Preliminay Drainage Report

The Clayton on Earll

3-ZN-2024

Clayton Companies
7340 E. Main Street, Suite 200
Scottsdale, Arizona 85251
480 951 2260

prepared by:

CIVIL DESIGN SOLUTIONS, L.L.C.
Civil Engineering Land Development
Water Resources

15925 W. Glenrosa Ave, Goodyear, AZ 85395

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Case #: 3-ZN-2024

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Status: Accepted

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Date:09/11/2024

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LIST OF APPENDIXS

1.0 INTRODUCTION

1.1 General

This Preliminary Drainage Report has been prepared for the Clayton on Earll (2.93 acre) Mixed-Use Redevelopment, which is being developed by Clayton Companies, an Arizona Corporation. This analysis will present the design requirements for the drainage system for the entire project.

1.2 Location

The project is located in a portion of the Southwest 1/4 of Section 26, Township 2 North, Range 4 East of the Gila and Salt River Baseline and Meridian, Maricopa County, Arizona. It is on the northwest corner of the intersection of Earll Drive and Civic Center Plaza. The address being 7300 E. Earll Drive, Scottsdale. *See Figure 1, Vicinity Map.*

1.3 Project Description

The project is located within the Downtown Development zone for the City of Scottsdale, Arizona. The project is not within the ESL zone per the city LIS. The disturbed area is 86% of the total site. The project is approximately 2.93 gross acres with several parcels that will be combined. The project is a proposed Mixed-Use Redevelopment project with a total of 89 dwelling units and 6,300 square feet of commercial space. The project is currently zoned as C-3, DO. The project Land use is maximum 50 Dwelling units per acre. The project has several existing buildings that will be demolished and removed. The property is flat with less than 2 feet of fall across the site.

1.4 Purpose

This Report has been prepared to satisfy the City of Scottsdale requirements for the Rezoning process for the property. This report provides design calculations to determine the amount of stormwater will be generated by the development. This property is located within Quarter Section map 15-45 as C.O.S. project number “76-PA-2024 The Clayton on Earll”.

1.5 Executive Summary

This project has been designed in accordance with the *Design Standards & Policies Manual for the City of Scottsdale, 2018*. The existing property is currently being used as a commercial use. The existing property use is buildings and parking lots. No offsite flows will enter the site. Both Earll Drive and Civic Center Plaza have existing storm drainpipe. Earll Drive has a 96" storm drainpipe. Civic Center Plaza has a 30" storm drainpipe. All offsite flows will be conveyed within the existing Earll Drive and Civic Center Plaza Street sections, then captured within the existing catch basins, which convey the storm water flows to the existing 96" storm drainpipe. The proposed project will not increase the amount of non- permeable surfaces. Since this project is an infill redevelopment project, the required detention will be to provide the first flush, which is calculated at 3933 cubic feet. **The Existing Site provides 4,925 cubic feet of storage. The proposed site will provide 5,474 cubic feet of storage. The proposed site will provide 549 cubic feet more storage than the existing site provides.** The storage retention basin will be drained within 36 hours via a small diameter storm drainpipe to the existing stormwater drainage system. All onsite drainage will be conveyed within the service road located north and west of the proposed building. Storm water from the east portion of the proposed building will be roof captured and conveyed directly to the proposed first flush detention basin. By constructing the first flush retention basin the amount of storm water from the site entering the adjacent streets will be decreased from the pre-development conditions. There is no impact on the surrounding area. *See Exhibit 3-Drainage Area Map.*

The proposed building Finish Floor is set at a minimum 6 inches above the highest adjacent grade next to the building to ensure the building does not flood. The proposed finish Floor Elevation is to be 1238.5. The lowest adjacent top of curb elevation is 1236.49.

1.6 FEMA Regulated Flood Zones

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Map (FIRM) information for communities that adhere to FEMA regulations. FIRM map number 04013C2235M, dated September 18, 2020 indicates that the site is located within a designated Zone X. (*See Exhibit 2 – Firm Map*) for an illustration of the flood zones surrounding the site.

Zone X is defined by FEMA as follows:
Areas with minimum flood hazards.

1.7 404 Jurisdictional Wash

There are no Jurisdictional washes on the property.

2.0 HYDROLOGY

2.1 Off-Site Drainage

The off-site flows will be conveyed within the Earll and Civic Center Plaza Street sections. There are four large catch basins located within the adjacent curb on Earll Drive and Civic Center Plaza. The existing property stormwater drained directly to the adjacent streets. No off-site flows enter the property. Refer to *Exhibit 3- Drainage Area Map* with respect to the site.

