

## Meeting Notice and Agenda

## **Board of Adjustment**

Wednesday, June 1, 2022	5:30 PM	Council Chambers
	Boardmember Quinn Williams	
	Boardmember Rohan Sahani	
	Boardmember Jon Newman	
	Boardmember Leibsohn	
	Boardmember Priti Kaur	
	Boardmember Robert Brown	
	Chair Hope Ozer	

#### 1. CALL TO ORDER

#### 2. ROLL CALL

PUBLIC PARTICIPATION IN THE MEETING

Members of the public are encouraged to participate in the meeting via the following options:

- 1. View the live stream at https://paradisevalleyaz.legistar.com/Calendar.aspx (a) Click on Calendar Tab
- (b) Look for Planning Commission meeting (you may have to select it from the
- dropdown list) and find the meeting date
  - (c) Click the "In Progress" link in the column titled Video
- 2. Zoom Conference
  - (a) Computer: https://zoom.us/j/6678902153
  - (b) Telephone: 1 669 900 6833 Meeting ID 667 890 2153
- 3. Submitting questions and comments:

(a) Visit https://paradisevalleyaz.legistar.com/Calendar.aspx, search for the meeting date, and click "eComment". Locate the agenda item you are interested in and click "Comment" (Please submit comments at least 1 hr prior to meeting)

(b) Email pmichaud@paradisevalleyaz.gov (Please submit comments at least 1 hr prior to meeting)

4. Speaking during Call to the Public / Public Hearings

(a) Visit https://paradisevalleyaz.legistar.com/Calendar.aspx, search for the meeting date, and click "eComment". Locate the agenda item and click "Register to Speak". Join the meeting by dialing 1 669 900 6833 Meeting ID 667 890 2153

(b) If attending by Zoom Video Conference, click the chat button and enter your name and the agenda item you would like to address

(These meeting participation guidelines are pursuant to Town Council Resolution 2020-08 adopted March 17, 2020.)

Notice is hereby given pursuant to A.R.S. §38-431.02. that members of the Planning Commission will attend by audio/video conference call.

Notice is hereby given that members of the Public Body will attend either in person or by telephone conference call, pursuant to A.R.S. §38-431(4).

#### 3. EXECUTIVE SESSION

The Public Body may convene into an executive session at one or more times during the

meeting as needed to confer with the Town Attorney for legal advice regarding any of the items listed on the agenda as authorized by A.R.S. §38-431.03.A.3.

#### 4. STUDY SESSION ITEMS

Work/Study is open to the public however the following items are scheduled for discussion only. The Public Body will be briefed by staff and other Town representatives. There will be no votes and no final action taken on discussion items. The Public Body may give direction to staff and request that items be scheduled for consideration and final action at a later date. The order of discussion items and the estimated time scheduled to hear each item is subject to change.

#### 5. PUBLIC HEARINGS

The Public Body may take action on this item.

A. <u>22-219</u> Caskey Variance – 7602 N Moonlight Lane (APN 169-11-004C) Case No. BA-22-05

Attachments: A. Staff Report

B. Vicinity Map & Aerial

- C. Application
- D. Narrative and Plan Set
- E. Exhibit Diagrams
- F. Notification Materials

#### 6. ACTION ITEMS

The Public Body may take action on this item.

#### 7. CONSENT AGENDA

All items on the Consent Agenda are considered by the Public Body to be routine and will be enacted by a single motion. There will be no separate discussion of these items. If a Commissioner or member of the public desires discussion on any item it will be removed from the Consent Agenda and considered separately.

#### A. <u>22-175</u> Approval of the April 6, 2022 Board of Adjustment Minutes

Attachments: BoA Draft Min 4.6.22

#### 8. STAFF REPORTS

9. PUBLIC BODY REPORTS

#### **10. FUTURE AGENDA ITEMS**

#### **11. ADJOURNMENT**

AGENDA IS SUBJECT TO CHANGE

\*Notice is hereby given that pursuant to A.R.S. §1-602.A.9, subject to certain specified

statutory exceptions, parents have a right to consent before the State or any of its political subdivisions make a video or audio recording of a minor child. Meetings of the Planning Commission are audio and/or video recorded, and, as a result, proceedings in which children are present may be subject to such recording. Parents in order to exercise their rights may either file written consent with the Town Clerk to such recording, or take personal action to ensure that their child or children are not present when a recording may be made. If a child is present at the time a recording is made, the Town will assume that the rights afforded parents pursuant to A.R.S. §1-602.A.9 have been waived.

The Town of Paradise Valley endeavors to make all public meetings accessible to persons with disabilities. With 72 hours advance notice, special assistance can also be provided for disabled persons at public meetings. Please call 480-948-7411 (voice) or 480-483-1811 (TDD) to request accommodation to participate in the Planning Commission meeting.

Action Report

File #: 22-219

AGENDA TITLE: Caskey Variance - 7602 N Moonlight Lane (APN 169-11-004C) Case No. BA-22-05

STAFF CONTACT: Jose Mendez, 480-348-3519

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TO: Chair and Board of Adjustment

FROM: Lisa Collins, Community Development Director Paul Michaud, Planning Manager George Burton, Senior Planner Jose Mendez, Hillside Development Planner

DATE: June 1, 2022

**DEPARTMENT: Community Development Department/Planning Division** Jose Mendez, 480-348-3519

#### AGENDA TITLE: Caskey Variance – 7602 N Moonlight Lane (APN 169-11-004C) Case No. BA-22-05

This application includes a variance from the Zoning Ordinance, Article XXII, Hillside Development Regulations, to allow development for a new single family residence to exceed the allowable amount of disturbed area and to exceed the maximum cut height. Staff recommends approval of this variance request.

#### RECOMMENDATION

#### Motion For Approval

It is recommended that the Board of Adjustment **[approve]** Case No. BA-22-05, a request by Michael and Michelle Caskey, property owners of 7602 N Moonlight Lane; for a variance from the Zoning Ordinance, Article XXII, Hillside Development Regulations, to: 1) allow a new single-family residence and the development of the property to exceed the allowable disturbed area; and 2) exceed the maximum allowed hillside cut height.

#### Reasons For Approval:

Staff finds that there are special circumstances, applicable to only the subject lot, meeting the variance criteria.

#### BACKGROUND

#### Lot Conditions

The property is zoned R-43 Hillside and is approximately 142,335 sq. ft. square feet (SF) or 3.267 acres in size. The property is semi-rectangular in shape and measures approximately 200' wide and 706' on the south property line and 980' on the north property line measuring a median of approximately 858.17 feet in depth. The property is very steep as the very back end crosses a ridge. The slope of the lot on average is about 46% and most of the lot is steeper.





developed. As the adjacent properties have developed a utility waterline was dug creating 1,408 S.F. of disturbance. Approximately 788 S.F. of this disturbance will be restored. The site steepness and access point require the home to be located at the lowest (eastern side) of the property to be accessed from the south portion of N. Moonlight Lane off of E. Moonlight Way.

The front yard for this lot that adjoins N Moonlight Lane on the southeast corner of the lot is approximately 50' adjacent to the right-of-way. However, only approximately 14' of the lot is accessible from the street and has been partially disturbed by the adjacent property entrance (436 SF). This property and the adjacent lot at 7600 N Moonlight Lane were both owned by Mr. Lowry at the time he built his home at 7600 N Moonlight Lane in 1974. When Mr. Lowry built his home at 7600 N Moonlight Lane the driveway slope cut is partially on this property creating 1,005 S.F. of disturbance.

#### Fire Requirements

The proposed development requires access by a firetruck. Initially, the applicants were directed to create street improvements in the form of a cul-de-sac. This improvement had not been required when the adjacent lots developed but was required as this is the final lot to be developed on this dead-end street. The cul-de-sac would have created a lot of disturbance for the adjacent lots resulting in a 14' cut on the west and 12' of retaining wall on the east. The alternative was to integrate a firetruck turn-around driveway design. The onsite accessible driveway for a fire truck requires a disturbance of approximately 4,939 SF. The location of the driveway can only be accessed from the 436 SF of the pre-existing disturbance on the southeast near the neighbor's driveway. This access and topography required placing the driveway in a "Modified hammerhead" turn-around design which was approved by the Fire Official.

The onsite accessible driveway for a fire truck creates an additional disturbance of 1,894 SF which pushes the disturbance above the allowed by about 932 SF. The requirement for this driveway design also forces the placement of the home to be higher on the lot and cut more into the hillside.

#### Residence/Design

The building has been positioned within the buildable area of the lot at approximately the 34.4% slope line. In order to accommodate the firetruck turn around driveway the building is elongated across the lot from the side yard setback to side yard setback and approximately at the same "front" alignment as the neighboring homes to the north and south. Due to site constraints the home and exterior living areas are limited to a smaller footprint in comparison to the adjacent properties along the south side of Moonlight Lane per the provided *Diagram K Adjacent Lots*. The maximum height of the building is approximately 23' from the highest point of the building to the lowest point of natural grade. The proposed project meets the overall height of 40'. In order to accommodate the development the overall cut height on the hillside increased to approximately 41'0". This cut height was amended from an earlier Geotechnical survey with a taller cut and greater bolder roll disturbance.





#### DISTURBANCE CALCULATIONS:

<u>Permitted Disturbance</u>: Slope Category 34.4% allows for 10.04% Lot size 142,335 S.F. the allowed disturbance is **14,290 S.F. Proposed Disturbance 15,222 S.F. over by 932 S.F.** 

Gross Proposed Disturbance: 24,298 S.F.

Restored and revegetated area: Revegetated areas R1-4 (Diagram E) 6,026 S.F. Waterline disturbance to be restored 788 S.F. Total: **6,814 S.F.** 

Building Footprint Area: 5,111 S.F.

#### Proposed Net Disturbance: 12,373 S.F.

+ Pre-Existing Disturbance:	
Slope cut of the neighboring driveway	1,005 S.F.
Lot access on the south property line (14 linear feet)	436 S.F.
Existing waterline	1,408 S.F.
·	2,849 S.F.

## Total Net Disturbance: 15,222 S.F.

#### <u>Request</u>

The applicant requests a variance from the Zoning Ordinance, Article XXII, Hillside Development Regulations, Section 2207 III Land Disturbance Standards to allow a new single-family residence and the development of the property to exceed the allowable disturbed area by 932 S.F. (0.65%) from the allowed 14,290 S.F. (10.04%) to 15,222 S.F. (10.7%) and exceed the maximum allowed hillside cut face from the allowed 30' to 41'.

## **DISCUSSION ITEMS**

#### Variance criteria:

Town Code and Arizona Revised Statutes set criteria an applicant must meet before a Board of Adjustment may grant a variance request. If the Board finds an applicant meets all of these criteria, the Board may grant the variance. However, if the Board finds the applicant does not meet all of the criteria, the Board may not grant the variance. The following are staff's analysis with regard to the variance criteria.

1. "Such variance... will serve not merely as a convenience to the applicant, but [is] necessary to alleviate some demonstrable hardship or difficulty so great as to warrant a variance under the circumstances." (Town Code Section2-5-3(C)2).

Staff Analysis:





The hardship is the result of the rugged terrain and steep slope of the lot (averaging 46%) which limits the total cut height and amount of disturbance permitted. The residence is proposed in the most buildable/ shallow portion of the lot, in-line with the adjacent homes and cut into the hillside rather than built on top of the hillside. The property is narrower with a higher slope as the lots on either side of it and is proposing a lesser gross disturbance as shown in the adjacent property comparisons submitted by the applicant. The requirement for a firetruck turn around is obligatory to comply with fire safety codes. This has pushed the placement of the home further up the property into the rising slope which conduced to a taller cut. Hence, the variance request for an 11' increase in the allowed cut face in the hillside which would address the need to relocate the home to a higher, steeper location on the property. The sharp slope, limited access from N. Moonlight Lane, and existing disturbance requires extra disturbance for the fire truck turn around driveway. The pre-existing disturbance on the property alone limits the allowed disturbance and greatly contributes to the hardship.

2. The "special circumstances, hardship, or difficulty [do not] arise out of misunderstanding or mistake..." (Town Code Section 2-5-3(C)4(b)).

## Staff Analysis:

The hardship is not out of mistake or misunderstanding. The steepness of the lot and the existing disturbance are the result of how the property was originally platted and constructed upon by the previous owner and the utility water line. Access to the lot is limited as the road easement was not enforced to connect to the north section of N. Moonlight Lane. The requirement for a cul-de-sac as shown in Exhibit C would make the adjacent uphill property inaccessible and would lead to the creation of an unsightly 14 foot cut on the west properties and a 12 foot retaining wall on the lower east properties. The applicant chose to incorporate a fire truck turn around into the lot as this would cause the least amount of disturbance for neighboring properties despite the hardships it cause in relation limiting the disturbed area envelope and cut face requirements. The applicant is trying to utilize existing conditions by placing the residence in the most buildable portion of the lot while still adhering to rest of the Hillside Development Regulations.





3. "Such variance from ... the strict application of the terms of [the Zoning Ordinance] ... are in harmony with its general purposes and intents ..." (Town Code Section 2-5-3(C)2).

#### Staff Analysis:

The intent of the Hillside Development Regulations is to preserve the visual presence of the surrounding mountain preserves, prevent unnecessary grading, preserve drainage patterns, and require re-vegetation to maintain the natural landscape environment. The request meets this intent as it complies with the requirements for emergency vehicle access and storm water drainage on this steep site. The home is built into the hillside to reduce the amount of grading and designed with a modest outdoor living area that follows the linear profile of the elongated home to further minimize visibility of the cut and reduce disturbance to the site. Approximately 80% of the lot will remain completely untouched.

 "The special circumstances, hardship or difficulty applicable to the property are [not] selfimposed by the property owner, or predecessor..." (Town Code Section 2-5-3(C)4) (Arizona Revised Statutes 9-462.06(H)(2)).

#### Staff Analysis:

The request is not self-imposed. The property conditions on this lot make it a difficult lot to build on. The applicant is utilizing the existing site conditions by placing the building in the most buildable location and utilizing engineering and building design and techniques to further reduce the geotechnical cut height required and the site disturbance. This proposal is more modest in size and greatly reduces the outdoor living area in order fit within the cut as compared to adjacent properties. The proposed development mitigates existing disturbances on site and proposes to restore and replant to the furthest extent possible.

 Because of special circumstances applicable to the property, including its size, shape, topography, location, or surroundings, the strict application of the Zoning Ordinance will deprive such property of privileges enjoyed by other property of the same classification in the same zoning district." (Arizona Revised Statutes 9-462.06(G)(2)).

#### Staff Analysis:

The strict application of the Hillside Development Regulations greatly reduces the development on this lot as its narrow shape and location is perpendicular to the steep topography on the mountain. The lot follows a steep slope on average 46% which would allow for a land disturbance of 9.30% or approximately 13,237 S.F.





protection. The prescribed cut by the Geotechnical engineer created a disturbance of 4,204 S.F. for the cut face and boulder zone. The obligatory emergency vehicle turnaround amplifies the limitations of working with a narrow property as it requires an additional 1,894 S.F. from the normal driveway. The overall driveway takes up a lot of the disturbance that could have been allotted for outdoor living areas 4,939 S.F. In addition, to limiting the allowed disturbed area this pushes the home's location to a steeper part of the property that will require taller cuts in the hillside. Creating a cut that conforms to the code and enables a sizeable home that would meet all other height requirements is difficult.

6. The variance would not "constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity and zone in which such property is located." (Arizona Revised Statutes 9-462.06(G)(2)).

## Staff Analysis:

This does not constitute a grant of special privilege, but rather would allow this property to offer the homeowner and family similar opportunity to enjoy typical privileges that adjacent hillside properties also have in enjoying a comparatively smaller outdoor living area for swimming pool, deck, BBQ while enjoying the views. The firetruck requirement, existing disturbance, and steep slope of the property results in a very limited amount of available disturbance. A strict enforcement of the cut height would greatly limit the placement and height of the development on the lot. The building envelope would potentially be more obtrusive to the adjacent properties as the home would stand out as opposed to the current proposal which tucks the home lower on the slope of the property and lower from the adjacent grade. The proposed development would be similar in scale to the properties in the vicinity.

## **REQUIRED ACTION**

The Board must consider the facts and determine if the variance requests meet all six variance criteria. The Board may take the following actions:

- 1. Deny the variance request.
- 2. Approve the variance requests, subject to the following stipulations:
  - a. The improvements shall be in compliance with submitted plans & documents:
  - i. Architecture Plans and G&D Plans, prepared by David Dick Architect ; and Land Development Group provided on April 26, 2022.
  - b. The applicant must obtain the required building permits and inspections from the Building Department.
- 3. Continue the application for further review.





**COMMENTS:** Staff received two inquiries from neighbors directly adjacent to this lot, but no comments regarding this request. One neighbor at 7600 N Moonlight provided a letter of support.

COMMUNITY IMPACT: None

CODE VIOLATIONS: None

#### **ATTACHMENTS:**

- A. Staff Report
- B. Vicinity Map & Aerial Photo
- C. Application
- D. Narrative & Plans
- E. Exhibit Diagrams
- F. Notification Materials



# VICINITY MAP



7602 N Moonlight Way

Variance Request (BA-22-05)



# **AERIAL MAP**

## **Subject Property**



7602 N Moonlight Way

Variance Request (BA-22-05)



# **ZONING & HILLSIDE**

Figure 1 - Hillside Development Area Excerpt



7602 N Moonlight Way

Variance Request (BA-22-05)



## COMMUNITY DEVELOPMENT DEPARTMENT VARIANCE APPLICATION GUIDE

Town of Paradise Valley • 6401 East Lincoln Drive • Paradise Valley, Arizona 85253 • Phone: (480) 348-3692				
APPLICANT & CONTACT INFORMATION				
Project Name: Michael & Michelle Caskey				
Date:         Zoning:         R-43         Acreage (Net Acres):         3.267				
Property Address: 7602 N. Moonlight Lane, Paradise Valley, AZ 85253				
Assessor's Parcel Number: 169-11-004C				
Name of Subdivision & Lot Number: N/A				
Michael & Michelle Caskey				
7672 F. Solano Drive, Scottsdale, AZ 85250				
Address: (602) 684-2525				
phone number: (002) 004 2020				
E-mail address:				
(Or provide a separate letter of authorization)				
Applicant/Representative: David Dick				
Company Name (if Applicable): David Dick Architect				
Address: 7400 E. McDonald Drive, #122, Scottsdale, AZ 85250				
Phone number: 480-945-1898				
E-mail address: dd@ddarchstudio.com				
Signature: Kuil K				
THE ABOVE APPLICANT HEREBY APPLIES FOR A VARIANCE AS INDICATED IN THE SUBMITTED NARRATIVE, PLANS, AND DOCUMENTS IN ACCORDANCE WITH SECTION 2-5-3 OF THE TOWN CODE AND IN ACCORDANCE WITH THE TOWN ZONING ORDINANCE.				
FOR DEPARTMENTAL USE ONLY				
Variance-App.#: Submittal Date: Expiration Date:				

## Request for Disturbed Area Variance Caskey Residence – 7602 N Moonlight Lane

This Variance Request Includes

- Introductory Letter
- Response to the 6 Variance Criteria
- Exhibits A-P
  - Exhibit A) Aerial Photograph of Lot
  - o Exhibit B) Civil Survey
  - Exhibit C) Right of Way Diagram Plan
  - Right of Way Diagram Section
  - o Right of Way Diagram Images
  - o Right of Way Diagram Images
  - o Exhibit D) Existing Disturbed Area
  - Exhibit E) Disturbed Area Calculations
  - o Exhibit F) Minimum Turning Radius for Fire Trucks
  - Exhibit G) Neighbor Approval and Location
  - o Exhibit H) Required Disturbed Area Site Sections
  - Exhibit H1) Required Disturbed Area Site Plan
  - o Exhibit H2) Required Disturbed Area Site Plan without Fire Truck
  - o Exhibit J) Aerial Photograph Dated 1976
  - Exhibit K) Adjacent Lots Diagram
  - Exhibit L) Cul De Sac
  - Exhibit M) Geotechnical Report
  - o Exhibit N) Exterior Elevations
  - Exterior Elevations
  - Exhibit P) Civil Grading & Drainage

Board of Adjustment Hearing Officer Town of Paradise Valley 6401 E Lincoln Drive Paradise Valley, AZ 85253

#### RE: Caskey Residence – 7602 N Moonlight Lane Request for Disturbed Area Variance

Dear Hearing Officer:

This letter represents Michael and Michelle Caskey, the owners of the 3.268 net acre property located at 7602 N Moonlight Lane. This property is a hillside lot, located in the R-43 zoning district. According to this ordinance, properties located in this zoning district are limited to a disturbed area dependent on the slope of the building envelope. This lot's calculated disturbed area envelope allows for just 10.04 percent of the lot to be utilized for building purposes. This ordinance also restricts the maximum height of the cut face in the hillside to 30 feet.

#### Variance Request

In order for the Caskey's to reasonably enjoy their property in a safe and functional manner, we are requesting a minor adjustment to the disturbed area envelope and an increase in the maximum allowed cut face on the hillside. The disturbed area envelope on this property is developed by defining a building pad slope of 34.4%. See exhibit E. As charted, this building pad slope allows for 10.04% of the total 142,335 sq. ft. lot to be disturbed. This provides for a disturbed area of 14,290 sq. ft., which is 10.04% of the total lot area. In this variance, we are requesting that the maximum allowable disturbed area is increased from 14,290 sq. ft. to the amended area of 15,222 sq. ft or 10.7% of the total lot area. This is a total increase of 932 sq. ft. Secondly, we are requesting that the maximum allowed cut face on this hillside property increase from 30 ft. to 41 ft. The requested adjustments on this 3.268 acre lot would recognize the following conditions that necessitate this variance:

- Initial plat hardships create an extremely narrow property running perpendicular to the topography, which leaves a limited opportunity for a building pad and steep slope of 34.4%. The constricted nature of the property's shape is further illustrated by the fact that the property's length is 3 times its width, which is uncommon for lots of this size. The two adjacent properties to the South were created with frontages allowing for simplified development. This allowed the building to run parallel to the contours. These two factors referring to the unusual lot geometry and slope of the site create a condensed building pad that requires taller cuts in the hillside.
- Existing lot disturbance created by three previous adjacent developments can be seen on exhibit D. The construction of the driveway for the neighbor to the East wrongfully created 1,005 sq. ft. of disturbance along the Eastern edge of our property. The creation of lot access on the south property line created an additional 436 sq. ft. of disturbance on our lot. The development of the existing waterline created an additional 1,408 sq. ft. of disturbance on our lot.

- A single access point shared with the adjacent property limits development of the driveway to a specific pre-determined location on the property that will require the creation of disturbed area. The 3.268 acre property has 50 feet of frontage at the right of way and only 14 linear feet of actual street frontage. Because of the property's extreme slope, any other access point creates even greater disturbed area.
- The request to locate the emergency vehicle turn around on our property instead of at the end of the right of way not only impacted the design of the home but created an additional 1,894 sq. ft. of required disturbed area. This 1,894 sq. ft. pushed the disturbed area of the amended design over the limit by 932 sq. ft. which is the amount of additional disturbed area requested in this variance. In addition, the amount of space required for the 60 foot diameter turning radius of a fire truck meant the house had to be constructed further up the mountain where the lot is steeper, necessitating a steeper cut face in the hillside.

#### Context For Property

There are four major conditions that impact this property and differentiate it from similar lots of this size. These conditions include the properties narrow shape, steep slope, existing disturbed area, and minimal access to the lot from the public right-of-way. These factors constitute a real hardship, unique to this property.

Firstly, assessing the aerial photograph enclosed on Exhibit A, reveals that the Caskey's property has a narrow rectangular shape. Because the length of the property is three times the width, unique challenged arise when this factor combines with the fact that the narrow shape is aligned perpendicular to the hills natural topography. The lot's geometry, slope, and orientation on the mountain makes the development challenging because it inhibits developing a solution for the home that is developed parallel with the natural topography. A tighter more compact layout that recognizes drainage constraints and the condensed building area requires steeper, taller cuts in the hillside which increases disturbed area and cut face requirements.

The lot's extremely narrow shape and steep slope have resulted in a condensed building pad that requires taller cuts in the mountain. In an effort to mitigate this issue, the amended plan will break the cuts into sections, and work to minimize the angles of repose, which refers to the stable angle of the rock face defined by the geotechnical engineer. Please see Exhibit M for all of the geotechnical reports and amendments. The amendment to the geotechnical report in exhibit M demonstrates our efforts to minimize the height of the cut face and associated disturbed area. Also, please see exhibit H "site sections" for the efforts included to minimize the height of the required cuts. Exhibit H and H1 also reveal the amount of disturbed area required to develop a solution that incorporates both the cut face and the boulder roll zone that was prescribed by the geotechnical engineer.

The narrow shape of this property also requires a more complex drainage solution. The faceted shape of the amended home was encouraged by the need to have appropriate space to bring the drainage pattern around the home on either side. Additional drainage elements included a continuous mechanical underground drain behind the house feeding a 750 cu. ft. surge tank that distributes the water it harvests, slowly and thoughtfully across the front of the property. To

break up the concentrated drainage pattern a 24inch, 70 foot long pipe delivers the concentrated drainage to a boulder structure or weir that reduces the water energy and creates a sheet flow across the rest of the property. All this infrastructure (totaling 884 sq. ft. of disturbed area) was required to capture, redirect, and then redistribute water into the property's narrow frontage.

Adjacent properties like 4800 E. Moonlight Way and 4700 E. Moonlight Way are shaped with narrow uphill geometry but with wider street frontages, this lot geometry creates a larger building area. See Exhibit K. This allows for development of a home that is longer running with the topography, creating less cut on the face of the hillside. Wider properties also allow for more space around the home creating ample area to naturally reduce water energy without tanks and boulder weir.

Secondly, due to the slope of the property, the defined building pad slope of 34.4% has determined that the maximum disturbed area envelope is 10.04% or 14,290 sq. ft of the 142,335 sq. ft. lot. The initial geotechnical report prescribed a cut face and boulder role zone of 6,041 sq. ft. After working with the geotechnical engineer to reduce these requirements, the amended cut face and boulder zone became 4,204 sq. ft. This created a reduction in disturbance of 1,837 sq. ft. This is visible in Exhibit E, H and H1. The initial heights of these cuts was more than 46 feet, while the amended report requires only 41 feet. These adjustments show the effort to minimize the requirements of working with a property with an excessively narrow shape, steep slope, and minimal opportunity for a building pad.

Thirdly, In addition to the constraints placed on the property due to its shape, Moonlight Lane nor its right of way are continuous across the Eastern property line. To see an illustration of this, please see the aerial photograph of the lot enclosed in Exhibit A. This initial platting decision had a tremendous impact on the development of this property, and inadvertently led to existing disturbed area being present on our lot. As a result of this discontinuous platting of Moonlight Lane, the development of the adjacent home on the East involved the creation of a driveway that left disturbed area on our property when it cut a path connecting to the end of the street. This impacted the lot because it wrongfully created 1,005sq. ft. of disturbed area on our property that is inaccessible for building purposes and does not benefit the property owners. Exhibit J "Aerial Photograph" dated 1976 shows the negative effect of the driveway's construction, Exhibit B the "Civil Survey" indicates the extent of disturbed area impacted by this development, and Exhibit E quantifies its impact. Additionally, the lot access previously created on the south property resulted in an additional 436 sq. ft. of disturbance on our lot, which can be seen on Exhibit D. The right of way for Moonlight Lane stopped at the Southeastern corner, but the utilities did not. The civil survey contained in Exhibit B demonstrates that the waterline was developed across the eastern edge of this property creating additional disturbed area of 1,408 sq. ft. This previously created waterline would typically be constructed in the public right of way, and it detracts from our property's already limited disturbed area envelope. Please see Exhibit B to examine the waterline's additional impact on the property's disturbed area. Please see Exhibit D for the total disturbed area created by each prior disturbance on the property. In addition, Exhibit D demonstrates the 788 sq. ft. of disturbance from the waterline that will be revegetated and restored, and as a result not count towards total disturbed area. The existing disturbed area on the property was not created by the Caskey's or easily understood before they purchased the property.

Fourthly, the ability to access the lot from the public right-of-way has been pre-defined by the fact that there are only 14 linear feet of street front access to the property. This single available access point can be seen on Exhibit E. This single access point requires the driveway to be created in the location indicated on Exhibit E, as this is the only available access point. In addition to this, the pre-determined driveway location will instantly create disturbed area as it requires us to cut perpendicularly across the topography due to the slope of the property in this spot. The location of this access point not only dictates the location of the driveway, but it also requires the driveway access to be constructed on a sloped portion of the property that will immediately create disturbed area. It also prevents us from taking advantage of the rightful 25 percent reduction in disturbed area on hillside driveways. The limited street frontage and single access point is not typical among similar lots, and further exacerbates disturbed area constraints.

#### Context For Variance Request

The context for this variance request arises from five distinct hardships that are unique to this property and to this project. These hardships involve the four issues introduced in the context for the property, and the fifth being the town's request to incorporate an emergency vehicle turnaround onto the Caskey's property.

Firstly, our request for this variance is based on the limitations caused by the property's narrow shape seen in Exhibit A where you can clearly see the lot is three times as long as it is wide. The difficulties that result from the property's unusual shape are further exacerbated by the steep slope of 34.4 percent that results from the lot's perpendicular alignment with its topography. As discussed in the previous section, developing a solution for the home under these conditions requires taller, steeper cuts in the hillside, which increase the disturbed area to facilitate a compact design.

The narrow shape required the lot to incorporate a complex drainage system that would involve the creation of disturbed area due to the infrastructure needed to capture, redirect, and redistribute water in the property's narrow frontage. See exhibit H1 for 884 sq. ft. of disturbed area required. As seen in Exhibit K, adjacent properties with wider street frontages are able to utilize a larger building area that does not necessitate these complex drainage solutions because their wider shape allows for the natural reduction of water energy without tanks or boulder weir.

Secondly, the disturbed area envelope for this property is a direct result of defining the building pad slope at 34.4%. This building pad slope allows 10.04% of the lot to be utilized. In context, this provides for 14,290 sq. ft. of disturbed area on a lot that measures 142,335 sq. ft. in total.

Exhibit E, H, and H1 show the geotechnical engineer's initial and amended disturbed areas requirements for the face cut and boulder roll zone. The amended requirement came out to be 4,204 sq. ft. of disturbed area. This variance's request for a 0.65% (less than 1%) or 932 sq. ft increase in the disturbed area envelope and an 11 foot increase in the allowed cut face in the hillside would not only mitigate the property's existing hardships, but would allow it to accommodate the requested emergency vehicle turnaround. In an effort to reduce the height of the required cuts and disturbed area in the amended plans, the geotechnical engineer reevaluated and adjusted their original recommendations for the angle of the cuts in order to decrease the amount of disturbed area and height of the hillside cuts. These original and amended recommendations can be seen in exhibit M.

Thirdly, In addition to the limitations created by the property's unusual shape and slope, the existing disturbed area discovered on this property necessitates this variance request further. Because Moonlight Lane and its right of way are not continuous across the Eastern property line, past developments inevitably resulted in disturbed area being wrongly created on our lot. The discontinuity of Moonlight Lane can be seen in exhibit A and quantified in exhibit B. As a result of the discontinuous platting, the construction of the adjacent property's driveway created 1,005 sq. ft. of disturbed area on our property visible in Exhibit D and E. The disturbed area was increased by another 436 sq. ft due to the creation of lot access on the South property, and by another 1,408 sq. ft. due to the waterline constructed across the Eastern edge of the property. Exhibit D and E depicts the disturbed area resulting from the Southern property's lot access, and Exhibit B and D depict and quantify the disturbed area created by the waterline. These three instances of existing disturbed area discovered on the Caskey's property have resulted in a total of 2,849 sq. ft. that are now inaccessible for building purposes, and do not benefit the property owners in any way.

The fourth property related hardship involves the property's single access point that forces us to create additional disturbed area in constructing access to the public right of way. The fact that there is only 14 linear feet of street front access to the property is not an issue that one would generally expect to contend with on lots of this size, and it means the driveway's location has been pre-determined to be in a location that will inevitably create disturbed area, and prevent taking advantage of the 25 percent reduction in disturbed area expected for hillside lots along the driveway. The land in this single access point is not only limited to 14 feet but is significantly sloped in a way that will require perpendicular cuts across the topography in order to create driveway access. This will immediately create disturbed area, while adjacent lots have the opportunity to choose where their driveway is constructed minimizing disturbed area and allowing for the 25 percent reduction in disturbed area along the driveway. This is because their street front access is not limited to a single access point of 14 linear feet. This single access point is visible in Exhibit E.

These first four considerations were further magnified to the point that a variance would be necessary when we realized that incorporating an emergency vehicle turnaround into our lot would be the only way to meet health and life safety codes without permanently harming surrounding properties. See exhibit C for the requirements of a cul-de-sac in the public right of way, which would allow for emergency vehicle access.

The development of 7601 N. Moonlight Lane was always contingent upon emergency vehicle access. As we worked with the Town of Paradise Valley during the initial design phases, it became clear that creating the desired 80 foot diameter turnaround for emergency vehicle access in the public right of way would create several serious issues. By constructing this large turn around in the right of way, the uphill property becomes nearly inaccessible due to the development of a 14 foot cut face slope and therefore would be unbuildable. In addition, the downhill side would require a 12 foot retaining wall that does not comply with hillside code. Please see Exhibit C for an illustration of these problematic consequences. Exhibit L illustrates an aerial image of the 80 foot diameter turnaround in the right of way and highlights the adjacent properties negatively impacted. Exhibit C depicts a visual of what this problematic solution would look like, including the steep cuts and unsightly retaining walls.

In a meeting with Bob Lee at the Town of Paradise Valley in July of 2021, the decision was made that the site, (7602 N. Moonlight Lane) should incorporate the necessary fire truck turnaround onto our property in order for the home to comply with critical health and life safety codes.

While it would be typical to build a cul-de-sac in the public right of way, the significant slope of the right of way does not allow for a functional cul-de-sac to be built without causing harm to neighboring properties. The diagrams in exhibit C indicate the visual impact, while Exhibit L shows how such a cul-de-sac would make the adjacent lot inaccessible. These facts drove the town's decision to request that a fire truck turn around be incorporated into the Caskey's lot. It would not only be a less harmful solution, but also the most efficient way to comply with critical fire safety codes.

Incorporating a firetruck turn around required a major restructuring of the initial plan for the property. Please see Exhibit F which details the minimum turning radius required for an emergency vehicle to turnaround within a given space. Exhibit H1 documents a minimum 1,894 sq. ft. increase in disturbed area would be required due to the ergonomic requirements for turning around an emergency vehicle.

Please see Exhibit H1 for a visual representation of the implications of adding a fire truck turn around with a backup onto the site plan. See exhibit H2 for the calculations that demonstrate how the turnaround requirements pushed the design past the allowed disturbed area limits. The additional disturbed area for the turnaround and backup is shown to be 1,894 sq. ft. which pushed the disturbed area on our amended plan over the limit by 932 sq. ft, which is the increase requested in this variance.

In addition to this, the sheer amount of space needed for the circular turnaround in the driveway meant the house had to be constructed further up the mountain than initially planned. The amended plans for the property show that the house is now having to be constructed higher on the property where the slope is significantly steeper. See exhibit H. For this reason, a variance to allow for an eleven foot increase in the maximum allowed cut face is necessary in order to incorporate the emergency vehicle access that was requested. Surrounding properties with typical straight driveways are able to construct their homes lower on their lots where the slope is not as extreme, and therefore they do not require a variance to increase the height of the cut face in the hillside.

Exhibit H2 reveals that neither of the two variance requests would have been necessary prior to incorporating the requested fire truck turn around. The additional space needed for a fire truck to backup within the drive way required an additional 1,894 sq. ft. This pushed the disturbed area calculation past the approved limit by 932 sq. ft. The size of this circular driveway also forced the house to be constructed higher on the lot where the slope is steeper. The request for an eleven foot increase in the maximum allowed cut face in the hillside accommodates the greater slope that directly results from having to move the home upward to incorporate a fire truck turnaround.

With the fire truck turnaround, the final design requires a gross proposed disturbed area of 24,298 sq. ft. on a lot that measures 142,335 sq. ft. If you add in the existing disturbed area of 2,849 sq. ft. there is a total of 27,147 sq. ft. of disturbed area. This means that 115,188 sq. ft or

about 80% remains completely untouched. To compare this with adjacent properties, please see Exhibit K which shows the approximate lot sizes of these properties, their disturbed areas, home sizes and cut slope areas. The variance request is consistent with their land use diagram.

The placement of the currently amended driveway illustrated in Exhibit E, is a direct result of the single pre-determined right of way access point at the Southeast corner of the lot, and the disturbed area created by the neighbor to the South. The driveway must be angled Westerly uphill due to these two factors. This also means we are not able to utilize the 25 percent reduction in disturbed area along the driveway that would typically be expected for a hillside lot.

#### Neighborhood Information and Existing Property Details

This hillside property is located South of Tatum Canyon and exists on a short street that is accessible from E Moonlight Way. There is only one other property accessible from N Moonlight Lane, and the street dead ends into this property. These hillside lots sit on an incline, and neighboring properties have built at varying levels to optimize the views that are accessible to each.

The Caskey's property is an irregular lot that is both long and steep in comparison to typical lots in the area. Because of the steep narrow nature of the lot, only a small percentage of the land can be accessed and therefore built on. Emergency vehicle access is a health and safety prerogative typically created by the municipality in the public right of way, and the request to incorporate this access on our property further magnifies the existing constraints caused by the lot's unusual shape and existing disturbed area.

#### Neighbor Support

The Caskey's strive to be good and respectful neighbors, and to facilitate a solution that benefits rather than disturbs neighboring properties. The neighbor to the East would not be impacted by this variance that allows for the incorporation of a fire truck turnaround, and they have provided their written support in favor of the variance being passed. On document G, I have attached their approval, as well as their property's location in respect to the Caskey's lot.

## Variance Criteria

1. "Such variance...will serve not merely as a convenience to the applicant, but [is] necessary to alleviate some demonstrable hardship or difficulty so great as warrant a variance under the circumstances." (Town Code Section 2-5-3(C)2).

1. This variance does not serve as a convenience to the applicant, but rather allows their property to function in an effective and safe manner given the previously discussed limitations of the lot and the request for emergency vehicle access. The requested increase of 932 sq. ft or .65% (less than 1%) in the disturbed area envelope would not only recognize the negative impact of the initial plat and unusual lot shape in regard to the required excavation for grading and drainage but would also acknowledge the existing disturbed area from previous construction that disregarded the property's

interests in the past. The constraints to access the lot from the public right of way would also be addressed. In addition to this, the town's request for emergency vehicle access further necessitates this variance because it intensifies the already existing issues surrounding the property's shape and condition that adversely affect the lot. The variance's request for an 11 foot increase in the allowed cut face in the hillside would address the severe challenge of having to relocate the home to a higher, steeper location on the property in order to fit the requested fire truck turnaround. A steeper slope of 34.4 percent and the fact the lot's length is three times its width directly drives the increase in the height of the required cut face. The condensed building pad that results from these factors requires taller cuts into the hillside. Additionally, it becomes a matter of health and life safety, as it enables the lot to comply with critical fire safety codes. Including a fire truck turnaround in the applicant's driveway will require a significant increase in the amount of the disturbed area envelope. If the firetruck turnaround and all previously disturbed areas were excluded, the initial design would fit within the disturbed area envelope. Without the turnaround, we would also be able to follow the trend of adjacent lots and construct the home lower on the property where the slope is less steep. A variance to increase the allowed cut face would then likely be unnecessary. This variance request extends far beyond a matter of convenience, as it impacts the applicant's safety in the case of an emergency. Without this variance, the property is not allowed to enjoy the same rights that similar surrounding properties receive with simple access for emergency vehicles.

# 2. The "special circumstances, hardship, or difficulty [do not] arise out of misunderstanding or mistake..." (Town Code Section 2-5-3(C)4(b)).

2. The special circumstances posing an objective hardship to the applicant are not a result of misunderstanding or mistake. The Town of Paradise Valley has requested that the property incorporate a fire truck turnaround in order to comply with critical safety codes in the area. Locating the fire truck turnaround on our property has proven to be the only effective option to resolve this situation, as a cul-de-sac would be extremely detrimental to adjacent properties in the area. The cul-de-sac as shown in Exhibit C would not only make the adjacent uphill property inaccessible, but it would also lead to the creation of an unsightly 12 foot retaining wall that is against code for hillside properties. Based on the unique slope of the right of way, incorporating a fire truck turn around into the lot is the solution that would cause the least amount of damage despite the hardships it introduces in relation to the disturbed area envelope and cut face requirements on this property. The existing disturbed area created by others during the extension of the waterline, creating lot access along the Southern property line, and construction of the driveway for the adjacent lot is not a result of misunderstanding or mistake. Neither is the fact that the home had to be relocated to a steeper place on the already narrow lot in order to fit the circular driveway for emergency vehicle access. The condensed building pad that results from those conditions drives the need for an 11 foot increase in the allowed height of the cut face in the hillside. These objective realities including the lot's specific placement, narrow shape, and steep topography are a matter of circumstance rather than misunderstanding or mistake.

3. "Such variance from ... the strict application of the terms of [the Zoning Ordinance] ... are in harmony with its general purposes and intents ..." (Town Code Section 2-5-3(C)2).

3. This variance's requests to increase the disturbed area envelope by 932 sq. ft. or 0.65% of the total lot area and increase the maximum allowed cut face in the hillside from 30 ft. to 41 ft. is in harmony with the general purpose and intent of the zoning ordinance. It does not allow the applicant any special privileges for their property or the ability to negatively impact the neighborhood and its residents. The fire truck turn around requires a significant amount of disturbed area as well as the repositioning of the applicant's home to a less convenient orientation and location. Incorporating these requests onto a lot that is already unusually narrow and steep further necessitates a variance due to the condensed building pad that results from having to move the home to a steeper location on the property. In addition, recognizing the existing disturbed areas from previous construction reduces the damage caused by developments we had no control over. The request for emergency vehicle access to be incorporated onto our property is a special circumstance in itself, and the resulting requests in this variance are in harmony with its general purpose and intent.

