BUREAU OF RECLAMATION

Lake Powell Pipeline Project
Appendix E: Plan of Development

Coconino and Mohave Counties, Arizona
Kane and Washington Counties, Utah

U.S. Department of the Interior June 2020

Lake Powell Pipeline Project
Plan of Development

April 2020

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Abbreviations & Acronyms

Act	Lake Powell Pipeline Development Act
ADEQ	Arizona Department of Environmental Quality
AGFD	Arizona Game and Fish Department
BLM	Bureau of Land Management
BMP	best management practice
BPS	booster pump station
cfs	cubic feet per second
CI	Compliance Inspector
CIC	Compliance Inspector Contractor
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
HCP	Habitat Conservation Plan
HS	hydro station
HVAC	heating, ventilation, and air conditioning
kV	kilovolt
LPP	Lake Powell Pipeline
MSL	mean sea level
MVA	megavolt-amp
MW	megawatt
NPS	National Park Service
OSHA	Occupational Safety and Health Administration
POD	Plan of Development
PUP	Pesticide Use Proposal
Reclamation	U.S. Bureau of Reclamation
ROW	right-of-way
SCADA	Supervisory Control and Data Acquisition
SGFO	St. George Field Office
SITLA	Utah School and Institutional Trust Lands Administration
SPCC	Spill Prevention, Control and Countermeasure
SWPPP	Storm Water Pollution Prevention Plan
UBWR	Utah Board of Water Resources
UDEQ	Utah Department of Environmental Quality
UDWRe	Utah Division of Water Resources
WCWCD	Washington County Water Conservancy District

Chapter 1 Purpose and Need

The Utah Board of Water Resources (UBWR) proposes building and operating the Lake Powell Pipeline Project (LPP), a water conveyance system spanning from Lake Powell's Glen Canyon Dam in Page, Arizona, to water storage facilities near St. George, Utah. LPP involves construction and operation activities on Federal lands in both Utah and Arizona and will involve review by multiple Federal agencies.

The LPP will supply up to 86,249 acre-feet of existing Colorado River water rights to Washington County in order to meet the existing and future water needs of a growing population, while diversifying the regional water supply portfolio and enhancing its reliability.

The UBWR, pursuant to the Lake Powell Pipeline Development Act (Act), proposes to hold all federal, state and local authorizations, own the LPP facilities not otherwise owned by another party as a result of regulatory requirements, and oversee operation of the LPP with the assistance of the Utah Division of Water Resources (UDWRe) and sponsoring water conservancy districts. The LPP meets the following UBWR needs:

- The development of additional water supplies legally available from the Colorado River system to assist in meeting the water demands of the existing and projected future population of Washington County through 2060, with a necessary margin of safety, while simultaneously maximizing the use of existing available and identified water supplies.
- Diversification of the primary Municipal and Industrial (M&I) water sources for the County, adding necessary resiliency and reliability to the water delivery system given the risks of variability associated with both water supplies and water supply delivery systems.

Based on projected population growth in the region, water demands will exceed existing supplies, resulting in water shortages (Lake Powell Pipeline, Study Report 19, Final Water Needs Assessment, 2016). The UBWR identified Utah's Colorado River allocation as the best source to meet rising water demands, while also providing needed source diversity to the regional water portfolio. Risks associated with infrastructure failure and climate variability in the region underscore the need for the project. Conservation efforts in the region have significantly reduced per capita water use, and continued efforts are predicted to further reduce per capita use between now and 2060. However, conservation alone will not be adequate to meet existing and future demands and will not reduce supply and delivery risks.

1.1 Purpose and Need for BLM ROW

Implementation of LPP will involve access to and use of lands and resources administered by the Bureau of Land Management (BLM) (see Appendix A). Under the laws applied by the BLM, the agency must determine whether the LPP satisfies the requirements of those laws, whether to authorize the LPP, and if so, under what terms and conditions. The need for BLM action arises from its responsibility under the Federal Land Policy and Management Act (FLPMA) of 1976 and other laws to respond to the UBWR's right-of-way (ROW) request. The BLM's multiple-use mission includes managing activities on federal land such as ROW authorizations, while conserving natural, historical, cultural, and other resources in accordance with federal laws and BLM policies, guidance and management plans. A ROW for the LPP and associated pumping and energy facilities requires formal authorization and will contain management conditions to preserve public land resources.

The proposed LPP will be located in southwestern Utah and north western Arizona (see inset on Figure 1-1). UDWRe, agent for the UBWR, has submitted a ROW application to the BLM to construct, operate

and maintain the LPP on lands administered by the BLM. The UDWRe is also in the process of applying for ROW grants and other permits to other federal agencies, state agencies, and local jurisdictions.

The BLM ROWs requested for the LPP encompass approximately 2,127 acres for water conveyance and hydroelectric power generation facilities including subsurface pipelines, a pumping station, a regulating tank, hydroelectric inline stations, water tunnels, a water shaft, power transmission lines, and electrical switchyards and substations.

The State understands that there may be separate ROW grants issued by the BLM for the pipeline and associated facilities and for the transmission lines (see B.1.3. in Appendix B).

The purpose of this Plan of Development (POD) document is to describe the specific proposed LPP features and facilities, identify the BLM ROW grants requested for the pipeline and associated pumping and energy facilities in both Arizona and Utah, describe the LPP construction, operation and maintenance, and termination, and present the UDWRe's area of potential effects maps and proposed environmental resource protection measures. Other Department of the Interior agencies, such as National Park Service (NPS) and Bureau of Reclamation (Reclamation), may also use this POD in evaluating LPP ROW applications.

1.2 Overview of the LPP

The LPP consists of roughly 141 miles of 69-inch pipe and associated facilities to convey up to 86,249 acre-feet per year of water from Lake Powell. Figure 1-1 shows the overall LPP alignment from Lake Powell near Glen Canyon Dam to its termination point at Sand Hollow Reservoir near St. George, Utah.

The UBWR has applied to the federal agencies for ROWs to construct, operate and maintain the following components:

- Water Intake System
- Pipeline – approximately 141 miles of buried steel pipeline, 69-inches diameter
- Pumping Station – four booster pump stations
- Regulating Tank – one-million-gallon active capacity
- Hydroelectric Generating Stations – six generating inline facilities
- Hurricane Cliffs Waterway – tunnel and surge shaft
- Electric Power Transmission Lines – approximately 70 miles of 230 kV to 12.47 kV transmission lines and associated electrical switchyards and substations
- Communications Facilities – Fiber optics cable and Supervisory Control and Data Acquisition (SCADA) system

These facilities are described in more detail in Chapter 3 of this POD.

The Act states the UBWR will own, operate, and maintain the project. The project's title and its associated water rights may be transferred to the participating water conservancy districts. The districts could enter into an agreement with each other and the UBWR to continue operation, maintenance, repair and replacement of the LPP. The LPP title may be conveyed to the districts after the State of Utah has been fully compensated for its reimbursable costs. The UBWR will convey the project's title and its associated water rights to the districts in proportion to the amount each district paid for the developed water it received. Therefore, the UBWR will hold the ROWs for the LPP until the project's title and the

associated water rights are fully transferred to the districts. The Act provides for each district to repay the preconstruction and construction costs to the state within 50 years from the date of each contracted block of water.

The LPP fulfills a critical long-term public purpose. Implementation of the project will involve considerable cost and the districts intend to operate the LPP facilities without end. Based on these factors and in consideration of BLM guidance stated in 43 CFR 2805.11, the term of the ROW grants is anticipated to be 50 years with an option for renewal. Terms for other federal agency grants and licenses are anticipated to be 50 years.

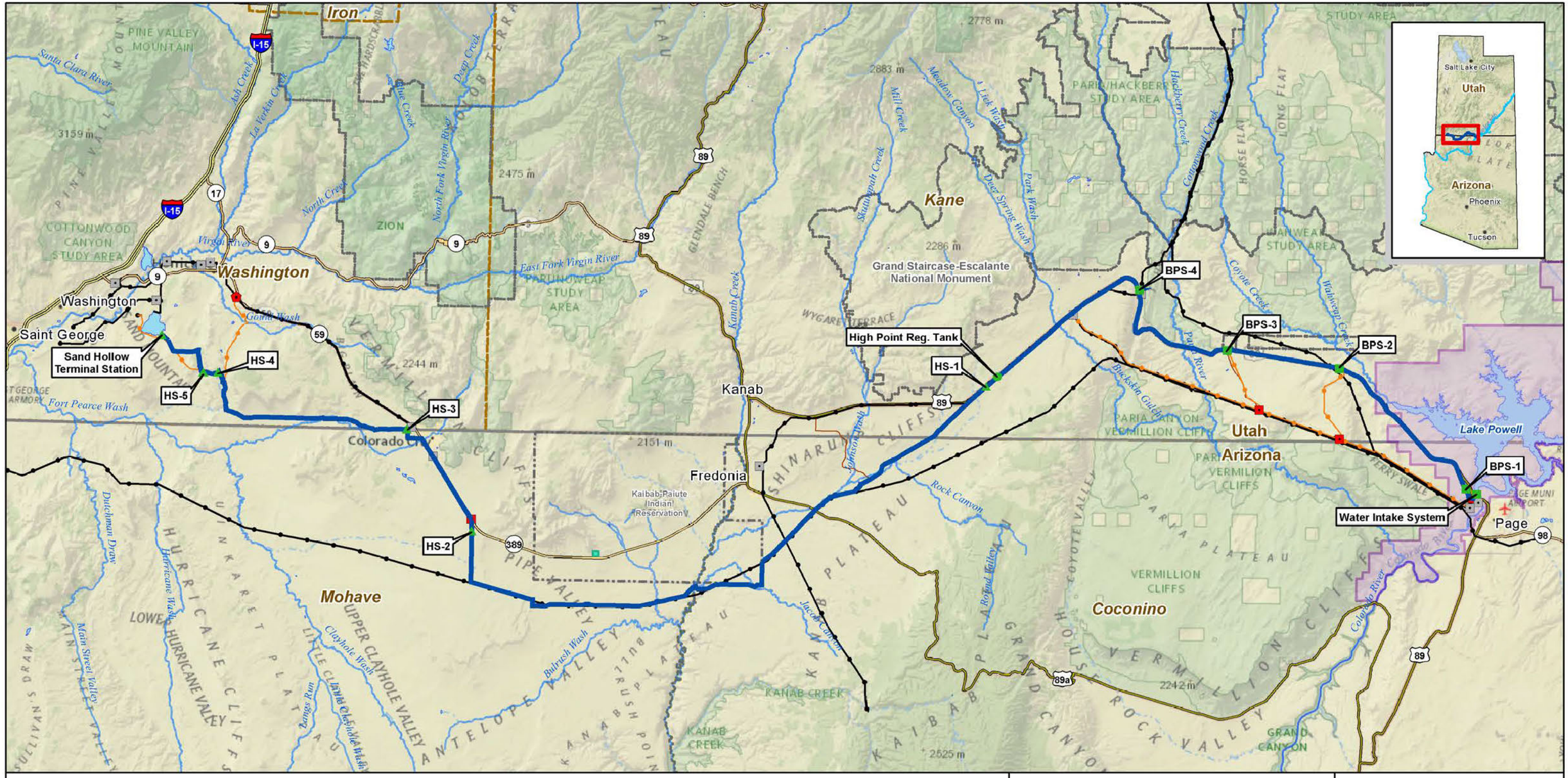

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Figure 1-1

Southern Alternative

Chapter 2 Right-Of-Way Location

The LPP will require ROWs across federal lands administered by the BLM in both Utah and Arizona. UDWRe submitted ROW applications for the LPP to the BLM on December 8, 2006. The project has been assigned BLM case numbers UTU-85472 and AZA-34941. UDWRe will acquire ROWs from other federal, state, and private landowners as appropriate.

A summary of the ROWs required to construct and operate LPP components is presented in Table 2-1 and Table 2-2. The tables show the facilities and acreages located on all land ownerships. Acreages are calculated based on varying ROWs for pipelines and transmission lines, and footprints of permanent, above ground facilities. ROWs are being requested for pipelines, pumping stations, a regulating tank, hydro stations, electric transmission lines, electrical substations and switchyards, permanent access roads, communication facilities, construction staging areas, use of borrow and spoil pits, and construction access roads.

The dimensions of ROWs identified within this POD are consistent with those established for other similar facilities constructed on BLM-managed land and are intended to minimize ground disturbance while allowing for safe and efficient construction and operation of project facilities. In areas of level terrain and stable soil conditions, the amount of disturbance of the ROWs may be reduced; however, any potential reductions will not be known until after detailed alignment surveys and project design have been completed. Impacts on ROW associated with pipeline construction will be temporary, whereas impacts on ROW associated with permanent above-ground facilities will be long term.

The ROW for the pipeline is nominally 150 feet wide with 100 feet of width planned for permanent ROW and 50 feet planned for temporary use during construction. The ROW will be narrower in limited areas and will also extend to as much as 250 feet wide in some locations where construction efforts require. Electric transmission line ROW varies from 100 feet to 150 feet in width depending on voltage and transmission tower configuration.

Most of the proposed ROWs located in Kane County are within the utility corridor designated by the U.S. Congress (Public Law 105-355, Title II, Section 202). The utility corridor that will be used by the proposed LPP extends from the boundary of the Utah School Institutional Trust Lands Administration (SITLA) land (see Map Panel 13 in Appendix A) to just past BLM Road K4000 (see Map Panel 30 in Appendix A).

Appendix C displays the BLM-administered land requirements for the LPP in Utah and Arizona by township, range, and section to the nearest ¼ ¼ section.

Table 2-1
LPP Right-of-Way Summary

Land Ownership/Management	Permanent ROW (acres)			Short Term or Temporary Construction Easement ROW[a] (acres)	Total ROW (acres)
	Pipelines[a]	Transmission Lines[a]	Pumping, Hydro, and Road Facilities[b]		
Bureau of Land Management	876	533	68	649	**2,127**
National Park Service	126	55	20	79	**280**
Bureau of Reclamation	1	8	27	0	**36**
State	302	375	11	186	**874**
Private	382	95	42	565	**1,083**
Total	**1,687**	**1,067**	**168**	**1,479**	**4,401**

Notes:
[a] Disturbed ROW would be restored.
[b] Disturbed ROW would not be restored due to permanent above ground facilities.
ROW = Right-of-way

Table 2-2
LPP Right-of-Way by Facility

Lake Powell Pipeline Facility	Total Right-of-Way (acres)					
	Bureau of Land Management	**National Park Service**	**Bureau of Reclamation**	**State**	**Private**	**Total**
Water Intake System	0	2	27	0	0	**29**
Pipeline (intake to regulation tank)	457	187	1	227	77	**949**
BPS-1	0	16	0	0	0	**16**
BPS-2	0	2	0	8	0	**10**
BPS-3	9	0	0	0	0	**9**
BPS-4	0	0	0	0	13	**13**
High Point Regulation Tank	6	0	0	0	0	**6**
Pipeline (regulation tank to sand hollow)	878	0	0	222	504	**1,603**
HS-1	11	0	0	0	0	**11**
HS-2	0	0	0	0	7	**8**
HS-3	0	0	0	0	14	**14**
HS-4	9	0	0	0	0	**9**
HS-5	25	0	0	0	0	**25**
Hurricane Cliffs Waterway	18	0	0	0	0	**18**
Sand Hollow Terminal Station	0	0	0	4	7	**11**
Pump Station Transmission Lines	426	55	8	339	7	**835**
Hydro Station Transmission Lines	114	0	0	36	88	**238**
Construction Access Roads[a]	41	0	0	12	14	**66**
Construction Staging Areas	133	18	0	27	352	**531**
Total	**2,127**	**280**	**36**	**874**	**1,083**	**4,401**

Notes:
a Construction access roads ROW includes the following existing roads: gravel road between BPS-3 and the proposed Glen Canyon-Buckskin 138 kV transmission line, and the gravel road from U.S. Highway 89 (near Vista Ave.) into White Sage Wash and lower Johnson Wash. All other construction access roads that will be built as part of the proposed action will be along the proposed pipeline or transmission line ROW. Permanent access roads associated with specific facilities are included in the proposed facility ROW.

Chapter 3 Facility Design Factors

This chapter describes the components that comprise the LPP, which include pipelines, water facilities (pumping stations, regulating tanks, hydroelectric generating stations), access roads, and electric power facilities. Specific facility locations are shown on maps included in Appendix A.

UDWRe has identified environmental protection measures that will be implemented as part of the design, construction, and operation of LPP facilities. Measures specific to noise abatement and visual resources are in sections B.9 and B.11 in Appendix B.

3.1 Pipelines

3.1.1 Pipeline

The main pipeline begins in Arizona at the discharge manifold at the Water Intake System and extends 141 miles through a 69-inch diameter buried steel pipe to Sand Hollow Reservoir in Washington County, Utah.

The pipeline diameter has been optimized for long-term delivery efficiency balancing pumping cost, friction loss, water velocity, and flow rate. The following hydraulic design criteria were used to calculate the pipeline diameter:

- Hazen-Williams friction coefficient C of 141, which represents the resistance to water flow; less friction in a pipeline means less energy required to convey water through the pipeline. C value of 141 is for 69-inch diameter steel pipe
- Maximum water velocity in the pipeline is 5.55 feet per second
- Design flow rate is 144.1 cubic feet per second (cfs), operating 365 days per year, 24 hours per day, 7 days per week; an up to 15-day annual shut-down period for inspection and maintenance may occur in most years (Note: pipeline as designed could convey 100,000 acre-feet per year; UBWR currently has 86,249 acre-feet per year of water rights identified for the LPP)
- Flow control to operate each hydraulically independent pipeline segment between inline hydro stations in unison to the same flow rate to balance water surface levels in inline
- hydro station afterbays
- Each inline hydro station afterbay is sized to contain one million gallons between high and low water elevations to provide 15.5 minutes storage at the maximum flow rate, which will buffer small differences in flow rates between each hydraulically independent pipeline

Figure 3-1 shows the ground surface profile, hydraulic grade line and pipe pressure class for the pipeline from the Water Intake System to the High Point Regulating Tank. The estimated minimum ground elevation is 3,735 feet mean sea level (MSL) and the estimated maximum ground elevation is 5,691 feet MSL.

Figure 3-2 shows the ground surface profile, hydraulic grade line and pipe pressure class for the pipeline from High Point Regulating Tank to HS-4. The estimated minimum ground elevation is 4,716 feet MSL and the estimated maximum ground elevation is 5,691 feet MSL. It is important to note the inline hydro stations at each pipeline terminus will reduce pressure in the pipeline while generating electricity. The

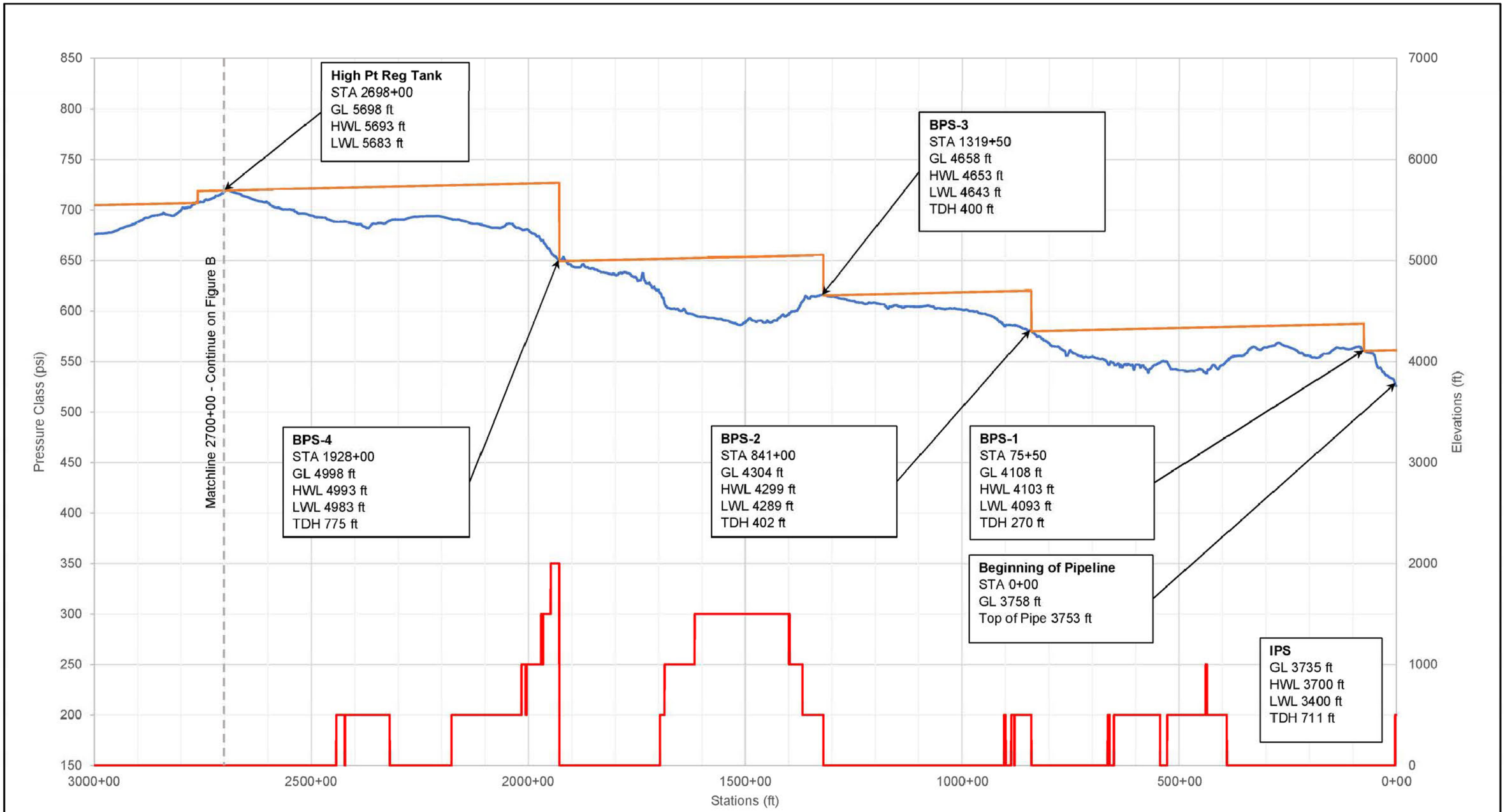
reduced pressure condition then allows for a lower pipe pressure class in the next downstream segment of pipeline.

Figure 3-3 shows the ground surface profile, hydraulic grade line and preliminary pipe pressure class for the pipeline from HS-5 to Sand Hollow Hydro Station. The estimated minimum ground elevation is 3,065 feet MSL and the estimated maximum ground elevation is near 3,500 feet MSL.

The gravity flow segments of the pipeline could be susceptible to hydraulic transients produced by a sudden loss of access to the power transmission grid. Impulse-type hydroelectric turbines are incorporated into the preliminary design because this type of turbine allows the nozzle jet to be rapidly deflected away from the turbine wheel using hydraulically-actuated deflector plates upon generator load rejection. This action occurs in approximately one second and is sufficiently quick to prevent the turbine from achieving runaway speed. The pipeline flow will be shut down slowly with the turbine nozzle spear valves. Slow valve closure will prevent a large hydraulic transient from developing within the pipeline. The use of impulse-type turbines will develop hydroelectric power at the inline hydro stations without the need for surge mitigation equipment.

The pipeline will be completely buried, with air release valves, vacuum relief valves, drain valves, and isolation valves located in buried concrete vaults with locking manhole covers at the ground surface. There will be no permanent security fencing or other permanent access restrictions along the pipeline ROWs. Temporary security and environmental exclusion fencing will be used as needed on pipeline segments during construction (see B.1.12 and B.1.14 in Appendix B).

In general, a 150-foot wide ROW will be required for the pipeline, of which 100 feet would be a permanent ROW and 50 feet would be a short-term construction ROW (see Chapter 2 for ROW detail). Figure 3-4 and Figure 3-5 show the typical ROW when constructing the pipeline in differing site conditions. The ROW for the pipeline will accommodate a pipe trench with side slopes ranging from 0.75H:1V to 2H:1V (i.e., a slope that rises one foot vertically for every 0.75 to two feet horizontally) in soil materials or vertical sides in rock cuts. The pipe trench depth may vary with the type of soil conditions or rock cuts and surface topography, with a minimum earth cover of 3 feet from the ground surface to the top of the pipe. The ROW will also be used for excavated material storage during construction, pipe storage before installation, heavy equipment movement on construction and maintenance roads, and will provide for safe personnel workspace. See Table 2-2 for the ROWs requested for the pipeline on BLM-administered lands totals. Disturbed ground would be restored after construction.

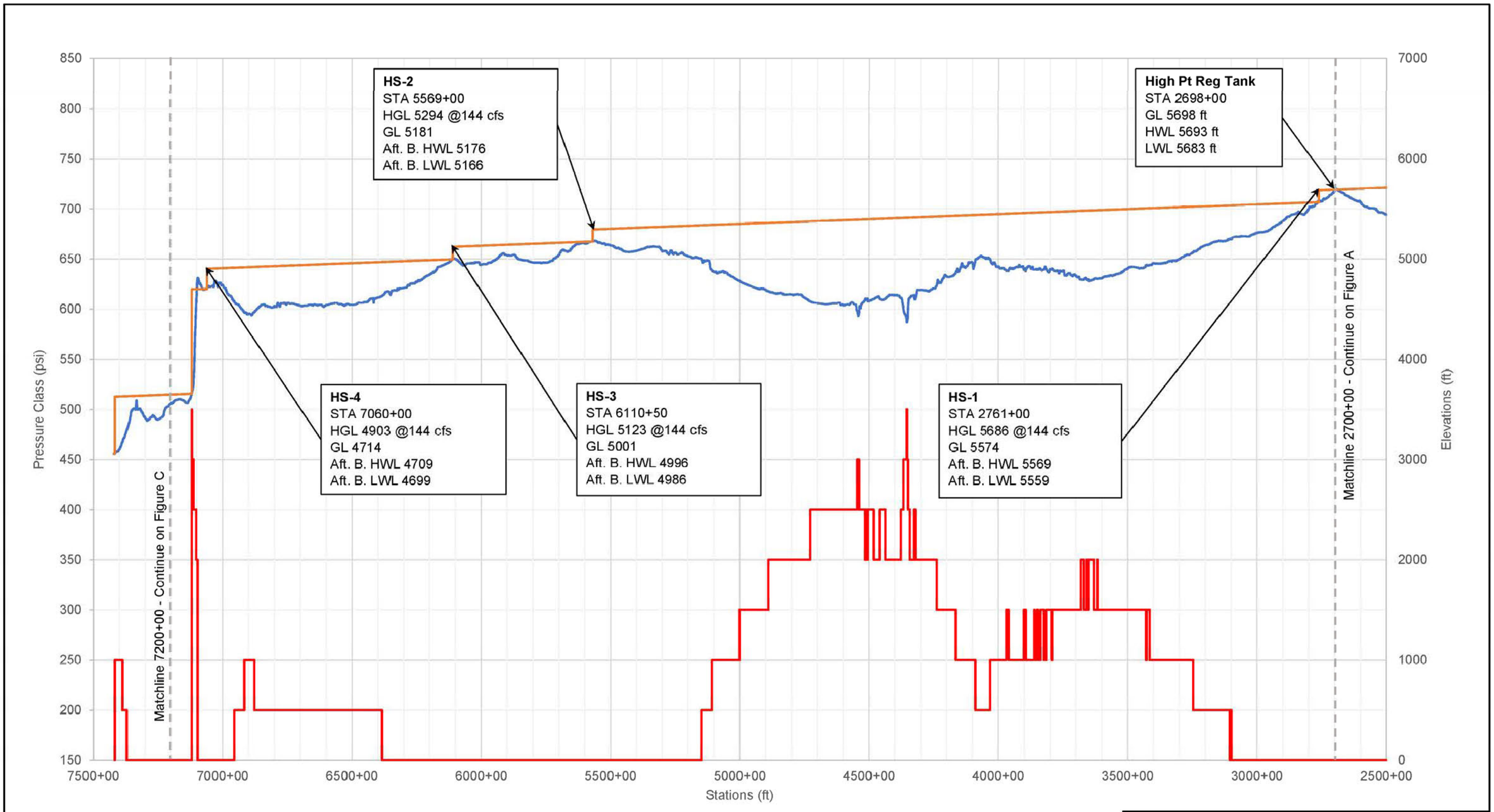


Note: Pipeline design flow of 100,000 acre-ft to Sand Hollow Reservoir per year

Lake Powell Pipeline

Figure 3-1

Southern Alternative Hydraulic Gradeline

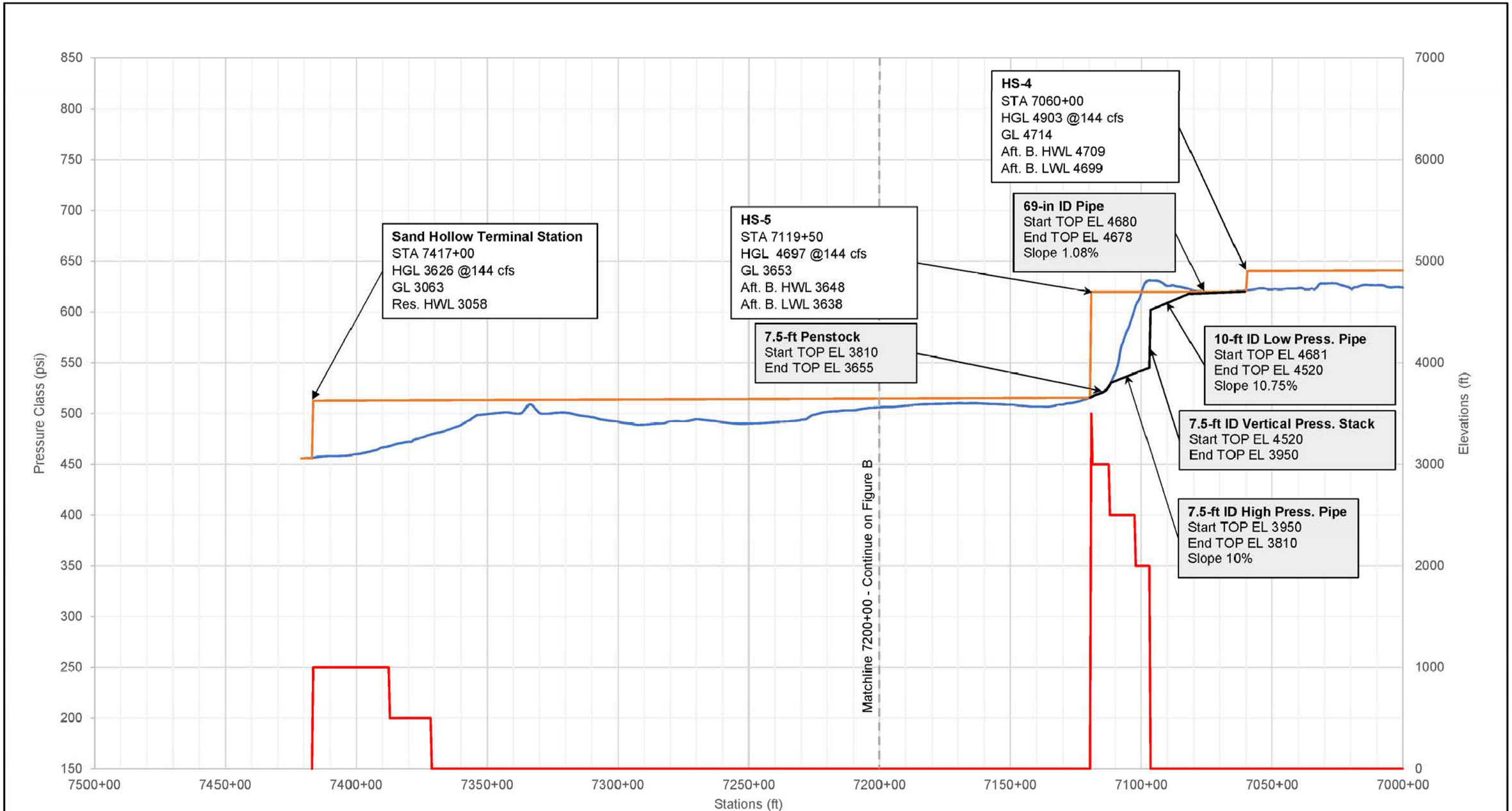


Note: Pipeline design flow of 100,000 acre-ft to Sand Hollow Reservoir per year

Lake Powell Pipeline

Figure 3-2

Southern Alternative Hydraulic Gradeline



Note: Pipeline design flow of 100,000 acre-ft to Sand Hollow Reservoir per year

Lake Powell Pipeline

Figure 3-3

Southern Alternative Hydraulic Gradeline

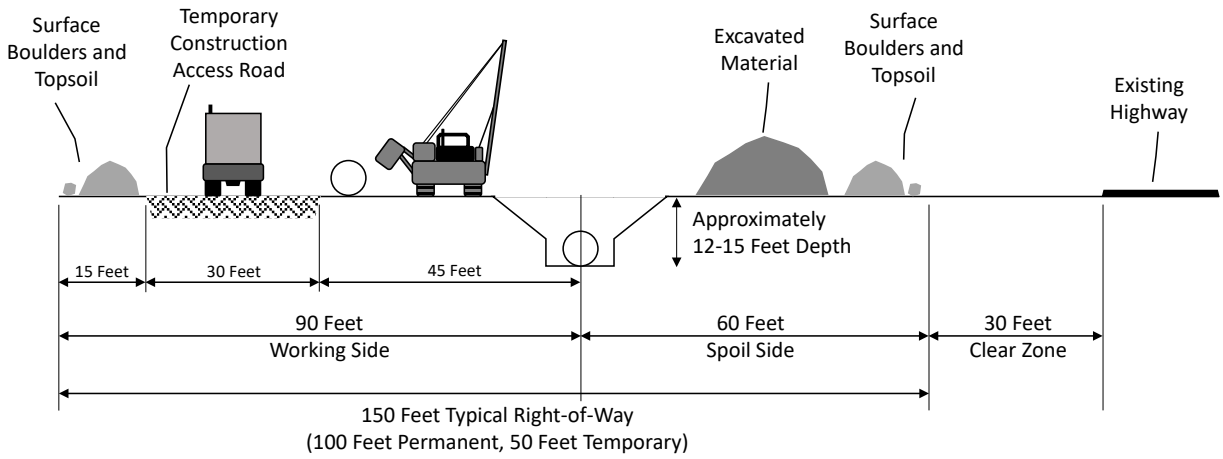


Figure 3-4 Typical ROW for LPP Pipeline Construction along Highways

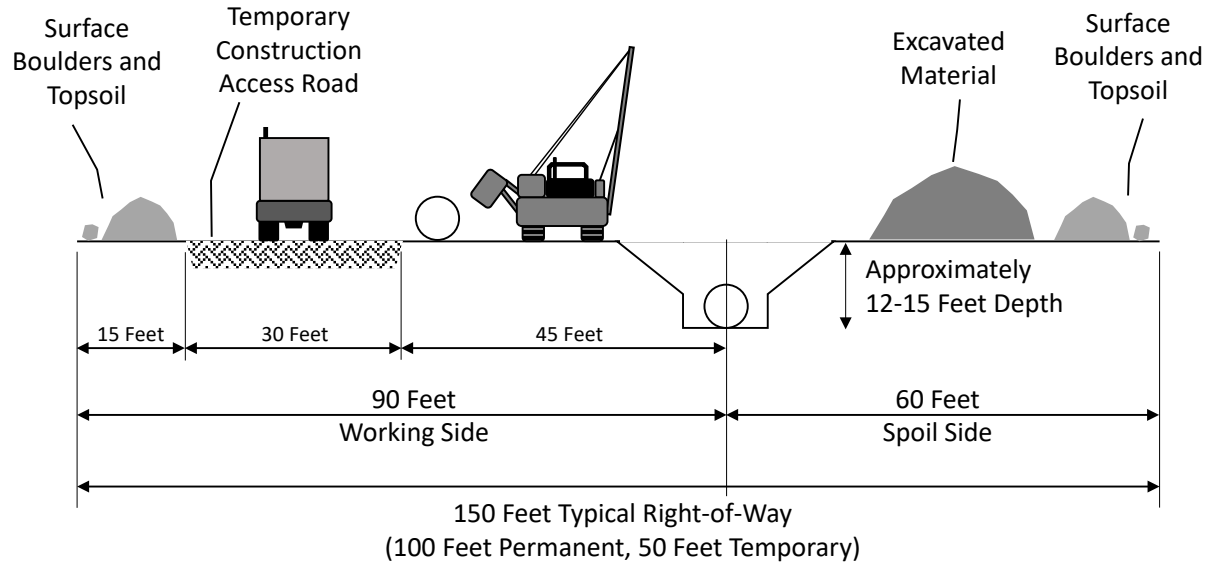


Figure 3-5 Typical ROW for LPP Pipeline Construction away from Highway

3.1.1.1 Water Intake System to Booster Pump Station-1

After pressurization in the intake pump station, the pipeline would enter NPS-managed land, cross U.S. Highway 89 and follow the old U.S. Highway 89 alignment that lies towards the west of the existing highway near Glen Canyon Dam. The pipeline would continue approximately 1.3 miles to the BPS-1 site located immediately west of the ADOT highway maintenance facility on the west side of US Highway 89.

3.1.1.2 Booster Pump Station-1 to Booster Pump Station-3

After pressurization in BPS-1, the pipeline would continue approximately 14.5 miles to BPS-2 through NPS-managed land, private land, and State of Utah land, staying mainly within ADOT and UDOT ROW

along the south side of U.S. Highway 89. Due to geologic constraints, the pipeline would cross to the north side for a short distance at Blue Pool Wash via a tunnel.

After pressurization in BPS-2, the pipeline would continue approximately 9 miles through State of Utah land to BPS-3, staying mainly within UDOT ROW along the south side of U.S. Highway 89.

3.1.1.3 Booster Pump Station-3 to High Point Regulating Tank

After pressurization in BPS-3, the pipeline alignment crosses to the north side of U.S. Highway 89 and continues west into BLM-administered land in the Congressionally-designated utility corridor, as follows:

- Continues west along the north side of U.S. Highway 89 and crosses the Paria River and Sand Gulch east of the Cockscomb (see Map Panel 15 in Appendix A).
- Continues through the Cockscomb along the north side of U.S. Highway 89 and then crosses diagonally under the highway to the south side near the west edge of the Cockscomb (see Map Panel 16 in Appendix A).
- Continues on the south and west sides of the highway where U.S. Highway 89 runs north/south parallel to the Cockscomb through Fivemile Valley and just before reaching BPS-4 it crosses to the east side of the highway passing adjacent to the Paria Substation and ending at BPS-4 (see Map Panel 17 in Appendix A).
- Upon pressurization in BPS-4, the pipeline alignment again crosses the highway to the west and south side and continues southwest parallel to U.S. Highway 89 within the Congressionally-designated utility corridor.
- Continue southwest along the south edge of the Congressionally-designated utility corridor across Buckskin Gulch to the High Point Regulating Tank (see Map Panels 19 and 20 in Appendix A).

3.1.1.4 High Point Regulating Tank to Hydro Station-1

This buried pipeline is located within the designated utility corridor along US Highway 89 in Kane County, Utah. The 69-inch diameter pipeline will convey water by gravity from High Point Regulating Tank to Hydro Station or HS-1 for a distance of 1.2 miles (see Map Panel 21 in Appendix A).

3.1.1.5 Hydro Station-1 to Hydro Station-2

This buried 69-inch diameter pipeline segment will convey water by gravity 6.8 miles on BLM-administered land in Utah and 28.9 miles on BLM-administered land in Arizona. The pipeline begins downstream from HS-1 adjacent to U.S. Highway 89 in Kane County, Utah and will have the following general path:

- follows the K3290 road near Seaman Wash (see Map Panels 21, 25, and 26 in Appendix A); a turnout will be placed at the northeast end of White Sage Wash along U.S. Highway 89 pipeline in the event Kane County Water Conservancy District chooses to pursue a project that would deliver water from the LPP to Kane County
- extends southwest into Coconino County, Arizona along White Sage Wash, and Johnson Wash (see Map Panels 24, 27, and 28 in Appendix A),
- extends southwest and south along the east boundary of the Kaibab-Paiute Indian Reservation and within the BLM designated utility corridor (see Map Panels 31 and 32 in Appendix A),
- extends west approximately parallel to the south boundary of the Kaibab-Paiute Indian Reservation and within portions of the BLM designated utility corridor (see Map Panels 31 and 37 in Appendix A),

- extends west into Mohave County, Arizona approximately parallel to the south boundary of the Kaibab-Paiute Indian Reservation and within the BLM designated utility corridor (see Map Panels 36, 41 and 44 in Appendix A), and

- extends north along Yellowstone Road to Hydro Station 2 (HS-2) (see Map Panel 49 in Appendix A).

3.1.1.6 Hydro Station-2 to Hydro Station-3

This buried 69-inch diameter pipeline segment will convey water by gravity for a distance of 1.6 miles on BLM-administered land. The pipeline begins downstream from HS-2 and will have the following general path:

- extends north along Yellowstone Road to Arizona State Route 389 (see Map Panel 49 in Appendix A),

- crosses under Arizona State Route 389 and extends along the north side of the highway to Colorado City and over Short Creek (see Map Panels 50 and 52 in Appendix A),

- crosses under Arizona State Route 389 and extends west along Township Avenue, and

- extends north along 1500 West across the Arizona-Utah state line to Uzona Avenue in Hildale City, Utah to Hydro Station-3 (HS-3).

3.1.1.7 Hydro Station-3 to Hydro Station-4

This buried 69-inch diameter pipeline segment will convey water by gravity for a distance of about 18 miles on BLM-administered and non-BLM-administered land in Utah and Arizona. The pipeline begins downstream from HS-3 and will have the following general path:

- extends west along Uzona Road into Canaan Gap and crosses into Arizona and back into Utah to avoid a natural rock formation (see Map Panel 54 in Appendix A),

- extends west through Canaan Gap in Utah (see Map Panel 55 in Appendix A),

- extends northwest around the southwestern side of Little Creek Mountain (see Map Panel 56 in Appendix A), and

- extends north to Hydro Station-4 (HS-4) (see Map Panel 57 in Appendix A).

3.1.1.8 Hydro Station 4 to Hydro Station-5

This buried 69-inch diameter pipeline segment will convey water by gravity for a distance of about 0.4 miles on BLM-administered land to the Hurricane Cliffs Waterway (see description in Section 3.2). The pipeline begins downstream from the high pressure tunnel at the base of the Hurricane Cliffs and terminates at Hydro Station-5 (HS-5) (see Map Panel 58 in Appendix A). A previous version of this pipeline segment included a peaking forebay and afterbay reservoir. These reservoirs have been removed from the project description.

3.1.1.9 Hydro Station-5 to Sand Hollow Hydro Station

This buried 69-inch diameter pipeline segment will convey water by gravity for approximately 5.5 miles on BLM-administered land and private land in Utah. A previous version of this pipeline segment extended directly west of a previously considered afterbay reservoir, tunneled under a large hill, and then continued northwest to Sand Hollow Reservoir. With the removal of the afterbay reservoir from the project description, the pipeline alignment has been revised and begins at HS-5 (see Map Panel 58 in

Appendix A) and extends north along an existing BLM road and then west just below Sky Ranch to the Sand Hollow Hydro Station at Sand Hollow Reservoir (see Map Panels 59 and 60 in Appendix A).

3.1.2 Pipeline Appurtenances

Pipeline appurtenances will include manways, drain valves, combination air release and air vacuum valves, pigging stations, pipeline markers, and other appurtenances necessary to maintain proper system function (see Figures 3-6 through 3-9). Cathodic protection test stations and test heads will be installed to monitor the pipeline for potential corrosion. Valves will be installed in buried concrete vaults with locking at-grade manhole covers to provide access. The valve locations depend on elevation, and the final sites will be determined during final design after detailed topographic surveys have been completed.

3.1.2.1 Manways

Access manways will provide entry into the pipeline for construction, inspection or maintenance at intervals typically not greater than 2,000 feet. Buried access manways will be provided near roadway crossings, low points, and high points where practical. The manways will typically consist of a 30-inch-diameter outlet on the pipe crown and a blind flange. Where feasible, the manways will be combined with air release valves, air and vacuum valves, combination air and vacuum valves, and drain valves to minimize the number of flanged pipeline outlets that could potentially leak. The preliminary design identified 17 manways on BLM-administered lands along the pipeline and 43 manways on BLM-administered lands along the pipeline.

3.1.2.2 Drain Valves

Drain valves for draining pipeline segments during hydrostatic testing, maintenance and repair periods will generally be installed at low points in the pipeline profile. A typical drain valve station will connect to the pipe invert and consist of an isolation valve with a pipe extension to the ground surface beyond the outside edge of the pipeline. The typical drain valve will be enclosed in a buried concrete vault with a locking manhole access. Each station will include a pumping chamber to allow further withdrawal of water from below the normal drain valve surface elevation and energy dissipaters at the discharge point.

The major portion of the pipeline segments will be drained back to the pump stations or hydro stations for discharge to local natural drainages or Sand Hollow Reservoir. The low points of the pipeline that can't be drained back through the pump stations or hydro stations will be discharged through energy dissipaters as necessary to local natural drainages. The preliminary design identified 52 drain valves on BLM-administered lands along the pipeline. The final number and location of the drain valves will be determined during final design.

3.1.2.3 Combination Air Release and Air Vacuum Valves

Combination air release and air vacuum valves will be installed at all high points that will trap air along the pipeline. Each combination valve will have a large orifice to vent air during pipeline filling and admit air during draining operations to avoid negative internal pressures that could damage the pipeline. A small orifice for air release will be provided as part of the combination air valve. The small orifice will release air while the pipeline is operating under pressure thereby preventing large air bubbles from collecting which could reduce hydraulic efficiency. Combination air valves could be installed at inflection points caused by increased downslopes, long ascents, long descents, and horizontal runs. Stand-alone air release valves may be used within long descents and in between the beginning and ends of horizontal runs. Combination or air release valves will typically not be spaced at more than 2,600-foot intervals. A typical air valve structure will connect to the top of the pipeline and consist of an isolation valve, the combination or air release valve and piping to the ground surface, and a buried concrete vault with a locking manhole access. Air vacuum valves and combination valves may be fitted with surge check valves to reduce the possibility of secondary hydraulic transients from air valve closure. For BLM-administered lands, the

preliminary design identified 144 air release, air vacuum, or combination air/vacuum valves along the pipeline.

3.1.2.4 Pig Launching and Retrieval Stations

Pigging stations are part of the overall pipeline maintenance system to assist in inspection and cleaning of the pipeline interior. The pig works by inserting it into a pig launcher – a funnel-shaped Y section in the pipe. The launcher is then closed and the water pressure in the pipe is used to push the pig, a soft bullet-shaped polyurethane foam plug with abrasive brushes, down the pipe until it reaches the pig receiver. The pig launching and receiving stations are buried concrete vaults housing the necessary piping and valves to insert and remove the pig.

A pig launching station will be installed after each booster pump station on the pipeline, including BPS-3, which is on BLM-administered land. A pig retrieval station will also be installed on the before the High Point Regulating Tank. A pig launching station will be installed after each afterbay at HS-1, HS-2, and HS-3, and HS-5. A pig retrieving station will be installed prior to each hydro station. The pig stations at HS-1 and HS-4 will be on BLM-administered land. The other stations will be on private land.

3.1.2.5 Pipeline Markers

Markers or other pipeline identifiers such as concrete monuments, fiberglass or composite marker posts, or brass caps will be installed every 1,000 feet or less along the entire alignment directly over the pipeline and buried electric transmission lines to clearly identify the buried locations. The markers will be installed in the following locations:

- Crossings of Section lines and property lines
- Both sides of major road crossings
- Direction changes
- Bifurcations or turnouts
- Drain valves
- Buried access structures
- Air release valves
- Vacuum relief valves

Concrete monuments will consist of a steel pipe approximately four-inches in diameter, filled with cement, standing approximately three-feet tall, and buried in a concrete footing. Fiberglass or composite post markers will stand approximately three-feet tall. Where the pipeline or buried electric transmission lines will cross through communities, commercially developed areas, or sensitive visual resource areas along a very limited portion of the alignment, use of posts may not be practical or desirable. In these limited cases, brass caps set in concrete may be used to mark the buried locations. Marker type and colors on BLM-managed lands will be coordinated with the BLM during final design.

Figures 3-6 through 3-9 (pages 3-11 through 3-14) are identified as "Confidential" and are not for public release

3.2 Water Facilities

3.2.1 Water Intake System

The conceptual design for the Water Intake System on NPS-managed land includes the following major components (see Figures 3-10 through 3-14):

- Intake Underground Features - includes large diameter vertical shafts and lateral tunnels consisting of:
    - Two vertical intake shafts
    - Six horizontal intake tunnels
    - Two forebay connector tunnels
    - One forebay chamber
    - Six pump well shafts
    - One isolation gate shaft
- Intake Pump Station Features – includes civil site improvements and structures to house:
    - Six pumps and motors
    - Four surge tanks
    - Piping and valves, other mechanical equipment
    - Electrical equipment
    - heating, ventilation, and air conditioning (HVAC) equipment
    - Chemical treatment equipment
    - Office and restroom
    - Access road and parking area
    - Onsite electrical substation
- Intake Power Transmission Features – includes a new power system from the nearby Glen Canyon substation with:
    - Glen Canyon substation modifications
    - 69 kV power transmission line
- Other Water Intake Features – includes civil site improvements and structures to house the support facilities:
    - Electrical Equipment
    - HVAC Equipment
    - Workshop

A new road with gates and fence will be required to access and protect the Water Intake System site. The electrical switchyard, parking area and the pump station building is planned to be further blended into the surrounding area and hidden from view by being located in the low point between the two prominent rock outcrops and being painted to blend with surrounding natural colors (see B.11.1 and B.11.4 in Appendix B). If suitable, native sandstone rock boulders excavated during construction of the facility will be used to further blend the facility into the landscape. Aesthetic design features will be coordinated with the NPS during final design. These Water Intake System features will have the capacity to divert up to 100,000 acre-feet of water per year from Lake Powell to satisfy the design criterion of the LPP.

Current designs to prevent quagga mussels in LPP supplies currently call for coatings, screens, and chemical treatment at the intake and booster pump stations. The best available technology will be evaluated during final design and will be implemented to prevent quagga mussels. Applicable technology could include self-cleaning screens and ultraviolet treatment. Preventive measure could be installed at all pump stations and hydrostations.

Figures 3-10 through 3-14 (pages 3-16 through 3-20) are identified as "Confidential" and are not for public release

3.2.2 Pumping Stations

The LPP includes four booster pump stations: BPS-1, BPS-2, BPS-3, and BPS-4. Each booster pump station will be designed and built with similar characteristics for efficient design, construction, and maintenance. BPS-3 will be located immediately west of the community of Church Wells, Utah, on BLM-administered land adjacent to the pipeline. The other booster pump stations will be located on lands owned by other agencies or on private land. The following describes the characteristics common to each booster pump station.

Each booster pump station will pressurize the water to convey it uphill to the next booster pump station. The following facilities will be included in each booster pump station:

- Forebay
- Pump station building
- Pumps and motors
- Buried surge tanks
- Piping
- Instrumentation and control systems
- Electrical substation and systems consisting of switchgear, transformers, motor control centers, variable frequency drives, local control panels, and lighting
- Mechanical systems consisting of heating, ventilation, air conditioning, plumbing, hoists, cranes, and compressors
- Chemical room for chemical addition as necessary
- Flow meter
- Detention basin
- Access road and parking area
- Perimeter fence and security systems

Figures 3-15 through 3-22 show the site plan and mechanical cross section of BPS-1, BPS-2, BPS-3, and BPS-4, respectively. Each pump station building will be constructed of concrete block with architectural finish matching the surrounding landscape (see B.11.1 and B.11.4 in Appendix B). The pump station building will house the five duty and one standby pump motors, piping and valves, and electric bridge crane for installation, maintenance and removal of equipment. The pump station building roof will be approximately 36 feet above the ground surface. An electrical room will contain the transfer switch, motor control centers, variable frequency drives, instrumentation and control systems, and local control systems. The six vertical turbine pumps will be mounted in a wet well connected through suction piping manifolds to a one-million-gallon forebay. Surge control for the adjacent segment of the pipeline will be provided by multiple 12-foot diameter by 60-foot long buried hydro pneumatic surge tanks with isolation valves and a duplex air compressor. Piping will include a 30-inch diameter pump discharge pipe for each pump, 72-inch diameter header pipes, and 48-inch diameter pipe manifold connected to the surge tanks.

The electrical substation will include switchgear and transformers to reduce the power voltage to meet operational requirements. The electrical room, chemical room and mechanical room/office will be air conditioned and heated to control operating temperatures. A multi-path ultrasonic flow meter will measure and record the pressurized flow leaving the booster pump station. The 0.5-acre detention basin will provide emergency overflow storage for the booster pump station. Access will be by graveled road and the graveled parking lot will provide parking for operation, maintenance and repair vehicles. The perimeter fence will provide site security. Motion-detection security lights will be used within the fenced area. Lighting fixtures at all pump stations will comply with special lighting standards for protecting dark night skies (see B.11.3 in Appendix B).

See Table 2-2 for the ROWs requested for BLM-administered lands totals. Most of the ROW would be permanently disturbed; some areas within the facility grounds would be revegetated.

Figures 3-15 through 3-22 (pages 3-23 through 3-30) are identified as "Confidential" and are not for public release

3.2.3 High Point Regulating Tank

The High Point Regulating Tank will be located along U.S. Highway 89, which will be the topographical high point at ground level elevation 5,691 feet MSL within the utility corridor on BLM-administered land. The regulating tank will provide a hydraulic break in the pipeline hydraulic grade line. The regulating tank will be a buried circular concrete tank with 1.5 million gallons of total storage capacity and 1 million gallons of active storage, which will provide an estimated 15 minutes of pipeline flow to allow for the pumping system to shut down. The storage capacity provides adequate submergence for the intake at HS-1, surge dampening in the pipeline, and sufficient freeboard to allow pump stations to shut down in the event of an emergency power failure and avoid premature overflow. The regulating tank will have an overflow pipe to a 1.5-million-gallon detention basin. The regulating tank site will have a pig launching station, pig receiving station, graveled access road and parking area, and perimeter fence to maintain security. Figure 3-23 shows the site plan for the High Point Regulating Tank. Figure 3-24 shows the mechanical cross section for the High Point Regulating Tank. See Table 2-2 for the ROWs requested on BLM-administered lands. Most of the ROW would be permanently disturbed; some areas within the facility grounds would be revegetated.

Figures 3-23 through 3-24 (pages 3-32 through 3-33) are identified as "Confidential" and are not for public release

3.2.4 Inline Hydro Stations

Hydro stations HS-1, HS-2, HS-3, HS-4, and HS-5 will be designed and built with similar characteristics for efficient design, construction, and maintenance. HS-2 and HS-3 are located on private land and therefore are outside of the BLM jurisdiction. Previous versions of the POD included a peaking hydrostation. This hydrostation has been removed from the project description and replaced with HS-5.

The inline hydro facilities are comprised of the following:

- Powerhouse
- Tailrace
- Afterbay
- Turbines and Generators
- Hydraulic Actuators
- Exciters
- Auxiliary Electrical Equipment
- Auxiliary Mechanical Equipment
- Powerhouse Crane
- Transmission Interconnection
- Main Power Transformer
- Outdoor Substation/Switchyard, Interface and Protection
- Powerhouse Yard
- Retention Basin
- Perimeter Fence and Site Security

The inline hydropower station site plans for HS-1, HS-2, HS-3, HS-4, and HS-5 are shown in Figures 3-25 through 3-29. Figure 3-30 through Figure 3-33 show the typical inline hydropower station powerhouse plan for HS-1 through HS-5. Figure 3-34 through Figure 3-36 show the typical inline hydropower station powerhouse section through the generating unit for HS-1 through HS-5.

The powerhouses will house a generating unit and a bypass valve. HS-1 through HS-4 powerhouses will be approximately 25-feet high above the finished ground level grade, 75 feet wide and 50 feet long. HS-5 powerhouse will be approximately 82-feet high, 55 feet wide, and 120 feet long. The powerhouse foundations and walls will consist of cast-in-place concrete and concrete masonry units (see B.11.1 and B.11.4 in Appendix B). The roofs will consist of structural steel joists with precast hollow core concrete panels and a high performance, weather resistant grout overlay. The powerhouses will have a roll-up door to allow access and departure of maintenance and repair vehicles and semi-trailers as required for delivery of large electrical and mechanical equipment. The tailrace pits will be below the turbine and lead to the afterbays. The afterbays will be approximately 75 feet wide and 180 feet long below grade and discharge to the next downstream pipeline.

The HS-1 through HS-4 turbines will be a twin-jet Turgo-type impulse unit with a horizontal shaft alignment. HS-5 will use a single Pelton vertical turbine. The turbine units will be furnished with hydraulic actuators and necessary components for complete control of the turbines. The turbines will each pass up to the design flow of 144 cfs. The generators will be synchronous with and directly coupled to the turbines. The generators will have a brushless excitation system and permanent magnet. HS-1 will generate 0.5 megawatt (MW) of electricity at rated conditions. HS-2 and HS-3 will each generate 1 MW. HS-4 will generate 1.7 MW and HS-5 will generate 10 MW of electricity. The auxiliary electrical equipment will include a main unit circuit breaker and medium voltage switchgear, generator neutral grounding cable, station service transformer, station service switchboard, medium voltage cabling, control

and protection system, and batteries, chargers, inverters, lighting, communications, low voltage distribution panels, motor starters, cable trays, conduits and grounding. The auxiliary mechanical equipment will include a unit dewatering system, station drainage system, raw water supply system, bypass pipeline and valves, station compressed air system, heating and ventilation system, fire protection system, and water gaging. A 25-ton electric overhead bridge crane will service each powerhouse to install, disassemble and maintain the powerhouse equipment.

The inline hydropower stations will be interconnected to a new or upgraded electrical transmission network via 12.47 kV to 138 kV transmission lines. A three-phase main power transformer will be located in the outdoor electrical substation adjacent to the powerhouse. Surge arresters will be installed on the low voltage side of the main power transformer and on the gantry side of the transmission line connection. Lightning protection will be provided by shield wire mounted on lightning masts within the substation.

The powerhouse yards will be located adjacent to the powerhouses and substations. It will have a road-base access road and parking area with drainage features to accommodate runoff from the yard, substation and powerhouse roof. The drainage will be collected in a retention basin located within the powerhouse yard. Security fencing will surround the site with a lockable, swinging gate to provide access. Motion-detection lighting will be installed within the site as part of the security system. Lighting fixtures will comply with special lighting standards for protecting dark night skies (see B.11.3 in Appendix B).

See Table 2-2 for the ROWs requested on BLM-administered lands. Most of the ROW would be permanently disturbed; some areas within the facility grounds would be revegetated.

Figures 3-25 through 3-36 (pages 3-36 through 3-47) are identified as "Confidential" and are not for public release

3.2.5 Hurricane Cliffs Waterway

The pipeline through Hurricane Cliffs will include a low-pressure tunnel, a high-pressure water shaft, a surge shaft, and a high-pressure tunnel as part of the Hurricane Cliffs Waterway. The waterway profile and plan are shown in Figure 3-37. See Table 2-2 for the ROWs requested on BLM-administered lands. Disturbed ground would be restored after construction.

The low-pressure tunnel will extend from the pipeline to the high-pressure shaft (see Figures 3-37 and 3-38). The low-pressure tunnel will have an inside finished diameter of 10 feet and lined with reinforced concrete. The high-pressure water shaft will be vertical and connect the low-pressure tunnel to the high-pressure tunnel (see Figures 3-37 and 3-38). The high-pressure shaft will have a 7.5-foot diameter extending for a vertical length to the low-pressure tunnel. The top 100 feet of the high-pressure shaft will be lined with reinforced concrete, with the remainder lined with steel plate.

The vertical surge shaft will extend directly above the high pressure shaft and function to mitigate pressure effects within the waterway system (see Figures 3-37 and 3-38). The surge shaft will be 7.5 feet in diameter extending for a vertical length of 300 feet to the ground surface at elevation 4,810 feet MSL. The surge shaft will be lined with concrete.

The high-pressure tunnel will extend from the bottom of the high-pressure shaft to the pipeline entering HS-5 (see Figures 3-37 and 3-38). The high-pressure tunnel will be 1,440 feet long and 7.5 feet in diameter, lined with steel plate.

Figures 3-37 through 3-38 (pages 3-49 through 3-50) are identified as "Confidential" and are not for public release

3.2.6 Sand Hollow Hydro Station

The Sand Hollow Hydro Station site will cover about 11 acres on state and WCWCD-administered land on the east shore of Sand Hollow Reservoir in Washington County, Utah (see Figure 3-39). This feature is not on BLM-administered land, so no ROW request from the BLM is included as part of this application.

The powerhouse will contain a twin-jet Turgo-type impulse turbine with a horizontal shaft alignment (see Figure 3-39 through Figure 3-41). The powerhouse will be 25 feet tall, above finished grade, 83 feet wide and 54 feet long and will house a generating unit and a bypass valve. The powerhouse foundation and walls will be constructed of cast-in-place concrete and concrete masonry units. The roof will consist of structural steel joists with precast hollow core concrete panels and a high performance, weather resistant grout overlay. The powerhouse will have a roll-up door to allow access and departure of vehicles and semi-trailers as required for delivery of large electrical and mechanical equipment. The electrical switchyard will be approximately 90 feet long and 55 feet wide.

To pass water to the turbine or bypass valve, a branch connection is necessary. Just upstream from the turbine inlet valve, the main branch of the pipeline will transition from its 69-inch diameter to the inlet valve diameter. The inlet valve diameter will normally be determined by the turbine supplier. A 30-inch diameter branch-off for the bypass valve will be located somewhere upstream from this reducer. An overhead bridge crane with sufficient capacity to lift and maneuver the heaviest components of the turbines and generators will be provided.

Discharge from the turbine will drop down into the tailrace pit and flow into the existing Sand Hollow Reservoir through a rock riprap channel. The turbine centerline will be set at an elevation higher than the maximum reservoir elevation.

The electrical switchyard will be approximately 90 feet long and 55 feet wide.

The powerhouse yard will be located adjacent to the powerhouse and the switchyard. The yard will be paved with road base, and adequate drainage features will be provided to accommodate runoff from the yard area and building roof drainage, as well as additional runoff from the adjacent excavated surfaces. The powerhouse yard will be enclosed by fencing, and a lockable, swinging gate at the turnout from the nearby public road to the access road.

Figures 3-39 through 3-41 (pages 3-52 through 3-54) are identified as "Confidential" and are not for public release

3.3 Communications Facilities

Communications facilities will be installed along the pipeline allowing for system operation and control, data collection and monitoring, communication, and security surveillance. Communication facilities requirements will be met through use of fiber optics, radio systems and possibly cellular communications equipment installed at pump stations, the regulating tank, and hydro stations.

Conduits for fiber optic cables will be installed parallel with the proposed pipeline. The fiber optic cables will be installed underground in either the pipeline trench or adjacent access road and will be contained within the requested ROWs. No additional ROW area will be required.

Pump station, regulating tank, and hydro station sites may include radio communication facilities. Radio communication facilities will include non-licensed, broad-spectrum radio to communicate between the facility and nearby valve vaults. Radio antennas will only be as high as necessary for functionality but may be as high as 20 feet and may be mounted on top of buildings or tanks for relay of operation information from the valve vaults, if fiber optic is not available. Antennas will be treated to limit visibility (see B.11.1 in Appendix B). No additional ROW area will be required.

3.4 Access Roads

Access roads include temporary construction access roads and permanent access roads. Both types of roads are included in the ROWs previously identified for the pipeline. Existing roads will be used to the extent feasible to access construction areas, provided they are suitable and landowner/land management agency approval is received. Some existing roads will be upgraded during construction to provide access to the pipeline and transmission line ROWs by grading, culvert installation, and placement of crushed rock, gravel, or other stabilization materials.

Permanent two-track access roads used for routine maintenance will be constructed along pipeline segments where no access is currently available.

Final road design and construction will be coordinated with the BLM and will consider the BLM's 9113–Roads Manual guidelines. Alternative widths (e.g., single lane with turnouts) or construction techniques (e.g., limit clearing/grubbing) will be considered for specific segments to lessen surface disturbance and subsequent restoration. Access controls, such as fences or gates, will be coordinated with applicable landowners and agencies during final design.

3.4.1 Construction Access Roads

Temporary construction access roads on BLM-administered land could be up to 30 feet wide as shown on Figure 3-3 and Figure 3-4 when the pipeline is constructed near or away from a highway, respectively. Temporary construction access roads will typically parallel the pipeline alignment. Existing access roads will be used during new transmission lines and pipeline construction. Upgrades to existing access roads for temporary construction access consist primarily of expanding the road potentially up to 30 feet wide with parallel ditches as shown on Figure 3-42. Coordination with each utility company on use of roads and road upgrades will occur during final design. Existing gravel roads identified for upgrades for construction access include (see Figure 1-1):

- The existing gravel road from BPS-3 to the Glen Canyon-Buckskin 138 kV transmission line (see Map Panel 13 in Appendix A). The road is approximately 5.5 miles long and the portion of this access road on BLM-administered land would encompass approximately 12 acres of ROW.

