

## Case Research



# Pre-Application Request

**Purpose:**

The purpose of the Pre-Application submittal, and meeting, is for the applicant and city staff to discuss a proposed Development Application, and the information and process that is necessary for city staff to process the proposal.

In accordance with the Zoning Ordinance, no development application shall be accepted before a Pre-Application has been submitted, and a Pre-Application meeting has been conducted with city staff, unless the Pre-Application meeting has been waived by the Zoning Administrator.

**Submittal:**

The completed Pre-Application Request form and all required materials and fees should be submitted in person to the One-Stop-Shop located at 7447 East Indian School Road; or, may they be submitted digitally at following website:

<https://eservices.scottsdaleaz.gov/eServices/PreApps/Default.aspx>

All checks shall be payable to "City of Scottsdale."

**Scheduling**

After the Pre-Application submittal has been accepted at the One-Stop-Shop, a staff member will contact the Applicant within five (5) Staff Working Days to schedule a Pre-Application meeting with the assigned staff member(s). Generally, a Pre-Application meeting is scheduled within five (5) to fifteen (15) Staff Working Days from the date of the submittal.

|   |   |
|---|---|
| <b>Project Name:</b> <u>Stamper Hanger</u>  |   |
| <b>Property's Address:</b> <u>16061 North 81st street, Scottsdale Arizona 85260</u>   | <b>APN:</b> <u>215-48-054</u>                       |
| <b>Property's Zoning District Designation:</b> <u>I-1</u>   |   |
| <b>Property Details:</b>  |   |
| <input type="checkbox"/> Single-Family Residential <input type="checkbox"/> Multi-Family Residential <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Other |   |
| Has a 'Notice of Compliance' been issued? <input type="checkbox"/> Yes <input type="checkbox"/> No     If yes, provide a copy with this submittal   |   |
| <b>Owner:</b> <u>Blake Stamper</u>  | <b>Applicant:</b> <u>James Larson</u>               |
| <b>Company:</b> <u>Ariztar, LLC</u>   | <b>Company:</b> <u>Larson Associates Architects</u> |
| <b>Address:</b> <u>16061 North 81st street</u>  | <b>Address:</b> <u>3807 North 24th street #100</u>  |
| <b>Phone:</b> <u>applicant</u> <b>Fax:</b> _____  | <b>Phone:</b> <u>602-955-9929</u> <b>Fax:</b> _____ |
| <b>E-mail:</b> <u>applicant</u>   | <b>E-mail:</b> <u>Jlarson@larson-architect.com</u>  |
| <b>Owner Signature</b> <u>[Signature]</u>   | <b>Applicant Signature</b> <u>[Signature]</u>       |
| <b>Official Use Only</b> <b>Submittal Date:</b> <u>02/25/17</u>   | <b>Application No.:</b> <u>626 -PA- 2017</u>        |
| <b>Project Coordinator:</b> _____   |   |

**Planning and Development Services**

7447 E Indian School Road Suite 105, Scottsdale, Arizona 85251 Phone: 480-312-7000 Fax: 480-312-7088



# Pre-Application Request

**Development Application Type:**  
Please check the appropriate box of the Type(s) of Application(s) you are requesting

| Zoning   | Development Review                                       | Signs   |
|--|--|---|
| <input type="checkbox"/> Text Amendment (TA)         | <input type="checkbox"/> Development Review (Major) (DR) | <input type="checkbox"/> Master Sign Program (MS)     |
| <input type="checkbox"/> Rezoning (ZN)               | <input type="checkbox"/> Development Review (Minor) (SA) | <input type="checkbox"/> Community Sign District (MS) |
| <input type="checkbox"/> In-fill Incentive (II)      | <input type="checkbox"/> Wash Modification (WM)          | <b>Other</b>  |
| <input type="checkbox"/> Conditional Use Permit (UP) | <input type="checkbox"/> Historic Property (HP)          | <input type="checkbox"/> General Plan Amendment (GP)  |
| <b>Exemptions to the Zoning Ordinance</b>            | <b>Land Divisions</b>                                    | <input type="checkbox"/> In-Lieu Parking (IP)         |
| <input type="checkbox"/> Hardship Exemption (HE)     | <input type="checkbox"/> Subdivision (PP)                | <input type="checkbox"/> Abandonment (AB)             |
| <input type="checkbox"/> Special Exception (SX)      | <input type="checkbox"/> Subdivision (Minor) (MD)        | <input type="checkbox"/> Adult Care (AC)              |
| <input type="checkbox"/> Variance (BA)               |  | <input type="checkbox"/> Single-Family Residential    |
| <input type="checkbox"/> Minor Amendment (MN)        |  | <input type="checkbox"/> Other:                       |

**Submittal Requirements:** (fees subject to change every July)

Pre-Application Fee: \$ \_\_\_\_\_  
(No fees are charged for Historic Preservation (HP) properties.)

Records Packet Fee: \$ \_\_\_\_\_  
Processed by staff. The applicant need not visit the Records desk to obtain the packet.  
*(Only required when requested by Staff)*

Application Narrative:  
The narrative shall describe the purpose of the request, and all pertinent information related to the request, such as, but not limited to, site circulation, parking and design, drainage, architecture, proposed land use, and lot design.

Property Owner Authorization Letter  
*(Required for the SA and MS Pre-Applications)*

- Site / Context Photographs
- Provide color photographs showing the site and the surrounding properties. Use the guidelines below for photos.
  - Photos shall be taken looking in towards the project site and adjacent to the site.
  - Photos should show adjacent improvements and existing on-site conditions.
  - Each photograph shall include a number and direction.
  - Sites greater than 500 ft. in length, also take the photo locations shown in the dashed lines.
  - Photos shall be provided 8 ½ x 11 paper, max. two per page.



Other  
\_\_\_\_\_  
\_\_\_\_\_

- *The following list of Additional Submittal Information is not required for a Pre-Application meeting, unless indicated below by staff prior to the submittal of this request.*
- *Applicants are advised to provide any additional information listed below. This will assist staff to provide the applicant with direction regarding an application.*

**Additional Submittal Information**

- Site Plan
- Subdivision plan
- Floor Plans
- Elevations
- Landscape plans
- H.O.A. Approval letter
- Sign Criteria Regulations & Language
- Material Samples – color chips, awning fabric, etc.
- Cross Sections – for all cuts and fills
- Conceptual Grading & Drainage Plan
- Exterior Lighting – provide cut sheets, details and photometrics for any proposed exterior lighting.
- Boundary Survey (required for minor land divisions)
- Areal of property that includes property lines and highlighted area abandonment request.
- One copy of the recorded document for the area that is requested to be abandoned. Such as: subdivision plat, map of dedication, GLO (General Land Office) federal patent roadway easement, or separate dedication document. A copy of most recorded documents to be abandoned may be purchased at the City of Scottsdale Records Dept. (480-312-2356), or the Maricopa County Recorder's Office (602-506-3535). A copy of the General Land Office (GLO) federal patent roadway easement may be purchased from the Bureau of Land Management (602-417-9200).

**Planning and Development Services**

7447 E Indian School Road Suite 105, Scottsdale, Arizona 85251 Phone: 480-312-7000 Fax: 480-312-7088



Larson Associates Architects, Inc.  
3807 N 24<sup>th</sup> Street, Suite 100  
Phoenix, AZ 85016 602.955.9929

Stamper Hangar  
Ariztar, LLC  
16061 N. 81<sup>st</sup> Street  
Scottsdale, AZ 82560  
APN 215-48-054

The Owner proposes to build a hangar of approximately 11,500 ft<sup>2</sup> to house several jets with primary charter assignments and similar uses. The firm intends to provide office space for their operations adjacent to and attached to the hangar. As shown on the plan the office space reception, parts and catering spaces are equal to approximately 4,300 ft<sup>2</sup>, an area which includes restrooms and storage space. The office element and the hangar element are each clearly defined in the accompany drawings. Access to the site is provided from 81<sup>st</sup> street on the west boundary of the site/. Parking is provided for the office and visitors with 16 spaces provided.

On-site private fuel is included as a part of the project scope. The ramp (staging) area is equal to the size of the hangar. All mechanical equipment is in a screened enclosure on the second level of the office area in an outside, unroofed area to screen all of the equipment. Equipment planned at this time includes evaporative cooling for the hangar, high SEER rooftop mechanical units (RTU), a compressor and a possible backup generator. On the north elevation, the horizontal louvers that screen the equipment are shown on the left portion of that elevation. Construction of the hangar is expected to be concrete tilt panels detailed to address the scale of the 38' walls and the 41' vertical elements and to carry the office scale through the building. The office block is lower and at an office building scale. The office building will likely be steel-framed with steel studs for exterior cavity walls and clad with Trespa or similar cladding material. The hangar doors are bottom-support, in rails by Norco or International and will be insulated.

