PRELIMINARY WATER SUPPLY STUDY

FOR

TTM 34760

IN THE

CITY OF CORONA, CALIFORNIA

Armstrong & Brooks Consulting Engineers

Planning-Infrastructure-Site Development-Water Resources

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INTRODUCTION AND NARRATIVE

WATER SUPPLY STUDY FOR TENTATIVE TRACT MAP 34760

A. INTRODUCTION.

The purpose of this Study is to determine if the proposed water supply system for Tentative Tract Map 34760 meets the City of Corona's minimum pressure requirements of 20 p.s.i. at the required fire flow of 1,500 g.p.m. The proposed system has also been designed to provide fire protection service for the proposed development in accordance with the requirements of the City of Corona's Fire Prevention Bureau.

The proposed project is located in South Corona area, adjacent to the Cleveland National Forest south of Shepard Crest Drive. The subject property consists of 65.4 total acres and is being subdivided into 34 single family residential lots, 2 open space lots, and service to 1 existing residence. The proposed pad elevations range from 1359.8' to 1410.0' and thus require service from the City's Zone 6 water system. Since the Zone 6 system is not completed adjacent to TTM 34760 some off-site facilities will be required. The proposed on-site and off-site water systems are shown on the attached exhibits in Appendix 'B'.

To complete the Zone 6 Master Plan system and provide the required 2 points of water service TTM 34760 proposes to connect to the existing 12" Zone 6 water main at the intersection of Orange Heights Lane and Main Street and install a 8" main westerly in Orange Heights Lane to Malaga Street then southerly in Malaga to the intersection of Fletcher Street. The 8" main will be connected to the proposed 8" Zone 6 water main in Fletcher Street to be constructed by Tract 32386 and Tract 32703 to the east. These Tracts are conditioned to extend the existing 8" Zone 6 transmission main located at the southerly end of Main Street. This will complete the Zone 6 loop per the City Master Plan.

The on-site system will connect to the looped Zone 6 system at the intersection of Malaga and Fletcher and extend 2- 8" parallel waterlines in Malaga southerly into the proposed development. The 2 parallel 8" water mains will continue southwesterly in Malaga "D" Circle to the intersection of "A" Circle. One 8" line will continue southerly to the terminus of "D" Circle then extend northeasterly through the proposed emergency / maintenance road to the knuckle between "B" Circle and "C" Circle to join the internal 8" system. The second 8" main line will extend easterly to the terminus of "A" Circle. An internal 8" waterline is also proposed in access road between "C" Circle and "A" Circle to connect the waterlines in "C" Circle and "A" Circle.

B. ANALYSIS.

Haestad Methods Cybernet software Version 6.5 was used to model the water system. A fire flow test (Appendix "E") was obtained for a fire hydrant located on S. Main Street and Orange Heights Lane. A static pressure of 80 p.s.i was measured at an elevation of 1334.36'. The hydraulic grade at this point is 1519.16' (1334.36 + (80*2.31)). Portions of the development are located within the city's zone 6 master plan system. The system has a corresponding hydraulic grade of 1550' and 1700'. For a more accurate and conservative system, the 1519.16' hydraulic grade was used to model the system.

As specified by the City, a minimum flow of 1,500 gpm at 20 psi was used to model the system. The City also requires the water system design criteria for this type of project to be Maximum Daily Demand (MDD) plus the fire flow requirement or Peak Hourly Demand (PHD), which ever is greater. In performing the calculations, we have found the flow of MDD plus fire flow requirement is greater than the PHD. The calculated MDD plus fire flow demand generated a flow of 1542 gpm, compared to the 83 gpm generated by the PHD (Appendix "D").

The system was modeled with the most remote fire hydrant located at the terminus of "C" Circle with an elevation of 1390' (node J-13) receiving 1,542 gpm. The lowest resulting pressure was found to be 20.37 psi. at node J-13 (Appendix "A"). The proposed system is capable of providing fire protection from the City of Corona as indicated in the fire flow test.

At the request of the City of Corona, PHD calculations were also performed (Appendix "B") and provided as a supplement since the City's design criteria stipulate that the MDD plus fire flow should be the governing calculations.

The proposed system will be able to provide adequate water pressure to the residences throughout the development. The developer may explore the use of individual booster pumps to increase pressure for the lots with elevated pad heights (Lots 20 and 21) at the time of home design / construction. Also, services that exceed a pressure of 80 psi shall be equipped with pressure regulating devices.

APPENDIX “A”

APPENDIX "B"

APPENDIX "C"

APPENDIX "D"

APPENDIX “E”