Lake Powell Pipeline

FERC Project No. P-12966

Revisions to In-Line Hydropower Station 1 Layout

Public Filing

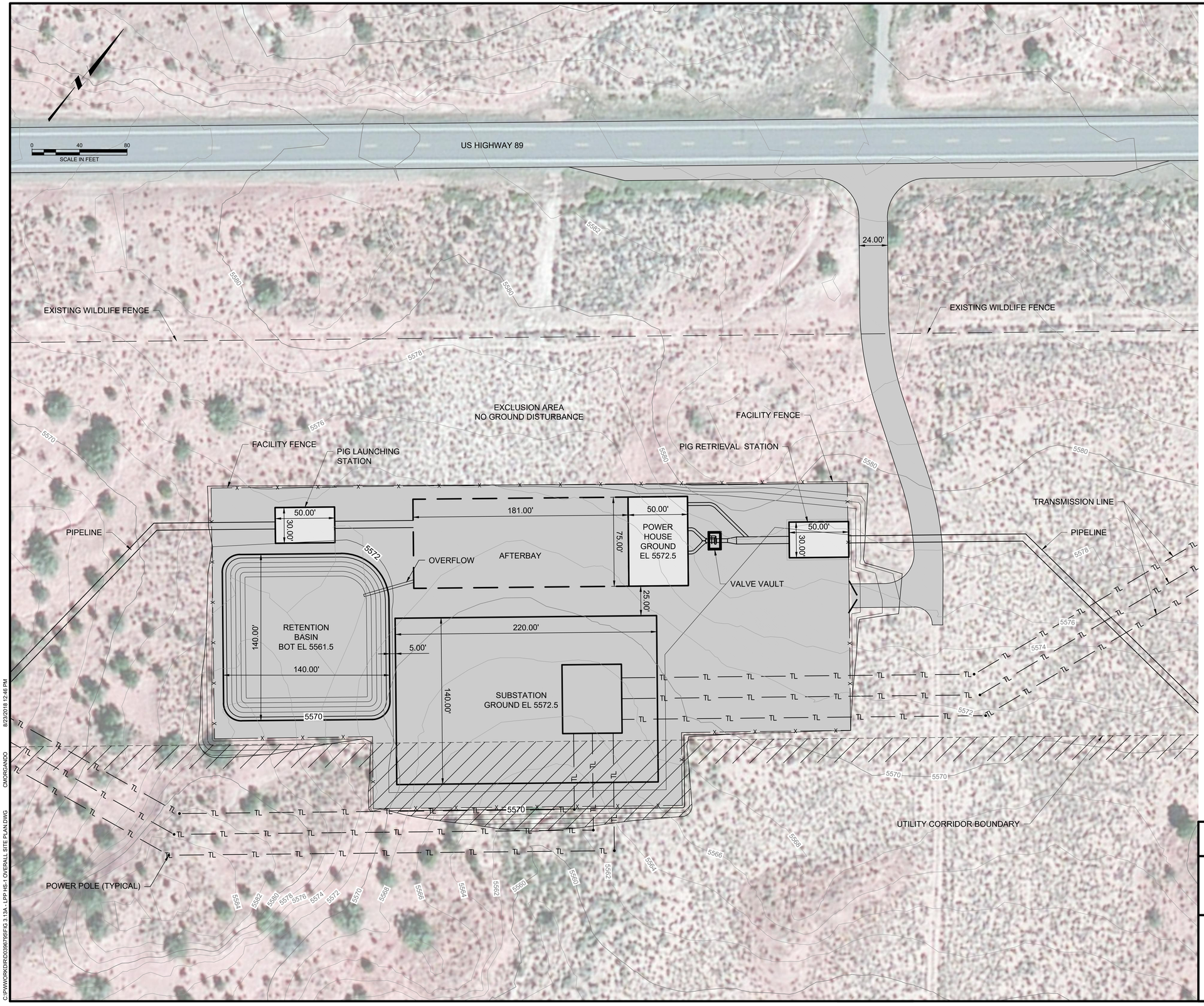
The Utah Division of Water Resources has worked collaboratively with the Bureau of Land Management (BLM) to identify and develop changes in the preliminary layout of in-line hydropower station 1 (HS-1). Changes were made in response to BLM comments on the final license application (FLA) regarding conformance with Visual Resource Management Class 3 objectives. The following site plan and Visual Contrast Rating Worksheet are filed with FERC as a clarification to the FLA filed on May 2, 2016, and replaces the Visual Contrast Rating Worksheet in the Final Visual Resources Study Report, Appendix A, Proposed Water Pipeline Alternative(s), KOP 20 HS-1 From US Highway 89.