4. "The special circumstances, hardship or difficulty applicable to the property are [not] self-imposed by the property owner, or predecessor..." (Town Code Section 2-5-3(C)4) (Arizona Revised Statutes 9-462.06(H)(2)).

4. The circumstances that have led to this variance request are not self-imposed by the property owner. While the Caskey's were aware of the hillside lot's unusual shape and steep slope, the request for a fire truck turnaround and the requirements that go along with incorporating one were entirely beyond their control. The request for a fire truck turn around on such a steep lot with such exaggerated geometry has compounded traditional hillside requirements in a way nobody could have foreseen or avoided. It was impossible to predict that there would be three instances of existing disturbed area along the Eastern and Southern side of the property caused by neighboring developments from 50 years prior. It was not until the survey was developed and staked that any existing disturbed area was revealed. Also, it was not possible to predict the extreme adjustments that would be required to incorporate emergency vehicle access onto a property with such challenging characteristics. Not only does it increase the disturbed area required, but it forces the home's location to move to a steeper part of the property that will require taller face cuts in the hillside. These uncontrollable and unforeseeable circumstance were not brought about by the property owner or predecessor, and they should not be allowed to unfairly limit the property's potential.

5. "Because of special circumstances applicable to the property, including its size, shape, topography, location, or surroundings, the strict application of the zoning ordinance will deprive such property of privileges enjoyed by other property of the same classification in the same zoning district." (Arizona Revised Statutes 9-462.06(G)(2)).

5. The excessively narrow shape of this property and its location on the mountain perpendicular to the steep topography create unique hardships and special circumstances that are illustrated throughout our exhibits. Exhibit B demonstrates the steep slope of 34.4 percent and the extremely narrow geometry with a length three times its width. Further disturbed area will be created due to the lot's limited access to the public right of way. With only 14 linear feet of street access to choose from, the driveway must be placed in a pre-determined location that will instantly require the creation of additional disturbed area since the lot is sloped in this location. It will also prevent us from taking advantage of the 25 percent reduction in disturbed along the driveways, as would typically be expected for hillside lots . Including a large radius for emergency vehicle access further amplifies the already significant limitations of working with a narrow property, as it increases the required disturbed area and pushes the home's location to a steeper part of the property that will require taller cuts in the hillside. Because of these special circumstances, a need for both variance requests arises due to the strict application of zoning ordinances. The variance's request for a 932 sq. ft. increase in the disturbed area envelope and an 11 foot increase in the allowed height of the cut face will allow the property to accommodate the Caskey's home and the fire truck turnaround requested by the Town of Paradise Valley. Emergency vehicle access and the ability to construct a home on one's property is a privilege that is generally a right expected for any lot. Moving the location of the home to a steeper part of the property directly necessitates an increase in the height of the cut face in the hillside. The fact the lot is three times longer than it is wide, with a steep slope of 34.4 percent directly leads to the need for taller cuts in the mountain to accommodate the condensed building pad. Even with our efforts to limit the height of the cuts in accordance with the recommendations of the geotechnical engineer, a variance is still necessary to mitigate the unique challenges of this lot. Simple emergency vehicle access is a right enjoyed by other similar lots, and this request is the only way to provide access without producing harmful consequences that will impact adjacent properties. For these reasons, the variance's modest requests would preserve the reasonably expected property rights of emergency vehicle access that typically apply to all properties in this area and ensure safety in the case of an emergency.

# 6. The variance would not "constitute a grant of special privilege inconsistent with the limitations upon other properties in the vicinity and zone in which such property is located." (Arizona Revised Statutes 9-462.06(G)(2)).

6. These variances do not provide special privilege inconsistent with limitations applying to surrounding properties. This variance would merely allow the property to accommodate the requested fire truck turnaround in the driveway. Emergency vehicle access was expected in the public right of way, but due to the harmful nature of constructing a culde-sac at the end of Moonlight Lane, the applicant is requesting a variance that will allow the emergency vehicle access to be incorporated onto their own property as the town requested. Emergency vehicle access does not constitute a special privilege that would not be expected for any property. In addition, there is no special privilege in recognizing the additional limitations that have been placed on the lot due to the existing disturbed area created by previous construction the property owner had no control over. There is also no special privilege in recognizing that the shape and steepness of this lot in its

initially platted form is a special circumstance, as the lot is three times as long as it is wide with a slope of 34.4 percent. The documents in Exhibit K illustrate that this variance would merely allow this property to receive the same rights similar adjacent lots are already enjoying. The variance's request for a slight expansion of 0.65% or 932 sq. ft. in the disturbed area envelope and 11 feet in the allowed cut face on the hillside does not allow any special privilege to the applicant, but rather it is necessary for them to ensure access to expected health and life safety requirements while reasonably enjoying their property.

#### **Conclusion**

Based on these itemized responses, we are requesting a variance that would allow for a slight increase of 0.65% or 932 sq. ft. in the disturbed area envelope and an eleven foot increase in the maximum allowed cut face in the hillside in order to accommodate the Town of Paradise Valley's request for emergency vehicle access on our property. This variance would not only mediate the challenge of working with an extremely narrow and steep lot, but it would also address the consequences of having to push the location of the home to a higher, steeper location on the lot in an effort to fit the circular turnaround onto the property. As demonstrated in Exhibit H1, this variance request is directly necessitated by the increase in disturbed area that is required to fit the fire truck turnaround onto the Caskey's property, as well as the relocation of the home to a steeper location on the lot as seen in the amended plans. This variance would not only mitigate the impacts of the lot's unusual characteristics, existing disturbed area and single access point, but would also ensure the rights and safety of the property owner are protected.

Please let us know if there are any additional documents or materials that would be helpful in assessing this variance request. Thank you for your time, and I look forward to reaching a resolution.

Sincerely,

David Dick, AIA, NCARB

#### GENERAL NOTES

TOWN OF PARADISE VALLEY
GOVERNING BUILDING CODES: ALL CONSTRUCTION
SHALL COMPLY WITH THE FOLLOWING CODES AND
AMENDMENTS PER THEIR ADOPTING ORDINANCES:

2015	INTERNATIONAL BUILDING CODE
2015	INTERNATIONAL REGIDENTIAL CODE
2015	INTERNATIONAL CODE COUNCIL ELECTRICAL
2015	INTERNATIONAL MECHANICAL CODE
2015	INTERNATIONAL PLUMBING CODE
2015	INTERNATIONAL PROP. MAINTENANCE CODE
2015	INTERNATIONAL FUEL GAS CODE
2015	INTERNATIONAL ENERGY CONSERVATION COL
2011	NATIONAL ELECTRICAL CODE

GAS CODE Y CONSERVATION CODE

CAL CODE 2015 INTERNATIONAL FIRE CODE

ALL PRODUCTS LISTED BY I.C.C./N.E.R. NUMBER(S) SHALL BE INSTALLED PER THE REPORT AND MANUFACTURER'S WRITTEN INSTRUCTIONS, PRODUC SUBSTITUTION(S) FOR PRODUCT(S) LISTED SHALL ALSO HAVE APPROVED EVALUATION I.C.C REPORT(S) OR BE APPROVED AND LISTED BY OTHER NATIONALLY RECOGNIZED TESTING AGENCIES.

MISCELLANEOUS SITE STRUCTURES, SWIMMING POOLS, SPAS, FENCES, SITE WALLS (INCLUDING RETAINING WALLS), AND GAS STORAGE TANKS REQUIRE SEPARATE PERMITS.

FOUNDATIONS SUPPORTING WOOD SHALL EXTEND AT LEAST 6" ABOVE ADJACENT FINISH GRADE. FINISHED GRADE SHALL SLOPE 5% FOR A

DISTANCE OF 10' TO AN APPROVED WATER DISPOSAL AREA. PRETREAT FOR TERMITE PROTECTION BENEATH

THE CONCRETE SLAB PRIOR TO PLACEMENT OF CONCRETE, MINIMUM THREE (3) YEAR WARRANTY. CONCRETE SLABS AT DOOR LOCATIONS SHALL

HAVE A MAXIMUM SLOPE OF 1/4" PER FOOT. SEAL ALL VOIDS AROUND PENETRATIONS THROUGH FLOOR SLABS.

MINIMUM INSULATION REQUIREMENTS: FRAME WALLS - R-19± MASONRY WALLS - R-7± ROOF R-38 PER 2012 IECC. SEE SPECIFICATIONS.

WALLS HAVING PARALLEL OR STAGGERED STUDS FOR SOUND CONTROL SHALL HAVE FIRE BLOCKS OF MINERAL FIBER, GLASS FIBER, OR OTHER APPROVED NON-RIGID MATERIAL.

WINDOW AREAS SHALL EQUAL A MINIMUM OF 1/10 OF FLOOR AREA.

ALL SLEEPING AREAS SHALL BE PROVIDED WITH AN OPERABLE WINDOW OR DOOR WITH A MINIMUM AREA OF 5.1 SQ. FT., OPENING DIRECTLY TO THE OUTSIDE. THE MINIMUM NET WIDTH SHALL NOT BE LESS THAN 20" AND THE MINIMUM NET HEIGHT SHALL NOT BE LESS THAN 24", MAXIMUM SILL HEIGHT SHALL NOT BE MORE THAN 44".

ALL GLASS IN HAZARDOUS AREAS AND ALL GLASS WITHIN 18" OF FLOOR (EXCEPT SINGLE PANES WITH 9 SQ. FT. OR LESS AREA) SHALL BE SAFETY GLASS. (R 308,4)

ATTIC ACCESS REQUIRED WHERE APPLICABLE PROVIDE 22" × 30" ATTIC ACCESS TO ALL AREAS GREATER THAN OR EQUAL TO 10 SQ. FT. WHICH HAVE A 30" OR MORE VERTICAL CLEAR HEIGHT

PROVIDE 30" CLEAR HEAD ROOM ABOVE THE ATTIC ACCESS.

#### DOORS LEADING INTO THE HOUSE FROM THE ARAGE SHALL BE SELF-CLOSING AND TIGH FITTING WITH GASKETS AND SWEEP. (R 302.5.1) OPENINGS FROM THE GARAGE INTO SLEEPING ROOM(S) SHALL NOT BE PERMITTED (R 302.5.1)

#### SHOWER ENCLOSURE SHALL BE SHOWER RODS, TEMPERED GLASS, OR APPROVED EQUAL (R 308.4)

CENTER OF WATER CLOSETS SHALL BE A MINIMUM OF 15" CLEAR FROM ITS CENTER TO ANY FINISHED SIDE WALL OR OBSTRUCTION. (R 307.1) FIRE WARNING SYSTEMS (R 314.1):

SMOKE DETECTORS SHALL BE INSTALLED AT A POINT CENTRALLY LOCATED IN THE CORRIDOR OR AREA GIVING ACCESS TO EACH SEPARATE SLEEPING AREA AND SHALL BE A MINIMUM OF 3'-Ø" FROM DUCT OPENINGS.

SMOKE DETECTORS SHALL BE PERMANENTLY WIRED, INTERCONNECTED, AND HAVE BATTERY POWERED BACK-UP.

PROVIDE SMOKE DETECTORS ON EACH FLOOR LEVEL.

WHERE THE HIGHEST POINT OF A CEILING IN A ROOM THAT OPENS TO THE HALLWAY SERVING THE BEDROOMS EXCEEDS THAT OF THE OPENING INTO THE HALLWAY BY 24 INCHES OR MORE, SMOKE DETECTORS SHALL BE INSTALLED IN THE HALLWAY AND IN THE ADJACENT ROOM, PROVIDE ADDITIONAL SMOKE DETECTORS AS APPLICABLE. HARDWARE:

ALL EXITS TO BE OPERABLE FROM THE INSIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE,

MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED AT A DOOR OR THE ACTIVE LEAF OF A PAIR OF DOORS.

FIREPLACES:

SEE FIREPLACE DETAILS FOR INFORMATION REGARDING CONSTRUCTION AND ANCHORAGE TO STRUCTURE.

PLUMBING:

49-353)

SOLDERS AND FLUX HAVING A LEAD CONTENT IN EXCESS OF TWO-TENTHS OF ONE PERCENT SHALL NOT BE USED IN THE INSTALLATION OR REPAIR OF ANY PLUMBING IN RESIDENTIAL OR NONRESIDENTIAL FACILITIES PROVIDING WATER FOR HUMAN CONSUMPTION WHICH ARE CONNECTED TO PUBLIC WATER SYSTEMS. (A.R.S. SECTION

PROVIDE SHOWER HOT WATER CONTROL VALVE AS EITHER PRESSURE BALANCED, OR THERMOSTATIC MIXING TYPE. IN ACCORDANCE W/ ASSE 1016 AS PER P2708.3 PLUMBING FIXTURES SHALL BE AS FOLLOWS (2015 IPC TABLE 604.4):

GENERAL NOTES CONTINUED

WATER CLOSETS: GRAVITY: 1,6 GALLONS PER FLUSH (MAXIMUM) FLUSH VALVE: 3.5 GALLONS PER FLUSH (MAXIMUM)

SHOWER HEADS: 2.5 GALLONS PER MINUTE (MAXIMUM)

MINUTE (MAXIMUM), PROVIDE AERATOR WATER TREATMENT SYSTEMS. EQUIP W/ AUTOMATIC SHUTOFF TO PREVENT CONTINUOUS FLOW WHEN NOT IN USE.

EVAP COOLERS: MUST HAVE RECIRCULATING PUMPS HOT WATER SHALL BE THE LEFT FITTING AT ALL FAUCETS (P 2722.2).

GAS LINES: (A) NOT PERMITTED UNDER STRUCTURE(S)± (B) NOT PERMITTED UNDER SLAB(S)±

APPLIANCES

WATER PIPING (2015 1.P.C. 607.3). SEISMIC ZONE (SEC. 1627 AS AMD.):

DESIGN AND CONSTRUCT TO MEET REQUIREMENTS OF ZONE 2B (SEC. 1627.2 AS AMD.).

# OR CONDUITS SHALL BE CAULKED

FLOOR PLAN NOTES NOTE: SEE SHEET A2 FOR FLOOR PLAN

FINISH GRADE SHALL BE A MINIMUM OF 6" BELOW WOOD FRAMING AT BUILDING EXTERIOR, SLOPE FINISH GRADE FOR AN ADDITIONAL 6" AWAY FROM BUILDING FOR A 10'-0" HORIZONTAL DISTANCE. FINISH FLOOR ELEVATION INDICATES TOP OF ALL

FLOOR FINISHES. INSTALL FLOOR SLAB TO ACCOMMODATE ALL FINISHES. TYPICAL WOOD FRAME WALLS: 2×6 STUDS AT 16"

2×4 STUDS AT 16" O.C. U.N.O.

SOUND WALLS: 2×6 STUDS AT 16" O.C. WITH 2×6 PLATES. BATT INSULATION. 5/8" GYPSUM BOARD EACH SIDE WITH RESILIENT CHANNELS ONE SIDE LOCATE WALLS AS SHOWN ON DRAWINGS OR AS NOTED BELOW:

#### BETWEEN BATH/TOILET ROOMS/POWDER ROOMS, AND OTHER INTERIOR ROOMS.

BETWEEN BEDROOMS AND OTHER INTERIOR ROOMS.

BETWEEN LAUNDRY AND BEDROOMS.

SOLID BACKING.

FOR BUILDING LAYOUT: ALL ANGLES 45 DEGREES UNLESS NOTED OTHERWISE. TYPICAL DOORS: LOCATE IN CENTER OF WALL OR

TUB AND SHOWER AREAS TO RECEIVE MOISTURE-RESISTANT GYPSUM BOARD BASE AT WALLS AND CEILING, INSTALL CERAMIC TILE OR OTHER APPROPRIATE FINISH AS SCHEDULED TO 70" MINIMUM ABOVE DRAIN, UNLESS NOTE OTHERWISE. PROVIDE INTERIOR GYPSUM WALL BOARD (GREEN BOARD) WITH WATER-REGISTANT FACE PAPER (I.C.C. \* ESR 1338 OR EQUAL).

SLOPE ALL SOAP NICHES IN TUB AND SHOWER AREAS TO DRAIN. SLOPE CEILING IN ENCLOSED SHOWER (APPROXIMATELY 1/8" PER FOOT). CONFIRM DIRECTION OF SLOPE.

SLOPE ALL SILLS TO DRAIN AWAY FROM WINDOWS AND SLOPE EXPOSED TOP OF PARAPETS AND WALLS TO DRAIN WATER, WATERPROOF ALL SILLS AND PARAPETS. AT CMU, USE WATERPROOF COATING PRIOR TO INSTALLING FINISH. AT METAL FRAMING, COVER WITH 30# FELT PRIOR TO INSTALLING FINISH (DO NOT PENETRATE THE TOP SURFACE, ATTACH AT SIDES).

LAVATORY SINK FAUCETS: 2.2 GALLONS PER

PROVIDE ONE-LINE ISOMETRIC DIAGRAM FOR GAS LINE PIPING PER 2015 IFGC SIZE THE LINES, SHOW DISTANCES TOTAL DEVELOPED LENGTH, BTU'S AND

EXPANSION TANKS ARE REQUIRED ON ALL HOT

ZONE FACTOR  $Z = \emptyset.\emptyset15$  (SEC, 1621,2 AS AMD.). EXTERIOR WALL PENATRATIONS BY PIPES, DUCTS,

O.C. AT ALL EXTERIOR WALLS, WALLS CONTAINING W.C. PLUMBING, AND WALLS WITH EXPOSED ENDS OR HAVING DOOR JAMBS. OTHER WALLS MAY BE

BETWEEN GARAGE AND INTERIOR ROOMS. SOUND WALL INDICATION:

PROVIDE BACKING (WOOD BLOCKING OR SOLID GROUT C.M.U. AS APPLIES) AT ALL HOSE BIBBS, HOSE RACKS, TOWEL BARS, CURTAIN RODS, T.P. HOLDERS, CABINETS, OR ANY ITEMS REQUIRING

FRAME JAMB 5 1/2" FROM INTERSECTING WALL, UNLESS NOTED OTHERWISE.

PROVIDE FLAT STONE SPLASH BLOCKS (OR EQUAL) AT GRADE BELOW ALL SCUPPERS AND ROOF DRAIN OUT FLOWS. ARRANGE STONES TO DIVERT WATER TO DESIRED DRAINAGE AND PREVENT EROSION.

FIREPLACE HEARTH EXTENSIONS SHALL EXTEND AT LEAST 20" IN FRONT OF FIREPLACE OPENING AND 2" BEYOND THE SIDES WHEN THE FIREPLACE OPENING IS 6 SQ. FT. OR LARGER (IF LESS THAN 6 BQ, FT,, PROVIDE AT LEAST 8" AT SIDES AND 16" AT FRONT), REQUIRED HEARTH SIDE EXTENSIONS SHALL BE THE FULL REQUIRED FRONT EXTENSION DEPTHS. REQUIRED FIREPLACE HEARTH EXTENSIONS SHALL BE OF NON-COMBUSTIBLE MATERIAL.

FLOOR PLAN NOTES CONTINUED

PROVIDE 22" × 30" ATTIC ACCESS TO ALL AREAS WHICH HAVE A 30" OR MORE VERTICAL CLEAR HEIGHT, PROVIDE 30" CLEAR HEADROOM ABOVE ATTIC ACCESS (R 807.1). SEE PLAN FOR LOCATIONS,

DRYER VENT TO HAVE DAMPER COVER. ALL OTHER VENTS, PIPES, DRAIN PIPES, OR OTHER MISCELLANEOUS OPENINGS OPEN TO THE OUTSIDE TO HAVE GALVANIZED METAL INSECT SCREEN TO PREVENT MIGRATION OF RODENTS AND INSECTS.

PROVIDE TYPE 30\* FELT BUILDING PAPER AS FLASHING AT ALL HEADS, JAMBS, AND SILLS OF WINDOW AND DOOR OPENINGS.

FLASH HORIZONTAL AND/OR SLOPED AREAS AND 6" MINIMUM OF VERTICAL WALL SURFACE AROUND OPENINGS.

PROVIDE CONTINUOUS SEALANT BEAD WHERE STUCCO ABUTS WINDOW AND DOOR FRAMES TO PROVIDE WEATHER-RESISTIVE BARRIER.

REGISTERS, DIFFUSERS AND GRILLES SHALL BE MECHANICALLY FASTENED TO RIGID SUPPORTS OR STRUCTURAL MEMBERS ON AT LEAST TWO OPPOSITE SIDES IN ADDITION TO BEING CONNECTED TO THE DUCTWORK THEY SERVE.

AT EXTERIOR GYPSUM BOARD SOFFITS, PROVIDE EXTERIOR GYPSUM CEILING SOFFIT BOARD (GRAY BOARD) WITH WATER-REGISTANT FACE PAPER (I.C.C. #EGR 1338 OR EQUAL ).

PROVIDE 5/8" TYPE "X" GYPSUM BOARD AT WALLS AND CEILING IN GARAGE, STORAGE AND MECHANICAL ROOMS.

GYPSOM BOARD APPLIED TO CEILING SHALL BE 1/2" WHEN FRAMING MEMBERS ARE 16" O.C. OR 5/8" WHEN FRAMING MEMBERS ARE 24" O.C. OR USE 1/2" SAG RESISTANT GYPSUM CEILING BOARD. TABLE R702.3.5

PROVIDE 18" HIGH PLATFORM UNDER ALL APPLIANCES INSTALLED IN (OR ACCESSIBLE FROM INSIDE) GARAGES.

ALL EXITS TO BE OPENABLE FROM THE INSIDE WITHOUT A KEY OR SPECIAL KNOWLEDGE

MANUALLY OPERATED EDGE OR SURFACE-MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED AT DOOR OR THE ACTIVE LEAF OF A PAIR OF DOORS.

ALL STAIRS TO CONFORM TO IRC SECTION R311.T. HANDRAILS:

R 311.7.8

INSTALL HANDRAILS AT ALL STAIRS HAVING MORE THAN 3 RISERS, UNLESS SHOWN OTHERWISE.

THE TOP OF HANDRAILS AND HANDRAIL EXTENSION SHALL BE PLACED NOT LESS THAN 34" NOR MORE THAN 38" ABOVE NOSING OF TREADS AND LANDINGS, AND DESIGNED SUCH THAT A 4" SPHERE CANNOT PASS THROUGH. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS. ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NEWEL POSTS OR SAFETY TERMINALS.

THE HAND GRIP PORTION OF HANDRAILS SHALL NOT BE LESS THAN 1-1/4" NOR MORE THAN 2 INCHES IN CROSS-SECTIONAL DIMENSION, OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE. THE HAND GRIP PORTION OF HANDRAILS SHALL HAVE A SMOOTH SURFACE WITH NO SHARP CORNERS.

HANDRAILS PROJECTING FROM A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1-1/2" INCHES BETWEEN THE WALL AND THE HANDRAIL.

NOTE: COMPLIANCE WITH CHAPTER 11 OF THE 2015 INTERNATIONAL RESIDENTIAL CODE OR CHAPTER 4 OF THE 2015 INTERNATIONAL ENERGY CODE IS REQUIRED (ZONE 2). A PERMANENT ENERGY CERTIFICATE WILL BE REQUIRED AT TIME OF FINAL TO BE POSTED IN THE ELECTRICAL DISTRIBUTION PANEL. (R, U & SHGC VALUES)

GUARDRAILS: R 312.1

UNENCLOSED FLOOR AND ROOF OPENINGS, OPEN AND GLAZED SIDES OF STAIRWAYS, LANDINGS AND RAMPS, BALCONIES OR PORCHES, WHICH ARE MORE THAN 30 INCHES ABOVE GRADE OR FLOOR BELOW, AND ROOFS USED FOR OTHER THAN SERVICE OF THE BUILDING SHALL BE PROTECTED BY A GUARDRAIL

OPEN GUARDRAILS SHALL HAVE INTERMEDIATE RAILS OR AN ORNAMENTAL PATTERN SUCH THAT A SPHERE 4" IN DIAMETER CANNOT PASS THROUGH.

THE TRIANGULAR OPENING FORMED BY THE RIGER, TREAD, AND BOTTOM ELEMENT OF A GUARDRAIL AT THE OPEN SIDE OF A STAIRWAY MAY BE OF SUCH SIZE THAT A SPHERE 6" IN DIAMETER CANNOT PASS THROUGH.

GUARDRAIL HEIGHT TO BE 36" ABOVE FINISHED FLOOR.

EMERGENCY ESCAPE ROUTE SHALL LEAD TO A PUBLIC WAY

GAS LOG LIGHTERS SHALL BE MANUFACTURED BY "ROBERT H. PETERSON CO., ANSI Z21, 50 OR EQUAL OTHER MANUFACTURERS SHALL PROVIDE AN ACTIVE I.C.C./ N.E.R. EVALUATION REPORT BEFORE ACCEPTABILITY WILL BE CONSIDERED. GAS LOG LIGHTERS OR SETS ARE TO BE PERMANENTLY INSTALLED

FIRE BLOCKING NOTES

AT CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVELS, AND AT 10 FT. INTERVALS BOTH VERTICAL AND HORIZONTAL.

AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS SOFFITS, DROPPED CEILINGS, AND COVE CEILINGS.

IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN AND BETWEEN STUDS ALONG AND IN LINE WITH THE RUN OF STAIRS, IF THE WALLS UNDER THE STAIRS ARE UNFINISHED.

IN OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS, FIREPLACES, AND SIMILAR OPENINGS WHICH AFFORD A PASSAGE FOR FIRE AT CEILING AND FLOOR LEVELS, USE NON-COMBUSTIBLE MATERIALS.

AT OPENINGS BETWEEN ATTIC SPACES AND CHIMNEY CHASES FOR FACTORY-BUILT CHIMNEYS.

WALLS HAVING PARALLEL OR STAGGERED STUDS FOR SOUND CONTROL SHALL HAVE FIRE BLOCKS OF MINERAL FIBER OR GLASS FIBER OR OTHER APPROVED NON RIGID MATERIAL.

THE INTEGRITY OF ALL FIRE BLOCKING AND DRAFT STOPS SHALL BE MAINTAINED.

BARRIER REQUIREMENTS PER TOWN OF PARADISE VALLEY

SWIMMING POOLS, SPA AND HOT TUBS:

SWIMMING POOL IS DEFINED AS ANY CONTAINED BODY OF WATER 18 INCHES (457 MM) OR MORE IN DEPTH AT ANY POINT AND THAT IS WIDER THAN 8 FEET (2400 MM) AT ANY POINT, THIS INCLUDES IN-GROUND, ABOVE GROUND AND ON-GROUND SWIMMING POOLS AND HOT TUBS AND SPAS.

BARRIER REQUIREMENTS:

THE PROVISIONS OF THIS CHAPTER SHALL CONTROL THE DESIGN OF BARRIERS FOR RESIDENTIAL SWIMMING POOLS, SPAS AND HOT TUBS. THESE DESIGN CONTROLS ARE INTENDED TO PROVIDE PROTECTION AGAINST POTENTIAL DROWNINGS AND NEAR BY RESTRICTING ACCESS TO SWIMMING POOLS, SPAS AND HOT TUBS.

AN OUTDOOR SWIMMING POOL, INCLUDING AN IN-GROUND, ABOVE-GROUND OR ON-GROUND POOL, HOT TUB OR SPA SHALL BE SURROUNDED BY A BARRIER WHICH SHALL COMPLY WITH THE FOLLOWING:

1. THE TOP OF THE BARRIER SHALL BE AT LEAST 60 INCHES (1524 MM) ABOVE GRADE MEASURED ON THE SIDE OF THE BARRIER WHICH FACES AWAY FROM THE SWIMMING POOL. THE TOP OF THE BARRIER THAT SEPARATES THE SWIMMING POOL ONLY FROM HABITABLE SPACES ON THE SAME PROPERTY SHALL BE AT LEAST 48 INCHES (1219 MM) ABOVE GRADE MEASURED ON THE SIDE OF THE BARRIER WHICH FACES AWAY FROM THE SWIMMING POOL. THE MAXIMUM VERTICAL CLEARANCE BETWEEN GRADE AND THE BOTTOM OF THE BARRIER SHALL BE 2 INCHES (51 MM), THE MAXIMUM VERTICAL CLEARANCE AT THE BOTTOM OF THE BARRIER MAY BE INCREASED TO 4 INCHES (102 MM) WHEN GRADE IS SOLID SURFACE SUCH AS CONCRETE. THE BARRIER SHALL BE AT LEAST 20-INCHES FROM THE WATER'S EDGE.

2. OPENINGS IN THE BARRIER SHALL NOT ALLOW PASSAGE OF A 4 INCH DIAMETER (102 MM) SPHERE. ANY DECORATIVE DESIGN WORK SUCH AS PROTRUSIONS, INDENTATIONS OR CUTOUTS WHICH MAKE THE BARRIER EASILY CLIMBABLE IS PROHIBITED,

3, SOLID BARRIERS WHICH DO NOT HAVE OPENINGS, SUCH AS MASONRY OR STONE WALL, SHALL NOT CONTAIN INDENTATIONS OR PROTRUGIONS EXCEPT FOR NORMAL CONSTRUCTION TOLERANCES AND TOOLED

MASONRY JOINTS.

4. THERE SHALL BE AT LEAST 45 INCHES BETWEEN HORIZONTAL ELEMENTS.

NOTE: AN AUTOMATIC RESIDENTIAL FIRE SPRINKLERS SYSTEM IS REQUIRED, DEFFERED SUBMITTAL

6. WHERE THE BARRIER IS COMPOSED OF

SHALL BE SELF-CLOSING AND HAVE A WHERE THE RELEASE MECHANISM OF THE

CONDITIONS SHALL BE MEET:

DOOR: OR

PREVENT ACCESS: OR

BE PROTECTED IN THE FOLLOWING WAYS:



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APN:	169-11-004C
ADDRESS:	7602 N MOONLIG
	PARADISE VALLE
ZONING:	R-43 (HILLSIDE)
LOT AREA:	142,335 S.F (3.2
QS#:	24-34

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-W -E	WATER LINE ELECTRIC LINE	R/W T	TANGENT, TELEPHONE	FLOOD INSURANCE RAT
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N89°45'40"E

FOUND DISTRUBED REBAR NO ID, NO0°15'27"W 6.23 FROM OBSERVED LINE, HEL FOR EAST-WEST POSITION

> 4700 E MOONLIGHT WAY PARADISE VALLEY, AZ 85253 APN 169-11-002P ZONING R-43 (HILLSIDE)

# **BOUNDARY & TOPOGRAPHIC SURVEY** PARCEL NO: 169-11-004C

OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA



- OVERLAPPING OF IMPROVEMENTS, EASEMENTS OR RIGHT-OF-WAYS EXCEPT AS SHOWN, AND HAS ACCESS TO OR FROM A DEDICATED ROADWAY.
- PROVIDED BY THE VARIOUS UTILITY COMPANIES AND THESE LOCATIONS SHOULD BE CONSIDERED APPROXIMATE. THERE MAY BE ADDITIONAL UNDERGROUND UTILITIES, NOT SHOWN ON THIS DRAWING. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRAN THAT THE UNDERGROUND UTILITIES SHOWN HEREON ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE AT THE TIME OF THE SURVEY.
- SUPPLIED BY THE GOVERNING AGENCY OR TAKEN FROM THE BEST AVAILABLE RECORDS. THE SURVEYOR WILL NOT ACCEPT RESPONSIBILITY FOR THE ACCURACY OF ANY INFORMATION SUPPLIED BY OTHERS.
- ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: EASEMENTS, OTHER THAT POSSIBLE EASEMENTS, WHICH WERE VISIBLE AT THE TIME OF MAKING THIS SURVEY; BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND USE
- 5. THE DESCRIPTION OF PROPERTY BOUNDARIES AND EASEMENTS SHOWN HEREON, REPRESENT THAT
- 6. EVERY DOCUMENT OF RECORD REVIEWED AND CONSIDERED AS A PART OF THIS SURVEY IS NOTED HEREON. THE SURVEY. THERE MAY EXIST OTHER DOCUMENTS OF RECORD, WHICH WOULD AFFECT THIS PARCEL.
- REPRESENTS INFORMATION AND MEASUREMENTS FOUND DURING THE COURSE OF THE SURVEY.
- FOR THE EVALUATION, SALVAGEABILITY, REMOVAL AND/RELOCATION OF ON-SITE PLANT MATERIALS.
- THE EXACT CURRENT CONDITIONS.

APN:	169-11-004C
ADDRESS:	7602 N MOONLIG
	PARADISE VALLEY
ZONING:	R-43 (HILLSIDE)
LOT AREA:	142,335 S.F (3.2
QS#:	24–34



# DRAINAGE MAP PARCEL NO: 169-11-004C



GDACS# 24521-2.



COMMUNITY #	PA	NEL #	SUFFIX	BASE FLOOD	
040049	1765	OF 4425	L		
MAP #	PANEL DATE	FIRM INDEX DATE	ZONE	N/A	
04013C	10/16/2013	11/04/2015	X*		
*AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE					

# PRELIMINARY GRADING & DRAINAGE PLAN 7602 N MOONLIGHT LN., PARADISE VALLEY, AZ 85253 **PARCEL NO: 169-11-004C**

# **TOWN OF PARADISE VALLEY NOTES**

- PRIOR TO THE FIRST INSPECTION OF STRUCTURES WITHIN 3 FEET OF A SETBACK LINE, THE PROPERTY PINS SHALL BE PLACED BY A REGISTERED CIVIL ENGINEER OR LAND SURVEYOR OF THE STATE OF ARIZONA, AND THE PROPERTY LINE(S) IDENTIFIED.
- 2. WHERE EXCAVATION IS TO OCCUR THE TOP 4" OF EXCAVATED NATIVE SOIL SHALL REMAIN ON THE SITE AND SHALL BE REUSED IN A MANNER THAT TAKES ADVANTAGE OF THE NATURAL SOIL SEED BANK IT CONTAINS.
- . ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE WITH THE MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL MUNICIPALITY UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS
- 4. THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THIS PLAN.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
- 6. ALL EXTERIOR SITE LIGHTING SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR TYPE, LOCATION, HEIGHT, WATTAGE, AND LUMEN BASED UPON THE FIXTURES INSTALLED PURSUANT TO SECTION 1023 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCE FOR NON-HILLSIDE PROPERTIES, SECTION 2208 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCE FOR HILLSIDE PROPERTIES, OR AS SPECIFIED IN THE SPECIAL USE PERMIT FOR SPECIAL USE PERMIT PROPERTIES.
- 7. A DUST CONTROL PLAN AND PERMIT MEETING THE REQUIREMENTS OF RULE 310 OF THE
- MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS, AS AMENDED, IS REQUIRED. A SEPARATE RIGHT-OF-WAY PERMIT IS NECESSARY FOR ANY OFF-SITE CONSTRUCTION. 9. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES.
- DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
- 10. EAVE PROJECTIONS INTO REQUIRED SETBACKS ARE LIMITED TO A MAXIMUM OF 24" PURSUANT TO SECTION 1008 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCES. 11. ALL STRUCTURES AND LANDSCAPING WITHIN THE SIGHT VISIBILITY TRIANGLE SHALL HAVE A 2
- FOOT MAXIMUM HEIGHT. 12. ALL NEW AND EXISTING ELECTRICAL SERVICE LINES SHALL BE BURIED PER THE TOWN OF
- PARADISE VALLEY REQUIREMENTS. 13. IT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE TO ARRANGE FOR THE RELOCATION AND RELOCATION COSTS OF ALL UTILITIES, AND TO SUBMIT A UTILITY RELOCATION SCHEDULE PRIOR TO THE ISSUANCE OF AN ENGINEERING CONSTRUCTION PERMIT.
- 14. EXISTING AND/OR NEW UTILITY CABINETS AND PEDESTALS SHALL BE LOCATED A MINIMUM OF 4' BEHIND ULTIMATE BACK OF CURB LOCATION.
- 15. POOL, SPA, BARBECUE AND ANY PROPOSED STRUCTURES OVER 8" ABOVE GRADE REQUIRE SEPARATE PERMIT APPLICATIONS. 16. POOLS SHALL BE CONSTRUCTED BY SEPARATE PERMIT AND SECURED FROM UNWANTED ACCESS
- PER TOWN CODE, ARTICLE 5-2. 17. ALL FILL MATERIAL UNDER SLABS AND WALKS SHALL BE COMPACTED TO NOT LESS THAN 95%.
- 18. SETBACK CERTIFICATION IS REQUIRED AND SHALL BE PROVIDED TO TOWN INSPECTOR PRIOR TO STEM WALL INSPECTION.
- 19. FOR BUILDING PADS THAT HAVE 1'OR MORE OF FILL MATERIAL, SOILS COMPACTION TEST RESULTS ARE REQUIRED AND SHALL BE PROVIDED TO TOWN INSPECTOR PRIOR TO PRE-SLAB INSPECTION. 20. FINISHED FLOOR ELEVATION CERTIFICATION IS REQUIRED AND SHALL BE PROVIDED TO TOWN
- INSPECTOR PRIOR TO STRAP AND SHEAR INSPECTION. 21. MAIL BOXES SHALL COMPLY WITH THE TOWN OF PARADISE VALLEY STANDARDS FOR MAIL BOXES IN THE RIGHTOF-WAY FOR HEIGHT, WIDTH AND BREAK AWAY FEATURES.
- 22. ALL PATIOS, WALKS, AND DRIVES TO SLOPE AWAY FROM BUILDING AND GARAGES AT A MINIMUM SLOPE OF 1/4" PER FOOT UNLESS SPECIFIED OTHERWISE. TRENCH BEDDING AND SHADING SHALL BE FREE OF ROCKS AND DEBRIS.
- 24. THE TOWN ONLY APPROVES THE SCOPE OF WORK AND NOT THE ENGINEERING DESIGN. ANY CONSTRUCTION QUANTITIES SHOWN ARE NOT VERIFIED BY THE TOWN.
- 25. THE APPROVAL OF THE PLANS IS VALID FOR 180 DAYS. IF A PERMIT FOR CONSTRUCTION HAS NOT BEEN ISSUED WITHIN 180 DAYS, THE PERMIT MUST BE RENEWED. 26. A TOWN INSPECTOR WILL INSPECT ALL WORK WITHIN THE TOWN'S RIGHTS-OF-WAY. NOTIFY TOWN
- INSPECTION SERVICES TO SCHEDULE A PRECONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION. 27. WHENEVER EXCAVATION IS NECESSARY, CALL ARIZONA811 BY DIALING 811 or 602-263-1100, TWO
- (2) WORKING DAYS BEFORE EXCAVATION BEGINS. 28. EXCAVATIONS SHALL COMPLY WITH REQUIREMENTS OF OSHA EXCAVATION STANDARDS (29 CFR,
- PART 1926, SUBPART P). UNDER NO CIRCUMSTANCES WILL THE CONTRACTORS BE ALLOWED TO WORK IN A TRENCH LOCATED WITHIN THE TOWN'S RIGHT-OF-WAY WITHOUT PROPER SHORING OR EXCAVATION METHODS.
- 29. PERMIT HOLDER SHALL POST A 6 SQUARE FOOT (2'X3') IDENTIFICATION SIGN, MADE OF DURABLE MATERIAL, IN THE FRONT YARD OF SUBJECT PROPERTY AND NOT IN THE TOWN'S RIGHT-OF-WAY. THE SIGN MAY NOT EXCEED A MAXIMUM OF 6 FEET IN HEIGHT FROM GRADE TO TOP OF THE SIGN. THE SIGN MUST INCLUDE THE PERMITTEE OR COMPANY NAME, PHONE NUMBER. TYPE OF WORK. ADDRESS OF PROJECT AND TOWN CONTACT NUMBER. 480-348-3556.
- 30. WHEN DEEMED NECESSARY, A 6-FOOT HIGH CHAIN LINK FENCE MUST BE INSTALLED AROUND THE CONSTRUCTION AREA TO PREVENT ANY POTENTIAL SAFETY HAZARD FOR THE PUBLIC. THE FENCE SHALL BE SETBACK AT LEAST 10 FEET FROM ALL RIGHTS-OF-WAY AND HAVE A 50-FOOT STREET CORNER SITE TRIANGLE WHERE APPLICABLE
- 31. CLEAR ACCESS FOR NEIGHBORING PROPERTIES AND EMERGENCY VEHICLES MUST BE MAINTAINED AT ALL TIMES. CONSTRUCTION RELATED VEHICLES MUST BE LEGALLY PARKED ONLY ON ONE SIDE OF THE STREET OR JOB SITE PROPERTY.
- 32. ALL CONSTRUCTION DEBRIS AND EQUIPMENT MUST BE CONTAINED ON SITE AT ALL TIMES. CONTRACTOR AND PROPERTY OWNER MUST MAINTAIN THE JOB SITE FREE OF LITTER AND UNSIGHTLY MATERIALS AT ALL TIMES. CONSTRUCTION MATERIALS ARE PROHIBITED IN THE TOWN'S RIGHT-OF-WAY.
- 33. CONSTRUCTION ACTIVITIES ARE PERMITTED BETWEEN THE HOURS OF 7 AM AND 5 PM MONDAY THROUGH CONSTRUCTION ACTIVITIES MAY START ONE (1) HOUR EARLIER DURING THE SUMMER (MAY 1ST THROUGH SEPTEMBER 30TH).
- 34. THE USE AND OPERATION OF FUEL-FIRED GENERATORS IS PROHIBITED UNLESS DUE TO A HARDSHIP. TOWN APPROVAL SHALL BE REQUIRED.
- 35. THE CONTRACTOR AND PROPERTY OWNER SHALL BE LIABLE FOR ANY DAMAGE DONE TO ANY PUBLIC PROPERTY AS A RESULT OF ANY CONSTRUCTION OR CONSTRUCTION RELATED ACTIVITIES. NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED UNTIL ALL AFFECTED RIGHTS-OF-WAY ARE CLEANED AND/OR REPAIRED TO THEIR ORIGINAL CONDITION AND UNTIL ANY AND ALL DAMAGES TO AFFECTED PROPERTIES ARE RESTORED TO ORIGINAL CONDITION.
- 36. A KEYED SWITCH SHALL BE REQUIRED ON ALL NEW AND EXISTING ELECTRIC ENTRY GATES. THE KEYED SWITCH SHALL BE INSTALLED IN A LOCATION THAT IS READILY VISIBLE AND ACCESSIBLE. KNOX BOX ORDER FORMS ARE AVAILABLE AT THE TOWN'S BUILDING SAFETY DEPARTMENT.
- 37. PROPERTY OWNER. BUILDER, OR GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR CONTROLLING DUST FROM THE SITE AT ALL TIMES. ALL MEANS NECESSARY SHALL BE USED BY THE BUILDER OR GENERAL CONTRACTOR TO CONTROL THE EXISTENCE OF DUST CAUSED BY ANY EARTHWORK, SPRAY APPLICATION OF MATERIALS, OR OTHER DUST-CAUSING PRACTICES REQUIRED BY THE CONSTRUCTION PROCESS.
- 38. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT THE TOWN FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, HEALTH, SAFETY, OR OTHER DESIGN ISSUES.
- 39. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTION DITCHES, PIPES PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT PROPOSED AND EXISTING IMPROVEMENTS FROM RUNOFF OR DAMAGE FROM STORM WATER, MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS.

