

Preliminary Drainage Report

for
SET JET



A portion of Lot 67
Thunderbird Industrial Airpark No. 2
Scottsdale, Arizona



Plan # 31-DR-2021

Case # _____

Q-S # _____

Accepted

Corrections

M.R. 06/14/2022
Reviewed By Date

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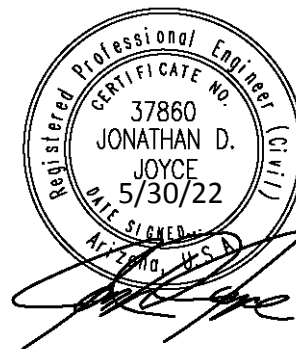


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EXHIBITS

- | | |
|-----------------|----------------------|
| A. Vicinity Map | E. Isopluvial Map |
| B. Aerial Map | F. USST Requirements |
| C. Contour Map | G. Calculations |
| D. FEMA Map | H. Drainage Exhibit |

SECTION 1: INTRODUCTION

1.1 Purpose

The purpose of this report is to provide a drainage analysis as required by the City of Scottsdale to support development of this 0.9403 acre project site. This report will analyze existing onsite and offsite stormwater runoff and well as proposed improvements to ensure that that all buildings and the public will be protected from damage by runoff and flooding to the extent of the 100-year flood event. Preparation of this report has been done according to the City of Scottsdale's Design Standards and Policy Manual. 8

1.2 Project Location

This project is located within the Scottsdale Airpark, in particular Thunderbird Industrial Airpark No 3. More specifically this project is located within a portion of Section 31, T4N, R5E of Maricopa County, Arizona, with an address of 15208 N 75th Street, Scottsdale Arizona 85260. See Exhibit 1, Vicinity Map.

Properties located adjacent to the subject site include similarly zoned and development properties with a taxiway adjacent to along the entire north property line. See Exhibits 2 and 3 (ALTA Survey and Aerial map).

1.3 Project Development

The project site is an undeveloped parcel created by means of a Lot Split. Lot 67 of Thunderbird Industrial Airpark was formerly an 81,764 sf lot and had the assessor's parcel number 215-56-067. After the Lot Split, two parcels were created: assessor's number 215-56-067A with 40,850 sf, and assessor's number 215-56-067B with 40,960 sf (the project site).

The project site is currently Zoned Ind-1 (Planned Industrial Zoning District). The proposed use is consistent with the current zoning with no changes proposed.

This development will consist of one 17,344 sf building, including covered parking for private planes (hanger), a front lobby and office space. The remaining property will consist of parking areas, a plane maneuvering area, drive aisles and landscape areas.

Underground retention will be utilized to meet retention requirements.

SECTION 2: DESCRIPTION OF EXISTING DRAINAGE CONDITIONS

2.1 Project Topography

The subject site is an undeveloped 0.9403 acres parcel, located between developed parcels to the east and west. The site has been largely cleared and graded a few trees remain that may require salvaging. The site drains from northeast to southwest at an approximate grade of 1.10 percent. See Exhibits, 2, 3 and 5, (Topographic Survey, Aerial photo and City of Scottsdale contour map).

2.2 Offsite Drainage

The subject site lies in a fully developed portion of Thunderbird Industrial Airpark. Offsite Drainage is from northeast to southwest. The subject property is not affected by off-site flows due to the following factors:

1. The Taxiway to the north is considered City of Scottsdale right-way and said City is responsible for managing its airport runoff
2. 75th Street to the south is also City of Scottsdale right-of-way and does not affect the subject property
3. The property to the east is responsible for retaining it's own 100 year event, it's outfall is to 75th Street.
4. The property to the west is downhill and outfalls to an elevation lower than the project site.

2.3 Onsite Drainage

This site will be responsible for retaining the 100 year 2 hour event per City of Scottsdale guidelines. Retention requirements will be met through the use of underground storage. See Exhibit G (USST Policy) for underground storage tank requirements.