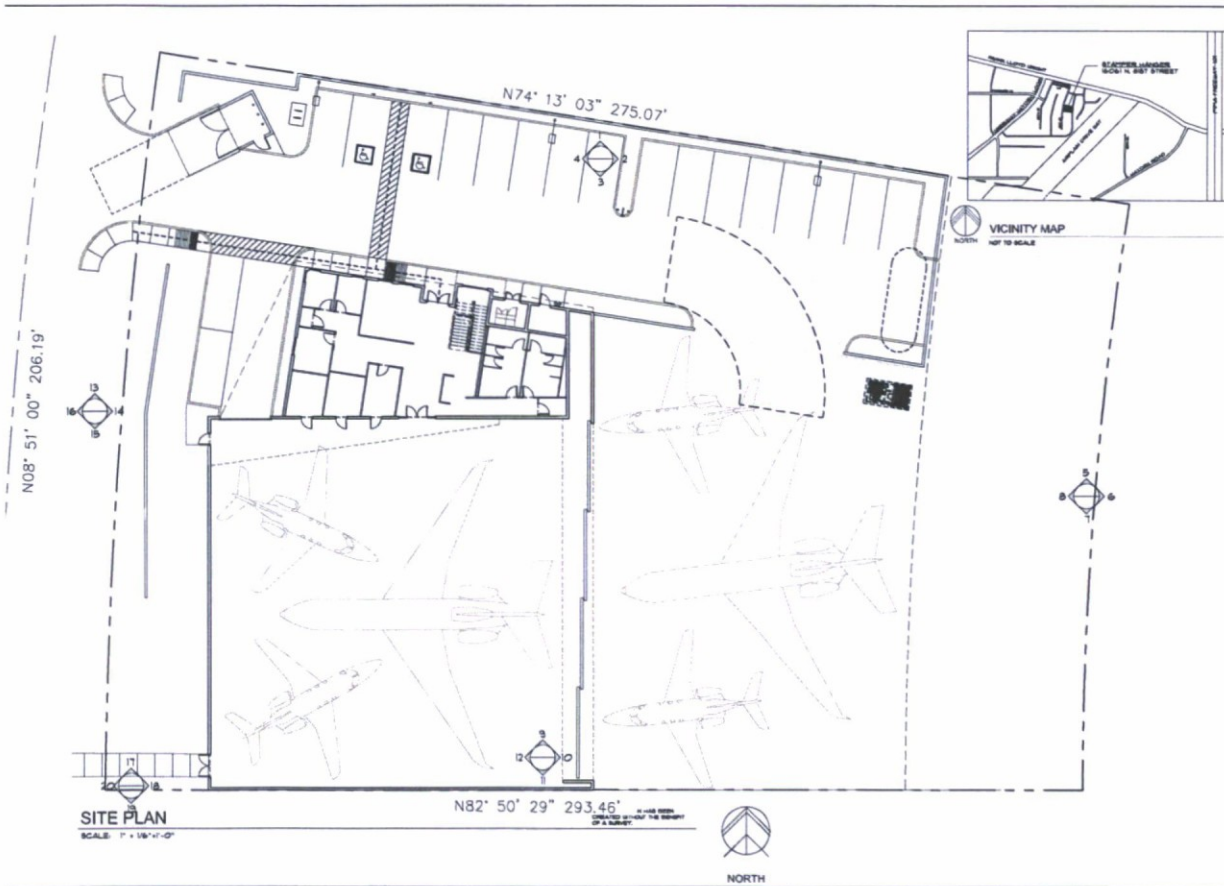
Colors have not been selected for this pre-application submittal. Civil engineering, landscape architectural and presentation perspectives are in development and are not included in this pre-application submittal. Particular attention has been paid to the west elevation to avoid presenting a large blank hangar wall as can be seen in the west elevation. Deep overhangs on the west portion of the office provide shade as well as an upper level patio possibility in this design as currently illustrated. The site will require below grade retention and the possibility of a drywall or a scheme to meter to a regional drainage system as directed by the City. The ramp will be concert, the parking lot asphaltic concrete and the drive approach from 81<sup>st</sup> will be concrete. Access to the ramp will be secured by a gate to maintain security for the project's airside.

We're looking forward to working with the City on this project. Hangar projects have been rather uncommon in recent years, a consequence of the economic decline in 2008. There seems to be more optimism for this type of project and specifically this type of project at Scottsdale Airport.



Larson Associates Architects, Inc

Job Name: Stamper Hanger  
Address: 16061 North 81st Street  
Scottsdale, Arizona  
Date: 8/24/17



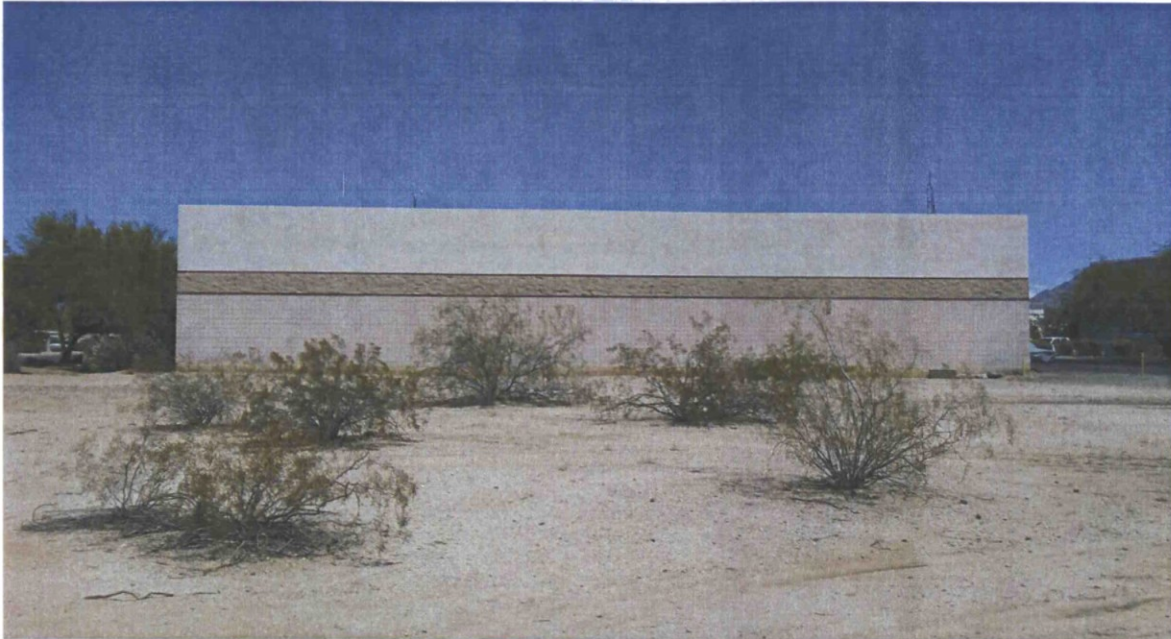
## SITE PLAN - PHOTO LOCATIONS



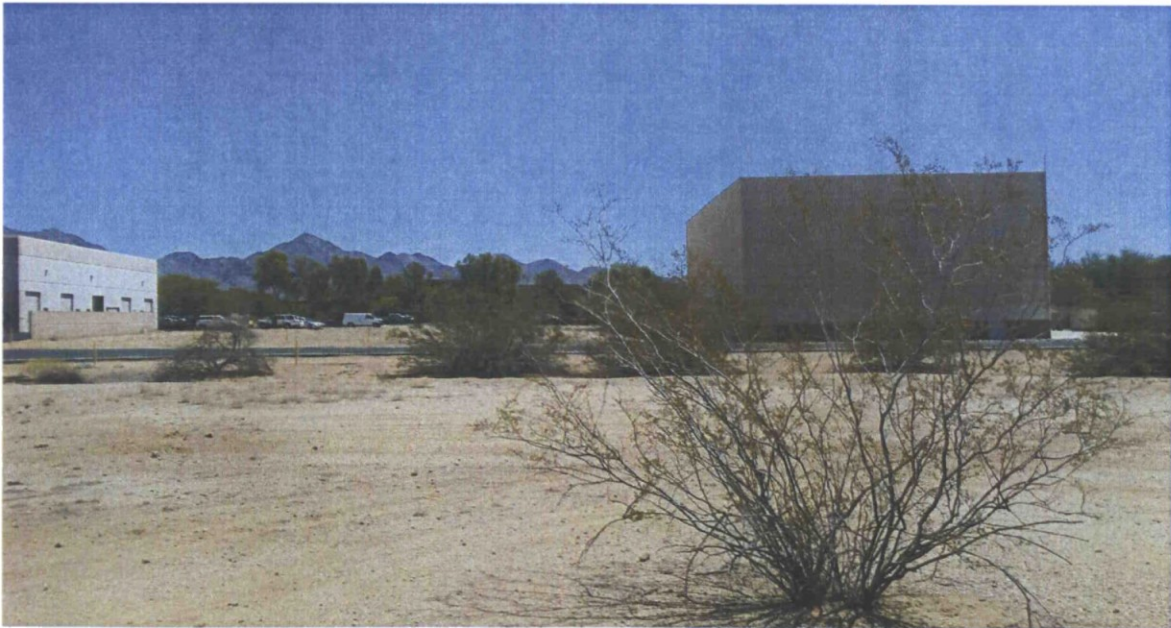
Job Name: Stamper Hanger  
Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



