

Drainage Reports

Abbreviated Water & Sewer Need Reports

Water Study

Wastewater Study

Stormwater Waiver Application

WASTEWATER DISTRIBUTION SYSTEM

BASIS OF DESIGN REPORT

FOR

Cardi

4151 N. Craftsman Ct.
SCOTTSDALE, ARIZONA

FINAL Basis of Design Report

- ☒ APPROVED
☐ APPROVED AS NOTED
☐ REVISE AND RESUBMIT



Disclaimer: If approved; the approval is granted under the condition that the final construction documents submitted for city review will match the information herein. Any subsequent changes in the water or sewer design that materially impact design criteria or standards will require re-analysis, re-submittal, and approval of a revised basis of design report prior to the plan review submission.; this approval is not a guarantee of construction document acceptance.
For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY Idillon

DATE 8/22/2018

August 20, 2018



PREPARED BY:

JACOBS WALLACE, LLC
2233 W. Bethany Home Rd.
Phoenix, AZ 85015
602.757.5964

TABLE OF CONTENTS

INTRODUCTION	1
EXISTING CONDITIONS.....	1
PROPOSED CONDITIONS.....	1
SUMMARY	1

Appendix:

- Vicinity Map
- Calculations
- Preliminary Design
- City of Scottsdale Quarter Section Map

INTRODUCTION

The proposed project consists of a multi-story mixed use building. The bottom floor will be commercial/retail use along with a parking garage. The upper floors will be residential condominiums. The existing conditions include 2 buildings with associated site improvements sitting on 2 lots. The lots would be combined into one with the proposed project. The 0.24-acre site is located at the northeast corner of 3rd Street and Craftsman Ct. The site is bordered to the north by existing commercial development, to the west by Craftsman Ct., to the south by 3rd Street, and to the east by a public alleyway. The site lies within the Southwest Quarter of Section 22, Township 2 North, Range 4 East of Gila and Salt River Base and Meridian. See the Appendix for a vicinity map.

EXISTING CONDITIONS

There is an existing 8" VCP sewer main within the alley to the east. There are services from this main to the existing lot.

PROPOSED CONDITIONS

The proposed project will install a new 6" private sewer to service the project. There will be a new 6" sewer connection made to the existing 8" VCP sewer in the alley to the east. The new private 6" line serving the project will be installed at 1% minimum slope. The existing sewer services will be capped and abandoned at the property line.

The private sewer line construction and design will conform to Uniform Plumbing Code.

WASTEWATER ANALYSIS

Mixed Use:

Retail: 4,097 sf

Residential: 6 units (2-bedroom assumed)

Unit Daily Flows:

Retail:	0.5gpd/sf
Residential:	140 gpd/unit

Average Daily Flow:

Retail:	$4,907\text{sf} * 0.5\text{gpd/sf} = 2453.5 \text{ gpd}$
Residential:	$6 \text{ units} * 140 \text{ gpd/unit} = 840 \text{ gpd}$
TOTAL=	3,293.5

Peak Daily Flow:

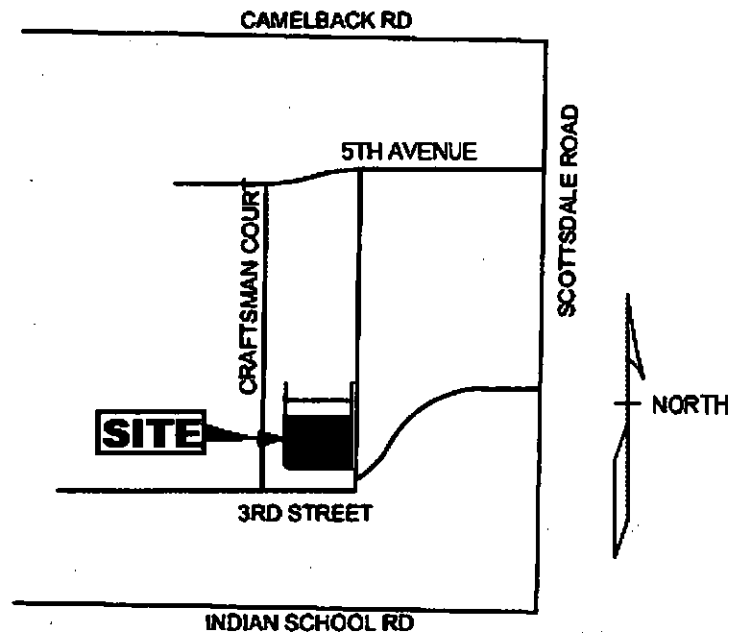
$840 \text{ gpd} * 4.5 + 2453.5 * 3 = 11,140.5 \text{ gpd} = 7.7 \text{ gpm}$