Drainage is being directed to said storage tanks through catch basins, roof drains and area drains. There are 2 underground tank storage areas both are accessible to the City of Scottsdale (not behind gates, fences or walls). Surface flow is concentrated at catch basins and area drains where it is collected and conveyed to underground storage tanks. Roof runoff is directed to four roof drains and connected underground to a storm drain system that is ultimately conveyed to the underground storage tanks. See Exhibit D, Drainage Exhibit.

Peak runoffs, concentration points, inlet calculations, pipe conveyance and storage/volume calculations are presented as Exhibit E, Calculations

2.4 Flood Insurance Rate Map

The Federal Emergency Management Agency (FEMA) under the National Flood Insurance Program (NFIP) has issued, on October 16, 2013, a Flood Insurance Rate Map (FIRM), Number 04013C1320L, indicating that the project site lies within a Flood Zone X. See Exhibit 4, (Firmette)

SECTION 3: PROPOSED DRAINAGE PLAN

3.1 Storm Water Management

This project is being required to retain the 100-yr, 2-hr event. This project is currently designed to retain the gross area of the project, which includes the adjacent City of Scottsdale right-of-way. Should this project be granted a waiver or required to retain only the projects net area, calculations/storage tanks will be revised.

This design utilizes 84" diameter CMP storage tanks to retain the volume required. Said storage tanks will drain through drywells within the required volumes the 36 hours. There are two separate storage tank areas, and both are accessible to the City of Scottsdale for emergency access and inspections.

The projects ultimate outfall is located at the southwest corner and outfalls to 75th Street (City right-of-way)

The north end (rear) of the site includes Areas A - E. Detailing the collection system from the back to front.

Surface runoff from Area A (airplane maneuvering area) is collected within Catch Basin 1. Catch Basin 1 is conveyed within an underground storm drain to the southeast and is joined by Area C (roof drain) and Area D (roof drain) on its way to Catch Basin 2. Catch Basin 2 then collects surface runoff from Area B (parking area and drive) and continues to the southeast where it is joined by Area E (roof drain) on its way to its ultimate destination, Underground Storage Area 1.

The south end (front) of the site Includes Areas F – I. Detailing the collection system from east to west.

Area H includes runoff from 75th Street (offsite) and a small portion of onsite runoff created by a grade break at the main entrance. This runoff is collected with a Scupper and delivered to a detention area and its respective Catch Basin 3. Area G also conveys surface runoff to the just described detention area and Catch Basin 3. Catch Basin 3 then conveys the runoff from both Areas G and H to its ultimate destination, Underground Storage Area 2.

Said Storage Area 2 not only collects runoff from east but also from west. Detailing the collection system from west to east. Area I collects surface runoff within a detention basin located at the southwest corner of the project site where it is collected within an Area Drain and conveyed north where it is joined by runoff from Area F (roof drain) on its way to its ultimate destination, Underground Storage Area 2.

Note: The runoff from Area J is allowed to drain offsite and away from the project site and is not being collected. However, the volume associated with Area J is accounted for within Storage Area 2 and is intercepted through the previously mentioned scupper.

See Drainage Map for areas and calculations.

3.2 Downstream affect

No negative downstream affects will result from the development of this project

3.3 Outfall

The ultimate outfall is to the 75th Street (a public right-of-way).

3.4 SWPPP

As the project site is greater than one, a full SWPPP will be required with Final Plans.

SECTION 4: CONCLUSIONS

1. Historical Drainage is Maintained
2. The Project Site has been designed to retain the 100 year, 2 hour event.
3. The Project Site can safely convey runoff in excess of the 100 year, 2 hour storm event without flooding to onsite structures
4. Finished Floor Elevations are safe from inundation during a 100-year 2-hour event.