## **ENGINEERS NOTES**

- 1. MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR
- 2. ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE
- . GRADING SHALL BE IN CONFORMANCE WITH 2018 IBC SEC. 1803 AND APPENDIX J.
- 4. 5% MINIMUM SLOPE AWAY FROM BUILDING FOR A MINIMUM 10', U.N.O. 5. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.)
- SPECIFICATIONS AND STANDARD DETAILS.
- POLLUTION CONTROL REGULATIONS, AS AMENDED, IS REQUIRED.
- A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION. 8. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM
- THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
- OR PROPERTY FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO BUILDING CONSTRUCTION. 10. ALL STRUCTURES AND LANDSCAPING WITHIN THE SIGHT VISIBILITY TRIANGLE SHALL HAVE A 2 FOOT
- MAXIMUM HEIGHT. 11. ALL PATIOS, WALKS, AND DRIVES TO SLOPE AWAY FROM BUILDING AND GARAGES AT A MINIMUM SLOPE OF 1/4" PER FOOT UNLESS SPECIFIED OTHERWISE. ALL LAWN AREAS ADJOINING WALKS OR SLABS WILL BE
- MINUS 6" BELOW FINISHED FLOOR UNLESS SPECIFIED OTHERWISE. 12. ALL MATERIAL TO BE UNDER SLABS AND WALKS SHALL BE COMPACTED TO NOT LESS THAN 95% PER ASTM
- D698. 13. THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO
- BY THIS PLAN.
- COMPLETE ALL WORK COVERED BY THIS PLAN. 15. THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY CONCERNS ASSOCIATED
- FI SFWHFRF 16. A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO
- CALL 48 HOURS IN ADVANCE FOR BLUE STAKE (1-800-STAKE-IT) PRIOR TO ANY EXCAVATION. 17. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE
- COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK. 18. ALL PAVING, GRADING, EXCAVATION, TRENCHING, PIPE BEDDING, CUT, FILL AND BACKFILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS.
- 19. THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS
- 20. CONTRACTOR TO VERIFY AND COORDINATE ALL DIMENSIONS AND SITE LAYOUT WITH ARCHITECTURE'S FINAL SITE PLAN AND FINAL BUILDING DIMENSIONS BEFORE STARTING WORK. REPORT DISCREPANCIES TO OWNER'S AGENT.
- 21. COORDINATION BETWEEN ALL PARTIES IS ESSENTIAL PART OF CONTRACT. 22. CONTRACTOR IS RESPONSIBLE FOR PROJECT AND SITE CONDITIONS. AND TO WORK WITH WEATHER CONDITIONS AS THE PROJECT SITE MAY BE LOCATED IN A FLOOD PRONE AREA AND SUBJECT TO FLOODING AND ITS HAZARDS.
- 23. THE CONTRACTOR IS TO VERIFY THE LOCATION, ELEVATION, CONDITION, AND PAVEMENT CROSS-SLOPE OF ALL EXISTING SURFACES AT POINTS OF TIE-IN AND MATCHING, PRIOR TO COMMENCEMENT OF GRADING, DESIGN INTENT REFLECTED ON THESE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH
- CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED. 24. CONTRACTOR IS RESPONSIBLE TO COORDINATE UTILITY CROSSINGS AT CULVERT CROSSINGS BEFORE CONDUITS ARE IN PLACE BEFORE STARTING CULVERT WORK.
- 25. ALL ON-SITE UTILITIES PER OTHERS. 26. THIS PROJECT REQUIRES A REGULAR ONGOING MAINTENANCE PROGRAM FOR THE DESIGNED DRAINAGE
- 27. IF A DISCREPANCY IS FOUND BETWEEN ENGINEER'S PLAN OR SURVEYOR'S STAKING AND THE ARCHITECTURAL PLAN. ENGINEER SHALL BE NOTIFIED IMMEDIATELY. FAILURE TO NOTIFY ENGINEER SHALL NEGATE ENGINEER'S LIABILITY.
- 28. ALL DISTURBED AREAS ARE TO BE ROPED AND ROPING MUST MATCH PLAN. 29. VEGETATION OUTSIDE OF CONSTRUCTION AREA TO REMAIN. 30. AREAS OUTSIDE THE WALL AND CUT AND FILL SLOPES SHALL BE REVEGETATED WITH SIMILAR PLANT TYPES
- ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- 32. ANY FUTURE IMPROVEMENTS SHOWN HEREON SHALL REQUIRE A SEPARATE PERMIT.
- 33. ANY POINTS OF DRAINAGE CONCENTRATION SHOULD BE PROTECTED AGAINST EROSION WITH NATIVE STONE. 34. THIS PLAN IS DESIGNED TO SHOW SITE GRADING AND DRAINAGE CONTRACTOR SHALL USE THE
- ARCHITECTURAL SITE PLAN TO DETERMINE FINAL HOUSE, WALL, STEP, ETC., LOCATIONS AND ELEVATIONS. 35. ALL DRAINAGE FACILITIES TO BE MAINTAINED BY HOMEOWNER.
- 36. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR SITE AND RETAINING WALLS LAYOUT, DIMENSIONS, AND TO BE DETERMINED AT TIME OF CONSTRUCTION AND TO BE A MINIMUM OF SIX INCHES BELOW EXISTING NATURAL GRADE OR FINISHED GRADE WHICHEVER IS LOWER (TYPICAL).
- 37. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING LAYOUT, DIMENSIONS AND ELEVATIONS. 38. REFER TO STRUCTURAL DRAWINGS, DETAILS AND CALCULATIONS FOR ALL PROPOSED RETAINING WALLS.
- 39. FOR CHANGE IN ELEVATION THAT ARE GREATER THAN 30", PROVIDE 36" HIGH GUARDRAILS FOR TOTAL OF 42" FALL PROTECTION BARRIER U.N.O.
- 40. ALL WATER AND SEWER LINES AND CONNECTIONS MUST BE INSTALLED PER IPC 2018, MAG AND CITY OF PHOENIX SUPPLEMENT TO MAG.
- 42. ABANDONMENT OR REMOVAL OF EXISTING SEPTIC SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH SEPARATE PERMIT.
- 43. COORDINATE RIPRAP COLOR WITH LANDSCAPE PLANS AND DETAILS. 44. VERIFY AND COORDINATE WITH ARCHITECTURAL AND LANDSCAPE PLANS LOCATION AND HEIGHT OF ALL SITE WALLS.
- 45. DISTURBED AREA 0.503 < 1 ACRE; NPDES PERMIT IS NOT REQUIRED. 46. REFER TO ARCHITECTURAL PLANS AND DETAILS FOR DEMOLITION OF EXISTING BUILDING STRUCTURE, SITE
- WALLS AND PAVEMENT. 47. VERIFY AND COORDINATE WITH LANDSCAPE PLANS FINAL LOCATION AND GRATE TYPE OF SPECIFIED AREA
- DRAINS AND TRENCH DRAINS. 48. CONTRACTOR TO COORDINATE ALL ELEVATIONS OF RETAINING, FREE STANDING AND STEM WALLS WITH COORDINATION BETWEEN THE PROJECT STAKEHOLDERS.

LOCATED IN A PORTION OF THE N 1/2 OF THE SE 1/4 OF THE NE 1/4 OF SECTION 6, T.2N, R.4E OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THIS PLAN IN THEIR ENTIRETY. WITH THE M.A.G. STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL CITY OR TOWN UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.

6. A DUST CONTROL PLAN MEETING THE REQUIREMENTS OF RULE 310 OF THE MARICOPA COUNTY AIR

ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS. BARRIER WALLS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT ADJACENT BUILDINGS

GRADED TO 2" BELOW THE TOP OF SLAB. TYPICAL FINISHED GRADE AROUND PERIMETER OF BUILDING IS

ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED

14. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO

WITH THIS PROJECT DURING CONSTRUCTION, UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THIS PLAN OR

UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL

OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.

PAVING, CURB AND GUTTER, OR OTHER SURFACE CONSTRUCTION. SHOULD EXISTING LOCATIONS, ELEVATIONS, CONDITION, OR PAVEMENT CROSS-SLOPE DIFFER FROM THAT SHOWN ON THESE PLANS, RESULTING IN THE NOTIFY THE OWNER'S AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT

STARTING WORK ON CULVERT. COORDINATE WITH OWNER REPRESENTATIVE. VERIFY UTILITY LINES AND/OR

SYSTEM(S) TO PRESERVE THE DESIGN INTEGRITY AND THE ABILITY TO PERFORM ITS OPERATIONAL INTENT. FAILURE TO PROVIDE MAINTENANCE WILL JEOPARDIZE THE DRAINAGE SYSTEM(S)' PERFORMANCE AND MAY LEAD TO IT'S INABILITY TO PERFORM PROPERLY AND/OR CAUSE DAMAGE ELSEWHERE IN THE PROJECT.

AND DENSITIES FOUND ON THE SITE. REVEGETATION SHALL BE COMPLETED PRIOR TO OCCUPANCY AND THE

31. MECHANICAL EQUIPMENT SHALL BE SCREENED TO A MINIMUM OF ONE FOOT ABOVE TOP OF EQUIPMENT.

DETAILS. TOP OF FOOTING ELEVATIONS SHOWN IN PLAN ARE APPROXIMATE ONLY. ACTUAL TOP OF FOOTINGS

41. ALL PIPES AND FITTINGS SHALL BE INSTALLED PER MANUFACTURE'S SPECIFICATIONS AND DETAILS. THE MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT RULES AND STANDARDS, AND WILL REQUIRE

ARCHITECT, LANDSCAPE ARCHITECT AND STRUCTURAL ENGINEER. LDG ASSUMES NO LIABILITY FOR LACK OF

## I ECEND

۲	BRASS CAP FLUSH	
•	FOUND REBAR OR AS NOTED	
0	SET 1/2" REBAR & TAG OR AS NOTED	
0	CALCULATED POINT	
	PROPERTY LINE	
	EASEMENT LINE	
	MONUMENT LINE	
WM	WATER METER	
$\otimes$	WATER VALVE	
•	FIRE HYDRANT	
	CABLE TV RISER	
$\bigvee$	UTILITY VAULT	
£	MAILBOX	
T	CATV, PHONE	
S	SEWER LINE	
o	CHAINLINK FENCE	
🗆	WROUGHT IRON FENCE	
E	ELECTRIC LINE	
C	COMMUNICATIONS LINE	
G	GAS LINE	
1321	EXISTING CONTOUR	
$\sim$	EXIST. DRAINAGE FLOW	
12.12	EXIST. SPOT ELEVATION	
	TREE	
	SAGUARO	
	ASPHALT PAVEMENT	
φ 4 4 4 4	CONCRETE PAVEMENT	
	EXISTING DISTURBED AREA	

PROPOSED DISTURBED AREA DRAINAGE FLOW ARROW PROPOSED SPOT ELEVATION

> TOP OF WALL TOP OF RETAINING WALL FINISH GRADE BOTTOM OF WALL

PROPOSED CONTOUR

TOP OF FOOTING STORM DRAIN PIPE

CATCH BASIN RETAINING AGAINST BUILDING EXTENDED BUILDING STEM WALL  $\times$ 

# **ABBREVIATIONS**

XX.XX

—XX\_

TW: XX.XX

TRW: XX.XX

/FG:XX.XX

(BW:XX.XX

ŤF: XX.XX

and the and the and the

BUILDING SETBACK LINE BSL EXISTING GRADE EL, ELEV ELEVATION EDGE OF PAVEMENT ESMT EASEMENT EX. EXIST. EXISTING GUTTER, GAS INVERT INV MEASURED MARICOPA COUNTY RECORDER MCR MANHOLE MH P, PVMT PAVEMENT PUE PUBLIC UTILITY EASEMENT (R), REC. RECORDED RADIUS RIGHT OF WAY R/W TANGENT. TELEPHONE TC TOP OF CURB TPV TOWN OF PARADISE VALLEY TSW TOP OF STEM WALL W WEST, WATERLINE WDO WALL DRAINAGE OPENING WM WATER METER

# UTILITIES NOTES

HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLAN ARE APPROXIMATE ONLY AND WILL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK. CALL BLUE STAKE @ (602) 263–1100.

# UTILITIES

WATER: EPCOR WATER SANITARY SEWER: SEPTIC ELECTRIC: APS TELEPHONE: CENTURY LINK. COX COMMUNICATIONS NATURAL GAS: SOUTHWEST GAS CABLE TV: CENTURY LINK, COX COMMUNICATIONS

# **GRADING SPECIFICATIONS**

- 1. EXCAVATION AND GRADING OF THIS SITE IS CLASSIFIED AS "ENGINEERED GRAD PERFORMED ACCORDINGLY.
- 2. THE CONTRACTOR WILL RETAIN A SOILS ENGINEER DURING CONSTRUCTION TO CONCERNING PREPARATION OF GROUND TO RECEIVE FILLS, TESTING AND REQU SLOPES INCLUDING CUT SLOPES.
- COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601 AND PROVISIONS AS SE 4. BEARING MATERIALS FOR FILL UNDER RESIDENCE PAD IF NATIVE MATERIAL IS REMOVED THAT ARE IN EXCESS OF SIX INCHES. REMAINING MATERIAL MUST BE THAT CAN BE COMPACTED INTO A DENSE CONDITION. MAXIMUM PARTICLE SIZE . . . . . . . . . . . . . . . . . 6 INCHES
- 5. CUT-SLOPES: MAXIMUM ROCK CUT SLOPE TO BE 1.0 FEET HORIZONTAL TO 3.
- 6. FILL SLOPES: MAXIMUM FILL SLOPE TO BE 2.0 FEET HORIZONTAL TO 1.0 FEET 7. COMPACTION FILL MATERIAL MUST BE PLACED ON LEVELED BENCHES CUT INTO FILL IN HORIZONTAL LIFTS OF THICKNESS COMPATIBLE WITH THE COMPACTION OF 95 PERCENT OF THE MAXIMUM A.S.T.M. DENSITY AT THE OPTIMUM MOISTU PERTAINS TO ALL ENGINEERED STRUCTURAL FILL SUPPORTING STRUCTURES AN RETAINING WALLS. COMPACTION TEST RESULTS SHALL BE SUBMITTED TO THE VALLEY BUILDING AND SAFETY DEPARTMENT.
- 8. ANY RETAINING WALLS ADJACENT TO THE PROPERTY LINES WILL BE UNDER SOILS ENGINEER. THE DEVELOPER SHALL NOTIFY THE ADJOINING PROPERTY ON START OF CONSTRUCTION ON THESE WALLS PER SECTION 2903-B OF IBC. TH MEANS OF PROTECTION OF ADJACENT PROPERTY WHILE THIS WORK IS UNDER
- 9. ALL EXPOSED CUT AND FILL SHALL BE TREATED WITH AN APPROVED AGING A 10. NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL ALL HILLSIDE STIPU REQUIREMENTS ARE COMPLIED INCLUDING, BUT NOT LIMITED TO LANDSCAPING SAFETY AND ALL ONSITE AND OFFSITE IMPROVEMENTS.
- 11. ALL OUTDOOR LIGHTING SHALL BE IN CONFORMANCE WITH ARTICLE XXII OF 12. ALL EXCESS FILL MATERIAL SHALL BE REMOVED FROM THE SITE WITH NO NE 13. THE USE OF HYDRAULIC RAM HAMMERS, OR OTHER HEAVY EQUIPMENT USED
- MACHINERY WITH AUDIBLE BACK UP WARNING DEVICES SHALL BE LIMITED TO SUNRISE, WHICHEVER IS LATER, AND 6:00PM OR SUNSET, WHICHEVER IS EARL LIMITED WORK ON SATURDAY AND NO WORK ON SUNDAY OR LEGAL HOLIDAYS
- 14. CONSTRUCTION STAKING AND/OF FENCING SHALL BE PLACED AROUND THE CO UNDISTURBED NATURAL AREAS.

# TOWN OF PARADISE VALLEY HILLSIDE N

- A. NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL ALL HILLSIDE STIPULA REQUIREMENTS ARE COMPLIED INCLUDING, BUT NOT LIMITED TO LANDSCAPING, ( SAFETY, AND ALL ONSITE AND OFFSITE IMPROVEMENTS.
- B. ALL OUTDOOR LIGHTING SHALL BE IN CONFORMANCE WITH ARTICLE XXII OF THE
- C. ALL EXCESS FILL MATERIAL SHALL BE REMOVED FROM THE SITE WITH NO NEW
- D. THE USE OF HYDRAULIC RAM HAMMERS, OR OTHER HEAVY EQUIPMENT USED TO MACHINERY WITH AUDIBLE BACK UP WARNING DEVICES SHALL BE LIMITED TO US SUNRISE, WHICHEVER IS LATER, AND 6:00PM OR SUNSET, WHICHEVER IS EARLIED LIMITED WORK ON SATURDAY AND NO WORK ON SUNDAY OR LEGAL HOLIDAYS. EQUIPMENT CANNOT BE USED ON SATURDAYS WITHOUT A WAIVER FROM THE TO
- E. CONSTRUCTION STAKING AND/OR FENCING SHALL BE PLACES AROUND THE CON UNDISTURBED NATURAL AREA.
- F. ALL RETAINING WALLS SHALL NOT EXTEND MORE THAN 6 INCHES ABOVE THE MA OF DRIVEWAY RETAINING WALLS IN ACCORDANCE WITH 2207.VI.6).

# DRAINAGE STATEMENT

- 1. ULTIMATE STORM OUTFALL IS LOCATED NEAR THE SOUTHEASTERLY PROP. COF 2. PROPOSED DEVELOPMENT DOES NOT IMPACT DRAINAGE CONDITIONS OF ADJOI
- 3. EXISTING DRAINAGE PATTERNS ARE PRESERVED.
- 4. THE MINIMUM FINISH FLOOR ELEVATION SHOWN IS SAFE FROM INUNDATION DU
- EVENT IF CONSTRUCTED PER THE APPROVED CIVIL PLANS. 5. PROPOSED STORM DRAIN SYSTEM SHALL BE INSPECTED AND CLEANED FROM
- MAJOR STORM EVENT. 6. RIPRAP AND BOULDERS ARE SPECIFIED AT ALL POINTS OF DISCHARGE TO MIT
- CONCENTRATED FLOWS BACK TO SHEET FLOWS. 7. ON-SITE RETENTION IS PROPOSED FOR THE RUNOFF GENERATED BY THE ROC ARFA.

# DISTURBED AREA CALCULATIONS

AREA OF LOT: TOTAL FLOOR AREA: FLOOR AREA RATIO: (TOTAL FLOOR AREA/AREA OF LOT)	142,335 S.F (3.268 AC.) 7,724 S.F. 5.42% < 25%	CUT: CUT F <u>FILL:</u> NET C
BUILDING PAD SLOPE: VERTICAL: HORIZONTAL: ALLOWABLE NET DISTURBED AREA:	34.41% 57.00' 165.67' 14,290 S.F. (10.04%) 2 840 S.F. (2.00%)	all Q Estim/ Assum Own [ Base
EXISTING DISTORBED AREA: GROSS PROPOSED DISTURBED AREA: LESS TEMPORARY AREAS OF DISTURBANCE TO BE RESTORED AND REVEGETATED: LESS BUILDING FOOTPRINT AREA: PROPOSED NET DISTURBED AREA:	2,849 S.F. (2.00%) 24,298 S.F. 6,814 S.F. <u>5,111 S.F.</u> 12,373 S.F. (8.69%)	FIRE S THE R VALLE 904.2
TOTAL DISTURBED AREA: ALLOWED SLOPES STEEPER THAN NATURAL GRADE (5% MAX.): PROPOSED SLOPES STEEPER THAN NATURAL GRADE: VOLUME OF CUT:	15,222 S.F. (10.69%) 7,116 S.F. (5%) 1,974 S.F. (1.4%) 4,321 C.Y.	PR NEW NEW
VOLUME OF FILL: TOTAL CUT & FILL: HILLSIDE ASSURANCE = 35 TIMES THE GRAM \$161,245	<u>446 C.Y.</u> 4,767 C.Y. DING PERMIT FEE. =	<b>SH</b> C-1 C-2

\$161,245 GRADING PERMIT FEE: \$4,607 (\$142 FIRST 100 CY / \$95 EA. ADDITIONAL 100 CY).

ALL QUANTITIES LISTED ON THESE PLANS ARE ESTIMATES ONLY. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF THE QUANTITIES AND BASE THEIR BIDS ON THEIR ESTIMATES.

EA







'HE RE /ALLEY 04.2

GRADING" PER 2018 I.B.C. AND WILL BE TO INSPECT PROGRESS OF CONSTRUCTION. REQUIRED COMPACTION STABILITY OF ALL FINISH AS SET FORTH IN THE SOILS REPORT. IS USED. LARGE ROCK FRAGMENTS MUST BE	SEC.6 T2N R4E	PROJECT SITE MOONLIGHT LN CRYSTAL LN CRYSTAL LN	N.T.S. DATE: 04/21/22	D BY: NP JOB: 2101034	3Y: CM VERSION: 2.4	) BY: JI PLOT DATE: 04/21/22	NT GROUP, LLC. JUT THE WRITTEN RICTED TO THE ORIGINAL SITE FOR WHICH IT WAS PREPARED.
ST BE SMALLER PARTICLES OF SAND AND ROCK	NTS		SCALE: N	DESIGNEI	DRAWN E	CHECKED	. Land Developmen or in Part Withc g shall be restr
O 3.0 FEET VERTICAL PER GEOTECHNICAL STUDY. FEET VERTICAL. INTO UNDISTURBED EXISTING HILLSIDE. PLACE TION EQUIPMENT USED. COMPACT TO A MINIMUM ISTURE CONTENT OF ± TWO PERCENT. THIS IS AND INCLUDING FILL UNDER ANY OF THE THE SOILS ENGINEER AND TOWN OF PARADISE	OWNER MICHAEL P. CASKEY & MICHELLE D. CASKEY 7672 E SOLANO DR SCOTTSDLAE, AZ 85250	ARCHITECT DAVID DICK ARCHITECT, AIA, NCARB 7400 E. MCDONALD DRIVE, SUITE 122 SCOTTSDALE, AZ 85250 P: 480–945–1895 DD@DDARCHSTUDIO.COM	DATE:				s such shall remain property of Lication by any method in whole Rohibited. The use of this draming
R THE SCOPE OF SPECIAL INSPECTION BY THE Y OWNERS IN WRITING, TEN DAYS PRIOR TO C. THE DEVELOPER WILL HAVE TO PROVIDE DER CONSTRUCTION. NG AGENT TO MINIMIZE TO VISUAL CONTINUITY. STIPULATIONS AND ALL TOWN CODE PING, GROUND RESTORATION, FIRE FLOW, FIRE DF THE TOWN ZONING ORDINANCE.	SITE DATA           APN: $169-11-004C$ ADDRESS:         7602 N MOONLIGHT LN., PARADISE VALLEY, AZ 85253           ZONING: $R-43$ (HILLSIDE)           LOT AREA: $142,335$ S.F (3.267 AC.)           QS #: $24-34$	CIVIL ENGINEER LAND DEVELOPMENT GROUP, LLC 8808 N CENTRAL AVE, SUITE 288 PHOENIX, AZ 85020 CONTACT: NICK PRODANOV, PE P: 602-889-1984	SIONS:				wing is an instrument of service and as Rized use, reuse, reproductions, or pub on of land development group, llc is pr
A THE TOWN ZONING ONDINANCE. D NEW SPILL SLOPES. SED TO CUT THROUGH ROCK, INCLUDING TO USE BETWEEN THE HOURS OF 7: 00AM OR EARLIER, MONDAY THROUGH FRIDAY, WITH DAYS. HE CONSTRUCTION SITE SO AS TO PROTECT THE <b>NOTES</b> PULATIONS AND ALL TOWN CODE NG, GROUND RESTORATION, FIRE FLOW, FIRE THE TOWN ZONING ORDINANCE. NEW SPILL SLOPES. D TO CUT THROUGH ROCK, INCLUDING O USE BETWEEN THE HOURS OF 7: 00AM OR ARLIER, MONDAY THROUGH FRIDAY, WITH YS. RAM HAMMERS AND OTHER HEAVY E TOWN MANAGER. CONSTRUCTION SITE SO AS TO PROTECT THE	GEOTECHNICAL ENGIN VANN ENGINEERING 9013 NORTH 24TH AVE, STE 7 PHOENIX, AZ 85021 P: 602 943 6997 CONTACT: JEFFRY VANN DATE: JULY 20, 2021 PROJECT: 28503 BENCHMARK BASS CAP FLUSH AT THE INTERSECTION ROAD HAVING AN ELEVATION OF 1419.80 BASSIS OF BEARINGS THE SOUTH LINE LINE OF LOT 1, SECTION N89'45'40"E.	OF 48TH ST ALIGNMENT AND INDIAN BENI NAVD 88 DATUM, GDACS# 24521–2.	REVISI				THIS DRAW UNAUTHOR PERMISSION
HE MATERIAL THEY RETAIN (WITH EXCEPTION 2. CORNER AT ELEVATION OF 1514.99 ADJOINING LOTS. IN DURING A 100-YEAR PEAK RUN-OFF ROM DEBRIS AND SILT AFTER EVERY 0 MITIGATE EROSION AND TO CONVERT 2 ROOF, HARDSCAPE AND AUTO-COURT	THE WEST 706 FEET OF THE SOUTH 200 SECTION 6, TOWNSHIP 2 NORTH, RANGE 4 BASE AND MERIDIAN, MARICOPA COUNTY, EXCEPT ALL COAL AND OTHER MINERALS LAND.	FEET OF THE EAST 980 FEET OF LOT 1, EAST OF THE GILA AND SALT RIVER ARIZONA; AS SET FORTH IN THE PATENT OF SAID <b>MAP (FIRM) DATA</b> SUFFIX L DATE ZONE M5 X* E 0.2% ANNUAL CHANCE		<b>PARCEL NO. 169-11-004C</b>	7602 N MOONLIGHT LN.,	PARADISE VALLEY, AZ 85253	
EARTHWORK QUANTITIES         MI       4,288 C.K.         MI FROM PIPES:       33 C.K.         MI       446 C.Y.         MI TOUT:       3,843 C.K.         MI QUANTITIES LISTED ON THESE PLANS ARE       SIMATES ONLY. NO SHRINK OR SWELL IS         SSUMED. THE CONTRACTOR SHALL MAKE THEIR       SUMED. THE CONTRACTOR SHALL MAKE THEIR         MI DETERMINATION OF THE QUANTITIES AND       SAE THEIR BIDS ON THEIR ESTIMATES.         FIRE SPRINKLER SYSTEM TO BE INSTALLED PER       MI ACCORDANCE WITH I.B.C. SECT.         MI SUMED. AND 2015 IFC, SEC. 903.       SAE DESTIMATES ON THEIR ESTIMATES.         MI SUMELE FAMILY RESIDENCE, NEW DRIVEWAY,       MI SINGLE FAMILY RESIDENCE, NEW DRIVEWAY,         MI SINGLE FAMILY RESIDENCE, NEW DRIVEWAY,       MI SINGLE FAMILY RESIDENCE, NEW DRIVEWAY,         MI SINGLE FAMILY RESIDENCE, NEW DRIVEWAY,       MI SINGLE FAMILY RESIDENCE, NEW DRIVEWAY,         MI SINGLE FAMILY RESIDENCE, NEW DRIVEWAY,       MI SINGLE FAMILY RESIDENCE, NEW DRIVEWAY,	AB-BUILT CERTIFICA I HEREBY CERTIFY THAT THE "RECORD D HEREON WERE MADE UNDER MY SUPERVITHE BEST OF MY KNOWLEDGE AND BELIE REGISTERED ENGINEER/ LAND SURVEYOR REGISTRATION NUMBER I HEREBY CERTIFY THAT FINISHED FLOOR 1547.00 AND 1536.40 ARE MINIMUM OF ELEVATION OF 1535.40 ACCORDING TO T ORDINANCE. REGISTERED CIVIL ENGINEER  APPROVAL THIS SET OF PLANS HAS BEEN REVIEWED PARADISE VALLEY REQUIREMENTS PRIOR T NEITHER ACCEPTS NOR ASSUMES ANY LIA COMPLIANCE APPROVAL SHALL NOT PREVI CORRECTIONS OF ERRORS OR OMISSIONS OF LAWS OR ORDINANCES.	RAWING" MEASUREMENTS AS SHOWN SION OR AS NOTED AND ARE CORRECT TO F. DATE DATE FICATION ELEVATIONS SHOWN ON THE PLAN OF 12" ABOVE THE 100-YEAR STORM HE TOWN OF PARADISE VALLEY CODE OF FOR COMPLIANCE WITH TOWN OF O ISSUANCE OF PERMIT. THE TOWN BILITY FOR ERRORS OR OMISSIONS. THIS ENT THE TOWN ENGINEER FROM REQUIRING IN THE PLANS TO BE FOUND IN VIOLATION			P 0UZ 000 1904   F 0UZ 000 1904   F 0UZ 445 9402 8808 N CENTRAL AVE., SUITE 288 PHOFNIX A7 85020	DEVELOPMENT GROUP PHOENIX@LDGENG.COM	
C-1 COVER SHEET C-2 OVERALL SITE PLAN C-3 IMPROVEMENT PLAN	TOWN ENGINEER TOWN OF PARADISE VALLEY	DATE Contact Arizona 811 at least two full working days before you begin excavation					A LINDER

**C-1** 

OF **3** 

Call 811 or click Arizona811.com



ID NUMBER	MAX. HEIGHT	LENGTH	VISIBLE WALL LENGTH			
	FT	FT	A	В	С	D
1	5.5	19.33	19.33	19.33		
2	5.5	28.83	28.83	28.83		
3	6	61.67	61.67	61.67		
4	4	12.50	12.50	12.50		
5	4	25.67	25.67	25.67		
6	5.67	18.50		18.50		
7	5.67	8.75		8.75		
8	5.67	19.67		19.67		
9	5.67	7.75		7.75		
10	5.67	84.50			84.50	84.50
11	5.67	43.00			43.00	43.00
12	5.67	58.67			58.67	58.67
13	5.67	15.83	15.83			
14	6	66.50	66.50	66.50		
15	4.83	27.50	27.50	27.50		
TOTAL		498.67	257.83	296.67	186.17	186.17







DATE. Scale. Revisioi

A RESIDENCE FOR: **RESIDENCE** OONLIGHT LANE VALLEY, AZ 85253

A CUSTOM R CASKEY F 7602 N. MOO Paradise va

SHEET NUMBER

AE1











05.18.2022 AS NOTED DATE. Scale. Revisio






VERIFY	ALL HEIGHT ELEVATION INFORMATIC
C:	TOP OF CONC
D:	TOP OF DECK
P:	TOP OF PAVING/ PAVERS
FF:	FINISH FLOOR
FG:	FINISH GRADE (ON HIGHER SIDE
NG:	NATURAL GRADE
BW:	BOTTOM OF WALL
TR:	TOP OF RAILING
ΤW:	TOP OF WALL
TRUL	TOP OF PETAINING IIIALI







			ATIONS
DIJIURDED	AREA	CALCUL	AIIONG

AREA OF LOT:	142,335 S.F. (3.268 AC.)
FLOOR AREA RATIO:	7,724 / 142,335 S.F = 5, 42%
BUILDING PAD SLOPE:	34. 41% VERTICAL: 57' HORIZONTAL: 165. 67'
ALLOWABLE NET DISTURBED AREA:	14,290 S.F. (10. 04%)
EXIST. DISTURBED AREA:	2,849 S.F. (2%)
GROSS PROPOSED DISTURBED AREA:	24,298 S.F.
LEGG TEMP. AREAG OF DIGTURBANCE TO REGTORED & REVEG,:	BE 6,814 S.F.
LESS BLDG. FOOTPRINT AREA	5,111 S.F.
PROPOSED NET DISTURBED AREA:	12,373 G.F. (8. 69%)
TOTAL DISTURBED AREA:	15,2226.F. (10. 69%)
ALLOWED SLOPES STEEPER THAN NATURAL GRADE (5% MAX.):	7,116 SF. (5%)
PROPOSED SLOPES STEEPER THAN NATURAL GRADE:	1,974 S.F. (1, 4%)
/OLUME OF CUT:	4,321 C.Y.
/OLUME OF FILL:	446 C.Y.

	NEW	RESIDENCE	LIVABLE-	MAIN LEVE
2.	NEW	RESIDENCE	LIVABLE-	LOWER LEV



## SYMBOL LEGEND:

MAIN LEVEL - LIVABLE

LOWER LEVEL - GARAGE, POOL EQ.





#### SITE PLAN NOTES:

WATER DIVERTED FROM ITS ORIGINAL DRAINAGE PATTERN SHALL BE RETURNED TO ITS ORIGINAL COURSE BEFORE LEAVING THE PROPERTY. GUARDRAILS TO BE 36" MINIMUM IN HEIGHT.

OPEN GUARDRAILS AND STAIR RAILINGS SHALL HAVE INTERMEDIATE RAILS OR AN ORNAMENTAL PATTERN

SUCH THAT A SPHERE 4 INCHES IN DIAMETER CANNOT PASS THROUGH.

NOTICE TO ALL CONTRACTORS AND SUBCONTRACTORS: PROTECT NATURAL VEGETATION, TERRAIN, ROCKS, ETC. FROM STUCCO, PAINT, ROOFING FOAM, OR OTHER DAMAGE BY COVERING WITH PLASTIC OR AS REQUIRED. PROVIDE A 5'-0" HIGH CHAIN LINK FENCE WITHIN BUILDING ENVELOPE (N.A.O.S. WHEN APPLICABLE). KEEP MATERIALS AND WORKMEN WITHIN THE FENCE TO PREVENT DAMAGE TO NATURAL TERRAIN AND VEGETATION. THE COST OF RECLAIMING OR REPAIRING ANY DAMAGE DUE TO NEGLIGENCE WILL BE AT THE CONTRACTOR'S/SUBCONTRACTOR'S EXPENSE.

VERIFY PROPERTY AND BUILDING LINES AND FINISH FLOOR ELEVATIONS PRIOR TO CONSTRUCTION. CONFIRM THAT ALL UTILITIES (SEWER, ELECTRIC, WATER) ARE LOCATED AS SHOWN AND THAT SEWER TAP IS LOW ENOUGH TO SERVE ALL PLUMBING DRAINS.

DRAWINGS ARE NOT TO BE SCALED. BUILD FROM DIMENSIONS INDICATED. VERIFY ALL DIMENSIONS. NOTIFY ARCHITECT OF ANY CONFLICTS.

IS REAGONABLY VISIBLE TO ENABLE EMERGENCY VEHICLES TO LOCATE THE RESIDENCE. AREAS DISTURBED DURING CONSTRUCTION OF DRAINAGE FACILITIES OR UTILITY (SEWER, WATER, ELECTRIC,

ETC.) TRENCHES SHALL BE REGTORED TO THEIR NATURAL STATE. ALL AREAS BETWEEN THE CONSTRUCTION FENCE AND ANY BUILDING OR SITE WALLS SHOULD BE

RELANDSCAPED TO BECOME INDISTINGUISHABLE FROM ADJACENT UNDISTURBED NATURAL DESERT AREA. ANY CACTUS DUG UP ON THE SITE MUST BE REPLACED WITH THE SAME ORIENTATION. MARK THE COMPASS HEADING ON THE CACTUS PRIOR TO REMOVAL.

FINISH GRADE SHALL BE A MINIMUM OF 6 INCHES BELOW WOOD FRAMING AT BUILDING EXTERIOR. SLOPE FINISH GRADE FOR AN ADDITIONAL 6 INCHES AWAY FROM BUILDING FOR A 10'-0" HORIZONTAL DISTANCE.

EVERY EFFORT IS MADE TO PROVIDE COMPLETE AND ACCURATE INFORMATION. IF THERE IS ANY CONFLICTING INFORMATION OR OMISSIONS IN THE WORKING DRAWINGS OR SUPPLEMENTAL DOCUMENTS, IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE ARCHITECT FOR A RESOLUTION. ALL WATER FEATURES WILL REQUIRE SEPRATE PERMIT.





- NEW RESIDENCE LIVABLE- MAIN LEVEL
  NEW RESIDENCE LIVABLE- LOWER LEVEL
  NEW GARAGE UNDER BUILDING- LOWER LEVEL
  NEW GARAGE UNDER DECK- LOWER LEVEL
  NEW POOL EQUIPMENT IN POOL EQUIPMENT ROOM AT LOWER LEVEL UNDER POOL
  LOWER LEVEL PATIO
  NEW SES 600 AMP, SEE ELECTRICAL. A PERMANENT CERTIFICATE SHALL BE COMPLETED & POSTED IN OR ON THE ELECTRICAL DISTRIBUTION PANEL BY THE BUILDER OR REGISTERED DESIGN PROFESSIONAL PER CODE
- CODE

- PANEL BT THE BUILDER OR REGISTERED DESIGN PROFESSIONAL PER CODE
  NEW GAS METER, SEE PLUMBING
  NEW WATER METER WITH SERVICE LINE, SEE PLUMBING
  MASONRY SITE WALL, SEE STRUCT. FOR REINFORCING, SEE SHEET DAI, DISTURBED AREA SITE PLAN FOR RETAINING WALL VISIBLE FROM PROPERTY CORNERS CALCULATIONS
  DRIVEWAY PAVING, COLOR AND SIZE BY ARCHITECT & OWNER
  CONCRETE PAVERS, OVER TERMITE TREATED SOIL
  STORM DRAIN PIPE, SEE CIVIL
  STORM DRAIN RETENTION PIPE, SEE CIVIL
  STORM DRAIN INLET, SEE CIVIL
  STORM DRAIN INLET, SEE CIVIL
  SLOTTED DRAIN, SEE CIVIL
  DRY WELL, SEE CIVIL
  FIRE TRUCK ACCESS, VERIFY WITH TOWN OF PARADISE VALLEY
  EXISTING DRIVEWAY, PROTECT DURING CONSTRUCTION
  EXISTING ASPHALT STREET, PROTECT DURING CONSTRUCTION
  NEW MAIL BOX
  SEPTIC SYSTEM

# HITECT SUITE 122 ARIZONA 85250 CONSTRUCTION ΰ CK, AR 3 0 Ο Ž AR **LIMIN** Ш

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EXPIRES: 3/31/2@24

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BUILDING	DATA		
PROJECT ADDRESS:			
1602 N. MOONLIGHT LN. PARADISE VALLEY, AZ 85253			
OWNER:			
CASKEY MICHAEL P / MICHELLE D 1612 E. SOLANO DR. SCOTTSDALE, AZ 85250			
APN*			
169-11-004C			
LEGAL DESCRIPTION			
SEE SURVEY			
ZONING:			
R-43			
NET LOT AREA:			
142,335 S.F. (SURVEY)			
BUILDING: AREA:	TOTAL AREA	FOOTPRINT	
A: LIVABLE - MAIN LEVEL B: LIVABLE - LOWER LEVEL	4,306 S.F. 725 S.F.	4,306 S.F.	
TOTAL LIVABLE (MAIN & LOWER LEVEL):	5,Ø31 S.F.	-	
C: MECHANICAL - MAIN LEVEL D: MECHANICAL - MAIN LEVEL (ABY GARAGE) E: GARAGE - LOWER LEVEL UNDER BLDG. F: GARAGE - LOWER LEVEL UNDER DECK G: POOL EQUIPMENT - LOWER LEVEL H: COV. PATIO - MAIN LEVEL J: OVERHANGS	24 6F. 21 6F. 663 6F. 652 6F. 129 6F. 445 6F. 680 6F.	24 SF. 652 SF. 129 SF.	
TOTAL BLDG. FOOTPRINT:		5,111 S.F.	
TOTAL BLDG, AREA (A THRU J)	7,724 S.F.		
TOTAL LOT COVERAGE CALCULATIONS:			
LOT COVERAGE ALLOWED: 25% LOT COVERAGE PROPOSED: 5, 42% = (1,124 S.F. FLOOR AREA / 142,335 S.F. LOT)			
DESCRIPTION OF WORK:			
NEW RESIDENCE. FIRE SPRINKLERS REQUIRED, UND	ER SEPARATE PERMIT		





SHEET NUMBER

A1.2







RETAINING WALL LEGEND						
	HEIGHT	WALL	VISABLE WALL LENGTH			
$\sim$			А	В	С	D
RI	5.5'	19.33'	19.33'	19.33'		
R2	5.5'	28.83'	28.83'	28.83'		
R3	6'	61.67'	61.67'	61.67'		
R4	4'	12.5'	12.51	12.5'		
R5	4'	25.67'	25.67'	25.67'		
R6	5.67'	18.5'		18.5'		
RT	5.67'	8.75'		8.75'		
R8	5.67'	19.67'		19.67'		
R9	5.67'	1.75'		7.75'		
RIØ	5.67'	84.5'			84.5'	84.5'
RII	5.67'	43'			43'	43'
R12	5.67'	58.67'			58.67'	58.67'
R13	5.67'	15.83'	15.83'			
R14	6'	66.5'	66.5'	66.5'		
R15	4.83'	27.5'	27,5'	27.5'		
TOTAL		498.67'				
TOTAL V	/ISIBLE		257.83'	296.67'	186.17'	186.17'

























4" CONCRETE SLAB ON - 4" A.B.C. FILL OVER TERMITE TREATED SOIL

SCALE: 1/2"=1'-Ø"





SCALE: 1"=10'-0" 0 10 20 30

NORTH



PRODUCT DETAILS Featuring a bronze finish, this Kore square cylinder ADA compliant dark sky energy-efficient LED outdoor wall light by Hinkley boasts decorative personality. With an etched dark lens, this fixture is crafted for elegance from top to bottom. The aluminum construction is fitting for outdoor use in any setting.