- The existing gravel road from U.S. Highway 89 (near Vista Ave.) into White Sage Wash and lower Johnson Wash will be upgraded to provide construction access to the pipeline alignment (see Map Panels 28, 29 and 35 in Appendix A). The road is approximately 9 miles long and the portion of this access road on BLM-administered land would be 29 acres of ROW.
- The existing County Road 239 from Arizona State Route 389 to the Navajo-McCullough Transmission Line corridor. The road is approximately 4.6 miles long, with 1.5 miles of the length on BLM-managed land.
- Other temporary construction access roads would be built within the proposed pipeline or transmission line ROWs.

If existing access roads within the project ROWs are temporarily widened for use during construction, those widened areas may be restored if not needed for permanent access (see Chapter 7 Stabilization and Rehabilitation).

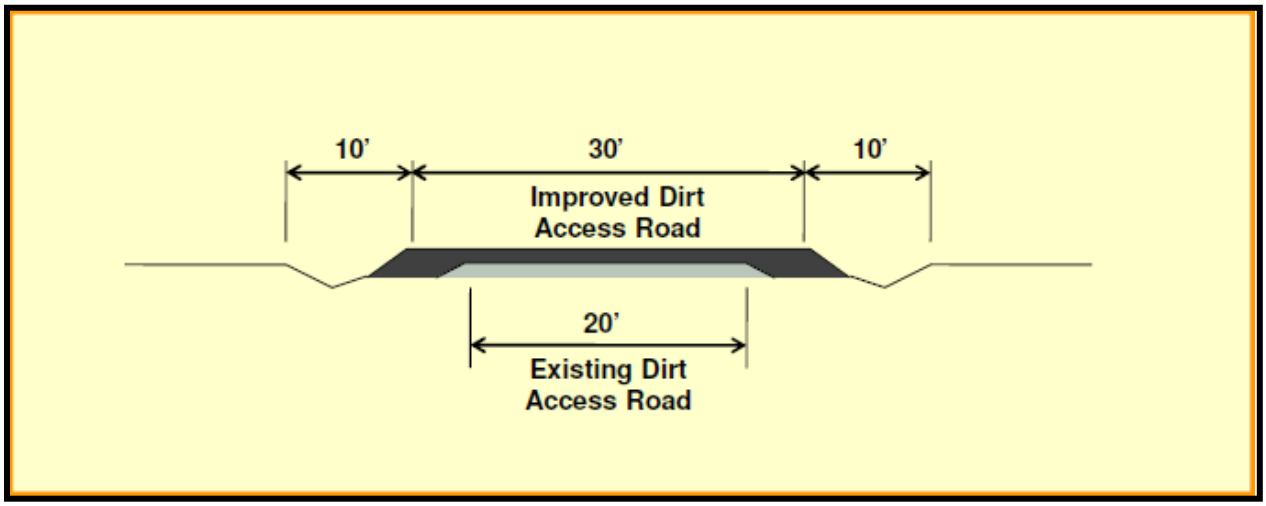


Figure 3-42 Typical Gravel or Dirt Road Upgrade Section and Easement for Temporary Construction Access

3.4.2 Permanent Access Roads

Permanent access roads could be up to 16 feet wide and will be located within the ROWs associated with the pipeline. Permanent access roads include the following:

- The 34.9-mile-long construction access road extending from where the proposed 230 kV Glen Canyon Substation to Buckskin Substation transmission line leaves NPS-managed land to the Buckskin Substation would be restored to a permanent two-track access road along the pipeline. The ROW would be within the proposed pipeline ROW.
- The 7.0-mile-long construction access road between the proposed 230 kV transmission line and BPS-2 would be restored to a permanent two-track access road along the pipeline. The ROW would be within the proposed pipeline ROW.
- The 18.1-mile-long construction access road extending from the U.S. Highway 89 vertical curve to the K4020 road would be restored to a permanent two-track access road along the pipeline. The ROW would be within the proposed pipeline ROW. This access road will follow the proposed

setback (approximately 430 feet) of the pipeline from the existing highway to accommodate future Paunsaugunt deer herd migration under-crossings.

- The 11.3 mile-long construction access road along the pipeline in White Sage Wash and Johnson Wash to the existing road along the Navajo-McCullough Transmission Line would be restored to a permanent two-track access road along the pipeline. The ROW would be within the proposed pipeline ROW. No existing highways and roads occur in this segment parallel to the pipeline.
- A series of segments totaling 9.5 miles of construction access road from west of Hildale City along the pipeline through Canaan Gap to the pipeline intersection with a BLM-road southwest of Little Creek Mountain would be restored to a permanent two-track access road. The ROW would be within the proposed pipeline ROW. No existing highways and roads occur in this segment parallel to the pipeline.
- A series of segments totaling 4.5 miles of construction access road from HS-5 along the pipeline and/or transmission line to the Sand Hollow Terminal Station would be restored to a permanent two-track access road. The ROW would be within the proposed pipeline ROW. No existing highways and roads occur in this segment parallel to the pipeline.
- Multiple short ingress/egress roads would be built as part of above ground pump stations and hydrostations.

All other permanent access roads to the pipeline appurtenances and along transmission lines will use existing highways and roads, with spur roads less than 150 feet long to each manway or valve vault as applicable. The pipeline between the Water Intake System and the High Point Regulating Tank will have 39 spur roads, each less than 150 feet long, for manway access and valve vault maintenance. These spur roads will total 1.1 miles and could encompass up to approximately 2 acres of ROW along the pipeline on BLM-administered land. The pipeline between the High Point Regulating Tank and Sand Hollow Reservoir will have 142 spur roads, each less than 150 feet long, for manway access and valve vault maintenance. These spur roads could total up to 4.0 miles and could encompass up to approximately 8 acres of ROW along the pipeline alignments on BLM-administered land.

3.5 Electric Power Facilities

The LPP electric power facilities consist of transmission lines, three-ring switch stations, primary electrical substations, secondary electrical substations, and staging areas for power facility construction. The power companies involved may include Page Electric Utilities, Garkane Energy Cooperative, Inc., PacifiCorp, and Dixie Power. These power companies own and operate transmission lines and associated facilities that cross Federal, state and private lands throughout the area from Glen Canyon Dam to Sand Hollow Reservoir.

This POD includes descriptions of the proposed electric power facilities and associated ROWs. The applicant intends to secure all BLM-administered ROWs for the project and will seek authorization as needed from BLM to assign ROW provisions to entities requiring long-term ROW access to construct, operate, or maintain electric facilities necessary to support the LPP.

3.5.1 Electric Power Transmission Lines

The power supply for the Water Intake System and BPS-1 will involve an upgraded 69 kV bus by the Glen Canyon substation, a new switching station, a new substation at the Water Intake System, and a new 69 kV power line connecting the substations. An additional 69 kV line will be extended from the switching station to BPS-1. These lines will not be collocated on existing towers or placed in existing ROW. The estimated transmission line distance from the Glen Canyon substation to the switching station

is about 2,640 feet, and the continuation from the switching station to the substation at the Water Intake System is an additional 2,120 feet. The distance between the switching station and BPS-1 is approximately 1 mile (see Map Panel 1 in Appendix A). No BLM ROW is needed for the section of transmission line between the Glen Canyon substation and the Water Intake System or BPS-1.

The power supply for BPS-2, BPS-3 and BPS-4 will involve a new 230 kV transmission line originating at the Glen Canyon substation, which will upgrade the Garkane Electric Cooperative, Inc. transmission system to the Buckskin substation (see Map Panels 1, 2, 4, 5, 8, 11, 12, 14, 15, 18, and 19 in Appendix A). Figure 3-43 shows a typical 230 kV transmission line tower configuration with a 150-foot-wide ROW. The new 36-mile 230 kV transmission line will run parallel to the existing Garkane Electric Cooperative, Inc. 138 kV transmission line. The line will involve 9.4 miles (154.0 acres) on BLM-administered land in Arizona (see Map Panels 1, 2, and 4 in Appendix A) and 15.1 miles (247.5 acres) on BLM-administered land in Utah (see Map Panels 4, 5, 12, 14, 15, 18 and 19 in Appendix A).

Two three-ring switching stations will be installed along the 230 kV line providing interconnection points for two new 138 kV lines needed to supply power to BPS-2 (7 miles) and BPS-3 (5.5 miles). The 138 kV line to BPS-2 does not cross BLM administered land. Figure 3-44 shows a typical 138 kV transmission line tower configuration. The 138 kV line to BPS-3 involves 2 miles on BLM-administered land (see Map Panel 13 in Appendix A).

The new 230 kV line will enhance the Buckskin substation to provide additional load capacity through the Paria substation for power to BPS-4. The interconnection to BPS-4 (0.4 miles) is on private land.

The new 230 kV transmission line to the Buckskin substation and138 kV transmission line to BPS-3, (see Map Panels 1 and 4 in Appendix A) will encompass 426.0 acres on BLM-administered land.

HS-1 will be connected to the existing electric transmission system with the construction of a new loop-in loop-out arrangement from the Buckskin-Johnson transmission line. Garkane Energy Cooperative, Inc. plans to upgrade the Buckskin-Johnson line, currently operating at 69 kV, to a 138 kV line. Figure 3-44 shows a typical 138 kV transmission line tower configuration. The distance from HS-1 to the existing line is less than 0.1 miles (see Map Panel 21 in Appendix A), all within the utility corridor. The new interconnection will encompass 1 acre on BLM-administered land.

A portion of the HS-2 transmission line will extend approximately 1 mile along Yellowstone Road to the existing Cane Beds-Hack Junction 34.5 kV transmission line paralleling Arizona State Route 389 (see Map Panel 49 in Appendix A). Figure 3-45 shows a typical 34.5 kV/69 kV transmission line tower configuration, requiring a 100-foot wide ROW. The new 34.5 kV transmission line ROW will encompass 5 acres on BLM-administered land.

HS-3 will be connected via a new 0.6-mile long, 12.47-kV underground line to the existing line owned by Garkane Energy Cooperative, Inc. at the Twin Cities substation. This interconnection is through private land, so no BLM ROW is needed for this transmission line.

The HS-4 transmission line will extend 10 miles from HS-4 to the interconnection with the existing Windy Ridge-Twin Cities 69 kV transmission line (see Map Panels 57, 58, 61, 62 and 63 in Appendix A). Figure 3-45 shows a typical 34.5 kV/69 kV transmission line tower configuration, requiring a 100-foot wide ROW. The new 69 kV transmission line will encompass 67 acres on BLM-administered land.

HS-5 will be interconnected to the electrical transmission network via a new 69-kV, 4.8-mile long transmission line, extending from the switchyard at HS-5 to the switchyard at the planned Sand Hollow Hydro Station. The new 69-kV transmission line ROW will encompass 42 acres on BLM-administered land.

The Sand Hollow Hydro Station will be connected to a nearby proposed Dixie Power substation by a double circuit 69-kV transmission line approximately 3.7 miles long. This interconnection is through private land, so no BLM ROW is needed.

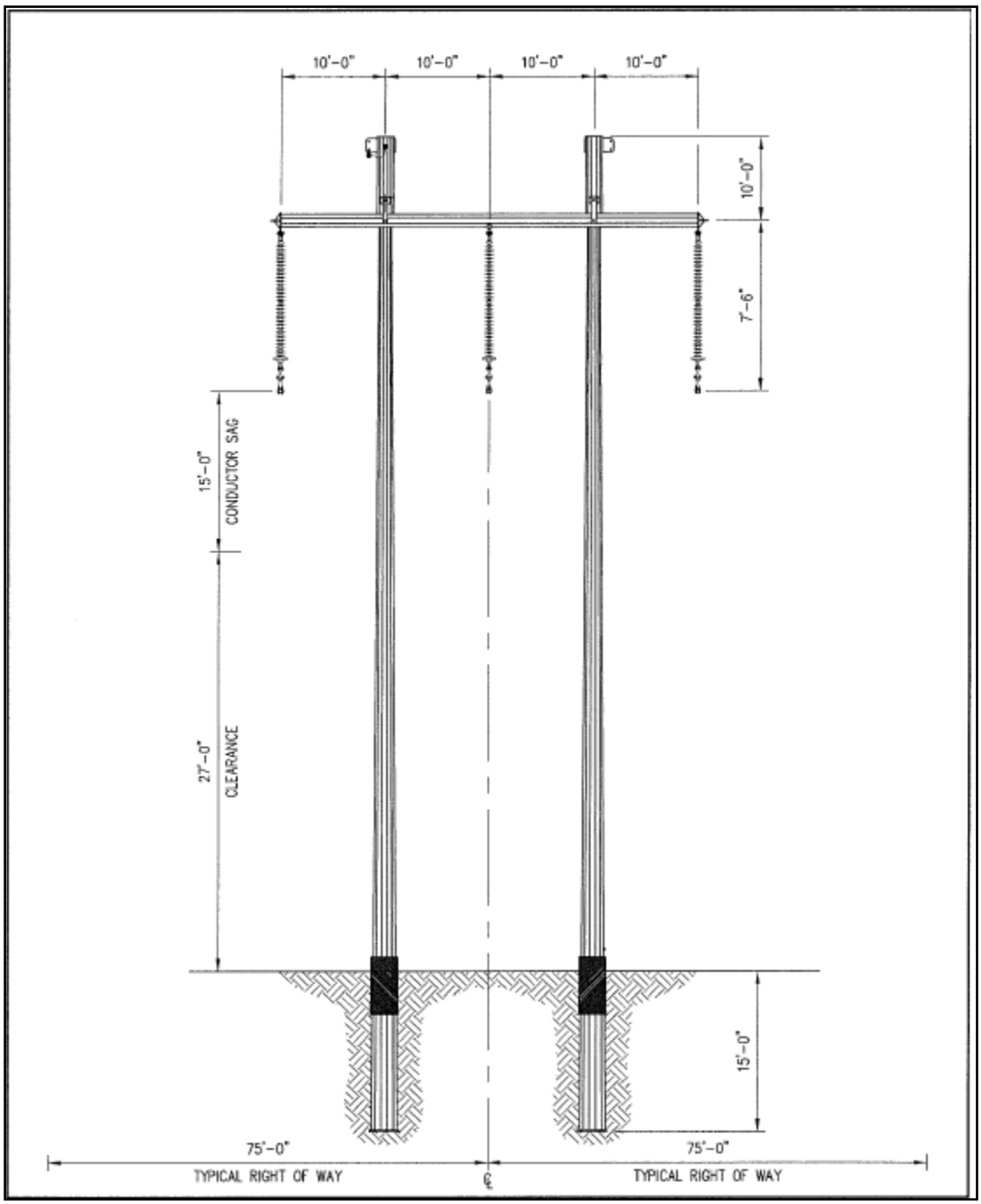


Figure 3-43 Typical 230 kV Transmission Line Tower Configuration

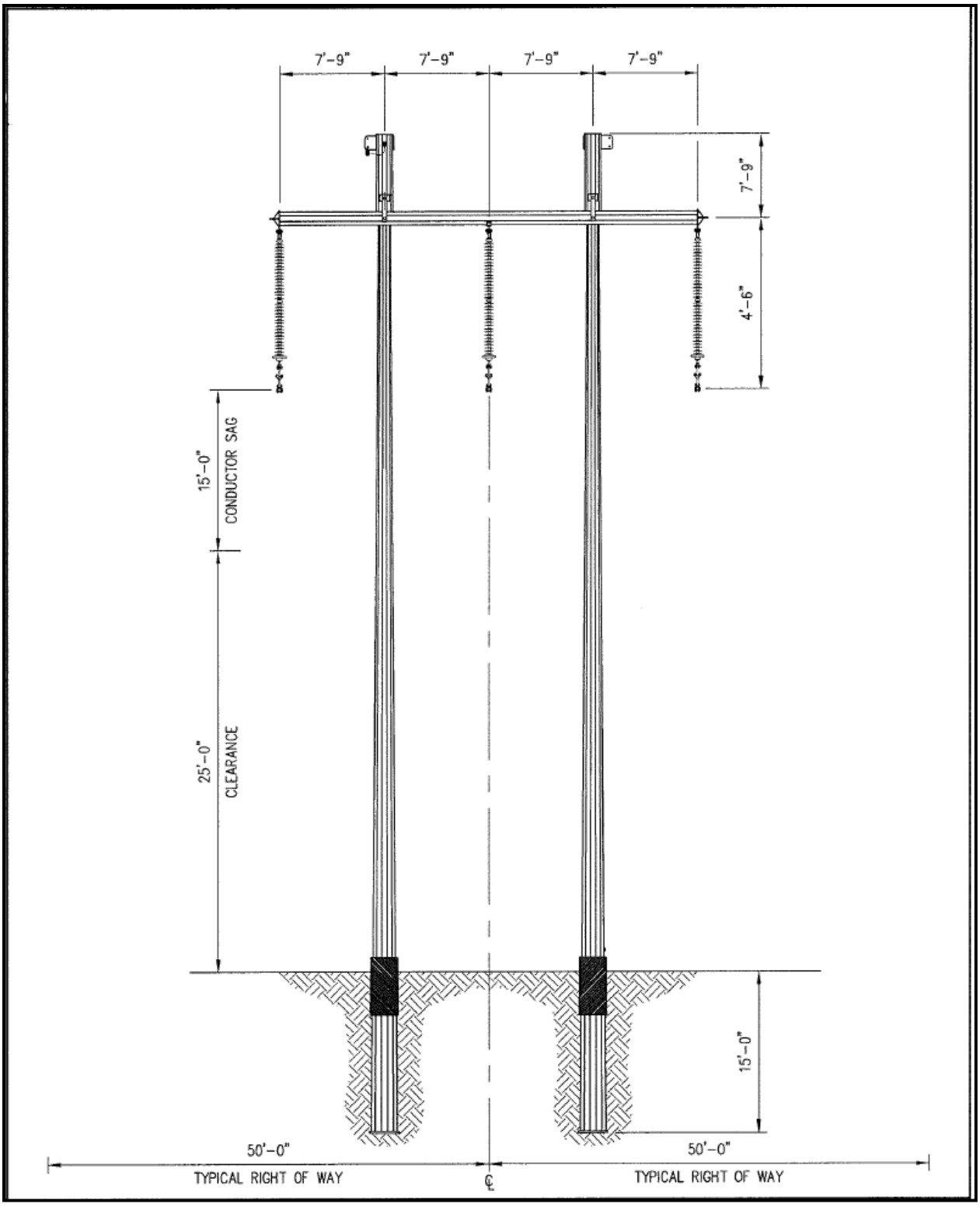


Figure 3-44 Typical 138 kV Transmission Line Tower Configuration

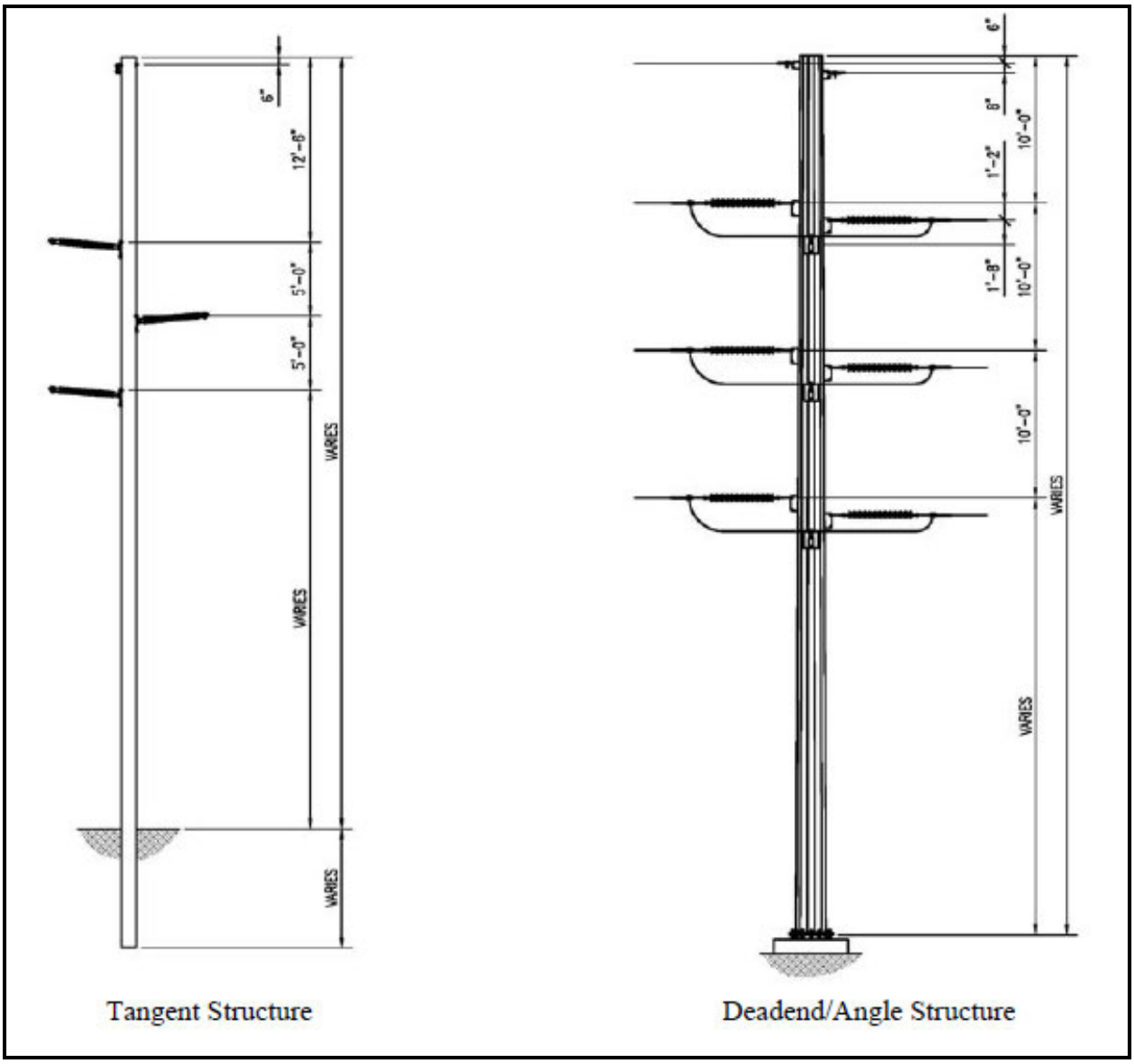


Figure 3-45 Typical 34.5 kV and 69 kV Transmission Line Tower Configurations

3.5.2 Electrical Substations

The substation equipment associated with the inline hydro stations and Sand Hollow Hydro Station are:

- Main Power Transformer – The three-phase main power transformer will step-up the generator voltage to the respective transmission voltage of the interconnection. The transformer will be oil-filled, two-winding type and air cooled. The main power transformer will be located adjacent to each powerhouse at the yard level.
- Outdoor Switchyard, Interface and Protection – An outdoor-type electrical transmission switchyard will be located adjacent to the powerhouse and main power transformer area. The main power transformer will be connected to the switchyard via overhead lines from the high-voltage side of the transformer to the high-voltage bus within the switchyard fence.

The electrical substations planned to be on land administered by the BLM are:

- BPS-3 will have an electrical substation located on BLM-administered land. The substation will have three single-phase step-down transformers to bring the voltage from 138 kV down to 4.16 kV to match the pump motor requirements. The substation will be surrounded by a perimeter security fence. Substation access will be via an access road leading to the gate in the security fence. The substation is included in the BPS-3 ROW area.
- HS-1 will have a substation located on BLM-administered land within the utility corridor along Highway 89. The 138 kV substation will have a loop-in loop-out transmission interconnection with the Buckskin-Johnson 138 kV transmission line, which is planned for upgrade from 69 kV to 138 kV by Garkane Electric Cooperative, Inc. The substation will be surrounded by a perimeter security fence with an access gate and access road. The substation is included in the HS-1 ROW area.
- HS-4 will have a primary substation located on BLM-administered land. The 69 kV substation will have a double-circuit connection to the 69 kV transmission line. The substation will be surrounded by a perimeter security fence with an access gate and access road. The substation is included in the HS-4 ROW area.
- HS-5 will use a three-phase main power transformer to step-up the generator voltage to the planned transmission voltage of 69 kV. The transformer will be oil-filled, two-winding type and air cooled, rated at 39 MVA. The main power transformer will be located adjacent to the powerhouse at the yard level. The transformer pad will be provided with skids for ease of installation of the transformer from the parking area as well as for ease of future maintenance and replacement, if necessary. The substation is included in the HS-5 ROW area.

3.6 Staging Areas

Staging areas are required for pipeline construction. These staging areas will be used for equipment and materials storage, construction office trailers, water storage and transfer, fuel storage, plant storage, equipment maintenance, and temporary stockpiling. Construction workers will park their personal vehicles in designated areas. Not every staging area will include all uses. Off-site parking and transportation to the project site of workers will be at the discretion of the contractor. Temporary security fencing may be used to enclose staging areas during construction; this fencing will be removed after construction activities (see B.1.32 in Appendix B).

Staging areas are located on existing roads with adequate access or along proposed temporary construction roads along the LPP alignment. Up to 19 staging areas are proposed adjacent to the water

conveyance pipelines. Staging areas are planned to be located on private land immediately adjacent to the pipeline ROW, except for one 38 acre site along U.S. Highway 89 west of the Cockscomb located on BLM-administered land (see Map Panel 17 in Appendix A) and three sites along the pipeline from HS-1 to HS-2 on BLM-administered land (see Map Panels 28, 32 and 41 in Appendix A). Two staging areas for constructing transmission lines will be located on BLM-administered land (see Map Panels 1 and 4 in Appendix A). All acres would be temporarily disturbed and restored after construction.

3.7 Borrow and Spoil

The soil and rock materials excavated from the trenches, road cuts, and tunnels will be reused for pipeline bedding and backfill and construction of maintenance roads to the extent economically feasible. Excavated rock will be used locally for bedding, backfill, and road construction, as practicable. Structures and roads will be designed to address and balance cuts and fills, as feasible. A preliminary comparison between the excavated volumes and the volumes of materials needed for construction indicates a surplus of soil. UDWRe will coordinate with the BLM regarding BLM needs for surplus soil. Otherwise, the surplus soil will be spread locally across the ROWs along the pipeline alignment. The preliminary analysis indicates the spread spoils will be up to four and a half inches thick. The spoils will be spread in a manner to blend with original topography and drainages with periodic swales or rolling dips to promote natural drainage patterns. Spoils may be painted or sprayed with an artificial desert varnish, as needed, following construction completion and prior to revegetation activities to reduce visual contrast (see B.11.4 in Appendix B). Borrow requirements are anticipated to be needed for certain specialized materials. If necessary, specialized material may have to be obtained from commercial sources outside of the project boundary.

Chapter 4 Government Agencies Involved

Table 1-1 lists the Federal and state permits, licenses, approvals and reviews potentially required to construct, operate, and maintain the LPP facilities described in this POD.

Table 4-1
Potentially Required Federal and State Permits, Licenses, Approvals and Reviews

Agency	Permit/License/Approval/Review
Federal	
Federal Energy Regulatory Commission	Conduit Exemption from Federal Power Act License
Bureau of Land Management	National Environmental Policy Act compliance – Cooperating Agency Endangered Species Act Section 7 consultation (lead) National Historic Preservation Act Section 106 compliance (lead) Native American Graves Protection and Repatriation Act coordination Cultural Resource Use Permit Right-of-Way Grant (FLPMA)
Bureau of Reclamation	National Environmental Policy Act compliance (lead) Endangered Species Act Section 7 consultation National Historic Preservation Act Section 106 compliance Native American Graves Protection and Repatriation Act coordination Cultural Resource Use Permit Right-of-Way License Agreement Water Service Contract
National Park Service	National Environmental Policy Act compliance – Cooperating Agency Endangered Species Act Section 7 consultation National Historic Preservation Act Section 106 compliance Native American Graves Protection and Repatriation Act coordination Archaeological Resources Protection Act Permit Right-of-Way Permit
Environmental Protection Agency	National Environmental Policy Act compliance document reviews
Federal Highway Administration	Permit to cross Federal Aid highway

Table 4-1
Potentially Required Federal, State and Local Permits, Licenses, Approvals and Reviews

Agency	Permit/License/Approval/Review
Federal	
U.S. Fish and Wildlife Service	Endangered Species Act Section 7 consultation and Biological Opinion Migratory Bird Treaty Act consultation Bald and Golden Eagle Protection Act consultation Fish and Wildlife Coordination Act compliance
U.S. Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit Rivers and Harbors Act Section 10 Permit Endangered Species Act Section 7 consultation National Environmental Policy Act compliance National Historic Preservation Act Section 106 compliance
State	
Arizona Department of Environmental Quality, Water Quality Division	Clean Water Act Section 401 Water Quality Certification Construction general permit (Arizona Pollutant Discharge Elimination System) Temporary discharge permit Temporary groundwater discharge permit
Arizona Department of Public Safety, Arizona Highway Patrol	Transportation Permit
Arizona Department of Transportation	Encroachment into State Highway ROW Right-of-Way occupancy permits
Arizona Department of Water Resources	Groundwater Withdrawal Permit
Arizona Game and Fish Department	Project Evaluation Program Fish and Wildlife Coordination Act concurrence
Arizona Plan Occupational Safety and Health Administration	Construction Permit
Arizona State Land Department	Right-of-Way across state lands Cultural Resource Use Permit
Arizona State Parks, State Historic Preservation Office	National Historic Preservation Act Section 106 review and concurrence Cultural Resource Use Permit
Utah Department of Environmental Quality, Division of Drinking Water	Approval to Construct New Facilities
Utah Department of Environmental Quality, Division of Water Quality	Clean Water Act Section 401 Water Quality Certification General storm water permit for construction (Utah Pollution Discharge Elimination System) Temporary discharge permit Temporary groundwater discharge permit

Table 4-1
Potentially Required Federal, State and Local Permits, Licenses, Approvals and Reviews

Agency	Permit/License/Approval/Review
Utah Department of Heritage and Arts, State Historic Preservation Office	National Historic Preservation Act Section 106 review and concurrence Cultural Resource Use Permit
Utah Department of Natural Resources, Division of Water Rights	Water Right Change Report of Water Right Conveyance Stream Alteration Permit
Utah Department of Natural Resources, Division of Wildlife Resources	Golden Eagle Nest Protection certificate of registration Reptile Protection certificate of registration Fish and Wildlife Coordination Act concurrence
Utah Governor's Office	Public Lands Policy Coordination Office Review Resource Development Coordinating Committee Review
Utah Occupational Safety and Health Administration	Construction Permit
Utah Department of Public Safety, Utah Highway Patrol	Transportation Permit
Utah Department of Transportation	Right-of-Way (outside of NPS-managed lands) and Encroachment Permit ROW occupancy permits
Utah State Institutional Trust Lands Administration (SITLA)	Right-of-Way/construction easements across SITLA-administered lands Cultural Resource Use Permit
Local	
Kane County, Utah	Building Permit
Washington County, Utah	Building Permit
Coconino County, Arizona	Building Permit
Mohave County, Arizona	Building Permit

Chapter 5 Construction of the Facilities

General construction methods and procedures are described in this chapter. The construction contracting breakdown (i.e., work packages, number of construction contracts and sequencing) will be identified during final design.

5.1 Standard Construction Methods

Standard construction methods common to LPP components on public and private lands are briefly described in the following sections. UDWRe will notify BLM at least 14 days before initiation of project construction. If construction activities overlap with a previously authorized ROW on BLM land, UDWRe will coordinate with the other ROW holder regarding LPP construction plans related to their authorized ROW (see B.1.4 and B.1.42 in Appendix B).

5.1.1 Surveying and Staking

Before ground disturbance activities are initiated for each work package, UDWRe will survey and stake each associated ROW boundary, construction area, and identified staging areas (see B.1.9. in Appendix B). In addition, environmental features requiring avoidance such as special status plant species, cultural sites, or other sensitive areas will be staked or flagged (e.g., in thick vegetation) and fenced as necessary, in accordance with approved environmental measures and federal and state environmental conditions and stipulations (see B.1.10. and B.1.11. in Appendix B). Existing utility lines, General Land Office and BLM survey monuments, culverts, and other existing features will be staked to prevent accidental damage during construction (see B.1.7. and B.1.8. in Appendix B).

5.1.2 Clearing and Grading

Clearing will occur within the staked boundaries of each ROW. Clearing may include removal of materials that could interfere with construction activities, create hazards or unsafe conditions, or impair subsequent site work. This could include cutting vegetation and removing boulders from each ROW as approved by the BLM (see B.1.16 through B.1.22 in Appendix B). Areas not needed for construction or have conditions that will not impede construction activities will not be cleared.

After prescribed plant and topsoil salvage, the cleared ROW areas will be grubbed by removing a deep surface layer that includes stumps and roots. The ROW areas will be graded as necessary to provide a level working surface for construction equipment. Grading of each ROW area will most likely be performed by a bulldozer or track hoe.

Following site clearing and grading, berms and drainage ditches may be constructed to contain runoff and divert floodwaters from the construction area. Berms and ditches will be incorporated into the final grading of facility sites, if feasible.

During construction and for a period of time as specified in the Integrated Weed Management Plan, noxious weeds will be managed according to the environmental protection measures B.1.76 through B.1.82 in Appendix B.

5.1.3 Site Fencing

Construction contractors will provide site security for equipment and materials, and to limit access to construction sites to authorized personnel. This may be accomplished through use of security personnel, signage, and/or fencing of facility sites as needed. Permanent site security fencing will be installed around facility sites. Temporary and permanent security fencing will consist of standard 6- to 8-foot high chain-link fencing (see B.1.12, B.1.13, and B.1.32 in Appendix B).

Temporary fencing may be installed as necessary for management of wildlife resources and grazing livestock during both construction and restoration efforts. The type and location of fencing will be coordinated with the BLM, NPS, Utah Division of Wildlife Resources, and/or Arizona Game and Fish Department (AGFD) (see B.1.14 in Appendix B).

5.1.4 Site Access

Access roads within each ROW will be constructed at the beginning of construction activities for each work package. This will include constructing new or upgrading existing roads within each ROW, by grading, culvert installation, or placement of crushed rock, gravel, or other stabilization materials. The final width of unimproved roads could be up to 16 feet; improved roads could be up to 30 feet.

5.1.5 Materials Storage

The construction staging areas and other portions of the ROWs, as identified by UDWRe, BLM, and NPS, will be used for construction equipment storage and building materials. Equipment is expected to include, but not be limited to, graders, trenchers, haul trucks, and pickup trucks. Building materials may include, but not be limited to, sections of pipe, pumps, motors, concrete block, cement, reinforcing steel bars, gravel, and sand. Smaller items such as tools, lighting fixtures, and instruments may be stored in enclosed, portable storage units. Fuel for construction equipment and uses will also be stored at the sites according to state, federal, and local rules and regulations. Temporary storage areas may be fenced, and security provided to secure the equipment and materials, as necessary (see B.1.32, B.1.36 through B.1.39, B.1.45 in Appendix B).

5.1.6 Sanitation and Power

Sanitary facilities and potable water storage will be provided for construction personnel. Sanitary facilities for construction personnel will be portable units. Water required during construction will be provided from local sources and/or temporary construction wells. Water may be conveyed to the construction site using trucks or temporary above-ground lines as necessary. Well number and locations will be determined in final design and may require additional ROW grants.

The ROWs will be kept free from any accumulation of construction waste, trash, and debris. Food waste will be disposed of promptly in predator-proof containers with re-sealable lids. Trash, debris, recyclables, and/or waste will not be buried or burned. Disposal or recycling of trash and debris will be off-site, at a State of Utah or State of Arizona approved sanitary landfill or recycling site (see B.1.33 and B.1.34 in Appendix B.) Construction materials shall be stored in a gathered, piled, or other organized manner that will readily accommodate use and eventual removal and will not create additional waste problems. Hazardous materials will be managed per the Spill Prevention, Control and Countermeasure (SPCC) plan (see B.1.48 in Appendix B).

Temporary power supply will be required during construction at some locations, including construction office trailers, pumping station, hydro station and other facility sites. Electrical power will be provided by the LPP electrical system, readily available commercial power, or if necessary, by portable generators. If portable generators are used, generator noise will be muffled and generators will be shut down outside of working hours if not necessary for construction purposes. If commercial power is available, it is anticipated that temporary connections will be arranged by the individual construction contractors, within the ROW areas. Those temporary connections may be to existing regional electrical power lines operated by Page Electric Utility, Garkane Electric Cooperative, Inc., PacifiCorp, and/or Dixie Power. Where the ROWs cross beneath existing power lines, warning signs will be installed, engineering measures may be implemented, and a construction watchman may be designated as needed to ensure equipment keeps specified distances away from the power line conductor cables (see B.1.41 in Appendix B).

5.2 Pipelines Construction

Pipeline construction will be by standard cut and cover technique, involving an open trench. The only exceptions will be short segments of tunneling in areas of difficult topography and jack and bore crossings of select highways. Multiple pipeline segments may be under construction at a given time. See Section B.1 in Appendix B for environmental protection measures related to pipeline construction.

5.2.1 General Pipeline Construction Techniques

In addition to the standard construction methods previously described, the following general construction techniques will apply to pipelines.

5.2.1.1 Trenching

Excavators, backhoes, track hoes, or other similar equipment will be used to excavate the trench. The pipe trench top width will normally vary from 20 to 30 feet wide, with side slopes from 0.75:1 to 2:1 but could be as narrow as 15 feet wide depending on topography, soils, bedrock or other site-specific conditions. The depth of the excavated ditch will be nominally 10 to 12 feet. This allows 1 to 2 feet of space for pipe bedding and placement, approximately 6 feet of depth to accommodate the pipe itself, plus a minimum of 3 feet of material to cover the pipe. Material excavated from the trench will be stockpiled adjacent to the trench.

In the Cockscomb, Jacob Canyon, Kanab Creek Canyon, Bitter Seeps Wash, or other areas where construction excavation may be limited due to topographic constraints, pipeline excavation may use trench boxes or other structural trench support measures, in compliance with Occupational Safety and Health Administration (OSHA) standards.

The length of open trench segments will be managed to minimize the duration of construction disturbance. Longer stretches of open trench may be needed in some areas to keep the construction period shorter and to enable testing. Multiple construction contracts may be underway during the same time period, and up to 5 miles of continuous trench from an individual contract could be open at any time.

Signs and barricades will be used, as needed, at public road crossings and trails to protect the public from open trenches and construction areas (see B.1.15 in Appendix B). Escape ramps will be placed at each end and every ¼- mile of any open trench or other excavation deeper than 4 feet to allow escape of wildlife or livestock that may become entrapped (see B.1.35 in Appendix B). Escape ramps will not be required at the end of a trench where active pipelaying and backfilling is occurring.

5.2.1.2 Bedding

Engineered bedding materials will be placed in the bottom of the pipeline trench. These bedding materials may consist of screened or otherwise processed excavated materials or materials imported from borrow pits. Imported natural materials or material from distant locations on the ROW areas will used only if certified weed-free. Alternatively, bedding materials may be a cement-based Controlled Low Strength Material. Bedding materials may be laid up to the mid-point around the pipe (lower pipe zone).

5.2.1.3 Pipe Laying and Welding

Pipe sections will be transported to the construction site via truck and strung along the trench. The pipe sections will be lowered into the trench and the sections welded together. All welds will be visually inspected and tested using non-destructive and approved testing methods. Welds that do not meet established specifications will be repaired or removed. Once the welds are approved, the exterior will be treated with corrosion protection measures such as tape wraps or painted coatings and the interior will be treated to match pipeline liner material, typically a cement-mortar. Wrapped and coated joints will be inspected for faults or voids in the coating. Appurtenant structures will then be affixed to the pipe.

5.2.1.4 Upper Pipe Zone Backfilling

After the pipe and bedding material have been placed in the trench, the area immediately around the upper sides of the pipe to not less than 12 inches above the top of pipe (upper pipe zone) will be backfilled and compacted. Materials used for backfill may include Controlled Low Strength Material, excavated soils, or materials imported from borrow pits or material suppliers that have been screened or otherwise processed. Imported natural materials or material from distant locations on the ROW areas will be used only if certified weed-free. The imported backfill material will be crushed rock, gravel, and/or sand up to 3/8-inch in diameter.

5.2.1.5 Trench Backfill

After upper pipe zone backfilling, the remainder of the trench will be backfilled to approximately finished grade using a backhoe, track hoe, bulldozer or similar equipment. Material that is six inches in diameter or less will be used as backfill. Trench backfill will meet best management practices, and be:

- Selected or processed to be clean, well graded earth material
- Free of excessive fine particles, vegetation, or other deleterious materials
- Compacted in place for maximum pipeline stability
- Moistened or dried before backfilling to maintain optimum moisture content

Excess soils not used as pipeline bedding or backfill will be distributed over ROW areas so as to blend with original topography and minimize disruption to natural drainage. Re-spreading of this material across the ROW area after construction could add approximately 4.5 inches to the ground surface. The ground surface will be graded to blend with pre-existing contours and adjacent land surface. Surface soils will be placed in a manner to minimize stark contrast with adjacent undisturbed areas. Following grading of the ROW area, topsoil replacement and vegetation restoration will be conducted in accordance with an approved Restoration Plan (see B.1.1 in Appendix B).

5.2.1.6 Construction Water

Water will be required for construction activities, including dust control, pipe bedding, trench backfill compaction, and hydrostatic testing. UDWRe has assumed that construction water would be obtained from water utilities where feasible, existing wells, and new wells installed as part of the project along the ROW.

Well number and locations will be determined in final design and may require additional ROW grants. Additional ROWs for other supplies for construction will not be needed.

5.2.1.7 Hydrostatic Testing

Hydrostatic testing will need to be conducted to pressure test the completed pipeline. The testing will be conducted in segments, when major portions of the pipeline are completed. Water used for the hydrostatic testing is anticipated to be obtained from existing groundwater wells or other permitted sources. Well number and locations will be determined in final design and may require additional ROW grants.

Water from hydrostatic testing of individual pipeline segments will either be released into a downstream pipeline segment for continued hydrostatic testing or will be discharged through a drain valve into adjacent dry washes. Discharges into dry washes will be conducted in accordance with requirements of a State of Utah or State of Arizona temporary discharge permit. The Compliance Inspector (CI) (see B.1.2 in Appendix B) will coordinate with the BLM on monitoring such discharges and will identify any site-specific mitigation actions. A diffuser or similar device will be used to reduce the potential of discharges to erode and scour dry washes. The specific discharge locations cannot be determined until facility design is completed. A detailed hydrostatic testing discharge plan will be prepared and submitted to the BLM for approval before testing (see B.1.57 and B.1.58 in Appendix B).

5.2.2 Special Pipeline Construction Techniques

Some pipeline segments will require special pipeline construction techniques described in the following sections.

5.2.2.1 Highway Road Crossings

The pipeline will cross U.S. Highway 89, U.S. Highway 89 Alt. and Arizona State Route 389. Bore and jack construction, which is a method for installing a casing below grade without trenching, is anticipated for these crossings. Boring and jacking pits, approximately 100 feet long by 20 feet wide, will be placed on either side of the highway (within the requested ROWs). Minimum depth to the top of the pipe under highways will be five feet. The Department of Transportation in each state and other applicable agencies will be consulted in final design as to best crossing method and measures

5.2.2.2 Utility and Other Crossings

The pipeline may cross existing utility pipelines, gas pipelines, and fiber optic cables. Such crossings may be performed by either bore and jack construction, or other methods that minimize or potentially avoid service disruptions. Standard industry practices or utility requirements will dictate methods and specifications, which will be determined during final design. No railroads will be crossed by the pipeline. The LPP will not include pipe sleeves or other measures to address future, speculative utilities that may eventually cross the LPP.

5.2.2.3 Steep Terrain

There are areas of steep terrain along the pipeline route in the Cockscomb area, Jacob Canyon, Kanab Creek Canyon, Bitter Seeps Wash, and Hurricane Cliffs areas. The excavated construction trench may be wider or narrower through these stretches, depending on conditions, and trench boxes or other structural trench support measures may be used, in compliance with OSHA standards. Other short areas of bore and jack construction techniques may be needed where the pipe depth will be over 40 feet because of topography and need to maintain an adequate hydraulic profile.

5.2.2.4 Stream Crossings

For stream crossings which may have flow (e.g., Paria River, Kanab Creek), the construction technique will be open cut with temporary diversion of flow, in accordance with US Army Corps of Engineers and State of Utah or State of Arizona permit requirements, as applicable. A dewatering plan will be prepared

and submitted to the BLM for approval in advance of construction (see B.1.44 in Appendix B). There are no wetlands that will be crossed by the requested ROWs.

5.2.2.5 Ephemeral Wash Crossings

Crossings of dry washes will be constructed by standard cut and cover, with implementation of erosion control measures in accordance with a project approved Storm Water Pollution Prevention Plan (SWPPP) and as required under the Clean Water Act Section 404 permit (see B.1.46 through B.1.56 in in Appendix B).

5.2.2.6 Residential Areas

Pipeline construction in residential areas including the communities of Greenehaven, Big Water, Church Wells, near the Paria River, Centennial Park, Colorado City, and Hildale City will be performed using trench box techniques to minimize trench widths and surface disturbance from excavation. Access disruptions to private property will be minimized by maintaining single-lane vehicle passage with steel plates over open trenches.

5.2.2.7 Blasting

Blasting will be necessary when bedrock or large boulders are encountered during excavation. Until detailed geotechnical investigations and pipeline design are completed, the extent of blasting is not known. Where blasting is required, a Blasting Plan will be prepared and submitted for BLM approval. Qualified blasting specialists will be used so that all blasting is conducted according to regulations and the approved plan (see B.1.43 in Appendix B).

5.3 Water Facilities Construction

5.3.1 Water Intake System

Following site clearing and grading, the intake system underground features will be constructed in Navajo Sandstone bedrock. The intake tunnels will be constructed one at a time using a micro-tunnel boring machine. Fish screens will be mounted on the end of each tunnel where it connects with Lake Powell. The two vertical intake shafts will connect each set of horizontal intake tunnels to the forebay chamber through two forebay connector tunnels at the bottom of each shaft. The vertical intake shafts will be constructed one at a time using blind-bore drilling techniques.

The connector tunnels will be constructed either using drill and blast techniques or a mechanized road header. An isolation gate valve will be installed in a concrete bulkhead within the forebay chamber to allow either the north or south side of the Water Intake System underground features to be isolated for maintenance. The vertical isolation shaft will be constructed either by blind-bore or raise-bore drilling techniques following excavation of the forebay chamber. The vertical pump well shafts will be constructed one at time either by blind-bore or raise-bore drilling techniques following excavation of the forebay chamber.

The Water Intake System pump station will be situated directly over the vertical pump well shafts and vertical isolation shaft, immediately southwest of the two vertical intake shafts. The pump station will include a building approximately 200 feet long, 100 feet wide and 40 feet high above ground level to house the pumps and motors, electrical, mechanical and chemical rooms, and an office/control room.

5.3.2 Pumping Station

Following site clearing and grading, the plumbing, power conduits and other infrastructure beneath the pumping station floors will be constructed. The structure foundations will then be constructed, followed by the floors, walls and roof. Mechanical and interior components may be constructed in conjunction with the building or after it is completed.

The facilities will be inspected and a certificate of occupancy issued according to required county regulations. Facilities may also be subject to applicable federal agency fire and electrical inspections. Permanent power will be connected from the LPP electrical system to the facilities' electrical systems. The pumps, valves, and appurtenances within each facility will be connected to the incoming and outgoing pipelines, and the system tested in its entirety. Temporary electrical, water, and sanitary systems not converted into permanent facilities will be removed. Final grading and site restoration of land within the ROW will be completed in accordance with the approved Restoration Plan (see B.1.1. in Appendix B).

5.3.3 High Point Regulating Tank

Following site grading and leveling, the buried regulating tank will be constructed of reinforced concrete. The concrete tank will be constructed as a cast-in-place structure. Overflow pipes, drain pipes, inlet and outlet pipes, ladders, and other appurtenances will be erected at varying periods during construction.

After construction, the regulating tank will be hydrostatically tested. Hydrostatic testing of the regulating tank will be coordinated with testing of the pipeline, if feasible, to conserve water and the amount of needed testing. The volume of water discharged from hydrostatic testing will depend on the final size of each tank, which will not be determined until project design. However, it is anticipated that the maximum volume of water discharged per tank will be 1.5 million gallons. Water will be discharged into adjacent dry washes or drainage channels, with the flow rate not exceeding the 2-to 5-year storm event. The water will be discharged in a controlled manner, in accordance with the requirements of a temporary discharge permit and the hydrostatic discharge testing plan. Alternately, water from testing may be discharged to the downstream pipeline.

5.3.4 Hydroelectric Generating Stations

Following site clearing and grading, the plumbing, power conduits and other infrastructure beneath the inline hydro station floors will be constructed. The structure foundations will then be constructed, followed by the floors, walls and roof. Mechanical and interior components may be constructed in conjunction with the building or after it is completed.

The facilities will be inspected and a certificate of occupancy issued according to required county regulations. Facilities may also be subject to applicable federal agency fire and electrical inspections. Permanent power and transmission will be connected from the LPP electrical system to the facilities' electrical systems. The turbines, generators, valves, and appurtenances within each facility will be connected to the incoming and outgoing pipelines, and the system tested in its entirety. Temporary electrical, water, and sanitary systems not converted into permanent facilities will be removed. Final grading and site restoration of land within the ROW will be completed in accordance with the approved Restoration Plan (see B.1.1. in Appendix B).

5.3.5 Hurricane Cliffs Waterway

The Hurricane Cliffs Waterway tunnels and shafts will be constructed using several different techniques and types of equipment.

- The low pressure tunnel may be constructed using the drill and blast tunnel method. Following excavation of the earth materials, the tunnel will be lined with cast-in-place reinforced concrete.
- The high pressure shaft and surge shaft likely will be constructed using a raise bore method from the ground surface on the top of Hurricane Cliffs. Following removal of the earth materials from the excavated shaft, the surge/inspection shaft and upper 100-feet of pressure shaft will be lined with cast-in-place reinforced concrete. The remainder of the high pressure shaft will be lined with welded steel plate.
- The high pressure tunnel may be constructed using the drill and blast tunnel method. Following excavation of the earth materials from the tunnel, it will be lined with welded steel plate. The annulus between the steel plant lining and the excavated tunnel surface will be backfilled with concrete.

Following completion of the waterway, all connected segments (low pressure tunnel, high pressure shaft and high pressure tunnel) will be hydrostatically tested for pressure. Water used for the hydrostatic testing is anticipated to be obtained from existing groundwater wells or other permitted sources.

Water from hydrostatic testing of waterway tunnels and shafts will either be released into the downstream pipeline segment for continued hydrostatic testing or will be discharged through a drain valve into an adjacent dry wash. Discharges into the dry wash will be conducted in accordance with requirements of a State of Utah temporary discharge permit. A diffuser or similar device will be used to reduce the potential of discharges to erode and scour the dry wash. The specific discharge locations cannot be determined until facility design is completed. A detailed hydrostatic testing discharge plan will be prepared and submitted to the BLM for approval before testing.

5.4 Communications Facilities Construction

Fiber optic cables will be buried in the ground in the pipe trench, adjacent to the pipeline within each ROW. In the trench, the cable will be buried at least three feet deep, or buried in the ground adjacent to the trench at approximately three to four feet deep. The fiber optic cables will be routed to the facilities where they will be connected to the facility communications systems.

5.5 Access Roads Construction

Access road construction will occur at the beginning of pipeline and facility construction in the area served by the access road. Roads may be graded to level the surface as necessary. Gravel will be applied in areas needed to maintain road conditions during construction activities (see B.1.28 and B.1.29 in Appendix B). In areas of improved roads, culverts will be installed where needed.

Public use and access on existing roads and highways will not be impeded by construction. Signs and flaggers will be used as necessary to direct traffic in accordance with all applicable Utah Department of Transportation requirements, Arizona Department of Transportation requirements, county and local laws and ordinances (see B.1.23 through B.1.27 in Appendix B).

If roads within the project ROWs are temporarily widened for use during construction, those widened areas may be restored along with other ROW restoration, in coordination with the BLM and NPS.

5.6 Electric Power Facilities Construction

The involved power companies will construct the electric power transmission lines and substations/switchyards within their geographical boundaries and service areas. The following subsections describe the power facilities construction.

5.6.1 Electric Power Transmission Lines

Clearing and grading of the entire power line area for each ROW will not be required. Following identification of specific power pole locations, work areas of approximately 100 feet by 200 feet around each power pole structure will be cleared. A temporary access road or access road spur to the pole locations will be graded as needed to provide vehicle passage. Trees within each ROW identified as a potential hazard to operation of the transmission lines will be removed in the clearance zone to avoid contact with the conductors. Tree removal will be coordinated with and approved by BLM in accordance with regulations.

A truck-mounted rotary auger will bore pole locations to a depth of approximately 15 feet. After hardware and insulators are installed on each pole, the poles will be erected on site and placed using a truck-mounted crane. Soil removed by the auger will be used to backfill the space around the pole. Excess soil cuttings will be spread around the pole site, within each ROW. Where additional strength is needed to support a power pole, a concrete foundation may be used to reinforce a bore hole, or concrete may be used to backfill a hole after pole installation. Guy wires may be used to further stabilize poles.

Conductor wires will be strung using tensioning equipment. Tensioning equipment will require 100-foot by 200-foot work areas, approximately one mile apart. A large spool of conductor wire will be mounted on a truck at one work area and pulling equipment will be located at the next work area. In this manner, conductor wire could be pulled onto the series of power poles within the one-mile pulling distance in a single operation. Stringing conductor wires over U.S. Highway 89 and Arizona State Route 389, and other frequently traveled roadways, may require erecting temporary guard structures to elevate conductor wires to a sufficient height to avoid traffic conflicts. Temporary guard structures will be constructed using wood poles in H-frame configuration.

After power lines are connected to substations and facilities, the lines will be energized. Electrical equipment on each power line network will be tested before it is entered into service.

5.6.2 Substations and Switchyards

Following site clearing and grading, berms and drainage ditches will be constructed to contain runoff and divert floodwaters from the substation and switchyard sites. For each substation and switchyard, concrete pads will be constructed for transformers. Each pad will include a curb around the perimeter for spill containment. Concrete foundations will be constructed for electrical structures. Electrical conductors will be strung using pulleys. A concrete block control building will be constructed to house controls and relay equipment.

Substations will be enclosed by security fencing, typically 8-foot high chain link, with a locked gate. Once the substations are constructed, they will go through a testing and commissioning process, in accordance with applicable electrical industry standards, codes and procedures.

5.7 Construction Schedule and Workforce Estimates

The schedule presented in this section has been prepared to support the environmental analysis, and assumptions have been made regarding the construction schedule, workforce, and equipment needs. A detailed construction schedule will be developed during final design, as individual construction contracts are identified. Schedule sequencing, durations, and workforce estimates may be revised.

5.7.1 Construction Schedule

Construction of the LPP components under this request for ROWs is planned to begin after receipt of the ROW grants. Various components of the LPP may be constructed simultaneously throughout the project area during this period. Table 5-1 provides a preliminary construction schedule for the LPP. The access roads will be constructed in conjunction with the pipelines and electric transmission lines, and therefore are not separately listed on the Table 5-1.

5.7.2 Workforce Estimates

A preliminary estimate of the peak workforce required to construct the LPP facilities has been developed for the purposes of environmental analysis. Although the specific number of construction contracts and associated contracting schedule has not yet been developed, assumptions were made based on the preliminary construction schedule and typical construction workforce on other similar projects. The estimated peak construction workforce by year is presented in Table 5-2. Estimates for the pipeline and transmission lines are shown over the entire construction period, because locations and limits of individual construction contracts have not yet been determined. The facility sites were grouped into general geographic regions for manageability.

Estimates of the types of construction equipment that may be required for project construction have been developed for the purpose of environmental analysis. The estimated construction equipment types are listed in Tables 5-3 through 5-5. The categories shown include the following components:

- Pipelines – includes pipelines, valves, manways, other appurtenances
- Pipelines – includes pipe, valves, manways, other appurtenances
- Power Transmission System – includes transmission poles, towers and conductors, substations
- Other Facilities – includes pumping station, regulating tank, hydro stations, fiber optic cables, roads, and staging areas

Table 5-1
Preliminary Construction Schedule for LPP on BLM-Administered Land

System	Feature Description	Anticipated Construction Start (Year/Quarter)	Anticipated Construction Finish (Year/Quarter)
Pipeline and Facilities	Water Intake System	Year 4/Q1	Year 6/Q1
	Booster Pump Station-1	Year 4/Q1	Year 5/Q4
	Booster Pump Station-2	Year 4/Q1	Year 5/Q4
	Booster Pump Station-3	Year 4/Q3	Year 6/Q2
	Pipeline Segment 1 – Intake to BPS-3	Year 1/Q1	Year 2/Q2
	Pipeline Segment 2 – BPS-3 to BPS-4	Year 2/Q1	Year 3/Q2
	Booster Pump Station-4	Year 4/Q3	Year 6/Q2
	Pipeline Segment 3 – BPS-4 to HS-1	Year 3/Q1	Year 3/Q4
	Regulating Tank	Year 4/Q1	Year 4/Q2
	Hydro Station-1	Year 4/Q1	Year 5/Q4
	Pipeline Segment 4 – HS-1 to HS-2	Year 4/Q1	Year 6/Q3
	Hydro Station-2	Year 4/Q2	Year 6/Q1
	Pipeline Segment 5 – HS-2 to HS-4	Year 4/Q2	Year 5/Q4
	Hydro Station-3	Year 4/Q3	Year 6/Q2
	Hydro Station-4	Year 4/Q4	Year 6/Q3
	Pipeline Segment 6 – HS-4 to HS-5	Year 4/Q3	Year 4/Q3
	Hurricane Cliffs Tunnels/Shafts	Year 4/Q3	Year 6/Q2
	Hydro Station-5	Year 5/Q1	Year 6/Q4
	Pipeline Segment 7 – HS-5 to Sand Hollow	Year 4/Q4	Year 5/Q2
	Sand Hollow Terminal Station	Year 5/Q1	Year 6/Q4
Transmission Lines [a]	Intake/BPS-1 Transmission Line	Year 1/Q1	Year 1/Q4
	Glen Canyon-Buckskin Transmission Line	Year 1/Q1	Year 3/Q1
	BPS-2 Transmission Line	Year 1/Q1	Year 3/Q1
	BPS-3 Transmission Line	Year 1/Q1	Year 3/Q1
	HS-4 Transmission Line	Year 1/Q1	Year 1/Q2
	HS-5 Transmission Line	Year 1/Q1	Year 1/Q2
	Sand Hollow Transmission Line	Year 1/Q1	Year 1/Q2
	Other Substations/Switchyards	Year 2/Q1	Year 3/Q1

Notes:
[a] Transmission lines not listed would be built concurrent with associated facility construction.
BPS = booster pump station
HS = hydro station
Q = quarter

Table 5-2
Estimated Peak Construction Workforce By Year

System	Feature Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Pipeline and Facilities [a,b,c]	Water Intake System				160	160	160
	Booster Pump Station-1				45	45	
	Booster Pump Station-2				46	46	
	Booster Pump Station-3				50	50	50
	Pipeline Segment 1 – Intake to BPS-3	145	145				
	Pipeline Segment 2 – BPS-3 to BPS-4		88	88			
	Booster Pump Station-4				53	53	53
	Pipeline Segment 3 – BPS-4 to HS-1			144			
	Regulating Tank				25		
	Hydro Station-1				31	31	
	Pipeline Segment 4 – HS-1 to HS-2				144	144	144
	Hydro Station-2				28	28	28
	Pipeline Segment 5 – HS-2 to HS-4				141	141	
	Hydro Station-3				30	30	30
	Hydro Station-4				48	48	48
	Pipeline Segment 6 – HS-4 to HS-5				136		
	Hurricane Cliffs Tunnels/Shafts				110	110	110
	Hydro Station-5					43	43
	Pipeline Segment 7 – HS-5 to SH				80	80	
	Sand Hollow Terminal Station					35	35
Transmis-sion Lines [a,b,c,d]	Intake/BPS-1 Transmission Line	10					
	Glen Canyon-Buckskin Transmission Line	24	24	24			
	BPS-2 Transmission Line	16	16	16			
	BPS-3 Transmission Line	16	16	16			
	HS-4 Transmission Line	16					
	HS-5 Transmission Line	16					
	Sand Hollow Transmission Line	16					
	Other Substations/Switchyards		32	32			

Notes:
[a] Segment includes construction on BLM land, private land, and state land; estimated peak construction workforce is for entire segment.
[b] Estimated total peak construction workforce is not continuous throughout the construction period for any feature.
[c] Construction periods may span multiple years in this table but may only involve construction during part of a particular year.
[d] Transmission lines not listed would be built concurrent with associated facility construction.

BPS = booster pump station
HS = hydro station
SH = Sand Hollow Reservoir

Table 5-3
Estimated Personnel and Equipment Required for Pipeline Construction

Personnel			Equipment		
Type	**Pipeline**	**Tunnel/Shaft**	**Type**	**Pipeline**	**Tunnel/Shaft**
General Foreman	1	1	Grader	2	2
Foreman	3	3	Haul Truck	4	6
Project Manager	1	1	Forklift	2	2
Project Engineer	1	1	Bulldozer	2	2
ROW Crew	5		Excavator	2	2
Pipe Stringing Crew	5		Loader	4	4
Excavation Crew	10		Crane	2	2
Bedding Crew	7		Generator, Large	1	2
Pipe Laying Crew	7		Generator, Small	2	4
Welding Crew	12	2	Welding Rig	12	2
Joint Prep/Wrap Crew	7		Plate Compactor	6	
Backfill Pipe Zone Crew	10		Roller Compactor	2	1
Final Backfill Crew	6		Fuel Truck	1	2
Interior Crew	5		Pickup Truck	8	6
Appurtenances	7		Truck	2	2
Safety	1	3	Drill Rig		2
Operator		10	Grout Plant		1
Mechanic		4	Conveyor System		1
Teamster		22	Dewatering System		2
Laborer		18	Muck Bucket		2
Electrician		3	Muck Car		4
Carpenter		4	Air Compressor		2
Master Blaster		1	Raise Bore		1
Blasting Crew		3	Hammer Drill		1
Lead Miner		3	Hoist		2
Oiler		3			
Total	**88**	**82**	**Total**	**52**	**57**

Table 5-4
Estimated Personnel and Equipment Required for Pump Station, Regulating Tank, and Inline Hydro Station Construction

Personnel				**Equipment**			
Type	**Pump Station**	**Regulating Tank**	**Inline Hydro Station**	**Type**	**Pump Station**	**Regulating Tank**	**Inline Hydro Station**
General Foreman	1	1	1	Excavator	2	2	2
Foreman	2	1	3	Bulldozer	1	1	1
Project Manager	1	1	1	Grader	1		1
Project Engineer	1	1	1	Haul Truck	4	6	4
ROW Crew	3	3	3	Scraper			
Safety	1	1	1	Crane	1	1	2
Operator	12	5	12	Loader	2	1	2
Mechanic	1	6	1	Roller Compactor	2	1	2
Teamster	7	4	7	Forklift	2	1	2
Iron Worker	6	2	6	Generator, Large	1		2
Welder	3	1	3	Generator, Small	2	2	2
Laborer	10	6	10	Plate Compactor	2		2
Electrician	12	2	12	Welding Rig	3	1	3
Carpenter	8	4	8	Fuel Truck	1	1	1
Millwright	2		2	Pickup Truck	8	8	8
Pipe Fitter	6	2		Truck	2	1	2
Master Blaster	1	1	1	Auger Drill	1	1	1
Blasting Crew	3	3	3	Bucket Truck		4	
Excavation Crew	2	3	2	Raise Bore			
Backfill Crew	2	2	2	Hammer Drill			
				Hoist			
Total	**84**	**49**	**79**	**Total**	**35**	**31**	**37**

Table 5-5 Estimated Personnel and Equipment Required for Power Transmission System					
Personnel			**Equipment**		
Type	**TL**	**Substation/ Switchyard**	**Type**	**TL**	**Substation/ Switchyard**
General Foreman	4	1	Excavator	-	3
Foreman	4	2	Bulldozer	1	-
Project Manager	-	1	Grader	-	1
Project Engineer	4	1	Haul Truck	6	3
ROW Crew	8	2	Crane	2	2
Safety	4	1	Loader	1	1
Operator	16	8	Roller Compactor	-	1
Mechanic	4	1	Generator, Large	-	1
Teamster	14	5	Generator, Small	2	-
Electrician	26	20	Forklift	1	1
Laborer	8	4	Plate Compactor	-	1
Helicopter Pilot	4	-	Fuel Truck	1	1
			Pickup Truck	8	4
			Water Truck	1	1
			Helicopter	1	-
			Auger Drill	3	1
			Bucket Truck	6	-
Total	**96**	**46**	**Total**	**33**	**21**
Notes: TL = Transmission Line					

Chapter 6 Resource Values and Environmental Concerns

Potential environmental impacts of the LPP have been evaluated in the State of Utah's Final License Application (Federal Energy Regulatory Commission or FERC Project No. 12966, submitted April 30, 2016). Several updates/errata to the application have subsequently been made and are in the FERC docket. Utah withdrew the FERC Final License Application on September 25, 2019, but the environmental analyses in the study report and updates are still applicable to further environment review. The final study reports have incorporated BLM comments and are publicly available except where noted, as follows:

- 01 – Air Quality
- 02 – Aquatic Resources
- 03 – Archeological and Historic-Era Resources (non-public)
- 04 – Geology and Soils
- 05 – Groundwater Resources
- 06 – Land Use Plans and Conflicts
- 07 – Noise
- 08 – Paleontological Resources (non-public)
- 09 – Recreation Resources
- 10 – Socioeconomics and Water Resource Economics
- 11 – Special Status Aquatic Resources
- 12 – Special Status Plant Species
- 13 – Special Status Wildlife Resources
- 14 – Transportation
- 15 – Vegetation Communities
- 16 – Visual Resources
- 17 – Surface Water Quality
- 18 – Surface Water Resources
- 19 – Water Needs Assessment/Climate Change
- 20 – Wetlands and Riparian Resources
- 21 – Wildlife Resources
- 22 – Alternatives Development
- 23 – Ethnographic Resources (non-public)

The Reclamation EIS will further evaluate potential impacts and will provide an additional basis for a decision on the ROW grants. NOTE: The Draft and Final EIS will be specifically referenced in the POD as these documents become publicly available.

