



Las Virgenes Municipal Water District

Preliminary Water System Design Report for Tentative Tract No. 52652

**Kittridge
Los Angeles County, California**

October 2006

BOYLE

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Preliminary Water System Design Report for Tentative Tract No. 52652 Kittridge Area

Las Virgenes Municipal Water District

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Las Virgenes Municipal Water District
Preliminary Water System Design Report
Tentative Tract No. 52652
Kittridge Area

Section 1 - Introduction

The purpose of this water system design report is to investigate the feasibility of providing water service to Tentative Tract No. 52652 and to develop criteria for the facilities required to provide adequate service thereto. The proposed development consists of 30 single-family homes, adjoining an older development (Tract 23762) in the Kittridge area of the District, west of Valley Circle Boulevard.

The older tract was constructed in 1965, and is served from the 1235-ft (backbone) pressure zone. However, a second-phase of this older tract was never constructed, largely because a pump station and tank was required to serve the higher elevations within this second phase. In accordance with District rules, the cost of constructing a new pump station and tank to serve a new pressure zone is to be borne by the developer of the zone. At that time, a small pump station site, 2,200 square feet in area, was dedicated to the District, but the second phase was never constructed.

When the original system was designed, it was envisioned that this pump station would serve not just the second phase, but also portions of the older tract—in particular Randiwood Lane and that portion of Kittridge Street that is west of the proposed pump station site. Higher-pressure class piping was installed in both these streets. Occasionally complaints about low pressure have been received from residents along these streets. In January 2003, in response to such complaints, District staff prepared LVMWD Report No 2228.00, which concluded that the conditions of service met District rules, but that pressure dipped as low as 37 psi at some residences. Such pressures are generally less than desirable, unless the plumbing systems within the homes have been specially designed for low pressures.

“Elevation Agreements” have been recorded at four of these existing homes. These agreements are deed-recorded acknowledgements that low pressure service is expected.

To serve the proposed new development, a water storage tank as well as a pump station will be required, in accordance with District policy that fire flow should not be dependent upon pumping. As envisioned

in the original plans for this area, the pump station should be designed to supply both the new development and 25 existing higher-elevation homes on Randiwood and Kittridge.

The owner and developer of Tentative Tract No. 52652 is Faye Estates, L.L.C., 23679 Calabasas Road No. 343, Calabasas, CA 91302; telephone (818) 421-9595. The developer's engineer is S.E.C. Civil Engineers, Inc., 16889 Saticoy Street, Van Nuys, CA 91406; telephone (818) 782-2788.

Section 2 – Proposed Development

Tentative Tract No. 52652, shown on **Plates 1 and 2**, is located on approximately 58 acres west of Valley Circle Boulevard. Access to the tract will be from continuations of both Kittridge Street and Welby Way. The site is in an unincorporated area of Los Angeles County.

The proposed developments consist of 30 new single-family residential lots. Currently the property is zoned R1-10,000 and RPD-30,000-1.5U. No change in zoning is proposed. The proposed residential lots range in size from 0.5 to 15 acres (Lot 8).

Ground elevations within the proposed development range from approximately 1000 feet at the north end (on lot 2) to 1330 feet at the west corner (on lot 10). Building pad elevations range from 1080 feet (Lot 1) to 1325 feet (Lot 10). Because of the hilly terrain, large cut-and-fill slopes are required to create relatively flat building pads.

Section 3 – Water Demand

The 30 new single-family homes will provide housing for approximately 90 people. Unit water demand and peaking factors used in this report are based on **Table 5-11** found in Reference 1 (LVMWD Report No. 2096.05). The average daily demand presented in Reference 1 for non-urban residential use in this area of Los Angeles County is 100 gpd/person. This demand factor is based on historical usage for older developments with moderately sized lots. The proposed development is for estate-sized lots where considerably higher demands would be expected due to landscaping. In addition, irrigation of large cut-and-fill slopes will also be served by the potable water system. According to the developer's grading plan these cut-and-fill slopes are not common areas, but are located within each lot.

