

**Drainage Reports**

**Abbreviated Water & Sewer Need Reports**

**Water Study**

**Wastewater Study**

**Stormwater Waiver Application**

# Final Drainage Report

For  
Circle K  
Northwest Corner of Scottsdale / Gold Dust  
N. Scottsdale Rd  
Scottsdale, AZ

Case Numbers:  
Plan Check Number:  
Job: 243  
October 2016

CITY  
COPY

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1<sup>ST</sup> REVIEW



EXP 9-30-17

**FINAL DRAINAGE REPORT  
FOR  
Circle K  
Northwest Corner of Scottsdale / Gold Dust  
Scottsdale, Arizona**

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## **1.0 INTRODUCTION**

The proposed site is located at the Northwest corner of Scottsdale Rd. and Gold Dust in the City of Scottsdale, Arizona. The site is situated within the Northeast quarter of Section 27, Township 3 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site is an existing small footprint Circle K Convenience store along with some adjacent parking on the retail site west of the Convenience store. This project fronts on Scottsdale Road.

## **2.0 OBJECTIVES – PROJECT DEVELOPMENT AND BACKGROUND**

The purpose of this report is to verify the site compliance with the drainage requirements set forth in the *Drainage Design Manual for Maricopa County, Volume II "Hydraulics"*, prepared by the Maricopa County Flood Control District; and the City of Scottsdale Design Standards and Procedures Manual dated January 2010 and drainage guidelines revised in 2012.

## **3.0 EXISTING SITE CONDITIONS**

Currently, the site is a developed drive convenience store with two fuel canopies with 4 driveways to public streets. Immediately west of the convenience store is existing retail parking. North of this site is another retail building with parking along the south side of that building. The gas canopies and retail were developed prior to 1980.

Existing convenience store / fuel areas flow from the northwest to the southeast and outfall thru the driveways along Scottsdale Road and Gold Dust. The convenience store currently has no retention.

The Retail site to the west flows to the west to the driveway east of the retail where the inverted crown directs flows the south side of the retail to a drainage channel behind the retail.

Flows in Scottsdale Road flow north to south. Flows in Gold dust flow east to west and outfall to the channel west of the retail.

Regional flows in the area are conveyed to a channel south of Mountain View and Scottsdale Road. These flows outfall to the Indian Bend Wash.

Both the existing Circle K site and Retail site contain no retention within the areas being developed on this project.

## **4.0 FLOOD PLAIN DESIGNATION**

The entire site lies within Zone "X shaded" designated flood zone per the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM), Map Numbers 1760L, dated October 16, 2013.

See Figure 2 for a copy of the FEMA map.

The rebuilt Convenience will be in excess of 14" above the low outfall.

## **5.0 PROPOSED SITE IMPROVEMENTS**

### **STORMWATER RETENTION / SITE IMPROVEMENTS**

This project was reviewed to verify if any increase in C factor will require any site retention. Area reviewed is the area disturbed by this project. Each area was analyzed for existing C factor. Existing non paved areas were analyzed using a C factor of 0.45. Existing paved areas were analyzed using a C factor of 0.95. Pre construction Weighted existing C factor was calculated to be 0.90. Post construction Weighted existing C factor was calculated to be 0.87.

The new project will be a net reduction in pervious area, therefore not requiring any new retention. Existing convenience store flow directions will remain unchanged. Retail site flow directions will also remain unchanged. Minor changes are change from outfalls thru former driveways to outfall thru landscape areas (for the two driveways being removed).

### **ULTIMATE OUTFALLS**

This project's ultimate outfall will remain at the southwest corner of the site. The finish floor is in excess of 14" above this elevation. This outfall is unchanged from historical.

### **DISPOSAL**

Site will not construct any new retention.

### **404 AND CONSTRUCTION STORMWATER**

This project is not located in a 404 wash. BMPs during construction will be maintained.

## **6.0 SUMMARY**

- This project is the redevelopment of an existing convenience store, removal of two driveways and conversion of some retail parking to convenience store use.
- The site does not accept any flows from the offsite streets. Both streets are fully developed.
- The Project Site is located within FEMA-designated flood zone "X". - New building will be greater than 14" above site outfall.
- Site currently has no retention which will remain unchanged. Flow directions will remain unchanged and some onsite retention will flow thru landscape areas that were formerly driveways.
- New construction will be a net significant reduction in C factor and no new formal retention is required.

## **7.0 REFERENCES**

1. Federal Emergency Management Agency, Flood Insurance Rate Map, Maricopa County, Arizona and Incorporated Areas, Map Number 04013C1760L, Oct 16, 2013.
2. City of Scottsdale, Design Standards and Procedures Manual Chapter 4, January 2010.

