PRELIMINARY DRAINAGE REPORT

Aire on McDowell

Single-Family Attached Homes
NEC 68th Street & McDowell Road
Scottsdale, AZ

Prepared For:

KHovnanian® Homes

Plan # _____

Case # 8-PP-2015

Q-S # _____

☐ Accepted

☑ Corrections

N. Baronas 1-4-16

Reviewed By Date

Copy #1

Prepared by:

EXPIRES 12-31-15

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Project Number: 150799

Original Submittal Date: August 21, 2015
Resubmittal Date: December 2, 2015 (Prelim Plat)

Case No.: 4-GP-2015; 15-ZN-2015 **Plan Check No.: TBD**

EXPIRES 12-31-15

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1. INTRODUCTION

This Preliminary Drainage Report represents the storm water analysis for the Aire on McDowell single-family attached homes residential subdivision proposed in Scottsdale, Arizona. The purpose of this report is to provide the hydrologic and hydraulic analyses, required by the City of Scottsdale, to support the proposed site plan for said subdivision. This report includes discussions and calculations defining the storm water management concepts for collection, conveyance, and detention systems necessary to comply with the drainage requirements of the City of Scottsdale and Maricopa County. Preparation of this report has been done in accordance with the requirements of the City of Scottsdale Design Standards & Policies Manual (DS&PM) 2010 [1], and the Drainage Design Manuals for Maricopa County, Arizona, Volumes I[2] and Volume II[3].

2. LOCATION AND PROJECT DESCRIPTION

2.1 LOCATION:

The project property consists of three parcels of land located in the SE ¼ of Section 34, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona; Parcel ID numbers are APN: 129-08-052B; 129-08-052C; and 129-08-052D. The project is located at the NEC of N. 68th Street and E. McDowell Road in Scottsdale, AZ. Refer to **FIGURE 1 - Vicinity Map** for the project's location with respect to major cross streets.

2.2 EXISTING AND PROPOSED DEVELOPMENTS SURROUNDING THE SITE:

The site is bounded by McDowell Road to the south, 68th Street to the west with C-3 commercial across, by an alley to the north with the Village Grove 6 residential subdivision across, and 69th Street to the east with C-3 commercial across.

2.3 EXISTING SITE DESCRIPTION:

Land ownership, as defined by ALTA/ACSM Land Title Survey by Arizona Surveying & Mapping dated 05/05/15 includes 5.11+/- acres of commercially developed land. City of Scottsdale zoning map designates this parcel as C-3.

This site is fully developed as a car dealership that is currently vacant. The topography generally slopes from the west-northwest to the southeast corner at approximately one-percent with a change in elevation of approximately eight (8) feet. Typical desert landscaping exists at the perimeter of the site. Refer to **FIGURE 2** for an aerial of the overall project existing conditions.

2.4 PROPOSED SITE DEVELOPMENT:

The property is proposed to be re-developed with new lot configurations into 81 single-family residential townhomes. Development will include 20' to 24' wide roads with rolled curbs. Refer to FIGURE 5 for proposed site layout.

2.5 FLOOD HAZARD ZONE:

As defined by the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona, and incorporated areas, Community number 045012, Panel number 2235 of 4425, as shown on Map Number 04013C2235L dated October 16, 2013 this site is designated as **Zone "X"**. As such, it is defined as areas of 0.2-percent-annual-

chance (or 500-year) flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and area protected by levees from the 100 year flood. Refer to **FIGURE 3** for the FIRM.

3. EXISTING DRAINGE CONDITIONS

3.1 OFF-SITE DRAINAGE:

This site is bound by a paved alley to the north. QS13-44 contour map indicates all runoff is conveyed along the north side of the property, from west to east. The other three sides of the site are bound by roadways with curb and gutter. No off-site flows impact the subject parcel. Refer to **FIGURE 4** for the COS QS 13-44 Contour Map and **Appendix IV** for the ALTA/Topographic Survey.

3.2 ON-SITE DRAINAGE:

The site is developed commercial property with generally flat slopes from west-northwest to east-southeast at approximately one (1) percent. Ponding occurs at six locations on site as follows:

Pond 1: Surface ponding occurs on the pavement near the easterly drive entrance from McDowell Road. This area extends under an existing parking structure and has a drywell discharging the retained runoff volume. Ponding depth is approximately six inches with a volume of approximately 1,566 CF.

Pond 2: Pond 2 is an open basin located east of the parking structure, adjacent to 69th Street. The existing volume is approximately 947 CF at 1.3 feet depth and is discharged by an existing drywell.

Pond 3: An additional open basin is located east of the parking structure, north of Pond 2, in the northeast corner of the subject property. Existing storage volume is approximately 403 CF at 1.3 feet depth and is discharged by an existing drywell.

Pond 4: Surface ponding occurs on the pavement under the northeast corner of the parking structure. Existing storage volume is approximately 616 CF at an approximate depth of six inches. An existing drywell discharges the retained runoff.

Pond 5: There is an open basin located in the northwest corner of the parcel between the building and 68th Street. Available storage volume is approximately 955 CF at a depth of one (1) foot. Discharge is via ground percolation.

Pond 6: An area adjacent to the westerly drive entrance off McDowell Road provides approximately 476 CF of storage at a depth of one (1) foot with discharge occurring via ground percolation.

Based on the above, existing available stormwater storage is approximately **4,963 CF.** Topographic survey, visual inspection of the site, and inspection of the existing drywells do not indicate underground retention is provided on this site.

Refer to **Appendix V** for existing drainage information including. ed?

Please provide figure to identify locations of ponds 1 through 6.

4. PROPOSED STORM WATER MANAGEMENT

4.1 DESIGN INTENT:

On-site drainage will be handled within street sections, onsite channels, or retention basins where necessary. This is a re-development of existing commercial land, therefore, the City of Scottsdale specifies that on-site retention shall be provided to maintain existing retention volumes and to store the difference between the pre vs. post development runoff from the 100-year 2-hour storm event.

On-site retention will be provided as allowed by site configuration within the roadways and/or open space and have total discharge of the storm water within thirty-six hours. The ultimate outfall remains the historical outlet over the sidewalk/curb at the southeast corner of the site with an elevation of 45.65

In general, the units will be graded to the front and into the street where it will be conveyed via curb and gutter and valley gutters, inlet structures, and ultimately to the retention areas. As applicable, the project will be designed to keep the 10 year peak flow rates within the top of the curbs, and the 100 year peak flows within the Right-of-Way at gutter depth of less than or equal to 0.67 feet. Roll curb will be utilized throughout the project with the addition of storm drains, scuppers, or curb-cuts to be used when necessary to convey the 100 year runoff.

Refer to Section 5 below for a discussion on proposed finished floor elevations. Refer to Exhibit "C" in **Appendix III** for the Preliminary Grading & Drainage Plan.

4.2 DESIGN STORM REQUIREMENTS:

In accordance with City of Scottsdale requirements, stormwater storage for the 100-year 2-hour storm event based on pre-development versus post development C values.

4.3 CHARACTERISTICS OF BASINS:

The proposed basins are a combination of R-5 single-family attached residential areas and road rights-of-way 46 feet wide. Based on Figure 4.1-4 of the DS&PM, runoff coefficients for the 100 year storm event used are as follows:

- C=0.45 for undisturbed natural desert or desert landscaping without impervious weed barrier.
- C=0.94 for the lots in R-5 zones (will use 0.95)
- C=0.95 for R.O.W / pavement areas.

HYDROLOGIC ANALYSIS: The hydrologic analysis is determined using the procedures in the City of Scottsdale Design Standards & Policies Manual and the Drainage Design Manual for Maricopa County, Arizona, Volume I. The Rational Method was utilized to compute the on-site peak discharges. The following established the Rational Method equation and the basic input data required:

$Q=C_{wt}IA$

Where: C_{wt} = The runoff coefficient relating runoff to rainfall
I = Average rainfall intensity in inches/hour, lasting for Tc
Tc = The time of concentration (minutes)

A = The contributing drainage area in acres

C_{wt} CALCULATIONS:

- Pre-development (Refer to EXHIBIT "A")
  - Landscape area (Grass): N/A @ C=0.30
  - Landscape area (Desert): 0.64 Ac. @ C=0.45
  - Impervious Ares (Roof / Pavement): 4.46 Ac. @ C=0.95

  C_{wt}: 5.10 Ac. @ **C_{wt} = 0.887**

- Post-development (Refer to EXHIBIT "B")
  - Landscape area (Grass): n/a @ C=0.30
  - Landscape area (Desert): 1.19 Ac. @ C=0.45
  - Impervious Ares (Roof / Pavement): 3.91 Ac. @ C=0.95

  C_{wt}: 5.10 Ac. @ **C_{wt} = 0.833**

RUNOFF RATE:

Q_{100} PRE = 0.887 * 5.60 in/hr * 5.10 ac = **25.33 CFS**
Q_{100} POST = 0.833 * 5.60 in/hr * 5.10 ac = **23.79 CFS**

4.4 OFF-SITE FLOW :

No off-site flows contribute to this site.

Please reconsider off-site impacts. See comments on preliminary grading plan.

4.5 STORMWATER RETENTION:

REQUIRED STORAGE:

Stormwater storage required is calculated In accordance with the COS – DS&PM. Required Retention (Acre-Feet) = $(P/12)*A*(C_{post} - C_{pre})$

Where: P = 100 Yr. 2 Hr. Precipitation in Inches (Ref: Isopluvial from DS&PM, Appendix 4-1D, pg. 11)
A = Area (Acres)
C = Cpost – Cpre

From Section 4.3 above, the C_{wt} is decreased from 0.887 pre-development to 0. 833 post-development (6.1%) therefore no additional retention is required as a result of the redevelopment. Retention will be provided to maintain existing conditions. As noted in Section 3.2 above, existing retention on site is approximately **4,963 CF.**

However, Case Report 89-DR-2008 for Center Lane Auto Sales stipulates "Pond 3" be re-graded in accordance with the recommendation of a letter report associated with the demolishment of a service building. Based on existing pond layouts it is assumed that "Pond 3" is Pond 2 and Pond 3 of this report. The letter report recommended regrading of the pond to 5,400 CF. Therefore, the required volume for this report will be the combination of existing volumes in Ponds 1, 4, 5, and 6 plus the stipulated volume per the letter.

V_r = 955 CF + 476 CF + 616 CF + 1,566 CF + 5,400 CF = **9,013 CF**

Refer to **Appendix V** for a copy of the stipulation (excerpt from Case Report) and the analysis letter.

PROVIDED STORAGE:

COS requires storm water retention to be provided in open basins for residential developments. The available open space is located at the east end of the project, adjacent to 69th Street. To maximize proposed storage volume, the basin is proposed to have 4:1 slopes from the R.O.W. property lines and use retaining walls along the adjacent residential units.

Table 1 below is a summary of proposed stormwater retention volume in the open basin.

Table 1 – Proposed Retention Volume

ELEV	AREA	DEPTH	AVG. VOL. (CF)	SUM VOL. (CF)
1243	4838			0
		1	5390	
1244	5942			5390
		1	6824.5	
1245	7707			12,214.5

The proposed retention volume of **12,214 CF** is greater than the required storage volume of **9,013 CF.**

STORAGE DISCHARGE:

Four drywells are registered on the site with ADEQ (registration No. 15180). As described in Section 3.2 above, these drywells discharge relatively small storage volumes. The two drywells associated with the pavement surface areas (existing Ponds 1 and 4) will be removed. The remaining two dry-wells will be maintained or replaced if required due to new construction encroachment or inadequate infiltration rates based on discharge of the water within 36 hours.

Drywells are proposed in the on-site storage facilities to dispose of the stormwater within thirty-six (36) hours. The calculation is as follows:

- Minimum percolating rate of a drywell (for planning purposes) = 0.1 cfs
- Volume to be drained in 36 hours = 0.1 cfs * 36 hours * 3600 sec/hour = 12,960 cf = 0.298 acre-feet

Basin"A" Provided storage = 12,214 cf
12,214 cf / 12,960 cf per drywell = 0.91 = 1 drywell required.
Two drywells are existing / proposed

The remainder of the runoff that is not retained will be conveyed to the McDowell Road storm drain by pumping or using a standpipe overflow.

Refer to Table 2 below for pond routing to determine the minimum rate of release.

Table 2 – Proposed Pond By-Pass release rate

Tc (min.)	I100	A (ac)	C	Q(in) (cfs)	Q (out) (cfs)	Qi-QoxTcx60 (cf)
5	7.36	5.10	0.833	31.27	6.45	7445.25
10	5.6	5.10	0.833	23.79	6.45	10404.29
15	4.63	5.10	0.833	19.67	6.45	11897.67
30	3.11	5.10	0.833	13.21	6.45	12171.98
60	1.93	5.10	0.833	8.20	6.45	6297.19
120	1.07	5.10	0.833	4.55	6.45	-13711.10
180	0.76	5.10	0.833	3.23	6.45	-34789.95
360	0.421	5.10	0.833	1.79	6.45	-100687.66
720	0.223	5.10	0.833	0.95	6.45	-237713.58
1440	0.145	5.10	0.833	0.62	6.45	-504057.30

By trial-and-error, the above Table 2 indicates the minimum release rate for the 100-yr event to maximize available storage is 6.45 cfs

Using the above release rate of 6.45 cfs, a restricted outlet will be used to by-pass runoff through the retention basin, calculated as summarized below in Table 3.

Table 3 – Restricted Outlet Calculations

RESTRICTED OUTLET - ORIFICE EQUATION										
	Q=CdA√2gh		Were:							
			Q=	Flow rate (cfs):			6.45			
			Cd=	Coefficient			0.62			
			A=	Area of orifice (sf)						
			g=	Acceleration from gravity (fps)			32.2			
			h=	Head (on centerline) (ft)			1.53		HWE	CL Elev
									1245	1243.47
	SOLVING FOR "A":									
	A=	6.45/0.62*√2*32.2*1.5 =			0.717 sf	(0.95' dia.) USE 11.5" DIA				

Per the above calculations, an 11.5" diameter orifice with the invert set at the bottom of pond elevation will be used to release runoff from the retention basin. An overflow standpipe will be provided with a weir elevation set at the design HWE for additional protection. The storage basin is designed with one (1) foot of freeboard above the proposed HWE.

4.6 STREET CAPACITY CALCULATIONS:

These calculations will be provided in the Final Drainage Report, including curb and gutter, street section, and valley gutter designs as appropriate.

4.7 STORM DRAIN INLET CALCULATIONS:

These calculations will be provided in the Final Drainage Report

5. FLOOD SAFETY FOR DWELLINGS

5.1 FINISHED FLOOR ELEVATIONS

Garage floor elevations will be set at approximately nine (9) inches above the adjacent gutter line elevation. This provides for a 4" rolled curb, 6' wide sidewalk with a cross slope of 2% maximum, and 3' of drive into the garage at a 10% slope.

All building finished floor elevations will be set a minimum of 14 inches above the ultimate lot outlet points and a minimum of 12 inches above the 100-year high-water elevation of any adjacent streets and drainage paths. This will ensure that each building will be well above the 100-year water level.

6. CONCLUSIONS

6.1 OVERALL PROJECT:

Please re-evaluate.

1. Off-site storm water does not impact this project
3. The finish floor elevations will be designed a minimum of 12 inches above the 100-year water surface in adjacent streets and drainage paths and a minimum of 14 inches above the low top of curb of the lot.
4. Storm water storage will be provided to maintain existing conditions and discharge within 36 hours in accordance with City of Scottsdale requirements.

6.2 PROJECT PHASING:

As a residential development the infrastructure will be constructed in a single phase to accommodate dwelling unit growth. The dwelling units may be phased based on consumer demand.

7. WARNING AND DISCLAIMER OF LIABILITY

RE: following page.

8. REFERENCES

1. *Design Standards & Policies Manual, City of Scottsdale – January 2010*
2. *Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology, Flood Control District of Maricopa County, Fourth Edition, November 18, 2009 amended through February 10, 2011*
3. *Drainage Design Manual for Maricopa County, Arizona, Volume II, Hydraulics, Flood Control District of Maricopa County, January 28, 1996*

Appendix 4-1C

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.

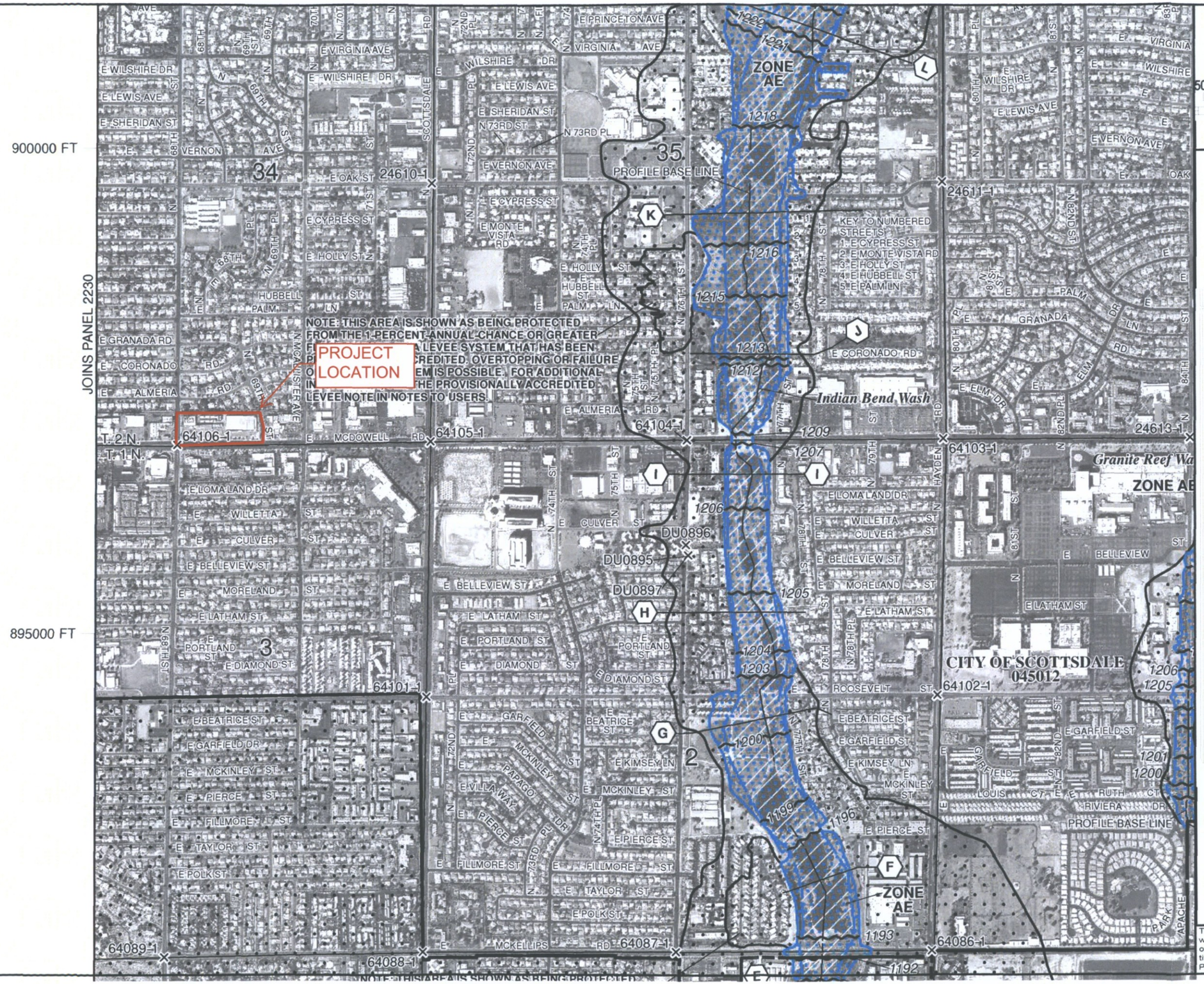
_____	_____	_____
Plan Check No.	Owner or Agent	Date

FIGURE 1. VICINITY MAP

NORTH

N.T.S.

FIGURE 2
AERIAL



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET METE

NFIP PANEL 2235L

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2235 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

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

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C2235L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency

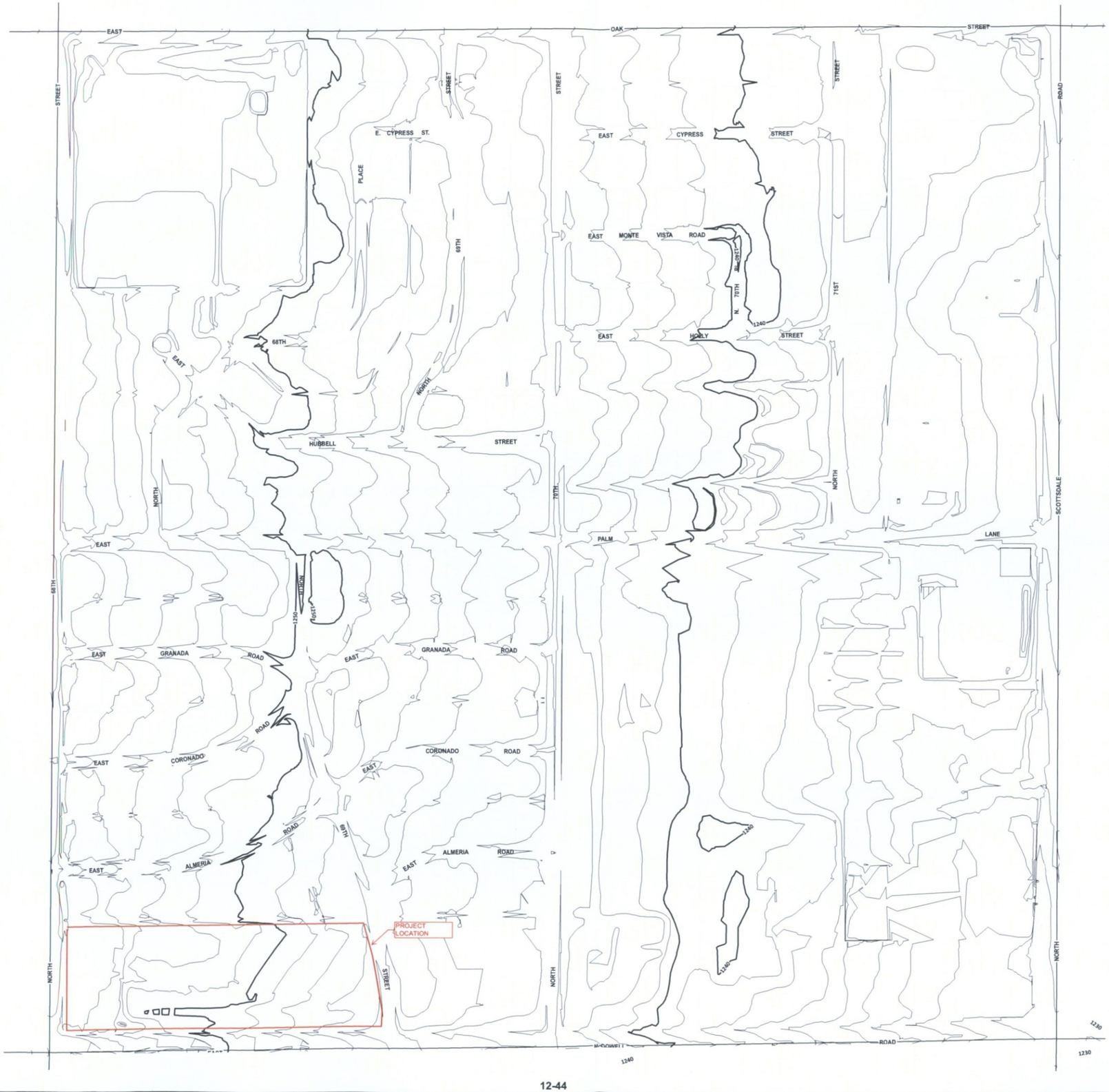
FIGURE 3

14-44

13-43

13-45

12-44



GENERAL NOTES:

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND, THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

VICINITY MAP

NORTH

SCALE: 1" = 100'

0 50 100 200

The map scale of 1" = 100' is based on a full size print of 30" x 36"

CONTOUR

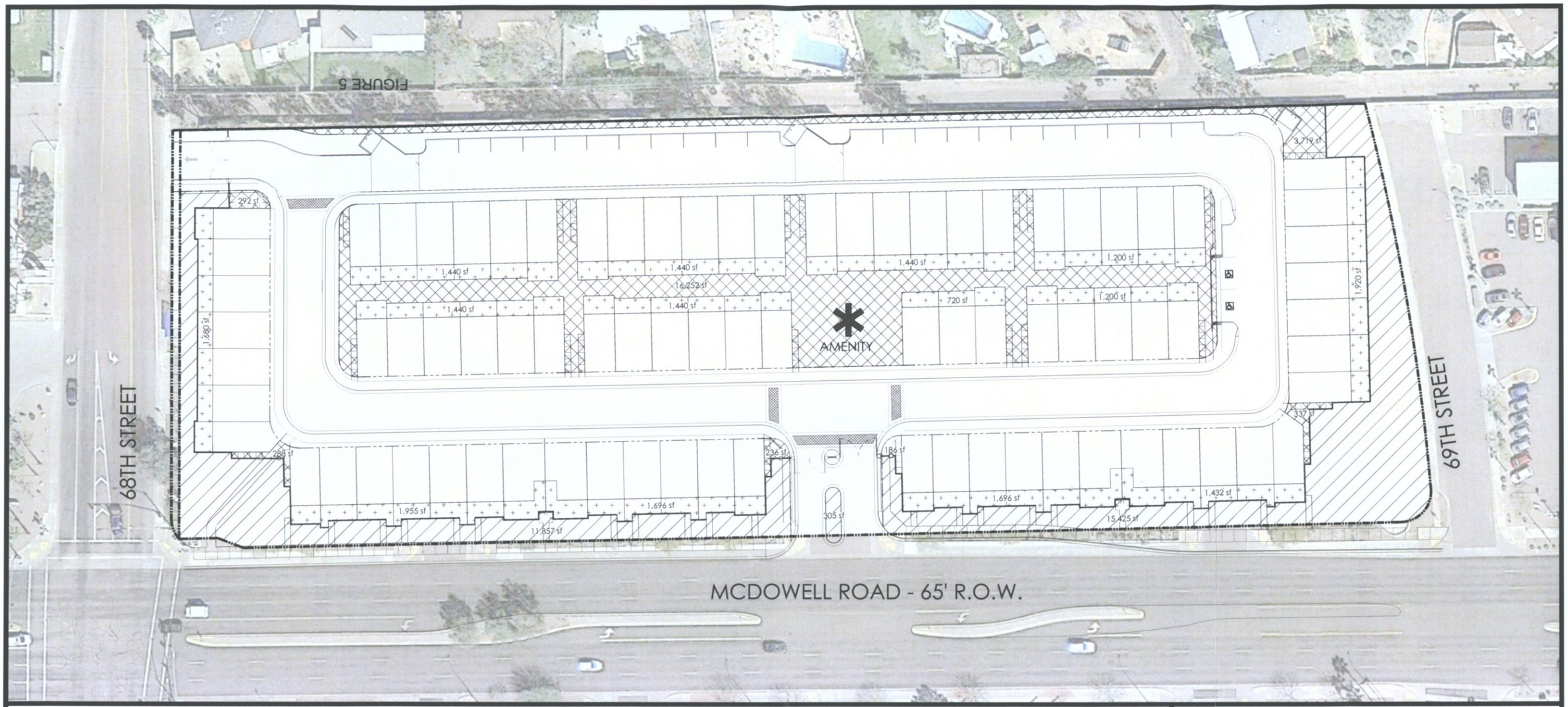
QUARTER SECTION MAP

13-44

SE 1/4 SEC. 34 T2N R4E

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

28-APR-14



OPEN SPACE ANALYSIS:

FRONTAGE OPEN SPACE
REQUIRED: 1,361 LF X 20= 27,220 SQ FT
PROVIDED: 27,589 SF

COMMON OPEN SPACE
REQUIRED: 48,874 SF (22% OF NET)
PROVIDED: 48,902 SF

PRIVATE OUTDOOR LIVING SPACE*
REQUIRED: +/- 13,655 SF
PROVIDED: +/- 20,702 SF
*MINIMUM: 240 SF/UNIT

SITE DATA:

ADDRESS:	6850 E MCDOWELL RD.
SITE AREA (NET):	222,314 (5.11 AC)
SITE AREA (GROSS):	298,775 SF (6.86 AC)
PROPOSED # OF LOTS:	81
NET DENSITY:	15.8 DU/AC
GROSS DENSITY:	11.8 DU/AC
CURRENT ZONING:	C-3
PROPOSED ZONING:	R-5
RESIDENT PARKING:	2 GARAGE SPACES/UNIT
GUEST PARKING:	25 SPACES (INCLUDES 2 ACCESSIBLE SPACES)
MAX. BUILDING HEIGHT:	36' PER ZONING
TYP. LOT DIMENSIONS:	24'x48', 20'x50'
OPEN SPACE:	SEE OPEN SPACE PLAN

LVA urban design studio
land planning • development entitlements • landscape architecture
120 south ash avenue • tempe, arizona 85281 • 480.994.0994

KH Hovnanian Homes

AIRE ON MCDOWELL

OPEN SPACE PLAN

APPROX. SCALE: 1"=30'