SUMMARY

A 6" line with a slope of 1.0% flowing at 75% full carries 229 gpm with a velocity of 3.2 fps. A 6" line carrying 7.7 gpm flows with a velocity of 1.3 fps. See attached calculations in the Appendix. These parameters fall within acceptable ranges as set forth in the City of Scottsdale guidelines.

APPENDIX

Vicinity Map



VICINITY MAP
NOT TO SCALE

Calculations

CARDI

Flowing 75% Full

Set units:

Pipe diameter, d_0	6	<input type="button" value="in"/>
Manning roughness, n ?	0.013	
Pressure slope (possibly ? equal to pipe slope), S_0	1	<input type="button" value="% rise/run"/>
Percent of (or ratio to) full depth (100% or 1 if flowing full)	75	<input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="%"/>

Results

Flow, Q	229.6187	<input type="button" value="gpm"/>
Velocity, v	3.2389	<input type="button" value="ft/sec"/>
Velocity head, h_v	1.9565	<input type="button" value="in"/>
Flow area	22.7467	<input type="button" value="sq. in."/>
Wetted perimeter	12.5664	<input type="button" value="in"/>
Hydraulic radius	1.8101	<input type="button" value="in"/>
Top width, T	5.1962	<input type="button" value="in"/>
Froude number, F	0.95	
Shear stress (tractive force), τ	11.2083	<input type="button" value="N/m^2"/>



CARDI

Flowing 7.7 GPM

Set units:

Pipe diameter, d_0	6	<input type="button" value="in"/>
Manning roughness, n ?	0.013	
Pressure slope (possibly ? equal to pipe slope), S_0	1	<input type="button" value="% rise/run"/>
Percent of (or ratio to) full depth (100% or 1 if flowing full)	12	<input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="%"/>

Results

Flow, Q	7.7016	<input type="button" value="gpm"/>
Velocity, v	1.2858	<input type="button" value="ft/sec"/>
Velocity head, h_v	0.3083	<input type="button" value="in"/>
Flow area	1.9219	<input type="button" value="sq. in."/>
Wetted perimeter	4.2449	<input type="button" value="in"/>
Hydraulic radius	0.4527	<input type="button" value="in"/>
Top width, T	3.8995	<input type="button" value="in"/>
Froude number, F	1.12	
Shear stress (tractive force), τ	1.7933	<input type="button" value="N/m^2"/>



STAIRWELL ENCLOSURE
THERE IS NO RETENTION REQUIRED FOR THIS SITE. THE PROPOSED FLOOR ELEVATION IS 8' 2" LOWER THAN THE EXISTING BUILDING BEING DEMOLISHED. THIS SHOULD MINIMIZE THE IMPACT ON THE EXISTING STAIRWELL PATTERNS. THE BTL PROPOSED BUILDING WILL HAVE ROOF DRAIN OUTLET TO THE SEWER TO ASSIST WITH MINIMIZING THE IMPACT OF THE NEW BUILDING. THE EXISTING BUILDINGS AND SITE IMPROVEMENTS WILL BE RELOCATED. THE PROPOSED FINISHED FLOOR ELEVATION WILL BE AT THE SAME LEVEL OF EXISTING ELEVATION AT THE NORTH CORNER OF THE SITE. THIS PUTS THE FINISHED FLOOR ELEVATION AT ABOVE LOW CORNER.

