PRELIMINARY WATER & SEWER BASIS OF DESIGN REPORT FOR VALLEY LIGHT GALLERY

Scottsdale, Arizona

12 August 2019

PREPARED FOR
Aline Architecture Concepts
7340 East Main Street, #210
Scottsdale, Arizona 85251

OWNER/DEVELOPER
Valley Light Gallery
7125 East Mercer Lane
Scottsdale, Arizona 85254

SITE ADDRESS
7120-7126 East Mercer Lane
Scottsdale, Arizona 85254

PREPARED BY
CYPRESS CIVIL DEVELOPMENT
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4450 north 12th street, #228
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CYPRESS # 19.087

44-DR-2019
8/26/2019

PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Valley Light Gallery' and is located at 7120 to 7126 East Mercer Lane in Scottsdale, Arizona. It is located on the north side of East Mercer Lane, just west of Scottsdale Road. Refer to Appendix A for location map.

The proposed Project consists of demolition of the existing structures and construction of a new building with associated paved parking, utilities, and drainage infrastructure.

The utility provider for both water and sewer facilities is the City of Scottsdale.

WATER SYSTEM DESIGN

Per available utility maps and as-built records, an existing 6" ACP water main is located in alley just north of the Project. There is an existing 3/4" water stub and meter to the site. The design team intends to remove the 3/4" service and upsize it to a 1-inch service and meter and install a new 1-1/2" distribution line for domestic service and a new 6" tap and line for fire service. Refer to Appendix B for City of Scottsdale Water and Sewer Quarter Section Map.

The total building area shall be 7,800 square feet. The building is type VB construction. Per the International Fire Code, Table B105.1, the existing building with the new expansion requires a minimum fire flow of 2,500 GPM for a 2-hour duration. The existing building and new expansion will have automatic sprinklers installed resulting in an allowable 50% reduction in fire flow requirements, with the minimum required fire flow being 1,500 GPM. Therefore, the required fire flow will be 1,500 GPM for a 2-hour duration. At the time of this report, fire flow test has been conducted. It is assumed that the minimum fire flow requirements will be met.

WASTEWATER SYSTEM DESIGN

Per available utility maps, two existing 8" VCP sewer mains are located in East Mercer Lane south of the Project. One line comes from the west and ends in a cleanout just southwest of the property line. The other comes from the east and ends in a cleanout directly south of the Project. As a result, the design team intends to connect to the existing sewer cleanout directly to the south via a new 6" service lateral. This is shall provide adequate sizing to supply the new sewer service to the new building.

WATER AND SEWER CALCULATIONS

The table below contains the expected water caculations for the new building:

TYPE	QUANTITY	WFSU/FIXTURE	TOTAL WFSU
WATER CLOSET (PUBLIC TANK)	3	5	15
URINAL (FV)	1	5	5
LAVATORY	4	2	8
SERVICE SINK	1	3	3
KITCHEN SINK	1	3	3
		TOTAL	**34**

The Project is designed to have a water supply fixture unit count of 34, which is approximately 62.5 GPM. The project is designed with a new 1-inch meter and approximately 20 linear feet of 1-1/2-inch distribution pipe. At the time of this report no fire flow test has been conducted to determine the pressure of the existing main. Therefore, the most conservative pressure of 20-29 PSI shall be assumed. Per the International Plumbing Code, Table E201.1, the maximum WFSU based on the above parameters is 87. Thus, a maximum of 34 WSFU is acceptable.

The table below contains the expected waste water caculations for the new building:

