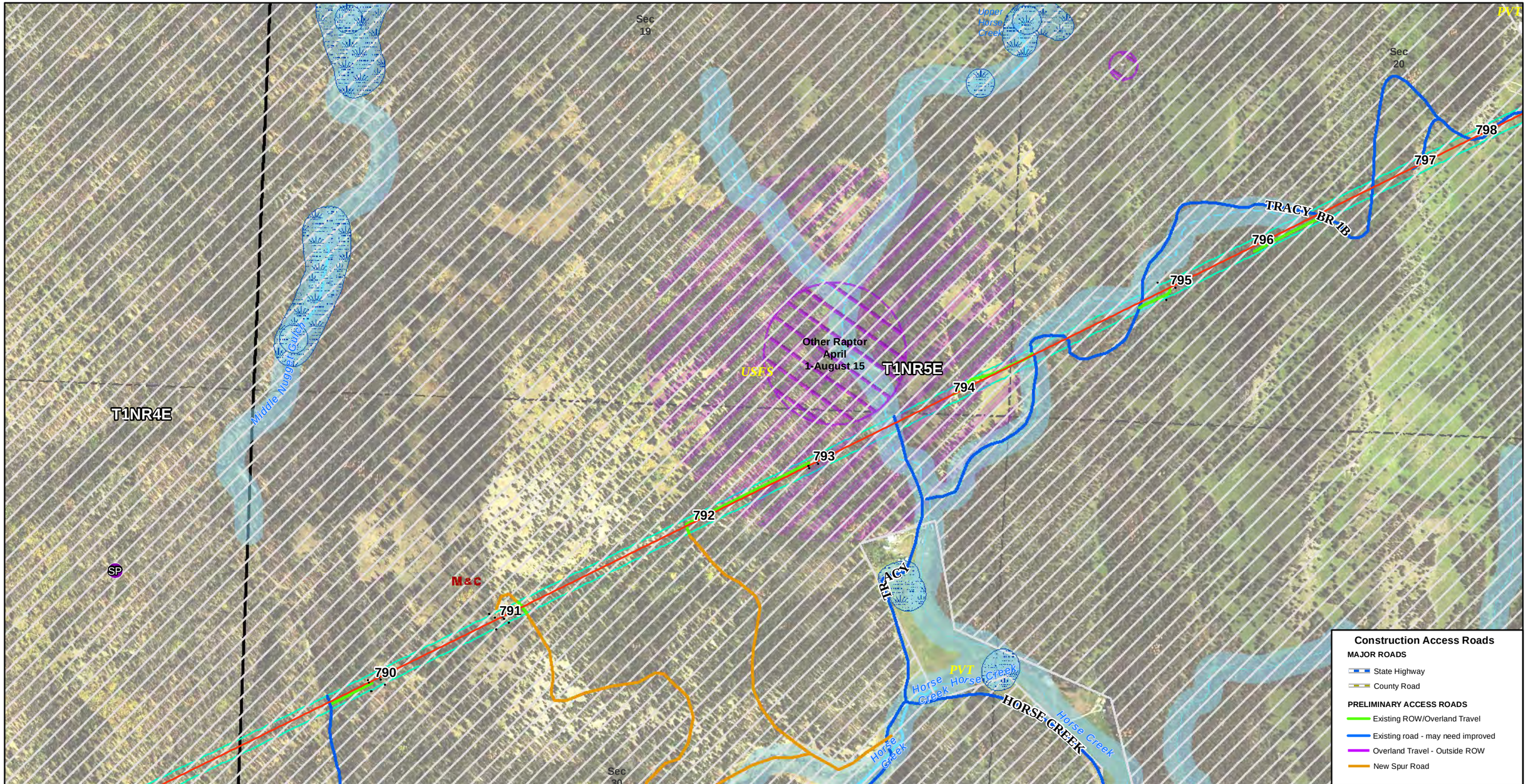
Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structures 806-805.

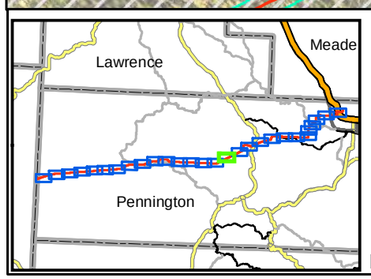
All bat roost/mines/caves within 500 feet of construction activities will be surveyed for potential habitat prior to construction. If habitat is identified, the BHNF biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to NOT potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1 – October 31) rather than the hibernation season (November 1 – March 31) so as not to disturb hibernating bats.

Construction between structures 806 and 797 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

Sensitive plants are located adjacent to Edelweiss Mountain Road. All vehicles and construction equipment shall stay on the improved road surfaces in these locations. One sensitive plant occurs in the ROW between structures 808 and 809. This area will likely be spanned and avoided by construction equipment; however, it will be flagged for avoidance.

The access roads to the ROW in this location cross a stream buffer on existing un-improved roads. These access roads through the stream buffer would only be used when dry. If access is required when the area is wet, consult with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 13

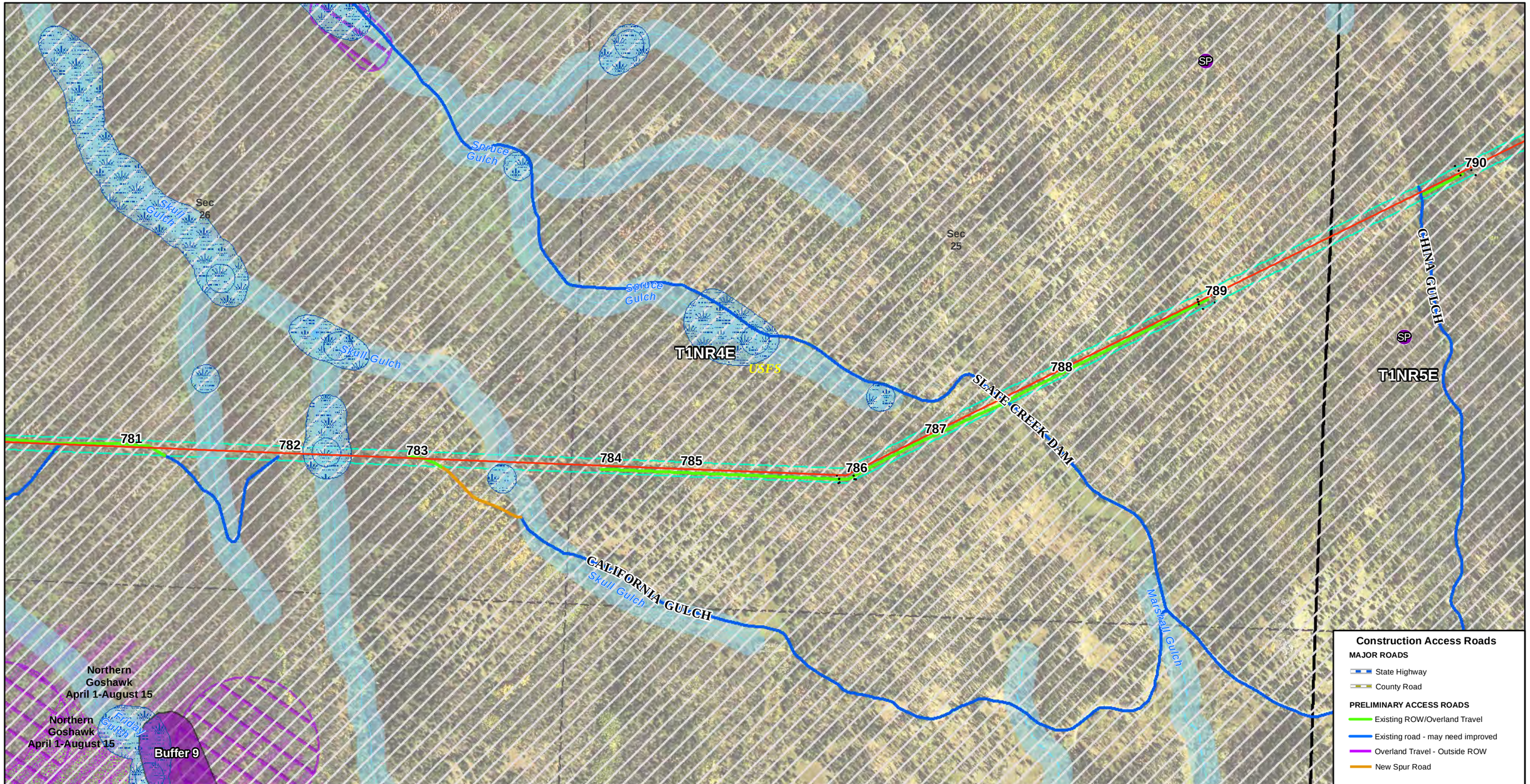
Following construction at structure 797, crews would continue west on Tracy BR.1B Road, using it to access the ROW and structures 796-794. Crews would continue west on Tracy BR.1B Road to its intersection with Tracy Road (244) following it to Horse Creek Road where spur roads would be required to access structures 793-791. Crews would then backtrack to Horse Creek Road following it south and west to China Gulch Road (249) taking it north to the ROW near structure 790, traveling within the ROW to the structure.

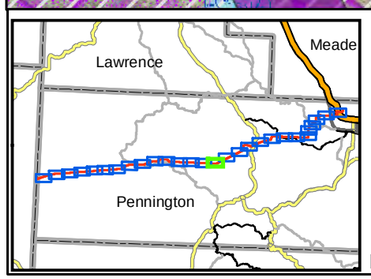
All bat roost/mines/caves within 500 feet of construction activities will be surveyed for potential habitat prior to construction. If habitat is identified, the BHNF biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to NOT potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1 – October 31) rather than the hibernation season (November 1 – March 31) so as not to disturb hibernating bats.

Construction between structures 797 and 790 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structures 795-792.