2.2 On-Site Drainage

2.2.1 Existing Condition

The terrain for the project is flat, sloping from the west to the east and is currently developed with buildings and parking lots. The total area for the project is 2.93 gross acres. The site is divided into five sub basin areas that convey and store the storm water from the site. Upon site inspection, and the existing topographic survey, two depressed areas were observed in the existing parking lot. These areas are to retain 0.5 feet of stormwater. *See Exhibit 4- Existing Drainage Area Map.* Pond EX1 has a volume of 2,959 cubic feet. Pond EX 2 has a volume of 1,966 cubic feet. The area for Pond EX1 and Pond EX2 will be drained by an existing drywell for each pond. The total area of the existing property that will directly flow to Earll Drive is 23,663 square feet. The total area of the existing property that will directly flow to Civic Center Plaza is 39,645 square feet. The remaining areas of the existing site will retain storm water in the parking lot, then drain to the drywell. There is not enough storage to retain the full 100-year, 2-hour storm event, therefore each sub basin will overflow to Earll Drive and Civic Center Plaza. The property is considered an infill project, thus requiring the project to detain the first flush storm. To the west and north of the property exists commercial and multi-family developments. To the east is Civic Center Plaza Street and to the south is Earll Drive. A FEMA Flood Plain Zone X is located on the property. There are no drainage structures such as culvers or bridges on the property. There are several large catch basins within the adjacent streets and a 96-inch storm drainpipe within Earll Drive. And a 30-inch storm drainpipe within Civic Center Plaza Street.

2.2.2 Proposed Condition

The Development will consist of a mixed use of commercial office and multi-family residential dwellings. The majority of the property will have a building and a parking garage. *See Exhibit 3-Drainage Area Map*. A service, parking and access road is planned to connect Earll Drive to Civic Center Plaza Street west and north of the proposed buildings. The runoff coefficient is to be 0.95. The site will be split into five sub basin areas that will collect and drain the storm water from the site. The project is preliminarily designed to mimic the existing storm water conveyance conditions. See *Exhibit 3 and 4* for the Post and Predevelopment sub basin areas. Sub Basin 1 will direct drain flows to Earll Drive. Sub Basin 2 will drain to a depressed area that will be stored in the proposed parking lot. The storage will provide 1,260 cubic feet. This storage will be drained by an existing drywell within 36 hours. Sub Basin 3 will directly drain to Civic Center Plaza. Sub Basin 4 will drain to the proposed first flush retention basin located adjacent to Civic Center Plaza. The first flush basin will use a bleed off pipe to drain the pond within 36 hours after the storm event. This bleed off pipe will take flows to the existing 30" storm drainpipe in Civic Center Plaza. The flows from Sub Basin 5 will directly drain into Civic Center Plaza. See Appendix B for a post vs predevelopment comparison of sub basin area and how storm water will impact the existing streets.

The first flush detention pond is designed to detain the first flush or a rainfall of 0.5 inches. This water will then be dissipated within 36 hours via a bleed off pipe conveyed to the existing storm drain system in Civic Center Plaza.

Site detention volumes, for the development, have been computed using the first flush storm event, the results are provided in the Hydrograph Summary Report in *Appendix B- Stormwater Runoff Calculations*. The development will not have an additional negative impact on the existing downstream flow patterns. The following equation was used to determine the required volumes:

V= (0.5/12) * A * CN
V= Volume Required
A= Watershed Area
CN= Runoff Coefficient

The proposed access and service streets will be designed to carry the rational method, 10-year peak flow with no curb over-topping, and the 100-year event peak flow within the street section.

2.3 Offsite Hydrologic Modeling

Since the project does not see off-site flows, no impacts from any other offsite watershed will affect the project. No modeling was required.

3.0 HYDRAULICS

This project has been designed in accordance with the DSPM 2018 for the City of Scottsdale

3.1 Storm-Water Retention

Per the city criteria, the first flush basin pond was designed using 0.5 inches of total rainfall. For the detention pond layout please refer to See *Exhibit 3- Drainage Area Map.*

3.2 Retention Water Percolation

The first flush basin pond shall drain by a bleed off pipe. The upstream invert of the pipe will be constructed 3 inches off the bottom of the first flush basin pond. The pond will be drained within 36 hours after the storm event. The sub basin 2 storage will drain using and existing drywell from the previous site. The detention basins will be drained according to the following formula:

$V_d = A\ R\ 36$ hours

Where: V_d = volume drained in a 36 hour period in cubic feet

A = Basin Area at mid-depth in acres

R = Bleed off flowrate (cfs)

The bleed off calculations is a part of *Appendix A- Retention Calculations.*

3.3 Street Drainage

The proposed access street within this project will be to carry runoff from the 10-year storm between the curbs and the 100-year maximum flow depth 6 inches. The street flows will be calculated using the rational method as required by the city at the time of the final drainage report.

The street will be designed with a single slope of 2 %, and vertical curb and gutter to ensure

the street will carry the 10-year storm event. The 100-year event will be analyzed to ensure that storm water can be conveyed within the street without over topping the curb and the proposed building would not flood. These calculations will be presented with the Revised Final Drainage Design Report at the Construction Document Phase.

4.0 FLOOD PLAIN ANALYSIS

The proposed Clayton on Earll, Mixed Use Development is **not** within a FEMA Floodplain depicted as Zone A, with no base elevation. The offsite flows that are conveyed within the streets adjacent to the property will not impact the project. No Flood Plain Analysis is required.

5.0 CONCLUSIONS

1. This drainage report is prepared in accordance with the recommendations and design parameters from the City of Scottsdale.