#1



#2



Job Name: Stamper Hanger  
Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



# 3



# 4



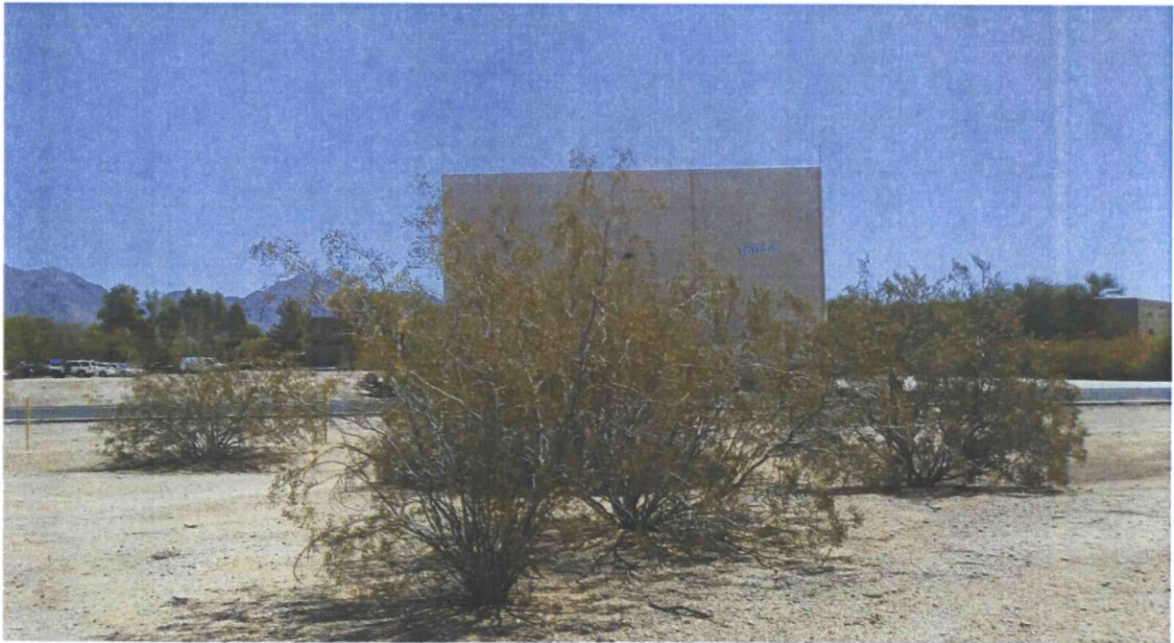
Job Name: Stamper Hanger  
Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



#5



#6

Larson

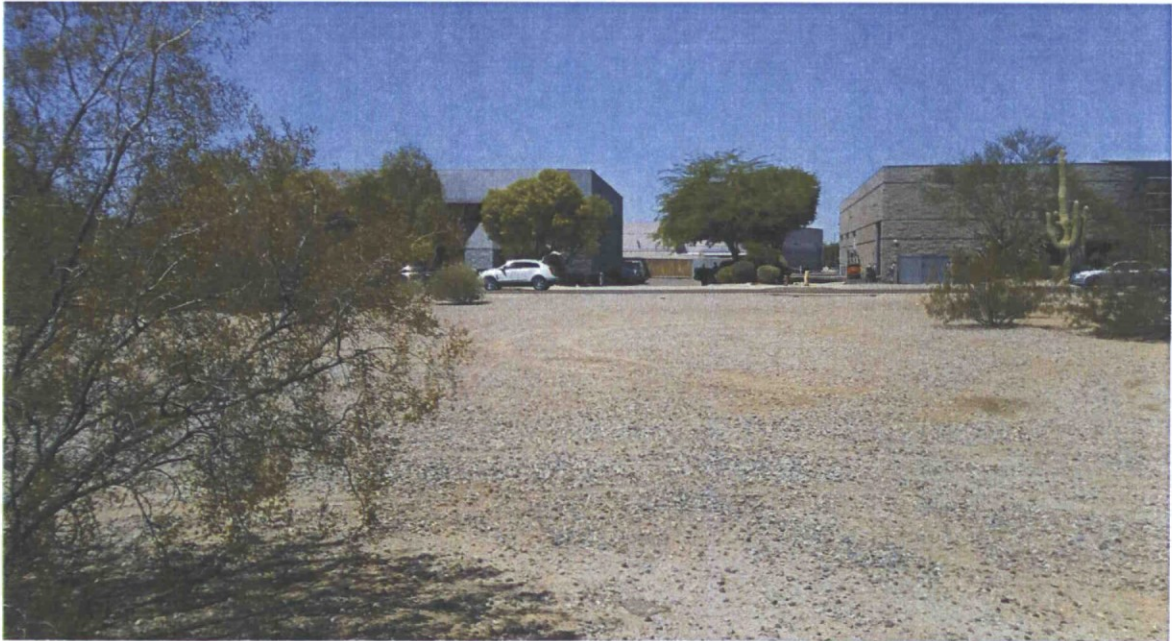
Job Name: Stamper Hanger  
Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



#7



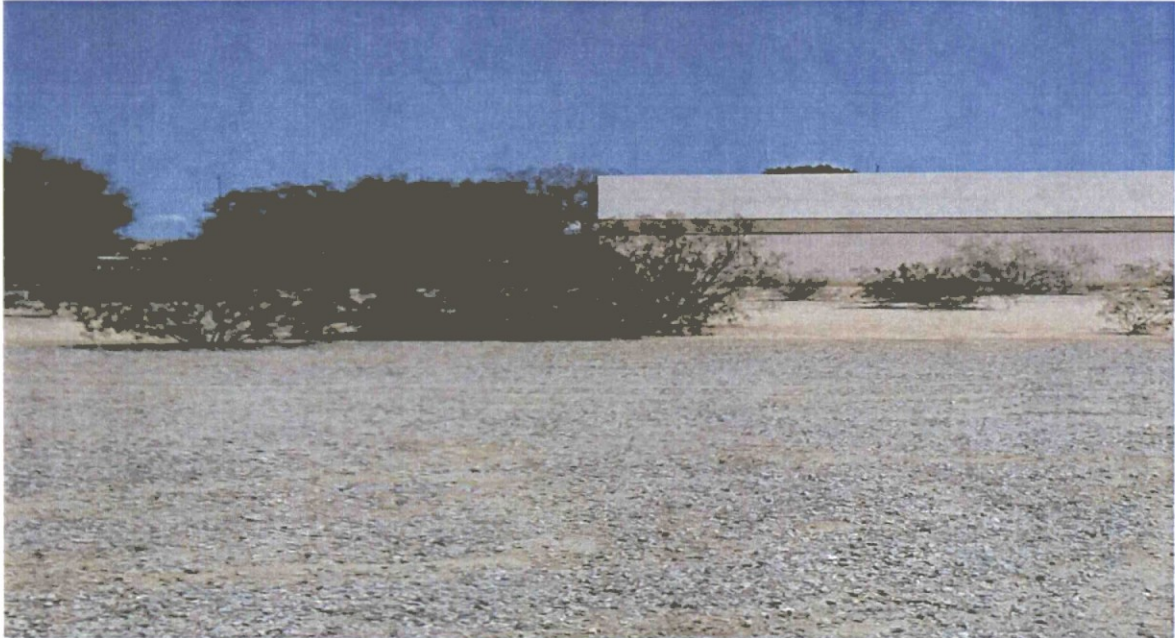
#8

Larson

Job Name: Stamper Hanger  
Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



#9



#10

Larson

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Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



# 11



# 12

Larson

Job Name: Stamper Hanger

Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



#13



#14



Job Name: Stamper Hanger  
Address: 16061 North 81st Street  
Scottsdale, Arizona