Tracy Road 244 and Horse Creek Road 243 cross or are located adjacent to stream and wetland buffers. These improved roads will be used as is and vehicles will not leave the improved road surface of these two roads. Tracy BR.1B Road and a new access road also involve stream buffers. These access roads through the stream buffer would only be used when dry. If access is required when the area is wet, consult with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 14

Following construction at structure 790, crews would backtrack down China Gulch Road and take Slate Creek Dam Road (530) north to the ROW between structures 788 and 787, accessing structures 789-784 within the ROW. Crews would then backtrack to Slate Creek Dam Road to California Gulch Road, taking it west to a new spur road to structure 783. Crews would then backtrack to Slate Creek Dam Road following it north to Slate Creek BR.1A, following it south to the ROW and an un-named road (which turns into Silver City 270 Road), following this un-named road to Structures 781 and 782.

Construction between structures 790 and 781 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

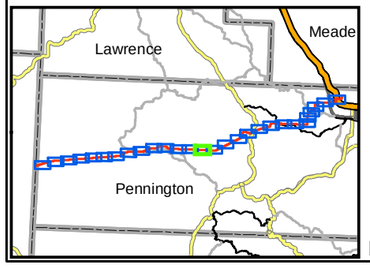
Portions of California Gulch Road and Silver City 270 Road are located in a stream buffer. These roads would only be used if dry. Any improvements to this road within the buffer would require consultation with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. A wetland and/or fen buffer is located within the ROW between structures 782 and 783. No construction or ground disturbance would be allowed in this buffer. Slate Creek Dam Road crosses several stream and wetland buffers and will be used as is. Vehicles and equipment would not leave the improved road surface in those locations.

PVT
PVT
Sec 27
Sec 26
Friday Gulch
Skull Gulch
772
773
774
775
776
777
778
779
780
781
782
T1NR4E
USFS
QUINGY
SLATE CREEK-BR-1A
ROCHFORD-07
M&C
M&C
M&C
SP
Friday Gulch
Northern Goshawk April 1-August 15
Northern Goshawk April 1-August 15

Construction Access Roads

MAJOR ROADS
- State Highway
- County Road

PRELIMINARY ACCESS ROADS
- Existing ROW/Overland Travel
- Existing road - may need improved
- Overland Travel - Outside ROW
- New Spur Road



BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

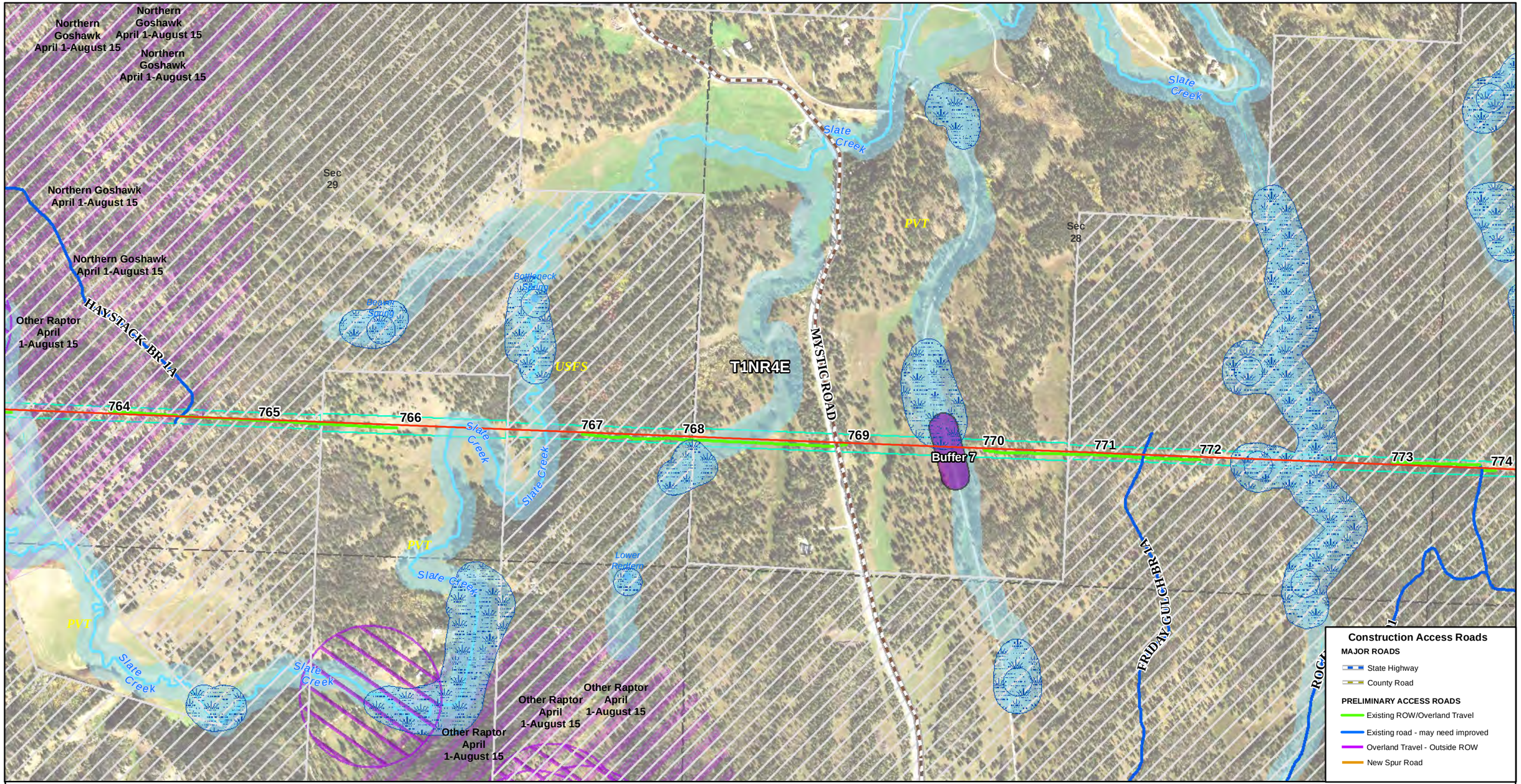
Map 15

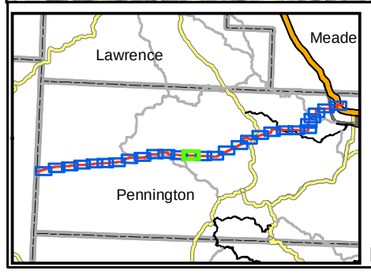
Crews would then backtrack on the un-named road, which turns into Quincy Road (530.1B), accessing structures 780-776 from this road and in the ROW. Crews would continue west on Quincy Road accessing structures 775-773 via existing spur roads.

All bat roost/mines/caves within 500 feet of construction activities will be surveyed for potential habitat prior to construction. If habitat is identified, the BHNF biologist will be contacted and coordinated with regarding spatial and timing restrictions. If a site is determined to NOT potentially provide bat habitat, then activity restrictions for that site would not apply. Surveys of potential hibernacula should be performed during the active season (April 1 – October 31) rather than the hibernation season (November 1 – March 31) so as not to disturb hibernating bats.

Construction between structures 782 and 773 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

The access road between structure 779 and 780 crosses stream and wetland buffers. This road would only be used if dry. Any improvements to this road within the buffers would require consultation with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. The ROW between structure 779 and 780 also crosses the stream and wetland buffer. No construction or ground disturbance would be allowed in this buffer. Quincy Road also crosses a stream buffer. This road would only be used if dry. Any improvements to this road within the buffers would require consultation with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 16 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 16

Following construction of structure 773, crews would backtrack to the intersection of Quincy and Rochford Road (U180001), following Rochford Road west and south to Friday Gulch BR.1A Road (643.1A), taking it north to the ROW. Crews would work east and west within the ROW to structures 772-770. Crews would then backtrack and take Friday Gulch Road to Mystic Road, following Mystic Road north to the ROW. Crews would exit Mystic Road within the ROW and access structures 769-767. Crews would backtrack to Mystic Road following it north to Haystack Road (242) following it west and south to Haystack BR.1A (242.1A) and to the ROW where crews would access structures 766-764 within the ROW.

Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structure 765 to 764.

Construction between structures 774 and 771, 768 and 767, and 765 and 764 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