The following sections and tables within the Final Visual Resources Study Report are changed as a result of the revised information:

- Chapter 1, Section 1.2.5.9 – 69 kV changed to 138 kV
- Chapter 4, Section 4.2 – Table 4-2, VAU 8. Telegraph Flat
- Chapter 4, Section 4.2 – Table 4-4, No. 8, Telegraph Flat, KOP 20
- Chapter 4, Section 4.2.2 – paragraphs 4 and 5
- Chapter 4, Section 4.2.3 – paragraph 5
- Chapter 4, Section 4.2.5.1 – Old Spanish NHT
- Chapter 4, Section 4.4.13 – paragraphs 2, 4 and 6
- Chapter 4, Section 4.4.14 – Table 4-8, KOP No. 20

The following sections in the FLA Exhibit E are changed as a result of the revised information:

- Chapter 3, Section 3.1.1.3.2 – paragraph 2, Figure 3-13 replaced with attached Figure 3-13a, HS-1 Overall Site Plan
- Chapter 5, Section 5.3.16.2.2 – Table 5-136, page 8 of 21, VAU 8. Telegraph Flat
- Chapter 5, Section 5.3.16.2.2 – Table 5-138, No.8, KOP 20
- Chapter 5, Section 5.3.16.2.2.2 – paragraphs 4 and 5
- Chapter 5, Section 5.3.16.2.2.3 – paragraph 5
- Chapter 5, Section 5.3.16.2.2.5 – paragraph 2, Old Spanish NHT
- Chapter 5, Section 5.3.16.2.4.1 – paragraphs 2, 4, and 6
- Chapter 5, Section 5.3.16.2.4.2 – Table 5-141, page 2 of 3, KOP No. 20



PRELIMINARY
NOT FOR
CONSTRUCTION

UTAH DIVISION OF WATER RESOURCES
LPP

UDWRe Stantec

HS-1 RE-DESIGN
SITE PLAN

FIG 3-13A

C:\PWWORKDIR\D0396795\FIG 3.13A - LPP HS-1 OVERALL SITE PLAN.DWG CMORGANDO 8/23/2018 12:46 PM

Form 8400 - 4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

KOP # 20 for Hydro Station HS-1 From US 89

Date 10/18/2018

District GSENM

Resource Area

Activity (program) Lands and Realty

SECTION A. PROJECT INFORMATION

1. Project Name
Lake Powel Pipeline
Hydro Station HS-1
Proposed Water Pipeline Alternative

2. Key Observation Point
KOP 20 Hydro Station HS-1 From US 89

3. VRM Class
Class 3

4. Location
Along US 89

Township - 43S

Range - 3W

Section 18

5. Location Sketch
See images on next page.

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Gently rolling	Stands of low to medium shrubs (sage and rabbitbrush) are interspersed with stands of pinyon juniper.	Thin utility poles and lines and fences add both vertical and horizontal elements. The highway adds a band.
LINE	Horizontal, simple	Complex, indistinct, also horizontal	Thin utility poles and lines and fencing add vertical and horizontal elements. The highway adds a slightly curving band.
COLOR	Landform is predominantly covered in vegetation but where visible it is coral colored.	Full range of green from dark juniper green to sage green to yellow green.	Grays and browns
TEX-TURE	Medium to smooth.	Medium to fine, clumped	Fine, to medium.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Same	Similar but removal of vegetation would create more obvious edges along edges of clearing.	Additional structures associated with substation and hydro station would add blocky forms as well as thinner vertical and horizontal ones.
LINE	Landform edge associated with clearing and grading would add horizontal lines.	The removal of vegetation will create additional edges between vegetated and not vegetated areas (ie building and driveway)	Increased amount of straight, vertical and horizontal
COLOR	Same.	Same	Gray/green structure; brown/beige poles; brown fence
TEX-TURE	Same.	Same.	Additional structures would increase texture to coarse - associated with building and substation.