Larson Associates Architects, Inc

Date: 8/24/17



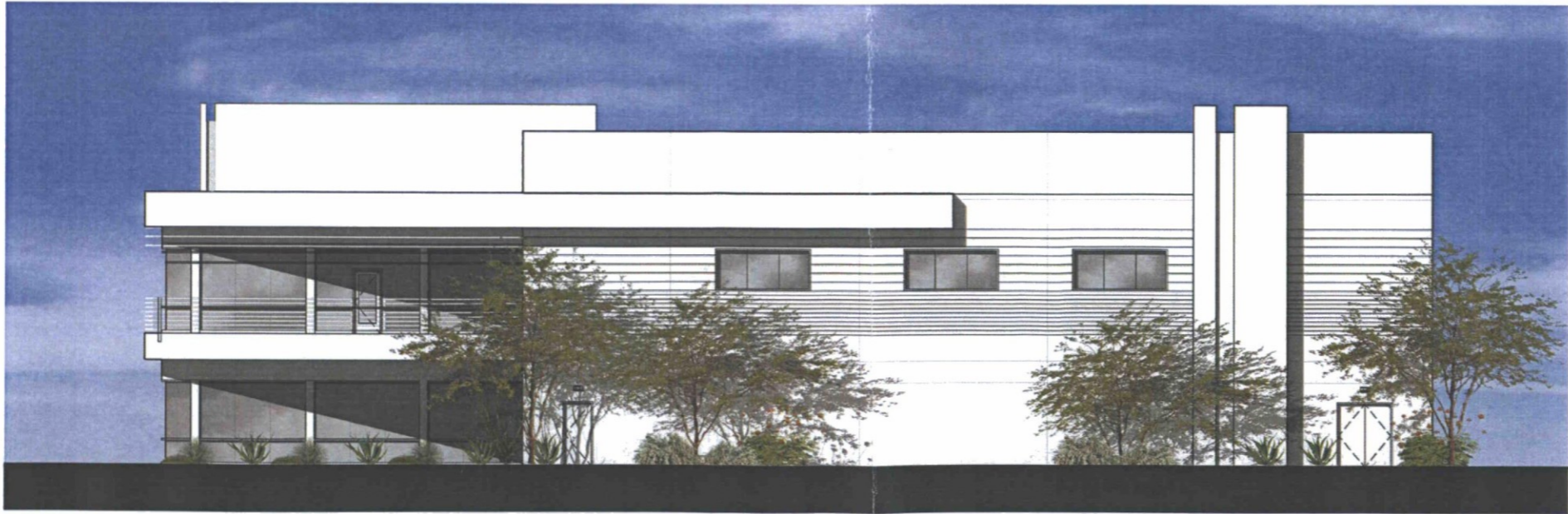
# 15



# 16



1 NORTH ELEVATION  
SCALE: 1/4"=1'-0" X-ELEV

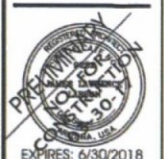


2 WEST ELEVATION  
SCALE: 1/4"=1'-0" X-ELEV

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design@larson-architects.com



STAMPER HANGAR  
16061 NORTH 81ST STREET  
SCOTTSDALE, AZ  
APN: 215-48-054



EXPIRES: 6/30/2018  
Drawing Name:  
EXTERIOR  
ELEVATIONS  
SITE  
PLAN  
Revisions  
Date: 8/22/2017  
Project Number:  
Drawing No:

**Drainage Reports**

**Abbreviated Water & Sewer Need Reports**

**Water Study**

**Wastewater Study**

**Stormwater Waiver Application**

**STAMPER HANGAR**  
**16061 N 81<sup>ST</sup> STREET**  
**SCOTTSDALE, ARIZONA**

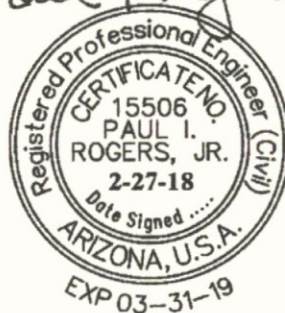
CASE: 49-DR-2017

**Preliminary Drainage Report**  
**2-27-18**

Prepared For:  
Larson Associates Architect, Inc.  
3807 N 24<sup>th</sup> Street, Suite 100  
Phoenix, AZ 85016  
Phone: 602-955-9929  
Fax: 602-954-4790  
jl Larson@larson-architects.com

Plan # \_\_\_\_\_  
Case # 49-DR-2017  
Q-S # \_\_\_\_\_  
 Accepted  
 Corrections  
DG 4/9/18  
Reviewed By \_\_\_\_\_

*Paul I. Rogers Jr*



Prepared By:



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7950 E. REDFIELD ROAD, SUITE 160 • SCOTTSDALE, ARIZONA 85260  
Phone: (480) 483-1500  
paul@trapeziumgroup.com

**49-DR-2017**  
**03/21/18**

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| 3. Proposed Drainage Plan  | 1 |
| 4. Special Conditions  | 1 |
| 5. Data Analysis Methods   | 1 |
| 6. Conclusions   | 2 |
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Vicinity Map

Flood Insurance Rate Map

Drainage Map

Appendix A, Computations

Appendix B, Warning and Disclaimer of Liability

Appendix C, Grading and Drainage Plan

Appendix D, Operations and Maintenance Manual

**1. Introduction**

This Preliminary Drainage Report addresses the drainage conditions for the Stamper Hangar project located at 16061 N 81<sup>st</sup> Street, Scottsdale, Arizona. The property is located within the southwest quarter of Section 1, Township 3 North, Range 4 East of the Gila and Salt River Meridian, Maricopa County, Arizona. The parcel for the Stamper Hangar is designated as Lot 34 of the North Scottsdale Airpark Unit 1 subdivision which is on the west side of the Scottsdale Airport runway.

The purpose of a drainage report is to document that storm water runoff has been considered in the planning of a project and that the public and its property will be protected from damage by runoff and flooding to the extent of the 100-year flood event. This applies to all properties adjacent to, or potentially impacted by, this development in addition to the property to be developed.

**2. Description of Existing Drainage Conditions and Characteristics**

The land in the Scottsdale Airpark area drains generally to the southwest. The major drainage flows upstream of the subject property have been blocked by the Central Arizona Project Canal. The properties in the North Scottsdale Airpark are required to provide storm water retention with overflow into either the adjacent street or the adjacent taxiway. The Stamper Hangar lot is vacant and drains into the adjacent taxiway to the east. The lot to the north is also vacant and drains into the taxiway with a small amount of sheet flow that enters the Stamper lot.

**3. Proposed Drainage Plan**

The Stamper lot will be designed to retain the runoff from the 100 year, 2 hour storm. The retention will be provided in an underground storm water tank, constructed of 16 gage aluminized corrugated steel pipe with 1" x 3" corrugations. The storm water storage tank will be installed under the parking drive area. The stored water will be disposed of by a drywell. In the event of a storm greater than the 100 year, 2 hour storm the excess water will overflow into 81<sup>st</sup> Street.

The finished floor elevation was set to be a minimum of 6" above the top of the curb in 81<sup>st</sup> Street nearest the northwest corner of the building. This elevation is 2.36 feet above the point of outfall at the southwest corner of the property.

**4. Special Conditions**

This project will be required to obtain a AZPDES permit and Maricopa County Dust Control permit.

**5. Data Analysis Methods**

The storm water retention requirement was computed using the formula given in Section 4-1.807 of the Scottsdale DSPM. The precipitation amount was

determined to be 2.3 inches from the figure in Appendix 4-1D of the DSPM. The runoff coefficient was taken from Figure 4.1-4 in the DSPM for industrial property. The number of drywells was determined by using a percolation rate of 0.1 cfs. The computations are shown in Appendix A.

Each storm water inlet was analyzed to determine the depth of ponding due to the 100-year 10-minute storm. All inlets accepted the peak flow with ponding depths less than 6 inches. The duration of the ponding would be approximately 20 minutes. The computations are included in Appendix A.

**6. Conclusions**

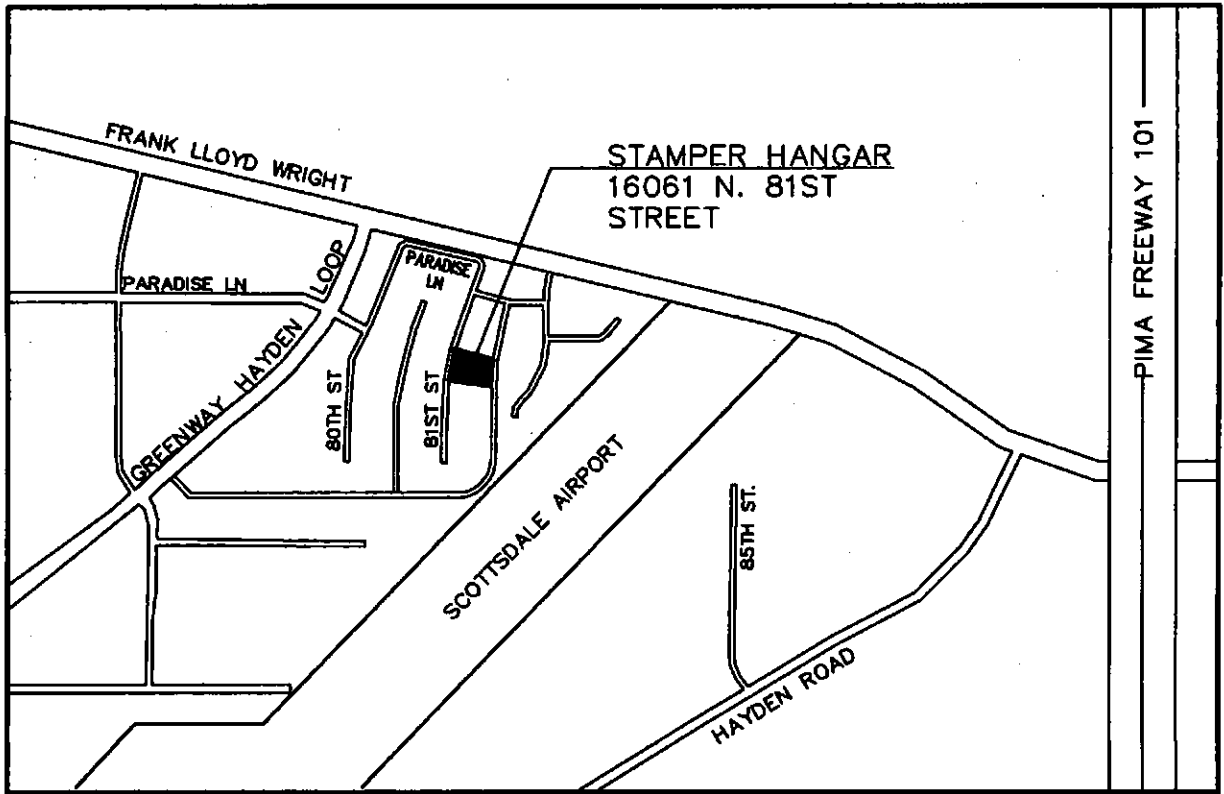
When constructed the Stamper Hangar will provide the storm water retention required by the City of Scottsdale, the building will be protected from flooding from the 100-year, 2 hour storm and will not have a detrimental effect on adjacent property.

