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June 11, 2007

Mr. Brent Grizzle
San Miguel Ranch Development
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As follow up to our meeting of April 18, 2007, the San Miguel CSD is providing you with a description and list of water and wastewater improvements anticipated for your proposed development project. Please understand that these described facilities are subject to change during our review process; however, we have endeavored to cover all aspects of water and sewer service to the extent possible. We have not quantified the on-site water distribution system or the wastewater collection system, which will also be required as part of this project.

Project Background

San Miguel Ranch is a 550-acre development proposed in the San Miguel area, west of Highway 101 on the northern fringe of San Miguel. The proposed development will be annexed into the San Miguel Community Services District (District) service area, and will be provided water and sewer services through the District.

SUMMARY OF INFRASTRUCTURE REQUIREMENTS

Water System:

- Minimum 500-gpm potable water well, and dedicated easement/site.
- 1 MG potable water storage tank (SMR is responsible for 850,000 gallons of storage) and dedicated easement/site.
- 1 water booster station rated at fire flow plus maximum day demand and dedicated easement/site (likely located on the same site as the tank).
- Pressure reducing station, north and south water system tie-ins (12-inch mains)

Sewer System:

- Dedicated force main (minimum 8-inch) to convey SMR raw wastewater to the SMCSD WWTP.
- Sewer lift station and dedicated easement/site.
- Wastewater Treatment Plant Expansion from 0.2 mgd to 0.4 mgd, to be implemented by SMCSD. SMR would be financially responsible for what is required to provide an additional 110,000 gpd treatment capacity based on average dry weather flow conditions

and project build-out, and corresponding maximum day dry weather flows of 115,000 gpd.

WATER SYSTEM

The San Miguel Ranch development will be required to provide certain improvements to serve the needs of the planned development. These improvements will include providing a supplemental potable water supply (well), water storage, booster station, inter-connections to the San Miguel main water zone, and transmission and distribution system piping. The improvements are depicted on Figure 1-1. In addition to the on-site distribution system, we summarize the major water system infrastructure needs in the following sections.

WATER WELL AND WATER DEMAND

The estimated water demand is as follows:

	Average, GPD	Maximum Day, GPD	Peak Hour, gpm
Water Demand	217,054	459,687	513

Fire flow is based on a flow of 1,500 gpm for residential and 2,500 gpm for commercial. The pipe distribution system main sizes shall be 8 inch and 12 inch mains as shown on Figure 2.

SMR will need to provide a water well, with a minimum capacity of 500 gpm. The well will need to include the well, pumping and piping, controls, power, emergency backup power provisions, disinfection facilities, and a well site dedicated to the District. The well site dimensions should be a minimum of 100 feet by 100 feet in dimension.

BOOSTER SYSTEM

The San Miguel Ranch System will require a boosted zone. Some of the portions lower in elevation may be served by the main zone pressure; however, the majority of the development will need to be on a separate pressure zone. The highest elevation in the system is approximately 806 and the lowest is approximately 647. The highest point is higher than the overflow of the existing tank and main gravity zone so there needs to be a boosted area. The booster station should be sized to meet fire flow conditions plus maximum day demand. For the homes and businesses that have pressures in excess of 80 psi under normal demand conditions near the north end of the development, individual PRVs are recommended.

The booster station must be capable of delivering fire flow (2,500 gpm) plus maximum day demand (320 gpm). The booster station will need to be enclosed in a simple block-wall building, with ample room for access to the pumps, controls, electrical, and backup power. The site should be fenced and secured, and include a dedicated easement to the District.

WATER TANK

The tank is sized using fire storage of 630,000 gallons, emergency storage of 171,000 gallons and operational storage of 29,944. The total tank size is 830,944 gallons. The tank will be set in the hill so that it has the same overflow elevation as the other two tanks in the San Miguel Community System. The Developer will thus be responsible for 850,000 gallons. We are recommending that the tank be sized for 1 million gallons. The tank can range in diameter and height to accommodate this storage volume. Examples of typical dimensions would be as follows:

<u>Diameter, ft</u>	<u>Height, ft</u>	<u>Volume, gallons</u>
75	32	1,057,604
80	28	1,052,903
100	20	1,175,115

Note that the height listed is for operating height (liquid level) in the tank. The new AWWA 2005 requirements will require allowance for "sloshing" height above the tank overflow, so the tank height should be anticipated to be 5 to 8 feet higher than the height listed on this table.

LINKING THE TWO SYSTEMS

There should be two connections between the existing and new systems, one on the north side of the development, and one on the south side. The north side can either go along Mission Street and link to the system at the freeway crossing or it can more directly cross Highway 101 and connect to the system in the middle of the development which would require boring and jacking under the highway. The north connection should be equipped with a pressure reducing station to allow backfeeding of water from the SMR pressure zone to the main zone in the event of an emergency. On the south side of the development, the new system can connect to the existing system along 10th street and cross under the highway. The pipeline connecting the new tank to the existing system must have a profile that remains below the elevation of the tank fill.

SEWER SYSTEM

The off-site sewer system improvements to serve SMR would include lift station and force main to convey wastewater to the treatment plant, and treatment plant expansion to accommodate 110,000 gpd capacity (on an average dry weather flow basis).