In order to project the potable water demand for the proposed development accurately, an average daily demand of 2000 gallons per day per developed acre was used. This demand factor is more typical of other new, large size lots for non-urban residential developments throughout the District. Based on the developers tentative tract map, approximately 32 acres of graded area exist, excluding the roadways. Demands for the new development are therefore estimated as follows:

$$\text{Total Average Demand} = 32 \times 2000 = 64,000 \text{ gallons per day}$$

$$\text{Average Day Demand (ADD)} = 64,000/24/60 = 44 \text{ gpm}$$

$$\text{Maximum Day Demand (MDD)} = (\text{ADD} \times 2.1) = 93 \text{ gpm}$$

$$\text{Peak Hour Demand (PHD)} = (\text{ADD} \times 2.1 \times 2.5) = 233 \text{ gpm}$$

The peaking factors of 2.1 and 2.5 are taken from Reference 1.

As discussed in Section 5 – Proposed Water System, a new pressure zone with a nominal gradient of 1340 feet must be constructed to serve the proposed development. Currently, all lots within existing Tract 23762 are served from the 1235-foot pressure zone. Several of these lots experience minimum service pressures lower than 43 psi, which is the District's standard. The addition of Tract 52652 to the existing distribution system would adversely impact the water pressures to these lots and others nearby, unless they are connected to the higher zone. Moreover, the original design for the water system in this

area planned for the inclusion of 25 lots of Tracts 23762 in the higher pressure zone. The new pressure zone created to serve Tract 52652 will therefore also need to serve 25 lots in Tract 52652. The demand for these 25 lots is estimated as follows:

$$\text{Total Yearly Consumption} = 6350 \text{ hcf}^1$$

$$\text{Average Day Demand (ADD)} = 635,000 \text{ gal/cf} / 365 \times 24 \times 60 = 9 \text{ gpm}$$

$$\text{Maximum Day Demand (MDD)} = (\text{ADD} \times 2.1) = 19 \text{ gpm}$$

$$\text{Peak Hour Demand (PHD)} = (\text{ADD} \times 2.1 \times 2.5) = 47 \text{ gpm}$$

Whenever a new pressure zone is proposed, it is District policy to consider the potential need for the new pressure zone to serve adjacent areas that may be developed in the future. However, in this case, the new pressure zone will be confined by existing service boundaries. To the north and south of the new zone, service is provided by the Los Angeles Department of Water and Power. The Ventura County boundary line bounds the area to the west. Therefore, no additional water demands are expected for this zone. Since the new tank is proposed to have a maximum water surface elevation of approximately 1340 feet, the maximum ground elevation that could be served would be approximately 1240 feet.

A summary of the demand estimated for the entire proposed 1340-foot zone and the various areas described above is shown on **Table 1**.

Table 1 – Estimated Water Demands

Tract	Average Day Demand	Maximum Day Demand	Peak Hour Demand
52652	44 gpm	93 gpm	233 gpm
23762 (25 houses)	9 gpm	19 gpm	47 gpm
Totals	53 gpm	112 gpm	280 gpm

¹ Based on billing records, August 2005 through July 2006.

The developer has not yet obtained fire flow requirements from the Los Angeles County Fire Department. For this preliminary water system design report, an estimated fire flow of 2000 gpm for 2 hours has been used. Based on Los Angeles County Fire Department Regulation No. 8, this fire flow is appropriate for two-story, single-family dwellings with a first floor area up to 7,999 square feet. If houses with larger first-floor areas are planned, a re-analysis will be required, unless the Fire Department accepts fire sprinklers or another accommodation in lieu of a higher fire flow. Per Fire Department regulations, a residual pressure of 20 psi must be maintained at each flowing hydrant. Per State of California regulation, 20 psi shall also be provided at each service during a fire-flow event.

Section 4 – Existing Water System

Tentative Tract No. 52652 will be supplied from the District's nominal 1235-foot gradient backbone system. The District currently has a transmission pipeline in Valley Circle Boulevard, which delivers water from the Andora Turnout (LV-1) on the Metropolitan Water District's West Valley Feeder Unit 1 to the Conduit Pump Station where it is pumped into nominal 1235-foot gradient system. Water is also taken from the LV-2 turnout in Calabasas, via Metropolitan's Calabasas Feeder, which receives water from West Valley Feeder No. 2. The existing water system facilities near the proposed development are shown on **Plate 1**.