SECTION 5: REFERENCES

1. City of Scottsdale Revised Code
2. City of Scottsdale Design Standards and Policies Manual
3. Drainage Design Manual for Maricopa County – Hydrology
4. Federal Emergency Management Agency (FEMA)

EXHIBIT A VICINITY MAP

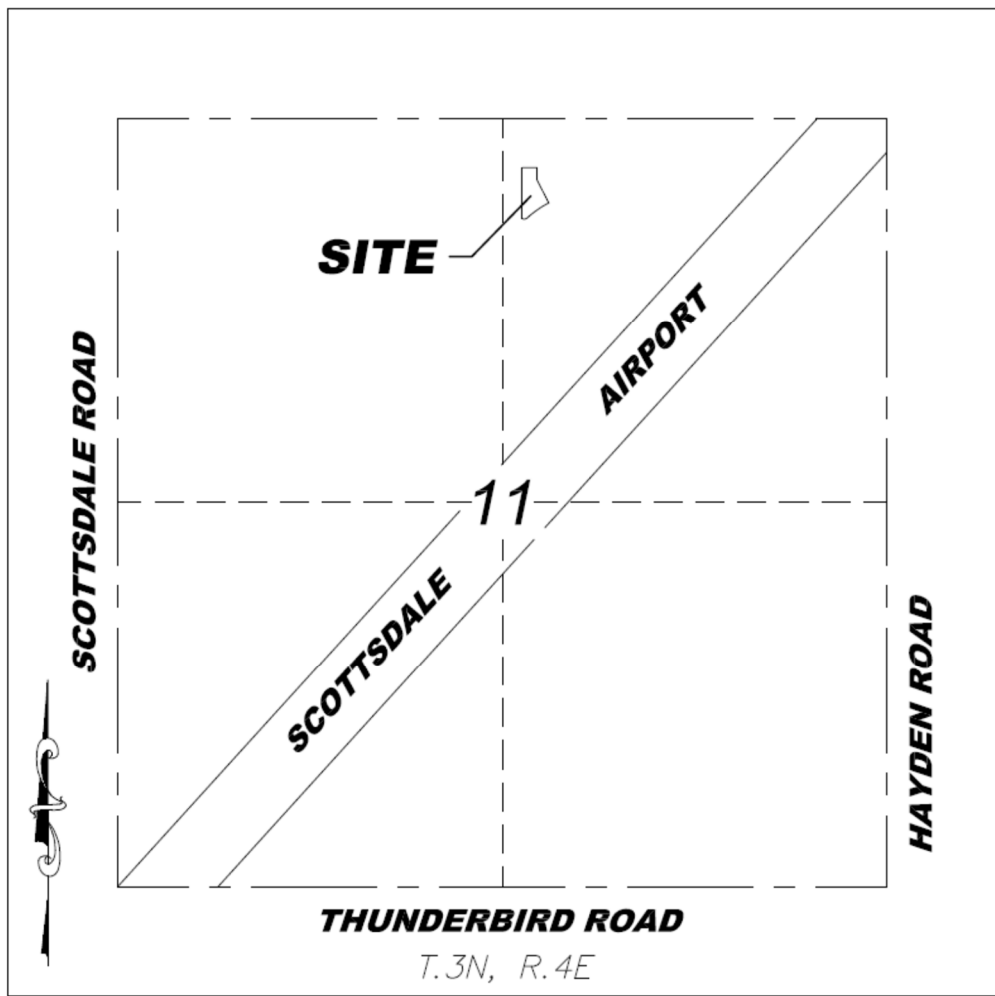


EXHIBIT B AERIAL MAP



EXHIBIT C CONTOUR MAP

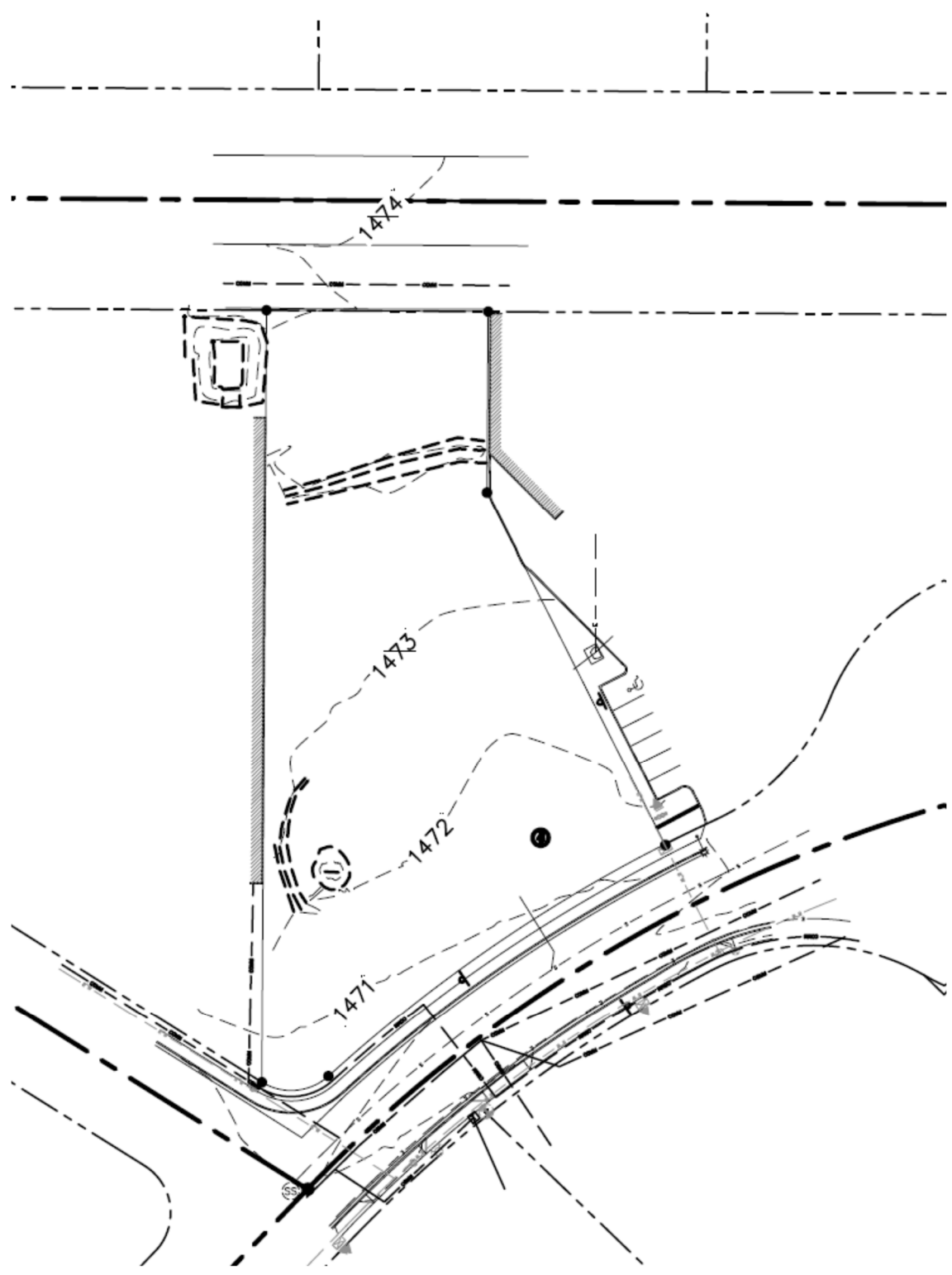


EXHIBIT E ISOPLUVIALS

ISOPLUVIALS

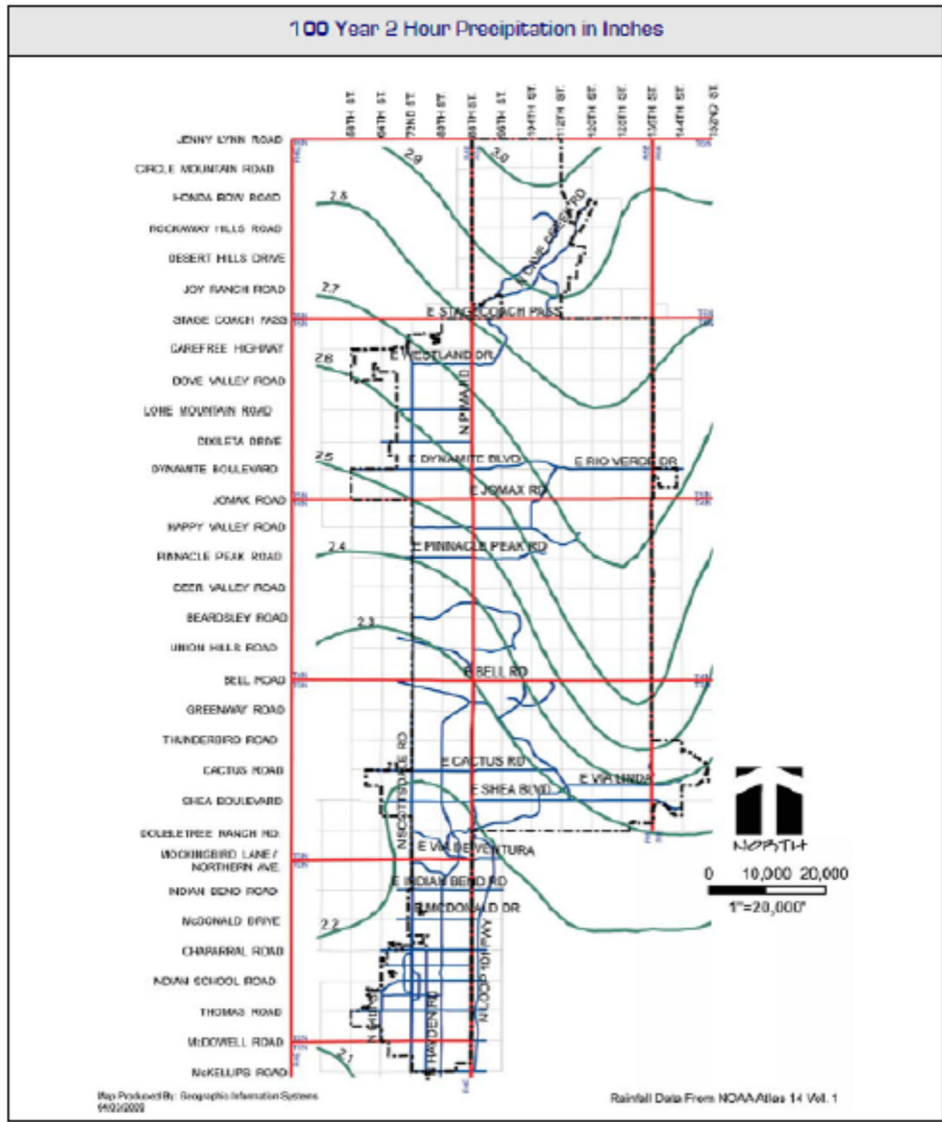


EXHIBIT F USST Policy

Underground stormwater storage tanks must meet the City's USST policy in Section 4-1.202 of the City's Design Standards and Policies Manual (DSPM), which includes but is not limited to the following :

- a) The owner must dedicate a public drainage easement over the USST, with no major vegetation such as trees within the easement. At a minimum, the easement should extend at a projected slope of 1:1 from the bottom of the pipe.
- b) The USST must have at least a 75 year life, including the lining and coating
- c) The USST must drain by gravity.
- d) Specify MAG supplemental standard detail 2554 for corrugated metal pipes
- e) A minimum of two access points must be provided for each USST.
- f) An Operations and Maintenance (O&M) Manual must be prepared for the system prior to approval of final plans
- g) Final plans must include signs at each end of the USST
- h) A signed and notarized Ownership and Responsibility Statement must be provided prior to approval of final plans.

