

PRELIMINARY WATER FACILITIES PLAN

for ALBERHILL VILLAGES SPECIFIC PLAN

in the City of Lake Elsinore,
County of Riverside, California



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INTRODUCTION

1.1 PURPOSE OF STUDY

The Alberhill Villages project, TM 35000 is located within the Elsinore Valley Municipal Water District (EVMWD) for water service within City of Lake Elsinore. The purpose of this report is to discuss the District's new static water pressure guidelines and phasing needs of the project as it relates to the District's planned Water Distribution System Master Plan facilities, more specifically the establishment of the water facilities, the estimated project water demands that will be required for the development of this project. This report will provide information concerning projected water demands, projected reservoir storage, existing water facilities, and recommended water facilities to support the project. It will also identify the approximate alignments and pipe size of these water infrastructures. The project water demands are based on the land use within the planning areas identified in the Alberhill Villages Specific Plan (AVSP) updated land use plan which is currently being processed through the City of Lake Elsinore.

1.2 PROJECT DESCRIPTION

As proposed by the Alberhill Villages Specific Plan, the current mining site will be reclaimed for development as the existing onsite clay, sand, and aggregate mining operations are gradually phased out. The Alberhill Villages project site is comprised of approximately 1,374 acres of undeveloped land that is currently being mined for its mineral resources. The site will also include an additional 9.1 acres and 16.8 acres for development which was originally part of the Alberhill Ranch Specific Plan. The site is bounded by undeveloped vacant land to the south, the I-15 Freeway to the north, the existing Horsethief Canyon development to the west, and Lake Street to the east. **Figure 1-1** shows a vicinity map of the area. The Alberhill Villages site is planned for a large mixed-use community consisting of a university campus, recreational lake and park areas, mixed-use commercial/office/retail, neighborhood commercial, public institutions/schools, and a large residential component ranging from very low density estate lots to very high density multifamily lots. Lake Street and Temescal Canyon Road/Lincoln Street are the main north-south thoroughfares into the community connecting the Downtown Lake Elsinore area and Interstate 15 Freeway. The development of Alberhill Villages project and other neighboring communities will enhance the north area of the City of Lake Elsinore producing a profound entry statement into the City off of Interstate 15 at Lake Street.

1.3 RELATED STUDIES

The Elsinore Valley Municipal Water District Water Distribution System Master Plan, prepared by MWH in February 2008, provides a regional study identifying existing and future proposed water supply, storage, and transmission facilities within the District's ultimate service area. The

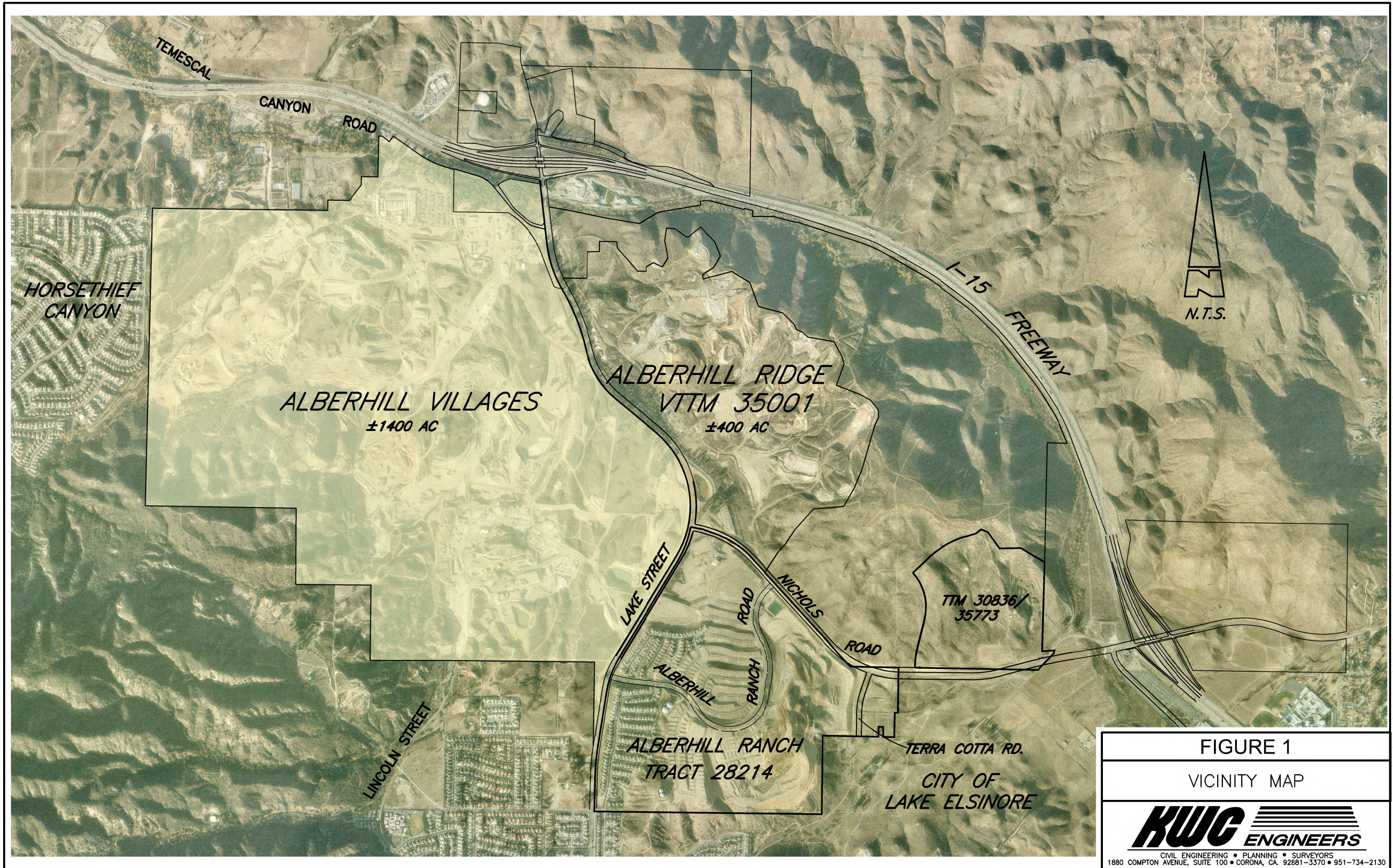


FIGURE 1

VICINITY MAP



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study also presents design criteria to be utilized in water supply, system pressures, pipeline velocities, fire flow criteria, storage volumes, operational storage, fire protection storage, emergency storage, and pump capacities. The report also provides information on the District's planning and evaluation criteria that can be applied to determine projected water demands.

Dexter Wilson Engineering, Inc. prepared in March 2006 a Master Plan of Water for Alberhill Ranch - Tract Nos. 28214 and 30836 which is located southeast of this project. The purpose of the study was to establish the water facilities that would be required for the development of Tract Nos. 28214 and 30836, some of these facilities will also serve this development. The Master Plan of Water for the Alberhill Area was reviewed and approved by EVMWD in 2013. The PDR provides the preliminary design for water supply to Alberhill Village Specific Plan. The District currently is reviewing the Alberhill Ranch Preliminary Design Report for the 1601/1676 Pump Station prepared by Dexter Wilson Engineering, Inc.

In addition to this study, EVMWD has reviewed and approved the Alberhill Villages and Alberhill Ridge Water Supply Assessment as prepared by MWH in March 2012. This water supply assessment concluded that EVMWD has sufficient existing and planned supply to meet the existing and currently committed future maximum day demands conditions including Alberhill Villages and Alberhill Ridge development during normal, single dry and multiple dry years over a 20-year period.

EVMWD has also reviewed the Addendum to Preliminary Water Facilities Plan for the Alberhill Ridge project prepared by KWC Engineers on May 28, 2013 in conjunction with the submittal of the Alberhill Ridge VTTM 35001 to the City of Lake Elsinore. This report identifies the proposed water infrastructure facilities required to support the Alberhill Ridge development which Alberhill Villages Phase I utilizes.

2

DESIGN CRITERIA

This section presents the design criteria used to evaluate recommended water system improvements required for the Alberhill Villages project. The criteria utilized in this study are in accordance with the February 2008 EVMWD Water Distribution System Master Plan, and the 2015 EVMWD Standard Specifications.

2.1 WATER DUTY FACTORS

The water duty factors used in projecting water demands for the project are listed in **Table 2-1**. **Table 2-2** lists other recommended water duty factors for land uses per unit basis.

TABLE 2-1

WATER DUTY FACTORS		
Land Use category	Water Duty Factor	Unit
Residential		
Mountainous (0-.1du/ac)	250	gpd/acre
Very Low Density (.1-.5du/ac)	400	gpd/acre
Low Density (.5-2du/ac)	800	gpd/acre
Low Medium Density (2-4du/ac)	2000	gpd/acre
Medium Density (4-6du/ac)	2300	gpd/acre
Medium High Density (6-12du/ac)	3000	gpd/acre
High Density (12-24du/ac)	5000	gpd/acre
Mixed Use (24du/ac max)	2300	gpd/acre
		gpd/acre
Non-Residential		
Business Park	1200	gpd/acre
Commercial office	3000	gpd/acre
Freeway Business	1300	gpd/acre
General Commercial	2500	gpd/acre
Limited Industrial	900	gpd/acre
Neighborhood Commercial	1000	gpd/acre
Open Space/Recreation	2000	gpd/acre
Public Institutional	2300	gpd/acre
Schools	4000	gpd/acre
Tourist Commercial	2500	gpd/acre
Parks/Landscaping	4000	gpd/acre

TABLE 2-2

WATER DUTY FACTORS FOR RESIDENTIAL DWELLING UNITS		
Land Use category	Water Duty Factor	Unit
Residential		
Low Density (<2du/ac)	750	gpd/du
Low Medium Density (2-4du/ac)	600	gpd/du
Medium Density (4-6du/ac)	500	gpd/du
Medium High Density (6-12du/ac)	450	gpd/du
Medium High Density (6-12du/ac)	350	gpd/du

To convert Average Day Demand flows (ADD) to Maximum Day Demand flows (MDD) a factor of 2.0 was used. Similarly for Peak Hour Demand flows (PHD) a factor of 4.5 was used.

2.2 PLANNING CRITERIA

The planning criteria are used to evaluate the proposed system hydraulic models. They are utilized as a check to confirm that the values being developed are reasonable. The District has revised its pressure range guidelines on November 25, 2014 to require a minimum static pressure of 60 psi and maximum of 125 psi. A list of planning criteria used in the evaluation of this project is shown in **Table 2-3**.

TABLE 2-3

PLANNING CRITERIA		
Description	Value	Unit
Maximum Pressure	125	psi
Minimum Pressure		
Peak Hour	60	psi
MDD + Adjacent to a Fire	20	psi
Maximum Pipeline Velocity		
Transmission Pipelines	3	fps
Distribution Pipelines (non-fire)	6	fps
Distribution Pipelines (fire)	10	fps
Fire Fighting Capabilities (Duration assumed for 4 hours)		
Parks	1,000	gpm
Single Family Residential (1 du/acre or less)	500	gpm
Single Family Residential (1-2 du/acre)	750	gpm
Single Family Residential (greater than 2 du/acre)	1,000	gpm
Medium Residential	1,500	gpm
Multi-Family Residential	2,500	gpm
Commercial and Industrial	2,500	gpm
Schools and Public Facilities	4,000	gpm
Emergency Reservoir Storage Volume	1 MDD	-
Operational Reservoir Storage Volume	30%MDD	-

2.3 SYSTEM PRESSURES

The water distribution system has been designed to maintain static pressures between 60 psi and 125 psi as per the District's recently adopted pressure guidelines on November 25, 2014. This criteria is used to initially divide a project between water service zones. **Appendix B** shows the projects pressure zone boundaries. Computer modeling is then performed to ensure that adequate residual pressures are obtained under all demand conditions. The system has been designed to yield minimum residual pressures of 60 psi during non-fire demands and 20 psi during maximum day demand plus fire flow conditions. Headloss in water lines is calculated using the Hazen-Williams equation with a "C" value of 120. Only locations where customers are served need to meet such pressure requirements. Nodes with pressures that could not be brought within acceptable parameters are identified and are presented as part of the analysis of the ultimate build-out scenario in Section 4.

2.4 PIPELINE VELOCITIES

To minimize excessive drainage of the reservoirs, lower flow velocities are needed for the major transmission pipelines to minimize headloss. Transmission pipelines were designed to have a maximum velocity of 3 fps with a maximum headloss of 3 ft/1000 ft (0.003ft/ft). Distribution lines were designed to have a maximum velocity of 6 fps with a maximum headloss of 15 ft/1000 ft (0.015 ft/ft) for non-fire scenarios and 10 fps for fire scenarios.

2.5 STORAGE VOLUMES

The total required volume of storage in a water system consists of water for operational storage, emergency storage and fire flow storage. Operational storage and emergency storage is required to be equivalent to 30 percent and 100 percent of the maximum day demand, respectively. Fire flow and duration requirements are shown in **Table 2-3**. If a school or public facility is proposed within the zone, the fire flow demand is 4000 gpm for 4 hours which equals storage of 0.96 MG. Therefore, storage reservoirs are sized for 130 percent of the maximum day demand plus fire flow storage of 0.96 MG. Storage water requirements were evaluated on a zone-by-zone basis.

2.6 PUMP CAPACITY

Pump stations should be able to fill reservoirs such that levels at the end of the day are the same or higher than those at the beginning of the day, based on MDD. Pump station capacity and the ability to transfer water to higher zones from lower zones, are evaluated on a zone-by-zone basis. Maximum day demands are compared with pump station capacities, with the largest unit out of service.

3

EXISTING AND PROPOSED MASTER PLAN FACILITIES

This section discusses the existing and proposed master plan water facilities as identified in the 2008 EVWMD Water Distribution System Master Plan report in the vicinity of the project. The ±1400 acre AVSP was included within the 2008 EVMWD Master Plan and this section further validates details of the proposed water facilities.

3.1 EXISTING FACILITIES

The Alberhill Villages project is located in the City of Lake Elsinore within the Elsinore Valley Municipal Water District service area. The Alberhill Villages project is located south of Interstate 15 Freeway at the Lake Street and Temescal Canyon Road area. To the west is the Horsethief Canyon Development, to the east is the future Alberhill Ridge Development, and to the southeast is the existing Alberhill Ranch Development (Tract 28214 and 30836). The existing water facilities in the vicinity of the project are located within the 1434, 1601 and 1801 water service zones. **Figure 3-1** presents a map showing the boundaries of the project and the existing regional water facilities in the vicinity of the project.

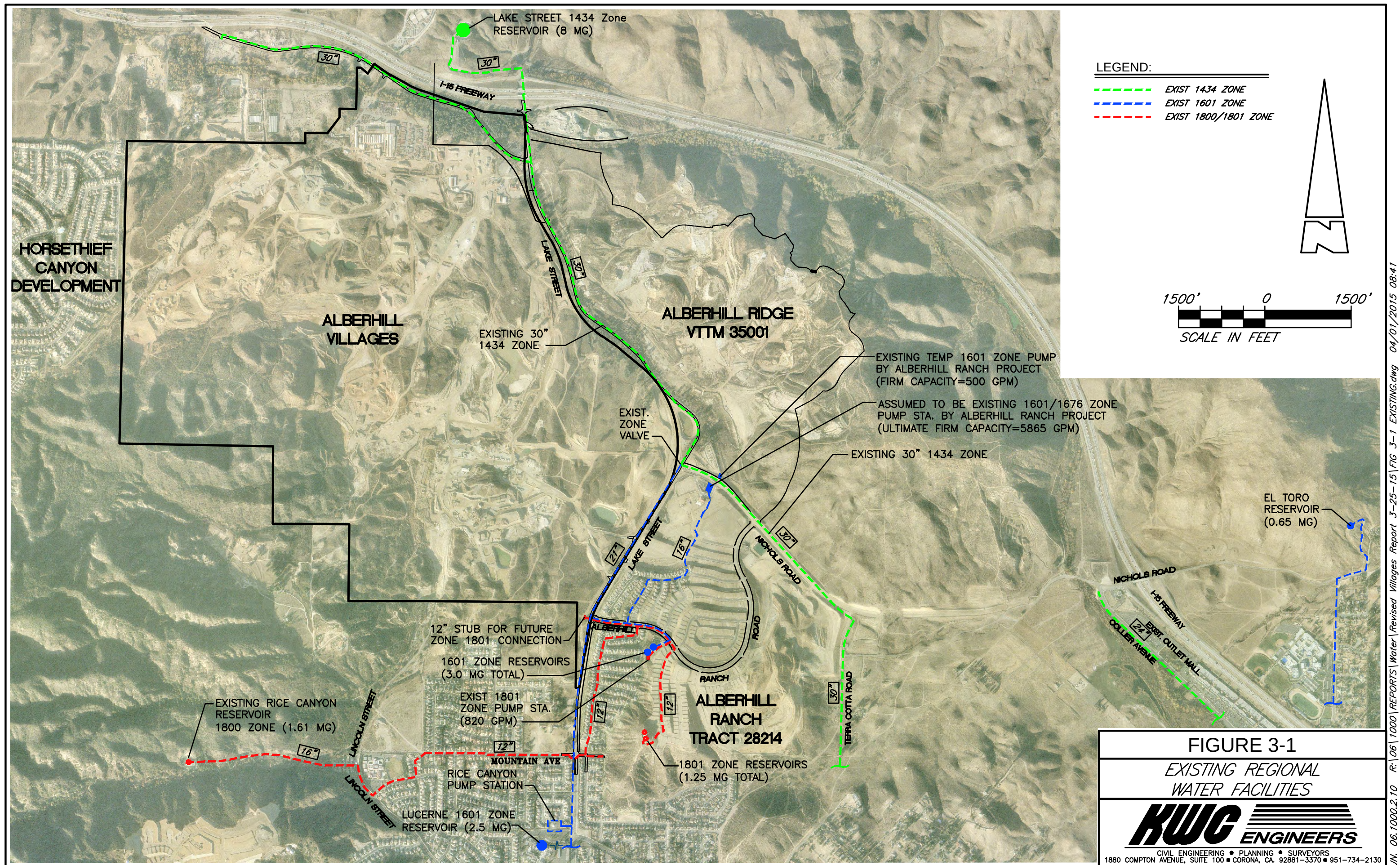
Table 3.1 below summarizes the range of design static pressures for different zones

TABLE 3.1

Water Service Zone Static Pressure Summary				
Watershed ID	Lot Elevation (ft.)		Static Pressure (psi)	
	Min	Max	Min.	Max.
1434 Zone	1145	1295	60	125
1601 Zone	1312	1462	60	125
1801 Zone	1512	1662	60	125

3.1.1 1434 ZONE

An existing 30-inch 1434 Zone transmission line is located in Lake Street from the Lake Street Reservoir to Nichols Road where it tees off to a 30-inch 1434 Zone transmission line within Nichols Road (and a 21-inch 1601 line in Lake Street). From Nichols Road the supply line continues to Terra Cotta Road and into Central Lake Elsinore. This line is supplied by the



existing 30-inch Temescal Valley pipeline from Corona. The Lake Street Reservoir has a capacity of 8.0 million gallons and a high water elevation of 1434.

3.1.2 1601 ZONE

An existing 21-inch 1601 Zone water line is located in Lake Street from Nichols Road southerly to beyond the Alberhill Ranch development. This line is supplied by the existing Lucerne Pump Station and Lucerne Reservoir along with the existing 1601 Alberhill Ranch 1 Reservoirs as identified by the EVMWD 2008 Water Master Plan. The Lucerne reservoir has a capacity of 2.5 million gallons and a high water elevation of 1,601 feet. The Alberhill Ranch 1 Reservoirs have a capacity of 3.0 million gallons total and a high water elevation of 1,601 feet per the EVWMD 2008 Water Master Plan.

The Alberhill Ranch project is currently being served by a temporary 1601 Zone pump station located on Nichols Road near the future permanent Alberhill Ranch 1 1601/1676 Zone Pump Station. The existing temporary pumping system for Alberhill Ranch has a firm capacity of 500 gpm and is proposed to serve approximately 200 units in the 1601 Zone. Once the Alberhill Ranch project exceeds the 200 unit limit in the 1601 Zone, the permanent Alberhill Ranch 1 1601/1676 Zone Pump Station shall be in place and operational. For the purposes of this report, it will be assumed that the future Alberhill Ranch 1 1601/1676 Zone Pump Station is fully constructed and the existing 1601 Alberhill Ranch 1 Reservoirs are fully operational and are therefore considered existing facilities.

The Alberhill Ranch 1 1601/1676 Zone Pump Station is located along the south side of Nichols Road, approximately 800 feet east of the intersection of Lake Street and Nichols Road. The pump station is supplied by a connection to the existing 30-inch 1434 Zone transmission line in Nichols Road (48-inch 1434 Zone Alberhill Transmission line in the future). As identified in the November 2013 1601/1650 Zone Pump Station Preliminary Design Report by Dexter Wilson Engineering, Inc., the pump station has been sized to pump the maximum day demand in the 1601 Zone system within Tract Nos. 28214 and 30836 (854 gpm) and the future developments of the Alberhill Ridge VTTM 35001 (896 gpm) and the **Alberhill Villages VTTM 35000** (2153 gpm) project for a total maximum day demand of 3,903 gpm. To meet this demand over a 16 hour period, the station will require a capacity of 5,854 gpm. This is accomplished with three duty pumps and one standby pump, each rated for a capacity of 1,955 gpm such that the ultimate firm pumping capacity of the station will be 5,865 gpm.