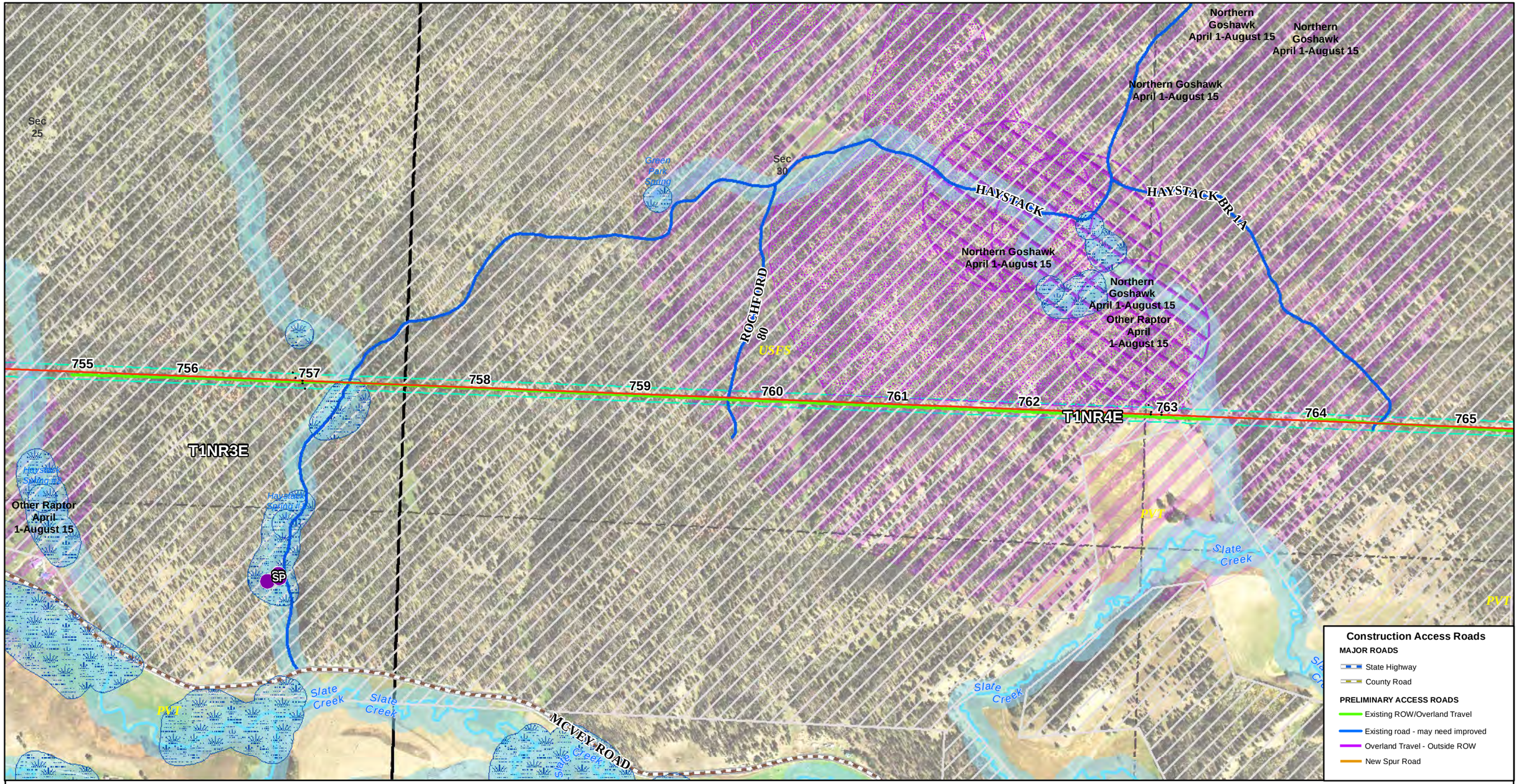
Rochford Road crosses a stream buffer. This road would only be used if dry. Any improvements to this road within the buffer would require consultation with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. The ROW between structure 772 and 773 crosses a stream and wetland buffer. No construction or ground disturbance would be allowed in this buffer. The access within the ROW between Mystic Road and structure 768 crosses a stream buffer. This road would only be used if dry. Any improvements to this road within the buffer would require consultation with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. The ROW between structure 766 and 767 also crosses a stream buffer. No construction or ground disturbance would be allowed in this buffer.

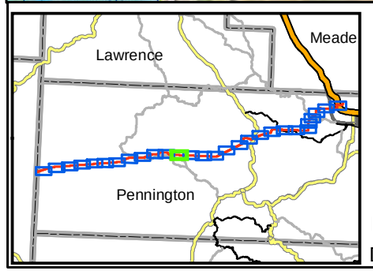
Friday Gulch BR.1A crosses cultural avoidance buffer 8 with the following mitigation measure:

Buffer 8	SD	Alpine must mark the avoidance buffer prior to work. Vehicles may use the access road through the site with the following stipulations: no road improvements within the avoidance buffer; vehicle traffic should be limited to rubber-tired vehicles; vehicles should not leave the established road; and road should not be used in conditions that may cause rutting, such as when muddy.

The ROW west of structure 770 crosses cultural avoidance buffer 7 with the following mitigation measure:

Buffer 7	SD	Alpine must mark the avoidance buffer prior to work. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within the 100-ft. (30-m) site avoidance buffer.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 17 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 17

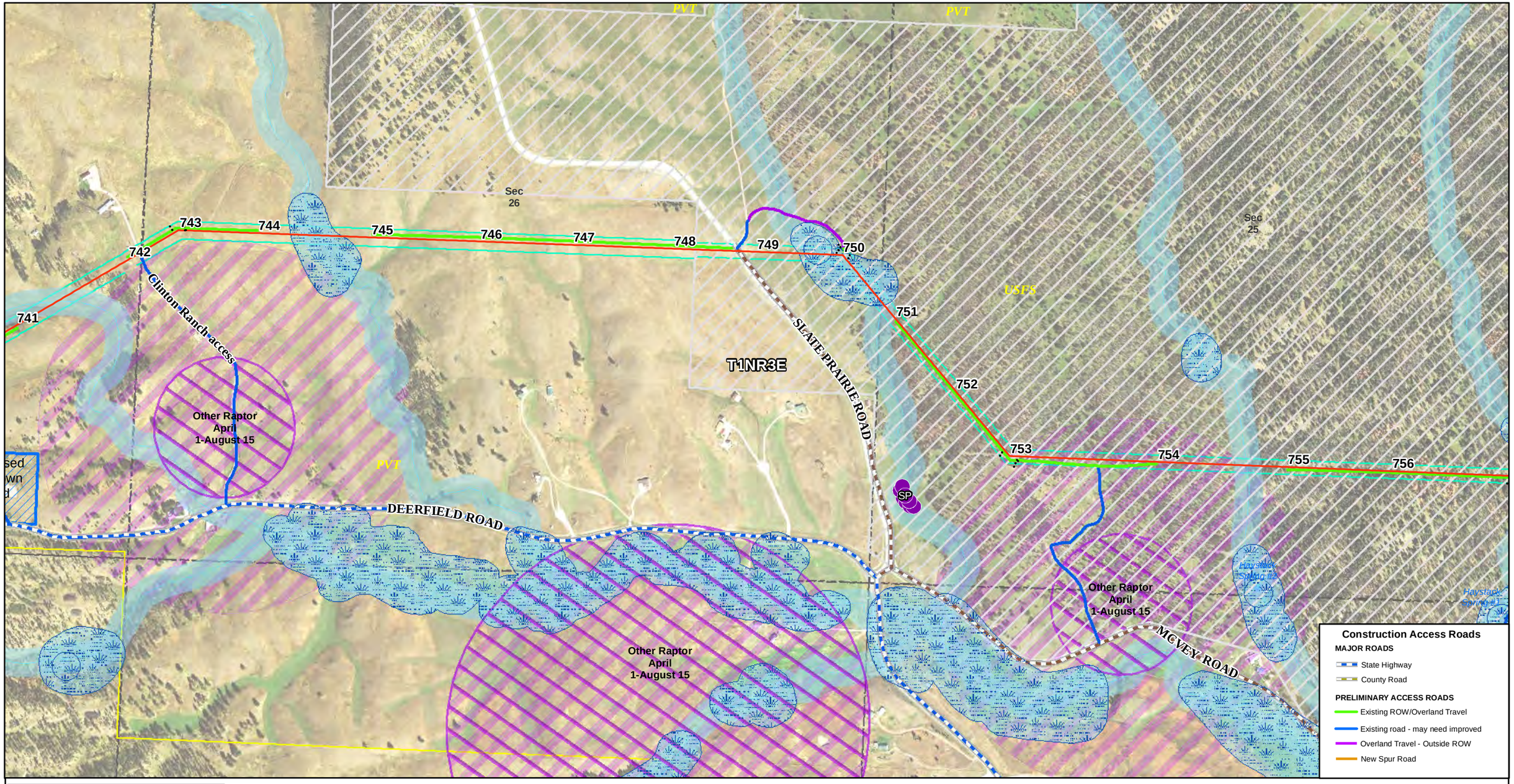
Following construction at structure 764, crews would backtrack to Haystack Road (242) following it west to Rochford 80 Road (U180080) following it south to the ROW, accessing structures 763-758 within the ROW. Crews will either continue west within the ROW or backtrack to Haystack Road, following it to the ROW and accessing structures 757-755 within the ROW.

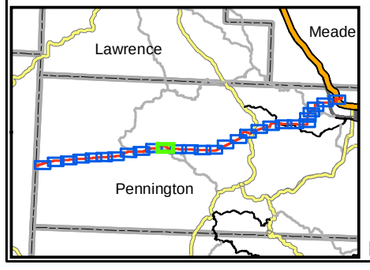
Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structure 765 to 760.

Construction between structures 764 and 755 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

Haystack Road crosses several stream and wetland buffers. All vehicles and construction equipment shall stay on the improved road surfaces in these locations. These roads would only be used if dry within the buffers. Any improvements to this road within the buffer would require consultation with the BHNF Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above.

Sensitive plants are located adjacent to Haystack Road. All vehicles and construction equipment shall stay on the improved road surfaces in this location.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 18

Following construction at structure 755, crews would then backtrack to Haystack Road and follow it south to McVey Road, taking McVey Road west to an un-named access road on the north accessing structures 754-751 within the ROW. Crews would then backtrack to McVey Road and continue west to Slate Prairie Road, travelling north to the ROW. Crews would leave Slate Prairie Road near structure 749, travelling overland to the east, avoiding a wetland and accessing structure 750. Crews would then backtrack to Slate Prairie Road and access structures 748-745 within the ROW. Crews would backtrack to Deerfield Road, taking it west to an existing road on private property, using it to access the ROW and structures 744-742 within the ROW.

Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structure 755 to 753.

Construction between structures 755 and 749 would be subject to big game winter range timing restrictions. No construction or road construction between 12/15 and 5/15.

The ROW between structure 754 and 755 crosses a stream and wetland buffer. No construction or ground disturbance would be allowed in this buffer. The access to structure 750 was modified to avoid a spring and wetland buffer. The access would cross a stream buffer. Prior to crossing the buffer, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. Due to engineering constraints, portions of structure 750 would be located within the stream and wetland buffer. Prior to construction beginning, erosion and sediment control measures including but not limited to silt fence would be installed downslope of the construction area to prevent sediment from reaching the wetland or stream. Additional BMPs described in sections 1-14 above relating to work near streams and wetlands and reclamation will also be utilized to ensure there will be no adverse impact to these resources. A wetland buffer exists between structures 744 and 745. No construction or ground disturbance would be allowed in this buffer.