EXHIBIT H DRAINAGE EXHIBIT

DRAINAGE STATEMENT

THIS PROJECT IS REQUIRED TO RETAIN THE 100 YEAR 2 HOUR STORM EVENT.

FF ELEVATIONS SHALL BE A MINIMUM OF 14" ABOVE LOW TOP OF CURB OR 6" ABOVE HIGH TOP OF CURB, WHICHEVER IS GREATER

AREA

40,764 SF	0.936 ACRES	NET
7,333 SF	0.168 ACRES	R/W
48,097 SF	1.104 ACRES	GROSS

RETENTION REQUIRED

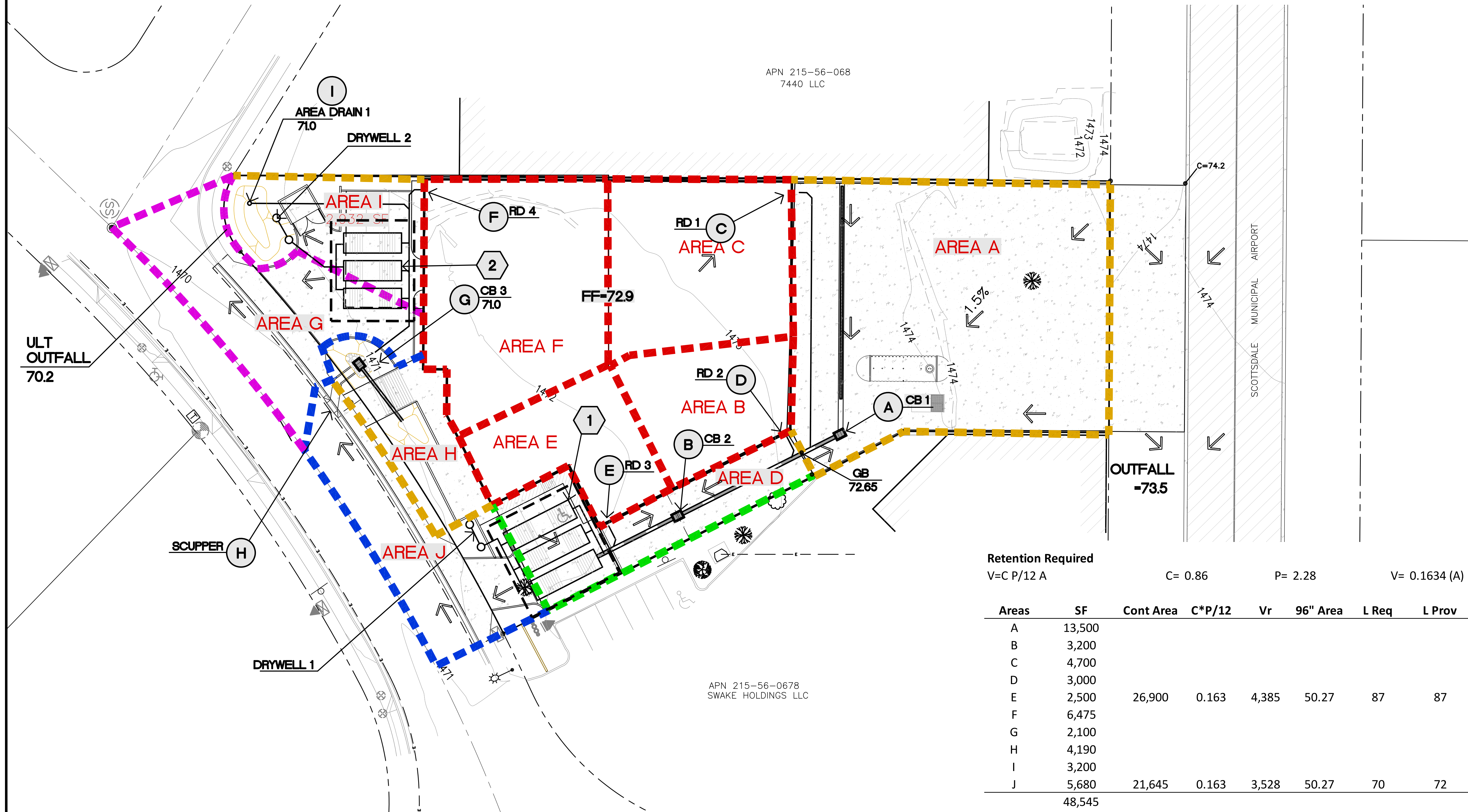
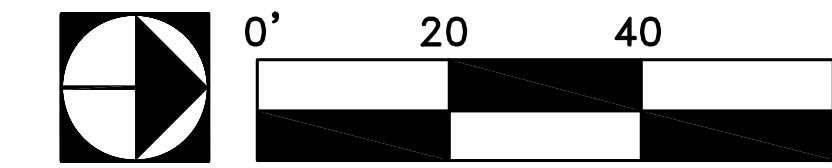
$V = C \cdot P / 12 \cdot A$
 $C=0.86$ $P=2.28$ $A=40,764$ SF $V=6,880$ NET
 $A=48,097$ SF $V=7,859$ GROSS