NORTH

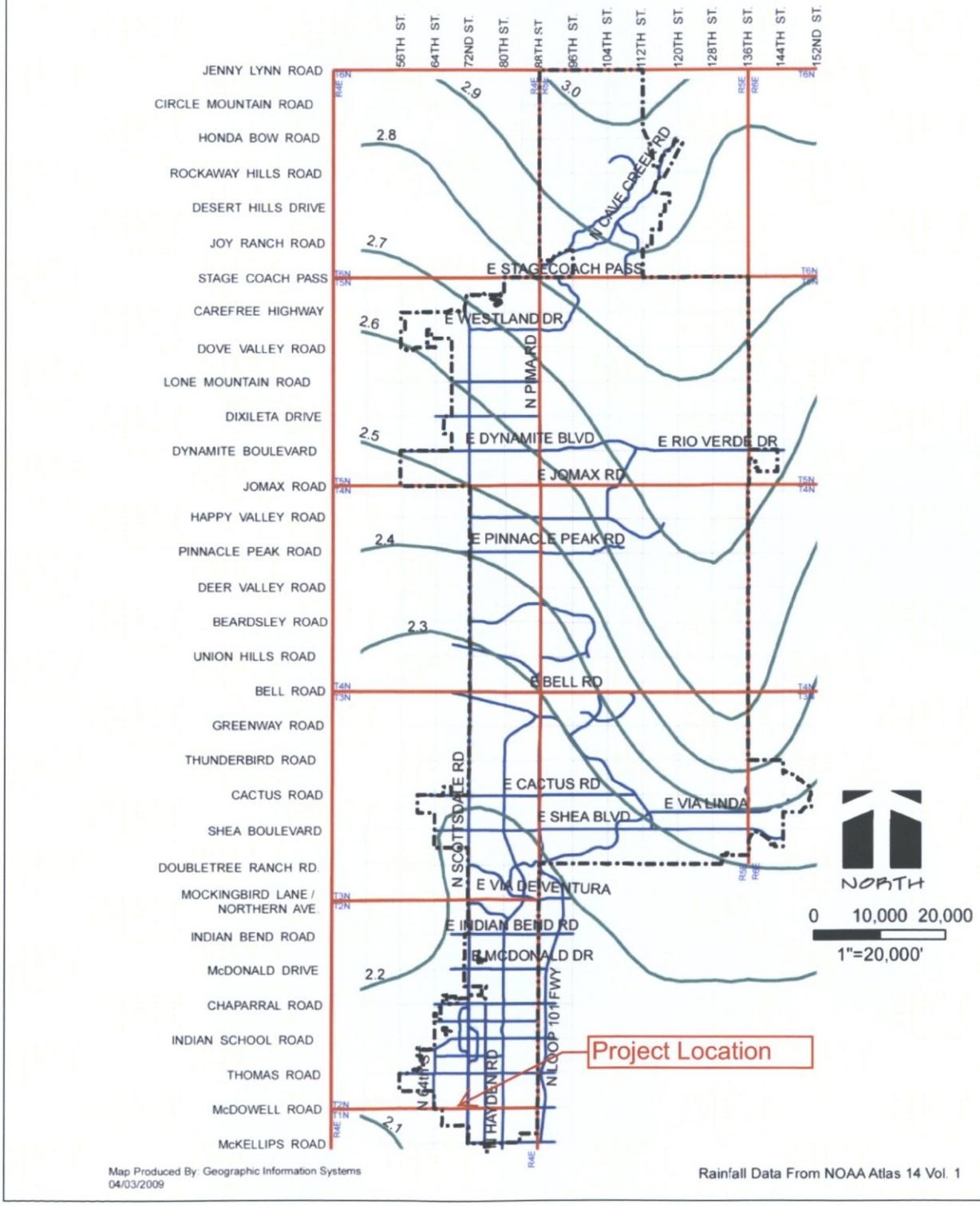
1517 DRAWN BY: AV 11/30/15

APPENDIX I

Rainfall Data

ISOPLUVIALS

100 Year 2 Hour Precipitation in Inches



NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, US*
Latitude: 33.4651°, Longitude: -111.9323°
Elevation: 1246 ft*
* source: Google Maps

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	2.16 (1.82-2.62)	2.82 (2.39-3.43)	3.85 (3.23-4.64)	4.63 (3.86-5.57)	5.70 (4.68-6.80)	6.53 (5.28-7.76)	7.36 (5.84-8.72)	8.21 (6.42-9.74)	9.36 (7.13-11.1)	10.2 (7.64-12.2)
10-min	1.64 (1.39-1.99)	2.15 (1.82-2.61)	2.93 (2.46-3.53)	3.53 (2.95-4.23)	4.33 (3.56-5.18)	4.96 (4.02-5.90)	5.60 (4.45-6.64)	6.25 (4.89-7.41)	7.12 (5.42-8.46)	7.79 (5.81-9.28)
15-min	1.36 (1.14-1.65)	1.78 (1.50-2.15)	2.42 (2.03-2.92)	2.92 (2.43-3.50)	3.58 (2.94-4.28)	4.10 (3.32-4.88)	4.63 (3.68-5.49)	5.16 (4.04-6.12)	5.88 (4.48-6.99)	6.44 (4.80-7.66)
30-min	0.914 (0.770-1.11)	1.20 (1.01-1.45)	1.63 (1.37-1.97)	1.96 (1.64-2.36)	2.41 (1.98-2.88)	2.76 (2.24-3.29)	3.11 (2.48-3.70)	3.48 (2.72-4.12)	3.96 (3.02-4.71)	4.34 (3.24-5.16)
60-min	0.566 (0.477-0.686)	0.740 (0.626-0.897)	1.01 (0.847-1.22)	1.22 (1.01-1.46)	1.49 (1.23-1.78)	1.71 (1.39-2.03)	1.93 (1.53-2.29)	2.15 (1.68-2.55)	2.45 (1.87-2.91)	2.68 (2.00-3.19)
2-hr	0.328 (0.282-0.390)	0.426 (0.364-0.506)	0.571 (0.487-0.676)	0.682 (0.575-0.804)	0.832 (0.694-0.977)	0.949 (0.780-1.11)	1.07 (0.866-1.25)	1.19 (0.947-1.39)	1.35 (1.05-1.59)	1.48 (1.12-1.75)
3-hr	0.237 (0.202-0.283)	0.304 (0.260-0.365)	0.400 (0.340-0.478)	0.476 (0.402-0.566)	0.582 (0.485-0.689)	0.667 (0.548-0.787)	0.757 (0.610-0.892)	0.849 (0.673-0.999)	0.978 (0.751-1.15)	1.08 (0.811-1.28)
6-hr	0.143 (0.124-0.168)	0.181 (0.158-0.213)	0.233 (0.203-0.272)	0.274 (0.236-0.319)	0.330 (0.281-0.382)	0.374 (0.313-0.431)	0.420 (0.346-0.484)	0.467 (0.377-0.539)	0.532 (0.419-0.615)	0.582 (0.448-0.676)
12-hr	0.080 (0.070-0.092)	0.101 (0.089-0.117)	0.128 (0.112-0.148)	0.150 (0.130-0.172)	0.178 (0.153-0.205)	0.200 (0.170-0.229)	0.223 (0.186-0.256)	0.246 (0.203-0.283)	0.277 (0.223-0.320)	0.301 (0.237-0.350)
24-hr	0.048 (0.043-0.054)	0.061 (0.055-0.069)	0.079 (0.071-0.089)	0.094 (0.083-0.105)	0.113 (0.100-0.127)	0.129 (0.114-0.144)	0.145 (0.127-0.162)	0.162 (0.141-0.181)	0.186 (0.159-0.207)	0.204 (0.173-0.228)
2-day	0.026 (0.023-0.029)	0.033 (0.030-0.037)	0.044 (0.039-0.049)	0.052 (0.046-0.058)	0.064 (0.056-0.071)	0.073 (0.064-0.081)	0.083 (0.072-0.092)	0.093 (0.081-0.104)	0.107 (0.092-0.120)	0.118 (0.101-0.133)
3-day	0.018 (0.016-0.021)	0.023 (0.021-0.026)	0.031 (0.028-0.035)	0.037 (0.033-0.041)	0.045 (0.040-0.050)	0.052 (0.046-0.058)	0.059 (0.052-0.066)	0.067 (0.058-0.074)	0.077 (0.066-0.086)	0.086 (0.073-0.096)
4-day	0.015 (0.013-0.016)	0.019 (0.017-0.021)	0.024 (0.022-0.027)	0.029 (0.026-0.033)	0.036 (0.032-0.040)	0.041 (0.037-0.046)	0.047 (0.041-0.053)	0.054 (0.046-0.060)	0.062 (0.053-0.069)	0.069 (0.059-0.078)
7-day	0.009 (0.008-0.010)	0.012 (0.011-0.013)	0.015 (0.014-0.017)	0.018 (0.016-0.021)	0.023 (0.020-0.025)	0.026 (0.023-0.029)	0.030 (0.026-0.033)	0.034 (0.029-0.038)	0.039 (0.034-0.044)	0.044 (0.037-0.049)
10-day	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.012 (0.011-0.013)	0.014 (0.013-0.016)	0.017 (0.015-0.019)	0.020 (0.018-0.022)	0.023 (0.020-0.025)	0.025 (0.022-0.028)	0.029 (0.025-0.033)	0.033 (0.028-0.036)
20-day	0.004 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.007-0.008)	0.009 (0.008-0.010)	0.010 (0.009-0.012)	0.012 (0.010-0.013)	0.013 (0.012-0.015)	0.015 (0.013-0.016)	0.017 (0.014-0.018)	0.018 (0.016-0.020)
30-day	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.006-0.007)	0.008 (0.007-0.009)	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)
45-day	0.003 (0.002-0.003)	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.009)	0.010 (0.008-0.011)	0.010 (0.009-0.012)
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 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.008 (0.007-0.009)

[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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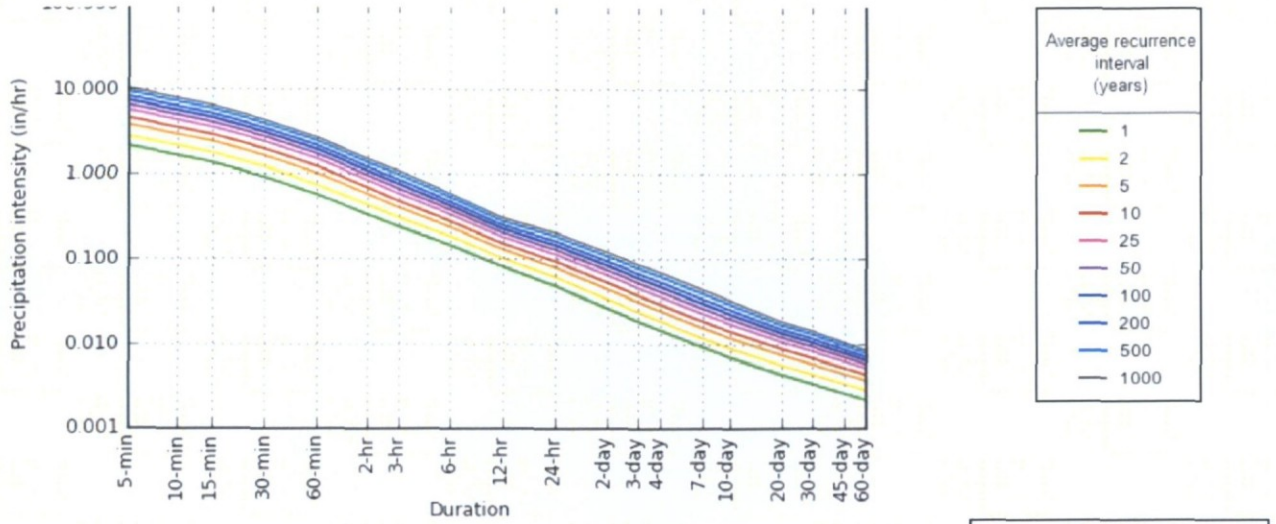
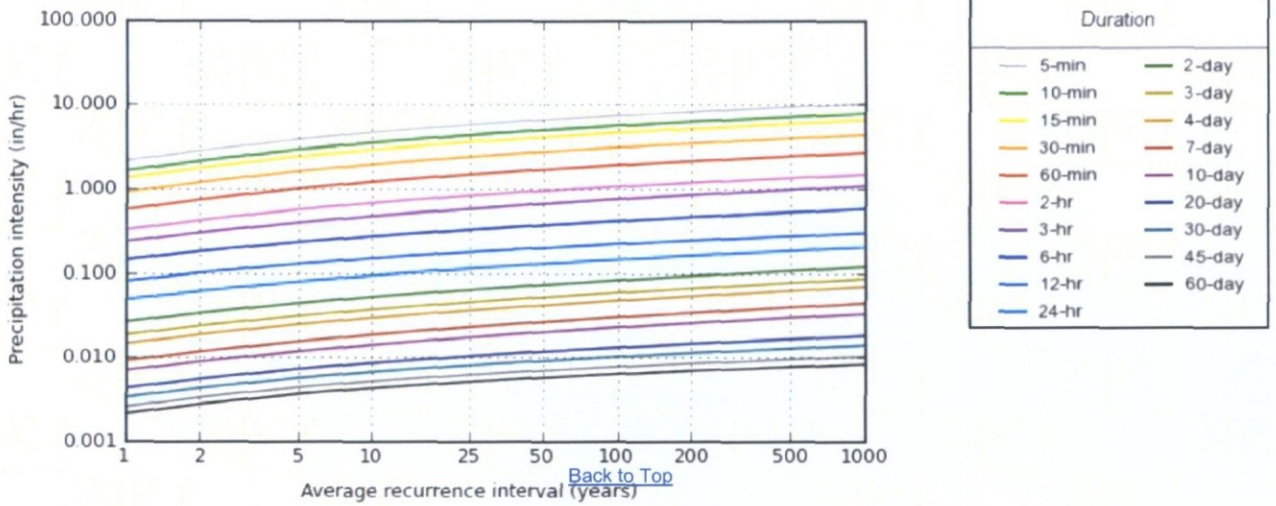
PF graphical





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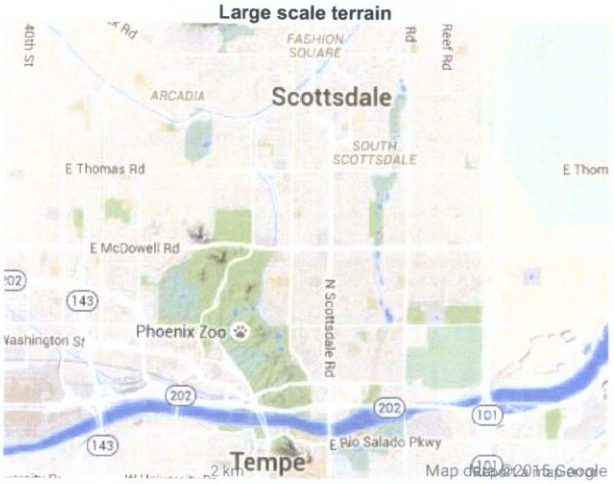
Maps & aerials

NOAA Atlas 14, Volume 1, Version 5

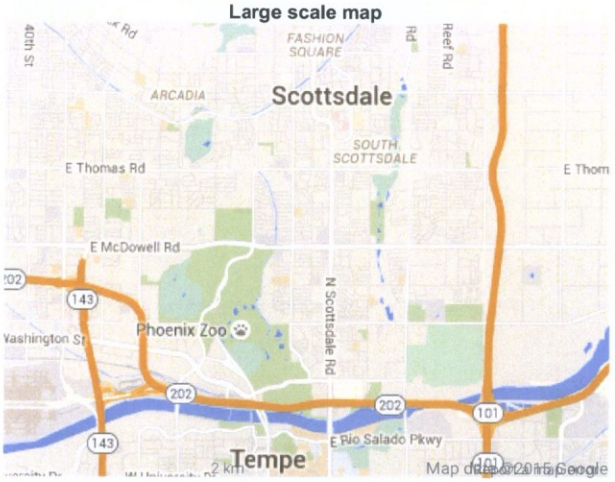
Created (GMT): Wed Oct 28 21:39:33 2015

Small scale terrain

Large scale terrain



Large scale map



Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910

NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, US*
Latitude: 33.4651°, Longitude: -111.9323°
Elevation: 1246 ft*
* source: Google Maps

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)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.180 (0.152-0.218)	0.235 (0.199-0.286)	0.321 (0.269-0.387)	0.386 (0.322-0.464)	0.475 (0.390-0.567)	0.544 (0.440-0.647)	0.613 (0.487-0.727)	0.684 (0.535-0.812)	0.780 (0.594-0.926)	0.853 (0.637-1.02)
10-min	0.274 (0.231-0.332)	0.359 (0.303-0.435)	0.488 (0.410-0.589)	0.588 (0.491-0.705)	0.722 (0.593-0.864)	0.827 (0.670-0.984)	0.933 (0.742-1.11)	1.04 (0.815-1.24)	1.19 (0.904-1.41)	1.30 (0.969-1.55)
15-min	0.340 (0.286-0.412)	0.444 (0.376-0.538)	0.606 (0.508-0.730)	0.729 (0.608-0.874)	0.895 (0.735-1.07)	1.03 (0.831-1.22)	1.16 (0.920-1.37)	1.29 (1.01-1.53)	1.47 (1.12-1.75)	1.61 (1.20-1.92)
30-min	0.457 (0.385-0.555)	0.598 (0.506-0.725)	0.815 (0.684-0.983)	0.982 (0.819-1.18)	1.21 (0.990-1.44)	1.38 (1.12-1.64)	1.56 (1.24-1.85)	1.74 (1.36-2.06)	1.98 (1.51-2.35)	2.17 (1.62-2.58)
60-min	0.566 (0.477-0.686)	0.740 (0.626-0.897)	1.01 (0.847-1.22)	1.22 (1.01-1.46)	1.49 (1.23-1.78)	1.71 (1.39-2.03)	1.93 (1.53-2.29)	2.15 (1.68-2.55)	2.45 (1.87-2.91)	2.68 (2.00-3.19)
2-hr	0.657 (0.563-0.781)	0.851 (0.728-1.01)	1.14 (0.974-1.35)	1.36 (1.15-1.61)	1.67 (1.39-1.95)	1.90 (1.56-2.22)	2.14 (1.73-2.50)	2.38 (1.89-2.78)	2.71 (2.10-3.17)	2.96 (2.25-3.49)
3-hr	0.712 (0.606-0.850)	0.912 (0.781-1.10)	1.20 (1.02-1.44)	1.43 (1.21-1.70)	1.75 (1.46-2.07)	2.00 (1.65-2.36)	2.27 (1.83-2.68)	2.55 (2.02-3.00)	2.94 (2.26-3.46)	3.25 (2.43-3.84)
6-hr	0.857 (0.745-1.00)	1.09 (0.949-1.27)	1.40 (1.21-1.63)	1.64 (1.42-1.91)	1.98 (1.68-2.29)	2.24 (1.88-2.58)	2.52 (2.07-2.90)	2.80 (2.26-3.23)	3.18 (2.51-3.68)	3.49 (2.68-4.05)
12-hr	0.961 (0.843-1.11)	1.22 (1.07-1.41)	1.54 (1.35-1.78)	1.80 (1.56-2.07)	2.15 (1.84-2.47)	2.41 (2.05-2.77)	2.69 (2.25-3.08)	2.96 (2.44-3.41)	3.34 (2.68-3.85)	3.63 (2.86-4.22)
24-hr	1.16 (1.04-1.30)	1.47 (1.32-1.65)	1.90 (1.70-2.13)	2.25 (2.00-2.51)	2.72 (2.41-3.04)	3.10 (2.73-3.45)	3.49 (3.05-3.89)	3.90 (3.38-4.34)	4.46 (3.82-4.97)	4.90 (4.16-5.47)
2-day	1.25 (1.12-1.40)	1.60 (1.44-1.79)	2.10 (1.88-2.35)	2.50 (2.23-2.79)	3.06 (2.71-3.41)	3.50 (3.08-3.91)	3.97 (3.48-4.44)	4.45 (3.87-4.98)	5.14 (4.41-5.76)	5.68 (4.83-6.40)
3-day	1.32 (1.19-1.48)	1.69 (1.52-1.90)	2.22 (1.99-2.49)	2.65 (2.37-2.96)	3.26 (2.89-3.63)	3.74 (3.30-4.17)	4.26 (3.73-4.75)	4.80 (4.17-5.36)	5.56 (4.77-6.21)	6.17 (5.24-6.92)
4-day	1.39 (1.25-1.56)	1.78 (1.60-2.00)	2.35 (2.10-2.62)	2.81 (2.50-3.13)	3.46 (3.07-3.85)	3.98 (3.51-4.43)	4.55 (3.98-5.06)	5.14 (4.46-5.73)	5.98 (5.12-6.67)	6.66 (5.65-7.45)
7-day	1.54 (1.38-1.73)	1.97 (1.77-2.20)	2.60 (2.32-2.90)	3.10 (2.77-3.47)	3.82 (3.39-4.27)	4.40 (3.88-4.91)	5.02 (4.39-5.60)	5.67 (4.92-6.33)	6.60 (5.65-7.36)	7.34 (6.22-8.21)
10-day	1.68 (1.50-1.87)	2.14 (1.92-2.40)	2.83 (2.53-3.15)	3.38 (3.01-3.76)	4.14 (3.68-4.61)	4.76 (4.20-5.30)	5.42 (4.75-6.03)	6.11 (5.31-6.80)	7.07 (6.07-7.88)	7.85 (6.67-8.76)
20-day	2.06 (1.85-2.29)	2.65 (2.38-2.94)	3.49 (3.13-3.88)	4.13 (3.70-4.58)	4.99 (4.45-5.54)	5.65 (5.02-6.27)	6.33 (5.59-7.03)	7.01 (6.16-7.79)	7.93 (6.91-8.84)	8.64 (7.47-9.64)
30-day	2.40 (2.15-2.67)	3.09 (2.78-3.44)	4.07 (3.65-4.51)	4.82 (4.31-5.33)	5.82 (5.18-6.44)	6.59 (5.84-7.28)	7.37 (6.51-8.15)	8.17 (7.18-9.04)	9.25 (8.07-10.2)	10.1 (8.71-11.2)
45-day	2.79 (2.51-3.10)	3.59 (3.24-3.99)	4.73 (4.26-5.25)	5.57 (5.00-6.18)	6.68 (5.98-7.41)	7.52 (6.70-8.33)	8.36 (7.42-9.27)	9.20 (8.13-10.2)	10.3 (9.04-11.5)	11.1 (9.72-12.4)
60-day	3.09 (2.79-3.42)	3.99 (3.60-4.42)	5.25 (4.73-5.81)	6.16 (5.54-6.81)	7.35 (6.59-8.13)	8.23 (7.35-9.11)	9.11 (8.11-10.1)	9.97 (8.84-11.0)	11.1 (9.78-12.3)	11.9 (10.5-13.3)

[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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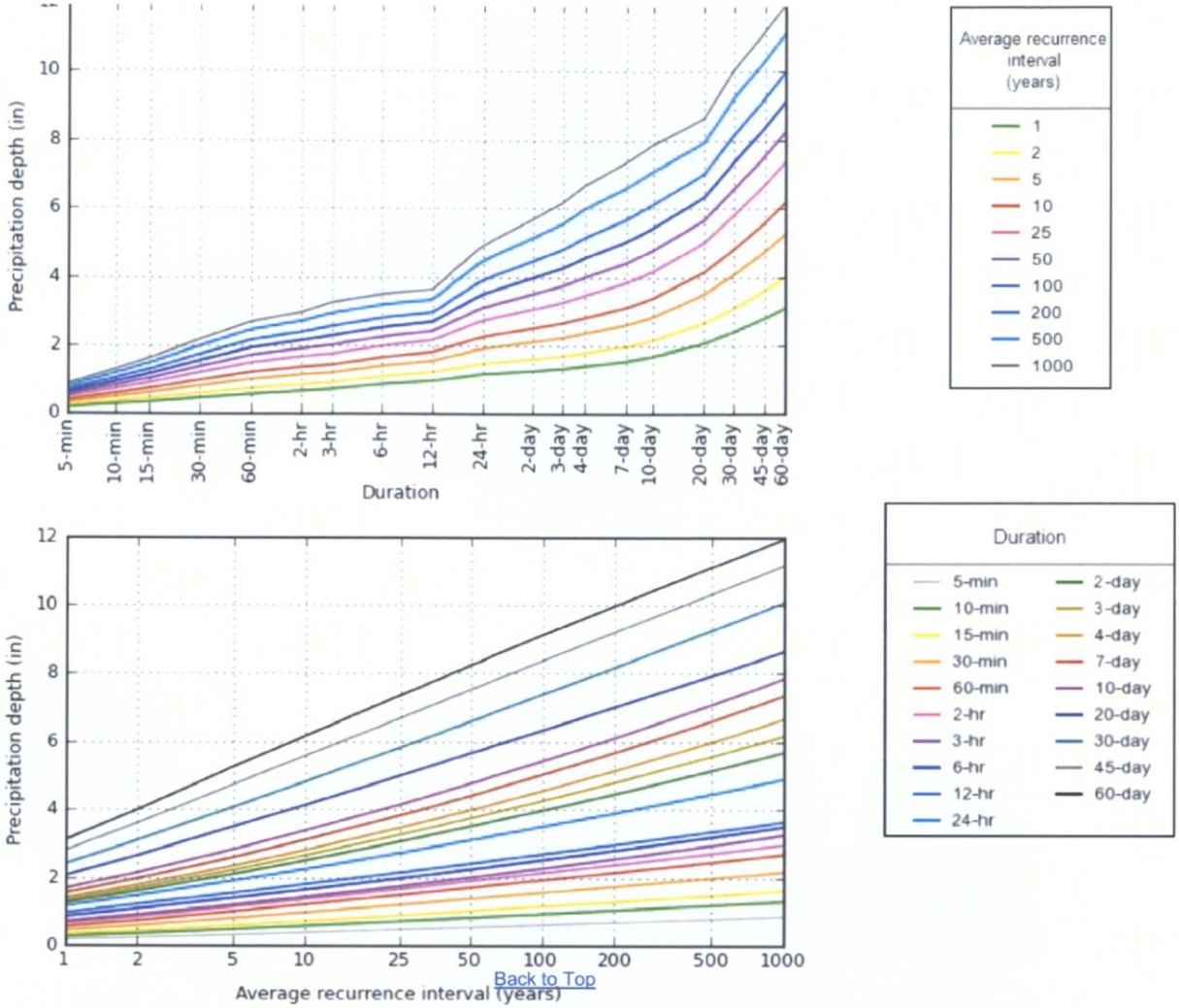
PF graphical



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Maps & aerials

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Small scale terrain

Large scale terrain

Large scale map

Large scale aerial

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National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910

APPENDIX II

Calculations

2. Time of Concentration

Time of concentration "**Tc**" is the total time of travel from the most hydraulically remote part of the watershed to the concentration point of interest. The calculation of "Tc" must follow FCDMC Hydrology Manual procedures.

***Note:** **Do not add a standard set amount of time to the estimated "Tc" for lot runoff delay (such as 5 or 10 minutes).** Natural land slopes are too variable in Scottsdale to add a set amount of time for lot runoff.

3. Runoff Coefficients

Use Figure 4.1-4 or equivalent to obtain the runoff coefficients or "**C**" values. Composite "**C**" values for the appropriate zoning category or weighted average values calculated for the specific site are both acceptable approaches.

