Larson Engineering, Inc.
6380 E. Thomas Road, Suite 300
Scottsdale, AZ 85251
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Larson

Preliminary Sewer Basis of Design Report

For

Desert Cove Self Storage

Project#: 62220035

8888 E Desert Cove Avenue
Scottsdale, AZ 85260

Scottsdale, ARIZONA

PRELIMINARY Basis of Design Report
☑ ACCEPTED
☐ ACCEPTED AS NOTED
☐ REVISE AND RESUBMIT

CITY OF SCOTTSDALE
SCOTTSDALE WATER
9379 E San Salvador Dr.
Scottsdale, AZ 85258

Disclaimer: If accepted; the preliminary approval is granted under the condition that a final basis of design report will also be submitted for city review and approval (typically during the DR or PP case). The final report shall incorporate further water or sewer design and analysis requirements as defined in the city design standards and policy manual and address those items noted in the preliminary review comments (both separate and included herein). The final report shall be submitted and approved prior to the plan review submission.
For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY apritchard **DATE** 9/30/2022

PREPARED FOR:

EAPC Architects Engineers
901 E. Madison Street
Phoenix, Arizona 85034

PREPARED BY:

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September 2022

Larson

Registered Professional Engineer (Civil)
CERTIFICATE NO.
49547
KIRK V SMITH
09/08/2022
Date Signed.....
ARIZONA, U.S.A.

Expires 6-30-24

Digitally signed by Kirk V. Smith
Date: 2022.09.08 14:22:56-07'00'

Contents

Appendix:

Sewer Exhibit

Calculations

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Introduction

The proposed Desert Cove Storage is located at 8888 East Desert Cove Avenue, Scottsdale, Arizona 85260. The parcel number for this project is 217-25-002Q. The project consists of a self-storage building (multi-level), with 2 stories above ground, 2 basement levels, parking, curbing, refuse container, utilities, underground storm retention pipe, and landscaping. The proposed building is 92,300 SF in total. The Project is located on the North side of East Desert Cove Avenue, just West of North 89th Place. See Location Map below:

Figure 1: Proposed Project Site

The Project will not alter the existing zoning, which is I-1. The surrounding area at this location is commercial businesses, and consists of commercial services and offices along with developed land to the East. The site is also adjacent to residential neighborhoods to the North, and to the East, exists the Ironwood Cancer & Research Centers. The existing site is currently undeveloped land. The new building will remain consistent with the City of Scottsdale's general plan. The project will not disturb the wash or drainage easement area.

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Design Documentation

Wastewater Design Flows are based on criteria provided in the City of Scottsdale's Design Standards & Policies Manual Chapter 7 dated 2018. This criterion was compared to the information provided in Chapter 9 Title 18 of the Arizona Administrative Code and was more conservative, thus satisfying both codes. Specifically, the design criteria used are as follows:

- Average Daily Flow — 0.5 Gallons/SF/Day
- Peaking Factor (peak hour) — 3
- Minimum Full Flow Velocity — 2.5 ft/s
- Maximum Full Flow Velocity — 10 ft/s
- Manning's Coefficient (n): — 0.013

Wastewater Calculations are attached in the Appendix for reference. The Manning Equation was utilized to analyze the proposed system.

Existing Conditions

The Project will not alter the existing zoning, which is I-1. The existing site is currently undeveloped land commercial buildings to the East, West, South of the proposed building. The area to the North of the Project is residential housing, to the West is Pima Freeway and the East is 92nd St.

Proposed Conditions

The attached Wastewater Exhibit shows the tie in location for the proposed sewer. This Project proposes to use [6-inch SDR35 PVC pipe.] The tie in is seen in the Utility Plan. All maintenance of the private onsite system is the responsibility of the owner.

Computations

The proposed wastewater collection system is designed to provide adequate capacity to serve the proposed Project. The proposed collection system pipe is SDR35 PVC at [6-inch diameter.] The slope is minimum 1.00%, and the depth of cover of the pipe will be a minimum of 36" to top of pipe.

Summary

The Proposed Wastewater Collection System has been analyzed to ensure all City of Scottsdale Design Standards and Policies Manual Chapter 7 requirements are being met. Figure 7.1-2 of that manual provided the demand and peaking factors included in the analysis and stated in this report.