The pump station is designed to be completed in two phases. The first phase of construction would include three vertical turbine pumps (2 duty, one standby). A spare pump slot with blind flanges would also be installed in this initial phase, allowing for the addition of the fourth pump. The second phase would be in installation of the fourth pump. However, the installation of the pumps will depend on which development of the Alberhill Ranch, Ridge and Villages projects is constructing water facilities requiring the pumps.

3.1.3 1801 ZONE

An existing 12-inch 1801 Zone water line is located within Mountain Avenue and throughout the Alberhill Ranch project. These lines are supplied by the Rice Canyon Reservoir and Pump Station along with the Alberhill Ranch 2 Pump Station and 1801 Zone Reservoir. The Rice Canyon Reservoir has a capacity of 1.61 million gallons and a high water line of 1,800 feet per the 2008 Master Plan. The Alberhill Ranch 2 Reservoir has a capacity of 1.25 million gallons total and a high water elevation of 1,801 feet per the approved 1801 Reservoir Plan.

3.1.4 PLANNED AND FUTURE FACILITIES BY OTHERS

The existing 30-inch 1434 Zone line in Lake Street and Nichols Road will be replaced by EVMWD in the future with a 42-inch Temescal Valley Transmission pipeline from Temescal Canyon Road to Nichols Road along Lake Street and a 48-inch line from Lake Street to Terra Cotta Road along Nichols Road where it will connect to the existing 30-inch 1434 Zone line at Terra Cotta Road. A 36-inch 1434 Zone line will continue east in Nichols Road to Baker Street and south in Baker Street to the Baker Street Reservoir 1434 Zone. The construction plans for the first phase of this transmission line, which begins in Lake Street 1200 feet north of Nichols Road and ends at the intersection of Pierce Street and Nichols Road, are approved. The existing 30-inch line in Lake Street will remain in place and may be integrated into the 1601 Zone water system. These transmission lines are master plan lines that the District proposes to construct with the ultimate roadway improvements of Lake Street and Nichols Road to improve the overall water distribution systems in the Alberhill area and EVMWD District-wide. These lines are considered EVMWD capital improvement facilities and are separate from the water lines proposed by the Alberhill projects. No construction start date has been identified by the District.

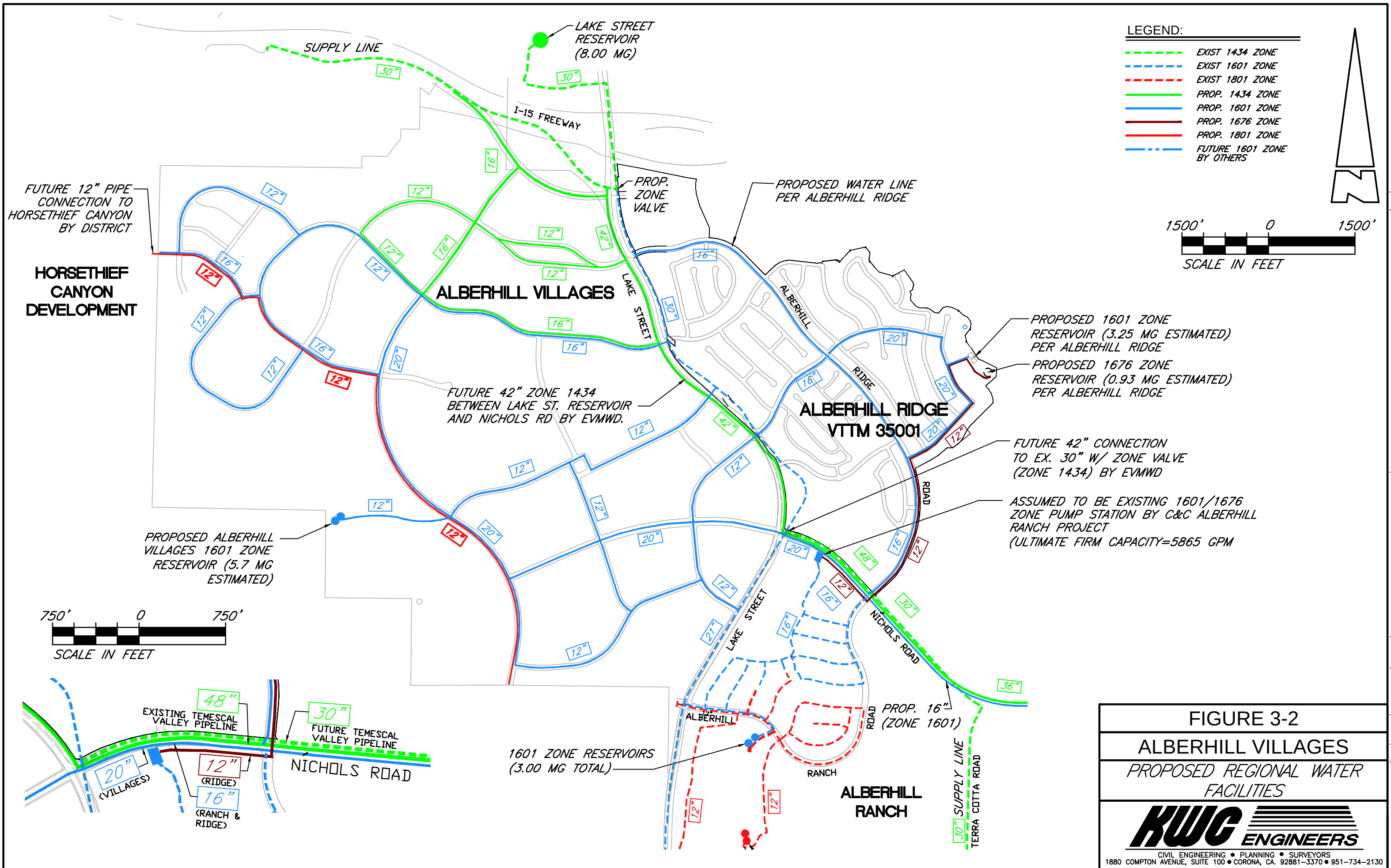
The Alberhill Ranch project also proposes to build a 16-inch 1601 Zone line in Nichols Road from the 1601/1676 pump station to Pierce Street supplied by the existing or ultimate Pump Station.

3.2 PROPOSED FACILITIES

For the purpose of this study, only the proposed master plan facilities within the close proximity to the Alberhill Villages project are listed. These master planned facilities are assumed to be in place or will be constructed in conjunction with the timing of the Alberhill Villages project at the time of ultimate build-out. **Figure 3-2** presents a map showing the boundaries of the project and the ultimate regional water facilities in the vicinity of the project.

3.2.1 1434 ZONE

A proposed 16 inch line will be constructed along the future extension of Temescal Canyon Road continuing from the existing 30 inch line at the northwest corner of the project site. This line will connect back to the proposed 42 inch line in Lake Street approximately midway point between Lake Street/Old Temescal Canyon Road and Lake Street/Nichols Street intersections to provide looping within the 1434 zone system.



3.2.2 1601 ZONE

Phase 1 of the Alberhill Villages 1601 zone is anticipated to develop first. The supply for Phase 1 would come from construction of proposed Alberhill Ridge 1601 zone tank, piping, and 1601 booster station. If Ridge facilities are not online when Phase 1 is planned for construction, the surplus capacity from existing Alberhill Ranch 1601 zone reservoir could be used depending the remaining areas in Ranch do not get built before Phase 1.

A proposed 20 inch pipeline will be constructed in Nichols Road between 1601 zone booster station and future Alberhill Villages 1601 Zone Reservoir Site. This reservoir site estimated to have 5.7 MG of storage capacity will be located at the southwest corner of the Alberhill Village project. Additional 20-inch lines in the east-west direction will be proposed to provide additional looping within the system and serve as the backbone infrastructure for the Alberhill Villages 1601 Zone service area. A stubout for future connection to Horsethief Canyon Development shown on the proposed water facilities exhibit will provide additional looping within the system in the future if completed by EVMWD.

3.2.3 1676 ZONE (ALBERHILL RIDGE)

EVMWD adopted new pressure guidelines on November 25, 2014 to increase the minimum static pressure from 40 to 60 psi and maximum pressure from 80 to 125 psi. This would result in larger pressure zones resulting in less reservoirs and regulators and help in passing the fire sprinkler tests. This necessitated revisiting the pressure boundaries map for the Alberhill region and make necessary revisions to comply with the newly adopted water system pressures.

A new 1676 Zone was created to address the 60 psi minimum pressure needed for the higher lots in Alberhill Ridge. The previously proposed 1650 Zone with the higher 343 lots has been revised to 1676 Zone and now includes a total of 527 lots. The previously design pumps at 1601/1650 booster pump station in the Preliminary Design Report by Dexter Wilson, dated July 2014 would still remain same as there is extra capacity in the pumps to supply water to the 1676 water tank. The tank will be an above ground structure with an HWL of 1676. The tank storage is sized for 0.93 MG to service the 1676 Zone system.

Extra lots removed from the 1601 Zone would create more storage in the proposed 1601 Zone tank which can be used for Alberhill Villages Phase I developments. Detailed calculations are included in **Appendix E**.

3.2.4 1801 ZONE

A new 12-inch pipeline may be constructed by the District from Horsethief Canyon Development to Mountain Avenue to provide additional looping within the 1801 system. If this pipeline is constructed, the 8 units of hillside development will be supplied by this line. If not, a connection to the Horsethief Canyon Development can be made by Alberhill Villages Specific Plan to supply the 8 units.

4

PROJECTED WATER DEMANDS RECOMMENDED WATER FACILITIES

This section provides the projected water demand for the Alberhill Villages Project, as well as determines the relative mainline pipe sizes, reservoir storage requirements and booster pump station capacities.

4.1 PROJECTED WATER DEMANDS

The projected water duty factors used to determine the Average Day and Maximum Day Demands for the project were established in Section 2. **Table 4-1** summarizes the projected Average Day and Maximum Day Demands for each water service zone on the project. **Appendix D** identifies the corresponding locations and proposed land uses for each of the Planning Areas described in the Alberhill Villages Specific Plan. **Appendix E** identifies the corresponding estimated project water demands. As shown the total estimated water demand generated by Alberhill Villages is approximately 4.27 MGD Average Day and 8.35 MGD Maximum Day.

TABLE 4-1

WATER DEMAND SUMMARY		
Watershed ID	Average Day Demand (mgd)	Maximum Day Demand (mgd)
Alberhill Villages		
1434 Zone	2.12	4.23
1601 Zone	2.15	4.29
1801 Zone	0.01	0.02
Total	4.27	8.35

4.2 RESERVOIR STORAGE

Based upon the estimated water demands, **Table 4-2** summarizes the required reservoir storage for each water service zone. Section 2 presented the design criteria utilized for determining

reservoir storage. The sizing shown in **Table 4-2** is for the Alberhill Villages project only and does not include oversizing to accommodate neighboring projects.

TABLE 4-2

RESERVOIR STORAGE REQUIREMENTS				
Watershed ID	Maximum Day Demand (mgd)	Required Operational & Emergency Storage (MG)	Required Fire Flow Storage (MG)	Total Required Storage (MG)
Alberhill Villages				
1434 Zone	4.23	5.50	0	5.50
1601 Zone	4.29	5.58	0.96	6.54
1801 Zone	0.02	0.03	0	0.03

Note:

1) Fire Flow Demand is set at 0.96 MG (4000 GPM for 4 hours) when there is a school present.

2) Fire Flow Demand for 1801 Zone within Alberhill Villages is based on (1000 GPM for 4 hours). For Zones supplied by existing tanks, the fire flow storage is zero.

3) 0.65 MG MDD of 4.29 MG is supplied by Alberhill Ridge 1601 Zone tank (3.25 MG proposed) for Villages Phase I. This makes the total required storage for 1601 Zone tank to be 5.69 MG instead of 6.54 MG.

4.3 RECOMMENDED WATER FACILITIES

The analysis performed to determine the recommended onsite water system for the Alberhill Villages Project consists of computer modeling that utilizes the Innovyze H2OMAP Water program which solves for the distribution of flows and hydraulic grades using the gradient Algorithm. The solution to the computer model is based upon the design criteria as shown in Section 2. Numerous demand scenarios were calculated to determine recommended line sizes within each of the proposed service zones. **Figure 4-1** provides the proposed water facility improvements for the project.

4.3.1 1434 ZONE

The 1434 Zone system will serve the northern portion of the Alberhill Villages project. **Table 4-3** summarizes the anticipated static pressures within this zone. To model the 1434 Zone system, we assumed that all the demands are met from the existing 1434 Lake Street Reservoir. The computer modeling output for the 1434 Zone analysis is provided in **Appendix F**. For all demand scenarios, we assumed that the water surface elevation in the Lake Street Reservoir was 1,434 feet. The results of the computer analysis indicate that the recommended piping has been

sited to adequately serve the project. Residual pressures in excess of 20 psi are obtained during all maximum day demand plus fire flow scenarios. Pipeline velocities are generally around 2 fps during MDD+FF. Proposed transmission lines velocities are below the 3 fps requirement. Distribution lines velocities do not exceed 10 fps during a fire flow condition.

The major proposed piping in this pressure zone will consist of 16-inch pipelines in Temescal Canyon Road. A 16-inch pipeline loop will be constructed from the Temescal Canyon Road's 30-inch to Lake Street's master planned 42-inch; and 12-inch pipe loops will be provided within the development areas. The computer modeling in **Appendix F** verifies that adequate service can be provided to the project during the demand scenarios considered.

4.3.2 1601 ZONE

The 1601 Zone system will serve the remainder of the Alberhill Villages project. **Table 4-3** summarizes the anticipated static pressures within this zone. Alberhill Villages will experience static pressures higher than 125 psi in some areas. The computer modeling for the 1601 Zone analysis is provided in **Appendix G**. For all demand scenarios considered, we assumed that the water surface elevation in the 1601 Zone Reservoirs are at 1600 feet.

The computer output verifies that the recommended pipe sizing will provide adequate service to the project. Minimum residual pressures in excess of 20 psi are obtained during maximum day demand plus fire flow scenarios. Pipeline velocities are generally below 2 fps during MDD+FF. Where proposed transmission lines velocities exceed 3 fps, the headloss is less than the required 0.003 ft/ft. Therefore, the system as proposed is adequate to meet the ultimate development conditions. The distribution lines velocities do not exceed 10 fps during fire flow conditions.

As shown in **Table 4-2**, a 1601 Zone Storage Reservoir with a capacity of 5.7 MG is required to service the Alberhill Villages project. A future 3.25 MG 1601 Zone reservoir will be proposed on the Alberhill Ridge site to also service the 1601 Zone area within Phase 1.

The major proposed piping in this pressure zone will consist of 20-inch pipelines within Lincoln Street, Nichols Road, and a segment from the proposed 1601 Zone Pump Station to Lake Street. These proposed lines are to be the transmission lines that supplies the water to the 1601 Zone Reservoirs located on the AVSP. For distribution throughout AVSP, 12-inch pipe loops will be provided within the development areas. The computer modeling in **Appendix G** verifies that adequate fire service can be provided to all areas within the 1601 Zone.

4.3.3 1801 ZONE

The 1801 Zone system will service the southwesterly residential estate lots (25 lots) within the Alberhill Villages project only. **Table 4-3** summarizes a range of anticipated static pressures within this zone, as pad elevations are unknown at the time of this study. As the static pressures

within this zone are known to be excessive, no model of the 1801 Zone system has been run. It is assumed that a Pressure Reducer Station installed off of the proposed 1801 Zone 12-inch master planned line from Horsethief Canyon to Mountain Avenue, will service these 8 lots.

TABLE 4-3

Water Service Zone Static Pressure Summary				
Watershed ID	Lot Elevation (ft)		Static Pressure (psi)	
	Min	Max	Min.	Max.
1434 Zone				
Pac Clay	1220	1290	62	93
1601 Zone				
Pac Clay	1284	1465	59	137
1801 Zone				
Pac Clay	1450	1650	65	152

**The above values have been calculated as if the reservoirs are at high water levels.

5

PHASING

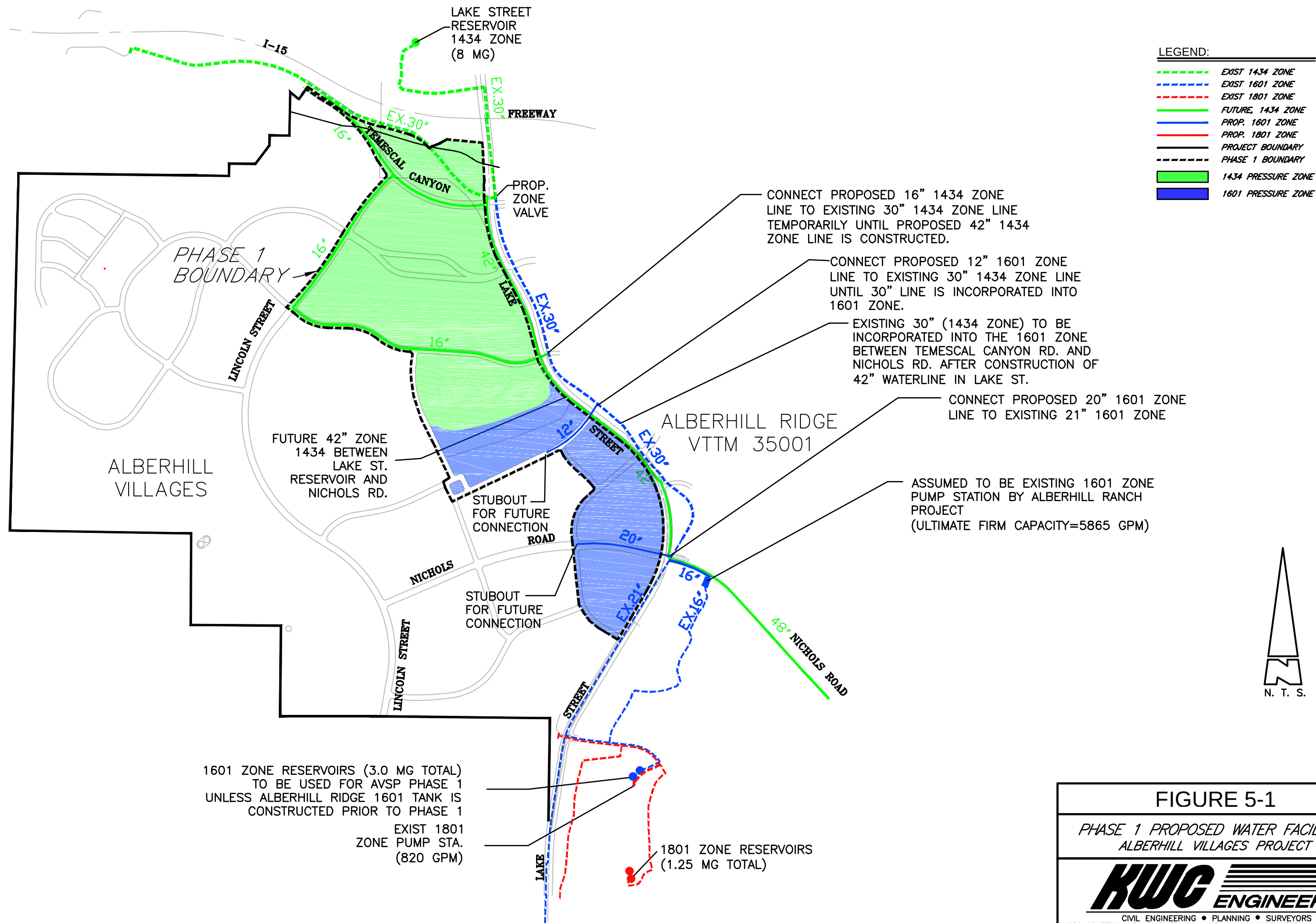
The Alberhill Villages project will be developed in six phases see **Appendix D** for the Conceptual Phasing Plan as identified in the Alberhill Villages Specific Plan. This report does not provide a detailed analysis of what facilities will be required to serve each phase of the project, but does discuss the facilities that are recommended to serve Phase 1 of the Alberhill Villages project.

5.1 PHASE 1 ALBERHILL VILLAGES PROJECT

Within the Phase 1 area of development for the Alberhill Villages project, it is proposed to construct a university campus, recreational lake and park, mixed-use commercial/retail/office, neighborhood commercial and medium density residential. **Figure 5-1** graphically shows the recommended Phase 1 Alberhill Villages water facilities that are required to service the Phase 1 area. The northern portion of Phase 1 is served by the 1434 Zone system while the southeastern portion is served by the 1601 Zone system supplied by the Alberhill Ridge 1601 tank and ultimate 1601/1676 pump station.

For the purpose of this study, it is assumed that the EVMWD master planned 1434 Zone 42-inch Alberhill Transmission line within Lake Street and 48-inch/36-inch within Nichols Road will be online at the time the Phase 1 portion of the Alberhill Village project is developed and secondly that the Alberhill Ridge 1601 tank and associated pipelines are constructed. According to the EVMWD 2008 Water Distribution System Master Plan, the Alberhill Area or northwestern portion of the District's 1434 Zone is fed from the Temescal Valley Pipeline (TVP) connection by the existing 30-inch TVP inter-tie pipeline located on Lake Street. When the proposed EVMWD master planned TVP Pump Station becomes operational, it will become necessary to provide additional transmission capacity in this area to distribute future water demands to the Alberhill area via the proposed Alberhill Transmission line. However, should the proposed transmission lines not be in place before the Alberhill Villages project develops, additional 1601 Zone transmission lines in Lake Street or a temporary interconnection to the existing 30-inch 1434 Zone line in Lake Street may be necessary to supply the proposed Alberhill Villages 1601 Zone Reservoir.