The gradient in the area is largely determined by the water level in the 8-million gallon Calabasas Tank. Gradients in the transmission pipeline vary from approximately 1220 feet to 1245 feet depending of the water levels in the tank and whether Conduit Pump Station is operating. As discussed in Section 1 of this report, low pressure complaints have been received at times from residents in the higher portions of the older tract, and a 2003 investigation and analysis by LVMWD staff confirmed that pressures were frequently below the District standard of 43 psi, although these pressure met District rules regarding conditions of service. If these residents were not connected to the discharge side of the proposed pump station, significant further degradation of their service would occur. The elevations of these services range to approximately 1142 feet.

The system has been planned for service to the new tract since the 1960s. A fee parcel was deeded to the District for a pump station site. Pipelines in the area were designed for both the new development and the switching of the 25 existing homes to the new pressure zone. A 12-inch pipeline exists on the suction side of the pump station. A 10-inch, Class 250 steel pipeline exists on the discharge side. This discharge pipeline also connects to Randiwood Lane and the portion of Kittridge Street where pressure problems currently exist. Approximately 550 feet of existing pipeline on the north end of Randiwood Lane is only 4-inches in diameter. Replacement of this small-diameter pipeline will be required, in order to provide the estimated fire flow to the new residences on Welby Lane.

Section 5 – Proposed Water System

The proposed water system necessary to serve Tentative Tract No. 52652 is shown on **Plate 2**. Due to the high elevations in the proposed development, a new pressure zone, served by a new pump station and a new tank, must be constructed. The new pressure zone will have a nominal gradient of 1340 feet. The pump station will take suction from a 12-inch pipeline in Kittridge Street, which connects to the 30-inch transmission main on the discharge side of Conduit Pump Station. The pump station will discharge to an existing 10-inch pipeline, which carries the flow to the intersection of Randiwood Lane and Kittridge Street, where the flow splits into two 8-inch pipelines. At the intersection of Kittridge and Archwood Street, the two pipelines join to a single 12-inch pipeline that carries the water to and from the proposed tank. In accordance with District standards, main isolation valves will be required at each intersection. Hydrants will likely be needed approximately every 300 feet along all streets. These hydrants shall conform to AWWA Standard C503-82 with 6"x4"x2-1/2" bronze heads. The actual location of these hydrants shall be coordinated by the Developer with the Fire Department.

A parcel on the south side of Kittridge Street, between Randiwood Lane and Vickiview Drive, was deeded to the District for a future pump station site, when the original development occurred. This site is small, with only about 1200 square feet of buildable area, and thus may not be adequate. If the site is determined to be unsatisfactory for a pump station, it will be the responsibility of the developer to dedicate a suitable fee parcel to the District. The maximum elevation of the building pad on which the pump station is built should be at an elevation of approximately 1160 or lower, in order to assure adequate suction pressure. In accordance with District policy, the pump station will be located within a building for sound attenuation and weather protection. The building shall be designed to conform to the general aesthetics of the neighborhood.

The proposed tank will be located on a separate fee parcel to be conveyed by the developer, at the northwest corner of "Lot 10." The developer will be responsible for providing a paved access road from Archwood Street to the tank within a dedicated easement. The fee parcel shall contain enough room for the tank, tank appurtenances, a 15-foot access road around the tank, and room for placement of

a temporary tank, as discussed later in this report. The tank site shall be surrounded by an earthen berm (or the tank shall be partially buried), so as to be unseen from the existing and proposed homes.

The portion of "Lot 10" that is not devoted to the tank and access road may be used for the construction of a single-family residence, however this residence will require its own on-site pump and tank, because virtually no water pressure would be available from the District's main. A deed-recorded "elevation" agreement will also be required for any residential lot developed from the balance of "Lot 10."

The geological feasibility of these pump station and tank sites is beyond the scope of this report. The developer will be responsible for submitting an appropriate geotechnical report for both sites, for District review and approval.

