

Water Basis of Design for Falcon Nest



Lot 5
Sun Airpark Corporate Center
Scottsdale, Arizona



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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 rsacks

DATE 1/27/2022

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Exhibits

A	Vicinity Map
B	Aerial Map
C	Zoning Map
D	WS ¼ Section Map
E	Fire Flow Test
F	Preliminary Utility Plan

SECTION 1: INTRODUCTION

1.1 Purpose

The purpose of this report is to provide a water demand analysis as required by the City of Scottsdale to support development of this 1.508 acre project site. This report will look at existing water pressure and supply to ensure that existing conditions can support the planned development.

1.2 Project Location

This project is located within the Scottsdale Airpark, in particular Lot 5 of the Sun Airpark Corporate Center. More specifically this project is located within a portion of Section 1, T3N, R4E of Maricopa County, Arizona, with an address of 15650 N 83rd Way, 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 northwest property line. See Exhibit 2 –Aerial Map

1.3 Project Development

The project site (hereafter referred to as the subject site) is currently Zoned Ind-1 (Planned Industrial Zoning District). The proposed use is consistent with the current zoning and no changes are being proposed. See Exhibit 3 – Zoning Map

This development consists of one 23,671 sf building, including 18,633 sf devoted to hanger space and 5,038 sf devoted to front lobby and office space. The remaining property will include parking, plane maneuvering area, drive aisles and landscape areas.

SECTION 2: EXISTING WATER SUPPLY

2.1 City of Scottsdale Services

The City of Scottsdale has an 8" ACP Water Main in 83rd Way. The site has an existing water meter and fire hydrant. This project will reuse said water meter and has included the existing fire hydrant within the below fire hydrant test. See Exhibit D.

2.2 Fire Hydrant Flow Test

A fire flow test was performed by EJ Flow Tests, LLC at 7:05 am on May 25, 2021. Water flow test was witnessed by the COS Water Resources Department. The results of said flow test are included as Exhibit E. The system shall be designed to maintain 30 psi min pressure at the hydrant under fire flow conditions, and a minimum of 1,500 gpm shall be supplied for commercial, industrial, and multi-family properties.

As shown within said Exhibit E the Pressure shown at Fire Hydrant F1 was 47.2 psi under fire flow condition with 3,293 gpm is available at 20 psi (includes a 10% safety factor)

SECTION 3: PROPOSED IMPROVEMENTS

3.1 Site Plan

A Utility Site Plan is presented as Exhibit F. As mentioned within Section 2.1 an existing water meter exists on site (Sta 5+23) The water meter will be salvage and relocated to be out of the driveway. The existing Building Service shall be removed with a new 1.5" Service installed.

Per the IFC 2015, a 18,900 sf Type IV Building requires 2,000 gpm for a flow duration of 2 hours.

3.2 Demand

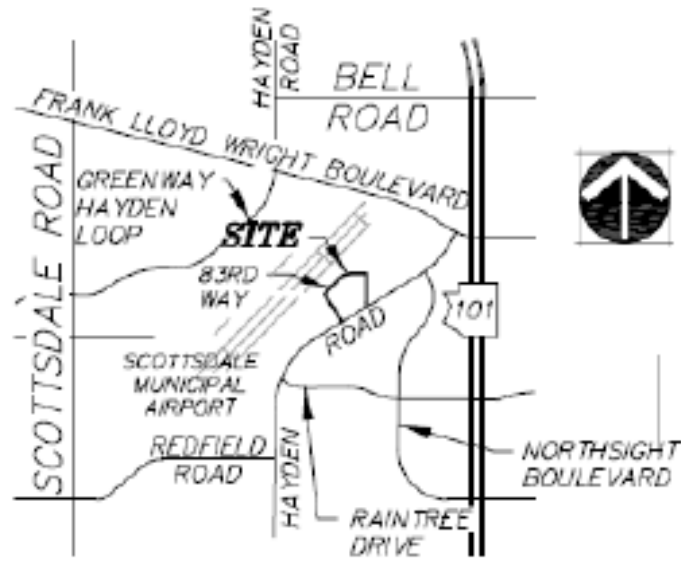
The storage facilities shall be fire sprinklered but besides fire will not require any additional water service. Conservatively applying 1.88 GPM per Arce (this site is 1.341 acres) yields 2.521 GPM.

SECTION 4: CONCLUSIONS

The existing COS water system is adequate to meet both the domestic and fire flow needs without additional improvements.

