



June 16, 2008

City of Rapid City  
Growth Management Department  
Attn: Ms. Vicki Fisher  
300 6<sup>th</sup> Street  
Rapid City, SD 57701-5035

**Re: Elk Vale Low Level Water Reservoir – Project No. W07-1638  
11-6-19 SDCL Review – Letter of Intent**

Dear Ms. Fisher:

Enclosed herewith please find an application, along with supporting documentation, for an 11-6-19 SDCL Review for the above referenced project. Please review and advise of the Planning Commission's action. Feel free to contact Dan Coon with Engineering Services as the schedule for the 11-6-19 review has been shifted due to City financing and design deadlines and he has offered to help answer questions with regard to this Project.

The Elk Vale Low Level Water Reservoir is an important project for the City of Rapid City in that it will provide some of the necessary distribution system infrastructure improvements needed to support continued growth in northeastern Rapid City. The Elk Vale Low Level Water Reservoir will generally consist of construction of a partially buried 3.5 million gallon concrete ground storage reservoir, control vault/building, access road and parking area, stormwater quality detention pond, perimeter fencing, security, and various site piping. In addition, two new control vaults will be added at the existing Signal Hill reservoirs to improve operation of the Low Level Pressure Zone.

A detailed Preliminary Engineering Report was completed in October 2007 that evaluated and defined the project service area, water demand projections, pumping and water storage requirements (based on equalization storage, fire fighting demands, and reserves for emergencies), hydraulic analysis, reservoir siting, and reservoir materials and configuration. Recommendations from this report included a ground storage reservoir at the location shown on both the Project Location Map (Cover Sheet) and Elk Vale Project Area (Sheet C1). Please note that the Elk Vale Project Area is currently undeveloped pasture with a Low Density Residential with Planned Development Designation. In addition, modifications to the existing water storage reservoirs located at Signal Hill are needed to improve the overall operation of the Low Level Pressure Zone and its interaction with the new Elk Vale Low Level Reservoir. The Signal Hill improvement location is shown on both the Project Location Map (Cover Sheet) and Signal Hill Project Area (Sheet C15).

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**Site and Site Access:** The land that the Elk Vale Low Level Reservoir will be constructed on is currently owned by G&G Investments. A permanent access and utility easement and covenant agreement have been negotiated between the City and the Owner and are included in Appendix B of the Project Specifications. As outlined, the easement allows the City permanent access to the site for maintenance and construction of the Project with Ownership of the easement transferring to the City when the surrounding area is platted.

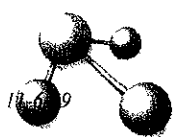
Access to the Elk Vale Site will be along an existing trail. Due to the undeveloped nature of the surrounding area, permanent paving outside of the easement is not proposed since any paving installed outside of the easement would likely need to be relocated when permanent roads are platted. Improvements to the existing trail will generally consist of an 8-inch gravel surface layer to allow heavier construction vehicles access to the Site. Dust will be controlled by the application of magnesium chloride in accordance with South Dakota Department of Transportation specifications.

**Ground Storage Reservoir:** As previously indicated, the reservoir will consist of concrete construction, steel reinforcing as required, and a dome roof as shown on Sheets P1 through P5. The reservoir will be partially buried and transition from an exposed face of 16 feet on the east to 5-feet on the west (refer to Sheet P2). The median dome elevation is less than 35-feet as required by City Standards and indicated on Detail 4/P3. The base bid for the project will include a plain concrete reservoir with painted exterior (final color selected by the City during shop drawing phase). An “architectural treatment” alternative bid is also provided and includes twenty-four stone veneer pilasters located around the perimeter of the reservoir that will match the look of the Elk Vale Control Vault (shown on Sheets P1 and P5).

**Construction and Post-Construction Stormwater Management:** A construction and post-construction stormwater submittal including Erosion and Sediment Control Plan sheets and calculations was provided to Rapid City Engineering Services Department on June 16, 2008.