HORSETHIEF
CANYON
DEVELOPMENT



6

CONCLUSIONS

The Alberhill Villages project will require the following Water Infrastructure to be constructed for the build-out condition:

EVMWD Capital Improvements

- 42-inch 1434 Zone Alberhill Transmission line in Lake Street between Temescal Canyon Road and Nichols Road by EVMWD.
- Existing 30-inch in Lake Street switched from 1434 Zone to 1601 Zone by EVMWD.
- 48-inch 1434 Zone Alberhill Transmission line in Nichols Road between Lake Street and Terra Cotta Road by EVMWD.
- 12-inch 1801 Zone waterline from Horsethief Canyon Development to Mountain Avenue by EVMWD.

Alberhill Villages Infrastructure Improvements

- Proposed 1601/1676 Pump Station completed to its ultimate firm capacity of 5,865 gpm.
- Future 1601 Zone Alberhill Ridge Reservoir to supply Alberhill Villages Phase 1 and associated pipelines (to be constructed by Alberhill Ridge, portion of by Alberhill Villages)
- 16-inch 1601 Zone waterline stub-out at the northwest corner for Horsethief Canyon Development to connect to Alberhill Villages Development in the future.
- 20-inch 1601 Zone waterlines to supply the proposed Alberhill Villages 1601 Zone Reservoir from 1601/1676 pump station and provide additional looping in water system.
- 5.7 MG 1601 Zone Alberhill Villages Reservoir.
- 12-inch 1601 and 1801 Zone Backbone Waterlines.

These proposed water infrastructure facilities with respect to their proximate locations, alignments, and sizes are consistent with the EVMWD 2008 Water Distribution System Master Plan and related water system studies in the Alberhill area. The proposed Alberhill Villages onsite water facilities presented in this report are preliminary estimates of the anticipated water facilities necessary to service the project needs. Further studies may be required by EVMWD during the development phase of the project.

A

REFERENCES

Elsinore Valley Municipal Water District, Standard Plans and Specifications, February 2015.

Elsinore Valley Municipal Water District, Water Distribution System Master Plan, MWH, February 2008.

City of Lake Elsinore General Plan – Land Use Map, City of Lake Elsinore, December 13, 2011.

Master Plan of Water for Alberhill Ranch Tracts 28214 and 30836, Dexter Wilson Engineering, Inc., March 2006.

Preliminary Design Report for the 1601 Zone Pump Station, Dexter Wilson Engineering, Inc., April 2006.

Water System Analysis for the Pacific Clay Commercial Sites, Dexter Wilson Engineering, Inc., June 22, 2007.

Brighton Alberhill Specific Plan Amendment No. 1, J.L. Webb Planning, Inc., March 19, 1991.

Alberhill Villages Specific Plan, Project Design Consultants, January 2010.

Alberhill Villages and Alberhill Ridge Water Supply Assessment, MWH, March 2012.

Preliminary Water Facilities Plan for Alberhill Ridge, KWC Engineers, December 2011.

Alberhill Ranch Preliminary Design Report for the 1601/1650 Pump Station, Dexter Wilson Engineering, Inc., November 2013.

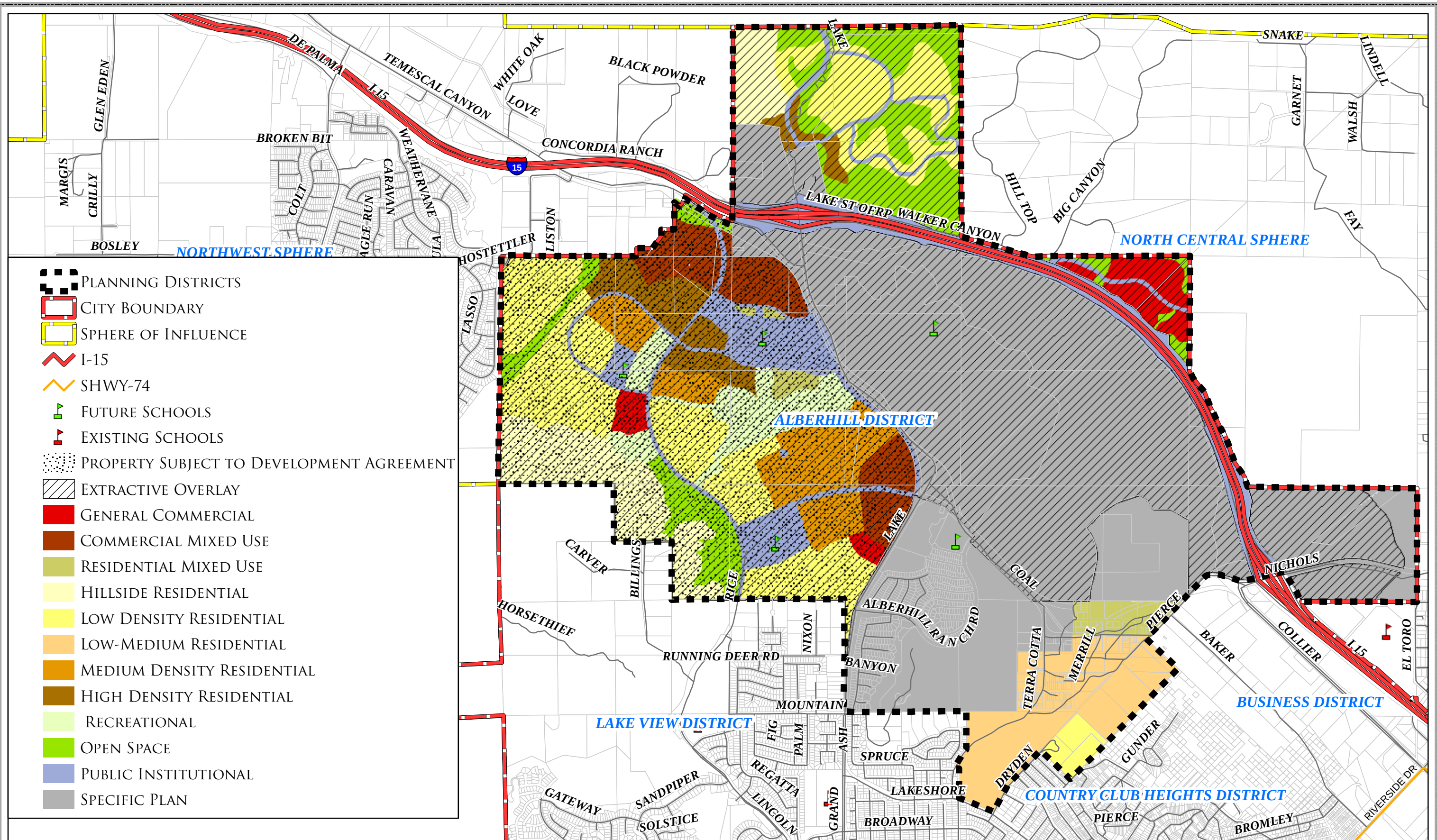
Addendum to Preliminary Water Facilities Plan for Alberhill Ridge, KWC Engineers, May 28, 2013

B

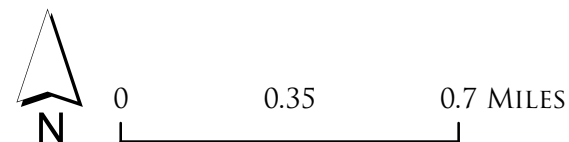
PRESSURE ZONE MAP

C

CITY OF LAKE ELSINORE GENERAL PLAN LAND USE MAP



SOURCES: CITY OF LAKE ELSINORE, COUNTY OF RIVERSIDE



CITY OF LAKE ELSINORE
ALBERHILL DISTRICT LAND USE PLAN
FIGURE AH-1

D

RELATED PROJECTS LAND USE PLAN

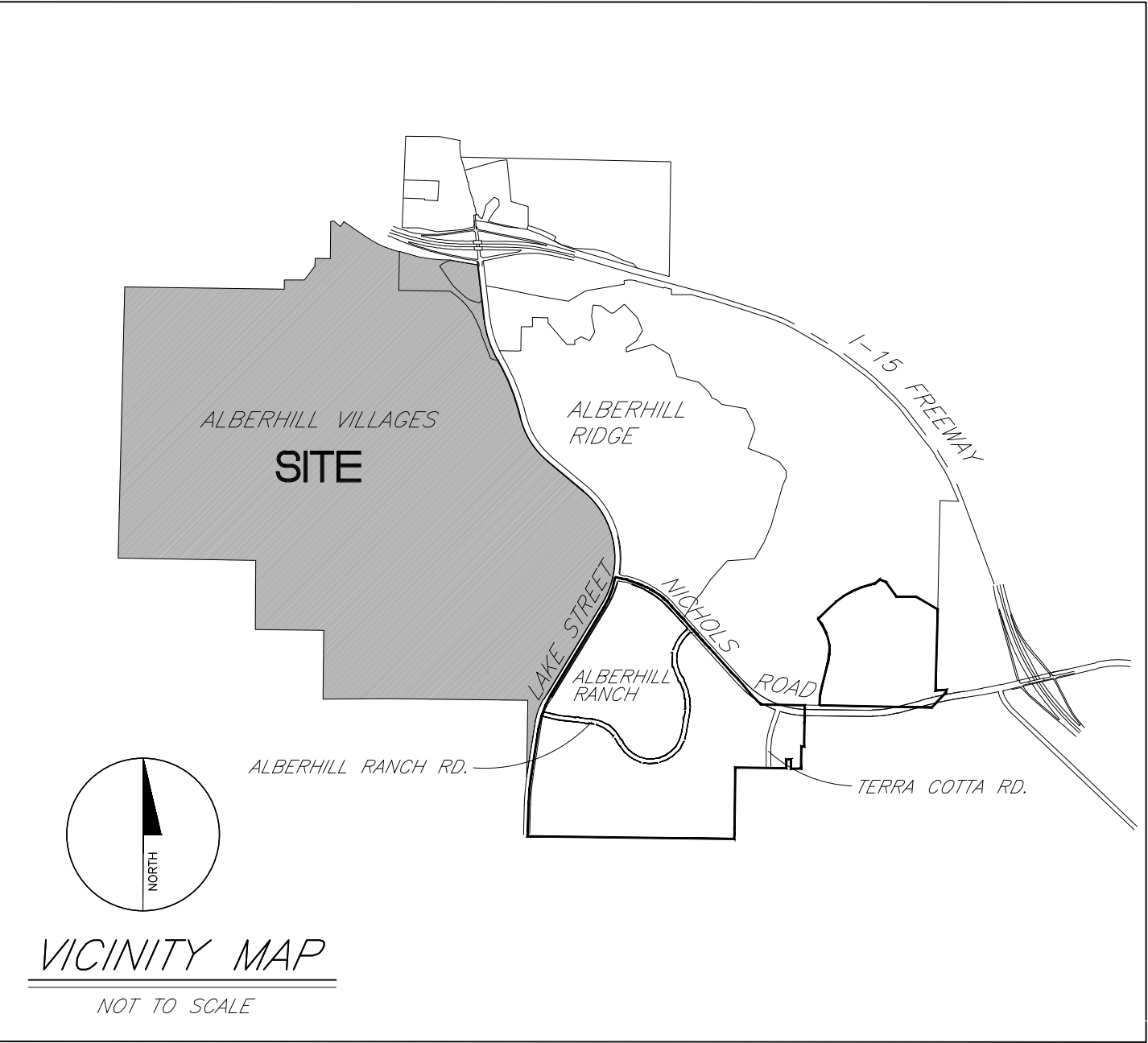
Alberhill Villages Conceptual Land Use Plan

Alberhill Ridge Land Use Plan & Vesting Tentative Tract Map

Alberhill Ranch Site Phasing Map

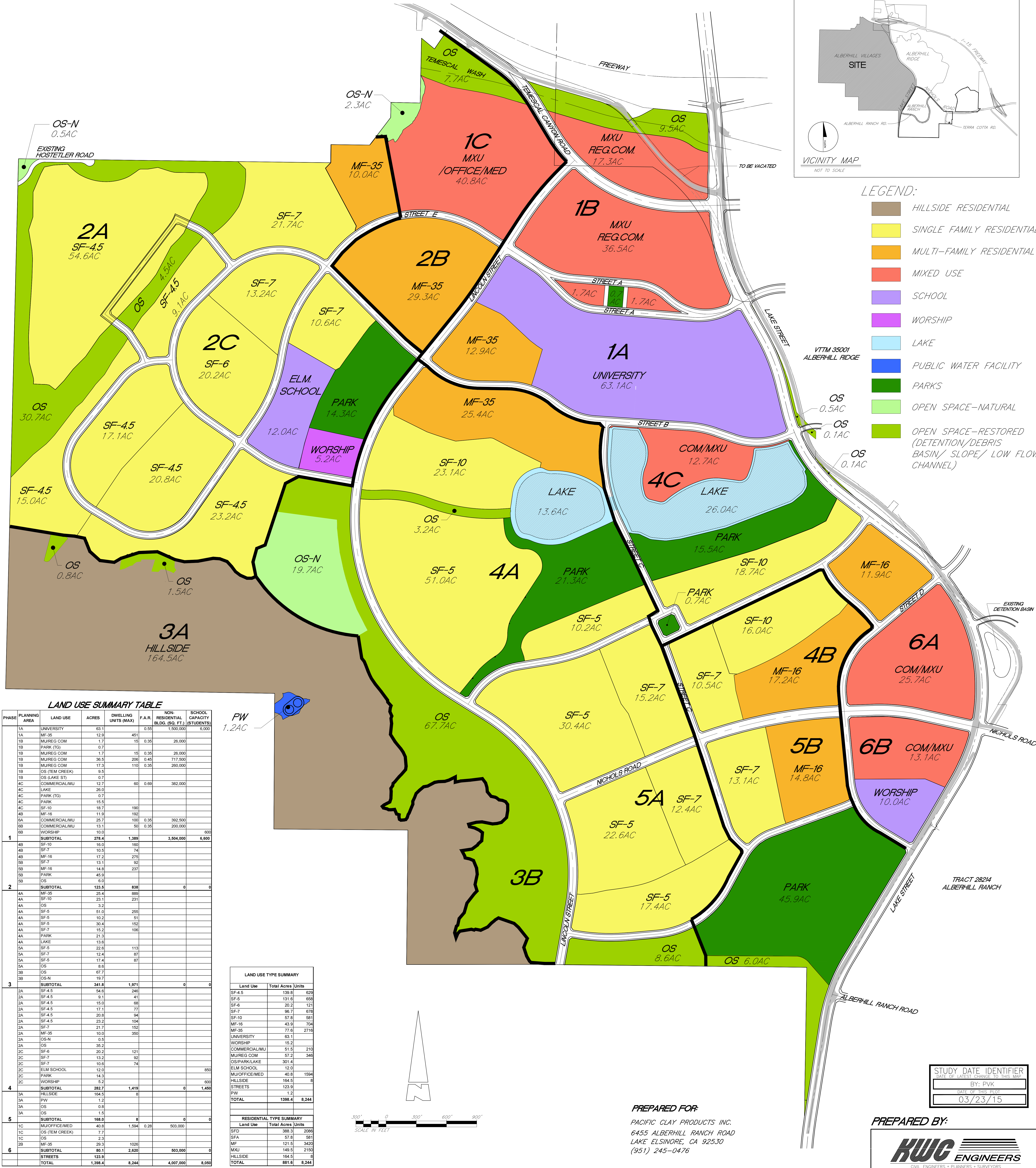
ALBERHILL VILLAGES SPECIFIC PLAN
PRELIMINARY LAND USE EXHIBIT

VICINITY MAP



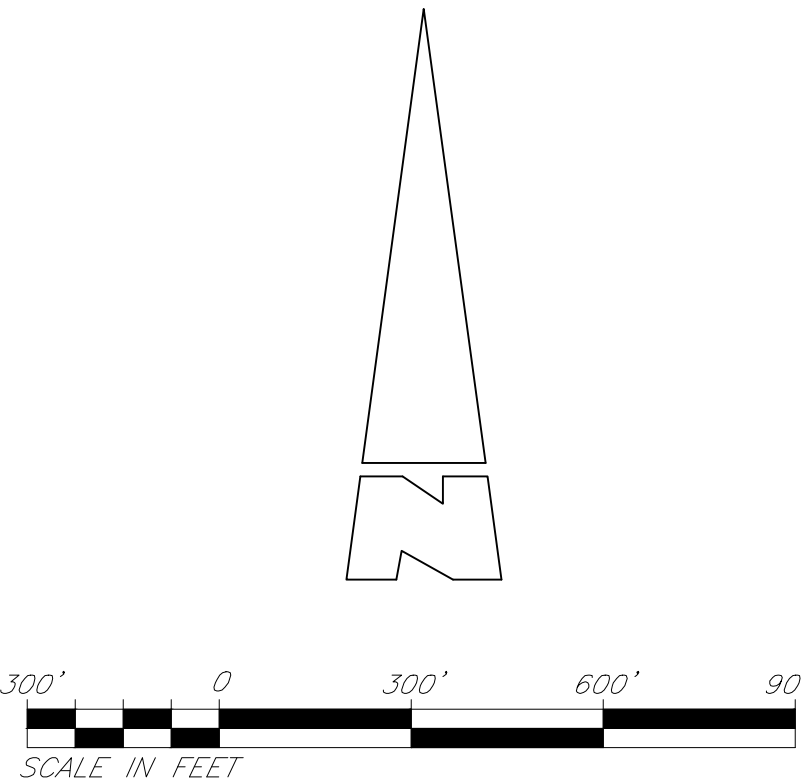
LEGEND:

- HILLSIDE RESIDENTIAL
- SINGLE FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- MIXED USE
- SCHOOL
- WORSHIP
- LAKE
- PUBLIC WATER FACILITY
- PARKS
- OPEN SPACE-NATURAL
- OPEN SPACE-RESTORED (DETENTION/DEBRIS BASIN/ SLOPE/ LOW FLOW CHANNEL)



LAND USE SUMMARY TABLE									
PHASE	PLANNING AREA	LAND USE	ACRES	DWELLING UNITS (MAX)	F.A.R.	NON-RESIDENTIAL BLDG. (SQ. FT.)	SCHOOL CAPACITY (STUDENTS)		
1	1A	UNIVERSITY	63.1		0.55	1,500,000	6,000		
	1A	MF-35	12.9	451					
	1B	MU/REG.COM.	1.7	15	0.35	25,000			
	1B	PARK (TG)	0.7						
	1B	MU/REG.COM.	1.7	15	0.35	25,000			
	1B	MU/REG.COM.	36.5	205	0.45	717,500			
	1B	MU/REG.COM.	17.3	110	0.35	260,000			
	1B	OS (TEM CREEK)	9.5						
	1B	OS (LAKE ST)	0.7						
	1B	OS (LAKE ST)	0.7						
2	2A	COMMERCIUMU	12.7	60	0.69	382,000			
	2A	LAKE	26.0						
	2A	PARK (TG)	0.7						
	2A	PARK	15.5						
	2A	SF-10	18.7	190					
	2A	MF-16	11.9	192					
	2A	COMMERCIUMU	25.7	100	0.35	392,500			
	2A	COMMERCIUMU	13.1	50	0.35	200,000			
	2A	WORSHIP	10.0						
	2A	SUBTOTAL	278.4	1,389		3,504,000	6,000		
3	3A	SF-10	16.0	160					
	3A	SF-7	10.5	74					
	3A	MF-16	17.2	275					
	3A	SF-7	13.1	92					
	3A	MF-16	14.8	237					
	3A	PARK	45.9						
	3A	OS	6.0						
	3A	SUBTOTAL	123.5	838			0		0
	3A	MF-35	25.4	889					
	3A	SF-10	23.1	231					
4	4A	OS	3.2						
	4A	SF-5	51.0	255					
	4A	SF-5	10.2	51					
	4A	SF-5	30.4	152					
	4A	SF-7	15.2	106					
	4A	PARK	21.3						
	4A	LAKE	13.6						
	4A	SF-5	22.6	113					
	4A	SF-7	12.4	87					
	4A	SF-5	17.4	87					
5	5A	OS	8.6						
	5A	OS	67.7						
	5A	OS-N	19.7						
	5A	SUBTOTAL	341.8	1,971			0		0
	5A	SF-4.5	54.6	246					
	5A	SF-4.5	9.1	41					
	5A	SF-4.5	15.0	68					
	5A	SF-4.5	17.1	77					
	5A	SF-4.5	20.8	94					
	5A	SF-4.5	23.2	104					
6	6A	SF-7	21.7	152					
	6A	MF-35	10.0	350					
	6A	OS-N	0.5						
	6A	OS	35.2						
	6A	SF-6	20.2	121					
	6A	SF-7	13.2	92					
	6A	SF-7	10.6	74					
	6A	ELM SCHOOL	12.0						
	6A	PARK	14.3						
	6A	WORSHIP	5.2						
7	7A	SUBTOTAL	282.7	1,419			0		1,450
	7A	HILLSIDE	164.5	8					
	7A	PW	1.2						
	7A	OS	0.8						
	7A	OS	1.5						
	7A	SUBTOTAL	168.0	8			0		
	7A	MU/OFFICE/MED	40.8	1,504	0.28	503,000			
	7A	OS (TEM CREEK)	7.7						
	7A	OS	2.3						
	7A	MF-35	29.3	1028					
8	8A	SUBTOTAL	123.9	2,620			0		
	8A	STREETS	123.9						
	8A	TOTAL	1,388.4	8,244			4,007,000	8,050	
	8A	STREETS	123.9						
	8A	TOTAL	1,388.4	8,244			4,007,000	8,050	
	8A	STREETS	123.9						
	8A	TOTAL	1,388.4	8,244			4,007,000	8,050	
	8A	STREETS	123.9						
	8A	TOTAL	1,388.4	8,244			4,007,000	8,050	
	8A	STREETS	123.9						
	8A	TOTAL	1,388.4	8,244			4,007,000	8,050	