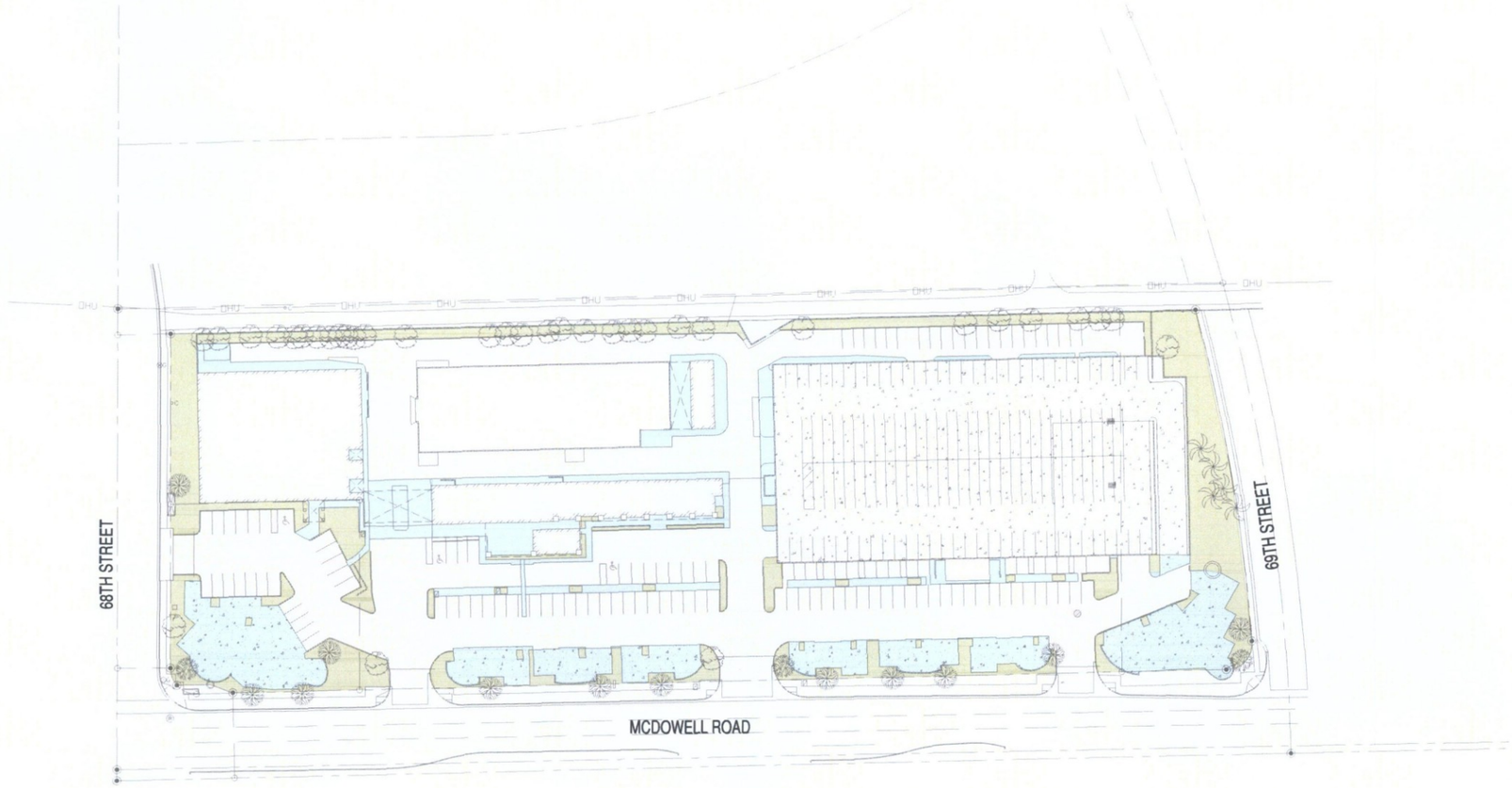
RUNOFF COEFFICIENTS - "C" VALUE

Land Use	Storm Frequency		
Composite Area-wide Values	2-25 Year	50 Year	100 Year
Commercial & Industrial Areas	0.80	0.83	0.86
Residential Areas-Single Family (average lot size)			
R1-1-1901	0.33	0.50	0.53
R1-130	0.35	0.51	0.59
R1-70	0.37	0.52	0.60
R1-43	0.38	0.55	0.61
R1-35 (35,000 square feet/lot)	0.40	0.56	0.62
R1-18 (18,000 square feet/lot)	0.43	0.58	0.64
R1-10 (10,000 square feet/lot)	0.47	0.62	0.67
R1-7 (7,000 square feet/lot)	0.51	0.64	0.94
Townhouses (R-2, R-4)	0.63	0.74	0.94
Apartments & Condominiums (R-3, R-5)	0.76	0.83	0.94
Specific Surface Type Values			
Paved streets, parking lots (concrete or asphalt), roofs, drive-ways, etc.	0.90	0.93	0.95
Lawns, golf courses, & parks (grassed areas)	0.20	0.25	0.30
Undisturbed natural desert or desert landscaping (no impervious weed barrier)	0.37	0.42	045
Desert landscaping (with impervious weed barrier)	0.63	0.73	0.83
Mountain terrain – slopes greater than 10%	0.60	0.70	0.80
Agricultural areas (flood-irrigated fields)	0.16	0.18	0.20

FIGURE 4.1-4 RUNOFF COEFFICIENTS FOR USE WITH RATIONAL METHOD

EXHIBIT A

PRE-DEVELOPMENT GROUND COVERAGE



PRE-DEVELOPMENT GROUND COVERAGE

IMPERVIOUS SURFACES	
ASPHALT AREA:	77,425 SF (±1.78 AC)
CONCRETE AREA:	35,942 SF (±0.83 AC)
BUILDING AREA:	80,854 SF (±1.86 AC)
TOTAL IMPERVIOUS AREA:	194,221 SF (±4.46 AC)
PERVIOUS SURFACES	
LANDSCAPE AREA:	28,093 SF (±0.64 AC)
TOTAL COVERAGE:	222,314 SF (±5.11 AC)

NORTH

0' 50' 100' 150'

SCALE: 1" = 50'

SEG
SUSTAINABILITY ENGINEERING GROUP
8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260
WWW. AZSEG.COM TEL. 480.588.7226

PROJECT: ARE ON MCDOWELL

LOCATION: 68TH & MCDOWELL ROAD SCOTTSDALE, AZ

DRAWN: CASTELLO
DESIGNED: CASTELLO
CHECKED: COUNSELL
PROJ. MGR.: FAKIH

DATE: 8/14/2015

ISSUED FOR: OWNER REVIEW

REVISION NO.:	DATE:
1	
2	
3	
4	

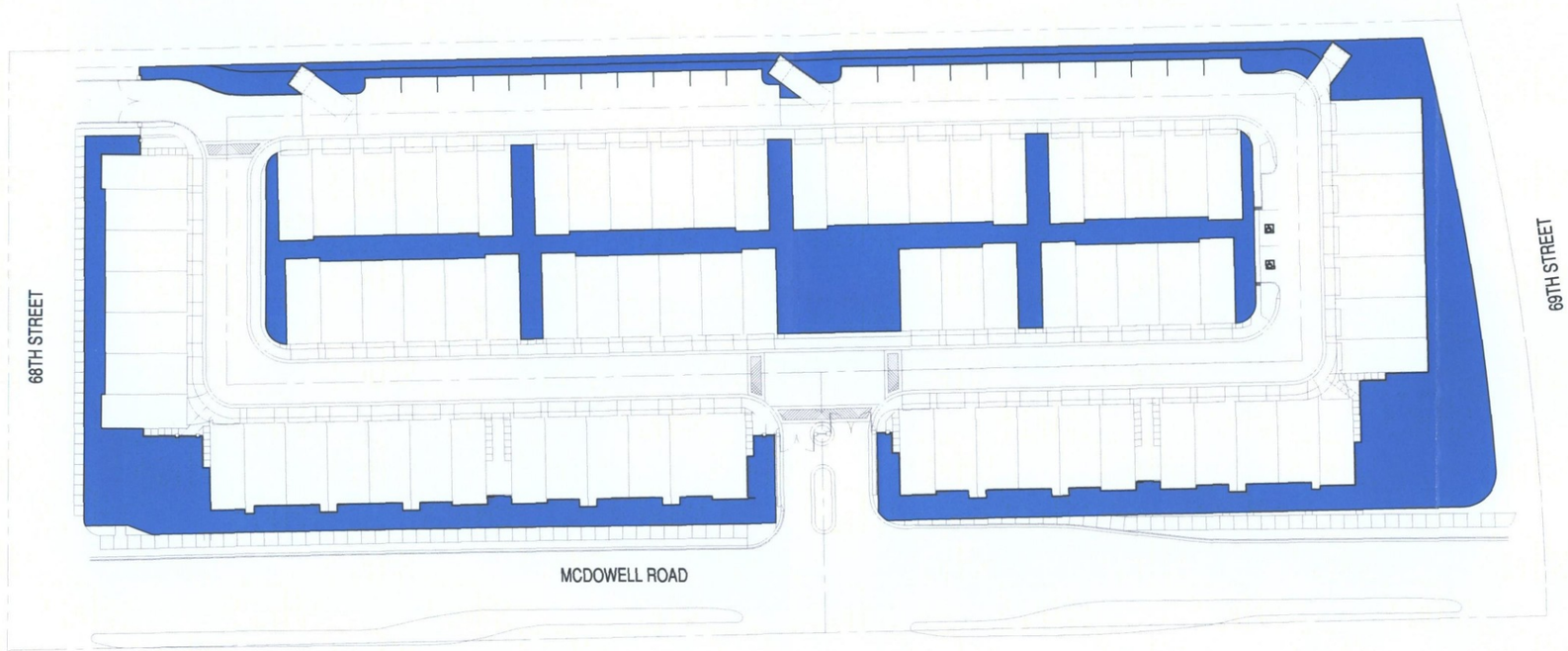
JOB NO.: 150799

SHEET TITLE: PRE-DEVELOPMENT GROUND COVERAGE AREA

SHEET NO.: EXHIBIT A

EXHIBIT B

POST-DEVELOPMENT



POST-DEVELOPMENT

LANDSCAPE AREA:	51,662 SF. (1.19 AC.)

SEG
SUSTAINABILITY ENGINEERING GROUP
8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260
WWW. AZSEG.COM TEL. 480.588.7226

Hovnanian Homes

PROJECT: ARE ON MCDOWELL
LOCATION: 68TH & MCDOWELL ROAD SCOTTSDALE, AZ 85257

DRAWN	CASTELLO
DESIGNED	CASTELLO
CHECKED	COUNSELL
PROJ. MGR.	FAKIH

DATE: 11/11/2015

ISSUED FOR:

REVISION NO.:	DATE:
1	
2	
3	
4	

JOB NO.: 150799

SHEET TITLE: POST-DEVELOPMENT GROUND COVERAGE AREA

SHEET NO.: EXHIBIT B

Pond Routing Calculations

Tc (min.)	I100	A (ac)	C	Q(in) (cfs)	Q (out) (cfs)	Qi-QoxTcx60 (cf)
5	7.36	5.10	0.833	31.27	6.45	7445.25
10	5.6	5.10	0.833	23.79	6.45	10404.29
15	4.63	5.10	0.833	19.67	6.45	11897.67
30	3.11	5.10	0.833	13.21	6.45	12171.98
60	1.93	5.10	0.833	8.20	6.45	6297.19
120	1.07	5.10	0.833	4.55	6.45	-13711.10
180	0.76	5.10	0.833	3.23	6.45	-34789.95
360	0.421	5.10	0.833	1.79	6.45	-100687.66
720	0.223	5.10	0.833	0.95	6.45	-237713.58
1440	0.145	5.10	0.833	0.62	6.45	-504057.30

Pond Storage Calculations

ELEV	AREA	DEPTH	AVG. VOL. (CF)	SUM VOL. (CF)
1243	4838			0
		1	5390	
1244	5942			5390
		1	6824.5	
1245	7707			12214.5

RESTRICTED OUTLET - ORIFICE EQUATION									
	Q=CdAV2gh		Were:						
			Q=	Flow rate (cfs):			6.45		
			Cd=	Coefficient			0.62		
			A=	Area of orifice (sf)					
			g=	Acceleration from gravity (fps)			32.2		
			h=	Head (on centerline) (ft)			1.53		
	SOLVING FOR "A":								
	A=	6.45/0.62*√2*32.2*1.5 =		0.717 sf		(0.95' dia) USE 11" DIA			

HWE	CL Elev
1245	1243.47

APPENDIX III

Preliminary Grading Plan

Attachment #1

Preliminary LIBW FLO-2D Results

- LIBW ADMS Preliminary Results
  - street_all
  - Map Locator Layers
  - North
  - South
    - Dmax
    - CDischarge
      - <VALUE>
        - 0 - 0.5
        - 0.5 - 1
        - 1.000000001 - 2
        - 2.000000001 - 3
        - 3.000000001 - 4
        - 4.000000001 - 5
        - 5.000000001 - 10
        - 10.00000001 - 15
        - 15.00000001 - 20
        - 20.00000001 - 25
        - 25.00000001 - 30
        - 30.00000001 - 40
        - 40.00000001 - 50
        - 50.00000001 - 2,228.77002
    - Vmax
  - LIBW_Study_Area_Boundary
  - 2013Aerial_3inch
- PPW ADMS Preliminary Results
- PPS ADMS 95% Results
- New Data Frame 3
- New Data Frame

1st Review 8-PP-2015
Date: 12-24-2015

Please review and reconsider off-site flow impacts. Evaluate street flow capacity and potential break-out flows.

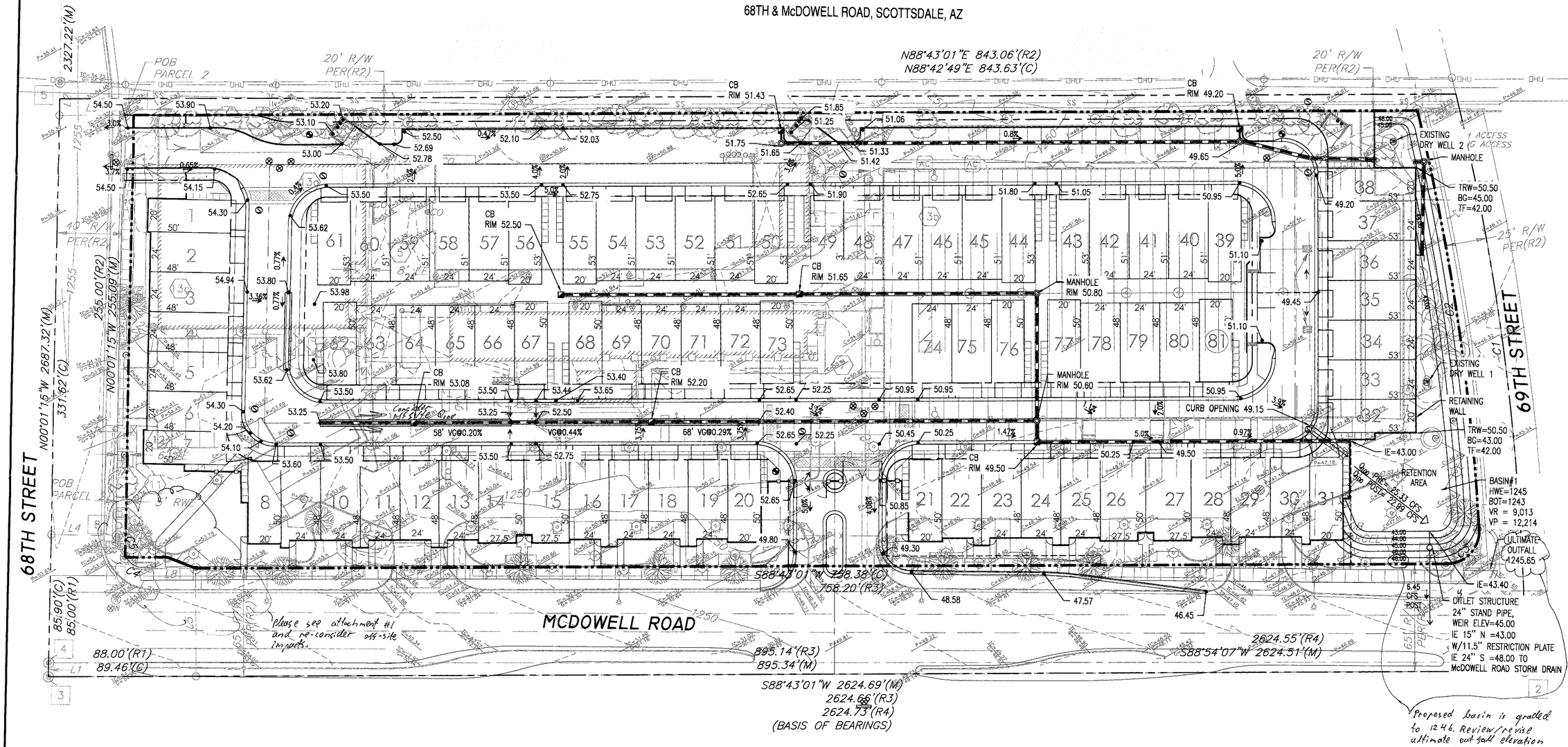
Approximate beak-out flow at this location is 28 cfs.

Nerijus Baronas, P.E., CFM | Senior Stormwater Engineer
City of Scottsdale, Stormwater Management
7447 E. Indian School Rd. Ste. 125 | Scottsdale, Arizona 85251
Tel: +1 (480) 312 7072 | Fax: +1 (480) 312 9187

PRELIMINARY GRADING PLAN

AIRE ON McDOWELL

68TH & McDOWELL ROAD, SCOTTSDALE, AZ



NORTH

SCALE: 1" = 30'

LEGEND

- PROPOED SEWER MANHOLE
- PROPOSED FIRE HYDRANT
- CATCH BASIN
- EXISTING DRY WELL
- XX.XX — SPOT GRADE
- C.O. XX.XX — CURB OPENING GRADE

UNIT FLOOR ELEVATIONS		
UNIT	GARAGE FLOOR	FFE
1-7	55.05 S.F.	55.83 S.F.
8-14	54.35 S.F.	55.00 S.F.
15-20	53.50 S.F.	54.15 S.F.
21-26	51.00 S.F.	51.75 S.F.
27-31	50.25 S.F.	50.70 S.F.
32-38	50.25 S.F.	50.70 S.F.
39-43	51.80 S.F.	52.45 S.F.
44-49	52.65 S.F.	53.30 S.F.
50-55	53.50 S.F.	54.15 S.F.
56-61	54.35 S.F.	55.00 S.F.
62-67	54.35 S.F.	55.00 S.F.
68-73	53.50 S.F.	54.15 S.F.
74-76	51.80 S.F.	52.45 S.F.
77-81	51.80 S.F.	52.45 S.F.

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County (602) 263-1100

NOTE TO CONTRACTOR:
THE USE OF DRAWINGS AND DOCUMENTS IS INTENDED AS A SET OF GUIDELINES FOR THE PROJECT AND ARE INTENDED TO BE USED IN CONJUNCTION WITH A SET OF CONSTRUCTION SPECIFICATIONS TO BE SUPPLIED BY OWNER. THEY MUST BE REVIEWED AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES INCLUDING FEDERAL, STATE AND LOCAL SAFETY REGULATIONS. THESE DRAWINGS ARE NOT UNIVERSAL SOIL CONDITION OR WHAT-IF/CHOO. THE FAILURE OF THIS CONDITION MAY REQUIRE SIGNIFICANT CHANGES TO THESE DOCUMENTS. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO CONFORM TO ALL APPLICABLE CODES AND TO INFORM THE OWNER/ARCHITECTS OF ANY QUESTIONS. ANY DISCREPANCIES FOUND IN THE CONSTRUCTION DOCUMENTS SHALL ALSO VISIT THE SITE BEFORE BEGINING CONSTRUCTION ARE REQUIRED TO KNOW ALL OBSERVABLE CONDITIONS AND APPLICABLE CODES

SEG SUSTAINABILITY ENGINEERING GROUP
8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226

KTLovmanian Homes

PROJECT: AIRE ON MCDOWELL

LOCATION: 68TH & MCDOWELL ROAD SCOTTSDALE, AZ 85257

DRAWN	CASTELLO
DESIGNED	CASTELLO
CHECKED	COUNSELL
PROJ. MGR.	FAKIH

DATE: 12/02/2015

ISSUED FOR:

REVISION NO.:	DATE:
1	
2	
3	
4	

JOB NO.: 150799

SHEET TITLE: PRELIMINARY GRADING PLAN

SHEET NO.:

APPENDIX IV

ALTA / Topographic Survey

ALTA/ACSM LAND TITLE SURVEY

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

LEGAL DESCRIPTION:

PARCEL NO. 1:

TRACT "A", STEWART PLAZA, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 71 OF MAPS, PAGE 24;

EXCEPT THAT PART OF TRACT "A", STEWART PLAZA, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 71 OF MAPS, PAGE 24, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID TRACT "A";

THENCE SOUTH ALONG THE WEST LINE OF SAID TRACT "A", 130.00 FEET TO A POINT DISTANT 125.00 FEET NORTH OF THE POINT OF CURVE AT THE SOUTH TERMINUS OF THE WEST LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", 145.00 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", 145.00 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST ALONG THE SOUTH LINE OF SAID TRACT "A", 592.26 FEET TO A POINT DISTANT 80.00 FEET WEST OF THE POINT OF CURVE AT THE EAST TERMINUS OF THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH, A DISTANCE OF 275.00 FEET MORE OR LESS, TO A POINT ON THE NORTH LINE OF SAID TRACT "A", SAID POINT BEING DISTANT 58.00 FEET WEST OF THE NORTHEAST CORNER OF SAID TRACT "A";

THENCE WEST ALONG THE NORTH LINE OF SAID TRACT "A", 724.88 FEET TO THE POINT OF BEGINNING; AND

EXCEPT A PARCEL OF LAND LOCATED IN TRACT "A", STEWART PLAZA, A SUBDIVISION RECORDED IN BOOK 71, PAGE 24, MARICOPA COUNTY RECORDS, AND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS.

FROM THE SOUTH QUARTER CORNER OF SAID SECTION 34;

THENCE NORTH (ASSUMED BEARING) ALONG THE WEST LINE THEREOF, A DISTANCE OF 85 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 34, A DISTANCE OF 40 FEET TO A POINT ON THE WEST LINE OF SAID TRACT "A" AND THE TRUE POINT OF BEGINNING;

THENCE NORTH ALONG THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST, PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE SOUTH 88 DEGREES 43 MINUTES 01 SECONDS WEST ALONG THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT HAVING A TANGENT OF 20 FEET;

THENCE ALONG SAID CURVE TO THE RIGHT TO ITS POINT OF TANGENCY IN THE WEST LINE OF SAID TRACT "A", TO THE TRUE POINT OF BEGINNING; AND

EXCEPT ALL MINERALS AND ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND BELOW A DEPTH OF 500.00 FEET, WITHOUT THE RIGHT OF SURFACE ENTRY, AS RESERVED IN DEED RECORDED IN DOCKET 12171, PAGE 281, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2:

THAT PART OF TRACT "A", STEWART PLAZA, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 71 OF MAPS, PAGE 24, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID TRACT "A";

THENCE SOUTH ALONG THE WEST LINE OF SAID TRACT "A", 130.00 FEET TO A POINT DISTANT 125.00 FEET NORTH OF THE POINT OF CURVE AT THE SOUTH TERMINUS OF THE WEST LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", 145.00 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", 145.00 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST ALONG THE SOUTH LINE OF SAID TRACT "A", 592.26 FEET TO A POINT DISTANT 80.00 FEET WEST OF THE POINT OF CURVE AT THE EAST TERMINUS OF THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH, A DISTANCE OF 275.00 FEET MORE OR LESS, TO A POINT ON THE NORTH LINE OF SAID TRACT "A", SAID POINT BEING DISTANT 58.00 FEET WEST OF THE NORTHEAST CORNER OF SAID TRACT "A";

THENCE WEST ALONG THE NORTH LINE OF SAID TRACT "A", 724.88 FEET TO THE POINT OF BEGINNING;

AREAS:

PARCEL 1 – ±22,985 SQUARE FEET OR ±0.53 ACRES
PARCEL 2 – ±176,586 SQUARE FEET OR ±4.10 ACRES
PARCEL 3 – ±20,743 SQUARE FEET OR ±0.48 ACRES
TOTALS – ±222,314 SQUARE FEET OR ±5.11 ACRES NET
GROSS TOTAL – INCLUDING TO THE CENTER OF ADJACENT STREETS
±298,775 SQUARE FEET OR ±6.86 ACRES GROSS

LEGAL DESCRIPTION CONTINUED:

EXCEPT ALL MINERALS AND ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND BELOW A DEPTH OF 500.00 FEET, WITHOUT THE RIGHT OF SURFACE ENTRY, AS RESERVED IN DEED RECORDED IN DOCKET 12171, PAGE 281, RECORDS OF MARICOPA COUNTY, ARIZONA

PARCEL NO. 3:

A PARCEL OF LAND LOCATED IN TRACT "A", STEWART PLAZA, A SUBDIVISION RECORDED IN BOOK 71, PAGE 24, MARICOPA COUNTY RECORDS, AND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM THE SOUTH QUARTER CORNER OF SAID SECTION 34;

THENCE NORTH (ASSUMED BEARING) ALONG THE WEST LINE THEREOF, A DISTANCE OF 85 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 34, A DISTANCE OF 40 FEET TO A POINT ON THE WEST LINE OF SAID TRACT "A" AND THE TRUE POINT OF BEGINNING;

THENCE NORTH ALONG THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST, PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE SOUTH 88 DEGREES 43 MINUTES 01 SECONDS WEST ALONG THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT HAVING A TANGENT OF 20 FEET;

THENCE ALONG SAID CURVE TO THE RIGHT TO ITS POINT OF TANGENCY IN THE WEST LINE OF SAID TRACT "A", TO THE TRUE POINT OF BEGINNING;

EXCEPT A PARCEL OF LAND LOCATED IN TRACT "A", STEWART PLAZA, A SUBDIVISION RECORDED IN BOOK 71, PAGE 24, MARICOPA COUNTY RECORDS, AND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SAID SECTION 34;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST ALONG THE SOUTH LINE OF SAID SECTION, A DISTANCE OF 88.01 FEET;

THENCE NORTH, A DISTANCE OF 65.02 FEET TO A POINT ON THE SOUTH LINE OF SAID TRACT "A", SAID POINT ALSO BEING THE TRUE POINT OF BEGINNING;

THENCE SOUTH 88 DEGREES 43 MINUTES 01 SECONDS WEST, A DISTANCE OF 28.00 FEET ALONG THE SOUTH LINE OF SAID TRACT "A" TO THE BEGINNING OF A TANGENT CURVE TO THE RIGHT, CONCAVE NORTHEASTERLY WITH A RADIUS OF 19.56 FEET;

THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 49 DEGREES 23 MINUTES 27 SECONDS, A DISTANCE OF 16.86 FEET TO A POINT ON THE EAST LINE OF THE WEST 5.00 FEET OF SAID TRACT "A", AS DESCRIBED IN DOCUMENT NO. 89-578133, MARICOPA COUNTY RECORDS;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF TRACT "A", A DISTANCE OF 25.55 FEET;

THENCE SOUTH 70 DEGREES 20 MINUTES 55 SECONDS EAST, A DISTANCE OF 19.11 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT ALL MINERALS AND ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND BELOW A DEPTH OF 500.00 FEET, WITHOUT THE RIGHT OF SURFACE ENTRY, AS RESERVED IN DEED RECORDED IN DOCKET 12171, PAGE 281, RECORDS OF MARICOPA COUNTY, ARIZONA.

SCHEDULE "B" ITEMS:

(1) ANY ACTION BY THE COUNTY ASSESSOR AND/OR TREASURER, ALTERING THE CURRENT OR PRIOR TAX ASSESSMENT, SUBSEQUENT TO THE DATE OF THE POLICY OF TITLE INSURANCE. **(NOT RESPONSIBILITY OF SURVEYOR)**

(2) TAXES AND ASSESSMENTS COLLECTIBLE BY THE COUNTY TREASURER, A LIEN NOT YET DUE AND PAYABLE FOR THE YEAR 2015. **(NOT RESPONSIBILITY OF SURVEYOR)**

(3) RESERVATIONS OR EXCEPTIONS IN PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF. **(NOT RESPONSIBILITY OF SURVEYOR)**

(4) WATER RIGHTS, CLAIMS OR TITLE TO WATER, AND AGREEMENTS, COVENANTS, CONDITIONS OR RIGHTS INCIDENT THERETO, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS

THIS EXCEPTION IS NOT LIMITED BY REASON OF THE DISCLOSURE OF ANY MATTER RELATING TO WATER RIGHTS AS MAY BE SET FORTH ELSEWHERE IN SCHEDULE B. **(NOT RESPONSIBILITY OF SURVEYOR)**

(5) EASEMENT FOR ELECTRIC TRANSMISSION LINE AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 2799, PAGE 318. **(SHOWN)**

(6) EASEMENT FOR ELECTRIC TRANSMISSION LINE AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 3014, PAGE 496. **(SHOWN)**

(7) EASEMENT FOR UNDERGROUND WATER LINES AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 15471, PAGE 806 **(SHOWN)**

(8) ALL MATTERS SET FORTH IN INDEMNITY AGREEMENT BY AND BETWEEN SCOTT TOYOTA AND CITY OF SCOTTSDALE RECORDED IN DOCKET 16176, PAGE 89. **(BLANKET OVER PARCEL 2)**

(9) EASEMENT FOR UNDERGROUND ELECTRICAL CONDUITS AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 16502, PAGE 417. **(SHOWN)**

(10) EASEMENT FOR UNDERGROUND ELECTRICAL CONDUITS AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCUMENT NO. 87-307251. **(SHOWN)**

(11) EASEMENT FOR ROAD OR HIGHWAY AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCUMENT NO. 89-578133. **(SHOWN)**

(12) TERMS, CONDITIONS, LIABILITIES AND OBLIGATIONS CONTAINED IN AN INSTRUMENT ENTITLED COST SHARING AND MAINTENANCE AGREEMENT MCDOWELL ROAD STREETSCAPE IMPROVEMENT PROJECT, RECORDED IN DOCUMENT NO. 20051284874. **(BLANKET)**

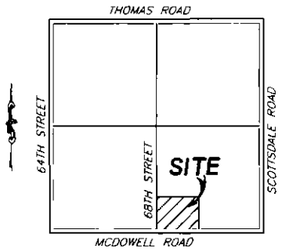
(13) ITEM AMENDED THE FOLLOWING MATTER(S) DISCLOSED BY SURVEY OF SAID LAND BY ARIZONA SURVEYING AND MAPPING, JOB NO P15-075, DATED MAY 5, 2015:

A.) ENCROACHMENT OF AN IMPROVEMENT CONSISTING OF A TWO STORY STUCCO BUILDING (LABELED BUILDING A ON SAID SURVEY) ONTO THE AREA OF THE EASEMENT RECORDED IN DOCKET 2799, PAGE 318.
B.) ENCROACHMENT OF AN IMPROVEMENT CONSISTING OF A TWO STORY PARKING GARAGE ONTO THE AREA OF THE EASEMENTS RECORDED IN DOCKET 3014, PAGE 496, DOCKET 15471, PAGE 806, AND DOCKET 16502, PAGE 417.
C.) ENCROACHMENT OF AN IMPROVEMENT CONSISTING OF A BUS STOP ALONG THE WEST BOUNDARY OF PARCELS 2 AND 3.
D.) METAL STAND PIPES AND ELECTRIC CABINET LOCATED WITHIN THE RIGHT OF WAY DEDICATION SHOWN IN DOCUMENT NO. 89-578133 ON PARCEL 3.
E.) ELECTRIC CABINETS, ELECTRIC BOX, TRAFFIC SIGNAL, AND TRAFFIC SIGNAL BOX LOCATED IN THE SOUTHWESTERLY PORTION OF PARCEL 3.
F.) ENCROACHMENT OF IMPROVEMENTS CONSISTING CONCRETE SURFACES, LANDSCAPING LIGHTS, AND 2-FOOT BLOCK WALLS ONTO MCDOWELL ROAD.

(14) ALL MATTERS SET FORTH IN RESOLUTION NO. 8356, BY THE CITY OF SCOTTSDALE FOR THE LOS ARCOS REDEVELOPMENT AREA, RECORDED IN DOCUMENT NO. 2010-0549775. **(BLANKET)**

(15) RIGHTS OF PARTIES IN POSSESSION.