2. **The Existing Site provides 4,925 cubic feet of storage. The proposed site will provide 5,474 cubic feet of storage. The proposed site will provide 549 cubic feet more storage than the existing site provides.** The ponds are to contain the first flush storm event with 0.5 inches of total rainfall are utilized to mitigate increases in peak discharge and storm-water volumes leaving the project. The existing site area that directly drains to Earll Drive without having any storage is 23,696 square feet (Sub Basin 1). The proposed site area that directly drains to Earll Drive without having any storage is 23,141 square feet (Sub Basin 1). The existing site areas that directly drain to Civic Center Plaza without having any storage is 34,072 square feet (Sub Basin 3 and 5). The proposed site areas that directly drain to Civic Center Plaza without having any storage is 16,873 square feet (Sub Basin 3 and 5). The existing site areas that directly drain to the adjacent streets are greater than the proposed site areas that directly drain to the adjacent streets.

3. The ultimate low outfall of each the project is located at the intersection of Earll Drive and Civic Center Plaza Street. The finish floor elevation for the building shall be set to meet the following minimum requirements:

    1. 6 inches above the corresponding drainage sub-area low outfall
    2. 12 inches above the adjacent 100-year ponding elevation.
    3. 14 inches above the lowest top-of-curb elevation along the frontage streets.

4. Preliminary drainage infrastructure is to be designed in accordance with the appropriate criteria

defined in this report. For situations not addressed in this report, the City of Scottsdale drainage criteria will be used for drainage facility design.

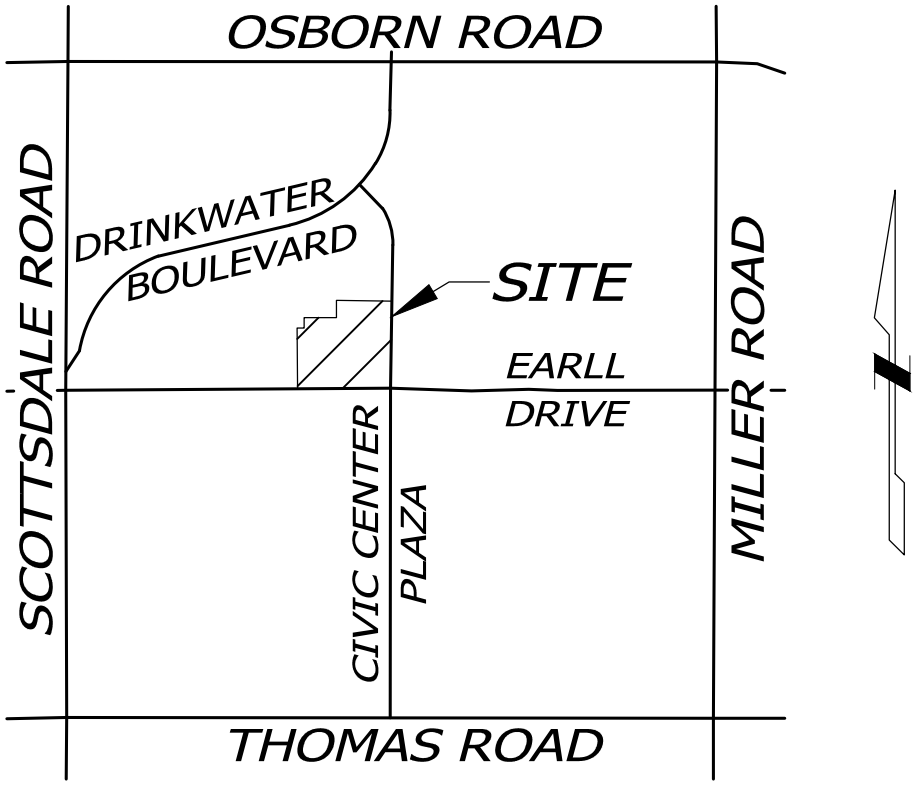
5. The design of hydraulic structures will be based on generally accepted engineering practices and will follow guidelines established with the City of Scottdale. The hydraulic analysis of these structures will be included in the final drainage design report that will accompany the improvement plans.

6. The storage ponds shall drain by bleed off pipe and existing drywell. The pipe is designed to drain the pond within 36 hours after a storm event.