**7. Warning and Disclaimer of Liability**

A Warning and Disclaimer of Liability form is included in Appendix B of this report.

**8. References**

- City of Scottsdale Design Standards and Policy Manual, January 2010.



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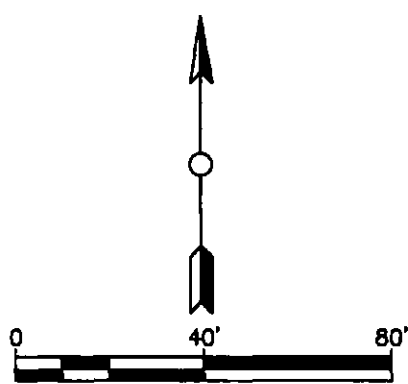
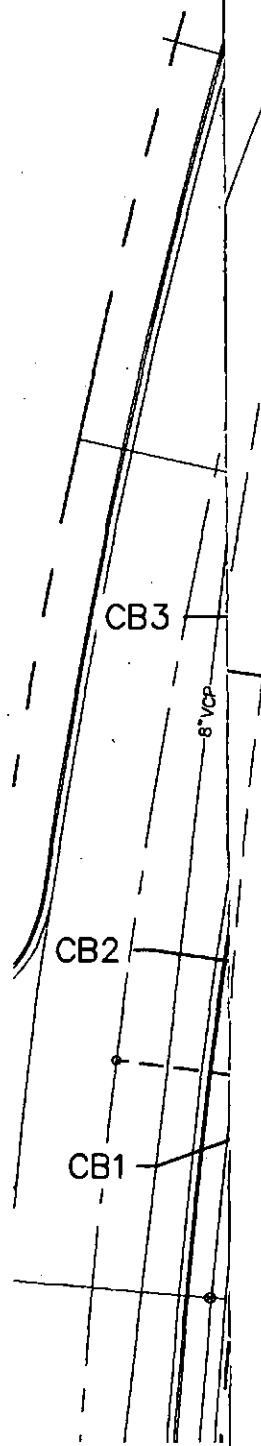
7950 E. Redfield Road, Suite 160 | Scottsdale, AZ 85260 | Ph: (480) 483-1500

**STAMPER HANGAR**  
**16061 N 81ST STREET**  
**VICINITY MAP**

PROJ MGR: PIR  
DRAWN BY: PIR  
DATE: 2-27-18  
SCALE: NTS

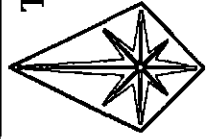
SHEET  
1 OF 1





→ Direction of Drainage

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**Stamper Hangar**  
**16061 N 81st Street, Scottsdale**  
**Drainage Map**

PROJ. MGR: PIR  
 PROJ. ASSOC: \_\_\_\_\_  
 DATE: 2-28-18  
 SCALE: 1"=40'  
 PROJECT #: LAASCA

SHEET  
**1 OF 1**

## **APPENDIX A**

### **Computations**

Required Retention Volume

$$V_r = (P/12)AC$$

$V_r$  = Volume Required, Cubic Feet

P = Precipitation Amount, Inches

A = Net Area of Property, Square Feet

C = Runoff Coefficient

$$V_r = (2.3/12)(52527)(0.86) = 8,658 \text{ CF}$$

Provided Retention Volume

Retention is provided in an underground storage tank.

$$V = (A)(L)$$

A = Cross Sectional Area of Tank, SF

$$A = \pi R^2 = \pi(5)^2 = 78.5 \text{ SF}$$

L = Length of Tank, FT

$$V = (78.5)(112) = 8,792 \text{ CF}$$

Tank is 10 feet in diameter, 112 feet in length.

Disposal of Stored Storm Water

$$N = V / (R \times 3600 \times 36)$$

N = Number of drywells needed.

V = Retention Basin Design Volume in cubic feet.

R = percolation rate for drywells in cubic feet per second.

$$N = 8,792 / (0.1 \times 3600 \times 36) = 0.68, \text{ Use one drywell}$$

## Stamper Hangar

### Rational Method Runoff Calculations

Design Storm: 100-year, 10-minute

| Location | C    | TC<br>(min) | i<br>(in/hr) | A<br>(acres) | Q<br>(cfs) | Volume<br>(cf) |
|----------|------|-------------|--------------|--------------|------------|----------------|
| CB1      | 0.95 | 10          | 5.7          | 0.128627     | 0.70       | 418            |
| CB2 & 3  | 0.95 | 10          | 5.7          | 0.144697     | 0.78       | 470            |
| CB4      | 0.95 | 10          | 5.7          | 0.118228     | 0.64       | 384            |
| CB5      | 0.95 | 10          | 5.7          | 0.330877     | 1.79       | 1075           |
| CB6      | 0.95 | 10          | 5.7          | 0.072314     | 0.39       | 235            |
| CB7      | 0.95 | 10          | 5.7          | 0.207989     | 1.13       | 676            |

$Q = CiA$

Q = Peak runoff, cubic feet per second.

C = Coefficient of runoff.

i = intensity of rainfall, Inches per hour.

A = Area contributing to runoff, acres.

V = Runoff Volume, Cubic Feet, =  $TC \times 60 \times CiA$

## Stamper Hangar Valley Gutter

| Location | "n" Factor | Street Slope | Cross Slope | Depth of flow | Spread | Flow Area | Wetted Perimeter | Velocity<br>(1) | Q<br>(2) |
|----------|------------|--------------|-------------|---------------|--------|-----------|------------------|-----------------|----------|
| CB6      | 0.015      | 0.00500      | 0.0150      | 0.08          | 5.33   | 0.43      | 10.67            | 0.82            | 0.35     |

$$(1) V = (1.486/n) * (a/p)^{.667} * (s^{.5})$$

$$(2) Q = (1.486/n) * (a^{1.667}/p^{.667}) * (s^{.5})$$

| Location | T<br>(ft) | Qi with<br>Clogging<br>Factor<br>(cfs) | Q<br>bypassed<br>(cfs) |
|----------|-----------|--|------------------------|
| CB6      | 5.33      | 0.3                                    | 0.1                    |

T = Spread of flow in street

W = Width of Grate

L = Length of Grate

Q = Flow in street

V = Flow velocity

S<sub>x</sub> = Street cross slope

E<sub>o</sub> =  $1 - (1 - W/T)^{2.67}$

#### Grated Catch Basins

| Location | P<br>(ft) |
|----------|-----------|
| CB1      | 6.42      |
| CB 2&3   | 12.84     |
| CB4      | 6.3       |
| CB5      | 6.42      |
| CB7      | 4.67      |