FLOOD ZONE (FIRM)
THIS SITE FALLS WITHIN ZONE SHADDED X PER 64013222L,
EFFECTIVE ON 10/16/2013. DEFINED AS AREAS OF GLEN
ANNUAL CHARGE FLOOD; AREAS OF 18 INCHES, CHARGE
FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR
WITH DRAINING AREAS LESS THAN 1 SQUARE MILE; AND AREAS
PROTECTED BY LEVEES FROM 18 ANNUAL CHARGE FLOOD.

DATE AREA
LOT 22
SITE AREA 7,400.00 SQUARE FEET OR 0.16
ACRES
MORE OR LESS

LOT 23
SITE AREA 3,553.88 SQUARE FEET OR 0.08
ACRES
MORE OR LESS

BASES OF BEARING
THE MONUMENT LINE OF CHATHAM COUNTY
BETWEEN 2ND AVENUE AND 6TH AVENUE.
BEARING = N 05°50'00" E AS RECORDED IN
BOOK 62, PAGE 83 B.L.R.

SEABIRD - N 075°00' E AS OBSERVED ON
BOOK 92, PAGE 30 N.O.B.

DEATH MARK
BRASS CAP IN HAND HOLE AT THE INTERSECTION
OF SCOTTSDALE RD. AND DEAN SCHOOL RD.
ELEVATION- 1290.388 (DAVIDS)

ELEVATION= 120.500 (MAY08)

PROJECT DESCRIPTION
 DEMO EXISTING BUILDINGS AND SITE
 IMPROVEMENTS AND CONSTRUCT PROPOSED
 MULTI-STORY MIXED USE DEVELOPMENT WITH
 ASSOCIATED SITE IMPROVEMENTS

APM

173-88-022A

175-65-022
SECRET

CONSTRUCTION TYPE
VI

LEGAL DESCRIPTION
PARCEL NO. 2
LOTS 22 AND 23, CRAFTSMAN COUNTY,
ACCORDING TO THE PLAT OF RECORD IN THE
OFFICE OF MARICOPA COUNTY, ARIZONA,
RECORDED IN BOOK 22 OF MAPS, PAGE 23
AND THEREAFTER AFFIDAVIT OF CORRECTION
RECORDED AS DOCUMENT NO. .
2007-115092, OF OFFICIAL RECORDS.

PARCEL NO. 2:
THAT PORTION OF THE ALLEY LYING
IMMEDIATELY EAST AND ADJACENT TO LOTS
61 AND 62, CRIMMENDEN COUNTY,
ACCORDING TO THE PLAT OF SUNDOWN IN THE
OFFICE OF MARICOPA COUNTY, ARIZONA,
RECORDED IN BOOK 83 OF MAPS, PAGE 23,
AS ABANDONED BY THE CITY OF
SCOTTSDALE REGULATION NO. 896,
RECORDED JUNE 17, 1971 AS DEEDS SCDA,

1	BURNS CUP IN HAND-CUP
2	SEVERE CLASH OUT
3	SEVERE WAREHOUSE
4	SEVERE WARE
5	PURE MOUNTAIN
6	PURE DEPT. CONNECTION
7	WATER METER
8	UNDERFLOW PREVENTER
9	BASE METER
10	STREET LIGHT
11	LIGHT POLE
12	GROUND LIGHT
13	ELECTRIC SIGN
14	TELEPHONE SIGN
15	CHALK SIGN
16	SIGN
17	PALM TREE
18	GLARE TREE
19	NON-CONDUCTOR TREE
20	SHADOWED OBJECT

C.M.U. WALL (4 OR 8 INCH BLOCKS)