6.0 REFERENCES

1. Design Standards and Policies Manual, 2018 for the City of Scottsdale

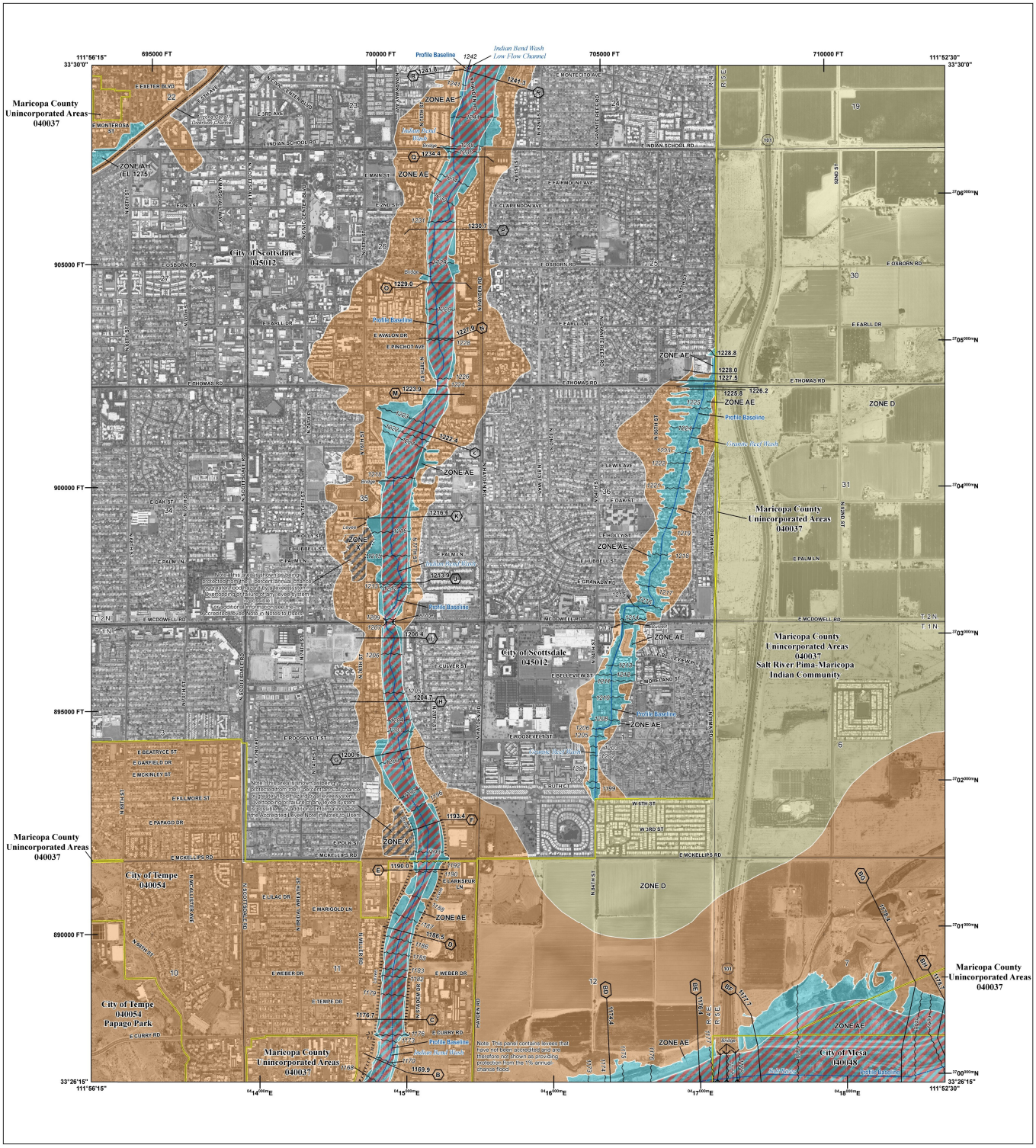
EXHIBIT 1-VICINITY MAP



VICINITY MAP

NOT TO SCALE

EXHIBIT 2– FIRM MAP



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-8620.

Base map information shown on this FIRM was derived from U.S. Census Bureau TIGER files, dated 2014, and digital data provided by the Flood Control District of Maricopa County. Digital orthophotography was provided by the Flood Control District of Maricopa County. The imagery was flown in Fall 2013 and was produced with a 0.6 foot ground sample distance.

ACCREDITED LEVEE NOTES TO USERS: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/national-flood-insurance-program.

SCALE

N

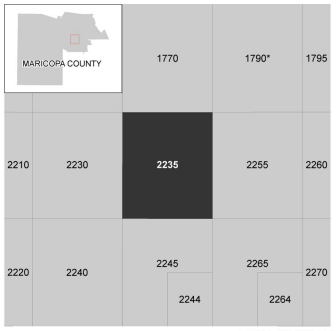
Map Projection:
NAD 1983 HARN StatePlane Arizona Central FIPS 0202 Feet Intl.
Western Hemisphere; Vertical Datum: NAVD88

1 inch = 1,000 feet 1:12,000

0 1,000 2,000 4,000 feet

0 250 500 1,000 meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA
and Incorporated Areas

PANEL 2235 OF 4425

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2235	M
MESA, CITY OF	040048	2235	M
SCOTTSDALE, CITY OF	045012	2235	M
TEMPE, CITY OF	040054	2235	M