LAND USE TYPE SUMMARY			
Land Use	Total Acres	Units	
SF-4.5	139.8	629	
SF-5	131.6	658	
SF-6	20.2	121	
SF-7	96.7	678	
SF-10	57.8	581	
MF-16	43.9	704	
MF-35	77.6	2716	
UNIVERSITY	63.1		
WORSHIP	15.2		
COMMERCIUMU	51.5	210	
MU/REG.COM.	57.2	346	
OS/PARK/LAKE	301.4		
ELM SCHOOL	12.0		
MU/OFFICE/MED	40.8	1594	
HILLSIDE	164.5	8	
STREETS	123.9		
PW	1.2		
TOTAL	1398.4	8,244	
RESIDENTIAL TYPE SUMMARY			
Land Use	Total Acres	Units	
SFD	388.3	2089	
SFA	57.8	581	
MF	121.5	3420	
MXU	149.5	2160	
HILLSIDE	164.5	8	
TOTAL	881.6	8,244	



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(951) 245-0476

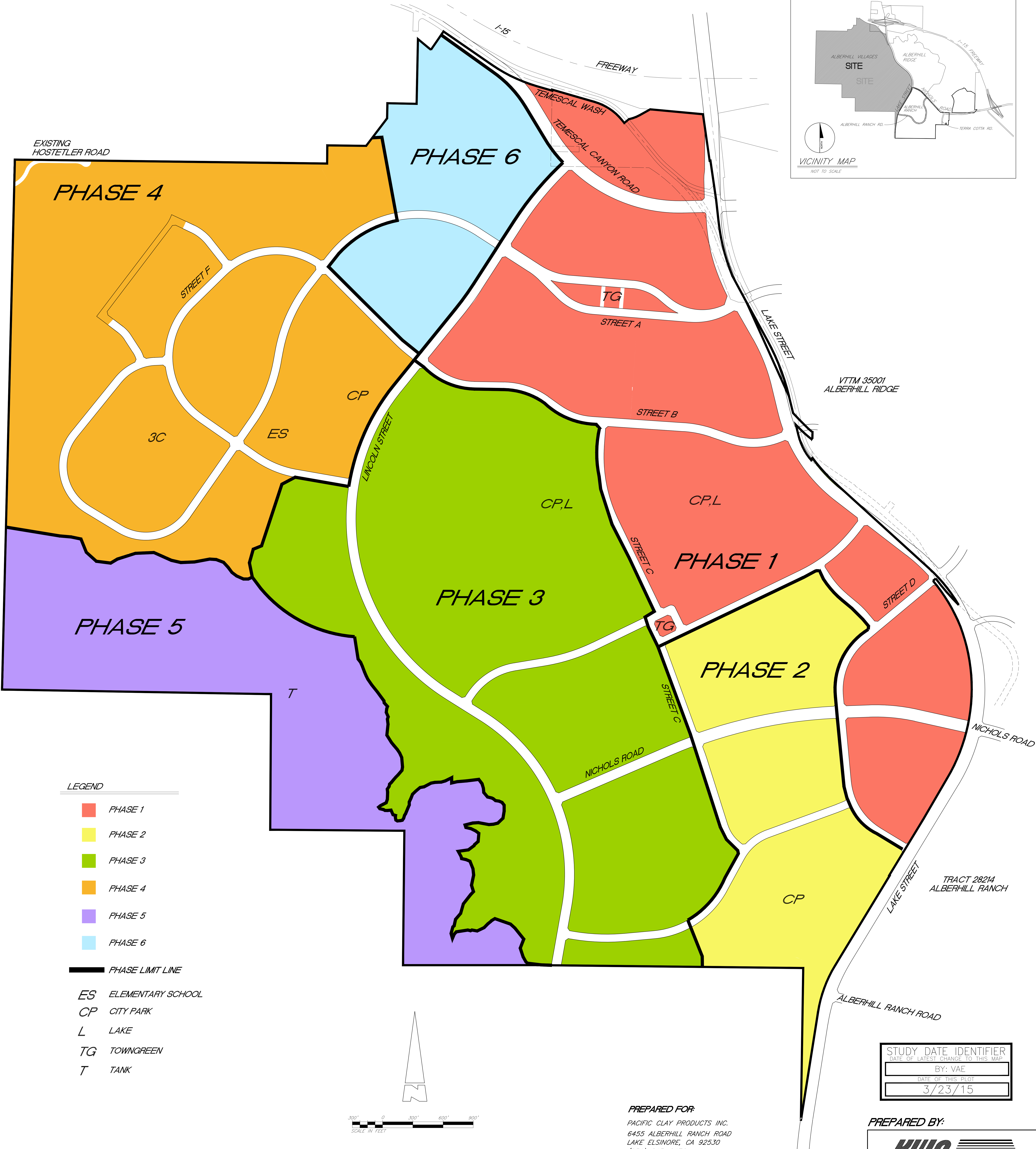
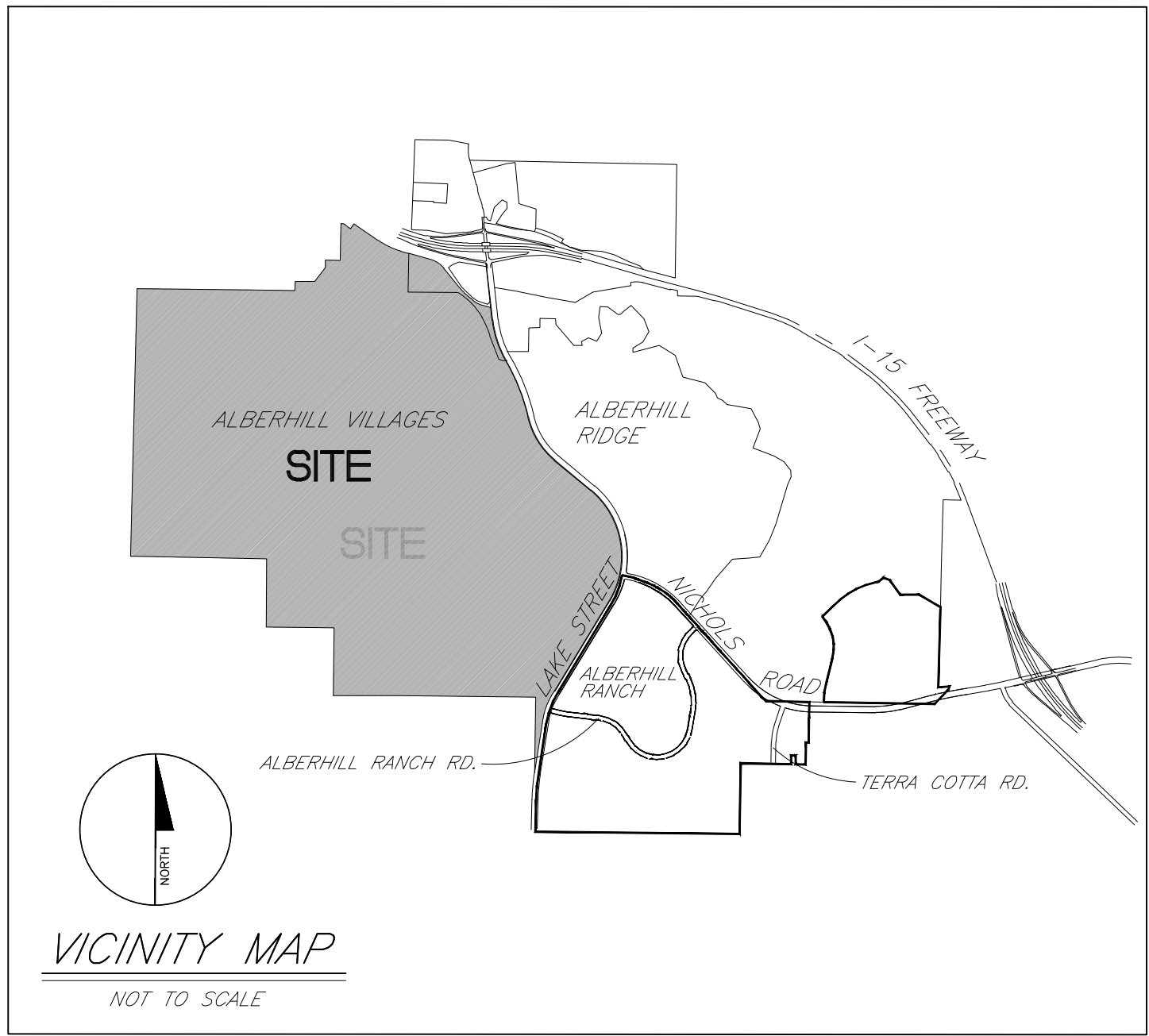
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STUDY DATE IDENTIFIER	
DATE OF LATEST CHANGE TO THIS MAP	BY: PVK
DATE OF THIS EDITION	03/23/15

ALBERHILL VILLAGES SPECIFIC PLAN
PHASING EXHIBIT

VICINITY MAP

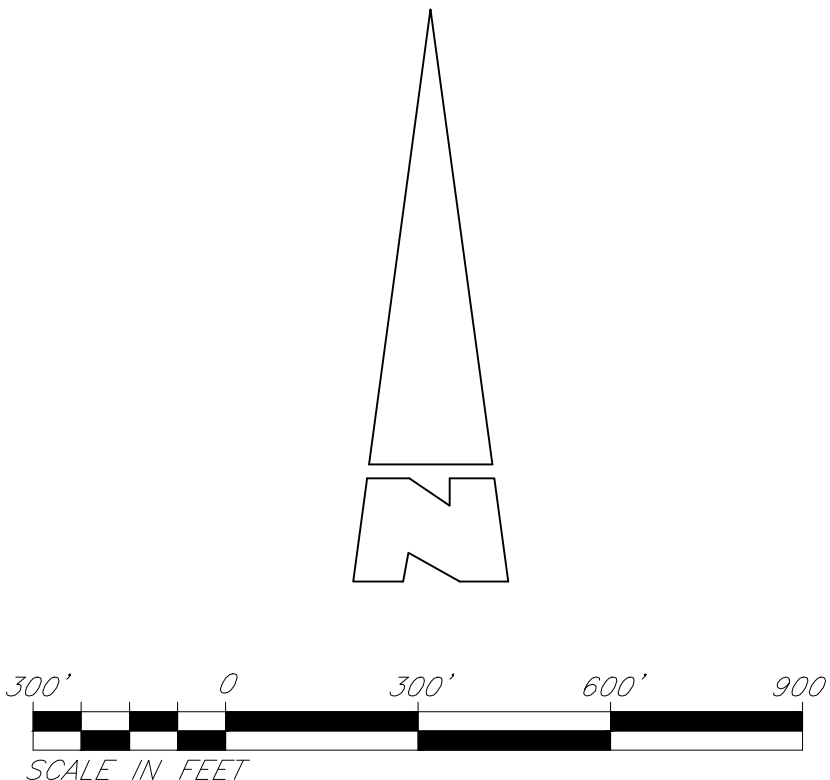


LEGEND

- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- PHASE 5
- PHASE 6

PHASE LIMIT LINE

- ES ELEMENTARY SCHOOL
- CP CITY PARK
- L LAKE
- TG TOWNGREEN
- T TANK



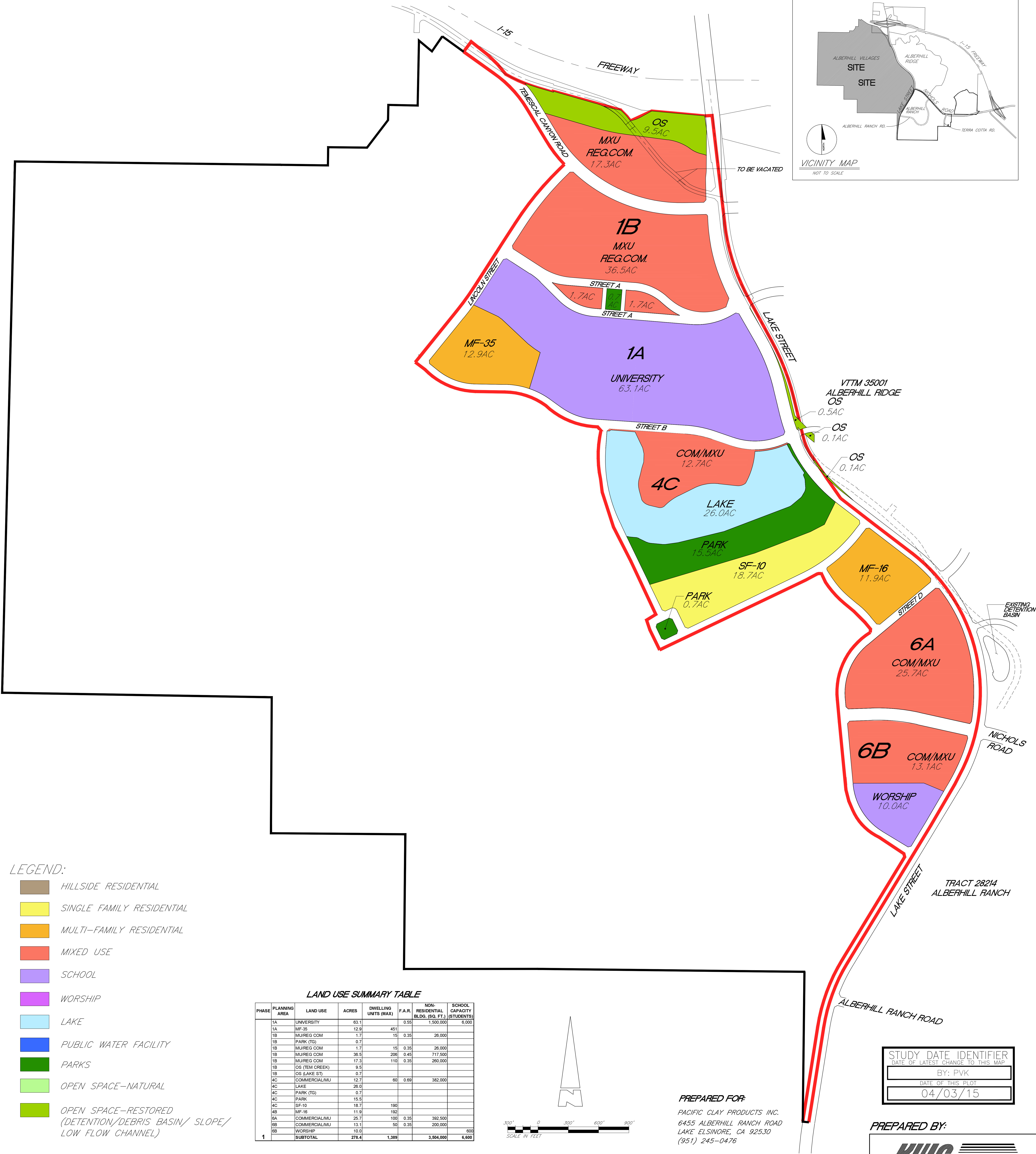
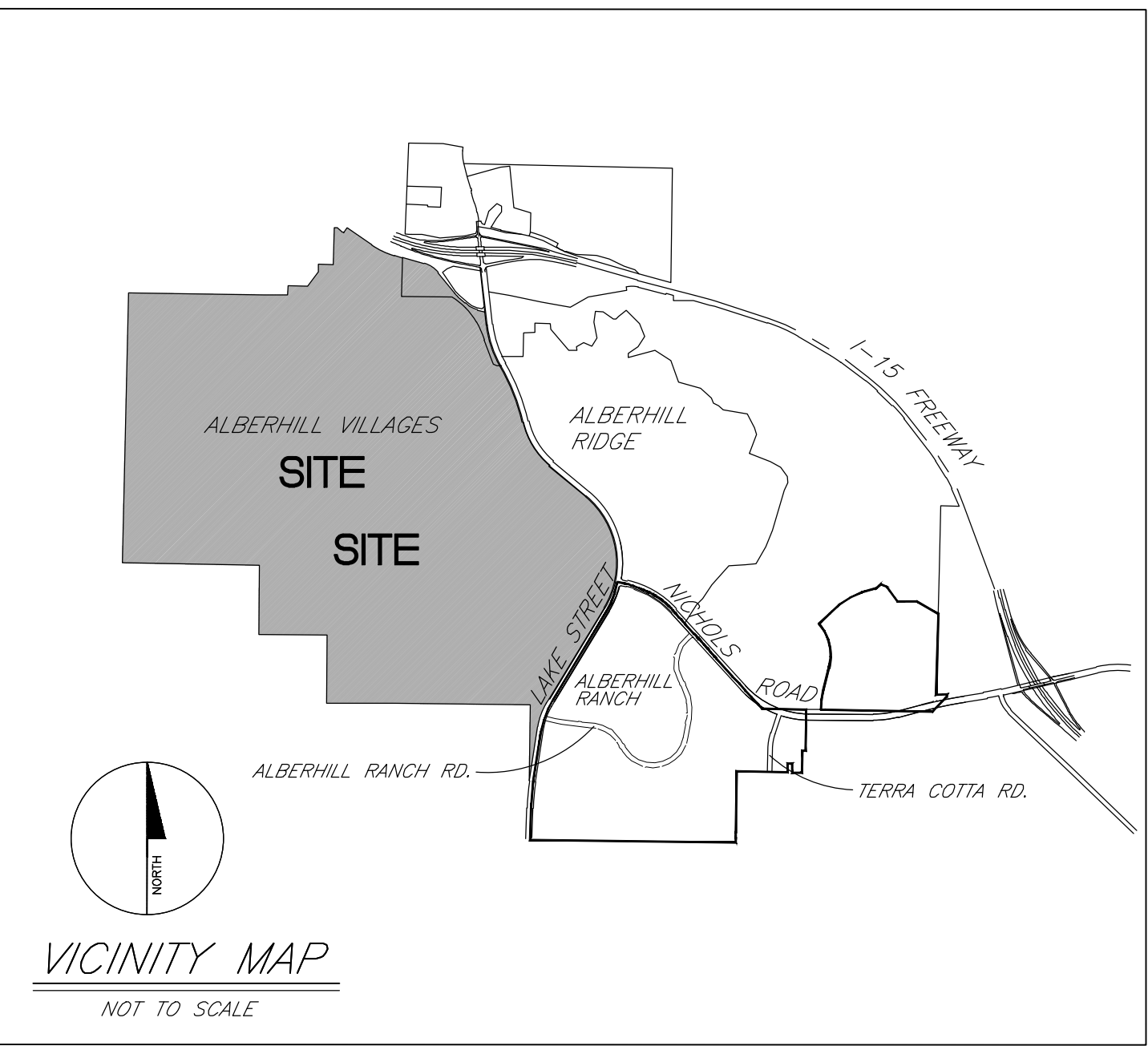
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LAKE ELSINORE, CA 92530
(951) 245-0476

STUDY	DATE	IDENTIFIER
DATE OF LATEST CHANGE TO THIS MAP	BY: VAE	
DATE OF THIS PLAN	3/23/15	

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ALBERHILL VILLAGES SPECIFIC PLAN
PRELIMINARY LAND USE EXHIBIT - PHASE I

VICINITY MAP

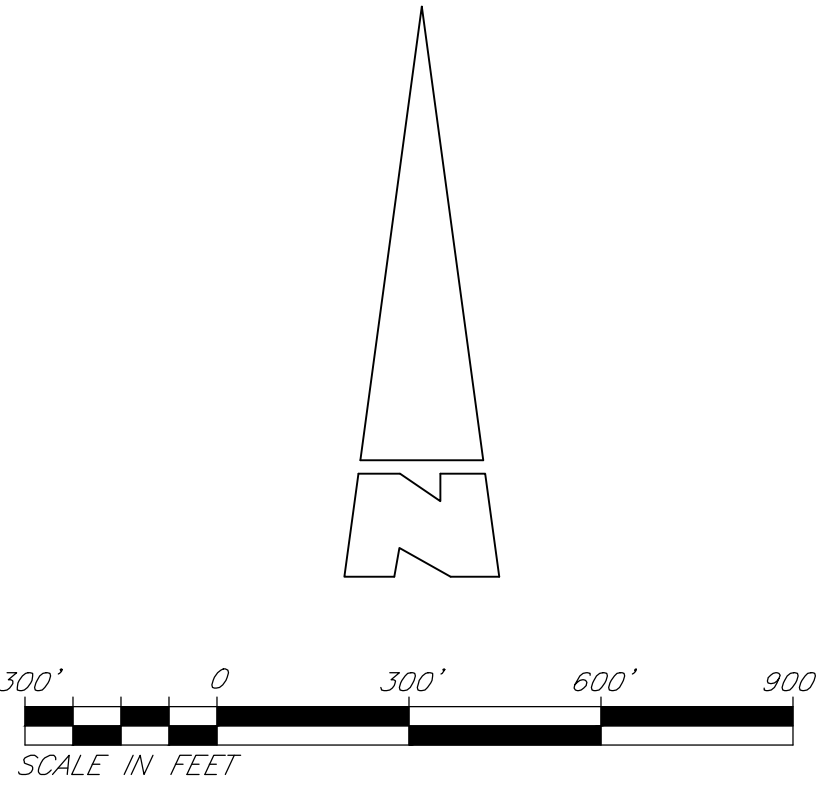


LEGEND:

- HILLSIDE RESIDENTIAL
- SINGLE FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- MIXED USE
- SCHOOL
- WORSHIP
- LAKE
- PUBLIC WATER FACILITY
- PARKS
- OPEN SPACE-NATURAL
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LAND USE SUMMARY TABLE

PHASE	PLANNING AREA	LAND USE	ACRES	DWELLING UNITS (MAX)	F.A.R.	NON-RESIDENTIAL BLDG. (SQ. FT.)	SCHOOL CAPACITY (STUDENTS)
1	1A	UNIVERSITY	63.1		0.55	1,500,000	6,000
	1A	MF-35	12.9	451			
	1B	MU/REG.COM	1.7	15	0.35	26,000	
	1B	PARK (TG)	0.7				
	1B	MU/REG.COM	1.7	15	0.35	26,000	
	1B	MU/REG.COM	36.5	206	0.45	717,500	
	1B	MU/REG.COM	17.3	110	0.35	280,000	
	1B	OS (TEM CREEK)	0.5				
	1B	OS (LAKE ST)	0.7				
	4C	COMMERCIAL/MU	12.7	60	0.69	382,000	
	4C	LAKE	26.0				
	4C	PARK (TG)	0.7				
	4C	PARK	15.5				
	4C	SF-10	18.7	190			
	4B	MF-16	11.9	192			
	6A	COMMERCIAL/MU	25.7	100	0.35	392,500	
	6B	COMMERCIAL/MU	13.1	50	0.35	200,000	
	6B	WORSHIP	10.0				600
		SUBTOTAL	278.4	1,389		3,594,000	6,600



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E

ESTIMATED PROJECT WATER DEMANDS

Project Water Demand Summary Table

Watershed ID	Ultimate Flows		
	Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)
Alberhill Villages			
1801 Zone	0.01	0.02	0.05
1601 Zone	2.15	4.29	9.66
1434 Zone	2.12	4.23	9.52
Total	4.27	8.35	18.76

Reservoir Storage Requirement Table

	Maximum Daily Demand (mgd)	Required Operational & Emergency Storage (MG)	Required Fire Flow Storage (MG)	Total Required Storage (MG)
Alberhill Villages				
1801 Zone	0.02	0.03	0	0.03
1601 Zone ¹	4.29	5.58	0.96	6.54
1434 Zone	4.23	5.50	0	5.50

Notes:

- a) Fire Flow Demand is set at 0.96 MG (4000 GPM for 4 hours) when there is a school present.
- b) Fire Flow Demand for 1801 Zone within Alberhill Villages is based on 1000 GPM for 4 hours.
- 1) 0.65 MG MDD of 4.29 MG is supplied by Alberhill Ridge 1601 Zone tank (3.25 MG proposed) for Villages Phase I. This makes the total required storage for Villages 1601 Zone tank to be 5.69 MG instead of 6.54 MG.

Alberhill Villages (from Specific Plan)

1434 Zone Projected Water Demands (per conceptual Land Use Plan)							
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes	Average Daily Demand (gpm)
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)		
University Village, University Town Center							
PA 1a							
College Campus	63.1	School	0.25	0.50	1.14	36	175.3
Multi-Family-35DU/AC (per Unit Basis)	451	Multi Family High Rise	0.14	0.27	0.61	34	94.0
Open Space (OS-R)	0.7	Open Space/Recreation	0.001	0.003	0.006	12	1.0
PA 1b- Commercial/Mixed Use							
Residential-52DU/AC (per Unit Basis)	346	Multi Family High Rise	0.10	0.21	0.47	22	72.1
Office	12.2	Commercial Office	0.04	0.07	0.16	22	25.5
Commercial	45.0	General Commercial	0.11	0.22	0.51	22	78.1
Park	0.7	Parks/Landscaping	0.003	0.01	0.01	22	1.9
Open Space (OS-R)	9.5	Open Space/Recreation	0.02	0.04	0.09	10	13.2
PA 1c- Office Medical							
Office	40.8	Commercial Office	0.12	0.24	0.55	36	85.0
Multi-Family-35DU/AC (per Unit Basis)	1594		0.48	0.96	2.15	36	332.1
Open Space (OS-R)	7.7	Open Space/Recreation	0.02	0.03	0.07	32	10.7
Subtotal			1.28	2.56	5.76		888.8
Parkview Village							
PA 2a							
Multi-Family-35DU/AC (per Unit Basis)	350	Multi Family High Rise	0.11	0.21	0.47	24	72.9
Single Family-7DU/AC	21.7	Medium High Density	0.07	0.13	0.29	24	45.2
PA 2b							
Multi-Family-35DU/AC (per Unit Basis)	1026	Multi Family High Rise	0.31	0.62	1.39	34	213.8
PA 2c							
Single Family-7DU/AC	13.2	Medium High Density	0.04	0.08	0.18	24	27.5
Subtotal			0.52	1.04	2.33		359.4
Lakeside Village							
PA 4a							
Multi-Family-35DU/AC (per Unit Basis)	889	Multi Family High Rise	0.27	0.53	1.20	34	185.2
PA 4c- Entertainment							
Multi-Family Overlay (per Unit Basis)	60	Multi Family High Rise	0.02	0.04	0.08	54	12.5
Office	3.2	Commercial Office	0.01	0.02	0.04	54	6.7
Commercial	9.5	General Commercial	0.02	0.05	0.11	54	16.5
Subtotal			0.32	0.64	1.43		220.9
Total for Alberhill Villages 1434 Zone			2.12	4.23	9.52		1469.0

Alberhill Villages (from Specific Plan)

1601 Zone Projected Water Demands (per conceptual Land Use Plan)							
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes	Average Daily Demand (gpm)
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)		
Parkview Village							
PA 2a							
Single Family-4.5DU/AC	54.6	Medium Density	0.13	0.25	0.57	36	87.2
Single Family-4.5DU/AC	15.0	Medium Density	0.03	0.07	0.16	34	24.0
Single Family-4.5DU/AC	17.1	Medium Density	0.04	0.08	0.18	34	27.3
Single Family-4.5DU/AC	9.1	Medium Density	0.02	0.04	0.09	32	14.5
Single Family-4.5DU/AC	20.8	Medium Density	0.05	0.10	0.22	48	33.2
Single Family-4.5DU/AC	23.2	Medium Density	0.05	0.11	0.24	48	37.1
Open Space (OS-R)	35.2	Open Space/Rec./Slopes	0.07	0.14	0.32	34	48.9
PA 2c							
Elementary School	12.0	School	0.05	0.10	0.22	30	33.3
Single Family-6DU/AC	20.2	Medium Density	0.05	0.09	0.21	32	32.3
Single Family-7DU/AC	10.6	Medium High Density	0.03	0.06	0.14	10	22.1
Worship	5.2	Public Institutional	0.01	0.02	0.05	10	8.3
Park	14.3	Parks/Landscaping	0.06	0.11	0.26	10	39.7
		Subtotal	0.59	1.17	2.64		407.9
Highland Village							
PA 3b							
OS/Park (OS-R)	67.7	Open Space/Rec./Slopes	0.14	0.27	0.61	26	94.0
		Subtotal	0.14	0.27	0.61		94.0
Lakeside Village, Ridgeview Village, Alberhill Town Center							
PA 4a							
Single Family-5DU/AC	51	Medium Density	0.12	0.23	0.53	26	81.5
Single Family-5DU/AC	10.2	Medium Density	0.02	0.05	0.11	24	16.3
Single Family-5DU/AC	30.4	Medium Density	0.07	0.14	0.31	24	48.6
Single Family-7DU/AC	15.2	Medium High Density	0.05	0.09	0.21	22	31.7
Single Family-10DU/AC	23.1	Medium High Density	0.07	0.14	0.31	28	48.1
Park	21.3	Parks/Landscaping	0.09	0.17	0.38	56	59.2
Open Space (OS-R)	3.2	Open Space/Recreation	0.01	0.01	0.03	20	4.4
PA 4b							
Single Family-7DU/AC	10.5	Medium High Density	0.03	0.06	0.14	22	21.9
Single Family-10DU/AC	16.0	Medium High Density	0.05	0.10	0.22	20	33.3
Multi-Family-16DU/AC	17.2	High Density	0.09	0.17	0.39	20	59.7
Multi-Family-16DU/AC	11.9	High Density	0.06	0.12	0.27	16	41.3
PA 4c							
Single Family-10DU/AC	18.7	Medium High Density	0.06	0.11	0.25	56	39.0
Park	15.5	Parks/Landscaping	0.06	0.12	0.28	20	43.1
Park	0.7	Parks/Landscaping	0.00	0.01	0.01	20	1.9
PA 5a							
Single Family-5DU/AC	22.6	Medium Density	0.05	0.10	0.23	24	36.1
Single Family-5DU/AC	17.4	Medium Density	0.04	0.08	0.18	24	27.8
Single Family-7DU/AC	12.4	Medium High Density	0.04	0.07	0.17	22	25.8
Open Space (OS-R)	8.6	Open Space/Rec./Slopes	0.02	0.03	0.08	58	11.9
PA 5b							
Single Family-7DU/AC	13.1	Medium High Density	0.04	0.08	0.18	22	27.3
Multi-Family-16DU/AC	14.8	High Density	0.07	0.15	0.33	20	51.4
Park	45.9	Parks/Landscaping	0.18	0.37	0.83	52	127.5
Open Space (OS-R)	6.0	Open Space/Rec./Slopes	0.01	0.02	0.05	40	8.3
PA 6a							
Multi-Family Overlay (per Unit Basis)	100	Multi Family Low Rise	0.04	0.08	0.18	14	27.8
Office	6.4	Commercial Office	0.02	0.04	0.09	14	13.3
Commercial	19.3	General Commercial	0.05	0.10	0.22	14	33.5
PA 6b							
Multi-Family Overlay (per Unit Basis)	100	Multi Family High Rise	0.04	0.08	0.18	14	27.8
Office	4.3	Commercial Office	0.01	0.03	0.06	14	9.0
Commercial	8.8	General Commercial	0.02	0.04	0.10	14	15.3
Worship	10.0	Public Institutional	0.02	0.05	0.10	54	16.0
		Subtotal	1.42	2.85	6.41		988.7
Total for Alberhill Villages 1601 Zone			2.15	4.29	9.66		1490.6

Alberhill Villages (from Specific Plan)

1801 Zone Projected Water Demands (per conceptual Land Use Plan)						
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)	
Highland Village						
PA 3a						
Hillside Residential (per Unit Basis) *	8	Low Density	0.01	0.01	0.03	NOT MODELED
Open Space (OS-R)	2.3	Open Space/Recreation	0.005	0.01	0.02	NOT MODELED
		Subtotal	0.01	0.02	0.05	
Total for Alberhill Villages 1801 Zone			0.01	0.02	0.05	

* Estimated 8 Estate Homes.

Alberhill Villages Phase 1 (from Specific Plan)

1434 Zone Projected Water Demands (per conceptual Land Use Plan)							
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes	Average Daily Demand (gpm)
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)		
University Village, University Town Center							
PA 1a							
College Campus	63.1	School	0.25	0.50	1.14	36	175.3
Multi-Family-35DU/AC (per Unit Basis)	451	Multi Family High Rise	0.14	0.27	0.61	34	94.0
Open Space (OS-R)	0.7	Open Space/Recreation	0.001	0.003	0.006	12	1.0
PA 1b- Commercial/Mixed Use							
Residential-52DU/AC (per Unit Basis)	346	Multi Family High Rise	0.10	0.21	0.47	22	72.1
Office	12.2	Commercial Office	0.04	0.07	0.16	22	25.5
Commercial	45.0	General Commercial	0.11	0.22	0.51	22	78.1
Park	0.7	Parks/Landscaping	0.003	0.01	0.01	22	1.9
Open Space (OS-R)	9.5	Open Space/Recreation	0.02	0.04	0.09	10	13.2
Subtotal			0.66	1.33	2.99		461.0
Lakeside Village							
PA 4c- Entertainment							
TTM 35000 MF Overlay (Unit Basis)	60	Multi Family High Rise	0.02	0.04	0.08	54	12.5
Office	3.2	Commercial Office	0.01	0.02	0.04	54	6.7
Commercial	9.5	General Commercial	0.02	0.05	0.11	54	16.5
Subtotal			0.05	0.10	0.23		35.7
Total for Alberhill Villages 1434 Zone Phase 1			0.72	1.43	3.22		496.6

Alberhill Villages Phase 1 (from Specific Plan)

1601 Zone Projected Water Demands (per conceptual Land Use Plan)							
Watershed ID	Contributory Area (AC) or Units	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes	Average Daily Demand (gpm)
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)		
Lakeside Village, Ridgeview Village, Alberhill Town Center							
PA 4b							
Multi-Family-16DU/AC	11.9	High Density	0.06	0.12	0.27	16	41.3
PA 4c							
Single Family-10DU/AC	18.7	Medium High Density	0.06	0.11	0.25	16	39.0
Park	15.5	Park	0.06	0.12	0.28	16	43.1
PA 6a							
Multi-Family Overlay (per Unit Basis)	100	Multi Family Low Rise	0.04	0.08	0.18	14	27.8
Office	6.4	Commercial Office	0.02	0.04	0.09	14	13.3
Commercial	19.3	General Commercial	0.05	0.10	0.22	14	33.5
PA 6b							
Multi-Family Overlay (per Unit Basis)	100	Multi Family High Rise	0.04	0.08	0.18	42	27.8
Office	4.3	Commercial Office	0.01	0.03	0.06	42	9.0
Commercial	8.8	General Commercial	0.02	0.04	0.10	42	15.3
Worship	10.0	Public Institutional	0.02	0.05	0.10	42	16.0
Subtotal			0.38	0.77	1.72		265.9
Total for 1601 Zone Alberhill Villages Phase 1			0.38	0.77	1.72		265.9

Alberhill Ridge Project (from VTTM 35001 Lotting Study/Land Use Plan Dated 08/08/11)

1601 Zone Projected Water Demands (per conceptual Land Use Plan)						
Watershed ID	Contributory Area (AC)	Land Use Designation	Ultimate Flows			Tributary Area to Model Nodes
			Average Daily Demand (mgd)	Maximum Daily Demand (mgd)	Peak Hour Demand (mgd)	
VTTM 35001 Dated 08/08/11						
PA 1 - Mixed Use						
Retail/Office	9.8	General Commercial	0.02	0.05	0.11	J9
PA 2a						
Single Family-5DU/AC (per unit basis)	144	Medium Density	0.07	0.14	0.32	J30
PA 2b						
Single Family-5DU/AC (per unit basis)	185	Medium Density	0.09	0.19	0.42	J8
PA 2c						
Single Family-5DU/AC (per unit basis)	125	Medium Density	0.06	0.13	0.28	J6
PA 2d						
Park	5.9	Open Space/Recreation	0.02	0.05	0.11	J12
PA 2e						
Elementary School	850	Public Inst/Schools	0.05	0.10	0.23	J5
PA 3 - Mixed Use						
Retail/Office	34.6	General Commercial	0.09	0.17	0.39	J3
PA 4						
Single Family-5DU/AC (per unit basis)	65	Medium Density	0.03	0.07	0.15	J5
PA 5 - HDMFR						
Multi Family-24DU/AC	11.5	High Density	0.06	0.12	0.26	J4
PA 8a						
Single Family-5DU/AC (per unit basis)	71	Medium Density	0.04	0.07	0.16	J15
PA 8b						
Single Family-5DU/AC (per unit basis)	112	Medium Density	0.06	0.11	0.25	J11
PA 8c						
Single Family-5DU/AC (per unit basis)	157	Medium Density	0.08	0.16	0.35	J14
PA 8d						
Single Family-5DU/AC (per unit basis)	100	Medium Density	0.05	0.10	0.23	J10
Total for Alberhill Ridge 1601 Zone			0.72	1.45	3.25	

Water		
	Average Daily Demand	
Single Family or Duplex	500	gal/unit
	2500	gal/acre
Multi Family Low Rise	400	gal/unit
	4000	gal/acre
Multi Family High Rise	300	gal/unit
Commercial Use	3000	gal/acre
Commercial/Industrial Mix	100	gal/1000 sq. ft.
Commercial Residential Mix	120	gal/1000 sq. ft.
Hotels	350	gal/unit
Schools, Parks	60	gal/student
	4000	gal/acre

Sewer		
	Sewer Demand Factors	
Single Family or Duplex	250	gal/unit
	1250	gal/acre
Multi Family Low Rise	200	gal/unit
	2000	gal/acre
Multi Family High Rise	150	gal/unit
Commercial Use	1500	gal/acre
Commercial/Industrial Mix	50	gal/1000 sq. ft.
Commercial Residential Mix	60	gal/1000 sq. ft.
Hotels	175	gal/unit
Schools, Parks	30	gal/student
	2000	gal/acre
Residential Areas	100	gal/capita/day average
People/Dwelling Unit	2.5	Single family residence

Sewer (from master plan 2002)			
Land Use category	Recommended Return-to-sewer ratio (%)	Recommended Wastewater flow factor	
Residential			
Mountainous (0-.1du/ac)	40	150	gpd/acre
Very Low Density (.1-.5du/ac)	40	200	gpd/acre
Low Density (.5-2du/ac)	50	650	gpd/acre
Low Medium Density (2-4du/ac)	65	1400	gpd/acre
Medium Density (4-6du/ac)	65	1500	gpd/acre
Medium High Density (6-12du/ac)	70	1750	gpd/acre
High Density (12-24du/ac)	70	1750	gpd/acre
Mixed Use (24du/ac max)	80	1700	gpd/acre
Non-Residential			
Business Park	80	900	gpd/acre
Commercial office	80	2200	gpd/acre
Freeway Business	80	1300	gpd/acre
General Commercial	80	1700	gpd/acre
Limited Industrial	85	700	gpd/acre
Neighborhood Commercial	80	1000	gpd/acre
Open Space/Recreation	25	200	gpd/acre
Public Institutional	60	1200	gpd/acre
Streets	0	0	gpd/acre
Tourist Commercial	80	750	gpd/acre
Water/Floodway	0	0	gpd/acre

Water (from EVMWD master plan FEB 2008)

Land Use category	Recommended Return-to-sewer ratio (%)	Recommended Wastewater flow factor	
Residential			
Mountainous (0-.1du/ac)		250	gpd/acre
Very Low Density (.1-.5du/ac)		400	gpd/acre
Low Density (.5-2du/ac)		800	gpd/acre
Low Medium Density (2-4du/ac)		2000	gpd/acre
Medium Density (4-6du/ac)		2300	gpd/acre
Medium High Density (6-12du/ac)		3000	gpd/acre
High Density (12-24du/ac)		5000	gpd/acre
Mixed Use (24du/ac max)		2300	gpd/acre
Non-Residential			
Business Park		1200	gpd/acre
Commercial office		3000	gpd/acre
Freeway Business		1300	gpd/acre
General Commercial		2500	gpd/acre
Industrial		3000	gpd/acre
Limited Industrial		900	gpd/acre
Neighborhood Commercial		1000	gpd/acre
Open Space/Recreation/Slopes		2000	gpd/acre
Public Institutional		2300	gpd/acre
Schools		4000	gpd/acre
Tourist Commercial		2500	gpd/acre
Parks/Landscaping		4000	gpd/acre

Water for Residential DU (master plan FEB 2008)

Land Use category		Recommended Wastewater flow factor	
Residential			
Low Density (<2du/ac)		750	gpd/du
Low Medium Density (2-4du/ac)		600	gpd/du
Medium Density (4-6du/ac)		500	gpd/du
Medium High Density (6-12du/ac)		450	gpd/du
High Density (12-24du/ac)		350	gpd/du

F

ULTIMATE CONDITION 1434 ZONE ANALYSIS, NODE AND PIPE DIAGRAM

AVERAGE DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	13.20	1222.00	1433.63	91.70
110	0.00	1222.00	1433.63	91.70
12	1.00	1238.00	1433.62	84.76
126	0.00	1226.00	1433.45	89.89
22	177.60	1228.00	1433.05	88.85
24	145.60	1270.00	1432.86	70.57
26	0.00	1238.00	1433.62	84.76
28	0.00	1260.00	1433.62	75.23
32	10.70	1204.00	1433.62	99.49
34	492.90	1250.00	1432.87	79.24
36	592.40	1228.00	1432.99	88.82
42	0.00	1264.00	1433.24	73.33
54	35.70	1264.00	1433.40	73.40