∧ OTHER OPTIONS 7 1/2" high x 5 1/4" wide. Extends 4" from the wall. Backplate is 5 1/4" wide. Weighs 2 Built-in dimmable 5 watt LED module: 300 lumen light output, comparable to a 35 watt incandescent. 3000K color temperature. 80 CRI. Dimmable with electronic low voltage dimmer, or LED rated dimmer. Kore square cylinder ADA compliant dark sky energy-efficient LED outdoor wall light by Hinkley. Bronze finish; aluminum construction. Etched glass lens. Dark sky compliant.

Kore 7 1/2"H Bronze Square Dark Sky LED

Outdoor Wall Light - Style # 38A39

< Go Back

#### EXTERIOR WALL SCONCE

BULB: 5W , 300 LUMENS TOTAL FIXTURES: 11 LIGHT FIXTURES TOTAL LUMENS: 3300 LUMENS

#### > EXTERIOR RECESSED CAN

BULB: 5W, 300 LUMENS TOTAL FIXTURES: 14 LIGHT FIXTURES TOTAL LUMENS: 4200 LUMENS

NOTE: ALL EXTERIOR LIGHTING WILL COMPLY WITH SECTION 2208 OF THE TOWN ZONING ORDINANCE



EXPIRES: 3/31/2@24

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### FLOOR PLAN KEYNOTES: CMU WALL, SEE DIMENSIONAL FLOOR PLAN FOR THICKNESS AND STRUCTURAL FOR REINFORCING. ADHERED DECORATIVE STONE VENEER ON CMU 2x FURRING WHERE INDICATED , SEE STRUCTURAL FOR REINFORCING SEE ONE-KOTE STUCCO SYSTEM PER UES 382 ON STRUCTURAL EXTERIOR FRAME WALL - 2X6 FRAMING @ 16"O.C. W/ R-19 BATT INSULATION WESTERN ONE-KOTE STUCCO SYSTEM PER UES 382 ON 1" RIGID INSULATION ON 2 LAYERS OF #30 BUILDING PAPER ON PLYWOOD SHEATHING. SEE STRUCTURAL FOR ALL CONNECTIONS 6. ADHERED DECORATIVE STONE VENEER ON POLYMER MODIFIED MORTAR PER ASTM #CIGT0-13 ON BROWN COAT STUCCO ON EXPANDED METAL LATH ON 2 LAYERS #30 BUILDING PAPER OVER PLYWOOD SHEATHING ON 2x WOOD FRAME. SEE STRUCTURAL 2x FRAME WALL @ 16" O.C. SEE DIMENSIONAL FLOOR PLAN FOR THICKNESS TYPICAL SOUND WALL. SEE DETAIL 10/A8.1 PROVIDE 1-HOUR SEPARATION BETWEEN RESIDENCE AND GARAGE / MECHANICAL ROOMS, 5/8" " TYPE "X" GYPSUM BOARD @ ALL WALLS 4 CEILING 10. I HR FIRE RATED, SELF-CLOSING, SELF-LATCHING, TIGHT FITTING MECHANICAL UNIT - SEE MECHANICAL MECHANICAL UNIT ON CONCRETE PAD, SEE MECHANICAL PODIFIED MORTAR PER ASTIT "CIG 10-13 ON BROWN COAT STUCCO ON EXPANDED METAL LATH ON 2 LAYERS #30 BUILDING PAPER OVER PLYWOOD SHEATHING ON 2x WOOD FRAME. SEE STRUCTURAL POOL EQUIPMENT WATER HEATER ON GALVANIZED METAL LINER WITH DRAIN TO DAYLIGHT. PROVIDE T&P RELIEF VALVE TO DAYLIGHT @ +6" ABOVE FINISH GRADE AND 36" AWAY FROM ANY DOOR - SEE PLUMBING WATER PURIFICATION SYSTEM 600 AMP SES ELECTRIC PANEL, SEE ELEC. PROVIDE A PERMANENT CERTIFICATE IN PANEL 17. GAS METER 18. HOSE BIBB W/ BACKFLOW PREVENTOR AND SHUT OFF VALVE @ WATER ENTRANCE - SEE PLUMBING 19. HOSE BIBB ON LANDSCAPE LOOP 20. INDICATES FLOOR ABOVE INDICATES FLOOR ABOVE HANDRAIL AS PER R311.7.8 GUARDRAIL @ 36" ABOVE DECK, AS PER SECTION 16@1.1.1.1, SHALL BE ABLE TO RESIST A SINGLE CONCENTRATED LOAD OF #200 APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOAD TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. SEE STRUCTURAL 23. SITE WALL, STUCCO BOTH SIDES 24. CONCRETE STEPS, SEE STRUCTURAL 25. 4" CONCRETE SLAB OVER 4" A.B.C. ON TERMITE TREATED SOIL, SEE STRUCTURAL, SEE INTERIOR DESIGN FOR FINISH SURFACE 26. SMOKE DETECTOR - SMOKE ALARM TO BE PERMANENTLY WIRED, INTERCONNECTED WITH BATTERY POWERED BACK UP AND LOCATED 36 MIN. FROM A/C DUCT OPENINGS. COORDINATE W/ MECHANICAL. 27. CARBON MONOXIDE ALARM PER IRC 315.1 28. BASE CABINET @ +36" A.F.F. 29. UPPER CABINET 30. TALL CABINETRY 31. EXHAUST FAN, SEE MECHANICAL 32. HIGH-EFFICIENT TOILET, 1.3 OR LESS GALLON/FLUSH - PROVIDE 15" MIN. CLEAR SPACE ON EACH SIDE 33. LAVATORY 34. CONTROL VALVES, VERIFY EXACT LOCATION W/ OWNER PRIOR TO E A6 34. CONTROL VALVES, VERT EXAMPLE AND ADDRESS AND A ADDRESS AND A ADDRESS AND A ADDRESS AND A ADDRESS AND 36. CUSTOM TILED SLOPED SHOWER, BASE- ON BUILT UP REINFORCED MORTAR BED, ON "NOBLE" SINGLE SHEET MEMBRANE WATER PROOFING, FOLD CORNERS, MIN, 8' VERTICAL LAP, VERIFY FINAL FLOOR FINISH W/ OWNER. 31. TEMPERED GLASS SHOWER ENCLOSURE 38. INDICATES CHANGE IN CEILING HEIGHT 39. DRAIN TO DAYLIGHT 6" ABOVE GRADE/ PAVING, COORDINATE WITH AREA DRAIN. PROVIDE BRASS LAMBS TONGUE AT ROOF DRAIN TERMINATION 40. AREA DRAIN - COORDINATE WITH CIVIL GRADING AND DRAINAGE 41. FIRE PIT FIRE FII AREA DRAIN, COORDINATE W/ CIVIL ENGINEER PLANTER DRAIN, COORDINATE W/ LANDSCAPE DESIGN 2-4" PVC PIPES, COORDINATE W/ LANDSCAPE DESIGN CONCRETE PAVERS, COORDINATE W/ LANDSCAPE DESIGN EDGE OF POOL ABOVE GAA METER 41. GAS METER 48. RESIDENTIAL ELEVATOR, COORDINATE STRUCTURAL FRAMING REQUIREMENTS WITH STRUCTURAL ENGINEER 49. EDGE OF PATIO ABOVE 50. GARAGE CABINETRY, COORDINATE W/ INTERIOR DESIGN FOR STORAGE 51. CONTINUOUS FOUNDATION DRAIN. SEE DETAIL 4/A-1.5 52. CHANGE IN CEILING HEIGHT 53. DECK ABOVE 54. SITE GATE 55. PERMEABLE CONCRETE PAVER 56. EDGE OF STEM

![](_page_45_Figure_4.jpeg)

POOL EQUIPMENT ROOM FIN. FL. EQUALS 1534

POOL EQUIPMENT

	AREA DRAIN
ullet	POT DRAIN
$\oslash$	PLANTER DRAIN
++	HOSE BIBB
$\oslash$	SMOKE DETECTOR
$\mathbb{O}$	EXHAUST FAN
G	GAS VALVE
$\langle \Delta \rangle$	WINDOW CALLOUT, SEE SHEET A9
101	DOOR CALLOUT, SEE SHEET AS
$\bigotimes$	SECTION CALL OUT
C.O.	CARBON MONOXIDE DETECTOR
	ELEVATION CALL OUT
	RETURN AIR, SEE MECH.

![](_page_45_Figure_6.jpeg)

![](_page_46_Figure_0.jpeg)

![](_page_46_Figure_2.jpeg)

![](_page_46_Figure_3.jpeg)

![](_page_46_Figure_4.jpeg)

- WOOD FRAME. SEE STRUCTURAL 2x FRAME WALL @ 16" O.C. SEE DIMENSIONAL FLOOR PLAN FOR THICKNESS
- TYPICAL SOUND WALL. SEE DETAIL 10/A8.1 STRUCTURAL STEEL POST. SEE STRUCTURAL
- MECHANICAL UNIT SEE MECHANICAL INDICATES ROOF LINE
- HANDRAIL AS PER R311.7.8
- GUARDRAIL & JEER NJILLO GUARDRAIL & 36" ABOVE DECK, AS PER SECTION 1601.1.1.1, SHALL BE ABLE TO RESIST A SINGLE CONCENTRATED LOAD OF #200 APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP AND HAVE ATTACHMENT DEVICED AND DUPPOPTING ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOAD TO **E** APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. SEE STRUCTURAL 24"x24" STONE TILE ON PRE-FABRICATED METAL TRAYS ON BISON SELF 11. LEVELING PEDESTAL DECK SYSTEM ON 3 COATS 90 MIL ELASTOMERIC URETHANE POLYMER WITH AN INTEGRATED MEGH LAYER AND A SANGED O
- FINAL COAT ON PLYWOOD SHEATHING CONCRETE STEPS, SEE STRUCTURAL
- SOLID WOOD TREAD ON STEEL FRAME ON PRE-MANUF, 8x8 STEEL TUBE STRINGER, SEE STRUCTURAL 14. POOL UNDER SEPARATE PERMIT
- HOSE BIBB ON LANDSCAPE LOOP 15 16. SMOKE DETECTOR - SMOKE ALARM TO BE PERMANENTLY WIRED,
- INTERCONNECTED WITH BATTERY POWERED BACK UP AND LOCATED 36" MIN, FROM A/C DUCT OPENINGS, COORDINATE W/ MECHANICAL. CARBON MONOXIDE ALARM PER IRC 315.1 17
- 18. STACKED WASHER W/ RECESSED CONNECTIONS. VERIFY PROPER CLEARANCES W/ UPPER CABINET, FLOOR DRAIN UNDER WASHER, COORDINATE W/ PLUMBING
- 19. STACKED DRYER W/ RECESSED CONNECTIONS, VERIFY PROPER CLEARANCES W/ UPPER CABINET.
- 20. BASE CABINET @ +36" A.F.F. UPPER CABINET TALL CABINETRY
- ISLAND WITH SEATING, VERIFY FINAL DESIGN WITH OWNER 24. BUILT-IN MICROWAVE, COORDINATE WITH CABINET DESIGN
- 25. BUILT-IN OVEN, COORDINATE WITH CABINET DESIGN 26. REFRIGERATOR GEN. CONTRACTOR RESPONSIBLE FOR COORDINATING
- ELECTRICAL AND PLUMBING AS REQUIRED 27. FREEZER WITH ICE & WATER IN DOOR, GEN, CONTRACTOR RESPONSIBLE FOR COORDINATING ELECTRICAL AND PLUMBING AS REQUIRED
- 28. SINK W/ GARBAGE DISPOSAL 29. DISHWASHER - PROVIDE WATER HAMMER ARRESTOR 30. TRASH
- 48" WOLF GAS RANGE . EXHAUST FAN WITH CUSTOM HOOD LINER, 600 CFM, SEE MECHANICAL. COORDINATE VENT THRU ROOF LOCATION WITHIN PARAPET AREA, SEE ROOP F 🗲 PLAN COORDINATE DECORATIVE HOOD W/ INTERIOR DESIGNER 33. EXHAUGT FAN, SEE MECHANICAL
  34. HIGH-EFFICIENT TOILET, 1.3 OR LESS GALLON/FLUSH - PROVIDE 15" MIN.
- CLEAR SPACE ON EACH SIDE 35. LAVATORY 36. CONTROL VALVES, VERIFY EXACT LOCATION W/ OWNER PRIOR TO
- INSTALLATI*O*N 31. DECORATIVE TILE ON MUD SET BED ON DENSSHIELD TILE BACKER BOARD. ASTM \*C621. PROVIDE TILE (NONABSORBENT SURFACE) TO A HEIGHT OF 6 FEET ABOVE THE FLOOR MIN. VERIFY WITH OWNER 38. CUSTOM TILED SLOPED SHOWER, BASE- ON BUILT UP REINFORCED MORTAR
- BED, ON "NOBLE" SINGLE SHEET MEMBRANE WATER PROOFING, FOLD CORNERS. MIN. 8" VERTICAL LAP. VERIFY FINAL FLOOR FINISH W/ OWNER. 39. TEMPERED GLASS SHOWER ENCLOSURE 40. LINEN WITH ADJUSTABLE SHELVES
- 41. RECESSED STEP LIGHT, SEE ELEC. 42. TRENCH DRAIN-ZURN Z888-4 SLOTTED DRAIN SYSTEM
- 43. BBQ 44. CONCRETE COUNTER TOP AT BBQ AREA, COORDINATE W/ INTERIOR
- DESIGNER 45. DOORS WITH DIRECT ACCESS TO POOL SHALL SWING INWARD AWAY FROM POOL AND SHALL BE AUTOMATIC SELF-CLOSING AND SELF-LATCHING SYSTEM WITH RELEASE MECHANISM LOCATED AT 54" ABOVE FLOOR 46. EGRESS WINDOW- WINDOW SILL HEIGHT IS 44 INCHES MAX. ABOVE FINISH FLOOR AND 5. 1 SQ. FT. CLEAR NET OPERABLE AREA PER CODE
- 47. INDICATES CHANGES IN CEILING HEIGHT 48. DASH LINE INDICATES BLOCK OUT FOR FUTURE ELEVATOR. CONTRACTOR RESPONSIBLE TO COORDINATE REQUIRED STRUCTURAL AND ELECTRICAL REQUIREMENTS
- 49. EXHAUST HOOD ABOVE 50. ADHERED DECORATIVE CMU VENEER WITH HORIZ, RAKED JOINTS ON POLYMER MODIFIED MORTAR PER ASTM #CIG10-13 ON BROWN COAT STUCCO ON EXPANDED METAL LATH ON 2 LAYERS #30 BUILDING PAPER OVER PLYWOOD SHEATHING ON 2× WOOD FRAME. SEE STRUCTURAL METAL TRACK / THRESHOLD
- 52. WALL WITH CLEAR STORY ABOVE 53. DECK DRAIN
- 54. DOWNDRAFT EXHAUST FAN WITH INLINE MOTOR, SEE MECHANICAL. COORDINATE VENT THRU WALL LOCATION, INSTALL PER MANUF. SPECIFICATIONS . SUPPLY AIR, COORDINATE WITH MECHANICAL 55
- 56. RETURN AIR, COORDINATE WITH MECHANICAL 51. DECORATIVE CONCRETE CAP
- 58. TREAD AND RIGER DECORATIVE PORCELAIN TILE ON 3/4" MUDGET ON 1/8" RUBBER SOUND MATT ON 3 COATS 30 MIL. ELASTOMERIC URETHANE WATERPROOF MEMBRANE WITH AN INTEGRATED MESH LAYER AND A SANDED FINAL COAT, 8" LAP ON ALL VERTICAL SURFACES ON 1-1/8" PLYWOOD SUBFLOOR. 59. MECHANICAL YARD
- 60. GAS FIRE PIT RESIDENTIAL ELEVATOR. COORDINATE STRUCTURAL FRAMING 61
- REQUIREMENTS W/ STRUCTURAL ENGINEER 62. AREA OF HEATED FLOOR 63. KNEE SPACE @ DECK
- 64, 44" CHEF'S SINK
- 65. EDGE OF STEM 66. METAL THRESHOLD
- 67. LINE OF WALL ABOVE 68. INDICATES DRAINAGE PATTERN OF DECK BELOW, COORDINATE W/
- PEDESTAL DECK SYSTEM AND WATER PROOF MEMBRANE 69. GAS METER
- 10. ISOKERN MODULAR MASONRY FIRE PLACE, MAGNUM 48. PER ESR#2316 CUSTOM CUT AND REINFORCED, COORDINATE W/ INTERIOR DESIGNER PERMANENT GAS LOG PER ANSI 221.60B-2004
- LAMBS TONGUE FROM ROOF DRAIN ABOVE 13. AREA DRAIN COORDINATE W/ GRADE AND DRAINAGE
- 14. POOL GATE 15. POOL FENCE 16. AWING IN CEILING COORDINATE W/ ELECTRICAL

## SYMBOL LEGEND:

- AREA DRAIN
- $\mathbf{\bullet}$ POT DRAIN
- PLANTER DRAIN
- SMOKE DETECTOR
- P EXHAUST FAN
- G GAS VALVE
- $\langle A \rangle$ WINDOW CALLOUT, SEE SHEET A9.1
- 101 DOOR CALLOUT, SEE SHEET A9.1
- $\bigotimes$ SECTION CALL OUT
- C.O. CARBON MONOXIDE DETECTOR
- ELEVATION CALL OUT
- RETURN AIR, SEE MECH. لد \_\_ \_

## WALL LEGEND:

	EXTERIOR FRAME WALL - 2X6 FRAMING @ 16'O.C. W/ R-13 BATT INSULATION W/ WESTERN ONE-KOTE STUCCO SYSTEM PER UES 382 ON 1" RIGID INSULATION ON 2 LAYERS OF #30 BUILDING PAPER ON PLYWOOD SHEATHING. SEE STRUCTURAL FOR ALL CONNECTIONS
///////////////////////////////////////	NEW MASONRY WALL, SEE STRUCT. FOR

REINFORCING

NEW FRAME WALL- 2× FRAMING @ 16"O.C.

SOUND WALL

EXTERIOR FRAME WALL - 2×6 FRAMING @ 16'O.C. W/ R-19 BATT INSULATION W/ ADHERED DECORATIVE CMU VENEER ON POLYMER MODIFIED MORTAR PER ASTM #C1670-13 ON BROWN COAT STUCCO ON EXPANDED METAL LATH ON 2 LAYERS #30 BUILDING PAPER OVER PLYWOOD SHEATHING ON 2× WOOD FRAME, SEE STRUCTURAL

![](_page_46_Picture_63.jpeg)

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ROOF PLAN SCALE: 3/16" = 1'-0" NORTH

## ROOF PLAN KEYNOTES:

- I-INCH FOAM ROOF SYSTEM PER E9R-2532 ON PLYWOOD SHEATHING OVER ROOF FRAMING, SEE STRUCTURAL
   22-GAUGE PAINTED METAL FASCIA W/ GRACE ULTRA UNDERLAYMENT W/ MIN. 4" LAP ALL ENDS
   DECORATIVE COPPER ROOF SYSTEM ON GRACE ULTRA ICE 4 WATER SHIELD SELF-ADHESIVE ROOF UNDERLAYMENT PER ICC-ESR-1611

- UNDERLATMENT PER ICC-ESR-IGTT
  4. PARAPET
  5. LINE OF WALL BELOW
  6. STEEL COLUMN BELOW
  1. CHIMNEY WITH ADHERED DECORATIVE STONE VENEER ON POLYMER MODIFIED MORTAR PER ASTM \*CIGTØ-I3 ON BROWN COAT STUCCO ON EXPANDED METAL LATH ON 2-LAYERS \*30 BUILDING PAPER OVER PLYWOOD SHEATHING, SEE STRUCTURAL
  8. WALKING DECK
- 8. WALKING DECK
  9. STUCCOED PARAPET W/ CONTINUOUS BITUTHANE WRAP AT TOP AND SIDES W/ A MINIMUM 12 INCH LAP, ANCHOR AT SIDES ONLY
- 10. METAL GUARDRAIL AT 3'-0" ABOVE ADJACENT FINISH FLOOR CRICKET
- CRICKET
   EXHAUST FAN VENT THRU ROOF FROM BBQ. COORDINATE AND VERIFY LOCATION WITHIN PARAPET AREA. INSTALL PER MANUFACTURERS SPECIFICATIONS
   ROOF DRAIN W/ OVERFLOW, DAYLIGHT 4" ABOVE GRADE.
- COORDINATE DAYLIGHT WITH AREA DRAIN BELOW 14. GUTTER, MATCH FASCIA, PROVIDE RAIN CHAIN AT OUTLET, COORDINATE WITH AREA DRAIN/ SPLASH PAD BELOW
- 15. SPLASH PAD
- ID. SPLASH PAD
  IG. AREA DRAIN BELOW
  II. DECK DRAIN BELOW, SEE FLOOR PLAN
  IB. DECORATIVE METAL SHROUD
  IP. METAL TRELLIS OWNER AND ARCHITECT TO APPROVE FINAL DESIGN
  IP. DEPET WITH ADVERED DECORATIVE STONE VENEER 20. PARAPET WITH ADHERED DECORATIVE STONE VENEER ON POLYMER MODIFIED MORTAR PER ASTM \*CIG10-13 ON BROWN COAT STUCCO ON EXPANDED METAL LATH ON 2-LAYERS \*30 BUILDING PAPER OVER PLYWOOD
- SHEATHING, SEE STRUCTURAL 21. METAL SCUPPER, PAINTED. COORDINATE WITH
- TERMINATION LOCATION.
   PROVIDE A SPLASH PAD ON THE FOAM ROOF, COORDINATE WITH SCUPPER LOCATION OR LAMBS TOUGE
   COORDINATE SCUPPER TERMINATION WITH LANDSCAPE

![](_page_47_Figure_20.jpeg)

![](_page_47_Figure_21.jpeg)

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![](_page_47_Figure_22.jpeg)

## ROOF PLAN NOTES:

COVER ALL VENTS, PIPES, DRAIN PIPES, OR OTHER MISCELLANEOUS OPENINGS TO THE OUTSIDE WITH GALVANIZED METAL INSECT SCREEN TO PREVENT MIGRATION OF RODENTS AND INSECTS.

COORDINATE SPLASH BLOCK/ BOULDERS @ LANDSCAPE TO PREVENT EROSION @ GRADE BELOW ALL SCUPPERS

ALL ROOF CEILING INSULATION SHALL BE INSTALLED IN DIRECT CONTACT WITH ROOF DECK, PROVIDE OPEN CELL SPRAY FOAM "DEMILEC" PER ESR-2668 OR APPROVED EQUAL, NO ATTIC VENTILATION SHALL BE REQUIRED IN SUCH AREAS.

NO ROOF PENETRATION OF ANY TYPE ARE ALLOWED IN NON-PARAPETED FLAT ROOFS, COORDINATE W/ ARCHITECT ALL LOCATIONS FOR PLUMBING VENTS AND EXHAUST HOODS. PAINT ALL ROOF PENETRATIONS INCLUDING BUT NOT LIMITED TO VENTS, PIPES AND FLUES.

MINIMUM SLOPE REQU	JIREMENTS
1/4" PER FOOT SLOPE- MAIN ROOF 1/8" PER FOOT SLOPE IN VALLEY	
4' CRICKET	
4' 8'	RISE=  '  '/  /8' SLOPE= 8'
5'	RISE=   3/4"   1/4"/ 1/8" SLOPE= 10"
6'   '	RISE=   1/2"   1/2"/ 1/8" SLOPE= 12"
MAX. DISTANCE BETWEEN SCUPPERS	
4' CRICKET =1214' APART 5' CRICKET =1218' APART 6' CRICKET =122' APART	

![](_page_47_Picture_29.jpeg)

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![](_page_48_Figure_0.jpeg)

![](_page_48_Figure_1.jpeg)

![](_page_48_Figure_2.jpeg)

EXTERIOR ELEVATION NOTES: INSTALL SPRAYED FOAM ROOFING SYSTEM PER ESR\* 5379 OVER T&G PLYWOOD ROOF DECK SHEATHING BONDED W/ EXTERIOR GLUE, TAPE DECK JOINTS W/ ONE-LAYER OF 2-MIL. THICK ALUMINUM BACKED 2"

CONSTRUCT ROOF DECK WITH CRICKETS, AS REQUIRED TO SLOPE TO DRAINS AND SCUPPERS, MAINTAIN A MINIMUM OF 1/4" PER 12 INCH SLOPE AT ROOF \$ 1/8" PER FOOT MINIMUM @ CRICKET VALLEYS. INSTALL SPRAYED FOAM ROOFING SYSTEM UP

COVER ALL VENTS, PIPES, DRAIN PIPES, OR OTHER MISCELLANEOUS OPENINGS TO THE OUTSIDE WITH GALVANIZED METAL INSECT SCREEN TO PREVENT MIGRATION OF RODENTS AND INSECTS.

COORDINATE SPLASH BLOCK/ BOULDERS @ LANDSCAPE TO PREVENT EROSION @ GRADE BELOW

ALL ROOF CEILING INSULATION SHALL BE INSTALLED IN DIRECT CONTACT WITH ROOF DECK- PROVIDE OPEN CELL SPRAY FOAM "ICYNENE" PER ESR-1826. NO ATTIC VENTILATION SHALL BE REQUIRED IN SUCH

	MATERIAL	COLOR
	WALL STONE: VENEER	HIGHLAND SCOTCH CASTLE ROCK LRV 28
	STUCCO: (SAND FINISH)	DUNN EDWARDS DE 6215 "WOODEN PEG" LRV 31
	METAL ROOF & FASCIA	COPPER OLD PENNY LRV 30
	ALUMINUM DOOR / WINDOW:	DARK BRONZE ANODIZED LRV 8
III	HOLLOW METAL MECH, DOOR & JAMB:	DUNN EDWARDS DE 6215 "WOODEN PEG" LRV 31
TT	ALUMINUM GARAGE DOOR:	DUNN EDWARDS DET 695 "GRANGE HALL" LRV 19
G	NEGATIVE EDGE POOL TILE: NOBEL POOL TILE	MANSION NPMS 665 LRV 31
	SITE GATES: @ MECH, YARD	RUSTED STEEL HORIZONTAL PANELS DUNN EDWARD BURNS CAVE DE 6098
	STEPS	EXPOSED AGGREGATE CONCRETE STEPS LRV 32
	VIEW FENCE STEEL GUARDRAILS,	RUSTED STEEL DUNN EDWARD BURNS CAVE DE 6098 LRV 11
	ROOF MATERIAL & COLOR _	CEDAR BLEND LRV 26
	EXTERIOR SOFFITS (SYNTHETIC FINISH)	WALNUT T&G LRV 26
	FLAGSTONE TREADS	CHOCOLATE BROWN LRV 21
	CONCRETE PAVER	BELGARD DESERT LRV 22 HOLLAND SERIES
	ARTISTIC PAVER	LINEN GRAY LRV 21 LIMESTONE LOCK SERIES

1559 T.O. PARAPET

ALL MATERIAL AND COLOR SHALL BE LESS THAN 38 LRV

MAIN LEVEL F.F.

![](_page_48_Picture_26.jpeg)

![](_page_48_Figure_27.jpeg)

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![](_page_48_Picture_30.jpeg)

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![](_page_49_Figure_0.jpeg)

EXTERIOR ELEVATION NOTES: INSTALL SPRAYED FOAM ROOFING SYSTEM PER ESR\* 5373 OVER T&G PLYWOOD ROOF DECK SHEATHING BONDED W/ EXTERIOR GLUE, TAPE DECK JOINTS W/ ONE-LAYER OF 2-MIL, THICK ALUMINUM BACKED 2" WIDE TAPE.

CONSTRUCT ROOF DECK WITH CRICKETS, AS REQUIRED TO SLOPE TO DRAINS AND SCUPPERS. MAINTAIN A MINIMUM OF 1/4" PER 12 INCH SLOPE AT ROOF & 1/8" PER FOOT MINIMUM @ CRICKET VALLEYS. INSTALL SPRAYED FOAM ROOFING SYSTEM UP VERTICAL SURFACES OF ALL ROOF PENETRATIONS TO INSURE WATERPROOF INSTALLATION.

COVER ALL VENTS, PIPES, DRAIN PIPES, OR OTHER MISCELLANEOUS OPENINGS TO THE OUTSIDE WITH GALVANIZED METAL INSECT SCREEN TO PREVENT MIGRATION OF RODENTS AND INSECTS. COORDINATE SPLASH BLOCK/ BOULDERS @ LANDSCAPE TO PREVENT EROSION @ GRADE BELOW ALL SCUPPERS

ALL ROOF CEILING INSULATION SHALL BE INSTALLED IN DIRECT CONTACT WITH ROOF DECK- PROVIDE OPEN CELL SPRAY FOAM "ICYNENE" PER ESR-1826. NO ATTIC VENTILATION SHALL BE REQUIRED IN SUCH AREAS,

	MATERIAL	COLOR
	WALL STONE: VENEER	HIGHLAND SCOTCH CASTLE ROCK LRV 28
	STUCCO: (SAND FINISH)	DUNN EDWARDS DE 6215 "WOODEN PEG" LRV 31
	METAL ROOF & FASCIA	COPPER OLD PENNY LRV 30
	ALUMINUM DOOR / WINDOW:	DARK BRONZE ANODIZED LRV 8
	HOLLOW METAL MECH, DOOR & JAMB:	DUNN EDWARDS DE 6215 "WOODEN PEG" LRV 31
	ALUMINUM GARAGE DOOR:	DUNN EDWARDS DET 695 "GRANGE HALL" LRV 19
	NEGATIVE EDGE POOL TILE: NOBEL POOL TILE	MANSION NPMS 665 LRV 37
	SITE GATES: @ MECH, YARD	RUSTED STEEL HORIZONTAL PANELS DUNN EDWARD BURNS CAVE DE 6098
	STEPS	EXPOSED AGGREGATE CONCRETE STEPS LRV 32
	VIEW FENCE STEEL GUARDRAILS,	RUSTED STEEL DUNN EDWARD BURNS CAVE DE 6098 LRV 11
	ROOF MATERIAL & COLOR	CEDAR BLEND LRV 26
	EXTERIOR SOFFITS (SYNTHETIC FINISH)	WALNUT T&G LRV 26
	FLAGSTONE TREADS	CHOCOLATE BROWN LRV 21
P	CONCRETE PAVER	BELGARD DESERT LRV 22 HOLLAND SERIES
	ARTISTIC PAVER	LINEN GRAY LRV 21 LIMESTONE LOCK SERIES

ALL MATERIAL AND COLOR SHALL BE LESS THAN 38 LRV

![](_page_49_Figure_21.jpeg)

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![](_page_49_Picture_23.jpeg)

RESIDENCE FOR: RESIDENCE Jonlight Lane Valley, az 85253  $\stackrel{\bigcirc}{O}$  > A CUSIUM CASKEY 7602 N. MC Paradise

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![](_page_50_Picture_0.jpeg)

I - STREET VIEW

![](_page_50_Picture_2.jpeg)

4 - FRONT VIEW

![](_page_50_Picture_4.jpeg)

7 - AERIAL VIEW

![](_page_50_Picture_7.jpeg)

2 - STREET VIEW

![](_page_50_Picture_9.jpeg)

5 - SIDE VIEW

![](_page_50_Picture_11.jpeg)

8 - AERIAL VIEW

![](_page_50_Picture_13.jpeg)

![](_page_50_Picture_15.jpeg)

ALL MATERIAL AND COLOR SHALL BE LESS THAN 38 LRV

3 - SIDE VIEW

6 - REAR VIEW

![](_page_50_Picture_20.jpeg)

NORTH

# FOR CONSTRUCTION DAVID DICK, ARCHITECT 7400 E. MCDONALD DR., SUITE 122 NOT PRELIMINARY

EXPIRES: 3/31/2@24

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![](_page_50_Picture_25.jpeg)

![](_page_51_Figure_0.jpeg)

![](_page_51_Figure_3.jpeg)

![](_page_51_Figure_5.jpeg)

![](_page_51_Figure_6.jpeg)

- 10. WESTERN ONE-KOTE STUCCO SYSTEM PER UES 382 ON 1" RIGID INSULATION ON 2 LAYERS OF #30 BUILDING PAPER ON PLYWOOD
- 12. 2x FRAME WALL @ 16" O.C. SEE DIMENSIONAL FLOOR PLAN FOR

- IØ" HEAVY WOOLEN BATT INSULATION
   GUARDRAIL @ 36" ABOVE DECK, AS PER SECTION 1601.7.1.1, SHALL BE ABLE TO RESIST A SINGLE CONCENTRATED LOAD OF #200 APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOAD TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. SEE STRUCTURAL 26. 4" CONCRETE SLAB ON 4" A.B.C. FILL OVER TERMITE TREATED
- BITUTHENE, INSTALL PER MANUFACTURES INSTRUCTIONS 29. CONCRETE FOOTING, SEE STRUCTURAL
- 30. FOUNDATION DRAIN 31. POOL CONTRACTOR TO COORDINATE MIRA COAT XCL BLOK WITH

- 35. TAG WALNUT CEILING STAINED AND SEALED, COORDINATE W/ INTERIOR DESIGNER
- 36. POOL BY OTHERS UNDER SEPARATE PERMIT

- A. ALL ROOF CEILING INSULATION SHALL BE INSTALLED IN DIRECT CONTACT WITH ROOF DECK. PROVIDE OPEN CELL SPRAY FOAM 'DEMILEC' PER ESR-2668 OR APPROVED EQUAL, NO ATTIC VENTILATION SHALL BE REQUIRED IN SUCH AREAS
- B. AIR SEALING SHALL BE PROVIDED BETWEEN GARAGE \$ CONDITIONED SPACES, AS PER TABLE NII02,4,1 (R402,1,1)
- C. THE BUILDING THERMAL ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE IN ACCORDANCE W/ THE REQUIREMENTS OF SECTIONS NII02.4.1 THROUGH NII02.4.4
- D. CORNERS & HEADERS SHALL BE INSULATED & THE JUNCTION OF THE FOUNDATION SILL PLATE SHALL BE SEALED. THE JUNCTION @ THE TOP PLATE & TOP OF EXTERIOR WALL SHALL BE SEALED. EXTERIOR THERMAL ENVELOPE INSULATION SHALL BE INSTALLED IN SUBSTANTIAL CONTACT & CONTINUOUS ALIGNMENT W/ THE AIR BARRIER. KNEE WALLS SHALL BE SEALED. AS PER TABLE NI/02.4.1
- E. RIM JOIGTG SHALL BE INSULATED & INCLUDE THE AIR BARRIER. AG PER TABLE NII02.4.1 (R402.1.1)

![](_page_51_Figure_37.jpeg)

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![](_page_52_Figure_1.jpeg)

### SECTION KEYNOTES:

- I-INCH FOAM ROOF SYSTEM PER ESR-2532 ON PLYWOOD SHEATHING OVER ROOF FRAMING, SEE STRUCTURAL
   22-GAUGE PAINTED METAL FASCIA W/ GRACE ULTRA UNDERLAYMENT W/ MIN. 4" LAP ALL ENDS
   DECORATIVE FLOOR FINISH ON I-1/2" LIGHT WEIGHT CONCRETE ON I/8" SOUND MATT ON I-1/8" PLYWOOD SUBFLOOR
   PARAPET WITH PAINTED METAL CAP
   PREFABRICATED WOOD TRUSSES, SEE STRUCTURAL
   CEILING INSULATION IN DIRECT CONTACT WITH ROOF DECK. PROVIDE OPEN CELL SPRAY FOAM "DEMILEC" PER ESR-2668 OR APPROVED EQUAL APPROVED EQUAL 1. WOOD BEAM, SEE STRUCTURAL 8. STEEL BEAM, SEE STRUCTURAL 9. EXTERIOR FRAME WALL - 2X6 FRAMING @ 16'O.C. W/ R-19 BATT
- INSULATION 10. WESTERN ONE-KOTE STUCCO SYSTEM PER UES 382 ON 1' RIGID INSULATION ON 2 LAYERS OF #30 BUILDING PAPER ON PLYWOOD SHEATHING, SEE STRUCTURAL FOR ALL CONNECTIONS
- ADHERED DECORATIVE STONE VENEER ON POLYMER MODIFIED MORTAR PER ASTM #CI610-13 ON BROWN COAT STUCCO ON EXPANDED METAL LATH ON 2 LAYERS #30 BUILDING PAPER OVER PLYWOOD SHEATHING ON 2x WOOD FRAME. SEE STRUCTURAL
- 12. 2x FRAME WALL @ 16" O.C. SEE DIMENSIONAL FLOOR PLAN FOR THICKNESS W/ SOUND INSULATION WHERE INDICATED
- 13. STRUCTURAL CONCRETE WALL, SEE DIMENSIONAL FLOOR PLAN FOR THICKNESS AND STRUCTURAL FOR REINFORCING
- 14. 2x4 FURRING WHERE INDICATED , SEE STRUCTURAL FOR REINFORCING SEE STRUCTURAL
- KEINFORCING SEE STRUCTURAL
  15. SYNTHETIC FINISH ON EXTERIOR DENS GLASS SHEATHING PER CCRR-Ø317, PAINTED
  16. EXTERIOR SOFFITS (SYNTHETIC FINISH) WALNUT T&G
  17. SAG RESISTANT GYPSUM BOARD @ CEILING
  18. PROVIDE 1-HOUR SEPARATION BETWEEN RESIDENCE AND GARAGE / MECHANICAL ROOMS, 5/8" TYPE "X" GYPSUM BOARD @ ALL
- WALLS & CEILING 19. INSULATED ALUMINUM DOOR / WINDOW SYSTEM W/ BITUTHANE
- FLASHING, SEE DOOR AND WINDOW SCHEDULE
  20. INTERIOR FLOORING DECORATIVE TILE ON 3/4" MUDGET ON 1/8" RUBBER SOUND MATT ON 1-1/8" PLYWOOD SUBFLOOR
  21. DECORATIVE TILE ON PREFABRICATED METAL TRAY ON "BIGON" SELF LEVELING DECK SYSTEM ON 3 COATS OF 90 MIL ELASTOMERIC URETHANE POLYMER WATERPROOF MEMBRANE WITH AN INTEGRATED MESH LAYER AND A SANDED FINAL COAT ON PLYWOOD DECK COORDINATE POSITIVE SLOPE TO SUBDECK
- DRAIN 22. WOOD FLOOR TRUGG, SEE STRUCTURAL 23. 10" HEAVY WOOLEN BATT INSULATION 24. GUARDRAIL @ 36" ABOVE DECK, AS PER SECTION 1601.1.1.1, SHALL EVALUATION 24. GUARDRAIL © 36 ABOVE DECK, AS PER SECTION 1601.1.1., SHALL BE ABLE TO RESIST A SINGLE CONCENTRATED LOAD OF #200 APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOAD TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. SEE STRUCTURAL
  25. 4" CONCRETE SLAB ON 4" A.B.C. FILL OVER TERMITE TREATED 4000 APPLICATION.
- 25. 4 CONCRETE SLAD ON 4 A.B.C. FILL OVER TER THE TREATED SOIL, SEE STRUCTURAL
   26. CONCRETE RETAINING WALL. SEE DIMENSIONAL FLOOR PLAN FOR THICKNESS AND STRUCTURAL FOR REINFORCING
   21. CONTRACTOR TO COORDINATE APPLICATION OF GRACE BITUTHENE 4000 WATERPROOF MEMBRANE SYSTEM ON REPOTECTION ROAPD ON DRAIN BOARD OVER APPLIED
- PROTECTION BOARD ON DRAIN BOARD OVER APPLIED BITUTHENE. INSTALL PER MANUFACTURES INSTRUCTIONS 28. CONCRETE FOOTING, SEE STRUCTURAL
- 29. FOUNDATION DRAIN 30. POOL CONTRACTOR TO COORDINATE MIRA COAT XCL BLOK WITH
- GUNITE TO OPTIMIZE WATERPROOFING
  31. CONTRACTOR TO COORDINATE APPLICATION OF MASTER SEAL 581
  WATERPROOFING CEMENT BASE COATING ON STRUCTURAL
  CONCRETE WALL

## NOTES PER BLDG. CODES

- A. ALL ROOF CEILING INSULATION SHALL BE INSTALLED IN DIRECT CONTACT WITH ROOF DECK. PROVIDE OPEN CELL SPRAY FOAM 'DEMILEC' PER ESR-2668 OR APPROVED EQUAL, NO ATTIC VENTILATION SHALL BE REQUIRED IN SUCH AREAS
- B. AIR SEALING SHALL BE PROVIDED BETWEEN GARAGE & CONDITIONED SPACES, AS PER TABLE NII02,4,1 (R402,1,1)
- C. THE BUILDING THERMAL ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE IN ACCORDANCE W/ THE REQUIREMENTS OF SECTIONS N1102.4.1 THROUGH N1102.4.4
- D. CORNERS & HEADERS SHALL BE INSULATED & THE JUNCTION OF THE FOUNDATION SILL PLATE SHALL BE SEALED. THE JUNCTION @ THE TOP PLATE & TOP OF EXTERIOR WALL SHALL BE SEALED. EXTERIOR THERMAL ENVELOPE INSULATION SHALL BE INSTALLED IN SUBSTANTIAL CONTACT & CONTINUOUS ALIGNMENT W/ THE AIR BARRIER. KNEE WALLS SHALL BE SEALED. AS PER TABLE N1102.4.1 (R4Ø2.1.1)
- E. RIM JOISTS SHALL BE INSULATED & INCLUDE THE AIR BARRIER. AS PER TABLE NII02.4.1 (R402.1.1)

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# - CASKEY RESIDENCE-- 7602 N. Moonlight Lane, Paradise Valley, AZ 85253 -

PLANT MATERIAL

IRRIGATION SCHEDULE

SCHEDULES.

FINAL GRADE.