UDWRe has identified environmental protection measures that will be implemented as part of the construction and operation of the LPP. These applicant-committed measures include design features, best management practices, monitoring, standard operating procedures, and other practices. Measures specific to environmental resources are in sections B.3 through B.11 in Appendix B.

Chapter 7 Stabilization and Rehabilitation

Land within each ROW will be stabilized and restored after construction activities (see B.1.62 through B.1.75 in Appendix B). The following sections describe soil replacement and stabilization, vegetation removal and stockpiling, seeding specifications, fertilizer, and temporary watering.

7.1 Soil Replacement and Stabilization

Surface soils removed following clearing and grubbing activities within each ROW will be stockpiled for replacement over disturbed ground after construction activities are completed. The stockpiled soils will be evenly spread and distributed across the ROW. Surface soils will be placed in a manner to minimize stark contrast with adjacent undisturbed areas. The soil surface will be left roughened to trap moisture and seeds in the soil depressions. Finished grading will drain disturbed areas to natural drainage features such as dry washes, swales, and depressions. Erosion control measures such as weed-free excelsior wattles staked horizontally across sloped areas and excelsior matting on steep slopes will be applied to stabilize soils and control erosion and precipitation runoff. Trees and other woody vegetation removed during construction may be ground up to make chips for distribution over areas previously covered with shrub and tree vegetation (see B.1.59 through B.1.61, and B.1.70).

7.2 Vegetation Removal and Handling During Construction

Vegetation may be cleared as part of construction within each ROW (see B.1.63 through B.1.69, and B.1.71 and B.11.5). Cacti species in designated areas will be salvaged from the ROW for transplanting into adjacent areas. Trees and other woody vegetation, if removed, will be cut near the ground surface and stockpiled for chipping and distribution during ROW surface restoration. Tree stumps will be grubbed and stockpiled for chipping. Other non-woody vegetation, if removed, will be stockpiled with surface soils for spreading over disturbed areas during ROW restoration. The cleared and removed vegetation will provide seed stock and organic matter for the surface soils to aid in restoring the ROWs.

7.3 Seeding Specifications

A seed mixture containing seeds of species (grasses, forbs, and shrubs) reviewed with the BLM will be prepared for broadcasting over the restored ROW areas (see B.1.73 in Appendix B). The seed mixture will be certified weed-free and include seeds of revegetation plant species recommended by the BLM. The seed mixture specifications will be submitted to the BLM as part of the Restoration Plan for review and approval before distribution and spreading. The seed mixture will be applied to the surface soils at a rate and during seasons reviewed by the BLM.

7.4 Fertilizer

A fertilizer mixture will be formulated as part of the Restoration Plan for application over the ROW areas (see B.1.1. in Appendix B). Major soil types will be analyzed to determine chemical/mineral make-up and the potential composition of the fertilizers, if needed. The fertilizer mixtures, if any, will be submitted to the BLM with the Restoration Plan for review and approval. Fertilizer will be applied to the surface soils at a rate and during seasons reviewed with the BLM.

7.5 Temporary Watering

Seeded and fertilized areas in the ROW areas may be temporarily watered, depending on the season and weather conditions following restoration activities (see B.1.74 in Appendix B). Temporary watering may involve spraying and sprinkling seeded and fertilized areas in the ROWs using water appropriate for vegetation and soil conditions. Spraying and sprinkling quantities and timing will be reviewed by the BLM as part of the Restoration Plan (see B.1.1., B.1.62., and B.1.74. in Appendix B).

7.6 Access Roads Reclamation

After construction, temporary construction access roads will be restored to pre-construction conditions, including soil, rock, natural topography and vegetation conditions, in coordination with the BLM. Improvements to existing roads made for temporary construction access will be left in place in coordination with the BLM (see B.1.31 in Appendix B).

Chapter 8 Operation and Maintenance

The LPP will be operated and maintained in accordance with environmental requirements of each BLM ROW grant and other federal, state, and local agency requirements (see B.2.1 through B.2.13 in Appendix B). In addition to routine operation of facilities, activities will include remote and on-site monitoring of system functions, inspection of the pipelines and facilities, regular maintenance of equipment, repairs conducted as needed, and responses to emergency conditions should they occur. All operation and maintenance activities will be confined to the ROW areas. If additional ROW area is required for unforeseen circumstances, UDWRe will request it from the BLM.

A routine operations and maintenance schedule will be developed for the project during facility construction and provided to BLM and other federal, state, and local land management agencies. Facilities will periodically be visually inspected to maintain proper functioning, with emphasis on main facilities and mechanical and electrical equipment. On-site personnel and remote monitoring and control systems will track and manage facility functions. Agency staff would be notified if extraordinary maintenance or repair efforts are necessary.

8.1 Pipelines Operation

Operational activity on the pipeline will primarily include maintenance of each ROW and inspection, repair, and cleaning of the pipeline and appurtenances. The pipelines will be routinely cleaned by inserting a pig, which is a soft bullet-shaped polyurethane foam plug with abrasive brushes, into the pig launcher at each pump station, hydro station, or regulating tank. After closing the pig launcher, the pig will be pushed through the pipeline by the pressure, cleaning the pipeline walls, until it arrives at the pig receiver at the next station or tank. ROW maintenance may include application of herbicides to control noxious and non-native invasive weeds, in accordance with a BLM-issued pesticide use proposal (PUP) (see B.1.81 and B.1.82 in Appendix B). The PUP is not issued in perpetuity and a request for a PUP will be periodically submitted to the BLM.

Aerial and ground inspections by pipeline personnel will identify any areas of exposed pipeline and appurtenances, excessive erosion (per SWPPP protocols), unauthorized ROW encroachment, or any other conditions that could present a safety hazard or require preventive maintenance or reporting. The pipeline alignment will likely be visually inspected at least monthly, using the access roads authorized in the ROWs. No off-road or overland travel will occur by vehicle for routine inspections.

In the unlikely event of a major system rupture or malfunction resulting in the discharge of water, pressure sensors installed on the system will detect the pressure loss, and the pump and hydro stations will begin an automatic, sequenced shut down. Shut down will be sequenced to avoid buildup of dangerous pressures in the pipelines and other facilities. Valve closing times will vary based on location and system conditions but are estimated to vary from 15 to 25 minutes. For a major system failure, alarms will sound at manned facilities along the pipeline alignment and at the primary operations center in St. George, Utah. A plan of action to investigate the source of the problem will commence immediately. Timely notification will be provided to the BLM and other pertinent federal, state, and local agencies.

Depending on the location of an incident, responders could take several hours to reach remote areas. The quantity of water that might be released in the unlikely event of a pipeline rupture or valve failure cannot be precisely quantified, as it will depend on the type and extent of a break/failure, along with the location of the break within a pipeline segment and its distance from the closest upstream and downstream isolation valves. However, for the purposes of analysis, assuming an extremely unlikely but potentially catastrophic failure with complete severing of the pipeline at one point over a ten-mile stretch, the

maximum quantity of water that could be discharged will be 31.5 acre-feet. This assumption uses a 35 minute response time (10 minutes for the system to identify the location and 25 minutes to fully close the nearest upstream isolation valve), and does not consider the effect of decreasing flow rate during the valve closure time-period on the total discharge volume. All of that quantity is unlikely to be released, even in an emergency scenario, since immediate actions will be taken through the automated system and on-site response to control and repair the leakage.

If pipeline repairs are necessary, they would be undertaken expeditiously to prevent further impact to the ROW and to place the project back into service.

8.2 Water Facilities Operations

8.2.1 Intake System and Pumping Stations

The intake and booster pump stations will be remotely monitored to maintain proper operation, including controlling the valves and pumps to maintain flow through the system. Each will be visually inspected periodically. Routine inspections will use permanent access roads. No off-road or overland vehicle travel will occur for routine inspections.

The maintenance yard adjacent to each station will be used to conduct maintenance and repair activities as needed and could be used to support maintenance and repair activities for nearby pipeline segments and appurtenances.

8.2.2 High Point Regulating Tank

The High Point Regulating Tank will be remotely monitored to maintain proper operation, including storage volume and levels to manage flow through the pipeline. It will likely be visually inspected weekly. Routine inspections will use permanent access roads. No off-road or overland vehicle travel will occur for routine inspections.

The maintenance yard adjacent to Regulating Tank-2 will be used to conduct maintenance and repair activities as needed and could be used to support maintenance and repair activities for nearby segments of the pipeline and appurtenances.

8.2.3 Hydroelectric Generating Stations

The inline hydro stations will be remotely monitored to maintain proper operation, including controlling the valves to maintain flow through the system. These facilities will be visually inspected periodically. Access to perform routine inspections will be made from use of permanent access roads. No off-road or overland vehicle travel will occur for routine inspections.

The maintenance yards adjacent to the hydro stations will be used to conduct maintenance and repair activities at those facilities as needed and could be used to support maintenance and repair activities for nearby pipeline segments and appurtenances.

8.3 Communication Facilities

Routine yearly inspections will occur for fiber optic communication facilities. The buried fiber optic cables will only be removed and replaced on system failure. Communications facilities located within project facility sites will be visually inspected during regularly scheduled site visits.

8.4 Access Roads Operations

Permanent access roads within the ROWs will be maintained throughout LPP operation (see B.1.30 and B.2.7 in Appendix B). This may include repair and additional grading and graveling of improved roads to maintain road integrity. Drainage features such as culverts under access roads will be routinely inspected and cleaned out as necessary to maintain proper function to convey precipitation runoff. Extraordinary road maintenance activities on federal lands will be coordinated with the applicable federal agency.

8.5 Electric Power Facilities Operations

The power facilities will be monitored remotely to maintain proper operation and ensure that adequate power is available. The structures, insulators, conductors, and related hardware will be visually inspected annually. Substations and switchyards will be visually inspected monthly. Additional visual inspections may be carried out following severe weather or other events that could damage the facilities. Maintenance will be performed on an as-needed basis.

8.6 Security

Operations and/or security staff will conduct inspections on unmanned facility sites approximately two to three times per week. Access to perform routine security inspections will be made from use of permanent access roads and/or be accessed on foot. There will be no off-road or overland vehicle travel. These patrols will be aided by remote passive security cameras that allow for enhanced monitoring of the facilities.

Chapter 9 Termination and Restoration

The ROWs granted for the LPP will be in accordance with the FLPMA and other land management laws and regulations. Termination and abandonment of the LPP is not anticipated, unless exceptional circumstances should arise. In such a case, the termination and abandonment will be subject to approvals by the BLM and other federal and private land managers. Termination and abandonment plans will be written in accordance with the then current management procedures and submitted to the BLM and other agencies in advance of any associated actions. If the LPP was to be abandoned in part or in whole, the affected ROW grants may be terminated. UDWRe will be responsible for completing reclamation of the LPP project area in accordance with BLM and other agency approved termination and abandonment plans. If upgrade or replacement of facilities is required, UDWRe will coordinate with the BLM before initiating major construction in accordance with applicable stipulations of the ROW grants.

Appendix A
Mapbook of the LPP Alignment and Facilities

Map Book Grid/Match Lines
Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative
Project Transmission Lines
Project Access Roads

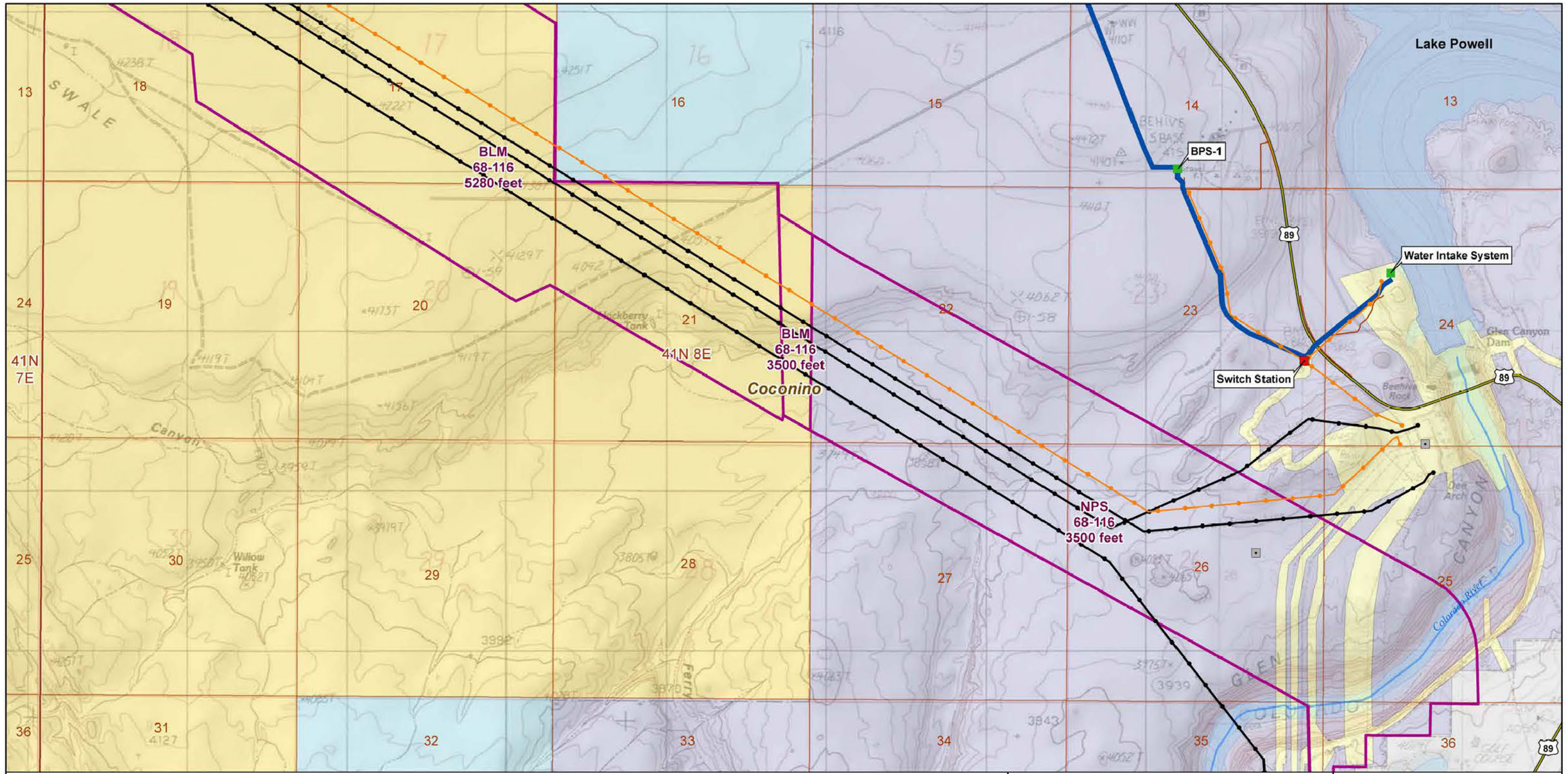
N

0 2.5 5 10 Miles

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel Index Sheet



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- West Wide Energy Corridor
- US Highway
- Project Access Roads
- Major Rivers & Streams
- Lakes & Reservoirs
- State Boundaries
- County Boundaries

Land Ownership

- BLM
- Bureau of Reclamation
- State
- Private
- National Park Service

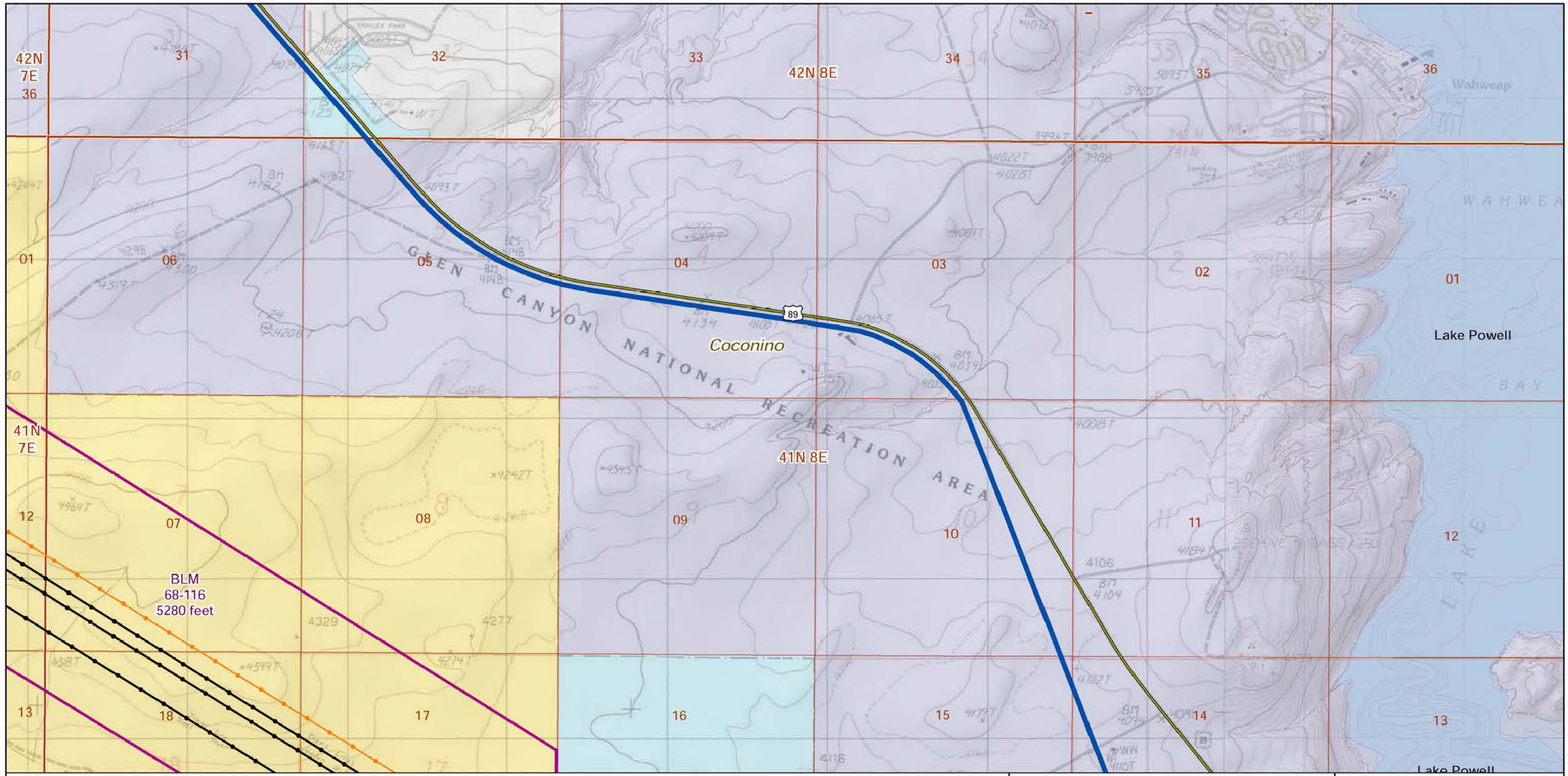
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 01



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- West Wide Energy Corridor
- US Highway
- Lakes & Reservoirs
- State Boundaries
- County Boundaries

Land Ownership

- BLM
- State
- Private
- National Park Service

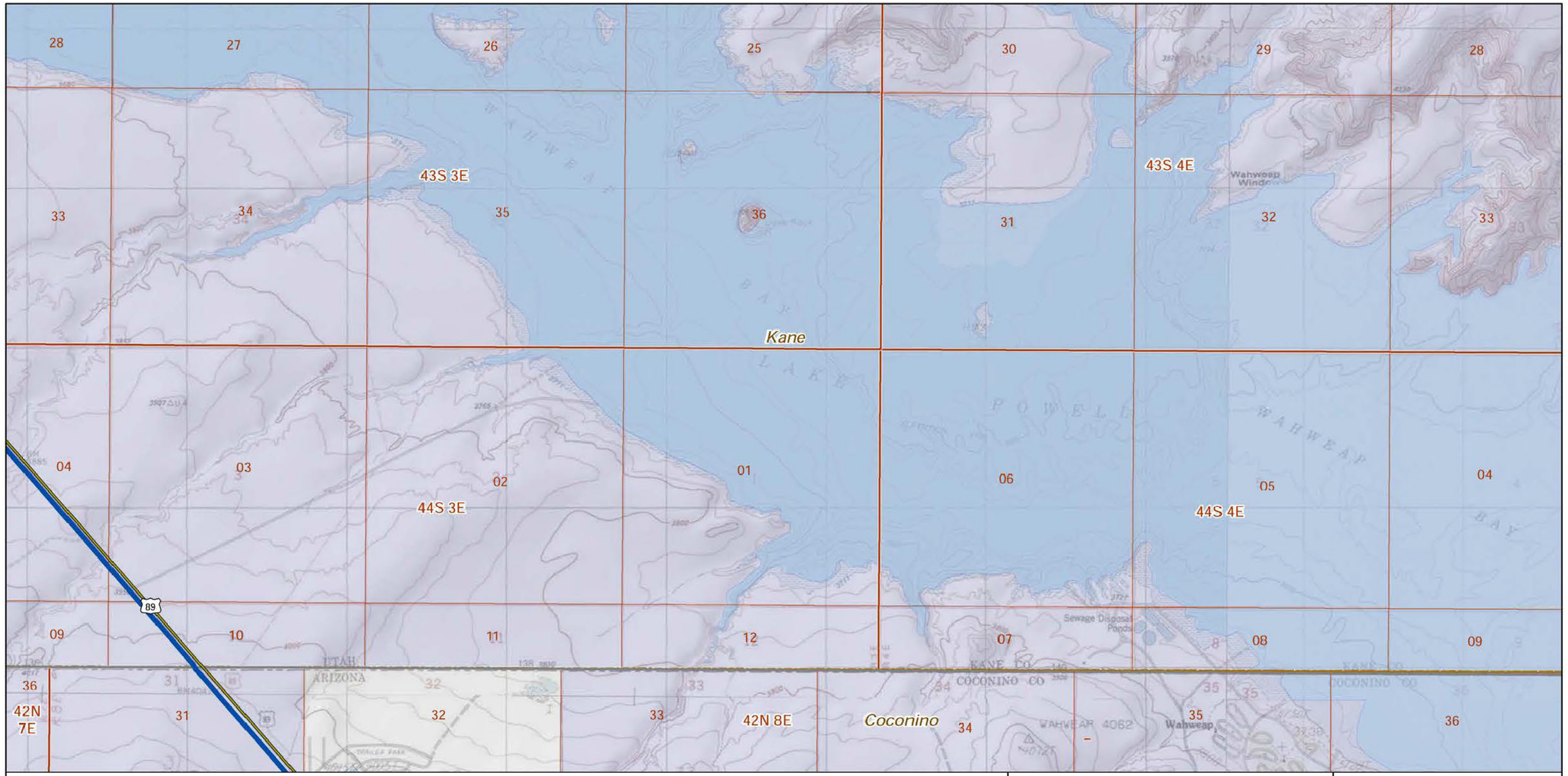
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 02



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- US Highway
- Lakes & Reservoirs
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- State
- Private
- National Park Service

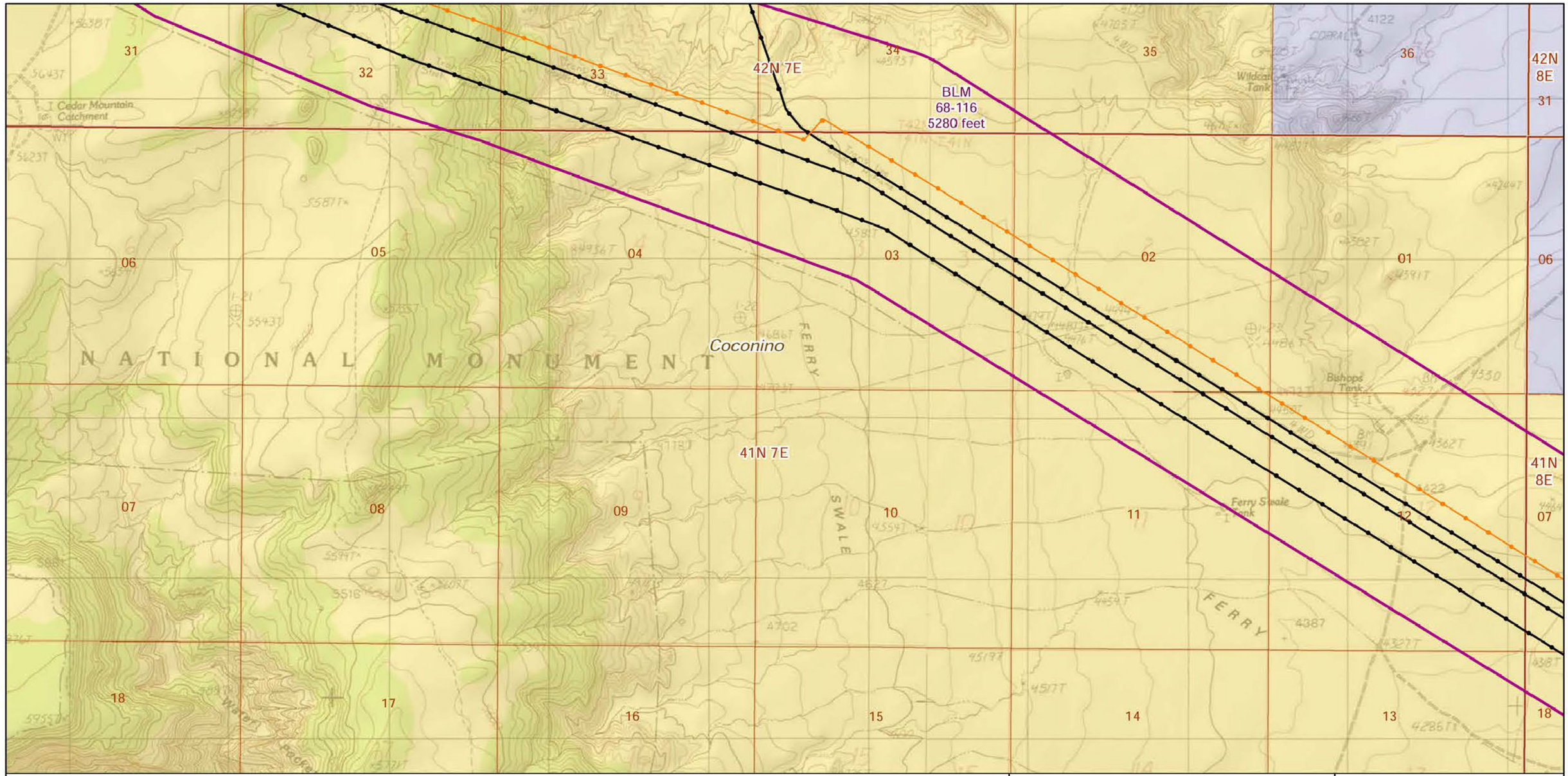
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 03



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
Project Transmission Lines
West Wide Energy Corridor
State Boundaries
County Boundaries
Land Ownership
BLM

National Park Service

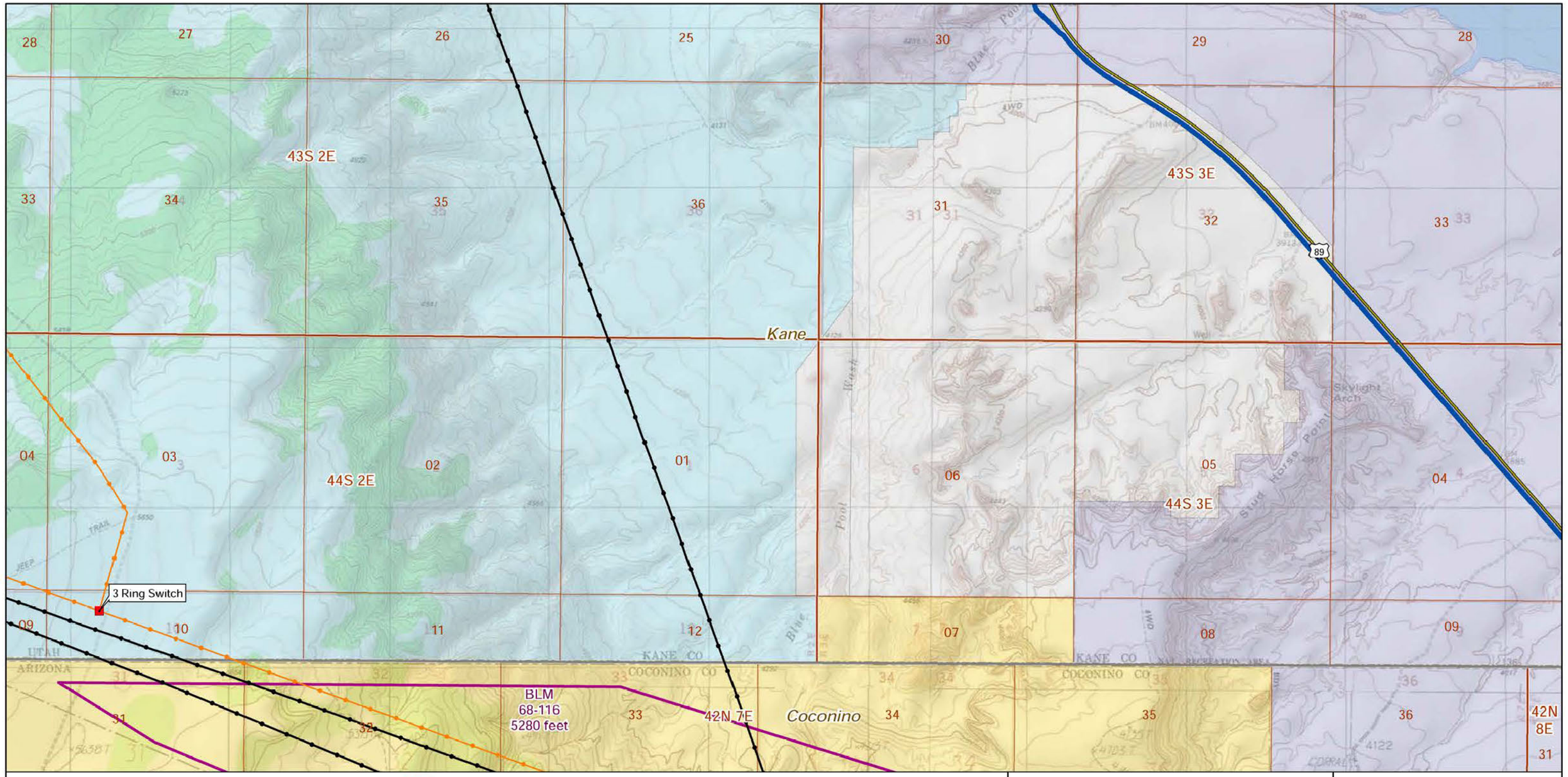
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 04



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
Project Transmission Lines
West Wide Energy Corridor
US Highway
Lakes & Reservoirs
State Boundaries
County Boundaries

Township
Section

Land Ownership
BLM
State
Private
National Park Service

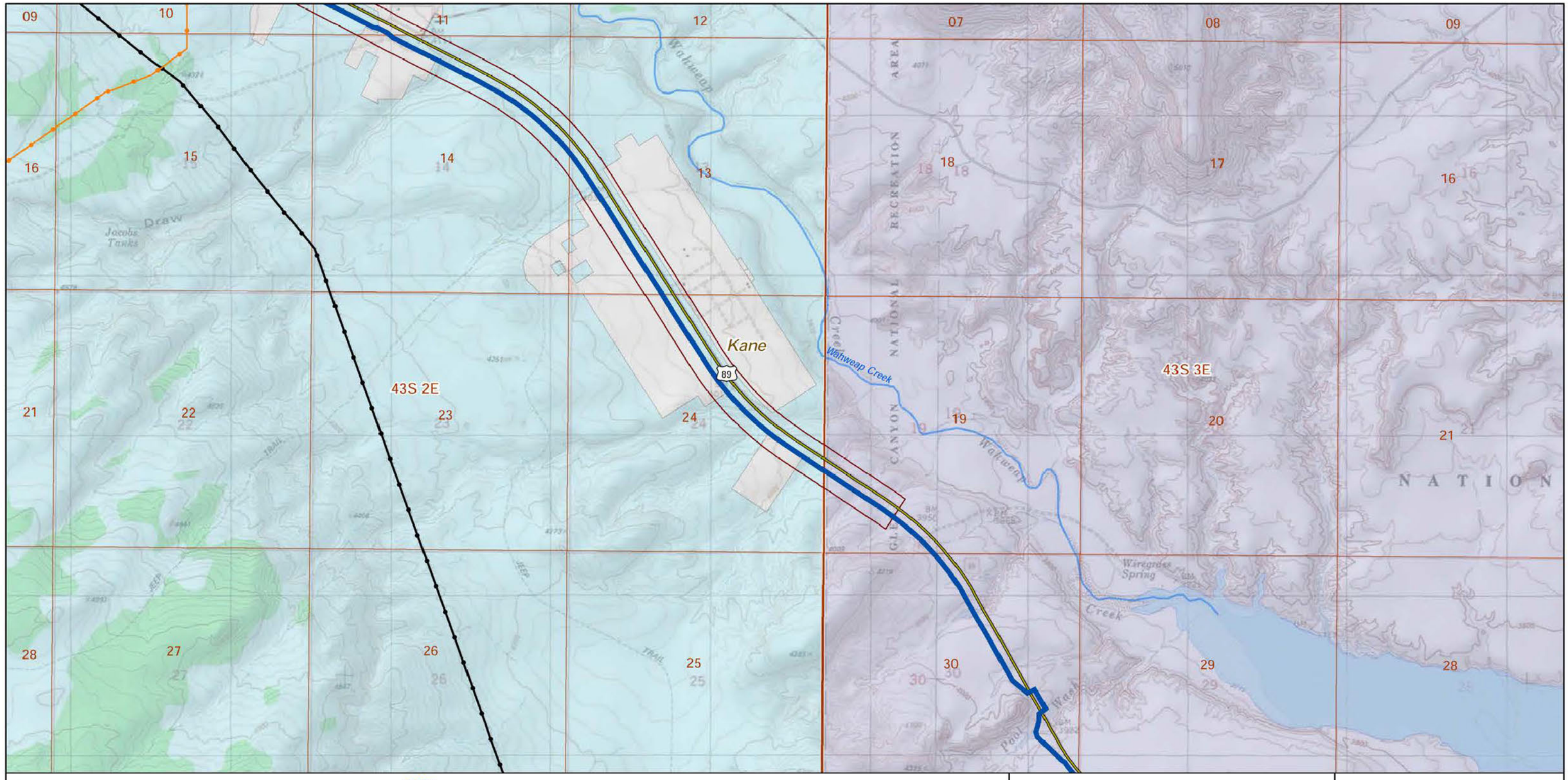
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

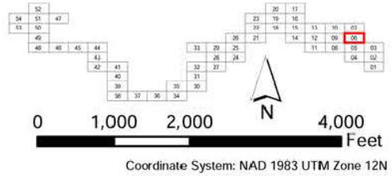
Plan of Development
Southern Alternative
Map Panel 05



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- GSENM Utility Corridor
- US Highway
- Major Rivers & Streams
- Lakes & Reservoirs
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

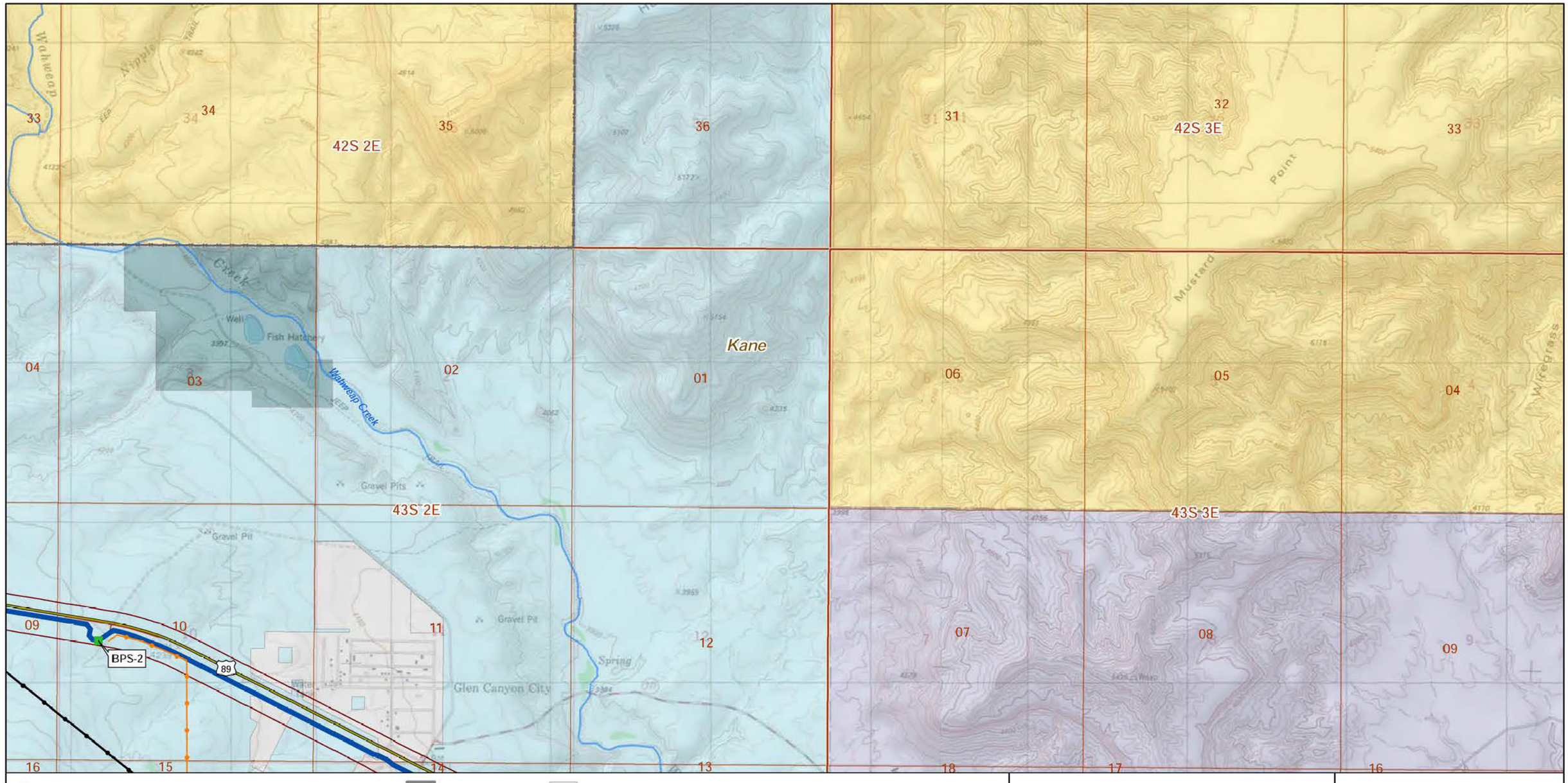
- State
- Private
- National Park Service



Coordinate System: NAD 1983 UTM Zone 12N

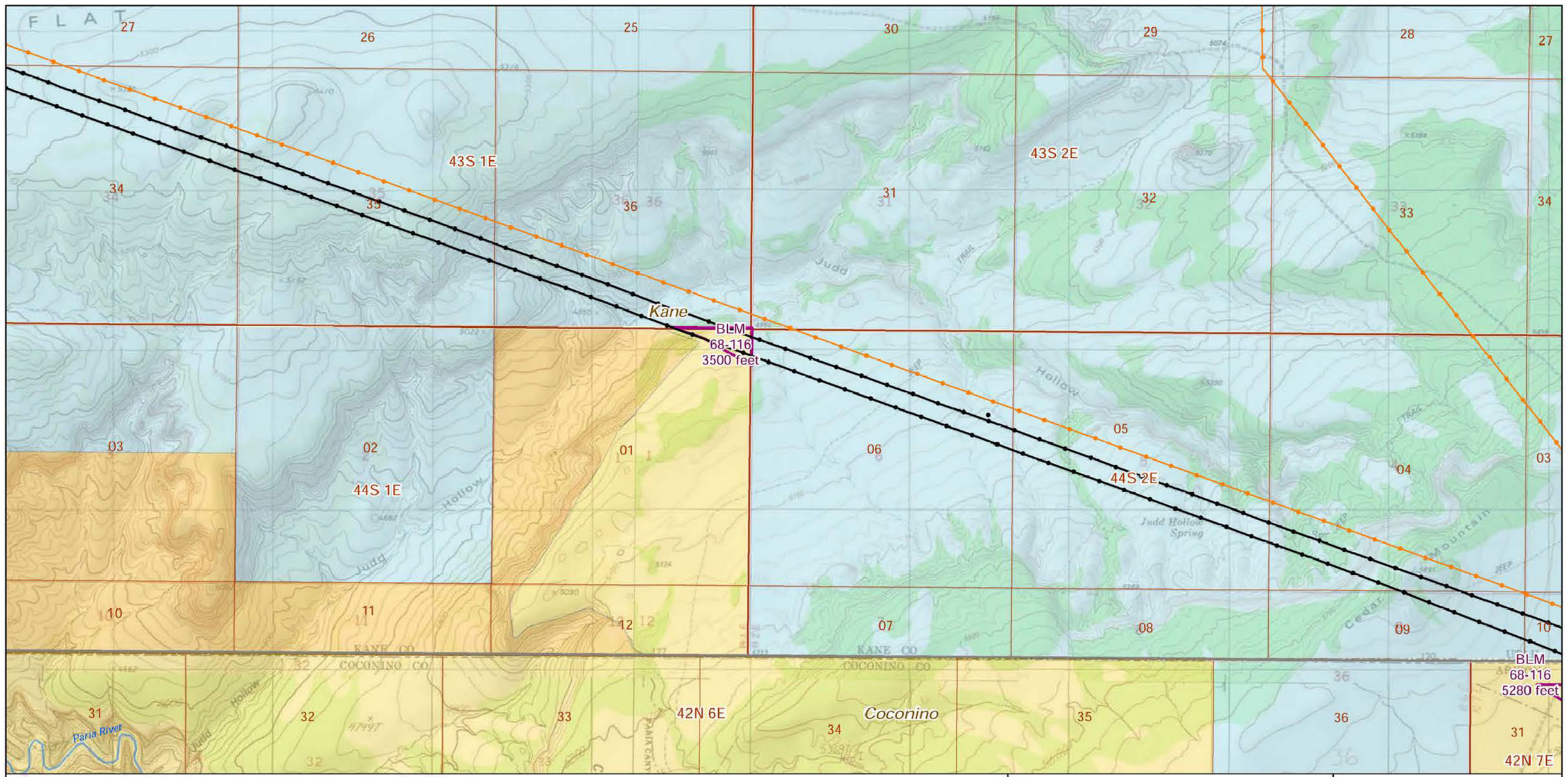
Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 06



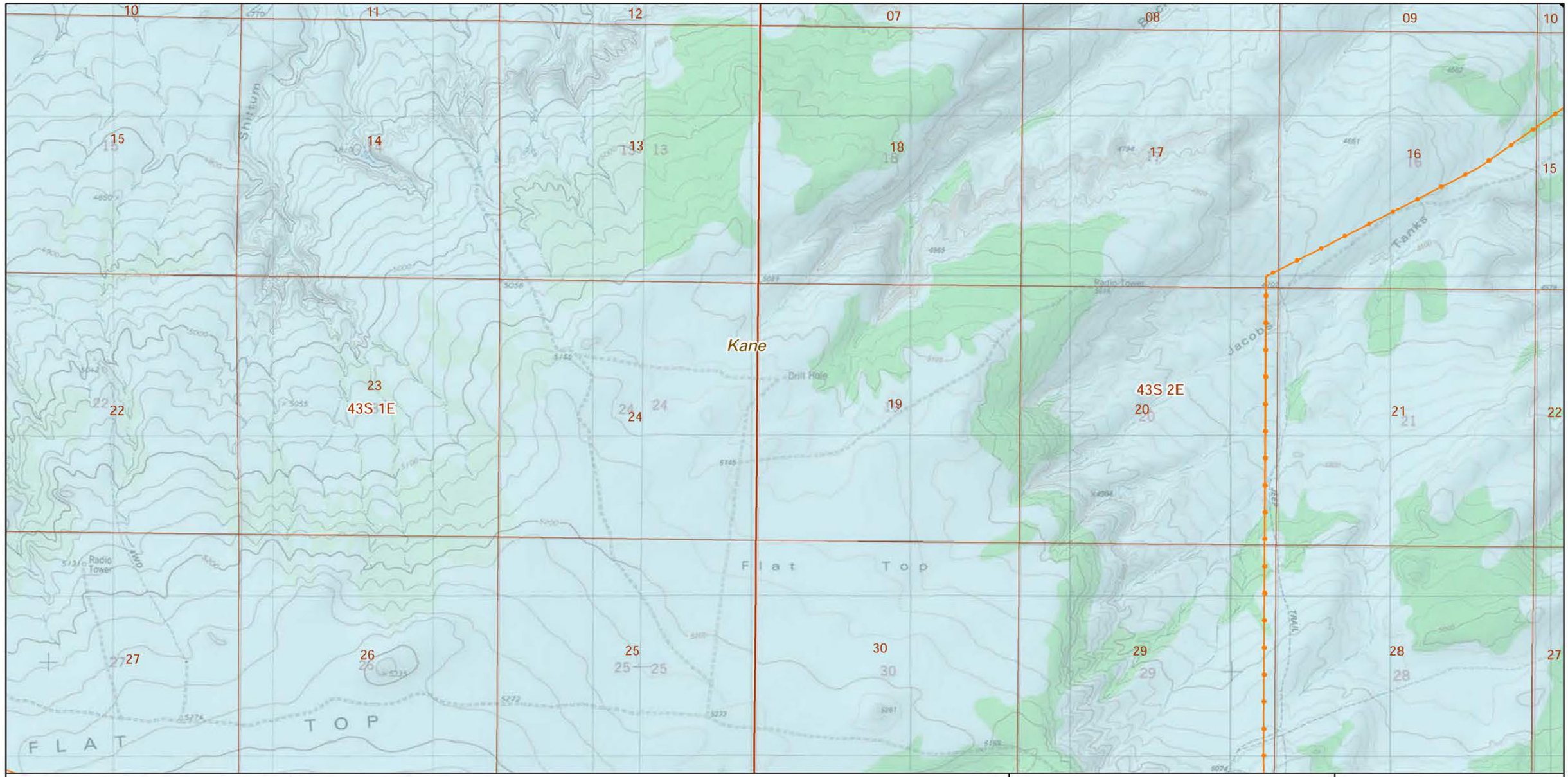
Lake Powell Pipeline

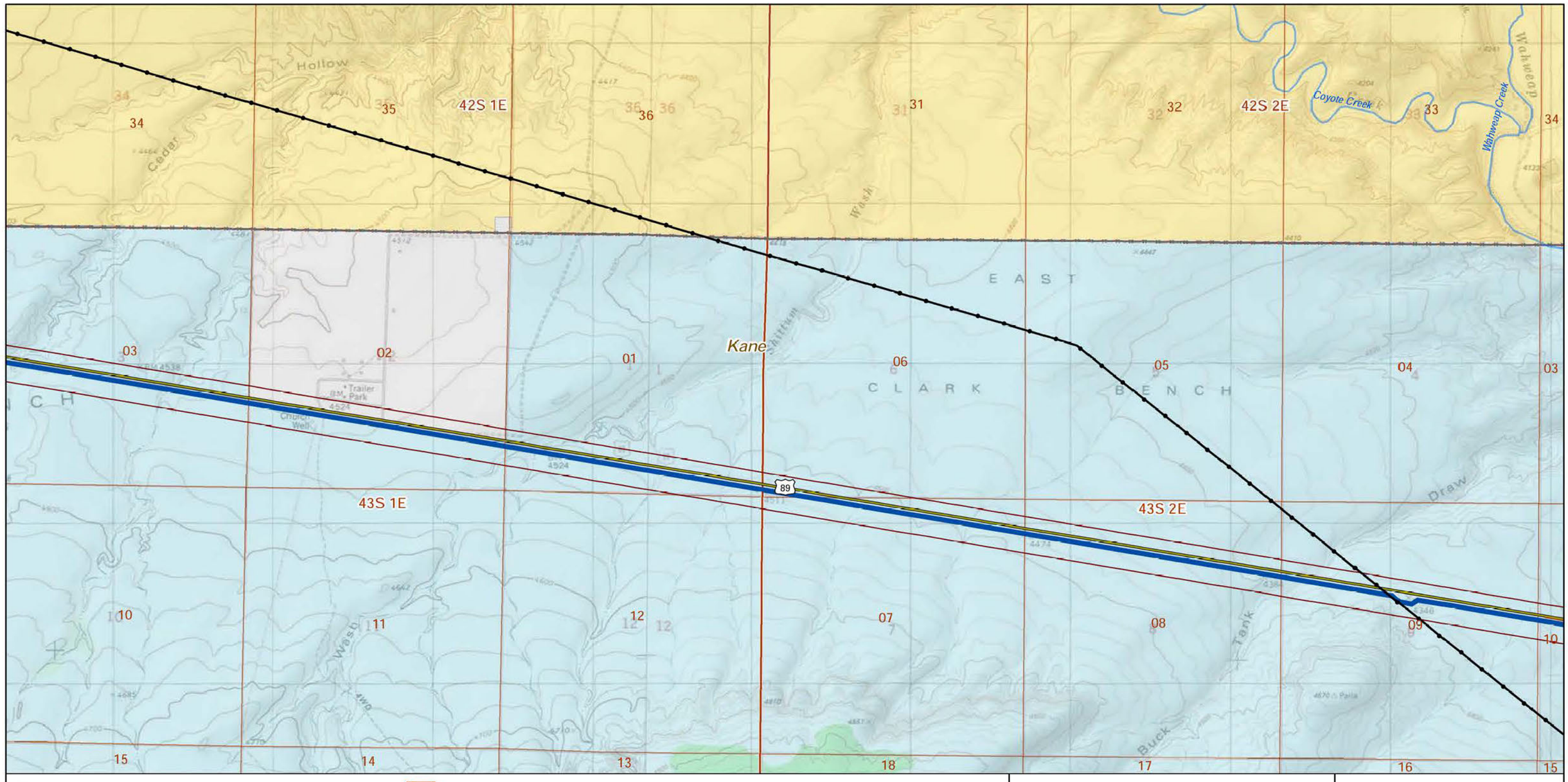
Plan of Development
Southern Alternative
Map Panel 07



Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 08


10
11
12
07
08
09
10
15
14
13
18
17
16
15
Shinarump
Kane
Drill Hole
Radio Tower
Tanks
Jacobs
23
43S 1E
22
24
19
43S 2E
20
21
22
Radio Tower
Flat Top
27
26
25
30
29
28
27
TOP
FLAT
Projcct Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative
Existing Major Transmission Lincs
Project Transmission Lines
State Boundaries
County Boundaries
Township
Section
Land Ownership
State
0
1,000
2,000
4,000
Feet
N
Coordinate System: NAD 1983 UTM Zone 12N
Lake Powell Pipeline
Plan of Development
Southern Alternative
Map Panel 09



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- GSENM Utility Corridor
- US Highway
- Project Access Roads
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- State
- Private

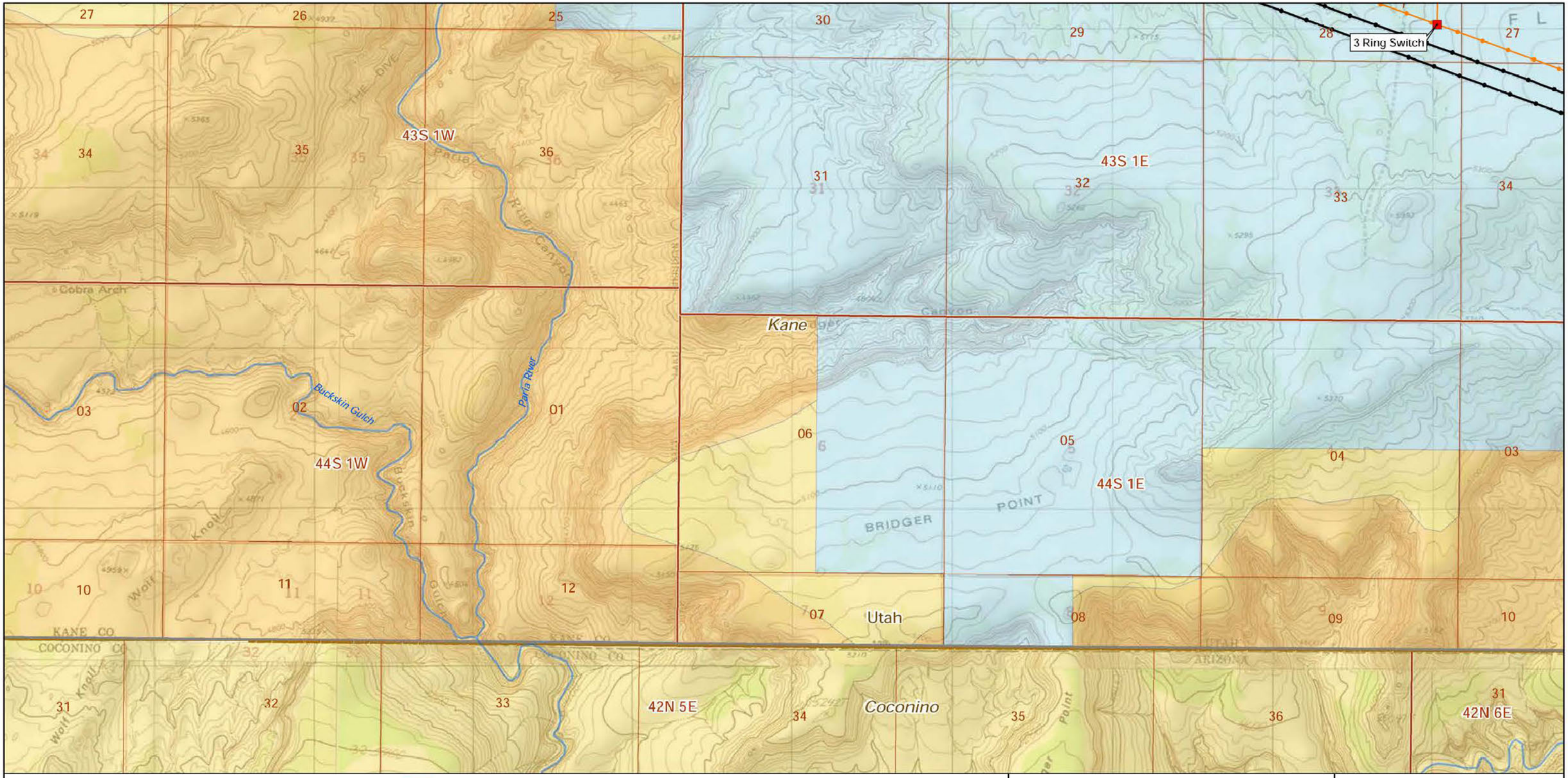
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 10



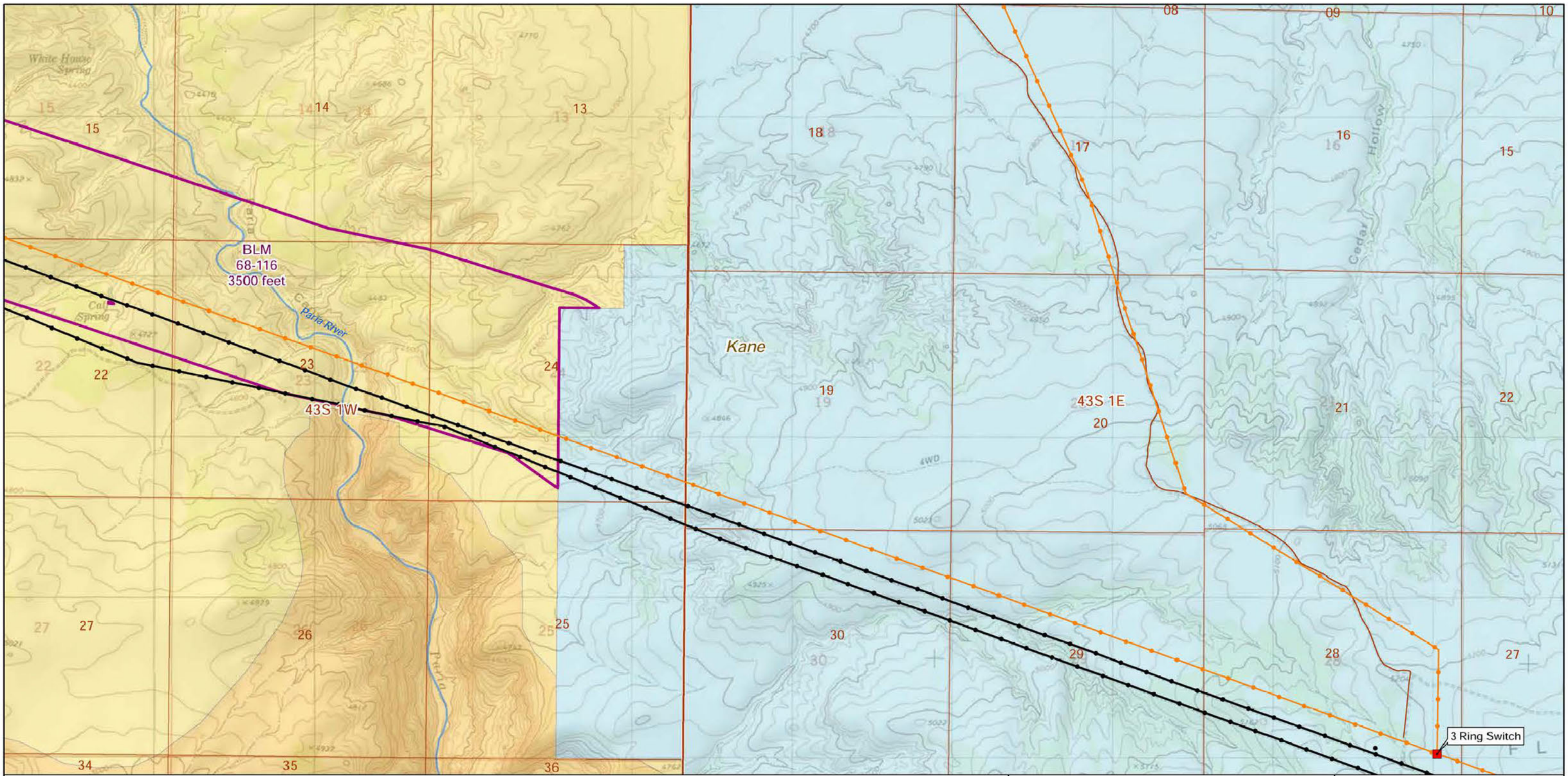
- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- Project Access Roads
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- State
- BLM Wilderness

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 11



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- West Wide Energy Corridor
- Project Access Roads
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- State
- BLM Wilderness

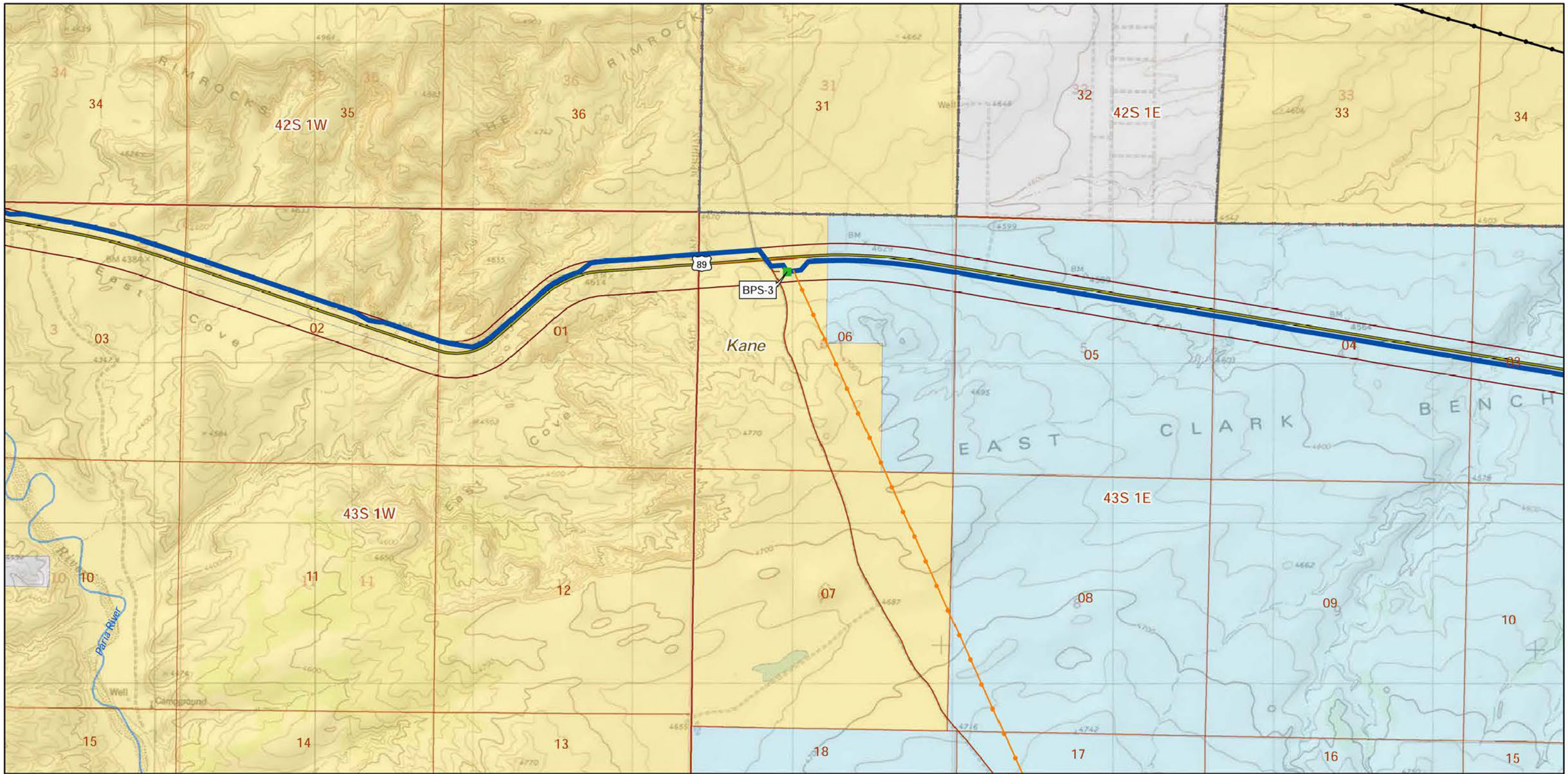
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development Southern Alternative Map Panel 12



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- GSENM Utility Corridor
- US Highway
- Project Access Roads
- Major Rivers & Streams
- Lakes & Reservoirs
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- State
- Private

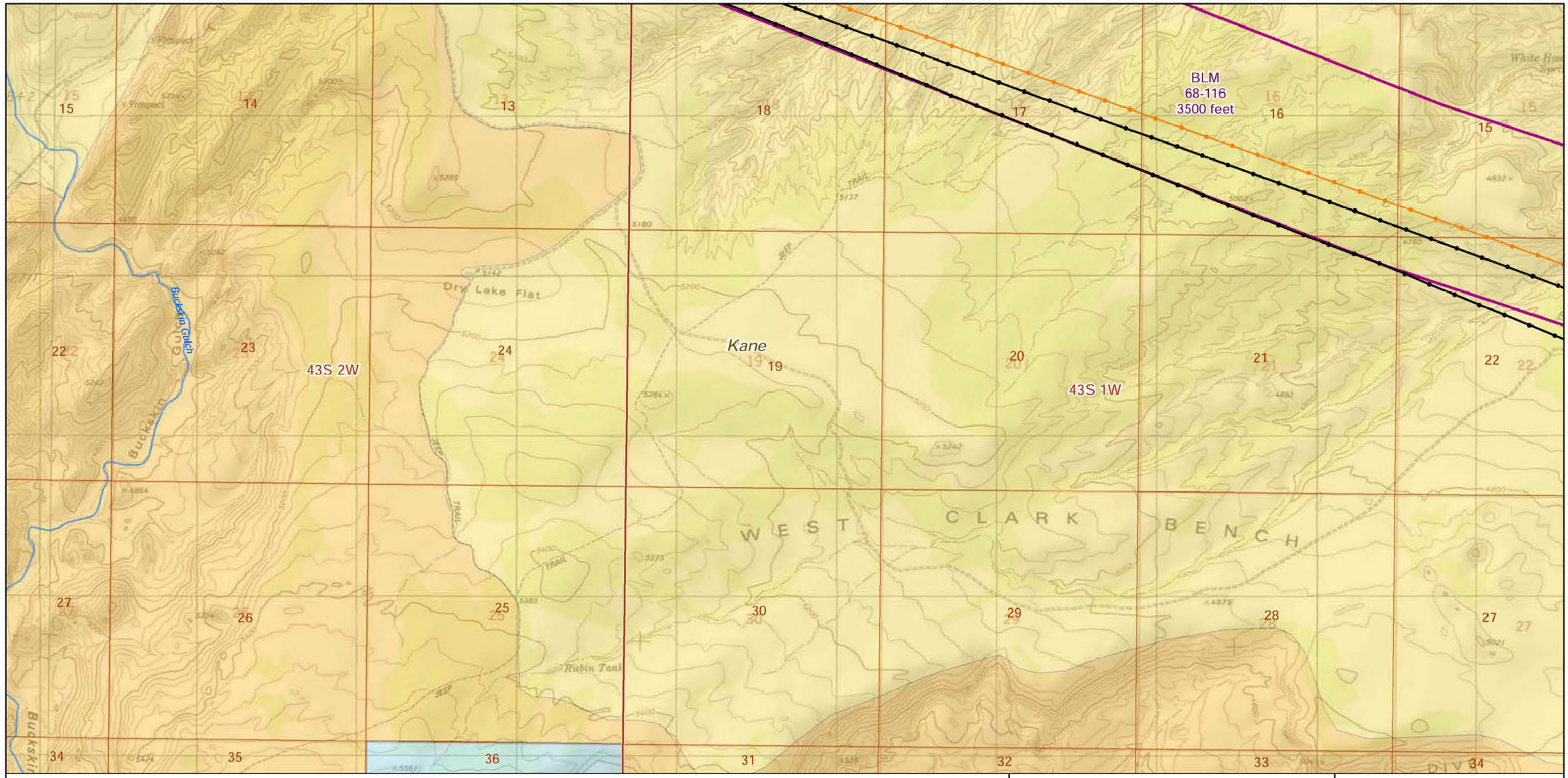
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