NOTE: THIS EXCEPTION MAY BE MADE MORE SPECIFIC UPON OUR EXAMINATION OF DOCUMENTS, WHICH ENTITLE THE OCCUPANTS TO POSSESSION. **(NOT RESPONSIBILITY OF SURVEYOR)**



VICINITY MAP
NOT TO SCALE

RECORD OWNER:

APN# 129-08-052B,
129-08-052C, 129-08-052D
EJC INVESTMENT LLC
PROPERTY ADDRESS
6880 E MCDOWELL ROAD
SCOTTSDALE, AZ 85257
MAILING ADDRESS
PO BOX 8449
SCOTTSDALE, AZ 85257

BASIS OF BEARING:

S88°43'01"W ALONG THE MONUMENT LINE OF MCDOWELL ROAD AS MEASURED BETWEEN MONUMENTS NUMBERED (1) AND (3) SHOWN HEREON AND DESCRIBED UNDER MONUMENT NOTES. ALSO SHOWN ON THE FINAL PLAT FOR STEWART PLAZA, RECORDED IN BOOK 71 OF MAPS, PAGE 24, MARICOPA COUNTY RECORDS

FLOODZONE:

CURRENT FLOOD ZONE IS "ZONE X" (AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WIDTH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD); PER FIRM MAP NO. 04013C2235L, DATED OCTOBER 16, 2013.

SURVEYOR'S NOTES:

1. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. ALL INFORMATION REGARDING RECORD EASEMENTS, ADJOINERS, AND OTHER DOCUMENTS WHICH MIGHT AFFECT THE QUALITY OF TITLE TO TRACT SHOWN HEREON WAS GAINED FROM A COMMITMENT FOR TITLE INSURANCE ISSUED BY STEWART TITLE GUARANTY COMPANY, ORDER NUMBER 05501-66138-AMENDMENT NO. 1, DATED MAY 19, 2015 AT 5:00 P.M.

2. THE WORD "CERTIFY" OR "CERTIFICATE" IS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A GUARANTEE, EXPRESS OR IMPLIED.

3. THIS ALTA/ACSM LAND TITLE SURVEY WAS PREPARED SPECIFICALLY FOR THE USE OF THE PARTIES NAMED IN THE CERTIFICATION AND THEIR REPRESENTATIVES. USE OF THIS SURVEY IS NOT PERMITTED UNLESS EXPRESSLY PERMITTED IN WRITING IN ADVANCE BY ARIZONA SURVEYING AND MAPPING. THIS SURVEY IS NOT TO BE USED FOR DESIGN PURPOSES. ARIZONA SURVEYING AND MAPPING SHALL HAVE NO LIABILITY FOR ANY UNAUTHORIZED USE OF THIS INFORMATION WITHOUT THEIR PRIOR WRITTEN CONSENT.

4. IF A DISCREPANCY IS DISCOVERED IN THE TOPOGRAPHY OF THIS MAP THE SURVEYOR MUST BE CONTACTED TO RESOLVE ANY ISSUES PRIOR TO ANY DESIGN OR CONSTRUCTION.

5. THE LOCATION OF UNDERGROUND UTILITIES AS DEPICTED HEREON IS BASED ON RECOVERABLE FIELD LOCATED SURFACE FEATURES OF THOSE UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE AND POSSIBLY INCOMPLETE. NO EXCAVATIONS WERE MADE TO LOCATE BURIED UTILITIES DURING THE PROGRESS OF, OR FOR THE PURPOSE OF THIS SURVEY.

6. OWNERSHIP INFORMATION SHOWN HEREON WAS OBTAINED FROM THE MARICOPA COUNTY ASSESSOR'S WEBSITE AND MAY BE INACCURATE OR OUT-OF-DATE.

7. RELATIVE TO OPTIONAL TABLE "A" ITEM NO. 16 THE SURVEYOR DID NOT NOTICE ANY EARTH MOVING DURING THIS SURVEY.

8. NO FIELD WORK OR CHECKS HAVE BEEN DONE SINCE PREVIOUSLY SIGNED SURVEY IN JUNE 2015.

CERTIFICATION:

TO: K. HOVNANIAN GREAT WESTERN HOMES, LLC, AN ARIZONA LIMITED LIABILITY COMPANY
EJC INVESTMENTS, L.L.C., AN ARIZONA LIMITED LIABILITY COMPANY
STEWART TITLE GUARANTY COMPANY
STEWART TITLE & TRUST OF PHOENIX, INC

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS AND INCLUDES ITEMS 1, 2, 3, 4, 5, 8, 9, 10(a), 11(a), 13, AND 16 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MAY 01, 2015

LANCE C. DICKSON RLS #46643 DATE

REGISTERED LAND SURVEYOR — 46643 — LANCE C. DICKSON — 11/24/15 — ARIZONA, U.S.A.

EXPIRES 06/30/2016

REVISIONS	

ALTA/ACSM LAND TITLE SURVEY

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

Arizona Surveying and Mapping
Absolute Confidence Since 1988
2411 WEST NORTHERN AVENUE, SUITE 110
PHOENIX, ARIZONA 85021
TEL (602) 246-9919 FAX (602) 246-9944 info@asam1.com

FIELDWORK BY :	WDZ
DRAWN BY :	CRS
CHECKED BY :	LCD
JOB #	P15-075
DATE :	11/24/15

SHEET NO.
1
1 OF 3

APPENDIX V

Existing Drainage Data

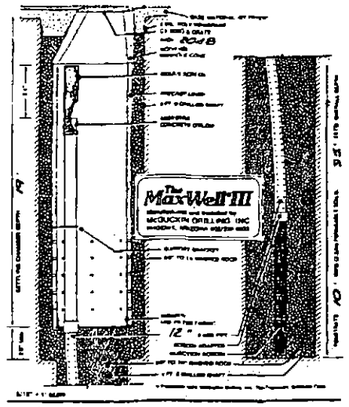
CITY OF SCOTTSDALE
ENGINEERING DEPARTMENT

REVISED OCTOBER, 1979

The following general notes and modifications to the Specifications and/or the standards shall apply and appear on ALL GRADING PLANS.

1. All construction to be conform to the latest Maricopa Association of Governments (M.A.G.) Uniform Standard Specifications and Details for Public Works Construction" with Scottsdale supplements, if applicable.
2. The Engineering Services Director does not verify any cut/fill quantities shown on plans.
3. Minimum density shall be 90% or that which is specified by the soils engineer, whichever is greater.
4. The contractor shall obtain a written letter of acceptance of the project from the Engineering Services Director.
5. "As-built" drawings made by a Civil Engineer registered with the State of Arizona of the work covered by the "Late" and/or permit shall be required before issuance of the written letter of acceptance.
6. Approval of plan is for six months time only. If construction is not started within six months, the plans shall be resubmitted for reapproval.
7. Traffic Control shall conform to the City of Phoenix Traffic Control Manual.
8. Inspection is to be done by City of Scottsdale Field Engineering.
9. Field Engineering shall be notified 24 hours prior to the starting of any construction work (994-2333).
10. A grading permit shall be issued by the Building Division for a fee as determined from the Uniform Building Code, latest edition.
11. Finished floor elevation shall be certified by a Civil Engineer registered in the State of Arizona that it has been constructed at the elevation shown on this plan. Certification shall be made prior to the pre-slab inspection.
12. A construction permit shall be issued by Private Development Engineering authorizing the construction and inspection of improvements shown hereon for a fee of $_____.
13. The design of these plans are only approved in scope and not in detail.

NOTE TO CONTRACTORS: Encroachment permits are required for work in the right-of-way. Prior to obtaining an encroachment permit, the contractor must have on file with the Engineering Services Director a certificate of insurance verifying the following coverages: $250,000 for death of/or injury to any one person in any one accident, $500,000 for death of/or injury to more than one person, in any one accident; $250,000 for property damage. City of Scottsdale must be named as additionally insured party.



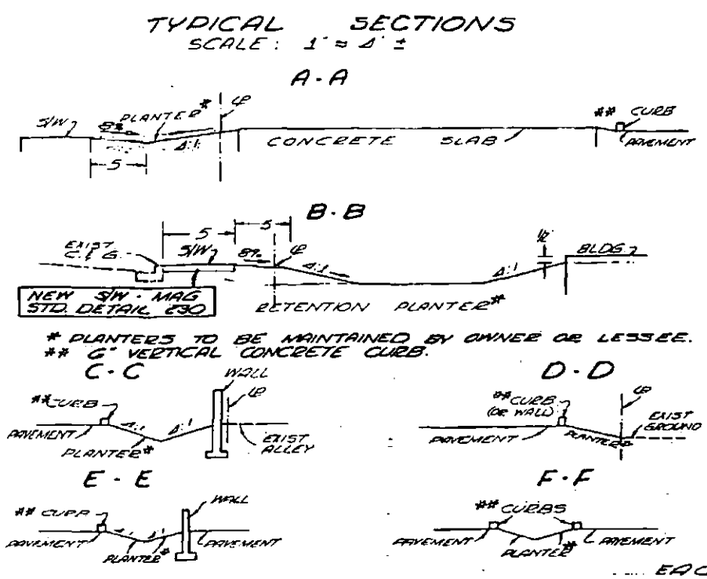
INJECTION WELL SPECIFICATIONS

LEGAL:
PART OF TRACT 'A', STEWART PLAZA, PER BOOK 71 OF MAPS, PAGE 24, M.C.R., LOCATED WITHIN THE SE¼ OF SECTION 34, T.2N., R.4E.

LEGEND:
- 49.50 INDICATES FINISHED ELEVATION OF ASPHALT PAVEMENT (ADD 0.20 FOR ADJOINING TOP OF CURB OR S/W).
- 49.5 INDICATES FINISHED ELEVATION AT PLANTER
- +49.0 INDICATES EXISTING ELEVATION. ( ) INC. CONST.
- INDICATES FINISHED ASPHALT DRAIN.
- INDICATES NEW ASPHALT PAVEMENT

NOTE:
SEE JOB NO. 3787 FOR PROPERTY SURVEY.

TYPICAL SECTIONS
SCALE: 1" = 4'



* PLANTERS TO BE MAINTAINED BY OWNER OR LESSEE.
** 6" VERTICAL CONCRETE CURB.

DRAINAGE PLAN

Phase II

AUTO SALES AND SERVICE FACILITY - 6850 EAST McDOWELL

OWNER: MR. BRUCE WALLACE
ARCHITECT: MR. RICHARD BRITT

SCALE: 1" = 20' JOB NO. 4400

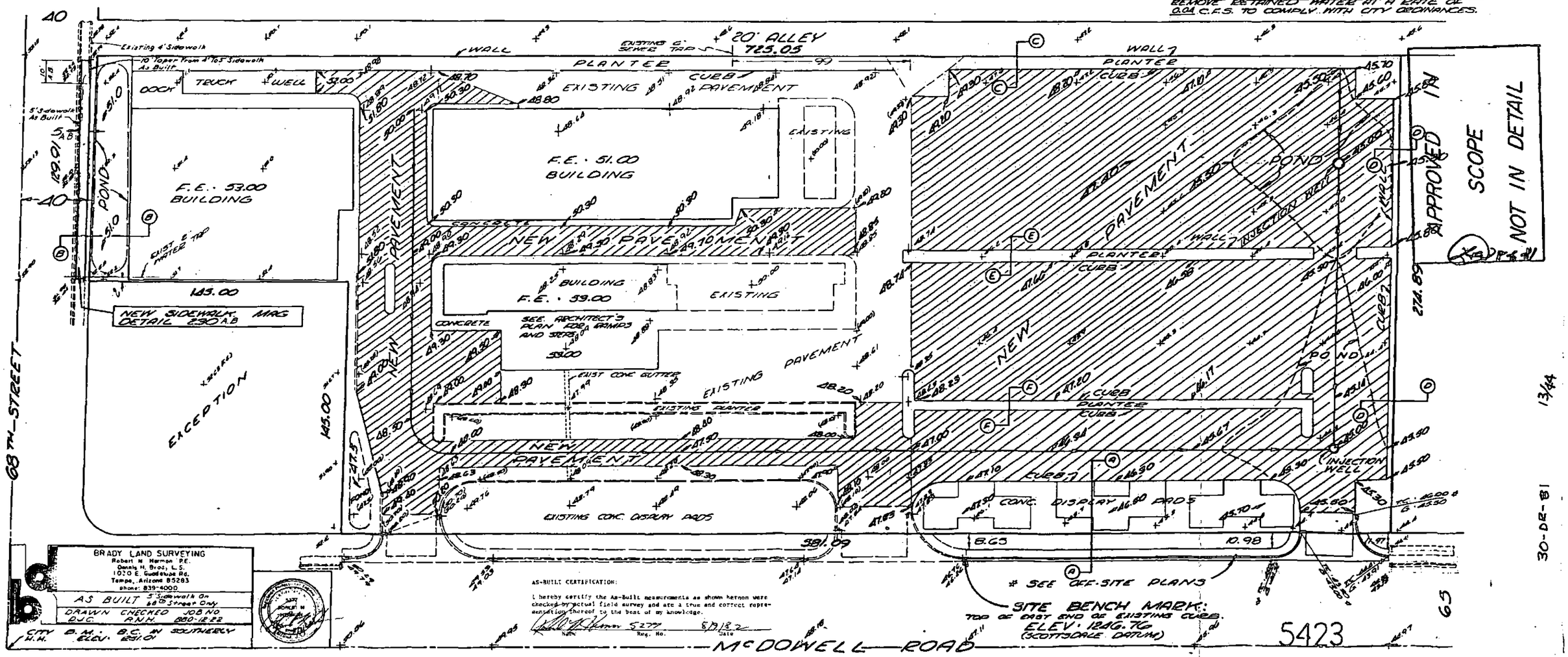
MICHAEL WIER · CIVIL ENGINEER
811 W. THOMAS · PHONE: 279-9373

CITY OF SCOTTSDALE

REVIEWED BY		RECOMMENDED APPROVAL BY
FIRE DEPARTMENT	PRIVATE DEVELOPMENT ENGINEERING	PRIVATE DEVELOPMENT ENGINEERING MANAGER — DATE 9/16/81
TRAFFIC ENGINEERING	PLANNING DEPARTMENT	APPROVED BY
FIELD SERVICES	MUNICIPAL UTILITIES DEPARTMENT	ENGINEERING SERVICES DIRECTOR — DATE
PARKS DEPARTMENT	CAPITOL IMPROVEMENTS	EXPIRES SEP 1982

PERCOLATION TEST RESULTS MUST BE SUBMITTED TO PRIVATE DEVELOPMENT ENGINEERING PRIOR TO THE CERTIFICATE OF OCCUPANCY BEING ISSUED.

..... EACH DRYWELL MUST HAVE THE CAPACITY TO REMOVE ESTIMATED WATER AT A RATE OF 0.04 C.F.S. TO COMPLY WITH CITY ORDINANCES.



BRADY LAND SURVEYING
Robert N. Harmon P.E.
Dennis H. Brady, L.S.
1010 E. Guadalupe Rd.
Tempe, Arizona 85283
phone: 839-4000

AS BUILT 5' Sidewalk On 68th Street Only
DRAWN CHECKED JOB NO
DJC ANH 800-12-22

CITY B.M.: B.C. IN SOUTHERLY M.H. ELEV. 1251.07

AS-BUILT CERTIFICATION:

I hereby certify the As-Built measurements as shown hereon were checked by actual field survey and are a true and correct representation thereof to the best of my knowledge.

Robert N. Harmon 5277 8/18/82
Name Reg. No. Date

DRAINAGE ANALYSIS
Center Line Auto
6850 E. McDowell, Scottsdale

In meetings with the City of Scottsdale, regarding the required storm water retention, it was agreed that Center Line will be required to provide additional retention for the areas where the ground is disturbed. Center Line will be demolishing the sales building only and providing an awning attached to the existing parts building. The service building will be demolished down to the foundation, which will remain. It was agreed that the ground at the service building will not be disturbed, and therefore will not be included in the area of disturbed ground.
The sales building measures 152' x 30' (4560 sf), and 14' x 58' (812 sf), which totals to 5372 sf.
The retention required for this disturbed area is as follows:

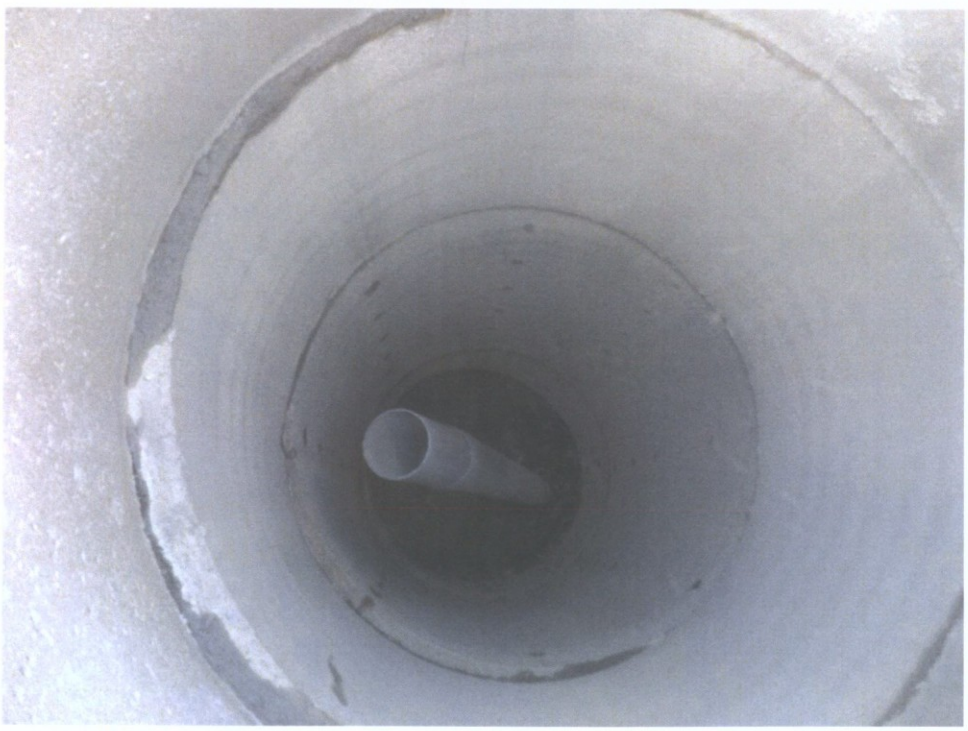
Vr = p/12 x A x C	p = 2.82 "
Vr = 2.82/12 x 0.123 x 0.90	A = 5372/43,560 = 0.123 ac.
Vr = 0.026 af = 1133 cf	C= 0.90

The existing basin #3 has a retention volume of 3,122 cf.
Enlarging and regrading the basin as indicated on the attached plan provides a revised volume of 5,400 cf.
The calculation for the revised basin are as follows.

Area of Top of Basin (46' contour) = 4,222 sf
Area of Bottom of Basin (44' contour) = 1,178 sf
Average area = 4222 sf + 1178 sf = 5400/2 = 2,700 sf
Volume of regarded basin # 3 = 2,700 sf x 2 ft = 5,400 cf

Therefore, the increased volume of basin # 3, after regrading is:

5,400 cf – 3122 cf = 2,278 cf , which exceeds the required volume (Vr) of 1,133 cf.



EXISTING DRYWELL 1

EXISTING DRYWELL 2

EXISTING DRYWELL 3

APPROXIMATE LOCATION EXISTING DRYWELL 4

EASEMENTS DEDICATIONS AND RELATED IMPROVEMENTS:

Ordinance

F. Before any building permit is issued for the site, the owner shall dedicate a sight distance easement over sight distance triangle(s) in conformance with figures 5.3-26 and 5.3-27 of Section 5.3 of the DS&PM.

WATER AND WASTEWATER STIPULATIONS

DRB Stipulations

11. *Existing water and sewer service lines to this site shall be utilized, or shall be disconnected at the main pursuant to the Water Resources Services Department requirements.*

12. *Creation of any new vehicle service or wash areas located within the proposed development shall require installation of a sand/oil interceptor.*

DRAINAGE AND FLOOD CONTROL:

DRB Stipulations

13. *With the improvement plan submittal, the owner shall submit a final drainage report that demonstrates consistency with the Preliminary Drainage report submitted on October 24, 2008, including the letter report signed and sealed 10/20/2008 authored by Engineering Construction Design, Inc. 4045 E. McDowell Road Suite B, Phoenix, Arizona 85008. The DS&PM and the case drainage report accepted in concept by the Director or designee of the Stormwater Management Division of the Municipal Services Department, as well as the attached stipulations.*

14. *It is stipulated that re-grading of the stormwater storage basin # 3 will be performed in accordance with the recommendations of the letter report.*

15. *Dry wells have been approved for this project subject to geo-technical demonstration that the existing wells can be retrofitted to perform, in accordance with the City Code, to drain all detention areas in a 36-hour period, or the dry wells shall be replaced.*

16. *In accordance with NPDES provisions of the Clean Water Act, dry wells or other hydraulic devices leading to the dry wells will be fitted with oil water separators, or other filters, that will preclude harmful chemicals or solids from entering the dry wells.*

17. *The report sealed by Dennis Hustead, P.E. and dated 10/20/08 contains all of the stipulations that are necessary to carry forward into construction.*

ADDITIONAL ITEMS:

Ordinance

G. Flagpoles, if provided, shall be one-piece, conical tapered in design.

DRB Stipulations

18. *Per stipulations for case 9-UP-2006, the applicant shall upgrade the existing bus shelter on 68th Street to the City of Scottsdale's standard bus shelter design.*

PRELIMINARY DRAINAGE REPORT

Aire on McDowell

Single-Family Attached Homes
NEC 68th Street & McDowell Road
Scottsdale, AZ

Prepared For:

KJ Jovnanian Homes

Plan # _____

Case # 8-PP-2015

Q-S # _____

☑ Accepted

☐ Corrections

N. Baronas 2-8-16

Reviewed By Date

Prepared by:

Registered Professional Engineer (Civil)
CERTIFICATE NO.
45621
ALI SAMIH
FAKIH
Date Signed 01-18-16
ARIZONA, U.S.A.

EXPIRES 12-31-17

Sustainability Engineering Group
8280 E. Gelding Drive, Suite 101
Scottsdale, AZ 850799
480.588.7226 www.azSEG.com

Project Number: 150799

Original Submittal Date: August 21, 2015
Resubmittal Date: December 2, 2015 (Prelim Plat)
Resubmittal Date: January 19, 2016 (Prelim Plat)

Case No.: 4-GP-2015; 15-ZN-2015; 8-PP-2015 **Plan Check No.: TBD**

EXPIRES 12-31-17

TABLE OF CONTENTS:

LIST OF FIGURES:

APPENDIX:

1. INTRODUCTION

This Preliminary Drainage Report represents the storm water analysis for the Aire on McDowell single-family attached homes residential subdivision proposed in Scottsdale, Arizona. The purpose of this report is to provide the hydrologic and hydraulic analyses, required by the City of Scottsdale, to support the proposed site plan for said subdivision. This report includes discussions and calculations defining the storm water management concepts for collection, conveyance, and detention systems necessary to comply with the drainage requirements of the City of Scottsdale and Maricopa County. Preparation of this report has been done in accordance with the requirements of the City of Scottsdale Design Standards & Policies Manual (DS&PM) 2010 [1], and the Drainage Design Manuals for Maricopa County, Arizona, Volumes I[2] and Volume II[3].

2. LOCATION AND PROJECT DESCRIPTION

2.1 LOCATION:

The project property consists of three parcels of land located in the SE ¼ of Section 34, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona; Parcel ID numbers are APN: 129-08-052B; 129-08-052C; and 129-08-052D. The project is located at the NEC of N. 68th Street and E. McDowell Road in Scottsdale, AZ. Refer to **FIGURE 1 - Vicinity Map** for the project's location with respect to major cross streets.

2.2 EXISTING AND PROPOSED DEVELOPMENTS SURROUNDING THE SITE:

The site is bounded by McDowell Road to the south, 68th Street to the west with C-3 commercial across, by an alley to the north with the Village Grove 6 residential subdivision across, and 69th Street to the east with C-3 commercial across.

2.3 EXISTING SITE DESCRIPTION:

Land ownership, as defined by ALTA/ACSM Land Title Survey by Arizona Surveying & Mapping dated 05/05/15 includes 5.11+/- acres of commercially developed land. City of Scottsdale zoning map designates this parcel as C-3.

This site is fully developed as a car dealership that is currently vacant. The topography generally slopes from the west-northwest to the southeast corner at approximately one-percent with a change in elevation of approximately eight (8) feet. Typical desert landscaping exists at the perimeter of the site. Refer to **FIGURE 2** for an aerial of the overall project existing conditions.

2.4 PROPOSED SITE DEVELOPMENT:

The property is proposed to be re-developed with new lot configurations into 81 single-family residential townhomes. Development will include 20' to 24' wide roads with rolled curbs. Refer to FIGURE 5 for proposed site layout.

2.5 FLOOD HAZARD ZONE:

As defined by the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona, and incorporated areas, Community number 045012, Panel number 2235 of 4425, as shown on Map Number 04013C2235L dated October 16, 2013 this site is designated as **Zone "X"**. As such, it is defined as areas of 0.2-percent-annual-

chance (or 500-year) flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and area protected by levees from the 100 year flood. Refer to **FIGURE 3** for the FIRM.

3. EXISTING DRAINGE CONDITIONS

3.1 OFF-SITE DRAINAGE:

This site is bound by a paved alley to the north. QS13-44 contour map indicates all runoff is conveyed along the north side of the property, from west to east. The other three sides of the site are bound by roadways with curb and gutter. There appears to be a potential for runoff from the roadway to enter the site near the southwest corner of the site (68th Street and McDowell intersection during larger storm events given the top of curb elevations are close to the same as the on-site elevations. Refer to **FIGURE 4** for the COS QS 13-44 Contour Map and **Appendix IV** for the ALTA/Topographic Survey.

3.2 ON-SITE DRAINAGE:

The site is developed commercial property with generally flat slopes from west-northwest to east-southeast at approximately one (1) percent. Ponding occurs at six locations on site as follows:

Pond 1: Surface ponding occurs on the pavement near the easterly drive entrance from McDowell Road. This area extends under an existing parking structure and has a drywell discharging the retained runoff volume. Ponding depth is approximately six inches with a volume of approximately 1,566 CF.

Pond 2: Pond 2 is an open basin located east of the parking structure, adjacent to 69th Street. The existing volume is approximately 947 CF at 1.3 feet depth and is discharged by an existing drywell.

Pond 3: An additional open basin is located east of the parking structure, north of Pond 2, in the northeast corner of the subject property. Existing storage volume is approximately 403 CF at 1.3 feet depth and is discharged by an existing drywell.

Pond 4: Surface ponding occurs on the pavement under the northeast corner of the parking structure. Existing storage volume is approximately 616 CF at an approximate depth of six inches. An existing drywell discharges the retained runoff.

Pond 5: There is an open basin located in the northwest corner of the parcel between the building and 68th Street. Available storage volume is approximately 955 CF at a depth of one (1) foot. Discharge is via ground percolation.

Pond 6: An area adjacent to the westerly drive entrance off McDowell Road provides approximately 476 CF of storage at a depth of one (1) foot with discharge occurring via ground percolation.

Based on the above, existing available stormwater storage is approximately **4,963 CF.** Topographic survey, visual inspection of the site, and inspection of the existing drywells do not indicate underground retention is provided on this site.

Refer to **Appendix V** for existing drainage information including "Existing Volume Exhibit" indicating the above pond storage information.

4. PROPOSED STORM WATER MANAGEMENT

4.1 DESIGN INTENT:

On-site drainage will be handled within street sections, onsite channels, or retention basins where necessary. This is a re-development of existing commercial land, therefore, the City of Scottsdale specifies that on-site retention shall be provided to maintain existing retention volumes and to store the difference between the pre vs. post development runoff from the 100-year 2-hour storm event.

On-site retention will be provided as allowed by site configuration within the roadways and/or open space and have total discharge of the storm water within thirty-six hours. The ultimate outfall of the retention will be a weir with an elevation of 46.00 outletting to the historical outlet over the sidewalk/curb at the southeast corner of the site with an elevation of 45.65

In general, the units will be graded to the front and into the street where it will be conveyed via curb and gutter and valley gutters, inlet structures, and ultimately to the retention areas. As applicable, the project will be designed to keep the 10 year peak flow rates within the top of the curbs, and the 100 year peak flows within the Right-of-Way at gutter depth of less than or equal to 0.67 feet. Roll curb will be utilized throughout the project with the addition of storm drains, scuppers, or curb-cuts to be used when necessary to convey the 100 year runoff.

Refer to Section 5 below for a discussion on proposed finished floor elevations. Refer to Exhibit "C" in **Appendix III** for the Preliminary Grading & Drainage Plan.

4.2 DESIGN STORM REQUIREMENTS:

In accordance with City of Scottsdale requirements, stormwater storage for the 100-year 2-hour storm event based on pre-development versus post development C values.

4.3 CHARACTERISTICS OF BASINS:

The proposed basins are a combination of R-5 single-family attached residential areas and road rights-of-way 46 feet wide. Based on Figure 4.1-4 of the DS&PM, runoff coefficients for the 100 year storm event used are as follows:

- C=0.45 for undisturbed natural desert or desert landscaping without impervious weed barrier.
- C=0.94 for the lots in R-5 zones (will use 0.95)
- C=0.95 for R.O.W / pavement areas.