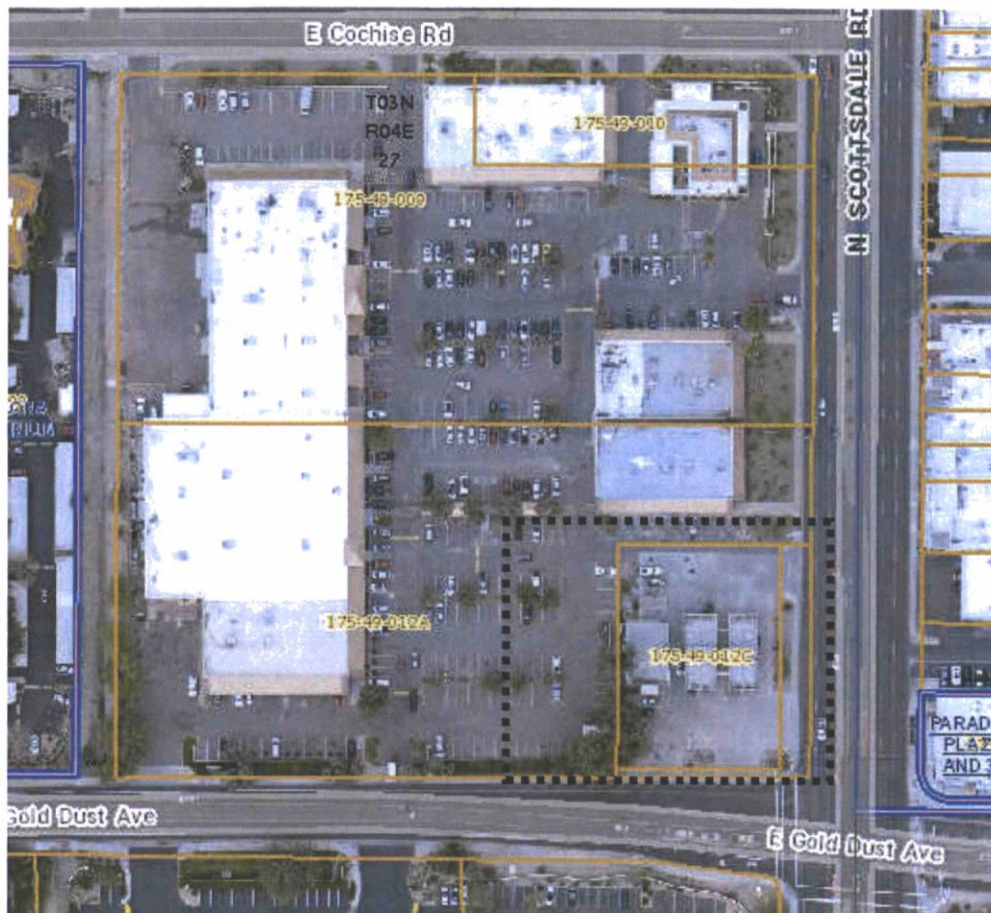


Figure 1-VICINITY MAP / AERIAL MAP

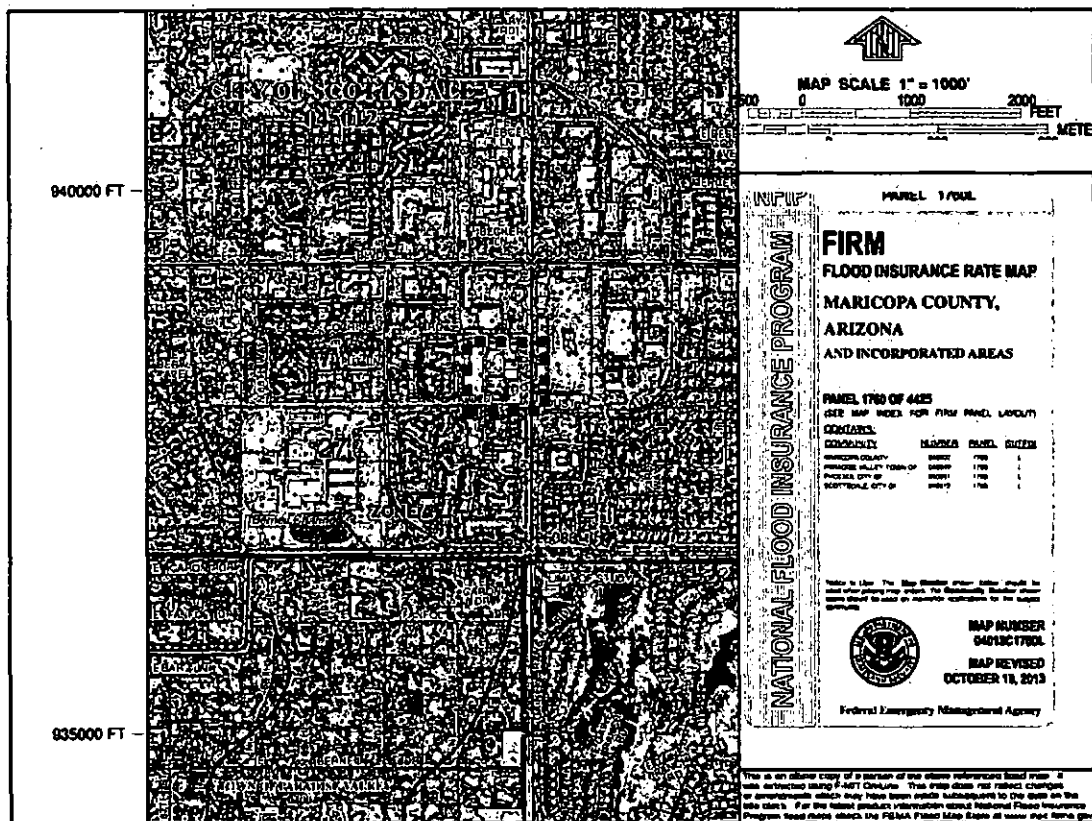
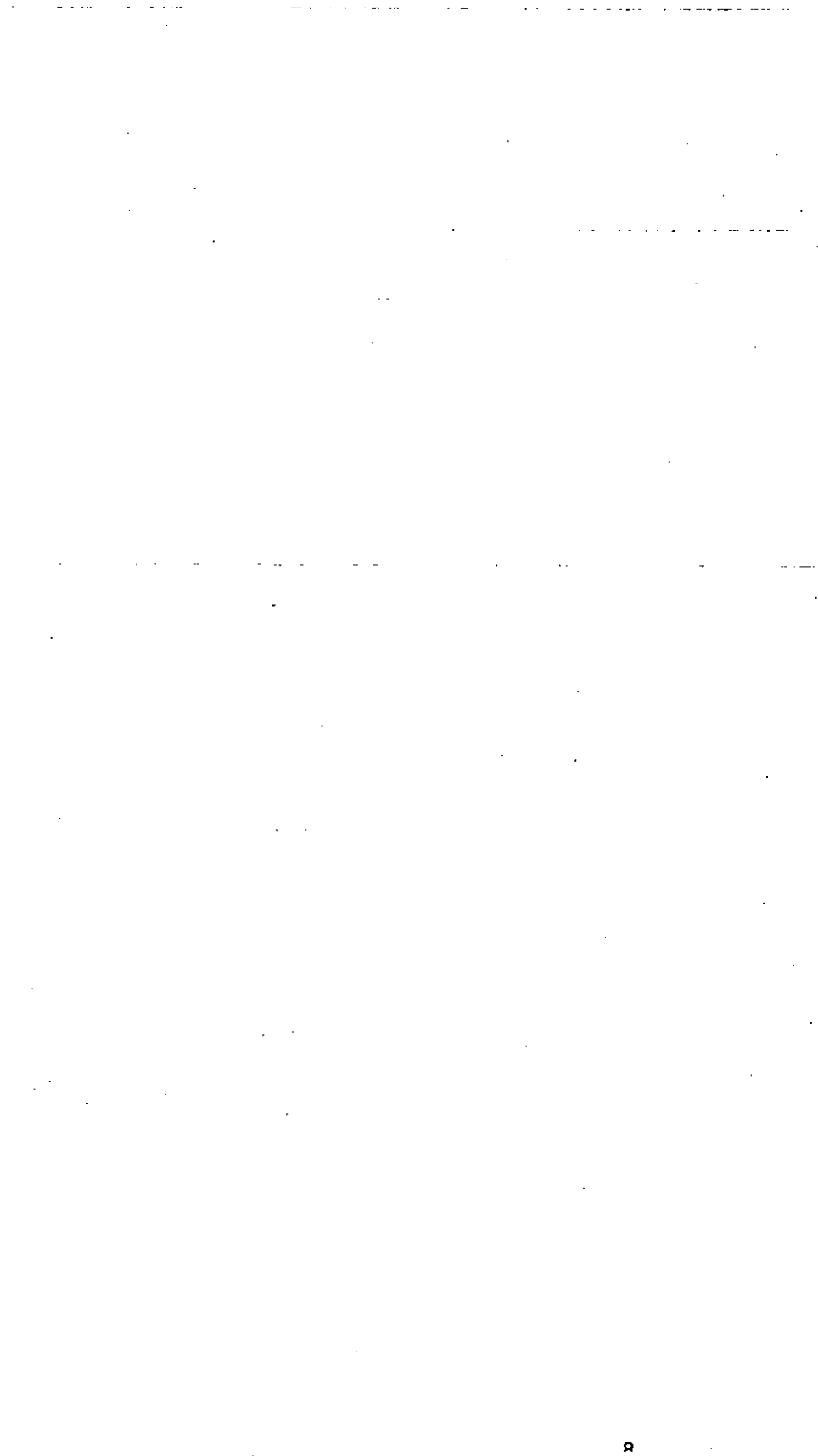


Figure 2-FEMA MAP



Figure 3 - C factor Calculations



Pre Construction	Areas	C	CxA
Impervious Areas	<div>21357</div> <div>10081</div>		
	31438	0.95	29866
Pervious Areas	<div>2678</div> <div>160</div> <div>110</div> <div>298</div>		
	3246	0.45	1461
TOTALS	34684	0.90	31327

Post Construcion	Areas	C	CxA
Impervious Areas	<div>29242</div>		
	29242	0.95	27780
Pervious Areas	<div>2614</div> <div>1485</div> <div>917</div> <div>426</div>		
	5442	0.45	2449
TOTALS	34684	0.87	30229

Figure 4 - GD Plan

