



February 26, 2013

Mr. Bob Busch  
Inscription Canyon Ranch Sanitary District  
P.O. Box 4947  
Chino Valley, Arizona 86323

**Re: Sewer Collection System Review – Whispering Canyon Phases 5, 6 & 7**

Mr. Busch,

At your request, Granite Basin Engineering, Inc. has completed the review of the referenced project.

The following items were reviewed:

1. Capacity Assurance Form for Sewage Treatment Facility
2. Capacity Assurance Form for Sewage Collection System
3. Construction Plans for Phases 5, 6 & 7; dated 2/6/07

Our Comments are as follows:

*General*

1. The design flows noted in the Capacity Assurance Form for Sewage Treatment Facility should be based on historical flow data, not 200-gpd/residence.
2. The design flows noted in the Capacity Assurance Form for Sewage Collection System should be based on historical flow data, multiplied by the appropriate dry weather peaking factor.
3. An updated Sewer Design Report needs to be submitted for review. We understand there have been a number of revisions to the original design report. The updated report should be a stand-alone document that does not require references to previous versions.
4. The design should evaluate the sewer collection system without the re-pumping stations. If possible, the District would prefer not to be responsible for operation and maintenance of any re-pumping stations. According to the updated design report from Lyon, dated 11/16/12, only one re-pumping station may be required at full build-out, and this would be analyzed for future phases. We suggest evaluating the system with more than one model pump; consider low-head pumps versus hi-head pumps in the appropriate areas to make the system work without the re-pumping stations.
5. The Final Plat must be revised to include a disclosure for the individual grinder pumps. The model of the pump, as per the Sewer Design Report, must be included in the note.

*Phase 5 Construction Plans*

1. Concrete encasements should not be installed on the sewer collection system at water main crossings. Ductile iron sleeves shall be used with at least 2' clearance.
2. Inline flushing stations should include cleanouts on both sides of the valve so the line can be flushed in both directions, if necessary.
3. An inline flushing station should be located along Mira Road between Nola Circle and Jocelyn Road (inline flushing stations should be located every 500-ft).
4. At tee intersections, a valve and cleanout should be included on each intersecting leg.
5. Specific site details should be provided for the sewer lift station along North Whispering Canyons Drive. Please include details for site grading and drainage, elevations, access, control panels, power requirements, etc.
6. Provide O&M literature for the sewer lift station.

*Phase 6 Construction Plans*

1. Concrete encasements should not be installed on the sewer collection system at water main crossings. Ductile iron sleeves shall be used with at least 2' clearance.
2. Inline flushing stations should include cleanouts on both sides of the valve so the line can be flushed in both directions, if necessary.
3. Inline flushing stations should be located every 500-ft.
4. At tee intersections, a valve and cleanout should be included on each intersecting leg.

*Phase 7 Construction Plans*

1. Concrete encasements should not be installed on the sewer collection system at water main crossings. Ductile iron sleeves shall be used with at least 2' clearance.
2. Inline flushing stations should include cleanouts on both sides of the valve so the line can be flushed in both directions, if necessary.
3. Inline flushing stations should be located every 500-ft.
4. At tee intersections, a valve and cleanout should be included on each intersecting leg.
5. Specific site details should be provided for the sewer lift station along Cedron Circle. Please include details for site grading and drainage, elevations, access, control panels, power requirements, etc.
6. Provide O&M literature for the sewer lift station.

We would recommend approval of the submitted documents once the items noted above have been addressed by the Project Engineer. Please do not hesitate to contact me should you have any questions or comments regarding this review.

Sincerely,

Davin Benner, P.E.