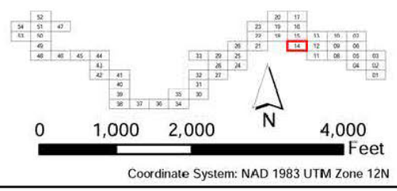
Plan of Development
Southern Alternative
Map Panel 13



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- West Wide Energy Corridor
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

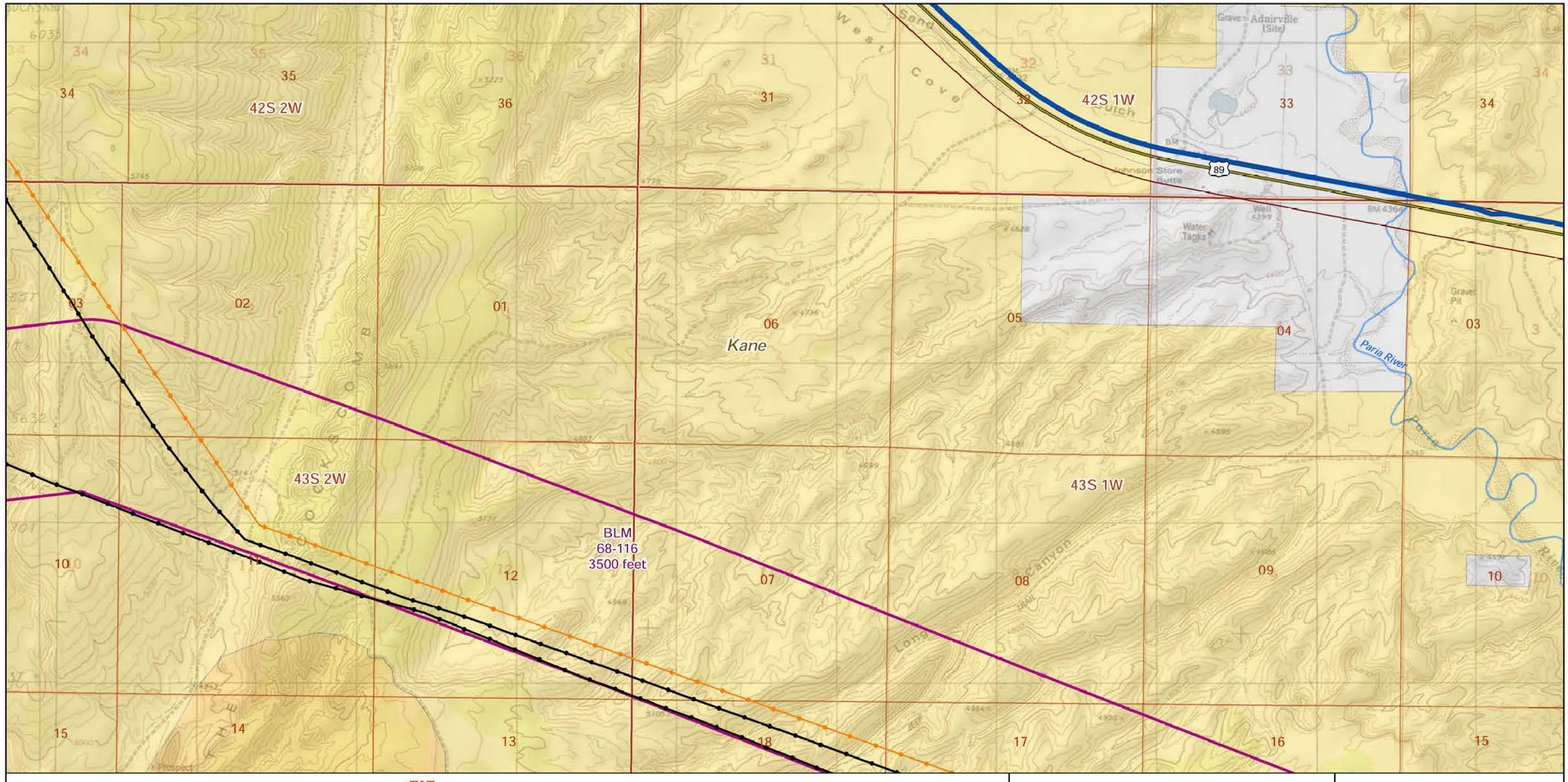
- BLM
- State
- BLM Wilderness



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 14



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- GSENM Utility Corridor
- West Wide Energy Corridor
- US Highway
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- Private
- BLM Wilderness

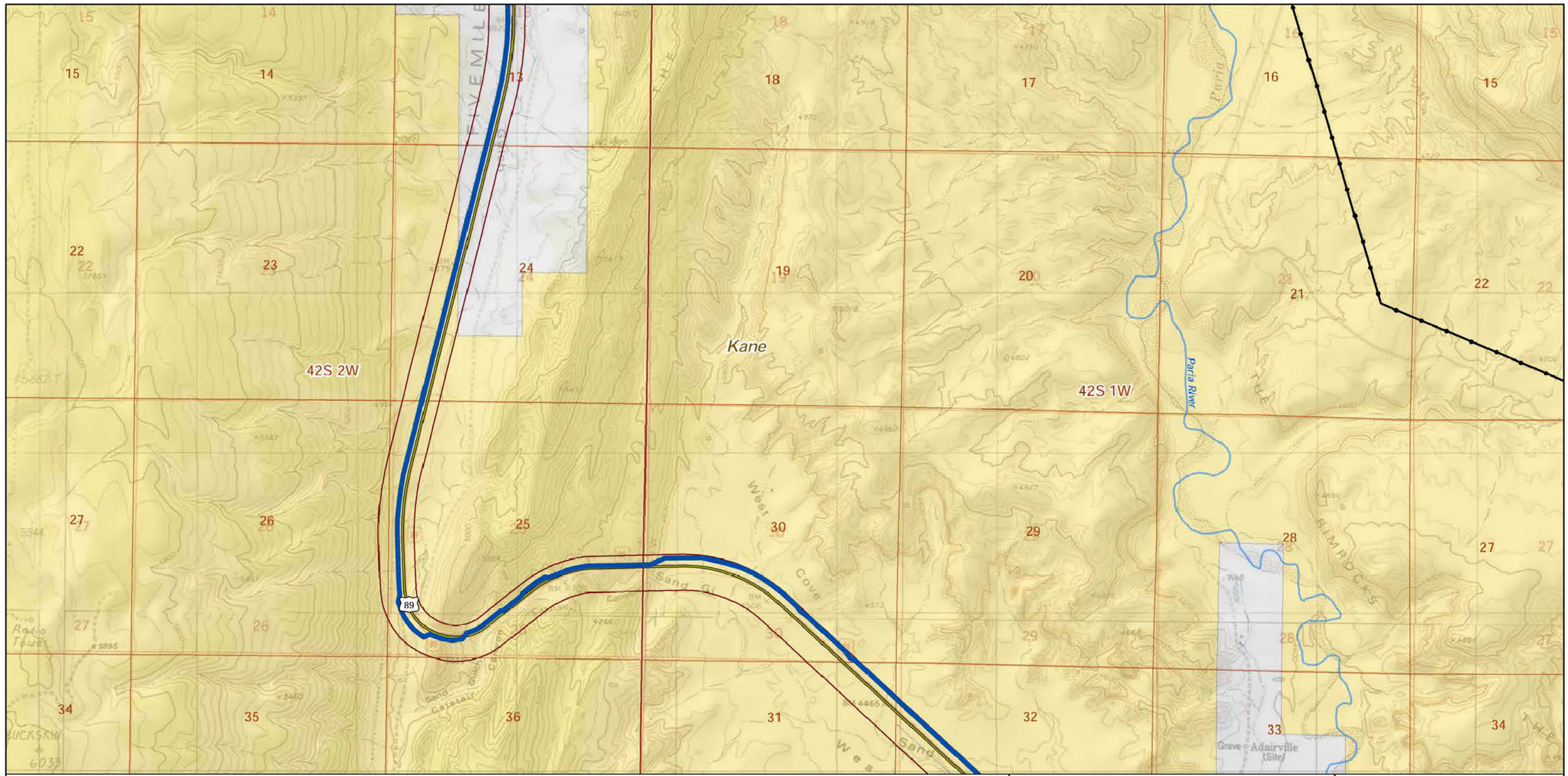
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 15



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- GSENM Utility Corridor
- US Highway
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership
- BLM
- Private

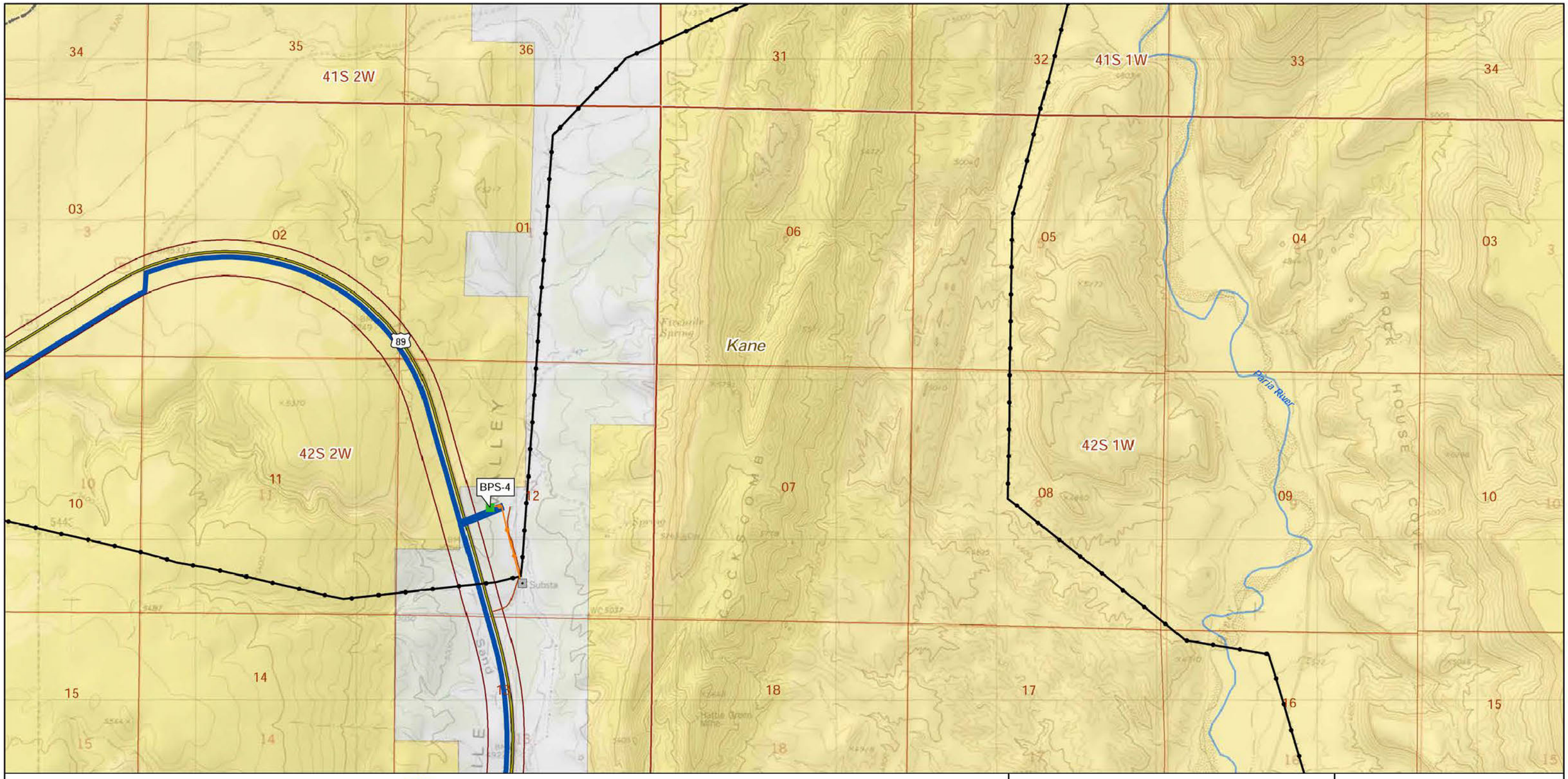
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

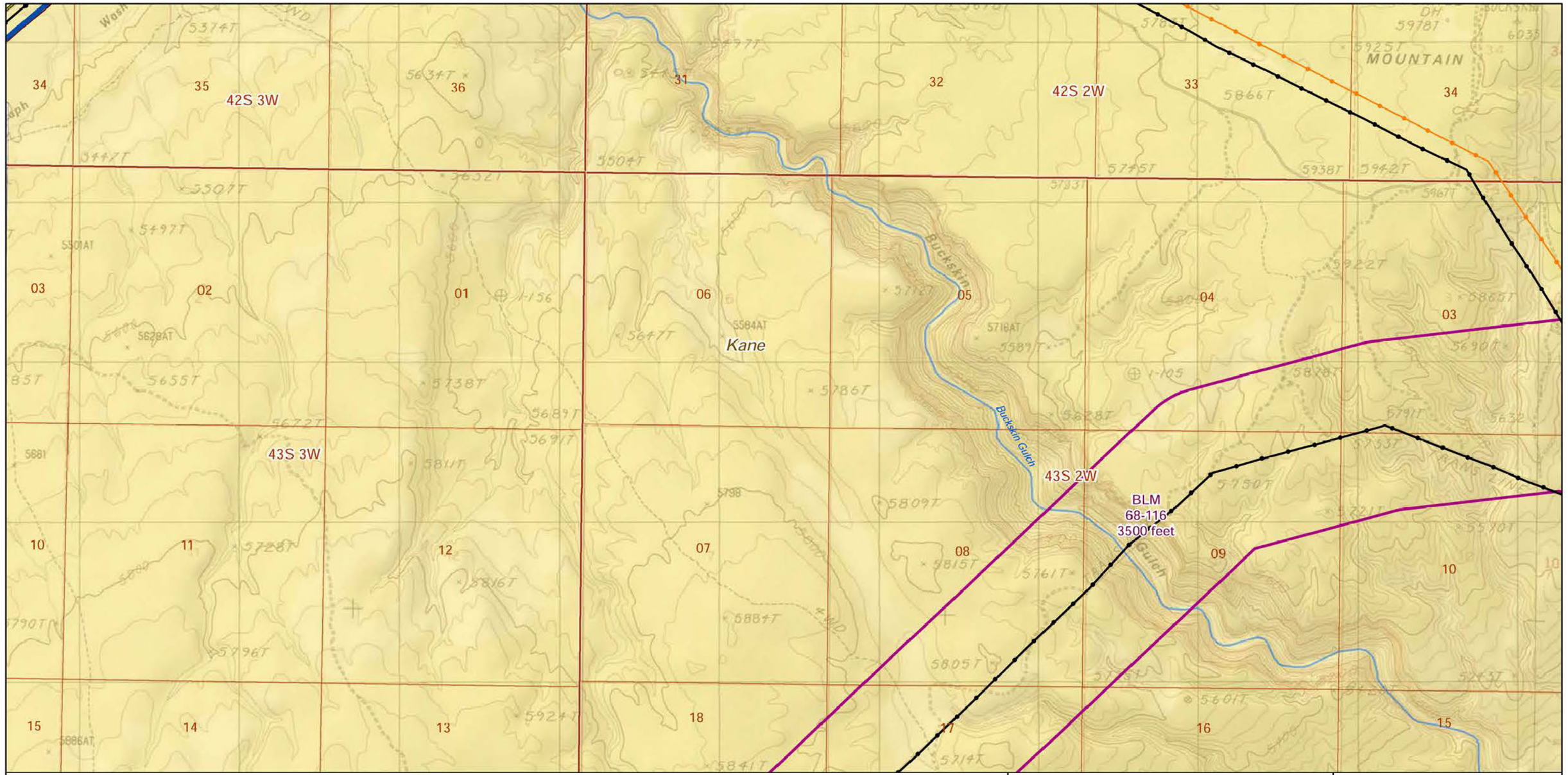
Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 16



Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 17



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- GSENM Utility Corridor
- West Wide Energy Corridor
- US Highway
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- Private

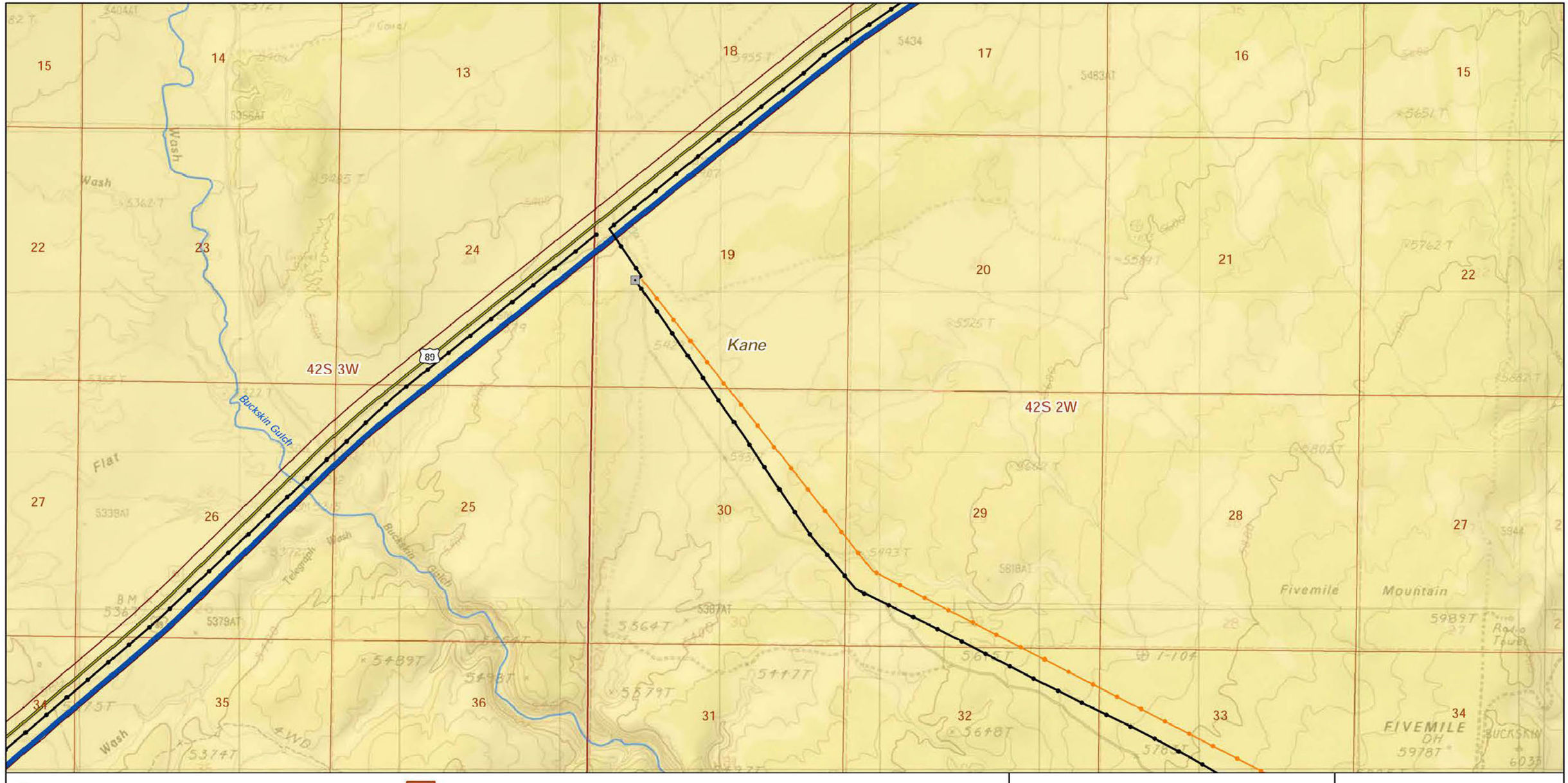
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

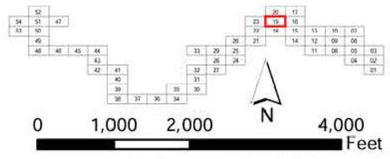
Plan of Development
Southern Alternative
Map Panel 18



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- GSENM Utility Corridor
- US Highway
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

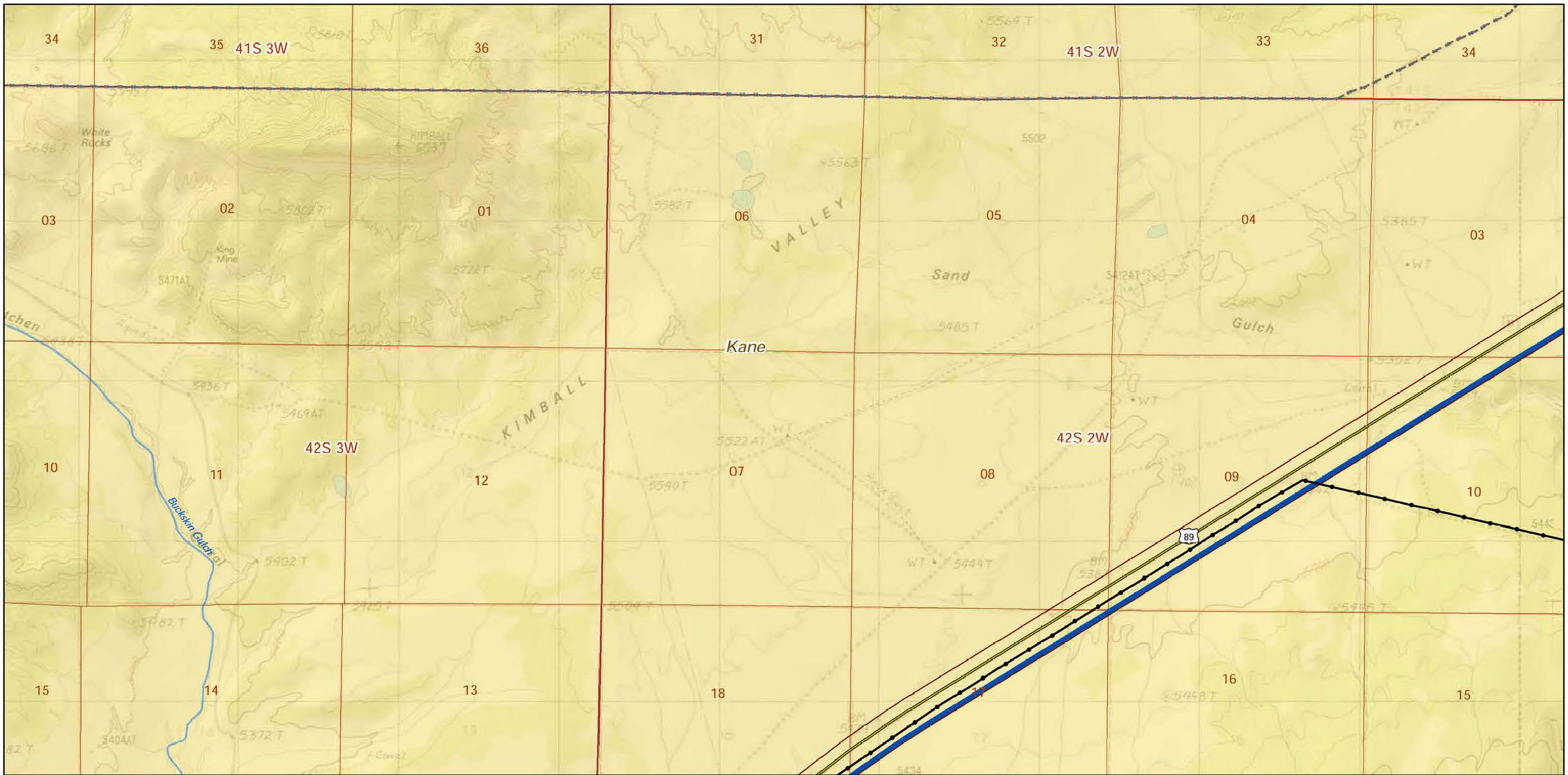
- BLM



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 19



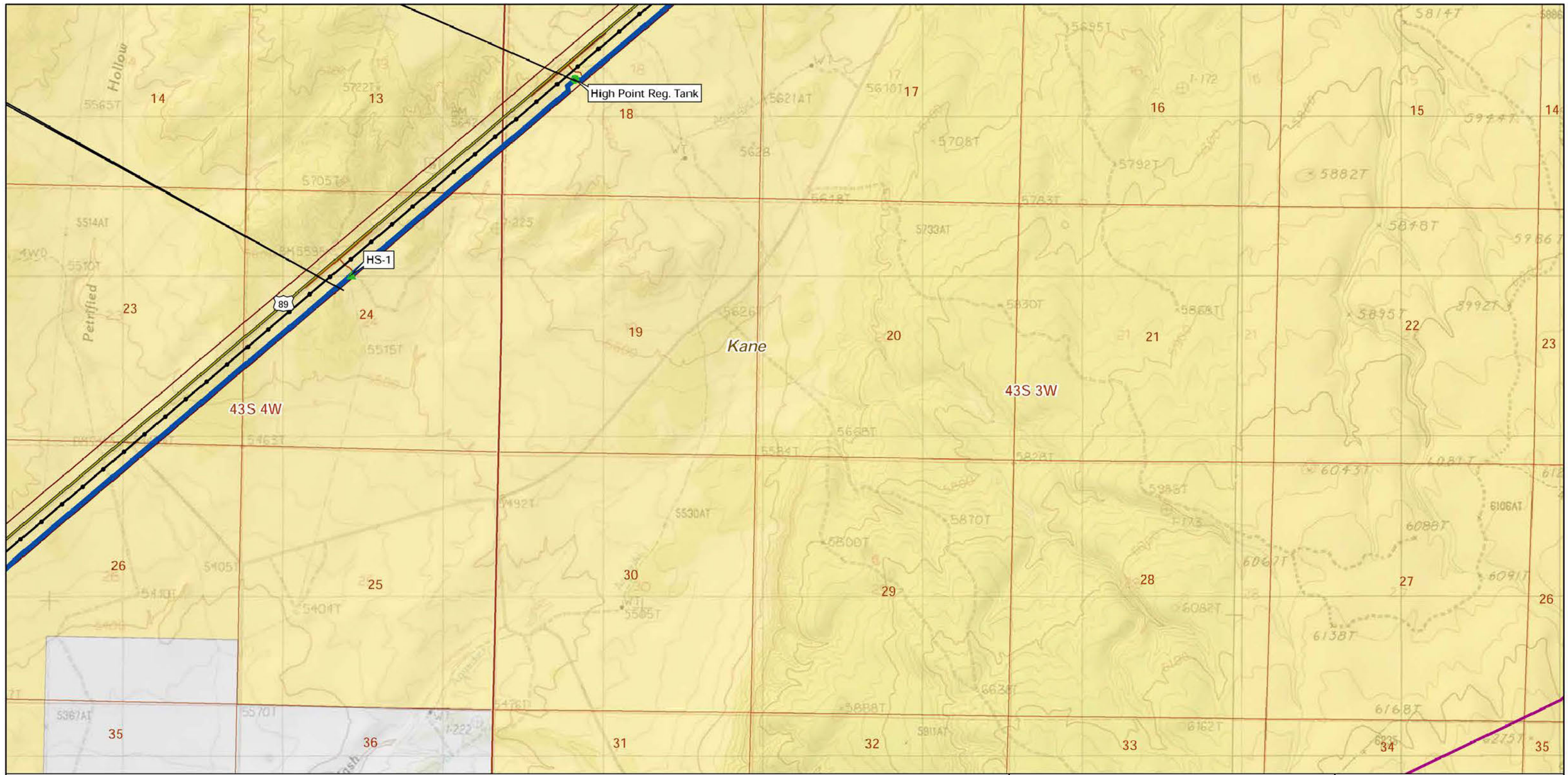
- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- GSENM Utility Corridor
- US Highway
- Major Rivers & Streams
- Lakes & Reservoirs
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 20



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- GSENM Utility Corridor
- West Wide Energy Corridor
- US Highway
- Project Access Roads
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- Private

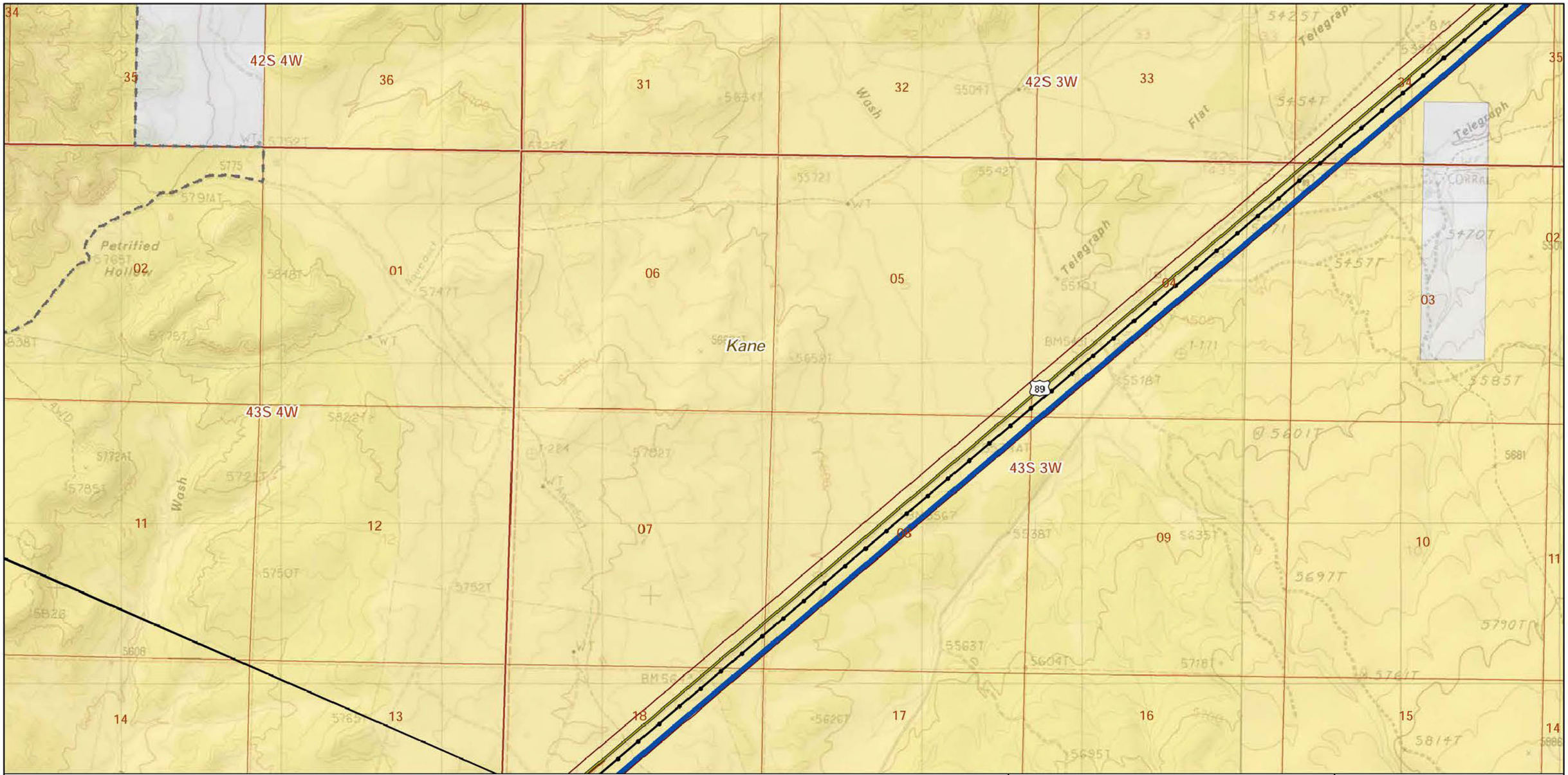
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 21



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- GSENM Utility Corridor
- US Highway
- Project Access Roads
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership
- BLM
- Private

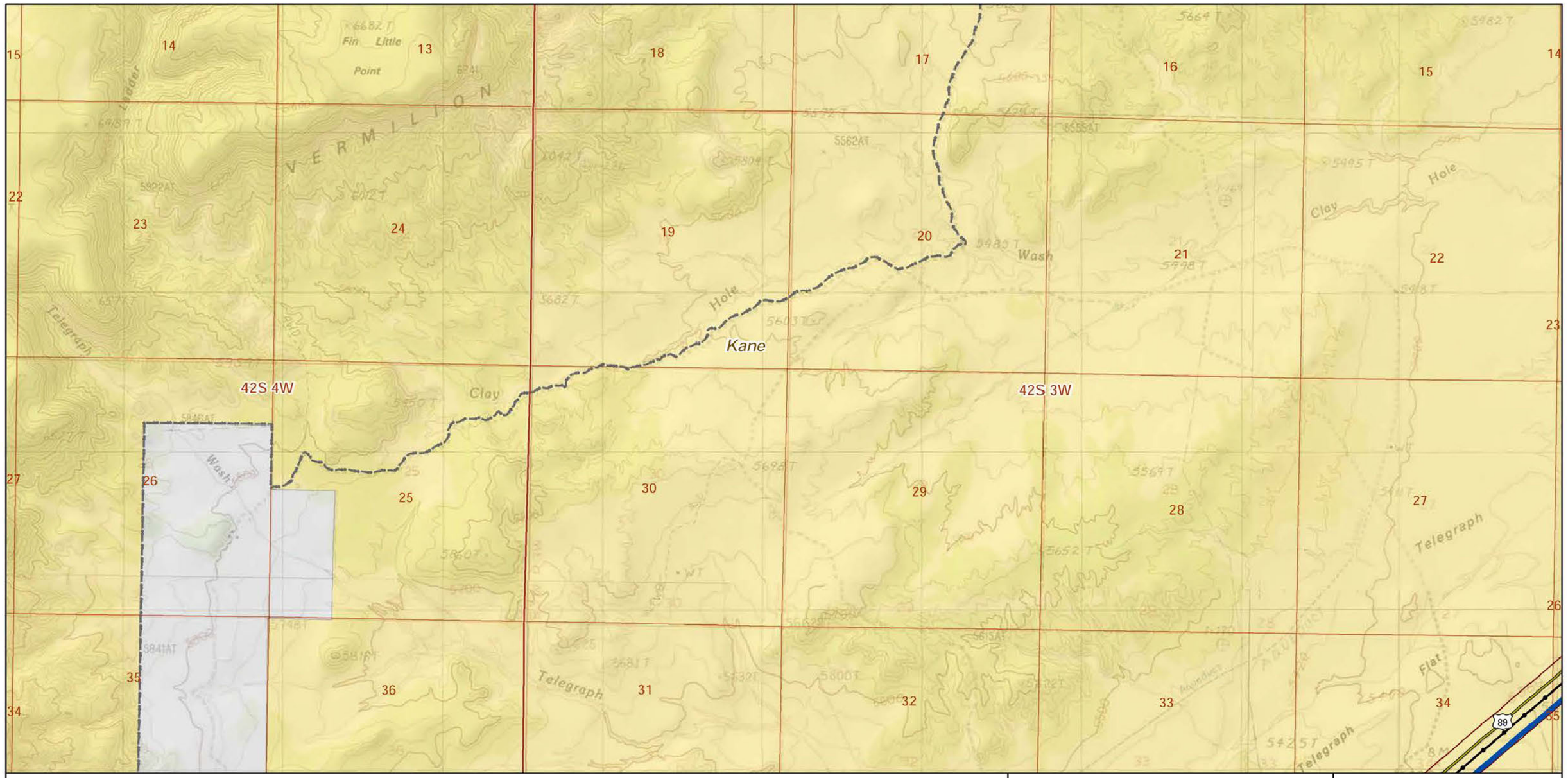
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

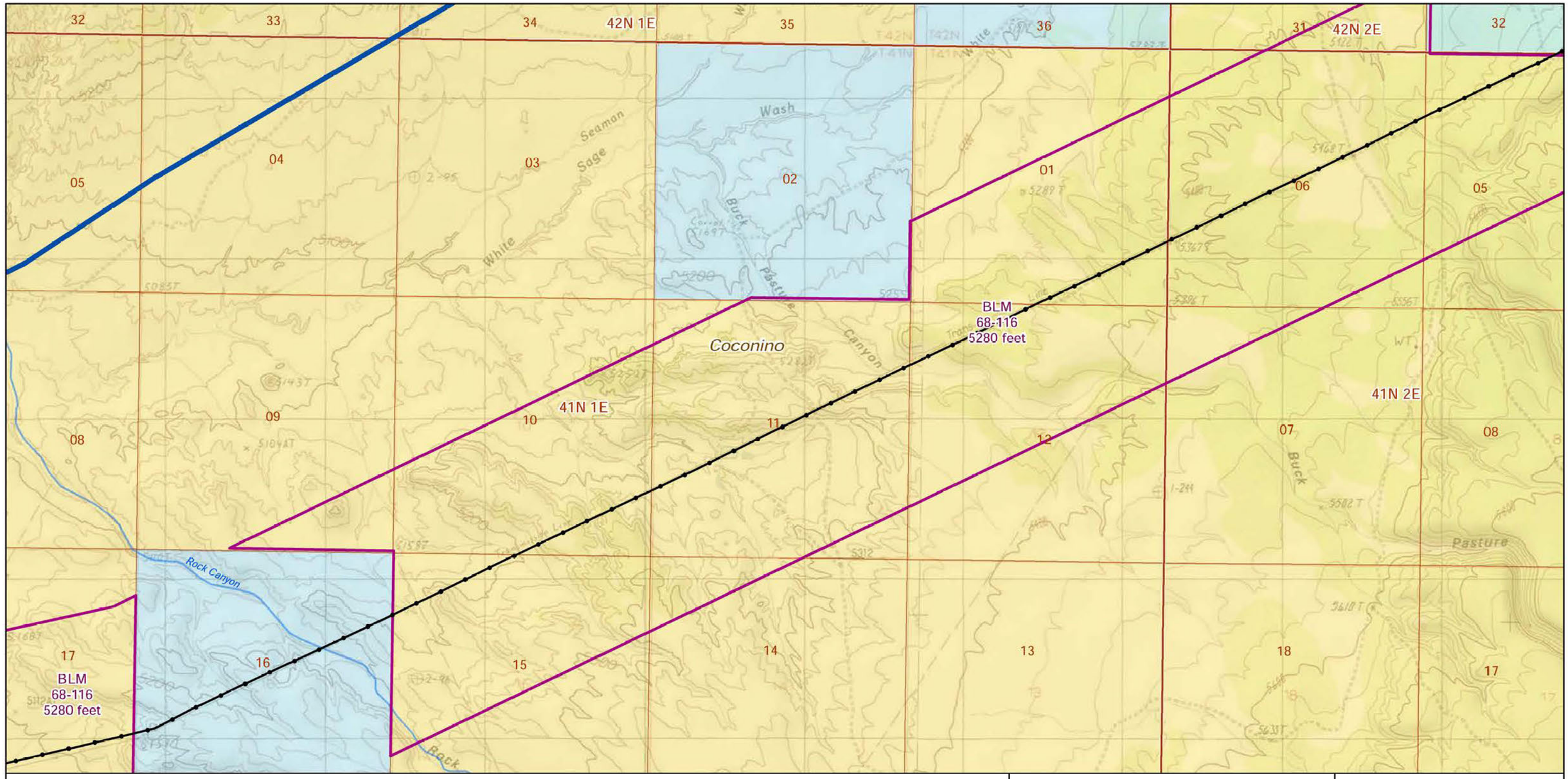
Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 22

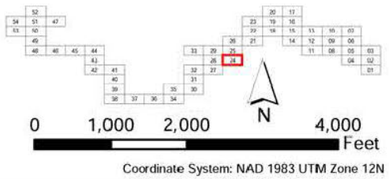


Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 23



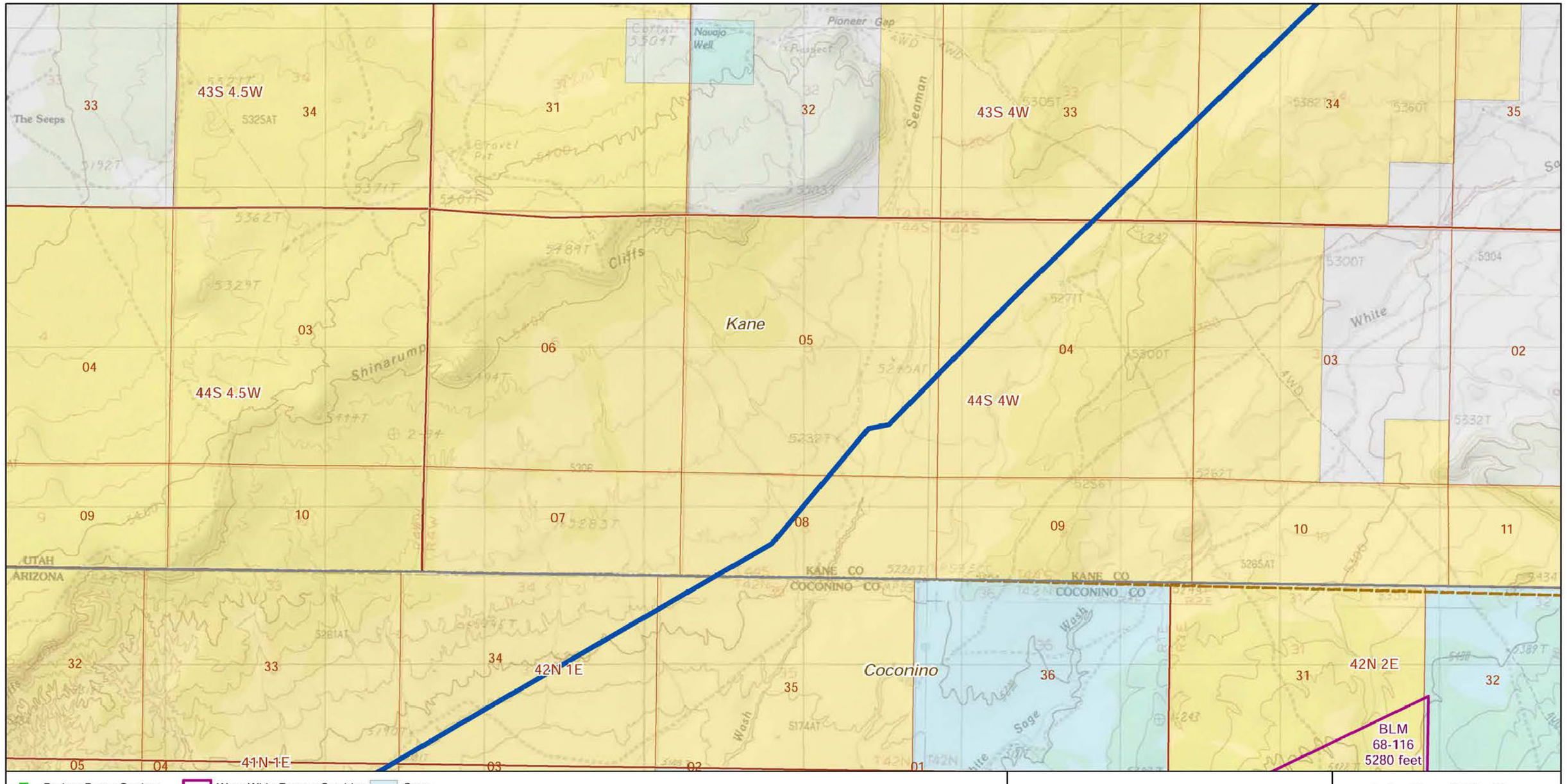
- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- West Wide Energy Corridor
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Land Ownership
- BLM
- State



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 24



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- West Wide Energy Corridor
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- State
- Private

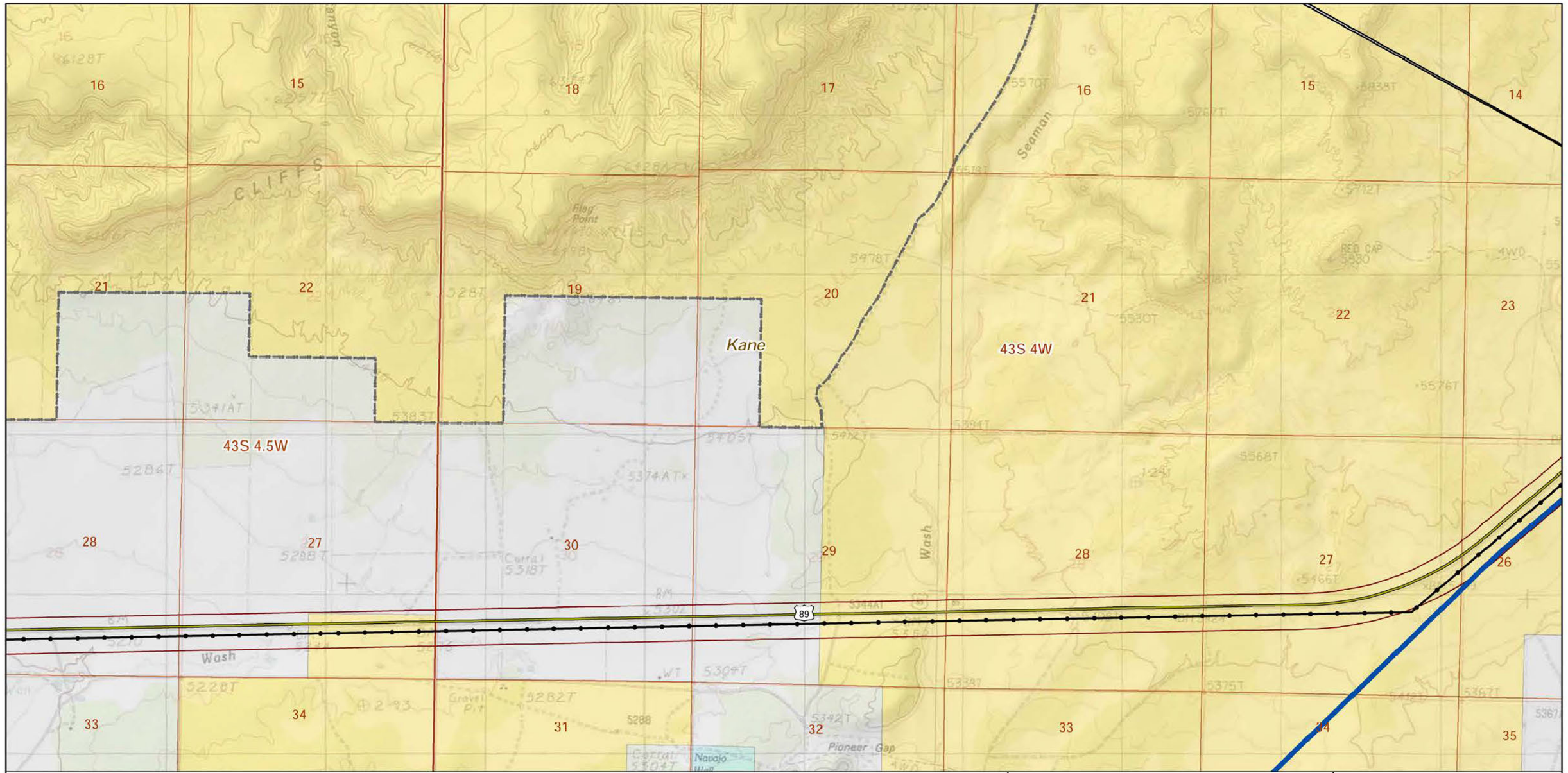
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

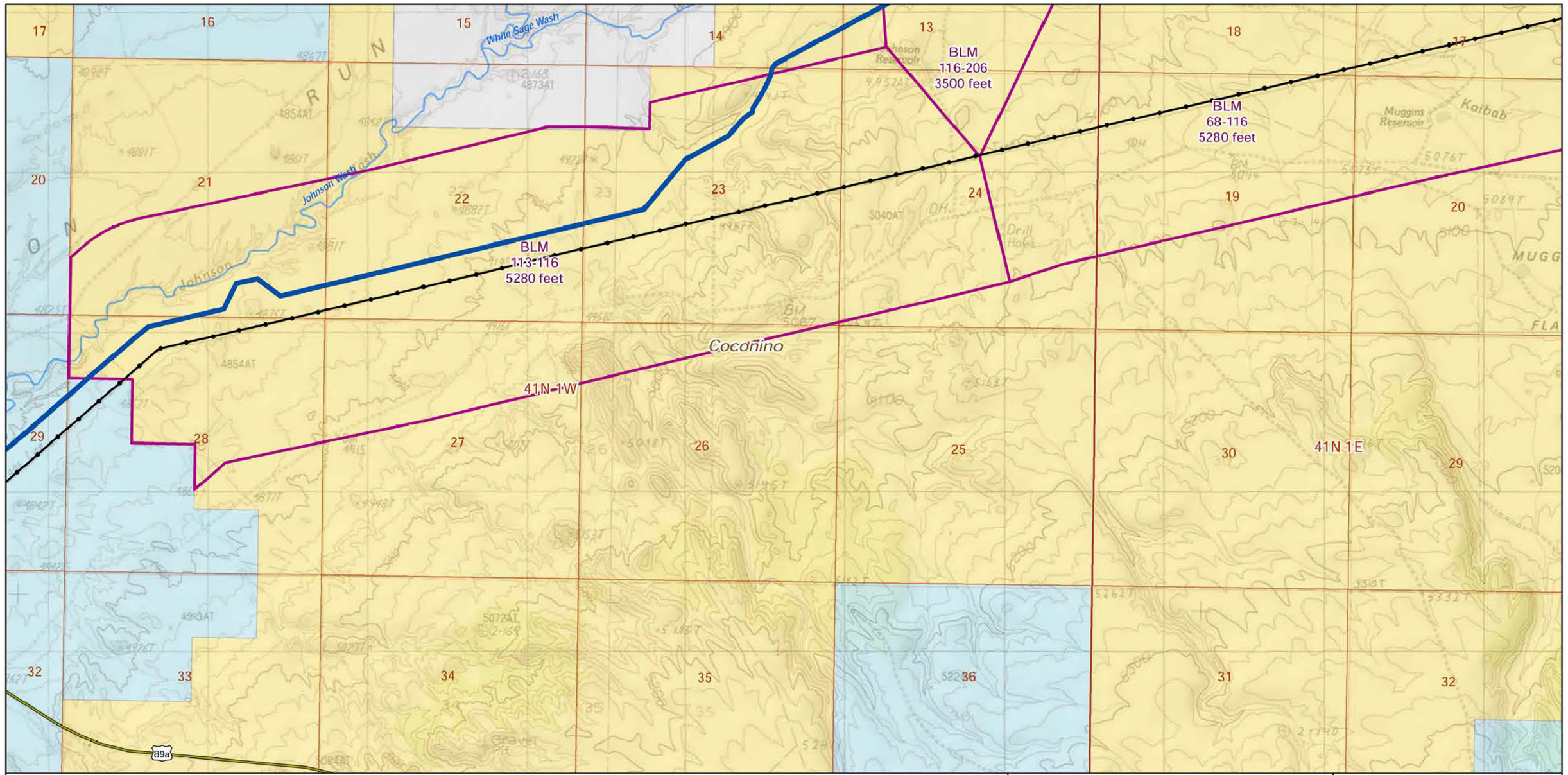
Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 25



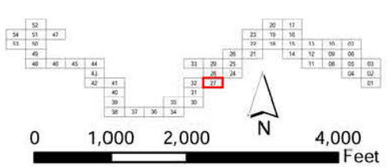
Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 26



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- West Wide Energy Corridor
- US Highway
- Major Rivers & Streams
- State Boundaries
- County Boundaries

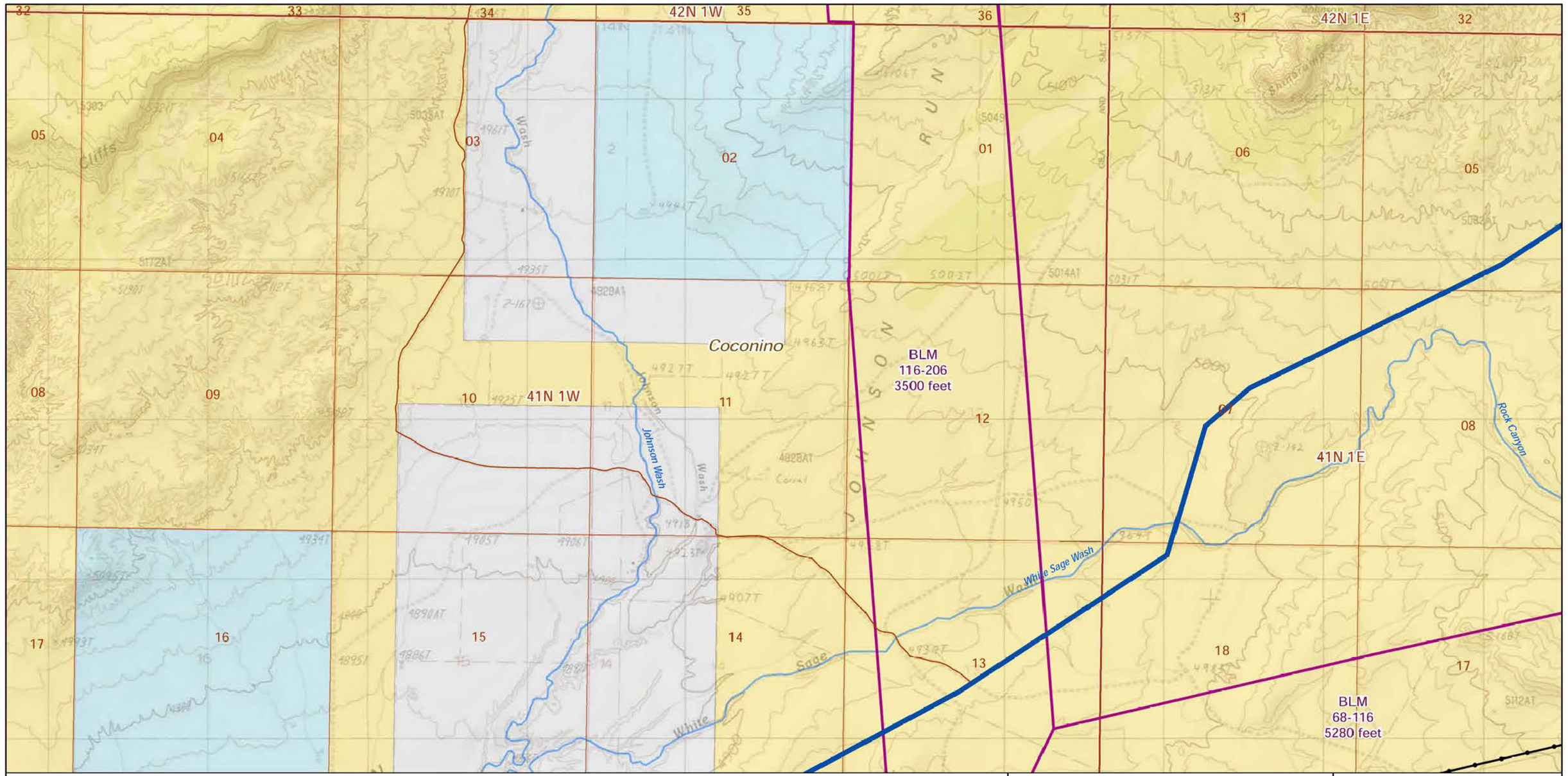
Land Ownership
- BLM
- State
- Private



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 27



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
West Wide Energy Corridor
Project Access Roads
Major Rivers & Streams
State Boundaries
County Boundaries

Land Ownership
BLM
State
Private

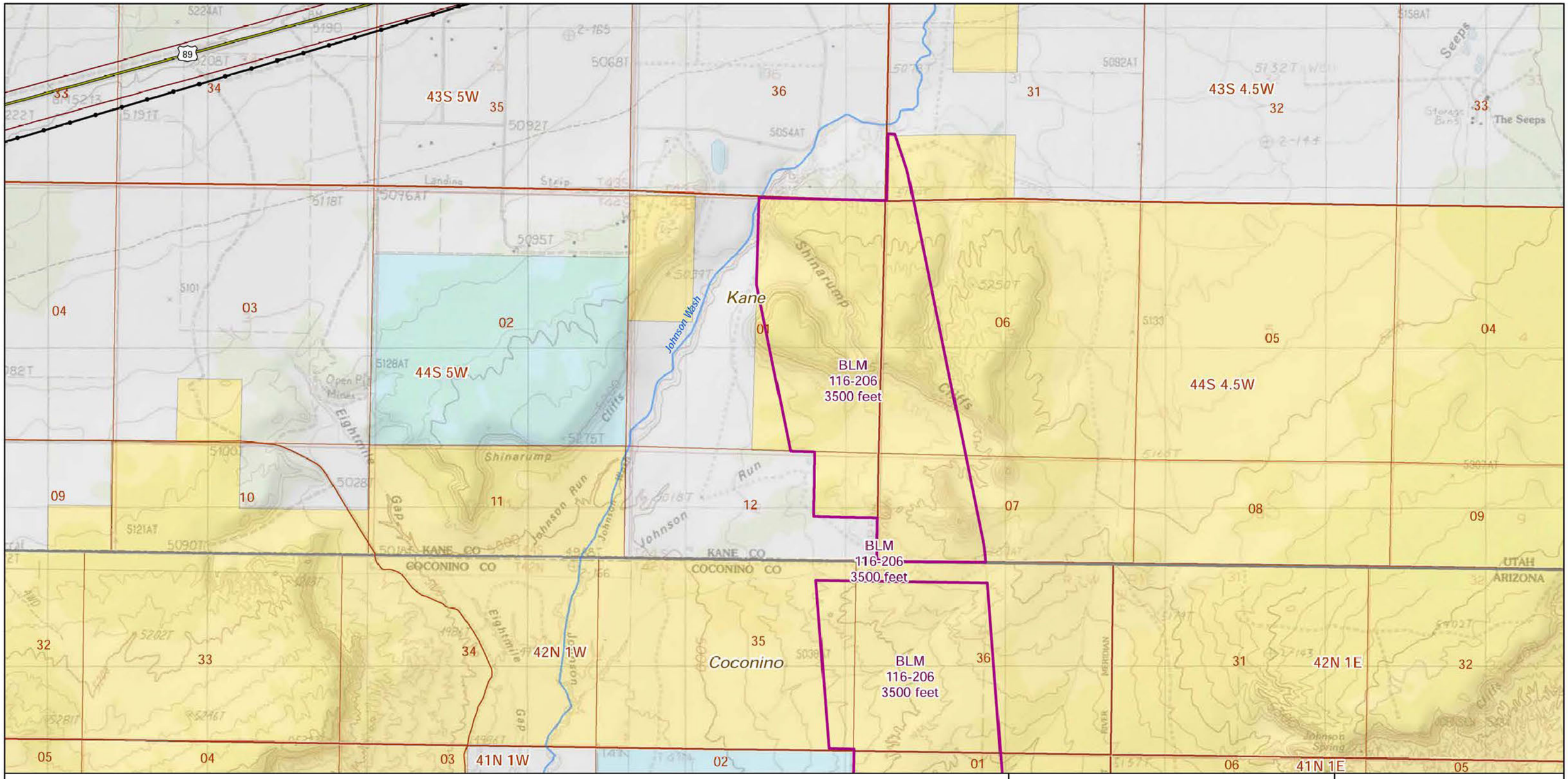
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 28



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- GSENM Utility Corridor
- West Wide Energy Corridor
- US Highway
- Project Access Roads
- Major Rivers & Streams
- Lakes & Reservoirs
- State Boundaries
- County Boundaries
- Township
- Section
- Land Ownership
- BLM
- State
- Private

0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 29

BLM
113-116
5280 feet

Coconino

40N 2W

40N 1W

Jacob Canyon

Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
West Wide Energy Corridor
Major Rivers & Streams
Tribal Lands
State Boundaries
County Boundaries

Land Ownership
BLM
State
Tribal

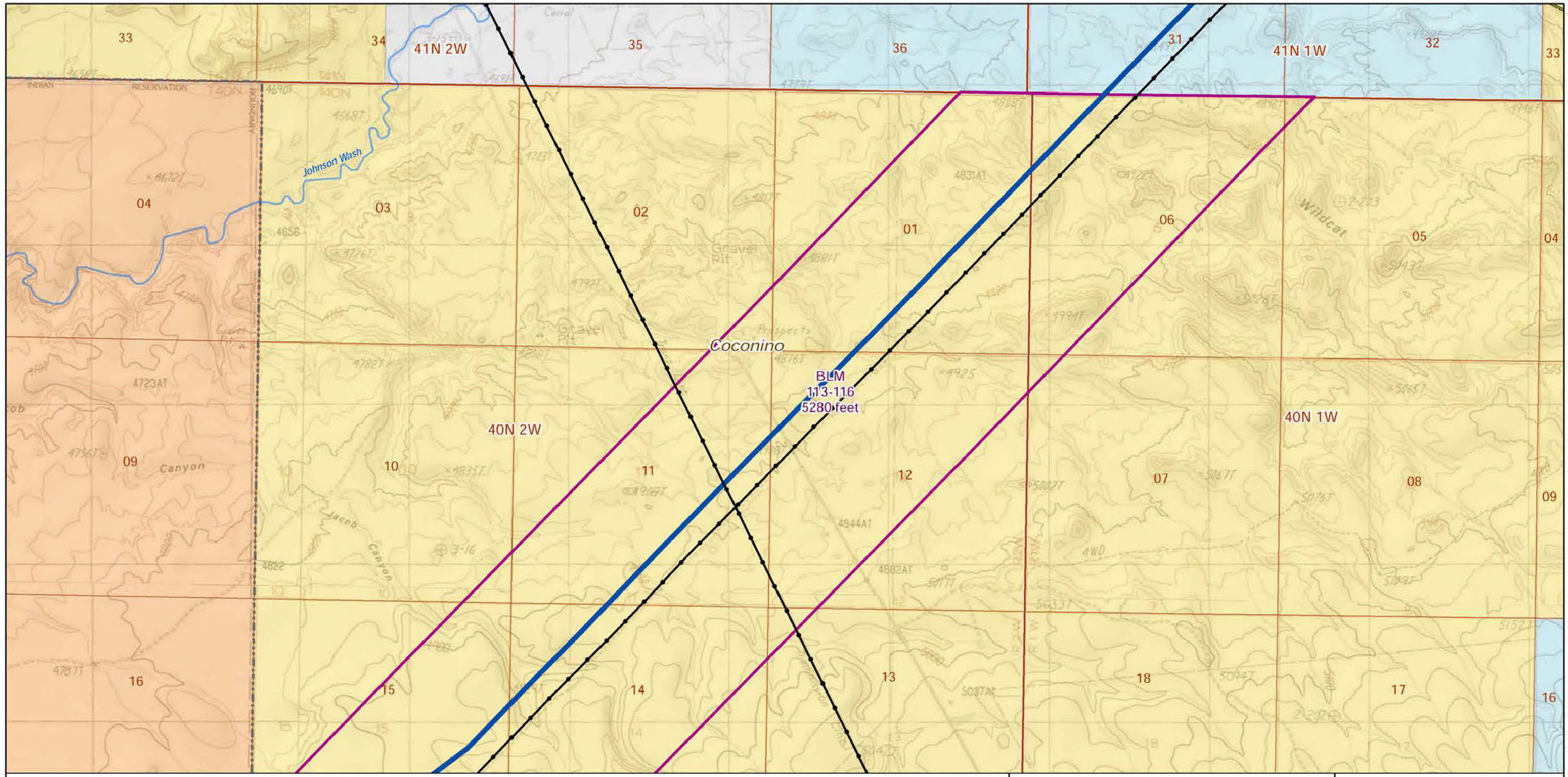
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 30



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
West Wide Energy Corridor
US Highway
Major Rivers & Streams
Tribal Lands
State Boundaries
County Boundaries

