



Letter of Intent

Scope of Work

The expansion/upgrade of the Black Hills Power Fifth Street Substation will improve system reliability and capacity in the Fifth Street area. The BHP planning department has identified this area as a problem area taking into account future growth. The existing equipment inside the substation is not large enough to absorb that anticipated load growth, and has reliability concerns due to age and type. Black Hills Power has pursued other locations for the expansion, but this particular design and location combination addresses the major concerns efficiently. Relocating the substation would introduce problems with transmission line access and tying into existing feeders. The current site is located at the load center, has access to transmission lines and is the starting point for the feeders we need to tie into.

The project requires two phases that are explained below:

Phase 1:

The additional equipment requires us to expand the substation boundaries. We are proposing to purchase the lots North of our existing substation owned by Kevin Lewis. Black Hills Power and Mr. Lewis have discussed the situation and are awaiting approval from the City before making any additional agreements.

The initial stage with respect to construction will be to remove the house and prepare the new lots for construction. This will allow BHP to finish more than half the construction on the new lots before removing the existing sub. This phase would leave us with a fully functioning substation.

List of Required Work Phase 1:

- Purchase additional lots
- Remove house, fence, and trees
- Prepare lots for construction (drainage, grading, concrete, fence, grounding, ect.)
- Erect Steel Structures
- Bring Transmission into substation
- Install Aluminum Bus
- Install Equipment (25MVA transformer, switchgear building, switches, circuit switcher, as well as all necessary appurtenances)
- Install Feeder Circuits

Phase 2:

The second phase will include removing the existing substation and finishing the other portion included in the new design. An additional 25MVA transformer will be installed.

List of Required Work:

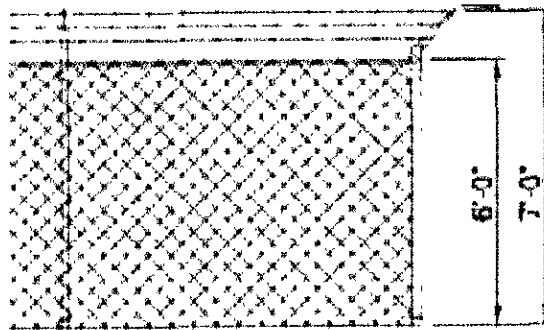
- Remove existing substation (remove equipment, cable, and structures)
- Prepare lots (drainage, grading, concrete, fence, grounding, ect.)
- Relocate gate and access to Knology building
- Erect Steel Structures
- Install Aluminum Bus
- Install Equipment (25MVA transformer, circuit switcher, and all necessary appurtenances)
- Install Feeder Circuits
- Landscaping

Landscaping:

The landscaping design has been done by Wyss Associates. The design meets all point requirements set forth by the City of Rapid City. The design layout can be seen on the "Planting Plan" drawing, and the irrigation design can be seen on the "Irrigation Plan" drawing. The design includes small shrubs and bushes on the outside perimeter of the substation fence as well as some larger trees in the boulevard. Black Hills Power requests that the City approve the use of trees in the boulevard in order to meet the point requirements.

Fence:

Black Hills Power is required by NESC (110.A.1.b) to install at a minimum a 7Ft tall fence. BHP uses a standard of 6Ft of chain linked fabric, with an additional 1Ft of barbed wire. BHP requests require variances to the current requirements based on the NESC requirements.



Transmission Line into Substation:

The Fifth Street Substation is in a location that requires special emphasis be placed on how the transmission line enters the substation. It usually requires positioning large steel structures. However, that is not an option at this location. Black Hills Power understands the delicate situation

the location presents, and has researched an underground cable application that would greatly reduce the overall profile of the substation. The overall cost of the installation will be significantly larger compared to entering the substation with overhead lines. The process will require a couple of major steps. First, the transmission line structures off of Oakland Street will need to be replaced with new structures. Additionally, BHP will need to cross 5th Street, and then turn North alongside 5th Street with underground cable. This will require a trench along 5th Street approximately five feet wide and five feet deep as well as boring to cross the street. The same sized trench will be required in the vacated alley where the transmission line is currently overhead. The end result will be a low profile entrance into the substation as well as the removal of overhead transmission lines along Oakland Street. Black Hills Power request the City to approve the installation of the 69kV underground cable beneath and along Fifth Street, as well as to replace the 69kV structures with new riser structures along Oakland Street.

Parking and Access:

The substation is split between two levels. The lower level is on the North end, and the upper level is on the South end. Access to the North end will be from Cleveland Street as shown on drawing “General Arrangement”. The South end will utilize the paved alley for access as shown. Both levels include two parking spaces. One of the parking spots on each level is handicap accessible with dimensions 16’X18’, while the other is 9’X18’. Black Hills Power requests a variance on paving the parking spots. Our substation area utilizes a specified mix of gravel for safety purposes to meet the required National Electric Safety Code stipulations.

Setback Variances:

The “General Arrangement” drawing shows the location of equipment and fences. BHP is requesting variances on the setbacks on the North, West, and East sides. The layout has been designed to make efficient use of the available area. However, BHP was not able to fit all the equipment into the available area while still maintaining the electrical clearances required using standard setbacks.

North Side (Front):	
Required Set Back – 35Ft	Available Set Back – 30Ft
West Side (Front):	
Required Set Back – 35Ft	Available Set Back – 30Ft
East Side (Rear):	
Required Set Back – 25Ft	Available Set Back – 22Ft

Note: “Front”, “Rear”, and “Side” designations shown on layout drawing.

In addition to the outer perimeter setbacks, BHP requests that the setbacks between lots 22 and 23 be removed completely since the substation will occupy the entire area.