RETENTION PROVIDED

RETENTION PROVIDED BY UNDERGROUND CMP STORAGE TANKS
 DIAMETER = 96"
 CALCULATIONS SHOWN THIS PAGE BELOW RIGHT

LEGEND

- 2** DRAINAGE AREAS
 - D** CONCENTRATION POINTS
 - ← DRAINAGE DIRECTION
 - RD** ROOF DRAIN
 - AD** AREA DRAIN
 - CP** CONCENTRATION POINT
 - DW** DRYWELL
 - CB** CATCH BASIN
 - SC** SCUPPER
- PROPERTY LINE
 - - - RIGHT OF WAY
 - - - MONUMENT LINE
 - - - EASEMENT
 - E ELECTRIC
 - W WATER LINE
 - S SEWER LINE
 - R/W RIGHT OF WAY
 - PUE PUBLIC UTILITY EASEMENT
 - SVT SIGHT VISIBILITY TRIANGLE
- ⊙ FIRE HYDRANT
 - ⊗ WATER VALVE
 - ⊙ SEWER MANHOLE
 - ⊙ POWER POLE
 - ☆ LIGHT POLE
 - ⊙ PROPERTY CORNER
 - ⊙ BRASS CAP FLUSH
 - ⊙ BRASS CAP IN HANDHOLE
 - CL CENTERLINE
 - BSL BUILDING SETBACK LINE
 - DE DRAINAGE EASEMENT

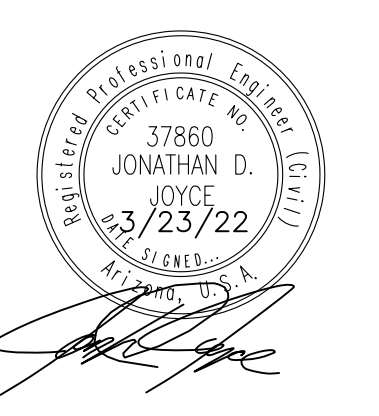


Retention Required
 $V = C \cdot P / 12 \cdot A$ $C = 0.86$ $P = 2.28$ $V = 0.1634 (A)$

Areas	SF	Cont Area	C*P/12	Vr	96" Area	L Req	L Prov
A	13,500						
B	3,200						
C	4,700						
D	3,000						
E	2,500	26,900	0.163	4,385	50.27	87	87
F	6,475						
G	2,100						
H	4,190						
I	3,200						
J	5,680	21,645	0.163	3,528	50.27	70	72
	48,545						



SET JET
 AT SCOTTSDALE AIRPORT
 PRELIMINARY GRADING EXHIBIT



DRAWING	SPECIFICS
PROJECT:	2110
DATE:	3/23/22
SCALE:	N/A
DRAWN BY:	STAFF
DESIGNED BY:	JDJ
CHECKED BY:	JDJ