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Rapid City Growth  
Management Department

Civil Narrative for Layout Plat for Skyline Pines East Subdivision Reconnection with Rapid City TIF  
#47 -Tower Road Reconstruction Project

Engineers Project Number – 07-1373-E01

Dated December 14, 2007

Legal Description: Platted Lot A – B of the SE1/4 SE1/4 Less Lots 2 & 3 of the SE1/4 & Less ROW; Lot B – C of the SW1/4 SE1/4 Less Lot 1 of the SE1/4; Lot 1 of the SE1/4 SW1/4 in Section 11, Township 1 North, Range 7 East, Rapid City, SD

This is a preliminary report concerning the proposed reconstruction of Tower Road and proposed future development along both Tower Road and Fairmont Boulevard.

### Platting

Located on the south side of Tower Road are up to 16 proposed lots. The current zoning for the south side of Tower Road is Office Commercial District (Planned Commercial District). These are proposed as offices of various types in accordance with zoning designation for this area. The platting of this area may change based on future owners of these lots.

Based on a previous study along Tower Road and the current condition and location of the road, we are proposing to vacate and replat the existing 66' Tower Road right-of-way between the eastern and western limits of this project. The replatted 66' right-of-way would then be based on the proposed centerline alignment of Tower Road. This would allow the new road to be built on a more stable surface and based on the existing terrain would allow for adequate room for the proposed road. According to our Registered Land Surveyor, this would be easier and neater than platting various H-Lots along the existing Tower Road right-of-way.

### Streets

Currently, Tower Road is an asphalt surfaced road approximately 24' wide with a roadway ditch on either side, where the current terrain allows. Tower Road has been identified as a Collector Street on the 2007 Rapid City Major Street Plan Map. Therefore, we are proposing to construct the new road as a 24' wide asphalt roadway, standard curb and gutter, a 6' sidewalk on the south side, utilities, and boulevards on both sides within the platted 66' right of way. The six foot sidewalk would be changed from the south side of the road to the north side at the intersection of Tower Road and the proposed cul-de-sac. The proposed slopes of Tower Road are estimated to be between 6.00% and 8.00%.

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We are proposing to construct 4 or 5 intersections along Tower Road. These will include the future intersection of Fairmont Boulevard and Tower Road, a future cul-de-sac shown as the "Future Lots" on the included layout sheet, and two or three future access roads to the proposed 16 lots on the south side of Tower Road.

Due to terrain limitations and existing conditions along Tower Road, we would propose that the constructed width of sidewalk is reduced to 6' with a 6.3' boulevard and that sidewalk only be required on one side of Tower Road.

### Water

We are proposing to install a new water main along Tower Road. This water main will connect two different pressure zones. The lower portion of the new system will be served by the Terracita Reservoir (overflow 3785.59). The upper portion of the new system will be served by the Highway 16 Reservoir (overflow 3995.00). A fire hydrant and two gate valves will be used to separate the two pressure zones

Connection on the lower end of the project (near Highway 16), would be to an existing 12" PVC water main. This water main is located in the west side right-of-way just north of the Tower Road Bridge. The upper portion of this area will be connected to an existing 8" PVC water main located approximately 500' north of the intersection of Tower Road and Sandstone Lane. The new water main will be installed primarily on the north side of Tower Road, approximately 1000 feet of the new water main will be installed on the south side of the new road, based on existing terrain limitations. Estimated material necessary include approximately 4,320 linear feet of pipe, 11 fire hydrants and other necessary appurtenances.

Initial WaterCAD modeling shows that a 10" main will be required from Highway 16 to the intersection of the proposed cul-de-sac and Tower Road. An 8" water main will be used for the remaining length of this main. The model was set up based on requirements as shown in the City of Rapid City Utility Design Criteria Draft Manuals. Demands are based on the table shown in Section 3.4.2. All fire hydrants were modeled to provide 1500 gpm during fire flow calculations with the exception of the ones located in the Office/Commercial lots located on the south side of Tower Road. These were modeled using 3500 gpm. All fire hydrants within the modeled system will maintain the minimum 1500 gpm fire flow and pressure requirements shown in the design manuals. The four fire hydrants located within the Office/Commercial Lots (requiring 3500 gpm fire flow) are estimated to maintain a range of 2200 to 3200 gpm during fire flow modeling calculations.

### Sanitary Sewer

We are proposing to install a new 8" sanitary sewer main from the intersection of Tower Road and Sandstone Lane westerly along the proposed Tower Road right-of-way and then down the western side of the existing Mount Rushmore Road/ US Highway 16 right-of-way. We are proposing to connect the sanitary sewer to a manhole located in the right-of-way at the intersection of Fairmont Boulevard and Mount Rushmore Road. The new sanitary sewer main will include approximately 18 manholes and 4968 linear feet of new 8" sanitary sewer main. Estimated average flow to this manhole is 91 gpm and an estimated peak flow is 362 gpm. This estimate assumes that 17 medical office buildings, approximately 12,000 square feet each in size, would be constructed on the approximate 600,000 square foot area south of Tower Road.

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**Drainage**

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Street drainage will be through Type "B" and Type "E" inlets along Tower Road. These inlets will drain to the north towards the detention pond, located west of the hotel between Tower Road and Fairmont Boulevard. Drainage calculations have not been completed at this time. Outlet structures for these outlets will be protected by rip-rap, erosion control blanket, and other means in order to prevent erosion.

An existing stormwater detention pond is located within the boundaries of this project. This pond is subject to change as development of this area increases. As shown in the Meade-Hawthorne Drainage Basin Plan, the outlet for the detention pond (Element 223) will be altered. This change, as suggested in the Basin Plan will include reducing the outlet from a 36" RCP to an 18" RCP while still providing adequate storage in the detention pond.

**Existing Easements**

There is currently an existing easement for the sanitary sewer main running through the north side of the site from Fairmont Boulevard to the western boundary. This easement is not currently shown on the proposed layout and will be addressed during that future phase of the project.

**Future Improvements**

We are proposing two or three access roads into the 16 lots south of Tower Road. These access' would be constructed using sub-collector street standards with 22' wide asphalt surfaces, standard curb and gutter, 4' sidewalks, 5' boulevards and utilities. Proposed access easements are shown at the ends of the two roads for access to each of the individual lots. Streets within the access easements would be consistent with lane/place standards. We would also like to propose the possibility of including, as an alternative to access roads, access to the proposed lots via shared parking lots parallel to Tower Road, as shown on the included plat.

We are proposing 5 lots in a cul-de-sac as shown on the north side of Tower Road. Access to this cul-de-sac will be through a sub-collector street.

Fairmont Boulevard will be constructed to similar standards as Tower Road. Currently Fairmont Boulevard has an approximate 35' wide asphalt surface with a 4' wide sidewalk located on the south side of the existing portion of the road within an 80' right-of-way. We are proposing to narrow the street to a 24' asphalt wide surface roadway with 4' sidewalk, 5' boulevards and utilities. The right-of-way will remain 80' wide along the platted area

Two intersections are proposed off of Fairmont Boulevard. These intersections will provide access to the "Future Towers Area" shown on the included layout. These future streets are proposed as a sub-collector street. The street will have a 22' wide asphalt surface with standard curb and gutter, 5' boulevards and 4' sidewalks on both sides. Water and sanitary sewer for the "Future Towers Area" will be extended as needed at the time during the project.