Sec 28

Sec 27

PVT

USFS

PVT

T1NR3E

DEERFIELD 86

734

735

736

737

738

739

740

741

742

743

744

745

733

732

731

730

Dutchman Spring

Durchman Creek

Clinton Ranch access

Other Raptor April 1-August 15

Other Raptor April 1-August 15

Proposed Laydown Yard

DEERFIELD ROAD

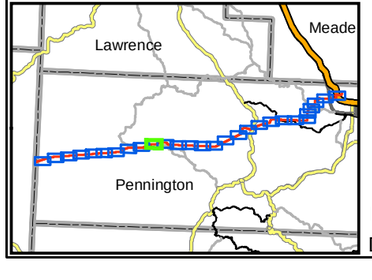
Construction Access Roads

MAJOR ROADS

- State Highway
- County Road

PRELIMINARY ACCESS ROADS

- Existing ROW/Overland Travel
- Existing road - may need improved
- Overland Travel - Outside ROW
- New Spur Road



BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 19 of 28
Date: 4/22/2016

Mitigation Areas

- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission

- Project centerline and structure number/location

WETLAND

- Wetlands and Fens -100 foot buffer
- Springs

STREAMS

- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

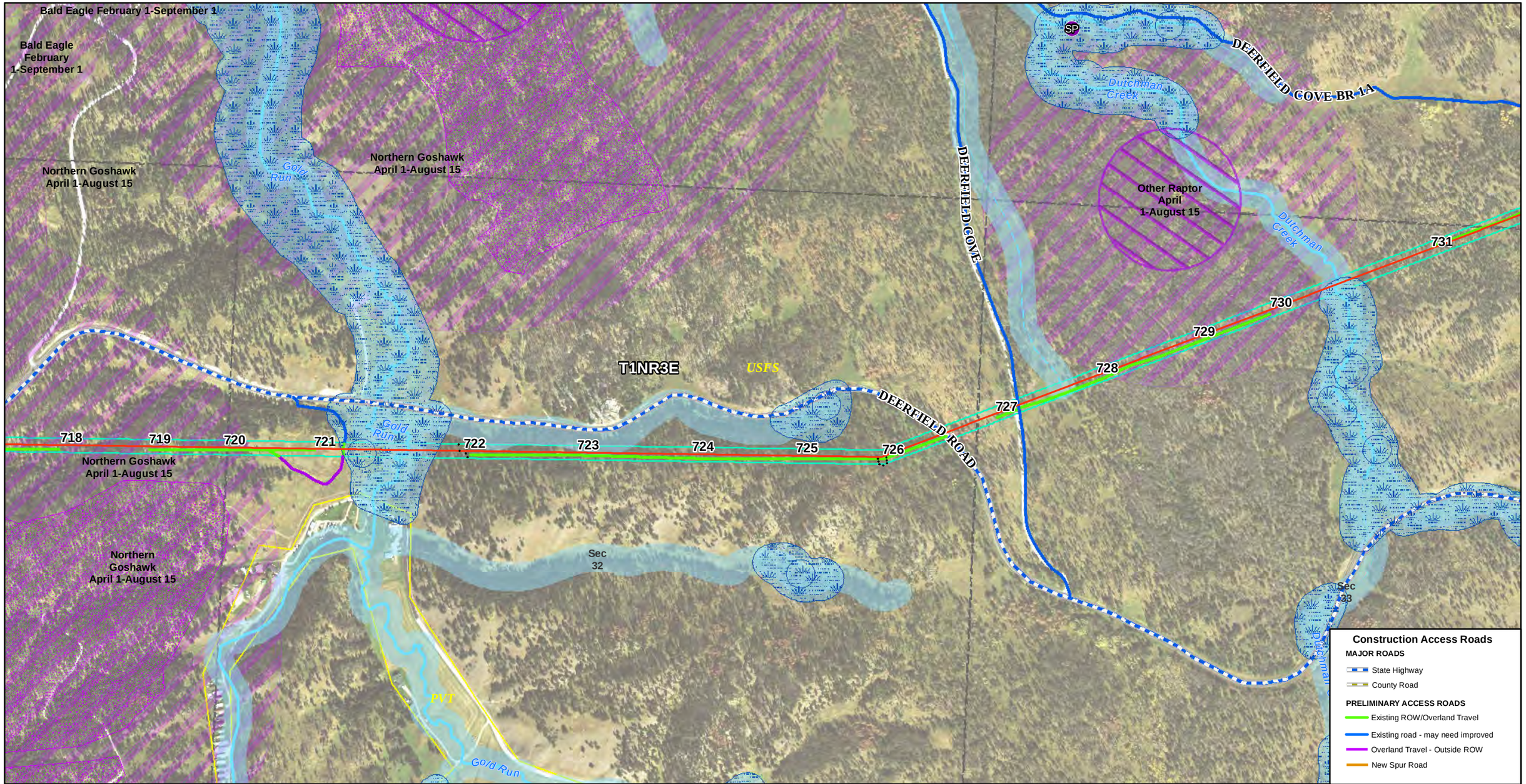
Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

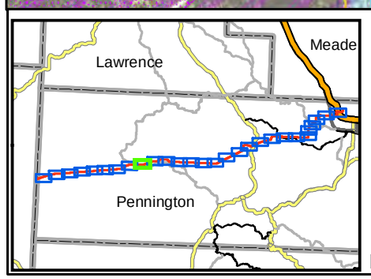
Map 19

Following construction at structure 742, crews would backtrack to Deerfield Road and travel west to the Clinton laydown yard located on private property. From the laydown yard, crews would travel overland to the ROW, accessing structures 741-738 within the ROW. Crews would then backtrack to Deerfield Road and travel west to Deerfield Cove Road (607), following it north to Deerfield Cove BR 1A Road (607.1A) and Deerfield 86 Road (U170086). A small spur road would be utilized to access the ROW and structures 733-731. Deerfield 86 Road then enters the ROW and crews would access structures 737-734 within the ROW.

Sensitive plants are located adjacent to Deerfield Cove Road BR 1A. All vehicles and construction equipment shall stay on the improved road surfaces in this location.

A stream buffer exists between structure 741 and 742. Vehicles and equipment will not cross this buffer. The ROW crosses a wetland and stream buffer between structure 737 and 739. Structure 738 is located on the southern edge of the wetland buffer. Prior to crossing the buffer and constructing structure 738, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. Prior to construction beginning, erosion and sediment control measures including but not limited to silt fence would be installed downslope of the construction area to prevent sediment from reaching the wetland or stream. Additional BMPs described in sections 1-14 above relating to work near streams and wetlands and reclamation will also be utilized to ensure there will be no adverse impact to these resources. A wetland and stream buffer is located between structure 730 and 731. Vehicles and equipment will not cross this buffer.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 20 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

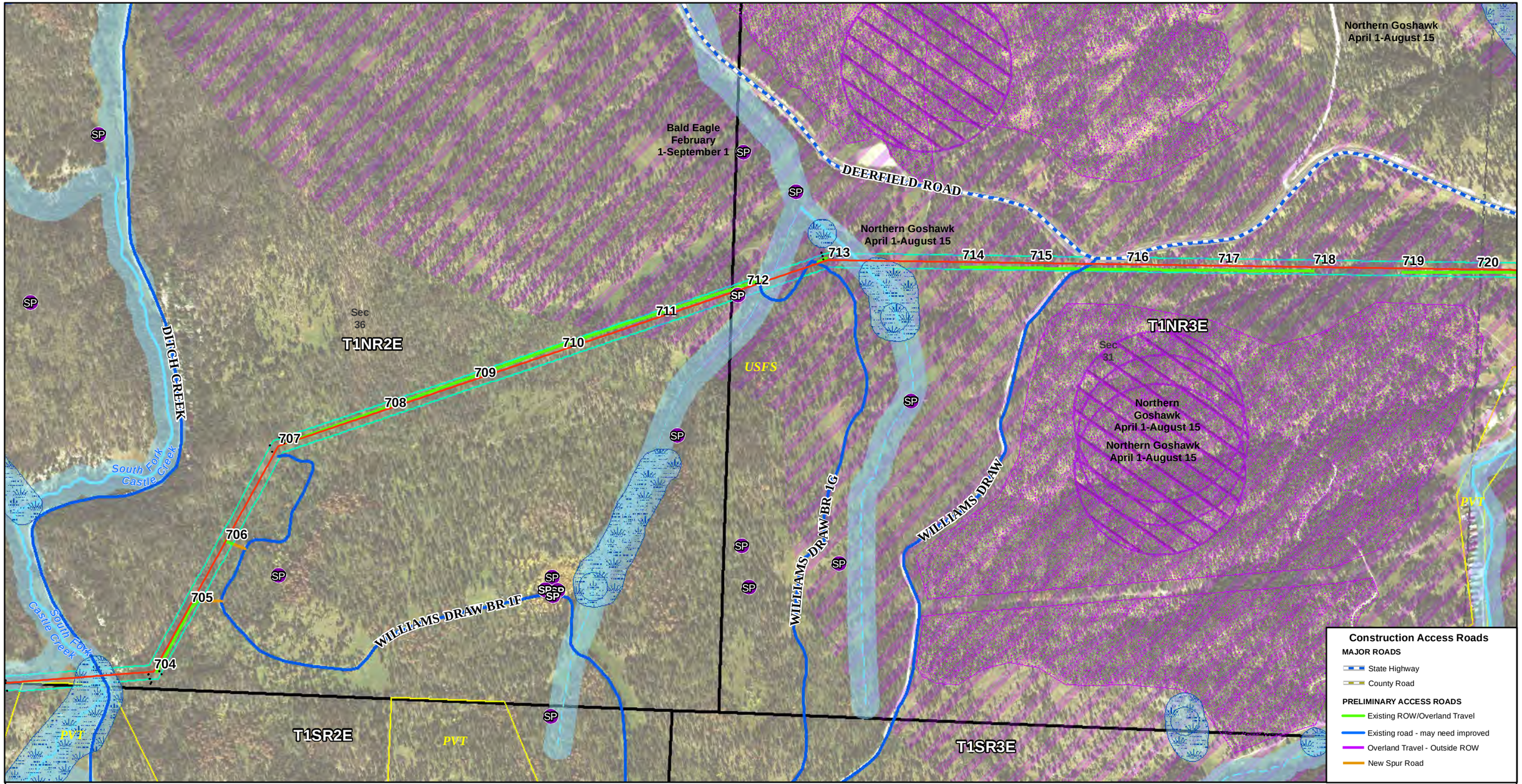
Map 20

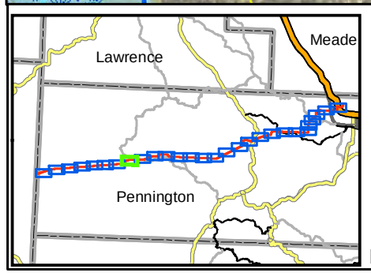
Crews would backtrack to Deerfield Cove Road (607) and access the ROW near structure 727, accessing structures 730-728 within the ROW to the east and structure 727 to the west. Crews would then backtrack to Deerfield road travelling west to the ROW. Crews would enter the ROW from Deerfield Road accessing structures 726-722 within the ROW. Crews would then backtrack to Deerfield Road travelling west to an existing two track north of structure 721. Crews would use this two track to access the ROW and structures 721-719.

Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structure 731 to 728 and 721-719.

Sensitive plants are located adjacent to 607.1A Deerfield Cove BR 1A Road. All vehicles and construction equipment shall stay on the improved road surface in this location.

Stream and wetland buffers are located adjacent to 607.1A Deerfield Cove BR 1A Road. All vehicles and construction equipment shall stay on the improved road surface in this location. A wetland and stream buffer is located between structure 721 and 722. A portion of an existing access road to structure 721 that crosses the western edge of the buffer may need to be improved for use. Prior to crossing the buffer, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. Prior to construction beginning, erosion and sediment control measures including but not limited to silt fence would be installed downslope of the construction area to prevent sediment from reaching the wetland or stream. Additional BMPs described in sections 1-14 above relating to work near streams and wetlands and reclamation will also be utilized to ensure there will be no adverse impact to these resources.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 21 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

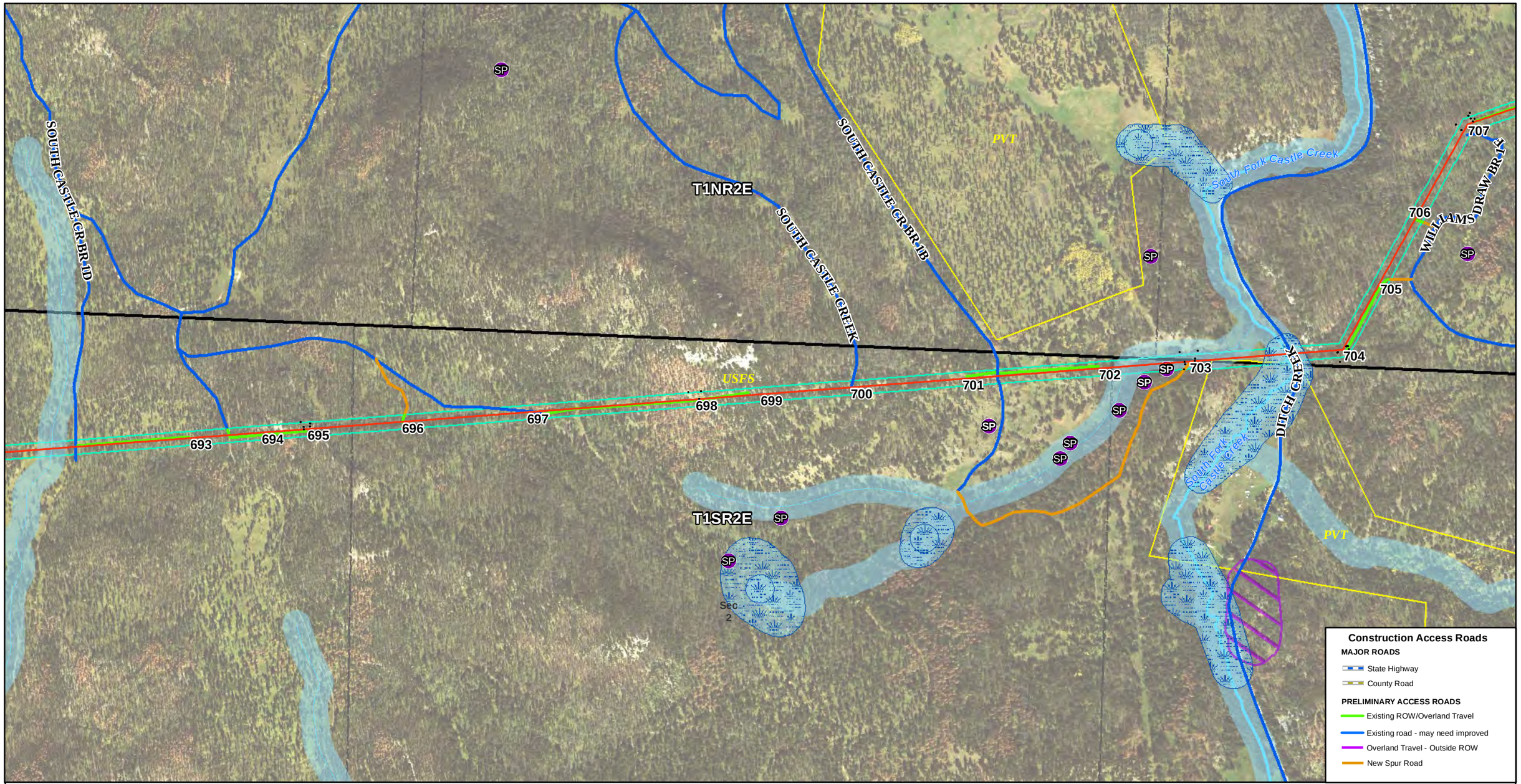
Map 21

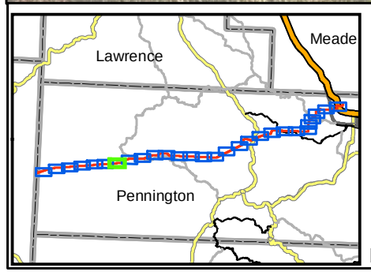
Following construction at structure 719, crews would backtrack to Deerfield Road travelling west to Williams Draw Road (691). Crews would access the ROW from Williams Draw Road and work east to structures 719-716 and west to structures 715-714. Crews would then backtrack to Williams Draw Road travelling south to Williams Draw BR 1G Road (691.1G), taking this existing road to structures 713 and 712 and continuing down the ROW to structures 712-707. At structure 707, crews would use Williams Draw BR 1F Road (691.1F) following it south where small spur roads would be used to access 706 and 705, and accessing structure 704 within the ROW

Construction would not be allowed between April 1 and August 15 in the following locations without prior approval from the BHNF biologist: structure 719-711.

Sensitive plants are located adjacent to Williams Draw Road. All vehicles and construction equipment shall stay on the improved road surfaces in this location. Sensitive plants also occur within the ROW between structures 711 and 712. These plants will be flagged and avoided if possible. If they cannot be avoided, equipment shall only enter when soils are dry or frozen. The contractor will consult with the USFS botanist prior to construction in this area.

A wetland and stream buffer is located between structure 713 and 714. Vehicles and equipment will not cross this buffer. The existing access road to structure 712 as well as the existing access road to structure 707 cross a stream buffer. If improvements to these roads are required for construction, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. Prior to construction beginning, erosion and sediment control measures including but not limited to silt fence would be installed downslope of the construction area to prevent sediment from reaching the wetland or stream. Additional BMPs described in sections 1-14 above relating to work near streams and wetlands and reclamation will also be utilized to ensure there will be no adverse impact to these resources.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 22 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

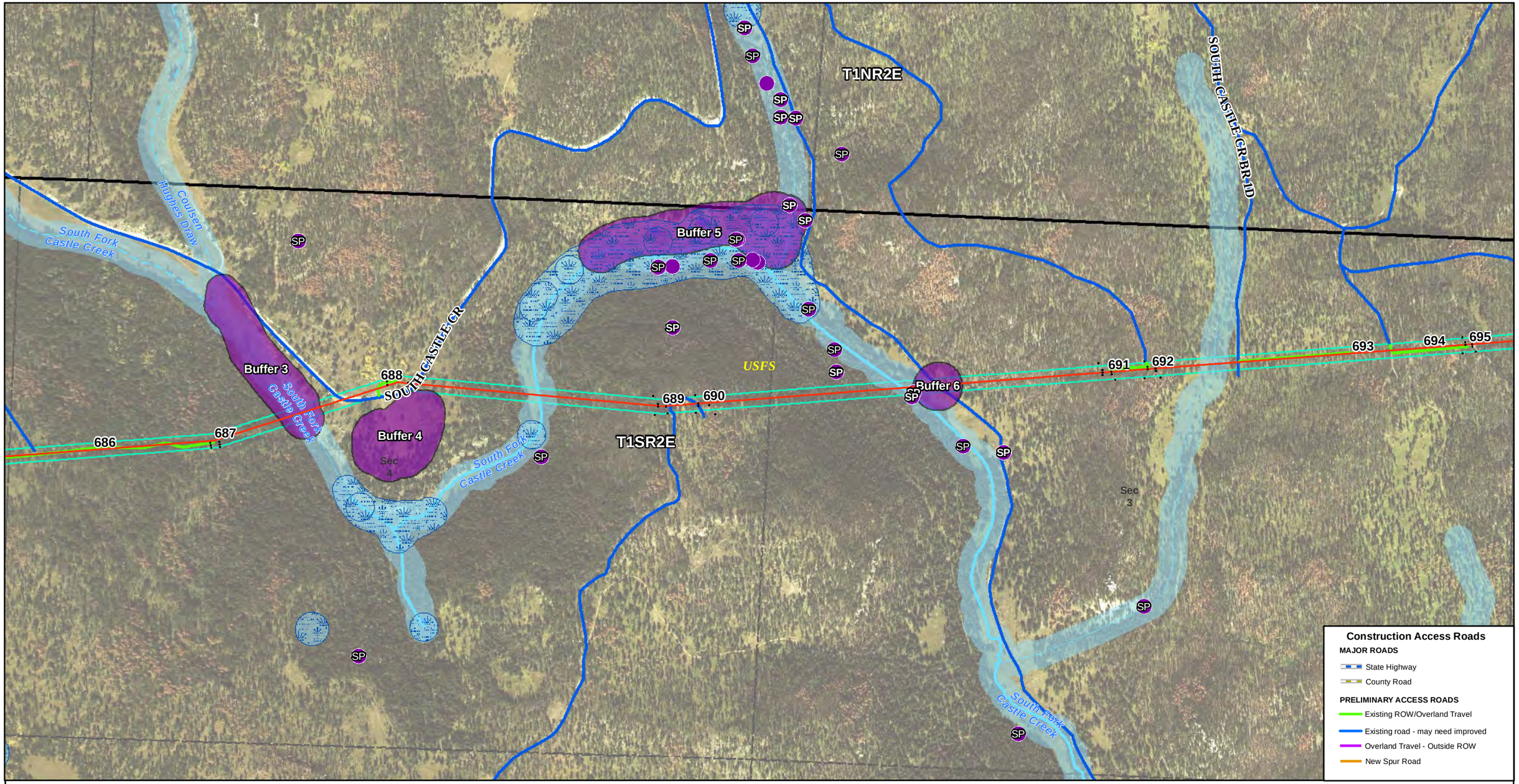
Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