SECTION 5: REFERENCES

1. City of Scottsdale Revised Code
2. City of Scottsdale Design Standards and Policies Manual



VICINITY MAP

SCALE: NTS



EXHIBIT B

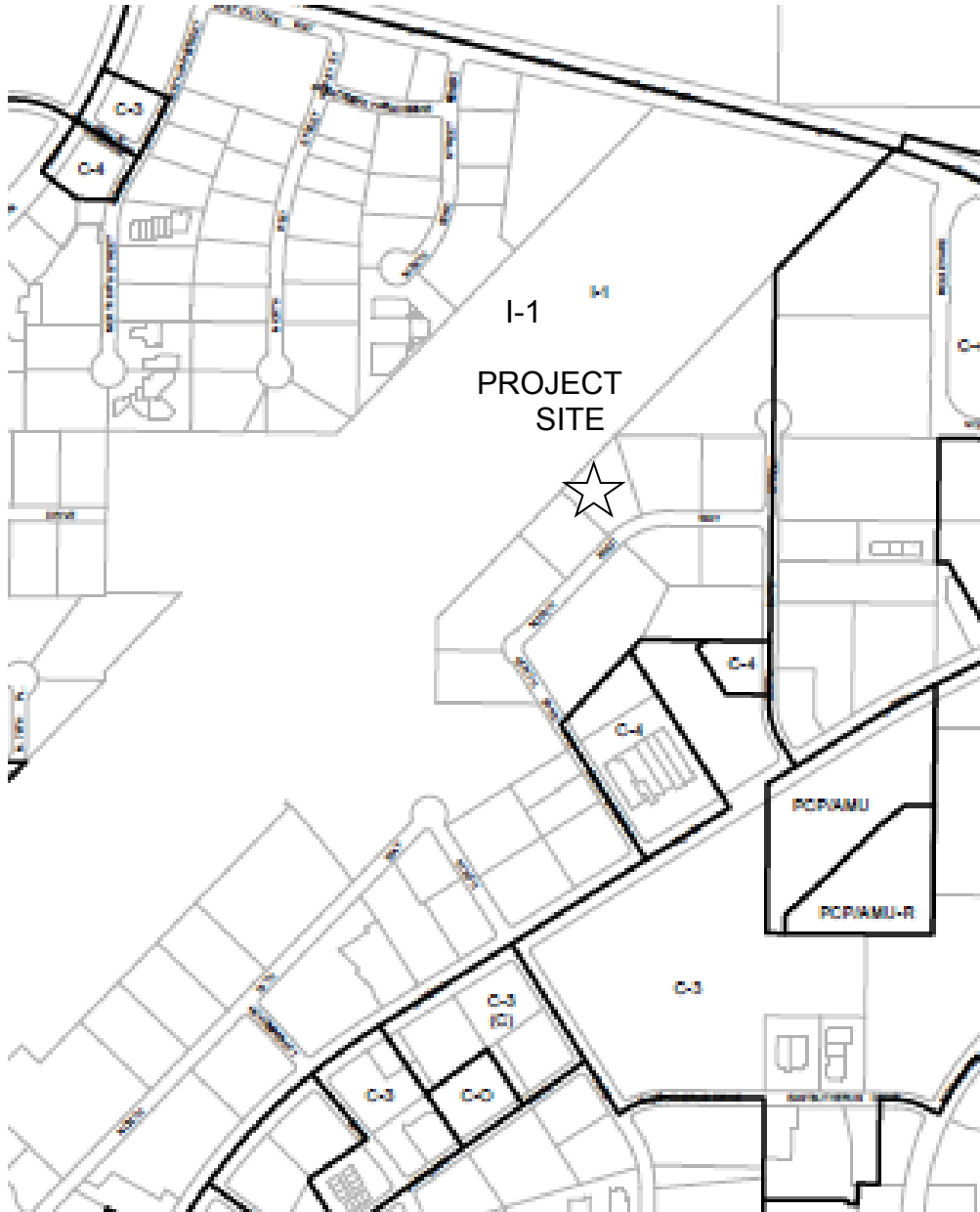


EXHIBIT C

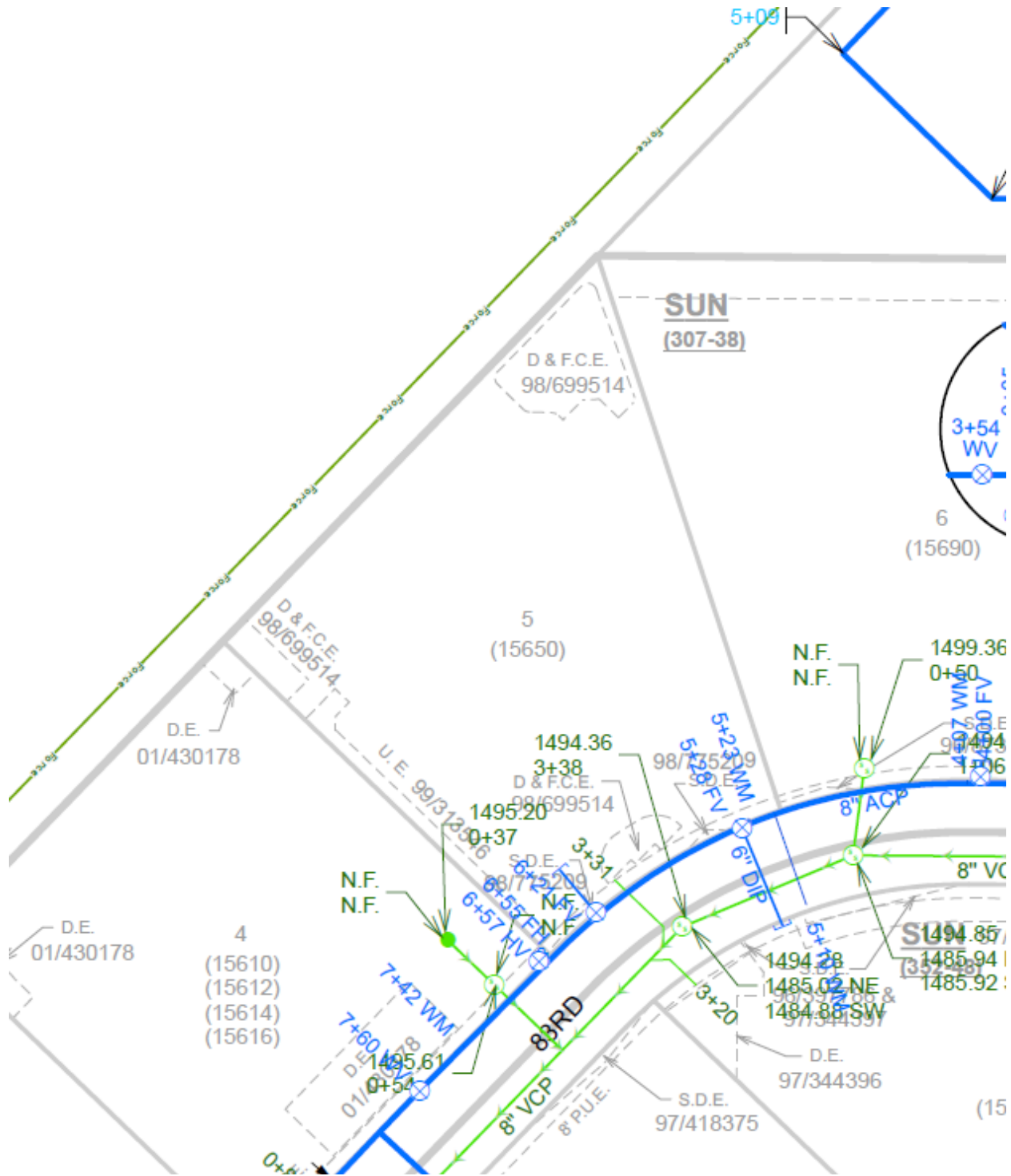


EXHIBIT D

Falcon Nest
Water Basis of Design Report

EXHIBIT E FIRE FLOW TEST



Flow Test Summary

Project Name: EJFT 21201 - Scottsdale Airpark
Project Address: 15650 N 83rd Way, Scottsdale, AZ 85260
Date of Flow Test: 2021-05-25
Time of Flow Test: 7:05 AM
Data Reliable Until: 2021-11-25
Conducted By: Eder C., Steven S. & Simon L. (EJ Flow Tests) 602.999.7637
Witnessed By: Christopher Mendez (City of Scottsdale) 602.908.9046
City Forces Contacted: City of Scottsdale (602.908.9046)
Permit Number: C65390

