DESIGN REPORT

FOR

SUNDANCE RV RESORT
@ EMPIRE LANDING
WATER SYSTEM

Prepared for:

Sundance RV Resort
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TABLE OF CONTENTS

Figures

INTRODUCTION

The following is a design report for Sundance RV Resort. This parcel of land is located southeast of Parker Dam Road along the Colorado River in the Southeast Quarter of Section 25, Township 2 North, Range 26 East, of the San Bernardino Base and Meridian Line (See Figure 1). The project is a proposed 9.87 acre 127 unit RV park. The improvements include the construction of an access road, utilities, and 127 RV Spaces.

Existing facilities include three public restrooms, water service is provided by existing onsite treatment plant, offsite gravity storage tank.

Proposed water service will be provided by new onsite distribution system connected to the existing water distribution system.

The vicinity map is shown in Figure 1. We are seeking the appropriate approvals for construction.

As part of the construction, the developer is installing an onsite water gravity distribution system (RV Park plumbing) using four-inch [4"] and two-inch [2"] diameter PVC piping.

The existing water system consists of a 50 gpm water treatment plant fed by a turbine pump pumping directly out of the Colorado River. The plant capacity is 50 gpm or 72,000 gallons per day. The treated water is chlorinated and delivers thru a 3-inch transmission main to a 12,000 gal (10,862 gal usable) ground storage table at elevation 475 above main sea level. The storage tank then flows by gravity thru a 4-inch PVC distribution pipeline back to the existing distribution system within the park. The treatment plant has an automation system however because of the relatively low demand is operated manually as water demand dictates.

The proposed water distribution flows are covered below.

Average and Peak Flows

The proposed flows, an average daily potable water flow of 14,400 GPD (10.00 GPM) was calculated. The peak day water flow is 28,800 GPD (20.00 GPM) and the peak hour sewer flow is **40.0 GPM**. The peak day and peak hour flows were calculated per the Special Districts Department of San Bernardino County Design Criteria and Plan Preparation requirements. The peak day flow is 2 times the average daily flow, and the peak hour flow is 4 times the average daily flow.

WATER DISTRIBUTION

The existing water distribution system consists of the water supply, treatment, storage and distribution piping will be incorporated into the overall proposed improvements.

DESIGN CRITERIA

The system heads, existing and proposed are disclosed below.

System Heads

The static head for this project is provided by the ground storage tank with bottom elevation of 475ft. The park has an average elevation of 376 with variation of plus 10ft. This equals to a static pressure of 38 psi in the higher portions of the park to 47 psi in the lower elevations.

DISTRIBUTION SYSTEM DYNAMIC PRESSURES

Peak hourly flow rate of 40 gpm
Length of 4-inch distribution piping to farthest point of service 3500ft.
Assure total peak flow at furthest point in park thru friction
Head loss would be 4.3ft or 1.8 psi
The resulting service pressure would be 35 psi static 1.8 psi friction loss or a minimum pressure of 33.2 psi.

CONCLUSION

The Sundance water treatment and distribution system is designed in accordance with San Bernardino and State of California requirements. The proposed water distribution system is a gravity system to a looped distribution system which will have peak demand pressure in the 35 to 45 psi range depending upon service elevation.

The plans and specifications accompanying this Design Report are designed utilizing the criteria outlined in this report.

The Proposed Sundance RV Resort at Empire Landing is designed to handle all of the flows from the existing Empire Landing Camp Ground and the proposed improvements of Sundance RV Resort. The proposed sewer lines have the ability to convey the flows developed by this final phase of the project.

SITE/LOCATION MAP

N.T.S.

TO LAKE HAVASU