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
131	1434-LAKE	110.00	3828.30	30	100	1,469.10	0.67	0.37	0.10	Open	0
133	110.00	32.00	3208.22	30	100	276.20	0.13	0.01	0.00	Open	0
135	110.00	10.00	143.75	42	100	1,192.90	0.28	0.00	0.01	Open	0
137	36.00	26.00	2569.41	12	100	-217.76	0.62	0.63	0.24	Open	0
139	22.00	12.00	2502.29	12	100	-208.79	0.59	0.57	0.23	Open	0
141	34.00	36.00	1352.23	12	100	-127.77	0.36	0.12	0.09	Open	0
143	36.00	22.00	37.72	12	100	-611.53	1.73	0.06	1.66	Open	0
145	22.00	126.00	1062.82	16	100	-580.34	0.93	0.39	0.37	Open	0
147	32.00	126.00	1926.77	16	100	265.50	0.42	0.17	0.09	Open	0
149	126.00	10.00	1507.68	16	100	-314.83	0.50	0.18	0.12	Open	0
151	34.00	42.00	1970.48	16	100	-401.61	0.64	0.37	0.19	Open	0
153	42.00	54.00	886.12	16	100	-401.61	0.64	0.17	0.19	Open	0
155	54.00	28.00	978.16	16	100	-437.31	0.70	0.21	0.22	Open	0
157	12.00	26.00	31.48	42	100	655.07	0.15	0.00	0.00	Open	0
159	26.00	28.00	1378.18	42	100	437.31	0.10	0.00	0.00	Open	0
161	10.00	12.00	980.97	42	100	864.86	0.20	0.01	0.01	Open	0
163	34.00	24.00	1302.32	12	100	36.48	0.10	0.01	0.01	Open	0
165	24.00	36.00	1982.08	12	100	-109.12	0.31	0.14	0.07	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-1,469.10	1,404.00	1,434.00	13.00	100	8	30

MAXIMUM DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	26.40	1222.00	1432.66	91.28
110	0.00	1222.00	1432.66	91.28
12	2.00	1238.00	1432.63	84.33
126	0.00	1226.00	1432.01	89.26
22	355.20	1228.00	1430.58	87.78
24	291.20	1270.00	1429.87	69.27
26	0.00	1238.00	1432.63	84.33
28	0.00	1260.00	1432.62	74.80
32	21.40	1204.00	1432.61	99.06
34	985.80	1250.00	1429.91	77.96
36	1184.80	1228.00	1430.36	87.68
42	0.00	1264.00	1431.25	72.47
54	71.40	1264.00	1431.85	72.73

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
131	1434-LAKE	110.00	3828.30	30	100	2,938.20	1.33	1.34	0.35	Open	0
133	110.00	32.00	3208.22	30	100	552.41	0.25	0.05	0.02	Open	0
135	110.00	10.00	143.75	42	100	2,385.79	0.55	0.01	0.05	Open	0
137	36.00	26.00	2569.41	12	100	-435.52	1.24	2.27	0.88	Open	0
139	22.00	12.00	2502.29	12	100	-417.57	1.18	2.05	0.82	Open	0
141	34.00	36.00	1352.23	12	100	-255.53	0.72	0.45	0.33	Open	0
143	36.00	22.00	37.72	12	100	-1,223.05	3.47	0.23	5.98	Open	0
145	22.00	126.00	1062.82	16	100	-1,160.68	1.85	1.42	1.34	Open	0
147	32.00	126.00	1926.77	16	100	531.01	0.85	0.61	0.31	Open	0
149	126.00	10.00	1507.68	16	100	-629.67	1.00	0.65	0.43	Open	0
151	34.00	42.00	1970.48	16	100	-803.22	1.28	1.33	0.68	Open	0
153	42.00	54.00	886.12	16	100	-803.22	1.28	0.60	0.68	Open	0
155	54.00	28.00	978.16	16	100	-874.62	1.40	0.77	0.79	Open	0
157	12.00	26.00	31.48	42	100	1,310.15	0.30	0.00	0.02	Open	0
159	26.00	28.00	1378.18	42	100	874.62	0.20	0.01	0.01	Open	0
161	10.00	12.00	980.97	42	100	1,729.72	0.40	0.03	0.03	Open	0
163	34.00	24.00	1302.32	12	100	72.95	0.21	0.04	0.03	Open	0
165	24.00	36.00	1982.08	12	100	-218.25	0.62	0.49	0.25	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-2,938.20	1,404.00	1,434.00	13.00	100	8	30

MAXIMUM DAY DEMANDS + FIRE ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	26.40	1222.00	1427.40	89.00
110	0.00	1222.00	1427.43	89.01
12	2.00	1238.00	1427.29	82.02
126	0.00	1226.00	1423.69	85.66
22	4355.20	1228.00	1415.57	81.27
24	291.20	1270.00	1415.65	63.11
26	0.00	1238.00	1427.28	82.02
28	0.00	1260.00	1427.25	72.47
32	21.40	1204.00	1427.15	96.69
34	985.80	1250.00	1416.46	72.13
36	1184.80	1228.00	1415.59	81.28
42	0.00	1264.00	1421.89	68.42
54	71.40	1264.00	1424.34	69.47

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
131	1434-LAKE	110.00	3828.30	30	100	6,938.20	3.15	6.57	1.72	Open	0
133	110.00	32.00	3208.22	30	100	1,382.99	0.63	0.28	0.09	Open	0
135	110.00	10.00	143.75	42	100	5,555.21	1.29	0.03	0.22	Open	0
137	36.00	26.00	2569.41	12	100	-1,055.33	2.99	11.70	4.55	Open	0
139	22.00	12.00	2502.29	12	100	-1,071.49	3.04	11.72	4.68	Open	0
141	34.00	36.00	1352.23	12	100	368.14	1.04	0.88	0.65	Open	0
143	36.00	22.00	37.72	12	100	309.04	0.88	0.02	0.47	Open	0
145	22.00	126.00	1062.82	16	100	-2,974.66	4.75	8.12	7.64	Open	0
147	32.00	126.00	1926.77	16	100	1,361.59	2.17	3.46	1.80	Open	0
149	126.00	10.00	1507.68	16	100	-1,613.08	2.57	3.71	2.46	Open	0
151	34.00	42.00	1970.48	16	100	-1,715.52	2.74	5.43	2.76	Open	0
153	42.00	54.00	886.12	16	100	-1,715.52	2.74	2.44	2.76	Open	0
155	54.00	28.00	978.16	16	100	-1,786.92	2.85	2.91	2.97	Open	0
157	12.00	26.00	31.48	42	100	2,842.24	0.66	0.00	0.06	Open	0
159	26.00	28.00	1378.18	42	100	1,786.92	0.41	0.04	0.03	Open	0
161	10.00	12.00	980.97	42	100	3,915.74	0.91	0.11	0.12	Open	0
163	34.00	24.00	1302.32	12	100	361.58	1.03	0.82	0.63	Open	0
165	24	36	1982.08	12	100	70.38	0.20	0.06	0.03	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-6,938.20	1,404.00	1,434.00	13.00	100	8	30

PEAK HOUR DEMAND ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

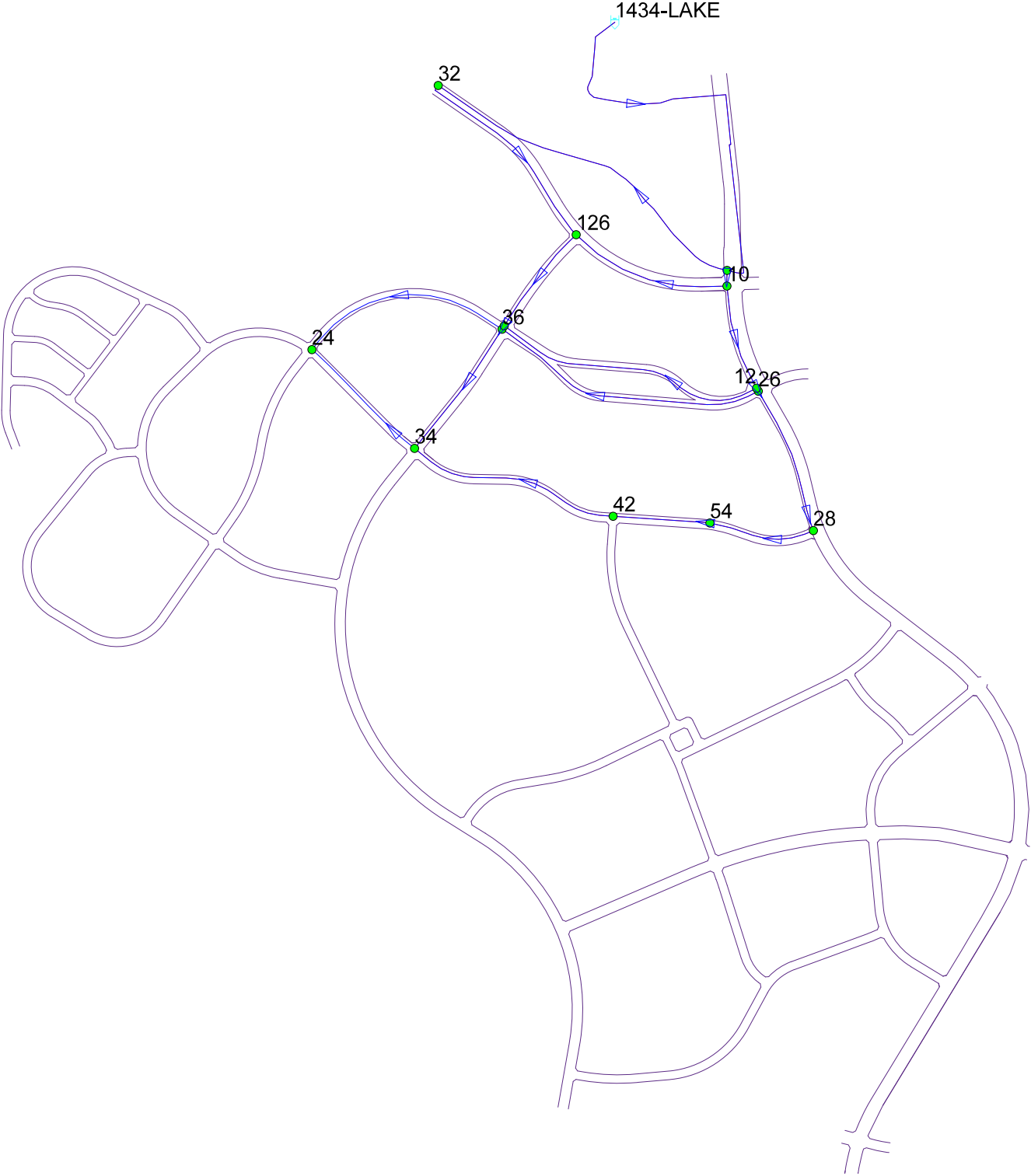
Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	59.40	1222.00	1427.96	89.24
110	0.00	1222.00	1427.99	89.26
12	4.50	1238.00	1427.85	82.26
126	0.00	1226.00	1425.05	86.25
22	799.20	1228.00	1418.67	82.62
24	655.20	1270.00	1415.46	63.03
26	0.00	1238.00	1427.85	82.26
28	0.00	1260.00	1427.80	72.71
32	48.15	1204.00	1427.76	96.96
34	2218.05	1250.00	1415.65	71.78
36	2665.80	1228.00	1417.65	82.18
42	0.00	1264.00	1421.64	68.30
54	160.65	1264.00	1424.33	69.47

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
1434-LAKE	110.00	3828.30	30.00	100	6611	3.00	6.01	1.57	Open	0	0
110	32.00	3208.22	30.00	100	1243	0.56	0.23	0.07	Open	0	0
110	10.00	143.75	42.00	100	5368	1.24	0.03	0.21	Open	0	0
36	26.00	2569.41	12.00	100	-980	2.78	10.20	3.97	Open	0	0
22	12.00	2502.29	12.00	100	-940	2.67	9.19	3.67	Open	0	0
34	36.00	1352.23	12.00	100	-575	1.63	2.00	1.48	Open	0	0
36	22.00	37.72	12.00	100	-2752	7.81	1.01	26.86	Open	0	0
22	126.00	1062.82	16.00	100	-2612	4.17	6.38	6.00	Open	0	0
32	126.00	1926.77	16.00	100	1195	1.91	2.72	1.41	Open	0	0
126	10.00	1507.68	16.00	100	-1417	2.26	2.92	1.93	Open	0	0
34	42.00	1970.48	16.00	100	-1807	2.88	5.98	3.04	Open	0	0
42	54.00	886.12	16.00	100	-1807	2.88	2.69	3.04	Open	0	0
54	28.00	978.16	16.00	100	-1968	3.14	3.48	3.56	Open	0	0
12	26.00	31.48	42.00	100	2948	0.68	0.00	0.07	Open	0	0
26	28.00	1378.18	42.00	100	1968	0.46	0.04	0.03	Open	0	0
10	12.00	980.97	42.00	100	3892	0.90	0.11	0.11	Open	0	0
34	24.00	1302.32	12.00	100	164	0.47	0.19	0.15	Open	0	0
24	36.00	1982.08	12.00	100	-491	1.39	2.19	1.10	Open	0	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-6,610.95	1,404.00	1,434.00	13.00	100	8	30



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ULTIMATE CONDITION 1601 ZONE ANALYSIS, NODE AND PIPE DIAGRAM

AVERAGE DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis				
Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	70.10	1250.00	1599.14	151.28
12	0.00	1274.00	1599.29	140.95
14	126.60	1350.00	1599.30	108.02
16	41.30	1298.00	1599.30	130.55
20	193.90	1396.00	1599.28	88.08
22	106.70	1393.00	1599.28	89.38
24	128.70	1405.00	1599.32	84.20
26	175.50	1358.00	1599.22	104.52
28	48.10	1317.00	1599.14	122.25
30	33.30	1342.00	1599.04	111.38
32	46.80	1366.00	1599.01	100.96
34	100.20	1376.00	1599.00	96.63
36	87.20	1402.00	1599.00	85.36
40	8.30	1446.00	1599.35	66.45
42	0.00	1389.00	1599.31	91.13
46	0.00	1329.00	1599.03	117.00
48	70.30	1,407.00	1,599.01	83.20
52	127.50	1,406.00	1,599.27	83.74
54	16.00	1,376.00	1,599.29	96.75
56	98.20	1,300.00	1,599.24	129.66
58	11.90	1,448.00	1,599.29	65.56
60	0.00	1,367.00	1,599.32	100.66
62	0.00	1,485.00	1,599.61	49.66
66	0.00	1,365.00	1,599.30	101.52
68	0.00	1,530.00	1,599.81	30.25
72	348.90	1,430.00	1,599.39	73.40
74	0.00	1,520.00	1,599.81	34.58
78	0.00	1,384.00	1,599.28	93.28
82	0.00	1,450.00	1,599.81	64.91
84	255.20	1,460.00	1,598.57	60.04
88	0.00	1,286.00	1,599.29	135.75

AVERAGE DAY DEMANDS ANALYSIS RESULTS

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
101	32	34	276.56	16	100	138.46	0.22	0.01	0.03	Open	0
103	34	36	1264.33	16	100	47.77	0.08	0.00	0.00	Open	0
107	14	16	1965.55	30	100	81.64	0.04	0.00	0.00	Open	0
111	40	42	1661.30	21	100	270.75	0.25	0.04	0.02	Open	0
113	42	14	1345.37	21	100	192.40	0.18	0.02	0.01	Open	0
115	24	1601-VILLAGES	2744.37	20	100	-841.19	0.86	0.68	0.25	Open	0
117	28	10	1363.89	20	100	-12.48	0.01	0.00	0.00	Open	0
119	10	46	2338.44	12	100	88.44	0.25	0.11	0.05	Open	0
121	46	32	1111.14	12	100	49.01	0.14	0.02	0.02	Open	0
123	34	48	3055.51	12	100	-9.51	0.03	0.00	0.00	Open	0
125	48	30	880.65	12	100	-79.81	0.23	0.03	0.04	Open	0
127	46	36	2803.35	12	100	39.43	0.11	0.03	0.01	Open	0
129	26	56	2062.33	12	100	-32.53	0.09	0.01	0.01	Open	0
131	10	12	3985.29	16	100	-171.01	0.27	0.15	0.04	Open	0
133	22	52	1244.24	12	100	41.32	0.12	0.01	0.01	Open	0
135	52	54	1197.12	12	100	-45.27	0.13	0.02	0.01	Open	0
137	56	22	1279.63	12	100	-76.24	0.22	0.04	0.04	Open	0
139	20	54	919.59	12	100	-17.08	0.05	0.00	0.00	Open	0
141	54	42	749.57	12	100	-78.35	0.22	0.03	0.04	Open	0
143	24	58	1376.80	12	100	52.81	0.15	0.02	0.02	Open	0
145	58	52	2192.22	12	100	40.91	0.12	0.02	0.01	Open	0
147	16	20	1766.59	12	100	30.87	0.09	0.01	0.01	Open	0
149	60	62	3115.43	16	100	-274.37	0.44	0.29	0.09	Open	0
151	40	62	656.84	12	100	-279.05	0.79	0.25	0.39	Open	0
153	62	1601-RANCH	1156.93	16	100	-553.41	0.88	0.39	0.34	Open	0
155	60	66	175.18	16	100	274.37	0.44	0.02	0.09	Open	0
157	14	66	668.80	20	100	-154.32	0.16	0.01	0.01	Open	0
175	68	1601-RIDGE	364.28	16	100	-700.10	1.12	0.19	0.52	Open	0
177	72	68	2351.33	20	100	-700.10	0.71	0.42	0.18	Open	0
179	68	74	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74	82	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78	72	4401.32	16	100	-135.15	0.22	0.11	0.02	Open	0
185	16	72	1652.06	16	100	-216.04	0.34	0.10	0.06	Open	0
189	66	78	980.87	16	100	120.05	0.19	0.02	0.02	Open	0
195	84	78	2172.49	12	100	-255.20	0.72	0.71	0.33	Open	0
197	16	88	956.41	30	100	225.51	0.10	0.00	0.00	Open	0
201	88	56	2843.06	12	100	54.50	0.15	0.05	0.02	Open	0
203	88	12	1050.05	30	100	171.01	0.08	0.00	0.00	Open	0
87	14	20	1422.10	20	100	138.48	0.14	0.01	0.01	Open	0
89	20	22	1463.29	20	100	-7.47	0.01	0.00	0.00	Open	0
91	22	24	1520.39	20	100	-231.72	0.24	0.03	0.02	Open	0
93	24	26	1329.39	20	100	427.95	0.44	0.09	0.07	Open	0
95	26	28	2604.92	20	100	284.99	0.29	0.09	0.03	Open	0
97	28	30	1242.42	16	100	249.36	0.40	0.10	0.08	Open	0
99	30	32	1,132.69	16	100	136.25	0.22	0.03	0.03	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-553.41	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-700.10	1,570.00	1,600.00	13.00	100	3.25	30
1601-VILLAGES	-841.19	1,570.00	1,600.00	13.00	100	5.7	30

MAXIMUM DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis				
Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	140.20	1250.00	1596.88	150.30
12	0.00	1274.00	1597.44	140.15
14	253.30	1350.00	1597.46	107.22
16	82.60	1298.00	1597.46	129.75
20	387.80	1396.00	1597.41	87.27
22	213.40	1393.00	1597.41	88.57
24	257.40	1405.00	1597.54	83.43
26	351.00	1358.00	1597.20	103.64
28	96.20	1317.00	1596.88	121.27
30	66.60	1342.00	1596.54	110.29
32	93.60	1366.00	1596.43	99.85
34	200.40	1376.00	1596.41	95.50
36	174.40	1402.00	1596.39	84.23
40	16.60	1446.00	1597.66	65.72
42	0.00	1389.00	1597.52	90.35
46	0.00	1329.00	1596.49	115.91
48	140.60	1,407.00	1,596.41	82.07
52	255.00	1,406.00	1,597.36	82.92
54	32.00	1,376.00	1,597.42	95.94
56	196.40	1,300.00	1,597.25	128.80
58	23.80	1,448.00	1,597.45	64.76
60	0.00	1,367.00	1,597.54	99.89
62	0.00	1,485.00	1,598.58	49.22
66	0.00	1,365.00	1,597.48	100.74
68	0.00	1,530.00	1,599.31	30.03
72	697.80	1,430.00	1,597.81	72.71
74	0.00	1,520.00	1,599.31	34.37
78	0.00	1,384.00	1,597.41	92.47
82	0.00	1,450.00	1,599.31	64.70
84	510.40	1,460.00	1,594.84	58.43
88	0.00	1,286.00	1,597.44	134.95