Raw Flow Test Data

Static Pressure: 68.0 PSI
Residual Pressure: 54.0 PSI
Flowing GPM: 1,839
GPM @ 20 PSI: 3,577

Data with a 10 % Safety Factor

Static Pressure: 61.2 PSI
Residual Pressure: 47.2 PSI
Flowing GPM: 1,839
GPM @ 20 PSI: 3,293

Hydrant F₁

Pitot Pressure (1): 30 PSI
Coefficient of Discharge (1): 0.9
Hydrant Orifice Diameter (1): 2.5 inches
Pitot Pressure (2): 30 PSI
Coefficient of Discharge (2): 0.9
Hydrant Orifice Diameter (2): 2.5 inches

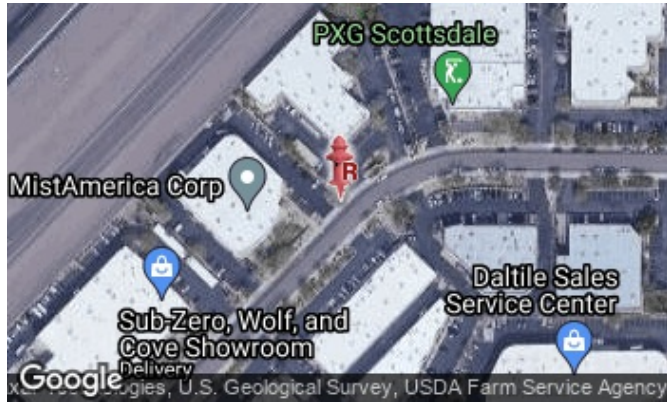


- Project Site
- Static-Residual Hydrant
- Flow Hydrant
- Distance Between F₁ and R 305 ft (measured linearly)
- Static-Residual Elevation 1498 ft (above sea level)
- Flow Hydrant (F₁) Elevation 1498 ft (above sea level)
- Elevation & distance values are approximate

EJ Flow Tests, LLC

21505 North 78th Ave. | Suite 130 | Peoria, Arizona 85382 | (602) 999-7637 | www.ejengineering.com
John L. Echeverri | NICET Level IV 78493 SME | C-16 FP Contractor ROC 271705 AZ | NFFA CFPS 1915
www.flowtestsummary.com

Static-Residual Hydrant



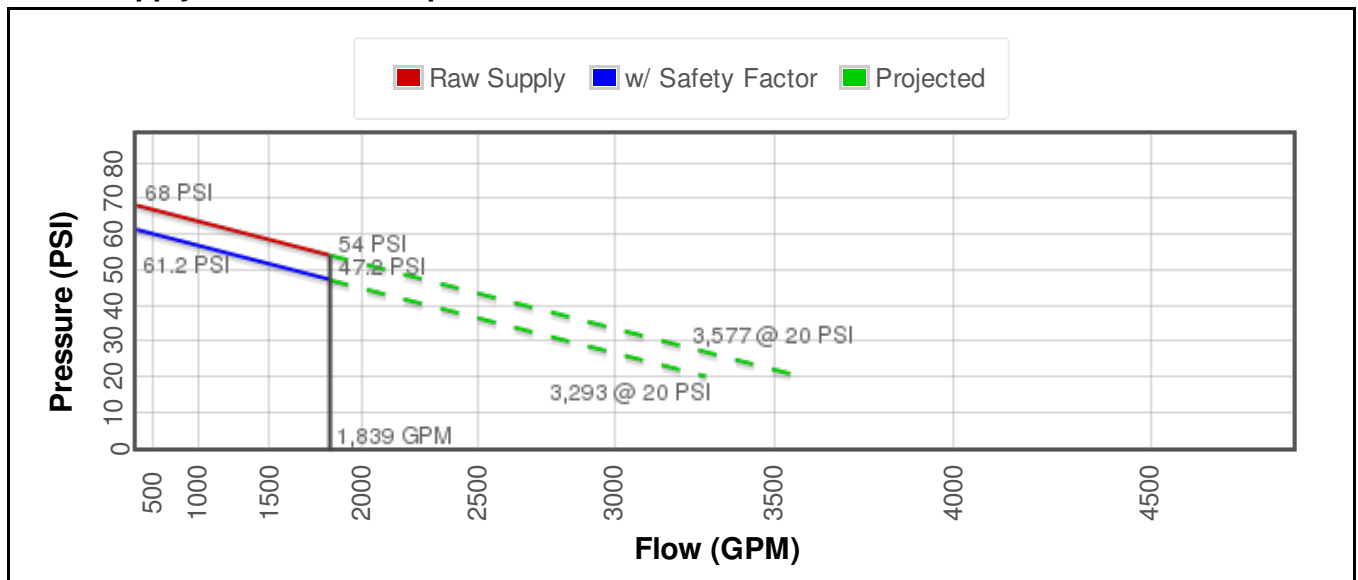
Flow Hydrant (only hydrant F1 shown for clarity)

