



CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701

Rapid City Fire Department
Fire Prevention Division

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November 13, 2015

CIP Committee

Re: Emergency Repairs Fire Station #6 Water service

During the spring / summer of 2015 a significant water leak was identified in the 4 inch fire sprinkler water service to fire station #6. The leak was isolated between the building and the Post Indicating Valve. A temporary water source was provided to support the building fire sprinkler protection system until the leak could be located and repaired. We coordinated with the Rapid City Utility maintenance group and determined that the leak was under the concrete apparatus apron and walkway. Disruption of the concrete apron during the busy summer months was not an option for RCFD, and utility maintenance committed to assisting with the repair in the early fall.

Line location and access required disruption of approximately 1200 square feet of reinforced concrete, 8 inches in depth for the apron and 4 inches in depth for the walkway. The RCFD crews performed the initial concrete cutting and breaking in preparation for removal, which was completed by utility maintenance. Once the concrete was removed utility maintenance excavated the water line(s) and unfortunately found the break at the point where the line passes through the foundation wall. The break is in a ductile line and is result of considerable ground settling outside of the structure.

The repair at this point was beyond the capabilities of the utility maintenance group due to the inability to access the pipe through the foundation wall. Replacement of the pipe assembly behind the foundation wall required, structural engineering guidance, specialized concrete cutting, and disassembly of the fire sprinkle riser.

That brings us to today, we now have the assembly exposed and we are facing winter conditions. What started as a relatively straight forward repair has evolved into a big project with a number of surprises and numerous trades. To complicate the issue underground utility and concrete contractors are not readily available as their projects are behind due to wet spring and early summer conditions. They are faced with the same impending weather conditions that we are, and it is a complicated repair, with few willing or capable of completing the work.

We have garnered commitments from contractors to replace the pipe and repair the concrete, but most work will be completed based upon time and materials due to the complexity. As of this writing we continue to attempt to determine actual costs, however with the exception of the actual concrete replacement we are estimating the cost based upon current known conditions.

Therefore we are requesting Emergency funding in the amount not to exceed \$35,000.00 to complete the repairs.

Recipient Name

3/8/2012

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The following is a general summarized list of the various project components we have been or will be working through to complete this repair.

- Approximately 1200 sq. ft. of reinforced Concrete apron, curb and walk removed (Replacement will require drilling and dowelling into existing concrete.)
- Excavation of approximately 40 cubic yards of material (Replacement and re-compaction to approved densities prior to concrete placement)
- Reposition Flag pole, lighting, and fixed patio furnishings to original condition.
- Repair yard disturbance and erosion control adjacent to the work area.
- Exterior in slab heating system (System abandonment is under consideration, but will require proper termination of system piping and controls)
- Main Lawn sprinkler piping and control wiring damaged during excavation(Repair as needed)
- Exterior electrical receptacle power and lighting supply was discovered and damaged during excavation activities. (Electrical conduit and conductor replacement by an electrician)
- PIV(Post Indicating Valve tamper switch wiring replacement)
- Sawed a slot out of the 12 inch reinforced concrete foundation wall to allow access (Wall repair required prior to back filling and compaction)
- Dislodged 1 to 2 cu. yds. of loose fill under the stations apparatus slab (Will require core drilling of the slab and slurry fill following the foundation wall repair)
- Disassembly of the fire sprinkler riser in the building (Reassembly to an operational condition)

The completion of this repair is imperative as it currently has left the Fire Station without Fire Sprinkler protection, and has rendered one emergency apparatus bay in accessible. Equipment typically housed in this station has been temporarily relocated or is left outside in the elements.

Thank you in advance for your consideration of this project and the undesirable / non-typical position we have found ourselves in.

Sincerely,



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