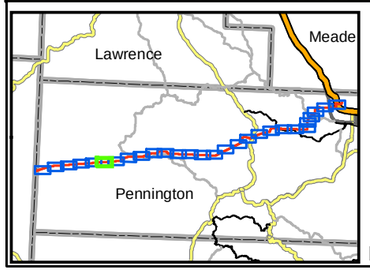
Map 22

Following construction at structure 704, crews would backtrack on Williams Draw BR 1F Road to Williams Draw Road to Deerfield Road continuing west on Deerfield Road to Ditch Creek Road exiting Ditch Creek Road onto South Castle Creek Road (294). Travelling south on South castle Creek Road, crews would turn south onto South Castle Creek BR 1B Road (294.1B) following it to the ROW. Crews would access structures 701 and 702 within the ROW and utilize a new spur road to access structure 703. Crews would then backtrack on South Castle Creek BR 1B Road to an existing un-named road connecting to South Castle Creek Road (294.1I), following it to the ROW at structure 700. Crews would then backtrack to an existing un-named road using it to access the ROW and structures 699-696. Crews would then backtrack to another existing un-named road to access the ROW and structures 695-694. Crews would then backtrack and take another existing un-named road north to South Castle Creek BR 1D Road (294.1D), taking it south to the ROW. Crews would access structure 693 within the ROW.

Sensitive plants are located adjacent to South Castle Creek BR 1B Road and the spur road to structure 703. All vehicles and construction equipment shall stay on the improved road surfaces and spur road in these locations. Sensitive plants also occur within the ROW between structures 702 and 703. These plants will be flagged and avoided. No equipment will enter the flagged plant buffer. If tree removal for conductor clearance is required, trees will be felled on foot with chainsaws and left on the ground. The contractor will consult with the USFS botanist prior to construction in this area.

A wetland and stream buffer is located between structure 703 and 704. Vehicles and equipment will not cross this buffer. The new access road to structure 703 crosses a stream buffer. Due to engineering constraints, structure 703 is located within a stream buffer. Prior to crossing the buffer, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. Prior to construction beginning, erosion and sediment control measures including but not limited to silt fence would be installed downslope of the construction area to prevent sediment from reaching the wetland or stream. Additional BMPs described in sections 1-14 above relating to work near streams and wetlands and reclamation will also be utilized to ensure there will be no adverse impact to these resources.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 23

Crews would then backtrack north on South Castle Creek BR 1D Road to South Castle Creek Road (294), taking it west to Preacher Spring 89 Road (U220089). Crews would travel south on Preacher Spring 89 Road, Pole Creek BR 1A Road, Pole Creek Road (385), Ditch Creek Road (291.4), Six Mile Road (301), South Pole Creek Road (593), South Pole Creek BR 1E (593.1E), and Preacher Spring 88 Road (U220089) to access the ROW and structures 690 and 689 (the portion of Preacher Spring 89 Road between its intersection of Pole Creek BR 1A Road and structure 690 is to be completely avoided by construction activities). Crews would then backtrack the way they came in ending up at South Castle Creek Road. Crews would travel west on South Castle Creek Road to the ROW and structure 688. Crews would then continue west on South Castle Creek Road to Duck Lake Road (294.2C), taking it south to the ROW and Powerline CZ-5001 Road (451). Once on Powerline Road, crews would travel east to structure 687 and 686.

Pole Creek BR.1A Road crosses cultural avoidance buffer 6 with the following mitigation measure:

Buffer 6	SD	Alpine must mark the avoidance buffer prior to work. No structures, grading, vegetation clearing, or other disturbances within the 100-ft. (30-m) site avoidance buffer. Vehicles may use the access road through the site with the following stipulations: no road improvements within the avoidance buffer; vehicle traffic should be limited to rubber-tired vehicles; vehicles should not leave the established road; and road should not be used in conditions that may cause rutting, such as when wet. The proposed decking or staging area should not be used.

Cultural buffer 4 is located south of structure 688 and south of South Castle Creek Road with the following mitigation measure:

Buffer 4	SD	Alpine must mark the avoidance buffer prior to work. The structure location north of South Castle Creek Road (FR 294) should be used and all project work should be limited to the areas north of the road. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within the 100-ft. (30-m) site avoidance buffer. Vehicles may travel along South Castle Creek road without restriction. The proposed staging area in this location should not be used.

The project ROW crosses cultural buffer 3 with the following mitigation measure:

Buffer 3	SD	Alpine must mark the avoidance buffer prior to work. No structures, vehicle traffic, grading, vegetation clearing, or other disturbances within the 100-ft. (30-m) site avoidance buffer.

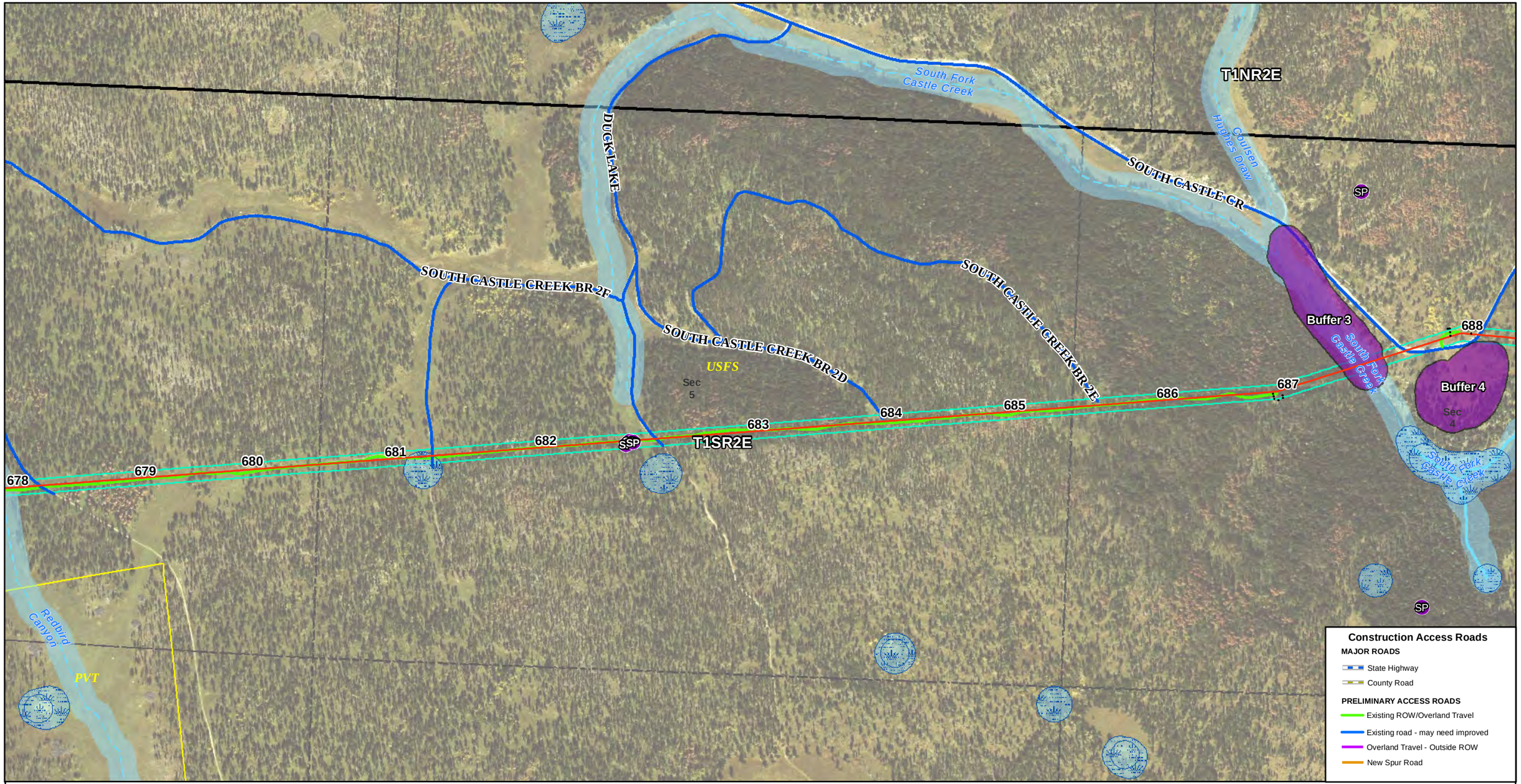
It is anticipated that cultural buffer 5 will be avoided. If the road is needed for access to structures 689 and 690, the following mitigation measure would apply:

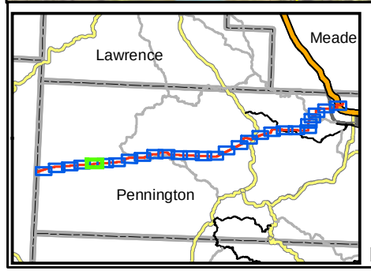
Buffer 5	SD	Alpine must mark the avoidance buffer prior to work and must monitor installation and removal of fill or matting. Vehicles may use the access road through the site with the following stipulations: no road improvements within the 100-ft. (30-m) avoidance buffer; vehicle traffic should be limited to rubber-tired vehicles; vehicles should not leave the established road; the road should not be used in conditions that may cause rutting, such as when muddy, and the easternmost 500 ft. of the road through the site must be covered with protective Geotextile fabric and fill dirt or ground-protection matting. Matting must be approved by the BHNF.

