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at your service

Case #: 11-DR-2024

Review Cycle: 4

Status: Accepted

Reviewed By: VM

Date:05/09/2025

DRAINAGE REPORT
FOR
FLEXJET
15115 N. AIRPORT DRIVE
SCOTTSDALE, ARIZONA 85260

PREPARED FOR:

Larson Associates Architects, Inc.
3807 N. 24th Street Suite 100
Phoenix, Arizona 85016

Job Number 21-028
April 23, 2024
Rev: March 12, 2025
Rev: April 17, 2025

INTRODUCTION

This drainage statement is being prepared in conjunction with the Flexjet project located at 15115 N. Airport Drive in the Scottsdale Airpark. It is located in the Southeast Quarter of Section 2, Township 3 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The project is leasing 1.94 acres from the City of Scottsdale at the Scottsdale Airport. The purpose of this drainage statement is to present the drainage impacts that this project will have on the existing site.

EXISTING CONDITIONS

This site is located within Scottsdale Airpark south of the Greenway Hayden Loop. The property is owned by the City of Scottsdale and will be leased by the developer.

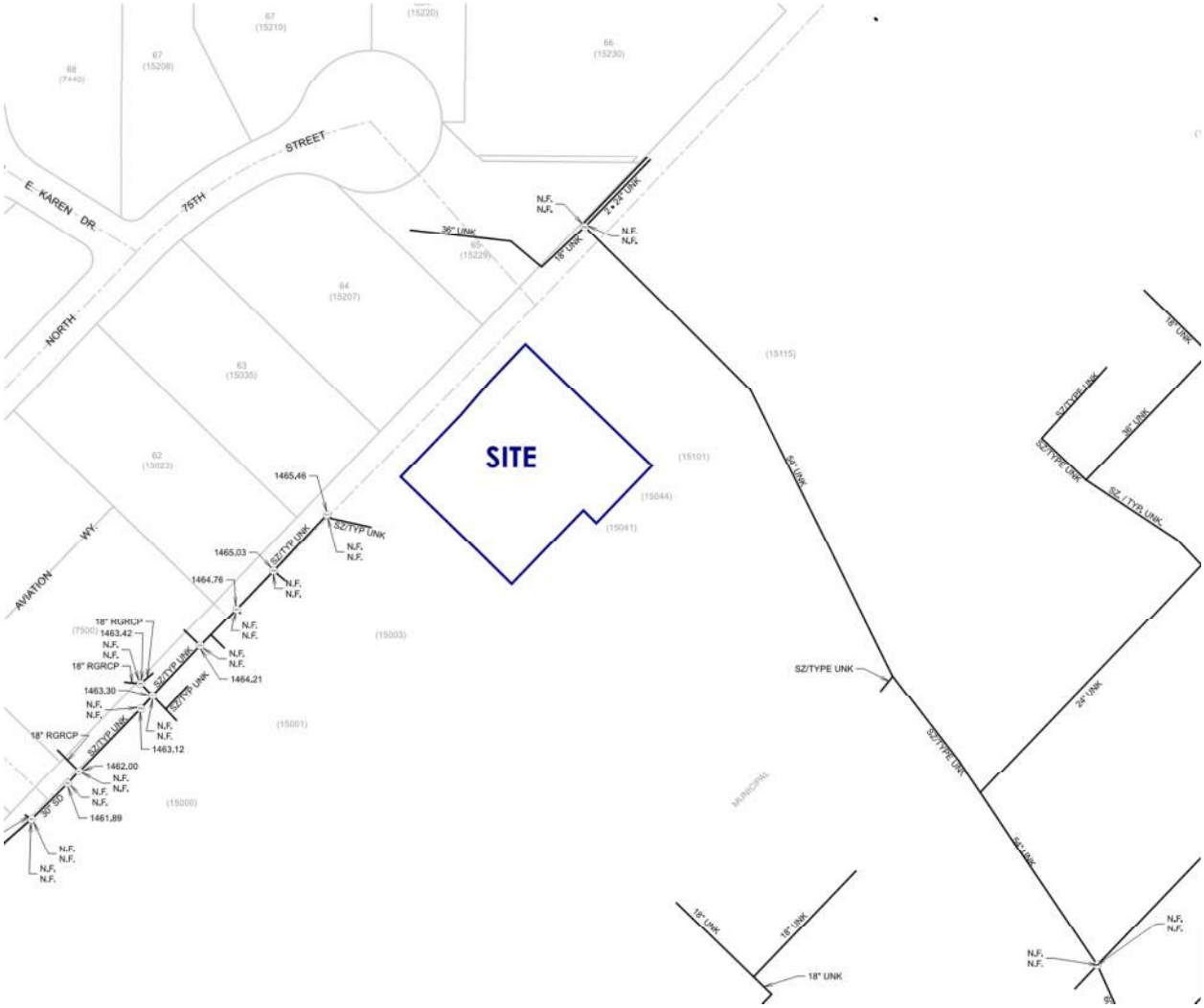
Based on the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Map Number 04013C1760L dated October 16th, 2013, this site is located in flood zone "Shaded X". FEMA defines flood zone "Shaded X" as, *"Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood."*

The lot is currently developed as a private aviation terminal. The existing improvements are being demolished to allow for the new construction project. See vicinity map below:

The general topography of the area slopes from northeast to southwest. As this area developed over time, the offsite runoff generated upstream of this parcel and historically affected this property was partially retained by prior commercial developments, and/or diverted by public streets, and the Loop 101 freeway. See USGS quadrangle map below:

In addition, the Central Arizona Project canal is located approximately 4500 feet north of the site. The canal effectively acts as a levee from the historic runoff generated from the McDowell Mountains. Based on all of this information, it is a safe assertion that this project is not adversely affected from offsite stormwater runoff.

Based on the current topographic survey of the parcel, all of the onsite runoff is directed by surface flows into the airport proper. Existing catch basins are located southeasterly of the site the collect the surface runoff and directs it to the airport's storm drain system. Ultimately, the runoff ends up in the stormwater basin near the southwest corner of the airport property. See the city's drainage quarter section map below for details:



Based on the existing land use of the parcel, the runoff coefficient for the 100-year storm event was calculated as 0.81 based on the following percentages:

CATEGORY	AREA (SF)	"C" FACTOR
HARDSCAPE	65,299	0.90
LANDSCAPE	19,249	0.50
TOTAL	84,548	0.81

Assuming a 5 minute time of concentration, the peak 100-year discharge from the site was calculated as 12.1-cfs.

PROPOSED CONDITIONS

The developer of Flexjet is leasing the underlying parcel from the City of Scottsdale. The existing buildings and parking lot are being demolished. A new building will be constructed for use as a plane hangar and passenger terminal, along with a new underground parking garage will be constructed within the leased limits. See attached concept grading plan.

RETENTION REQUIREMENTS

Based on information from Scottsdale Airport and information received at the pre-application meeting, since the site is considered part of the airport and historically has drained into the airport's drainage infrastructure, no retention facilities are required for the project.

Based on the proposed grading plan and land uses, the 100-year runoff coefficient for the 100-year storm event was calculated as 0.86 based on the following percentages:

CATEGORY	AREA (SF)	"C" FACTOR
HARDSCAPE	76,514	0.90
LANDSCAPE	8,034	0.50
TOTAL	84,548	0.86

65% of the proposed site will drain directly into the airport. Assuming a 5 minute time of concentration, the peak 100-year discharge into the airport was calculated as 8.3-cfs. The remaining 35% of the site will drain into Airport Drive and enter the existing storm drain system via curb inlets. The 100-year discharge was calculated as 4.5-cfs.