The proposed pump station and tank were sized to minimize power costs by pumping for a 9-hour duration at night and taking advantage of "off-peak" power rates, as recommended in Reference 1. It is also desirable to operate the proposed pump station at night so as not to increase the peak daytime demand within the 1235-foot system. The "on-peak" hours are presently defined as noon to 6:00 p.m. on summer weekdays; "mid-peak" hours are defined as 8:00 a.m. to noon and 6:00 p.m. to 11:00 p.m. on summer weekdays, and 8:00 a.m. to 9:00 p.m. on winter weekdays. All other hours, weekends and holidays are considered "off-peak".

The water supply to the proposed pump station will be transmitted through existing mains within adjacent Tract No. 23762. Due to existing low-pressure conditions within that tract (as described in LVMWD Report No. 2228.00), four lots have recorded elevation agreements. With the addition of the pump station for the new 1340-foot zone, it is estimated that these and other homes within Tract No. 23762 will experience pressures even lower than District standard. Due to these low pressures, and in accordance with the long-established plans of the District, the proposed pump station and tank are sized with an initial capacity to serve not only Tentative Tract No. 52652, but also the 25 existing homes in Tract No. 23762.

The pump station capacity, based on a 9-hour nighttime pumping duration, is shown in **Table 2**.

Table 2
Required Pump Station Capacity – 1340-foot Pressure Zone

<u>Projected Demands:</u>		<u>Maximum Day Demand</u>
Projected Demand – Tentative Tract 52652:		93 gpm
Projected Demand – Tract 23762:		19 gpm
Total Projected Demand:		112 gpm
<u>Pumping Capacity Calculation:</u>		<u>Required Capacity</u>
Minimum Pumping Capacity		
=MDD(24 hrs./9 hrs.)		
=112(24/9)		= 300 gpm

It is proposed that the pump station have two pumps, each with a capacity of **300 gpm**. One pump would be for “duty” purposes and the other for “stand-by”. Each pump would require a 20 hp motor. While pumping, the minimum residual pressure at the suction side of the pump station is expected to be approximately 60 psi. The maximum static suction pressure is estimated at 79 psi. The size of the proposed pump station will be approximately 25 feet x 40 feet, including building and equipment yard, plus sufficient area for parking of a District vehicle. The design and construction of the pump station must conform to District standards.

The storage capacity of the proposed tank was evaluated based on the 9-hour, off-peak pumping criteria outlined in Reference 1. **Table 3** shows the Tank Capacity Calculations for daily regulation storage, fire storage, and five-hour emergency reserve. The required storage tank must have a capacity of at least 0.42 MG. The tank will be approximately 20 feet high and approximately 64 feet in diameter and meet District standards for design and construction.

Table 3
Tank Capacity Calculations

Tank Capacity Calculations		Based on MDD
Tract 52652		93 gpm
Tract 23762		19 gpm
	Total Demand	112 gpm
Daily Regulation = [(112 gpm) x (21.3 hrs) x (60 min/hr)] =		143,000 gallons
Fire Storage = [(2000 gpm) x (2 hrs) x (60 min/hr)] =		240,000 gallons
Emergency Reserve = [(112 gpm) x (5 hrs) x (60 min/hr)] =		34,000 gallons
Total		417,000 gallons
		(0.42 MG)

NOTE: Based on 9-hour, off peak pumping as outlined in Reference 1.

Since only one tank is proposed, provision should be made in design of the tank site to accommodate a temporary tank, when the 0.42 MG tank is removed from service. A level, paved area, not less than 15 feet by 45 feet should be provided, along with sufficient access area, so that a portable tank, such as is available from the Baker Company, can be installed.

Hydraulic gradients and pressures expected at key locations within Tentative Tract No. 52652 and Tract 23762 (1340-foot zone), during various demand conditions, are shown in Table 4.

Service connections below an elevation of 1155 feet will experience maximum pressures greater than 80 psi, requiring individual pressure regulators ahead of building plumbing, in accordance with the 80 psi limitation imposed by the Uniform Plumbing Code. This applies to approximately 9 lots within the proposed development, and all existing homes on Randiwood Lane and that portion of Kittridge Street that is west of the proposed pump station (25 existing home in total). Because the need for these pressure regulators is prompted by this development, the cost of installing them shall be borne by the developer. In addition, service lines that were previously installed along the west side of Randiwood Lane shall be disconnected at the main and abandoned.