HYDROLOGIC ANALYSIS: The hydrologic analysis is determined using the procedures in the City of Scottsdale Design Standards & Policies Manual and the Drainage Design Manual for Maricopa County, Arizona, Volume I. The Rational Method was utilized to compute the on-site peak discharges. The following established the Rational Method equation and the basic input data required:

$Q=C_{wt}IA$

Where: C_{wt} = The runoff coefficient relating runoff to rainfall

I = Average rainfall intensity in inches/hour, lasting for Tc
Tc = The time of concentration (minutes)
A = The contributing drainage area in acres
Q = Runoff rate (CFS)

C_{wt} CALCULATIONS:

- Pre-development (Refer to EXHIBIT "A")
  - Landscape area (Grass): N/A @ C=0.30
  - Landscape area (Desert): 0.64 Ac. @ C=0.45
  - Impervious Ares (Roof / Pavement): 4.46 Ac. @ C=0.95

  C_{wt}: 5.10 Ac. @ **C_{wt} = 0.887**

- Post-development (Refer to EXHIBIT "B")
  - Landscape area (Grass): n/a @ C=0.30
  - Landscape area (Desert): 1.19 Ac. @ C=0.45
  - Impervious Ares (Roof / Pavement): 3.91 Ac. @ C=0.95

  C_{wt}: 5.10 Ac. @ **C_{wt} = 0.833**

RUNOFF RATE:

Q_{100} PRE = 0.887 * 5.60 in/hr * 5.10 ac = **25.33 CFS**
Q_{100} POST = 0.833 * 5.60 in/hr * 5.10 ac = **23.79 CFS**

4.4 OFF-SITE FLOW :

As described in Section 3.1 above, the potential exists for off-site runoff to enter the site near the intersection of 98th Street and McDowell Road. The project will be evaluated to determine any impact to the site and, if required, capacity to carry the historical flows through the site will be provided. If the off-site flows are determined to be greater than 25 cfs a drainage easement will be provided.

4.5 STORMWATER RETENTION:

REQUIRED STORAGE:
Stormwater storage required is calculated In accordance with the COS – DS&PM. Required Retention (Acre-Feet) = $(P/12)*A*(C_{post} - C_{pre})$

Where: P = 100 Yr. 2 Hr. Precipitation in Inches (Ref: Isopluvial from DS&PM, Appendix 4-1D, pg. 11)
A = Area (Acres)
C = Cpost – Cpre

From Section 4.3 above, the C_{wt} is decreased from 0.887 pre-development to 0. 833 post-development (6.1%) therefore no additional retention is required as a result of the redevelopment. Retention will be provided to maintain existing conditions. As noted in Section 3.2 above, existing retention on site is approximately **4,963 CF.**

However, Case Report 89-DR-2008 for Center Lane Auto Sales stipulates "Pond 3" be re-graded in accordance with the recommendation of a letter report associated with the demolishment of a service

building. Based on existing pond layouts it is assumed that "Pond 3" is Pond 2 and Pond 3 of this report. The letter report recommended regrading of the pond to 5,400 CF. Therefore, the required volume for this report will be the combination of existing volumes in Ponds 1, 4, 5, and 6 plus the stipulated volume per the letter.

V_r = 955 CF + 476 CF + 616 CF + 1,566 CF + 5,400 CF = **9,013 CF**

Refer to **Appendix V** for a copy of the stipulation (excerpt from Case Report) and the analysis letter.

PROVIDED STORAGE:

COS requires storm water retention to be provided in open basins for residential developments. The available open space is located at the east end of the project, adjacent to 69th Street. To maximize proposed storage volume, the basin is proposed to have 4:1 maximum slopes from the R.O.W. property lines and use retaining walls along the adjacent residential units.

Table 1 below is a summary of proposed stormwater retention volume in the open basin.

Table 1 – Proposed Retention Volume

ELEV	AREA	DEPTH	AVG. VOL. (CF)	SUM VOL. (CF)
1243	3305			0
		1	3898.5	
1244	4492			3898.5
		1	5380.5	
1245	6269			9279
		1	7237	
1246	8205			16516

The proposed retention volume of **16516 CF** is greater than the required storage volume of **9,013 CF.**

STORAGE DISCHARGE:

Four drywells are registered on the site with ADEQ (registration No. 15180). As described in Section 3.2 above, these drywells discharge relatively small storage volumes. The two drywells associated with the pavement surface areas (existing Ponds 1 and 4) will be removed. The remaining two dry-wells will be maintained or replaced if required due to new construction encroachment or inadequate infiltration rates based on discharge of the water within 36 hours.

Drywells are proposed in the on-site storage facilities to dispose of the stormwater within thirty-six (36) hours. The calculation is as follows:

- Minimum percolating rate of a drywell (for planning purposes) = 0.1 cfs
- Volume to be drained in 36 hours = 0.1 cfs * 36 hours * 3600 sec/hour = 12,960 cf = 0.298 acre-feet

Basin"A" Provided storage = 16,516 cf
16,516 cf / 12,960 cf per drywell = 1.27 = 2 drywells required.

Two drywells are existing / proposed

The remainder of the runoff that is not retained will be conveyed to the historical outlet, being McDowell Road, via an overflow weir created by a pedestrian access walkway / retaining wall combination. Refer to Table 2 below for pond routing to determine the minimum rate of release.

Table 2 – Proposed Pond By-Pass release rate

Tc (min.)	I100	A (ac)	C	Q(in) (cfs)	Q (out) (cfs)	Qi-QoxTcx60 (cf)
5	7.36	5.10	0.833	31.27	4	8180.25
10	5.6	5.10	0.833	23.79	4	11874.29
15	4.63	5.10	0.833	19.67	4	14102.67
30	3.11	5.10	0.833	13.21	4	16581.98
60	1.93	5.10	0.833	8.20	4	15117.19
120	1.07	5.10	0.833	4.55	4	3928.90
180	0.76	5.10	0.833	3.23	4	-8329.95
360	0.421	5.10	0.833	1.79	4	-47767.66
720	0.223	5.10	0.833	0.95	4	-131873.58
1440	0.145	5.10	0.833	0.62	4	-292377.30

By trial-and-error, the above Table 2 indicates the minimum release rate for the 100-yr event to maximize available storage is 4 cfs

Using the above release rate of 4 cfs, an overflow outlet will be used to by-pass runoff through the retention basin. The outlet is proposed be a concrete weir created by a 6' wide concrete path entering the retention area. The approximate depth of water through the weir for 4 cfs is 0.37 feet. Refer to Flowmaster calculations in **Appendix II.**

4.6 STREET CAPACITY CALCULATIONS:

These calculations will be provided in the Final Drainage Report, including curb and gutter, street section, and valley gutter designs as appropriate.

4.7 STORM DRAIN INLET CALCULATIONS:

These calculations will be provided in the Final Drainage Report

5. FLOOD SAFETY FOR DWELLINGS

5.1 FINISHED FLOOR ELEVATIONS

Garage floor elevations will be set at approximately nine (9) inches above the adjacent gutter line elevation. This provides for a 4" rolled curb, 6' wide sidewalk with a cross slope of 2% maximum, and 3' of drive into the garage at a 10% slope.

All building finished floor elevations will be set a minimum of 14 inches above the ultimate lot outlet points and a minimum of 12 inches above the 100-year high-water elevation of any adjacent streets and drainage paths. This will ensure that each building will be well above the 100-year water level.

6. CONCLUSIONS

6.1 OVERALL PROJECT:

1. The site will be evaluated for any potential off-site flows impacting the project.
3. The finish floor elevations will be designed a minimum of 12 inches above the 100-year water surface in adjacent streets and drainage paths and a minimum of 14 inches above the low top of curb of the lot.
4. Storm water storage will be provided to maintain existing conditions, at a minimum, and discharge within 36 hours in accordance with City of Scottsdale requirements.

6.2 PROJECT PHASING:

As a residential development the infrastructure will be constructed in a single phase to accommodate dwelling unit growth. The dwelling units may be phased based on consumer demand.

7. WARNING AND DISCLAIMER OF LIABILITY

RE: following page.

8. REFERENCES

1. *Design Standards & Policies Manual, City of Scottsdale – January 2010*
2. *Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology, Flood Control District of Maricopa County, Fourth Edition, November 18, 2009 amended through February 10, 2011*
3. *Drainage Design Manual for Maricopa County, Arizona, Volume II, Hydraulics, Flood Control District of Maricopa County, January 28, 1996*

Appendix 4-1C

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.

Plan Check No.	Owner or Agent	Date

FIGURE 1. VICINITY MAP

NORTH

N.T.S.

FIGURE 2
AERIAL

900000 FT

895000 FT

JOINS PANEL 2230

NOTE: THIS AREA IS SHOWN AS BEING PROTECTED FROM THE 1-PERCENT-ANNUAL-CHANCE OR GREATER F... LEVEE SYSTEM THAT HAS BEEN P... CREDITED. OVERTOPPING OR FAILURE O... EM IS POSSIBLE. FOR ADDITIONAL IN... THE PROVISIONALLY ACCREDITED LEVEE NOTE IN NOTES TO USERS.

PROJECT LOCATION

ZONE AE

PROFILE BASE LINE

KEY TO NUMBERED STREETS:
1. E CYPRESS ST
2. E MONTE VISTA RD
3. E HOLLY ST
4. E HUBBELL ST
5. E PALM LN

Indian Bend Wash

CITY OF SCOTTSDALE
045012

Granite Reef Wa...

T. 2 N.
T. 1 N.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
METE

NFIP

PANEL 2235L

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

PANEL 2235 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

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

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C2235L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

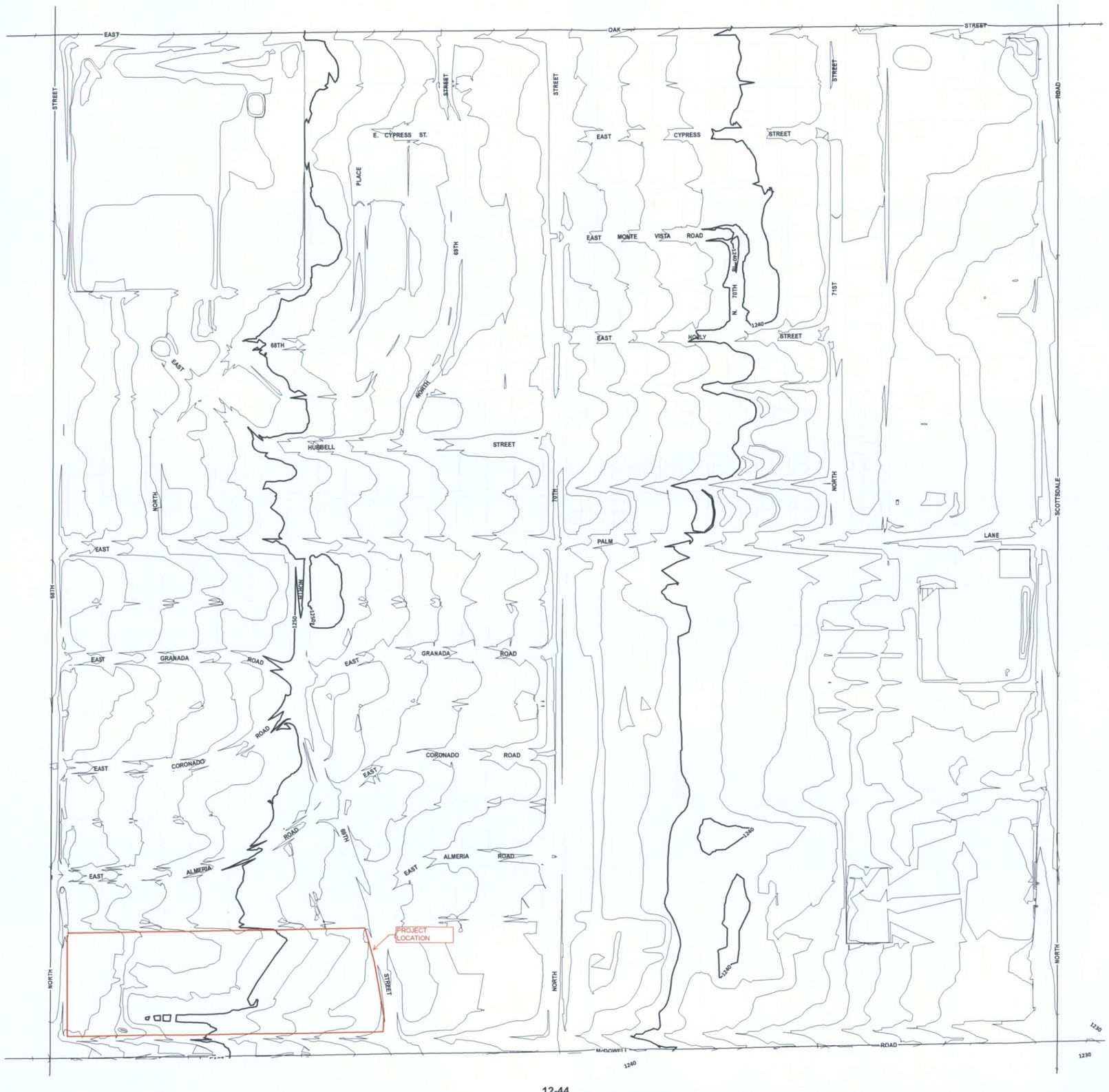
FIGURE 3

14-44

13-43

13-45

12-44



28-APR-14

GENERAL NOTES:

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

VICINITY MAP

NORTH

SCALE: 1" = 100'

0 50 100 200

The map scale of 1" = 100' is based on a full size print of 30" x 36"

CONTOUR

QUARTER SECTION MAP

13-44

SE 1/4 SEC. 34 T2N R4E

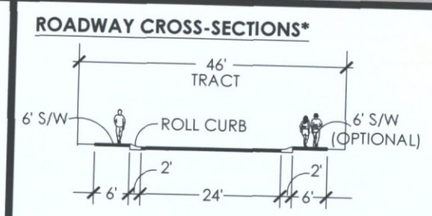
FIGURE 4

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

SITE DATA

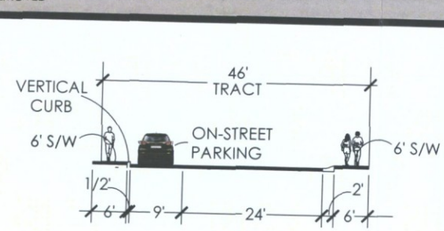
ADDRESS:	6850 E MCDOWELL RD.
SITE AREA (NET):	222,314 (5.11 AC)
SITE AREA (GROSS):	298,775 SF (6.86 AC)
PROPOSED # OF LOTS:	81
NET DENSITY:	15.8 DU/AC
GROSS DENSITY:	11.8 DU/AC
CURRENT ZONING:	C-3
PROPOSED ZONING:	R-5
RESIDENT PARKING:	2 GARAGE SPACES/UNIT
GUEST PARKING:	25 SPACES (INCLUDES 2 ACCESSIBLE SPACES)
MAX. BUILDING HEIGHT:	36' PER ZONING
TYP. LOT DIMENSIONS:	24'x48', 20'x50'
OPEN SPACE:	SEE OPEN SPACE PLAN

ROADWAY CROSS-SECTIONS*



SECTION A
(SIDEWALKS BOTH SIDES)

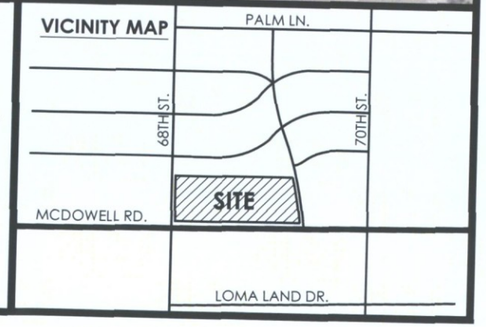
SECTION B
(PARKING ONE SIDE & OPTIONAL SIDEWALK ONE SIDE)



SECTION C
(PARKING ONE SIDE & SIDEWALKS ON BOTH SIDES)

* ALL INTERNAL STREETS TO BE DESIGNATED FIRE LANES. *ALL INTERNAL STREETS TO SUPPORT 83,000 POUNDS GROSS VEHICLE WEIGHT.

VICINITY MAP



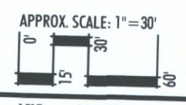
LVA urban design studio
land planning • development entitlements • landscape architecture
120 south ash avenue • tempe, arizona 85281 • 480.994.0994

KJ Hovnanian Homes

AIRE ON MCDOWELL

CONCEPTUAL SITE PLAN

APPROX. SCALE: 1" = 30'



NORTH

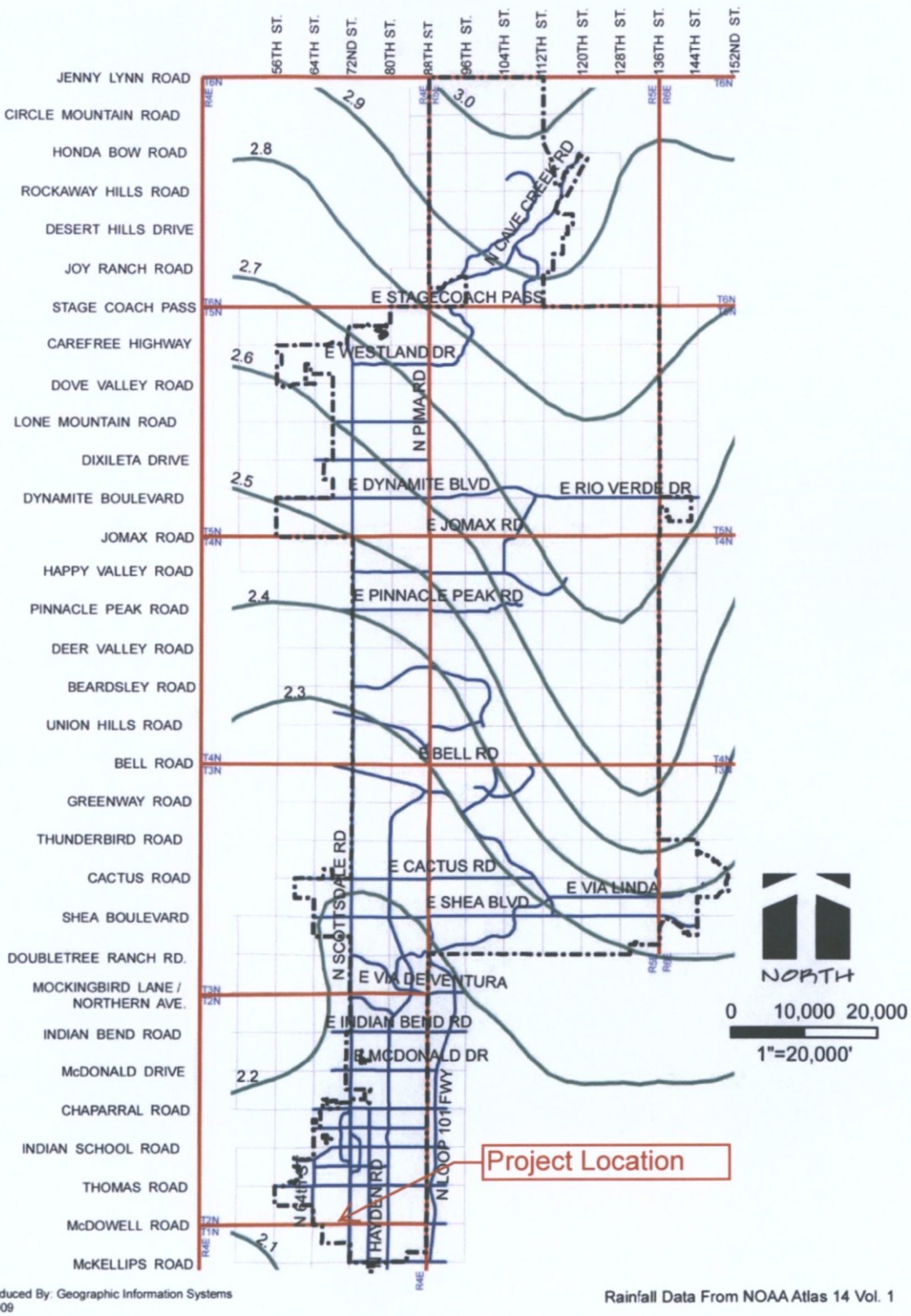
1517 DRAWN BY: AV 1/18/16

APPENDIX I

Rainfall Data

ISOPLUVIALS

100 Year 2 Hour Precipitation in Inches



Map Produced By: Geographic Information Systems
04/03/2009

Rainfall Data From NOAA Atlas 14 Vol. 1

NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, US*
Latitude: 33.4651°, Longitude: -111.9323°
Elevation: 1246 ft*
* source: Google Maps

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	2.16 (1.82–2.62)	2.82 (2.39–3.43)	3.85 (3.23–4.64)	4.63 (3.86–5.57)	5.70 (4.68–6.80)	6.53 (5.28–7.76)	7.36 (5.84–8.72)	8.21 (6.42–9.74)	9.36 (7.13–11.1)	10.2 (7.64–12.2)
10-min	1.64 (1.39–1.99)	2.15 (1.82–2.61)	2.93 (2.46–3.53)	3.53 (2.95–4.23)	4.33 (3.56–5.18)	4.96 (4.02–5.90)	5.60 (4.45–6.64)	6.25 (4.89–7.41)	7.12 (5.42–8.46)	7.79 (5.81–9.28)
15-min	1.36 (1.14–1.65)	1.78 (1.50–2.15)	2.42 (2.03–2.92)	2.92 (2.43–3.50)	3.58 (2.94–4.28)	4.10 (3.32–4.88)	4.63 (3.68–5.49)	5.16 (4.04–6.12)	5.88 (4.48–6.99)	6.44 (4.80–7.66)
30-min	0.914 (0.770–1.11)	1.20 (1.01–1.45)	1.63 (1.37–1.97)	1.96 (1.64–2.36)	2.41 (1.98–2.88)	2.76 (2.24–3.29)	3.11 (2.48–3.70)	3.48 (2.72–4.12)	3.96 (3.02–4.71)	4.34 (3.24–5.16)
60-min	0.566 (0.477–0.686)	0.740 (0.626–0.897)	1.01 (0.847–1.22)	1.22 (1.01–1.46)	1.49 (1.23–1.78)	1.71 (1.39–2.03)	1.93 (1.53–2.29)	2.15 (1.68–2.55)	2.45 (1.87–2.91)	2.68 (2.00–3.19)
2-hr	0.328 (0.282–0.390)	0.426 (0.364–0.506)	0.571 (0.487–0.676)	0.682 (0.575–0.804)	0.832 (0.694–0.977)	0.949 (0.780–1.11)	1.07 (0.866–1.25)	1.19 (0.947–1.39)	1.35 (1.05–1.59)	1.48 (1.12–1.75)
3-hr	0.237 (0.202–0.283)	0.304 (0.260–0.365)	0.400 (0.340–0.478)	0.476 (0.402–0.566)	0.582 (0.485–0.689)	0.667 (0.548–0.787)	0.757 (0.610–0.892)	0.849 (0.673–0.999)	0.978 (0.751–1.15)	1.08 (0.811–1.28)
6-hr	0.143 (0.124–0.168)	0.181 (0.158–0.213)	0.233 (0.203–0.272)	0.274 (0.236–0.319)	0.330 (0.281–0.382)	0.374 (0.313–0.431)	0.420 (0.346–0.484)	0.467 (0.377–0.539)	0.532 (0.419–0.615)	0.582 (0.448–0.676)
12-hr	0.080 (0.070–0.092)	0.101 (0.089–0.117)	0.128 (0.112–0.148)	0.150 (0.130–0.172)	0.178 (0.153–0.205)	0.200 (0.170–0.229)	0.223 (0.186–0.256)	0.246 (0.203–0.283)	0.277 (0.223–0.320)	0.301 (0.237–0.350)
24-hr	0.048 (0.043–0.054)	0.061 (0.055–0.069)	0.079 (0.071–0.089)	0.094 (0.083–0.105)	0.113 (0.100–0.127)	0.129 (0.114–0.144)	0.145 (0.127–0.162)	0.162 (0.141–0.181)	0.186 (0.159–0.207)	0.204 (0.173–0.228)
2-day	0.026 (0.023–0.029)	0.033 (0.030–0.037)	0.044 (0.039–0.049)	0.052 (0.046–0.058)	0.064 (0.056–0.071)	0.073 (0.064–0.081)	0.083 (0.072–0.092)	0.093 (0.081–0.104)	0.107 (0.092–0.120)	0.118 (0.101–0.133)
3-day	0.018 (0.016–0.021)	0.023 (0.021–0.026)	0.031 (0.028–0.035)	0.037 (0.033–0.041)	0.045 (0.040–0.050)	0.052 (0.046–0.058)	0.059 (0.052–0.066)	0.067 (0.058–0.074)	0.077 (0.066–0.086)	0.086 (0.073–0.096)
4-day	0.015 (0.013–0.016)	0.019 (0.017–0.021)	0.024 (0.022–0.027)	0.029 (0.026–0.033)	0.036 (0.032–0.040)	0.041 (0.037–0.046)	0.047 (0.041–0.053)	0.054 (0.046–0.060)	0.062 (0.053–0.069)	0.069 (0.059–0.078)
7-day	0.009 (0.008–0.010)	0.012 (0.011–0.013)	0.015 (0.014–0.017)	0.018 (0.016–0.021)	0.023 (0.020–0.025)	0.026 (0.023–0.029)	0.030 (0.026–0.033)	0.034 (0.029–0.038)	0.039 (0.034–0.044)	0.044 (0.037–0.049)
10-day	0.007 (0.006–0.008)	0.009 (0.008–0.010)	0.012 (0.011–0.013)	0.014 (0.013–0.016)	0.017 (0.015–0.019)	0.020 (0.018–0.022)	0.023 (0.020–0.025)	0.025 (0.022–0.028)	0.029 (0.025–0.033)	0.033 (0.028–0.036)
20-day	0.004 (0.004–0.005)	0.006 (0.005–0.006)	0.007 (0.007–0.008)	0.009 (0.008–0.010)	0.010 (0.009–0.012)	0.012 (0.010–0.013)	0.013 (0.012–0.015)	0.015 (0.013–0.016)	0.017 (0.014–0.018)	0.018 (0.016–0.020)
30-day	0.003 (0.003–0.004)	0.004 (0.004–0.005)	0.006 (0.005–0.006)	0.007 (0.006–0.007)	0.008 (0.007–0.009)	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)
45-day	0.003 (0.002–0.003)	0.003 (0.003–0.004)	0.004 (0.004–0.005)	0.005 (0.005–0.006)	0.006 (0.006–0.007)	0.007 (0.006–0.008)	0.008 (0.007–0.009)	0.009 (0.008–0.009)	0.010 (0.008–0.011)	0.010 (0.009–0.012)
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 (0.005–0.006)	0.006 (0.006–0.007)	0.007 (0.006–0.008)	0.008 (0.007–0.009)	0.008 (0.007–0.009)

[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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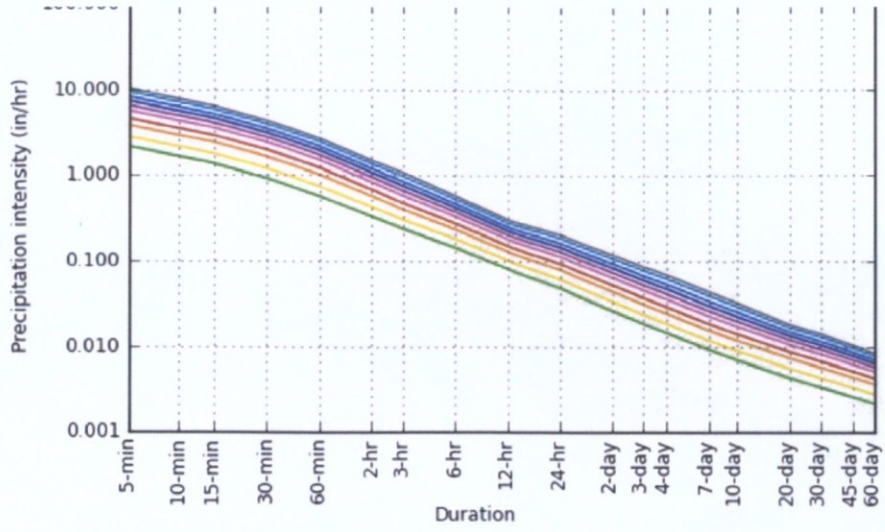
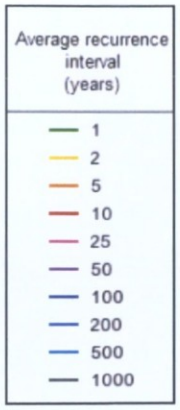
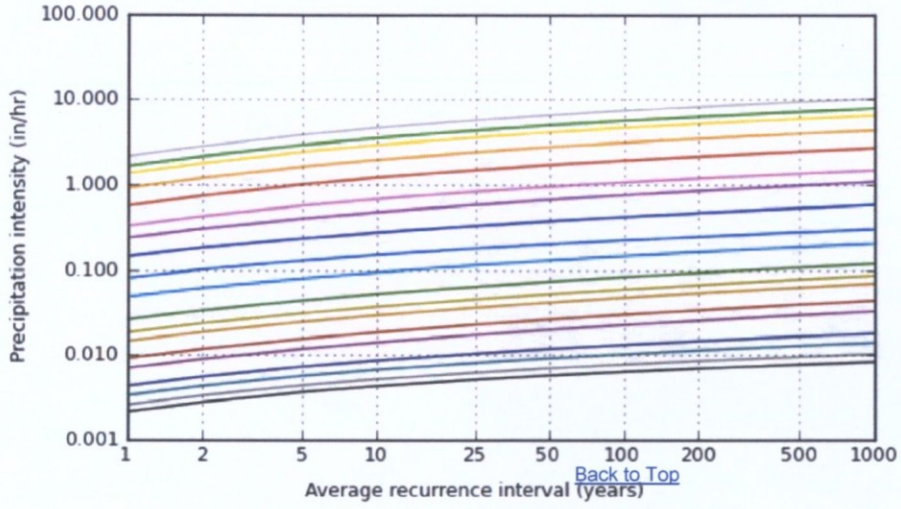
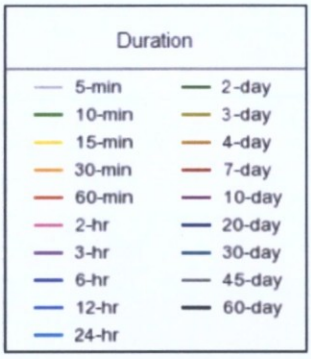
PF graphical