- Landscape Construction Documents -

# **GENERAL NOTES:**

- 1. THESE CONSTRUCTION DOCUMENTS, INCLUDING ALL PLANS, NOTES, DETAILS AND SPECIFICATIONS ARE INTENDED TO FACILITATE THE INSTALLATION CONTRACTOR BY PROVIDING GENERAL GUIDELINES FOR DESIGN INTENT. IT IS THE GOAL OF THE DOCUMENTS THAT THE WORK IS TO BE COMPLETED WITHOUT CHANGE ORDERS. ALL QUANTITIES SHOWN IN THE DOCUMENTS ARE ESTIMATES ONLY AND ARE NOT GUARANTEED; THE CONTRACTOR SHALL SUPPLY ALL MATERIALS, LABOR AND EQUIPMENT IN ORDER TO FULFILL THE INTENT OF THE DESIGN DRAWINGS.
- 2. INTERPRETATION OF THE PLANS AND SPECIFICATIONS SHALL BE MADE BY THE "AUTHOR" OR "ARCHITECT/ENGINEER-OF-RECORD" OF THE RESPECTIVE DOCUMENT AND SHALL BE CONSIDERED FINAL. ANY POSSIBLE AMBIGUITY SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR PRIOR TO SUBMITTING FORMAL BIDS. ALL CLARIFICATIONS SHALL BE PREPARED IN WRITING BY THE "ARCHITECT/ENGINEER-OF-RECORD" PRIOR TO BIDDING. THE CONTRACTOR SHALL ACCEPT THE INTERPRETATION OF THE "ARCHITECT/ENGINEER-OF-RECORD" AS THE CORRECT AND FINAL INTERPRETATION
- 3. ANY INCIDENTAL INSTALLATION PROCEDURE, MATERIAL OR EQUIPMENT, NOT MENTIONED IN THESE CONSTRUCTION DOCUMENTS, THE SPECIFICATIONS NOR SHOWN ON THE PLANS, WHICH MAY BE NECESSARY FOR COMPLETION AND SATISFACTORY OPERATION OF THE DESIGN SYSTEM SHALL BE FURNISHED AND INSTALLED (AS BASED ON INDUSTRY STANDARDS) AS THOUGH SHOWN OR PROVIDED
- 4. EXISTING CONDITIONS AND BASE INFORMATION ARE BASED ON PLANS PREPARED BY THE ARCHITECT. 5. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE LOCATIONS OF EXISTING AND FUTURE UNDERGROUND SERVICES AND IMPROVEMENTS WHICH MAY CONFLICT WITH THE WORK TO BE DONE.
- NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE IMMEDIATELY SHOULD A CONFLICT ARISE. 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS AND SHALL NOTIFY ALL UTILITY COMPANIES WITH UTILITIES ON SITE PRIOR TO THE CONSTRUCTION OF THE PROJECT.
- 7. FOR UNDERGROUND UTILITY COORDINATION AND 48 HOURS PRIOR TO START OF CONSTRUCTION (DEPENDING ON AREA OR JURISDICTION), THE CONTRACTOR SHALL CONTACT: A) BLUE STAKE (ARIZONA) 1-800-782-5348
  - B) UNDERGROUND SERVICES ALERT (USA) 1-800-227-2600
- 8. THESE NOTES ARE TO BE USED FOR GENERAL REFERENCE IN CONJUNCTION WITH AND AS A SUPPLEMENT TO THE WRITTEN SPECIFICATIONS, APPROVED ADDENDUMS, AND THE CHANGE ORDERS AS ASSOCIATED WITH THESE CONSTRUCTION DOCUMENTS.
- 9. SHOULD THE CONTRACTOR HAVE ANY QUESTIONS REGARDING THESE CONSTRUCTION DOCUMENTS OR SHOULD THERE BE ANY DISCREPANCIES, HE SHALL CONTACT THE LANDSCAPE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING FURTHER.
- 10. ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS AND PER GOVERNING CODES AND/OR ORDINANCES
- 11. THE CONTRACTOR SHALL PROVIDE BARRICADES AND TRAFFIC CONTROL ALONG PUBLIC STREETS, IF REQUIRED, DURING INSTALLATION. 12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPORT TO THE LANDSCAPE ARCHITECT AND/OR THE OWNER'S
- AUTHORIZED REPRESENTATIVE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND FIELD CONDITIONS PRIOR TO THE START OF WORK. 13. BEFORE WORK BEGINS ON THE PROJECT, THE CONTRACTOR SHALL REVIEW THE PROJECT WITH THE
- LANDSCAPE ARCHITECT AND/OR THE OWNER'S AUTHORIZED REPRESENTATIVE. 14. THE LANDSCAPE ARCHITECT AND/OR THE OWNER'S AUTHORIZED REPRESENTATIVE SHALL APPROVE ANY
- OR ALL CHANGES PRIOR TO THE START OF WORK 15. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND COORDINATING EXISTING SITE CONDITIONS.
- 16. THE CONTRACTOR SHALL ADHERE TO ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL LAWS AND/OR REGULATIONS PERTAINING TO THE PROJECT.
- 17. THE CONTRACTOR SHALL PROPERLY COORDINATE HIS WORK WITH OTHER CONTRACTOR'S WORK PRIOR TO INSTALLATION. 18. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT EXISTING IMPROVEMENTS AND
- THE PUBLIC FROM DAMAGE THROUGHOUT CONSTRUCTION. 19. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGES IMPOSED, UNINTENTIONALLY OR ACCIDENTALLY TO EXISTING UTILITIES, STRUCTURES, WALLS, OR OTHER AMENITIES, DUE TO THE ACTION OF THE CONTRACTOR, CONTRACTOR'S EMPLOYEES AND/OR THE CONTRACTOR'S SUBCONTRACTORS. DAMAGE OCCURRED DURING THE CONTRACTOR'S OPERATION SHALL BE REPAIRED, AT THE EXPENSE OF THE CONTRACTOR, TO THE SATISFACTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
- 20. MATCH GRADES, LAYOUT AND ELEVATIONS OF ADJOINING LANDSCAPE WORK BY OTHERS. NOTIFY THE LANDSCAPE ARCHITECT OF CONFLICTS BEFORE PROCEEDING WITH CONSTRUCTION.

# **PLANTING GENERAL NOTES:**

- THE CONTRACTOR SHALL REVIEW PLANTING PLAN WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE RESERVES THE RIGHT TO REFUSE ANY PLANT MATERIALS HE DEEMS UNACCEPTABLE. SEE SPECIFICATIONS. 3. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL PLANT MATERIAL AS SPECIFIED ON THE PLANTING
- PLANS. HOWEVER, SHOULD THE PLANT MATERIAL BE TEMPORARILY UNAVAILABLE, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND INSTALL 5 GALLON NURSERY BUCKETS WITH IRRIGATION AT EACH PLANT LOCATION. AS THE PLANT MATERIAL BECOMES AVAILABLE, THE 5 GALLON BUCKETS SHALL BE REMOVED AND PLANT MATERIAL INSTALLED. 4. ANY AND ALL SUBSTITUTIONS TO BE APPROVED BY THE LANDSCAPE ARCHITECT.
- 5. LOCATE PLANTS AWAY FROM SPRINKLER HEADS, LIGHT FIXTURES AND OTHER OBSTRUCTIONS. 6. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
- 7. PLANTING AND IRRIGATION DESIGN MAY BE MODIFIED TO ADAPT TO WALK CONFIGURATIONS THAT DIFFER FROM THESE PLANS, OR BECAUSE OF GRADE LIMITATIONS ON SITE. 8. WATER TEST ALL TREE PLANTING HOLES PRIOR TO PLANTING. IF TREE HOLE DOES NOT DRAIN, DO NOT
- PLANT, SEE HARDPAN DETAIL. 9. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS NOT SHOWN ON DRAWINGS. 10. TREES SHALL BE PLANTED A MINIMUM OF 10'-0" FROM STREET LIGHTS / FIRE HYDRANTS, 6'-0" FROM EDGE OF
- UNDERGROUND PIPELINES AND A MINIMUM OF 4'-0" FROM WALKS, CURBS AND WALLS. SHRUBS SHALL BE PLANTED A MINIMUM OF 2'-0" FROM CURB AND WALKS. 11. ALL SPECIMEN TREES, SHRUBS AND CACTI SHALL BE FIELD LOCATED BY LANDSCAPE ARCHITECT OR
- OWNER'S AUTHORIZED REPRESENTATIVE. 12. THE CONTRACTOR SHALL INSTALL "SHAWTOWN ROOT BARRIER PANELS" (OR APPROVED EQUAL) AT ALL TREES WITHIN 7'-0" FEET OF HARDSCAPE ELEMENTS INCLUDING (BUT NOT LIMITED TO) SIDEWALKS, ASPHALT, CONCRETE SLABS / FOOTINGS AND STRUCTURES. CONTRACTOR SHALL SUBMIT SPECIFICATION SHEETS OF PROPOSED ROOT BARRIER PANELS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
- 13. THE CONTRACTOR SHALL INSTALL ARBOR GUARDS AT ALL TREES LOCATED IN TURF AREAS. 14. ON-SITE AND OFF-SITE TOPSOIL SHALL CONFORM TO CONTENT REQUIREMENTS AS SPECIFIED IN PART 2 OF THE PLANTING SPECIFICATIONS. AGRONOMY TEST SUBMITTALS ARE REQUIRED FOR ALL MATERIAL USED FOR TOPSOIL AND BACKFILL. SUBMIT REPORT TO LANDSCAPE ARCHITECT FOR REVIEW. 15. ALL PLANT MATERIAL SHALL BE IN COMPLIANCE WITH THE AMERICAN STANDARDS FOR NURSERY STOCK,
- LATEST EDITION 16. THE CONTRACTOR SHALL PROVIDE MAINTENANCE FOR ALL ALL PLANT MATERIAL FROM THE TIME OF
- INSTALLATION THROUGH SUBSTANTIAL COMPLETION. 17. CACTI SHALL BE PLANTED A MINIMUM OF 3'-0" AWAY FROM ALL PEDESTRIAN ROUTES.
- 8. CACTI SHALL BE WELL ROOTED AND NON-SCARRED.
- 19. PLANT MATERIAL MARKED 'SALVAGE' SHALL BE SELECTED FROM ON-SITE SALVAGE INVENTORY. ALL MATERIAL SELECTIONS SHALL BE APPROVED BY LANDSCAPE ARCHITECT AND/OR OWNER'S AUTHORIZED REPRESENTATIVE 20. IN DISTURBED AREAS INDICATED TO RECEIVE REVEGETATION HYDROSEED AND/OR PLANTING, THE
- CONTRACTOR SHALL MATCH EXISTING NATURAL DESERT STONE GROUND COVER CONDITIONS ADJACENT TO THE PROJECT.
- 21. NATIVE REVEGETATION AREAS AND PLANTER BEDS SHALL BE TREATED WITH PRE-EMERGENT AS PER MANUFACTURER'S INSTRUCTIONS. RE-APPLY AS NECESSARY TO ELIMINATE INVASIVE WEEDS. REMOVE ALL DEAD DEBRIS
- 22. THE CONTRACTOR SHALL PROVIDE A 50'-0" BY 50'-0" TYPICAL MOCK-UP OF NATIVE REVEGETATION AREAS FOR REVIEW BY THE LANDSCAPE ARCHITECT OR OWNER'S AUTHORIZED REPRESENTATIVE. 23. ALL TREE STAKING SHALL CONFORM TO THE PLANTING DETAILS OR AS NOTED IN THE SPECIFICATIONS. THE
- LANDSCAPE ARCHITECT OR OWNER'S AUTHORIZED REPRESENTATIVE SHALL REVIEW TYPICAL TREE STAKING PRIOR TO FINAL ACCEPTANCE.

# **INERT GENERAL NOTES:**

ANGULAR GRANITE RIP-RAF

- INSTALL GRANITE RIP-RAP IN ALL DRAINAGE SWALES, AND WHERE INDICATED ON PLANS (TYPICAL). REFER TO MATERIALS SCHEDULE / PLANTING LEGEND FOR COLOR AND SIZE OF GRANITE RIP-RAP.
- 2. THE CONTRACTOR SHALL SUBMIT SAMPLES TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION
- 3. THE CONTRACTOR SHALL REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.
- DECOMPOSED GRANIT DECOMPOSED GRANITE IS REQUIRED IN ALL PLANTING AREAS, EXCEPT AREAS OF TURF AND GRANITE RIP-RAP, AND SHALL EXTEND UNDER PLANT MATERIAL UNLESS NOTED OTHERWISE ON PLANS. REFER TO MATERIALS SCHEDULE / PLANTING LEGEND.

#### VERIFY INSTALLATION CONDITIONS. 15. PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL CONTACT BLUE

6.

STAKE TO VERIFY LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES THAT MAY BE EFFECTED BY HIS WORK, AND HE SHALL BE RESPONSIBLE FOR DAMAGES TO SUCH UTILITIES CAUSED AS A RESULT OF HIS IRRIGATION INSTALLATION.

REFER TO NOTE #4 IF PRESSURE DIFFERS FROM THAT NOTED.

NEW METERS PER THE ATTACHED IRRIGATION SCHEDULE.

- 16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPENSATING THE OWNER AND/OR THE OWNER'S REPRESENTATIVE FOR ANY DESIGN CHANGES MADE AS A RESULT OF DEVIATION BY THE CONTRACTOR FROM THE PLANS AND SPECIFICATIONS OR DUE TO ERRORS, FAULTY MATERIAL OR FAULTY WORKMANSHIP.
- 17. INSTALL ALL MAINLINES WITH A MINIMUM OF 20" OF COVER. 18. INSTALL ALL LATERALS WITH A MINIMUM OF 12" OF COVER 19. ALL PIPE TO BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS AND ASTM STANDARD D 2774.
- 20. ALL THREADED JOINTS TO BE COATED WITH TEFLON TAPE UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. USE LIQUID TEFLON ON METAL PIPE THREADS ONLY.
- REQUIRED. 22. INSTALL ALL SPRINKLERS, EMITTERS, AND RELATED MATERIAL PER IRRIGATION SYSTEM
- SPECIFICATIONS AND DETAILS. 23. INSTALL ALL ELECTRICAL JOINTS WITH 3-M WATERPROOF CONNECTORS.
- 24. ALL ELECTRICAL CONNECTIONS SHALL BE MADE AT THE REMOTE CONTROL VALVE BOXES, CONTROLLER ENCLOSURES AND VALVE BOXES SPECIFICALLY FOR ELECTRICAL CONNECTIONS. 25. A CERTIFIED ELECTRICIAN SHALL BE RESPONSIBLE FOR INSTALLING ALL WIRING FROM THE
- CIRCUIT BREAKER AT THE 120 VOLT SOURCE LOCATION TO AUTOMATIC CONTROLLER.
- 26. ALL 120 VOLT VOLT POWER WIRE TO BE INSTALLED PER LOCAL CODE AND THE N.E.C. 27. INSTALL ALL VALVE WIRING IN MAINLINE TRENCH AS DETAILED. 28. INSTALL ALL REMOTE CONTROL VALVES AT HEIGHT INDICATED ON DETAILS, AS HIGH AS POSSIBLE BUT ALLOWING CLEARANCE BETWEEN VALVE BOX LID AND FLOW CONTROL
- HANDLE ON REMOTE CONTROL VALVE. 29. INSTALL ALL MAINLINE GATE VALVES IN A ROUND PLASTIC VALVE BOX PER DETAILS.
- 30. ALL PVC SOLVENT WELD FITTINGS SHALL BE LASCO OR APPROVED EQUAL. THE MAINLINE LATERAL PIPE AND VALVES ARE SHOWN SCHEMATICALLY AND SHAL INSTALLED WITHIN THE LANDSCAPE AREA, OUTSIDE R.O.W. AND P.U.E., ADJACENT TO
- SIDEWALK OR CURB AND OFFSET 18" WHEREVER POSSIBLE. SUPPLY THE FOLLOWING MATERIAL TO THE OWNER: A) TWO WRENCHES FOR DISASSEMBLY AND ADJUSTING OF EACH TYPE OF SPRINKLER
- HEAD AND VALVE SUPPLIED B) TWO KEYS FOR EACH OF THE CONTROLLERS.
- C) TWO COUPLERS WITH MATCHING HOSE BIBS AND SHUT-OFF VALVE. D) TWO VALVE BOX KEYS.
- 33. ALL MAINLINE FITTINGS FOR PIPE 3" AND LARGER SHALL BE CAST OR DUCTILE IRON FOR
- PVC; SCHEDULE 80 PVC FOR 2 1/2" AND SMALLER.
- 35. SLEEVES SHALL BE A MINIMUM OF TWO TIMES THE DIAMETER OF THE LINE SIZE.
- AREAS 37. CONTROLLER WIRES THAT ARE DIRECT BURIED SHALL BE #14 OR BETTER, BUNDLED OR WRAPPED A MINIMUM OF EVERY TWELVE (12') FEET. DURING INSTALLATION WIRES SHALL
- HAVE A 24" LOOP TIED IN ALL DIRECTION CHANGES GREATER THAT 30 DEGREES AND BE UNTIED PRIOR TO TRENCH FILL IN. 38. DRIP SYSTEM FLUSH CAPS SHALL BE PLACED IN A VALVE BOX AT THE END OF ALL DRIP
- LATERAL RUNS, AS DESCRIBED ON THE DRAWINGS. 39. ALL VALVES, PRESSURE REGULATORS AND OTHER DEVICES SHALL BE PLACED IN AN APPROPRIATELY SIZED VALVE BOX WITH A MINIMUM OF TWO (2") INCHES OF PEA GRAVE
- 40. PRIOR TO PLACING ANY IRRIGATION SYSTEM IN SERVICE, AN ARIZONA CERTIFIED BACKFLOW DEVICE TESTER SHALL TEST THE BACKFLOW PREVENTION DEVICE AND GIVE A
- 44. ALL PIPE CROSSINGS IN THE RIGHT-OF-WAY SHALL BE MARKED ON EACH SIDE OF THE CURB WITH A NON-DESTRUCTIBLE MARKING.

# **GRADING GENERAL NOTES:**

- 1. CONTRACTOR SHALL GRADE TO MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES. REVIEW ENGINEERS PLAN FOR DRAINAGE.
- FINISH GRADING SHALL BE BY THE DIRECTION OF THE LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT SHALL APPROVE GRADING PRIOR TO PLANTING. GRADING FOR THIS PROJECT INCLUDES THE FOLLOWING: A) FINE GRADING OF EXISTING ROUGH GRADES IS REQUIRED TO PROVIDE SMOOTH, EVEN GRADE TRANSITION IN LANDSCAPE AREA. B) IMPORTING AND PLACING "OFF-SITE 3/8" MINUS TOPSOIL" IN THE FOLLOWING
- AREAS: i) TURF, AND ANNUAL AREAS (6" DEPTH)
- ii) PLANT BACKFILL (CAN BE SCREENED ON-SITE SOIL). THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY CALICHE ENCOUNTERED ON SITE AT NO ADDITIONAL COST TO THE OWNER. THE OWNER AND CONTRACTOR SHALL COORDINATE A SUITABLE LOCATION ON SITE TO DISPOSE OF THE CALICHE MATERIAL.
- SHOULD A SUITABLE LOCATION ON SITE NOT EXIST, THE OWNER SHALL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH REMOVAL AND DISPOSAL OF THE CALICHE. FINISH GRADE OF ALL PLANTING AREAS IS TO BE 1.5" BELOW ADJACENT PAVING UNLESS
- NOTED OTHERWISE REFERENCE CIVIL ENGINEERING DRAWINGS FOR GRADING AND DRAINAGE FLOWS. THE CONTRACTOR SHALL BE RESPONSIBLE THAT THESE ARE PROVIDED FOR AND NOT
- IMPAIRED WITH OBSTRUCTIONS. 8. THE CONTRACTOR IS RESPONSIBLE FOR GRADING ALL AREAS AT THE DIRECTION OF THE LANDSCAPE ARCHITECT TO CREATE A NATURALLY UNDULATING GROUND PLANE.
- (TYPICAL). . CONTRACTOR SHALL SUBMIT SAMPLES TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR to installation.

2. ALL PLANTING AREAS SHALL RECEIVE A 2" MINIMUM LAYER OF DECOMPOSED GRANITE, THROUGHOUT

- COPY OF THE PASSED TEST RESULTS TO THE MARICOPA COUNTY INSPECTOR OR MAIL IT TO THE MARICOPA COUNTY DEPARTMENT OF PUBLIC WORKS INSPECTION STATION. 41. AFTER INITIAL TESTING, ALL BACKFLOW DEVICES SHALL BE TESTED ANNUALLY. 42. BACKFLOW DEVICES SHALL BE A MINIMUM OF TWO (2') FEET FROM THE WATER METER AND BE THE SAME SIZE AS THE METER SERVICE LINE.
  - 43. ALL BACKFLOW PREVENTION DEVICES SHALL HAVE A MINIMUM 24"x36"x4" CLASS B CONCRETE SLAB WITH PIPE SLEEVES. IF A SECURITY CAGE IS INSTALLED, CONCRETE SHALL BE SIX (6") INCHES LARGER ON ALL SIDES THAN THE SECURITY CAGE.

34. ALL MAINLINE PIPE SHALL BE A MINIMUM OF SCHEDULE 40. 36. ALL MAINLINE AND IRRIGATION EQUIPMENT SHALL BE PLACED IN THE LANDSCAPED

21. FLUSHING OF ALL LINES PRIOR TO INSTALLATION OF SPRINKLERS AND EMITTERS IS

## **IRRIGATION GENERAL NOTES:**

1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR FULL IRRIGATION COVERAGE OF ALL THE LANDSCAPE CONTRACTOR SHALL SUBMIT FULL PIPING PLANS, AFTER FIELD

VERIFICATION, DEPICTING POINT OF CONNECTION, METER LOCATION AND SIZE, BACKFLOW PREVENTER LOCATION AND SIZE, AND PIPE ROUTING AND SIZES. 3. THE LANDSCAPE CONTRACTOR SHALL INSTALL THE SPECIFIED SYSTEM IN ACCORDANCE WITH THE ATTACHED SCHEDULES, NOTES, DETAILS, AND SPECIFICATIONS. THE LANDSCAPE CONTRACTOR TO SITE VERIFY PRESSURE AND NOTIFY LANDSCAPE ARCHITECT OF ANY DIFFERENCES PRIOR TO INSTALLATION OR ORDERING OF MATERIALS

IF CONTRACTOR FAILS TO NOTIFY LANDSCAPE ARCHITECT, HE IS FINANCIALLY RESPONSIBLE FOR ANY NECESSARY SYSTEM ALTERATIONS THAT RESULT. 5. THE LANDSCAPE CONTRACTOR SHALL FIELD VERIFY EXISTING TAP LOCATIONS. INSTALL

THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING OF ASPHALT AND CONCRETE AS REQUIRED FOR SLEEVE INSTALLATION ACCORDING TO THE

7. CONTROLLER TO BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS. CONTROLLER SIZE AND QUANTITIES TO BE DETERMINED BY THE VALVE REQUIREMENTS AND POINTS OF CONNECTION. INSTALL ONE (1) CONTROLLER AT EACH POINT OF CONNECTION. INSTALL PVC MAINLINE AND LATERALS ACCORDING TO THE IRRIGATION AND PIPING

9. ALL VALVE FLOWS SHALL NOT EXCEED MANUFACTURER'S SPECIFICATIONS. 10. VALVE BOXES SHALL BE SQUARE TO ADJACENT WALKS OR CURBS AND FLUSH WITH THE

WORK SHALL CONFORM TO ALL CONSTRUCTION CODES AND REGULATIONS. 12. THE LANDSCAPE CONTRACTOR SHALL INSTALL GREEN VALVE BOXES IN TURF AREAS AND TAN VALVE BOXES IN DECOMPOSED GRANITE AREAS (TYPICAL).

13. REFER TO THE IRRIGATION NOTES FOR THE CALCULATED PRESSURE AT THE WATER METER. 14. THE LANDSCAPE CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING ON PROJECT TO

![](_page_53_Figure_115.jpeg)

## HARDSCAPE GENERAL NOTES:

- 1. FOOTINGS, WALLS AND FENCES SHALL BE PLACED OUTSIDE OF THE
- PUBLIC RIGHT-OF-WAY. 2. REFER TO CIVIL PLANS PREPARED BY CIVIL ENGINEERS FOR ALL
- INFORMATION REGARDING HORIZONTAL AND VERTICAL CONTROLS ALL DETAILS SHALL BE REVIEWED BY A STRUCTURAL ENGINEER AND
- MODIFIED (IF NECESSARY) PRIOR TO CONSTRUCTION. 4. ALL DIMENSIONS SHOWN ON THIS PLAN ARE BASED ON THE CIVIL PLAN SUBMITTED BY THE ARCHITECT. SHOULD DISCREPANCIES OCCUR, FIELD
- **REVISIONS SHALL BE REQUIRED.** 5. THE CONTRACTOR SHALL HAVE SIDEWALK SURVEYED AND STAKED FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- 6. IN ADDITION TO SUBMITTING MATERIAL SAMPLES OF ALL SITE RELATED MATERIALS, THE CONTRACTOR SHALL PREPARE A 4'X4' SAMPLE PANEL FOR EACH TYPE OF CONSTRUCTION, I.E., A) CONCRETE PAVERS, B) EXPOSED AGGREGATE PAVING, C) INTEGRAL COLORED CONCRETE, ETC., FOR APPROVAL BY THE LANDSCAPE ARCHITECT AND OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO FINAL CONSTRUCTION.
- 7. UNLESS NOTED OTHERWISE ON CONSTRUCTION DOCUMENTS OR NOTED IN DETAILS, SIDEWALKS SHALL BE 5'-0" WIDE, 4" THICK, 3,000 PSI CONCRETE ON COMPACTED BASE WITH CONSTRUCTION JOINTS AT 5'-0" ON CENTER AND EXPANSION JOINTS AT 20'-0" ON CENTER. SIDEWALKS SHALL HAVE A MEDIUM BROOM, NON-SKID FINISH WITH 1/2" RADIUS TOOLED EDGES. 8. RADIUS AT SIDEWALK INTERSECTIONS SHALL BE 5'-0" (TYPICAL), UNLESS
- NOTED OTHERWISE. 9. THE CONTRACTOR SHALL LAYOUT AND VERIFY ALL HARDSCAPE ELEMENTS PRIOR TO CONSTRUCTION FOR REVIEW BY THE LANDSCAPE ARCHITECT
- OR OWNER'S AUTHORIZED REPRESENTATIVE. SHOULD DISCREPANCIES EXIST, CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER'S AUTHORIZED REPRESENTATIVE BEFORE PROCEEDING FURTHER.

# **SHEET INDEX:**

COVER SHEET	L0.0
NATIVE PLANT INVENTORY	L2.0
REVEGETATION PLAN	L3.0
IRRIGATION PLAN	L4.1
LIGHTING PLAN	L5.1
PLANTING DETAILS	L7.1
IRRIGATION DETAILS	L7.2
IRRIGATION SPECIFICATIONS	L8.1

![](_page_53_Picture_128.jpeg)

![](_page_53_Picture_130.jpeg)

# **CONSULTANT TEAM**

LANDSCAPE ARCHITECT/PLANNER:

GREEY | PICKETT 7144 E. STETSON DRIVE SUITE 205 SCOTTSDALE, AZ 85251 PHONE: (480) 609-0009 FAX: (480) 609-0068 CONTACT: RUSS GREEY

![](_page_53_Picture_134.jpeg)

760. Parc revisions: project #: scale: DDA008 N/A issued for: Hillside Submittal 05/17/22

Moonlight , Valley, AZ 85

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drawn by:

TEAM

# **INVENTORY COMPLETED BY:**

GREEY | PICKETT 7144 E. STETSON DRIVE, SUITE 205 SCOTTSDALE, ARIZONA 85251 PHONE 480-609-0009 CONTACT: RUSS GREEY EMAIL: rgreey@greeypickett.com

# NOTE:

ALL PLANTS WITHIN THE LIMITS OF DISTURBANCE WERE INVENTORIED. WE INVENTORIED ABOUT 10' BEYOND THE DISTURBED AREA. THE REST OF THE SITE IS UPHILL AND IS EXTREMELY STEEP AND NOT SAFE TO INVENTORY PLANTS WAY OUTSIDE LIMITS OF DISTURBANCE.

# **GENERAL SALVAGE NOTES:**

PLAN AND LEGEND.

#### 5/12/2022 Date:

Tag #	Spacias	Condition	Inventory	Salvagaability	Calinor	Troo	Troo	Cacti
	opecies	condition	Designation	Comments	Inches	Height-Ft.	Width-Ft.	Height-Ft.
1	СОМ	Poor	Destroy	Open Wound	8.0	<u> </u>		5
2	COM	Poor	Destroy	Poor Health	12.0			4
3	COM	Fair	Destroy	Growing in Rock	7.0			4
4	PLO	Fair	Destroy	Too Rocky	4.0	6	10	
5	PLO	Poor	Destroy	Branch Die Back	8.0	11	17	
6	COM	Poor	Destroy	Poor Health	12.0			4
7	PLO	Poor	Destroy	Poor Structure	8.0	10	20	
8	OCT	Poor	Destroy	Poor Structure	2.0			7
9	COM	Fair	Destroy	Too Rocky	14.0			4
10	OCT	Poor	Destroy	Poor Health	2.0			6
11	OCT	Poor	Destroy	Poor Health	2.0			6
12	SAG	Good	Salvage		3.0			10
13	COM	Poor	Destroy	Poor Health	10			3
14	PLO	Poor	Destroy	Branch Die Back	9.0	10	17	
15	PLO	Poor	Destroy	Poor Structure	4.0	8	15	
16	PLO	Poor	Destroy	Poor Structure	4.0	8	15	
17	SAG	Good	Salvage		8.0			4
18	SAG	Good	Salvage		10.0			6
19	SAG	Good	Salvage		10.0			6
20	PLO	Good	Destroy	Growing in Tock	5.0	10	12	
21	PLO	Poor	Destroy	Poor Structure	8.0	13	20	
22	MES	Fair	Destroy	Too Close to Existing Wall	8.0	12	12	
Summa	ary		-	_				

#### Salvage Plants

0 Trees on this site to be salvaged totaling 0 caliper inches

4 Cacti on this site to be salvaged totaling 26 linear feet

4 Total Plants to Salvage

## Unsalvageable Plants (Destroy)

9 Trees on this site that are not salvageable (destroy) totaling 50 caliper inches

9 Cacti on this site that are not salvagable (destroy) totaling 43 linear feet

18 Total Plants to Destroy (Unsalvageable)

## Abbreviation Legend

Abb	Botanical Name	<b>Common Name</b>
PLO	Parkinsonia florida	Palo Verde
COM	Ferocactus cylindraceus	Compass Barrel
SAG	Carnegiea gigantea	Saguaro
OCT	Fouquieria splendens	Ocotillo
MES	Prosopis velutina	Mesquite

1. PLANT MATERIALS MUST BE INDIVIDUALLY TAGGED IN THE FIELD AT THE TIME THE INVENTORY PLANS ARE SUBMITTED. TAGGED MATERIALS MUST BE CLEARLY MARKED WITH WATERPROOF INK AND INCLUDE THE NUMBER WHICH CORRESPONDS TO THE NUMBER SHOWN ON THE PLANS. 2. ALL PLANT MATERIALS MUST REMAIN ON SITE UNTIL THE SALVAGE PLAN IS APPROVED. 3. TAGS MUST BE ATTACHED SO THAT THEY WILL REMAIN ON THE PLANT FOR THE DURATION OF THE SALVAGE AND NURSERY STORAGE PERIOD.

4. ALL SALVAGEABLE MATERIAL IS TO BE CLEARLY FLAGGED WITH TAPE OR PLASTIC TAGS VISIBLE FROM ALL DIRECTIONS. TAGS SHALL BE NUMBERED TO CORRESPOND WITH THE PLANT INVENTORY

COLOR CODE AS FOLLOWS:

**RED - SALVAGE AND RELOCATE** 

WHITE - PRESERVE AND PROTECT IN PLACE

BLUE - DESTROY, NOT SALVAGEABLE AND CANNOT REMAIN IN PLACE

5. ALL SALVAGEABLE PLANTS WILL BE STORED AT AN ON-SITE HOLDING YARD AND WILL BE **RE-PLANTED ON-SITE AT A LATER DATE.** 

6. ALL MISCELLANEOUS CACTI UNDER 3' IN HEIGHT WILL BE SALVAGED AND STORED IN THE NURSERY IF THEY ARE WITHIN THE BUILDING ENVELOPE AND AFFECTED BY CONSTRUCTION. 7. UPON REMOVAL OF SALVAGEABLE NATIVE PLANTS THE SALVAGE CONTRACTOR SHALL SUBMIT A LIST IDENTIFYING THE TAG NUMBER OF THE PLANTS SURVIVING SALVAGE OPERATIONS TO THE CITY'S LANDSCAPE INSPECTOR PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. 8. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PROJECT PROPERTY LINES PRIOR TO SALVAGE. ANY PLANT MATERIAL THAT IS LABELED SALVAGEABLE OR NON-SALVAGEABLE OUTSIDE OF FINAL STAKING BOUNDARIES IS TO REMAIN IN PLACE UNLESS OTHERWISE DIRECTED BY OWNER. 9. CONTRACTOR TO VERIFY WITH OWNER ALL PLANT MATERIAL LABELED SALVAGEABLE OR NON-SALVAGEABLE ADJACENT TO N.A.O.S. BOUNDARIES AND /OR DRAINAGE WAYS

![](_page_54_Picture_29.jpeg)

# **PLANT SYMBOL LEGEND:**

![](_page_54_Picture_32.jpeg)

# **INVENTORY COMPLETED BY:**

**ARIZONA SPECIALTY CACTUS** PHONE: 602-694-3496 E-MAIL: AZSPECIALTYCACTUS@GMAIL.COM CONTACT: ALEX GREEY

![](_page_54_Picture_35.jpeg)

#### **REVEGETATION NOTES:**

**RE-VEGETATION:** ALL AREAS DISTURBED BY CONSTRUCTION OR CONSTRUCTION ACCESS IN THE NATURAL AREA OR TRANSITIONAL AREA

(BASICALLY ANY AREA THAT IS OUTSIDE THE FOOTPRINT OF THE OVERALL HOUSE AND SITE WALLS) SHALL BE RE-VEGETATED WITH CONTAINER SIZED NATIVE PLANT, SPECIES. 75% OF ALL OF THE RE-VEGETATION PLANT MATERIAL SHALL BE THE DOMINANT SHRUB SPECIES, WHICH IS TRIANGLE LEAF BURSAGE.

**RE-VEGETATION SEED MIX:** ALL AREAS DISTURBED BY CONSTRUCTION OR CONSTRUCTION ACCESS IN THE NATURAL AREA OR TRANSITION AREA (BASICALLY ANY AREA THAT IS OUTSIDE THE FOOTPRINT OF THE OVERALL HOUSE AND SITE WALLS) SHALL RECEIVE AN APPLICATION OF RE-VEGETATION SEED MIX.

#### **RECOMMENDED APPLICATION METHOD:**

- 1. RIP OR SCARIFY ALL AREA TO BE SEEDED TO A MINIMUM DEPTH OF 4". 2. COVER ALL AREAS THAT HAVE EXCESSIVE AMOUNTS OF HARD GRANITE (HARDPAN) OR ALKALINE SOIL WITH DESERT COBBLE: CONTRACTOR TO APPLY NATIVE DESERT COBBLE MIX TO MATCH THE
- CHARACTER OF THE NATIVE SURROUNDING AREA. 3. BROADCAST SEED MIX AT THE RATES DESCRIBED ABOVE IN A UNIFORM
- MANNER ENSURING THAT ALL AREAS ARE EVENLY COVERED; EITHER MECHANICAL OR HAND BROADCASTING METHODS ARE ACCEPTABLE. 4. MECHANICALLY DRAG OR RAKE ALL SEEDED AREAS AFTER ALL SEED IS UNIFORMLY APPLIED. IDEALLY THIS SHOULD HAPPEN AFTER THE BOXED
- PLANT MATERIAL IS INSTALLED, AND BEFORE THE SMALL CONTAINERIZED PLANTS ARE INSTALLED.

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5. NO SUPPLEMENTAL IRRIGATION IS REQUIRED.

#### **REVEGETATION SEED MIX** Plant Name

Tiantitanio				
<i>Ericameria laricifolia</i> Turpentine Bush				5
<i>Ambrosia deltoidea</i> Bursage				1
<i>Eriogonum fasiculatum</i> Desert Buckwheat				1
<i>Prosopis velutina</i> Native Mesquite				1
<i>Calliandra eriophylla</i> Pink Fairy Duster				.5
<i>Cercidium floridum</i> Blue Palo Verde				1
<i>Cercideum microphyllum</i> Foothill Palo Verde				1
<i>Baileya multiradiata</i> Desert Marigold				.5
<i>Simmondsia chinensis</i> Jojoba				1
	١	١	١	١

![](_page_55_Figure_12.jpeg)

PLANT	MATERIALS	LEGEND-	RE \	/ E G.	
Sym.	Plant Name	Size	Qty	Caliper(in.)	ΗxW

60'' box

36" box

1 Multi-trunk

3 Multi-trunk

24" box 3 Multi-trunk

Olney tesota

Parkinsonia microphylla

Foothills Palo Verde

Prosopis velutina

Native Mesquite

Ironwood

Trees	
$\langle \rangle$	
Shrub	

Shrubs				
8	<i>Ambrosia deltoidea</i> Triangle Leaf Bursage	1 gal.	161	-
	Calliandra eriophylla Pink Fairy Duster	5 gal.	22	-
$( \diamond )$	<i>Cordia boissieri</i> Mexican Olive	15 gal.	3	-
$) \otimes$	<i>Ericameria laricifolia</i> Turpentine Bush	1 gal.	40	-
$\bigcirc$	<i>Erigonum fasciculatum</i> Flat Top Buckwheat	5 gal.	8	-
$\bigotimes$	Justicia californica Chuparosa	5 gal.	8	-
$\bigcirc$	<i>Larrea tridentata</i> Creosote	5 gal.	27	-
$\bigotimes$	<i>Olea europaea 'Montra'</i> Little Ollie Dwarf Ollie	5 gal.	41	-
$\bigcirc$	<i>Simmondsia chinensis</i> Jojoba	5 gal.	10	-
$\bigcirc$	<i>Sphaeralcea ambigua</i> Globe Mallow	5 gal.	10	-
Groundo	overs			
$\odot$	<i>Baileya multiradiata</i> Desert Marigold	1 gal.	5	-
$\bigcirc$	<i>Glandularia gooddingii</i> Goodding Verbena	1 gal.	8	-
0	<i>Melampodium leucanthum</i> Blackfoot Daisy	1 gal.	33	-
	<i>Viguiera deltoidea</i> Goldeneye	1 gal.	5	-
Accents	Cactus			
	<i>Agave americana</i> Century Plant	15 gal.	5	-
窃	<i>Agave deserti</i> Desert Agave	5 gal.	9	-
	<i>Agave ovatifolia</i> Whale's Tongue Agave	15 gal.	2	-
×	<i>Agave parryi var. truncata</i> Parry's Agave	15 gal.	2	-
e se	<i>Agave weberi</i> Blue Agave	15 gal.	1	-
Φ	Asclepias subulata Desert Milkweed	5 gal.	7	-
	<i>Cylindropuntia bigelovii</i> Teddy Bear Cholla	15 gal.	9	-
	<i>Euphorbia antisyphilitica</i> Candelilla	5 gal.	11	-
$\ominus$	<i>Ferocactus wislizenii</i> Fishhook Barrel Cactus	5 gal.	3	-
×	<i>Fouquieria splendens</i> Ocotillo	Large bare root	5	-
	<i>Opuntia engelmannii</i> Engelmann's Prickley Pear	5 gal.	9	-
$\underbrace{\mathfrak{O}}_{\sim}$	Penstemon 'species' Mixed Penstemon	1 gal.	15	-
$\left( \mathcal{F} \right)$	<i>Yucca elata</i> Soaptree Yucca	15 gal.	4	-
$\langle \! \circ \! \rangle$	<i>Yucca rostrata</i> Beaked Yucca	24" box	1	-

![](_page_55_Figure_17.jpeg)

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project #:

drawn by: TEAM

DDA008

7602 N. Moonlight Lan Paradise Valley, AZ 85253

revisions:

scale: 1''= 10'-0''

Hillside Submittal

drawing: Landscape Plan

issued for:

date: 05/17/22

## INERTS

Description Sym. 1/2" MINUS DECOMPOSED GRANITE, COLOR TO MATCH EXISTING SURROUNDING AREA IN COLOR AND SIZE **IN** ALL PLANTING AREAS INSIDE WALLS. 2" THICK. \_\_\_\_\_ DESERT COBBLE: THE TOP 6" OF DESERT SOIL IS TO BE SALVAGED AND STOCKPILED FOR RE-VEGETATION harawara a AREAS. CONTRACTOR TO MIX AND SPREAD COBBLE MIX ON SITE TO MATCH THE CHARACTER OF THE NATIVE SURROUNDING AREA. 2" THICK. SUPPLEMENTAL COBBLE TO BE D.C. RANCH COBBLE, 6" MINUS. BOULDER NOTES: 1. BOULDER SYMBOLS ARE SHOWN FOR REFERENCE ONLY. SIZE BOULDERS BASED ON TONNAGE ONLY, BUT INCLUDE A VARIETY OF

SHAPES AND SIZES. 2. SURFACE SELECT BOULDERS TO BE SELECTED/TAGGED BY LANDSCAPE ARCHITECT AND FIELD LOCATED.

3. LANDSCAPE CONTRACTOR TO SET BOULDERS WITH CRANE USING STEEL CABLES. PROVIDE NECESSARY CRANE FOR WEIGHT.

RELOC	ATED SALVA	GE
PLANT	MATERIALS	LEGEND
Sym.	Plant Name	Qty
A .		

Accents		
Ô	<i>Carnegiea gigantea</i> Saguaro	4

SDEV #:	ZONING:	ENVR#:	H/S#:	LSPL#:	CPHG:
n consent of the ov	wner or Greey Pickett	. Unauthorized rep	production may su	ubject you to civil o	and criminal liability.