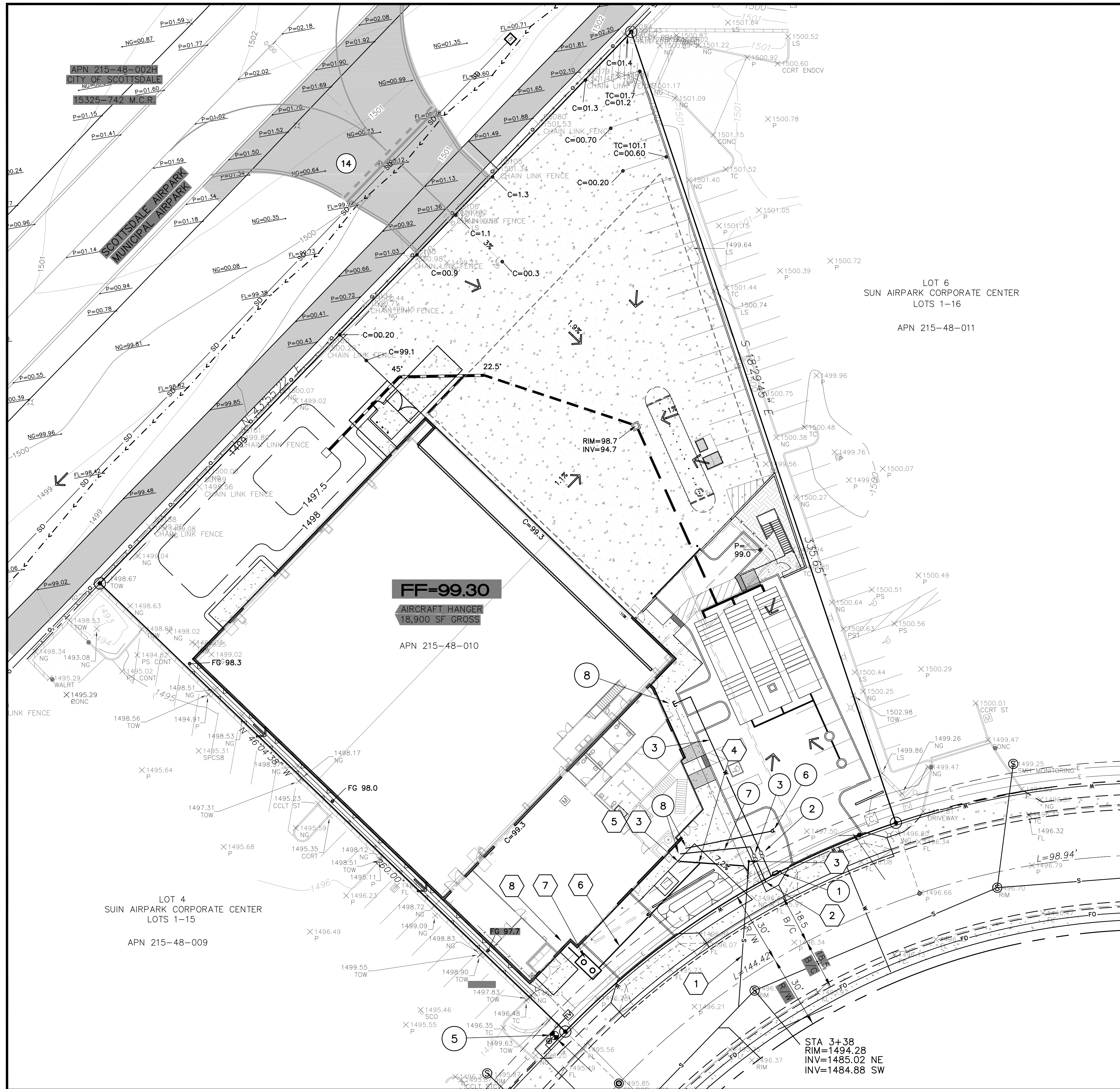


Approximate Project Site



Water Supply Curve N^{1.85} Graph





LEGEND

---	BOUNDARY LINE	⊙	FIRE HYDRANT
---	CENTER LINE OR MONUMENT LINE	⊠	HANDICAPPED SPACE
▨	CONCRETE SURFACE	⊕	LIGHT POLE
VC&G	VERTICAL CURB & GUTTER	⊗	SEWER MANHOLE
D/W	INDICATES DRIVEWAY (MEANS OF ACCESS)	⊙	STREET SIGN
---	WALL	⊕	TELECOMMUNICATIONS RISER
---	FENCE	⊕	CABLE TELEVISION RISER
⊕	GATE	⊕	WATER METER
---	UNDERGROUND ELECTRIC LINE	⊕	WATER VALVE
---	SEWER LINE	FL	FLOW LINE
---	UNDERGROUND TELECOMMUNICATIONS LINE	TC	TOP OF CURB
---	UNDERGROUND WATER LINE	NG	NATURAL GROUND
⊕	SPRINKLER HOOK-UP (FIRE DEPARTMENT)	P	PAVEMENT
⊕	AIR CONDITIONER	C	CONCRETE
⊕	BACK FLOW PREVENTOR	RIM	TOP OF RIM
⊕	DRYWELL OR CATCH BASIN	INV	INVERT ELEVATION
⊕	ELECTRIC BOX	FF	FINISHED FLOOR ELEVATION
⊕	ELECTRIC CABINET	HAG	HIGHEST ADJACENT GRADE
⊕	ELECTRIC GENERATOR		
⊕	ELECTRIC TRANSFORMER		

PRELIMINARY WATER NOTES

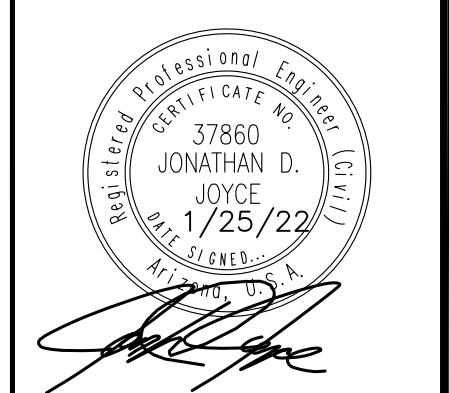
- X 1 INSTALL WATER METER
 - 2 INSTALL DOMESTIC BACKFLOW PREVENTOR