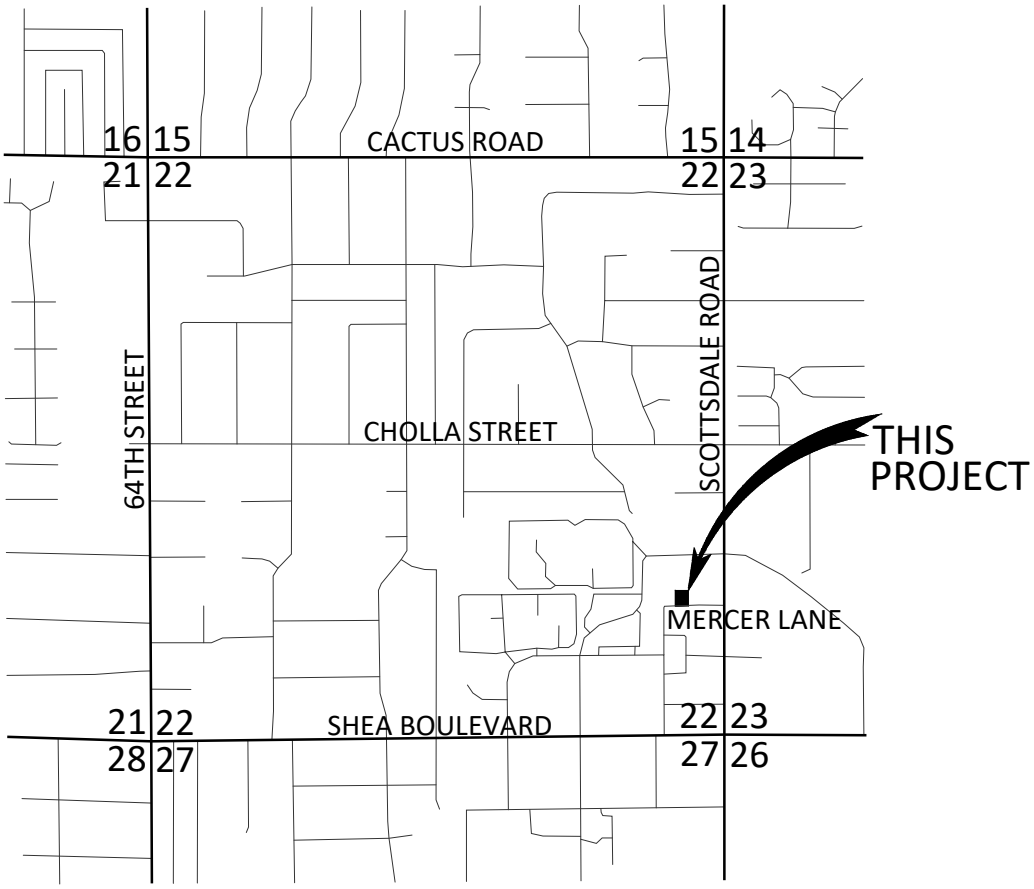
TYPE	QUANTITY	DFU/FIXTURE	TOTAL DFU
WATER CLOSET (PUBLIC)	3	6	18
URINAL	1	4	4
LAVATORY	2	1	2
SERVICE SINK	1	2	2
KITCHEN SINK	1	2	2
		TOTAL	**28**

The Project is designed to have a drainage fixture unit count of 28, which is approximately 56.3 GPM. The Project is designed with a new 6-inch sewer lateral with a minimum slope of 1.0%. Per the International Plumbing Code, Table 710.1(1), the maximum DFU based on the above parameters is 700. Thus, a maximum of 28 DFU is acceptable.

CONCLUSION

CYPRESS respectfully submits this report as the Preliminary Water & Wastewater Design Report for the proposed Valley Light Gallery. The proposed water and wastewater systems shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
Location Map