The project has an underground parking garage. The ramp to the subsurface lot is covered, and a grade break at the top of the ramp minimizes the amount of rainwater flowing below grade. The stormwater runoff will be limited to drips from vehicles' undercarriage and tires, and rain that is wind driven into the area of the access ramp. Any stormwater that flows to the parking garage will be collected in a trench drain and pumped into a sand/grit interceptor, and discharged into the city's sewer system. These details are included on the plumbing drawings.

A trench drain will be installed on the easterly wall of the hangar to manage the roof drainage from the east half of the new hangar and the west half of the existing hangar. Approximately 22,950 square feet of roof area will ultimately drain to the new trench drain. Assuming a 5-minute time of concentration, the peak 100-year discharge into the drain is 3.6 cfs. Given the site constraints, the

trench was designed to convey the full runoff from the area within the depth of the trench. This will insure the existing SES equipment located between the two hangars will not be impacted by the runoff. The trench will be cast in place and have an effective width of 2-foot. The minimum trench depth is 6" and will slope to the southeast at a 1% slope. Since the trench bottom will not be able to daylight to grade at the airport apron, an 18" storm drain will convey the runoff to a bubble-up manhole located near the lease line. The pipe will have a minimum of 4-feet of cover, and the manhole grate will be traffic rated. The manhole will have a 3-foot sump below the incoming pipe invert to collect debris and trash from the system. The sump will be cleaned on an annual basis along with the trench drain to insure it maintains its operational efficiency. Based on the 18" storm drain size, the calculated highwater elevation for the runoff at the southerly end of the trench drain was calculated at 68.34 placing it approximately 6" below the grate elevation and 7" below the existing SES pad.

The new roof drain outlets for the project are located on the architectural site plan. A copy of the site plan is also included in the Appendix of this report.

Final drainage details will be included with the final construction documents.

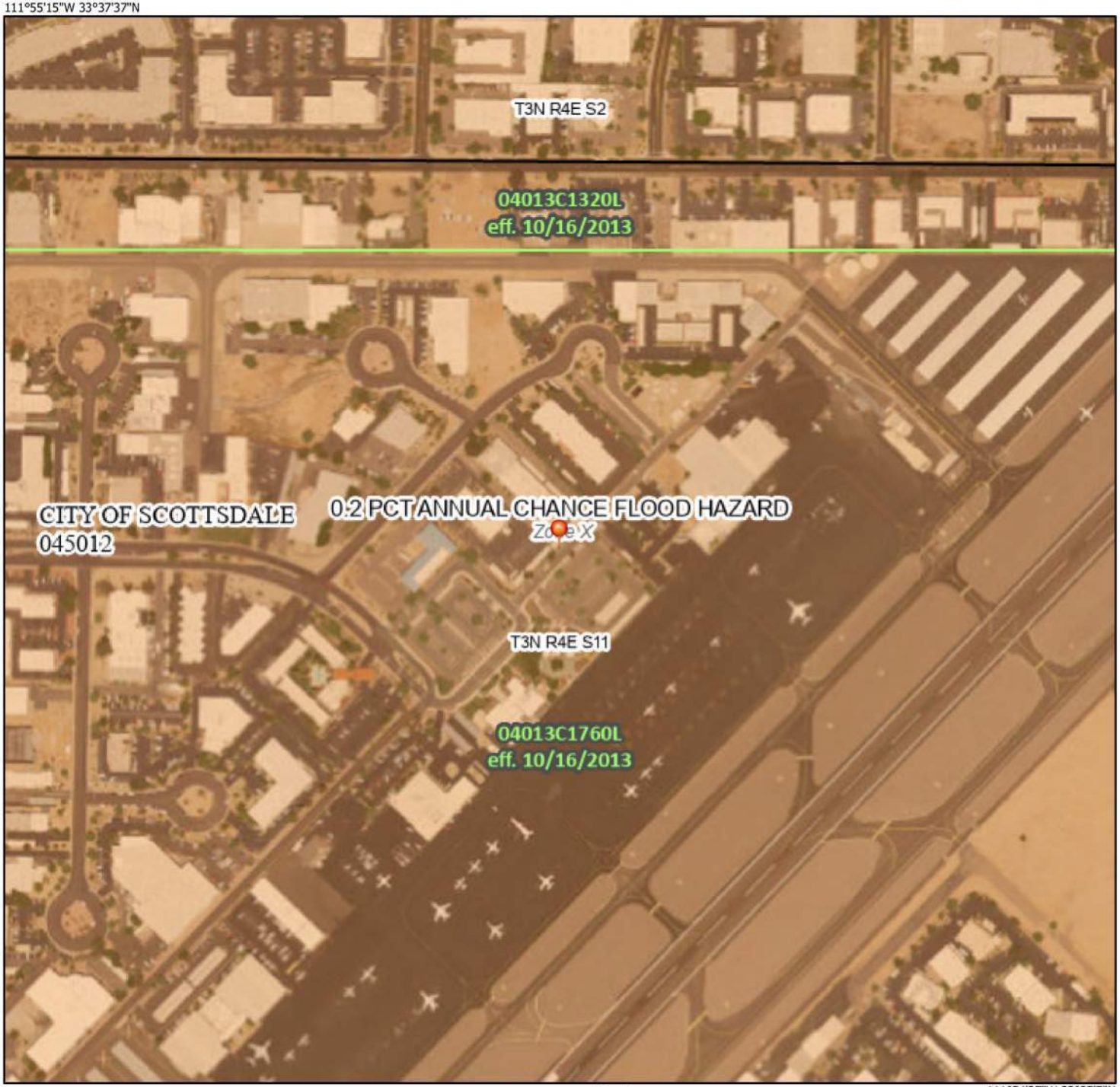
Since the site is disturbing in excess of 1-acre, a SWPPP plan and report has been prepared with the demolition drawings, and a Notice of Intent is on file with ADEQ (AZCON 107823).

APPENDIX

National Flood Hazard Layer FIRMette

FEMA

111°55'15"W 33°37'37"N



111°54'37"W 33°37'7"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

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*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