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Maps & aerials

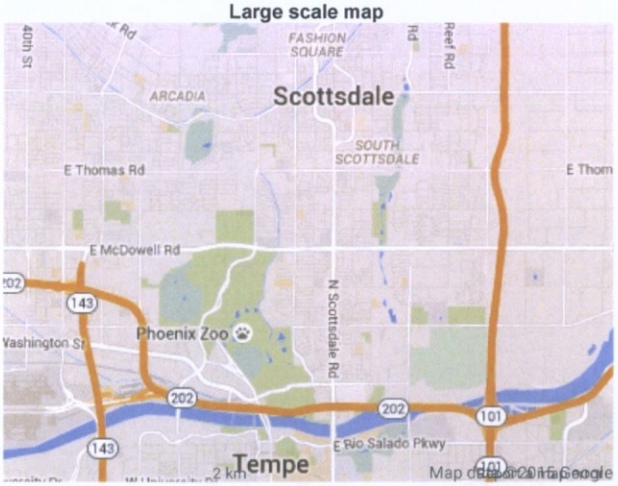
NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Wed Oct 28 21:39:33 2015

Small scale terrain

Large scale terrain

Large scale map



Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910

NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, US*
Latitude: 33.4651°, Longitude: -111.9323°
Elevation: 1246 ft*
* source: Google Maps

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)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.180 (0.152-0.218)	0.235 (0.199-0.286)	0.321 (0.269-0.387)	0.386 (0.322-0.464)	0.475 (0.390-0.567)	0.544 (0.440-0.647)	0.613 (0.487-0.727)	0.684 (0.535-0.812)	0.780 (0.594-0.926)	0.853 (0.637-1.02)
10-min	0.274 (0.231-0.332)	0.359 (0.303-0.435)	0.488 (0.410-0.589)	0.588 (0.491-0.705)	0.722 (0.593-0.864)	0.827 (0.670-0.984)	0.933 (0.742-1.11)	1.04 (0.815-1.24)	1.19 (0.904-1.41)	1.30 (0.969-1.55)
15-min	0.340 (0.286-0.412)	0.444 (0.376-0.538)	0.606 (0.508-0.730)	0.729 (0.608-0.874)	0.895 (0.735-1.07)	1.03 (0.831-1.22)	1.16 (0.920-1.37)	1.29 (1.01-1.53)	1.47 (1.12-1.75)	1.61 (1.20-1.92)
30-min	0.457 (0.385-0.555)	0.598 (0.506-0.725)	0.815 (0.684-0.983)	0.982 (0.819-1.18)	1.21 (0.990-1.44)	1.38 (1.12-1.64)	1.56 (1.24-1.85)	1.74 (1.36-2.06)	1.98 (1.51-2.35)	2.17 (1.62-2.58)
60-min	0.566 (0.477-0.686)	0.740 (0.626-0.897)	1.01 (0.847-1.22)	1.22 (1.01-1.46)	1.49 (1.23-1.78)	1.71 (1.39-2.03)	1.93 (1.53-2.29)	2.15 (1.68-2.55)	2.45 (1.87-2.91)	2.68 (2.00-3.19)
2-hr	0.657 (0.563-0.781)	0.851 (0.728-1.01)	1.14 (0.974-1.35)	1.36 (1.15-1.61)	1.67 (1.39-1.95)	1.90 (1.56-2.22)	2.14 (1.73-2.50)	2.38 (1.89-2.78)	2.71 (2.10-3.17)	2.96 (2.25-3.49)
3-hr	0.712 (0.606-0.850)	0.912 (0.781-1.10)	1.20 (1.02-1.44)	1.43 (1.21-1.70)	1.75 (1.46-2.07)	2.00 (1.65-2.36)	2.27 (1.83-2.68)	2.55 (2.02-3.00)	2.94 (2.26-3.46)	3.25 (2.43-3.84)
6-hr	0.857 (0.745-1.00)	1.09 (0.949-1.27)	1.40 (1.21-1.63)	1.64 (1.42-1.91)	1.98 (1.68-2.29)	2.24 (1.88-2.58)	2.52 (2.07-2.90)	2.80 (2.26-3.23)	3.18 (2.51-3.68)	3.49 (2.68-4.05)
12-hr	0.961 (0.843-1.11)	1.22 (1.07-1.41)	1.54 (1.35-1.78)	1.80 (1.56-2.07)	2.15 (1.84-2.47)	2.41 (2.05-2.77)	2.69 (2.25-3.08)	2.96 (2.44-3.41)	3.34 (2.68-3.85)	3.63 (2.86-4.22)
24-hr	1.16 (1.04-1.30)	1.47 (1.32-1.65)	1.90 (1.70-2.13)	2.25 (2.00-2.51)	2.72 (2.41-3.04)	3.10 (2.73-3.45)	3.49 (3.05-3.89)	3.90 (3.38-4.34)	4.46 (3.82-4.97)	4.90 (4.16-5.47)
2-day	1.25 (1.12-1.40)	1.60 (1.44-1.79)	2.10 (1.88-2.35)	2.50 (2.23-2.79)	3.06 (2.71-3.41)	3.50 (3.08-3.91)	3.97 (3.48-4.44)	4.45 (3.87-4.98)	5.14 (4.41-5.76)	5.68 (4.83-6.40)
3-day	1.32 (1.19-1.48)	1.69 (1.52-1.90)	2.22 (1.99-2.49)	2.65 (2.37-2.96)	3.26 (2.89-3.63)	3.74 (3.30-4.17)	4.26 (3.73-4.75)	4.80 (4.17-5.36)	5.56 (4.77-6.21)	6.17 (5.24-6.92)
4-day	1.39 (1.25-1.56)	1.78 (1.60-2.00)	2.35 (2.10-2.62)	2.81 (2.50-3.13)	3.46 (3.07-3.85)	3.98 (3.51-4.43)	4.55 (3.98-5.06)	5.14 (4.46-5.73)	5.98 (5.12-6.67)	6.66 (5.65-7.45)
7-day	1.54 (1.38-1.73)	1.97 (1.77-2.20)	2.60 (2.32-2.90)	3.10 (2.77-3.47)	3.82 (3.39-4.27)	4.40 (3.88-4.91)	5.02 (4.39-5.60)	5.67 (4.92-6.33)	6.60 (5.65-7.36)	7.34 (6.22-8.21)
10-day	1.68 (1.50-1.87)	2.14 (1.92-2.40)	2.83 (2.53-3.15)	3.38 (3.01-3.76)	4.14 (3.68-4.61)	4.76 (4.20-5.30)	5.42 (4.75-6.03)	6.11 (5.31-6.80)	7.07 (6.07-7.88)	7.85 (6.67-8.76)
20-day	2.06 (1.85-2.29)	2.65 (2.38-2.94)	3.49 (3.13-3.88)	4.13 (3.70-4.58)	4.99 (4.45-5.54)	5.65 (5.02-6.27)	6.33 (5.59-7.03)	7.01 (6.16-7.79)	7.93 (6.91-8.84)	8.64 (7.47-9.64)
30-day	2.40 (2.15-2.67)	3.09 (2.78-3.44)	4.07 (3.65-4.51)	4.82 (4.31-5.33)	5.82 (5.18-6.44)	6.59 (5.84-7.28)	7.37 (6.51-8.15)	8.17 (7.18-9.04)	9.25 (8.07-10.2)	10.1 (8.71-11.2)
45-day	2.79 (2.51-3.10)	3.59 (3.24-3.99)	4.73 (4.26-5.25)	5.57 (5.00-6.18)	6.68 (5.98-7.41)	7.52 (6.70-8.33)	8.36 (7.42-9.27)	9.20 (8.13-10.2)	10.3 (9.04-11.5)	11.1 (9.72-12.4)
60-day	3.09 (2.79-3.42)	3.99 (3.60-4.42)	5.25 (4.73-5.81)	6.16 (5.54-6.81)	7.35 (6.59-8.13)	8.23 (7.35-9.11)	9.11 (8.11-10.1)	9.97 (8.84-11.0)	11.1 (9.78-12.3)	11.9 (10.5-13.3)

[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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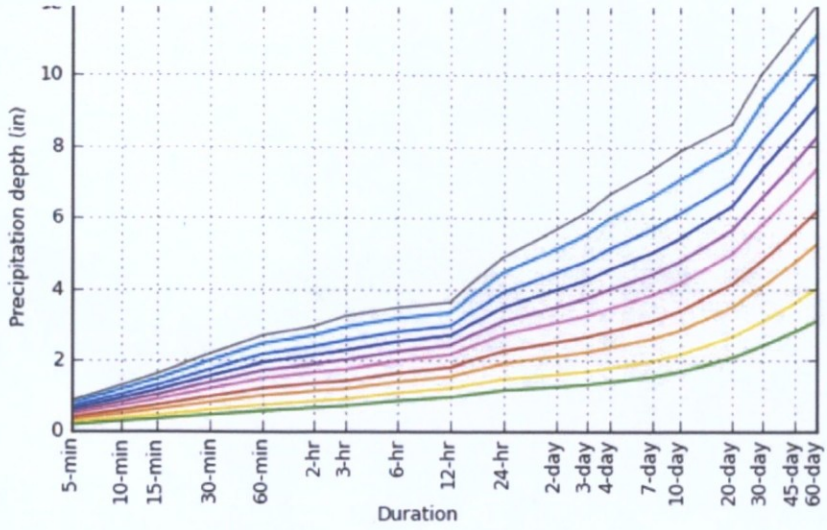
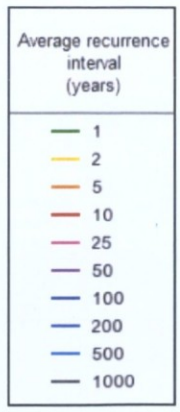
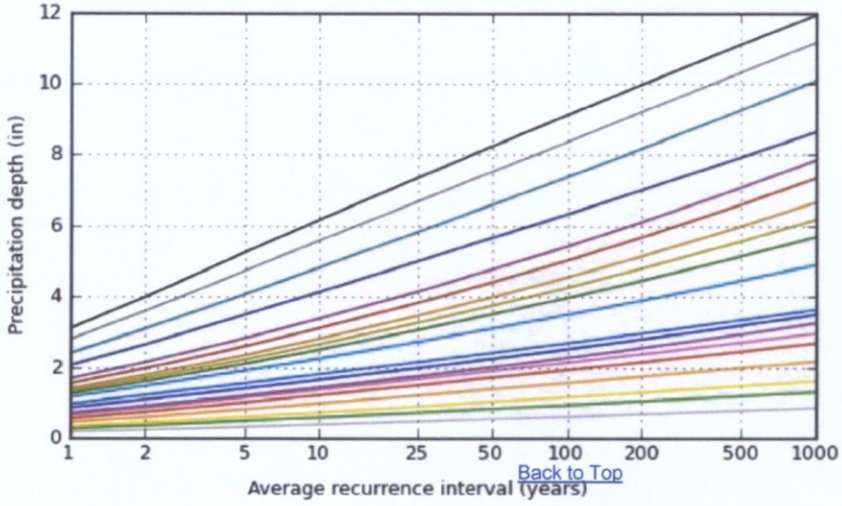
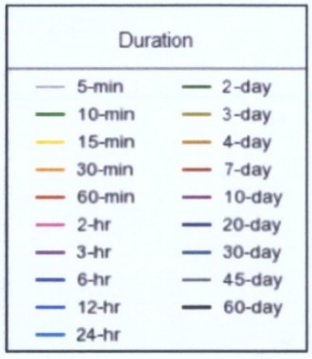
PF graphical









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Maps & aerials

NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Wed Oct 28 21:37:43 2015

Small scale terrain

Large scale terrain

Large scale map

Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910

APPENDIX II

Calculations

2. Time of Concentration

Time of concentration "**Tc**" is the total time of travel from the most hydraulically remote part of the watershed to the concentration point of interest. The calculation of "Tc" must follow FCDMC Hydrology Manual procedures.

***Note:** **Do not add a standard set amount of time to the estimated "Tc" for lot runoff delay (such as 5 or 10 minutes).** Natural land slopes are too variable in Scottsdale to add a set amount of time for lot runoff.

3. Runoff Coefficients

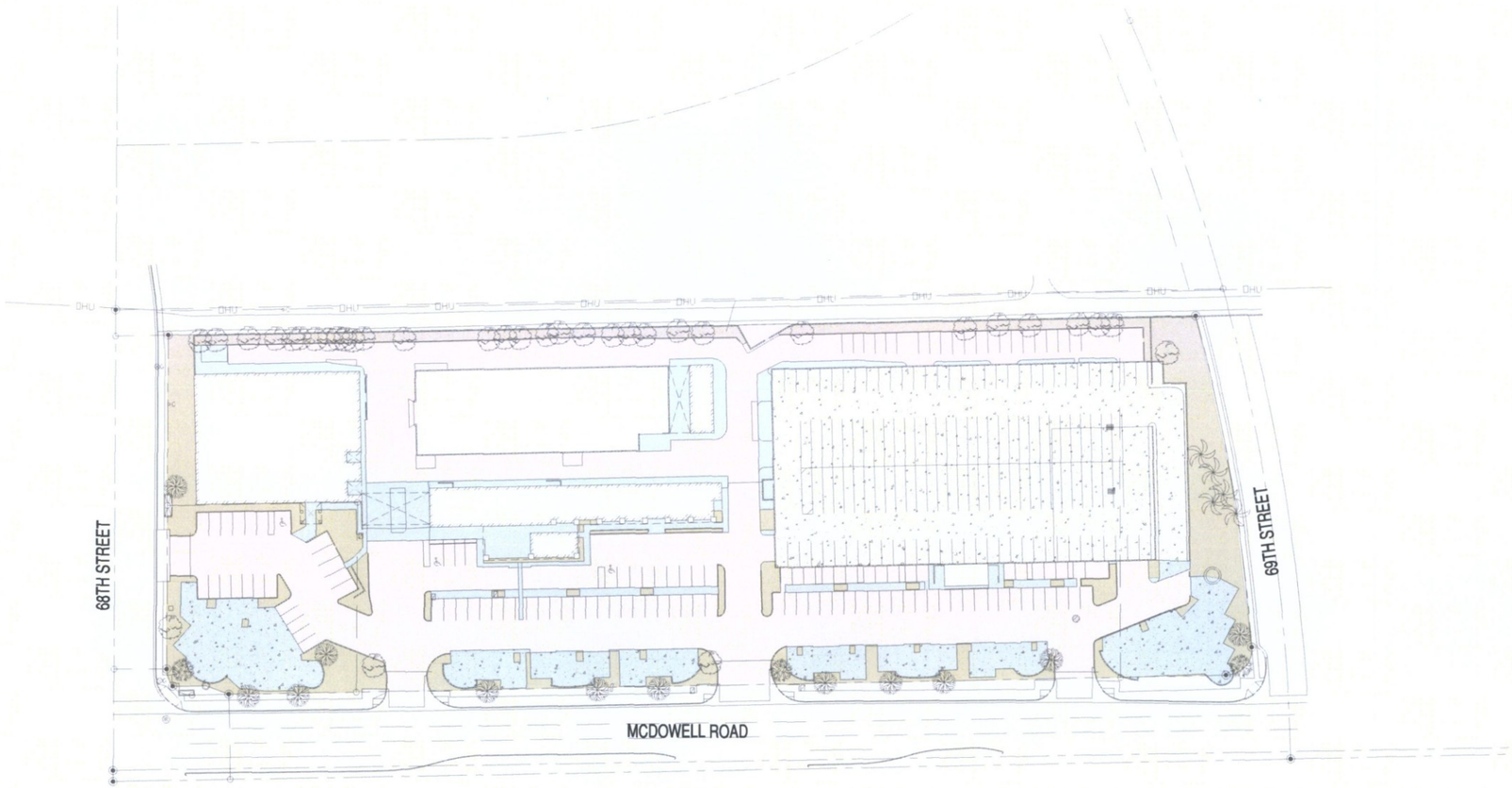
Use Figure 4.1-4 or equivalent to obtain the runoff coefficients or "**C**" values. Composite "**C**" values for the appropriate zoning category or weighted average values calculated for the specific site are both acceptable approaches.

RUNOFF COEFFICIENTS - "C" VALUE			
Land Use	Storm Frequency		
Composite Area-wide Values	2-25 Year	50 Year	100 Year
Commercial & Industrial Areas	0.80	0.83	0.86
Residential Areas-Single Family (average lot size)			
R1-1-1901	0.33	0.50	0.53
R1-130	0.35	0.51	0.59
R1-70	0.37	0.52	0.60
R1-43	0.38	0.55	0.61
R1-35 (35,000 square feet/lot)	0.40	0.56	0.62
R1-18 (18,000 square feet/lot)	0.43	0.58	0.64
R1-10 (10,000 square feet/lot)	0.47	0.62	0.67
R1-7 (7,000 square feet/lot)	0.51	0.64	0.94
Townhouses (R-2, R-4)	0.63	0.74	0.94
Apartments & Condominiums (R-3, R-5)	0.76	0.83	0.94
Specific Surface Type Values			
Paved streets, parking lots (concrete or asphalt), roofs, drive-ways, etc.	0.90	0.93	0.95
Lawns, golf courses, & parks (grassed areas)	0.20	0.25	0.30
Undisturbed natural desert or desert landscaping (no impervious weed barrier)	0.37	0.42	045
Desert landscaping (with impervious weed barrier)	0.63	0.73	0.83
Mountain terrain – slopes greater than 10%	0.60	0.70	0.80
Agricultural areas (flood-irrigated fields)	0.16	0.18	0.20

FIGURE 4.1-4 RUNOFF COEFFICIENTS FOR USE WITH RATIONAL METHOD

EXHIBIT A

PRE-DEVELOPMENT GROUND COVERAGE



PRE-DEVELOPMENT GROUND COVERAGE

IMPERVIOUS SURFACES	
ASPHALT AREA:	77,425 SF (±1.78 AC)
CONCRETE AREA:	35,942 SF (±0.83 AC)
BUILDING AREA:	80,854 SF (±1.86 AC)
TOTAL IMPERVIOUS AREA:	194,221 SF (±4.46 AC)
PERVIOUS SURFACES	
LANDSCAPE AREA:	28,093 SF (±0.64 AC)
TOTAL COVERAGE:	222,314 SF (±5.11 AC)

NORTH

0' 50' 100' 150'

SCALE: 1" = 50'

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County (602) 263-1100

NOTE TO CONTRACTOR:
THIS SET OF DRAWINGS AND DOCUMENTS IS INTENDED AS A SET OF GUIDELINES OF CONSTRUCTION. PLANS ARE NOTTO BE SUPPLIED BY OWNER. THEY MUST BE READ TO INCORPORATE ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES INCLUDING FEDERAL A.D.A. REQUIREMENTS. THIS SET ASSUMES THAT THERE ARE NO UNUSUAL SOIL CONDITIONS OR WIND LOADS. THE FAILURE OF THIS ASSUMPTION MAY REQUIRE REVISIONS TO THE PLANS. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO CONFORM TO ALL APPLICABLE CODES AND TO INFORM THE OWNER/ARCHITECTS OF ANY QUESTIONS OR CLARIFICATIONS WHICH ARE DESIRED. CONTRACTORS SHALL ALSO VISIT THE SITE BEFORE BIDDING. CONTRACTORS ARE REQUIRED TO KNOW ALL OBSERVABLE CONDITIONS AND APPLICABLE CODES.

SEG SUSTAINABILITY ENGINEERING GROUP
8280 E. GELDING DR #101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL: 480.588.7226

PROJECT: ARE ON MCDOWELL

LOCATION: 68TH & MCDOWELL ROAD SCOTTSDALE, AZ

DRAWN	CASTELLO
DESIGNED	CASTELLO
CHECKED	COUNSELL
PROJ. MGR.	FAKIH

DATE: 8/14/2015

ISSUED FOR: OWNER REVIEW

REVISION NO.:	DATE:
1	
2	
3	
4	

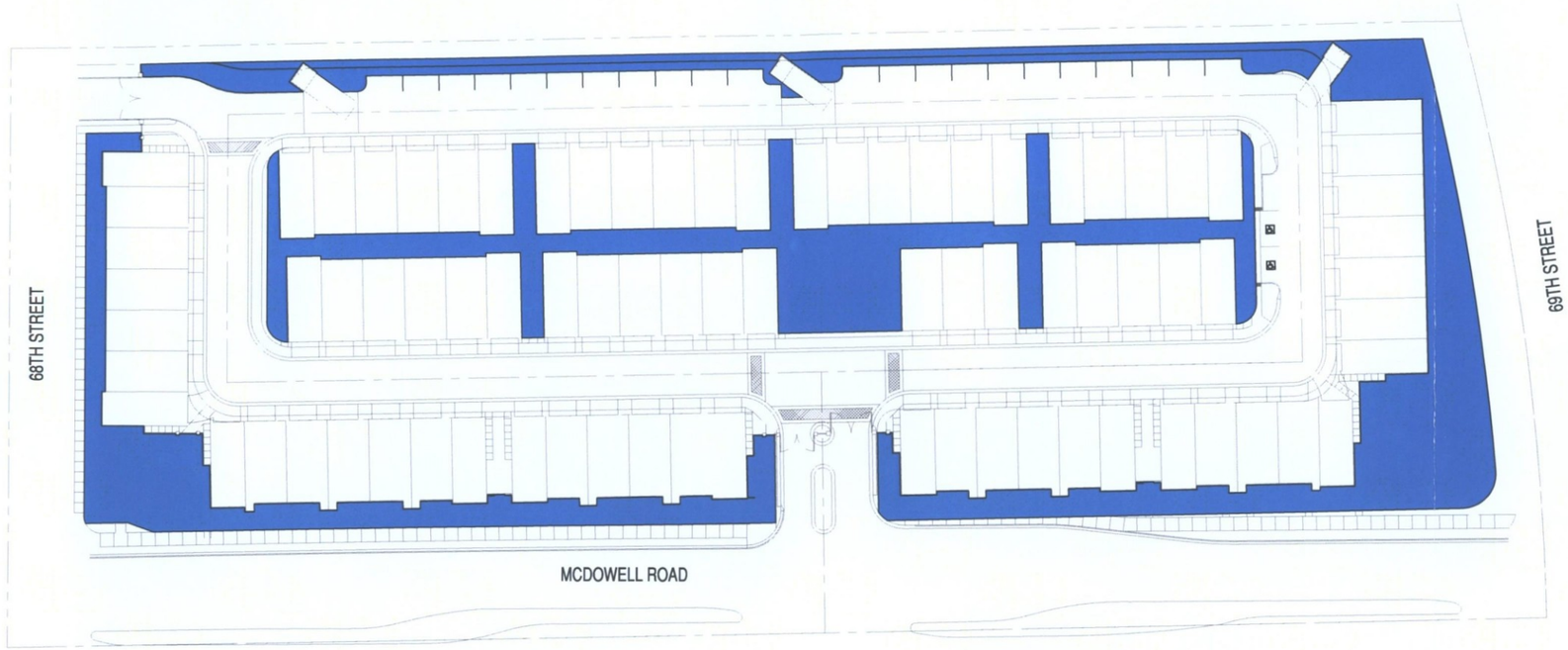
JOB NO.: 150799

SHEET TITLE: PRE-DEVELOPMENT GROUND COVERAGE AREA

SHEET NO.: EXHIBIT A

EXHIBIT B

POST-DEVELOPMENT



POST-DEVELOPMENT

LANDSCAPE AREA:	51,662 SF. (1.19 AC.)

NORTH

0' 40' 80' 120'

SCALE: 1" = 40'

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Northern Georgia (800) 282-7411

NOTE TO CONTRACTOR: THIS SET OF DRAWINGS AND DOCUMENTS IS INTENDED AS A SET OF GUIDELINES FOR THE PROJECT AND ARE INTENDED TO BE USED IN CONJUNCTION WITH A SET OF CONSTRUCTION SPECIFICATIONS TO BE SUPPLIED BY OWNER. THEY MUST BE READ TO INCORPORATE ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THERE ARE NO UNUSUAL SOIL CONDITIONS OR MIND LOADS. THE FAILURE OF THIS CONDITION MAY REQUIRE SIGNIFICANT CHANGES TO THESE DOCUMENTS. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO CONFORM TO ALL APPLICABLE CODES AND TO INFORM THE OWNER/ARCHITECTS OF ANY QUESTIONS OR DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. VISIT THE SITE BEFORE BIDDING. CONTRACTORS ARE REQUIRED TO KNOW ALL OBSERVABLE CONDITIONS AND APPLICABLE CODES.

SEG SUSTAINABILITY ENGINEERING GROUP

8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260
WWW. AZSEG.COM TEL. 480.588.7226

KHovnanian Homes

PROJECT: ARE ON MCDOWELL

LOCATION: 68TH & MCDOWELL ROAD SCOTTSDALE, AZ 85257

DRAWN	CASTELLO
DESIGNED	CASTELLO
CHECKED	COUNSELL
PROJ. MGR.	FAKIH

DATE: 11/11/2015

ISSUED FOR:

REVISION NO.:	DATE:
1	
2	
3	
4	

JOB NO.: 150799

SHEET TITLE: POST-DEVELOPMENT GROUND COVERAGE AREA

SHEET NO.: EXHIBIT B

Pond Routing Calculations

Tc (min.)	I100	A (ac)	C	Q(in) (cfs)	Q (out) (cfs)	Qi-QoxTcx60 (cf)
5	7.36	5.10	0.833	31.27	4	8180.25
10	5.6	5.10	0.833	23.79	4	11874.29
15	4.63	5.10	0.833	19.67	4	14102.67
30	3.11	5.10	0.833	13.21	4	16581.98
60	1.93	5.10	0.833	8.20	4	15117.19
120	1.07	5.10	0.833	4.55	4	3928.90
180	0.76	5.10	0.833	3.23	4	-8329.95
360	0.421	5.10	0.833	1.79	4	-47767.66
720	0.223	5.10	0.833	0.95	4	-131873.58
1440	0.145	5.10	0.833	0.62	4	-292377.30

Pond Storage Calculations

ELEV	AREA	DEPTH	AVG. VOL. (CF)	SUM VOL. (CF)
1243	3305			0
		1	3898.5	
1244	4492			3898.5
		1	5380.5	
1245	6269			9279
		1	7237	
1246	8205			16516

Worksheet for Broad Crested Weir - 1

Project Description

Solve For	Discharge

Input Data

Headwater Elevation		46.37	ft
Crest Elevation		46.00	ft
Tailwater Elevation		46.00	ft
Crest Surface Type	Paved		
Crest Breadth		6.00	ft
Crest Length		6.00	ft

Results

Discharge	4.04	ft^3/s
Headwater Height Above Crest	0.37	ft
Tailwater Height Above Crest	0.00	ft
Weir Coefficient	2.99	US
Submergence Factor	1.00	
Adjusted Weir Coefficient	2.99	US
Flow Area	2.22	ft^2
Velocity	1.82	ft/s
Wetted Perimeter	6.74	ft
Top Width	6.00	ft

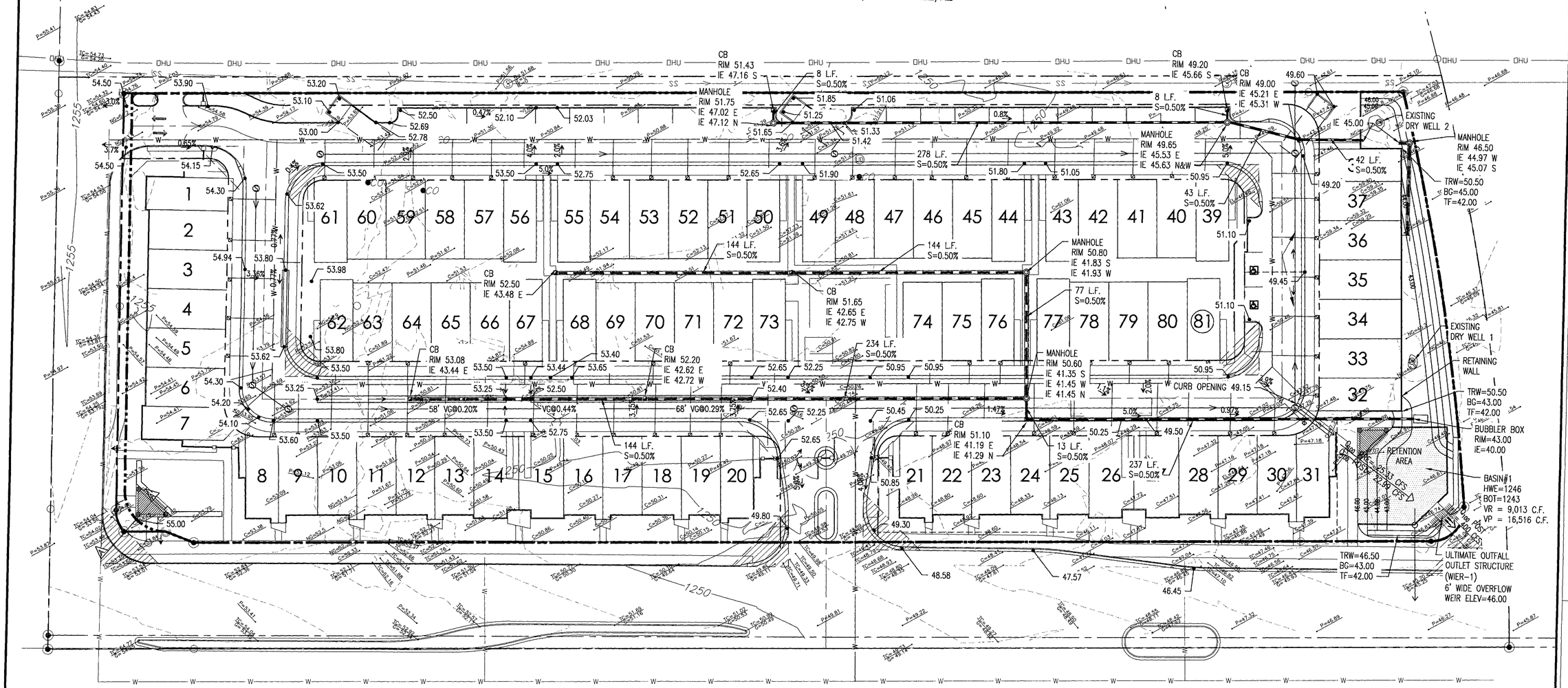
APPENDIX III

Preliminary Grading Plan

PRELIMINARY GRADING PLAN

AIRE ON McDOWELL

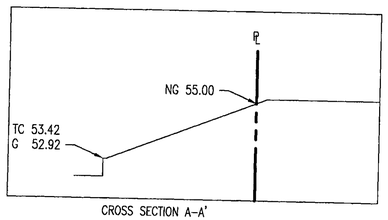
68TH & McDOWELL ROAD, SCOTTSDALE, AZ



NORTH

0' 30' 60' 90'