Land Ownership
BLM
State
Private
Tribal

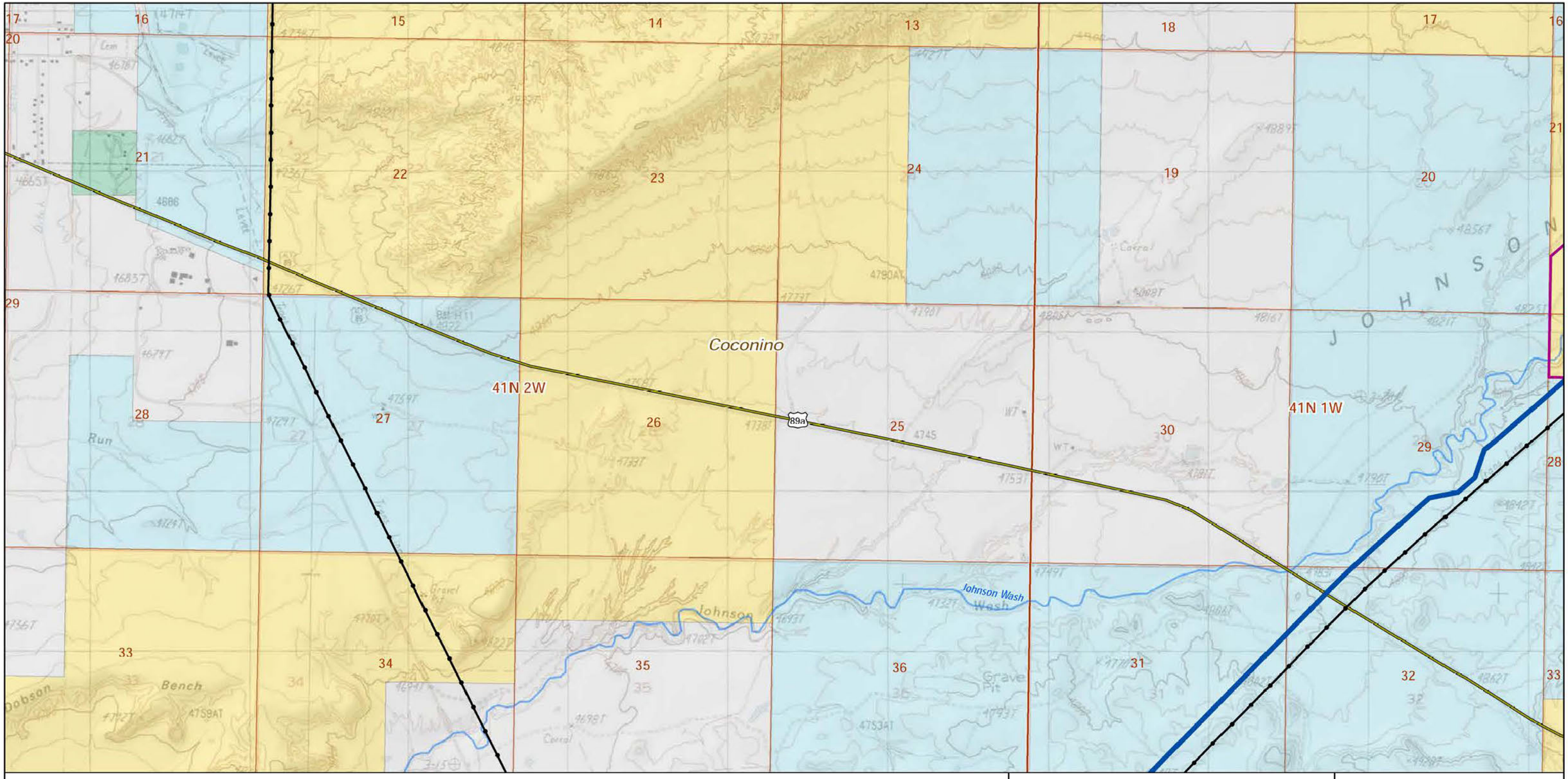
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

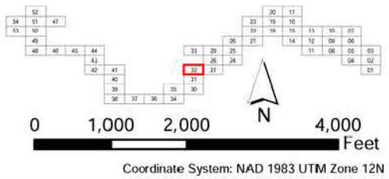
Plan of Development
Southern Alternative
Map Panel 31



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
West Wide Energy Corridor
US Highway
Major Rivers & Streams
State Boundaries
County Boundaries

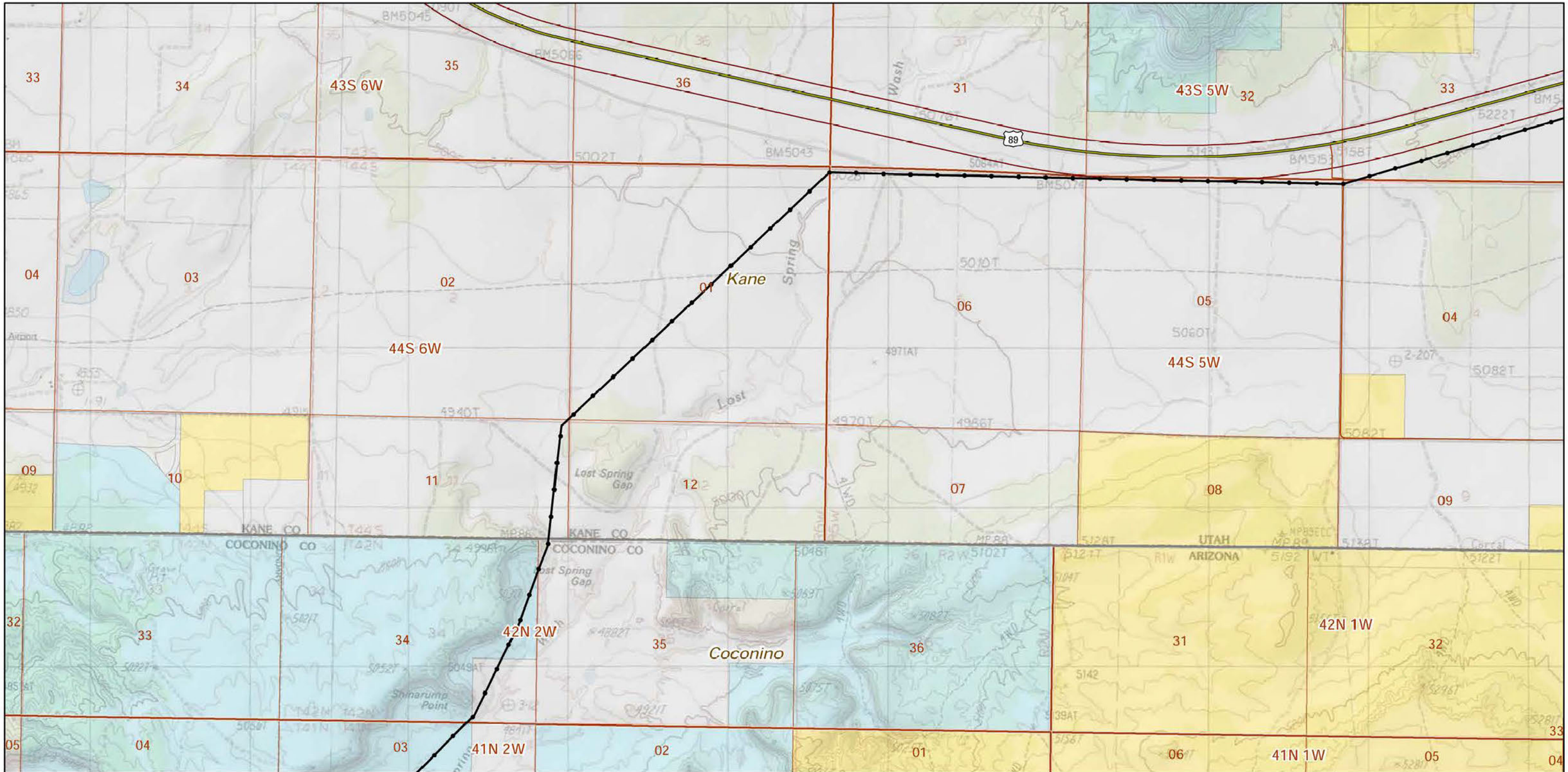
Land Ownership
BLM
State
Private
USFS



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 32



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- GSENM Utility Corridor
- US Highway
- Project Access Roads
- Lakes & Reservoirs
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- State
- Private

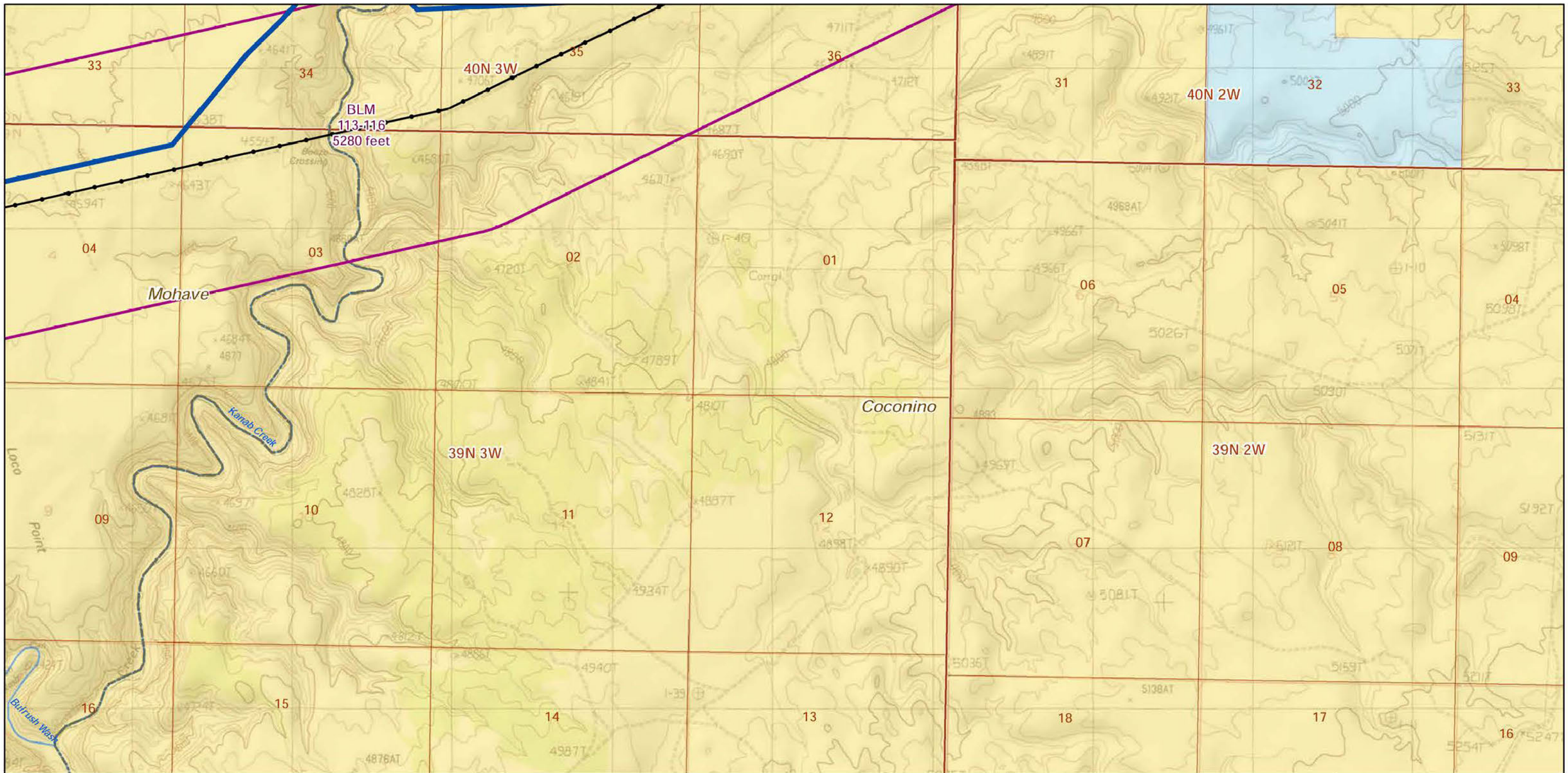
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

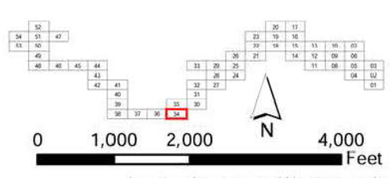
Plan of Development
Southern Alternative
Map Panel 33



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- West Wide Energy Corridor
- Major Rivers & Streams
- State Boundaries
- County Boundaries

Land Ownership

- State
- BLM



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 34

KAIBAB - PAIUTE

INDIAN RESERVATION

Nagles Crossing

Quickwater Spring

Kanab Creek

MOHAVE CO

COCONINO CO

Mohave

Coconino

40N 3W

40N 2W

Jacob Canyon

BLM
113-116
5280 feet

16 15 14 13 18 17 16
21 22 23 24 19 20 21
28 27 26 25 30 29 28
33 34 35 36 31 32 33

Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
West Wide Energy Corridor
Major Rivers & Streams
Tribal Lands
State Boundaries
County Boundaries

Land Ownership
BLM
State
Tribal

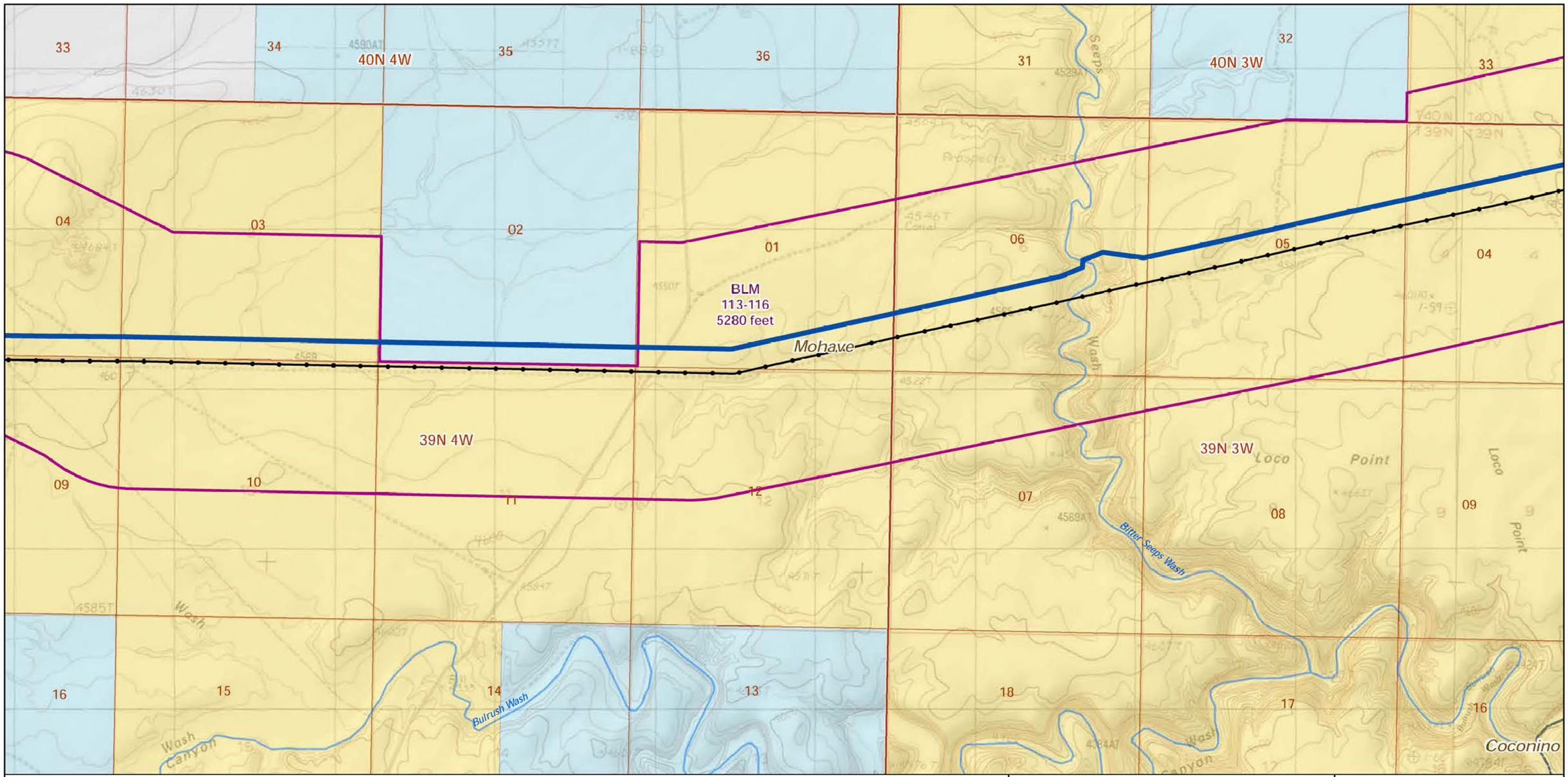
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 35



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- West Wide Energy Corridor
- Major Rivers & Streams
- State Boundaries
- County Boundaries

Land Ownership

- BLM
- State
- Private

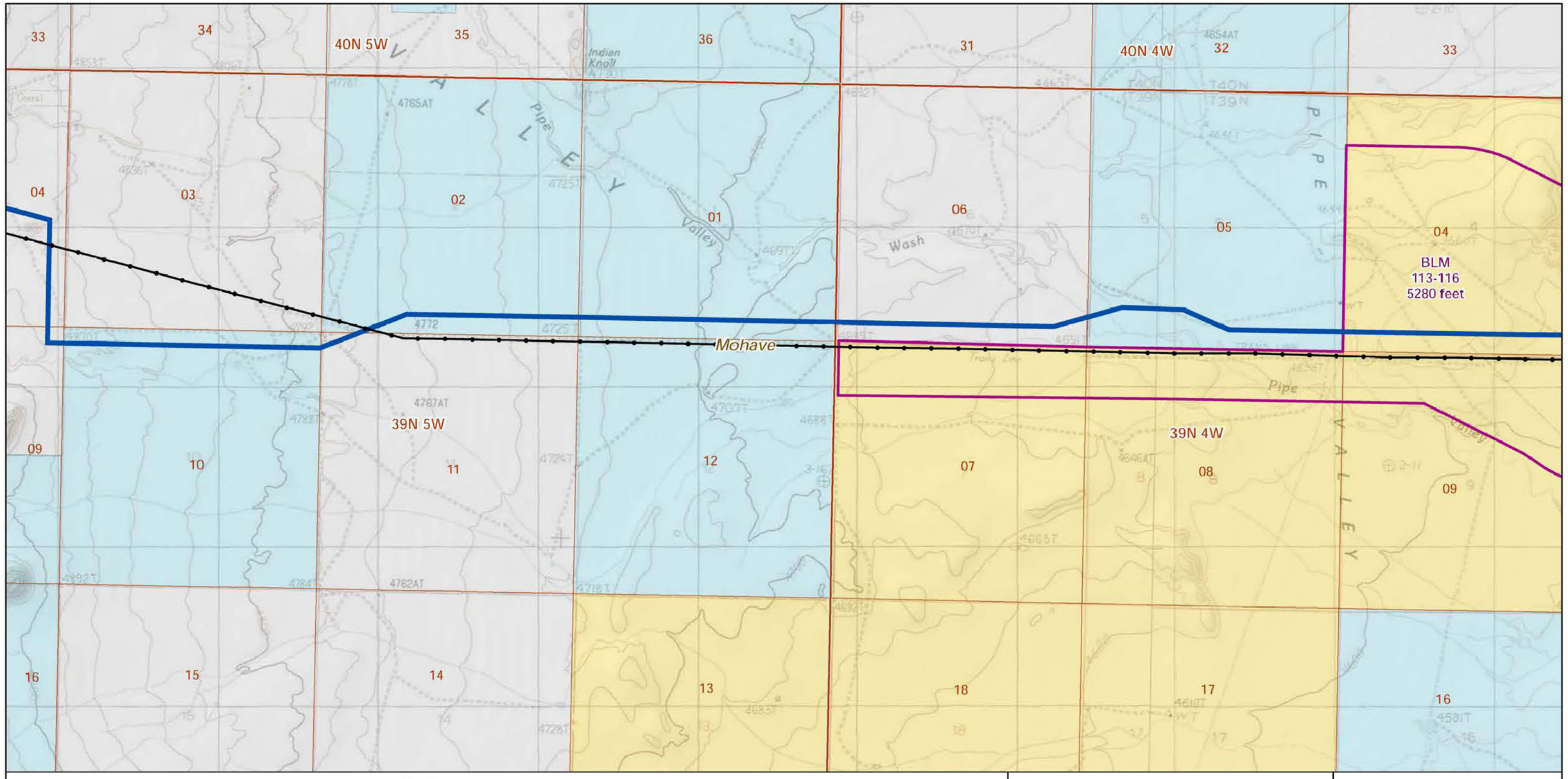
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 36



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- West Wide Energy Corridor
- State Boundaries
- County Boundaries

Land Ownership

- BLM
- State
- Private

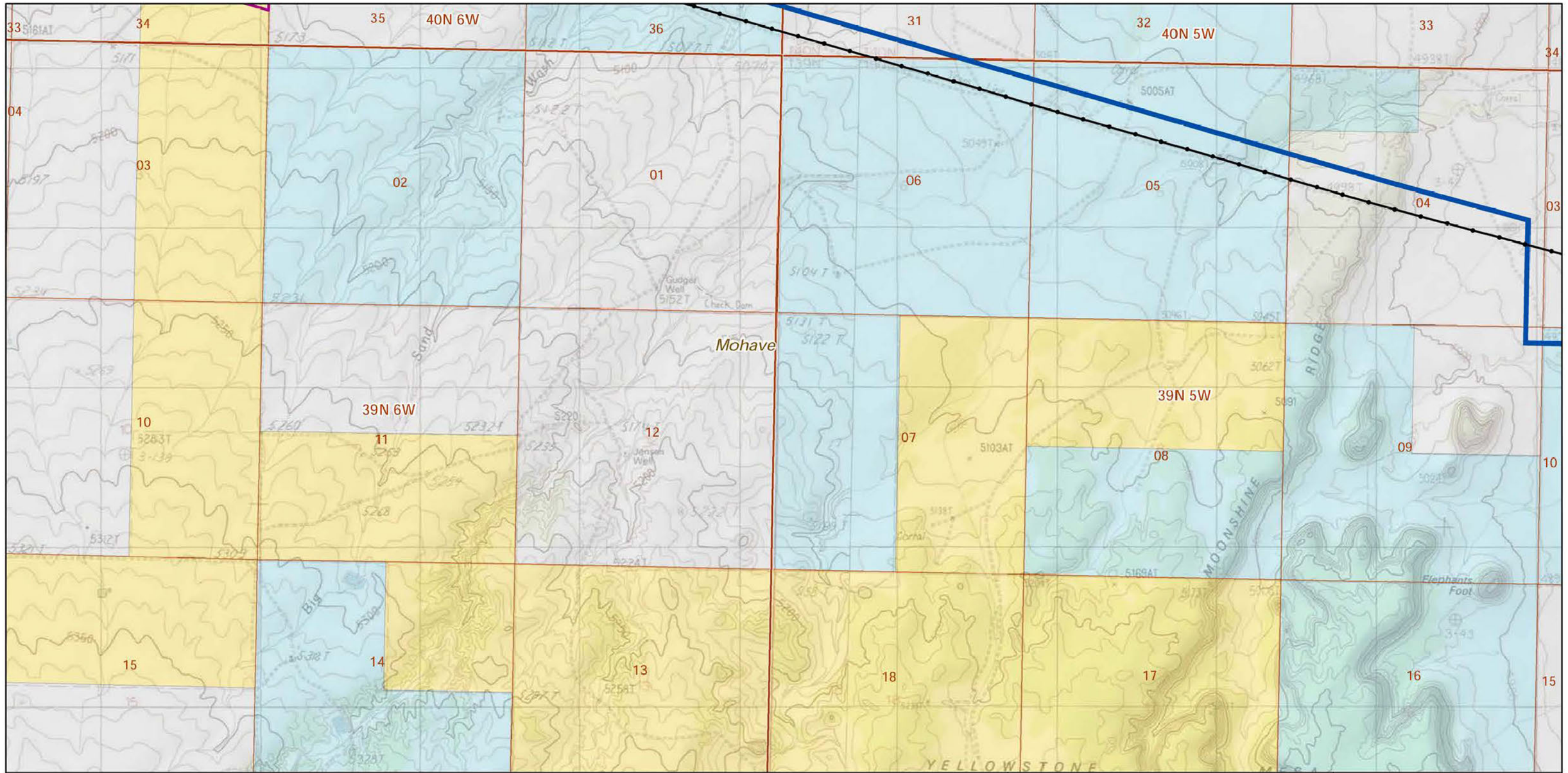
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

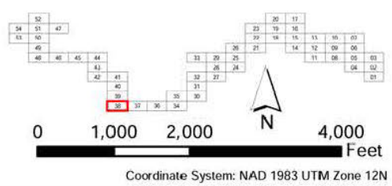
Plan of Development
Southern Alternative
Map Panel 37



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- West Wide Energy Corridor
- State Boundaries
- County Boundaries

Land Ownership

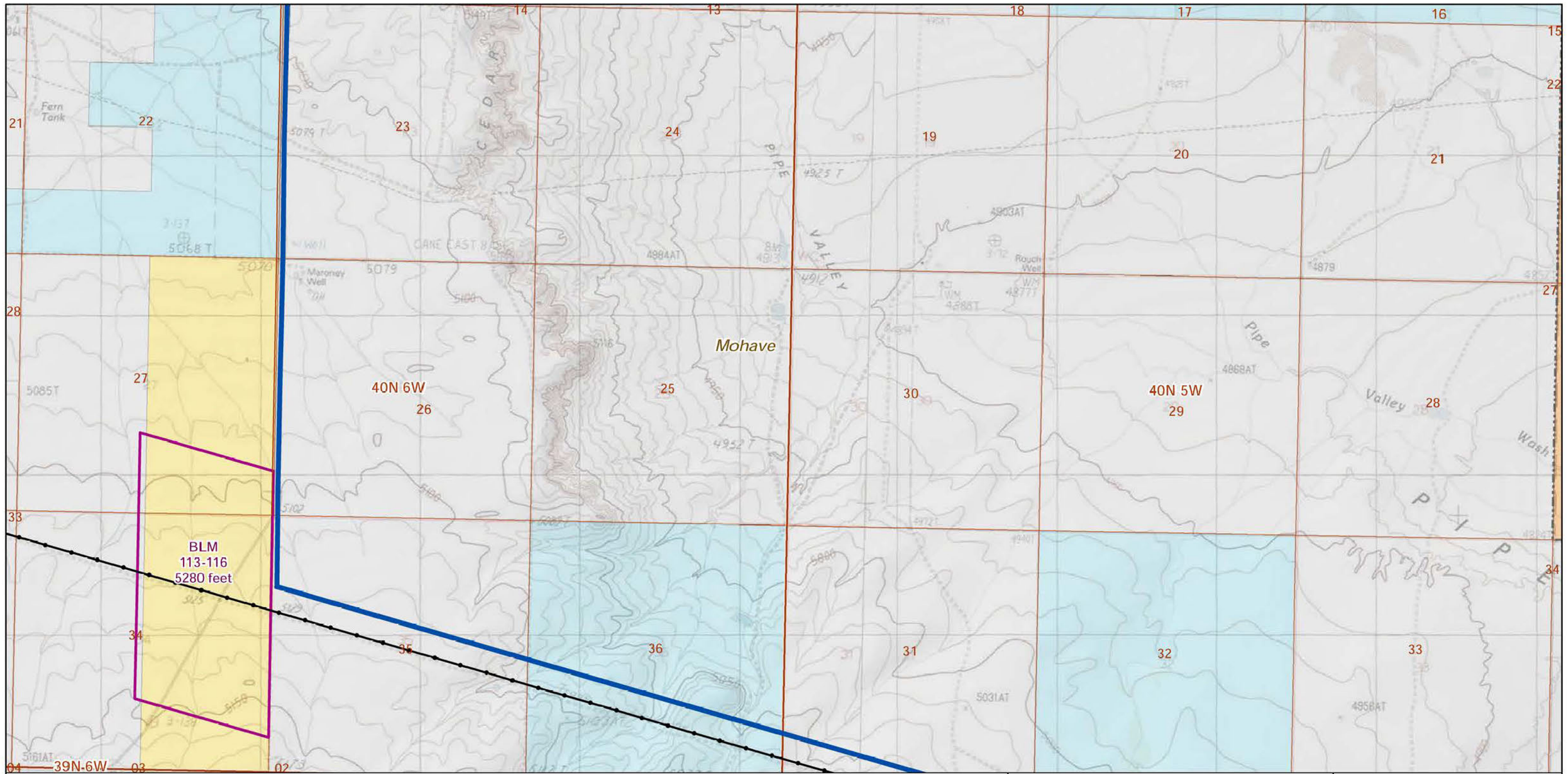
- BLM
- State
- Private



Coordinate System: NAD 1983 UTM Zone 12N

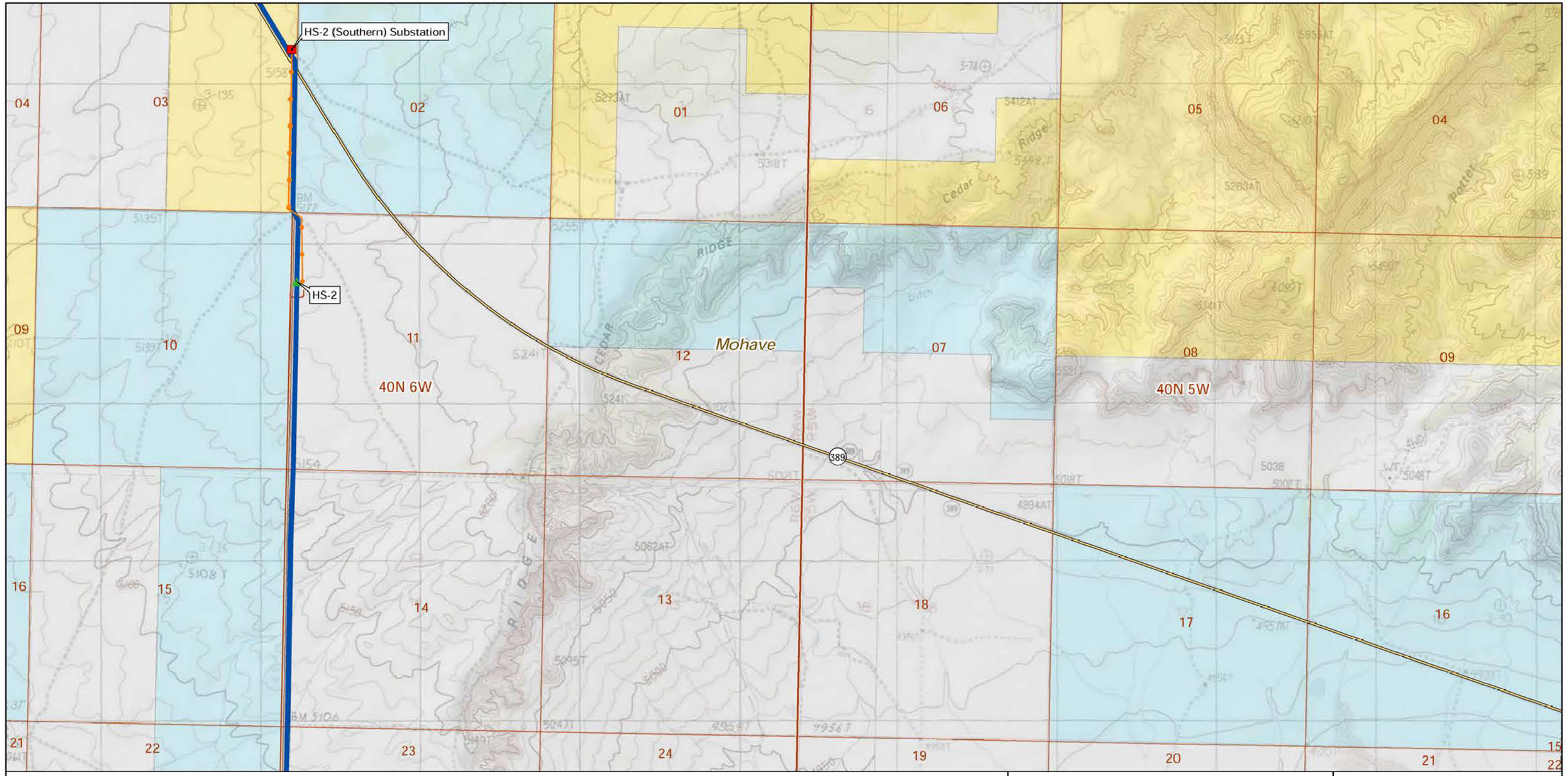
Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 38



Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 39



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Project Transmission Lines
- ST Highway
- Project Access Roads
- Tribal Lands
- State Boundaries
- County Boundaries

Land Ownership

- BLM
- State
- Private
- Tribal

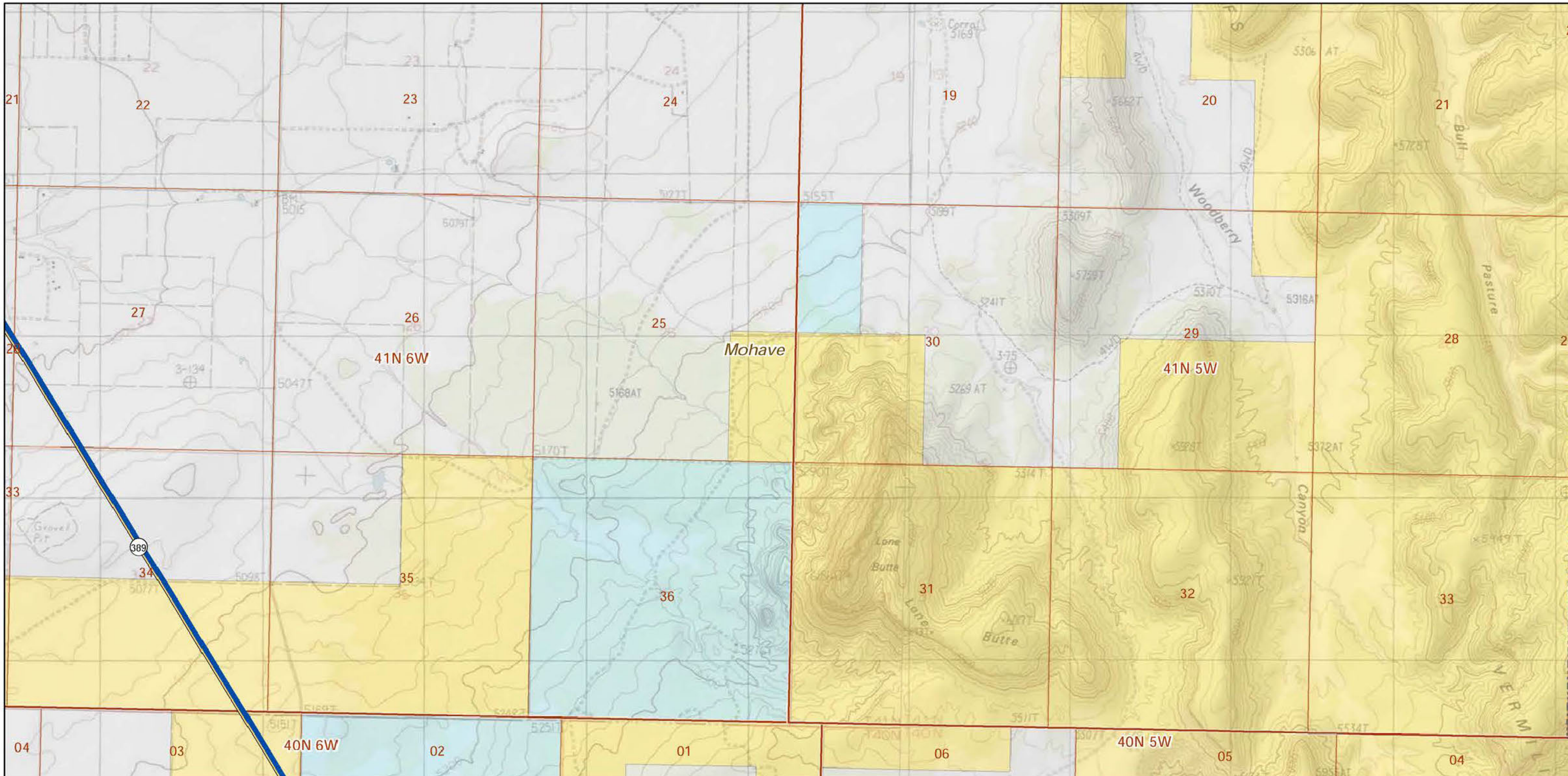
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 40



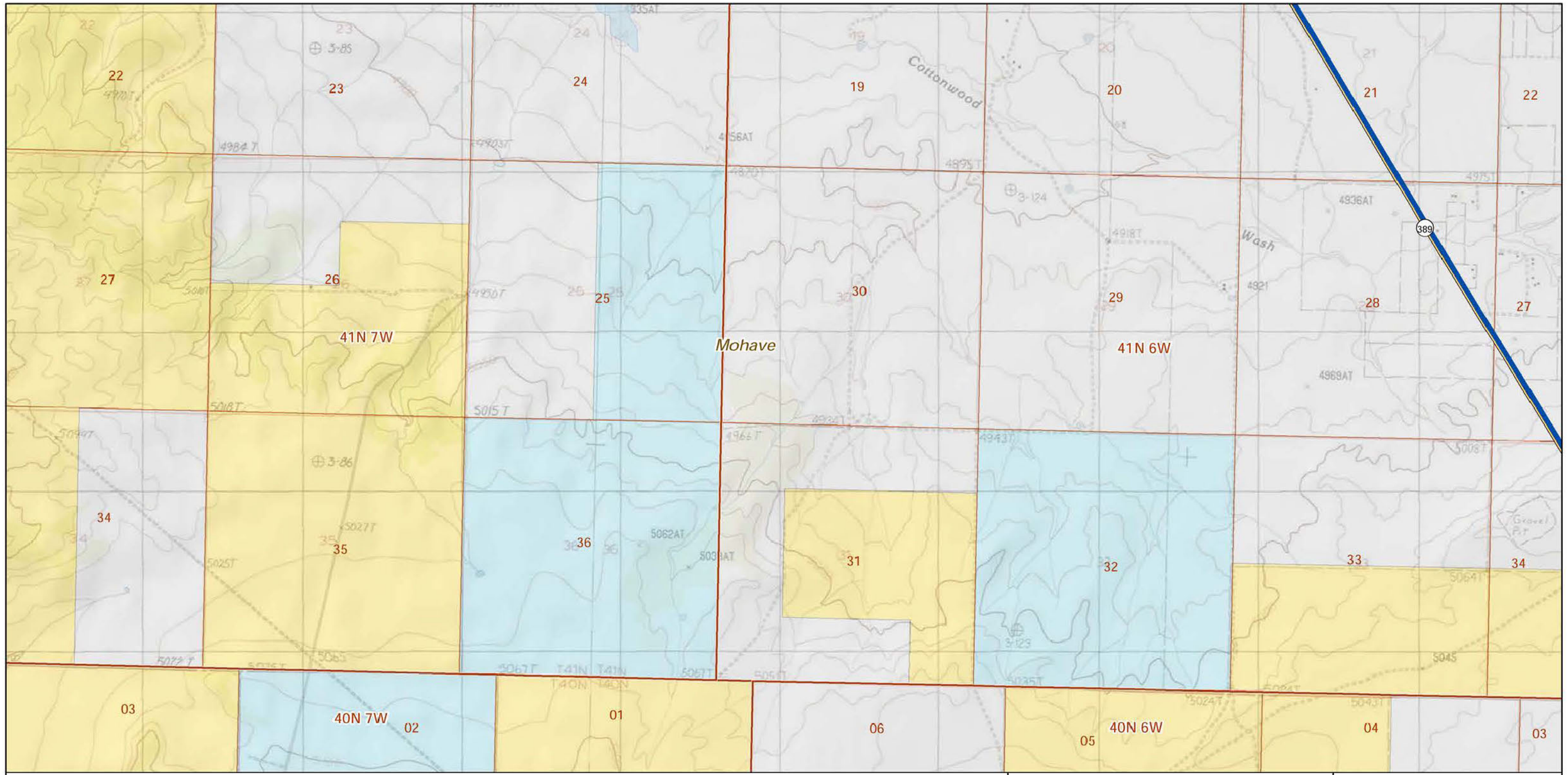
Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative
ST Highway
Tribal Lands
State Boundaries
County Boundaries
Land Ownership
BLM
State
Private
Tribal

0 1,000 2,000 4,000 Feet

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 41



Projcct Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

ST Highway
Lakes & Reservoirs
State Boundaries
County Boundaries
Land Ownership
BLM
State

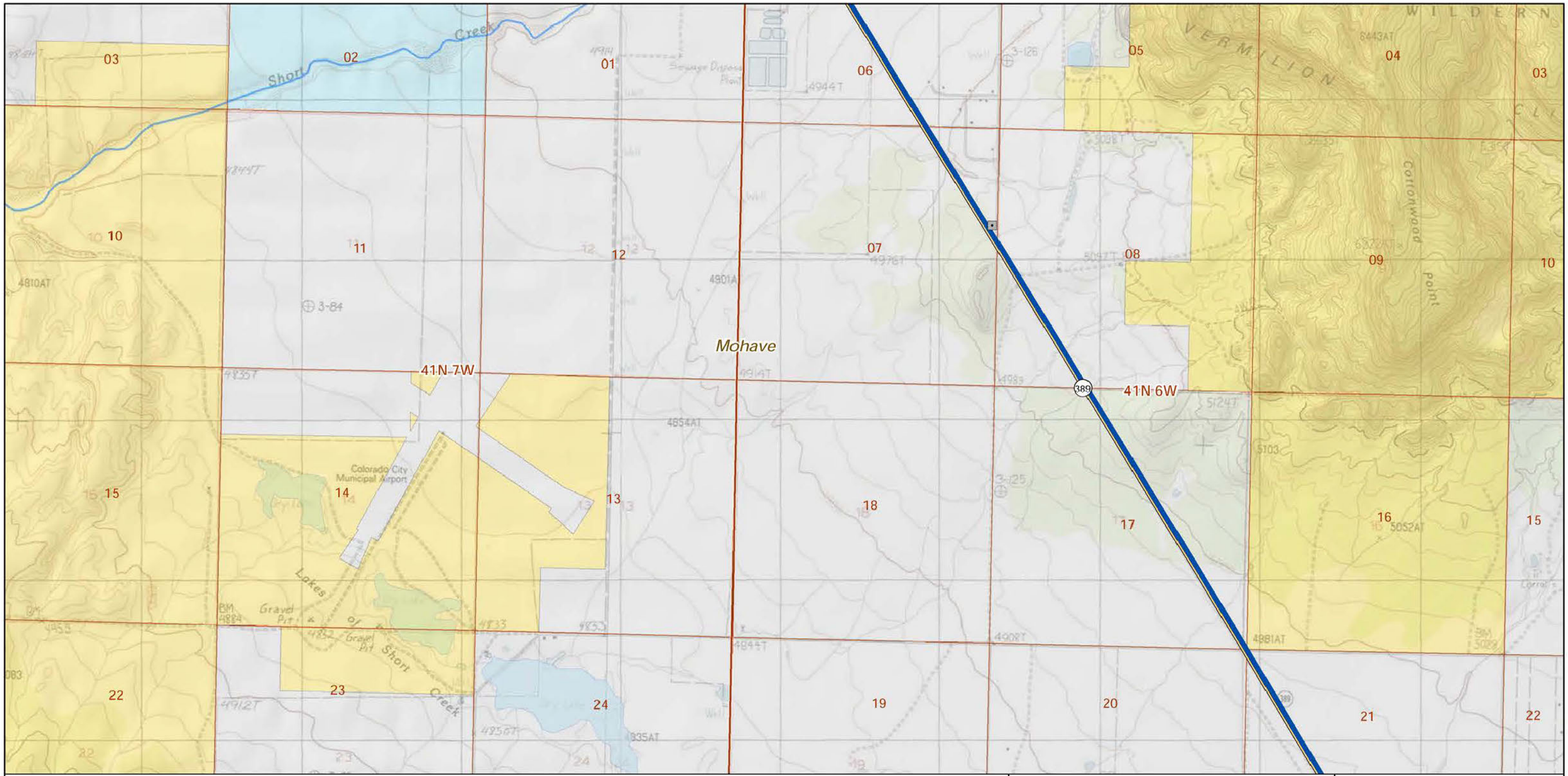
Privatc

0 1,000 2,000 4,000 Feet

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

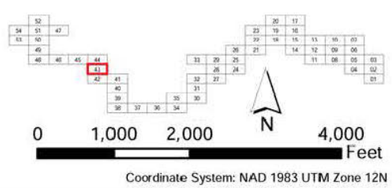
Plan of Development
Southern Alternative
Map Panel 42



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- ST Highway
- Major Rivers & Streams
- Lakes & Reservoirs
- State Boundaries
- County Boundaries

Land Ownership

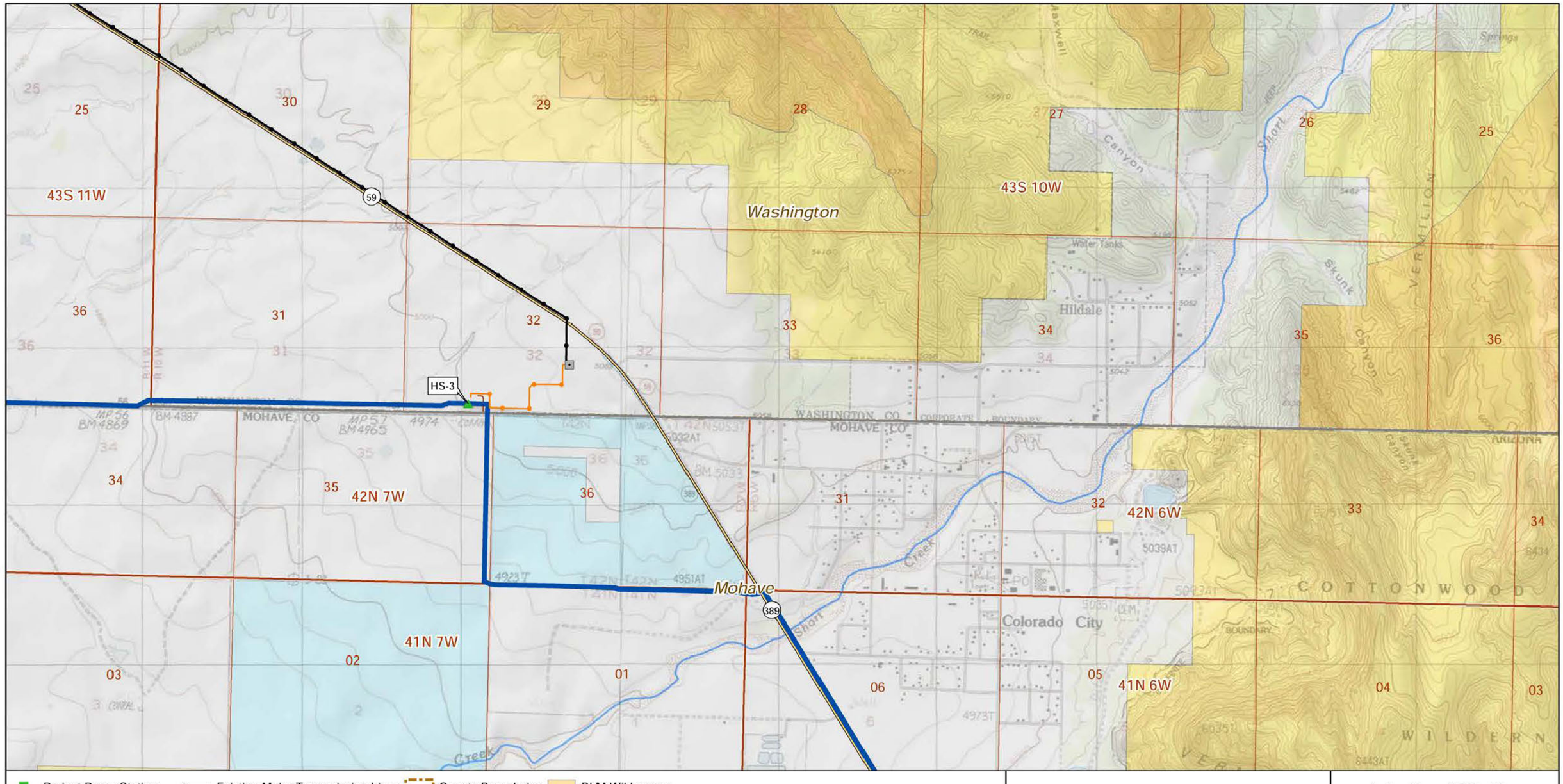
- BLM
- State
- Private



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 43



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
Project Transmission Lines
ST Highway
Project Access Roads
Major Rivers & Streams
Lakes & Reservoirs
State Boundaries

County Boundaries
Township
Section

Land Ownership
BLM
State
Private

BLM Wilderness

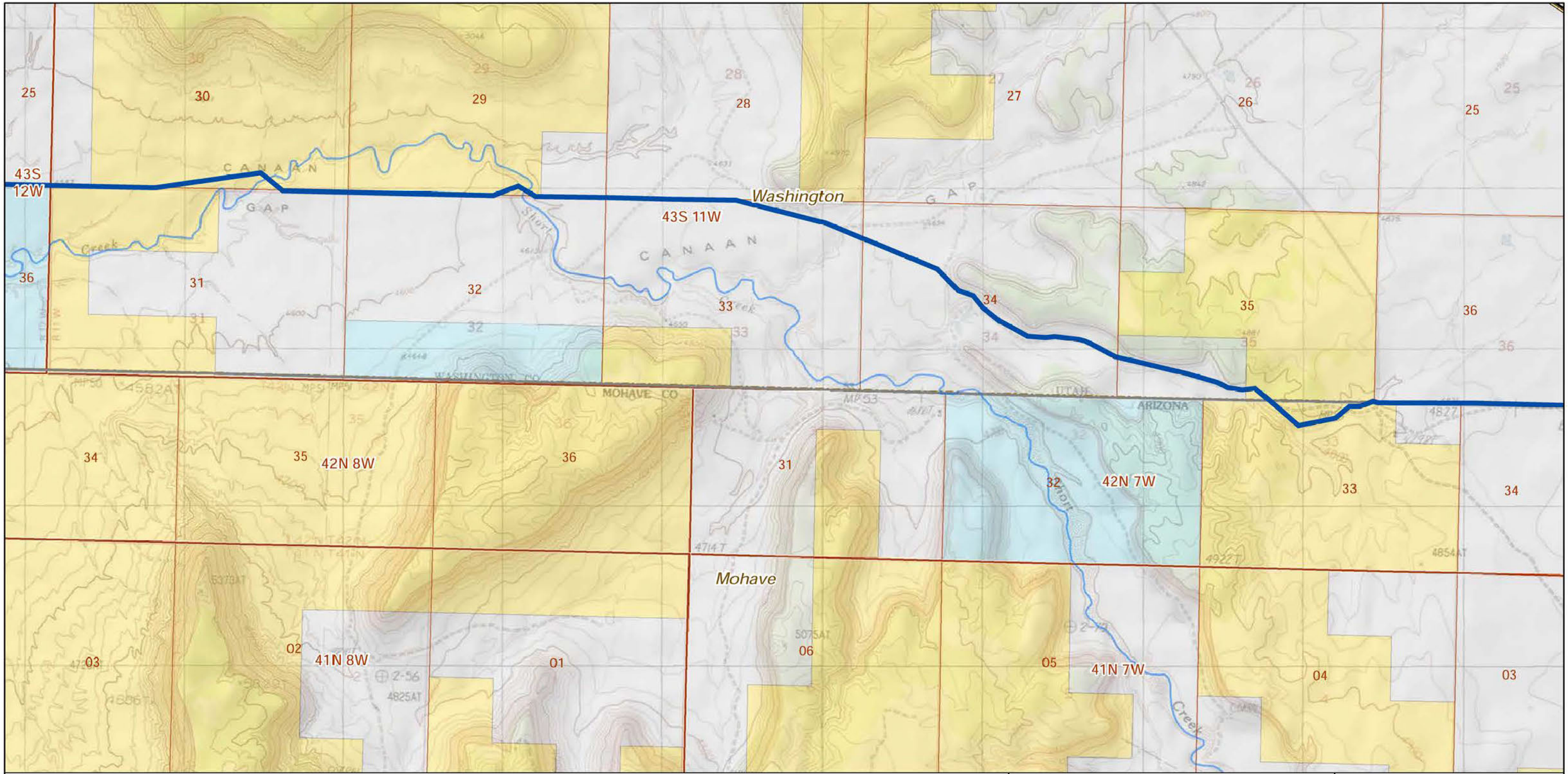
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 44



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
ST Highway
Major Rivers & Streams
State Boundaries
County Boundaries
Township
Section

Land Ownership
BLM
State
Private

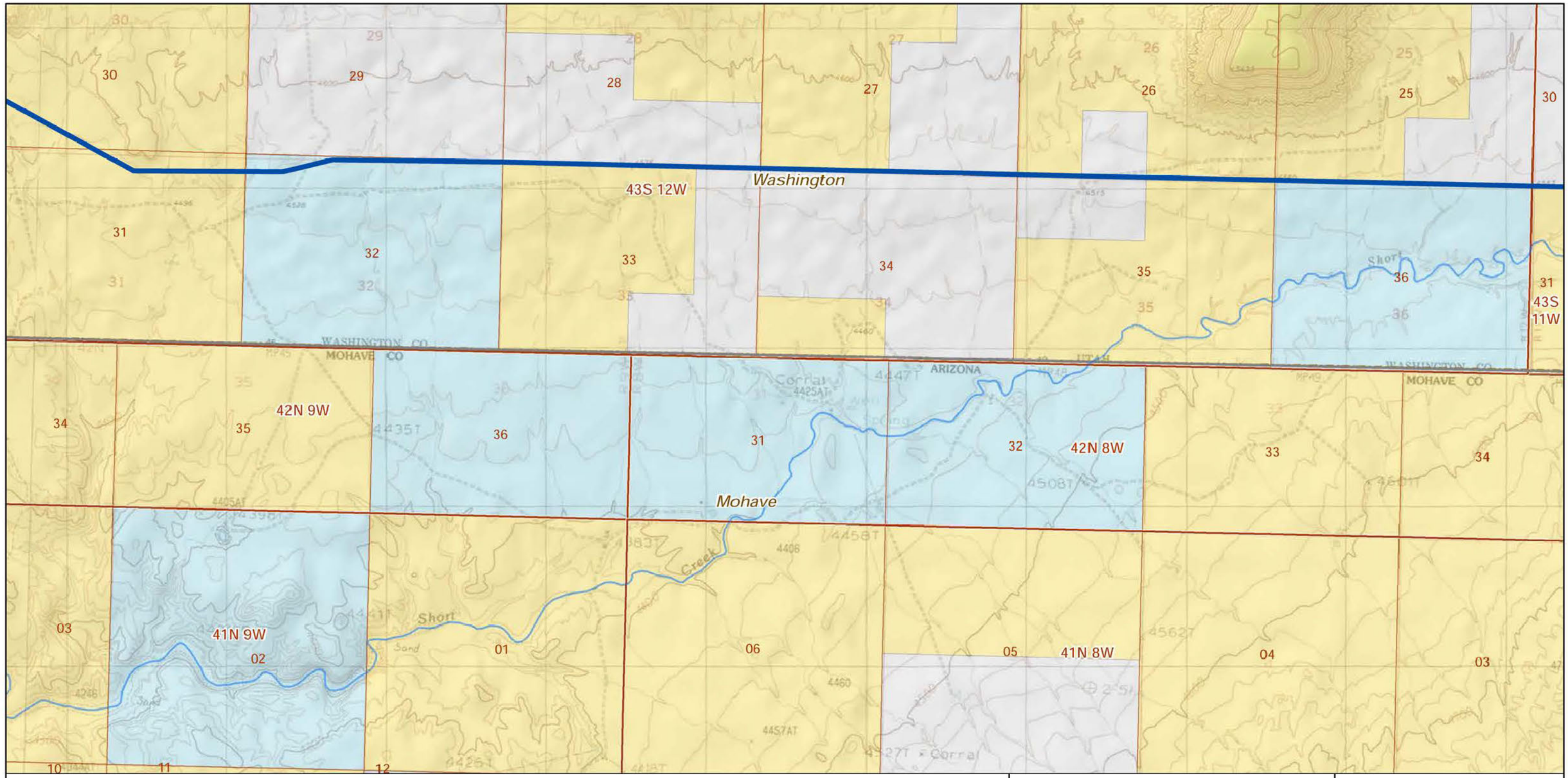
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 45



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section
- Land Ownership
- BLM
- State
- Private

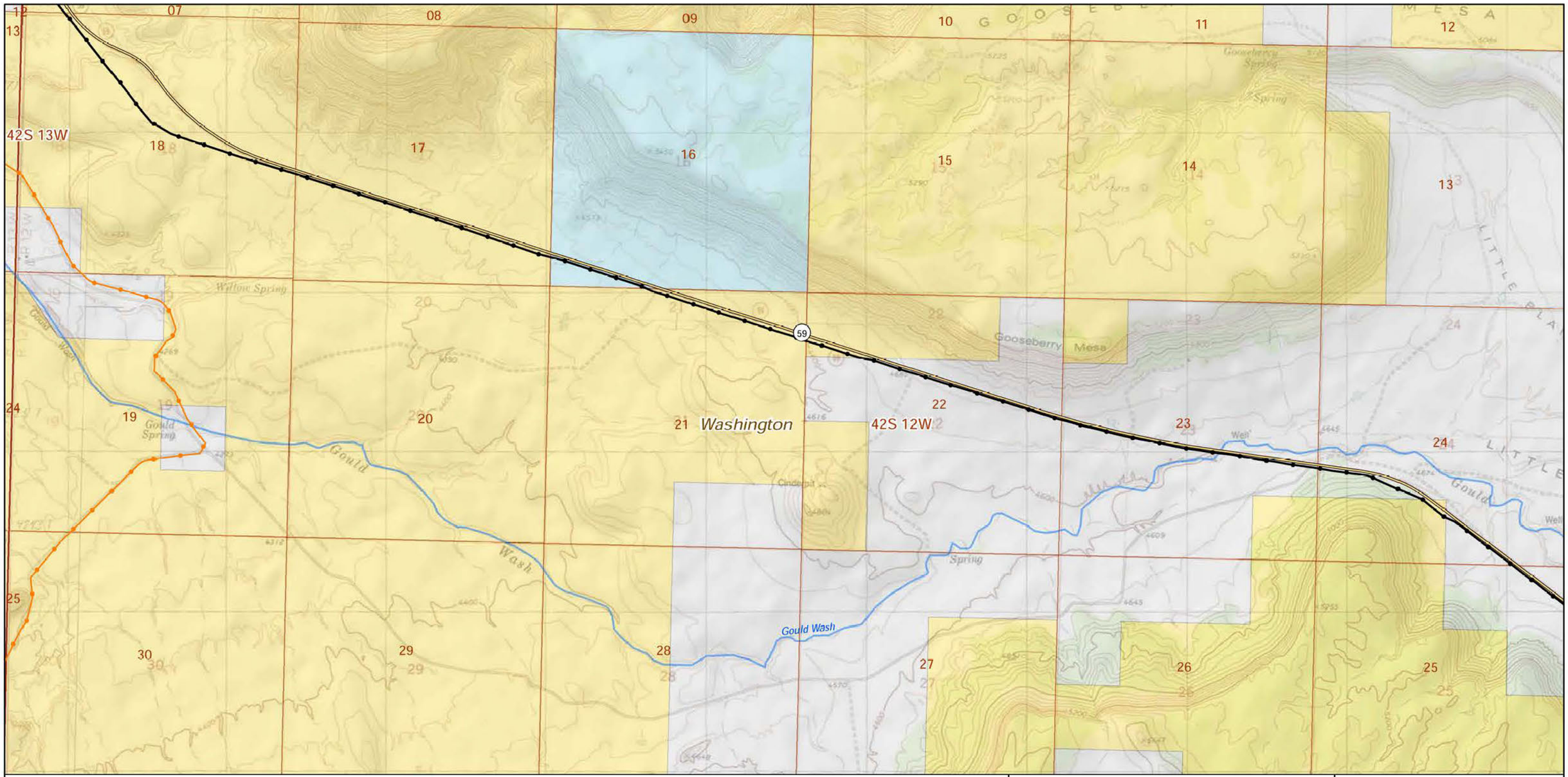
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 46



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
Project Transmission Lines
ST Highway
Major Rivers & Streams
State Boundaries
County Boundaries
Township

Section

Land Ownership
BLM
State
Private

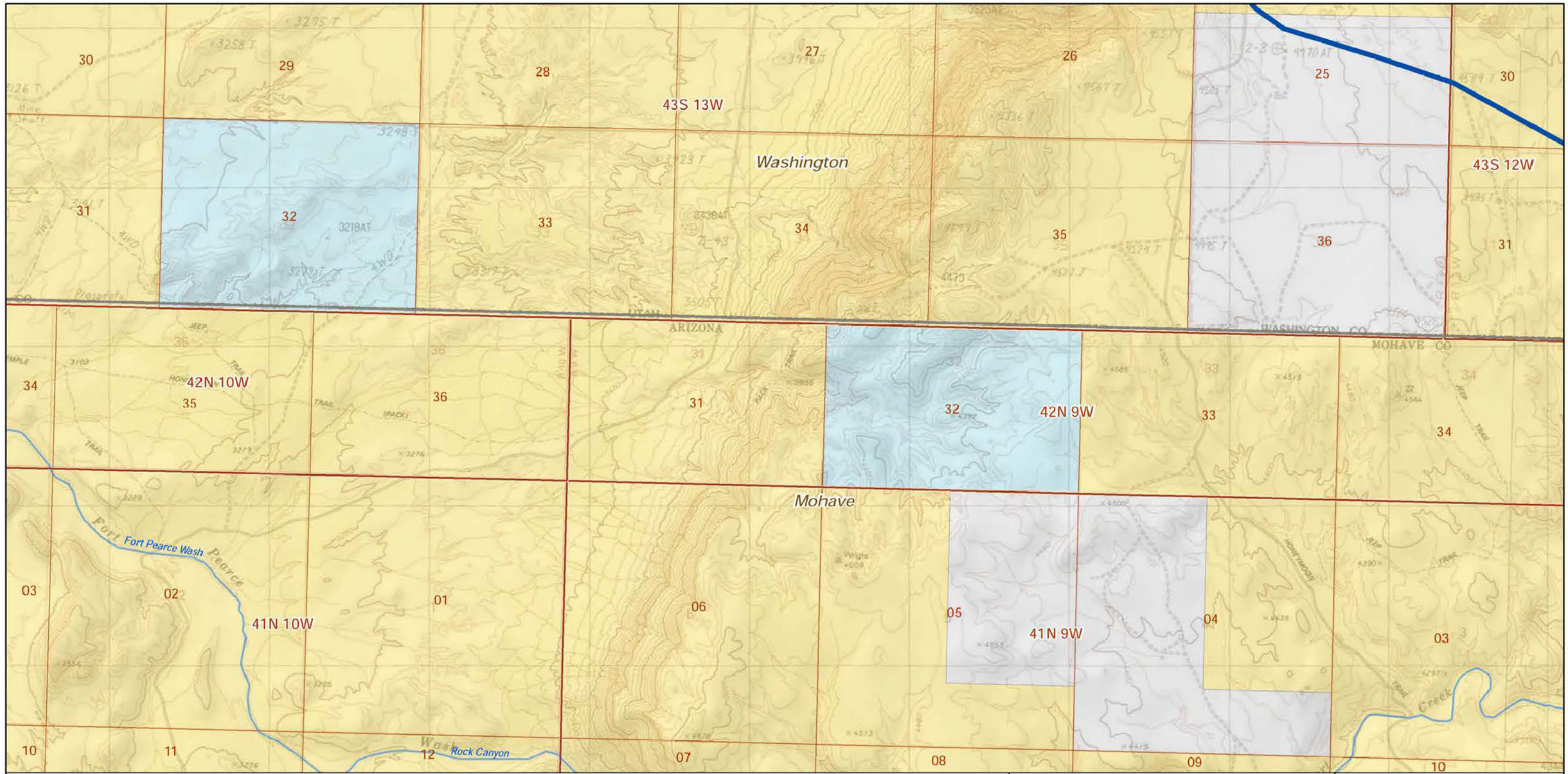
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 47



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership
- State
- Private
- BLM