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

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/22/2021 at 6:41 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, USA*
Latitude: 33.6293°, Longitude: -111.9058°
Elevation: 1497 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**2.32** (1.92-2.83)	**3.02** (2.53-3.70)	**4.07** (3.37-4.97)	**4.88** (4.03-5.94)	**5.98** (4.86-7.25)	**6.82** (5.47-8.18)	**7.68** (6.05-9.22)	**8.53** (6.61-10.2)	**9.70** (7.33-11.6)	**10.6** (7.84-12.7)
10-min	**1.76** (1.46-2.15)	**2.30** (1.93-2.81)	**3.10** (2.57-3.78)	**3.72** (3.07-4.52)	**4.55** (3.70-5.51)	**5.18** (4.16-6.23)	**5.84** (4.61-7.01)	**6.49** (5.03-7.78)	**7.38** (5.58-8.86)	**8.05** (5.96-9.67)
15-min	**1.46** (1.21-1.78)	**1.90** (1.59-2.33)	**2.56** (2.12-3.12)	**3.07** (2.54-3.74)	**3.76** (3.06-4.56)	**4.28** (3.44-5.15)	**4.83** (3.81-5.79)	**5.36** (4.16-6.42)	**6.10** (4.61-7.32)	**6.65** (4.93-7.99)
30-min	**0.982** (0.814-1.20)	**1.28** (1.07-1.57)	**1.73** (1.43-2.10)	**2.07** (1.71-2.52)	**2.53** (2.06-3.07)	**2.89** (2.32-3.47)	**3.25** (2.56-3.90)	**3.61** (2.80-4.33)	**4.11** (3.10-4.93)	**4.48** (3.32-5.38)
60-min	**0.607** (0.504-0.742)	**0.793** (0.663-0.969)	**1.07** (0.885-1.30)	**1.28** (1.06-1.56)	**1.57** (1.27-1.90)	**1.79** (1.43-2.15)	**2.01** (1.59-2.41)	**2.24** (1.73-2.68)	**2.54** (1.92-3.05)	**2.77** (2.05-3.33)
2-hr	**0.355** (0.298-0.424)	**0.459** (0.388-0.549)	**0.611** (0.513-0.726)	**0.726** (0.604-0.863)	**0.886** (0.730-1.05)	**1.00** (0.817-1.18)	**1.13** (0.902-1.33)	**1.25** (0.986-1.47)	**1.42** (1.09-1.67)	**1.55** (1.17-1.83)
3-hr	**0.262** (0.221-0.321)	**0.336** (0.284-0.413)	**0.438** (0.369-0.536)	**0.520** (0.432-0.632)	**0.634** (0.520-0.765)	**0.725** (0.587-0.870)	**0.819** (0.651-0.982)	**0.918** (0.717-1.10)	**1.05** (0.798-1.26)	**1.16** (0.860-1.39)
6-hr	**0.158** (0.136-0.188)	**0.200** (0.171-0.238)	**0.255** (0.217-0.301)	**0.299** (0.253-0.352)	**0.359** (0.299-0.421)	**0.406** (0.333-0.474)	**0.454** (0.368-0.528)	**0.504** (0.401-0.589)	**0.572** (0.442-0.666)	**0.625** (0.472-0.729)
12-hr	**0.088** (0.076-0.104)	**0.111** (0.095-0.131)	**0.140** (0.120-0.164)	**0.163** (0.139-0.191)	**0.194** (0.163-0.227)	**0.217** (0.181-0.253)	**0.242** (0.198-0.281)	**0.267** (0.216-0.310)	**0.299** (0.236-0.350)	**0.325** (0.252-0.382)
24-hr	**0.051** (0.045-0.060)	**0.065** (0.057-0.076)	**0.084** (0.073-0.098)	**0.099** (0.086-0.115)	**0.121** (0.104-0.140)	**0.137** (0.117-0.158)	**0.155** (0.131-0.179)	**0.173** (0.144-0.200)	**0.198** (0.162-0.229)	**0.218** (0.176-0.254)
2-day	**0.027** (0.024-0.032)	**0.035** (0.030-0.041)	**0.046** (0.040-0.053)	**0.055** (0.047-0.063)	**0.067** (0.057-0.077)	**0.076** (0.064-0.088)	**0.086** (0.072-0.100)	**0.097** (0.080-0.112)	**0.111** (0.091-0.129)	**0.123** (0.099-0.143)
3-day	**0.019** (0.017-0.023)	**0.025** (0.022-0.029)	**0.033** (0.029-0.038)	**0.040** (0.034-0.045)	**0.049** (0.042-0.056)	**0.056** (0.048-0.064)	**0.064** (0.054-0.073)	**0.072** (0.061-0.083)	**0.084** (0.069-0.097)	**0.093** (0.076-0.108)
4-day	**0.016** (0.014-0.018)	**0.020** (0.018-0.023)	**0.027** (0.023-0.030)	**0.032** (0.028-0.037)	**0.040** (0.035-0.045)	**0.046** (0.040-0.052)	**0.053** (0.045-0.060)	**0.060** (0.051-0.068)	**0.070** (0.058-0.080)	**0.078** (0.065-0.090)
7-day	**0.010** (0.009-0.011)	**0.013** (0.011-0.015)	**0.017** (0.015-0.020)	**0.021** (0.018-0.024)	**0.026** (0.022-0.029)	**0.030** (0.025-0.034)	**0.034** (0.029-0.039)	**0.039** (0.033-0.044)	**0.045** (0.038-0.052)	**0.051** (0.042-0.059)
10-day	**0.007** (0.006-0.008)	**0.010** (0.008-0.011)	**0.013** (0.011-0.015)	**0.015** (0.013-0.018)	**0.019** (0.017-0.022)	**0.022** (0.019-0.025)	**0.025** (0.022-0.029)	**0.029** (0.024-0.033)	**0.034** (0.028-0.039)	**0.037** (0.031-0.043)
20-day	**0.004** (0.004-0.005)	**0.006** (0.005-0.007)	**0.008** (0.007-0.009)	**0.009** (0.008-0.011)	**0.011** (0.010-0.013)	**0.013** (0.011-0.015)	**0.015** (0.013-0.017)	**0.016** (0.014-0.019)	**0.019** (0.016-0.022)	**0.020** (0.017-0.024)
30-day	**0.003** (0.003-0.004)	**0.004** (0.004-0.005)	**0.006** (0.005-0.007)	**0.007** (0.006-0.008)	**0.009** (0.008-0.010)	**0.010** (0.009-0.011)	**0.011** (0.010-0.013)	**0.013** (0.011-0.014)	**0.014** (0.012-0.016)	**0.016** (0.013-0.018)
45-day	**0.002** (0.002-0.003)	**0.003** (0.003-0.004)	**0.005** (0.004-0.005)	**0.005** (0.005-0.006)	**0.007** (0.006-0.008)	**0.008** (0.007-0.009)	**0.009** (0.007-0.010)	**0.009** (0.008-0.011)	**0.011** (0.009-0.012)	**0.012** (0.010-0.013)
60-day	**0.002** (0.002-0.002)	**0.003** (0.002-0.003)	**0.004** (0.003-0.004)	**0.004** (0.004-0.005)	**0.005** (0.005-0.006)	**0.006** (0.005-0.007)	**0.007** (0.006-0.008)	**0.008** (0.006-0.009)	**0.009** (0.007-0.010)	**0.009** (0.008-0.011)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

Worksheet for Trench Drain

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Bottom Width	2.00 ft
Discharge	3.60 cfs

Results	
Normal Depth	4.5 in
Flow Area	0.7 ft²
Wetted Perimeter	2.75 ft
Hydraulic Radius	3.3 in
Top Width	2.00 ft
Critical Depth	5.6 in
Critical Slope	0.005 ft/ft
Velocity	4.80 ft/s
Velocity Head	0.36 ft
Specific Energy	0.73 ft
Froude Number	1.383
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.00 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	4.5 in
Critical Depth	5.6 in
Channel Slope	0.010 ft/ft
Critical Slope	0.005 ft/ft

Rating Table for Trench Drain

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Bottom Width	2.00 ft
Discharge	3.60 cfs

Discharge (cfs)	Normal Depth (in)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)
0.00	(N/A)	(N/A)	(N/A)	(N/A)	2.00
0.10	0.5	1.28	0.1	2.08	2.00
0.20	0.7	1.68	0.1	2.12	2.00
0.30	0.9	1.96	0.2	2.15	2.00
0.40	1.1	2.19	0.2	2.18	2.00
0.50	1.3	2.38	0.2	2.21	2.00
0.60	1.4	2.55	0.2	2.24	2.00
0.70	1.6	2.70	0.3	2.26	2.00
0.80	1.7	2.84	0.3	2.28	2.00
0.90	1.8	2.96	0.3	2.30	2.00
1.00	1.9	3.08	0.3	2.32	2.00
1.10	2.1	3.19	0.3	2.35	2.00
1.20	2.2	3.29	0.4	2.36	2.00
1.30	2.3	3.38	0.4	2.38	2.00
1.40	2.4	3.48	0.4	2.40	2.00
1.50	2.5	3.56	0.4	2.42	2.00
1.60	2.6	3.64	0.4	2.44	2.00
1.70	2.7	3.72	0.5	2.46	2.00
1.80	2.8	3.80	0.5	2.47	2.00
1.90	2.9	3.87	0.5	2.49	2.00
2.00	3.0	3.94	0.5	2.51	2.00
2.10	3.1	4.01	0.5	2.52	2.00
2.20	3.2	4.07	0.5	2.54	2.00
2.30	3.3	4.14	0.6	2.56	2.00
2.40	3.4	4.19	0.6	2.57	2.00
2.50	3.5	4.26	0.6	2.59	2.00
2.60	3.6	4.31	0.6	2.60	2.00
2.70	3.7	4.37	0.6	2.62	2.00
2.80	3.8	4.42	0.6	2.63	2.00
2.90	3.9	4.47	0.6	2.65	2.00
3.00	4.0	4.52	0.7	2.66	2.00
3.10	4.1	4.57	0.7	2.68	2.00
3.20	4.2	4.62	0.7	2.69	2.00
3.30	4.2	4.67	0.7	2.71	2.00
3.40	4.3	4.72	0.7	2.72	2.00
3.50	4.4	4.76	0.7	2.74	2.00
3.60	4.5	4.80	0.7	2.75	2.00
3.70	4.6	4.85	0.8	2.76	2.00