SEWER CONNECTION

The force main should be an 8 inch force main; however, final sizing of the force main will be confirmed during detailed design by the Developer and District staff. The new sewer line should not connect to the existing system because it would cause the existing system to surcharge in some areas. A dedicated line for the new development to the treatment plant is suggested. There are two options for alignment of the force main: from the center of the new development across the highway or along Mission Street. The alignment across the highway would require boring and jacking under the highway, but could possibly be a gravity line. The alignment along

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Mission Street would create a very long force main. A lift station will need to be provided to accommodate SMR wastewater flows.

WASTEWATER TREATMENT PLANT

The wastewater treatment plant will need to be upgraded for the new development. The current treatment plant is rated for 200,000 gpd. The new development, at build-out, is expected to have a wastewater flow of approximately 110,000 gpd on an average dry weather flow basis, and 115,000 gpd on a maximum day dry weather flow basis. To provide for this development, and buffer for other future development, the treatment plant should be upgraded to approximately 400,000 gpd at a minimum. This endeavor to expand the plant will be accomplished by the SMCSD under a separate expansion project. There is approximately 10.5 acres north of the treatment plant available for upgrades shown on Figure 1-2. At this time, with no detailed design information, it can be assumed that the entire 10.5 acre parcel may be needed for this plant expansion.

Please let me know if you have any questions.

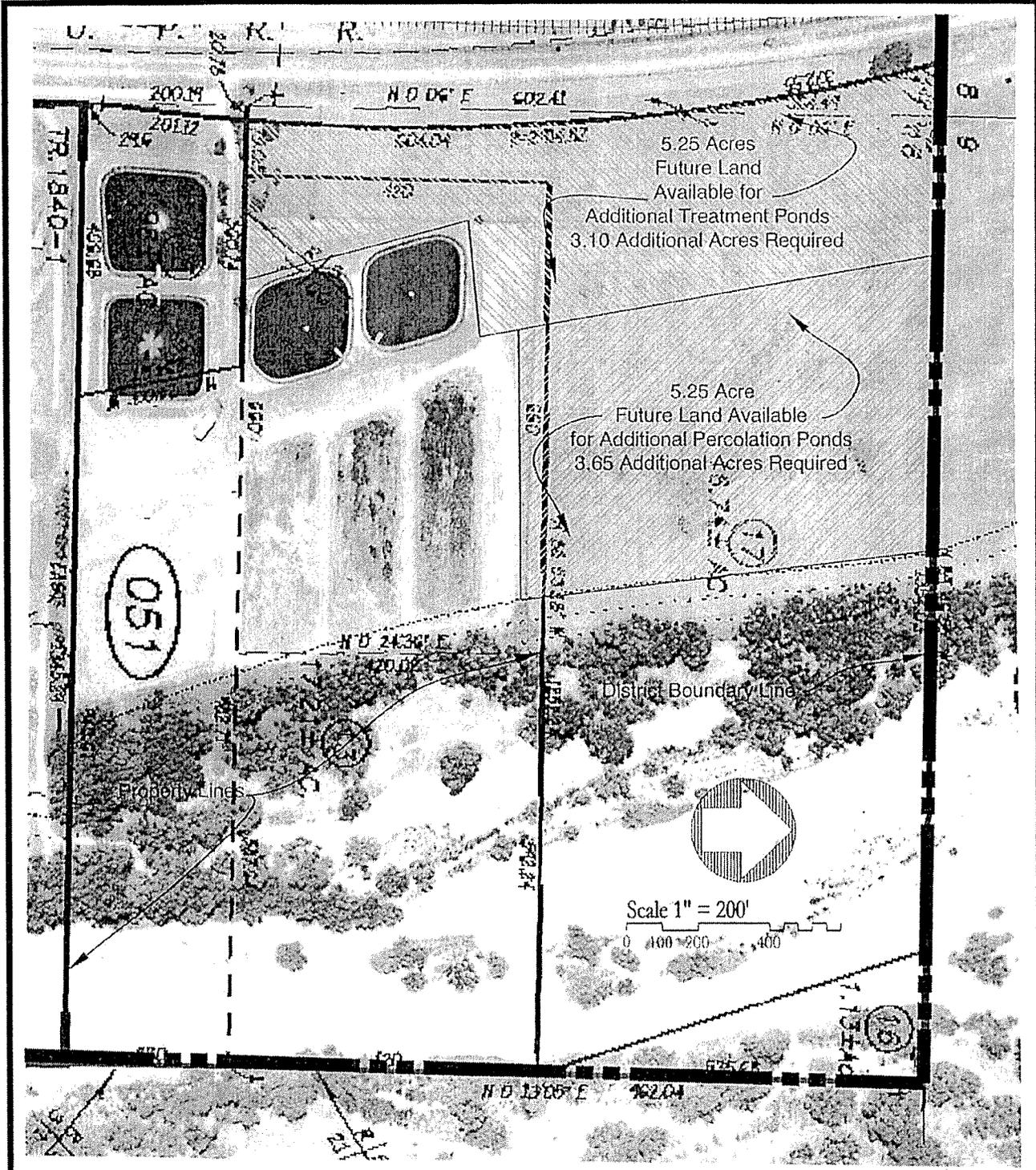
Sincerely

SAN MIGUEL COMMUNITY SERVICES DISTRICT



Steven G. Tanaka, P.E.
District Engineer

Cc: J.M. Ellison, General Manager
John Knight, RRM



San Miguel
Community
Services District

Figure 1-2
Future Land Requirements