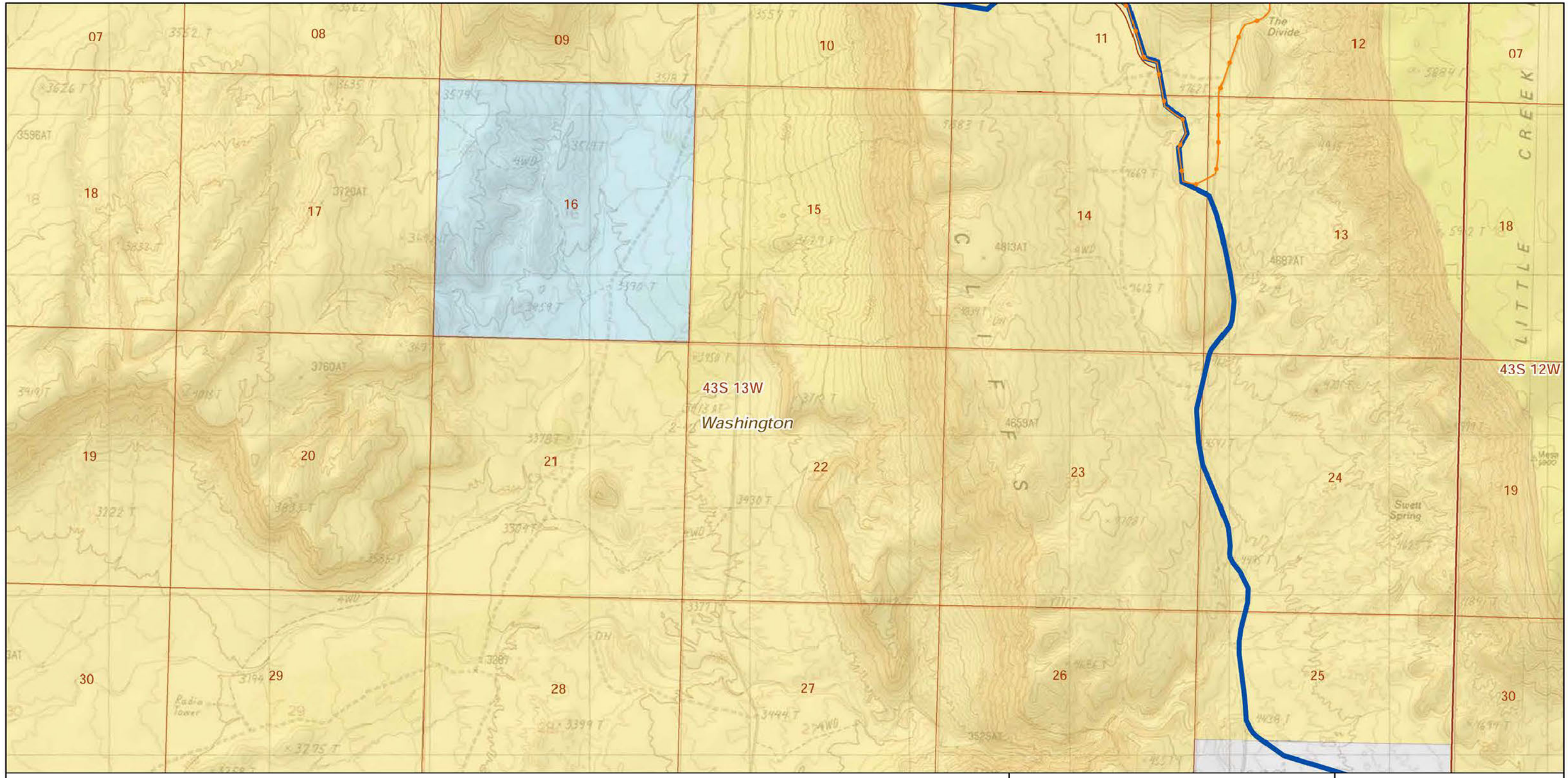
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 48



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Project Transmission Lines
Project Access Roads
State Boundaries
County Boundaries
Township
Section

Land Ownership
BLM
State
Private

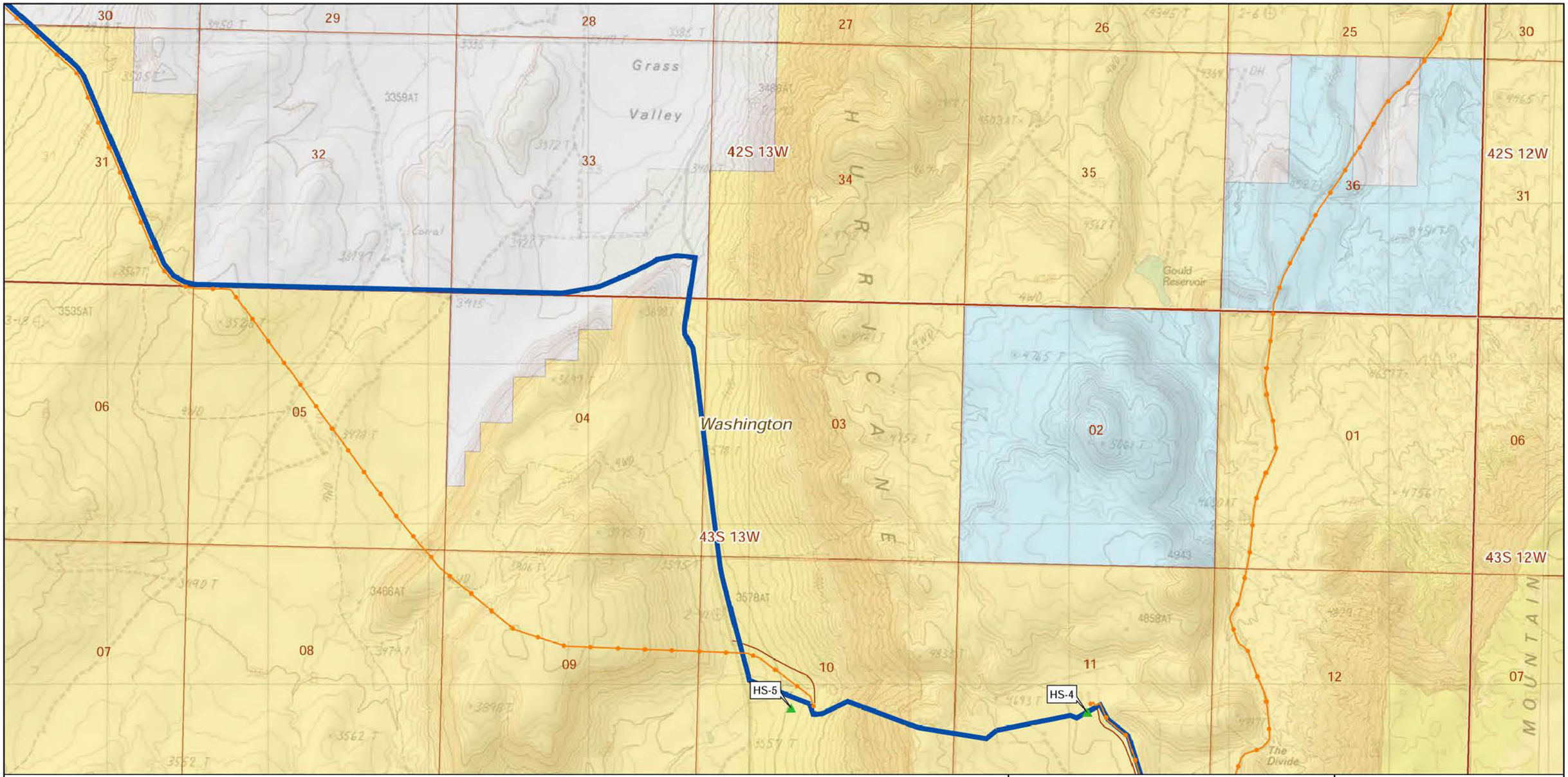
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

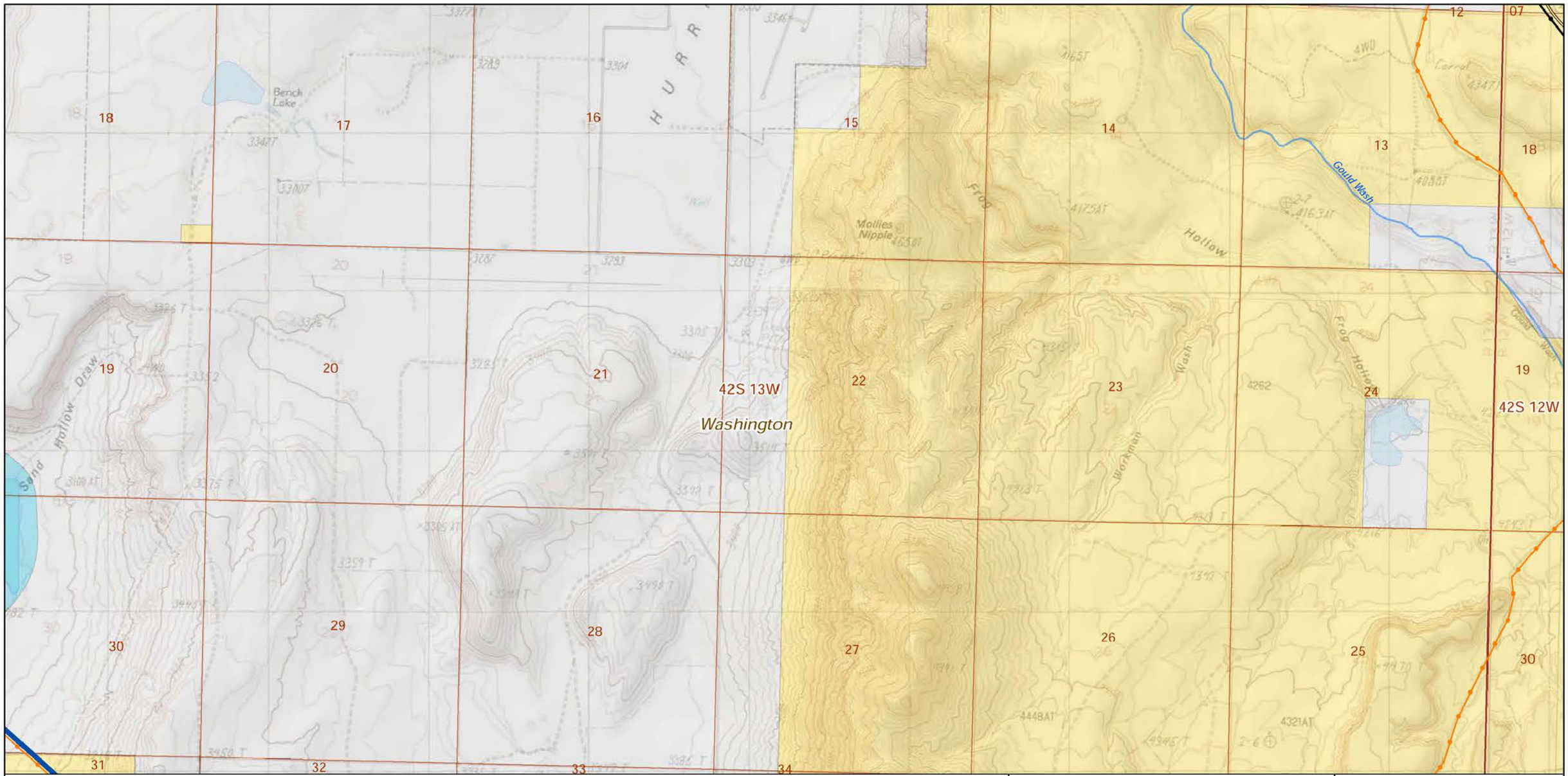
Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 49



Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 50



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- ST Highway
- Major Rivers & Streams
- Lakes & Reservoirs
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

- BLM
- Private
- State Park

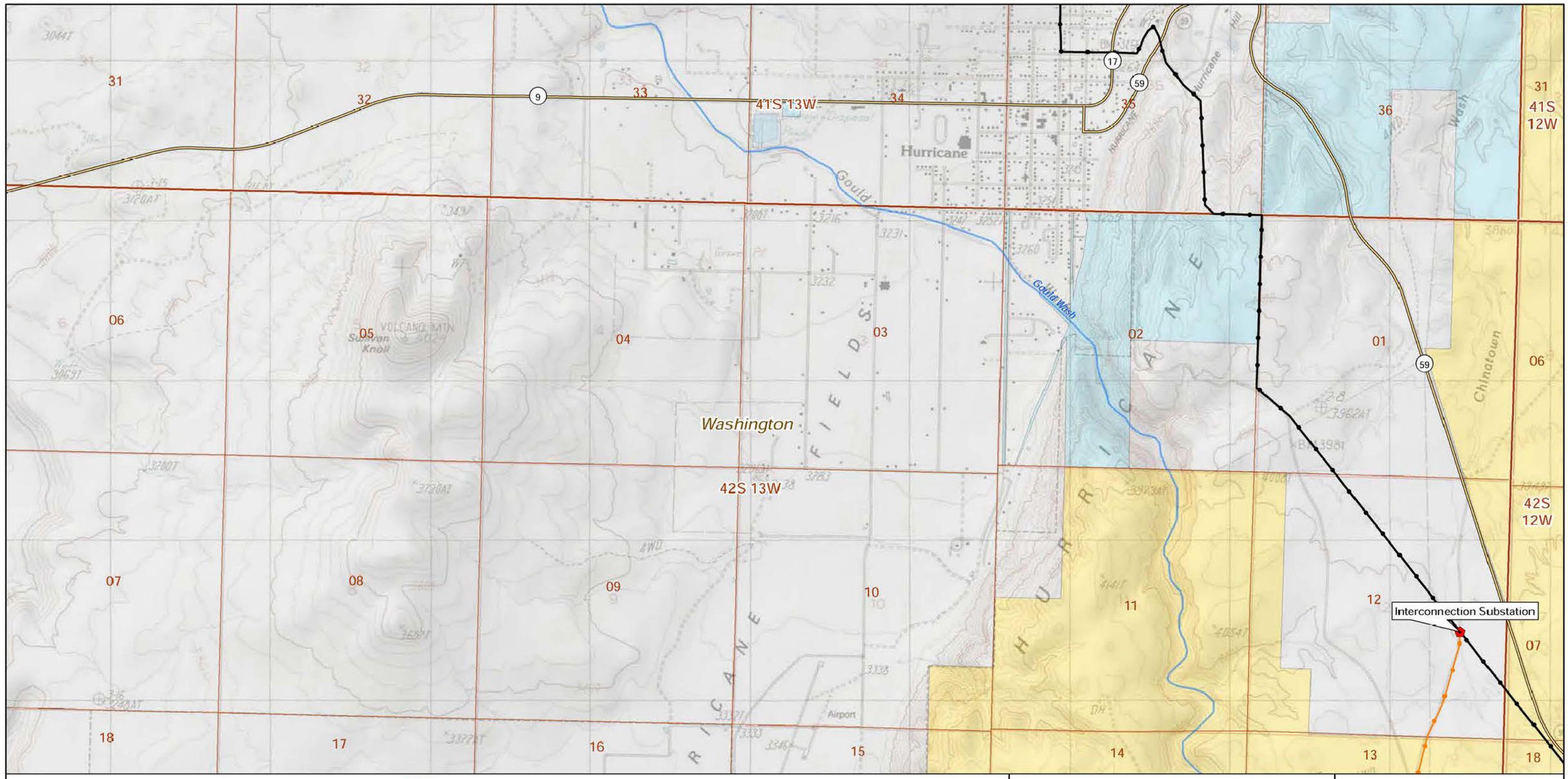
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 51



Project Pump Station
Project Regulating Tank
Project Hydro Station
Existing Substation
Project Substation
Project Switching Station
Southern Alternative

Existing Major Transmission Lines
Project Transmission Lines
ST Highway
Major Rivers & Streams
Lakes & Reservoirs
State Boundaries
County Boundaries

Township
Section

Land Ownership
BLM
State
Private

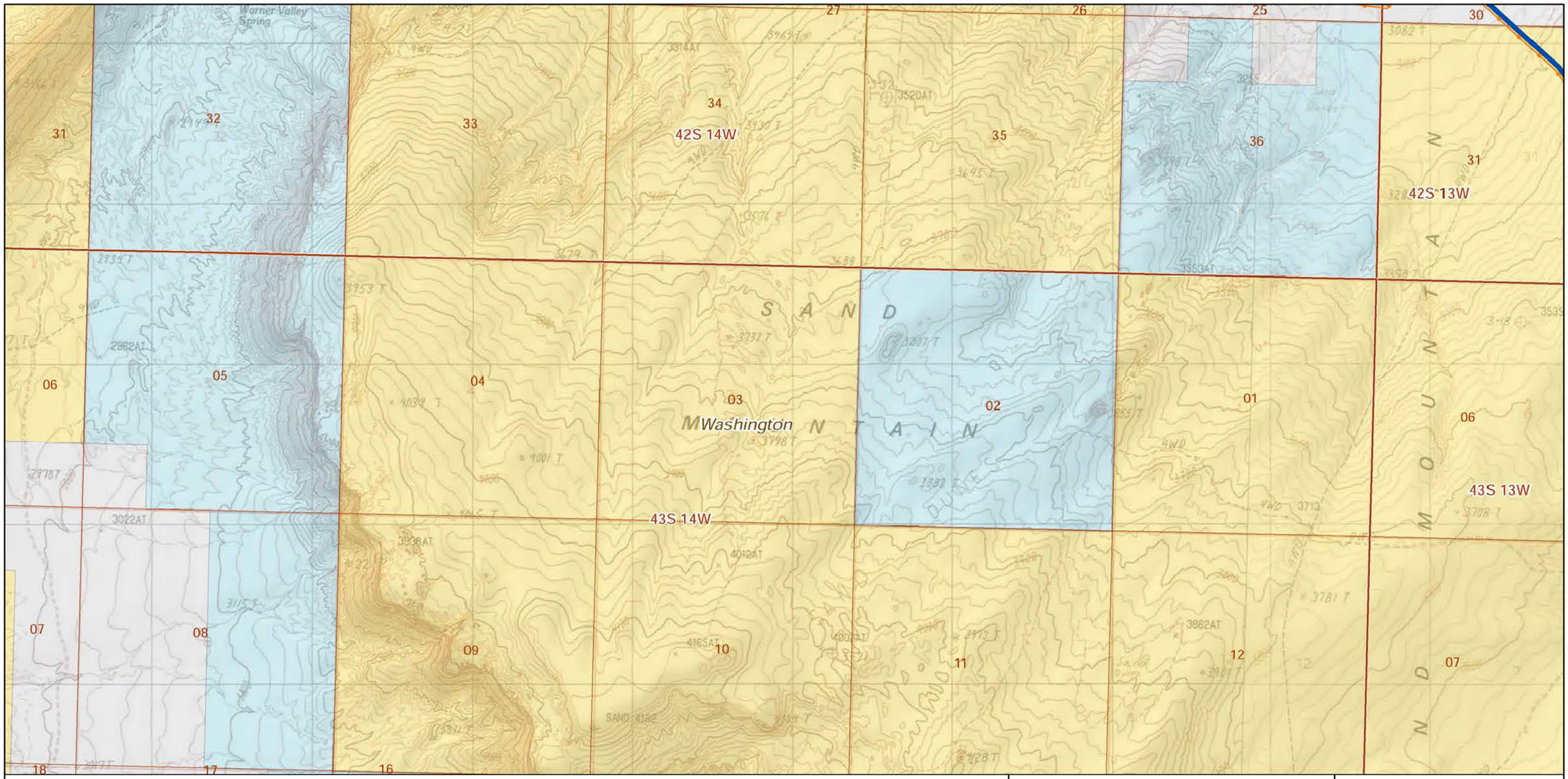
0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

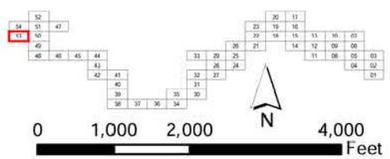
Plan of Development
Southern Alternative
Map Panel 52



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Project Transmission Lines
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership

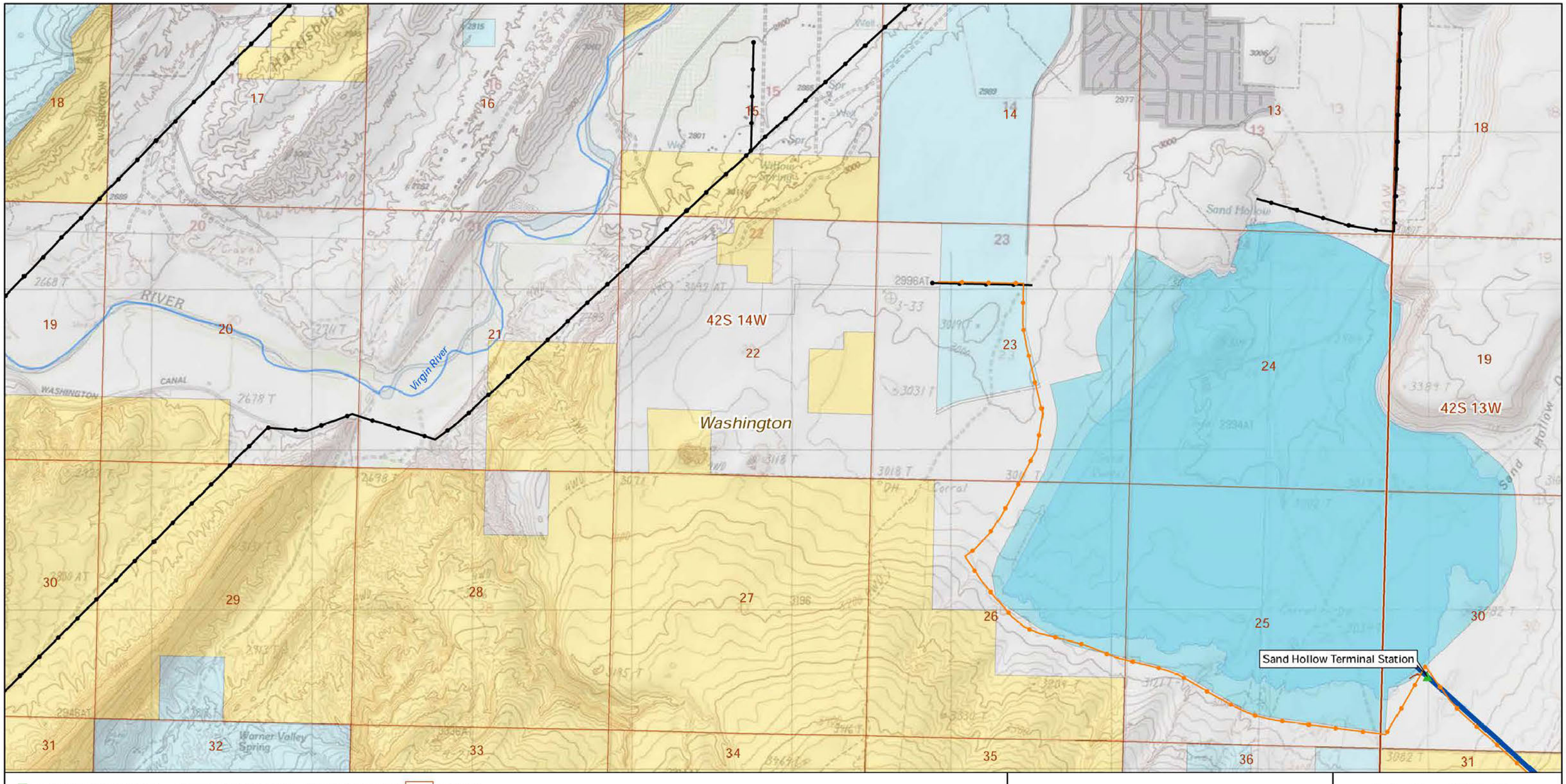
- BLM
- State
- Private
- State Park



Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 53



- Project Pump Station
- Project Regulating Tank
- Project Hydro Station
- Existing Substation
- Project Substation
- Project Switching Station
- Southern Alternative
- Existing Major Transmission Lines
- Project Transmission Lines
- Project Access Roads
- Major Rivers & Streams
- State Boundaries
- County Boundaries
- Township
- Section

Land Ownership
- BLM
- State
- Private
- State Park

0 1,000 2,000 4,000 Feet

N

Coordinate System: NAD 1983 UTM Zone 12N

Lake Powell Pipeline

Plan of Development
Southern Alternative
Map Panel 54

Appendix B
Applicant Environmental Protection Measures

Appendix B
Applicant's Environmental Protection Measures

The applicant's environmental protection measures identified in this appendix apply to the resources for which a measure is intended to mitigate the effects of the LPP. The Utah Division of Water Resources (UDWRe) has identified environmental protection measures that will be implemented as part of the construction, operation, and maintenance of the LPP. The environmental protection measures also apply to emergency maintenance activities to the extent they do not interfere with efforts to protect public safety and undue environmental impact during an emergency event. Some efforts, such as Section 7 consultation, may occur after the fact in emergency situations. Emergency procedures will be developed in the Emergency Response Plan, as noted below.

These applicant-committed measures include design features, best management practices, monitoring, standard operating procedures, and other practices. They also include measures UDWRe anticipates will be included in the special use permit and agreements with other Federal agencies, state or local agencies and entities, and those anticipated to be required by other permit conditions.

B.1. General Construction Practices within the ROWs

Planning and Permitting

B.1.1. The Final Plan of Development (POD) will incorporate mitigation contained in the BLM Record of Decision and provide detailed project design and construction specifics, including but not limited to construction contract timing, phasing, and any modifications to construction access roads and right-of-way (ROW) entry points, and other details. The BLM will review and approve the updated POD prior to notice to proceed for any surface disturbance activity.

The final project POD shall contain detailed plans, including, but not limited to, those listed below.

- Agency Coordination Plan – primary contacts including the BLM authorized officers, UDWRe, construction management, environmental compliance inspection contractor, and construction contractors; identification of reporting procedures and frequency
- Bird Conservation Strategy – measures to reduce impacts on migratory birds, bald and golden eagles, and other sensitive birds; the plan will identify measures to be implemented during construction, including but not limited to, the identification of critical nesting periods for bird species anticipated to be within the ROWs, pre-construction surveys to be conducted for nesting raptors and migratory birds (survey to be conducted by qualified biologist <10 days prior to work at site) , and the construction avoidance buffer size and time duration for active raptor and migratory bird nests (ranging from 100-feet to 1-mile, depending on species). The plan will identify design features and measures to be implemented during operation, including description of design standards, any post-construction monitoring, and adaptive measures such as marking of power lines to avoid or minimize impacts; the bird conservation strategy will be developed in coordination with the BLM for compliance with Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA); for Utah, IM N. UT-2017-007 Guidance for Utah Bureau of Land Management to Meet Responsibilities under MBTA and E.O 13186 will be followed, and IM 2006-096 Utah Supplemental Planning Guidance- Raptor Best Management Practices, and applicable BLM Resource Management Plan prescriptions.

- Construction Plan – construction schedule, access roads, borrow pits, best management practices, vehicle/equipment washing locations, etc.
- Construction Traffic Management Plan – measures to reduce and manage construction traffic.
- Construction Dust Management Plan – air quality standards and permits, dust control measures, general water sources, air quality monitoring, and reporting.
- Emergency Response Plan – emergency contacts, notification procedures, available resources, and emergency procedures.
- Integrated Weed Management Plan – management of areas with noxious/invasive weeds, treatment and control measures, monitoring, and reporting.
- Mitigation Plan – summary of environmental commitments and mitigation measures, responsible parties, timing, and reporting.
- Construction Noise Management Plan – measures to manage construction noise.
- Public Information Plan – public notification measures.
- Recreation Resources Mitigation Plan – measures to protect and restore recreation resources during construction and operation of the LPP.
- Restoration Plan – topsoil (growth medium) and vegetative cover salvage, stockpiling and replacement; plant salvage, maintenance and replacement, seeding, soil stabilization, and post-construction monitoring.
- Spill Prevention, Control, and Countermeasure Plan (SPCC) – procedures for storage and handling of hazardous and toxic materials, necessary permits, spill response and cleanup.
- Storm Water Pollution Prevention Plan (SWPPP) – erosion and sediment control measures, compliance inspections and reporting.

B.1.2. UDWRe will provide a Compliance Inspector (CI). The CI will provide environmental oversight and compliance/regulatory activities for UDWRe during construction activities of the project. The CI will be responsible for ensuring that UDWRe complies with all terms, conditions, stipulations and other metrics and measures required for the project and will have the authority to halt activities that are in non-compliance and assist in BLM coordination, if needed. Metrics and measures will be defined in the various detailed plans described in B.1.1. A pre-construction meeting between applicable permitting agencies, UDWRe, the CI, and the construction contractor will be required prior to any surface disturbing activity occurring. The CI will provide reports to permitting agencies detailing compliance as described in the approved Agency Coordination Plan.

If required by BLM, UDWRe will provide a Compliance Inspector Contractor (CIC). The CIC will be a third party compliance construction monitor that will be paid for by the State but will be directed by and will report to the BLM during the construction process. The CIC will have similar duties as the CI and will work in conjunction with the CI but will perform the duties on behalf of BLM.

B.1.3. All activities directly or indirectly associated with the construction of the project will be conducted within the authorized limits of the ROW grants. Any facility relocation, additional construction area, additional access, or other use that is not in accord with the ROW grants will not be initiated without prior approval of the BLM.

B.1.4. UDWRe will notify each directly affected BLM field office (Arizona Strip Field Office, Kanab Field Office, and St. George Field Office) at least 14 days before initiation of project construction. Notification will be made to the designated BLM field office representative.

B.1.5. A worker education program will be developed by UDWRe and used during construction and operation. It will be presented to personnel who will be on-site, including but not limited to contractors, contractor's employees, supervisors, inspectors, and subcontractors. A handout will be developed addressing environmental protection measures incorporated into the project and the responsibility of each worker in environmental protection. Each worker will be briefed on his or her environmental compliance responsibilities, provided a handout, and required to sign a certification that he or she understands and will comply with those environmental protection measures. An individual who fails to comply with the environmental protection measures will be subject to corrective action up to and including dismissal from the project

Specifics of the program will include, but are not limited to:

- General site maintenance (i.e., trash disposal)
- Stormwater and Erosion Control
- Hazardous material spill protocols
- refueling protocols
- Smoking areas
- Use of sanitary facilities
- California condor conservation measures
- MBTA
- Incident reporting,
- Prohibiting driving off the cleared corridor or existing roads,
- Importance of speed limits and other traffic regulations on access roads
- Prohibiting unrestrained dogs or hunting on the construction and facility sites
- Terms and conditions of the LPP Biological Opinion
- Desert tortoise Habitat Conservation Plan (HCP) measures
- Identifying and reporting procedures for other sensitive plants and wildlife that occur within the area of potential effect
- Cultural and paleontological resource identification and protection
- Biological, Cultural, and Paleontological monitoring requirements
- Visual resources measures
- Avoidance of undue disturbance of biological soil crusts
- Soil segregation requirements,
- Noxious weed management and identification
- Prohibiting collection of wildlife, plants, or cultural/paleontological resources, unless the collection is part of a mitigation plan and is done by qualified personnel
- Workers will receive a sticker or certificate that they have completed the training; a laminated card that can be used for reference, including applicable contact phone numbers, may also be used
- Training sessions will be held for new contractors and/or contractor personnel throughout the life of the project

B.1.6. A Public Information Plan will be developed by UDWRe in coordination with the BLM to notify the public and appropriate agencies in advance of the start of each construction phase. Measures that will

be implemented to inform the public may include public notices, public meetings, letters to nearby residents, road signs, and other measures.

Surveying

B.1.7. UDWRe will endeavor to protect all survey monuments found within the ROWs. Survey monuments include but are not limited to General Land Office and the BLM Cadastral Survey Corners, U.S. Geological Survey benchmarks, reference corners, witness points, US Coast and Geodetic Survey benchmark and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments.

B.1.8. In the event the destruction of survey monuments is unavoidable, UDWRe will report the incident, in writing, to the BLM and the installing authority, if known. If General Land Office, BLM, or NPS monuments or references are destroyed during operations, UDWRe will secure the services of a registered land surveyor to restore the disturbed monuments and references, using surveying procedures found in the Manual of Instructions for the Survey of the Public Lands of the United States, latest edition. UDWRe will record any such surveys in the appropriate office and send a copy to the authorized officer.

B.1.9. UDWRe will conduct boundary surveys of the edges of the ROWs prior to the start of construction of each work package. The outer boundaries will be clearly marked with stakes and colored flagging, placed about 100 feet apart or within sight of each adjacent flag. All ground-disturbing activities will be confined to the designated ROWs.

B.1.10. If any exclusion zones within the ROWs are required by the BLM, NPS, or identified in the biological opinion for resource protection (i.e., biological or cultural resources, protected plants, nesting birds, etc.), those areas will be staked, flagged or fenced, and signed by UDWRe and approved by the BLM and NPS to ensure avoidance during construction, and if necessary during operation and maintenance.

B.1.11. UDWRe will develop a GIS cloud based Environmental Access Plan (EAP). All contractors will utilize EAP. The EAP will detail access requirements such as required pre-access surveys or monitoring requirements. The EAP will be updated throughout the construction process as needed based on completed surveys, approved access areas, and current conditions and requirements.

Fencing

B.1.12. Security fencing may be used in specific areas for security or safety concerns.

B.1.13. Permanent site security fencing will be used to enclose facility sites, including pumping stations, regulating tanks, hydro stations, and remote substations and switchyards. This fencing will generally consist of standard chain-link fencing with a minimum height of 6 feet and topped with serpentine razor, or similar wire. Block walls may be constructed at some facility sites instead of fencing, depending on site requirements. Fence color may vary at some facility sites and will be coordinated with the BLM during final design (see B.11.1).

B.1.14. Temporary construction fencing may be installed, as necessary, for management of wildlife resources and grazing livestock during both construction and restoration efforts. The type and location of fencing will be coordinated with the BLM, Utah Division of Wildlife Resources, and/or Arizona Game and Fish Department.

B.1.15. To protect human safety during construction, temporary signs warning the public of the presence and danger of open trenches in the area will be installed where paved roads, gravel roads or OHV trails occur within ¼ mile of an open trench. Also, where such roads and trails occur within ¼ mile of an open trench, temporary warning signs will be placed at intervals along the roads and trails as required by BLM. The signs will be designed according to BLM and other federal agency requirements and will be coordinated with agency communications staff.

Clearing and Grading

B.1.16. All Biological Resource EPMs (B.5 below) will be adhered to prior to and during clearing and grading.

B.1.17. Where feasible, vegetation within the ROWs will be crushed instead of removed by blading, to minimize impacts to soils.

B.1.18. Trash and debris will be removed from the ROWs before clearing and grading activities begin and properly disposed of in a permitted landfill or recycling facility. This is limited to existing surface debris foreign to the natural, native community.

B.1.19. In specific areas, boulders greater than 18 inches in diameter found on the soil surface will be moved to the edge of the ROWs and redistributed randomly across the ROWs during reclamation. Boulders will either be positioned so that the surface previously in contact with the ground will be in generally the same orientation or a desert varnish may be applied to boulders, as needed, to reduce stark visual contrast. UDWRe will coordinate with BLM during final design to identify areas for surface boulder replacement.

B.1.20. All available growth medium (topsoil and cleared vegetation) will be salvaged and marked with signage for redistribution during reclamation. Growth medium will be windrowed along the edge of the ROWs or placed in stockpiles and temporarily stabilized (if stockpiled for more than 14 days) with temporary seeding, natural fiber geotextiles, mulch, periodic water applications, or other techniques to reduce or eliminate erosion or dust. Any temporary seeding mixes will be a BLM-approved certified weed-free seed mix. Topsoil and cleared vegetation will not be stockpiled in one location for longer than two years unless approved by land management agency for specific activities. Topsoil and cleared vegetation stockpiles maintained longer than one growing season will be planted with an annual seed mix to help control erosion and keep soil micro-organisms active.

B.1.21. Areas with noxious and invasive weeds will be treated and/or monitored in accordance with the Integrated Weed Management Plan.

B.1.22. A record will be maintained of when construction-related major vegetation and ground-disturbing activities begin and are completed, and when restoration activities are initiated as a function of the SWPPP inspection report.

Access Roads

B.1.23. A Construction Traffic Management plan will be developed and coordinated with the BLM and other relevant state and local authorities prior to the start of construction for each major phase of the project. The plan will include measures to reduce the number of construction trips by scheduling of work shifts and materials deliveries, designation of access routes, traffic monitoring, and other measures to

minimize traffic effects. The plan will also take into account active seasons for hunting, camping, and/or other recreational activities that occur within the same time and place as each phase of construction.

B.1.24. While driving on paved roads or marked dirt roads, posted speed limits will be maintained by construction vehicles and personnel. While driving within the construction area, ROW, or on un-posted dirt roads, a maximum speed limit of 25 miles per hour (20 miles per hour in Mojave Desert tortoise habitat) will be required of construction vehicles and personnel to reduce dust and allow for observation and avoidance of wildlife, livestock or visitors in the road.

B.1.25. Public access routes (roads or designated trails) within or crossing the ROWs will be maintained, closed, or detour routes will be identified during construction activities. Open-cut road crossings of public roads will be completed in one day to the extent feasible. Road closures will be coordinated with the BLM and other permitting and local authorities. Detours needed for temporary road closures because of safety concerns will be established in coordination with the BLM and other permitting and local authorities, depending on detour routes. Site specific recreation access issues will be coordinated with applicable agencies during construction.

B.1.26. Signing and traffic controls will be placed well in advance of the construction area to warn motorists of detour routes available during construction.

B.1.27. Signs and persons with flags will be used within the construction area as necessary to direct traffic in accordance with all applicable Utah Department of Transportation requirements, Arizona Department of Transportation requirements, county, and local rules and ordinances.

B.1.28. Designated construction exit locations from the ROWs onto existing paved or improved roads will be identified. These exit locations will be stabilized with crushed rock underlain by geotextile filter fabric to prevent sediment from being tracked onto asphalt, concrete, or improved road surfaces and to limit other damage such as road shoulder rutting.

B.1.29. Sediment transported onto a public paved road surface by construction equipment or other vehicles that will require removal by sweeping will be disposed of in an approved landfill. Road washing and/or street sweeping on public paved roads will be conducted, as needed.

B.1.30. During construction and maintenance, all unpaved access roads used by construction personnel, equipment, and materials deliveries will be maintained in coordination with permit ROW requirements. All unpaved, public access roads would be maintained during construction to meet local county standards and federal land management agency requirements, as applicable. Maintenance may include appropriate materials to maintain road integrity and drainage and to avoid erosion and damage to adjacent soil resources, consistent with NPDES permit requirements.

B.1.31. At the completion of construction, temporary access roads will be restored to pre-construction conditions. Improvements to existing roads made for construction will be left in place in coordination with the BLM.

Construction

B.1.32. Construction contractors will provide site security for equipment and materials, and to limit access to construction sites to authorized personnel. This may be accomplished through use of security personnel, signage, and/or fencing of facility sites as needed.

B.1.33. The ROWs will be kept free from any accumulation of construction waste, trash, and debris to reduce the attractiveness of the area to opportunistic predators such as desert kit fox, coyotes, and common ravens. Food waste will be disposed of promptly in predator-proof containers with re-sealable lids. Trash, debris, recyclables and/or waste will not be buried or burned. Disposal or recycling of trash and debris will be off-site, at a State of Utah or State of Arizona approved sanitary landfill or recycling site. Construction materials shall be stored in a gathered, piled, or other organized manner that will readily accommodate use and eventual removal and will not create fluid or additional waste problems.

B.1.34. Sanitary waste will be contained within portable toilet facilities. Portable toilets will be obtained by construction contractors and sited in designated locations in the construction area. The toilets will be maintained and serviced as needed for the duration of construction and removed at the completion of construction. Facilities will be anchored to prevent blowing over in high winds.

B.1.35. Escape ramps will be placed at each end and every ¼- mile of any open trench or other excavation deeper than 4 feet to allow escape of wildlife or livestock that may become entrapped. Escape ramps will not be required at the end of a trench where active pipelaying and backfilling is occurring. The spacing of escape ramps may be adjusted upon approval of the BLM to ensure ramps are placed in areas near water sources and visible livestock/wildlife trails. The escape ramps will consist of loose dirt at a 2:1 or shallower slope. Excavation areas that are left open overnight will be checked by construction personnel every morning and evening and directly prior to backfilling.

B.1.36. Hazardous and toxic materials such as fuels, solvents, lubricants, and acids used during construction will be controlled to prevent accidental spills. Toxic and hazardous materials will be stored in accordance to the project SPCC plan. Vehicle and equipment refueling and hazardous materials storage will not be allowed within 100 feet of any wash, stream, or spring.

B.1.37. Spill cleanup kits will be available on heavy equipment and maintained so that any spill of fuels, solvents, lubricants, or acids can be quickly cleaned up. Construction and maintenance personnel will be trained in the proper use of the spill kit materials and correct disposal procedures.

B.1.38. Any leak or accidental release of hazardous and toxic materials will be stopped immediately and cleaned up at the time of occurrence. Contaminated soils will be removed and disposed of at a State of Utah or State of Arizona approved landfill site. All spills requiring an emergency response, regardless of the size of the spill, will be reported to UDWRe and BLM and will be tracked.

B.1.39. Any release of hazardous and/or toxic materials in excess of a reportable quantity established by 40 CFR, Part 117 will be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, Section 102b. A copy of any report required or requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances will also be submitted to the BLM and other applicable agencies.

B.1.40. For every active phase of construction, fire suppression equipment such as extinguishers and shovels will be available on-site during construction. Vehicles will not be parked in tall vegetation to prevent fires from exhaust contact. A designated individual on each construction site will be responsible for fire watch and fire suppression. For welding crews, one team member will be responsible for fire watch, in addition to the individual designated for the construction site fire watch and fire suppression. When welding at field locations, all flammable materials (i.e., brush, litter) will be cleaned for a distance of 15 feet around the area. Fire restrictions that may be in effect could restrict welding activities depending on the level of restriction.

B.1.41. Where the ROWs cross beneath existing power lines, warning signs will be installed with identified height restrictions during construction. A construction watchman may be designated as needed during construction activities beneath power lines, to ensure equipment keeps specified distances from the power line conductor cables.

B.1.42. When construction practices overlap with an existing authorized ROW on BLM land, UDWRe will inform the other ROW holder of LPP construction plans that will occur within, or could affect, that other ROW.

B.1.43. If blasting is determined to be necessary based on project design, a Blasting Plan will be prepared and submitted to the BLM for approval in advance of construction. Any blasting will be conducted conservatively and managed to avoid damage to nearby facilities, properties, or sensitive cultural sites. Blast noise monitoring will be conducted if blasting will be in the vicinity of occupied properties, wildlife areas, or sensitive public uses such as campgrounds or visitor facilities. Blasting will not occur within 100 feet of an occupied Mojave Desert tortoise burrow.

B.1.44. A dewatering plan will be prepared and submitted to the BLM for approval in advance of construction. Should dewatering be necessary, discharge will be filtered to minimize sediment and will be directed to prevent flow from directly entering streams, wetlands, or sensitive environmental areas. Erosion and sediment control will be conducted the same as described for stormwater practices. The CI will coordinate with the BLM on monitoring discharges and will identify site-specific mitigation actions.

B.1.45. All concrete washout water will be collected and retained in a leak proof container so caustic material does not reach the soil surface and water does not migrate into the ground and groundwater. Containers will be allowed to dry (evaporate) and then solids will be disposed of or recycled at an approved facility or used as tracking pad material onsite.

Stormwater and Erosion Control

B.1.46. A General Permit for Stormwater Discharges Associated with Construction Activity (UTRC00000 & Arizona Department of Environmental Quality [ADEQ] CGP) will be obtained prior to any surface disturbance that includes clearing, grading, excavation, and/or stockpiling.

B.1.47. A site-specific SWPPP will be prepared and implemented for each construction contract. The plan will be submitted to the BLM and other applicable agencies. The SWPPP will identify all potential sources of pollution which could affect the quality of stormwater discharges from the construction site, describe the construction activities that disturb soils at the site, provide an estimate of the total disturbance area, and identify waters of the United States within one mile of the site. The SWPPP will identify erosion and sediment control measures, compliance inspection metrics, maintenance, and reporting. A copy of the SWPPP will be kept on site and updated as needed to manage pollutants or reflect changes in site conditions.

B.1.48. A SPCC Plan (40 CFR 112) will be prepared and submitted to the BLM and other applicable agencies. The plan will describe measures that will be taken to properly store, handle, and prevent hazardous materials from being picked up in stormwater and transported offsite. It will also contain measures related to clean up procedures and time frames, notification procedures, and restoration efforts for the affected area.

B.1.49. Construction sequencing will be designed and scheduled to create the shortest construction window practicable and the least amount of potential stormwater runoff. Construction, cleanup, and

reclamation will be sequenced to reasonably minimize the time between ground disturbance and final restoration.

B.1.50. Erosion and sediment control will be implemented using both non-structural and structural best management practices (BMPs). Non-structural BMPs examples include not performing topsoil stripping during wet weather if there is risk of topsoil eroding or washing off the site in violation of NPDES permits, and soil stabilization such as mulch, slope tracking, seeding, and erosion matting. Structural examples are silt fence, wattles, and ditch checks. Any netting for erosion and sediment control BMPs will be of natural-fiber (non-plastic material). BMP specifications will be included in the project specific SWPPP(s).

B.1.51. Temporary perimeter sediment controls will be installed as necessary prior to initial soil disturbance activities and will be maintained throughout construction and reclamation. These controls will be designed to retain sediment on site to the extent practicable. Typical sediment control BMPs include:

- Siltation or filter berms
- Filter or silt fencing
- Sediment barriers, e.g., sand bags, straw bales, straw wattles (straw bound into rolls or bales)
- Temporary erosion controls, e.g. straw & woodchip mulches, Jute netting

Temporary seeding will be installed as soon as practical on all disturbed areas that will remain disturbed and inactive for more than 14 days. Any straw used for erosion or sediment control will be certified weed-free. Temporary erosion and sediment controls will be inspected weekly and after major precipitation events and will be removed after construction and/or when they are no longer needed.

B.1.52. During construction, broken structural erosion controls will be replaced or restored as soon as practicable (typically within a day) but before the next forecasted precipitation event. Sediment will be removed from structures when sediment reaches 50 percent of the barrier capacity and disposed of within disturbed ROWs. Redistribution of sediment will be coordinated with the BLM.

B.1.53. For construction activities crossing a dry wash, spoil stockpiles will be pushed away and stored a minimum of 10 feet away from the ordinary high-mark and silt fencing will be used to limit sediment movement from the stockpile; stockpiles without silt fences will be located a minimum of 100 feet away from dry washes. All stockpiles will be kept within project ROWs.

B.1.54. At a minimum, a 10-foot wide vegetation buffer strip and other erosion control measure such as straw bales or wattles (certified weed free) will be maintained between the cleared ROWs and an adjacent drainage. The timing of clearing, grading, trenching, pipe installation, stabilization and seeding banks during drainage crossings will be minimized to promote expedient efforts towards restoration.

B.1.55. Non-stormwater discharges, including from pipeline and facility hydrostatic testing, will be directed into existing dry washes or other downstream project facilities as feasible. Best management practices such as diffusers or other energy dissipaters, straw bales (certified weed free), or filter sacks will be used to prevent bank instability and erosion. Discharges will be managed and monitored so that they do not exceed the typical 2- to 5-year flood event of the existing washes, and to allow debris accumulations to be removed as needed. Discharges will also be managed to not exceed bank levels and downstream banks and terrestrial vegetation will be monitored and discharges stopped if above bank erosion is detected.

B.1.56. Stormwater compliance inspections will be conducted by UDWRe throughout construction at least once every 7 days regardless of rain events, or every 14 days and additionally within 24 hours of a

storm event greater than 0.5 inches to ensure compliance with the SWPPP and Utah Department of Environmental Quality (UDEQ) and ADEQ permits. Inspections will include disturbed areas of the project that have not been stabilized, material and equipment storage areas that are exposed to precipitation, all erosion and sediment control measures installed within the ROWs, all structural control measures, and all locations where vehicles enter and/or exit the ROWs. Inspectors will notify the construction manager to where requirements of the SWPPP are not being followed, and implement corrective action as required to achieve compliance. Inspection reports will be maintained on file and submitted to the BLM and UDEQ or ADEQ upon request.

B.1.57. A Hydrostatic Discharge Plan will be submitted to the BLM for approval, prior to the start of any discharges.

B.1.58. Water quality of the hydrostatic testing water will be tested prior to discharge in accordance with UDEQ or ADEQ permit requirements.

B.1.59. At the completion of construction, all non-natural berms, ditches, temporary erosion and sediment controls, bales, wattles, and other energy dissipating/filtering devices not required for protection of facilities will be removed, and drainage function restored. Soils used for erosion control structures and soils captured by those structures will be distributed across the ROWs prior to replacing the topsoil and reclamation. Bales, wattles, and other energy dissipating/filtering devices will be disposed of in approved trash receptacles. The ground surface will be graded to blend into the preconstruction topography and/or slopes.

B.1.60. Washes and ephemeral drainage function will be restored. Soils over the pipeline will be compacted in place for maximum pipeline stability, and additional stabilization measures such natural fiber erosion matting and seeding will be installed where necessary. Stabilization measures such as rip rap may be required to protect facilities and prevent increased erosion in washes. If armoring of a channel crossing with rip-rap or concrete is necessary due to high erosion potential, those areas and erosion control methods will be identified for BLM, USACE, or other appropriate agency based upon the jurisdictional status of the feature.

B.1.61. Post-construction stormwater management will consist of permanent erosion control measures installed as necessary to protect areas disturbed by UDWRe activities. These could include but are not limited to vegetation restoration, tracking and matting of steep slopes to maintain stability, berming (contoured to blend with existing landscape), and/or placement of appropriately colored riprap. Final stabilization of soil disturbed areas will be achieved when vegetation restoration and other erosion control measures are completed in accordance with the BLM-approved Restoration Plan and UDEQ or ADEQ stormwater permit requirements.

Restoration

B.1.62. A detailed Restoration Plan will be submitted to the BLM for approval prior to the start of construction. The portion of the plan pertaining to restoration in listed species habitat will be in accordance with approved study reports and permits and submitted to the USFWS by the BLM for approval. The Restoration Plan will describe reclamation and rehabilitation objectives and methods to be used, species of plants and/or seed mixture to be used, time of planting, blending with existing vegetation at ROW edges, fertilizer mix reviews and approvals, success standards, and follow-up monitoring.

B.1.63. Soils and cut/fill areas will be restored to reasonably blend into existing landforms and will be placed in a manner to minimize stark contrast with adjacent undisturbed areas. Topsoil from cut/fill

activities will be spread on freshly disturbed areas to reduce color contrast and aid rapid revegetation. Disposal of excess fill material downslope will be completed in such a fashion as to avoid creating stark color contrast with existing vegetation/soils. Cut slopes will be randomly scarified and roughened to reduce texture contrasts with existing landscapes.

B.1.64. Vegetation conditions of the ROWs and adjacent site locations will be documented in the Restoration Plan prior to construction, to establish baseline conditions for restoration. The Restoration Plan will detail how baseline conditions will be assessed. The Restoration Plan will describe revegetation efforts, success standards, and follow-up monitoring.

B.1.65. All cacti and yucca disturbed within the ROWs located in the Mojave Desert habitat portion of the project will be salvaged, with the following exceptions:

- Cholla, including silver or golden cholla (*Opuntia echinocarpa*) and pencil cholla (*Opuntia ramosissima*), equal to or greater than 3 feet tall or less than 1 foot tall (i.e., only these species of cholla between 1 foot and less than 3 feet tall will be salvaged)
- All cacti and yucca whose vegetative mass is more than 40 percent dead (i.e., apical leaves, brown or significantly chlorotic, stems rotten or significantly desiccated, etc.)
- All cacti and yucca less than 1 foot tall (excluding barrel cactus [*Ferocactus cylindraceus*], cottontop cactus [*Echinocactus polycephalus*], and hedgehog cactus [*Echinocereus sp.*])
- All yucca that are over six feet in height
- Any cacti or yucca that cannot be accessed safely due to steep slopes or very rocky areas
- All cacti and yucca not salvaged will be left on-site to become part of the vegetative mulch

B.1.66 Within disturbed portions of the ROWs located within critical habitat of listed species or areas of critical environmental concern, additional shrub salvage or enhanced seed application may be conducted to enhance restoration efforts in coordination with the BLM. Additional shrub salvage may be accomplished by either 1) salvaging from the BLM lands within the ROWs, 2) salvaging from an approved off-site harvest site, and/or 3) propagation of shrubs from native seed in an approved nursery.

B.1.67. Salvaged cacti and yucca will be transported to designated transplanting or soil windrow sites within the ROWs. Upon approval from the BLM, salvaged or windowed vegetation may be transplanted at designated sites outside the ROWs.

B.1.68. Plant salvage in critical habitat of listed species or areas of critical environmental concern (see B.1.65 and B.1.66) will occur from only within the ROWs or as indicated in the Restoration Plan. Salvaging will not begin until the ROW has been clearly staked and flagged. As feasible, salvage operations will not be performed during periods of high temperatures or other unfavorable environmental conditions. All salvaged plants will be documented and catalogued.

B.1.69. Prior to commencing any plant salvage operations in special designation areas, a free use permit, flora transportation tags, or any other required permits will be obtained to transport salvaged plants as part of restoration activities.

B.1.70. Salvaged plants in special designation areas will be maintained for the duration of construction activities if identified for replanting within the ROWs as part of site restoration, in coordination with the BLM. Maintenance will include necessary watering and other care to ensure reasonable survival of the salvaged plants.

B.1.71. At the completion of construction, coordination with the BLM on road decommissioning will occur. In areas where there are no above-ground facilities, permanent access roads, or facilities no less

than 12 inches below the ground surface, the ground surface will be ripped as needed to an appropriate depth based on site characteristics to help relieve compaction, to establish an adequate seed bed to provide good seed-to-soil contact during seeding, and facilitate penetration and plant establishment (see comprehensive seeding program EPMs). Topsoil and mulched vegetation removed from the ROW at the start of construction, if any, and, if necessary, additional stabilization measures such as straw will be re-spread across the ROWs at the completion of construction.

B.1.72. Upon the completion of final grading, salvaged plants identified for replanting will be removed from the nursery sites and transplanted within the ROWs in areas not occupied by above-ground facilities or access roads. Efforts will be taken to restore plants to the same general area from which they were salvaged. Plants will be replanted in a random and non-uniform pattern, in an effort to mimic the adjacent non-disturbed plant communities. Planting holes will be two times the size of the plant material to be transplanted and will be pre-watered. All backfill will be free of debris, foreign objects, rocks large enough to obstruct root growth or watering, and noxious weeds. As feasible, transplanting will not occur during periods of high temperatures or other unfavorable environmental conditions.

B.1.73. A comprehensive seeding program will be applied after final grading and before or after plant replacement. The seed mix, application rate, and application method will be described in the Restoration Plan and reviewed by the BLM. Vegetable-based soil binders and/or hydromulch may be used on steep slopes to reduce seed movement and erosion. Seeds for restoration will be obtained from native local seed and/or a BLM-approved commercial seed vendor, and will be certified free of plant species listed on the Utah and Arizona noxious weed lists or specifically identified by the BLM. Examples of BLM-St. George Field Office (SGFO) approved native plant seed species, include: white bursage (*Ambrosia dumosa*), Four-wing Saltbush (*Atriplex canescens*), Mormon tea (*Ephedra nevadensis*), Sand Sagebrush (*Artemisia filifolia*), Rubber Rabbitbrush (*Chrysothamnus nauseosus*), Saltbush (*Atriplex confertifolia*), Winterfat (*Krasheninnikovia lanata*), Brittlebrush (*Encelia spp.*), Sideoats Grama (*Bouteloua curtipendula*), Blue Grama (*Bouteloua gracilis*), Galleta (*Pleuraphis jamesii*), Sand Lovegrass (*Eragrostis trichodes*), Indian Ricegrass (*Achnatherum hymenoides*), Sand Dropseed (*Sporobolus cryptandrus*), Bottlebrush Squirreltail (*Elymus elyomoides*), Globemallow (*Sphaerealcia ambigua*), Datura (*Datura sp.*), creosote bush (*Larrea tridentate*), and indigo bush (*Psorothamnus fremontii*). Use of exotic nonnative plant species is not allowed on public land managed by the SGFO, including Forage kochia (*Kochia prostrata*) and Crested wheatgrass (*Agropyron cristatum*).

B.1.74. Watering may be conducted after completion of seeding, to help remove air pockets and compact soils in and around the roots of transplanted vegetation. Initial and subsequent quantities and timing of watering will be reviewed by the BLM as part of the Restoration Plan

B.1.75. Signs and/or physical blocking barriers indicating restoration activities are being conducted may be installed where needed to deter off-road vehicular damage to restored areas. Placement and design of signs and barriers will be coordinated with the BLM and identified in the Restoration Plan.

Noxious Weeds

B.1.76. An Integrated Weed Management Plan will be prepared and submitted to the BLM and other applicable agencies for approval prior to the start of construction. The BLM will coordinate with USFWS as needed. Noxious weed control will be implemented to minimize the spread of noxious weeds during construction and restoration/revegetation activities. All weed control efforts on BLM-administered lands will be in compliance with the BLM Handbook H-9011, H-9011-1 Chemical Pest Control, H-9014 Use of Biological Control Agents of Pests on Public Lands, and H-9015 Integrated Pest Management.

B.1.77. Areas within the ROWs that have pre-existing noxious weed infestations as identified in the Special Status Vegetation and Noxious Weed Inventory will be treated by a licensed contractor with a BLM-approved control method (i.e., chemical, mechanical, and/or biological controls) prior to the start of construction activities, as feasible. If noxious weed infestations exist within the ROWs at the start of construction, topsoil and fill will be kept segregated and not transported to other areas within the ROWs.

B.1.78. Prior to the import of borrow or fill from outside the ROWs, the source material location will be inspected by a qualified biologist or weed scientist to ensure it is free of noxious weeds or specifically identified in the BLM-approved Integrated Weed Management Plan for the project.

B.1.79. Any straw or other organic products used during construction, restoration, operations, maintenance, or for stabilization will be certified free of plant species listed on the Utah and Arizona noxious weed list or specifically identified in the BLM-approved Integrated Weed Management Plan for the project.

B.1.80. Construction vehicles and equipment will be cleaned with a high pressure washer or high pressure air and wire brush prior to arrival on the ROWs and prior to departure from areas of known noxious weed infestations to minimize the introduction or spread of noxious weeds. Cleaning efforts will concentrate on tracks, tires, and vehicle undercarriage, with special emphasis on axles, frames, cross members, motor mounts, on and underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out and refuse will be disposed of in waste receptacles. Cleaning stations will be designated and will be recorded using global positioning systems or other mutually acceptable equipment and provided to the BLM Weed Coordinator or designated contact person. All water and material at the vehicle cleaning stations will be contained and collected and hauled off site for disposal at an approved disposal site.

B.1.81. UDWRe or its certified licensed contractor will submit a request for a Pesticide Use Proposal to the BLM and other applicable agencies prior to the planned application of any herbicide and a Pesticide Application Record after the planned application of the herbicide. The Pesticide Use Proposal will identify areas of planned herbicide application for BLM use. No herbicide mixing or rinsing of containers or application equipment will occur within 100 feet of natural sources (i.e., lakes, streams, or springs). An annual report on herbicide application on public lands within the ROWs will be provided to the BLM.

B.1.82. Herbicides may not be sprayed within or around an exclusion area containing sensitive resources (buffers may be applied around areas in coordination with the BLM, depending on resource). These areas will be delineated with stakes and signs during construction or by GPS data. Removal of noxious and invasive weeds in these areas shall be accomplished by method(s) approved by the BLM or that are identified in the biological opinion.

B.2. General Operations Practices

General

B.2.1. Facility inspection and maintenance will only use established access roads, and no off-road travel will be allowed. While driving on paved roads, routes, or marked dirt roads, posted speed limits will be maintained by inspection and maintenance vehicles and personnel. While driving on un-posted dirt roads, a maximum speed limit of 25 miles per hour (20 miles per hour in Mojave Desert tortoise habitat) will be maintained by inspection and maintenance vehicles and personnel to reduce dust and allow for observation of desert tortoise, other wildlife or livestock in the road.

B.2.2. The ROWs will be maintained in a clean condition, and any waste material, including human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment that may be generated from ROW activities will be disposed of promptly at a State of Utah or State of Arizona approved landfill site.

B.2.3. Hazardous materials at the Hurricane Cliffs Hydro Station will be stored in secondary containment structures, in compliance with Utah OSHA standards.

B.2.4. Pipelines and facilities will be equipped with pressure and flow sensors that will immediately indicate a major system failure or break. The system will begin an automatic shutdown process to isolate the affected area. Valve placement and storage capacity are planned to allow isolation of pipeline segments to manage drainage volumes. Personnel will be promptly mobilized to evaluate and repair any failure.

B.2.5. Stormwater discharges will be managed during facility operation by conducting regular inspection and maintenance of any permanent erosion control structures. Inspections will be conducted prior to and immediately following a rain event. Maintenance will be performed on the permanent structures as needed.

B.2.6. Pipeline or other facility repairs that may be needed will be accomplished within the ROWs, following all environmental requirements of this plan. If additional ROWs or amendment of the existing ROWs are required for pipeline or facility repair, prior written approval will be obtained from the BLM. If additional area is required for emergency repairs, such as in the case of a major system failure or break, UDWRe will obtain BLM verbal or written permission prior to any disturbance outside of the granted ROW area(s).

B.2.7. UDWRe will limit maintenance of existing BLM roads to the existing disturbance, and perform maintenance in accordance with specifications provided by the BLM field offices.

B.2.8. If major infrastructure replacements or improvements are required, additional ROWs or an amendment of the existing ROWs may be required. Additional environmental compliance may also be required. Notification and prior approval for said additional or amended ROWs will be obtained from the BLM as required.

Restoration Monitoring

B.2.9. Vegetation restoration success will be monitored by UDWRe and reported to the BLM, as defined in the approved Restoration Plan. Monitoring will include both qualitative and quantitative data collection and analysis. Vegetation restoration success on non-BLM lands will be coordinated with the respective landowners.

B.2.10. Annual restoration monitoring reports will be submitted to the BLM for five years documenting post-construction monitoring, and will include but not be limited to activities conducted, current status, and recommended future activities. Along with the annual report in the third year, UDWRe will include a quantitative analysis, to allow opportunity following the third-year report to correct any issues that may prevent restoration site release within the subsequent two years. If monitoring indicates that restoration is not trending towards meeting or has not met designated interim success criteria, the restoration activities may be revised and remedial measures implemented, subject to BLM approval. Restoration activities and annual reporting shall continue until the restoration fulfills the requirements of the BLM-approved

Restoration Plan, and UDWRe receives written release from the BLM. Since successful restoration may be achieved in some areas more quickly than other areas, written approval shall identify the area released.

B.2.11. In the unlikely event of a major system rupture resulting in discharge of greater than 5,000,000 gallons or off-site erosion, UDWRe will notify the BLM and other appropriate government entities as identified in the Emergency Response Plan. UDWRe will coordinate with the BLM to develop and implement incident-specific restoration measures as directed by the BLM.

B.2.12. The ROWs and primary unpaved access routes used for facility inspections will be monitored for noxious weeds from the start of construction until termination of the ROWs. Noxious weeds will be treated with a BLM-approved control method (i.e., chemical, mechanical, and/or biological controls) as needed. A request for a Pesticide Use Proposal will be submitted to the BLM prior to any planned noxious weed herbicide application, and a Pesticide Application Record will be submitted after weed herbicide use. All applications of herbicides shall comply with BMPs, SOPs, and Conditions from the Vegetation Treatments Programmatic EIS Biological Assessment related to Mojave Desert tortoise (DOI-BLM-WO-WO2100-2007-0002-EIS), Vegetation Treatments Using Aminopyralid Fluroxypyr and Rimsulfuron on BLM Lands in 17 Western States PEIS (DOI-BLM-WO-WO2100-2012-0002-EIS), the Arizona Strip Field Office noxious weed EA (DOI-BLM-AZ-A000-2016-0001-EA), and the SGFO specific EA (DOI-BLM-UT-C030-2016-0005-EA). Treatments may be waived in areas where noxious weeds are prevalent in adjacent off ROW areas with the BLM approval.

B.2.13. An annual report on noxious weeds conditions and control activities within the ROWs will be submitted to the BLM.

B.3. Geologic Hazards and Soils

B.3.1. If pipeline crossings of a fault are identified during detailed geotechnical investigations, additional design features will be considered to ensure pipeline integrity (e.g., flexible couplings, increased pipe wall thickness, pipe sleeves).

B.3.2. Soils unsuitable for use as pipeline backfill will be used to refill borrow pits identified as part of the project and will not be exported from federal lands.

B.4. Water Resources

B.4.1. In accordance with Clean Water Act individual permit requirements, BMPs will be implemented for the pipeline crossing of Paria River (intermittent flow) and Sand Wash, Buckskin Gulch (if flowing during a precipitation runoff event), and pipeline crossing of Kanab Creek (intermittent flow) and Short Creek (if flowing during a precipitation runoff event). The BMPs will utilize industry-accepted procedures.

B.4.2. The project has been sited to avoid wetlands, and no construction is currently planned to occur in wetlands.

B.5. Biological Resources

General

B.5.1. Qualified biologists or field contact representatives (FCR) will act as biological monitors and be present on-site during project-related actions that may impact special status biological resources. The USFWS and authorized BLM officer will approve the selected consulting firm/biologists/FCRs to be used to implement the terms and conditions of the Biological Opinion or other agreements between UDWRe, BLM, and other federal or state agencies. Any biologist and/or firm not previously approved will submit a curriculum vitae and be approved by the USFWS and BLM authorized officer. Other personnel may assist with implementing terms and conditions that do not involve tortoise handling, monitoring, or surveys, but only under direct field supervision of the USFWS and BLM- approved biologists. Specific biologist requirements for Mojave Desert tortoise are described further in the tortoise measures below.

B.5.2. All necessary federal and state handling permits will be obtained.