In addition to the fee parcel required for the tank and the easement required for the tank access road, the developer would also be required to provide legal easements for any water lines and other appurtenances that are outside of public right-of-ways.

Table 4
Hydraulic Gradients¹ / Pressure
1340-Foot Zone

Location	Peak Hour Demand (PHD)	Maximum Day + Fire Flow	Maximum Gradient
Lowest Pad of Tract 52652 (Lot 1) Elev. 1080	1324 ft (106 psi)	1212 ft (55 psi)	1340 ft (113 psi)
Lowest House of Tract 23762 (next to Pump Station) Elev. 1053	1322 ft (116 psi)	1286 (100 psi)	1340 ft (124 psi)
Highest Pad ² Lot 9 Elevation 1225	1325 ft (43 psi)	1319 ft (41 psi)	1340 ft (50 psi)
Highest FH near Lot 9 Elevation 1250	1325 ft (32 psi)	1319 ft (30 psi)	1340 ft (39 psi)
Most Remote FH (near Lot 2) Elevation 1085	1325 ft (103 psi)	1208 ft (53 psi)	1340 ft (110 psi)
Notes: <ol style="list-style-type: none"> 1. The gradients shown are in the water main. The calculated pressures do not include any head loss between the point of connection to the main and the point of use. 2. As discussed on Page 5-1, the highest lot, Lot 10, can only receive service with an on-site pumping and storage system owned and maintained by the resident. 			

As noted in Section 4, to provide fire flow to the three new residential lots at the west end of Welby Way, approximately 550 feet of 4-inch diameter main must be replaced with 8-inch diameter pipe.

Section 6 – Recycled Water

Providing recycled water for irrigation within Tentative Tract No. 52652 is not being considered at this time. The nearest facilities in the District's Recycled Water Systems are located approximately 3 miles south of the proposed development. However, given the large size of the proposed lots, irrigation and domestic plumbing should be installed separately in order to facilitate the conversion of irrigation systems to recycled water, if it ever becomes available.

Section 7 – Sewer Service

Tentative Tract No. 52652 is located within the service area of Las Virgenes Municipal Water District's Sanitation Improvement District U-3. Annexation for the proposed development is not required – it was part of the District when the District was formed. The County of Los Angeles will review and approve the actual design of the collection system, and will own and maintain the pipelines.

This development is located in an area that is not within reach of the District's sewerage collection facilities. The City of Los Angeles is under agreement with the Las Virgenes Municipal Water District to convey and treat sewage from developments in the area. Under this agreement, the District is required to pay the City of Los Angeles for conveyance, treatment and applicable charges related to new development. The District recovers these costs from sewer service and capital facilities charges to the new development.

Based on the proposed 30 single-family units, it is estimated that Tentative Tract No. 52652 will generate approximately 9,000 gallons of sewage per day as shown in **Table 5**.

Table 5
Sewage Generation

Land Use	Units	Daily Generation Rate (gallons/unit)	Daily Total (gallons)
Residential	30	300	9,000

Section 8 – Construction Phasing and Acceptance

It is not known at this time whether the tract will be constructed in phases. Prior to the approval of a Final Water System Design Report, any construction phasing that affects the water system will need to be defined. If phasing is proposed, the pump station, the tank, and all pipelines in between will need to be constructed in Phase 1. This includes the pipelines in both Kittridge and Archwood Streets, unless the sizes of the proposed pipelines are increased.

The District will consider final acceptance of the potable water system when a previously defined, separately bonded phase of the project is completed. Construction shall be considered complete for a phase when all facilities related to the potable water system have been installed in accordance with the District's standards and the approved water system design report, and all-meter boxes have been set to grade in concrete sidewalks.

Phased construction shall only be approved in contiguous phases that allow for orderly construction and acceptance of the potable water system. Phases shall be separated by valves that provide for isolation of approved and unapproved portions of the water system. Each phase shall have provision for a master meter constructed as part of the water system. The phasing plan of the proposed development is non-amendable. If any modifications are proposed to the phasing plan, an addendum to the Water System Design Report will be required in order to verify that adequate flow and pressures will be available prior to the construction and acceptance of each phase.