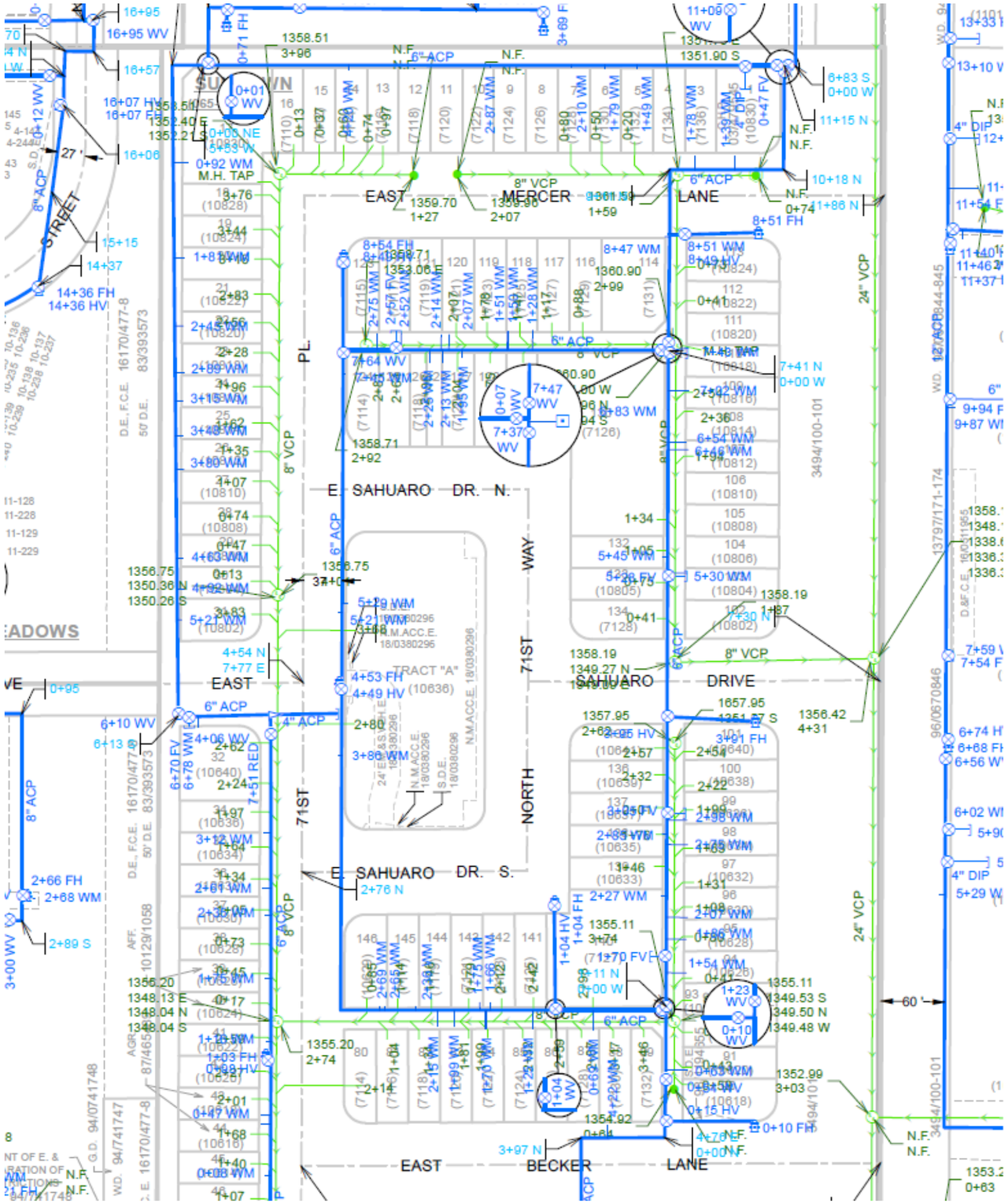
IN THE SE 1/4 OF THE SE 1/4 OF SECTION 22,
T. 3 N., R. 4 E., G.&S.R.M.,
CITY OF SCOTTSDALE, MARICOPA COUNTY, ARIZONA

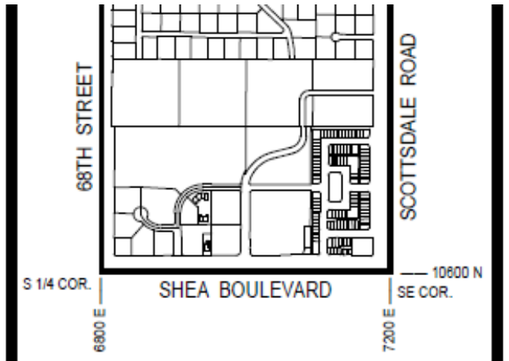
LOCATION MAP

NORTH

3" = 1 MILE

Appendix B
City of Scottsdale Water and Sewer Quarter Section Map





29-45

NORTH

SCALE: 1" = 100'

0 50 100 200

The map scale of 1" = 100' is based on a full size print of 30" x 36"

WATER & SEWER

QUARTER SECTION MAP

29-44

SE 1/4 SEC. 22 T3N R4E

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8/26/2019