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## **IRRIGATION PLAN IS FOR SCHEMATIC PURPOSES ONLY**

CONTRACTOR TO PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT FOR APPROVAL.

## IRRIGATION LEGEND

SYMBOL	DESCRIPTION	NOTES
Μ	WATER METER. ALSO PROVIDE REDUCED PRESSURE BACKFLOW PREVENTOR TO MATCH METER	SEE CIVIL PLANS FOR SIZE
$\bigcirc$	CONTROLLER	WALL-MOUNTED, PAINT TO MATCH WALL. SPEC HUNTER 'I-CORE' CONTROLLER OR EQUIVALENT.
•	CONTROL VALVE QTY. TBD	FLUSH MOUNTED, BOX COLOR TO MATCH GROUND PLANE
DT SHOWN	MAINLINE	CLASS 200 PVC

THE INSTALLATION CONTRACTOR SHALL PROGRAM THE CONTROLLER, IN ORDER TO MANAGE THE DURATION OF THE IRRIGATION CYCLE TO AVOID RUNOFF CONDITIONS

## SLEEVING SCHEDULE

PIPE OR WIRE BUNDLE	REQUIRED SLEEVE
3/4", 1", 1-1/4" PIPE	1-2" PVC SLEEVE PI
1-1/2", 2" PIPE	1-4" PVC SLEEVE PE
1-25 CONTROL WIRES	1-2" PVC SLEEVE
26-55 CONTROL WIRES	2-3" PVC SLEEVE

VC SLEEVE PER PIPE VC SLEEVE PER PIPE VC SLEEVE VC SLEEVE

## IRRIGATION LEGEND

(2) 2" CLASS 200 PVC SLEEVING MATERIAL. UNDER ALL PAVED SURFACES 

### EMITTER SCHEDULE

INSTALL BOWSMITH "ML-220" SERIES PRESSURE COMPENSATING EMITTERS AS FOLLOWS:

Plant type	Plant size	Emitters per Plant	GPH Outlet	# of Outlets	Total GPH/Plant
TREES	15 gal.	1 Multi- Outlet	2 GPH	3	6 GPH
	24'' Box	1 Multi- Outlet	2 GPH	4	8 GPH
	36'' Box	1 Multi- Outlet	2 GPH	5	10 GPH
	48'' Box	1 Multi-	2 GPH	6	12 GPH

INSTALL BOWSMITH "S" SERIES PRESSURE COMPENSATING EMITTERS AS FOLLOWS: 2 Single 1/2 GPH 2 1 GPH SHRUBS 1 gallon

	per Plant			
5 gallon	2 Single	2 GPH	2	4 GPH
	per Plant			

NOTES: ALL SHRUBS SPACED 18 INCHES OR CLOSER SHALL RECEIVE ONLY ONE DRIP EMITTER. SHRUBS SPACED GREATER THAN 18 INCHES TO RECEIVE EMITTERS PER THE ABOVE SCHEDULE.

ALL EMISSION POINTS TO BE LOCATED ON THE UPHILL SIDE OF PLANT MATERIAL. ONE EMISSION POINT TO BE LOCATED AT THE PLANT BALL, WITH THE ADDITIONAL POINTS WITHIN PLANT PIT PERIMETER.

ALL PIPING SHALL BE THOROUGHLY FLUSHED PRIOR TO EMITTER INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY NECESSARY FLUSHING OF EMITTERS DUE TO CLOGGING FOR THE DURATION OF THE MAINTENANCE PERIOD. ANY PLANT MATERIAL THAT DIES DUE TO EMITTER CLOGGING SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.

NOTE
NOIE:
1. IRRIGATION SYSTEM TO BE ALL HARD PIPE PVC.
2. INSTALL MULTI-PORT EMITTERS.
3. USE INLINE EMITTERS, NO FLAG EMITTERS.
4. CONTRACTOR TO SUBMIT SHOP DRAWINGS OR CONTACT LANDSCAPE
ARCHITECT FOR PROPOSED IRRIGATION SYSTEM FOR APPROVAL PRIOR TO
CONSTRUCTION.
5. PLANT MATERIAL WITHIN DISTURBED AREA AROUND HOUSE WILL BE
WATERED WITH PERMANENT IRRIGATION SYSTEM.
6. REVEGETATION PLANT MATERIAL WILL BE WATERED WITH TEMPORARY
SURFACE IRRIGATION SYSTEM

![](_page_56_Figure_20.jpeg)

- ALGARINICAL C.		LED Path Lig
		PROJECT
- NAR	k	CATALOG #
		ТҮРЕ
		NOTES
		-
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		7.4° (1887mm)
versatility of die-cast alum	inum with minimalist aesthetics	
to complement a range of	contemporary installations.	
Quick Facts	040 100 000 0 <b>0</b> 0	T IIII
<ul> <li>Die-cast aluminum</li> <li>Two-layer marine-grade</li> </ul>	<ul> <li>Compatible with Luxor<sup>™</sup> technology</li> </ul>	quue 0.E12
anodization and powder coat finish	<ul> <li>Phase and PWM dimmable</li> <li>Input voltage: 10-15V</li> </ul>	760 mm)
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LANDSCAPE LIGHTING FXLuminaire. Version is also available for	org Shroud Sheer PLUS	3
LANDSCAPE LIGHTING FXLuminaire. View of the second secon	org Shroud options to as in 3, 6, or 9 LED. An RGBW use with Luxor* ZDC systems.	3
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Λ	<b>1-PL</b> Pa	th Light Designer Plus	CATALOG # TYPE NOTES								
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₹	5	FX LUMINAIRE	NP-3LED-BZ	BRONZE METALLIC	LOW VOLTAGE IN-GRADE WELL LIGHT	LED	3 LED	4.4 W	289	2700K	
	TBD	_	-	-	LOW VOLTAGE TRANSFORMER (CONTRACTOR TO DETERMINE QUANTITY R	equired)	1			1	
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ORDER 2. LANDS	RING OR CAPE A	R INSTALLING.	LD APPROVE ALL	LIGHTS.							NOTE: SEE CIVIL G&D PLANS FOR ALL ELEVATION AND TOP OF WALL CALLOUTS.

CITY QUARTER SECTION#: KIVA#: RVSN#: ZONING CASE#: SPAD#: CSPR#: SDEV #:

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![](_page_57_Figure_9.jpeg)

![](_page_58_Figure_0.jpeg)

![](_page_58_Picture_3.jpeg)

![](_page_58_Figure_4.jpeg)

7602 N. Moonlight Lan Paradise Valley, AZ 85253

revisions:  $\bigtriangleup$ project #: scale: DDA008 As Noted issued for: Hillside Submittal date: 05/17/22 drawn by: TEAM drawing: Planting Details of 08

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CSPR#: SDEV #: ZONING: ENVR#: H/S#: LSPL#: CPHG:

![](_page_59_Figure_0.jpeg)

![](_page_59_Figure_1.jpeg)

![](_page_59_Figure_2.jpeg)

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7602 N. Moonlight Lan Paradise Valley, AZ 85253

revisions:  $\bigtriangleup$  $\bigtriangleup$  $\bigtriangleup$  $\bigtriangleup$ project #: scale: DDA008 As Noted issued for: Hillside Submittal drawn by: date: 05/17/22 TEAM drawing: Irrigation Details 0 Copyright © 2014 by Greey | Pickett Professional Corp.

# SECTION - 02810 IRRIGATION

PARTI - GENERAL 1.01 WORK INCLUDED

Work of this Section generally includes a provision of an underground irrigation system including the following:

\*Trenching, stockpiling excavation materials, and refilling trenches.

- \*Complete systems including but not limited to piping, backflow preventer assemblies, valves, fittings, heads, controller wiring and final adjustments to ensure efficient coverage as determined by Consultant.
- \*Water connections.
- \*Replacements of unsatisfactory materials.
- \*Clean-up, inspection, and approval.
- \*Tests.

## 1.02 REFERENCES

Perform Work in accordance with requirement of Conditions of the Contract and division 01 - General Requirements as well as provisions of all applicable laws, codes, ordinances, rules and regulations. Conform to requirements of reference information listed below except where more stringent requirements are shown or specified in Contract Documents.

- 1. American Society for Testing and Materials (ASTM) Specifications and Test Methods specifically referenced in this Section.
- 2. Underwriters Laboratories (UL) UL Wires and Cables.
- 1.03 QUALITY ASSURANCE

Installer Qualifications - Installer shall have had considerable experience and demonstrated ability in the installation of irrigation system(s) of specified type(s) in a neat, orderly and responsible manner in accordance with recognized standards of workmanship. To demonstrate ability, experience and financial stability necessary for this Project, submit if requested by Consultant, prior to contract award the following:

- 1. List of 3 projects completed in the last 2 years of similar complexity to this Project. Description of projects shall include:
- a. Name of project.
- b. Location. c. Owner.
- d. Brief description of work and project budget.
- 2. Current company financial statement.
- Special Requirements:
- 1. Tolerances Specified depths of pressure supply lines and laterals and pitch of pipes are minimums. Settlement of trenches is cause for removal of finish grade treatment, refilling, recompaction, and repair of finish grade treatment.
- 2. Coordination with Other Contracts Protect, maintain, and coordinate Work with Work under other Sections.
- 3. Damage to Other Improvements Contractor shall replace or repair damage to grading, soil preparation, seeding, sodding, or planting done under other Sections during work associated with installation of irrigation system at no additional cost to Owner.
- 4. Work involving substantial plumbing for installation of backflow preventers, copper service and related work shall be executed by licensed and bonded plumber(s), performed in accordance with prevailing codes and regulations.
- 5. Work involving connection to, installation, or extension of 120 volt or greater electrical service, shall be executed by a licensed and bonded electrician, performed in accordance with prevailing codes and regulations.

#### 1.04 SUBMITTALS

Prepare and make submittals in accordance with conditions of the Contract.

#### Records Drawings (As-Builts):

- 1. At onset of irrigation installation contractor shall secure mylar sepias of site plan from Landscape Architect. Make blue-line or black-line prints for every week on Project. At end of every day, revise prints for Work accomplished that day in red ink. As-built sepias shall be brought up-to-date at close of working day on every Friday by a qualified draftsperson. One up-to-date print shall be mailed to Consultant on Monday of each week. An additional print of record plan(s) shall be available at Project Site. Upon completion of Project submit for review, prior to final acceptance, final set of as-built mylar sepias. Dimension from two permanent points of reference (building corners, sidewalk, road intersections or permanent structures), location of the following items:
- a. Connection to existing water lines.
- b. Routing of pressure supply lines (dimension every 100 feet along routing). c. Electric control valves. d. Quick coupling valves.
- e. Drip line blow-out stubs.
- f. Control wire routing (if not with pressure supply line). g. Other related equipment as directed by Consultant.

submit all as-builts information to consultant for approval.

- 2. Consultant will not certify any pay request submitted by the Contractor if the as-built drawings are not current, and processing of pay request will not occur until as-builts are updated.
- 3. Prior to scheduling walk-through for substantial completion, contractor to

Controller Drawings - Do not prepare controller drawings until record (as-built) drawings have been approved by Consultant.

1. Provide controller drawing, automatic controller.

- a. Controller drawing may be same size reproduction of record drawing, if scale permits fitting inside controller door without folding drawing. If photo reduction prints are required, keep reduction to maximum size
- possible to retain full legibility. b. Controller drawing shall be blue-line print of actual as-built system, showing area covered by that controller.
- c. Identify area of coverage of each remote control valve, using a distinctly different pastel color for each zone. Highlight heads, lateral
- piping, and control valves. d. Following review of controller drawings by Consultant, hermetically seal
- each drawing between two layers of 20 mm thick clear plastic. e. Controller drawing shall be completed and approved by Consultant prior to final completion walk-through of irrigation system.
- f. Attach approved controller drawing to inside of each controller door using self adhesive Velcro strips.

#### Operation Manual:

Submit 3 sets of operations manual to Consultant for approval or prior to scheduling final completion walk-through. Manual to include the following in 1 x 3 ring binder:

- 1. Index sheet stating project name, and listing contractor name, address, phone number and contract person including Primary Sub-Contractors.
- 2. Manufacturer cut sheets for all material components of irrigation system. Highlight or circle specific model or item.

1.05 DELIVERY, STORAGE & HANDLING

Deliver, unload, store and handle materials, packaging, bundling, products, in dry, weatherproof condition in manner to prevent damage, breakage, deterioration, intrusion, ignition, and vandalism. Deliver is original unopened packaging containers prominently displaying manufacturer name, volume, quantity, contents, instructions, and conformance to local, state and federal law.

1.05 DELIVERY, STORAGE & HANDLING (CONT.)

Remove and replace cracked, broken, or contaminated items or elements prematurely exposed to moisture, inclement weather, snow, ice, temperature extremes, fire or job site damage.

Handling of PVC Pipe - Exercise care in handling, loading and storing of PVC pipe. All PVC pipe shall be transported in a vehicle which allows length of pipe to lie flat so as not to subject it to undue bending or concentrated external loads. All sections of pipe that have been dented or damaged shall be discarded, and if installed, shall be removed and replaced with new piping.

1.06 JOBSITE CONDITIONS

Protection of Property:

- 1. Preserve and protect all trees, plants, monuments, structures, and paved areas from damage due to Work of this Section. In the event damage does occur, all damage to inanimate items shall be completely repaired or replaced to satisfaction of Owner. All injury to living plants shall be repaired by Owner, and all costs of such repairs shall be charged to and paid by Contractor.
- 2. Protect buildings, walks, walls, and other property from damage. Flare and barricade open ditches. Damage caused to asphalt, concrete, or other building material surfaces shall be repaired or replaced at no cost to Owner. Restore disturbed areas to original condition.

Existing Trees:

- 1. All trenching or other Work under limb spread of any and all evergreens or low branching deciduous material shall be done by hand or by other methods so as to prevent damage to limbs or branches.
- 2. Where it is necessary to excavate adjacent to existing trees, use all possible care to avoid injury to tress and tree roots. Excavation, in areas where 2 inches and larger roots occur, shall be done by hand. Roots 2 inches or larger in diameter, except directly in the path of pipe conduit, shall be tunneled under and shall be heavily wrapped with burlap to prevent scarring or excessive drying. Where a trenching machine is operated close to trees having roots smaller than 2 inches in diameter, wall of trench adjacent to tree shall be hand rimmed, making clean cuts through roots. Roots 1 inch and larger in diameter shall be painted with two coats of Tree Seal. Trenches adjacent to trees shall be closed within 24 hours, and when this is not possible, side of trench adjacent to tree shall be kept shaded with moistened burlap or canvas.

Protection and Repair of Underground Lines:

- 1. Request proper utility company to stake exact location (including depth) of all underground electric, gas, or telephone lines. Take whatever precautions are necessary to protect these underground lines from damage. In the event damage does occur, all damage shall be repaired by Contractor unless other arrangements have been made.
- 2. Replacement of Paving and Curbs Where trenches and lines cross existing roadways, paths, curbing, etc., damage to these shall be kept to a minimum and shall be restored to original condition.

1.07 WARRANTY / GUARANTY

Remove and replace cracked, broken, or contaminated items or elements prematurely exposed to moisture, inclement weather, snow, ice, temperature extremes, fire or job site damage.

Handling of PVC Pipe - Exercise care in handling, loading and storing of PVC pipe. All PVC pipe shall be transported in a vehicle which allows length of pipe to lie flat so as not to subject it to undue bending or concentrated external loads. All sections of pipe that have been dented or damaged shall be discarded, and if installed, shall be removed and replaced with new piping.

#### 1.08 MAINTENANCE

Furnish the following maintenance items to Owner prior to final Acceptance:

1. 2 sets of special tools required for moving, disassembling, and adjusting each type of sprinkler head and valve supplied on this Project.

- 2. 2 keys for each automatic controller.
- 3. 1 quick coupler key and matching hose swivel.

1.09 EXTRA STOCK

In addition to the installed system, furnish the following items to Owner: A 4 per 100 installed drip emitters of each type used.

#### PART II - PRODUCTS

2.01 MATERIALS

General Piping:

- 1. Pressure Supply Lines (downstream of backflow prevention units) Class 200 BE (1)
- 2. Non-pressure lines Class 200 BE -
- 3. Drip Tubing Hardie EHD 2057-050 DURA-POL Blue Stripe Hose.

4. Emitter Tubing - by emitter manufacturer.

#### Plastic pipe and Fittings:

### 1. Identification Markings:

- a. All pipe to be identified with following indelible markings: 1) Manufacturers Name.
- 2) Nominal pipe size.
- 3) Schedule of class.
- 4) Pressure Rating. 5) NSF (National Sanitation Foundation) seal of approval. 6) Date of extrusion.
- 2. Solvent Weld Pipe Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM D1784; cell classification 12245-B, Type 1, Grade 1.
- a. Fittings Standard weight, Schedule 40, injection molded PVC; complying with ASTM D1784 and D2466, cell classification 12454-B. 1) Threads - Injection molded type (where required).
- 2) Tees and ells Side gated. b. Threaded Nipples - ASTM D2464, Schedule 80 with molded threads. c. Joint Cement and Primer - Type as recommended by manufacturer of pipe and fittings.

#### Low Pressure/Volume Systems:

- 1. Emitters as indicated on drawings.
- 2. Drip Tubing manufactured of flexible vinyl chloride compound conforming to ASTM D1248, Type 1, Class C, Category 4, P14 and ASTM D3350 for PE 1221110.
- 3. Fittings As recommended by tubing manufacturer.
- 4. Drip Valve Assembly Type and size shown on drawings.
- a. Wye Strainer Plastic/Fiberglass construction with 150 mesh nylon screen and blow out assembly,

2.01 MATERIALS (CONT.)

- b. Control Valve 2 way, solenoid pilot operated type made of synthetic, non-corrosive material; diaphragm activated and slow closing. Include freely pivoted seat seal; retained (mounted) without attachment to
- diaphragm c. Pressure Reducing Valve - Plastic/Fiberglass construction with adjusting

Copper Pipe and Fittings:

- 1. Copper Pipe Type K hard tempered.
- 2. Fittings Wrought copper, solder joint type.
- 3. Joints Soldered with solder, 45% silver, 15% copper, 16% zinc, and 24% cadmium and solids at 1125 F and liquids at 1145F.

Brass Pipe and Fittings:

- 1. Brass Pipe 85% red brass, AMSI Schedule 40 screwed pipe.
- 2. Fittings Medium brass, screwed 125 pound class.

### Quick Coupling Valves - Brass two-piece body designed for working pressure of 150 psi; operable with quick coupler. Equip quick coupler with locking rubber

Valve Boxes:

- 1. Drip Line Blow-out Stubs, and Wire Stub Box Carson #910-12.
- 2. 3/4 inch through 2 inch Control Valves Carson #1419-13B.
- 3. Drip Valve Assemblies Carson #1419-13B.
- 4. Control Wiring Splices Carson #910-12.
- Electrical Control Wiring:

1. Low Voltage:

- a. Electrical Control Wire AWG UF UL approved No.14 gauge direct burial copper wire for all control wires, and No.12 gauge direct burial copper wire for all common wires.
- b. Wire Colors:
- 1) Control Wires Red. 2) Common Wires - White.
- 3) Master Valve Wires Blue.
- 4) Future Wires Same as control and common wire (labeled at terminations)
- c. If multiple controllers are utilized, and wire paths of different controllers cross each other, both common and control wires from each controller shall be different colors approved by Consultant.
- d. Control wire connections and splices shall be made with 3M direct bury splice, Rain Bird Pentite connectors, or similar dry splice method.
- 2. High Voltage Type required by local codes and ordinances, of proper size to accommodate needs of equipment serviced.

Electric Control Valves - As noted on drawings

Pipe bedding material - Construction grade sand approved by Consultant.

Automatic Controller - As shown on drawings. Backflow Preventer - As shown on drawings.

PART III - EXECUTION

3.01 INSPECTION:

Examine areas and conditions under which Work of this Section is to be performed. Do not proceed with Work until unsatisfactory conditions have been corrected.

Grading operations, with the exception of final grading, shall be completed and approved by Owner prior to staking or installation of any portion of irrigation system except sleeving.

#### 3.02 PREPARATION

Staking shall Occur as Follows:

1. Mark with powdered lime or marking paint, routing of pressure supply line and flag heads and control valve locations for first series of zones as directed by Consultant. Contact Consultant 48 hours in advance and request review of staking. Consultant will review staking and direct changes if required. Staking review does not relieve installer from coverage problems due to improper placement of heads after staking.

Install sleeving under all asphalt paving and concrete walks, prior to concreting and paving operations, to accommodate piping and wiring. Compact backfill around sleeves to 95% Standard Proctor Density within 2% of optimum moisture content in accordance with ASTM D1557.

Trenching - Trench excavation shall follow, as much as possible, layout shown on Drawing. Dig trenches straight and support pipe continuously on bottom of trench. Trench bottom shall be clean and smooth with all rock and organic debris removed. Pressure supply line trenches shall be over-excavated as required to allow for bedding material. Trench depth shall be uniform as required to meet minimum depth requirements for type of piping.

- 1. Clearances:
- a. Piping smaller than 3 inches Trenches shall have a minimum width of 7 inches.
- b. Line clearance Provide not less than 6 inches of clearance between each line, and not less than 12 inches of clearance between lines of other trades.

#### 2. Pipe and Wire Depth:

- a. Pressure Supply Piping 24 inches from top of pipe.
- b. Non-pressure piping (pop-up) 18 inches from top of pipe.
- c. Control Wiring Side and bottom of pressure supply line.
- d. Drip tubing 12 inches from top of pipe. e. Emitter tubing - 12 inches from top of pipe (non slope plantings). 4 inches from top of pipe (slopes 2:1 or greater).
- 3. Boring will be permitted only where pipe must pass under obstruction(s) which cannot be removed, and must be approved by consultant if not specifically indicated on construction drawings. Final density of backfill shall match that of surrounding soil. Use of sleeves of suitable diameter is acceptable if installed first by jacking or boring, and pipe laid through sleeves. Observe same precautions as though pipe were installed in open trench.

3.03 INSTALLATION

Locate other equipment as near as possible to location designated on construction drawings. Deviations shall be approved by Consultant prior to installation.

#### PVC Piping:

- 1. Snake pipe in trench as much as possible to allow for expansion and contraction.
- 2. When pipe laying is not in progress, or at end of each day, close pipe ends with tight plug or cap. (Perform work in accordance with good practices prevailing in piping trades).
- 3. Coordinate pressure supply line installation with required bedding
- operations.
- 4. Stake all above grade PVC piping per details.

3.03 INSTALLATION (CONT.)

- 5. Use 45 degree ells when making perpendicular crossings of above grade PVC piping, to depress bottom pipe.
- 6. Lay pipe and make all plastic to plastic joints in accordance with manufacturers recommendations.

#### Drip Tubing:

1. Install fitting connections per manufacturers recommendations.

- 2. Use only manufacturer provided or recommended hole punch when making penetrations in drip tubing for insert fittings. Use of other hole punch shall be cause for immediate removal and replacement of all installed drip tubina.
- 3. Install drip line blow-out stubs at all dead ends of drip tubing.
- 4. Any deviations from drip tube routing shown on drawings must be approved by consultant prior to installation.

Control Wiring:

#### 1. Low Voltage Wiring:

- a. Bury control wiring between controller and electric valves in pressure supply line trenches, with wires consistently located below and to one side of pipe, on top of initial pipe bedding, or in separate trenches.
- b. Bundle all 24 volt wires at 10 foot intervals with electrical or duct tape. c. Provide an expansion loop at pressure supply line angle fittings, every electric control valve location (in valve box), and at minimum 500 feet intervals. From expansion loop by wrapping wire at least 8 times around
- an inch pipe and with drawing pipe. d. Make splices and electric control valve connections using Rainbird Pentite connectors or similar dry splice method.
- e. Install control wire splices not occurring at control valve in a separate splice valve box. f. Install one control wire for each control valve.
- g. Run 2 spare #14-1 control wires from controller pedestal to last electric control valve operated by controller on each and every leg of pressure supply line. Label spare wires at controller and wire stub box. Loop a minimum of 24 inches from all spare wires inside every control valve box operated by controller
- h. Run all future control wires from controller pedestal to point indicated on drawings. Coil a minimum of ten (10) feet at termination and install in 10 inch round valve box. Label all wires at termination.
- 2. High Voltage Wiring for Automatic Controller:

a. Provide 120 volt power connection to automatic controller.

#### Automatic Controller:

- 1. Install controller in accordance with manufacturers instructions as detailed and where shown on Drawings.
- 2. Connect remote control valves to controller in numerical sequence as shown on Drawings.
- 3. Final location of controller shall be approved by Consultant prior to installation.
- 4. Each controller shall have a dedicated separate ground wire.
- 5. Above ground conduit shall be rigid galvanized with appropriate fittings. Below ground conduit shall be Schedule 40 PVC.

#### Quick Coupling Valves:

Install quick couplers on double swing-joint assemblies of Schedule 80 PVC pipe; flush to grade. Angled nipple relative to pressure supply line shall be no more than 45 degrees and no less than 10 degrees. Install quick coupling as detailed.

Drip Valve Assemblies - Install drip valve assembly as detailed.

Drip Emitters - Install drip emitters as detailed.

#### Valve Boxes:

- 1. Install one value box for each type of value installed as detailed, flush with grade for all sodded areas and above grade for all planted areas.
- 2. Valve box extensions are not acceptable except for master valve.
- 3. Install gravel sump after compaction of all trenches. Valve box to rest on gravel sump. Place final portion of gravel inside valve box after valve box is backfilled and compacted.
- 4. Brand all valve box lids. Letter and number size shall be no smaller than 1 inch and no greater in size than 1- inches. Depth of branding shall be no more than 1/8 inch into valve box lid as follows:
- a. Control valves Brand controller letter and station number on lid of each control valve box
- b. Quick Coupling Valves Brand quick coupling valve box lids with letter
- c. Wire Splices Brand all wire splice box lids with letters W.S. d. Drip Tubing Blow-out Stubs - Brand controller letter and station number on lid of each drip tubing blow-out box lid.

Backflow Preventer - Install as detailed Drawings.

#### Control Wiring:

1. All control wiring to be laid to bottom and side of pressure supply line trench. Separate wire trenches will not be allowed unless approved by Consultant prior to installation.

#### Backfilling - Do not begin backfilling operation until required system tests have been completed. Backfill shall not be done in freezing weather except with prior approval by Consultant. Leave trenches slightly mounded to allow for settlement after backfilling is completed. Trenches shall be finish graded prior to walk-through of system by Consultant.

- 1. All pressure supply lines shall be bedded with construction grade sand 4 inches below invert of pipe, to 6 inches above top of pipe and width of trench when site conditions are rocky or otherwise unfavorable.
- 2. Materials Excavated material is generally considered satisfactory for backfill purposes after completing bedding requirements. Backfill material shall be free of rubbish, vegetable matter, frozen materials, and stones larger than 2 inches in maximum dimension. Do not mix subsoil with topsoil. Material not suitable for backfill shall be hauled away. Contractor shall be responsible for providing suitable backfill if excavated material is unacceptable or not sufficient to meet backfill, compaction, and final grade requirements.
- 3. Do not leave trenches open for a period of more than 48 hours. Open excavations shall be protected in accordance with OSHA regulations.

b. Puddling or ponding. Puddling or ponding and/or jetting is prohibited

1. Provide for a minimum cover of 24 inches between the top of the pipe and

2. Piping shall be bedded with construction grade sand or squeegee - 6

inches below pipe to 6 inches above pipe and width of excavation.

the bottom of the aggregate base for all pressure and non-pressure piping

4. Compact backfill to 90% maximum density in 6 lifts, determined in accordance with ASTM D155-7 utilizing the following methods:

within 10'-0" of building or foundation walls.

installed under asphalt concrete or concrete paving.

a. Mechanical tampering.

Piping Under Paving:

CITY QUARTER SECTION#: KIVA#: RVSN#: ZONING CASE#: SPAD#:

3.03 INSTALLATION (CONT.)

- 3. Compact backfill material in 6 inch lifts at 95% maximum density determined in accordance with ASTM D1557 using manual or mechanical tamping devices.
- 4. Set in place, cap, and pressure test all piping under paving, in presence of Consultant or Owner prior to backfilling and paving operations.
- 5. Piping under existing walk or concrete pavement shall be done by jacking, boring, or hydraulic driving, but where cutting or breaking of walks and/or concrete is necessary, it shall be done and replaced at no cost to Owner. Obtain permission and prior approval to cut or break walks and/or concrete from Owner.
- 3.04 FIELD QUALITY CONTROL

Flushing - After piping, risers, and valves are in place and connected, but prior to installation of sprinkler heads, quick coupling valves, and air release valves, thoroughly flush piping system under full head of water pressure from dead end fittings. Maintain flushing for 5 minutes through furthermost valves. Cap riser after flushing.

Testing - Conduct tests in presence of Consultant. Arrange for presence of Consultant a minimum of 48 hours in advance of testing. Supply force pump and all other test equipment.

- 1. After backfilling, and installation of all control valves, quick coupling valves, fill pressure supply line with water, and pressurize to 40 PSI over the designated static pressure or 120 PSI, whichever is greater, for a period of 2
- 2. Leakage, Pressure Loss Test is acceptable if no leakage or loss of pressure is evident during test period.
- 3. Leaks Detect and repair leaks.
- 4. Retest system until pressure can be maintained for duration of test.
- 5. Before final acceptance, pressure supply line shall remain under pressure for a period of 48 hours.

Walk Through for Substantial Completion:

- 1. Arrange for Consultants presence a minimum of 48 hours in advance of walk-through.
- 2. Entire System shall be completely installed and operational prior to scheduling of walk-through. All sodded areas are to be complete with head height and valve boxes adjusted accordingly.
- 3. Operate each zone in its entirety for Consultant at time of walk through and open all valve boxes.
- 4. Consultant shall generate a list of items to be corrected prior to Final Completion.
- 5. Furnish all materials and perform all Work required to correct all inadequacies due to deviations from Contract Documents, and as directed by Consultant.
- 6. During walk-through, expose all drip emitters under operations for observation by Consultant to demonstrate that they are performing and installed as designed; prior to placing of all mulch material. Schedule separate walk-through if necessary.

Walk-Through for Final Completion:

- 1. Arrange for Consultants presence a minimum of 48 hours in advance of walk through.
- 2. Show evidence to Consultant that Owner has received all accessories, charts, record drawings, and equipment as required before Final Completion walk-through is scheduled.
- 3. Operate each zone identified as deficient at substantial completion c-through for Consultant at time of nal completion walk-through to ensure correction of all incomplete items.
- 4. Items deemed not acceptable by Consultant shall be reworked to complete satisfaction of Consultant.
- 5. If after request to Consultant for walk-through for Final Completion of irrigation system, Consultant finds items during walk through, Contractor shall be charged for all subsequent walkthroughs. Funds will be withheld from final payment and/or retainage to Contractor, in amount equal to additional time and expenses required by Consultant to conduct and document further walk-through as deemed necessary to ensure compliance with Contract Documents.

#### 3.05 ADJUSTING

Upon substantial completion of installation, fine-tune entire system by regulating valves, adjusting patterns and break-up arms/screws, and setting pressure reducing valves or throttling control valve flow controls at proper pressure to provide optimum and efficient coverage. Flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadways, and buildings as much as possible. Heads of same type shall be operating at same pressure +/- 7%.

If it is determined that irrigation adjustments will provide proper and more adequate coverage, make such adjustments prior to Final Acceptance, as directed, at no additional cost to Owner. Adjustments may also include changes in nozzle sizes, degrees of arc, and control valve throttling.

All sprinkler heads shall be set perpendicular to finish grade unless otherwise designated.

Areas which do not conform to designated operation requirements due to unauthorized changes or poor installation practices shall be immediately corrected at no additional cost to the Owner.

3.06 CLEANING

Maintaining continuous cleaning operation throughout duration of Work. Dispose of off-site at no additional cost to Owner, all trash or debris generated by installation of irrigation system.

![](_page_60_Picture_233.jpeg)

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CSPR#: SDEV #: ZONING: ENVR#: H/S#: LSPL#: CPHG: These documents are protected by copyright and may not be reproduced, in whole or in part, in any form or by any means, electronic or mechanical, without express written consent of the owner or Greey Pickett. Unauthorized reproduction may subject you to civil and criminal liability.

![](_page_61_Picture_0.jpeg)

# 7602 N Moonlight Lane

![](_page_61_Picture_2.jpeg)

![](_page_61_Picture_3.jpeg)

A Aerial Photograph of Lot

![](_page_62_Figure_0.jpeg)

APN:	169-11-004C
ADDRESS:	7602 N MOONLIG
	PARADISE VALLE
ZONING:	R-43 (HILLSIDE)
LOT AREA:	142,335 S.F (3.2
QS#:	24-34

![](_page_63_Figure_3.jpeg)

![](_page_64_Figure_3.jpeg)

![](_page_65_Picture_3.jpeg)

![](_page_65_Picture_4.jpeg)

![](_page_65_Picture_5.jpeg)

![](_page_66_Picture_3.jpeg)

IMAGE 3

![](_page_66_Picture_5.jpeg)

#### EXISTING DISTURBED AREA CALCULATIONS:

436 S.F.

1,408 S.F.

<u>1,005 S.F.</u>

2,849 SF.

![](_page_67_Figure_1.jpeg)

TOTAL EXIST. DISTURBED AREA:

![](_page_67_Figure_3.jpeg)