To accommodate the natural progression of this development, the water system must be accepted in one or more orderly and contiguous phases. The developer shall relocate the master meter to the next phase upon approval of the previous phase.

The developer must comply with the Special Conditions for bonds, temporary risers and hose bibs, and repair of damage to accepted water system components set forth in the District's memorandum entitled, "Review of Policy – Acceptance of Tract Water Systems (July 14 1989)."

Section 9 – Financial Impact on District

The new water system facilities required to serve Tentative Tract No. 52652, including the pump station and tank, are for the benefit of the developer and provide no benefit to the existing District system. The developer is therefore responsible for funding the proposed pump station with a “duty” capacity of 300 gpm, the proposed tank with a minimum capacity of 0.42 MG, a paved tank access road from Archwood Street to the tank, all of the new in-tract and off-site waterlines and appurtenances. The developer is also responsible for funding the installation of pressure regulators on the 25 existing houses within adjacent Tract 23762.

District financial participation in the new potable water system facilities outlined in this report is not warranted under District Rule and Regulations. Section 3-3.201 of LVMWD Administrative Code states that if “an applicants property cannot be served from an existing water main, then the applicant shall provide for the extension of the facilities necessary to provide such service...”

Section 10 – Water Conservation

In accordance with District Water Ordinance 11-86-161, the following water conservation measures are required:

- Waste and leakage of water is not allowed.
- For residential development, all toilets installed shall use 1.6 gallons or less per flush, and all showerheads shall flow at 2.5 gallons per minute, or less, at 80 psi.
- If a model home display is to be provided, one of the models must be landscaped with water efficient (Xeriscape) plant materials and irrigated with an appropriate water conserving irrigation system. Further, the Xeriscape model shall be designed to be drought tolerant; irrigation intensive plantings are discouraged. Turf shall occupy no more than 30% of the landscaping. The model home display shall draw attention to the specific landscape materials and irrigation techniques utilized.

To obtain maximum benefit of the limited water resources of the State of California, Las Virgenes Municipal Water District has adopted landscape ordinances, which require plant materials and irrigation systems to be water efficient. In accordance with District Ordinance No. 1-93-205, landscape and irrigation plans must be submitted to the District for review. The landscape and irrigation plans must be in conformance with District landscaping and irrigation specifications, as contained in the Las Virgenes Municipal Water District Landscaping Guide.

Section 11 – Environmental Review

The District is a “responsible agency” for the purpose of environmental review of this project under the California Environmental Quality Act (CEQA). The lead agency for the environmental review of this project under CEQA is the County of Los Angeles. Prior to the approval of a “Final” Water System Design Report, copies of adopted environmental and planning documents must be provided to the District, showing conditions of approval.

The proposed pump station and tank to serve Tentative Tract No. 52652 shall also be addressed in CEQA documentation. If, in the opinion of the District, these facilities are not adequately addressed, the developer will be responsible for the cost of additional environmental analysis and documentation prepared for the District for these facilities.

As discussed earlier, the architectural design of the proposed pump station building should be in character with the surrounding residences. The proposed tank should be constructed to comply with viewshed mitigation requirements, by installing berms, native-type vegetation or partially burying the tank. The tank should be effectively screened from residences and public roadways.

Section 12 – Conclusions and Recommendations

A. It is concluded that:

1. To provide adequate water service to the proposed development, the following facilities must be installed by the developer:
 - a. The water main(s), as shown on **Plate 2**, and the connection to the existing District facilities on Kittridge Street and Vickiview Drive.
 - b. A minimum of ten (10) new fire hydrants conforming to AWWA Standard C503-82.
 - c. A pump station on Kittridge Street as shown on **Plate 2** and described herein. The pump station will serve domestic flows to the proposed 1340-foot zone at a capacity of 300 gpm, with 300 gpm standby capacity. The pump station shall be constructed in conformance with District Standards, and conform to the general character of the neighborhood.
 - d. A 0.42 MG tank, as shown on **Plate 2**, with a high water elevation of 1340 feet. The tank shall be constructed in conformance with AWWA and District Standards.
 - e. Room at the tank site for a temporary tank and parcel only with the exception of a separate private pump.
 - f. A paved access road to the tank.
 - g. Viewshed mitigation measures that effectively conceal the tank from the public.
 - h. Pressure regulating valves on 25 existing homes along Randiwood Lane and the upper portion of Kittridge Street.
2. Service connections below 1155 feet in elevation, including both Tentative Tract 52652 and a portion of Tract 23762, will experience maximum pressures estimated to be greater than 80 psi