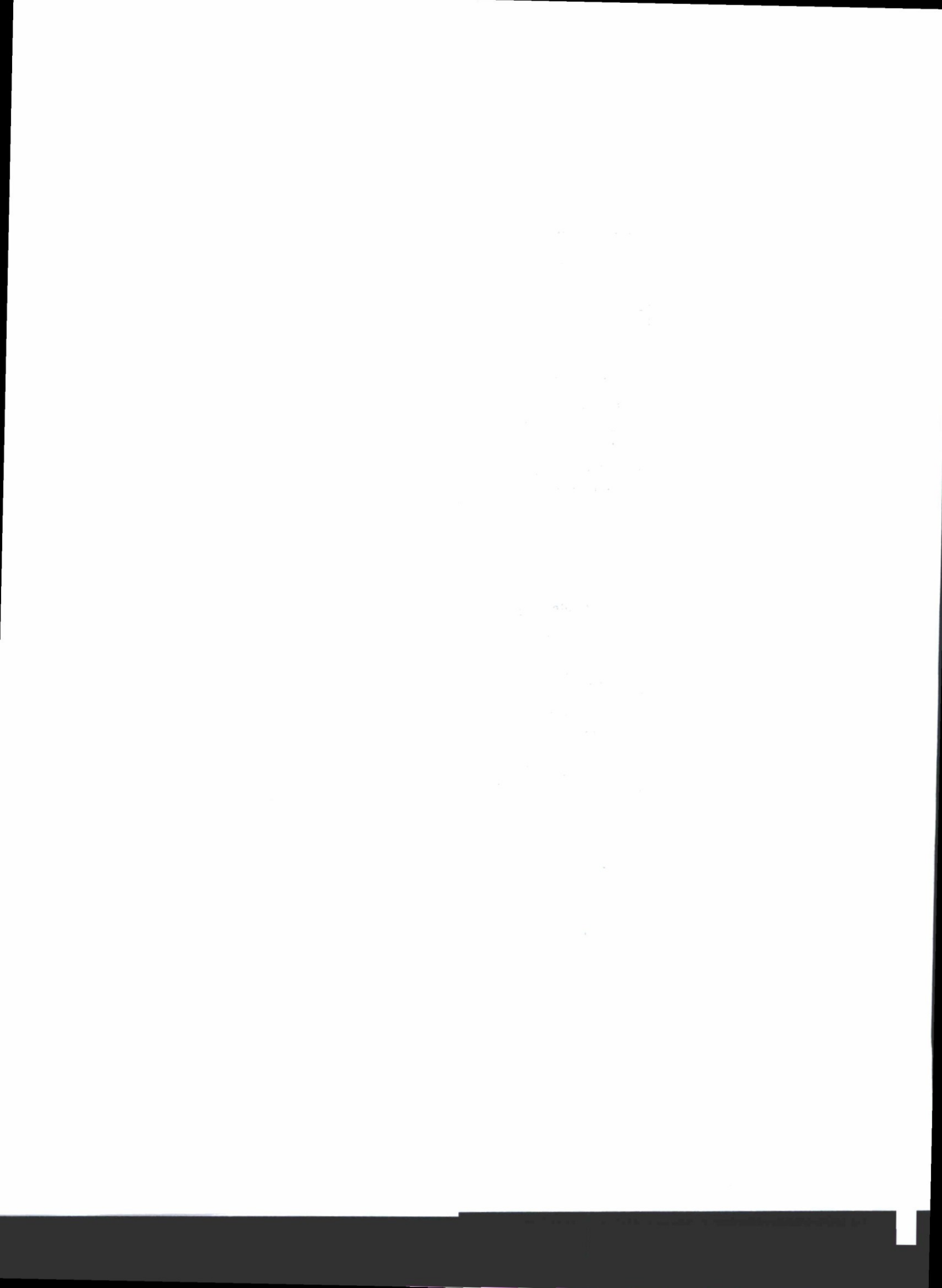
P = open perimeter of grate

d = depth

Qi = Flow intercepted = C<sub>w</sub>Q

C<sub>w</sub> = 3.0

Clogging Factor = 0.5



## **APPENDIX B**

### **Warning and Disclaimer of Liability**



# WARNING & DISCLAIMER OF LIABILITY

The Drainage and Floodplain Regulations and Ordinances of the City of Scottsdale are intended to "minimize the occurrence of losses, hazards and conditions adversely affecting the public health, safety and general welfare which might result from flooding caused by the surface runoff of rainfall" (Scottsdale Revised Code §37-16).

As defined in S.R.C. §37-17, a flood plain or "*Special flood hazard* area means an area having flood and/or flood related erosion hazards as shown on a FHBM or FIRM as zone A, AO, A1-30, AE, A99, AH, or E, and those areas identified as such by the floodplain administrator, delineated in accordance with subsection 37-18(b) and adopted by the floodplain board." It is possible that a property could be inundated by greater frequency flood events or by a flood greater in magnitude than a 100-year flood. Additionally, much of the Scottsdale area is a dynamic flood area; that is, the floodplains may shift from one location to another, over time, due to natural processes.

### WARNING AND DISCLAIMER OF LIABILITY PURSUANT TO S.R.C §37-22

"The degree of flood protection provided by the requirements in this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Floods larger than the base flood can and will occur on rare occasions. Floodwater heights may be increased by man-made or natural causes. This article (Chapter 37, Article II) shall not create liability on the part of the city, any officer or employee thereof, or the federal government for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder."

Compliance with Drainage and Floodplain Regulations and Ordinances does not insure complete protection from flooding. The Floodplain Regulations and Ordinances meet established local and federal standards for floodplain management, but neither this review nor the Regulations and Ordinances take into account such flood related problems as natural erosion, streambed meander or man-made obstructions and diversions, all of which may have an adverse affect in the event of a flood. You are advised to consult your own engineer or other expert regarding these considerations.

I have read and understand the above. If I am an agent for an owner I have made the owner aware of and explained this disclaimer.

\_\_\_\_\_ 14/Mar/18 \_\_\_\_\_  
 Plan Check No.      Owner or Agent      Date

**APPENDIX C**  
**Grading and Drainage Plan**

**APPENDIX D**

**Storm Water Operations and Maintenance Manual**

**STAMPER HANGAR**  
**16061 N 81<sup>ST</sup> STREET**  
**SCOTTSDALE, ARIZONA**

**Storm Water Operations and Maintenance Manual**

### Contact Information

Name of Facility: Stamper Hangar  
Address: 16061 N 81<sup>st</sup> Street  
Scottsdale, Arizona 85260

Main Contact: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-Mail: \_\_\_\_\_

### System Description

Stormwater on the site is collected by several catch basins located in the paved areas and in landscaped areas. These catch basins empty into storm drain pipes that transmit the collected water to an underground stormwater storage tank under the parking drive area. The stored water is drained into a drywell that disposes of the water by percolation into the soil.

The system is designed to operate automatically without any operator inputs.

### City of Scottsdale Underground Storm Water Storage Policy

#### A. Policy

This policy supplements Scottsdale Code requirements for all stormwater storage. Underground stormwater storage involves constructing underground tanks, pipes, or vaults that accept stormwater runoff by means of inlets and storm drain pipes. The city approves underground storage only after rigorous analysis of storage system location, specifications, access, operation and maintenance, liability, and signage.

#### B. General Criteria for Underground Stormwater Storage System Design

1. Underground stormwater storage systems must demonstrate protection of public health, safety, and welfare as established by city codes and policies.
2. All underground stormwater storage elements must meet industry standards or stricter standards.
3. Storage system must not be located under building or parking garages.
4. The owner must dedicate a drainage easement to the city which incorporates the storage system and any additional area needed to allow for maintenance. A 5-foot setback from the property line must be provided to enable access for inspection and maintenance.
5. Design access must address: Provide documentation show least a 75 year life of entire system, including the lining and coating of the underground storage tank.

#### C. Specific Criteria for Underground Stormwater Storage Design

1. Pipes-underground storage system pipes must have a smooth interior floor.
2. Installation-excavation, bedding, and backfill procedures and materials must be in accordance with MAG standards.

3. Access—a minimum of two access points must be provided for each underground storage system to enable inspections and removal of accumulated sediment and debris. Access must be in accordance with MAG standards.

**D. Criteria for Operations, Maintenance and Liability**

1. Provide an O&M Manual in the drainage report covering the following items.
2. Operations and maintenance generally—owner must provide:
3. Maintenance staff with expertise in operation, inspecting, and maintaining an underground stormwater storage system;
4. An Operations and Maintenance Manual on site for the system that includes:
  - a. a schedule for inspections and maintenance, and
  - b. provisions for emergency operations due to power failure, pump failure, and clogged outlet structures;
  - c. A log of the inspections and required maintenance services.
5. Inspections and maintenance required—In addition to maintenance required by the Scottsdale Code and other applicable requirements, owner shall:
6. Inspect system after each storm event of 0.6 inch or more, and semi-annually, preferably prior to summer and winter rains.

**E. Signage**

Before receiving a certificate of occupancy, owner must install signs at each end of the underground storage tank that reads “Notice- Underground Stormwater Storage Tank.” Use black lettering on white background. The size shall be comparable to a “no Parking Sign.”

**F. Liability**

Owner assumes all liability for the design, construction, maintenance and failure of the underground stormwater storage system in perpetuity and hold the City harmless from any such liability. **A signed and notarized document to this effect must be recorded on the property deed by Maricopa County.**

**Special Precautions During Refueling Operations.**

If and when fueling operations occur on the property the following precautions must be taken. Before any fueling operations begin either for filling the underground fuel storage tank or for adding fuel to an aircraft, magnetic mats must be placed over catch basins #5, 6 and 7. These mats must remain in place until all fueling has been completed and the chance for fuel spills has ended. After the completion of fueling, the mats must be removed to allow the catch basin to capture any rain fall that may occur.

**Maintenance**

The facility owner is responsible for the operation and maintenance of the storm water system, and must employ personnel with expertise in operation, inspecting, and maintaining an underground stormwater storage system or must contract with a company providing such services.

The catch basin grates and interiors must be cleared of any debris that may restrict the flow of water into the underground storm drain pipes. The underground pipes must be maintained clear of debris.