Rating Table for Trench Drain

Discharge (cfs)	Normal Depth (in)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)
3.80	4.7	4.89	0.8	2.78	2.00
3.90	4.7	4.93	0.8	2.79	2.00
4.00	4.8	4.97	0.8	2.80	2.00
4.10	4.9	5.01	0.8	2.82	2.00
4.20	5.0	5.05	0.8	2.83	2.00
4.30	5.1	5.09	0.8	2.85	2.00
4.40	5.2	5.12	0.9	2.86	2.00
4.50	5.2	5.17	0.9	2.87	2.00
4.60	5.3	5.20	0.9	2.88	2.00
4.70	5.4	5.23	0.9	2.90	2.00
4.80	5.5	5.27	0.9	2.91	2.00
4.90	5.5	5.30	0.9	2.92	2.00
5.00	5.6	5.34	0.9	2.94	2.00

Worksheet for 18" SD

Project Description	
Friction Method	Manning Formula
Solve For	Elevation at 1

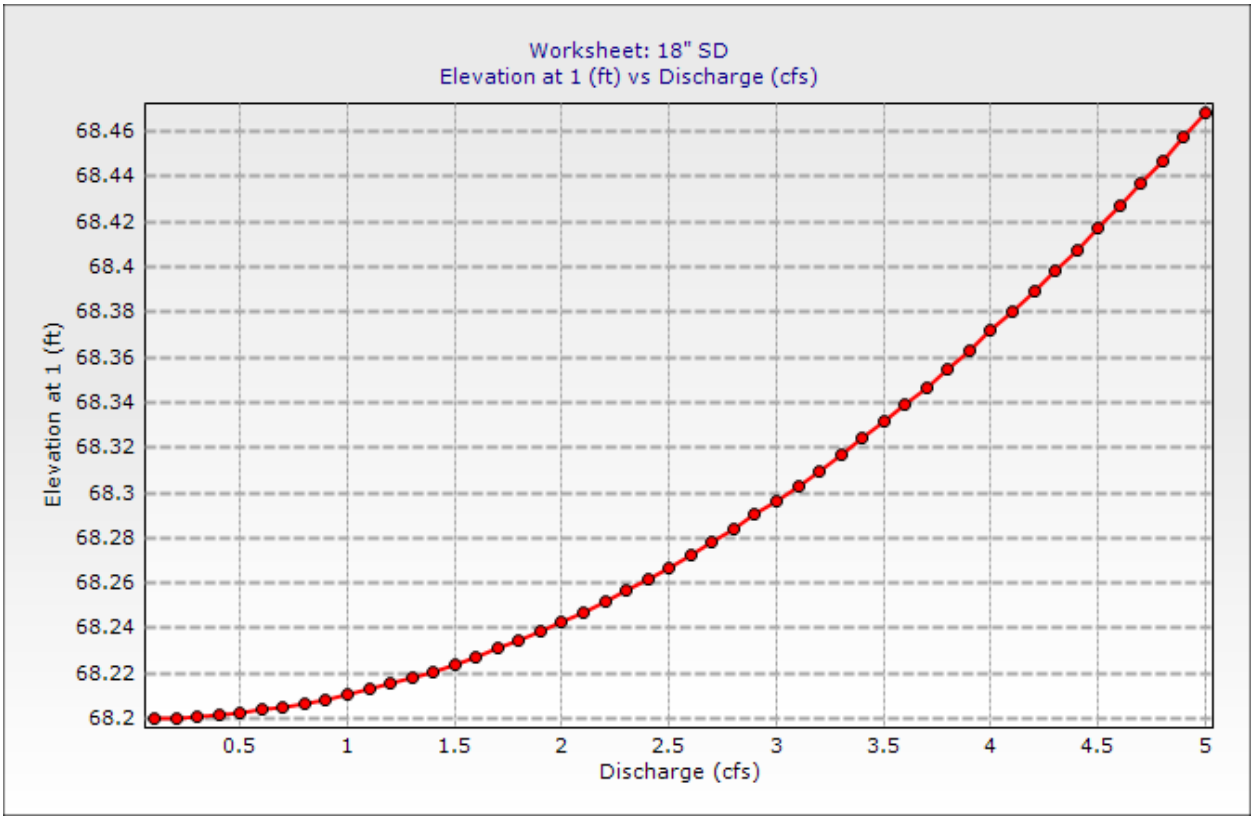
Input Data	
Pressure 1	0 psi
Pressure 2	0 psi
Elevation 2	68.20 ft
Length	50.00 ft
Roughness Coefficient	0.020
Diameter	18.0 in
Discharge	3.60 cfs

Results	
Elevation 1	68.34 ft
Headloss	0.14 ft
Energy Grade 1	68.40 ft
Energy Grade 2	68.26 ft
Hydraulic Grade 1	68.34 ft
Hydraulic Grade 2	68.20 ft
Flow Area	1.8 ft^2
Wetted Perimeter	4.71 ft
Velocity	2.04 ft/s
Velocity Head	0.06 ft
Friction Slope	0.003 ft/ft

Rating Curve for 18" SD

Project Description	
Friction Method	Manning Formula
Solve For	Elevation at 1

Input Data	
Pressure 1	0 psi
Pressure 2	0 psi
Elevation 2	68.20 ft
Length	50.00 ft
Roughness Coefficient	0.020
Diameter	18.0 in
Discharge	3.60 cfs



FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

COMMUNITY NUMBER	PANEL # PANEL DATE	SUFFIX	DATE OF FIRM (INDEX DATE)	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
045012	1760 10/16/2013	L	7/20/2021	X	N/A

ENGINEER'S FINISHED FLOOR CERTIFICATION:

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.