MAXIMUM DAY DEMANDS ANALYSIS RESULTS

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
101	32	34	276.56	16	100	276.92	0.44	0.03	0.09	Open	0
103	34	36	1264.33	16	100	95.54	0.15	0.02	0.01	Open	0
107	14	16	1965.55	30	100	163.24	0.07	0.00	0.00	Open	0
111	40	42	1661.30	21	100	541.51	0.50	0.14	0.09	Open	0
113	42	14	1345.37	21	100	384.81	0.36	0.06	0.05	Open	0
115	24	1601-VILLAGES	2744.37	20	100	-1,682.41	1.72	2.46	0.90	Open	0
117	28	10	1363.89	20	100	-24.95	0.03	0.00	0.00	Open	0
119	10	46	2338.44	12	100	176.88	0.50	0.39	0.17	Open	0
121	46	32	1111.14	12	100	98.01	0.28	0.06	0.06	Open	0
123	34	48	3055.51	12	100	-19.02	0.05	0.01	0.00	Open	0
125	48	30	880.65	12	100	-159.62	0.45	0.12	0.14	Open	0
127	46	36	2803.35	12	100	78.86	0.22	0.10	0.04	Open	0
129	26	56	2062.33	12	100	-65.06	0.18	0.05	0.03	Open	0
131	10	12	3985.29	16	100	-342.03	0.55	0.55	0.14	Open	0
133	22	52	1244.24	12	100	82.63	0.23	0.05	0.04	Open	0
135	52	54	1197.12	12	100	-90.55	0.26	0.06	0.05	Open	0
137	56	22	1279.63	12	100	-152.47	0.43	0.16	0.13	Open	0
139	20	54	919.59	12	100	-34.15	0.10	0.01	0.01	Open	0
141	54	42	749.57	12	100	-156.70	0.44	0.10	0.13	Open	0
143	24	58	1376.80	12	100	105.63	0.30	0.09	0.06	Open	0
145	58	52	2192.22	12	100	81.83	0.23	0.09	0.04	Open	0
147	16	20	1766.59	12	100	61.73	0.18	0.04	0.02	Open	0
149	60	62	3115.43	16	100	-548.75	0.88	1.04	0.33	Open	0
151	40	62	656.84	12	100	-558.11	1.58	0.92	1.40	Open	0
153	62	1601-RANCH	1156.93	16	100	-1,106.86	1.77	1.42	1.22	Open	0
155	60	66	175.18	16	100	548.75	0.88	0.06	0.33	Open	0
157	14	66	668.80	20	100	-308.67	0.32	0.03	0.04	Open	0
175	68	1601-RIDGE	364.28	16	100	-1,400.23	2.23	0.69	1.89	Open	0
177	72	68	2351.33	20	100	-1,400.23	1.43	1.50	0.64	Open	0
179	68	74	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74	82	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78	72	4401.32	16	100	-270.32	0.43	0.40	0.09	Open	0
185	16	72	1652.06	16	100	-432.11	0.69	0.35	0.21	Open	0
189	66	78	980.87	16	100	240.08	0.38	0.07	0.07	Open	0
195	84	78	2172.49	12	100	-510.40	1.45	2.58	1.19	Open	0
197	16	88	956.41	30	100	451.02	0.20	0.01	0.01	Open	0
201	88	56	2843.06	12	100	108.99	0.31	0.19	0.07	Open	0
203	88	12	1050.05	30	100	342.03	0.16	0.01	0.01	Open	0
87	14	20	1422.10	20	100	276.94	0.28	0.05	0.03	Open	0
89	20	22	1463.29	20	100	-14.98	0.02	0.00	0.00	Open	0
91	22	24	1520.39	20	100	-463.48	0.47	0.13	0.08	Open	0
93	24	26	1329.39	20	100	855.91	0.87	0.34	0.26	Open	0
95	26	28	2604.92	20	100	569.97	0.58	0.31	0.12	Open	0
97	28	30	1242.42	16	100	498.72	0.80	0.35	0.28	Open	0
99	30	32	1132.69	16	100	272.50	0.43	0.10	0.09	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-1,106.86	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-1,400.23	1,570.00	1,600.00	13.00	100	3.25	30
1601-VILLAGES	-1,682.41	1,570.00	1,600.00	13.00	100	5.7	30

MAXIMUM DAY + FIRE DEMAND ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis				
Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	140.20	1250.00	1579.51	142.78
12	0.00	1274.00	1590.62	137.19
14	253.20	1350.00	1591.02	104.43
16	82.60	1298.00	1590.93	126.93
20	387.80	1396.00	1590.78	84.40
22	213.40	1393.00	1590.62	85.63
24	257.40	1405.00	1590.63	80.43
26	351.00	1358.00	1587.10	99.27
28	96.20	1317.00	1579.48	113.73
30	66.60	1342.00	1567.91	97.89
32	93.60	1366.00	1561.82	84.85
34	200.40	1376.00	1560.08	79.76
36	4174.40	1402.00	1549.54	63.93
40	16.60	1446.00	1591.77	63.16
42	0.00	1389.00	1591.24	87.63
46	0.00	1329.00	1562.34	101.11
48	140.60	1,407.00	1,565.61	68.73
52	255.00	1,406.00	1,590.60	79.99
54	32.00	1,376.00	1,590.84	93.09
56	196.40	1,300.00	1,589.57	125.47
58	23.80	1,448.00	1,590.61	61.79
60	0.00	1,367.00	1,591.54	97.29
62	0.00	1,485.00	1,595.06	47.69
66	0.00	1,365.00	1,591.34	98.07
68	0.00	1,530.00	1,597.90	29.42
72	697.80	1,430.00	1,593.33	70.77
74	0.00	1,520.00	1,597.90	33.75
78	0.00	1,384.00	1,591.36	89.85
82	0.00	1,450.00	1,597.90	64.09
84	510.40	1,460.00	1,588.79	55.80
88	0.00	1,286.00	1,590.76	132.05

MAXIMUM DAY + FIRE DEMAND ANALYSIS RESULTS

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
101	32	34	276.56	16	100	2,676.61	4.27	1.74	6.28	Open	0
103	34	36	1264.33	16	100	3,117.54	4.97	10.54	8.33	Open	0
107	14	16	1965.55	30	100	1,008.98	0.46	0.09	0.05	Open	0
111	40	42	1661.30	21	100	1,094.84	1.01	0.53	0.32	Open	0
113	42	14	1345.37	21	100	761.64	0.71	0.22	0.16	Open	0
115	24	1601-VILLAGES	2744.37	20	100	-3,462.65	3.54	9.37	3.41	Open	0
117	28	10	1363.89	20	100	-220.12	0.22	0.03	0.02	Open	0
119	10	46	2338.44	12	100	1,366.02	3.88	17.17	7.34	Open	0
121	46	32	1111.14	12	100	309.16	0.88	0.52	0.47	Open	0
123	34	48	3055.51	12	100	-641.33	1.82	5.53	1.81	Open	0
125	48	30	880.65	12	100	-781.93	2.22	2.30	2.61	Open	0
127	46	36	2803.35	12	100	1,056.86	3.00	12.80	4.56	Open	0
129	26	56	2062.33	12	100	-513.03	1.46	2.47	1.20	Open	0
131	10	12	3985.29	16	100	-1,726.33	2.75	11.12	2.79	Open	0
133	22	52	1244.24	12	100	40.48	0.11	0.01	0.01	Open	0
135	52	54	1197.12	12	100	-192.56	0.55	0.23	0.19	Open	0
137	56	22	1279.63	12	100	-418.28	1.19	1.05	0.82	Open	0
139	20	54	919.59	12	100	-108.64	0.31	0.06	0.07	Open	0
141	54	42	749.57	12	100	-333.20	0.95	0.40	0.54	Open	0
143	24	58	1376.80	12	100	45.76	0.13	0.02	0.01	Open	0
145	58	52	2192.22	12	100	21.96	0.06	0.01	0.00	Open	0
147	16	20	1766.59	12	100	123.46	0.35	0.15	0.09	Open	0
149	60	62	3115.43	16	100	-1,060.62	1.69	3.53	1.13	Open	0
151	40	62	656.84	12	100	-1,111.44	3.15	3.29	5.01	Open	0
153	62	1601-RANCH	1156.93	16	100	-2,172.06	3.47	4.94	4.27	Open	0
155	60	66	175.18	16	100	1,060.62	1.69	0.20	1.13	Open	0
157	14	66	668.80	20	100	-1,192.55	1.22	0.32	0.47	Open	0
175	68	1601-RIDGE	364.28	16	100	-2,554.69	4.08	2.10	5.76	Open	0
177	72	68	2351.33	20	100	-2,554.69	2.61	4.57	1.94	Open	0
179	68	74	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74	82	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78	72	4401.32	16	100	-642.33	1.02	1.97	0.45	Open	0
185	16	72	1652.06	16	100	-1,214.56	1.94	2.40	1.45	Open	0
189	66	78	980.87	16	100	-131.93	0.21	0.02	0.02	Open	0
195	84	78	2172.49	12	100	-510.40	1.45	2.58	1.19	Open	0
197	16	88	956.41	30	100	2,017.48	0.92	0.17	0.17	Open	0
201	88	56	2843.06	12	100	291.15	0.83	1.19	0.42	Open	0
203	88	12	1050.05	30	100	1,726.33	0.78	0.14	0.13	Open	0
87	14	20	1422.10	20	100	692.00	0.71	0.25	0.17	Open	0
89	20	22	1463.29	20	100	536.30	0.55	0.16	0.11	Open	0
91	22	24	1520.39	20	100	-135.86	0.14	0.01	0.01	Open	0
93	24	26	1329.39	20	100	3,023.64	3.09	3.53	2.66	Open	0
95	26	28	2604.92	20	100	3,185.67	3.25	7.62	2.93	Open	0
97	28	30	1242.42	16	100	3,309.58	5.28	11.57	9.31	Open	0
99	30	32	1132.69	16	100	2,461.05	3.93	6.09	5.38	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-2,172.06	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-2,554.69	1,570.00	1,600.00	13.00	100	3.25	30
1601-VILLAGES	-3,462.65	1,570.00	1,600.00	13.00	100	5.7	30

PEAK HOUR DEMAND ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis				
Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	315.45	1250.00	1586.01	145.59
12	0.00	1274.00	1588.50	136.27
14	569.70	1350.00	1588.59	103.38
16	185.85	1298.00	1588.57	125.91
20	872.55	1396.00	1588.39	83.36
22	480.15	1393.00	1588.39	84.66
24	579.15	1405.00	1588.95	79.71
26	789.75	1358.00	1587.42	99.41
28	216.45	1317.00	1586.00	116.56
30	149.85	1342.00	1584.44	105.05
32	210.60	1366.00	1583.98	94.45
34	450.90	1376.00	1583.86	90.07
36	392.40	1402.00	1583.79	78.77
40	37.35	1446.00	1589.51	62.18
42	0.00	1389.00	1588.87	86.60
46	0.00	1329.00	1584.26	110.60
48	316.35	1,407.00	1,583.90	76.65
52	573.75	1,406.00	1,588.16	78.93
54	72.00	1,376.00	1,588.42	92.04
56	441.90	1,300.00	1,587.66	124.64
58	53.55	1,448.00	1,588.55	60.90
60	0.00	1,367.00	1,588.97	96.18
62	0.00	1,485.00	1,593.64	47.07
66	0.00	1,365.00	1,588.71	96.93
68	0.00	1,530.00	1,596.90	28.99
72	1570.05	1,430.00	1,590.17	69.40
74	0.00	1,520.00	1,596.90	33.32
78	0.00	1,384.00	1,588.39	88.56
82	0.00	1,450.00	1,596.90	63.65
84	1148.40	1,460.00	1,576.82	50.62
88	0.00	1,286.00	1,588.53	131.09

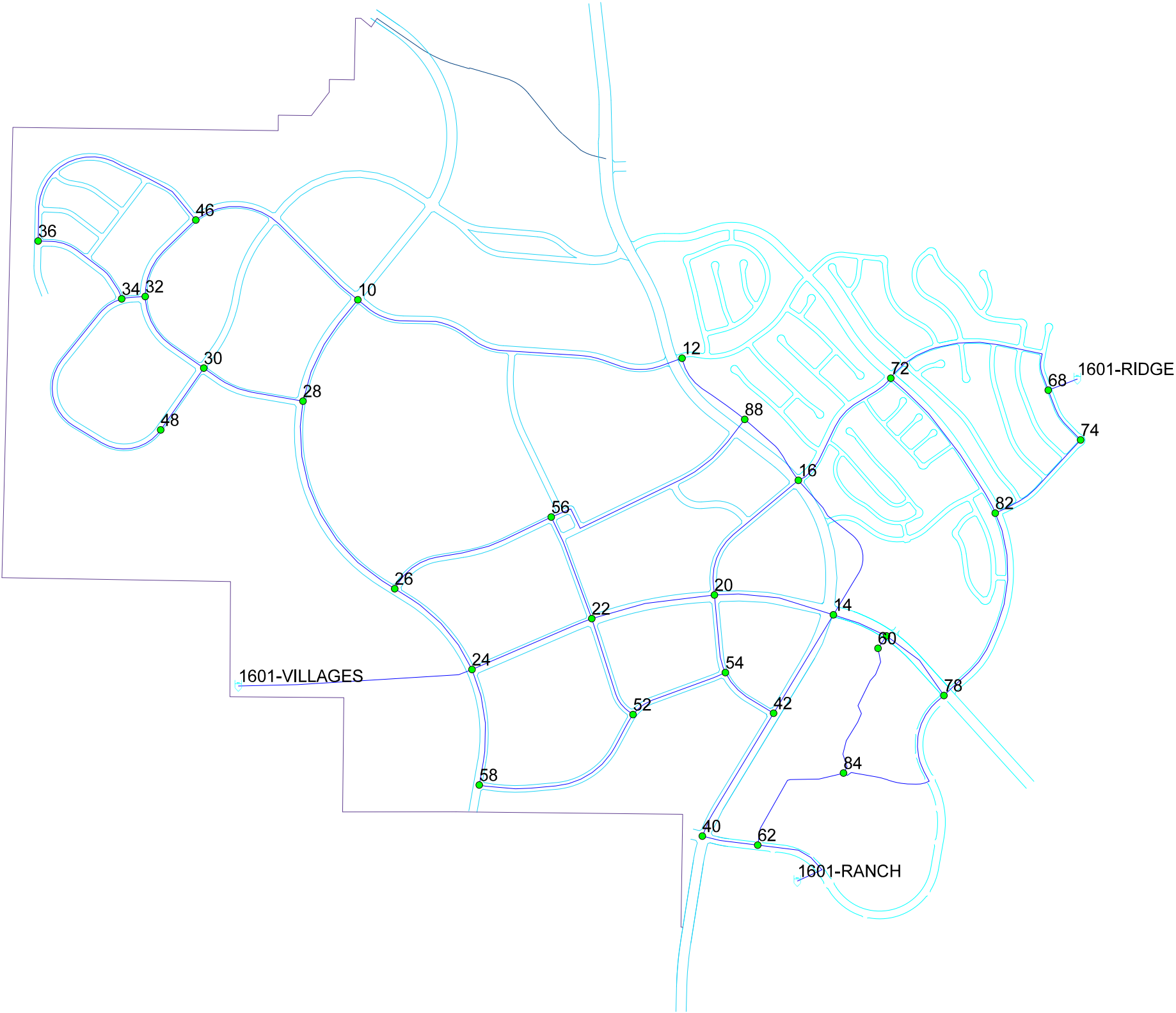
PEAK HOUR DEMAND ANALYSIS RESULTS

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
101	32	34	276.56	16	100	623.06	0.99	0.12	0.42	Open	0
103	34	36	1264.33	16	100	214.96	0.34	0.07	0.06	Open	0
107	14	16	1965.55	30	100	367.36	0.17	0.01	0.01	Open	0
111	40	42	1661.30	21	100	1,218.35	1.13	0.65	0.39	Open	0
113	42	14	1345.37	21	100	865.78	0.80	0.28	0.21	Open	0
115	24	1601-VILLAGES	2744.37	20	100	-3,785.34	3.87	11.05	4.03	Open	0
117	28	10	1363.89	20	100	-56.15	0.06	0.00	0.00	Open	0
119	10	46	2338.44	12	100	397.97	1.13	1.75	0.75	Open	0
121	46	32	1111.14	12	100	220.53	0.63	0.28	0.25	Open	0
123	34	48	3055.51	12	100	-42.80	0.12	0.04	0.01	Open	0
125	48	30	880.65	12	100	-359.15	1.02	0.54	0.62	Open	0
127	46	36	2803.35	12	100	177.44	0.50	0.47	0.17	Open	0
129	26	56	2062.33	12	100	-146.40	0.42	0.24	0.12	Open	0
131	10	12	3985.29	16	100	-769.57	1.23	2.49	0.62	Open	0
133	22	52	1244.24	12	100	185.92	0.53	0.23	0.18	Open	0
135	52	54	1197.12	12	100	-203.73	0.58	0.26	0.22	Open	0
137	56	22	1279.63	12	100	-343.06	0.97	0.73	0.57	Open	0
139	20	54	919.59	12	100	-76.84	0.22	0.03	0.04	Open	0
141	54	42	749.57	12	100	-352.57	1.00	0.45	0.60	Open	0
143	24	58	1376.80	12	100	237.65	0.67	0.40	0.29	Open	0
145	58	52	2192.22	12	100	184.10	0.52	0.39	0.18	Open	0
147	16	20	1766.59	12	100	138.90	0.39	0.19	0.11	Open	0
149	60	62	3115.43	16	100	-1,234.66	1.97	4.67	1.50	Open	0
151	40	62	656.84	12	100	-1,255.71	3.56	4.13	6.28	Open	0
153	62	1601-RANCH	1156.93	16	100	-2,490.36	3.97	6.36	5.50	Open	0
155	60	66	175.18	16	100	1,234.66	1.97	0.26	1.50	Open	0
157	14	66	668.80	20	100	-694.45	0.71	0.12	0.17	Open	0
175	68	1601-RIDGE	364.28	16	100	-3,150.44	5.03	3.10	8.50	Open	0
177	72	68	2351.33	20	100	-3,150.44	3.22	6.74	2.87	Open	0
179	68	74	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74	82	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78	72	4401.32	16	100	-608.19	0.97	1.78	0.40	Open	0
185	16	72	1652.06	16	100	-972.20	1.55	1.59	0.96	Open	0
189	66	78	980.87	16	100	540.21	0.86	0.32	0.32	Open	0
195	84	78	2172.49	12	100	-1,148.40	3.26	11.57	5.32	Open	0
197	16	88	956.41	30	100	1,014.81	0.46	0.05	0.05	Open	0
201	88	56	2843.06	12	100	245.24	0.70	0.87	0.31	Open	0
203	88	12	1050.05	30	100	769.57	0.35	0.03	0.03	Open	0
87	14	20	1422.10	20	100	623.17	0.64	0.20	0.14	Open	0
89	20	22	1463.29	20	100	-33.63	0.03	0.00	0.00	Open	0
91	22	24	1520.39	20	100	-1,042.76	1.06	0.56	0.37	Open	0
93	24	26	1329.39	20	100	1,925.78	1.97	1.53	1.15	Open	0
95	26	28	2604.92	20	100	1,282.43	1.31	1.41	0.54	Open	0
97	28	30	1242.42	16	100	1,122.13	1.79	1.56	1.26	Open	0
99	30	32	1132.69	16	100	613.13	0.98	0.46	0.41	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-2,490.36	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-3,150.44	1,570.00	1,600.00	13.00	100	3.25	30
1601-VILLAGES	-3,785.34	1,570.00	1,600.00	13.00	100	5.7	30





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**1434 ZONE PHASE 1
ANALYSIS, NODE AND PIPE DIAGRAM**

AVERAGE DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	13.20	1222.00	1433.95	91.84
110	0.00	1222.00	1433.95	91.84
12	1.00	1238.00	1433.95	84.90
126	0.00	1226.00	1433.93	90.09
22	177.60	1228.00	1433.87	89.20
26	0.00	1238.00	1433.95	84.90
28	0.00	1260.00	1433.95	75.37
32	0.00	1204.00	1433.95	99.64
34	94.00	1250.00	1433.87	79.67
36	175.30	1228.00	1433.87	89.20
42	0.00	1264.00	1433.91	73.62
54	35.70	1264.00	1433.92	73.63

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
131	1434-LAKE	110.00	3828.30	30	100	496.80	0.23	0.05	0.01	Open	0
133	110.00	32.00	3208.22	30	100	90.10	0.04	0.00	0.00	Open	0
135	110.00	10.00	143.75	42	100	406.70	0.09	0.00	0.00	Open	0
137	36.00	26.00	2569.41	12	100	-70.59	0.20	0.08	0.03	Open	0
139	22.00	12.00	2502.29	12	100	-70.73	0.20	0.08	0.03	Open	0
141	34.00	36.00	1352.23	12	100	14.96	0.04	0.00	0.00	Open	0
143	36.00	22.00	37.72	12	100	-89.75	0.25	0.00	0.05	Open	0
145	22.00	126.00	1062.82	16	100	-196.63	0.31	0.05	0.05	Open	0
147	32.00	126.00	1926.77	16	100	90.10	0.14	0.02	0.01	Open	0
149	126.00	10.00	1507.68	16	100	-106.52	0.17	0.02	0.02	Open	0
151	34.00	42.00	1970.48	16	100	-108.96	0.17	0.03	0.02	Open	0
153	42.00	54.00	886.12	16	100	-108.96	0.17	0.01	0.02	Open	0
155	54.00	28.00	978.16	16	100	-144.66	0.23	0.03	0.03	Open	0
157	12.00	26.00	31.48	42	100	215.25	0.05	0.00	0.00	Open	0
159	26.00	28.00	1378.18	42	100	144.66	0.03	0.00	0.00	Open	0
161	10	12	980.97	42	100	286.97	0.07	0.00	0.00	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-496.80	1,404.00	1,434.00	13.00	100	8	30

MAXIMUM DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	26.40	1222.00	1433.82	91.78
110	0.00	1222.00	1433.82	91.78
12	2.00	1238.00	1433.82	84.85
126	0.00	1226.00	1433.73	90.01
22	355.20	1228.00	1433.54	89.06
26	0.00	1238.00	1433.82	84.85
28	0.00	1260.00	1433.81	75.31
32	0.00	1204.00	1433.81	99.58
34	188.00	1250.00	1433.54	79.53
36	350.60	1228.00	1433.53	89.06
42	0.00	1264.00	1433.66	73.51
54	71.40	1264.00	1433.72	73.54