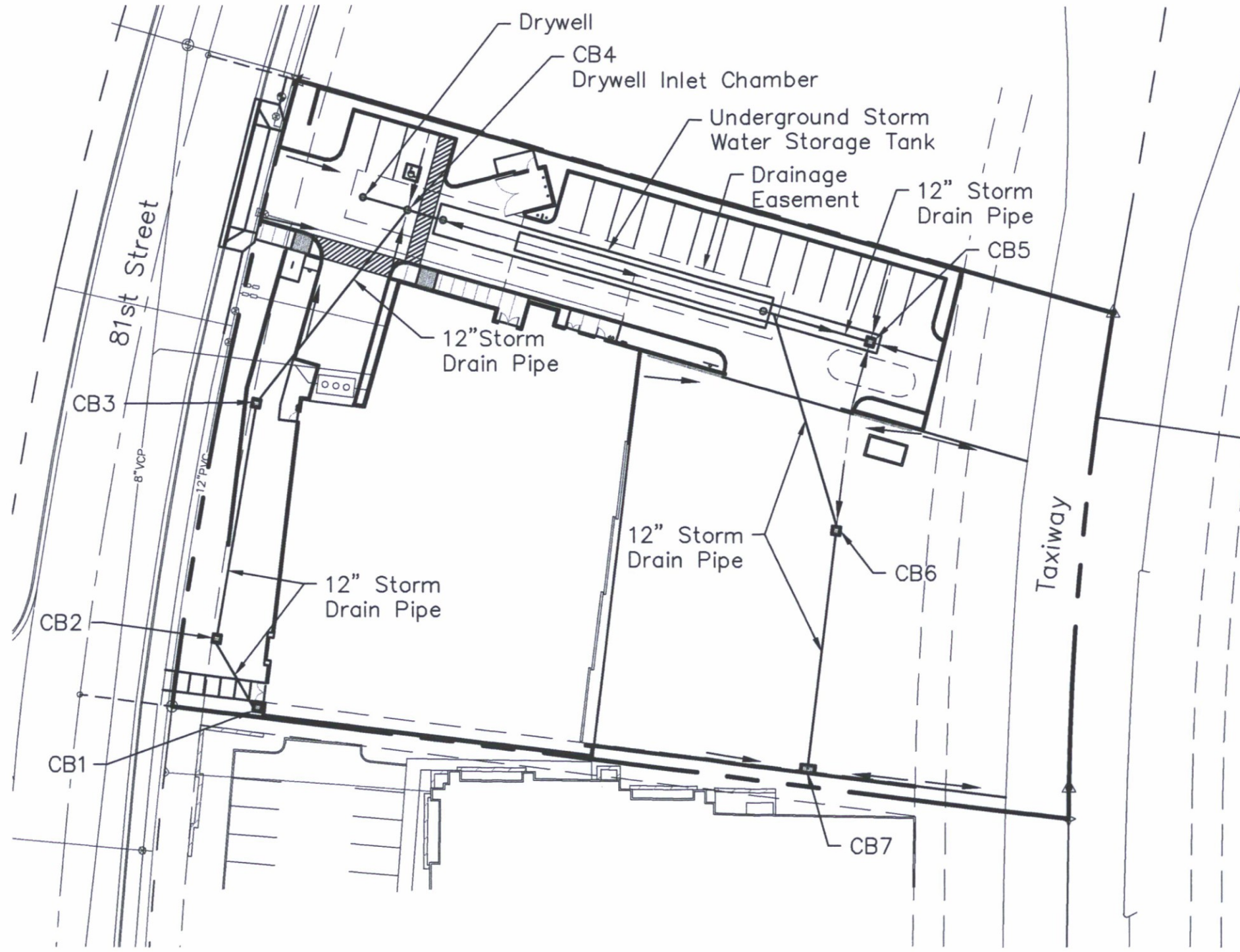
The underground stormwater storage tank, the drywell inlet chamber, and the drywell itself will by the very nature of their operation collect silt and debris. These structures must be cleaned out when the level of this debris reaches a depth of 12 inches.

### **Inspections**

The storm drainage system must be inspected after each and every rainfall event equaling 0.6 inches or more and semi- annually. It is suggested that the semi-annual inspections be scheduled prior to the onset of the summer and winter rainy seasons.

A log must be kept of each inspection and any debris buildup or damage noted. Clean outs and/or repairs should be scheduled as needed.

A suggested inspection log sheet and a suggested drywell inspection checklist are attached.



0 40' 80'

Direction of Drainage

CB1 = Catch Basin #1

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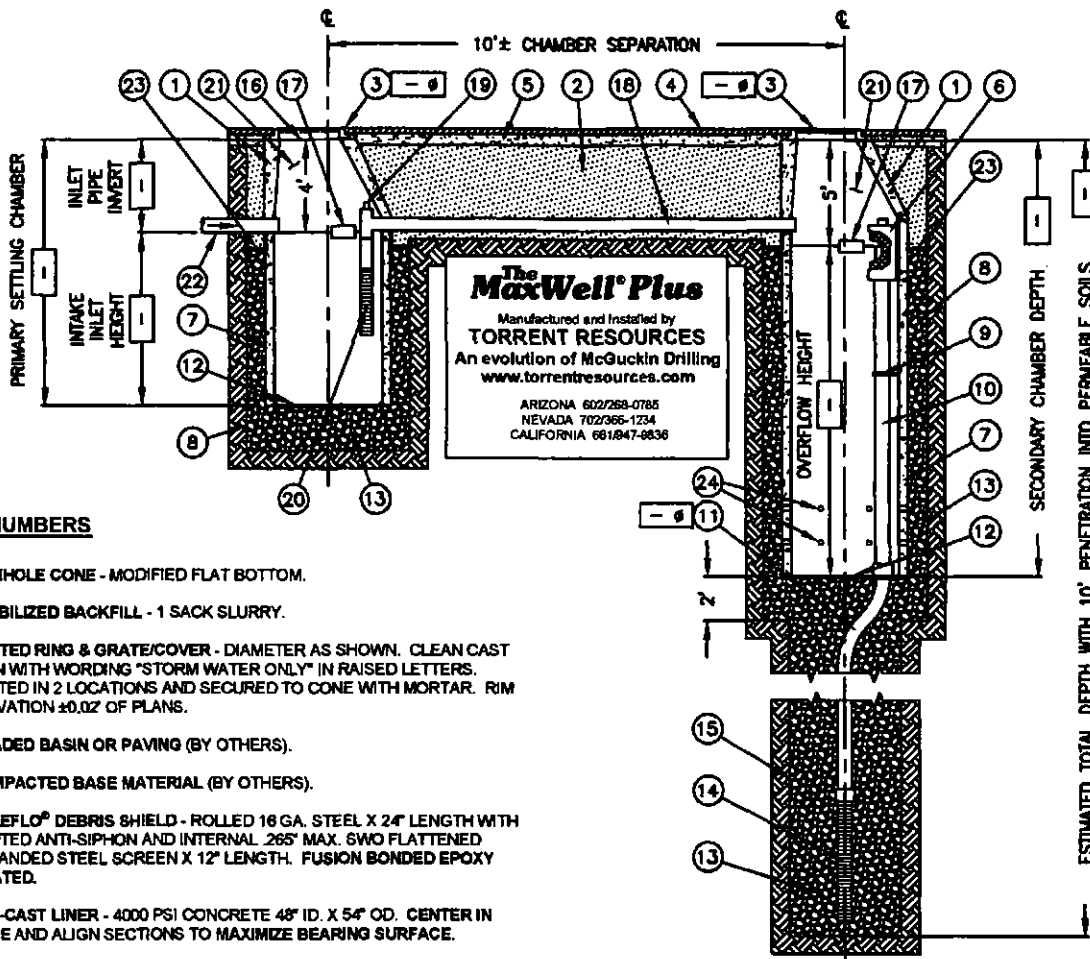
7898 E. Redfield Road, Suite 100 | Scottsdale, AZ 85260 | Ph: (480) 485-1500 | www.Trapeziumgroup.com

Stamper Hangar  
 16061 N 81st Street, Scottsdale  
 Site Map

PROJ. MGR.: PIR  
 PROJ. ASSOC.: \_\_\_\_\_  
 DATE: 2-26-18  
 SCALE: 1"=40'  
 PROJECT #: LAASCA

SHEET

# The MaxWell® Plus Drainage System Detail And Specifications



**The MaxWell® Plus**  
 Manufactured and Installed by  
**TORRENT RESOURCES**  
 An evolution of McGuckin Drilling  
 www.torrentresources.com  
 ARIZONA 602/268-0785  
 NEVADA 702/365-1234  
 CALIFORNIA 661/847-8836