B.5.3. The biological monitors will be responsible for determining compliance with measures as defined by the Biological Opinion or other agreements between UDWRe, the BLM, and other federal or state agencies. Biological monitors will have the authority to halt non-emergency construction activities that are not in compliance with these measures. Stop work directives will be effective long enough to remedy the immediate situation, and will be limited to the equipment and parties involved in the situation. All action of noncompliance or conditions of threat to special status species will be recorded immediately by the biological monitor and reported to UDWRe. UDWRe will immediately report all such action and conditions to the BLM for reporting to the USFWS and/or Utah Division of Wildlife Resources or Arizona Game and Fish Department (AGFD). Biological monitors will be qualified biologists and/or botanists, as determined by the BLM.

B.5.4. No harassment or harming of animals will be allowed. Animals found entrapped in open holes, open pipes/culverts, or excavations will be reported to the biological monitor. Before any pipe with a diameter of three inches or greater is buried, capped, or moved it will first be inspected for animals. If the wildlife is unable to escape on its own, it will be moved from the construction area by the biologists, in accordance with applicable federal and state guidelines.

B.5.5. The Environmental Compliance Representative will report to the BLM and other federal or state agencies, in accordance with ROW requirements, any entrapment, death, or injury to special status species.

B.5.6. Prior to discharge of water used for hydrostatic testing of the pipeline and other facilities, all appropriate discharge and biological permits will be obtained and the drainage locations will be surveyed for special status species and nesting migratory birds. The BLM will be notified of any special status species or nesting migratory birds found in the drainage area, and will determine whether additional measures need to be implemented prior to the discharge, beyond those identified in project permits and any other applicable agreements or requirements between UDWRe and the BLM, USFWS, and Utah Division of Wildlife Resources or AGFD.

B.5.7. Biological resource monitoring and compliance updates will be provided to the BLM throughout the construction period for record keeping and project documentation purposes. These will include information on ongoing construction activities, monitoring, wildlife and special status species observations, species relocations, entrapped special status species, and any other pertinent biological

issues. Updates may be written or oral, as agreed upon by the BLM and UDWRe or AGFD contract biologists. An annual written report will be provided to the BLM.

Special Status Plants

B.5.8. In areas where special status plant species were identified in previous surveys either within or adjacent to the ROWs, pre-construction surveys will be conducted during the blooming or fruiting season as needed to verify plant identification. The USFWS Information for Planning and Consultation website will be reviewed prior to construction to obtain appropriate ESA species list updates for the project. Specific locations of special status plants, including BLM sensitive species, will be recorded for subsequent salvage or seed collection.

B.5.9. UDWRe will adjust construction activities as feasible to avoid any identified special status plant populations within the ROWs. T-posts strung with rope and signage will be used to mark the avoidance area including a reasonable buffer, alerting construction personnel to avoid the area. The onsite Environmental Compliance Representative will ensure these areas are properly monitored and protected. When individual special status plant locations are known (coordinates have been surveyed with GPS equipment) prior to construction drawings being prepared, the special status plants will be included in the construction drawings.

The only ESA-listed plant species that has been found near the construction area is the Siler pincushion cactus (*Pediocactus sileri*). The known occurrences of Siler pincushion cactus are outside the construction easement along the LPP and would be avoided.

B.5.10. If the special status plant species cannot be avoided, UDWRe will implement plant or seed salvage prior to the start of construction. Seeds will be collected from special status plants that are located within the ROWs. Collection, storage, and handling of seeds will be in accordance with commonly accepted scientific practices. Collected special status plant seed will be applied with the seeding program as part of restoration at the completion of construction, and in the same general area as the seeds were initially collected, as appropriate.

B.5.11. If previously unknown special status plant species are discovered within the ROWs prior to start of or during construction, UDWRe will consult with the BLM, and the BLM will reinitiate consultation with USFWS, if appropriate.

B.5.12. If federal or state protected plant species are discovered in areas cleared during previous surveys within the ROWs during construction, the on-site biological monitor or agency personnel will have the authority to temporarily halt non-emergency construction activities in order to: 1) mark the area with T-posts and rope, including a reasonable buffer, to alert construction personnel to avoid the area, or 2) allow time for UDWRe to consult with the BLM, and for the BLM to reinitiate consultation with USFWS, if appropriate.

B.5.13. Herbicides may not be sprayed within or around any special status plant exclusion areas (buffers may be applied around areas in coordination with the BLM, depending on species). These areas will be delineated with stakes and signs during construction or by GPS data. Removal of noxious and invasive weeds in these areas shall be accomplished by method(s) approved by the BLM and that are identified in the biological opinion.

Mojave Desert Tortoise

B.5.14. Desert tortoise surveys and monitoring in tortoise habitat in Utah will be completed prior to and during construction, respectively. UDWRe will submit to U.S. Fish and Wildlife Service (USFWS), Utah Ecological Services Field Office, the qualifications and references for individuals conducting surveys and monitoring at least 30 days prior to initiation of construction activities.

B.5.15. Desert tortoise monitors are individuals who are approved by the USFWS to:

- assess habitat suitability;
- conduct presence/absence and abundance surveys for desert tortoises;
- monitor LPP activities within desert tortoise habitat;
- ensure proper implementation of conservation measures; and
- report incidents of non-compliance in accordance with biological opinions and permits.

Desert tortoise monitors should have sufficient desert tortoise field experience (a minimum of 480 hours searching for tortoises and tortoise sign) to detect the presence of desert tortoises through observations of animals and signs including scat and burrows. A desert tortoise monitor is not authorized to handle desert tortoises. The monitor will keep detailed field notes that will be turned into the USFWS office every three months.

B.5.16. Field contact representatives (FCR) are individuals who are approved by the USFWS to:

- monitor LPP activities within desert tortoise habitat;
- conduct daily clearance sweeps as detailed in the text below;
- ensure proper implementation of protective measures; and
- call the desert tortoise monitor or USFWS with any questions or concerns.

The FCRs are not permitted to assess habitat suitability or conduct USFWS protocol level surveys for desert tortoises because they do not have sufficient training or field experience.

- Desert tortoise monitors will ensure the FCRs meet the following qualifications:
- can recognize signs of desert tortoises;
- understand monitoring protocols; and
- have a minimum of one field day under the supervision of a desert tortoise monitor in each activity season and habitat type.

While FCRs are not authorized to handle desert tortoise or conduct USFWS protocol level surveys (USFWS 2017), FCRs may be approved, depending on activity season and habitat quality, to conduct daily clearance sweeps for desert tortoises immediately prior to or during LPP activities. The FCR will keep detailed field notes of tortoise related activity performed that will be turned into the USFWS Utah Ecological Services Field Office every three months.

B.5.17. Before construction activities begin, a pre-construction meeting will be held between the applicant, all onsite workers, Washington County Water Conservancy District (WCWCD), and the desert tortoise monitor to review all conservation measures. A handout of the conservation measures will be provided to all onsite workers.

B.5.18. Anytime a vehicle or construction equipment is parked in desert tortoise habitat, the area around and directly under the vehicle must be inspected for tortoises before the vehicle or equipment is moved. The inspection does not need to be performed by a tortoise monitor or FCR. If there is a desert tortoise

observed, it will be left to move on its own – the tortoise will not be approached or handled. If this does not occur within 15 minutes, an approved desert tortoise biologist will be contacted to remove and relocate the tortoise. Inspection for wildlife around vehicles and equipment prior to operation will be applied to all LPP activities and the entire LPP ROW.

B.5.19. If a desert tortoise is found in the project area during LPP activities, the tortoise will not be approached or handled and all LPP activities within 300 feet of the tortoise will be halted immediately, until such time as the tortoise leaves the area or is moved from the site. This distance can be adjusted down depending on specific circumstances as coordinated with the Utah Division of Wildlife Resources (UDWRi). The UDWRi will be contacted to approach and handle the tortoise. The USFWS (and the Washington County HCP administrator, if so directed by UDWRi or USFWS) will be notified within 24 hours if a tortoise is found in the project area.

B.5.20. All equipment taken into desert tortoise suitable habitat will be power-washed to remove noxious weeds and seeds and petroleum products prior to entering or re-entering the site. Fueling machinery will occur on already disturbed areas within ROWs. Laws and regulations pertaining to fueling of vehicles and equipment will be observed.

B.5.21. LPP activities and equipment in desert tortoise suitable habitat will be confined to the designated ROWs which will be identified by stakes, lathes, and flagging. To the extent feasible, previously disturbed areas within the ROWs will be used for temporary storage areas.

B.5.22. Designated routes of travel will be used whenever feasible in desert tortoise suitable habitat. Additional access routes outside designated routes of travel or the temporary ROWs will be limited to areas pre-cleared by the desert tortoise monitor that do not contain sign of desert tortoise within 100 meters (328 feet). Use of access routes will be kept to a minimum.

If construction or modification of access routes is needed, desert tortoise monitor(s) approved to conduct protocol level surveys (USFWS 2010) will survey these routes plus a 100-meter (328 feet) zone of influence. If a desert tortoise or fresh tortoise sign is found within the 100 meter (328 feet) zone of influence of the LPP (regardless of habitat quality), the monitor will contact UDWRi and USFWS to discuss appropriate translocation, avoidance, and minimization measures based on the case-specific circumstances."

B.5.23. Cross-country vehicular travel by contractor personnel outside of the ROWs or identified access routes will be prohibited. This measure will be applied to all LPP activities and the entire LPP ROW.

B.5.24. Surface occupancy or other surface disturbing activities will be avoided as feasible within 600 meters (1,969 feet) of occupied desert tortoise habitat.

B.5.25. Trash and food items will be contained in closed (predator-proof) containers and removed regularly as needed to reduce attractiveness to opportunistic predators such as ravens, coyotes, and feral dogs. This measure will be applied to all LPP activities and the entire LPP ROW.

B.5.26. Use of firearms by contractor personnel for target practice will be prohibited from the construction site and access routes. This measure will be applied to all LPP activities and the entire LPP ROW.

B.5.27. Contractor personnel will be prohibited from bringing unrestrained domestic dogs to the construction site.

B.5.28. A hazardous materials spill kit will be kept on site during construction that is appropriate for the solvents involved in operation and maintenance of vehicles and machinery used during the construction. Laws and regulations pertaining to hazardous materials will be observed. This measure will be applied to all LPP activities and the entire LPP ROW.

B.5.29. Bulk concrete, grout, cement mortar, and solid and source site materials will be stored at a staging area. This measure will be applied to all LPP activities and the entire LPP ROW.

B.5.30. Project and personnel vehicle speeds in the project area within occupied desert tortoise habitat will be limited to 20 mph. Speed limit signs can be posted when entering and exiting occupied habitat.

B.5.31. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – Unless UDWRe elects fencing in lieu of desert tortoise monitors, desert tortoise monitors will be on site during all LPP activities for the protection of desert tortoises. These monitors will be responsible for determining compliance with measures as defined in the biological opinion.

B.5.32. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – No more than one hour prior to daily construction activities commencing or by 7 am each work day (whichever is later), a desert tortoise monitor will conduct a clearance sweep of that day's Project activity area (including a 100-meter [328 feet] zone of influence on all sides) and carefully inspect any hazards (e.g. trenches, open pipes). If temperatures are cold enough that tortoise activity is not expected, UDWRe may coordinate with USFWS to reduce the monitoring requirements.

B.5.33. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – A desert tortoise monitor will be assigned to each grouping of equipment (heavy machines which use power to perform a construction function specific to the machine) operating in spatially disjunct areas within the project site. A grouping of equipment is defined as all construction equipment working within a 1,000-foot linear distance from the first piece of equipment to the last piece of equipment. Equipment performing backfilling, re-contouring, and reclamation activities are included in this measure.

B.5.34. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – If UDWRe chooses not to have a desert tortoise monitor on every grouping of equipment, it can use temporary fencing.

B.5.35. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – Blasting is not permissible within 100 meters (328 feet) of an occupied tortoise burrow, due to potential direct effects of this action on burrow stability.

B.5.36. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – If LPP activities occur within occupied habitat during the most active seasons (March 15 – May 15 and August 20 – October 20), UDWRe will hold a short refresher meeting with all LPP personnel that will be led by the desert tortoise monitor or FCR (whichever is on-site when the meeting is conducted) on March 15 and August 20 (or the first working day just prior to those dates). This meeting will include instruction and handouts to remind workers of the LPP's conservation measures. A refresher meeting may need to be given on both dates for the LPP. Refresher meetings will be held in addition to the pre-construction meeting described in General Measures. However, if the initial pre-construction meeting occurred recently (within one month prior to the most active season start date, March 15 or October 20), the refresher meeting that will have normally been held on that date is not required.

B.5.37. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – UDWRe may choose to use temporary tortoise-proof fencing infrastructure in lieu of full-time monitoring to keep desert tortoises out of LPP activities. When temporary fencing is used and if the temperature is 95 degrees F or higher, the entire fence line will be checked at least three times a day—once by a tortoise monitor no more than one hour prior to each day's construction activities beginning or by 7 am (whichever is later), and twice more by the FCR throughout the day. Longer term Projects can consider installing tortoise shade structures (see b, below) to lessen the need for three daily checks of the fence to one daily check. In the event shade structures are installed, daily fence line checks must continue no more than one hour prior to each day's activities beginning or 7 am (whichever is later). If temperatures do not reach 95 degrees F, the fence line can be checked once a day. Any fencing plans must be approved by USFWS.

Temporary tortoise-proof fencing consists of barrier fence buried at least 15 centimeters or 6 inches (leaving 1 meter or 3.3 feet aboveground) and supported by stakes.

Shade structures will be constructed on a flattened mound of dirt 20 cm high (to protect the shelter from runoff). Shelter material will be arranged in a half moon shape, and must be a minimum of 20 cm tall, 40 cm long, and 40 cm wide. Shelters must be covered with 20 cm of soil on the top and sides to stabilize and insulate the structure.

B.5.38. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – If the proponent does not install temporary fencing, then by the close of each work day, open trenches and other open excavations will be covered or provided with tortoise escape ramps. Excavations left open will be checked each morning for presence of tortoise prior to commencement of daily work and at the end of the work day.

Escape ramps will have a slope no steeper than 3:1 and be a minimum of 91.5 cm (3 feet) in length. Escape ramps will be placed at 100-meter (328 feet) intervals. These distances will be reduced if the FCR, desert tortoise monitor, and approved desert tortoise biologist determine that the plug/escape ramp spacing is insufficient to facilitate animal escape from the trench.

B.5.39. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – No standing water as a result of LPP operations will be permitted in desert tortoise habitat because this can attract desert tortoises and predators. Similarly, leaks on water trucks and water tanks will be repaired to prevent pooling water. If watering conditions could temporarily attract tortoises, the FCR or a desert tortoise monitor assigned to a group of equipment constructing the pipeline may periodically leave the group of equipment to patrol each area being watered.

B.5.40. *For occupied or high quality desert tortoise habitat in the active season (February 15 – November 30)* – The storing and handling of bulk hazardous waste materials will be excluded from the LPP areas within 600 meters (1,969 feet) of active tortoise burrows.

B.5.41. *For occupied or high quality desert tortoise habitat in the less active season (December 1 – February 14)* – A desert tortoise monitor is not required for measures identified for the active season. An FCR will complete similar activities and remain on-site during all LPP activities, conduct daily clearance sweeps out to 100 meters (328 feet), check any hazards, and check all backfilling, re-contouring, and reclamation activities prior to initiation. A desert tortoise monitor will come out to the site weekly to check in with the FCR, review and collect field notes, and check any hazards.

B.5.42. *For occupied or high quality desert tortoise habitat in the less active season (December 1 – February 14)* – In lieu of an FCR that remains on site throughout the day, UDWRe may use temporary

fencing infrastructure. An FCR will come out to the site daily to check the fence line and any hazards. A desert tortoise monitor will come out to the site bi-weekly to check in with the FCR, review and collect field notes, and check the fence line and any hazards (regardless of temperatures).

B.5.43. *For unoccupied, medium desert tortoise habitat in the active season (February 15 – November 30)* – Desert tortoise monitors are not required to be on site during all LPP activities and temporary fencing is not required.

B.5.44. *For unoccupied, medium desert tortoise habitat in the active season (February 15 – November 30)* – A desert tortoise monitor will come out to the site weekly to check in with the FCR, review and collect field notes, and check any hazards.

B.5.45. *For unoccupied, medium desert tortoise habitat in the active season (February 15 – November 30)* – A FCR will perform a sweep of any open trench and any other open excavations at least three times daily. If a desert tortoise or fresh tortoise sign is found within the 100 meter (328 feet) zone of influence of the LPP, the monitor will contact UDWRi and USFWS to discuss appropriate translocation, avoidance, and minimization measures based on the case-specific circumstances.

B.5.46. *For unoccupied, medium desert tortoise habitat in the active season (February 15 – November 30)* – No standing water as a result of LPP operations will be permitted in desert tortoise habitat as this can attract desert tortoises and predators. Similarly, leaks on water trucks and water tanks will be repaired to prevent pooling water. If conditions favor tortoise activity, the FCR or a desert tortoise monitor assigned to a group of equipment constructing the pipeline may periodically leave the group of equipment to patrol each area being watered.

B.5.47. *For unoccupied, medium desert tortoise habitat in the less active season (December 1 – February 14)* – Desert tortoise monitors or an FCR are not required to remain on-site during all LPP activities and temporary fencing is not required.

B.5.48. *For unoccupied, medium desert tortoise habitat in the less active season (December 1 – February 14)* – A FCR will perform a sweep of any open trench and any other open excavations once daily.

B.5.49. *For unoccupied, medium desert tortoise habitat in the less active season (December 1 – February 14)* – A FCR will contact a desert tortoise monitor bi-weekly to review and submit field notes (electronic submission is permissible), and report any hazards. If a desert tortoise or fresh tortoise sign is found within the 100 meter (328 feet) zone of influence of the LPP (regardless of habitat quality), the monitor will contact UDWRi and USFWS to discuss appropriate translocation, avoidance, and minimization measures based on the case-specific circumstances.

B.5.50. *For unoccupied, medium desert tortoise habitat in the less active season (December 1 – February 14)* – A desert tortoise monitor will come out to the site every four weeks to check with the FCR and check any hazards.

B.5.51. A formal Reclamation Plan for all desert tortoise habitat will be developed and submitted to the BLM per BLM requirements.

B.5.52. Desert tortoise monitor(s) will prepare all survey reports and field notes and submit them to USFWS quarterly and at project completion. The reports will identify the extent of impacts to desert tortoises. They will include:

- Desert tortoise survey and monitoring reports.

- Desert tortoise encounters within project boundaries and how they were reported and addressed.

B.5.53. During routine inspections, scheduled maintenance, emergency maintenance, or any other maintenance, if desert tortoises are encountered, they will be avoided and the BLM Biologist will be contacted if there appear to be hazards to the tortoise. The BLM will coordinate with the USFWS as appropriate.

B.5.54. Scheduled maintenance in suitable habitat will be performed during the less active season (December 1 – February 14). It will be overseen by an individual who has received the desert tortoise education training provided by the Washington County HCP. Scheduled maintenance activities will not create new disturbance beyond the already-disturbed access road and pipeline features.

B.5.55. Maintenance activities that are performed during the less-active season, or that create new surface disturbance in suitable habitat will be coordinated with the BLM. The BLM will coordinate with the USFWS as appropriate.

B.5.56. If emergency maintenance activities create new surface disturbance in suitable habitat or is required during the active season in suitable habitat, the BLM will be contacted within 24 hours to minimize any impacts and coordinate post-emergency response. The BLM will coordinate with the USFWS as appropriate.

Gila Monster and Common Chuckwalla

B.5.57. Within potential habitat and confirmed sightings near the LPP for Gila monster and common chuckwalla, pre-construction surveys of the ROWs will be conducted by qualified biologists to find and move individuals out of harm's way. These surveys may be conducted in accordance with Gila monster protocol. All occupied burrows found in the construction zone will be examined and excavated as described for the desert tortoise. If a Gila monster is found, Utah Division of Wildlife Resources or Arizona Game and Fish Department and BLM will be immediately contacted.

B.5.58. Gila monster and common chuckwalla will be moved only by qualified biologists and solely for the purpose of moving them out of harm's way. The onsite biologists will follow the Utah Division of Wildlife Resources or AGFD and BLM Gila monster protocol and specifically will know how to: 1) identify Gila monster and be able to distinguish it from other lizards such as chuckwalla and western banded gecko, 2) report any observations of Gila monster to Utah Division of Wildlife Resources or AGFD and BLM, 3) be alerted to the consequences of a Gila monster bite; and 4) be aware of protective measures provided under state law.

B.5.59. All Gila monster and common chuckwalla observed by project workers will be reported immediately to the biological monitor. A report of the Gila monster sighting will be filed with Utah Division of Wildlife Resources or AGFD and BLM. The report will include information on the animal's size and condition, location (with GPS coordinates), date and time, habitat (including plant species present), photo-documentation (if feasible), and circumstances under which it was found.

Burrowing Owl and Kit Fox

B.5.60. Burrowing owl is a migratory bird. As such, the measures presented in the migratory bird section are in addition to the ones listed here.

B.5.61. Surveys of suitable habitat in the ROWs for active burrowing owl will be conducted by qualified biologists during nesting season (March 1 through August 31) and no more than 30 days prior to the start of construction. Surveys for active kit fox burrows can be conducted at the same time. The presence of active burrows or dens will be verified through non-invasive means including motion cameras, fiber-optic scope or miniature closed-circuit video probe; the surveys will consider that dens can be very diverse with several tunnels and entrance and exit burrows. The locations of active burrows within the ROWs will be determined using a GPS unit to enable accurate relocation during subsequent mitigation actions.

B.5.62. There will be no destruction of occupied, active nesting burrows or natal dens, capture and relocation of live burrowing owls or kit foxes, nor harm in any way to individual animals on public land administered by the BLM. Active nesting burrows or natal dens within the ROWs will be avoided by modifying construction activities in the immediate area. T-posts with rope and signs will be used to mark the avoidance area, which will include a buffer of at least 0.25 miles. The buffer area may be reduced in coordination with the BLM's adaptive management process and will be determined prior to construction. The fencing will be installed in a manner to allow for ingress and egress of the animals. The avoidance area will also be signed to inform construction personnel to avoid the area.

B.5.63. Destruction of unoccupied burrows and dens will occur outside of the active nesting (March 1 to August 31) or natal season (February 15 to May 15) to avoid take. Burrows or dens will be excavated using hand tools and refilled to prevent reoccupation. Clearing and collapsing of burrows or dens within the ROWs will be done by qualified biologists prior to the start of construction. Existing unsuitable burrows or dens on adjacent BLM land outside of the ROWs will be enhanced (enlarged or cleared of debris) or new burrows and dens created (by installing artificial burrows and dens) at a ratio of two enhanced or new burrows to each one burrow that will be destroyed.

Migratory Birds (including Raptors)

B.5.64. As feasible, UDWRe will conduct initial ground clearing outside of the critical nesting period for migratory birds.

B.5.65. If initial ground clearing will occur during the critical nesting period, pre-construction surveys for nesting migratory birds will be conducted by a qualified biologist (no more than 10 days prior to construction). If an active nest is identified, a no-activity buffer (ranging from 100-feet to 1-mile, depending on species) is to be established around the nest site and remain in place until the young have fledged and/or the nest becomes non-active.

B.5.66 If nesting migratory birds are found during the pre-construction surveys, UDWRe will follow measures identified within the Bird Conservation Strategy (see measure B.1.1). If feasible, the bird nests will be avoided until the birds have fledged. T-posts and rope fencing will be used to mark the avoidance areas, which will also be signed to inform construction personnel to avoid the area. If avoidance is not feasible, UDWRe will consult with the BLM.

B.5.67. Power poles, perch discouragers, and line spacing will be designed and constructed in accordance with the recommendations of the Avian Power Line Interaction Committee, in order to reduce the potential to electrocute or otherwise harm raptors.

B.5.68. UDWRe will continue working with Utah Division of Wildlife Resources or AGFD through Partners in Flight and other associated monitoring programs to support on-going surveys for eagles, ferruginous hawks, and other raptors within the general project vicinity.

B.5.69. If trees located within the ROWs cannot be avoided and must be removed for construction, the trees will be removed outside of the nesting period for raptors or other migratory birds, as feasible. If removal of a tree during the nesting period is required, the tree will first be surveyed by a qualified biologist to ascertain the presence of any nests. Should active nests of raptors or migratory birds be present, the tree will not be removed until the birds have fledged.

B.5.70. Where appropriate, restrict permitted activities from May 1 through July 15 within 0.5 mile of raptor nest sites unless the nest site has been determined to be inactive for at least the previous 5 years; the specific avoidance buffer distance and time period for raptor species may be refined in the Bird Conservation Strategy (see measure B.1.1). Construction could occur during restricted periods if sufficient monitoring of the nest is completed during the present active season and the nest is found to be unoccupied for that year (presence/absence surveys according to protocols).

B.5.71. Immediately prior to the start of an authorized or permitted project, BLM will contact personnel monitoring California Condor locations and movements to determine the locations and status of condors in or near the project area. A condor deterrent device may need to be installed if a new structure is built in known condor areas. The need for this will be evaluated on a case-by-case basis by the appropriate agency wildlife biologist.

B.5.72. UDWRe will notify the BLM wildlife team lead or condor biologist if California Condors visit the worksite while permitted activities are underway.

B.5.73. Where condor nesting activity is known within 0.5 miles of permitted or authorized activities that include operation of heavy machinery, BLM may encourage the operator to avoid use of the equipment during the active nesting season (February 1- November 30), or as long as the nest is viable to the extent consistent with the Agreement between the U.S. Fish and Wildlife Service and the Coalition of County and Local Governments for the California Condor Experimental Population, Northern Arizona and Southern Utah (Condor Agreement).

B.5.74. Where condors occur within 1.0 mile of permitted or authorized activities that include blasting, BLM will encourage that blasting be postponed until the condors leave the area or are hazed away by personnel permitted to haze condors to the extent consistent with the Condor Agreement.

B.5.75. Where condor nesting activity is known within 1.0 mile of the project area, BLM encourages that blasting activity be delayed until after the active nesting season (February 1- November 30), or as long as the nest is viable to the extent consistent with the Condor Agreement. These dates may be modified based on the most current information regarding condor nesting.

B.5.76. Where California Condors visit a worksite while activities are underway, the onsite supervisor will notify the BLM wildlife team lead or condor biologist. Project workers and supervisors will be instructed to avoid interaction with condors. Operations will cease until the bird leaves on its own or until techniques are employed by permitted personnel that results in the individual condor leaving the area to the extent consistent with the Condor Agreement.

B.5.77. The project site will be cleaned up at the end of each day the work is being conducted (e.g., trash removed, scrap materials picked up) to minimize the likelihood of condors visiting the site. BLM staff may conduct site visits to the area to ensure adequate clean-up measures are taken.

B.5.78. For projects where potential exists for leakage or spill of hazardous materials, a spill plan will be developed and implemented to prevent water contamination and potential poisoning of condors. The plan will include provisions for immediate cleanup of any hazardous substance, and will define how each

hazardous substance will be treated in case of leakage or spill. The plan will be reviewed by the BLM condor lead biologist to ensure condors are adequately addressed.

Big Game

B.5.79. There will be no permanent site fencing along the pipeline alignment away from above-ground facilities in order to avoid restricting seasonal movement patterns of big game. Temporary fencing may be used to protect wildlife during pipeline construction. Temporary fencing may be in place at a given location for an extended period after completing a pipe segment's construction to prevent grazing on the ROW while vegetation is being re-established. Temporary fence specifications will be coordinated with the BLM field offices.

B.5.80. In consultation with the BLM or NPS, and Utah Division of Wildlife Resources or AGFD, a plan will be developed to either turn existing water sources on or off to aid in animal distribution away from active construction areas. UDWRe will coordinate with ranchers and other land permittees within the project hydrographic basins to ensure that existing artificial water sources continue to be available during construction for big game. If construction is within two miles of an existing artificial water source, supplemental temporary stock tanks will be placed in a suitable location away from the construction area. The location of the temporary stock tanks will be selected in consultation with appropriate ranchers and land permittees, the BLM or NPS, and Utah Division of Wildlife Resources or AGFD, and after appropriate site-specific environmental review and analysis has occurred. Water tanks will be filled using trucks, and maintained for the duration of construction in this area.

B.5.81. Where appropriate, restrict LPP construction activities in big game calving/fawning/kidding/lambing grounds and crucial summer range from April 15 through June 30.

B.5.82. Pipeline and electrical transmission line construction in crucial mule deer winter range will be coordinated with Utah Division of Wildlife Resources and the BLM and scheduled during the period from May 1 through September 30 between Highway 89 milepost 31 and 50 to avoid impacts on crucial mule deer winter habitat. If these dates are determined to be too restrictive to efficiently construct the pipeline, then alternative minimization techniques will be discussed with Utah Division of Wildlife Resources and the BLM.

B.5.83. Unavoidable impacts on Paunsaugunt deer herd crucial winter habitat could be mitigated by compensatory measures, including contributions to ongoing mule deer habitat improvement projects and construction of a new improved crossing structure at Highway 89 milepost 39.5. Compensatory mitigation measures will be coordinated as necessary with Utah Division of Wildlife Resources.

B.5.84. Where appropriate, restrict LPP construction activities within crucial bighorn sheep habitat from March 1 through May 31 and from July 1 through August 31.

Fish

B.5.85. During pipeline construction, BMPs will be implemented to minimize effects on fish (if present) from the temporary rerouting of intermittent flow in Paria River and in other intermittent washes. Practices will comply with Utah Division of Wildlife Resources and Clean Water Act permitting requirements. Examples of BMPs could include screens on pump intakes.

Other Biological Measures

B.5.86. Clearing of the pipeline construction corridor and subsequent routine maintenance activities through riparian areas near the Paria River, Kanab Creek, Bitter Seeps Wash, and other identified areas of southwestern willow flycatcher suitable habitat would be scheduled outside of the willow flycatcher breeding and nesting season, which is April 1 through August 15.

B.6. Paleontological Resources

B.6.1. A field survey will be conducted of areas within the ROWs identified as having a high potential for paleontological resources, based upon a paleontological records search (following BLM Instruction Manual 2008-009, Potential Fossil Yield Classification System for Paleontological Resources on Public Lands). The field survey will identify if there are any surface exposures containing visible fossils and if there is a potential for buried fossils within the construction footprint. If any important fossils or middens are found during the field survey, a program will be developed in coordination with applicable agencies and implemented to remove any exposed fossils prior to construction, per agency guidelines.

B.6.2. Areas identified as having a high potential for buried paleontological resources based upon the field survey will be monitored by a qualified paleontologist during construction activities involving ground disturbance, including grading, excavation, and trenching.

B.6.3. Any fossils recovered during the field survey or construction monitoring will be prepared in accordance with standard professional paleontological techniques. The fossils will be curated in a BLM-approved facility. A report on the findings and significance of the salvage program, including a list of the recovered fossils, will be prepared following completion of the program. A copy of this report will accompany the fossils, and a copy will be submitted to the Utah State Museum or Arizona State Museum.

B.7. Cultural Resources

B.7.1. The Programmatic Agreement and subsequent Historic Property Treatment Plans will direct the appropriate avoidance, monitoring, or mitigation measures that may be used for adversely impacted eligible cultural resources. Those measures will be developed under those processes and should not be separately developed in the EIS. The HPTPs will address monitoring. The EIS should reference the appropriate processes or documents.

B.8. Land Use and Range Management

B.8.1. UDWRe will coordinate in advance of construction with the BLM, other applicable agencies, and permit holders that may be affected by construction activities. This coordination will allow for advance planning of grazing practices to minimize access and use conflicts. A grazing deferment plan may be developed with willing landowners, grazing permittees, and land management agencies to address grazing disturbance of revegetation efforts. Land use on affected parcels after construction and restoration activities will be negotiated between UDWRe and the landowner or manager.

B.8.2. Range improvements, including fence lines and cattle guards, corrals, or other non-watering facilities, located within the ROWs and along permanent access roads will be documented prior to the start of construction. If range improvements are temporarily removed or damaged as a result of construction, they will be repaired to the grazing permittee requirements and be functional upon

completion of construction. Temporary fencing and needed facilities will be used during construction to keep cattle confined to grazing areas as intended by the existing range improvements temporarily moved for construction.

B.8.3. If livestock is struck by a vehicle directly associated with construction activities, UDWRe will compensate permittee for the livestock at market value.

B.8.4. If access to livestock watering sources or facilities is restricted, alternate source(s) will be made available in consultation with the BLM or the NPS for the duration that access is restricted. Restricted access points and alternate sources will be made during final design. If livestock watering sources or facilities are damaged during construction, they will be repaired to BLM or NPS standards and be functional upon completion of construction.

B.9. Noise

B.9.1. All construction equipment will be equipped with manufacturer's standard noise control devices (i.e., mufflers, acoustical lagging, and/or engine enclosures). All construction equipment will be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices.

B.9.2. Pumping stations and hydroelectric generating stations will be enclosed and utilize noise design features (e.g., acoustical louvers and noise absorbing panels) to minimize operational noise levels. Pressure reducing station valves will be fully enclosed in vaults. Potential facility noise levels will be estimated during facility design, and features incorporated to minimize normal operational noise levels with an objective of 60 A-weighted decibel (dBA) or less at the boundary of the facility.

B.9.3. Equipment will be operated conservatively, which means the operator will not throttle the engine excessively and will keep engine speed as low as necessary to perform required tasks. In addition, the operator will not leave equipment running or idling needlessly.

B.9.4. When construction occurs in the vicinity of occupied residences located within 0.5 mile of the project, the occupants will be notified of the construction schedule with a written letter. To the extent feasible, construction will occur during daytime hours (6:00 a.m. to 6:00 p.m., 7 days per week; 24-hour operations may be approved for tunneling or drilling) within 0.5 mile of the residences to minimize the impacts from construction noise during evening and nighttime hours. Where campgrounds, recreation sites, other similar facilities, and high use areas are located within 0.5 mile of the project, signage will be posted at appropriate locations indicating the construction schedule and construction will occur during daytime hours to avoid disturbances to campground users.

B.10. Air Quality

B.10.1. Dust control permits will be obtained for each construction contract in accordance with local, county and/or state requirements. The permits will contain a Dust Control Plan listing all construction activities that will occur and the BMPs that will be used to mitigate construction dust. The BMPs will include site-specific dust control measures that are based on each project soil type, specific construction activities, phases and stages. They may include:

- Moisture conditioning of construction materials
- Controlling dust on access roads
- Covering or stabilizing soil with vegetation

- Using phased construction
- Limiting size and number of ingress and egress points
- Limiting size of staging areas
- Limiting vehicle speeds on the work site to minimize dust generation
- Proactive measures to prevent unauthorized access to disturbed areas
- Application of track-out controls

B.10.2. UDWRe will comply with all requirements of applicable dust control permits.

B.10.3. Any dust palliative, dust suppressant, or tackifier used within threatened and endangered species habitat or active drainages will be approved by the BLM. BLM will coordinate with USFWS as needed.

B.10.4. Operating permits will be obtained as required from the local county and/or the state for stationary sources as necessary, such as aggregate rock handling equipment, rock crushers, conveyors, and screening equipment which may emit particulate matter. UDWRe will comply with all requirements of the operating permits.

B.10.5. Operating permits will be obtained for combustion equipment such as stationary internal combustion engines (greater than 250 horsepower) used during construction or operation of the project. The Operating Permit will include operating requirements, reporting requirements and pollutant emission limits.

B.10.6. Active construction sites and unpaved roads used for construction will be watered or a chemical dust suppression approved by the BLM will be applied, as needed, to maintain effective dust control.

B.10.7. Equipment will be operated conservatively, which means the operator will not throttle the engine excessively and will keep engine speed as low as necessary to perform required tasks. In addition, the operator will not leave equipment running or idling needlessly.

B.11. Visual Resources

Environmental protection measures related to revegetation and restoration of temporarily disturbed areas to reduce visual impacts are described in Sections B.1 and B.2 of this Appendix.

B.11.1. Pumping stations, the water treatment facility, buried storage reservoir, hydroelectric generating stations, substations, transmission lines and towers, permanent fencing, permanent access roads, culvert ends, markers and other project facilities will utilize architectural details and be painted or constructed of colored block or colored materials to blend with the colors of the surrounding landscape, per BLM Manual 8400 – Visual Resources Management. Architectural details will be coordinated with BLM during final design and approved by the BLM as part of local building permit approvals. Site-specific paving and gravel may be needed and will be coordinated with the applicable agencies during final design. Visual Resources Management objectives in land use plans will be followed as applicable.

B.11.2. Lighting needed to conduct construction at night will be limited to the basic requirements to conduct the work. Lighting will be shielded, and directed down towards the site and not into surrounding areas or onto roads. Lighting for night construction will be coordinated and approved by the BLM and other applicable agencies.

B.11.3. Nighttime lighting during project operations at the pumping stations, pressure reducing stations, regulating tanks, and electrical substations will either be manually controlled or programmed and used

when occupied or when needed for safety and security. Lighting will be shielded and directed downwards and towards the facility site and will follow NPS night sky and International Dark Sky standards.

B.11.4. Rock cuts and other construction areas along the ROWs in sensitive visual areas or landscapes will be restored to blend with adjacent geological structure and may be painted or sprayed with an artificial desert varnish following construction completion and prior to revegetation to reduce the visual contrast. Application rates and color tint will be site-specific. Available artificial desert varnish materials used for visual resource impact mitigation purposes will be approved by the BLM prior to use.

B.11.5. Additional trees in juniper areas will be cleared to create uneven, natural appearing openings in vegetative cover adjacent to the pipeline alignment. Trees and shrubs will be feathered along the edge of the ROW with selective thinning to create variations in density and create uneven edges. Slash piles will not be left in sensitive viewing areas.

B.11.6. Existing vegetation that screens pipeline alignments, flow-control facilities, parking lots and other features from key viewing areas will be retained if it does not impede construction activities.

B.11.7. Pitting and vertical mulching in sensitive locations may be used in coordination with the BLM to reduce contrast and visibility of the pipeline.

Appendix C
Land List of Proposed LPP Pipeline Right-of-Way

Notes:

- All proposed Lake Powell Pipeline rights-of-way (ROW) are listed in the table, as other agencies may use this Plan of Development to evaluate ROW applications.
- The table is first organized by “Feature Type”, then by “Name, then by “Ownership” and “State”.
- ROW acres listed as “0.00” are less than 0.01 acres

Acronyms:
Alt – Alternative
AZ – Arizona
BLM – Bureau of Land Management
BPS – Booster Pump Station
HS – Hydro Station
kV – kilovolt
NPS – National Park Service
Reclamation – Bureau of Reclamation
UT – Utah

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Access Road - BPS-2	Access Road	NPS	AZ	41N	08E	14	SESE	0.68
Access Road - BPS-2	Access Road	NPS	AZ	41N	08E	14	SWSE	0.61
Access Road - BPS-2	Access Road	NPS	AZ	41N	08E	23	NENE	0.00
Access Road - BPS-2	Access Road	NPS	AZ	41N	08E	23	NENW	0.01
Access Road - BPS-2	Access Road	NPS	AZ	41N	08E	23	NWNE	0.92
Access Road - BPS-2	Access Road	State	UT	43S	02E	10	NESW	0.22
Access Road - BPS-2	Access Road	State	UT	43S	02E	10	SENW	0.25
Access Road - BPS-2	Access Road	State	UT	43S	02E	10	SWNW	0.69
Access Road - BPS-3	Access Road	BLM	UT	43S	01E	06	NENW	1.12
Access Road - BPS-3	Access Road	BLM	UT	43S	01E	06	NWNW	0.91
Access Road - BPS-4	Access Road	Private	UT	42S	02W	12	SESW	0.39
Access Road - HS-1	Access Road	BLM	UT	43S	04W	24	NENW	0.46
Access Road - HS-1	Access Road	BLM	UT	43S	04W	24	NWNE	0.00
Access Road - HS-1	Access Road	BLM	UT	43S	04W	24	SENW	0.59
Access Road - HS-1	Access Road	BLM	UT	43S	04W	24	SWNW	0.06
Access Road - HS-4	Access Road	BLM	UT	43S	13W	10	NESW	0.14
Access Road - HS-4	Access Road	BLM	UT	43S	13W	10	SENW	1.52
Access Road - HS-4	Access Road	BLM	UT	43S	13W	10	SWNW	0.66
Access Road - HS-4	Access Road	BLM	UT	43S	13W	11	NWSE	1.39
Access Road - HS-4	Access Road	BLM	UT	43S	13W	11	SESE	0.25
Access Road - HS-4	Access Road	BLM	UT	43S	13W	11	SWSE	0.82
Access Road - IPS	Access Road	NPS	AZ	41N	08E	23	NESE	0.38
Access Road - IPS	Access Road	NPS	AZ	41N	08E	23	SENE	0.27
Access Road - IPS	Access Road	NPS	AZ	41N	08E	24	NWSW	0.91
Access Road - Reg Tank	Access Road	BLM	UT	43S	03W	18	NESW	0.00
Access Road - Reg Tank	Access Road	BLM	UT	43S	03W	18	NWSW	0.56
Access Road - Reg Tank	Access Road	BLM	UT	43S	03W	18	SENW	0.61
Access Road - Reg Tank	Access Road	BLM	UT	43S	03W	18	SWNW	0.01
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	03	NENW	1.52
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	03	NESW	1.51
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	03	SENW	1.59
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	03	SESW	1.48
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	10	NENW	1.77
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	10	NWSW	0.70
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	10	SENW	0.77
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	10	SWNW	0.83

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	11	SWSE	0.86
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	13	NESW	0.50
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	13	NWNW	0.36
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	13	SENW	1.10
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	13	SWNW	1.81
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	14	NENE	1.90
Access Road - Southern Alternative East	Access Road	BLM	AZ	41N	01W	14	NWNE	0.71
Access Road - Southern Alternative East	Access Road	BLM	AZ	42N	01W	34	NESW	0.25
Access Road - Southern Alternative East	Access Road	BLM	AZ	42N	01W	34	NWSE	1.47
Access Road - Southern Alternative East	Access Road	BLM	AZ	42N	01W	34	SENW	1.68
Access Road - Southern Alternative East	Access Road	BLM	AZ	42N	01W	34	SESW	0.08
Access Road - Southern Alternative East	Access Road	BLM	AZ	42N	01W	34	SWNW	1.01
Access Road - Southern Alternative East	Access Road	BLM	AZ	42N	01W	34	SWSE	1.52
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	03	SESW	1.36
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	03	SWSW	0.01
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	04	SWSW	2.29
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	09	NWNW	0.46
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	10	NENW	0.14
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	10	NWNW	0.00
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	10	SENE	0.92
Access Road - Southern Alternative East	Access Road	BLM	UT	44S	05W	11	SWNW	0.34
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	03	NWNE	0.01
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	03	NWSE	0.06
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	03	SWSE	0.15
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	10	NESE	0.91
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	10	NESW	0.99
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	10	NWSE	0.92
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	11	NWSW	0.59
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	11	SESW	1.13
Access Road - Southern Alternative East	Access Road	Private	AZ	41N	01W	11	SWSW	0.52
Access Road - Southern Alternative East	Access Road	Private	UT	43S	05W	32	SESE	0.15
Access Road - Southern Alternative East	Access Road	Private	UT	43S	05W	33	SWSW	0.03
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	03	SESW	0.01
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	03	SWSE	0.26
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	03	SWSW	0.76

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	04	NWNW	0.91
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	04	NWSW	0.98
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	04	SESE	0.54
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	04	SESW	0.44
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	04	SWNW	0.91
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	04	SWSE	0.32
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	04	SWSW	0.03
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	09	NENE	0.33
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	09	NENW	0.50
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	09	NWNE	0.56
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	09	NWNW	0.01
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	10	NENE	0.95
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	10	NWNE	0.69
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	10	NWNW	0.14
Access Road - Southern Alternative East	Access Road	Private	UT	44S	05W	10	SENE	0.02
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	06	NENW	0.25
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	06	NESW	1.62
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	06	SENW	1.62
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	06	SESW	1.38
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	06	SWSE	0.46
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	07	NESE	1.37
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	07	NWNE	1.60
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	07	NWSE	0.38
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	07	SESE	1.48
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	07	SWNE	1.66
Transmission Line - Access Road - BPS-3	Access Road	BLM	UT	43S	01E	08	SWSW	0.00
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	08	SWSW	0.27
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	17	NENW	0.21
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	17	NESW	0.58
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	17	NWNW	1.26
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	17	NWSE	0.13
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	17	SENW	1.05
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	17	SWSE	0.98
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	20	NESE	0.80
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	20	NWNE	0.74
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	20	SENE	0.02

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	20	SESE	0.71
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	20	SWNE	0.24
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	21	SWSW	0.94
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	28	NENW	0.91
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	28	NESE	0.97
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	28	NWNE	0.30
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	28	NWNW	0.07
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	28	NWSE	0.26
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	28	SESE	0.17
Transmission Line - Access Road - BPS-3	Access Road	State	UT	43S	01E	28	SWNE	0.95
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	10	NESE	4.56
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	10	SESE	0.51
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	11	NESE	0.03
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	11	NESW	1.26
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	11	NWSW	10.24
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	11	SESE	7.10
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	11	SWSW	0.10
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	12	NWSW	2.85
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	12	SWSW	8.37
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	13	SWNW	0.21
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	14	NENE	0.00
Construction Staging Area - Hydro System - All	Construction Staging Area	BLM	UT	43S	13W	14	SENE	5.14
Construction Staging Area - Hydro System - All	Construction Staging Area	NPS	AZ	41N	08E	23	NESE	2.30
Construction Staging Area - Hydro System - All	Construction Staging Area	NPS	AZ	41N	08E	24	NWSW	1.21

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Construction Staging Area - Hydro System - All	Construction Staging Area	NPS	AZ	41N	08E	24	SWNW	1.62
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	AZ	41N	06W	07	NESE	0.01
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	AZ	41N	06W	07	SESE	0.01
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	AZ	41N	06W	08	NESW	0.84
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	AZ	41N	06W	08	NWSW	25.87
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	AZ	41N	06W	08	SESW	0.10
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	AZ	41N	06W	08	SWSW	1.66
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	AZ	41N	06W	34	SWNE	12.48
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	09	SWSE	6.01
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	17	NESE	0.62
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	17	NESW	0.54
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	17	NWSE	0.98
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	17	SESE	38.72
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	17	SESW	19.30
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	17	SWSE	38.95
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	42S	13W	17	SWSW	0.05
Construction Staging Area - Hydro System - All	Construction Staging Area	Private	UT	43S	11W	33	NWNE	19.82
Construction Staging Area - Hydro System - All	Construction Staging Area	Reclamation	AZ	41N	08E	24	SWNW	0.00
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	39N	04W	01	NWSW	18.00
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	39N	04W	01	SWSW	5.91

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	40N	02W	11	NENE	5.09
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	40N	02W	12	NWNW	8.10
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	40N	02W	12	SWNW	0.57
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	41N	01W	13	NESW	1.07
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	41N	01W	13	NWSE	0.74
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	41N	01W	13	SENW	2.46
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	BLM	AZ	41N	01W	13	SWNE	2.02
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	Private	AZ	40N	06W	26	SWSW	4.73
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	Private	AZ	40N	06W	35	NWNW	17.65
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	Private	AZ	41N	01W	30	NESE	5.69
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	Private	AZ	41N	01W	30	SESE	26.96
Construction Staging Area - Hydro System - Southern Alternative	Construction Staging Area	Private	AZ	41N	01W	30	SWSE	1.56
Construction Staging Area - Transmission Line - Glen Canyon to Buckskin	Construction Staging Area	BLM	AZ	41N	08E	20	NENW	8.09
Construction Staging Area - Transmission Line - Glen Canyon to Buckskin	Construction Staging Area	BLM	AZ	42N	07E	34	SESW	3.00
Construction Staging Area - Transmission Line - Glen Canyon to Buckskin	Construction Staging Area	BLM	AZ	42N	07E	34	SWSW	0.03
Construction Staging Area - Transmission Line - Glen Canyon to Buckskin	Construction Staging Area	State	UT	43S	01E	28	SESE	2.17
Construction Staging Area - Transmission Line - Glen Canyon to Buckskin	Construction Staging Area	State	UT	44S	02E	10	NWNW	0.12
Construction Staging Area - Transmission Line - Glen Canyon to Buckskin	Construction Staging Area	State	UT	44S	02E	10	SENW	1.68

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Construction Staging Area - Transmission Line - HS-4	Construction Staging Area	BLM	UT	42S	12W	19	SWNE	1.31
Construction Staging Area - Transmission Line - HS-4	Construction Staging Area	Private	UT	42S	12W	19	NWSE	5.04
Construction Staging Area - Transmission Line - HS-4	Construction Staging Area	Private	UT	42S	12W	19	SWNE	0.12
Construction Staging Area - Transmission Line - HS-4	Construction Staging Area	Private	UT	42S	13W	12	NENE	9.19
Construction Staging Area - Transmission Line - HS-4	Construction Staging Area	Private	UT	42S	13W	12	NWNE	6.04
Construction Staging Area - Transmission Line - HS-4	Construction Staging Area	Private	UT	42S	13W	36	NWNE	3.76
Construction Staging Area - Water Conveyance System	Construction Staging Area	BLM	UT	42S	02W	02	NWSW	12.86
Construction Staging Area - Water Conveyance System	Construction Staging Area	BLM	UT	42S	02W	02	SWSW	23.82
Construction Staging Area - Water Conveyance System	Construction Staging Area	BLM	UT	42S	02W	03	SESE	0.01
Construction Staging Area - Water Conveyance System	Construction Staging Area	BLM	UT	43S	01W	04	NENE	0.00
Construction Staging Area - Water Conveyance System	Construction Staging Area	NPS	AZ	41N	08E	10	SESE	6.63
Construction Staging Area - Water Conveyance System	Construction Staging Area	NPS	AZ	41N	08E	11	SWSW	5.36
Construction Staging Area - Water Conveyance System	Construction Staging Area	NPS	AZ	41N	08E	23	NESE	0.59
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	42S	01E	32	SESE	23.20
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	42S	01E	32	SWSE	0.95
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	42S	02W	12	SESW	11.06
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	42S	02W	12	SWSE	1.13
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	42S	02W	13	NENW	3.98

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	42S	02W	13	NWNE	0.56
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	43S	01E	02	NWSE	20.56
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	43S	01W	04	NENE	20.40
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	43S	01W	04	NWNE	0.06
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	43S	02E	10	SESE	15.73
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	43S	02E	13	SWSW	1.72
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	43S	02E	14	SESE	3.46
Construction Staging Area - Water Conveyance System	Construction Staging Area	Private	UT	43S	02E	24	SWNE	2.75
Construction Staging Area - Water Conveyance System	Construction Staging Area	State	AZ	42N	08E	32	SWSW	17.55
Construction Staging Area - Water Conveyance System	Construction Staging Area	State	UT	43S	02E	13	SWSW	0.63
Construction Staging Area - Water Conveyance System	Construction Staging Area	State	UT	43S	02E	14	SESE	1.91
Construction Staging Area - Water Conveyance System	Construction Staging Area	State	UT	43S	02E	24	SENW	0.44
Construction Staging Area - Water Conveyance System	Construction Staging Area	State	UT	43S	02E	24	SWNE	2.97
Facility Boundary - BPS-1	Facility Boundary	NPS	AZ	41N	08E	14	SESW	13.76
Facility Boundary - BPS-1	Facility Boundary	NPS	AZ	41N	08E	23	NENW	2.36
Facility Boundary - BPS-2	Facility Boundary	State	UT	43S	02E	10	NWSW	4.03
Facility Boundary - BPS-2	Facility Boundary	State	UT	43S	02E	10	SENW	0.01
Facility Boundary - BPS-2	Facility Boundary	State	UT	43S	02E	10	SWNW	2.41
Facility Boundary - BPS-3	Facility Boundary	BLM	UT	43S	01E	06	NENW	5.96
Facility Boundary - BPS-3	Facility Boundary	BLM	UT	43S	01E	06	SENW	0.75
Facility Boundary - BPS-4	Facility Boundary	BLM	UT	42S	02W	12	SENW	0.14
Facility Boundary - BPS-4	Facility Boundary	Private	UT	42S	02W	12	NESW	11.47

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Facility Boundary - BPS-4	Facility Boundary	Private	UT	42S	02W	12	SENW	0.80
Facility Boundary - Buckskin Substation Upgrade	Facility Boundary	BLM	UT	42S	02W	19	NWSW	7.46
Facility Boundary - Buckskin Substation Upgrade	Facility Boundary	BLM	UT	42S	02W	19	SWNW	0.16
Facility Boundary - Buried Regulating Tank	Facility Boundary	BLM	UT	43S	03W	18	NESW	3.17
Facility Boundary - Buried Regulating Tank	Facility Boundary	BLM	UT	43S	03W	18	NWSW	1.82
Facility Boundary - Buried Regulating Tank	Facility Boundary	BLM	UT	43S	03W	18	SENW	0.17
Facility Boundary - HS-1	Facility Boundary	BLM	UT	43S	04W	24	NENW	0.25
Facility Boundary - HS-1	Facility Boundary	BLM	UT	43S	04W	24	SENW	10.09
Facility Boundary - HS-2	Facility Boundary	Private	AZ	40N	06W	11	NWNW	3.08
Facility Boundary - HS-2	Facility Boundary	Private	AZ	40N	06W	11	SWNW	4.28
Facility Boundary - HS-2	Facility Boundary	State	AZ	40N	06W	10	NENE	0.12
Facility Boundary - HS-2	Facility Boundary	State	AZ	40N	06W	10	SENE	0.14
Facility Boundary - HS-3	Facility Boundary	Private	UT	43S	10W	32	NESW	6.72
Facility Boundary - HS-3	Facility Boundary	Private	UT	43S	10W	32	NWSW	7.74
Facility Boundary - HS-4	Facility Boundary	BLM	UT	43S	13W	11	NESW	2.01
Facility Boundary - HS-4	Facility Boundary	BLM	UT	43S	13W	11	NWSE	2.41
Facility Boundary - HS-5	Facility Boundary	BLM	UT	43S	13W	10	NESW	17.66
Facility Boundary - HS-5	Facility Boundary	BLM	UT	43S	13W	10	NWSE	5.62
Facility Boundary - HS-5	Facility Boundary	BLM	UT	43S	13W	10	SESW	0.09
Facility Boundary - HS-5	Facility Boundary	BLM	UT	43S	13W	10	SWNE	0.11
Facility Boundary - HS-5	Facility Boundary	BLM	UT	43S	13W	10	SWSE	1.14
Facility Boundary - IPS	Facility Boundary	NPS	AZ	41N	08E	24	NWSW	0.00
Facility Boundary - IPS	Facility Boundary	NPS	AZ	41N	08E	24	SENW	0.00
Facility Boundary - IPS	Facility Boundary	NPS	AZ	41N	08E	24	SWNW	0.02
Facility Boundary - IPS	Facility Boundary	Reclamation	AZ	41N	08E	24	NESW	1.85
Facility Boundary - IPS	Facility Boundary	Reclamation	AZ	41N	08E	24	NWSW	2.08
Facility Boundary - IPS	Facility Boundary	Reclamation	AZ	41N	08E	24	SENW	4.95
Facility Boundary - IPS	Facility Boundary	Reclamation	AZ	41N	08E	24	SWNW	18.03
Facility Boundary - Sand Hollow Hydro	Facility Boundary	Private	UT	42S	13W	30	NWSW	5.87
Facility Boundary - Sand Hollow Hydro	Facility Boundary	Private	UT	42S	13W	30	SWSW	1.20
Facility Boundary - Sand Hollow Hydro	Facility Boundary	State	UT	42S	13W	30	NWSW	3.53
Hydro System - All	Pipeline	BLM	AZ	40N	06W	03	NENE	3.71
Hydro System - All	Pipeline	BLM	AZ	40N	06W	03	SENE	3.42
Hydro System - All	Pipeline	BLM	AZ	41N	06W	16	SWSW	0.19

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	BLM	AZ	41N	06W	34	NESE	0.16
Hydro System - All	Pipeline	BLM	AZ	41N	06W	34	NWSE	5.24
Hydro System - All	Pipeline	BLM	AZ	41N	06W	34	SESE	5.28
Hydro System - All	Pipeline	BLM	AZ	41N	06W	34	SWSE	0.13
Hydro System - All	Pipeline	BLM	AZ	42N	07W	33	SENW	5.03
Hydro System - All	Pipeline	BLM	AZ	42N	07W	33	SWNE	4.18
Hydro System - All	Pipeline	BLM	AZ	42N	07W	33	SWNW	0.06
Hydro System - All	Pipeline	BLM	UT	42S	13W	31	NENW	2.98
Hydro System - All	Pipeline	BLM	UT	42S	13W	31	NESE	2.17
Hydro System - All	Pipeline	BLM	UT	42S	13W	31	NWNE	2.23
Hydro System - All	Pipeline	BLM	UT	42S	13W	31	NWSE	1.99
Hydro System - All	Pipeline	BLM	UT	42S	13W	31	SESE	4.85
Hydro System - All	Pipeline	BLM	UT	42S	13W	31	SWNE	4.15
Hydro System - All	Pipeline	BLM	UT	43S	03W	18	NESW	0.01
Hydro System - All	Pipeline	BLM	UT	43S	03W	18	NWSW	4.13
Hydro System - All	Pipeline	BLM	UT	43S	03W	18	SWSW	1.70
Hydro System - All	Pipeline	BLM	UT	43S	04W	13	SESE	5.18
Hydro System - All	Pipeline	BLM	UT	43S	04W	23	NESE	1.67
Hydro System - All	Pipeline	BLM	UT	43S	04W	23	SESE	4.37
Hydro System - All	Pipeline	BLM	UT	43S	04W	23	SWSE	2.41
Hydro System - All	Pipeline	BLM	UT	43S	04W	24	NENE	0.78
Hydro System - All	Pipeline	BLM	UT	43S	04W	24	NENW	0.79
Hydro System - All	Pipeline	BLM	UT	43S	04W	24	NWNE	5.99
Hydro System - All	Pipeline	BLM	UT	43S	04W	24	NWSW	5.15
Hydro System - All	Pipeline	BLM	UT	43S	04W	24	SENW	2.78
Hydro System - All	Pipeline	BLM	UT	43S	04W	24	SWNE	0.11
Hydro System - All	Pipeline	BLM	UT	43S	04W	24	SWNW	1.02
Hydro System - All	Pipeline	BLM	UT	43S	04W	26	NENW	3.35
Hydro System - All	Pipeline	BLM	UT	43S	04W	26	NWNE	3.62
Hydro System - All	Pipeline	BLM	UT	43S	04W	26	SENW	2.65
Hydro System - All	Pipeline	BLM	UT	43S	04W	26	SWNW	2.97
Hydro System - All	Pipeline	BLM	UT	43S	11W	29	SESW	1.86
Hydro System - All	Pipeline	BLM	UT	43S	11W	29	SWSE	3.25
Hydro System - All	Pipeline	BLM	UT	43S	11W	29	SWSW	1.86
Hydro System - All	Pipeline	BLM	UT	43S	11W	30	SESE	1.82

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	BLM	UT	43S	11W	30	SESW	4.02
Hydro System - All	Pipeline	BLM	UT	43S	11W	30	SWSE	4.61
Hydro System - All	Pipeline	BLM	UT	43S	11W	30	SWSW	1.90
Hydro System - All	Pipeline	BLM	UT	43S	11W	31	NENW	0.58
Hydro System - All	Pipeline	BLM	UT	43S	11W	31	NWNW	4.52
Hydro System - All	Pipeline	BLM	UT	43S	11W	32	NENW	0.01
Hydro System - All	Pipeline	BLM	UT	43S	11W	32	NWNE	0.03
Hydro System - All	Pipeline	BLM	UT	43S	11W	35	NESE	0.35
Hydro System - All	Pipeline	BLM	UT	43S	11W	35	NESW	0.00
Hydro System - All	Pipeline	BLM	UT	43S	11W	35	NWSE	2.01
Hydro System - All	Pipeline	BLM	UT	43S	11W	36	NWSW	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	25	SESE	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	25	SESW	1.43
Hydro System - All	Pipeline	BLM	UT	43S	12W	25	SWSW	1.40
Hydro System - All	Pipeline	BLM	UT	43S	12W	26	SESE	1.49
Hydro System - All	Pipeline	BLM	UT	43S	12W	26	SESW	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	26	SWSE	1.48
Hydro System - All	Pipeline	BLM	UT	43S	12W	26	SWSW	1.49
Hydro System - All	Pipeline	BLM	UT	43S	12W	27	SESE	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	27	SESW	1.57
Hydro System - All	Pipeline	BLM	UT	43S	12W	27	SWSW	1.58
Hydro System - All	Pipeline	BLM	UT	43S	12W	28	SESE	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	28	SWSE	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	30	NWSW	0.13
Hydro System - All	Pipeline	BLM	UT	43S	12W	30	SESW	3.22
Hydro System - All	Pipeline	BLM	UT	43S	12W	30	SWSW	6.60
Hydro System - All	Pipeline	BLM	UT	43S	12W	31	NENE	4.54
Hydro System - All	Pipeline	BLM	UT	43S	12W	31	NENW	1.89
Hydro System - All	Pipeline	BLM	UT	43S	12W	31	NWNE	4.69
Hydro System - All	Pipeline	BLM	UT	43S	12W	33	NENE	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	33	NENW	2.99
Hydro System - All	Pipeline	BLM	UT	43S	12W	33	NWNE	2.98
Hydro System - All	Pipeline	BLM	UT	43S	12W	33	NWNW	3.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	35	NENE	3.06
Hydro System - All	Pipeline	BLM	UT	43S	12W	35	NENW	0.00
Hydro System - All	Pipeline	BLM	UT	43S	12W	35	NWNE	3.07

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	BLM	UT	43S	12W	36	NENE	0.00
Hydro System - All	Pipeline	BLM	UT	43S	13W	03	NWSW	3.39
Hydro System - All	Pipeline	BLM	UT	43S	13W	03	SWNW	0.22
Hydro System - All	Pipeline	BLM	UT	43S	13W	03	SWSW	3.83
Hydro System - All	Pipeline	BLM	UT	43S	13W	04	NENE	3.91
Hydro System - All	Pipeline	BLM	UT	43S	13W	04	NESE	0.43
Hydro System - All	Pipeline	BLM	UT	43S	13W	04	SENE	3.61
Hydro System - All	Pipeline	BLM	UT	43S	13W	10	NESW	1.01
Hydro System - All	Pipeline	BLM	UT	43S	13W	10	NWNW	3.91
Hydro System - All	Pipeline	BLM	UT	43S	13W	10	NWSW	0.02
Hydro System - All	Pipeline	BLM	UT	43S	13W	10	SENW	0.58
Hydro System - All	Pipeline	BLM	UT	43S	13W	10	SWNW	4.57
Hydro System - All	Pipeline	BLM	UT	43S	13W	11	NESW	3.75
Hydro System - All	Pipeline	BLM	UT	43S	13W	11	NWSE	4.88
Hydro System - All	Pipeline	BLM	UT	43S	13W	11	NWSW	2.24
Hydro System - All	Pipeline	BLM	UT	43S	13W	11	SESE	3.29
Hydro System - All	Pipeline	BLM	UT	43S	13W	11	SWSE	1.97
Hydro System - All	Pipeline	BLM	UT	43S	13W	13	NWSW	4.66
Hydro System - All	Pipeline	BLM	UT	43S	13W	13	SWNW	2.31
Hydro System - All	Pipeline	BLM	UT	43S	13W	13	SWSW	5.01
Hydro System - All	Pipeline	BLM	UT	43S	13W	14	NENE	4.85
Hydro System - All	Pipeline	BLM	UT	43S	13W	14	SENE	3.01
Hydro System - All	Pipeline	BLM	UT	43S	13W	23	NENE	2.47
Hydro System - All	Pipeline	BLM	UT	43S	13W	23	SENE	2.55
Hydro System - All	Pipeline	BLM	UT	43S	13W	24	NWNW	2.17
Hydro System - All	Pipeline	BLM	UT	43S	13W	24	NWSW	4.82
Hydro System - All	Pipeline	BLM	UT	43S	13W	24	SWNW	2.14
Hydro System - All	Pipeline	BLM	UT	43S	13W	24	SWSW	4.96
Hydro System - All	Pipeline	BLM	UT	43S	13W	25	NESE	0.01
Hydro System - All	Pipeline	BLM	UT	43S	13W	25	NESW	0.05
Hydro System - All	Pipeline	BLM	UT	43S	13W	25	NWNW	4.60
Hydro System - All	Pipeline	BLM	UT	43S	13W	25	NWSW	0.01
Hydro System - All	Pipeline	BLM	UT	43S	13W	25	SENW	0.35
Hydro System - All	Pipeline	BLM	UT	43S	13W	25	SESE	0.01
Hydro System - All	Pipeline	BLM	UT	43S	13W	25	SWNW	4.67