EXISTING DISTURBE

	REV
~~~~~~~~~	DIS

DICK, ARCHITECT E MODONALD DR. SUITE 72 SOCITSDALE. ANZONA 62300 (480) 345-3805 OFFY 68 DAVID 1 7400 E. 1 EXISTING DISTURBED AREA Site Plan 04.25.2022 AS NOTED DATE: 04.20.2022 DATE Scale Print A CUSTOM RESIDENCE FOR: CASKEY RESIDENCE 7602 N MOONLIGHT LANE PARADISE VALLEY AZ 85253 D

#### EXISTING & PROPOSED DISTURBED AREA CALCULATIONS:

	AREA OF LOT: AREA UNDER ROOF: FLOOR AREA RATIO:	142,335 ( 1,124 S.F. 1,124 / 14	3F. (3268 AC.) 2,335 SF = 5. 4	12%
	BUILDING PAD SLOPE:	34. 41%	VERTICAL: 5 HORIZONTAL	7' = 165. 67'
	ALLOWABLE NET DIGTURBED AREA:		14,290 S.F. (10	0. Ø4%)
SYMBOL	EXIST. DISTURBED AREA CALCS .:			<u>TOTAL S.F.</u>
	DI: EXIST. DIST. AREA I - SOUTH ACCESS: EXIST. DIST. AREA TO REMAIN DISTURBED FOR PROPOSED DRIVEWA ACCESS TOTAL:	ſΥ		436 SF.
	D2: EXIST. DIST. AREA 2 FOR WATER LINE TOTAL:	E		1,408 S.F.
	D2.1: PORTION OF DISTURBED AREA FOR LINE TO REMAIN DISTURBED:	WATER 62	20 SF.	
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	D22: PORTION OF EXIST. DIST. AREA FOR WATER LINE TO BE REVEG AND RES	TORED: 78	38 <u>S.F.</u>	
	D3: EXIST. DIST. AREA 3 - NEIGHBOR DR EXIST. DISTURBED AREA TO REMAIN DISTURBED TOTAL:	2.		<u>1,005 SF.</u>
	TOTAL EXIST. DISTURBED AREA:			2,849 S.F.
	GROSS PROPOSED DISTURBED AREA: LESS TEMP. AREAS OF DISTURBANCE TO E	βE		24,298 S.F.
	RESTORED & REVEG,: RI: REVEG AREA: R2: REVEG AREA: R3: REVEG SEPTIC FIELD R4: REVEG SEPTIC FIELD		1,313 G.F. 461 G.F. 1,955 G.F. 2 291 G.F.	
	D22: REVEG IN EXIST. DISTURBED AREA FOR WATER LINE:		<u></u>	
	TOTAL REGTORED & REVEG .:		6,814 S.F.	6,814 S.F.
	LESS BLDG, FOOTPRINT AREA			5,111 S.F.
	PROPOSED NET DISTURBED AREA:			12,373 S.F.
	TOTAL EXIST. DISTURBED AREA:			
	IVIAL DISTURBED AREA (EXIST. & PROPC	OEU):		
	ALLOWABLE NET DIGTURBED AREA:			
	YROMOSED DISTURBED AREA FOR VARIANCE:			

+12,373 S.F.

+2,849 S.F. 15,222 S.F.

14,290 S.F.

932 S.F.

![](_page_68_Figure_2.jpeg)

![](_page_69_Figure_0.jpeg)

## **Turning Performance Analysis**

34 ft. 4 in.

Bid Number: 382 Department: Phoenix Fire Department Chassis: Quantum Chassis, 2010

t Body: Pumper, Medium, Aluminum, 2nd Gen

![](_page_69_Figure_6.jpeg)

Parameters:	
Inside Cramp Angle:	45°
Axle Track:	82.92 in.
Wheel Offset:	4.68 in.
Tread Width:	17.7 in.
Chassis Overhang:	82.44 in.
Additional Bumper Depth:	22 in.
Front Overhang:	104.44 in.
Wheelbase:	191 in.
Calculated Turning Radii:	
Inside Turn:	14 ft. 9 in.
Curb to curb:	28 ft. 11 in.

Comments:

Wall to wall:

Category	Option	Description
Axle, Front, Custom	0018453	Axle, Front, Oshkosh TAK-4, Non Drive, 22,800 lb, Qtm/AXT/DCF
Wheels, Front	0019611	Wheels, Front, Alcoa, 22.50" x 12.25", Aluminum, Hub Pilot
Tires, Front	0686052	Tires, Front, Michelin, XFE (wb), 425/65R22.50, 20 ply, Fire Service Speed Rtng
Bumpers	0550059	Bumper, 22" Extended, Quantum
-		

#### Notes:

Actual Inside cramp angle may be less due to highly specialized options.

Curb to Curb turning radius calculated for 9.00 inch curb.

Definitions:	
Inside CrampAngle	Maximum turning angle of the front inside fire.
Axle Track	King-pin to King-pin distance of front axle.
Wheel Offset	Offset from the center line of the wheel to the King-pin.
Tread Width	Width of the tire tread.
Chassis Overhang	Distance of the center line of the front axle to the front edge of the cab. This does not include the bumper depth.
Additional Bumper Wheel	Depth that the bumper assembly adds to the front overhang.
Wheelbase	Distance between the center lines of the vehicles front and rear axles.
Inside Turning Radius	Radius of the smallest circle around which the vehicle can turn.
Curb to Curb Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures assumes a curb height of 9 inches.
Wall to Wall Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures takes into account any front overhang due to chassis, bumper extensions and or aerial devices.

## F CASKEY RESIDENCE Minimum Turning Radius for Fire

David Dick, Architect 7400 E. McDonald Drive, Suite 122, Scottsdale, Arizona 85250 480-945-1898 OFFICE Board of Adjustment Hearing Officer Town of Paradise Valley 6401 E Lincoln Drive Paradise Valley, AZ 85253

RE: Caskey Residence – 7602 N Moonlight Lane Request for Disturbed Area Variance

Dear Hearing Officer:

After reviewing the variance that is being requested by Michael and Michelle Caskey regarding their property on 7602 N Moonlight Lane, I would like to formally offer my support in favor of the variance.

Sincerely,

ED & PATS & LOWRY 7600 N- MOONLight Lane P.V. Date: Jun 29

(Name) De

## G Neighbor approval & location

# 7602 N. Moonlight Lane

![](_page_71_Picture_1.jpeg)

## G Neighbor Approval and Location


DAVID DICK, ARCHITECT	96250
7400 E. MODONALD DR., BUTE 422	(1901) 945-1999 OFFIX 7 3
SCOTTEDALE, ANZONA	(1901) 945-9906 FJ 7 3
SITE SECTIONS	
DATE 04.25.2022 Scale AS NOTED PRINT DATE: 04.20.2022	
A CUSTOM RESIDENCE FOR:	7602 N MOONLIGHT LANE
CASKEY RESIDENCE	PARADISE VALLEY AZ 85253

PRELIMINARY NOT FOR CONSTRUCTION

#### REQUIRED DISTURBED AREA CALCULATIONS:

1: INITIAL GEOTECH CUT AND BOULDER ROLL AREA:	6,Ø41 S.F.
2: AMENDED GEOTECH CUT AND BOULDER ROLL AREA:	4,204 S.F.
REDUCTION IN DISTURBANCE:	1,837 S.F.



DISTURBED AREA REQUIRED FOR FIRE TRUCK 1,894 S.F. TURNAROUND:



+ + + + + + + + + + + + + + + + + + +	REQUIRED DISTURBED AREA FOR RIP RAP:	358 S.F.
	REQUIRED DISTURBED AREA FOR WEIR:	<u>526 SF.</u>
	REQUIRED DISTURBED AREA PER CIVIL ENGINEER:	884 S.F.

DAVID DICK, ARCHITECT 7400 E. MODONALD DR., SUITE 42 8001780ALE, MATCONA 8350 (480) 845-8850 0FFK 7 4 REQUIRED DISTURBED AREA SITE PLAN DATE 04.25.2022 Scale As Noted Print Date: 04.20.2022 A CUSTOM RESIDENCE FOR: CASKEY RESIDENCE 7602 N MOONLIGHT LANE PARADISE VALLEY AZ 85253

H1

PRELIMINARY NOT FOR CONSTRUCTION

TOTAL FROM	. DISTURBED AREA (EXIST. & PROPOSED) EXHIBIT E:	13,328 S.F.
R5:	AMENDED- IF FIRE TRUCK TURNAROUND NOT REQUIRED, REVEG & RESTORE AREA	-1,894 S.F.

13,328 S.F.

AMENDED DISTURBED AREA- IF FIRE TRUCK TURNAROUND NOT REQUIRED, REVEG & RESTORE AREA

13,328 S.F. IS LESS THATN 14,290 S.F. ALLOWABLE NET DISTURBED AREA. THEREFORE NO VARIANCE IS REQUIRED

NO VARIANCE NEEDED





REQUIRED DISTURBED AREA SITE PLAN WITHOUT FIRE TRUCK

DATE 04.25.2022 SCALE AS NOTED PRINT DATE: 04.20.2022

A CUSTOM RESIDENCE FOR: CASKEY RESIDENCE 7602 N MOONLIGHT LANE PARADISE VALLEY AZ 85253

H2

#### 169-11-004D 1976







HBIT KE EXIST. RES EXIST. PAT EXIST. DRI EXIST. BOU	TNOTES: DENCE & GARA NO/ POOL DECK VEWAY JLDER ROLL LOTS EXHIE	\GE < 8I <b>T</b> :	T FOR CONSTRUCTION	DAVID DICK, ARCHITECT 7400 E. MODONALD DR., SHITE 72 800TTBDALE, ANZONA 14801 945-1999 OFFIC 7 (14801 945-1998 OFFIC 7
5,111 6.F. 652 6.F.	<u>169-11-002Q</u> 126,436 SF. (PV) 6,888 SF. 1,107 SF. 1515 SE	<u>169-11-002P</u> 123,986 SF.(PV) 189,402 SF. (COUNTY) 8,566 SF. 3264 SF. 4500 SF	PRELIMINARY N	
4,939 S.F. 4,204 S.F.	6,000 SF. 3,300 SF.	7,025 S.F. 4,830 S.F.		CASKEY RESIDENCE Exhibit - Adjacent Lots
SI	ITE PLAN EX DJACENT LO	XHIBIT - DTS		DATE 04.25.2022 Scale AS NOTED PRINT DATE: 04.20.2022
N	OT TO SCAL	E I	-	A CUSTOM RESIDENCE FOR: CASKEY RESIDENCE 7602 N MOONLIGHT LANE PARADISE VALLEY AZ 85253



DAVID DICK, ARCHITECT 7400 E. MODONALD DR., SUITE 42 8007T8DALE, ARIZONA 945-999 0FFY 78
CASKEY RESIDENCE Exhibit - Cul de Sac
BATE. 04.25.2022 BANE. AS NOTED PRINT DATE: 04.20.2022
A CUSTOM RESIDENCE FOR: CASKEY RESIDENCE 7602 N MOONLIGHT LANE PARADISE VALLEY AZ 85253
r S S S S S S S S S S S S S S S S S S S

PRELIMINARY NOT FOR CONSTRUCTION

#### SITE PLAN OF CUL DE SAC & ADJACENT LOTS

NOT TO SCALE





GEOTECHNICAL ENGINEERING • ENVIRONMENTAL CONSULTING • CONSTRUCTION TESTING & OBSERVATION

July 20, 2021

Project 28503

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85253

#### RE: Executive Summary Letter Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Way Paradise Valley, Arizona 85253

Mr. Caskey,

At the request of the Town of Paradise Valley, this firm is submitting an Executive Summary Letter in regard to the Geotechnical Investigation Report, Rock Cut Slope Analysis, and Boulder Stability Analysis, prepared by this firm and dated July 20, 2021, which have been submitted for the above listed project.

Three main components, as a portion of the PV Hillside Safety Plan, were included in the study. A full seismic refraction hillside geotechnical study, an existing rock cut slope stability evaluation, and a boulder stability evaluation. Excerpts from each of these studies are presented below:

#### **Geotechnical Investigation**

The subject site is currently a vacant parcel on hillside terrain sloping down to the east with moderate vegetation. Over-sized aggregate was observed scattered across the site surface. Soil containing over-sized aggregate (greater than 3-inches in diameter) must not be used as structural fill. Numerous rock outcrops were observed on the property as you move west and upslope on the property. Note, there is an existing cut slope just off the eastern boundary of the parcel. Based on review of aerial photographs and parcel boundaries, the existing cut slope is not part of the subject site.

The subsurface of the site was explored through the utilization of eight (8) 24-channel refraction seismic survey lines, denoted on the Site Plan in Section II of this report. The seismic survey lines involved the retrieval of data in two separate directions (*forward and reverse*). As such, sixteen (16) refraction seismic surveys were conducted at the site. The lengths of the seismic survey lines were 72.0 feet, thereby allowing an examination of the subsurface to depths of 28.0 feet below the existing site grade. One (1) double-ring infiltrometer test (ASTM D 3385 – 18) was conducted in order to establish the stabilized infiltration rate.

The site is situated on hillside topography. The local geology and our field investigation indicate that a layer of overburn soil (defined herein as Layer 1) overlies a rock mass comprised of crossbedded quartzite (defined herein as Layer 2).

The native soils encountered at the site are considered cohesionless based on the laboratory testing (i.e. measured plasticity index of 2). Based on the measured properties of the soil samples,

this firm has determined that the potential for soil expansion is low. The soils encountered at the site are considered to have a low potential for collapse.

For all construction, 2.0 feet and 1.33 feet are recommended as the minimum width of spread and continuous footings, respectively. The following tabulations may be used in the design of shallow spread (column) and continuous (wall) foundations for the proposed structures.

Foundation Embedment Depth <sup>1</sup>	Bearing Stratum <sup>2</sup>	Allowable Soil Bearing Capacity <sup>3</sup>
1.5 Feet	Native undisturbed soil (Layer 1) or engineered fill	2000 PSF
2.0 Feet	Native undisturbed soil (Layer 1) or engineered fill	2500 PSF
Bearing at the surface of Layer 2 with minimum footing thickness of 1.0 feet	Layer 2	5500 PSF
Socketed 1.0 feet into Layer 2		6500 PSF

#### Table 12: Conventional Surface Level Foundations

By calculation of the shear wave, the weighted average shear wave velocity equals 3097 feet per second for the uppermost 100 feet. The 2018 IBC Site Class B may be utilized in the earthquake design of the proposed site.

Foundation stepping will be required to prevent any transitional foundation from bearing on fill or retaining wall backfill soil. Specifically, this refers to a footing that will transition from the retaining wall level to the house level. At all times, footings installed throughout the step must bear on native undisturbed soil, as outlined in Surface to Retaining Wall Footing Transitions, Option A (Included in Section IV). If footings must bear on or in retaining wall backfill, the recommendations included in Surface to Retaining Wall Footing Transitions, Options B and C, must be followed. Note: retaining wall backfill is not considered engineered fill. Furthermore, the recommendations in Section IV are preliminary and must be reviewed and finalized by the project structural engineer.

The major cause of soil problems in this locality is moisture increase in soils below structures. Therefore, it is extremely important that positive drainage be provided during construction and maintained throughout the life of any proposed development. In no case should long-term ponding be allowed near structures. Infiltration of water into utility or foundation excavations must be prevented during construction. Planters or other surface features that could retain water adjacent to buildings should not be constructed.

In areas where sidewalks or paving do not immediately adjoin structures, protective slopes should be provided with an outfall of about 4 percent for at least 10.0 feet from perimeter walls. Backfill against footings, exterior walls, retaining walls, and in utility or sprinkler line trenches should be well compacted and free of all construction debris to minimize the possibility of moisture infiltration through loose soil.

Flower, shrub, and tree distances should be maintained according to the presented table. Note that for planting distances less than 5.0 and 10.0 feet for flowers/shrubs and trees respectively, the adjoining foundation embedment depths will need to increase.



#### **Boulder Stability Analysis**

During the site investigation, one moderate sized boulder (greater than 36.0 inches) was observed and found to be of potential concern. The site primary consists of jagged rock outcrops and potentially embedded boulders within the surficial soil layers as you move to the west and upslope on the property. Note, there are small sized boulders (less than 36.0 inches) across the site and do not necessitate a boulder stability analysis.

Based on the boulder stability analysis, B-1 is considered stable and will not require redial action.

Alterations to the current conditions of the site, specifically excavations into the subsurface, may lead to the exposure of buried boulders. If such a scenario arises, this firm should be contacted to re-evaluation the new conditions of the site with regard to boulder stability.

#### **Rock Cut Slope Analysis**

During the initial site evaluation, no existing cut slopes were encountered or observed. This was confirmed during the geotechnical site investigation. Thus, a rock cut slope analysis report was not warranted, and rock cut slope stability is not of concern for the subject site within its current state.

This report and the recommendations contained herein are predicated on three reports serving in congress; 1) the Geotechnical Investigation Report, 2) the Boulder Stability Evaluation, and 3) the Rock Cut Slope Stability Evaluation. This letter is, therefore, only a portion of the overall study of the site. Because of the uniqueness of each report, the contents are constrained to separate submittals. Notwithstanding, all reports will work together. The three reports are identified by the Project Number 28503.

Neither Vann Engineering, Inc. nor their agents or employees shall be jointly, severally or individually liable to the client or owner in excess of the compensation to be paid for our work, by any reason of any act or omission, including breach of contract or negligence not amounting to willful or intentional wrong. This concludes all items to be addressed in this letter. Should any questions arise concerning the content of this letter, please feel free to contact this office at your earliest convenience.

Respectfully submitted,

VANN ENGINEERING, INC.



Jeffry D. Vann, PhD PE D.GE F.ASCE Principal Engineer

Alan J. Cym Alan J. Cuzme, MS

Geotechnical Consultant

Distribution: Addressee via email, <u>micaskey@icloud.com</u> David Dick, David Dick Architect, Inc., via email, <u>dd@ddarchstudio.com</u>





#### **GEOTECHNICAL INVESTIGATION REPORT**

Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Prepared for:

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85250

July 20, 2021

Project 28503



GEOTECHNICAL ENGINEERING • ENVIRONMENTAL CONSULTING CONSTRUCTION TESTING & OBSERVATION



GEOTECHNICAL ENGINEERING • ENVIRONMENTAL CONSULTING • CONSTRUCTION TESTING & OBSERVATION

July 20, 2021

Project 28503

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85250

#### RE: Geotechnical Investigation Report Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Mr. Caskey,

Transmitted herewith is a copy of the final report of the geotechnical investigation on the abovementioned project. The services performed provide an evaluation at selected locations of the subsurface soil conditions throughout the zone of significant foundation influence. The materials encountered on the site are believed to be representative of the total area; however, soil and rock materials do vary in character between points of investigation. The recommendations contained in this report assume that the soil conditions do not deviate appreciably from those disclosed by the investigation. Should unusual material or conditions be encountered during construction, the soil engineer must be notified so that they may make supplemental recommendations if they should be required.

As an additional service, this firm would be pleased to review the project plans and structural notes for conformance to the intent of this report. We trust that this report will assist you in the design and construction of the proposed project. Vann Engineering, Inc. appreciates the opportunity to provide our services on this project and looks forward to working with you during construction and on future projects. This firm possesses the capability of performing testing and inspection services during construction. Such services include, but are not limited to, compaction testing as related to fill control, foundation inspections and concrete sampling. Please notify this firm if a proposal for these services is desired. Should any questions arise concerning the content of this report, please feel free to contact this office directly.

Respectfully submitted,

Alan J.

VANN ENGINEERING, INC.

Cuzme. MS

Jeffry D. Vann, P/hD PE D.GE F.ASCE

Geotechnical Consultant Principal Engineer Distribution: Addressee via email, <u>micaskey@icloud.com</u>

David Dick, David Dick Architect, Inc., via email, <u>dd@ddarchstudio.com</u>



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# SECTION I

#### 1.0 INTRODUCTION

It is the understanding of this firm that a new custom residence is proposed for construction at the subject site, with no planned basement levels. This document presents the results of a geotechnical investigation report conducted by Vann Engineering, Inc. for the:

#### Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Refer to the following aerial photograph which depicts the site (outlined in red) and the immediate vicinity:



Figure 1: Aerial photograph of the site (outlined in red) and the immediate vicinity

The services performed provide an evaluation at selected locations of the subsurface soil conditions throughout the zone of significant foundation influence.

This report and the recommendations contained herein are predicated on three reports serving in congress; 1) the Geotechnical Investigation Report, 2) the Boulder Stability Evaluation, and 3) the Rock Cut Slope Stability Evaluation. This report is, therefore, only a portion of the overall study of the site. Because of the uniqueness of each report, the contents are constrained to separate submittals. Notwithstanding, all reports will work together. The three reports are identified by the Project Number 28503.

#### 1.1 Purpose

The purpose of the investigation was two-fold: 1) to determine the physical characteristics of the soil underlying the site, and 2) to provide final recommendations for safe and economical foundation design and slab support. For purposes of foundation design, the maximum column and wall loads have been assumed to be as summarized in the following table.



#### Table 1: Anticipated Design Loads

Foundation Type	Maximum Column Load (kips)	Maximum Wall Load (KLF)
Conventional, shallow, lightly loaded surface-level spread foundations with total and differential settlements limited to ½ inch and ¼ inch, respectively.	100	5.0

Anticipated structural loads more than those stated above will need to be addressed in an addendum, since they are not covered by the scope of services of this effort.

#### 1.2 Scope of Services

The scope of services for this project includes the following:

- Description of the site and the major soil and rock layers
- Site Plan indicating the locations of all points of exploration
- Explanation of applicable geologic hazards
- Recommendations for surface-level conventional spread foundations; allowable bearing capacity based on settlement analysis of ½ inch total settlement and ¼ inch differential settlement (design data, allowable bearing pressure and depth, for shallow spread foundations)
- General excavation conditions
- Recommendations for safe cut slope stability
- Recommendations for fixed-end and free-end retaining walls
- Lateral stability analyses including active pressure, passive pressure and base friction
- Recommendations for site grading necessary earthwork for conventional systems
- Recommendations for drainage and slab support
- Anticipated shrinkage of the surface soil
- IBC site classification
- Results of the double-ring infiltrometer testing

Note: This report does not include, either specifically or by implication, any environmental assessment of the site or identification of contaminated or hazardous materials or conditions. If the owner is concerned about the potential for such contamination, other studies should be undertaken. We are available to discuss the scope of work of such studies with you. Recommendations for basement-level facilities have not been included in our scope of services.

#### 1.3 Authorization

The obtaining of data from the site and the preparation of this geotechnical investigation report have been carried out according to this firm's proposal (VE20GT0118AC1 dated January 19, 2021), authorized by Michael Caskey on May 6, 2021 to proceed with the work. Our efforts and report are limited to the scope and limitations set forth in the proposal.

#### 1.4 Standard of Care

Since our investigation is based upon review of background data, observation of site materials, and engineering analysis, the conclusions and recommendations are professional opinions. Our professional services have been performed using that degree of skill ordinarily exercised, under



similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. These opinions have been derived in accordance with current standards of practice and no other warranty, express or implied, is made. The limitations of this report and geotechnical issues which further explain the limitations of the information contained in this report are listed at section 7.0.

#### 2.0 **PROJECT DESCRIPTION**

#### 2.1 Proposed Development

Vann Engineering, Inc. understands that a new custom residence is proposed for construction at the subject site, with no planned basement levels.

#### 2.2 Site Description

The subject site is currently a vacant parcel on hillside terrain sloping down to the east with moderate vegetation. Over-sized aggregate was observed scattered across the site surface. Soil containing over-sized aggregate (greater than 3-inches in diameter) must not be used as structural fill. Numerous rock outcrops were observed on the property as you move west and upslope on the property. Refer to the following images which depict the general nature of the site. Note, there is an existing cut slope just off the eastern boundary of the parcel. Based on review of aerial photographs and parcel boundaries, the existing cut slope is not part of the subject site.



Figure 2: General site conditions facing north-northeast



Project 28503 – Geotechnical Investigation Report Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253



Figure 3: Photograph showing rock outcrops and dislodged boulders on the property partially embedded in the surficial soil layer



Figure 4: General site conditions looking upslope (facing west)





Figure 5: Photograph showing rock outcrop comprised of quartzite

#### 3.0 SUBSURFACE INVESTIGATION AND LABORATORY TESTING

#### 3.1 Subsurface Investigation

The subsurface of the site was explored through the utilization of eight (8) 24-channel refraction seismic survey lines, denoted on the Site Plan in Section II of this report. The seismic survey lines involved the retrieval of data in two separate directions (*forward and reverse*). As such, sixteen (16) refraction seismic surveys were conducted at the site. The lengths of the seismic survey lines were 72.0 feet, thereby allowing an examination of the subsurface to depths of 28.0 feet below the existing site grade.

Information pertaining to the subsurface profile was obtained through analysis of seismic refraction data and geological observations of the site. Seismic wave velocities, representative of the various strata, are listed in Section I of this report. Note: Changes in the calculated velocity indicate strata breaks or distinct changes within the same stratum. The important concept to remember with this method is that it is predominantly effective where velocities increase from layer to layer, moving downward from the surface. Analytical methods are used by this firm for determining the depth to the various layers, even in the most complex multi-layer situations. However, when a denser harder soil or rock layer overlies a weaker or less dense soil or rock layer, the weaker or less dense layer is masked and not detected by the seismograph. Thus, the Cross Sections presented herein may not reveal a possible weaker underlying layer, within or below the depicted layers. If a weaker layer is encountered during the excavation efforts, this office should be contacted immediately for further recommendations.

Generally, the depth of a seismic survey investigation is approximately equal to one-third the length of the survey. For example, if it is desired to examine the substrata to a depth of 20.0 feet, the survey should extend a distance of 60.0 feet. However, seismic survey exploration depths,



as mentioned above and depicted on the Cross Sections presented herein, are calculated by using a computer program (SeisImager 2D) that generates cross sections of the subsurface geology at each seismic survey location. Further, total exploration depths, as stated above, of the seismic survey study may vary from one survey line to the next. Furthermore, the calculated depths are dependent on the program's ability to interpret the subsurface layering and are based primarily on the penetration and refraction of the seismic wave into and through the subsurface stratum.

The materials encountered on the subject site are believed to be representative of the total area; however, soil and rock materials do vary in character between points of investigation. The recommendations contained in this report are based on the assumption that the soil conditions do not deviate appreciably from those disclosed by the investigation. Should unusual material or conditions be encountered during construction, the soil engineer must be notified so that they may make supplemental recommendations if they should be required.

#### 3.2 Laboratory Testing

Laboratory analyses were performed on representative soil samples to aid in material classification and to estimate pertinent engineering properties of the on-site soils in preparation of this report. Testing was performed in general accordance with applicable test methods. A representative sample obtained during the field investigation was subjected to the following laboratory analyses:

#### Table 2: Laboratory Testing

Test	Sample(s)	Purpose
Sieve Analysis, Atterberg Limits, and Moisture Content	Native subgrade soils (1)	Soil classification and determination of in-situ moisture content

Refer to Section III of this report for the complete results of the laboratory testing. The samples will be stored for 30 days from the date of issue of this report, and then disposed of unless otherwise instructed in writing by the client.

#### 3.3 Double-Ring Infiltrometer Testing

One (1) double-ring infiltrometer test (ASTM D 3385 – 18) was conducted in order to establish the stabilized infiltration rate. The double-ring infiltrometer test is denoted as DRI-1 on the Site Plan.

As described in ASTM D 3385 – 18, the test was initiated through the advancement of a 24-inch diameter open cylinder, driven to a depth of 6.0 inches below the existing grade. Following the placement of the 24-inch open cylinder, a 12-inch diameter open cylinder was placed in the center of the 24-inch open cylinder, then advanced/driven to a depth of 3.0 inches below the existing grade.

Following the placement of the two cylinders, the inner cylinder and the annular space were partially filled with water and maintained at a constant level (head) for a period of 60.0 minutes to allow for an adequate pre-soak time. Following the pre-soaking effort, a constant head elevation



was established. Measurements were obtained at time intervals of 15, 30 and 60 minutes (total elapsed time of each test was 6 hours).

The table and associated graph, located in Section IV, present the data obtained during the double-ring infiltrometer testing. It is this firm's opinion that de-rating of the infiltration rates should be completed by the project civil/drainage engineer.

#### 4.0 SUBSURFACE CONDITIONS

#### 4.1 Local Geology

The site is situated on hillside topography. The local geology and our field investigation indicate that a layer of overburn soil (defined herein as Layer 1) overlies a rock mass comprised of cross-bedded quartzite (defined herein as Layer 2).



Figure 6: Geologic Map

#### 4.2 Site Stratigraphy

The following represents a general summary of the on-site soil and rock characteristics based on a computer-aided analysis of data obtained during this firm's subsurface investigation.



Layer	Velocity Range (FPS)	Depth of Occurrence <sup>1</sup>	Classification
1	From the surface to depths ranging from 1.1 to 5.3 feet	1377 to 1900	Dense coarse-grained alluvium comprised of silty gravelly sand (SM)
2	Below depths ranging from 1.1 to 5.3 feet <sup>3</sup>	5453 to 7555	Moderately weathered and fractured, fair, moderately strong cross-bedded quartzite

#### Table 3: Site Stratigraphy

<sup>1</sup>Average calculated depth range below the existing site surface at the locations of the seismic surveys. Variations on the order of 1.5 feet may be encountered in the layer depth calculations due to the variability of the materials, degrees of weathering, and orientation of the structures.

### <sup>2</sup>Over-sized (greater than 3.0 inches) particles were encountered at the surface, and throughout Layer 1, and must not be used as structural fill.

#### <sup>3</sup>The depth to Layer 2 may approach zero as we draw close to know outcrops.

Refer to the following tomographic cross sections and general layered cross sections located in Section II of this report for the subsurface layering determined by analysis of the seismic refraction survey data. The locations of the seismic surveys are depicted on the Site Plan in Section II.



Figure 7: Tomographic cross section of Seismic Survey Line A-B





Figure 8: Tomographic cross section of Seismic Survey Line C-D



Figure 9: Tomographic cross section of Seismic Survey Line E-F





Figure 10: Tomographic cross section of Seismic Survey Line G-H



Figure 11: Tomographic cross section of Seismic Survey Line I-J





Figure 12: Tomographic cross section of Seismic Survey Line K-L



Figure 13: Tomographic cross-section of Seismic Survey Line M-N





Figure 14: Tomographic cross-section of Seismic Survey Line O-P

#### 4.3 Engineering Properties of the Site Soils

Expansive soils are soils that expand or swell and are typically known to have a shrink/swell potential. Cohesive soils, or clay soils, tend to shrink as they are dried, and swell as they become wetted. The clay content of the soil determines the extent of the shrink/swell potential. The native soils encountered at the site are considered <u>cohesionless</u> based on the laboratory testing (i.e. measured plasticity of 2). Based on the measured properties of the soil samples, this firm has determined that the potential for soil expansion is <u>low</u>.

Collapsible soils are typically comprised of silt and sand size grains with small amounts of clay. The collapse potential of a soil depends on the in-situ density, depth of the deposit and the extent of a porous structure. When loading is applied to collapsible soils, originating from the weight of the structure, along with wetting, settlement occurs. Wetting sources are most commonly associated with landscape irrigation, inadequate surface drainage, utility line leakage, proximity of retention basins and water features to a structure, and long-term ponding next to the structure. Based on seismic refraction and laboratory test data, the soils encountered at the site are considered to have a low potential for collapse (mitigated by the foundation recommendations contained herein).

#### 4.4 Groundwater

No groundwater was encountered during the course of this firm's site investigation. Groundwater is expected at a depth of approximately 229 feet according to recent well data in the area (Registry ID: 55-535940). Also, refer to the following 2005 groundwater map for an approximate location of the site in relation to surrounding wells:



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The recommendations contained herein are based upon the properties of the surface and subsurface soils and rocks as described by the field evaluation, the results of which are presented and discussed in this report. Alternate recommendations may be possible and will be considered upon request. The following recommendations are predicated on the wedge of spread fill remaining and are presented as a guide in the compilation of construction specifications. The recommendations are not comprehensive contract documents and should not be utilized as such.

#### 5.1 Excavating Conditions

Excavations greater than 4.0 feet should be sloped or braced as required to provide personnel safety and satisfy local safety code regulations. The following table summarizes the seismic wave velocity and <u>possible</u> rippability conditions for the various layers. The rippability conditions are based on the seismic P-wave velocities and data utilized by Caterpillar Inc. included in their "Handbook of Ripping."

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Layer	Average Depth of Occurrence <sup>1</sup>	Seismic Wave Velocity (fps)	Remarks Relative to Rippability
1	From the surface to depths ranging from 1.1 to 5.3 feet	1377 to 1900	Conventional equipment, Case 580 Trencher (special note given to over-sized aggregate) <sup>2</sup>
2 (Hard Dig)	Below depths ranging from 1.1 to 5.3 feet	5453 to 7555	Blasting techniques may be required to accomplish effective material removal <sup>3</sup>

#### Table 4: Excavating Conditions

<sup>1</sup>Average calculated depth range below the existing site surface at the locations of the seismic surveys. Variations on the order of 1.5. feet may be encountered in the layer depth calculations due to the variability of the materials, degrees of weathering, and orientation of the structures.

<sup>2</sup>As stated herein, over-sized particles are those greater than 3.0 inches. It must be noted that over-sized particles will occur within Layer 1 and should be anticipated during the excavation process.

<sup>3</sup>This is not a recommendation to blast, it is simply an indication of the effort that may be involved in removing the material.

## The subsurface soils (Layer 1) will be highly susceptible to sloughing. As such, we recommend that appropriate measures be incorporated into the final design and construction to avoid mishaps associated with caving.

Temporary construction slopes should be designed and excavated in strict compliance with the rules and regulations of the Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA), 29 CFR, Part 1926. This document was prepared to better ensure the safety of workers entering trenches or excavations and requires that all excavations conform to new OSHA guidelines. The contractor is solely responsible for protecting excavations by shoring, sloping, benching or other means as required to maintain stability of both the excavation sides and bottom. Vann Engineering, Inc. does not assume any responsibility for construction site safety or the activities of the contractor.

The subsurface soils (Layer 1) are considered to be OSHA Type C soil. <u>Temporary</u> excavations into Layer 1 soils are to be configured at a 1.5H:1V incline. Layer 2 is considered to be OSHA Type A (rock). <u>Temporary</u> excavations into Layer 2 rock are to be configured at a 1H:3V incline. Deviation from these recommendations will necessitate a trench support system or shield.

#### 5.2 Cut Slope Stability

The following tabulation presents this firm's analysis of safe cut slopes for the anticipated subsurface conditions. However, it should be noted that the subsurface material (Layer 2), once exposed, could reveal hidden characteristics that may indicate the potential for slope instability during and after cutting operations. Therefore, this firm recommends that the following safe cut slope criteria and associated slope stability analyses be implemented during construction.



Portion of Cut Slope	Temporary Cut Slope Ratio (Horizontal to Vertical) "During the Life of Construction"ª	Permanent Cut Slope Ratio (Horizontal to Vertical)ª
Layer 1	1.5:1	2.5:1
Layer 2	1:3	1:2.5

#### Table 5: Cut Slope Recommendations Not Exceeding 20 Feet in Height

<sup>a</sup>This firm should be notified during construction in order to verify field conditions and inspect all cut slopes for structural features/discontinuities (e.g. shear zones, foliation/parting, fractures, joint orientations and slabbing) contained within the rock mass that could lead to slope instability and eventual slope failure.

20.0 feet is recommended as the maximum cut slope height, using the appropriate cut slope ratios for the corresponding height limitation.

If conditions relative to the integrity and stability of the rock mass are observed during the site excavation and are noted during a site inspection, this firm may alter the above-recommended cut slopes to adhere to a more stable condition. Therefore, it is critical that all cut slope excavations be inspected at a point where; if unstable conditions are identified, that mitigation measures can be implemented before large scale cuts have been performed or slope failure occurs (i.e. inspecting and potentially modifying the cut slope recommendations, or possibly recommending the use of rock anchors, rock netting, or retaining walls for slope stability, when the cut is no greater than 10.0 feet in height). Note: Altered recommendations or mitigation measures shall be based on the results obtained from a Markland stability analysis, which is not part of the scope of work for this report. These slope designs were completed under the assumption that surcharge loads will not be applied at the crest of any existing cut slope. All slopes should be limited to pedestrian foot traffic only, within 10.0 feet of the crest.

Very small flows of surface water may erode portions of the faces of the existing cut slopes and lead to localized slope movements. For this reason, all surface drainage should be controlled and directed away from any cut slopes. This firm recommends that a V-shaped trench be constructed 5.0 feet up-slope, adjacent and parallel to the crest of any cut-slope and graded to drain. The drainage trench design shall provide adequate protection for keeping water away from any exposed cut-slope and building area.

There exists the possibility of rock falls associated with possible weathered upper portions of any exposed rock stratum. In other words, some localized rock movements should be anticipated. Any such occurrence will be accommodated by the utilization of buffer zones. Buildings should not be constructed in, <u>and pedestrian traffic should be directed away from</u>, buffer zones. At the base of any cut-slope (beyond the toe of the cut-slope), buffer zones should be maintained according to the following schedule:

Vertical Rock Cut-Slope Height (feet)	Horizontal Rock-Fall Impact Zone Distance (feet)
5	2.5
10	5.0
15	7.5

#### Table 6: Buffer Zones



Vertical Rock Cut-Slope Height	Horizontal Rock-Fall Impact Zone Distance
(feet)	(feet)
20	10.0

Unforeseen conditions may develop during cutting operations. If conditions arise which were not addressed by this design, it is imperative that this firm be notified such that the situation can be addressed properly.

In all construction activities related to site grading, the concept of toe removal should become well understood. All slopes, whether they are natural or fill, have a toe (the lowest portion of the slope). When the toe is removed, the slope may become unstable. For purposes of construction, the entire site should be considered to exist on a slope. Any cut into the natural slope will result in the removal of the toe for the up-slope portion, resulting in the potential movement of up-slope boulders riding on the surface.

In addition to cut operations, vibrations from heavy equipment can induce a seismic-like component to a cut or natural slope which may reduce the overall slope stability and decrease the factor of safety against sliding below 1. Such vibrations can also dislodge boulders from a normally stable slope. It should also be noted that it is beyond this firm's ability to predict the time and place such an event (*rock fall or slope movement*) will occur.

It is well known that erosional processes and gravity work continuously to move rock and soil down-slope, and therefore, <u>future slope movements should be anticipated</u> whether small or large. To protect the structure from rock falls and rollouts, the following Rock Fall Catchment Geometry diagram must be adhered to. The diagram describes the geometry of the slope protection measures at the base of the slope.



Figure 15: Rock Fall Catchment Geometry



#### 5.3 Backfill Settlement

Retaining wall and utility trench backfill in building and pavement areas should be compacted to the density criteria previously presented herein. If backfills are not compacted as recommended, excessive settlement may result in areas adjoining backfilled retaining walls, or over utilities. Excessive settlement of loose backfills has caused damage to pavements, floor slabs, pedestrian walkways, planters, etc., which adjoin backfilled retaining walls. Deep compacted backfills will also tend to settle differently relative to retaining walls and should not be used for support of adjoining facilities prone to damage from differential settlements, or facilities attached to the main structure.

Flooding has also been experienced in below grade areas due to breakage of utility lines embedded in loose retaining wall backfills, and from infiltration of surface water (irrigation and/or rainfall) through loose retaining wall backfills. Backfills may consist of compacted native soils. Backfill compaction should be accomplished by mechanical methods. Water jetting or flooding of loose, dumped backfills to increase moisture contents should be prohibited in all wall backfills and in utility trench backfills. Because of the critical factor of minimizing settlements of approach slabs, particularly careful quality control should be exercised over backfill operations.

Heavily loaded structures that require minimal settlement (i.e. less than ¼-inch differential settlement), such has infinity edge swimming pools, should not bear on backfill soil. Such structures should be designed with deeper foundations (such has drilled shafts, micro piles, helical piers, etc.) which penetrate through the backfill soil and into a stronger stratum below. If recommendations for a deep foundation system are required, please contact this firm so that a subsequent analysis can be performed. Even with proper backfill compaction (well compacted – 95 percent minimum), the backfill will have the potential for about 1.2 inches of settlement (for 10.0 feet of total backfill) in the event of wetting by irrigation or broken conduits. With moderately compacted backfill (90 percent minimum), the magnitude of backfill settlement may approach 3.0 inches (for 10.0 feet of total backfill). Further, with poorly compacted backfill (85 percent minimum), the approximate magnitude of backfill settlement may reach as much as 6.0 inches (for 10.0 feet of total backfill).

The preceding estimates for backfill settlement are those which may occur through settlement of the backfill alone, without any surcharge or other structural loading condition. Refer to the following table which reflects the anticipated settlement without any structural loads.

Backfill Types			Anticipated Settlement without any Structural Loads (in.)					
% Compaction	Description	% Estimated Strain	2.5 feet of backfill	5.0 feet of backfill	7.5 feet of backfill	10.0 feet of backfill	12.5 feet of backfill	15.0 feet of backfill
95-98	Very Well Compacted	0.5	0.15	0.3	0.45	0.6	0.75	0.9
95	Well Compacted	1	0.3	0.6	0.9	1.2	1.5	1.8
90	Moderately Compacted	2.5	0.75	1.5	2.25	3.0	3.75	4.5
85	Poorly Compacted	5	1.5	3.0	4.5	6.0	7.5	9.0
80	Very Poorly Compacted	7.5	2.25	4.5	6.75	9.0	11.25	13.5

#### Table 7: Backfill Settlement

Accordingly, it is recommended that where slabs are supported on grade over fill but are also tied to or connected to elements supported at retaining level, special construction details should be



utilized. Concrete slabs should be hinged or keyed at the base where they join the rigid structure in order to allow slight rotation of the slab. These measures will reduce the likelihood that such slabs will crack or suffer noticeable deformations. Also refer to Slab Support presented herein.

Foundation stepping will be required to prevent any transitional foundation from bearing on fill or retaining wall backfill soil. Specifically, this refers to a footing that will transition from the retaining wall level to the house level. At all times, footings installed throughout the step must bear on native undisturbed soil, as outlined in Surface to Retaining Wall Footing Transitions, Option A (Included in Section IV). If footings must bear on or in retaining wall backfill, the recommendations included in Surface to Retaining Wall Footing Transitions, Options B and C, must be followed. Note: Retaining wall backfill is not considered engineered fill. Furthermore, the recommendations in Section IV are preliminary and must be reviewed and finalized by the project structural engineer.

#### 5.4 Site Preparation

It is recommended that all vegetation and all deleterious matter be removed at the commencement of site grading activities. Although underground facilities such as septic tanks, cesspools, basements, and dry wells were not encountered, such features may be encountered during construction. These features should be demolished or abandoned in accordance with the recommendations of the geotechnical engineer. Such measures may include backfill with 2-sack ABC/cement slurry.

Following the removal of the above listed items, the uppermost <u>8.0 inches</u> of the site soils must be reworked to establish a stable condition. All final compaction shall be as specified herein. The scarification and compaction requirement apply to cut situations as well as fill situations.

Any site cut material may be reused as structural supporting fill provided that it is free of all vegetation, the <u>maximum particle size is 3.0 inches</u>, and a suitable percentage of fines will be generated to ensure a stable mixture. Over-sized (greater than 3.0 inches) particles were encountered at the surface, and throughout Layer 1, and must not be used as structural fill.

Complete removal and cleaning of any undesirable materials and proper backfilling of depressions will be necessary to develop support for the proposed facilities. Widen all depressions as necessary to accommodate compaction equipment and provide a level base for placing any fill. All fills shall be properly moistened and compacted as specified in the section on compaction and moisture recommendations. All subbase fill required to bring the structure areas up to subgrade elevation should be placed in horizontal lifts not exceeding 6.0 inches compacted thickness or in horizontal lifts with thicknesses compatible with the compaction equipment utilized.

## Fill placement in <u>wash areas</u>, trench areas, or sloped topography should involve <u>horizontal</u> layers placed in 6-inch lifts; such that each successive lift is benched into the native site soils a minimum lateral distance of <u>5.0 feet</u>.

Any tree removal efforts made to accommodate the new structure must include removal of the root systems, followed by backfilling of the volume occupied by the root ball. Typically, to remove all significant roots such that the maximum diameter of any root is no greater than  $\frac{1}{2}$  inch, it is required to excavate to a depth of 4.0 feet to capture all applicable roots. Further, the lateral extent of each tree root excavation is generally 8.0 feet (twice the depth). An inspection of the



site should be performed during the grubbing process to ensure that all applicable materials have been removed.

It is the understanding of this firm that various utility trenches may traverse the completed pad. The backfill of all utility trenches, if not in conformance with this report, may adversely impact the integrity of the completed pad. This firm recommends that all utility trench backfill crossing the pads be inspected and tested to ensure full conformance with this report. Untested utility trench backfill will nullify any as-built grading report regarding the existence of engineered fill beneath the proposed building foundations and place the owner at greater risk in terms of potential unwanted foundation and floor slab movement.

To avoid distress due to differential settlement, we recommend that all foundations bear on a like stratum, or strata that will produce similar settlements, and that all foundations use the same bearing capacity throughout the project.

Compaction of backfill, subgrade soil, subbase fill, and base course materials should be accomplished to the following density and moisture criteria prior to concrete placement:

Material	Building Area	Percent Compaction (ASTM D698)	Compaction Moisture Content Range
On-site soils with	Below Foundation Level	95 min	Optimum -2 to optimum +2
PI < 12	Above Foundation Level <sup>1</sup>	95 min	Optimum -2 to optimum +2
Imported fill motorial	Below Foundation Level	95 min	Optimum -2 to optimum +2
imported nii materiai	Above Foundation Level <sup>1</sup>	95 min	Optimum -2 to optimum +2
Base course	Below Interior Concrete Slabs	95 min	

#### **Table 8: Compaction Requirements**

<sup>1</sup>Also applies to the subgrade in exterior slab, sidewalk, curb, gutter and pool deck areas.

Any soil disturbed during construction shall be compacted to the applicable percent compaction as specified herein. Increase the required degree of compaction to a minimum of 98 percent for fill materials greater than 5.0 feet below final grade. Natural undisturbed soils or compacted soils subsequently disturbed or removed by construction operations should be replaced with materials compacted as specified above.

All imported (engineered) fill material to be used as structural supporting fill should be free of vegetation, debris and other deleterious material and meet the following requirements:

Table 9: Imported Fill Soll Parameters			
Soil Parameter	Requirement (Maximum Allowable)		
Plasticity Index:	14		
Particle Size:	3 inches		
Passing #200 Sieve:	60 %		

#### Table O. Immented Fill Call Developmentary



Soil Parameter	Requirement (Maximum Allowable)
Expansion Potential*:	1.5 %
Sulfates:	0.19 %

\*Performed on a sample remolded to 95 percent of the maximum ASTM D698 density at 2 percent below the optimum moisture content, under a 100 PSF Surcharge.

Water settling and/or slurry <u>shall not</u>, in any case, be used to compact or settle surface soils, fill material, or trench backfill within 10.0 feet of a structure area or within an area, which is to be paved. When trench backfill consists of permeable materials that would allow percolation of water into a structure or pavement area, water settling shall not be used to settle such materials in any part of the trench.

#### 5.5 Fill Slope Stability

Maximum fill slopes may conform to a 2.5:1 (horizontal:vertical) ratio if the fill is placed in accordance with the recommendations contained herein.