SCALE: 1" = 30'



CROSS SECTION A-A'

SCALE
VERT: 1"=2'
HORZ: 1"=10'

LEGEND

- PROPOED SEWER MANHOLE
- PROPOSED FIRE HYDRANT
- CATCH BASIN
- EXISTING DRY WELL
- XX.XX — SPOT GRADE
- C.O. XX.XX — CURB OPENING GRADE

UNIT FLOOR ELEVATIONS		
UNIT	GARAGE FLOOR	FFE
1-7	55.05	55.83
8-14	54.35	55.00
15-20	53.50	54.15
21-26	51.00	51.75
27-31	50.25	50.70
32-38	50.25	50.70
39-43	51.80	52.45
44-49	52.65	53.30
50-55	53.50	54.15
56-61	54.35	55.00
62-67	54.35	55.00
68-73	53.50	54.15
74-76	51.80	52.45
77-81	51.80	52.45

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

NOTE TO CONTRACTOR:
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SEG SUSTAINABILITY ENGINEERING GROUP
8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226

Toll Brothers Tuscan Homes

PROJECT: AIRE ON MCDOWELL
LOCATION: 68TH & MCDOWELL ROAD SCOTTSDALE, AZ 85257

DRAWN — POUNDS
DESIGNED — POUNDS
CHECKED — COUNSELL
PROJ. MGR. — FAKIH

DATE: 01/15/2016
ISSUED FOR: PRELIMINARY PLAT

REVISION NO.:	DATE:
1	
2	
3	
4	

JOB NO.: 150799

SHEET TITLE: PRELIMINARY GRADING PLAN

SHEET NO.:

APPENDIX IV

ALTA / Topographic Survey

ALTA/ACSM LAND TITLE SURVEY

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

LEGAL DESCRIPTION:

PARCEL NO. 1:

TRACT "A", STEWART PLAZA, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 71 OF MAPS, PAGE 24;

EXCEPT THAT PART OF TRACT "A", STEWART PLAZA, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 71 OF MAPS, PAGE 24, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID TRACT "A";

THENCE SOUTH ALONG THE WEST LINE OF SAID TRACT "A", 130.00 FEET TO A POINT DISTANT 125.00 FEET NORTH OF THE POINT OF CURVE AT THE SOUTH TERMINUS OF THE WEST LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", 145.00 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", 145.00 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST ALONG THE SOUTH LINE OF SAID TRACT "A", 592.26 FEET TO A POINT DISTANT 80.00 FEET WEST OF THE POINT OF CURVE AT THE EAST TERMINUS OF THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH, A DISTANCE OF 275.00 FEET MORE OR LESS, TO A POINT ON THE NORTH LINE OF SAID TRACT "A", SAID POINT BEING DISTANT 58.00 FEET WEST OF THE NORTHEAST CORNER OF SAID TRACT "A";

THENCE WEST ALONG THE NORTH LINE OF SAID TRACT "A", 724.88 FEET TO THE POINT OF BEGINNING; AND

EXCEPT A PARCEL OF LAND LOCATED IN TRACT "A", STEWART PLAZA, A SUBDIVISION RECORDED IN BOOK 71, PAGE 24, MARICOPA COUNTY RECORDS, AND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA. SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM THE SOUTH QUARTER CORNER OF SAID SECTION 34;

THENCE NORTH (ASSUMED BEARING) ALONG THE WEST LINE THEREOF, A DISTANCE OF 85 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 34, A DISTANCE OF 40 FEET TO A POINT ON THE WEST LINE OF SAID TRACT "A" AND THE TRUE POINT OF BEGINNING;

THENCE NORTH ALONG THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST, PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE SOUTH 88 DEGREES 43 MINUTES 01 SECONDS WEST ALONG THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT HAVING A TANGENT OF 20 FEET;

THENCE ALONG SAID CURVE TO THE RIGHT TO ITS POINT OF TANGENCY IN THE WEST LINE OF SAID TRACT "A", TO THE TRUE POINT OF BEGINNING; AND

EXCEPT ALL MINERALS AND ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND BELOW A DEPTH OF 500.00 FEET, WITHOUT THE RIGHT OF SURFACE ENTRY, AS RESERVED IN DEED RECORDED IN DOCKET 12171, PAGE 281, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2:

THAT PART OF TRACT "A", STEWART PLAZA, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 71 OF MAPS, PAGE 24, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID TRACT "A";

THENCE SOUTH ALONG THE WEST LINE OF SAID TRACT "A", 130.00 FEET TO A POINT DISTANT 125.00 FEET NORTH OF THE POINT OF CURVE AT THE SOUTH TERMINUS OF THE WEST LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", 145.00 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", 145.00 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST ALONG THE SOUTH LINE OF SAID TRACT "A", 592.26 FEET TO A POINT DISTANT 80.00 FEET WEST OF THE POINT OF CURVE AT THE EAST TERMINUS OF THE SOUTH LINE OF SAID TRACT "A";

THENCE NORTH, A DISTANCE OF 275.00 FEET MORE OR LESS, TO A POINT ON THE NORTH LINE OF SAID TRACT "A", SAID POINT BEING DISTANT 58.00 FEET WEST OF THE NORTHEAST CORNER OF SAID TRACT "A";

THENCE WEST ALONG THE NORTH LINE OF SAID TRACT "A", 724.88 FEET TO THE POINT OF BEGINNING.

AREAS:

PARCEL 1 – ±22,985 SQUARE FEET OR ±0.53 ACRES
PARCEL 2 – ±178,586 SQUARE FEET OR ±4.10 ACRES
PARCEL 3 – ±20,743 SQUARE FEET OR ±0.48 ACRES
TOTALS – ±222,314 SQUARE FEET OR ±5.11 ACRES NET
GROSS TOTAL – INCLUDING TO THE CENTER OF ADJACENT STREETS ±298,775 SQUARE FEET OR ±6.86 ACRES GROSS

LEGAL DESCRIPTION CONTINUED:

EXCEPT ALL MINERALS AND ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND BELOW A DEPTH OF 500.00 FEET, WITHOUT THE RIGHT OF SURFACE ENTRY, AS RESERVED IN DEED RECORDED IN DOCKET 12171, PAGE 281, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 3:

A PARCEL OF LAND LOCATED IN TRACT "A", STEWART PLAZA, A SUBDIVISION RECORDED IN BOOK 71, PAGE 24, MARICOPA COUNTY RECORDS, AND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA. SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM THE SOUTH QUARTER CORNER OF SAID SECTION 34;

THENCE NORTH (ASSUMED BEARING) ALONG THE WEST LINE THEREOF, A DISTANCE OF 85 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 34, A DISTANCE OF 40 FEET TO A POINT ON THE WEST LINE OF SAID TRACT "A" AND THE TRUE POINT OF BEGINNING;

THENCE NORTH ALONG THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST, PARALLEL TO THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET;

THENCE SOUTH PARALLEL TO THE WEST LINE OF SAID TRACT "A", A DISTANCE OF 145 FEET TO THE SOUTH LINE OF SAID TRACT "A";

THENCE SOUTH 88 DEGREES 43 MINUTES 01 SECONDS WEST ALONG THE SOUTH LINE OF SAID TRACT "A", A DISTANCE OF 125 FEET TO THE BEGINNING OF A CURVE TO THE RIGHT HAVING A TANGENT OF 20 FEET;

THENCE ALONG SAID CURVE TO THE RIGHT TO ITS POINT OF TANGENCY IN THE WEST LINE OF SAID TRACT "A", TO THE TRUE POINT OF BEGINNING;

EXCEPT A PARCEL OF LAND LOCATED IN TRACT "A", STEWART PLAZA, A SUBDIVISION RECORDED IN BOOK 71, PAGE 24, MARICOPA COUNTY RECORDS, AND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA. SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SAID SECTION 34;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST ALONG THE SOUTH LINE OF SAID SECTION, A DISTANCE OF 88.01 FEET;

THENCE NORTH, A DISTANCE OF 65.02 FEET TO A POINT ON THE SOUTH LINE OF SAID TRACT "A", SAID POINT AL50 BEING THE TRUE POINT OF BEGINNING;

THENCE SOUTH 88 DEGREES 43 MINUTES 01 SECONDS WEST, A DISTANCE OF 28.00 FEET ALONG THE SOUTH LINE OF SAID TRACT "A" TO THE BEGINNING OF A TANGENT CURVE TO THE RIGHT, CONCAVE NORTHEASTERLY WITH A RADIUS OF 19.56 FEET;

THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 49 DEGREES 23 MINUTES 27 SECONDS, A DISTANCE OF 16.86 FEET TO A POINT ON THE EAST LINE OF THE WEST 5.00 FEET OF SAID TRACT "A", AS DESCRIBED IN DOCUMENT NO. 89-578133, MARICOPA COUNTY RECORDS;

THENCE NORTH 88 DEGREES 43 MINUTES 01 SECONDS EAST PARALLEL TO THE SOUTH LINE OF TRACT "A", A DISTANCE OF 25.55 FEET;

THENCE SOUTH 70 DEGREES 20 MINUTES 55 SECONDS EAST, A DISTANCE OF 19.11 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT ALL MINERALS AND ALL OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND BELOW A DEPTH OF 500.00 FEET, WITHOUT THE RIGHT OF SURFACE ENTRY, AS RESERVED IN DEED RECORDED IN DOCKET 12171, PAGE 281, RECORDS OF MARICOPA COUNTY, ARIZONA.

SCHEDULE "B" ITEMS:

(1) ANY ACTION BY THE COUNTY ASSESSOR AND/OR TREASURER, ALTERING THE CURRENT OR PRIOR TAX ASSESSMENT, SUBSEQUENT TO THE DATE OF THE POLICY OF TITLE INSURANCE. **(NOT RESPONSIBILITY OF SURVEYOR)**

(2) TAXES AND ASSESSMENTS COLLECTIBLE BY THE COUNTY TREASURER, A LIEN NOT YET DUE AND PAYABLE FOR THE YEAR 2015. **(NOT RESPONSIBILITY OF SURVEYOR)**

(3) RESERVATIONS OR EXCEPTIONS IN PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF. **(NOT RESPONSIBILITY OF SURVEYOR)**

(4) WATER RIGHTS, CLAIMS OR TITLE TO WATER, AND AGREEMENTS, COVENANTS, CONDITIONS OR RIGHTS INCIDENT THERETO, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS.

THIS EXCEPTION IS NOT LIMITED BY REASON OF THE DISCLOSURE OF ANY MATTER RELATING TO WATER RIGHTS AS MAY BE SET FORTH ELSEWHERE IN SCHEDULE B. **(NOT RESPONSIBILITY OF SURVEYOR)**

(5) EASEMENT FOR ELECTRIC TRANSMISSION LINE AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 2799, PAGE 318 **(SHOWN)**

(6) EASEMENT FOR ELECTRIC TRANSMISSION LINE AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 3014, PAGE 496. **(SHOWN)**

(7) EASEMENT FOR UNDERGROUND WATER LINES AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 15471, PAGE 806. **(SHOWN)**

(8) ALL MATTERS SET FORTH IN INDEMNITY AGREEMENT BY AND BETWEEN SCOTT TOYOTA AND CITY OF SCOTTSDALE RECORDED IN DOCKET 16176, PAGE 89. **(BLANKET OVER PARCEL 2)**

(9) EASEMENT FOR UNDERGROUND ELECTRICAL CONDUITS AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCKET 16502, PAGE 417. **(SHOWN)**

(10) EASEMENT FOR UNDERGROUND ELECTRICAL CONDUITS AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCUMENT NO. 87-307251. **(SHOWN)**

(11) EASEMENT FOR ROAD OR HIGHWAY AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT RECORDED IN DOCUMENT NO. 89-578133. **(SHOWN)**

(12) TERMS, CONDITIONS, LIABILITIES AND OBLIGATIONS CONTAINED IN AN INSTRUMENT ENTITLED COST SHARING AND MAINTENANCE AGREEMENT MCDOWELL ROAD STREETSCAPE IMPROVEMENT PROJECT, RECORDED IN DOCUMENT NO. 20051284874. **(BLANKET)**

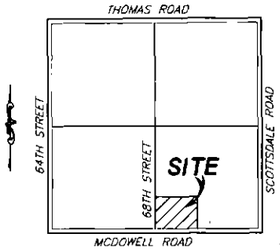
(13) ITEM AMENDED THE FOLLOWING MATTER(S) DISCLOSED BY SURVEY OF SAID LAND BY ARIZONA SURVEYING AND MAPPING, JOB NO. P15-075, DATED MAY 5, 2015:

A.) ENCROACHMENT OF AN IMPROVEMENT CONSISTING OF A TWO STORY STUCCO BUILDING (LABELED BUILDING A ON SAID SURVEY) ONTO THE AREA OF THE EASEMENT RECORDED IN DOCKET 2799, PAGE 318.
B.) ENCROACHMENT OF AN IMPROVEMENT CONSISTING OF A TWO STORY PARKING GARAGE ONTO THE AREA OF THE EASEMENTS RECORDED IN DOCKET 3014, PAGE 496, DOCKET 15471, PAGE 806, AND DOCKET 16502, PAGE 417.
C.) ENCROACHMENT OF AN IMPROVEMENT CONSISTING OF A BUS STOP ALONG THE WEST BOUNDARY OF PARCELS 2 AND 3.
D.) METAL STAND PIPES AND ELECTRIC CABINET LOCATED WITHIN THE RIGHT OF WAY DEDICATION SHOWN IN DOCUMENT NO. 89-578133 ON PARCEL 3.
E.) ELECTRIC CABINETS, ELECTRIC BOX, TRAFFIC SIGNAL, AND TRAFFIC SIGNAL BOX LOCATED IN THE SOUTHWESTERLY PORTION OF PARCEL 3.
F.) ENCROACHMENT OF IMPROVEMENTS CONSISTING CONCRETE SURFACES, LANDSCAPING LIGHTS, AND 2-FOOT BLOCK WALLS ONTO MCDOWELL ROAD.

(14) ALL MATTERS SET FORTH IN RESOLUTION NO. 8356, BY THE CITY OF SCOTTSDALE FOR THE LOS ARCOS REDEVELOPMENT AREA, RECORDED IN DOCUMENT NO. 2010-0549775. **(BLANKET)**

(15) RIGHTS OF PARTIES IN POSSESSION.

NOTE: THIS EXCEPTION MAY BE MADE MORE SPECIFIC UPON OUR EXAMINATION OF DOCUMENTS, WHICH ENTITLE THE OCCUPANTS TO POSSESSION. **(NOT RESPONSIBILITY OF SURVEYOR)**



VICINITY MAP
NOT TO SCALE

RECORD OWNER:

APN# 129-08-052B,
129-08-052C, 129-08-052D
EJG INVESTMENT LLC
PROPERTY ADDRESS
6880 E MCDOWELL ROAD
SCOTTSDALE, AZ 85257
MAILING ADDRESS
PO BOX 8449
SCOTTSDALE, AZ 85257

BASIS OF BEARING:

S88°43'01"W ALONG THE MONUMENT LINE OF MCDOWELL ROAD AS MEASURED BETWEEN MONUMENTS NUMBERED (1) AND (3) SHOWN HEREON AND DESCRIBED UNDER MONUMENT NOTES. ALSO SHOWN ON THE FINAL PLAT FOR STEWART PLAZA, RECORDED IN BOOK 71 OF MAPS, PAGE 24, MARICOPA COUNTY RECORDS.

FLOODZONE:

CURRENT FLOOD ZONE IS "ZONE X" (AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WIDTH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD); PER FIRM MAP NO. 04013C2235L, DATED OCTOBER 16, 2013.

SURVEYOR'S NOTES:

1. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. ALL INFORMATION REGARDING RECORD EASEMENTS, ADJOINERS, AND OTHER DOCUMENTS WHICH MIGHT AFFECT THE QUALITY OF TITLE TO TRACT SHOWN HEREON WAS GAINED FROM A COMMITMENT FOR TITLE INSURANCE ISSUED BY STEWART TITLE GUARANTY COMPANY ORDER NUMBER 05501-6638-AMENDMENT NO. 1, DATED MAY 19, 2015 AT 5:00 P.M.

2. THE WORD "CERTIFY" OR "CERTIFICATE" IS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A GUARANTEE, EXPRESS OR IMPLIED.

3. THIS ALTA/ACSM LAND TITLE SURVEY WAS PREPARED SPECIFICALLY FOR THE USE OF THE PARTIES NAMED IN THE CERTIFICATION AND THEIR REPRESENTATIVES. USE OF THIS SURVEY IS NOT PERMITTED UNLESS EXPRESSLY PERMITTED IN WRITING IN ADVANCE BY ARIZONA SURVEYING AND MAPPING. THIS SURVEY IS NOT TO BE USED FOR DESIGN PURPOSES. ARIZONA SURVEYING AND MAPPING SHALL HAVE NO LIABILITY FOR ANY UNAUTHORIZED USE OF THIS INFORMATION WITHOUT THEIR PRIOR WRITTEN CONSENT.

4. IF A DISCREPANCY IS DISCOVERED IN THE TOPOGRAPHY OF THIS MAP THE SURVEYOR MUST BE CONTACTED TO RESOLVE ANY ISSUES PRIOR TO ANY DESIGN OR CONSTRUCTION.

5. THE LOCATION OF UNDERGROUND UTILITIES AS DEPICTED HEREON IS BASED ON RECOVERABLE FIELD LOCATED SURFACE FEATURES OF THOSE UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE AND POSSIBLY INCOMPLETE. NO EXCAVATIONS WERE MADE TO LOCATE BURIED UTILITIES DURING THE PROGRESS OF OR FOR THE PURPOSE OF THIS SURVEY.

6. OWNERSHIP INFORMATION SHOWN HEREON WAS OBTAINED FROM THE MARICOPA COUNTY ASSESSOR'S WEBSITE AND MAY BE INACCURATE OR OUT-OF-DATE.

7. RELATIVE TO OPTIONAL TABLE "A" ITEM NO. 16 THE SURVEYOR DID NOT NOTICE ANY EARTH MOVING DURING THIS SURVEY.

8. NO FIELD WORK OR CHECKS HAVE BEEN DONE SINCE PREVIOUSLY SIGNED SURVEY IN JUNE 2015.

CERTIFICATION:

TO: K. HOVNANIAN GREAT WESTERN HOMES, LLC, AN ARIZONIAN LIMITED LIABILITY COMPANY
EJG INVESTMENTS, L.L.C., AN ARIZONA LIMITED LIABILITY COMPANY
STEWART TITLE GUARANTY COMPANY
STEWART TITLE & TRUST OF PHOENIX, INC

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS AND INCLUDES ITEMS 1, 2, 3, 4, 5, 8, 9, 10(a), 11(a), 13, AND 16 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MAY 01, 2015

LANCE C. DICKSON RLS #46643 DATE

REGISTERED LAND SURVEYOR 46643 LANCE C. DICKSON 11/24/15 ARIZONA, U.S.A.

EXPIRES 06/30/2016

REVISIONS

ALTA/ACSM LAND TITLE SURVEY

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

Arizona Surveying and Mapping
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2411 WEST NORTHERN AVENUE, SUITE 110
PHOENIX, ARIZONA 85021
TEL (602) 246-9919 FAX (602) 246-9944 info@asam1.com

FIELDWORK BY :	WDZ
DRAWN BY :	CRS
CHECKED BY :	LCD
JOB #	P15-075
DATE :	11/24/15

SHEET NO.
1
1 OF 3

0 20 40 80 120

SCALE: 1"= 40'

MONUMENT NOTES:

ALL MONUMENTATION SHOWN HEREON WAS ACCEPTED UNLESS OTHERWISE NOTED

1. FOUND CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE, SOUTHEAST CORNER SECTION 34, T2N, R4E, INTERSECTION OF MCDOWELL ROAD AND SCOTTSDALE ROAD
2. FOUND COTTON PICKER SPINDLE, 0.25' DOWN FROM PAVEMENT, INTERSECTION OF MCDOWELL ROAD AND 69TH STREET 0.12' NORTH (ACCEPTED)
3. FOUND CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE, SOUTH QUARTER CORNER SECTION 34, T2N, R4E, SOUTH MONUMENT AT INTERSECTION OF MCDOWELL ROAD AND 68TH STREET
4. FOUND CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE, NORTH MONUMENT AT INTERSECTION OF MCDOWELL ROAD AND 68TH STREET
5. FOUND COTTON PICKER SPINDLE
6. FOUND 1/2" REBAR WITH CAP (DESTROYED) 0.11' SOUTH & 0.02' WEST (ACCEPTED) AFFIXED CAP RLS-46643
7. FOUND "X" IN CONCRETE SIDEWALK
8. FOUND 1/2" REBAR WITHOUT CAP 0.18' SOUTH & 0.03' WEST (ACCEPTED) AFFIXED CAP RLS-46643
9. FOUND CITY OF SCOTTSDALE BRASS CAP FLUSH, CENTER OF SECTION 34, T2N, R4E, INTERSECTION OF OAK STREET & 68TH STREET
10. FOUND ½" REBAR WITHOUT TAGS, INTERSECTION OF 69TH ST AND ALMERIA ROAD
11. FOUND ½" REBAR WITH RED CAP RLS# 42137

REFERENCE DATA:

THIS SURVEY IS SUPPORTED BY THE FOLLOWING RECORD INFORMATION:

(R1) COMMITMENT FOR TITLE INSURANCE ISSUED BY STEWART TITLE GUARANTY COMPANY ORDER NUMBER 05501-8638, DATED APRIL 14, 2015 AT 5:00 P.M.

(R2) FINAL PLAT OF STEWART PLAZA, RECORDED IN BOOK 71 OF MAPS, PAGE 24, MCR

(R3) RECORD OF SURVEY BY SUPERIOR SURVEYING SERVICES INC. RECORDED IN BOOK 1040, PAGE 36, MCR

(R4) UNRECORDED ALTA/ACSM LAND TITLE SURVEY BY BYRD & ASSOCIATES LLC, JOB #249-17, DATED 01/30/06

(R5) FINAL PLAT OF VILLAGE GROOVE SIX RECORDED IN BOOK 76 OF MAPS, PAGE 36, MCR

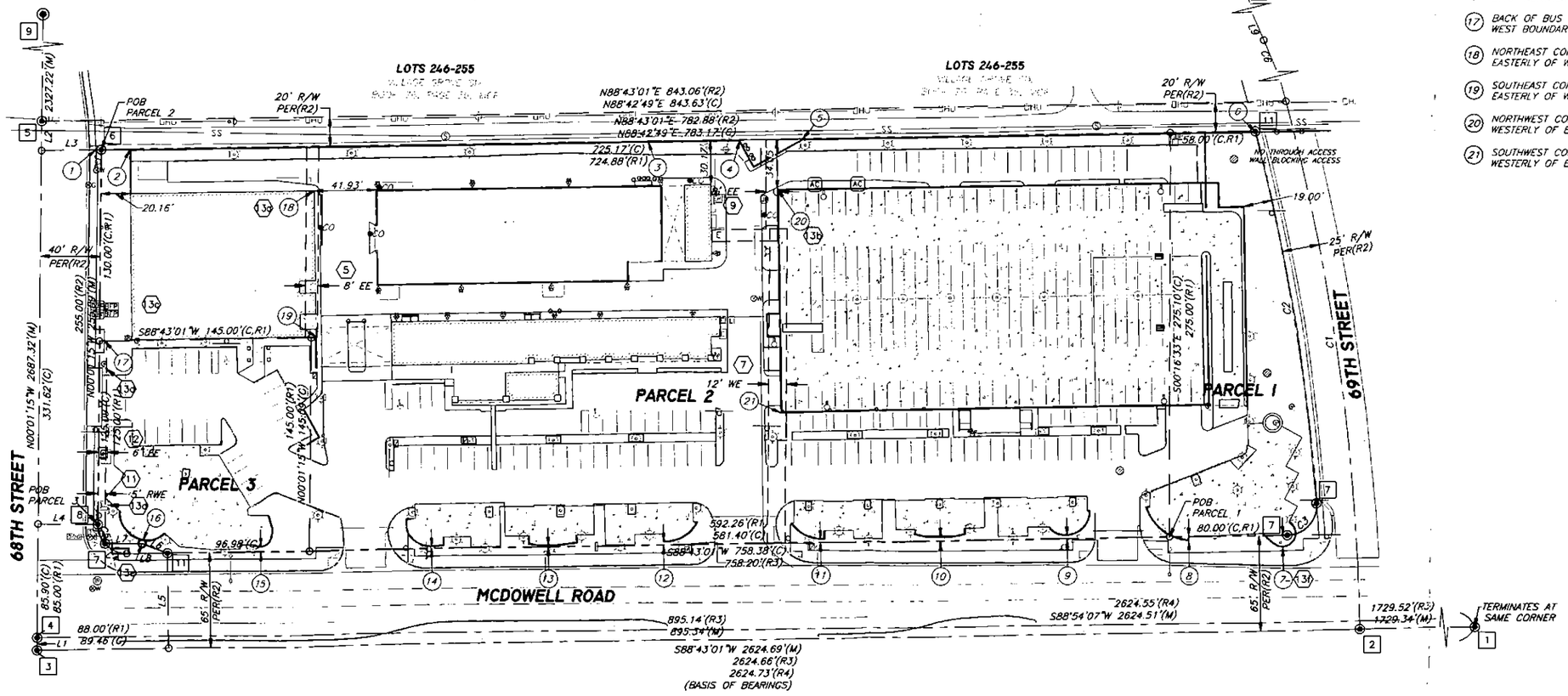
(R6) AMENDED RECORD OF SURVEY PLSS SUBDIVISION, MCGDACS, RECORDED IN BOOK 1046, PAGE 28, MCR

(R7) PLSS SUBDIVISION RECORD OF SURVEY, MCGDACS, RECORDED IN BOOK 734, PAGE 10, MCR

(R8) SPECIAL WARRANTY DEED 2012-1175008, MCR

LINE TABLE		
LINE	LENGTH	DIRECTION
L1(C)	8.48	N00°01'15"W
L1(R4)	8.47	N00°13'05"W
L2(C)	20.00	N00°01'15"W
L3(C)	40.01	N88°42'49"E
L4(C)	40.00	S89°58'45"W
L5(C)	65.00	N01°16'59"W
L6(C)	18.60	N89°44'57"W
L6(R1)	19.11	N70°20'55"W
L7(C)	25.56	S88°43'01"W
L7(R1)	25.55	S88°43'01"W
L8(C)	28.02	S88°43'01"W
L8(R1)	28.00	S88°43'01"W

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C1(C)	363.60	1507.36	13°49'14"	182.68
C1(R1)	363.52	1507.36	13°49'03"	
C2(C)	256.91	1482.36	9°55'49"	128.78
C2(R1)	255.83	1482.36	9°55'44"	
C3(C)	32.59	20.00	93°21'18"	21.21
C3(R3)	32.58	20.00	93°20'33"	
C4(C)	16.86	19.56	49°22'39"	8.99
C4(R3)	16.86	19.56	49°22'37"	
C5(C)	14.30	19.56	41°53'35"	7.49
C5(R3)	14.30	19.56	41°53'33"	
C6(C)	215.18	1507.36	8°10'45"	107.77
C6(R3)	215.22	1507.36	8°10'51"	



BOUNDARY NOTES:

1. EAST EDGE BACK OF SIDEWALK IS 3.60' WESTERLY OF NORTHWEST BOUNDARY CORNER
2. NORTHWEST CORNER OF 7.5' HIGH BLOCK WALL IS 0.25' SOUTHERLY OF NORTH BOUNDARY LINE
3. NORTHERLY FACE OF 7.5' HIGH BLOCK WALL IS 0.04' NORTHERLY OF NORTH BOUNDARY LINE
4. NORTHWEST CORNER OF 7.5' HIGH BLOCK WALL 0.13' SOUTHERLY OF NORTH BOUNDARY LINE
5. NORTHEAST CORNER OF 7.5' HIGH BLOCK WALL IS LOCATED ON NORTH BOUNDARY LINE
6. NORTHERLY FACE OF 7.5' HIGH BLOCK WALL IS 0.25' SOUTHERLY OF NORTH BOUNDARY LINE
7. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 8.0' SOUTHERLY OF SOUTH BOUNDARY LINE
8. SOUTHEAST CORNER OF 1.5' HIGH BLOCK WALL IS 2.80' SOUTHERLY OF SOUTH BOUNDARY LINE
9. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 2.10' NORTHERLY OF SOUTH BOUNDARY LINE
10. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 2.60' NORTHERLY OF SOUTH BOUNDARY LINE
11. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 2.05' NORTHERLY OF SOUTH BOUNDARY LINE
12. SOUTHWEST CORNER OF 1.5' HIGH BLOCK WALL IS 2.0' NORTHERLY OF SOUTH BOUNDARY LINE
13. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 0.50' NORTHERLY OF SOUTH BOUNDARY LINE
14. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 0.88' NORTHERLY OF SOUTH BOUNDARY LINE
15. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 3.15' NORTHERLY OF SOUTH BOUNDARY LINE
16. SOUTHERLY FACE OF 1.5' HIGH BLOCK WALL IS 2.16' NORTHERLY OF SOUTH BOUNDARY LINE
17. BACK OF BUS STOP IS 3.45' EASTERLY OF WEST BOUNDARY LINE
18. NORTHEAST CORNER OF BUILDING IS 5.0' EASTERLY OF WEST EASEMENT LINE
19. SOUTHEAST CORNER OF BUILDING IS 7.35' EASTERLY OF WEST EASEMENT LINE
20. NORTHWEST CORNER OF BUILDING IS 0.30' WESTERLY OF EAST EASEMENT LINE
21. SOUTHWEST CORNER OF BUILDING IS 3.50' WESTERLY OF EAST EASEMENT LINE

REVISIONS

ALTA/ACSM LAND TITLE SURVEY

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

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DATE :	11/24/15

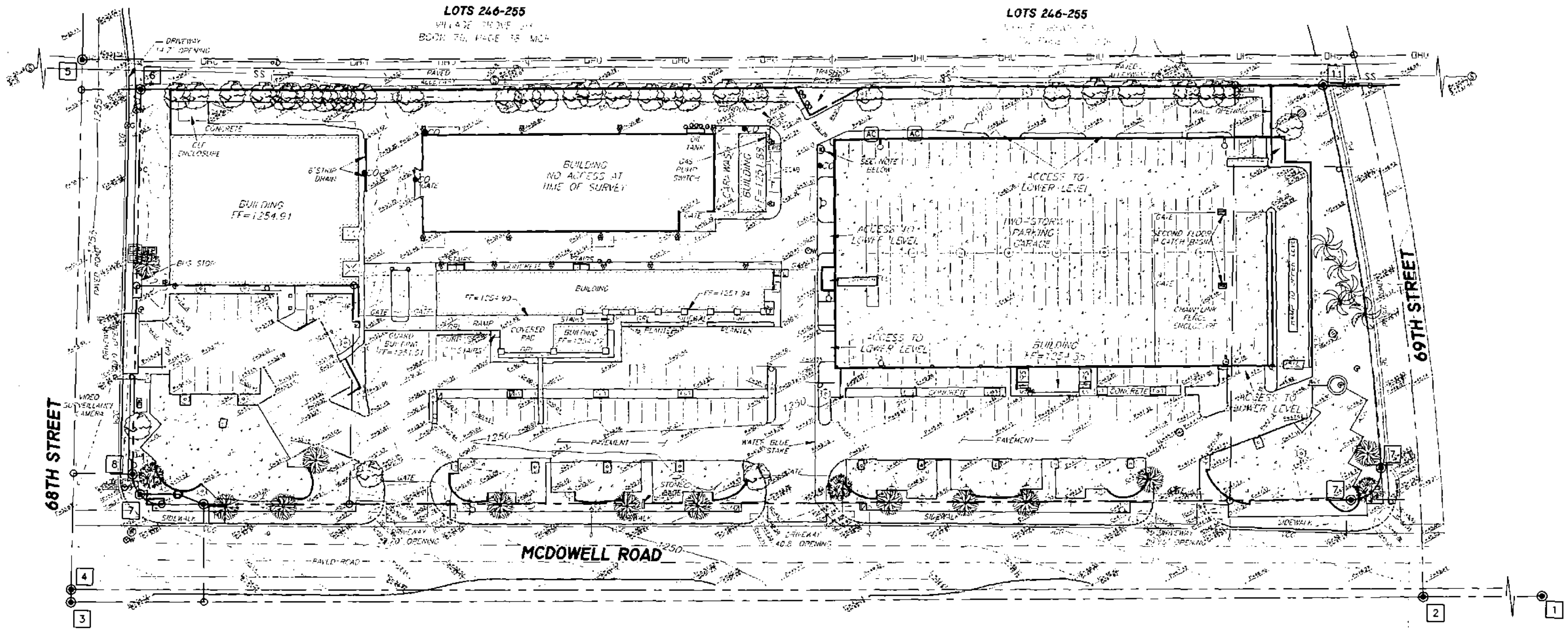
SHEET NO.