but less than 150 psi, and will require an individual pressure regulator ahead of building plumbing in accordance with the 80 psi limitation imposed by the Uniform Plumbing Code.

3. All water system improvements should be designed to accommodate hydraulic gradients not less than 1340 feet.
4. The developer will be required to dedicate a fee parcel to the District for the proposed tank, and easements for the paved tank access road and all proposed waterlines outside of public streets and existing District rights-of-way. Similarly, if a new site for the pump station is used, a fee parcel shall be dedicated to the District.
5. Recycled water is not available to serve the development.
6. No District financial participation in new on-site and off-site water system facilities related to Tentative Tract No. 52652 is warranted.

B. It is recommended that:

1. The potable water system facilities shown on **Plate 2** and outlined herein are for planning purposes only.
2. The developer submit environmental documents adopted by the County of Los Angeles for inclusion is a Final Water System Design Report.
3. No District financial participation in new on-site and off-site water system facilities related to of Tentative Tract No. 52652 is warranted.
4. Landscape irrigation and domestic plumbing systems should be installed separately in order to facilitate conversion to recycled water, if it becomes available in the future.

Section 13 – Limitations

Report Intent. This Water System Design Report is intended only to develop the hydraulic information necessary to design a water system. No effort has been made at this time to precisely locate existing or proposed facilities. Conflicts may develop as more information is discovered about both existing and proposed pipelines, street grades, etc. Corrections of conflicts related to this project will be the responsibility of the applicant.

Project Changes. This Water System Design Report is based upon information submitted by the developer of the subject property and his representatives. Accordingly, this design report may be subject to modification to reflect changes made by the applicant. This report may also be subject to modifications to reflect additions or amendments to the District's Water Ordinance and The District's Design Standards prior to approval of the final design. Any revision in the above information or the tentative map or deviation therefrom may invalidate the conclusions and recommendations. A supplemental or amended report must be prepared for the use of the District at the applicant's sole expense if the project or the data is changed.

Other Agency Approvals. The Water System Design Report has been prepared at the request of the developer. Approval of this report does not indicate the District either supports or opposes the underlying project or any related project. District staff will answer questions concerning this report. However, the project proponent is solely responsible for securing necessary project approvals from state, regional, and local agencies with jurisdiction by law without the express or implied intervention or support of the District.

Project Delays. This Water System Design Report is based upon the assumption that the project will be implemented in due course. A supplement, amendment or complete report must be prepared for the use of the District at the proponent's sole expense if the project is unduly delayed.

Warranty of Supply. The approval of this Water System Design Report does not constitute a commitment by the District to supply water or provide sanitation service to the project. The project will be assured of connection to the water and sanitation systems of the District only if the proponent also