BOUNDARY

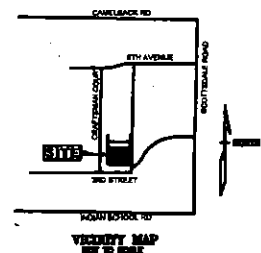
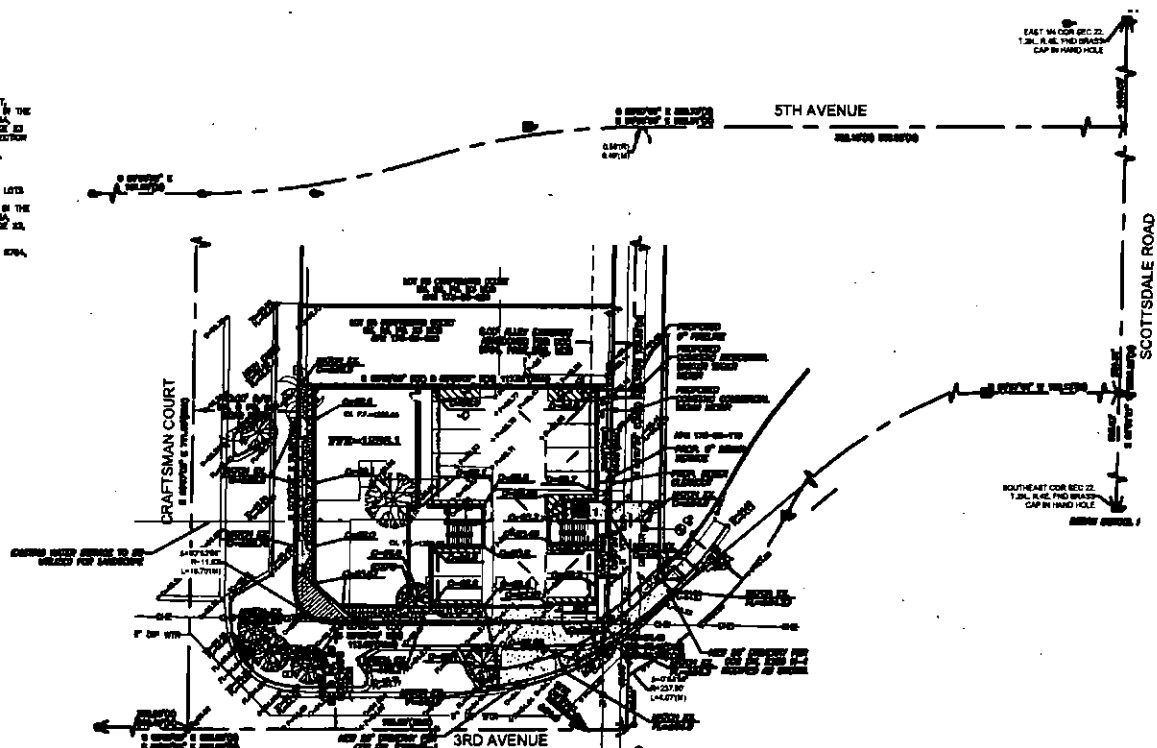
A PORTION OF SOUTHEAST QUARTER OF SECTION 22,
TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE C.R. AND
R.A. 11TH MERIDIAN, LAMARCA COUNTY, OKLAHOMA.

JACKSON WALLACE, LLC
11111 N. SETHAN WAY HOME RD
PHOENIX, AZ 85028
CHUCK JACKSON
602.757.0894

4300 NORTH GAVIN CENTER PLAZA
SUITE 201
SCOTTSDALE, ARIZONA 85251
PHONE: 802.819.3781
CONTACT: MARK TOMERAK

OWNER

FILE 104
 TEMPE AZ 100-17

[illegible]

CRAFTSMAN COURT
HOMERIDGE DEVELOPMENT
SCOTTSDALE, AZ

CONCEPTUAL G & D
AND
UTILITY PLAN

JACOBS WALLACE, LLC

Abstract



APRIL 2018

DRAWING NO.

DRAWING NO
C1.0

JOB: 0062

City Map