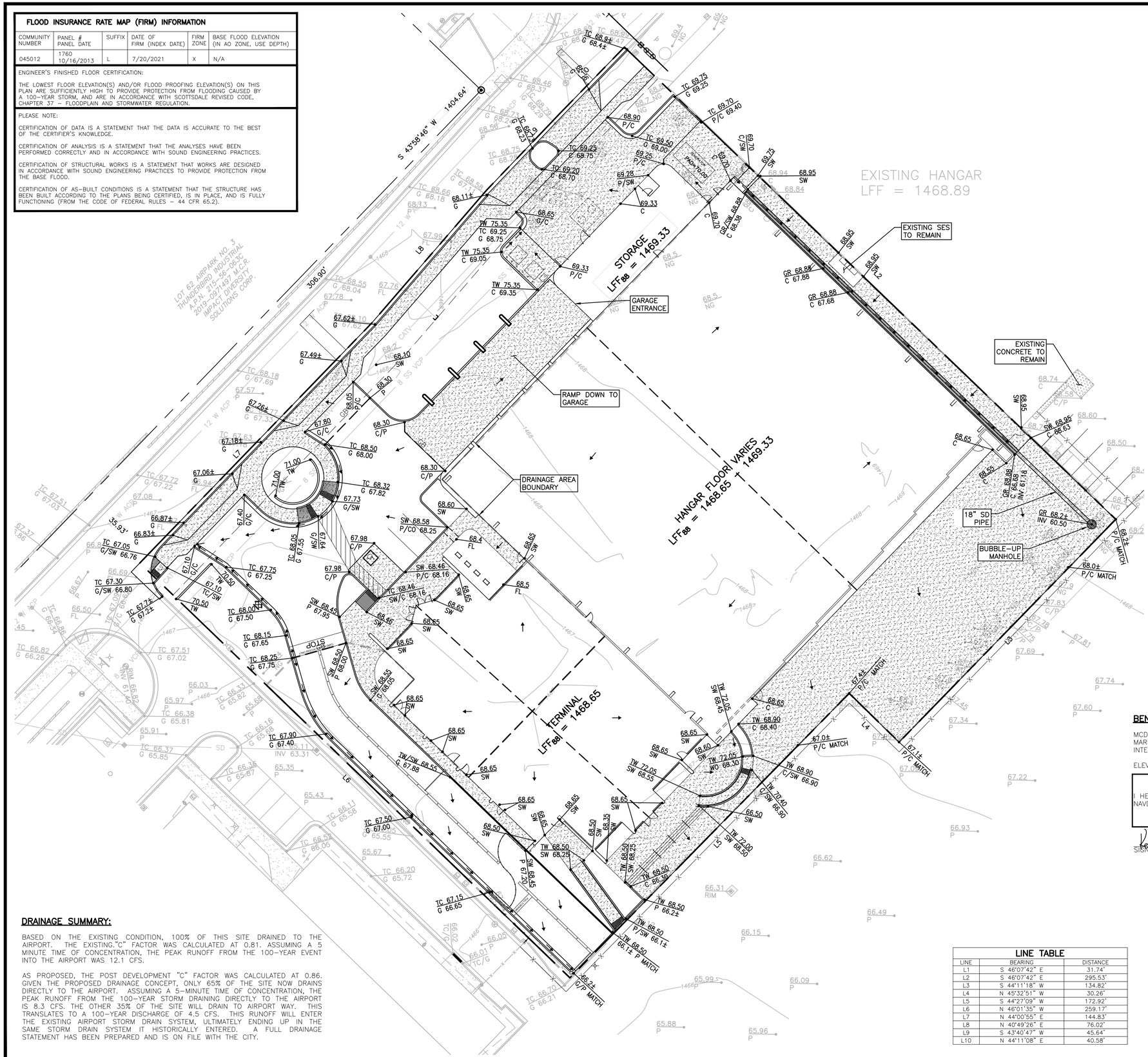
PLEASE NOTE:

CERTIFICATION OF DATA IS A STATEMENT THAT THE DATA IS ACCURATE TO THE BEST OF THE CERTIFIER'S KNOWLEDGE.

CERTIFICATION OF ANALYSIS IS A STATEMENT THAT THE ANALYSES HAVE BEEN PERFORMED CORRECTLY AND IN ACCORDANCE WITH SOUND ENGINEERING PRACTICES.

CERTIFICATION OF STRUCTURAL WORKS IS A STATEMENT THAT WORKS ARE DESIGNED IN ACCORDANCE WITH SOUND ENGINEERING PRACTICES TO PROVIDE PROTECTION FROM THE BASE FLOOD.

CERTIFICATION OF AS-BUILT CONDITIONS IS A STATEMENT THAT THE STRUCTURE HAS BEEN BUILT ACCORDING TO THE PLANS BEING CERTIFIED, IS IN PLACE, AND IS FULLY FUNCTIONING (FROM THE CODE OF FEDERAL RULES – 44 CFR 65.2).



DRAINAGE SUMMARY:

BASED ON THE EXISTING CONDITION, 100% OF THIS SITE DRAINED TO THE AIRPORT. THE EXISTING."C" FACTOR WAS CALCULATED AT 0.81. ASSUMING A 5 MINUTE TIME OF CONCENTRATION, THE PEAK RUNOFF FROM THE 100-YEAR EVENT INTO THE AIRPORT WAS 12.1 CFS.

AS PROPOSED, THE POST DEVELOPMENT "C" FACTOR WAS CALCULATED AT 0.86. GIVEN THE PROPOSED DRAINAGE CONCEPT, ONLY 65% OF THE SITE NOW DRAINS DIRECTLY TO THE AIRPORT. ASSUMING A 5-MINUTE TIME OF CONCENTRATION, THE PEAK RUNOFF FROM THE 100-YEAR STORM DRAINING DIRECTLY TO THE AIRPORT IS 8.3 CFS. THE OTHER 35% OF THE SITE WILL DRAIN TO AIRPORT WAY. THIS TRANSLATES TO A 100-YEAR DISCHARGE OF 4.5 CFS. THIS RUNOFF WILL ENTER THE EXISTING AIRPORT STORM DRAIN SYSTEM, ULTIMATELY ENDING UP IN THE SAME STORM DRAIN SYSTEM IT HISTORICALLY ENTERED. A FULL DRAINAGE STATEMENT HAS BEEN PREPARED AND IS ON FILE WITH THE CITY.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 46°07'42" E	31.74'
L2	S 46°07'42" E	295.53'
L3	S 44°11'18" W	134.82'
L4	N 45°32'51" W	30.26'
L5	S 44°27'09" W	172.92'
L6	N 46°01'35" W	259.17'
L7	N 44°00'55" E	144.83'
L8	N 40°49'26" E	76.02'
L9	S 43°40'47" W	45.64'
L10	N 44°11'08" E	40.58'

SCALE: 1"=20'

ARCHITECT

LARSON ASSOCIATES ARCHITECTS, INC.
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PHOENIX, ARIZONA 85016
TELEPHONE: 602-955-9929
ATTN: JIM LARSON

CIVIL ENGINEER

ZELL COMPANY, L.L.C.
PO BOX 2191
LITCHFIELD PARK, ARIZONA 85340
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ATTN: KEN ZELL, P.E.

OWNER

CITY OF SCOTTSDALE
7447 E. INDIAN SCHOOL RD., #205
SCOTTSDALE, ARIZONA 85251
TELEPHONE:
ATTN:

PROJECT ADDRESS

15115 N. AIRPORT DRIVE
SCOTTSDALE, ARIZONA 85260

APN

215-56-413E

LEASE AREA

84,548 SF
1.94 ACRES

DISTURBED AREA

84,548 SF
1.94 ACRES

LEGEND

NOTE: ALL SYMBOLS AND ABBREVIATIONS MAY NOT APPEAR ON EACH SHEET.