Enclosed is a set of drawings and spreadsheets which summarize the design and capacity of the system.

Desert Cove Self Storage							
Wastewater Flows							
Description	Use	Bldg Sqft	Demand ADF (Gal/SF/Day)	Avg. Daily Flow (GPD)	Peak Factor	Peak Flow (GPD)	Peak Daily Flow (GPM)
Storage Bldg	Office	3,148	0.5	1,574	3	4,722	3.28
Demand and Peak Factors based on City of Scottsdale's Design Standards & Policies Manual Chapter 7 Dated January 2010 only the office has sewer							

Desert Cove Self Storage					
Pipe Diameter (in)	Pipe Length (FT)	Pipe Slope(%)	Peak Daily Flow (gpm)	Max Capacity (GPM)	Velocity (ft/sec)
6	67	1.0%	3.28	252.4	2.9

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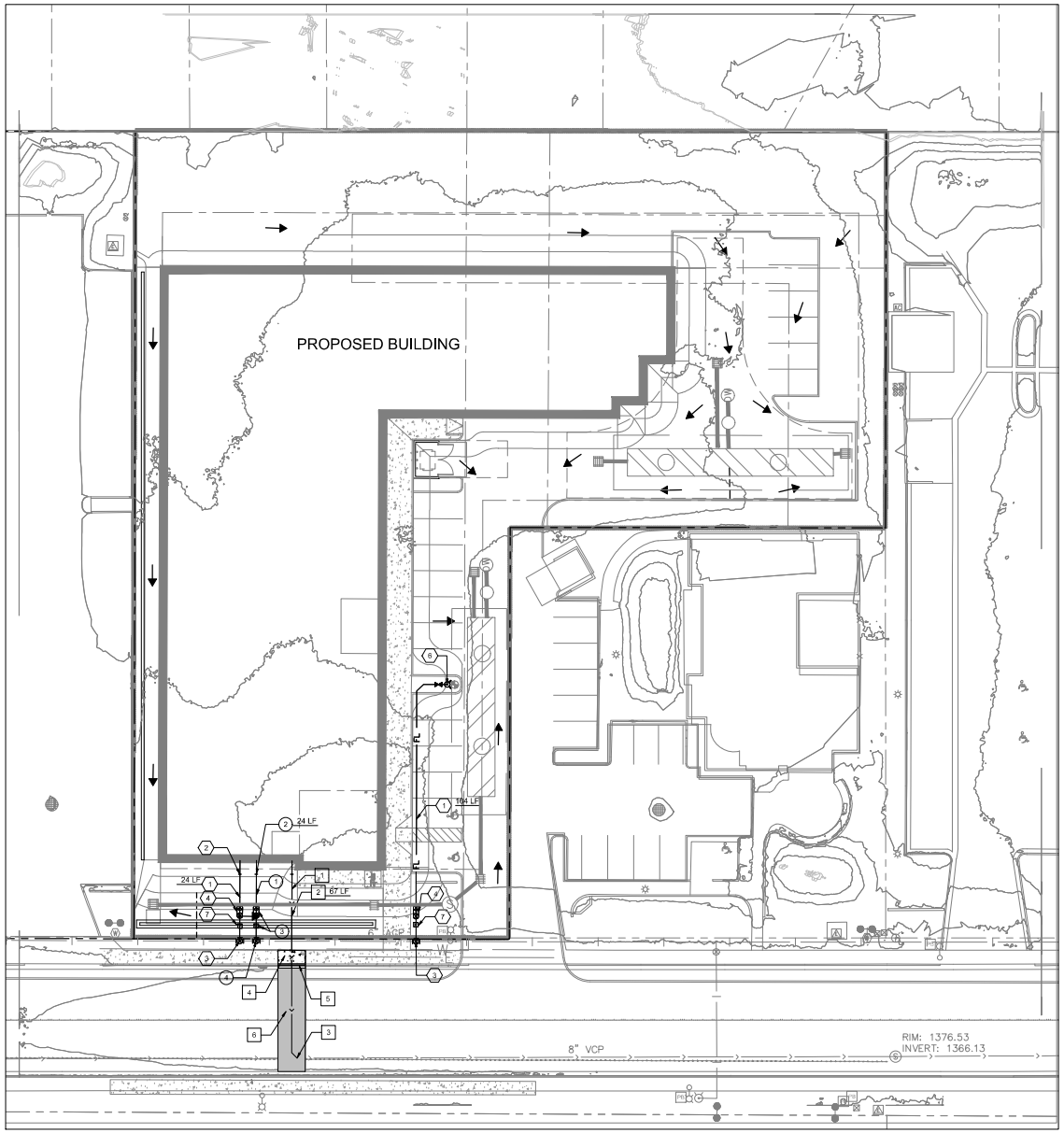