**Electrical Service to Site:** We have been coordinating with West River Electric Association and the closest source for this type of power is an electrical substation south of the reservoir site. It was determined the most effective way to bring power to the site is trenching a service line from the substation along the Elk Vale Road right-of-way and then along the pipe easement to the site as shown on Sheet C1. The South Dakota Department of Transportation representative (Gary Engel) has reviewed and given preliminary approval for this work.

**Site Security:** Due to the critical nature of this facility, site security is a priority and multiple barriers have been provided. The primary security for the site is an eight-foot tall, galvanized, chain link perimeter security fence with access through a lockable gate as shown on Sheet C6 and C21. A secondary security barrier will be provided via an intrusion detection device consisting of a buried radio-frequency detection cable located just inside the perimeter fence and shown on Sheet E1.0. Another security barrier includes various contact switches and motion sensors on door and hatch penetrations. This type of security plan is very similar to the recently constructed Red Rock Water Storage Reservoir (W03-1184) and the City would like to maintain continuity between projects. Note that a fence height variance application was submitted May 27, 2008 to allow installation of the eight-foot perimeter fence



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**Site Lighting:** The Elk Vale site will be receiving two “Type C” pole lights at the locations shown on Drawing E1.0 and in Detail 3/E0.1. One light will be located near the entrance gate and the other light will be located near the Elk Vale parking lot. Both “Type C” pole lights are controlled by photocell’s and will automatically turn on/off depending on the ambient light. In addition, the Elk Vale vault building will have exterior lighting as shown on Drawing 1/E1.1 (Luminaire Type B); however, these “Type B” luminaires must be switched on/off by City staff.

Signal Hill improvements do not include new site lighting (as all new improvements are vaults below grade).

**Landscaping:** According to Drawing L1, the landscaping points required by Rapid City Municipal Code are 102,583; however, seeding with prairie grass provides 103,656 points. Therefore, no further landscaping elements were provided.

Areas disturbed at Signal Hill will be reseeded with a City standard non-irrigated lawn mix, but no additional landscaping is anticipated since improvements are not disturbing or adding anything above grade.

**Parking:** The Elk Vale parking lot is shown on Drawing C13 and was developed with input from City Staff (e.g. Planning Department). In our communications, we learned that the Elk Vale parking lot needed to include one handicap (with loading zone) and one standard parking stall. Please note that the parking lot and road will be asphalt surfaced and Drawing C13 also shows the ADA sidewalk. Note that after construction, the Elk Vale Vault Building will be accessed once per week for routine operation and maintenance.

No new parking is included for the Signal Hill Area since adequate space is currently available for parking.

**Site:** Many site related improvements are planned and shown on Drawings C1, C2, C3, C4, C6, C13, C14, A4.1, and P2. Major improvements shown on these drawings include, but are not limited to, the following:

- Access trail (gravel on private property) and asphalt access road (on City easement).
- Buried 24” diameter water transmission main and 24” diameter storm sewer.
- Sediment filter pond.
- Elk Vale Low Level 3.5 MG Water Storage Reservoir
- Elk Vale Low Level Vault
- New buried electric service.
- Chain link fence and buried intrusion security wiring.
- Grading (directing all surface flow to new sediment filter pond).

Signal Hill improvements are shown on Drawings C15 through C20 and I1 through I18. Major improvements on these drawings include, but are not limited to, the following:

- 5MG Vault (refer to Drawings P7 and P8 for additional information)
- 2MG Vault (refer to Drawing P7 for additional information)
- Buried piping in/out of vaults (connecting to existing facilities).



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We truly appreciate the opportunity to provide professional engineering services to Rapid City, and look forward to working with you on completing this and future projects. Should you have any questions or concerns, please do not hesitate to contact Dan Coon or myself at 701-221-0530.

Respectfully submitted,

AE2S



Deon M. Stockert, PE  
Project Manager

Encl.