- EXISTING STORM DRAIN
- NEW STORM DRAIN
- CENTERLINE
- PROPERTY LINE
- XX EXISTING LINE
- (XX) OR [XX] EXISTING MANHOLES, VAULTS AND BOXES
- XXXX EXISTING ELEVATION
- BACKFLOW PREVENTER
- CATCH BASIN
- CLEANOUT
- FIRE HYDRANT
- FLOW ARROW
- ROOF DRAIN ARROW
- FLOWLINE ARROW
- FOUND BRASS CAP
- FOUND MONUMENT
- FOUND REBAR
- LIGHT POLE
- XXXX PROPOSED ELEVATION
- POWER POLE
- SET BRASS CAP
- SET MONUMENT
- SET REBAR
- SIGN
- TAPPING SLEEVE
- WATER VALVE
- WATER METER
- DRYWELL
- NEW CONCRETE
- NEW RIP-RAP
- EXISTING CONCRETE
- EXISTING BRICK

ABBREVIATIONS

BC	BACK OF CURB
BW	BACK OF WALK
CATV	CABLE TV
C	CONCRETE
CB	CATCH BASIN
CC	CANOPY CLEARANCE
CL	CENTERLINE
CO	CURB OPENING
DWV	DRAIN, WASTE AND VENT
E	ELECTRIC
ESMT	EASEMENT
FC	FACE OF CURB
FG	FINISH GRADE
FF	FINISH FLOOR
FH	FIRE HYDRANT
FL	FLOW LINE
FM	FORCE MAIN
FO	FIBER OPTICS
FW	FACE OF WALK
G	GUTTER
GB	GRADE BREAK
GR	GRATE
INV	INVERT
IRR	IRRIG. CONTROL VALVE
ML	MONUMENT LINE
NG	NATURAL GRADE
OHE	OVERHEAD ELECTRIC
P	PAVEMENT
PC	POINT OF CURVE
PT	POINT OF TANGENCY
RD	ROOF DRAIN
ROW	RIGHT OF WAY
SCO	SEWER CLEANOUT
SD	STORM DRAIN
SL	STREET LIGHT
SS	SANITARY SEWER
SW	SIDEWALK
T	TELEPHONE
TC	TOP OF CURB
TF	TOP OF FOOTING
TW	TOP OF WALL
TS	TRAFFIC SIGNAL
UGE	UNDERGROUND ELEC
VG	VALLEY GUTTER
W	WATER
WLE	WATER LINE EASEMENT

BENCHMARK

MCDOT BENCHMARK 5795 ALSO BEING THE SOUTHWEST CORNER OF SECTION 11, BEING MARKED BY A 3" CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE LOCATED AT THE INTERSECTION OF THUNDERBIRD ROAD AND SCOTTSDALE ROAD.

ELEVATION = 1427.05' (NAVD88 DATUM)

I HEREBY CERTIFY THAT ALL ELEVATIONS REPRESENTED ON THIS PLAN ARE BASED ON NAVD 1988 AND MEET THE FEMA BENCHMARK MAINTENANCE (BMM) CRITERIA.

Kenneth W. Zell — 04-17-2025
SIGNATURE AND SEAL IF APPLICABLE — DATE

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

REV	DATE	DESCRIPTION	BY

ZELL COMPANY, L.L.C.
PO BOX 2191
Litchfield Park, Arizona 85340
Phone: 623•547•2500

Kenneth W. Zell
Registered Professional Engineer (Civil)
24449
KENNETH W. ZELL
Date Signed 04-17-25
ARIZONA, U.S.A.
EXPIRES 09/30/2025

PROJECT: FLEXJET
LOCATION: SCOTTSDALE, ARIZONA 85260

DRAWN BY	DESIGNED BY	REVIEWED BY	DATE
KZ	KZ	KZ	4/23/2024

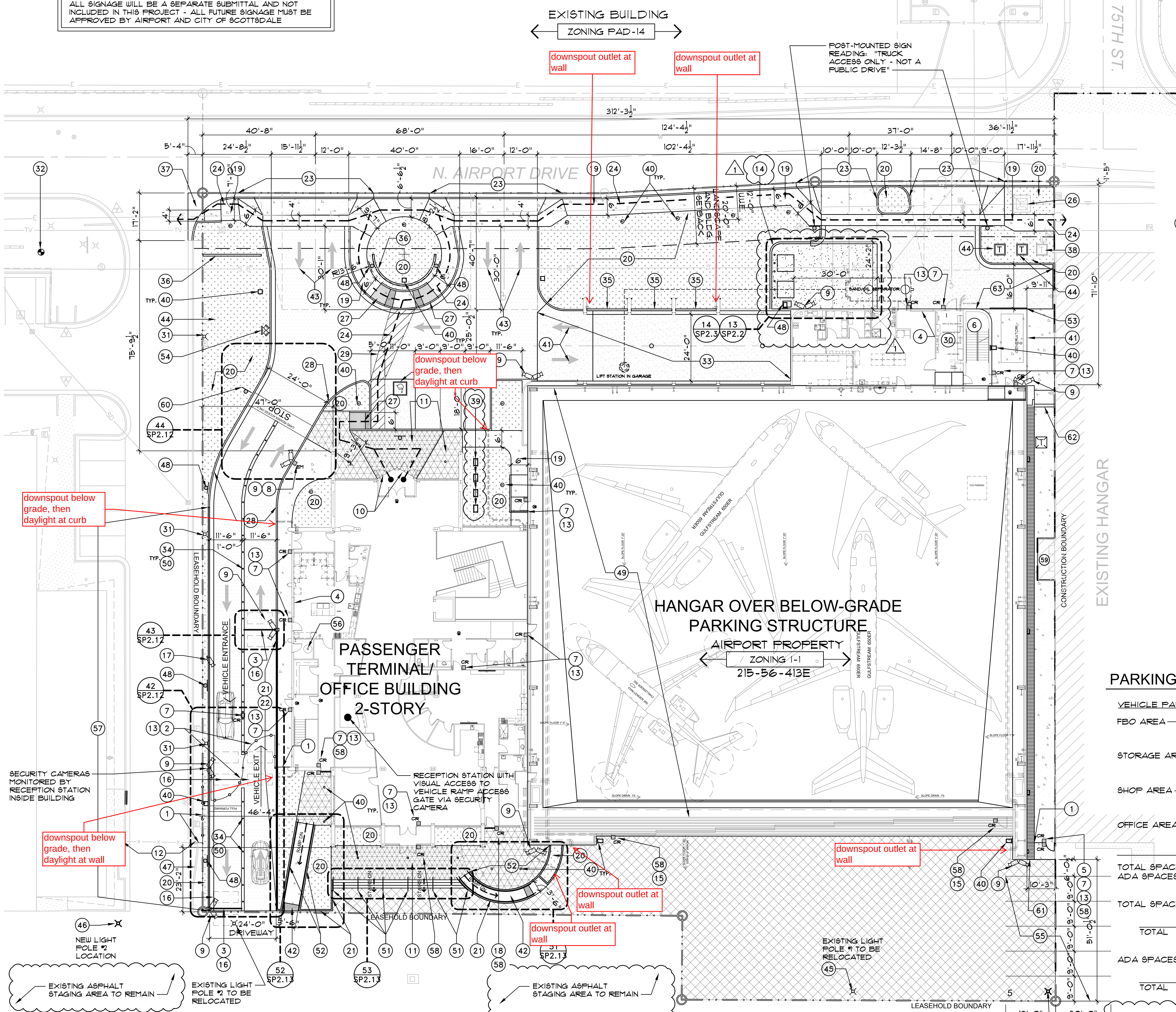
TITLE: CONCEPTUAL GRADING & DRAINAGE PLAN
SITE ADDRESS: 15115 N. AIRPORT DRIVE

SCALE: 1:20
JOB NO.: 21-028
SHEET 1 OF 2

281-25-1

Plot Date/Time: 4/17/2025 9:58 AM Layout Name: CGD
Full File Path: T:\draft_users\cad01-draftinc\21-028 Simcom At Scottsdale Airport\21-028.dwg

NOTE:
ALL SIGNAGE WILL BE A SEPARATE SUBMITTAL AND NOT INCLUDED IN THIS PROJECT - ALL FUTURE SIGNAGE MUST BE APPROVED BY AIRPORT AND CITY OF SCOTTSDALE