2

2 OF 3

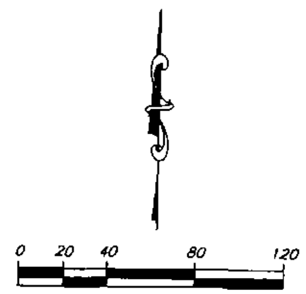
46643 LANCE C. DICKSON 11/24/15 ARIZONA, U.S.A.

EXPIRES 06/30/2016



LEGEND:

Symbol	Description	Symbol	Description	Abbrev.	Description
	BOUNDARY LINE		ELECTRIC STUB-UP	(C)	CALCULATED DATA
	MONUMENT LINE		ELECTRIC TRANSFORMER	(M)	MEASURED DATA
	EASEMENT LINE		ELECTRIC METER	(R)	RECORDED DATA
	ADJOINING PROPERTY		STREET LIGHT	MCR	MARICOPA COUNTY RECORDS
	BUILDING OVERHANG		POWER POLE	R/W	RIGHT-OF-WAY
SS	UNDERGROUND SEWER LINE		AREA LIGHT	APN	ASSESSOR'S PARCEL NUMBER
OHU	OVERHEAD UTILITY LINE		TRAFFIC SIGNAL	EE	ELECTRIC EASEMENT
X	FENCE AS NOTED		ELECTRIC PULL BOX	WE	WATER EASEMENT
	BLOCK WALL	TSB	TRAFFIC SIGNAL BOX	RWE	ROADWAY EASEMENT
	CONCRETE AREA	EPL	ELECTRIC PANEL	RC	ROLL CURB
			LIGHT POST	VCG	VERTICAL CURB & GUTTER
	SET 1/2" REBAR RLS #46643 UNLESS OTHERWISE NOTED	G	GASLINE MARKER	ECAB	ELECTRIC CABINET
	FOUND MONUMENT AS NOTED	G	GAS VALVE	GRL	GUARD RAIL
	CALCULATED POINT. NOTHING FOUND AND NOTHING SET		DRYWELL	#	SCHEDULE B ITEM
	FIRE DEPARTMENT CONNECTION		GRATE	#	MONUMENT NOTE
	FIRE HYDRANT		IRRIGATION CONTROL BOX	#	BOUNDARY NOTE
	DOWN SPOUT		IRRIGATION VALVE		TREE - PALM
W	WATER METER		STORM SEWER MANHOLE		TREE - SHADE
W	WATER VALVE		IRRIGATION MANHOLE		TREE - MESQUITE
BFP	BACKFLOW PREVENTOR	AC	AIR CONDITIONER UNIT		TREE - PALO VERDE
	WATER SERVICE OUTLET		BOLLARD		TREE - IRONWOOD
S	SEWER MANHOLE		HANDICAP MARKER		
CO	SEWER CLEANOUT		MISCELLANEOUS SIGN		



SCALE: 1" = 40'

PARKING:

PARKING SPACES - 104
HANDICAP SPACES - 3
PARKING GARAGE
LOWER LEVEL - 76
UPPER LEVEL - 125
TOTAL SPACES - 308

BENCHMARK:

CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE, GPS POINT #5032, INTERSECTION OF MCDOWELL ROAD AND SCOTTSDALE ROAD
(SEE MONUMENT NOTE #1)

ELEVATION= 1230.69 (NAVD 88)

NOTE:

LID FOR UNDERGOUND GAS TANKS ALSO SHOWN ON UNRECORDED ALTA (R3)

REVISIONS

ALTA/ACSM LAND TITLE SURVEY

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 2 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

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REGISTERED LAND SURVEYOR CERTIFICATE NO. 46643 LANCE C. DICKSON 11/24/15 ARIZONA, U.S.A.
EXPIRES 06/30/2016

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CHECKED BY :	LCD
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DATE :	11/24/15

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3

APPENDIX V

Existing Drainage Data

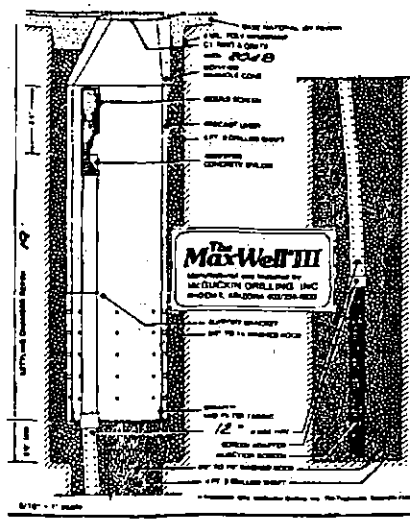
CITY OF SCOTTSDALE
ENGINEERING DEPARTMENT

REVISED OCTOBER, 1979

The following general notes and modifications to the specifications and/or the standards shall apply and appear on ALL GRADING PLANS.

1. All construction is to conform to the latest Maricopa Association of Governments (M.A.G.) "Uniform Standard Specifications and Details for Public Works Construction" with Scottsdale supplements, if applicable.
2. The Engineering Services Director does not verify any cut/fill quantities shown on plans.
3. Minimum density shall be 90% or that which is specified by the soils engineer, whichever is greater.
4. The contractor shall obtain a written letter of acceptance of the project from the Engineering Services Director.
5. "As-built" drawings made by a Civil Engineer registered with the State of Arizona of the work covered by the plans and/or permit shall be required before issuance of the written letter of acceptance.
6. Approval of plan is for six months time only. If construction is not started within six months, the plans shall be resubmitted for reapproval.
7. Traffic Control shall conform to the City of Phoenix Traffic Control Manual.
8. Inspection is to be done by City of Scottsdale Field Engineering.
9. Field Engineering shall be notified 24 hours prior to the starting of any construction work (994-2333).
10. A grading permit shall be issued by the Building Division for a fee as determined from the Uniform Building Code, latest edition.
11. Finished floor elevation shall be certified by a Civil Engineer registered in the State of Arizona that it has been constructed at the elevation shown on this plan. Certification shall be made prior to the pre-slab inspection.
12. A construction permit shall be issued by Private Development Engineering authorizing the construction and inspection of improvements shown hereon for a fee of $\_\_\_\_\_\_$.
13. The design of these plans are only approved in scope and not in detail.

NOTE TO CONTRACTORS: Encroachment permits are required for work in the right-of-way. Prior to obtaining an encroachment permit, the contractor must have on file with the Engineering Services Director a certificate of insurance verifying the following coverages: $250,000 for death and/or injury to any one person in any one accident, $500,000 for death and/or injury to more than one person, in any one accident; $250,000 for property damage. City of Scottsdale must be named as additionally insured party.



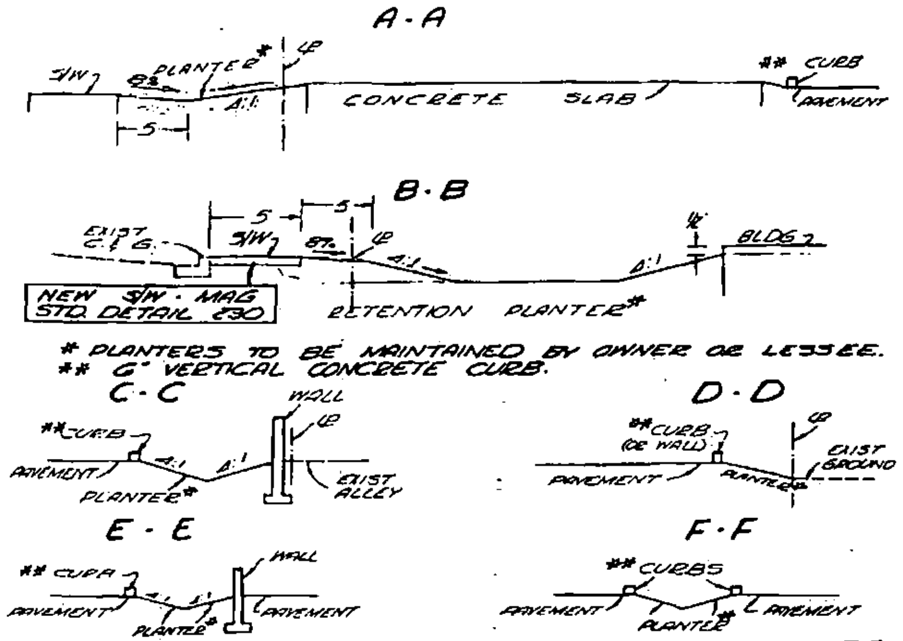
INJECTION WELL SPECIFICATIONS

LEGAL:
PART OF TRACT "A", STEWART PLAZA, PER BOOK 71 OF MAPS, PAGE 24, M.C.R. LOCATED WITHIN THE SE 1/4 OF SECTION 34, T.2N., R.4E.

LEGEND:
49.50 INDICATES FINISHED ELEVATION OF ASPHALT PAVEMENT (ADD 0.50 FOR ADJOINING TOP OF CURB OR S/W).
49.5 INDICATES FINISHED ELEVATION AT PLANTER.
+49.0 INDICATES EXISTING ELEVATION. ( ) - INC. EXIST.
→ INDICATES FINISHED ASPHALT DRAIN.
INDICATES NEW ASPHALT PAVEMENT

NOTE:
SEE JOB NO. 3787 FOR PROPERTY SURVEY.

TYPICAL SECTIONS
SCALE: 1" = 4'±



GRADING AND DRAINAGE PLAN Phase II

AUTO SALES AND SERVICE FACILITY · 6850 EAST McDOWELL

OWNER: MR. BRUCE WALLACE
ARCHITECT: MR. RICHARD BRITT

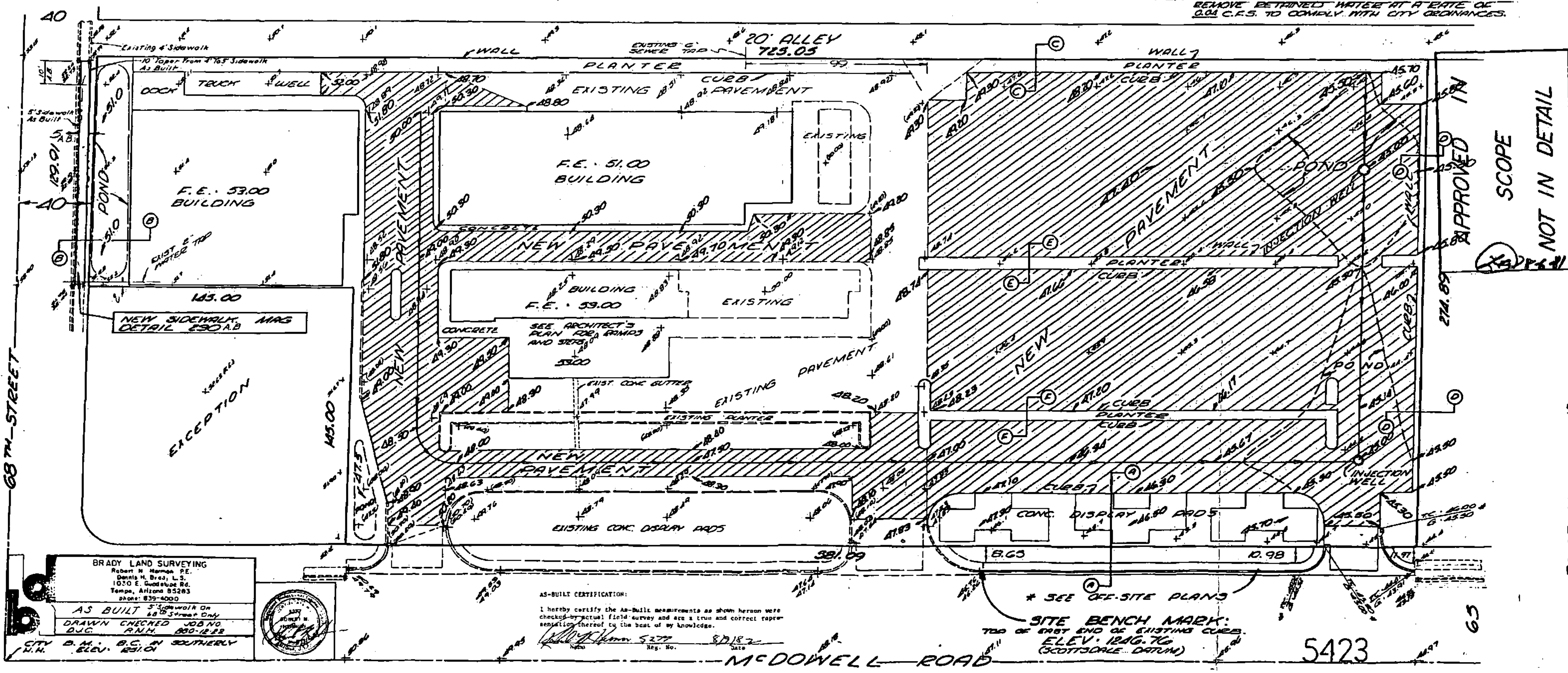
SCALE: 1" = 25' JOB NO. 4400

MICHAEL WIER · CIVIL ENGINEER
811 W. THOMAS · PHONE: 279-9373

CITY OF SCOTTSDALE				
REVIEWED BY				RECOMMENDED APPROVAL BY
FIRE DEPARTMENT		PRIVATE DEVELOPMENT ENGINEERING		William e. [signature] 8/5/81 PRIVATE DEVELOPMENT ENGINEERING MANAGER DATE
TRAFFIC ENGINEERING		PLANNING DEPARTMENT		APPROVED BY
FIELD SERVICES		MUNICIPAL UTILITIES DEPARTMENT		[signature] ENGINEERING SERVICES DIRECTOR DATE
PARKS DEPARTMENT		CAPITOL IMPROVEMENTS		

PERCOLATION TEST RESULTS MUST BE SUBMITTED TO PRIVATE DEVELOPMENT ENGINEERING PRIOR TO THE CERTIFICATE OF OCCUPANCY BEING ISSUED.

EACH DRYWELL MUST HAVE THE CAPACITY TO REMOVE RETAINED WATER AT A RATE OF 0.04 C.F.S. TO COMPLY WITH CITY ORDINANCES.



BRADY LAND SURVEYING
Robert N. Harmon P.E.
Dennis H. Brady, L.S.
1030 E. Guadalupe Rd.
Tempe, Arizona 85283
phone: 839-4000

AS BUILT 5' Sidewalk On 68th Street Only

DRAWN	CHECKED	JOB NO.
D.J.C.	R.N.H.	880-12-22

CITY B.M.: B.C. IN SOUTHERLY M.H. ELEV: 1251.01

AS-BUILT CERTIFICATION:

I hereby certify the As-Built measurements as shown hereon were checked by actual field survey and are a true and correct representation thereof to the best of my knowledge.

[signature] 5277 8/3/82
Name Reg. No. Date

5423

30-DR-81

13/44

65

4400

DRAINAGE ANALYSIS
Center Line Auto
6850 E. McDowell, Scottsdale

In meetings with the City of Scottsdale, regarding the required storm water retention, it was agreed that Center Line will be required to provide additional retention for the areas where the ground is disturbed. Center Line will be demolishing the sales building only and providing an awning attached to the existing parts building. The service building will be demolished down to the foundation, which will remain. It was agreed that the ground at the service building will not be disturbed, and therefore will not be included in the area of disturbed ground.
The sales building measures 152' x 30' (4560 sf), and 14' x 58' (812 sf), which totals to 5372 sf.
The retention required for this disturbed area is as follows:

Vr = p/12 x A x C	p = 2.82 "
Vr = 2.82/12 x 0.123 x 0.90	A = 5372/43,560 = 0.123 ac.
Vr = 0.026 af = 1133 cf	C= 0.90

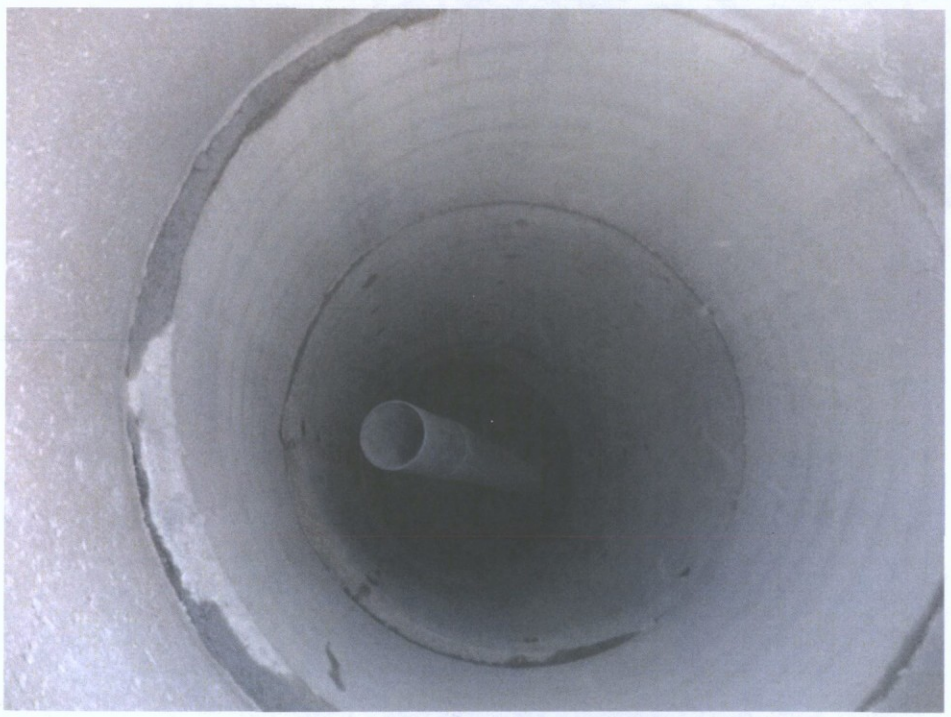
The existing basin #3 has a retention volume of 3,122 cf.
Enlarging and regrading the basin as indicated on the attached plan provides a revised volume of 5,400 cf.
The calculation for the revised basin are as follows.

Area of Top of Basin (46' contour) = 4,222 sf
Area of Bottom of Basin (44' contour) = 1,178 sf
Average area = 4222 sf + 1178 sf = 5400/2 = 2,700 sf
Volume of regarded basin # 3 = 2,700 sf x 2 ft = 5,400 cf

Therefore, the increased volume of basin # 3, after regrading is:

5,400 cf – 3122 cf = 2,278 cf , which exceeds the required volume (Vr) of 1,133 cf.

89-DR-2008
1st: 9/11/2008



EXISTING DRYWELL 1

EXISTING DRYWELL 2

EXISTING DRYWELL 3

APPROXIMATE LOCATION EXISTING DRYWELL 4

EASEMENTS DEDICATIONS AND RELATED IMPROVEMENTS:

Ordinance

F. Before any building permit is issued for the site, the owner shall dedicate a sight distance easement over sight distance triangle(s) in conformance with figures 5.3-26 and 5.3-27 of Section 5.3 of the DS&PM.

WATER AND WASTEWATER STIPULATIONS

DRB Stipulations

11. *Existing water and sewer service lines to this site shall be utilized, or shall be disconnected at the main pursuant to the Water Resources Services Department requirements.*
12. *Creation of any new vehicle service or wash areas located within the proposed development shall require installation of a sand/oil interceptor.*

DRAINAGE AND FLOOD CONTROL:

DRB Stipulations

13. *With the improvement plan submittal, the owner shall submit a final drainage report that demonstrates consistency with the Preliminary Drainage report submitted on October 24, 2008, including the letter report signed and sealed 10/20/2008 authored by Engineering Construction Design, Inc. 4045 E. McDowell Road Suite B, Phoenix, Arizona 85008. The DS&PM and the case drainage report accepted in concept by the Director or designee of the Stormwater Management Division of the Municipal Services Department, as well as the attached stipulations.*
14. *It is stipulated that re-grading of the stormwater storage basin # 3 will be performed in accordance with the recommendations of the letter report.*
15. *Dry wells have been approved for this project subject to geo-technical demonstration that the existing wells can be retrofitted to perform, in accordance with the City Code, to drain all detention areas in a 36-hour period, or the dry wells shall be replaced.*
16. *In accordance with NPDES provisions of the Clean Water Act, dry wells or other hydraulic devices leading to the dry wells will be fitted with oil water separators, or other filters, that will preclude harmful chemicals or solids from entering the dry wells.*
17. *The report sealed by Dennis Hustead, P.E. and dated 10/20/08 contains all of the stipulations that are necessary to carry forward into construction.*

ADDITIONAL ITEMS:

Ordinance

G. Flagpoles, if provided, shall be one-piece, conical tapered in design.

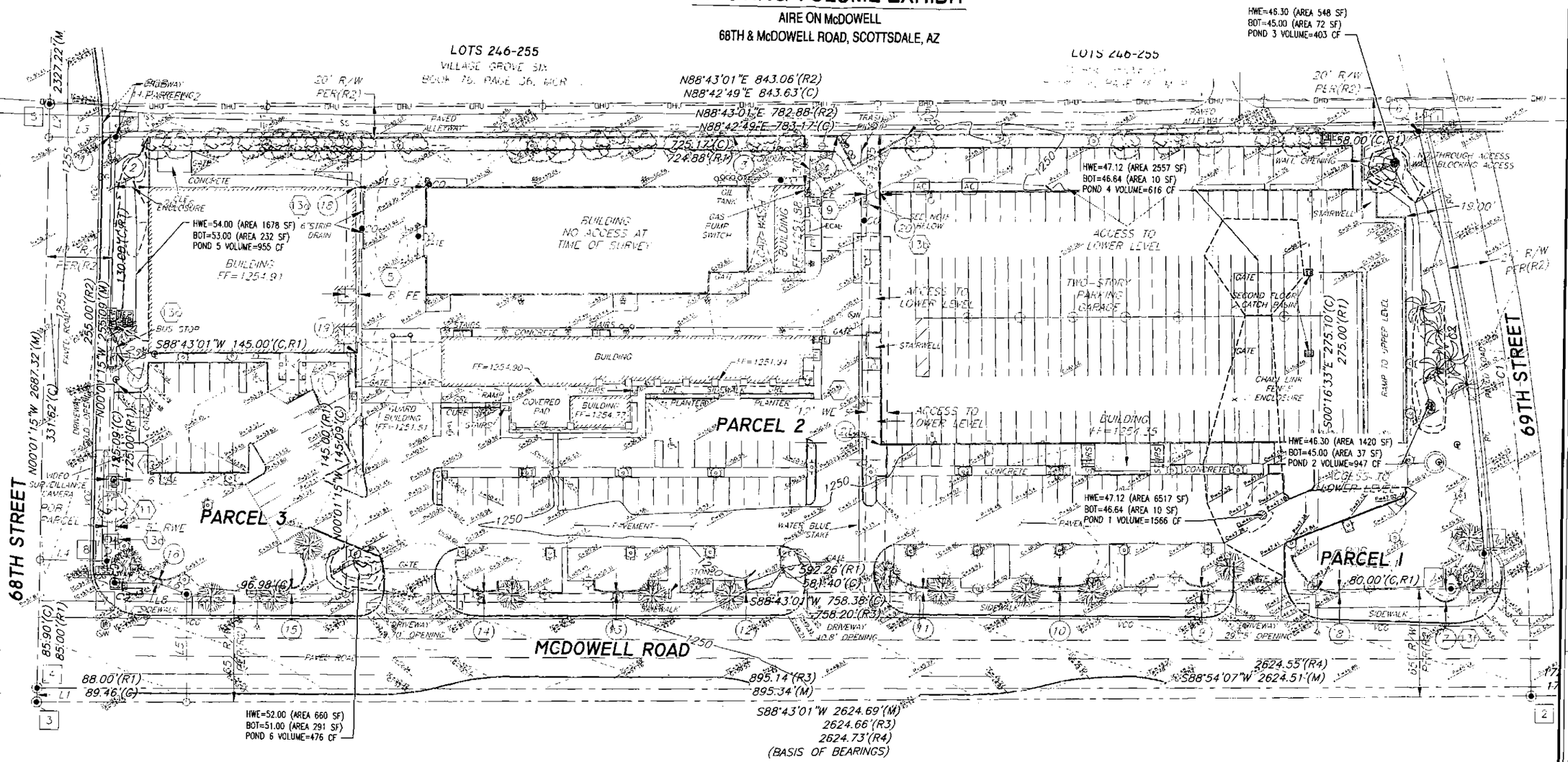
DRB Stipulations

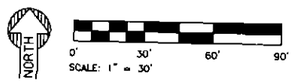
18. *Per stipulations for case 9-UP-2006, the applicant shall upgrade the existing bus shelter on 68th Street to the City of Scottsdale's standard bus shelter design.*

EXISTING VOLUME EXHIBIT

AIRE ON McDOWELL

68TH & McDOWELL ROAD, SCOTTSDALE, AZ





SEG SUSTAINABILITY ENGINEERING GROUP

8280 E GELDING DR #101, SCOTTSDALE, ARIZONA 85260

WWW.AZSEG.COM TEL. 480.588.7228

Toymanian Homes

PROJECT: AIRE ON MCDOWELL

LOCATION: 68TH & MCDOWELL ROAD SCOTTSDALE, AZ 85257

DRAWN	POUNDS
DESIGNED	POUNDS
CHECKED	COUNSELL
PROJ. MGR	FAKIH

DATE: 01/15/2016

ISSUED FOR: PRELIMINARY PLAT

REVISION NO:	DATE:
1	
2	
3	
4	

JOB NO. 150799

SHEET TITLE: EXISTING VOLUME EXHIBIT

SHEET NO