## ITEM NUMBERS

1. MANHOLE CONE - MODIFIED FLAT BOTTOM.
2. STABILIZED BACKFILL - 1 SACK SLURRY.
3. BOLTED RING & GRATE/COVER - DIAMETER AS SHOWN. CLEAN CAST IRON WITH WORDING "STORM WATER ONLY" IN RAISED LETTERS. BOLTED IN 2 LOCATIONS AND SECURED TO CONE WITH MORTAR. RIM ELEVATION ±0.02' OF PLANS.
4. GRADED BASIN OR PAVING (BY OTHERS).
5. COMPACTED BASE MATERIAL (BY OTHERS).
6. PUREFLO® DEBRIS SHIELD - ROLLED 18 GA. STEEL X 24" LENGTH WITH VENTED ANTI-SIPHON AND INTERNAL .265" MAX. SWO FLATTENED EXPANDED STEEL SCREEN X 12" LENGTH. FUSION BONDED EPOXY COATED.
7. PRE-CAST LINER - 4000 PSI CONCRETE 48" ID. X 54" OD. CENTER IN HOLE AND ALIGN SECTIONS TO MAXIMIZE BEARING SURFACE.
8. MIN. 6" Ø DRILLED SHAFT.
9. SUPPORT BRACKET - FORMED 12 GA. STEEL. FUSION BONDED EPOXY COATED.
10. OVERFLOW PIPE - SCH. 40 PVC MATED TO DRAINAGE PIPE AT BASE SEAL.
11. DRAINAGE PIPE - ADS HIGHWAY GRADE WITH TRI-A COUPLER. SUSPEND PIPE DURING BACKFILL OPERATIONS TO PREVENT BUCKLING OR BREAKAGE. DIAMETER AS NOTED.
12. BASE SEAL - GEOTEXTILE OR CONCRETE SLURRY.
13. ROCK - WASHED, SIZED BETWEEN 3/8" AND 1-1/2" TO BEST COMPLEMENT SOIL CONDITIONS.
14. FLOFAST® DRAINAGE SCREEN - SCH. 40 PVC 0.120" SLOTTED WELL SCREEN WITH 32 SLOTS PER ROW/FT. DIAMETER VARIES 120" OVERALL LENGTH WITH TRI-B COUPLER.
15. MIN. 4" Ø SHAFT - DRILLED TO MAINTAIN PERMEABILITY OF DRAINAGE SOILS.
16. FABRIC SEAL - U.V. RESISTANT GEOTEXTILE - TO BE REMOVED BY CUSTOMER AT PROJECT COMPLETION.
17. ABSORBENT - HYDROPHOBIC PETRO-CHEMICAL SPONGE. MIN. 128 OZ. CAPACITY.
18. CONNECTOR PIPE - 4" Ø SCH. 40 PVC.
19. ANTI-SIPHON VENT WITH FLOW REGULATOR.
20. INTAKE SCREEN - SCH. 40 PVC 0.120" MODIFIED SLOTTED WELL SCREEN WITH 32 SLOTS PER ROW/FT. 48" OVERALL LENGTH WITH TRI-C END CAP.
21. FREEBOARD DEPTH VARIES WITH INLET PIPE ELEVATION. INCREASE PRIMARY/SECONDARY SETTLING CHAMBER DEPTHS AS NEEDED TO MAINTAIN ALL INLET PIPE ELEVATIONS ABOVE CONNECTOR PIPE OVERFLOW.
22. OPTIONAL INLET PIPE (BY OTHERS).
23. MOISTURE MEMBRANE - 8 MIL. PLASTIC. PLACE SECURELY AGAINST ECCENTRIC CONE AND HOLE SIDEWALL. USED IN LIEU OF SLURRY IN LANDSCAPED AREAS.
24. EIGHT (8) PERFORATIONS PER FOOT, 2 ROWS MIN.

AT Lic. ROC070485 A, ROC047087 B-A, ADWR 963  
 CA Lic. 62800, C-42, HAZ.  
 NV Lic. 008360 A - 181 Lic. 90604 GFD4  
 U.S. Patent No. 4,923,330 - TM Trademark 1974, 1980, 2004



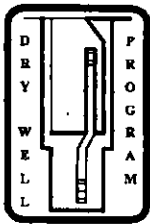
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ENVIRONMENTAL  
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 CIVIL DESIGN

**STAMPER HANGAR**  
 16061 N 81ST STREET  
 Drywell Detail

|             |     |       |   |
|-------------|-----|-------|---|
| PROJ. MGR.: | PIR | SHEET | 1 |
| DRAWN BY:   | PIR | OF    | 1 |





## ANNUAL DRY WELLS INSPECTION CHECKLIST

*ADEQ encourages facility owners or operators to use this list as guidance for performing annual inspections for dry well (s) located in industrial areas where hazardous substances are used, stored, loaded, or treated.*

This check list is developed to help industrial operators monitor and inspect dry wells located within drainage areas where hazardous substances are used, stored, loaded, or treated to ensure that there is no evidence of unauthorized discharge. Dry wells in such areas are subject to Aquifer Protection Permit (APP) requirements. Therefore, it is recommended that owners or operators maintain these records. These records should also be made available for review if requested during site inspections by ADEQ personnel. This inspection record should be kept at the facility for a minimum of three years.

PROPERTY NAME \_\_\_\_\_

PROPERTY ADDRESS \_\_\_\_\_

PROPERTY CONTACT \_\_\_\_\_ PHONE \_\_\_\_\_

DATE OF INSPECTION \_\_\_\_\_ INSPECTED BY \_\_\_\_\_

**PLEASE CHECK ALL THAT APPLY**

**GENERAL**

**A. DOES THE SITE DRAIN TO:**

- |   | Yes   | No    |
|---|-------|-------|
| 1. Street or gutter via pavement?                                       | _____ | _____ |
| 2. A storm drain catch basin that empties into a municipal storm drain? | _____ | _____ |
| 3. An on-site stormwater retention basin and/or dry well?               | _____ | _____ |

**B. IF THERE IS A RETENTION BASIN AT THE SITE:**

- |  |       |       |
|--|-------|-------|
| 1. Does stormwater drain within 36 hours after a rainfall event?           | _____ | _____ |
| 2. Do liquids other than stormwater enter the retention basin or dry well? | _____ | _____ |

**C. ARE THERE SPECIAL DRAINAGE FEATURES THAT DISCHARGE INTO THE DRY WELL SUCH AS:**

- |   |       |       |
|---|-------|-------|
| 1. Floor drains?  | _____ | _____ |
| 2. Truck docks or loading areas?  | _____ | _____ |
| 3. Vehicle service or maintenance areas?  | _____ | _____ |
| 4. Vehicle or equipment washing facilities?   | _____ | _____ |
| 5. Fueling areas?   | _____ | _____ |
| 6. Other areas where hazardous substances are used, stored, loaded or treated? Please describe. | _____ | _____ |

\_\_\_\_\_

**Site**

Please include detailed descriptions of the items listed below that pertain to the facility. If possible, attach a site plan or sketch map showing the retention area, dry well(s), and the storm water drainage directions.

**A. MEASURES USED TO KEEP HAZARDOUS SUBSTANCES OUT OF THE DRAINAGE AREA:**

|                                 | Yes | No  |
|---------------------------------|-----|-----|
| 1. Isolation?                   | ___ | ___ |
| 2. Berming?                     | ___ | ___ |
| 3. Covering?                    | ___ | ___ |
| 4. Other? Please describe _____ | ___ | ___ |
| _____                           |     |     |
| _____                           |     |     |

**B. ARE THERE INDICATIONS OF HAZARDOUS SUBSTANCES IN THE DRAINAGE AREA, SUCH AS:**

|  | Yes | No  |
|--|-----|-----|
| 1. Substance residue on pavement or soil?            | ___ | ___ |
| 2. Staining or etching of pavement or soil?          | ___ | ___ |
| 3. Heavy oil or grease build-up on pavement or soil? | ___ | ___ |

**C. WATER FROM HAZARDOUS SUBSTANCE AREA DRAINS TO:**

|                                   | Yes | No  |
|-----------------------------------|-----|-----|
| 1. Treatment facility?(List Type) | ___ | ___ |
| 2. Interceptor?(List Type)        | ___ | ___ |
| 3. Lined surface Impoundment?     | ___ | ___ |
| 4. Underground holding tank?      | ___ | ___ |
| 5. Sanitary Sewer?                | ___ | ___ |
| 6. Other? Please describe _____   | ___ | ___ |
| _____                             |     |     |
| _____                             |     |     |

**PLEASE DUPLICATE THIS SECTION AS NEEDED AND ANSWER THE QUESTIONS FOR EACH DRY WELL LOCATED IN A RETENTION BASIN AND/OR PAVED AREA.**

**DRY WELLS**

**A. PAVEMENT DRY WELLS:**

1. Depth of chamber \_\_\_\_\_ ft?
2. Depth to top of debris \_\_\_\_\_ ft?
3. Indication of oil or substance residue on the grate inlet? Yes    No
4. Is there a drainage screen or shielding device? \_\_\_\_\_
5. If so, is screen and/or shield clogged? Please describe. \_\_\_\_\_

---

6. Is there a petrochemical sponge or other absorbent in the dry well chamber? Please describe.

---

7. If so, what is the condition of the absorbent? Please describe.

---

**B. RETENTION BASIN DRY WELLS:**

1. Depth of chamber \_\_\_\_\_ ft?
2. Depth to top of debris \_\_\_\_\_ ft?
3. If the retention basin bottom is natural dirt or decomposed rock, is the grated inlet raised above the bottom of the basin at least three inches? Yes    No
4. Indication of oil or substance residue on the grate inlet? \_\_\_\_\_
5. Is there a drainage screen or shielding device? \_\_\_\_\_
6. If so, is screen and/or shield clogged? Please describe. \_\_\_\_\_

---

7. Is there a petrochemical sponge or other absorbent in the dry well chamber? Please describe.

---

8. If so, what is the condition of the absorbent? Please describe.

---

OTHER ON-SITE CONTAMINATION AS EVIDENCED BY:

Please describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8/27/96