FLOOR AREA RATIO CALCULATIONS

LOT AREA:	84,548 S.F. (1.94 ACRES)
BUILDING AREA:	
BELOW-GRADE PARKING GARAGE	28,914 G.S.F.
FBO/OFFICE	
LOWER LEVEL	1,465 G.S.F.
FIRST FLOOR	8,858 G.S.F.
SECOND FLOOR	9,541 G.S.F.
SUB-TOTAL	19,864 G.S.F.
HANGAR	29,940 G.S.F.
SHOP/STORAGE	
FIRST FLOOR	1,466 G.S.F.
SECOND FLOOR	1,466 G.S.F.
SUB-TOTAL	2,932 G.S.F.
TOTAL	52,736 G.S.F.
FLOOR AREA RATIO:	
REQUIRED	80% MAXIMUM = 0.8 X NET LOT AREA = 0.8 X 84,548 S.F. = 67,638.4 G.S.F.
PROVIDED	52,736 G.S.F. IS LESS THAN 67,638.4 G.S.F., THEREFORE OK

SITE LEGEND

- VEHICULAR ASPHALT PAVING
- AIRCRAFT RAMP CONCRETE PAVING
- PEDESTRIAN CONCRETE SIDEWALK
- LANDSCAPE AREA
- PEDESTRIAN PAVER FIELD COLOR - SEE FINISH LEGEND (TILE-1 PAVER)
- PEDESTRIAN PAVER ACCENT COLOR - SEE FINISH LEGEND (TILE-2 PAVER)
- LEASEHOLD BOUNDARY LINE
- NEW LIGHT POLE
- NEW BOLLARD LIGHT
- NEW BLUE EMERGENCY LIGHT POLE WITH CALL BOX
- NEW CARD-READER
- NEW SIGN
- NEW SECURITY CAMERA
- 8'-0" WROUGHT IRON SECURITY FENCE
- ACCESSIBLE PATH OF TRAVEL
- EXISTING FIRE HYDRANT TO REMAIN

PARKING CALCULATIONS

(SEE SITE PARKING PLAN, SHEET SP1.13 FOR BUILDING AREA CALCULATIONS RELATED TO PARKING)

VEHICLE PARKING

FBO AREA	9,169 S.F L.F. = 1/300 9169/300 = 30.6
STORAGE AREA	1,467 S.F L.F. = 1/800 1467/800 = 1.84
SHOP AREA	805 S.F L.F. = 1/300 805/300 = 2.69
OFFICE AREA	9,002 S.F L.F. = 1/300 9002/300 = 30
TOTAL SPACE REQUIRED:	65.13 PARKING SPACES REQUIRED = 66
ADA SPACES REQUIRED:	66 x 4% = 2.64 = 3 INCLUDING 1 VAN ACCESSIBLE
TOTAL SPACES PROVIDED:	57 SPACES IN BELOW GRADE PARKING GARAGE 4 SURFACE PARKING SPACES, STREET SIDE 5 SURFACE PARKING SPACES, AIR SIDE
TOTAL	66
ADA SPACES PROVIDED:	1 VAN ACCESSIBLE SP., SURFACE, STREET SIDE 1 STANDARD SP. IN BELOW GRADE GARAGE 1 VAN ACCESSIBLE SP. IN BELOW GRADE GARAGE
TOTAL	3 INCLUDING 2 VAN ACCESSIBLE SPACES