VERSION NUMBER
2.3.3.2

MAP NUMBER
04013C2235M

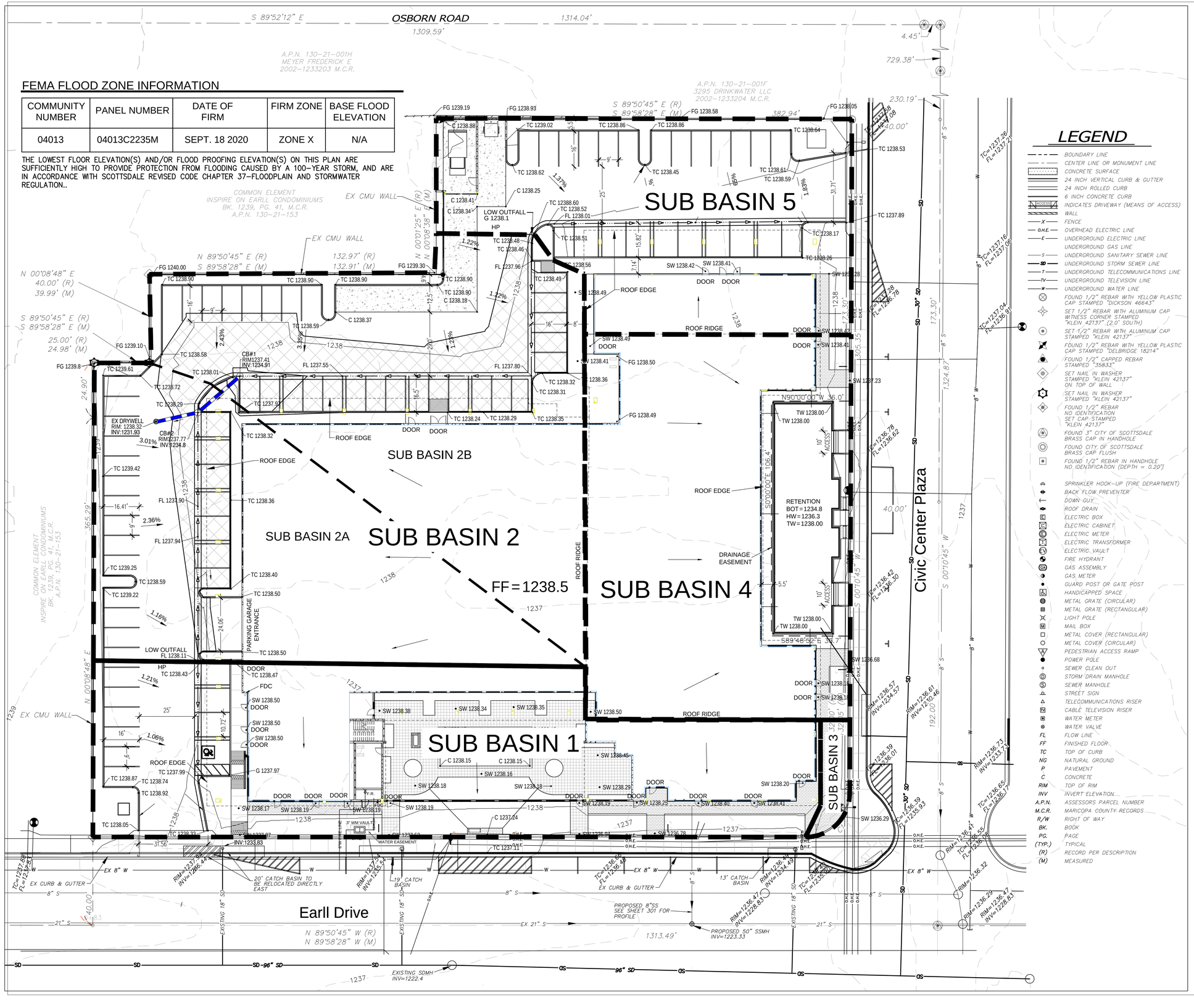
MAP REVISED
September 18, 2020

EXHIBIT 3 – DRAIANGE AREA MAP

FEMA FLOOD ZONE INFORMATION

COMMUNITY NUMBER	PANEL NUMBER	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION
04013	04013C2235M	SEPT. 18 2020	ZONE X	N/A

THE LOWEST FLOOR ELEVATION(S) AND/OR FLOOD PROOFING ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A 100-YEAR STORM, AND ARE IN ACCORDANCE WITH SCOTTSDALE REVISED CODE CHAPTER 37-FLOODPLAIN AND STORMWATER REGULATION..