 - 3 INSTALL FIRE BACKFLOW PREVENTOR
 - 4 INSTALL 1.5" WATER SERVICE
 - 5 EXISTING FIRE HYDRANT
 - 6 EXISTING SIAMESE FIRE CONNECTION
 - 7 REMOVE EXISTING FIRE LINE AND INSTALL NEW FIRE LINE TO PROPOSED FIRE ROOM
 - 8 INSTALL 4" FIRE SPRINKLER LINE TO PROPOSED FIRE ROOM
 - 9 SEE ARCHITECTURAL PLANS FOR CONTINUATION
- EXISTING 8" ACP WATER LINE

PRELIMINARY SEWER NOTES

- X 1 EXISTING SEWER SERVICE
- 2 REMOVE EXISTING SEWER CLEANOUT, EXTEND SEWER SERVICE AND INSTALL WYE CONNECTION
- 3 INSTALL SEWER CLEANOUT
- 4 INSTALL 4" SEWER SERVICE TO WITHIN 5' FEET OF BUILDING
- 5 INSTALL SEWER CLEANOUT SEE ARCHITECTURE PLANS FOR BUILDING CONNECTION CONTINUATION
- 6 INSTALL SEWER LINE FROM OIL/WATER SEPERATOR TO PROPOSED SEWER
- 7 INSTALL OIL/WATER SEPERATOR
- 8 SEE ARCHITECTURE PLANS FOR SEWER CONTINUATION



FALCON NEST
SCOTTSDALE MUNICIPAL AIRPARK
PRELIMINARY WATER + SEWER EXHIBIT



DRAWING SPECIFICS	
PROJECT:	2010
DATE:	1/25/22
SCALE:	N/A
DRAWN BY:	STAFF
DESIGNED BY:	JDJ
CHECKED BY:	JDJ