BICYCLE PARKING

REQUIRED:	2 SPACES PER 10 VEHICLE SPACES 66 / 10 * 2 = 13.2 = 14
PROVIDED:	16

SITE PLAN KEYNOTES

1. NEW 8'-0" HIGH SECURITY FENCE - NON-CLIMBABLE WROUGHT IRON PICKET FENCING - FENCING TO BE INSTALLED SO THAT BOTTOM OF PICKETS ARE WITHIN 2" OF THE GROUND 47/SP2.13 PT-4
2. NEW DOUBLE, SELF-CLOSING 24'-0" WIDE X 8'-0" HIGH MOTORIZED WROUGHT IRON SWINGING VEHICULAR GATES LEADING TO AND EXITING FROM AOA. GATE IS WITHIN LINE OF SIGHT OF RECEPTIONIST DESK - PROVIDE KEY SWITCH, PRE-EMPTION SENSOR AND SIMPLE ELECTRONIC ACCESS CONTROL DEVICE (CARD READER) - SEE DOOR AND GATE NOTES SHEET SP1.3 FOR ADDITIONAL REQUIREMENTS - VEHICLE CARD READER MUST BE TIED TO AIRPORT ACCESS CONTROL SYSTEM - SEE SHEETS SP1.3, SP2.12 AND SP2.13 PT-4
3. SELF-CLOSING ARM BAR BARRIER LINKED TO SWINGING GATE ACCESS CONTROL DEVICE (CARD READER) AND OBSTRUCTION SENSOR - SEE ELECTRICAL DRAWINGS - SEE SHEET SP2.12
4. ROLL-UP SERVICE DOOR
5. SELF-CLOSING MAN GATE TO AIR OPERATIONS AREA (AOA) - SEE DOOR AND GATE NOTES ON SHEET SP1.3 FOR ADDITIONAL REQUIREMENTS - SEE DETAIL 12/SP2.2
6. EXIT STAIR FROM PARKING GARAGE
7. CARD-READER LOCATION - ALL READERS SHOULD BE LANDSIDE TO ACCESS AIRSIDE WHEN APPLICABLE
8. BLUE LIGHT EMERGENCY CALL BOX - SEE ELECTRICAL DRAWINGS
9. SECURITY CAMERA LOCATION - PROVIDE CONDUIT FOR VIDEO FEED TO RECEPTION DESK AND MANAGER OFFICE
10. PRIMARY, ACCESSIBLE, LANDSIDE BUILDING ENTRY FOR PUBLIC USE - NO CARD-READER. PROVIDE SIGNAGE WITH THE INTERNATIONAL SYMBOL OF ACCESSIBILITY
11. TILE PAVERS - SEE FINISH LEGEND
12. EXISTING SECURITY GATE AT ADJACENT PROPERTY TO REMAIN - NEW FENCING TO ABUT EXISTING FENCING AND GATES THAT LINE OF SECURITY IS MAINTAINED. ANY GAPS SHALL NOT EXCEED 4"
13. POSTED SIGN THAT PROVIDES WARNING OF THE PROHIBITION AGAINST UNAUTHORIZED ENTRY
14. 6' MIN. HIGH CMU REFUSE ENCLOSURE WITH 30' APRON PER CITY OF SCOTTSDALE STANDARD DETAIL 14/SP2.3. SEE ALSO DETAILS 13/SP2.2 & 20/SP2.5 PT-3
15. MAN DOOR IN HANGAR DOOR
16. OBSTRUCTION FREE ENTRY/EXIT AND SHADOW LOOPS FOR VEHICLE DETECTION
17. SECURITY CAMERA AND CAMERA FOR LICENSE PLATE PHOTOGRAPHY - PROVIDE CONDUIT FOR VIDEO FEED TO RECEPTION DESK AND MANAGER OFFICE
18. PILOT AND LINE OFFICE ENTRY
19. NEW CONCRETE SIDEWALK PAVING, 6' MIN. WIDE WALKWAYS, TYP., FROM RIGHT OF WAY TO BUILDING ENTRY, UNLESS NOTED OTHERWISE - SEE DETAIL 1/SP2.0
20. NEW LANDSCAPE AREA - SEE LANDSCAPE DRAWINGS
21. 8" WIDE X 2'-6" MAX. HIGH CONCRETE RETAINING WALL - SEE CIVIL AND STRUCTURAL DRAWINGS PT-3
22. NEW STAINLESS STEEL GUARDRAIL - SEE DETAIL 53/SP2.13
23. NEW DRIVEWAY PER CITY OF SCOTTSDALE STANDARDS - SEE CIVIL DRAWINGS AND DETAIL 30/SP2.11
24. ACCESSIBLE PATH OF TRAVEL FROM PUBLIC WAY TO BUILDING ENTRY - ACCESSIBLE ROUTE OF TRAVEL TO BE 3' WIDE MIN. WITH MAX. SLOPE OF 1:20, AND MAX. CROSS SLOPE OF 1:50
25. VAN ACCESSIBLE PARKING SPACE AND SIGNAGE - SEE DETAILS 10/SP2.1 & 24/SP2.7. ACCESSIBLE PARKING SPACES SHALL HAVE A SLOPE NOT EXCEEDING 1:50
26. EXISTING ELECTRICAL CABINET TO REMAIN - SEE ELECTRICAL DRAWINGS
27. NEW ACCESSIBLE CURB RAMP
28. 6" CONCRETE CURB - SEE DETAIL 1/SP2.0
29. PAINTED CROSS WALK STRIPING - SEE DETAIL 4/SP2.0
30. NEW SES AND PANELS LOCATED INSIDE BUILDING IN ELECTRICAL ROOM
31. EXISTING LIGHT POLE TO REMAIN - VERIFY EXACT LOCATION AND NOTIFY ARCHITECT OF ANY CONFLICT WITH DEMOLITION OR CONSTRUCTION
32. EXISTING FIRE HYDRANT TO REMAIN
33. CONCRETE RAMP DOWN TO GARAGE - UNDER ROOF
34. "ULINE" OR EQUAL FLEXIBLE GUIDE POST IN TRAFFIC YELLOW, 6'-0" O.C.
35. NOT USED
36. NEW 8" WIDE X 3'-0" HIGH CONCRETE SCREEN WALL - SEE DETAIL 16/SP2.4 PT-3
37. THIS SIDE OF EXISTING DRIVEWAY TO BE RECONSTRUCTED PER CITY OF SCOTTSDALE STANDARDS - SEE CIVIL DRAWINGS
38. EXISTING TRANSFORMER SERVING EXISTING HANGAR TO THE EAST - CONSTRUCTED AS PART OF DEMO PHASE
39. FOUR DOUBLE BICYCLE RACKS - PER CITY OF SCOTTSDALE STANDARDS - SEE DETAIL 27/SP2.8 - EACH RACK HOLDS 2 BIKES FOR A TOTAL OF 16 BIKE SPACES
40. NEW SITE LIGHT - SEE SITE LIGHTING PLAN, SP1.11 AND ELECTRICAL DRAWINGS
41. BACK-UP GENERATOR ON 4" CONCRETE PAD - SEE ELECTRICAL DRAWINGS
42. NEW ACCESSIBLE RAMP
43. PAINTED DIRECTIONAL ARROWS
44. NEW TRANSFORMER SERVING NEW BUILDING - SEE ELECTRICAL DRAWINGS
45. EXISTING RAMP LIGHT POLE TO BE RELOCATED
46. NEW RAMP LIGHT POLE LOCATION
47. FIRE LANE SIGN - SEE FIRE ACCESS PLAN, SHEET SP1.7 FOR ADDITIONAL INFORMATION
48. 90 GALLON CITY OF SCOTTSDALE RECYCLING CONTAINER PER IGCC 901.3.4.1
49. ROOF MOUNTED ON-SITE RENEWABLE ENERGY SYSTEM (SOLOR PV) - NOT LESS THEN 3% OF ANNUAL ESTIMATED ENERGY OR 2 WATTS PER SQ. FT. MULTIPLIED BY THE GROSS ROOF AREA IN ACCORDANCE WITH IGcc AMENDED SECTION 701.3 - SEE ROOF PLAN, SHEET A1.7
50. NEW 1'-0" WIDE X 6" HIGH CONCRETE CURB TO SEPARATE DRIVE AISLES
51. NEW STAINLESS STEEL HANDRAIL WITH LED STRIP DOWNLIGHT
52. NEW 8" WIDE x 30" MAX. HIGH CONCRETE RETAINING WALL - SEE DETAIL 52/SP2.13 PT-3
53. 12'-0" HIGH METAL SCREEN WALL FOR BACK-UP GENERATOR, PAINTED PT-4
54. FIRE DEPARTMENT CONNECTION - SEE FIRE ACCESS PLAN, SHEET SP1.7
55. NEW 3" PAINTED WHITE STRIPING
56. NEW FIRE RISER INSIDE FIRE RISER ROOM - PROVIDE KNOX BOX FOR FIRE DEPT ACCESS PER LOCAL FIRE AUTHORITY STANDARDS
57. 8" WIDE X 2'-0" MAX. HIGH CONCRETE RETAINING CURB - SEE CIVIL AND STRUCTURAL DRAWINGS
58. AIRSIDE CARD READER LOCATION
59. EXISTING 2-HOUR RATED SES ENCLOSURE - CONSTRUCTED AS PART OF DEMO PHASE
60. SIGN READING: "STOP - CARD-READER ACCESS ONLY - NO TURNAROUND"
61. DRAIN DAYLIGHTS AT SINGLE STEP DOWN - SEE CIVIL DRAWINGS
62. (2) STEPS DOWN - SEE CIVIL DRAWINGS
63. OFF-STREET LOADING AREA

IgCC CHECK COMPLIANCE

1. HEAT ISLAND MITIGATION: OVER 50% OF THE HARDSCAPE ACCOMMODATED BY OPTION (E) PARKING UNDER A BUILDING, IN ACCORDANCE WITH 2021 IgCC SECTION 501.3.5.1 (BELOW GRADE PARKING GARAGE)
2. ELECTRIC VEHICLE CHARGING: UNDERGROUND PARKING GARAGE WILL ACCOMMODATE 4% OF TOTAL REQUIRED PARKING SPACES OR NOT LESS THEN 8% OF DESIGNATED EMPLOYEE ONLY PARKING SPACES OR 10% OF REQUIRED TOTAL PARKING SPACES
3. ENERGY COMPLIANCE PATH: PRESCRIPTIVE BASED COMPLIANCE - COMPLY WITH MANDATORY AND PRESCRIPTIVE REQUIREMENTS IN 2021 IECC OR ASHRAE 90.1-2019
4. ONSITE RENEWABLE ENERGY SYSTEM (SOLAR PV) - NOT LESS THEN 3% OF ANNUAL ESTIMATED ENERGY OR 2 WATTS PER SQ. FT. MULTIPLIED BY THE GROSS ROOF AREA IN ACCORDANCE WITH iGcc AMENDED SECTION 701.3 - SOLAR PANELS WILL BE ROOF MOUNTED SEE KEYNOTE 49/SP1.1
5. REFUSE AND RECYCLING COLLECTION - LOCATION NOTED PER KEYNOTE 48/SP1.1

1" = 20'-0"

0 10' 20' 40' 80'

PLAN NORTH TRUE NORTH

APPROVED PER ARTICLE 7 OF LEASE AGREEMENT 2010-166-COS

DATE: ____________ INITIALS: ____________

CITY OF SCOTTSDALE APPROVAL BLOCK

KEYNOTE SITE PLAN

SCALE: 1"=20'-0"

x-site-ONESKY

Larson Associates Architects, Inc.
3807 North 24th Street, Suite 100
Phoenix, AZ 85016
602.955.9929 602.954.4790 FAX
design@larson-architects.com

FLEXJET PAX TERMINAL/OFFICE/HANGAR
SCOTTSDALE AIRPORT
15115 N. AIRPORT DR.
SCOTTSDALE, AZ 85260

REGISTERED ARCHITECT CERTIFICATE NO. 9363 JAMES LAWRENCE LARSON ARIZONA, USA
PRELIMINARY NOT FOR CONSTRUCTION
EXPIRES: 6/30/2027

Drawing Name: NEW KEYNOTE SITE PLAN

Revisions
3-7-25 PROGRESS SET
1 DRB RESUBMITTAL 2 - 3/7/25

Date: 3/7/25

Project Number: 2021.004

Drawing No: SP1.1