LEGEND

- BOUNDARY LINE
- CENTER LINE OR MONUMENT LINE
- CONCRETE SURFACE
- 24 INCH VERTICAL CURB & GUTTER
- 24 INCH ROLLED CURB
- 6 INCH CONCRETE CURB
- INDICATES DRIVEWAY (MEANS OF ACCESS)
- WALL
- FENCE
- O.H.E. OVERHEAD ELECTRIC LINE
- E UNDERGROUND ELECTRIC LINE
- UNDERGROUND GAS LINE
- S UNDERGROUND SANITARY SEWER LINE
- SD UNDERGROUND STORM SEWER LINE
- T UNDERGROUND TELECOMMUNICATIONS LINE
- TV UNDERGROUND TELEVISION LINE
- W UNDERGROUND WATER LINE
- FOUND 1/2" REBAR WITH YELLOW PLASTIC CAP STAMPED "DICKSON 46643"
- SET 1/2" REBAR WITH ALUMINUM CAP WITNESS CORNER STAMPED "KLEIN 42137" (2.0' SOUTH)
- SET 1/2" REBAR WITH ALUMINUM CAP STAMPED "KLEIN 42137"
- FOUND 1/2" REBAR WITH YELLOW PLASTIC CAP STAMPED "DELBRIDGE 18214"
- FOUND 1/2" CAPPED REBAR STAMPED "35833"
- SET NAIL IN WASHER STAMPED "KLEIN 42137" ON TOP OF WALL
- SET NAIL IN WASHER STAMPED "KLEIN 42137"
- FOUND 1/2" REBAR NO IDENTIFICATION SET CAP STAMPED "KLEIN 42137"
- FOUND 3" CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE
- FOUND CITY OF SCOTTSDALE BRASS CAP FLUSH
- FOUND 1/2" REBAR IN HANDHOLE NO IDENTIFICATION (DEPTH = 0.20')
- SPRINKLER HOOK-UP (FIRE DEPARTMENT)
- BACK FLOW PREVENTER
- DOWN GUY
- ROOF DRAIN
- ELECTRIC BOX
- ELECTRIC CABINET
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- ELECTRIC VAULT
- FIRE HYDRANT
- GAS ASSEMBLY
- GAS METER
- GUARD POST OR GATE POST
- HANDICAPPED SPACE
- METAL GRATE (CIRCULAR)
- METAL GRATE (RECTANGULAR)
- LIGHT POLE
- MAIL BOX
- METAL COVER (RECTANGULAR)
- METAL COVER (CIRCULAR)
- PEDESTRIAN ACCESS RAMP
- POWER POLE
- SEWER CLEAN OUT
- STORM DRAIN MANHOLE
- SEWER MANHOLE
- STREET SIGN
- TELECOMMUNICATIONS RISER
- CABLE TELEVISION RISER
- WATER METER
- WATER VALVE
- FL FLOW LINE
- FF FINISHED FLOOR
- TC TOP OF CURB
- NG NATURAL GROUND
- P PAVEMENT
- C CONCRETE
- RIM TOP OF RIM
- INV INVERT ELEVATION
- A.P.N. ASSESSORS PARCEL NUMBER
- M.C.R. MARICOPA COUNTY RECORDS
- R/W RIGHT OF WAY
- BK. BOOK
- PG. PAGE
- (TYP.) TYPICAL
- (R) RECORD PER DESCRIPTION
- (M) MEASURED

VICINITY MAP
NOT TO SCALE

GENERAL NOTES

1. SLOPES ARE CALCULATED FROM DRAINAGE STRUCTURE CENTER TO DRAINAGE STRUCTURE CENTER.

DRAINAGE STATEMENT

SUB BASIN 1 = 23,141 SQ. FT., FLOWS TO EARLL DRIVE
SUB BASIN 2 = 38,320 SQ.FT., FLOWS TO BLEED OFF PIPE
SUB BASIN 3 = 667 SQ. FT., FLOWS TO CIVIC CENTER PLAZA
SUB BASIN 4 = 21,024 SQ. FT., FLOWS TO FIRST FLUSH BASIN
SUB BASIN 5 = 16,206 SQ.FT., FLOWS TO CIVIC CENTER PLAZA

TOTAL SUB BASIN AREA FOR FLOWS TO EARLL DRIVE = 23,141 SQ. FT.
TOTAL SUB BASIN AREA FOR FLOWS TO CIVIC CENTER PLAZA=16,873 SQ.FT.
TOTAL SUB BASIN AREA NOT DRAINING TO ADJACENT STREETS=59,344 SQ.FT.

OFF-SITE FLOWS: FROM VISUAL INSPECTION, NO OFF-SITE FLOWS ENTERS THE PARCEL.

RETENTION:
RETENTION HAS BEEN ANALYZED THE FIRST FLUSH REQUIREMENT. THE RETENTION IS TO BE 1.5 FEET IN DEPTH.

THE LOW CURB ELEVATION IS 1236.40 NEAR THE INTERSECTION OF EARLL DRIVE AND CIVIC CENTER PLAZA. THE HIGH CURB ELEVATION IS 1237.58 NEAR THE NORTHEAST PROPERTY CORNER OF THE SITE. USING 14 INCHES ABOVE LOW CURB AND 6 INCHES ABOVE HIGH CURB, THE FINISHED FLOOR ELEVATIONS OF NEW BUILDINGS MUST BE GREATER THAN OR EQUAL TO 1238.08.

THERE IS A 96" STORM DRAIN PIPE WITHIN EARLL DRIVE AND A 30" STORM DRAIN PIPE WITHIN CIVIC CENTER PLAZA. SUB BASIN 4 WILL DRAIN TO THE FIRST FLUSH DETENTION BASIN. THIS DETENTION WILL DIRECTLY BLEED OFF TO THE EXISTING 30" STORM DRAINAGE SYSTEM WITHIN CIVIC CENTER PLAZA. SUB BASIN 2 WILL DRAIN TO TWO PROPOSED CATCH BASINS. SUB BASIN 2 IS TO STORE STORM WATER WITHIN THE PROPOSED PARKING LOT AT A DEPTH OF 0.5 FEET. THE STORAGE IN THE PARKING LOT WILL BE DRAINED WITH A BLEED OFF PIPE DIRECTLY TO THE EXISTING DRYWELL FROM THE EXISTING PARKING LOT. SUB BASIN 2A WILL DRAIN TO EARLL ROAD AND SUB BASIN 2B WILL DRAIN TO CIVIC CENTER PLAZA.