Sensitive plants are located adjacent to Pole Creek BR 1A and Preacher Spring 89 Roads. All vehicles and construction equipment shall stay on the improved road surfaces in this location. Sensitive plants also occur within the ROW between structures 690 and 691. These plants will likely be spanned and will be flagged for avoidance.

Stream buffers are located adjacent to South Castle Creek Road and Pole Creek BR 1A Road, and Preacher Spring 89 Road. All vehicles and construction equipment shall stay on the improved road surface of these roads. Prior to construction in this area, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above. Prior to construction beginning, erosion and sediment control measures including but not limited to silt fence would be installed downslope of the construction area to prevent sediment from reaching the wetland or stream. Additional BMPs described in sections 1-14 above relating to work near streams and wetlands and reclamation will also be utilized to ensure there will be no adverse impact to these resources. A stream buffer exists between structure 692 and 693. Vehicles and equipment will not cross this buffer.

Slopes over 40% exist between structure 688 and 691. Construction vehicles and equipment will not travel the ROW between these structures.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 24 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

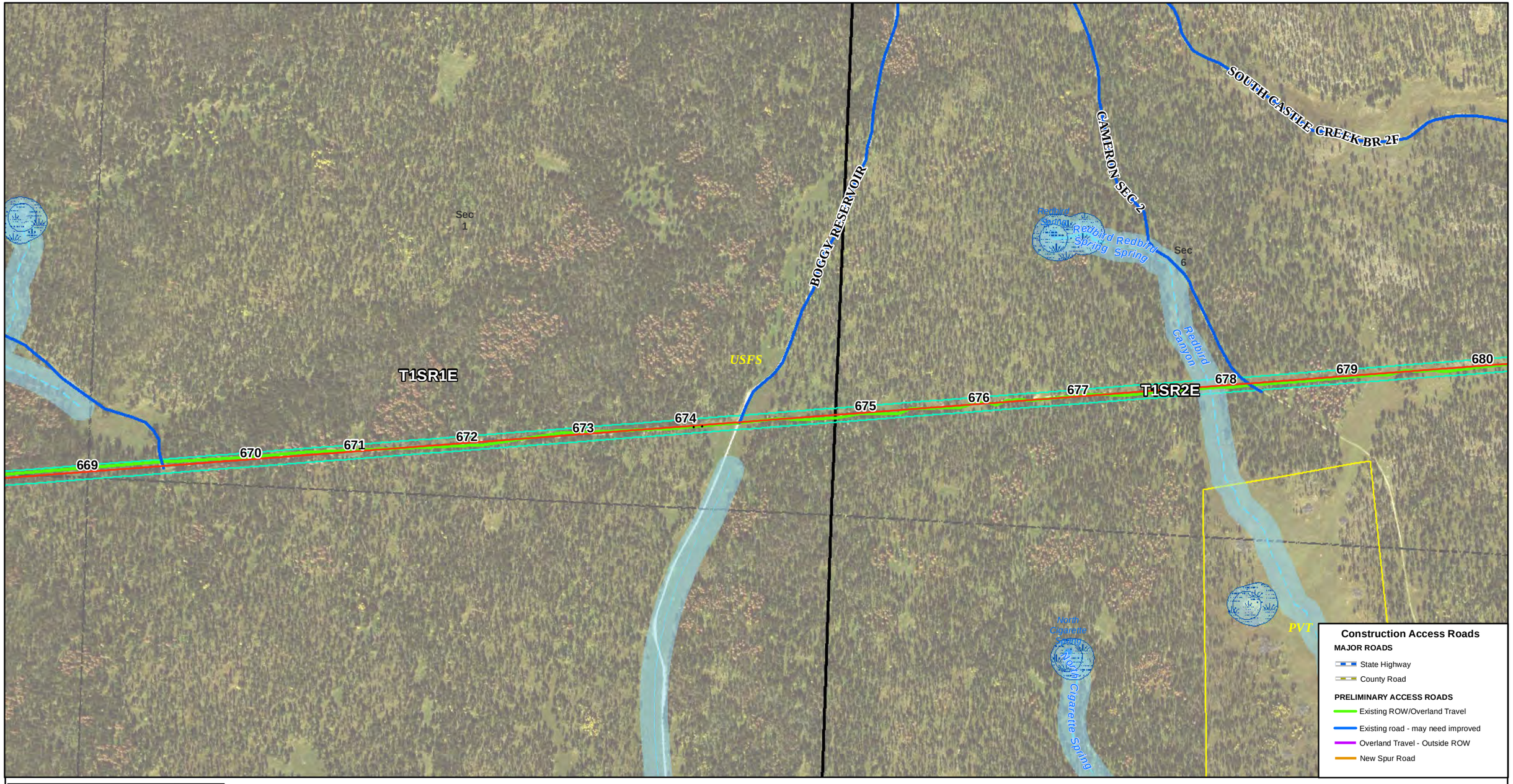
Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

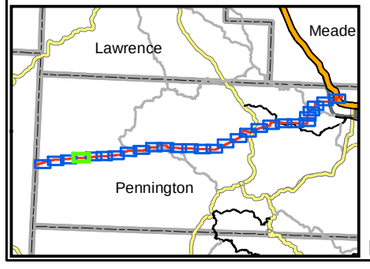
Map 24

Following construction at structure 686, crews would travel west on Powerline CZ Road within the ROW accessing structures 685-679.

Sensitive plants occur within the ROW between structures 682 and 683. These plants will be flagged and avoided if possible. If they cannot be avoided, equipment shall only enter when soils are dry or frozen.

A stream buffer is located adjacent to South Castle Creek Road. All vehicles and construction equipment shall stay on the improved road surface of this road. Stream buffers are also located adjacent to Duck Lake Road and South castle creek BR 2F. If these roads are used for construction, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream buffer crossing and utilize applicable BMPs as described in sections 1-14 above.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 25 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

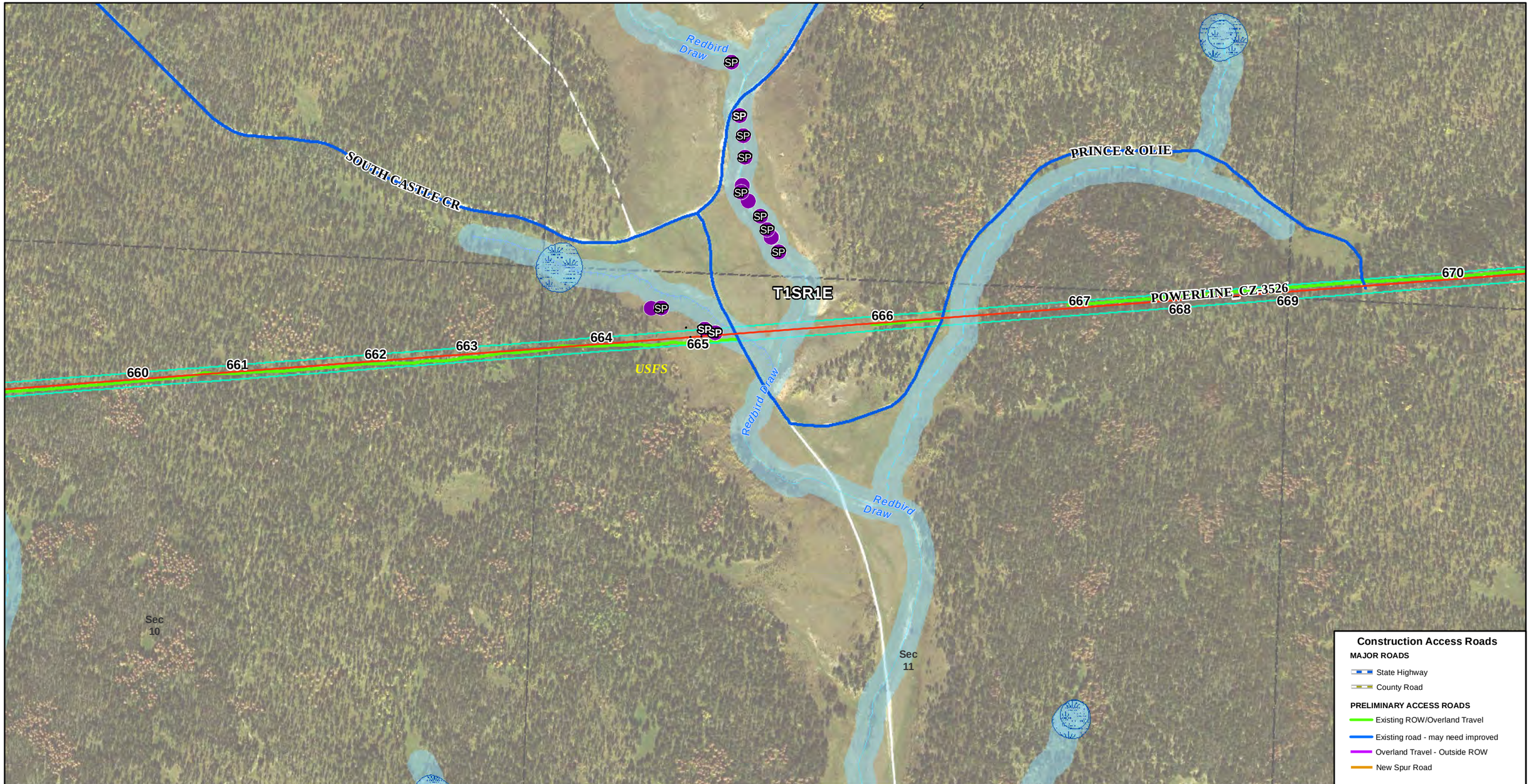
Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