References

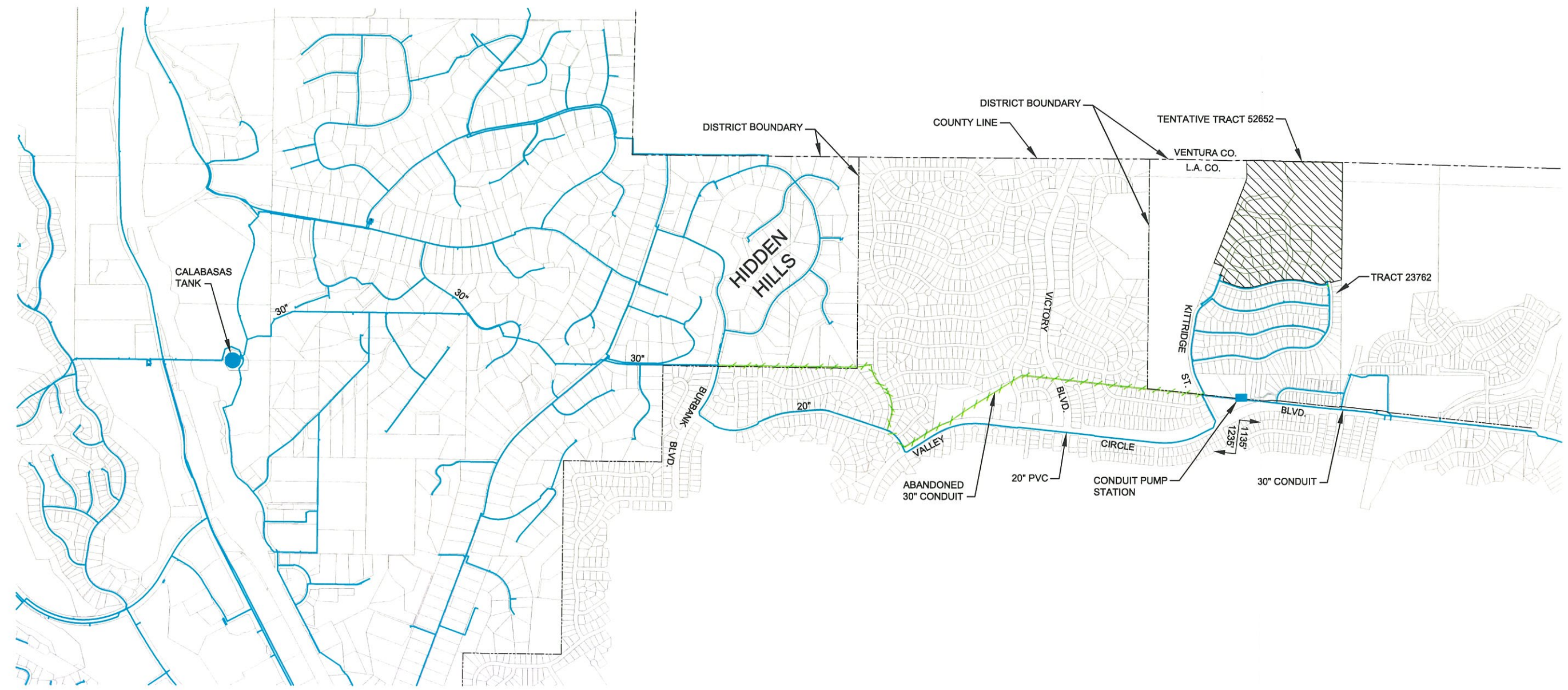
1. *Potable Water System Master Plan for the Las Virgenes Municipal Water District*, Boyle Engineering Corporation, December 1999 (LVMWD Report No. 2096.05).
2. *Recycled Water System Master Plan for Las Virgenes Municipal Water District - Triunfo Sanitation District Joint Venture*, Boyle Engineering Corporation, April 1999 (LVMWD Report No. 2096.00).
3. *Tract 23762, West Hills Pressure Study*, Las Virgenes Municipal Water District, January 2003 (LVMWD Report No. 2228.00).
4. Los Angeles County Fire Department, Fire Flow Regulation No. 8.

Appendix

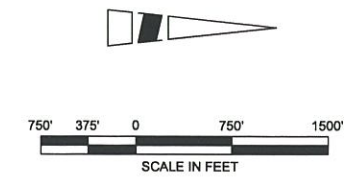
Documentation showing adoption of environmental reports and conditions of approval from Planning Commission to be included in Final Water System Design Report.

Plates

DWG: F:\LVMWD\16127.14 - Tract 52652 Kittridge\CAD\Planset\PLATE-1.dwg
DATE: Oct 24, 2006 8:10am
USER: bmasse
XREFS: baseparcels(12-8-03)
Pipes (LV)
MASTER



LEGEND
— EXISTING WATER MAINS



LAS VIRGENES MUNICIPAL WATER DISTRICT TENTATIVE TRACT 52652		
VICINITY MAP AND EXISTING POTABLE WATER SYSTEM		
16127.14	OCT 2006	PLATE 1