THE POST FLOWS DRAINING TO EARLL DRIVE ARE NOT GREATER THAN THE EXISTING FLOWS DRAINING TO EARLL DRIVE. THE POST FLOWS DRAINING TO CIVIC CENTER PLAZA ARE NOT GREATER THAN THE EXISTING FLOWS DRAINING TO CIVIC CENTER PLAZA.

RETENTION CALCULATIONS

FIRST FLUSH REQUIREMENTS
P=0.5 INCHES

V(ff) = C (P/12) A
V(ff) = 0.95 * (0.5/12) * 99,358.82
V(ff) = 3,933 CF

PROVIDED RETENTION CALCULATIONS

FIRST FLUSH STORAGE PROVIDED = 4,215 CF
DEPTH OF FIRST FLUSH RETENTION BASIN = 1.5'
HIGH WATER ELEVATION = 1236.3

SUB BASIN 2 STORAGE BASIN PROVIDED = 1260 CF
DEPTH OF STORAGE LESS THAN 0.5'
HIGH WATER ELEVATION = 1238.1

PRE VS POST FLOWS

SUB BASIN	POST AREA SF	PRE AREA SF	POST VS PRE	COMMENTS
1	23141	23698	-557	DRAIN TO EARLL
2	38320	31354	6966	BLEED OFF EX DRYWELL
3	667	2092	-1425	DRAIN TO CIVIC CENTER PLAZA
4	21024	10234	10790	DRAIN TO FIRST FLUSH
5	16206	31980	-15774	DRAIN TO CIVIC CENTER PLAZA

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

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CIVIL DESIGN SOLUTIONS, LLC
15925 w. Glenrosa Ave
Goodyear, Arizona 85395
480.205.8434

DEVELOPER/OWNER: CLAYTON COMPANIES
PROJECT NAME: THE CLAYTON ON EARLL
PLAN TYPE: EXHIBIT 3- DRAINAGE AREA MAP

SEALED

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
35476
BRIAN T.
BERNARD
9/6/24
ARIZONA, U.S.A.

ORIGINAL PLAN DATE: 5/31/2024
LATEST REVISION DATE: 9/5/2024
DRAINAGE AREA MAP
EXHIBIT 3
PROJECT NUMBER: 1287-24

EXHIBIT 4 – EXISTING DRAIANGE AREA MAP

OSBORN ROAD

NORTH
0 20 40
1 INCH =20 FT.

A.P.N. 130-21-001H
MEYER FREDERICK E
2002-1233203 M.C.R.

A.P.N. 130-21-001F
3295 DRINKWATER LLC
2002-1233204 M.C.R.

COMMON ELEMENT
INSPIRE ON EARLL CONDOMINIUMS
BK. 1239, PG. 41, M.C.R.
A.P.N. 130-21-153

SUB BASIN 5

SUB BASIN 2

SUB BASIN 4

SUB BASIN 1

SUB BASIN 3

POND EX1
EX DRYWELL

POND EX2
EX DRYWELL

3134 N. CIVIC CENTER PLAZA
ONE STORY BLOCK BUILDING
10,032 SQ. FEET
HEIGHT = 14.5'±

7330 E. EARLL DRIVE
ONE STORY STUCCO BUILDING
6,187 SQ. FEET
HEIGHT = 13.5'±

ONE STORY STUCCO BUILDING
4,863 SQ. FEET
HEIGHT = 13.5'±

3126 N. CIVIC CENTER PLAZA
ONE STORY STUCCO BUILDING
4,635 SQ. FEET
HEIGHT = 14.7'±

332 E. EARLL DRIVE
STORY BLOCK BUILDING
3,445 SQ. FEET
HEIGHT = 12.2'±

CIVIC CENTER PLAZA
(PUBLIC ROADWAY)

EARLL DRIVE
(PUBLIC ROADWAY)