SECTION D. CONTRAST RATING SHORT TERM - X LONG TERM

1. DEGREE OF CONSTRAST

		FEATURES											
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form				x			x			x		
	Line			x				x			x		
	Color				x				x			x	
	Texture				x				x		x		

2. Does project design meet visual resource? management objectives? X Yes No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☐ Yes X No (Explain on reverse side)

Evaluator's Names **Date**

Barbara Santner
12/07/2017

Comments from item 2.

For this proposed location, the KOP selected is a linear one along US Highway 89, going in both directions. The facilities simulated are for a 138-kV substation versus the original 69 kV substation. The proposal includes constructing a hydro power station (powerhouse, substation, transmission line, transformers, metal framework structure, retention basin, security fence and driveway) using the existing Kane County access road as the facility access point. There is an existing 8-foot-tall wildlife exclusion fence along the highway right of way at the HS-1 facility site with a gate at the existing Kane County access point. There is an existing 45-foot-high wooden power pole near the gate. Existing vegetation and landforms consist of sparse pinyon-juniper woodland and big sagebrush growing on gently rolling terrain. The pinyon are 12 to 15 tall and wide and the juniper are 6 to 8 feet tall. Nearby landforms consist of earthen mounds with gradual slopes ranging from 12 to 30 feet high.

The HS-1 facility would be approximately 520 feet wide (along US 89) and 265 feet deep (perpendicular to US Highway 89) with the northern edge set back approximately 120 feet south of the existing wildlife fence. The proposed security fence is a 9-foot-tall chain link with razor wire roll on top and would be located near the northern edge of the facility where it would be faintly seen behind the existing wildlife fence. Contrast from the security fence and existing gates would be reduced by using desert patina treatment to the galvanized surfaces. The powerhouse building would be bermed on the south side of an existing landform which would be preserved. The powerhouse building would be colored and textured to match surroundings such as using a non-reflective, textured surfacing in a random shape pattern and colored a BLM environmental color such as Shadow Gray. Final color will be chosen by BLM staff prior to construction. The access road to the site will be on the existing Kane County road to avoid new disturbance and surface will be of a rock that matches the existing characteristic landscape. The building pad would be set approximately 14 feet below the access road elevation at US Highway 89 reducing the visible height of the facilities. Reclamation of disturbed areas would reduce contrast by restoring color and texture that matches the characteristic landscape by using native materials or by using desert patina treatment to ground surfaces. New 55-foot-tall transmission line poles at the facility would angle at approximately 45 degree angles to connect to the linear power line to avoid clustering features near the powerhouse and substation facilities.

Relevant Environmental Factors:

Length of Time in View – The HS-1 structures could be in the foreground view for up to 28 seconds for viewers traveling at 65 mph along Highway 89. The HS-1 structures would be approximately ½-mile away from viewers when they first come into view.

Relative size/scale –The proposed powerhouse building is 25 feet high and the portion visible from the static KOP 20 would be approximately 13 feet higher than the landform between the building and the highway. The proposed substation is located behind the powerhouse building with the overhead framework 56 feet tall and with 10-foot-tall, 6-inch-wide lightning rods at the corners. The framework would be visible 31 feet higher than the top of the powerhouse building.

Season of Use – Visitor use season is from early spring to late fall for the GSENM.

Viewing Distance – Linear KOP 20 is ½-mile long in each direction along US Highway 89 approaching HS-1. Visual contrast would increase as viewers get closer to the HS-1 site.

Angle of Observation – From both directions the angle of observation of the Proposed Action is shallow and the facilities would be partially to moderately visible within the natural landforms and vegetation between the viewers and the facilities.

Light Conditions – Varying light conditions throughout the year would not materially affect the visual impact of the HS-1 structures as the greatest contrast is viewed from north to south.

Existing Conditions

Five to Ten Years Post Construction Condition

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