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
131	1434-LAKE	110.00	3828.30	30	100	993.60	0.45	0.18	0.05	Open	0
133	110.00	32.00	3208.22	30	100	180.21	0.08	0.01	0.00	Open	0
135	110.00	10.00	143.75	42	100	813.39	0.19	0.00	0.01	Open	0
137	36.00	26.00	2569.41	12	100	-141.18	0.40	0.28	0.11	Open	0
139	22.00	12.00	2502.29	12	100	-141.45	0.40	0.28	0.11	Open	0
141	34.00	36.00	1352.23	12	100	29.91	0.08	0.01	0.01	Open	0
143	36.00	22.00	37.72	12	100	-179.50	0.51	0.01	0.17	Open	0
145	22.00	126.00	1062.82	16	100	-393.25	0.63	0.19	0.18	Open	0
147	32.00	126.00	1926.77	16	100	180.21	0.29	0.08	0.04	Open	0
149	126.00	10.00	1507.68	16	100	-213.04	0.34	0.09	0.06	Open	0
151	34.00	42.00	1970.48	16	100	-217.91	0.35	0.12	0.06	Open	0
153	42.00	54.00	886.12	16	100	-217.91	0.35	0.05	0.06	Open	0
155	54.00	28.00	978.16	16	100	-289.31	0.46	0.10	0.10	Open	0
157	12.00	26.00	31.48	42	100	430.50	0.10	0.00	0.00	Open	0
159	26.00	28.00	1378.18	42	100	289.31	0.07	0.00	0.00	Open	0
161	10.00	12.00	980.97	42	100	573.95	0.13	0.00	0.00	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-993.60	1,404.00	1,434.00	13.00	100	8	30

MAXIMUM DAY DEMANDS + FIRE ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	26.40	1222.00	1430.41	90.30
110	0.00	1222.00	1430.43	90.31
12	2.00	1238.00	1430.35	83.35
126	0.00	1226.00	1428.10	87.57
22	4355.20	1228.00	1423.04	84.51
26	0.00	1238.00	1430.35	83.35
28	0.00	1260.00	1430.34	73.81
32	0.00	1204.00	1430.26	98.04
34	188.00	1250.00	1426.65	76.54
36	350.60	1228.00	1423.26	84.61
42	0.00	1264.00	1428.48	71.27
54	71.40	1264.00	1429.30	71.63

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
131	1434-LAKE	110.00	3828.30	30	100	4,993.60	2.27	3.57	0.93	Open	0
133	110.00	32.00	3208.22	30	100	1,055.11	0.48	0.17	0.05	Open	0
135	110.00	10.00	143.75	42	100	3,938.49	0.91	0.02	0.12	Open	0
137	36.00	26.00	2569.41	12	100	-805.47	2.28	7.09	2.76	Open	0
139	22.00	12.00	2502.29	12	100	-830.99	2.36	7.32	2.92	Open	0
141	34.00	36.00	1352.23	12	100	764.79	2.17	3.39	2.51	Open	0
143	36.00	22.00	37.72	12	100	1,219.67	3.46	0.22	5.95	Open	0
145	22.00	126.00	1062.82	16	100	-2,304.55	3.68	5.06	4.76	Open	0
147	32.00	126.00	1926.77	16	100	1,055.11	1.68	2.16	1.12	Open	0
149	126.00	10.00	1507.68	16	100	-1,249.43	1.99	2.31	1.53	Open	0
151	34.00	42.00	1970.48	16	100	-952.79	1.52	1.83	0.93	Open	0
153	42.00	54.00	886.12	16	100	-952.79	1.52	0.82	0.93	Open	0
155	54.00	28.00	978.16	16	100	-1,024.19	1.63	1.04	1.06	Open	0
157	12.00	26.00	31.48	42	100	1,829.67	0.42	0.00	0.03	Open	0
159	26.00	28.00	1378.18	42	100	1,024.19	0.24	0.01	0.01	Open	0
161	10.00	12.00	980.97	42	100	2,662.65	0.62	0.06	0.06	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-4,993.60	1,404.00	1,434.00	13.00	100	8	30

PEAK HOUR DEMAND ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
10	59.40	1222.00	1433.19	91.51
110	0.00	1222.00	1433.19	91.51
12	4.50	1238.00	1433.17	84.57
126	0.00	1226.00	1432.80	89.61
22	799.20	1228.00	1431.94	88.37
26	0.00	1238.00	1433.17	84.57
28	0.00	1260.00	1433.17	75.03
32	0.00	1204.00	1433.16	99.30
34	423.00	1250.00	1431.95	78.84
36	788.85	1228.00	1431.91	88.35
42	0.00	1264.00	1432.48	73.00
54	160.65	1264.00	1432.72	73.11

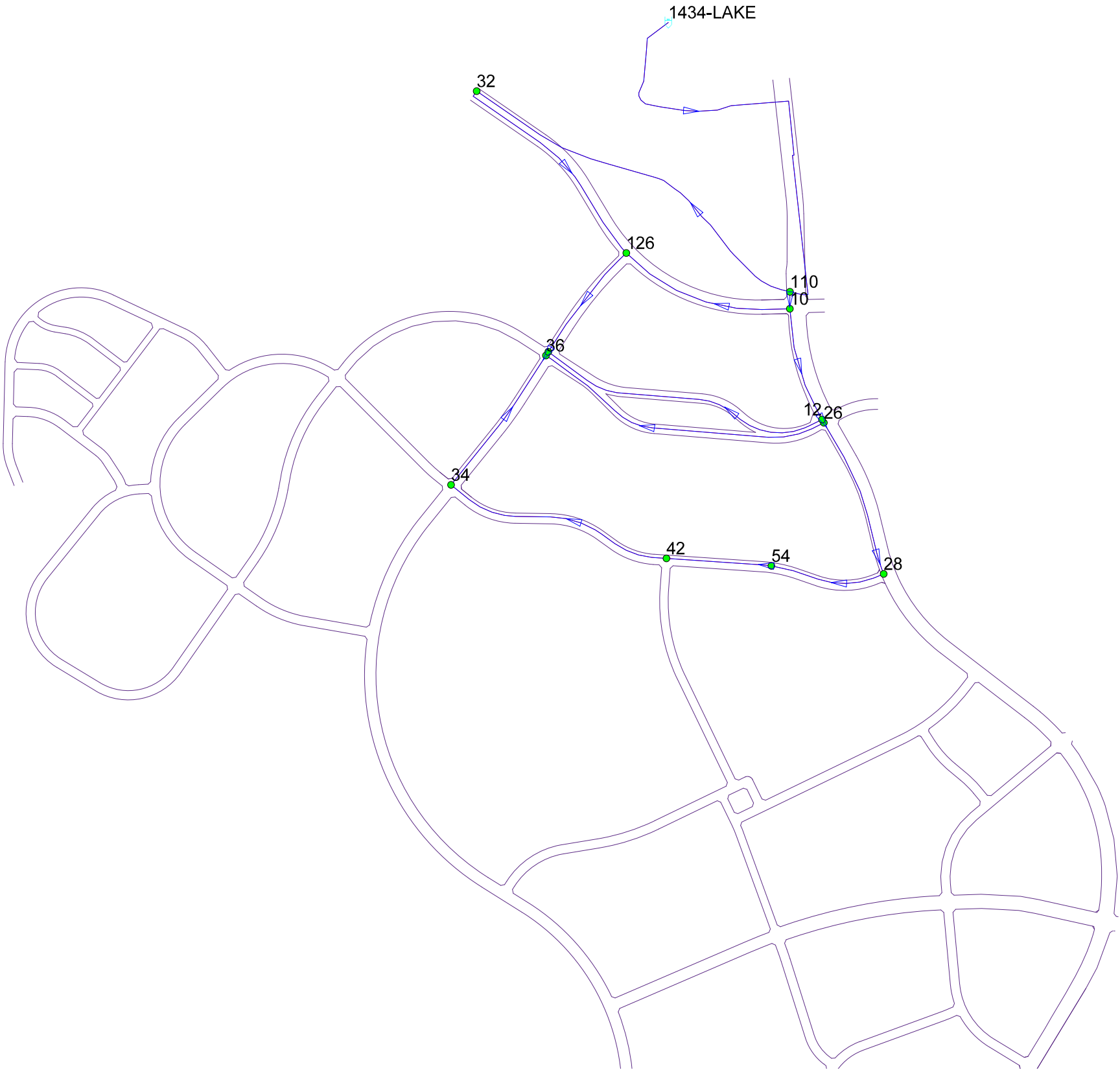
Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
131	1434-LAKE	110.00	3828.30	30	100	2,235.60	1.01	0.81	0.21	Open	0
133	110.00	32.00	3208.22	30	100	405.47	0.18	0.03	0.01	Open	0
135	110.00	10.00	143.75	42	100	1,830.13	0.42	0.00	0.03	Open	0
137	36.00	26.00	2569.41	12	100	-317.66	0.90	1.27	0.49	Open	0
139	22.00	12.00	2502.29	12	100	-318.27	0.90	1.24	0.49	Open	0
141	34.00	36.00	1352.23	12	100	67.30	0.19	0.04	0.03	Open	0
143	36.00	22.00	37.72	12	100	-403.88	1.15	0.03	0.77	Open	0
145	22.00	126.00	1062.82	16	100	-884.82	1.41	0.86	0.81	Open	0
147	32.00	126.00	1926.77	16	100	405.47	0.65	0.37	0.19	Open	0
149	126.00	10.00	1507.68	16	100	-479.35	0.76	0.39	0.26	Open	0
151	34.00	42.00	1970.48	16	100	-490.30	0.78	0.53	0.27	Open	0
153	42.00	54.00	886.12	16	100	-490.30	0.78	0.24	0.27	Open	0
155	54.00	28.00	978.16	16	100	-650.95	1.04	0.45	0.46	Open	0
157	12.00	26.00	31.48	42	100	968.62	0.22	0.00	0.01	Open	0
159	26.00	28.00	1378.18	42	100	650.95	0.15	0.01	0.00	Open	0
161	10.00	12.00	980.97	42	100	1,291.38	0.30	0.01	0.01	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1434-LAKE	-2,235.60	1,404.00	1,434.00	13.00	100	8	30

1434 ZONE PHASE 1 VILLAGES



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1601 ZONE PHASE 1 ANALYSIS, NODE AND PIPE DIAGRAM

AVERAGE DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
14	74.60	1350.00	1599.67	108.18
16	123.30	1298.00	1599.67	130.71
20	0.00	1396.00	1599.67	88.25
40	0.00	1446.00	1599.69	66.59
42	68.00	1389.00	1599.67	91.28
54	0.00	1376.00	1599.67	96.92
60	0.00	1367.00	1599.67	100.82
62	0.00	1485.00	1599.81	49.75
66	0.00	1365.00	1599.67	101.68
68	0.00	1530.00	1599.90	30.29
72	348.90	1430.00	1599.68	73.52
74	0.00	1520.00	1599.90	34.62
78	0.00	1384.00	1599.63	93.43
82	0.00	1450.00	1599.90	64.95
84	255.20	1460.00	1598.92	60.19

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
107	14.00	16.00	1965.55	30	100	53.04	0.02	0.00	0.00	Open	0
111	40.00	42.00	1661.30	21	100	186.82	0.17	0.02	0.01	Open	0
113	42.00	14.00	1345.37	21	100	98.98	0.09	0.01	0.00	Open	0
139	20.00	54.00	919.59	12	100	-19.84	0.06	0.00	0.00	Open	0
141	54.00	42.00	749.57	12	100	-19.84	0.06	0.00	0.00	Open	0
147	16.00	20.00	1766.59	12	100	-6.13	0.02	0.00	0.00	Open	0
149	60.00	62.00	3115.43	16	100	-184.55	0.29	0.14	0.04	Open	0
151	40.00	62.00	656.84	12	100	-186.82	0.53	0.12	0.18	Open	0
153	62.00	1601-RANCH	1156.93	16	100	-371.36	0.59	0.19	0.16	Open	0
155	60.00	66.00	175.18	16	100	184.55	0.29	0.01	0.04	Open	0
157	14.00	66.00	668.80	20	100	-14.95	0.02	0.00	0.00	Open	0
175	68.00	1601-RIDGE	364.28	16	100	-498.64	0.80	0.10	0.28	Open	0
177	72.00	68.00	2351.33	20	100	-498.64	0.51	0.22	0.09	Open	0
179	68.00	74.00	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74.00	82.00	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78.00	72.00	4401.32	16	100	-85.60	0.14	0.05	0.01	Open	0
185	16.00	72.00	1652.06	16	100	-64.14	0.10	0.01	0.01	Open	0
189	66.00	78.00	980.87	16	100	169.60	0.27	0.04	0.04	Open	0
195	84.00	78.00	2172.49	12	100	-255.20	0.72	0.71	0.33	Open	0
87	14.00	20.00	1422.10	20	100	-13.71	0.01	0.00	0.00	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-371.36	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-498.64	1,570.00	1,600.00	13.00	100	3.25	30

MAXIMUM DAY DEMANDS ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
14	149.20	1350.00	1598.80	107.80
16	246.60	1298.00	1598.79	130.33
20	0.00	1396.00	1598.80	87.87
40	0.00	1446.00	1598.89	66.25
42	136.00	1389.00	1598.81	90.91
54	0.00	1376.00	1598.81	96.54
60	0.00	1367.00	1598.82	100.45
62	0.00	1485.00	1599.32	49.54
66	0.00	1365.00	1598.80	101.30
68	0.00	1530.00	1599.63	30.17
72	697.80	1430.00	1598.83	73.15
74	0.00	1520.00	1599.63	34.50
78	0.00	1384.00	1598.66	93.01
82	0.00	1450.00	1599.63	64.84
84	510.40	1460.00	1596.09	58.97

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
107	14.00	16.00	1965.55	30	100	106.03	0.05	0.00	0.00	Open	0
111	40.00	42.00	1661.30	21	100	373.63	0.35	0.07	0.04	Open	0
113	42.00	14.00	1345.37	21	100	197.95	0.18	0.02	0.01	Open	0
139	20.00	54.00	919.59	12	100	-39.68	0.11	0.01	0.01	Open	0
141	54.00	42.00	749.57	12	100	-39.68	0.11	0.01	0.01	Open	0
147	16.00	20.00	1766.59	12	100	-12.30	0.03	0.00	0.00	Open	0
149	60.00	62.00	3115.43	16	100	-369.10	0.59	0.50	0.16	Open	0
151	40.00	62.00	656.84	12	100	-373.63	1.06	0.44	0.67	Open	0
153	62.00	1601-RANCH	1156.93	16	100	-742.73	1.19	0.68	0.58	Open	0
155	60.00	66.00	175.18	16	100	369.10	0.59	0.03	0.16	Open	0
157	14.00	66.00	668.80	20	100	-29.89	0.03	0.00	0.00	Open	0
175	68.00	1601-RIDGE	364.28	16	100	-997.27	1.59	0.37	1.01	Open	0
177	72.00	68.00	2351.33	20	100	-997.27	1.02	0.80	0.34	Open	0
179	68.00	74.00	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74.00	82.00	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78.00	72.00	4401.32	16	100	-171.20	0.27	0.17	0.04	Open	0
185	16.00	72.00	1652.06	16	100	-128.27	0.20	0.04	0.02	Open	0
189	66.00	78.00	980.87	16	100	339.20	0.54	0.13	0.14	Open	0
195	84.00	78.00	2172.49	12	100	-510.40	1.45	2.58	1.19	Open	0
87	14.00	20.00	1422.10	20	100	-27.38	0.03	0.00	0.00	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-742.73	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-997.27	1,570.00	1,600.00	13.00	100	3.25	30

MAXIMUM DAY + FIRE DEMAND ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
14	149.20	1350.00	1586.97	102.68
16	4246.60	1298.00	1586.49	125.00
20	0.00	1396.00	1586.97	82.75
40	0.00	1446.00	1588.12	61.58
42	136.00	1389.00	1587.34	85.94
54	0.00	1376.00	1587.17	91.50
60	0.00	1367.00	1587.78	95.67
62	0.00	1485.00	1592.87	46.74
66	0.00	1365.00	1587.50	96.41
68	0.00	1530.00	1597.01	29.04
72	697.80	1430.00	1590.50	69.54
74	0.00	1520.00	1597.01	33.37
78	0.00	1384.00	1587.59	88.22
82	0.00	1450.00	1597.01	63.70
84	510.40	1460.00	1585.02	54.17

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
107	14.00	16.00	1965.55	30	100	2,415.39	1.10	0.48	0.24	Open	0
111	40.00	42.00	1661.30	21	100	1,354.73	1.25	0.79	0.47	Open	0
113	42.00	14.00	1345.37	21	100	1,011.90	0.94	0.37	0.28	Open	0
139	20.00	54.00	919.59	12	100	-206.84	0.59	0.20	0.22	Open	0
141	54.00	42.00	749.57	12	100	-206.84	0.59	0.17	0.22	Open	0
147	16.00	20.00	1766.59	12	100	-229.70	0.65	0.48	0.27	Open	0
149	60.00	62.00	3115.43	16	100	-1,293.14	2.06	5.09	1.63	Open	0
151	40.00	62.00	656.84	12	100	-1,354.73	3.84	4.75	7.23	Open	0
153	62.00	1601-RANCH	1156.93	16	100	-2,647.87	4.23	7.13	6.16	Open	0
155	60.00	66.00	175.18	16	100	1,293.14	2.06	0.29	1.63	Open	0
157	14.00	66.00	668.80	20	100	-1,575.56	1.61	0.53	0.79	Open	0
175	68.00	1601-RIDGE	364.28	16	100	-3,092.13	4.93	2.99	8.21	Open	0
177	72.00	68.00	2351.33	20	100	-3,092.13	3.16	6.51	2.77	Open	0
179	68.00	74.00	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74.00	82.00	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78.00	72.00	4401.32	16	100	-792.82	1.27	2.91	0.66	Open	0
185	16.00	72.00	1652.06	16	100	-1,601.51	2.56	4.01	2.43	Open	0
189	66.00	78.00	980.87	16	100	-282.42	0.45	0.10	0.10	Open	0
195	84.00	78.00	2172.49	12	100	-510.40	1.45	2.58	1.19	Open	0
87	14.00	20.00	1422.10	20	100	22.87	0.02	0.00	0.00	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-2,647.87	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-3,092.13	1,570.00	1,600.00	13.00	100	3.25	30

PEAK HOUR DEMAND ANALYSIS RESULTS

Junction Pressures @ Steady State Analysis

Node	Demand (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)
14	335.70	1350.00	1594.59	105.98
16	554.85	1298.00	1594.59	128.51
20	0.00	1396.00	1594.60	86.05
40	0.00	1446.00	1595.00	64.56
42	306.00	1389.00	1594.67	89.12
54	0.00	1376.00	1594.64	94.74
60	0.00	1367.00	1594.72	98.67
62	0.00	1485.00	1596.96	48.51
66	0.00	1365.00	1594.59	99.48
68	0.00	1530.00	1598.35	29.62
72	1570.05	1430.00	1594.75	71.39
74	0.00	1520.00	1598.35	33.95
78	0.00	1384.00	1593.99	90.99
82	0.00	1450.00	1598.35	64.28
84	1148.40	1460.00	1582.43	53.05

Pipe Report @ Steady State Analysis

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)	Status	Flow Reversal Count
107	14.00	16.00	1965.55	30	100	238.67	0.11	0.01	0.00	Open	0
111	40.00	42.00	1661.30	21	100	840.67	0.78	0.32	0.20	Open	0
113	42.00	14.00	1345.37	21	100	445.39	0.41	0.08	0.06	Open	0
139	20.00	54.00	919.59	12	100	-89.28	0.25	0.04	0.05	Open	0
141	54.00	42.00	749.57	12	100	-89.28	0.25	0.04	0.05	Open	0
147	16.00	20.00	1766.59	12	100	-27.56	0.08	0.01	0.01	Open	0
149	60.00	62.00	3115.43	16	100	-830.47	1.33	2.24	0.72	Open	0
151	40.00	62.00	656.84	12	100	-840.67	2.38	1.96	2.99	Open	0
153	62.00	1601-RANCH	1156.93	16	100	-1,671.14	2.67	3.04	2.63	Open	0
155	60.00	66.00	175.18	16	100	830.47	1.33	0.13	0.72	Open	0
157	14.00	66.00	668.80	20	100	-67.26	0.07	0.00	0.00	Open	0
175	68.00	1601-RIDGE	364.28	16	100	-2,243.86	3.58	1.65	4.53	Open	0
177	72.00	68.00	2351.33	20	100	-2,243.86	2.29	3.59	1.53	Open	0
179	68.00	74.00	704.99	20	100	0.00	0.00	0.00	0.00	Open	0
181	74.00	82.00	1328.72	20	100	0.00	0.00	0.00	0.00	Open	0
183	78.00	72.00	4401.32	16	100	-385.19	0.61	0.76	0.17	Open	0
185	16.00	72.00	1652.06	16	100	-288.62	0.46	0.17	0.10	Open	0
189	66.00	78.00	980.87	16	100	763.21	1.22	0.60	0.62	Open	0
195	84.00	78.00	2172.49	12	100	-1,148.40	3.26	11.57	5.32	Open	0
87	14.00	20.00	1422.10	20	100	-61.71	0.06	0.00	0.00	Open	0

Tank Results @ Steady State Analysis

ID	Flow (gpm)	Elevation (ft)	Hydraulic Grade (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
1601-RANCH	-1,671.14	1,570.00	1,600.00	13.00	100	3	30
1601-RIDGE	-2,243.86	1,570.00	1,600.00	13.00	100	3.25	30

1601 ZONE PHASE 1 VILLAGES