SEWER CONSTRUCTION NOTES

1. CONNECT SANITARY SERVICE AT 5' OUTSIDE BLDG. SEE PLUMBING PLANS FOR CONTINUATION
2. INSTALL 6" PVC SEWER PIPE @ 1.0% MIN. PROVIDE TRACER WIRE FOR NON-METALLIC PIPES.
3. CONNECT TO EXISTING SEWER MAIN PER MAG STD DTL 440-2.
4. REMOVE AND REPLACE EXISTING 4" THICK CONCRETE SIDEWALK PER MAG STD DTL 230. MATCH EXISTING SIDEWALK SECTION IF THICKNESS IS GREATER THAN 4"
5. REMOVE AND REPLACE EXISTING VERTICAL CURB AND GUTTER PER MAG STD DTL 220-1.
6. REMOVE AND REPLACE EXISTING BITUMINOUS ROAD SECTION. MATCH EXISTING THICKNESS OF AGGREGATE AND BITUMINOUS.

WATER CONSTRUCTION NOTES

1. INSTALL 2" TYPE 'K' COPPER WATER LINE
2. CONNECT WATER SERVICE AT 5' OUTSIDE BLDG. SEE PLUMBING PLANS FOR CONTINUATION
3. INSTALL 2" WATER METER WITH 2" BACKFLOW PREVENTOR AND CAGE PER MAG STD DTL 320
4. INSTALL TAPPING SLEEVE WITH VALVE BOX AND COVER PER MAG STD DTL 340, CONTRACTOR TO VIF SIZE AND LOCATION OF EXISTING WATERMAIN.

FIRE LINE CONSTRUCTION NOTES

1. INSTALL 6" DUCTILE IRON FIRE SUPPRESSION SERVICE
2. CONNECT FIRE SUPPRESSION SERVICE AT 5' OUTSIDE BLDG - SEE PLUMBING PLANS FOR CONTINUATION
3. INSTALL TEE WITH VALVE BOX AND COVER PER COS DTL 2362-1 & DSPM 6-1.504, OR MAG STD DTL 391-1 TYPE C AND MAG STD DET 270
4. INSTALL 6" DOUBLE CHECK BACKFLOW PREVENTOR
5. REMOVE AND REPLACE EXISTING 4" THICK CONCRETE SIDEWALK PER MAG STD DTL 230. MATCH EXISTING SIDEWALK SECTION IF THICKNESS IS GREATER THAN 4"
6. INSTALL FIRE HYDRANT PER MAG STD DTL 360-2
7. INSTALL FIRE LINE VALVE BOX AND COVER PER MAG STD DET 391-1 TYPE C AND MAG STD DET 270, SEE CITY OF SCOTTSDALE STD DET 2362-2

LEGEND

- W — WATERLINE
- FL — FIRELINE
- SEWERLINE
- NEW FIRE HYDRANT

20 0 20 40

1"=20'

GRAPHIC SCALE

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Project # 62220035

Client:
EAPC ARCHITECTS ENGINEERS
901 E. MADISON ST.
PHOENIX, AZ, 85034

Project Title:
DESERT COVE SELF STORAGE
8888 E DESERT COVE AVE, SCOTTSDALE, AZ 85260

KIRK V. SMITH
45547
CERTIFICATE EXPIRES 09/30/2022
REGISTERED PROFESSIONAL ENGINEER
ARIZONA, U.S.A.

Expires 6-30-24

Rev.	Date	Description

Project #: 62220035
Drawn By: JL
Checked By: DC
Issue Date: 06.02.2022
Sheet Title:

UTILITY PLAN

C3

Sheet:

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