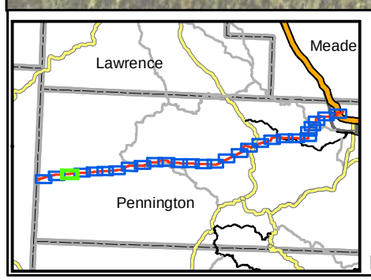
Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 25

Following construction at structure 679, crews would continue west on Powerline CZ Road within the ROW accessing structures 678-669.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Page 26 of 28
Date: 4/22/2016

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

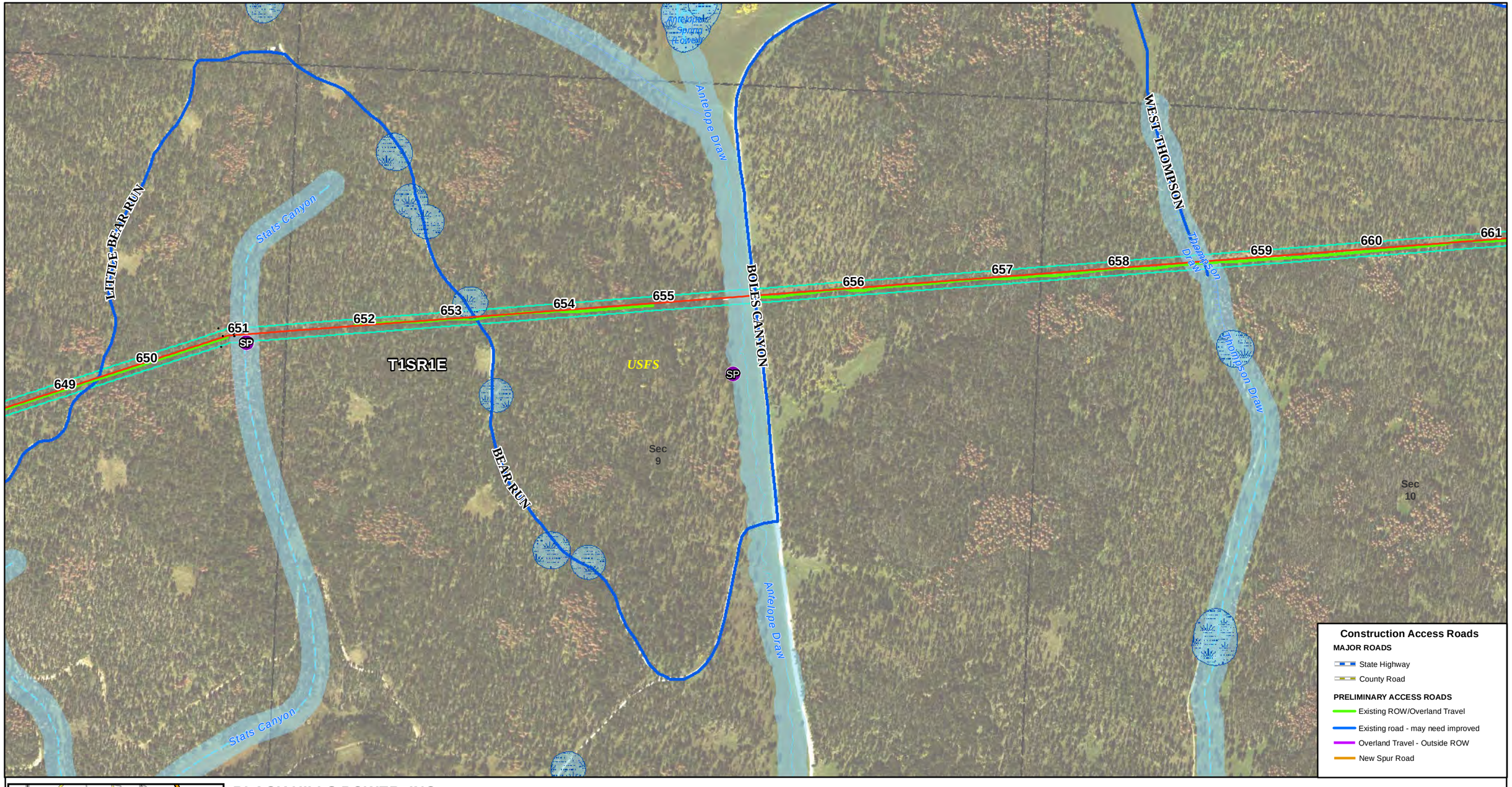
Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

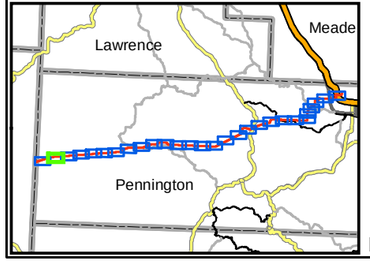
Map 26

Following construction at structure 669, crews would continue west on Powerline CZ Road accessing structures 668 and 667. Crews would then backtrack to Prince and Olie Road (384.1D), taking it west to its intersection with the ROW where crews would access structure 666 then continue on Prince and Olie Road to Briggs Spring Road (384) heading north to its intersection with the ROW. Crews would exit Briggs Spring Road onto Powerline Road within the ROW working west to structures 665-660.

Sensitive plants occur within the ROW near structure 665. These plants will be flagged and avoided if possible. If they cannot be avoided, equipment shall only enter when soils are dry or frozen. Sensitive plants are located adjacent to South Castle Creek Road. All vehicles and construction equipment shall stay on the improved road surface of these roads.

South Castle Creek and Briggs Spring Road cross several stream buffers. All vehicles and construction equipment shall stay on the improved road surface of these roads.





BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 27

Crews would continue west on Powerline Road within the ROW to structure 656, then continue west to Boles Canyon (117.1) taking it south to Bear Run Road (114) following it north to the ROW and Powerline Road. Crews would work east to structures 655 and 654, and then work west to structures 653 and 652. Crews would then backtrack to Bear Run Road taking it west to its intersection with the ROW. Crews would work east to structures 651 and 650 then west to structures 648 and 649 within the ROW.

Sensitive plants occur near the edge of the ROW near structure 651. These plants will be flagged and avoided.

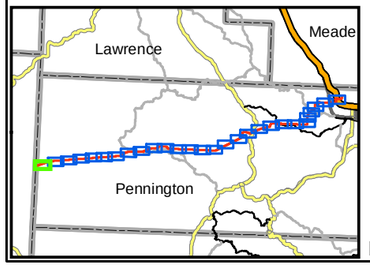
A stream buffer is located adjacent to Boles Canyon Road. All vehicles and construction equipment shall stay on the improved road surface of these roads. Bear Run Road crosses a stream buffer and several wetland buffers. Prior to construction in this area, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for each stream and wetland buffer crossing and utilize applicable BMPs as described in sections 1-14 above.

WYOMING
SOUTH DAKOTA
Sec 7
Sec 8
Little Bear Run
LITTLE BEAR RUN BR 1A
LITTLE BEAR RUV
T1SR1E
USFS
640
641
642
643
644
645
646
647
648
649
650
651
Stats Canyon
Stats Canyon
Stats Canyon

Construction Access Roads

MAJOR ROADS
- State Highway
- County Road

PRELIMINARY ACCESS ROADS
- Existing ROW/Overland Travel
- Existing road - may need improved
- Overland Travel - Outside ROW
- New Spur Road



BLACK HILLS POWER, INC.

TECKLA-OSAGE-LANGE
230 kV TRANSMISSION LINE

LANGE TO SOUTH DAKOTA BORDER
ACCESS ROADS AND MITIGATION RESTRICTIONS
PENNINGTON COUNTY, SOUTH DAKOTA

Scale 1 to 8,000

0 250 500 1,000 1,500 2,000 Feet

Mitigation Areas
- Areas requiring additional mitigation restrictions.
- BHNF Big Game Winter Range - MA 5.4 (closed to construction 12/15 - 5/15)
- BHNF Big Horn Sheep Lambing Areas (closed to construction 4/1 - 6/15)
- M&C Mines and Caves
- B R Bat Roosts
- SP Sensitive Plants

Transmission
- Project centerline and structure number/location

WETLAND
- Wetlands and Fens -100 foot buffer
- Springs

STREAMS
- Perennial
- Intermittent
- Ephemeral
- Swale
- 100 foot stream buffer

Notes:

Ground disturbance would be prohibited within 100 feet of surface water and/or riparian areas unless or until a permittee or his designated representative and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation would occur prior to development.

Prior to construction, active raptor nests would be identified within the analysis area. Nests would be avoided while active. Timing and disturbance buffers would be maintained around identified nests of raptor SOLC and sensitive species using USFWS-recommended spatial and temporal buffers for construction-related activities.

Date: 4/22/2016

Document Path: R:\117390-BlackHills\DD\GIS\Apps\2014\Mitigation Restrictions 2015\South Dakota Border to Lange-Access Roads and Mitigation Restrictions 4-22-2016.mxd

Map 28

Crews would then backtrack to Little Bear Run (115) following it west a little over 0.5 mile where a new spur road would be needed to access structure 646. Following construction at structure 645, crews would backtrack to Little Bear Run Road and follow it west to its intersection with the ROW and work east to 644 and west to structure 643 within the ROW. Crews would backtrack to Little Bear Run Road and continue west to Little Bear Run BR 1A (115.1A) taking it east to structure 645, then continue east on Little Bear Run BR 1A to the ROW near structure 647, accessing structure 647 from the ROW. Crews would then backtrack on Little Bear Run BR 1A to Little Bear Run Road and continue west to an existing un-named road leading to structure 641 and then access structure 642 within the ROW.

Little Bear Run road will be used to access structure 647. This existing road crosses a wetland buffer. Prior to crossing the buffer, the contractor would consult with the BHNF/MYRD Hydrologist to identify the necessary site-specific design requirements for this buffer crossing and utilize applicable BMPs as described in sections 1-14 above.