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	Private	AZ	41N	06W	06	NENW	0.02
Hydro System - All	Pipeline	Private	AZ	41N	06W	06	NESW	3.45
Hydro System - All	Pipeline	Private	AZ	41N	06W	06	NWNW	8.72
Hydro System - All	Pipeline	Private	AZ	41N	06W	06	NWSE	1.97
Hydro System - All	Pipeline	Private	AZ	41N	06W	06	SENW	5.02
Hydro System - All	Pipeline	Private	AZ	41N	06W	06	SWNW	0.40
Hydro System - All	Pipeline	Private	AZ	41N	06W	06	SWSE	5.42
Hydro System - All	Pipeline	Private	AZ	41N	06W	07	NENE	4.33
Hydro System - All	Pipeline	Private	AZ	41N	06W	07	NWNE	1.09
Hydro System - All	Pipeline	Private	AZ	41N	06W	07	SENE	4.06
Hydro System - All	Pipeline	Private	AZ	41N	06W	08	NWSW	5.42
Hydro System - All	Pipeline	Private	AZ	41N	06W	08	SESW	3.79
Hydro System - All	Pipeline	Private	AZ	41N	06W	08	SWNW	1.37
Hydro System - All	Pipeline	Private	AZ	41N	06W	08	SWSW	1.63
Hydro System - All	Pipeline	Private	AZ	41N	06W	17	NENW	4.65
Hydro System - All	Pipeline	Private	AZ	41N	06W	17	NESE	3.18
Hydro System - All	Pipeline	Private	AZ	41N	06W	17	NWNE	0.77
Hydro System - All	Pipeline	Private	AZ	41N	06W	17	NWSE	2.24
Hydro System - All	Pipeline	Private	AZ	41N	06W	17	SESE	5.19
Hydro System - All	Pipeline	Private	AZ	41N	06W	17	SWNE	5.40
Hydro System - All	Pipeline	Private	AZ	41N	06W	20	NENE	0.10
Hydro System - All	Pipeline	Private	AZ	41N	06W	21	NESW	5.36
Hydro System - All	Pipeline	Private	AZ	41N	06W	21	NWNW	5.25
Hydro System - All	Pipeline	Private	AZ	41N	06W	21	SENW	2.25
Hydro System - All	Pipeline	Private	AZ	41N	06W	21	SESW	0.96
Hydro System - All	Pipeline	Private	AZ	41N	06W	21	SWNW	3.11
Hydro System - All	Pipeline	Private	AZ	41N	06W	21	SWSE	4.40
Hydro System - All	Pipeline	Private	AZ	41N	06W	27	NWSW	3.60
Hydro System - All	Pipeline	Private	AZ	41N	06W	27	SESW	0.60
Hydro System - All	Pipeline	Private	AZ	41N	06W	27	SWSW	4.80
Hydro System - All	Pipeline	Private	AZ	41N	06W	28	NENE	1.24
Hydro System - All	Pipeline	Private	AZ	41N	06W	28	NESE	1.82
Hydro System - All	Pipeline	Private	AZ	41N	06W	28	NWNE	4.14
Hydro System - All	Pipeline	Private	AZ	41N	06W	28	SENE	5.39
Hydro System - All	Pipeline	Private	AZ	41N	06W	34	NENW	5.40
Hydro System - All	Pipeline	Private	AZ	41N	06W	34	SENW	2.39

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	Private	AZ	41N	06W	34	SWNE	3.02
Hydro System - All	Pipeline	Private	AZ	41N	07W	01	NENE	3.66
Hydro System - All	Pipeline	Private	AZ	41N	07W	01	NENW	2.77
Hydro System - All	Pipeline	Private	AZ	41N	07W	01	NWNE	3.52
Hydro System - All	Pipeline	Private	AZ	41N	07W	01	NWNW	2.75
Hydro System - All	Pipeline	Private	AZ	42N	06W	31	SWSW	0.85
Hydro System - All	Pipeline	Private	AZ	42N	07W	33	SENE	1.99
Hydro System - All	Pipeline	Private	AZ	42N	07W	34	SENW	3.72
Hydro System - All	Pipeline	Private	AZ	42N	07W	34	SWNE	2.15
Hydro System - All	Pipeline	Private	AZ	42N	07W	34	SWNW	2.88
Hydro System - All	Pipeline	Private	AZ	42N	07W	35	NESE	4.52
Hydro System - All	Pipeline	Private	AZ	42N	07W	35	SENE	2.99
Hydro System - All	Pipeline	Private	AZ	42N	07W	35	SESE	4.56
Hydro System - All	Pipeline	Private	AZ	43S	11W	36	NESE	0.00
Hydro System - All	Pipeline	Private	UT	42S	13W	30	NWSW	0.06
Hydro System - All	Pipeline	Private	UT	42S	13W	30	SESW	1.94
Hydro System - All	Pipeline	Private	UT	42S	13W	30	SWSW	3.93
Hydro System - All	Pipeline	Private	UT	42S	13W	31	NENW	0.06
Hydro System - All	Pipeline	Private	UT	42S	13W	31	SESE	0.04
Hydro System - All	Pipeline	Private	UT	42S	13W	32	SESE	3.62
Hydro System - All	Pipeline	Private	UT	42S	13W	32	SESW	3.62
Hydro System - All	Pipeline	Private	UT	42S	13W	32	SWSE	3.62
Hydro System - All	Pipeline	Private	UT	42S	13W	32	SWSW	3.62
Hydro System - All	Pipeline	Private	UT	42S	13W	33	SESE	5.59
Hydro System - All	Pipeline	Private	UT	42S	13W	33	SESW	3.67
Hydro System - All	Pipeline	Private	UT	42S	13W	33	SWSE	4.06
Hydro System - All	Pipeline	Private	UT	42S	13W	33	SWSW	3.61
Hydro System - All	Pipeline	Private	UT	43S	10W	31	NESE	4.54
Hydro System - All	Pipeline	Private	UT	43S	10W	31	NESW	4.54
Hydro System - All	Pipeline	Private	UT	43S	10W	31	NWSE	4.54
Hydro System - All	Pipeline	Private	UT	43S	10W	31	NWSW	4.22
Hydro System - All	Pipeline	Private	UT	43S	10W	32	NESW	0.18
Hydro System - All	Pipeline	Private	UT	43S	10W	32	NWSW	2.45
Hydro System - All	Pipeline	Private	UT	43S	11W	28	SESW	1.88
Hydro System - All	Pipeline	Private	UT	43S	11W	28	SWSE	0.22

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	Private	UT	43S	11W	28	SWSW	1.97
Hydro System - All	Pipeline	Private	UT	43S	11W	29	SESE	1.94
Hydro System - All	Pipeline	Private	UT	43S	11W	29	SESW	0.00
Hydro System - All	Pipeline	Private	UT	43S	11W	29	SWSE	0.00
Hydro System - All	Pipeline	Private	UT	43S	11W	29	SWSW	0.04
Hydro System - All	Pipeline	Private	UT	43S	11W	30	SESE	0.07
Hydro System - All	Pipeline	Private	UT	43S	11W	30	SWSE	0.01
Hydro System - All	Pipeline	Private	UT	43S	11W	30	SWSW	0.96
Hydro System - All	Pipeline	Private	UT	43S	11W	31	NENE	2.65
Hydro System - All	Pipeline	Private	UT	43S	11W	31	NWNE	0.19
Hydro System - All	Pipeline	Private	UT	43S	11W	32	NENE	2.61
Hydro System - All	Pipeline	Private	UT	43S	11W	32	NENW	2.68
Hydro System - All	Pipeline	Private	UT	43S	11W	32	NWNE	1.30
Hydro System - All	Pipeline	Private	UT	43S	11W	32	NWNW	2.65
Hydro System - All	Pipeline	Private	UT	43S	11W	33	NENE	4.81
Hydro System - All	Pipeline	Private	UT	43S	11W	33	NENW	2.69
Hydro System - All	Pipeline	Private	UT	43S	11W	33	NWNE	4.46
Hydro System - All	Pipeline	Private	UT	43S	11W	33	NWNW	2.59
Hydro System - All	Pipeline	Private	UT	43S	11W	34	NENW	0.49
Hydro System - All	Pipeline	Private	UT	43S	11W	34	NESE	4.74
Hydro System - All	Pipeline	Private	UT	43S	11W	34	NWNW	4.85
Hydro System - All	Pipeline	Private	UT	43S	11W	34	NWSE	2.20
Hydro System - All	Pipeline	Private	UT	43S	11W	34	SENE	0.07
Hydro System - All	Pipeline	Private	UT	43S	11W	34	SENW	5.28
Hydro System - All	Pipeline	Private	UT	43S	11W	34	SWNE	2.78
Hydro System - All	Pipeline	Private	UT	43S	11W	34	SWNW	0.03
Hydro System - All	Pipeline	Private	UT	43S	11W	35	NESW	4.72
Hydro System - All	Pipeline	Private	UT	43S	11W	35	NWSW	4.65
Hydro System - All	Pipeline	Private	UT	43S	11W	36	NESE	1.20
Hydro System - All	Pipeline	Private	UT	43S	11W	36	NESW	3.18
Hydro System - All	Pipeline	Private	UT	43S	11W	36	NWSE	0.95
Hydro System - All	Pipeline	Private	UT	43S	11W	36	NWSW	3.08
Hydro System - All	Pipeline	Private	UT	43S	12W	25	SESE	1.50
Hydro System - All	Pipeline	Private	UT	43S	12W	25	SESW	0.00
Hydro System - All	Pipeline	Private	UT	43S	12W	25	SWSE	1.47
Hydro System - All	Pipeline	Private	UT	43S	12W	26	SESW	1.47

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	Private	UT	43S	12W	26	SWSW	0.03
Hydro System - All	Pipeline	Private	UT	43S	12W	27	SESE	1.58
Hydro System - All	Pipeline	Private	UT	43S	12W	27	SESW	0.02
Hydro System - All	Pipeline	Private	UT	43S	12W	27	SWSE	1.59
Hydro System - All	Pipeline	Private	UT	43S	12W	27	SWSW	0.02
Hydro System - All	Pipeline	Private	UT	43S	12W	28	SESE	1.59
Hydro System - All	Pipeline	Private	UT	43S	12W	28	SESW	1.51
Hydro System - All	Pipeline	Private	UT	43S	12W	28	SWSE	1.57
Hydro System - All	Pipeline	Private	UT	43S	12W	28	SWSW	1.42
Hydro System - All	Pipeline	Private	UT	43S	12W	29	SESE	1.09
Hydro System - All	Pipeline	Private	UT	43S	12W	29	SESW	0.05
Hydro System - All	Pipeline	Private	UT	43S	12W	29	SWSE	0.52
Hydro System - All	Pipeline	Private	UT	43S	12W	32	NENE	0.18
Hydro System - All	Pipeline	Private	UT	43S	12W	32	NENW	0.14
Hydro System - All	Pipeline	Private	UT	43S	12W	32	NWNE	0.22
Hydro System - All	Pipeline	Private	UT	43S	12W	33	NENE	2.96
Hydro System - All	Pipeline	Private	UT	43S	12W	33	NENW	0.05
Hydro System - All	Pipeline	Private	UT	43S	12W	33	NWNE	0.00
Hydro System - All	Pipeline	Private	UT	43S	12W	33	NWNW	0.13
Hydro System - All	Pipeline	Private	UT	43S	12W	34	NENE	2.96
Hydro System - All	Pipeline	Private	UT	43S	12W	34	NENW	2.95
Hydro System - All	Pipeline	Private	UT	43S	12W	34	NWNE	2.96
Hydro System - All	Pipeline	Private	UT	43S	12W	34	NWNW	2.95
Hydro System - All	Pipeline	Private	UT	43S	12W	35	NENW	3.07
Hydro System - All	Pipeline	Private	UT	43S	12W	35	NWNW	3.03
Hydro System - All	Pipeline	Private	UT	43S	13W	04	NENE	0.04
Hydro System - All	Pipeline	Private	UT	43S	13W	04	NENW	0.13
Hydro System - All	Pipeline	Private	UT	43S	13W	04	NWNW	0.17
Hydro System - All	Pipeline	Private	UT	43S	13W	05	NENE	0.17
Hydro System - All	Pipeline	Private	UT	43S	13W	05	NENW	0.17
Hydro System - All	Pipeline	Private	UT	43S	13W	05	NWNE	0.17
Hydro System - All	Pipeline	Private	UT	43S	13W	05	NWNW	0.17
Hydro System - All	Pipeline	Private	UT	43S	13W	25	NESE	4.45
Hydro System - All	Pipeline	Private	UT	43S	13W	25	NESW	4.63
Hydro System - All	Pipeline	Private	UT	43S	13W	25	NWSE	4.73

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - All	Pipeline	Private	UT	43S	13W	25	NWSW	0.01
Hydro System - All	Pipeline	Private	UT	43S	13W	25	SESE	0.30
Hydro System - All	Pipeline	State	AZ	41N	07W	02	NENE	0.27
Hydro System - All	Pipeline	State	AZ	42N	07W	36	SESE	0.89
Hydro System - All	Pipeline	State	AZ	42N	07W	36	SESW	1.78
Hydro System - All	Pipeline	State	AZ	42N	07W	36	SWSE	1.02
Hydro System - All	Pipeline	State	AZ	42N	07W	36	SWSW	1.80
Hydro System - All	Pipeline	State	UT	43S	12W	25	SESE	0.19
Hydro System - All	Pipeline	State	UT	43S	12W	25	SESW	0.15
Hydro System - All	Pipeline	State	UT	43S	12W	25	SWSE	0.17
Hydro System - All	Pipeline	State	UT	43S	12W	25	SWSW	0.12
Hydro System - All	Pipeline	State	UT	43S	12W	26	SESE	0.00
Hydro System - All	Pipeline	State	UT	43S	12W	31	NENE	0.01
Hydro System - All	Pipeline	State	UT	43S	12W	32	NENE	3.27
Hydro System - All	Pipeline	State	UT	43S	12W	32	NENW	4.41
Hydro System - All	Pipeline	State	UT	43S	12W	32	NWNE	3.81
Hydro System - All	Pipeline	State	UT	43S	12W	32	NWNW	4.61
Hydro System - All	Pipeline	State	UT	43S	12W	33	NWNW	0.00
Hydro System - All	Pipeline	State	UT	43S	12W	35	NENE	0.00
Hydro System - All	Pipeline	State	UT	43S	12W	36	NENE	2.86
Hydro System - All	Pipeline	State	UT	43S	12W	36	NENW	2.97
Hydro System - All	Pipeline	State	UT	43S	12W	36	NWNE	2.91
Hydro System - All	Pipeline	State	UT	43S	12W	36	NWNW	3.03
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	03	NWNW	0.47
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	04	NENE	5.10
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	04	NENW	4.67
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	04	NWNE	4.68
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	04	NWNW	1.11
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	04	SENW	0.00
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	04	SWNW	3.57
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	05	NWSW	4.42
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	05	SENE	4.67
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	05	SENW	4.68
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	05	SWNE	4.68
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	05	SWNW	2.39
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	06	NESE	5.12

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	06	NESW	4.67
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	06	NWSE	4.98
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	06	NWSW	2.37
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	03W	06	SWSW	1.95
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	01	SESE	4.68
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	01	SESW	4.61
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	01	SWSE	4.68
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	01	SWSW	4.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	03	SESE	4.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	03	SESW	4.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	03	SWSE	4.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	03	SWSW	4.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	04	SESE	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	04	SESW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	04	SWSE	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	39N	04W	04	SWSW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	01W	06	NENW	1.25
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	01W	06	NWNW	5.36
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	01W	06	SWNW	0.81
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	01	NESE	1.20
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	01	NWSE	5.03
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	01	SENE	5.42
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	01	SESW	4.69
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	01	SWSE	1.59
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	11	NESE	2.44
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	11	NWSE	3.81
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	11	SENE	4.15
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	11	SESW	3.40
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	11	SWSE	2.81
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	12	NENW	1.85
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	12	NWNW	4.46
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	12	SWNW	2.10
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	14	NENW	3.26
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	14	NWNW	2.98
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	14	SWNW	3.63

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	15	NESE	3.75
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	15	NWSE	3.35
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	15	SENE	2.59
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	15	SESW	5.06
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	15	SWSE	2.38
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	22	NENW	0.81
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	22	NWNW	5.92
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	22	NWSW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	22	SWNW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	22	SWSW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	27	NWNW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	27	NWSW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	27	SWNW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	27	SWSW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	31	NENE	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	31	NENW	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	31	NWNE	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	31	NWNW	3.99
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	32	NENE	4.56
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	32	NWNE	4.54
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	33	NENE	4.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	33	NENW	4.96
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	33	NWNE	5.48
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	33	NWNW	4.81
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	02W	34	NWNW	1.16
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	33	SESE	0.00
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	34	NESE	2.52
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	34	NESW	5.79
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	34	NWSW	1.67
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	34	SENE	4.68
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	34	SENW	1.61
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	34	SWNE	5.19
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	34	SWSW	6.74
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	35	NESW	2.05
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	35	NWSE	0.11
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	35	NWSW	4.27

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	35	SENE	5.10
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	35	SENW	2.51
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	35	SWNE	4.60
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	35	SWNW	0.29
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	36	NENE	4.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	36	NENW	6.76
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	36	NWNE	6.91
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	36	NWNW	2.50
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	03W	36	SWNW	2.60
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	06W	03	NESE	3.79
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	06W	03	SENE	1.30
Hydro System - Southern Alternative	Pipeline	BLM	AZ	40N	06W	03	SESE	3.77
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	03	NWNW	0.00
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	04	NENE	4.76
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	04	NWNE	4.05
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	04	NWSW	3.08
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	04	SENW	5.29
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	04	SWNE	1.25
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	04	SWNW	2.25
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	05	NESE	5.14
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	05	NWSE	0.03
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	05	SESE	0.32
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	05	SESW	3.20
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	05	SWSE	5.37
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	07	NENE	3.05
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	07	NESW	5.09
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	07	SENE	2.04
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	07	SENW	1.27
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	07	SESW	4.72
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	07	SWNE	5.36
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	08	NENW	1.89
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	08	NWNW	5.09
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	18	NENW	0.97
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01E	18	NWNW	5.48
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	13	NENE	1.01

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	13	NESW	5.26
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	13	NWSE	1.84
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	13	NWSW	1.82
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	13	SENE	4.48
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	13	SWNE	3.64
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	13	SWSW	3.38
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	14	SESE	5.20
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	14	SWSE	0.56
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	21	SESE	4.95
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	21	SESW	0.51
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	21	SWSE	5.74
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	22	NESE	4.69
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	22	NESW	0.56
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	22	NWSE	4.61
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	22	SESW	4.13
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	22	SWSE	0.08
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	22	SWSW	4.69
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	23	NESW	0.91
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	23	NWNE	5.48
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	23	NWSW	4.84
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	23	SENW	5.46
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	23	SWNE	1.65
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	28	NENW	4.48
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	28	NWNE	0.11
Hydro System - Southern Alternative	Pipeline	BLM	AZ	41N	01W	28	NWNW	4.25
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	33	SESE	0.55
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	34	NESE	1.25
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	34	NESW	2.34
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	34	NWSE	5.29
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	34	SENE	4.04
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	34	SESW	2.95
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	34	SWSW	5.30
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	35	SENW	0.00
Hydro System - Southern Alternative	Pipeline	BLM	AZ	42N	01E	35	SWNW	4.77
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	26	NWSW	1.68
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	26	SWNW	1.05

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	27	NESE	4.46
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	27	SESE	2.07
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	27	SWSE	4.28
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	33	NESE	3.95
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	33	SESE	2.50
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	33	SWSE	3.92
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	34	NENW	4.16
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	34	NWNE	2.21
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	34	NWSW	2.44
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	34	SENW	2.32
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	04W	34	SWNW	4.03
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	03	NWSW	0.41
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	03	SWSW	0.77
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	04	NENE	0.78
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	04	NESE	0.35
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	04	SENE	0.77
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	05	NENE	0.35
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	05	NENW	0.22
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	05	NWNE	0.29
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	05	NWNW	0.06
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	10	NWNW	0.78
Hydro System - Southern Alternative	Pipeline	BLM	UT	43S	13W	10	SWNW	0.41
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	04	NENW	3.97
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	04	NWNE	2.51
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	04	NWSW	2.59
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	04	SENW	2.45
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	04	SWNW	3.95
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	05	NESE	3.77
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	05	SESE	2.35
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	05	SWSE	4.75
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	08	NENW	3.71
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	08	NWNE	2.28
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	08	SENW	2.72
Hydro System - Southern Alternative	Pipeline	BLM	UT	44S	04W	08	SWNW	2.35
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	04W	06	SESE	4.64

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	04W	06	SESW	4.54
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	04W	06	SWSE	4.54
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	04W	06	SWSW	4.19
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	04	NESE	6.50
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	04	NWSE	3.16
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	04	SENW	7.71
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	04	SESE	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	04	SWNE	2.70
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	04	SWNW	4.91
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	09	NENE	2.26
Hydro System - Southern Alternative	Pipeline	Private	AZ	39N	05W	11	NWNW	2.95
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	05W	31	SESE	0.08
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	05W	31	SESW	4.71
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	05W	31	SWSE	4.16
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	05W	31	SWSW	4.42
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	11	NWNW	2.81
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	11	NWSW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	11	SWNW	3.05
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	11	SWSW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	14	NWNW	4.53
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	14	NWSW	4.51
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	14	SWNW	4.41
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	14	SWSW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	23	NWNW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	23	NWSW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	23	SWNW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	23	SWSW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	26	NWNW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	26	NWSW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	26	SWNW	4.55
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	26	SWSW	4.54
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	35	NESE	2.83
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	35	NWNW	4.54
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	35	SENE	1.89
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	35	SENW	4.71
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	35	SWNE	4.71

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	Private	AZ	40N	06W	35	SWNW	4.83
Hydro System - Southern Alternative	Pipeline	Private	UT	42S	13W	33	SESE	1.04
Hydro System - Southern Alternative	Pipeline	Private	UT	42S	13W	33	SESW	0.15
Hydro System - Southern Alternative	Pipeline	Private	UT	42S	13W	33	SWSE	0.81
Hydro System - Southern Alternative	Pipeline	Private	UT	43S	13W	04	NENE	0.01
Hydro System - Southern Alternative	Pipeline	Private	UT	43S	13W	04	NENW	0.61
Hydro System - Southern Alternative	Pipeline	Private	UT	43S	13W	04	NWNW	0.76
Hydro System - Southern Alternative	Pipeline	Private	UT	43S	13W	05	NENE	0.41
Hydro System - Southern Alternative	Pipeline	Private	UT	43S	13W	05	NENW	0.54
Hydro System - Southern Alternative	Pipeline	Private	UT	43S	13W	05	NWNE	0.47
Hydro System - Southern Alternative	Pipeline	Private	UT	43S	13W	05	NWNW	0.22
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	02	SESE	4.54
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	02	SESW	4.54
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	02	SWSE	4.54
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	02	SWSW	4.54
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	05	SESE	4.54
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	05	SESW	4.74
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	05	SWSE	4.63
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	04W	05	SWSW	4.65
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	01	SESE	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	01	SESW	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	01	SWSE	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	01	SWSW	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	02	SESE	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	02	SESW	4.67
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	02	SWSE	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	02	SWSW	1.97
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	05	NENW	4.70
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	05	NWNE	2.97
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	05	NWNW	4.70
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	05	SENE	4.71
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	05	SWNE	1.74
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	06	NENE	4.63
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	06	NWNE	0.54
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	10	NENE	4.56

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	10	NENW	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	10	NWNE	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	39N	05W	10	NWNW	4.55
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	02W	32	NENW	4.54
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	02W	32	NWNW	4.54
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	02	SWSW	0.07
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	10	NENE	0.29
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	15	NENE	0.02
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	15	NESE	0.04
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	15	SENE	0.14
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	36	NESE	0.64
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	36	NESW	4.70
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	36	NWSE	4.65
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	36	NWSW	4.70
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	36	SESE	4.06
Hydro System - Southern Alternative	Pipeline	State	AZ	40N	06W	36	SWSE	0.05
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	28	SWNW	1.85
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	29	NESE	1.48
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	29	NESW	0.00
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	29	NWSE	5.87
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	29	SENE	4.94
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	29	SESW	6.06
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	29	SWSE	0.50
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	29	SWSW	0.10
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	31	NENE	0.03
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	31	NESE	0.63
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	31	NWSE	5.66
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	31	SENE	5.95
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	31	SESW	5.31
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	31	SWSE	0.93
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	32	NENW	0.16
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	32	NWNW	6.13
Hydro System - Southern Alternative	Pipeline	State	AZ	41N	01W	32	SWNW	0.31
Water Conveyance System	Pipeline	BLM	UT	42S	01W	30	NESW	4.87
Water Conveyance System	Pipeline	BLM	UT	42S	01W	30	NWSE	1.40
Water Conveyance System	Pipeline	BLM	UT	42S	01W	30	NWSW	5.19

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	BLM	UT	42S	01W	30	SESE	2.25
Water Conveyance System	Pipeline	BLM	UT	42S	01W	30	SWSE	4.53
Water Conveyance System	Pipeline	BLM	UT	42S	01W	31	NENE	3.83
Water Conveyance System	Pipeline	BLM	UT	42S	01W	32	NESE	1.26
Water Conveyance System	Pipeline	BLM	UT	42S	01W	32	NESW	2.30
Water Conveyance System	Pipeline	BLM	UT	42S	01W	32	NWNW	3.00
Water Conveyance System	Pipeline	BLM	UT	42S	01W	32	NWSE	5.28
Water Conveyance System	Pipeline	BLM	UT	42S	01W	32	SENW	3.67
Water Conveyance System	Pipeline	BLM	UT	42S	01W	32	SESE	3.50
Water Conveyance System	Pipeline	BLM	UT	42S	01W	32	SWNW	3.13
Water Conveyance System	Pipeline	BLM	UT	42S	01W	33	SWSW	0.00
Water Conveyance System	Pipeline	BLM	UT	42S	01W	34	SWSW	1.56
Water Conveyance System	Pipeline	BLM	UT	42S	02W	01	SWSW	0.93
Water Conveyance System	Pipeline	BLM	UT	42S	02W	02	NESE	0.81
Water Conveyance System	Pipeline	BLM	UT	42S	02W	02	NESW	4.57
Water Conveyance System	Pipeline	BLM	UT	42S	02W	02	NWSE	4.89
Water Conveyance System	Pipeline	BLM	UT	42S	02W	02	NWSW	5.61
Water Conveyance System	Pipeline	BLM	UT	42S	02W	02	SESE	5.40
Water Conveyance System	Pipeline	BLM	UT	42S	02W	02	SWSW	0.08
Water Conveyance System	Pipeline	BLM	UT	42S	02W	03	NESE	0.46
Water Conveyance System	Pipeline	BLM	UT	42S	02W	03	SESE	5.05
Water Conveyance System	Pipeline	BLM	UT	42S	02W	03	SWSE	3.52
Water Conveyance System	Pipeline	BLM	UT	42S	02W	08	SESE	0.09
Water Conveyance System	Pipeline	BLM	UT	42S	02W	09	NESE	0.94
Water Conveyance System	Pipeline	BLM	UT	42S	02W	09	NESW	2.15
Water Conveyance System	Pipeline	BLM	UT	42S	02W	09	NWSE	5.37
Water Conveyance System	Pipeline	BLM	UT	42S	02W	09	SENE	4.43
Water Conveyance System	Pipeline	BLM	UT	42S	02W	09	SESW	3.23
Water Conveyance System	Pipeline	BLM	UT	42S	02W	09	SWSW	5.16
Water Conveyance System	Pipeline	BLM	UT	42S	02W	10	NENW	5.36
Water Conveyance System	Pipeline	BLM	UT	42S	02W	10	NWNE	1.85
Water Conveyance System	Pipeline	BLM	UT	42S	02W	10	NWNW	1.30
Water Conveyance System	Pipeline	BLM	UT	42S	02W	10	SWNW	4.06
Water Conveyance System	Pipeline	BLM	UT	42S	02W	12	NWNW	4.92
Water Conveyance System	Pipeline	BLM	UT	42S	02W	12	NWSW	2.46

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	BLM	UT	42S	02W	12	SWNW	4.74
Water Conveyance System	Pipeline	BLM	UT	42S	02W	16	NWNW	0.21
Water Conveyance System	Pipeline	BLM	UT	42S	02W	17	NENE	5.28
Water Conveyance System	Pipeline	BLM	UT	42S	02W	17	NESW	0.00
Water Conveyance System	Pipeline	BLM	UT	42S	02W	17	NWNE	2.93
Water Conveyance System	Pipeline	BLM	UT	42S	02W	17	NWSW	5.03
Water Conveyance System	Pipeline	BLM	UT	42S	02W	17	SENW	5.38
Water Conveyance System	Pipeline	BLM	UT	42S	02W	17	SWNE	2.44
Water Conveyance System	Pipeline	BLM	UT	42S	02W	17	SWNW	0.53
Water Conveyance System	Pipeline	BLM	UT	42S	02W	18	NESE	2.55
Water Conveyance System	Pipeline	BLM	UT	42S	02W	18	SESE	3.27
Water Conveyance System	Pipeline	BLM	UT	42S	02W	18	SWSE	3.88
Water Conveyance System	Pipeline	BLM	UT	42S	02W	19	NENW	5.20
Water Conveyance System	Pipeline	BLM	UT	42S	02W	19	NWNE	1.97
Water Conveyance System	Pipeline	BLM	UT	42S	02W	19	SENW	0.66
Water Conveyance System	Pipeline	BLM	UT	42S	02W	19	SWNW	5.65
Water Conveyance System	Pipeline	BLM	UT	42S	02W	24	NESW	0.11
Water Conveyance System	Pipeline	BLM	UT	42S	02W	24	NWSW	4.55
Water Conveyance System	Pipeline	BLM	UT	42S	02W	24	SENW	0.61
Water Conveyance System	Pipeline	BLM	UT	42S	02W	24	SWNW	0.55
Water Conveyance System	Pipeline	BLM	UT	42S	02W	24	SWSW	4.65
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	NESE	4.53
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	NESW	0.02
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	NWNW	4.65
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	NWSE	4.84
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	NWSW	4.54
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	SESW	13.78
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	SWNW	4.57
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	SWSE	0.35
Water Conveyance System	Pipeline	BLM	UT	42S	02W	25	SWSW	13.52
Water Conveyance System	Pipeline	BLM	UT	42S	02W	36	NENW	0.71
Water Conveyance System	Pipeline	BLM	UT	42S	02W	36	NWNW	0.39
Water Conveyance System	Pipeline	BLM	UT	42S	03W	24	NESE	5.06
Water Conveyance System	Pipeline	BLM	UT	42S	03W	24	NWSE	2.11
Water Conveyance System	Pipeline	BLM	UT	42S	03W	24	SENE	0.84
Water Conveyance System	Pipeline	BLM	UT	42S	03W	24	SESW	3.34

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	BLM	UT	42S	03W	24	SWSE	3.79
Water Conveyance System	Pipeline	BLM	UT	42S	03W	25	NENW	2.55
Water Conveyance System	Pipeline	BLM	UT	42S	03W	25	NWNW	4.45
Water Conveyance System	Pipeline	BLM	UT	42S	03W	25	SWNW	1.63
Water Conveyance System	Pipeline	BLM	UT	42S	03W	26	NESE	1.62
Water Conveyance System	Pipeline	BLM	UT	42S	03W	26	NWSE	4.75
Water Conveyance System	Pipeline	BLM	UT	42S	03W	26	SENE	6.86
Water Conveyance System	Pipeline	BLM	UT	42S	03W	26	SESW	4.77
Water Conveyance System	Pipeline	BLM	UT	42S	03W	26	SWSE	1.70
Water Conveyance System	Pipeline	BLM	UT	42S	03W	34	NESE	0.04
Water Conveyance System	Pipeline	BLM	UT	42S	03W	34	NESW	1.03
Water Conveyance System	Pipeline	BLM	UT	42S	03W	34	NWSE	5.76
Water Conveyance System	Pipeline	BLM	UT	42S	03W	34	SENE	5.99
Water Conveyance System	Pipeline	BLM	UT	42S	03W	34	SESW	5.00
Water Conveyance System	Pipeline	BLM	UT	42S	03W	34	SWNE	0.27
Water Conveyance System	Pipeline	BLM	UT	42S	03W	34	SWSW	1.87
Water Conveyance System	Pipeline	BLM	UT	42S	03W	35	NENW	1.46
Water Conveyance System	Pipeline	BLM	UT	42S	03W	35	NWNW	5.38
Water Conveyance System	Pipeline	BLM	UT	42S	03W	35	SWNW	0.61
Water Conveyance System	Pipeline	BLM	UT	43S	01E	06	NENW	2.14
Water Conveyance System	Pipeline	BLM	UT	43S	01E	06	NWNE	0.00
Water Conveyance System	Pipeline	BLM	UT	43S	01E	06	NWNW	4.61
Water Conveyance System	Pipeline	BLM	UT	43S	01W	01	NENE	4.78
Water Conveyance System	Pipeline	BLM	UT	43S	01W	01	NENW	0.82
Water Conveyance System	Pipeline	BLM	UT	43S	01W	01	NWNE	7.60
Water Conveyance System	Pipeline	BLM	UT	43S	01W	01	NWSW	5.50
Water Conveyance System	Pipeline	BLM	UT	43S	01W	01	SENW	8.74
Water Conveyance System	Pipeline	BLM	UT	43S	01W	01	SWNE	0.20
Water Conveyance System	Pipeline	BLM	UT	43S	01W	01	SWNW	2.93
Water Conveyance System	Pipeline	BLM	UT	43S	01W	02	NESE	2.50
Water Conveyance System	Pipeline	BLM	UT	43S	01W	02	NWNW	4.22
Water Conveyance System	Pipeline	BLM	UT	43S	01W	02	SENE	5.19
Water Conveyance System	Pipeline	BLM	UT	43S	01W	02	SENW	8.01
Water Conveyance System	Pipeline	BLM	UT	43S	01W	02	SWNE	7.81
Water Conveyance System	Pipeline	BLM	UT	43S	01W	02	SWNW	3.45

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	BLM	UT	43S	01W	03	NENE	4.70
Water Conveyance System	Pipeline	BLM	UT	43S	01W	03	NENW	4.68
Water Conveyance System	Pipeline	BLM	UT	43S	01W	03	NWNE	4.62
Water Conveyance System	Pipeline	BLM	UT	43S	01W	03	NWNW	2.98
Water Conveyance System	Pipeline	BLM	UT	43S	03W	03	NWNW	4.16
Water Conveyance System	Pipeline	BLM	UT	43S	03W	04	NENE	2.83
Water Conveyance System	Pipeline	BLM	UT	43S	03W	04	NESW	4.54
Water Conveyance System	Pipeline	BLM	UT	43S	03W	04	NWSE	2.38
Water Conveyance System	Pipeline	BLM	UT	43S	03W	04	SENE	3.21
Water Conveyance System	Pipeline	BLM	UT	43S	03W	04	SESW	1.53
Water Conveyance System	Pipeline	BLM	UT	43S	03W	04	SWNE	3.68
Water Conveyance System	Pipeline	BLM	UT	43S	03W	04	SWSW	5.35
Water Conveyance System	Pipeline	BLM	UT	43S	03W	07	SESE	1.99
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	NENE	5.96
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	NESW	5.53
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	NWNE	0.12
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	NWSW	1.33
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	SENE	0.15
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	SENW	0.66
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	SWNE	6.05
Water Conveyance System	Pipeline	BLM	UT	43S	03W	08	SWSW	4.87
Water Conveyance System	Pipeline	BLM	UT	43S	03W	09	NWNW	0.71
Water Conveyance System	Pipeline	BLM	UT	43S	03W	18	NENE	4.13
Water Conveyance System	Pipeline	BLM	UT	43S	03W	18	NESW	0.98
Water Conveyance System	Pipeline	BLM	UT	43S	03W	18	NWNE	2.73
Water Conveyance System	Pipeline	BLM	UT	43S	03W	18	SENW	3.48
Water Conveyance System	Pipeline	BLM	UT	43S	03W	18	SWNE	3.35
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	03	NESW	0.01
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	03	NWSW	4.06
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	03	SESW	5.52
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	03	SWSE	1.68
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	03	SWSW	0.62
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	04	NESE	4.60
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	04	NESW	4.60
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	04	NWSE	4.60
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	04	NWSW	4.61

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	05	NENW	5.96
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	05	NESE	3.20
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	05	NWNW	0.15
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	05	SENE	1.69
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	05	SENW	0.72
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	05	SWNE	5.65
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	10	NESE	4.84
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	10	NWNE	5.19
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	10	NWSE	0.04
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	10	SENE	0.45
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	10	SESE	4.86
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	10	SWNE	4.42
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	14	NESW	0.21
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	14	NWNW	2.68
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	14	NWSW	4.68
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	14	SESW	3.10
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	14	SWNW	4.90
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	14	SWSW	0.16
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	15	NENE	2.21
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	23	NENW	1.81
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	23	NESE	3.99
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	23	NWNE	1.77
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	23	NWSE	2.38
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	23	SWNE	4.03
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	24	NWSW	2.25
Water Conveyance System	Pipeline	NPS	AZ	41N	08E	24	SWNW	0.84
Water Conveyance System	Pipeline	NPS	AZ	42N	08E	31	NESE	5.25
Water Conveyance System	Pipeline	NPS	AZ	42N	08E	31	NWNE	4.80
Water Conveyance System	Pipeline	NPS	AZ	42N	08E	31	SENE	1.62
Water Conveyance System	Pipeline	NPS	AZ	42N	08E	32	NWSW	0.00
Water Conveyance System	Pipeline	NPS	UT	43S	03E	19	NWSW	2.39
Water Conveyance System	Pipeline	NPS	UT	43S	03E	19	SESW	4.43
Water Conveyance System	Pipeline	NPS	UT	43S	03E	19	SWSW	2.98
Water Conveyance System	Pipeline	NPS	UT	43S	03E	29	SWSW	3.84
Water Conveyance System	Pipeline	NPS	UT	43S	03E	30	NENW	1.94

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	NPS	UT	43S	03E	30	NESE	8.39
Water Conveyance System	Pipeline	NPS	UT	43S	03E	30	NWNE	3.56
Water Conveyance System	Pipeline	NPS	UT	43S	03E	30	NWSE	0.15
Water Conveyance System	Pipeline	NPS	UT	43S	03E	30	SENE	0.12
Water Conveyance System	Pipeline	NPS	UT	43S	03E	30	SESE	3.15
Water Conveyance System	Pipeline	NPS	UT	43S	03E	30	SWNE	5.16
Water Conveyance System	Pipeline	NPS	UT	43S	03E	32	NWNW	0.01
Water Conveyance System	Pipeline	NPS	UT	43S	03E	33	NWSW	0.39
Water Conveyance System	Pipeline	NPS	UT	43S	03E	33	SESW	0.01
Water Conveyance System	Pipeline	NPS	UT	43S	03E	33	SWSW	6.04
Water Conveyance System	Pipeline	NPS	UT	44S	03E	03	SWSW	3.26
Water Conveyance System	Pipeline	NPS	UT	44S	03E	04	NENW	5.69
Water Conveyance System	Pipeline	NPS	UT	44S	03E	04	NESE	4.07
Water Conveyance System	Pipeline	NPS	UT	44S	03E	04	NWNW	0.38
Water Conveyance System	Pipeline	NPS	UT	44S	03E	04	NWSE	1.99
Water Conveyance System	Pipeline	NPS	UT	44S	03E	04	SENW	1.17
Water Conveyance System	Pipeline	NPS	UT	44S	03E	04	SESE	2.80
Water Conveyance System	Pipeline	NPS	UT	44S	03E	04	SWNE	4.88
Water Conveyance System	Pipeline	NPS	UT	44S	03E	10	NENW	2.53
Water Conveyance System	Pipeline	NPS	UT	44S	03E	10	SWNW	3.62
Water Conveyance System	Pipeline	Private	UT	42S	01W	32	SESE	0.03
Water Conveyance System	Pipeline	Private	UT	42S	01W	33	SESE	3.77
Water Conveyance System	Pipeline	Private	UT	42S	01W	33	SESW	4.63
Water Conveyance System	Pipeline	Private	UT	42S	01W	33	SWSE	4.21
Water Conveyance System	Pipeline	Private	UT	42S	01W	33	SWSW	4.62
Water Conveyance System	Pipeline	Private	UT	42S	01W	34	SWSW	0.01
Water Conveyance System	Pipeline	Private	UT	42S	02W	12	NESW	3.64
Water Conveyance System	Pipeline	Private	UT	42S	02W	12	NWSW	0.29
Water Conveyance System	Pipeline	Private	UT	42S	02W	12	SESW	4.73
Water Conveyance System	Pipeline	Private	UT	42S	02W	13	NENW	4.67
Water Conveyance System	Pipeline	Private	UT	42S	02W	13	NESW	4.54
Water Conveyance System	Pipeline	Private	UT	42S	02W	13	SENW	4.53
Water Conveyance System	Pipeline	Private	UT	42S	02W	13	SESW	4.64
Water Conveyance System	Pipeline	Private	UT	42S	02W	24	NENW	4.65
Water Conveyance System	Pipeline	Private	UT	42S	02W	24	SENW	3.49
Water Conveyance System	Pipeline	Private	UT	43S	02E	10	SESE	0.34

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	Private	UT	43S	02E	11	SESW	1.01
Water Conveyance System	Pipeline	Private	UT	43S	02E	13	NWSW	0.01
Water Conveyance System	Pipeline	Private	UT	43S	02E	13	SESW	0.00
Water Conveyance System	Pipeline	Private	UT	43S	02E	13	SWSW	0.73
Water Conveyance System	Pipeline	Private	UT	43S	02E	14	NENW	0.55
Water Conveyance System	Pipeline	Private	UT	43S	02E	14	NWNW	0.08
Water Conveyance System	Pipeline	Private	UT	43S	02E	14	SENE	0.07
Water Conveyance System	Pipeline	Private	UT	43S	02E	24	NENW	0.46
Water Conveyance System	Pipeline	Private	UT	43S	02E	24	NESE	0.28
Water Conveyance System	Pipeline	Private	UT	43S	02E	24	NWSE	0.03
Water Conveyance System	Pipeline	Private	UT	43S	02E	24	SENW	0.01
Water Conveyance System	Pipeline	Private	UT	43S	02E	24	SWNE	0.32
Water Conveyance System	Pipeline	Private	UT	43S	03E	32	NENW	5.50
Water Conveyance System	Pipeline	Private	UT	43S	03E	32	NESE	5.62
Water Conveyance System	Pipeline	Private	UT	43S	03E	32	NWNE	0.91
Water Conveyance System	Pipeline	Private	UT	43S	03E	32	NWNW	1.72
Water Conveyance System	Pipeline	Private	UT	43S	03E	32	SENE	1.22
Water Conveyance System	Pipeline	Private	UT	43S	03E	32	SESE	0.00
Water Conveyance System	Pipeline	Private	UT	43S	03E	32	SWNE	5.30
Water Conveyance System	Pipeline	Private	UT	43S	03E	33	NWSW	0.05
Water Conveyance System	Pipeline	Private	UT	43S	03E	33	SWSW	0.01
Water Conveyance System	Pipeline	Reclamation	AZ	41N	08E	23	NESE	1.00
Water Conveyance System	Pipeline	State	AZ	42N	08E	32	NWSW	0.80
Water Conveyance System	Pipeline	State	AZ	42N	08E	32	SESW	0.12
Water Conveyance System	Pipeline	State	AZ	42N	08E	32	SWSW	5.93
Water Conveyance System	Pipeline	State	UT	43S	01E	01	SESE	4.62
Water Conveyance System	Pipeline	State	UT	43S	01E	01	SESW	4.61
Water Conveyance System	Pipeline	State	UT	43S	01E	01	SWSE	4.62
Water Conveyance System	Pipeline	State	UT	43S	01E	01	SWSW	4.62
Water Conveyance System	Pipeline	State	UT	43S	01E	02	NESW	4.15
Water Conveyance System	Pipeline	State	UT	43S	01E	02	NWSE	0.40
Water Conveyance System	Pipeline	State	UT	43S	01E	02	NWSW	4.61
Water Conveyance System	Pipeline	State	UT	43S	01E	02	SESE	4.62
Water Conveyance System	Pipeline	State	UT	43S	01E	02	SESW	0.46
Water Conveyance System	Pipeline	State	UT	43S	01E	02	SWSE	4.21

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	State	UT	43S	01E	03	NESE	4.60
Water Conveyance System	Pipeline	State	UT	43S	01E	03	NESW	4.62
Water Conveyance System	Pipeline	State	UT	43S	01E	03	NWSE	4.61
Water Conveyance System	Pipeline	State	UT	43S	01E	03	NWSW	4.61
Water Conveyance System	Pipeline	State	UT	43S	01E	04	NESE	2.26
Water Conveyance System	Pipeline	State	UT	43S	01E	04	SENE	2.35
Water Conveyance System	Pipeline	State	UT	43S	01E	04	SENW	4.62
Water Conveyance System	Pipeline	State	UT	43S	01E	04	SWNE	4.61
Water Conveyance System	Pipeline	State	UT	43S	01E	04	SWNW	4.62
Water Conveyance System	Pipeline	State	UT	43S	01E	05	NENW	0.23
Water Conveyance System	Pipeline	State	UT	43S	01E	05	NWNW	3.89
Water Conveyance System	Pipeline	State	UT	43S	01E	05	SENE	4.59
Water Conveyance System	Pipeline	State	UT	43S	01E	05	SENW	4.44
Water Conveyance System	Pipeline	State	UT	43S	01E	05	SWNE	4.60
Water Conveyance System	Pipeline	State	UT	43S	01E	05	SWNW	0.79
Water Conveyance System	Pipeline	State	UT	43S	01E	06	NENE	4.58
Water Conveyance System	Pipeline	State	UT	43S	01E	06	NWNE	4.55
Water Conveyance System	Pipeline	State	UT	43S	02E	06	SWSW	3.30
Water Conveyance System	Pipeline	State	UT	43S	02E	07	NENE	4.56
Water Conveyance System	Pipeline	State	UT	43S	02E	07	NENW	4.60
Water Conveyance System	Pipeline	State	UT	43S	02E	07	NWNE	4.60
Water Conveyance System	Pipeline	State	UT	43S	02E	07	NWNW	1.68
Water Conveyance System	Pipeline	State	UT	43S	02E	08	NENE	0.26
Water Conveyance System	Pipeline	State	UT	43S	02E	08	NENW	4.60
Water Conveyance System	Pipeline	State	UT	43S	02E	08	NWNE	3.99
Water Conveyance System	Pipeline	State	UT	43S	02E	08	NWNW	4.58
Water Conveyance System	Pipeline	State	UT	43S	02E	08	SENE	4.34
Water Conveyance System	Pipeline	State	UT	43S	02E	08	SWNE	0.61
Water Conveyance System	Pipeline	State	UT	43S	02E	09	SENE	4.61
Water Conveyance System	Pipeline	State	UT	43S	02E	09	SENW	4.75
Water Conveyance System	Pipeline	State	UT	43S	02E	09	SWNE	4.68
Water Conveyance System	Pipeline	State	UT	43S	02E	09	SWNW	4.60
Water Conveyance System	Pipeline	State	UT	43S	02E	10	NESW	3.81
Water Conveyance System	Pipeline	State	UT	43S	02E	10	NWSE	0.01
Water Conveyance System	Pipeline	State	UT	43S	02E	10	NWSW	0.08
Water Conveyance System	Pipeline	State	UT	43S	02E	10	SENW	0.30

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Water Conveyance System	Pipeline	State	UT	43S	02E	10	SESE	9.77
Water Conveyance System	Pipeline	State	UT	43S	02E	10	SWNW	2.29637
Water Conveyance System	Pipeline	State	UT	43S	02E	11	SESW	0.12113
Water Conveyance System	Pipeline	State	UT	43S	02E	11	SWSW	5.06191
Water Conveyance System	Pipeline	State	UT	43S	02E	13	NWSW	0.01052
Water Conveyance System	Pipeline	State	UT	43S	02E	13	SWNW	1.22551
Water Conveyance System	Pipeline	State	UT	43S	02E	13	SWSW	10.1087
Water Conveyance System	Pipeline	State	UT	43S	02E	14	NENE	5.98206
Water Conveyance System	Pipeline	State	UT	43S	02E	14	NENW	3.3159
Water Conveyance System	Pipeline	State	UT	43S	02E	14	NWNE	5.13499
Water Conveyance System	Pipeline	State	UT	43S	02E	14	SENE	0.03937
Water Conveyance System	Pipeline	State	UT	43S	02E	14	SWNE	0.02311
Water Conveyance System	Pipeline	State	UT	43S	02E	24	NENW	3.92308
Water Conveyance System	Pipeline	State	UT	43S	02E	24	NESE	5.28552
Water Conveyance System	Pipeline	State	UT	43S	02E	24	NWSE	0.00232
Water Conveyance System	Pipeline	State	UT	43S	02E	24	SWNE	6.73906
Water Conveyance System	Pipeline	State	UT	43S	03E	19	NWSW	0.0703
Waterway - Hurricane Cliffs Forebay/Afterbay Waterway	Pipeline	BLM	UT	43S	13W	10	NESE	9.2072
Waterway - Hurricane Cliffs Forebay/Afterbay Waterway	Pipeline	BLM	UT	43S	13W	10	NWSE	4.97236
Waterway - Hurricane Cliffs Forebay/Afterbay Waterway	Pipeline	BLM	UT	43S	13W	11	NWSW	4.04026
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	10	NESW	2.42
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	10	NWSE	1.31
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	10	NWSW	0.33
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	10	SESE	0.05
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	10	SESW	0.34
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	10	SWSE	2.69
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	15	NENW	3.56
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	15	NWNE	0.80
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	15	NWNW	1.16
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	15	SWNW	2.45
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	16	NESE	0.94
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	16	NESW	2.05

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	16	NWSE	3.42
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	16	SENE	2.75
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	16	SESW	1.37
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	16	SWSW	3.42
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	17	SESE	1.15
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	20	NENE	3.03
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	20	NESE	3.03
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	20	SENE	3.03
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	20	SESE	3.03
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	28	SWSW	0.00
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	29	NENE	3.03
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	29	NESE	3.03
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	29	SENE	3.03
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	29	SESE	3.13
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	32	NENE	0.23
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	33	NESW	2.19
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	33	NWNW	3.65
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	33	NWSE	1.69
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	33	SENW	2.67
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	33	SESE	0.71
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	33	SWNW	1.21
Transmission Line - BPS-2	Transmission Line	State	UT	43S	02E	33	SWSE	3.17
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	03	NESW	2.09
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	03	NWSW	1.42
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	03	SESW	2.15
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	03	SWNW	3.60
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	03	SWSW	0.99
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	04	NENE	3.88
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	04	SENE	0.28
Transmission Line - BPS-2	Transmission Line	State	UT	44S	02E	10	NWNW	0.97
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	06	NESW	0.07
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	06	NWSE	3.29
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	06	SENW	3.15
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	06	SWNE	0.01
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	06	SWSE	2.91
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	07	NENE	2.95

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	07	NESE	0.66
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	07	NWNE	0.42
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	07	SENE	3.37
Transmission Line - BPS-3	Transmission Line	BLM	UT	43S	01E	08	NWSW	0.00
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	06	SWNE	0.07
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	06	SWSE	0.45
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	08	NWSW	2.71
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	08	SWSW	3.36
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	17	NENW	1.96
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	17	NESW	1.86
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	17	NWNW	1.96
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	17	NWSE	1.43
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	17	SENW	3.35
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	17	SWSE	3.20
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	20	NESE	3.20
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	20	NWNE	3.20
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	20	SENE	1.63
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	20	SESE	2.26
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	20	SWNE	1.57
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	21	SWSW	2.20
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	28	NENW	3.56
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	28	NESE	3.05
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	28	NWNE	1.05
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	28	NWNW	1.36
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	28	SENE	2.89
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	28	SESE	1.31
Transmission Line - BPS-3	Transmission Line	State	UT	43S	01E	28	SWNE	2.51
Transmission Line - BPS-4 69 kV Line	Transmission Line	Private	UT	42S	02W	12	NESW	2.05
Transmission Line - BPS-4 69 kV Line	Transmission Line	Private	UT	42S	02W	12	SESW	3.87
Transmission Line - BPS-4 69 kV Line	Transmission Line	Private	UT	42S	02W	12	SWSE	0.92
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	01	SWSW	0.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	02	NESW	5.33

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	02	NWSE	1.57
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	02	NWSW	1.76
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	02	SESE	4.90
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	02	SWNW	3.57
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	02	SWSE	3.76
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	03	NENE	0.29
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	03	NENW	3.38
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	03	NWNE	5.24
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	03	NWNW	2.38
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	03	SENE	5.04
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	03	SWNE	0.05
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	11	NENE	0.43
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	12	NENW	2.91
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	12	NESE	4.44
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	12	NWNW	5.33
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	12	SENE	0.90
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	12	SENW	2.43
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	07E	12	SWNE	5.34

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	07	NWSW	4.23
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	07	SESW	5.34
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	07	SWSE	2.33
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	07	SWSW	0.99
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	17	NESE	1.76
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	17	NESW	1.66
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	17	NWNW	0.35
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	17	NWSE	5.32
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	17	SENW	3.67
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	17	SESE	3.56
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	17	SWNW	4.99
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	18	NENE	5.31
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	18	NWNE	3.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	18	SENE	0.03
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	21	NENW	5.25
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	21	NWNE	3.27
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	21	NWNW	0.23
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	21	SENE	5.33

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	41N	08E	21	SWNE	2.06
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	31	NENE	0.68
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	32	NESE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	32	NWSE	1.24
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	32	SENW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	32	SWNE	3.58
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	32	SWNW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	33	NESW	2.74
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	33	NWSW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	33	SESE	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	33	SESW	2.08
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	33	SWSE	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	34	SESW	1.92
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	AZ	42N	07E	34	SWSW	2.95
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	19	NESW	2.40
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	19	NWSW	0.89
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	19	SESW	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	19	SWSE	1.01

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	29	NWSW	4.86
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	29	SESW	5.05
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	29	SWSE	3.97
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	29	SWSW	1.10
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	30	NENE	0.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	30	NESE	1.72
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	30	NWNE	5.81
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	30	SENE	5.45
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	30	SWNE	0.37
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	32	NENE	5.04
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	32	NWNE	1.07
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	33	NESE	5.04
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	33	NWNW	4.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	33	NWSE	1.03
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	33	SENW	5.05
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	33	SWNE	4.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	33	SWNW	1.04
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	34	NWSW	4.02

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	34	SESW	5.03
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	34	SWSE	2.59
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	42S	02W	34	SWSW	1.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	07	SESW	4.27
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	07	SWSE	0.04
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	07	SWSW	4.61
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	15	SESW	2.00
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	15	SWSW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	16	NESW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	16	NWSE	2.57
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	16	NWSW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	16	SESE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	16	SWSE	2.25
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	17	NESE	1.66
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	17	NWNW	3.73
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	17	SENE	3.14
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	17	SENW	4.80
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	17	SWNE	4.80

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	17	SWNW	1.07
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	18	NENE	4.81
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	18	NENW	0.52
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	18	NWNE	4.78
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	22	NENE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	22	NENW	2.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	22	NWNE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	23	NESE	3.81
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	23	NWNW	1.45
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	23	SENE	1.00
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	23	SENW	4.81
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	23	SWNE	4.81
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	23	SWNW	3.37
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	24	NESW	4.75
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	24	NWSE	0.04
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	24	NWSW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	24	SESW	0.08
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	01W	24	SWSE	0.02

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	02	NWSW	4.22
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	02	SESW	1.87
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	02	SWSW	3.69
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	03	NENE	1.00
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	03	NESE	1.33
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	03	NWNE	4.22
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	03	SENE	5.56
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	11	NENW	5.56
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	11	NESE	0.08
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	11	NWNE	0.00
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	11	SENE	4.74
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	11	SENW	0.49
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	11	SWNE	5.39
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	12	NESE	0.13
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	12	NESW	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	12	NWSE	4.52
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	12	NWSW	4.42
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	12	SESE	4.70

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	12	SWNW	0.41
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	43S	02W	12	SWSE	0.31
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	BLM	UT	44S	02E	10	SWNE	0.00
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	22	NESW	4.77
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	22	NWSE	0.00
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	22	NWSW	3.98
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	22	SESE	2.90
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	22	SESW	0.55
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	22	SWNW	1.35
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	22	SWSE	5.32
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	25	NWNW	1.47
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	26	NENE	4.57
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	26	NENW	2.40
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	26	NWNE	4.38
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	26	NWNW	5.32
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	26	SENW	2.36
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	26	SWNE	0.19
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	NPS	AZ	41N	08E	27	NENE	2.42

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	Reclamation	AZ	41N	08E	24	SESW	1.38
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	Reclamation	AZ	41N	08E	24	SWSW	0.28
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	Reclamation	AZ	41N	08E	25	NENW	0.17
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	Reclamation	AZ	41N	08E	25	NWNW	4.25
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	AZ	41N	08E	16	SESW	0.08
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	AZ	41N	08E	16	SWSW	5.10
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	19	SESW	4.36
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	19	SWSE	0.05
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	19	SWSW	5.45
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	27	SESW	1.37
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	27	SWSW	4.84
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	28	NESW	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	28	NWSE	1.97
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	28	NWSW	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	28	SESE	4.84
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	28	SWSE	2.87
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	29	NESE	1.64
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	29	NWNW	3.70

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	29	SENE	2.95
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	29	SENW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	29	SWNE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	29	SWNW	1.12
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	30	NENE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	30	NENW	0.46
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	30	NWNE	4.76
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	34	NENE	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	34	NENW	3.47
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	34	NWNE	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	34	SENE	0.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	35	NESE	4.66
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	35	NWNW	0.69
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	35	NWSE	0.24
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	35	SENE	0.17
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	35	SENW	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	35	SWNE	4.59
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	35	SWNW	4.15

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	36	NESW	4.02
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	36	NWSE	0.00
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	36	NWSW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	36	SESE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	36	SESW	0.80
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01E	36	SWSE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01W	24	NWSE	0.35
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01W	24	SESE	4.83
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	01W	24	SWSE	4.42
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	43S	02E	31	SWSW	3.27
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	03	SWSW	0.06
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	04	NESW	0.47
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	04	NWSW	4.77
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	04	SESE	4.38
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	04	SESW	4.35
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	04	SWSE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	04	SWSW	0.05
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	05	NESE	4.82

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	05	NWSE	3.59
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	05	SENW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	05	SWNE	1.24
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	05	SWNW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	06	NENE	2.03
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	06	NENW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	06	NWNE	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	06	NWNW	2.01
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	06	SENE	2.79
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	09	NENE	0.44
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	10	NWNW	4.77
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	10	SENE	0.10
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	10	SENW	4.82
Transmission Line - Glen Canyon to Buckskin Sub	Transmission Line	State	UT	44S	02E	10	SWNE	4.48
Transmission Line - HS-2 34.5 kV Line	Transmission Line	BLM	AZ	40N	06W	03	NESE	1.85
Transmission Line - HS-2 34.5 kV Line	Transmission Line	BLM	AZ	40N	06W	03	SENE	0.87
Transmission Line - HS-2 34.5 kV Line	Transmission Line	BLM	AZ	40N	06W	03	SESE	2.06
Transmission Line - HS-2 34.5 kV Line	Transmission Line	Private	AZ	40N	06W	11	NWNW	1.58
Transmission Line - HS-2 34.5 kV Line	Transmission Line	State	AZ	40N	06W	02	SWSW	0.00
Transmission Line - HS-2 34.5 kV Line	Transmission Line	State	AZ	40N	06W	10	NENE	0.00
Transmission Line - HS-3 12.47 kV Line	Transmission Line	Private	UT	43S	10W	32	NESW	2.63

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - HS-3 12.47 kV Line	Transmission Line	Private	UT	43S	10W	32	NWSE	2.86
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	18	NWSW	2.03
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	18	SESW	0.11
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	19	NESW	1.36
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	19	NWNE	2.06
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	19	NWSE	0.03
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	19	SENW	1.72
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	19	SESW	2.64
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	19	SWNE	1.93
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	19	SWSW	1.56
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	30	NWNW	3.70
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	30	NWSW	0.07
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	12W	30	SWNW	3.20
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	13	NESE	2.59
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	13	NWNE	3.17
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	13	SENE	1.63
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	13	SWNE	1.91
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	25	NESE	3.27
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	25	SENE	0.08
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	25	SESE	3.35
Transmission Line - HS-4	Transmission Line	BLM	UT	42S	13W	36	NENE	0.00
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	01	NWNW	3.03
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	01	NWSW	3.21
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	01	SWNW	3.09
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	01	SWSW	3.05
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	12	NWNW	3.20
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	12	NWSW	3.77
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	12	SWNW	3.46
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	12	SWSW	3.19
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	13	NWNW	3.06
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	13	SWNW	1.09
Transmission Line - HS-4	Transmission Line	BLM	UT	43S	13W	14	SENE	0.89
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	18	NWSW	0.00
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	18	SESW	0.02
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	18	SWSW	3.52
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	19	NENW	3.17

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	19	NWNE	0.03
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	19	NWNW	1.03
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	19	NWSE	4.51
Transmission Line - HS-4	Transmission Line	Private	UT	42S	12W	19	SWNE	0.02
Transmission Line - HS-4	Transmission Line	Private	UT	42S	13W	12	NESE	2.69
Transmission Line - HS-4	Transmission Line	Private	UT	42S	13W	12	SESE	1.84
Transmission Line - HS-4	Transmission Line	Private	UT	42S	13W	12	SWSE	1.40
Transmission Line - HS-4	Transmission Line	Private	UT	42S	13W	13	NWNE	0.03
Transmission Line - HS-4	Transmission Line	Private	UT	42S	13W	36	NWNE	3.32
Transmission Line - HS-4	Transmission Line	Private	UT	42S	13W	36	SENW	0.02
Transmission Line - HS-4	Transmission Line	Private	UT	42S	13W	36	SWNE	1.97
Transmission Line - HS-4	Transmission Line	State	UT	42S	13W	36	NENE	0.52
Transmission Line - HS-4	Transmission Line	State	UT	42S	13W	36	NESW	3.48
Transmission Line - HS-4	Transmission Line	State	UT	42S	13W	36	NWNE	0.02
Transmission Line - HS-4	Transmission Line	State	UT	42S	13W	36	SENW	1.52
Transmission Line - HS-4	Transmission Line	State	UT	42S	13W	36	SESW	1.22
Transmission Line - HS-4	Transmission Line	State	UT	42S	13W	36	SWSW	2.03
Transmission Line - HS-4	Transmission Line	State	UT	43S	13W	01	NWNW	0.01
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	42S	13W	31	NENW	2.24
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	42S	13W	31	NESE	0.89
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	42S	13W	31	NWNE	1.10
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	42S	13W	31	NWSE	1.79
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	42S	13W	31	SESE	3.11
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	42S	13W	31	SWNE	2.68
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	05	NENW	1.25
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	05	NWNW	2.75

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	05	NWSE	3.06
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	05	SENW	2.71
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	05	SESE	2.55
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	05	SWNE	0.29
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	05	SWSE	0.61
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	06	NENE	0.32
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	08	NENE	1.13
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	09	NWNW	2.60
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	09	SENE	2.41
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	09	SENW	2.58
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	09	SWNE	2.41
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	09	SWNW	0.47
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	10	NESW	0.71
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	10	SENW	1.68
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	BLM	UT	43S	13W	10	SWNW	2.28
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	Private	UT	42S	13W	30	SESW	0.82
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	Private	UT	42S	13W	30	SWSW	1.93
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	Private	UT	42S	13W	31	NENW	0.04

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	Private	UT	42S	13W	31	SESE	0.00
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	Private	UT	42S	13W	32	SWSW	0.00
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	Private	UT	43S	13W	05	NWNW	0.39
Transmission Line - Hurricane Cliffs Peaking Hydro Station	Transmission Line	Private	UT	43S	13W	06	NENE	0.01
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	23	NENW	0.69
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	23	NESE	1.72
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	23	NWNE	1.84
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	23	NWSE	1.50
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	23	SWNE	3.00
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	24	NWSW	1.49
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	24	SWNW	0.13
Transmission Line - IPS and BPS-1	Transmission Line	NPS	AZ	41N	08E	24	SWSW	2.62
Transmission Line - IPS and BPS-1	Transmission Line	Reclamation	AZ	41N	08E	23	NESE	0.65
Transmission Line - IPS and BPS-1	Transmission Line	Reclamation	AZ	41N	08E	24	SESW	0.79
Transmission Line - IPS and BPS-1	Transmission Line	Reclamation	AZ	41N	08E	24	SWSW	0.63
Transmission Line - IPS Switchyard	Transmission Line	NPS	AZ	41N	08E	23	NESE	0.32
Transmission Line - IPS Switchyard	Transmission Line	Reclamation	AZ	41N	08E	23	NESE	0.07
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	13W	30	NWSW	0.14
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	13W	30	SWSW	7.12
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	23	NWNW	0.81
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	23	NWSE	4.02
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	23	SWNE	0.10
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	23	SWSE	8.00
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	25	NESW	0.01

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	25	NWSW	2.59
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	25	SESE	2.95
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	25	SESW	3.41
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	25	SWSE	2.85
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	25	SWSW	0.18
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	26	NENW	4.84
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	26	NESE	1.63
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	26	NWNE	4.43
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	26	NWSE	3.86
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	26	SENW	6.68
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	Private	UT	42S	14W	26	SWNE	0.59
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	13W	30	SWSW	0.02
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	23	NENW	7.63
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	23	NWNE	2.89
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	23	NWNW	0.04
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	23	NWSE	3.81
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	23	SWNE	7.56
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	25	NESW	0.00

Name	Feature Type	Ownership	State	Town-ship	Range	Section	QQ_ Section	ROW Acres
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	25	NWSW	0.64
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	25	SESE	0.35
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	25	SESW	0.17
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	25	SWSE	0.52
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	26	NESE	2.89
Transmission Line - Sand Hollow Terminal Station to Sand Hollow Sub	Transmission Line	State	UT	42S	14W	26	NWSE	0.52