LEGEND

- BOUNDARY LINE
- CENTER LINE OR MONUMENT LINE
- CONCRETE SURFACE
- 24 INCH VERTICAL CURB & GUTTER
- 24 INCH ROLLED CURB
- 6 INCH CONCRETE CURB
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- E UNDERGROUND ELECTRIC LINE
- G UNDERGROUND GAS LINE
- S UNDERGROUND SANITARY SEWER LINE
- SD UNDERGROUND STORM SEWER LINE
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- SET NAIL IN WASHER STAMPED "KLEIN 42137" ON TOP OF WALL
- SET NAIL IN WASHER STAMPED "KLEIN 42137"
- FOUND 1/2" REBAR NO IDENTIFICATION SET CAP STAMPED "KLEIN 42137"
- FOUND 3" CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE
- FOUND CITY OF SCOTTSDALE BRASS CAP FLUSH
- FOUND 1/2" REBAR IN HANDHOLE NO IDENTIFICATION (DEPTH = 0.20')
- SCHEDULE B ITEM
- SPRINKLER HOOK-UP (FIRE DEPARTMENT)
- BACK FLOW PREVENTER
- DOWN GUY
- ROOF DRAIN
- ELECTRIC BOX
- ELECTRIC CABINET
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- ELECTRIC VAULT
- FIRE HYDRANT
- GAS ASSEMBLY
- GAS METER
- GUARD POST OR GATE POST
- HANDICAPPED SPACE
- METAL GRATE (CIRCULAR)
- METAL GRATE (RECTANGULAR)
- LIGHT POLE
- MAIL BOX
- METAL COVER (RECTANGULAR)
- METAL COVER (CIRCULAR)
- PEDESTRIAN ACCESS RAMP
- POWER POLE
- SEWER CLEAN OUT
- STORM DRAIN MANHOLE
- SEWER MANHOLE
- STREET SIGN
- TELECOMMUNICATIONS RISER
- CABLE TELEVISION RISER
- WATER METER
- WATER VALVE
- FL FLOW LINE
- FF FINISHED FLOOR
- TC TOP OF CURB
- NG NATURAL GROUND
- P PAVEMENT
- C CONCRETE
- RIM TOP OF RIM
- INV. INVERT ELEVATION
- A.P.N. ASSESSORS PARCEL NUMBER
- M.C.R. MARICOPA COUNTY RECORDS
- R/W RIGHT OF WAY
- BK. BOOK
- PG. PAGE
- (TYP.) TYPICAL
- (R) RECORD PER DESCRIPTION
- (M) MEASURED

DRAINAGE STATEMENT

OFF-SITE FLOWS: FROM VISUAL INSPECTION, NO OFF-SITE FLOWS ENTERS THE PARCEL.

RETENTION:
EXISTING SITE RETENTION BASINS.
POND EX1 = 2959 C.F., 0.5' DEPTH
POND EX2 = 1966 C.F. 0.5' DEPTH

SUB BASIN 1 = 23,698 SQ. FT., FLOWS TO EARLL DRIVE
SUB BASIN 2 = 31,354 SQ.FT., FLOWS TO POND EX1
SUB BASIN 3 = 2,092 SQ. FT., FLOWS TO CIVIC CENTER PLAZA
SUB BASIN 4 = 10,234 SQ. FT., FLOWS TO POND EX2
SUB BASIN 5 = 31,980 SQ.FT., FLOWS TO CIVIC CENTER PLAZA

TOTAL SUB BASIN AREA FOR FLOWS TO EARLL DRIVE = 23,698 SQ. FT.
TOTAL SUB BASIN AREA FOR FLOWS TO CIVIC CENTER PLAZA=34,072 SQ.FT.
TOTAL SUB BASIN AREA NOT DRAINING TO ADJACENT STREETS=41,588 SQ.FT.

POND EX1 DRAINS BY A DRYWELL. POND EX2 DRAINS BY A DRYWELL.

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

CIVIL DESIGN SOLUTIONS, LLC
15925 w. Glenrosa Ave
Goodyear, Arizona 85395
480.205.8434

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DEVELOPER/OWNER: CLAYTON COMPANIES
PROJECT NAME: THE CLAYTON ON EARLL
PLAN TYPE: EXHIBIT 4- EXISTING DRAINAGE MAP

SEALED

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
35476
BRIAN T.
BERNARD
9/5/24
Signed
ARIZONA, U.S.A.

ORIGINAL PLAN DATE
5/31/2024
LATEST REVISION DATE
7/31/2024
EXISTING DRAINAGE AREA MAP
SHEET NUMBER
EXHIBIT 4
PROJECT NUMBER
1287-24

The Clayton on Earll
FIRST FLUSH CALCULATIONS
Volume Required

Precipitation Depth =	0.5	in.
Pre Development Runoff Coefficient	0.95	
Post Development Runoff Coefficient	0.95	

Sub-Basin ID	Area (Square Feet)	Runoff Coefficient (C)	Volume Required (Cu-ft)	Volume Provided (Cu-ft)	Excess Volume (Cu-ft)	Comments
Overall site	99358.82	0.95	3932.95	4215.00	282.05	First Flush

Catch Basin #1

Drainage Area ID	Total Area (Ac)	Cw	tc (min)	i (in/hr)	Q100-yr peek (cfs)	Comments
CB#1	0.494	0.92	5.00	7.90	3.59	Sump
CB#2	0.393	0.92	5.00	7.90	2.86	Sump
					6.45	

Sub-Basin ID	Proposed Area (Square Feet)	Existing Area (Square Feet)	POST VS PRE	Comments
1	23141.00	23698.00	-557.00	Drain to Earll Dr
2A	19500.00	31354.00	-12534.00	Over flow to Earll Dr and storage to Ex Drywell
2B	18820.00			Overflow to Civic Center Plaza and storage to Ex Drywell
3	667.00	2092.00	-1425.00	Drain to Civic Center Plaza
4	21024.00	10234.00	10790.00	Drain to First Flush Basin Bleed off to Civic Center
5	16206.00	31980.00	-15774.00	Drain to Civic Center Plaza
	99358.00	99358.00		