#### 5.6 Shrinkage

For balancing grading plans, the estimated shrinkage of on-site soils has been provided below. The calculated shrinkage assumes oversized material will be processed and used on the project (i.e. oversized material is crushed and used in engineered fill). Assuming the average degree of compaction will approximate 97 percent of the standard maximum density, the approximate shrinkage of the reworked on-site soils is as follows:

Table 10: Shrinkage			
Material	Estimated Shrinkage (Based on ASTM D698A)		
On-site soils	11% ± 3		

#### 5.7 Site Classification

This project is not located over any known active faults or fault associated disturbed zones. Please refer to the following table contained in ASCE 7-16:

	Site Class	$\overline{V}_s$	$\overline{N}$ or $\overline{N}_{ch}$	$\overline{S}_u$
А	Hard Rock	>5,000 ft/s	NA	NA
В	Rock	2,500 to 5,000 ft/s	NA	NA
С	Very Dense Soil and Soft Rock	1,200 to 2,500 ft/s	>50 blows/ft	>2,000 lb/ft <sup>2</sup>
D	Stiff Soil	600 to 1,200 ft/s	15 to 50 blows/ft	1,000 to 2,000 lb/ft <sup>2</sup>
Е	Soft Clay Soil	<600 ft/s	<15 blows/ft	<1,000 lb/ft <sup>2</sup>

#### Table 11: ASCE 7-16 Section 20.3 Table 20.3-1 Site Classification



	Site Class	$\overline{V}_s$	$\overline{N}~or~\overline{N}_{ch}$	$\overline{S}_u$
		Any profile with more than	n 10 feet of soil that has the • Plasticity Index PI>20 • Moisture Content w≥409 Indrained Shear Strength <i>S</i> <sub>u</sub> <	following characteristics: % 500 lb/ft <sup>2</sup>
F	Soils Requiring Site Response Analysis in Accordance with Section 21.1	See Section 20.3.1		

The formula to determine the weighted average shear wave velocity is defined below:

$$\overline{V}_{s} = \frac{d_{s}}{\sum_{i=1}^{n} \frac{d_{i}}{V_{si}}}$$

Where  $d_s$  is the total thickness (uppermost 100 feet),  $V_{si}$  is the shear wave velocity measured in the field, and  $d_i$  is the thickness of any layer between 0 and 100 feet.

Based on the shear wave velocity results and the known local geologic conditions at the site the calculation for the weighted average is shown below.

$$\overline{V_s} = \frac{100 \, ft}{\frac{5.3 \, ft}{938 \, fps} + \frac{94.7 \, ft}{3555 \, fps}}$$
$$\overline{V_s} = 3097 \, fps$$

By calculation of the shear wave, the weighted average shear wave velocity equals 3097 feet per second for the uppermost 100 feet. The 2018 IBC Site Class **B** may be utilized in the earthquake design of the proposed site.

#### 5.8 Conventional Surface Level Spread Foundations

To avoid distress due to differential settlement, we recommend that all foundations bear on a like stratum, or strata that will produce similar settlements, and that all foundations use the same bearing capacity throughout the project. Refer to the Transition Lot Detail presented herein for an illustration of the recommended subexcavation and recompaction effort.

It is recommended that all perimeter foundations and isolated exterior foundations bearing on engineered fill or native undisturbed soil be embedded a minimum of 1.5 feet below the lowest adjacent finish pad grade within 5.0 feet of proposed exterior walls. Interior footings bearing on engineered fill or native undisturbed soils should be founded a minimum of 1.5 feet below finish floor level. Foundation excavations may be terminated upon contact with Layer 2 rock provided an adequate depth has been achieved (to be verified by a representative of this firm). Where footings will bear on Layer 2, foundations must have a minimum footing thickness of 1.0 feet.



For all construction, 2.0 feet and 1.33 feet are recommended as the minimum width of spread and continuous footings, respectively. The following tabulations may be used in the design of shallow spread (column) and continuous (wall) foundations for the proposed structures.

Foundation Embedment Depth <sup>1</sup>	Bearing Stratum <sup>2</sup>	Allowable Soil Bearing Capacity <sup>3</sup>
1.5 FeetNative undisturbed soil (Layer or engineered fill		2000 PSF
2.0 Feet	Native undisturbed soil (Layer 1) or engineered fill	2500 PSF
Bearing at the surface of Layer 2 with minimum footing thickness of 1.0 feet	l aver 2	5500 PSF
Socketed 1.0 feet into Layer 2		6500 PSF

#### Table 12: Conventional Surface Level Foundations

<sup>1</sup>Conditions for foundation embedment depth:

a) The depth below the lowest adjacent exterior pad grade within 5.0 feet of proposed exterior walls;



b) The depth below finish compacted pad grade provided that a sufficient pad blow-up (the lateral extent to which the building pad is constructed beyond the limits of the exterior walls or other structural elements, inclusive of exterior column foundations) has been incorporated into the grading and drainage design (5.0 feet or greater);



c)The depth below finish floor level for interior foundations.

<sup>2</sup>Refers to the soil layer that the footing pad rests on and does not mean to imply that the foundation be fully embedded into that particular stratum.

<sup>3</sup>The allowable soil bearing capacity value and associated allowable loads are based on a total settlement of ½ inch and a differential settlement of ¼ inch. The maximum estimated footing settlements (in situ) should be within tolerable limits of ½ inch if constructed in accordance with the recommendations contained in this report and a reasonable effort is made to balance loads on the footings.

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Note: Foundations for free-end retaining walls may utilize allowable soil bearing capacity that is double the above listed value, corresponding to 1" of allowable total settlement and 1/2" of allowable differential settlement.



The weight of the foundation below grade may be neglected in dead load computations. The above recommended bearing capacities should be considered allowable maximums for dead plus design live loads. The allowable bearing may be increased by a factor of 1.33 for resistance to wind loads and/or temporary eccentric loading.

Foundation stepping will be required to prevent any transitional foundation from bearing on fill or retaining wall backfill soil. Specifically, this refers to a footing that will transition from the retaining wall level to the house level. At all times, footings installed throughout the step must bear on native undisturbed soil, as outlined in Surface to Retaining Wall Footing Transitions, Option A (Included in Section IV). If footings must bear on or in retaining wall backfill, the recommendations included in Surface to Retaining Wall Footing Transitions, Options B and C, must be followed. Note: Retaining wall backfill is not considered engineered fill. Furthermore, the recommendations in Section IV are preliminary and must be reviewed and finalized by the project structural engineer.

Building foundations to be constructed in close proximity to retention basins (within 5 feet) should be embedded 1.0 feet deeper than the stated depths in the preceding bearing capacity tables.

Shallow foundations that are adjacent to lower foundation areas must be stepped down so that their base is below the lower backfill materials, and below a line projected upward from the nearest lower foundation edge at a 45-degree angle. It is recommended that continuous footings and stem walls are reinforced and bearing walls be constructed with frequent joints to better distribute stresses in the event of localized settlements. Similarly, all masonry walls should be provided with both vertical and horizontal reinforcement. It is recommended that the footing excavations be inspected to ensure that they are free of loose soil which may have blown or sloughed into the excavations. It will also be necessary for the geotechnical engineer to verify that the footing embedment depth and bearing stratum adhere to the recommendations presented above.

Code compliant concrete, with **Type II** cement, should be used for footings, stem walls and floor slabs. A maximum 4-inch slump should be used for footings and stem walls and a maximum 6-inch slump should be used for floor slabs.

# 5.9 Lateral Stability Analyses

All on-site retaining walls must be designed to resist the anticipated lateral earth pressures. Unrestrained (free-end) retaining walls should be designed for active earth pressures (K<sub>a</sub>) and are assumed to allow small movement of the wall. Restrained (fixed-end) retaining walls should be designed for at-rest earth pressures (K<sub>o</sub>) with no assumed wall movement. Soil or rock present in front of the toe of the retaining wall will provide resistance to movement and should be modeled as passive earth pressure (K<sub>p</sub>). The following presents recommendations for lateral stability analyses for native undisturbed soil (Layer 1), engineered fill, and Layer 2.

Parameter	Wall Type	Engineered Fill or Native Undisturbed Soil (Layer 1)	Layer 2°			
Active (Ka) Pressure <sup>a</sup>	Free-end	34 p	osf/ft			

#### Table 13: Lateral Stability



Parameter	Wall Type	Engineered Fill or Native Undisturbed Soil (Layer 1)	Layer 2 <sup>c</sup>		
At-Rest (K <sub>o</sub> ) Pressure <sup>a</sup>	Fixed-end <sup>b</sup>	52 psf/ft			
Passive (K <sub>p</sub> )	Free-end/Fixed-end independent of base friction	358 psf/ft	698 psf/ft		
Resistance	Fixed-end in conjunction with base friction	240 psf/ft	468 psf/ft		
Coefficient of	Free-end/Fixed-end independent of passive resistance	0.62	0.87		
	Free or Fixed-end in conjunction with passive resistance	0.42	0.58		

The equivalent fluid pressures presented herein do not include the lateral pressures arising from the presence of:

- Hydrostatic conditions, submergence or partial submergence
- Sloping backfill, positively or negatively
- Surcharge loading, permanent or temporary
- Seismic or dynamic conditions

We recommend a free-draining soil layer or manufactured geosynthetic material, be constructed adjacent to the back of any retaining walls serving as basement walls. A filter fabric may be required between the soil backfill and drainage layer. The drainage zone should help prevent development of hydrostatic pressure on the wall. This vertical drainage zone should be tied into a gravity drainage system at the base of the wall.

### 5.10 Conventional Slab Support

Site grading within the building areas should be accomplished as recommended herein. Four inches of aggregate base course (ABC) floor fill should immediately underlie interior grade floor slabs. The aggregate base material should conform to the requirements of local practice.

Building pads for conventional systems may be constructed with sufficient lateral pad "blow-up" to accommodate the entire perimeter slab width. To further reduce the potential for slab related damage in conjunction with conventional systems, we recommend the following:

- 1. Placement of effective control joints on relatively close centers
- 2. Proper moisture and density control during placement of subgrade fills
- 3. Provision for adequate drainage in areas adjoining the slabs
- 4. Use of designs that allow for the differential vertical movement described herein between the slabs and adjoining structural elements, **i.e.** <sup>1</sup>/<sub>4</sub> **inch**
- 5. Utilization of 2-sack ABC/cement slurry as backfill at the intersection of utility trenches with the building perimeter



The use of vapor retarders may be considered for any slab-on-grade where the floor will be covered by products using water based adhesives, wood, vinyl backed carpet, impermeable floor coatings (urethane, epoxy, or acrylic terrazzo). When used, the design and installation should be in accordance with the recommendation given in ACI 302.1R.

# 5.11 Drainage

The major cause of soil problems in this locality is moisture increase in soils below structures. Therefore, it is extremely important that positive drainage be provided during construction and maintained throughout the life of any proposed development. In no case should long-term ponding be allowed near structures. Infiltration of water into utility or foundation excavations must be prevented during construction. Planters or other surface features that could retain water adjacent to buildings should not be constructed.

In areas where sidewalks or paving do not immediately adjoin structures, protective slopes should be provided with an outfall of about 4 percent for at least 10.0 feet from perimeter walls. Backfill against footings, exterior walls, retaining walls, and in utility or sprinkler line trenches should be well compacted and free of all construction debris to minimize the possibility of moisture infiltration through loose soil.

Roof drainage systems, such as gutters or rain dispenser devices, are recommended all around the roof-line. Rain runoff from roofs should be discharged at least 10.0 feet from any perimeter wall or column footing. If a roof drainage system is not installed, rain-water will drip over the eaves and fall next to the foundations resulting in sub-grade soil erosion, creating depressions in the soil mass, which may allow water to seep directly under the foundations and slabs.

# 5.12 Landscaping Considerations

The potential for unwanted foundation and slab movements can often be reduced or minimized by following certain landscape practices. The main goal for proper landscape design should be to minimize fluctuations in the moisture content of the soils surrounding the structure. In addition to maintaining positive drainage away from the structure, appropriate plant/tree selections and sprinkler/irrigation practices are extremely important to the long-term performance of the foundations and slabs. The conventional practice of planting near foundations is not recommended.

Flower, shrub, and tree distances should be maintained according to the following table. Note that for planting distances less than 5.0 and 10.0 feet for flowers/shrubs and trees respectively, the adjoining foundation embedment depths will need to increase.

Flowers & Shrub Planting Distance	Tree Planting Distance	Design Changes
5 feet	10 feet	-
4 feet <sup>1</sup>	9 feet	Increase footing embedment depth by 6.0 inches <sup>2</sup>
3 feet <sup>1</sup>	8 feet	Increase footing embedment depth by 12.0 inches <sup>2</sup>

# Table 14: Foundation Design Alterations Due to Landscaping



Flowers & Shrub Planting Distance	Tree Planting Distance	Design Changes
2 feet <sup>1</sup>	7 feet	Increase footing embedment depth by 18.0 inches <sup>2</sup>

<sup>1</sup>Verification from the landscape architect that low water consumption plants are being installed must be submitted to this office for approval.

<sup>2</sup>The use of 2-sack ABC cement slurry may be implemented to provide the requisite embedment depth increase below a more conventional foundation detail.

Ground cover plants with low water requirements may be acceptable for landscaping near foundations. Ground cover vegetation helps to reduce fluctuations in the soil moisture content. Limit the watering to the minimum needed to maintain the ground cover vegetation near foundations. For greater moisture control, water these areas by hand. For planters and general landscaping, we recommend the following:

- Planters should be sealed.
- Grades should slope away from the structures.
- Only shallow rooted landscaping material should be used.
- Watering should be kept to a minimum.

Some trees may have extensive shallow root system that may grow under and displace shallow foundations. In addition, tree roots draw moisture from the surrounding soils, which may exacerbate shrink/swell cycles of the surface soils. The amount of moisture drawn out of the soil will depend on the tree species, size, and location. If trees are planted well away from foundations in irrigated areas, the chances of foundation damage are greatly reduced. If irrigation/sprinkler systems are to be used, we recommended installing the system all around the structure to provide uniform moisture throughout the year. The sprinkler system should be checked for leakages once per month. Significant foundation movements can occur if the soils under the foundations are exposed to a source of free water.

In lieu of deepened footings, a root barrier system can be implemented on individual trees. In order to reduce the minimum distance of tree installation to 7.0 feet from the foundation of adjacent structures, UB 24-2 root barriers from DeepRoot Green Infrastructure, LLC (or equivalent) may be implemented in box formations, surrounding the protection sides of installed trees. A minimum depth of embedment of 23.5 inches, of the DeepRoot UB 24-2 (or equivalent) root barriers, is required by this firm in order to redirect root growth downward and prevent moisture by landscape irrigation from entering the foundation zone of the adjacent structures. A minimum 0.5 inch of the root barrier. A minimum protection barrier around 3 sides of all installed trees must be utilized as a root barrier.

### 5.13 Foundations and Risks

The factors that aid in the design and construction of lightly loaded foundations include economics, risk, soil type, foundation shape and structural loading. Most of the time, foundation systems are selected by the owner/builder, which as a result of economic considerations, accept higher risks in foundation design. It should be noted that some levels of risk are associated with all foundation systems and there is no such thing as a "zero-risk" foundation. It also should be



noted that the previous foundation recommendations are not designed to resist soil movements as a result of sewer/plumbing leaks, excessive irrigation, poor drainage, and water ponding near the foundation system. It is recommended that the owner implement a foundation maintenance program to help reduce potential future unwanted foundation/slab movements throughout the useful life of the structure.

The owner should conduct yearly observation of foundations and slabs and perform any maintenance necessary to improve drainage and minimize infiltrations of water from precipitation and/or irrigation. Irrigation/sprinkler systems should be periodically monitored for leaks and malfunctioning sprinkler heads, which should be repaired immediately. Post-construction landscaping should be carefully designed to preserve initial site grading.

# 6.0 ADDITIONAL SERVICES

As an additional service, this firm would be pleased to review the project plans and structural notes for conformance to the intent of this report. Vann Engineering, Inc. should be retained to provide documentation that the recommendations set forth are met. These include but are not limited to documentation of site clearing activities, verification of fill suitability and compaction, and inspection of footing excavations. Relative to field density testing, a minimum of 1 field density test should be taken for every 2500 square feet of building area, per 6.0-inch layer of compacted fill. This firm possesses the capability of performing testing and inspection services during the course of construction. Such services include, but are not limited to, compaction testing as related to fill control, foundation inspections and concrete sampling. Please notify this firm if a proposal for these services is desired.

# 7.0 LIMITATIONS

This report is not intended as a bidding document, and any contractor reviewing this report must draw their own conclusions regarding specific construction techniques to be used on this project. The scope of services carried out by this firm does not include an evaluation pertaining to environmental issues. If these services are required by the lender, we would be most pleased to discuss the varying degrees of environmental site assessments.

This report is issued with the understanding that it is the responsibility of the owner to see that its provisions are carried out or brought to the attention of those concerned. In the event that any changes of the proposed project are planned, the conclusions and recommendations contained in this report shall be reviewed and the report shall be modified or supplemented as necessary. Prior to construction, we recommend the following:

- 1. Consultation with the design team in all areas that concern soils and rocks to ensure a clear understanding of all key elements contained within this report.
- 2. Review of the General Structural Notes to confirm compliance to this report and determination of which allowable soil bearing capacity has been selected by the project structural engineer (this directly affects the extent of earthwork and foundation preparation at the site).
- 3. This firm be notified of all specific areas to be treated as special inspection items (designated by the architect, structural engineer or governmental agency).



Relative to this firm's involvement with the project during the course of construction, we offer the following recommendations:

- 1. The site or development owner should be directly responsible for the selection of the geotechnical consultant to provide testing and observation services during the course of construction.
- 2. This firm should be contracted by the owner to provide the course of construction testing and observation services for this project, as we are most familiar with the interpretation of the methodology followed herein.
- 3. All parties concerned should understand that there exists a priority surrounding the testing and observation services completed at the site.

This report and the recommendations contained herein are predicated on three reports serving in congress; 1) the Geotechnical Investigation Report, 2) the Boulder Stability Evaluation, and 3) the Rock Cut Slope Stability Evaluation. This report is, therefore, only a portion of the overall study of the site. Because of the uniqueness of each report, the contents are constrained to separate submittals. Notwithstanding, all reports will work together. The three reports are identified by the Project Number 28503.



# **DEFINITION OF TERMINOLOGY**

Allowable Soil Bearing Capacity Allowable Foundation Pressure	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Aggregate Base Course (ABC)	A sand and gravel mixture of specified gradation, used for slab and pavement support.
Backfill	A specified material placed and compacted in a confined area.
Base Course	A layer of specified material placed on a subgrade or subbase.
Base Course Grade	Top of base course.
Bench	A horizontal surface in a sloped deposit.
Caisson	A concrete foundation element cased in a circular excavation, which may have an enlarged base. Sometimes referred to as a cast-in-place pier.
Concrete Slabs-on-Grade	A concrete surface layer cast directly upon a base, subbase, or subgrade.
Controlled Compacted Fill	Engineered Fill. Specific material placed and compacted to specified density and/or moisture conditions under observation of a representative of a soil engineer.
Differential Settlement	Unequal settlement between or within foundation elements of a structure.
Existing Fill	Materials deposited through the action of man prior to exploration of the site.
Expansive Potential	The potential of a soil to increase in volume due to the absorption of moisture.
Fill	Materials deposited by the action of man.
Finish Grade	The final grade created as a part of the project.
Heave	Upward movement due to expansion or frost action.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil.
Over excavate	Lateral extent of subexcavation.
Rock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting, or other methods of extraordinary force for excavation.
Scarify	To mechanically loosen soil or break down the existing soil structure.
Settlement	Downward movement of the soil mass and structure due to vertical loading.
Soil	Any unconsolidated material composed of disintegrated vegetable or mineral matter which can be separated by gentle mechanical means, such as agitation in water.
Strip	To remove from present location.
Subbase	A layer of specified material between the subgrade and base course.
Subexcavate	Vertical zone of soil removal and recompaction required for adequate foundation or slab support
Subgrade	Prepared native soil surface.





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# **SECTION II**



# **VELOCITY CLASSIFICATION DATA**

Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Pardise Valley, Arizona 85253

Average Velocity of Layer 1:	1618 fps	( 1377 to 1900 )	
Average Velocity of Layer 2:	6131 fps	( 5453 to 7555 )	
Average Depth to Layer 2:	3.0 feet		
Range:	1.1 to 5.3	feet	

- Layer 1: Dense coarse-grained alluvium comprised of silty gravelly sand (SM) Note: Significant over-sized aggregate (greater than 3.0 inches) will be encountered within Layer 1.
- Layer 2: Moderately weathered and fractured, fair, moderately strong crossbedded quartzite

Lino		Layer 1		Layer 2				
LINE	Velocity	Dept	:h (ft)	Velocity	Dept	h (ft)		
A - B	1562	-	-	7555	2.4	5.2		
C - D	1529	-	-	6166	2.1	4.0		
E - F	1377	-	-	5897	1.1	3.7		
G - H	1692	-	-	5453	1.3	4.7		
I - J	1870	-	-	6283	1.3	5.3		
K - L	1471	-	-	6049	2.9	3.7		
M - N	1543	-	-	5603	1.1	2.5		
0 - P	1900	-	-	6042	1.4	5.3		
Averages	1618		-	6131	3.	.0		

Project 28503 - Vann Engineering, Inc. - Phoenix, Arizona

















# LEGEND

		Major Divisio	Group Symbol	Typical Names	
(e	Irse sieve)	Clea	n Gravels	GW	Well graded gravels, gravel- sand mixtures, or sand-gravel- cobble mixtures.
0 sieve	ls s or coa ss No. 4	(Less than 5%	passes No. 200 sieve)	GP	Poorly graded gravels, gravel- sand mixtures, or sand-gravel- cobble mixtures.
oils No. 20	Grave % or les on passe	Gravels with Fines (More than 12%	Limits plot below "A" line & hatched zone on Plasticity Chart.	GM	Silty gravels, gravel-sand-silt mixtures.
ained S asses	(50 fractic	passes No. 200 sieve)	Limits plots above "A" line & hatched zone on Plasticity Chart.	GC	Clayey gravels, gravel-sand- clay mixtures.
ie-Gra 50% p	oarse sieve)	Clean	Sands	SW	Well graded sands, gravelly sands.
Coars than 5	s )% of c s No. 4	(Less than 5% pa	asses No. 200 sieve)	SP	Poorly graded sands, gravelly sands.
(Less	(Less 1 Sands than 50 passes	Sands with Fines (More than 12%	Limits plots below "A" line & hatched zone on Plasticity Chart.	SM	Silty sands, sand-silt mixtures.
	(More fractio	passes No. 200 sieve)	Limits plots above "A" line & hatched zone on Plasticity Chart.	SC	Clayey sands, sand-clay mixtures.
sieve)	elow "A" ied zone / Chart	Silts of L (Liquid Limit	ow Plasticity t Less Than 50)	ML	Inorganic silts, clayey silts with slight plasticity.
d Soils ses No. 200	Silts-Plot be line & hatch on Plasticity	Silts of H (Liquid Limit	ligh Plasticity t More Than 50)	МН	Inorganic silts, micaceous or diatomaceous silty soils, elastic silts.
ine-Graine r more pass	above "A" ned zone y Chart	Clays of I (Liquid Limit	_ow Plasticity t Less Than 50)	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
F (50% o	Clays-Plot line & hatch on Plasticity	Clays of I (Liquid Limit	High Plasticity t More Than 50)	СН	Inorganic clays of high plasticity, fat clays, sandy clays of high plasticity.
Note:	Coarse gra	ined soils with between 5 hed zone on the Plasticity	% & 12% passing the No. 200 s Chart to have double symbol.	sieve and fine grained	soils with limits plotting



#### DEFINITIONS OF SOIL FRACTIONS

SOIL COMPONENT	PARTICLE SIZE RANGE
Cobbles	Above 3 in.
Gravel	3 in. to No. 4 sieve
Coarse gravel	3 in. to 3/4 in.
Fine gravel	3/4 in. to No. 4 sieve
Sand	No. 4 to No. 200
Coarse	No. 4 to No. 10
Medium	No. 10 to No. 40
Fine	No. 40 to No. 200
Fines (silt or clay)	Below No. 200 sieve

## INTRODUCTION TO SEISMIC REFRACTION PRINCIPLES

Any disturbance to a soil or rock mass creates seismic waves which are merely the propagation of energy into that mass, manifested by distinct waveforms. There are two basic types of seismic waves; body waves and surface waves.

Body waves are either compressional or shear in nature, they penetrate deep into the substrata, and reflect from or refract through the various geologic layers. Any emission of an energy source into a medium exhibits both a compression wave (P Wave) and a shear wave (S Wave). P-Waves propagate in the form of oscillating pulses, traveling forward and backward, parallel to the direction of the wave front. S-Waves propagate in the form of distortional pulses, oscillating perpendicular to the wave front.

P-Waves travel at the highest velocities. Recording instruments that detect an energy transmission will generally observe the arrival of the P-Wave, followed by the S-Wave and surface waves.

All geologic materials exhibit P-Wave velocities in certain ranges, which relate to the density, specific gravity, elastic modulus, and moisture content of the specific material. As a material density and specific gravity increase so does its P-Wave velocity. Similarly, an increase in moisture content will cause an increase in P-Wave velocity. Generally, materials exhibiting higher P-Wave velocities will display higher elastic moduli.

In keeping with this relationship, determining the P-Wave velocities for the various subsurface layers, may yield very important and useful data relative to the engineering properties of the individual layers. In order to accomplish this task, methods of investigation, or surveys, were developed to establish the P-Wave velocity for subsurface layers. The method adopted by the VANN ENGINEERING INC Geophysical team examines the layer velocities, through refraction theory. Assuming that a P-Wave will refract through the various layers, according to the angle of incidence of the propagating wave form and the medium it is traveling through, it is then possible to detect a contrasting subsurface stratum by changes in the velocity of an induced seismic wave.

The procedure is outlined as follows:

A geophone is inserted into the ground or on a rock surface. Attached to it is a recording device. At predetermined intervals away from the geophone, in a linear array, a heavy sledgehammer strikes a stable plate or rock surface. Typically, the intervals of successive hammer impacts range from five to twenty feet. A timing device attached to the hammer, trips a measured recording sweep time, at the moment of impact. The arrival time of the induced P-Wave is measured and recorded at each interval. The length of a survey is closely related to the depth of investigation. Generally, the depth of investigation is approximately equal to one-third the length of the survey. For example, if it is desired to examine the substrata to a depth of twenty feet, the survey should extend a distance of at least sixty feet. Changes in the calculated velocity indicate strata breaks or distinct changes within the same stratum. The important concept to remember with this method is that it is predominantly effective where velocities increase from layer to layer, moving downward from the surface. Analytical methods are also available for determining the depth to the various layers, even in the most complex multi-layer situations



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# **SECTION III**

# CLASSIFICATION TEST DATA

# PROPOSED CUSTOM RESIDENCE APN 169-11-004C 7602 NORTH MOONLIGHT LANE PARADISE VALLEY, ARIZONA 85253

Sample		Sieve Analysis (% Passing Sieve Size)							Atterberg Limits			
Location	3"	2"	1"	#4	#10	#40	#100	#200	LL	PI	USCS	%
SG-A (0.0'-1.0')	-	100	86	62*	53	39	-	22	21	2	SM	0.9

\*Note, significant over-sized aggreage (greater than 3.0 inches) will be encountered within Layer 1.

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# **SECTION IV**

								INFILTRO	METER DATA							
										Liquid o	containers					
Proje	ct Identifi	cation	Project 28503	3		Co	nstants	Area, cm <sup>2</sup>	Liq depth, cm	No.	Vol / $\Delta H$					
Test	Location		DRI-1			Inner ring		671	6	1	670.58					
Teste	ed By	EL				Annular spa	ace	2070	6	2	2069.57					
рН	8.5		_	Liquid Used	H₂O	-										
Dept	n to water	table	~229			Inner ring p	enetration	3 in	Liquid level ma	aintained usi	ng:					
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#### SURFACE TO RETAINING WALL FOOTING TRANSITIONS

#### **OPTION A: (CROSS SECTION)**



- (1) REINFORCE SLAB WITH #4 REBAR @ 24 INCHES OCEW, CHAIRED, 100 PERCENT TIED, AND CONNECTED TO THE FOOTING STEEL
- (2) REFER TO EARTHWORK SECTION FOR REQUIRED ZONE OF SCARIFICATION BENEATH SLABS, SIDEWALKS, PARKING AREAS, ETC.
- 3 REFER TO SURFACE-LEVEL FOUNDATION TABLES FOR MINIMUM FOOTING DEPTHS AND ASSOCIATED BEARING CAPACITIES (NOTE: CONTROLLED AND OR IMPORTED COMPACTED FILL MAY BE REQUIRED BELOW FOOTINGS)
- (4) #4 EPOXIED DOWEL @ 24 INCHES OC, MINIMUM 6 INCH EMBEDMENT INTO RETAINING WALL (LAP AND TIE 24 INCHES TO THE SLAB STEEL)



- ALL REINFORCING STEEL AND DETAILS SHOWN ABOVE TO BE VERIFIED BY A REGISTERED STRUCTURAL ENGINEER - ILLUSTRATIONS NOT TO SCALE

- REFER TO OPTION A (PLAN VIEW)





- ALL REINFORCING STEEL AND DETAILS SHOWN ABOVE TO BE VERIFIED BY A REGISTERED STRUCTURAL ENGINEER - ILLUSTRATIONS NOT TO SCALE

- REFER TO OPTION B (PLAN VIEW)









9013 North 24th Avenue, Suite 7, Phoenix, Arizona 85021-2851



GEOTECHNICAL ENGINEERING • ENVIRONMENTAL CONSULTING • CONSTRUCTION TESTING & OBSERVATION

August 5, 2021

Project 28503

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85250

RE: Addendum to the Geotechnical Investigation Report Supplemental Cut Slope Stability Recommendations Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Mr. Caskey,

Transmitted herewith is the addendum for additional cut slope recommendations at the project listed above and shown in the following aerial photograph. This addendum specifically addresses supplemental recommendations for permanent cut slope geometry.



Figure 1: Aerial photograph of the site (outlined in red) and the immediate vicinity

After a more exhaustive evaluation of the subsurface geology and seismic p-wave velocities obtained during the site investigation and contained in the project Geotechnical Investigation Report, prepared by this firm and dated July 20, 2021, this firm recommends the following:

#### Supplemental Cut Slope Stability Recommendations

The following tabulation presents this firm's analysis of safe cut slopes for the anticipated subsurface conditions. However, it should be noted that the subsurface material (Layer 2), once exposed, could reveal hidden characteristics that may indicate the potential for slope instability during and after cutting operations. Therefore, this firm recommends that the following safe cut slope criteria and associated slope stability analyses be implemented during construction.

Portion of Cut Slope	Permanent Cut Slope Ratio (Horizontal to Vertical)ª
Layer 1	Rounded 1.5:1 <sup>b</sup>
Laver 2	1:3

#### Supplemental Cut Slope Recommendations (Not Exceeding 20 Feet in Height)

<sup>a</sup>This firm should be notified during construction in order to verify field conditions and inspect all cut slopes for structural features/discontinuities (e.g. shear zones, foliation/parting, fractures, joint orientations and slabbing) contained within the rock mass that could lead to slope instability and eventual slope failure.

<sup>b</sup>A representative of this firm must be present to observe a power washing operation of the upper layer to verify the stability in order to achieve the cut slope ratio as presented herein.

20.0 feet is recommended as the maximum cut slope height, using the appropriate cut slope ratios for the corresponding height limitation.

Special note: This firm should be notified during construction in order to verify field conditions and inspect all cut slopes for structural features (e.g. shear zones, foliation, fracture orientations, joint orientations and slabbing) contained within the rock mass that could lead to slope instability and eventual slope failure. If conditions relative to the integrity and stability of the rock mass are observed during the site excavation and are noted during a site inspection, this firm may alter the above-recommended cut slopes to adhere to a more stable condition.

Slope failures are known to have occurred in this region due to cut slopes that were not cut to the recommended safe cut slope angles. Many such cut slopes were not inspected for conformance to the recommendations or to verify or deny the potential for slope instability during the excavation efforts. Therefore, it is critical that all cut slope excavations be inspected at a point when; if unstable conditions are identified, mitigation measures can be implemented before large scale cuts have been performed or slope failure occurs (i.e. timely inspecting and potentially modifying the cut slope recommendations, or possibly recommending the use of rock anchors, rock netting, or retaining walls for slope stability, while the cut is not yet greater than 10 feet in height).



### **Rock Fall Catchment Geometry Clarification**

To clarify the requirement for setback distance regarding the rock fall catchment diagram as presented in Figure 15 of the original geotechnical investigation report, the datum for the setback distance of 0.5(H) should be referenced from the toe of the slope to the actual structure and not to the retaining wall.

Assuming the detail presented below (provided by others) is to scale, the required setback distance will be met or exceeded based on this firm's recommendations.



Figure 2: Site detail of the slope and structure

This concludes all items to be addressed by this addendum, which should be attached to the original soils report and made a part thereof. Should any questions arise concerning the content of this addendum, please feel free to contact this office at your earliest convenience.

Respectfully submitted,

VANN ENGINEERING, INC.

Jeremy Minnick, EIT, BSE Geotechnical Director



Jeffry D. Vann, PhD PE D.GE F.ASCE Principal Engineer

Distribution: Addressee via email, <u>micaskey@icloud.com</u> David Dick, David Dick Architect, Inc., via email, <u>dd@ddarchstudio.com</u>




July 20, 2021

Project 28503

Michael Caskey Moonlight Way Project 7622 East Solano Drive Scottsdale, Arizona 85250

RE: Rock Cut Slope Letter Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Mr. Caskey,

At the request of the Town of Paradise Valley, this firm has performed a Rock Cut Slope Analysis for the above referenced project.

During the initial site evaluation, no existing cut slopes were encountered or observed. This was confirmed during the geotechnical site investigation. Thus, a rock cut slope analysis report was not warranted, and rock cut slope stability is not of concern for the subject site within its current state. Note, there is an existing cut sloe on the eastern boundary of the parcel. Based on the review of the aerial photographs and parcel boundaries, the existing cut slope is not part of the subject site.

It must be noted that this report is predicated on three reports serving in congress; 1) this Rock Cut Slope Stability Evaluation, 2) the Boulder Stability Evaluation, and 3) the Geotechnical Investigation Report. This report is, therefore, only a portion of the overall study of the site. Because of the uniqueness of each report, the contents are constrained to separate submittals. Notwithstanding, all reports will work together. The three reports are identified by the Project Number 28503.

This concludes all items to be addressed in this letter. Should any questions arise concerning the content of this letter, please feel free to contact this office at your earliest convenience.

Respectfully submitted,

VANN ENGINEERING, INC.

Alan J. Cuzme, MS Geotechnical Consultant



Jeffry D. Vann, PhD PE D.GE F.ASCE Principal Engineer

Distribution: Addressee via email, <u>micaskey@icould.com</u> David Dick, David Dick Architect, Inc., via email, <u>dd@ddarchstudio.com</u>



# **BOULDER STABILITY EVALUATION**

Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Prepared for:

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85250

July 20, 2021

Project 28503



GEOTECHNICAL ENGINEERING • ENVIRONMENTAL CONSULTING CONSTRUCTION TESTING & OBSERVATION



July 20, 2021

Project 28503

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85250

RE: Boulder Stability Evaluation Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Mr. Caskey:

Transmitted herewith is a copy of the final report of the boulder stability evaluation for the abovementioned project.

The materials encountered on the site are believed to be representative of the total area; however, soil and rock materials do vary in character between points of investigation. The recommendations contained in this report assume that the soil conditions do not deviate appreciably from those disclosed by the investigation. Should unusual material or conditions be encountered during construction, the soil engineer must be notified so that they may make supplemental recommendations if they should be required. Additional boulders may require remedial action, over time, as natural forces promote weathering and potential displacements. For this reason, we recommend that the upslope portion of the site be periodically monitored to ensure the safety of the residents.

Should any questions arise concerning the contents of this report, please feel free to contact this office at your earliest convenience.

Respectfully submitted,

VANN ENGINEERING, INC.

uzme. MS

Geotechnical Consultant



Jeffry D. Vann, PhD PE D.GE F.ASCE Principal Engineer

Distribution: Addressee via email, <u>micaskey@icloud.com</u> David Dick, David Dick Architect, Inc., via email, <u>dd@ddarchstudio.com</u>



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# SECTION I

# 1.0 INTRODUCTION

It is the understanding of this firm that a new custom residence is proposed for construction at the subject site, with no planned basement levels. This document presents the results of a boulder stability evaluation conducted by Vann Engineering, Inc. for the:

### Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253



Figure 1: Aerial photograph of the site (outlined in red) and immediate surroundings

This report and the recommendations contained herein are predicated on three reports serving in congress; 1) the Geotechnical Investigation Report, 2) this Boulder Stability Evaluation, and 3) the Rock Cut Slope Stability Evaluation. This report is, therefore, only a portion of the overall study of the site. Because of the uniqueness of each report, the contents are constrained to separate submittals. Notwithstanding, all reports will work together. The three reports are identified by the Project Number 28503.

# 1.1 Purpose

The purpose of the investigation was to deterministically and probabilistically analyze the immediate and long-term stability of precariously balanced boulders or boulder clusters at the subject site and provide remedial recommendations if warranted.

# 1.2 Scope of Services

The scope of services for this project includes the following:

- Description of the site
- Photographic documentation of boulders of concern



- Site Plan indicating the locations of all boulders that were analyzed
- Probabilistic pseudo-static modeling to determine the stability of the boulders or boulder clusters
- Recommendations for mitigation, if necessary, of the boulder or boulder cluster against possible boulder mobilization (sliding and rocking)
  - > Two-dimensional illustration of recommended boulder stabilization protocol
  - > Recommendations for aesthetic modifications to any materials used in the stabilization efforts in order to sustain the natural view of the boulder or boulder cluster.

Note: This report does not include, either specifically or by implication, any environmental assessment of the site. If the owner is concerned about the potential for such contamination, other studies should be undertaken. We are available to discuss the scope of work of such studies with you.

# 1.3 Authorization

The obtaining of data from the site and the preparation of this geotechnical investigation report have been carried out according to this firm's proposal (VE20GT0118AC1 dated January 19, 2021), authorized by Michael Caskey on May 6, 2021, to proceed with the work. Our efforts and report are limited to the scope and limitations set forth in the proposal.

# 1.4 Standard of Care

Since our investigation is based upon review of background data, observation of site materials, and engineering analysis, the conclusions and recommendations are professional opinions. Our professional services have been performed using that degree of skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. These opinions have been derived in accordance with current standards of practice and no other warranty, express or implied, is made.

The limitations of this report and geotechnical issues which further explain the limitations of the information contained in this report are listed at 6.0.

# 2.0 PROJECT DESCRIPTION

# 2.1 Site Description

The subject site is a native undisturbed desert lot, with hillside topography that slopes down to the east. The site primarily consists of jagged rock outcrops as you move west and upslope on the property. The general slope of the hillside in the building location is approximately 20 degrees and as you move upslope and west of the building area, the slope increases upwards to 45 degrees. One moderate sized boulder, greater than 36 inches, was found to be of potential concern. Note, there are small sized boulders scattered across the surface. Refer to the aerial site plan and photographs in this report for the approximate locations of the studied boulder which is denoted as B-1. Refer to the following photographs taken during the field effort of the existing boulder evaluated herein.



Project 28503 – Boulder Stability Evaluation Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253



Figure 2: B-1, facing north



Figure 3: B-1, facing north



Project 28503 – Boulder Stability Evaluation Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253



Figure 4: B-1, facing west

# 2.2 Seismic Design Parameters

The results of the seismic refraction surveys are presented in the accompanying Geotechnical Investigation Report. The following parameters obtained from seismic design maps (adopted by 2015 NEHRP and 2018 IBC) are required for the determination of the site's seismic coefficient.

Parameter	Value (USGS)	Definition	
<b>S</b> 1	0.068g	Spectral Response Acceleration Parameter at 1.0-Second Period	
Fv	2.4	Site Coefficient <sup>1</sup>	
PGA	0.086g	Mapped MCE <sup>2</sup> Geometric Mean Peak Ground Acceleration	
Fpga	1.6	Site Coefficient <sup>1</sup>	
Ks	0.068	Site Seismic Coefficient	
1			

#### **Table 1: Seismic Parameters**

<sup>1</sup>See Section 11.4.7 of ASCE 7 <sup>2</sup>Maximum considered earthquake

# 3.0 STATIC STABILITY MODELING

The static stability of large boulders, also known as precariously balanced rocks (PBR), is affected by a combination of several parameters including boulder geology, shape, weight, points of



contact with slope or pedestal, slope or pedestal geology, slope or pedestal contact angle, and the potential applied loading. The probability of potential boulder movement translationally down slope (sliding) and rotationally down slope (rocking) is modeled using a pseudo-static analysis. A pseudo-static analysis allows dynamic forces to be applied to a static scenario via an equivalent force. To account for the variability of the measured parameters in the closed form solution, the Monte Carlo analysis was used. The Monte Carlo method can be used to determine the reliability of the stability of the boulder (i.e. probability of movement).

The magnitude of potential movement resulting from the limit equilibrium analysis cannot be determined. However, due the nature of the contact points between the subject boulders and their underlying rock mass, minimal movement of any boulder can cause an unwanted reaction from any boulder in contact.

The results of the static stability modeling aid in the determination of active mitigation of the subject boulders. Active mitigation is the reduction of driving forces and/or the increase of resisting forces associated with potential boulder movement. The stabilization of boulders can be accomplished by a variety of construction methods, including pinning, netting, and grouting. The method for stabilization differs with individual site conditions.

Each boulder will be modeled under three separate conditions as listed below:

- 1. Vibrational shaking from a seismic force.
- 2. Base erosion simulated by a decrease in contact percentage.
- 3. Grouting of the void space between base of the boulder and the underlying slope (possible stabilization technique) simulated by increasing the contact percentage to 100%.

The results of the models are presented as the probability of movement. A boulder is determined to be stable if the probability of movement is less than or equal to 0.1% (Adapted from the U.S. Army Corps of Engineers, 1997). If a boulder does not meet the design requirement for a given simulation, stabilization of the boulder is warranted.

Expected Performance Level	Probability of Unsatisfactory Performance
High	0.00003%
Good	0.003%
Above Average	0.1%
Below Average	0.6%
Poor	2.3%
Unsatisfactory	7%
Hazardous	16%

# Table 2: Target Reliability Indices (adapted from U.S Army Corps of Engineers, 1997)



# 3.1 Field Measurements

From the field investigation, the following parameters affecting the stability of the subject boulders were determined and are tabulated below.

	Table 5. Measured Farameters Encoding Doubler Olability								
Boulder ID	Height (ft)	Width (ft)	Length (ft)	Base (ft)	Slope Angle (°)	Contact Percentage (%)	Friction Angle (°)	Joint Compressive Strength (mPa)	Weighted Average Joint Roughness Coefficient
1	2.8	3.5	3.0	2.8	19	85	35	50	12

# Table 3: Measured Parameters Effecting Boulder Stability

Based the number of parameters affecting the boulder's stability, and assumed dispersions, ten thousand models were simulated for each specific boulder and loading condition.

# 3.2 Seismic Loading Condition

Vibrational waves caused by earthquakes, excavation blasting, or heavy construction equipment are a leading cause of soil/rock movement including slope failures, liquefaction, and boulder/rock falls. The effects of blasting and heavy equipment are able to be monitored and controlled, however seismic shaking from earthquakes cannot be predicted. As such, the stability of the subject boulders was modeled under an applied site-specific seismic load.

A pseudo-static analysis approach is used to model the boulder's response to an equivalent seismic force. The equivalent seismic force is determined from the site's seismic coefficient ( $k_s$ ), which is based on the site's earthquake history, and the weight of boulder. Using the values from Table 1, the site's seismic coefficient has been determined to be 0.067g. The following table summarizes the results from the pseudo-static stability analysis with the applied seismic load.

#### Table 4: Stability Results - Seismic Shaking

Boulder ID	Probability of Movement		
	Sliding	Overturning	
B-1	0.00%	0.00%	

Although the potential of the subject boulders to rock was increased by the application of the seismic force, the results of the model portray that the subject boulder's probability to overturn during a seismic event is low. Therefore, when considering seismic effects, B-1 will not require remedial action in the form of grouting.

# 3.3 Base Erosion Condition

To simulate base erosion, a decrease of 15% of the in-situ base contact percentage was applied to each boulder. The stability of each boulder was analyzed for sliding and overturning. The following table summarizes the results from the pseudo-static stability analysis with the base erosion applied.



# Probability results – Base Erosion Boulder ID Probability of Movement B-1 0.00%

#### Table 5: Stability Results – Base Erosion

The analysis results in **B-1** meeting the design criteria for the probability of movement relative to base erosion less than or equal to 0.1% and therefore requires no remedial action in order to stabilize the boulder.

# 4.0 **RECOMMENDATIONS FOR BOULDER STABILITY**

An active mitigation system is recommended in order to stabilize the subject boulders at the site that have a potential for sliding or toppling. The mitigation system utilizes a boulder stabilization technique from the Vann Engineering Boulder Mitigation Protocols (BMP).

# 4.1 Boulder Stability Summary

During the site investigation, one moderate sized boulder (greater than 36 inches) was observed which warranted a boulder stability analysis. Based on boulder stability analysis, the boulder in question is considered to be stable and will not required stabilization. Note, there are small sized boulders scattered across the site surface.

Vann Engineering, Inc. holds no responsibility for any disturbance to the natural environment of the site, not including the recommended mitigation of the subject boulders.

# 5.0 ADDITIONAL SERVICES

As an additional service, this firm would be pleased to review the project plans for conformance to the intent of this report. Vann Engineering, Inc. should be retained to provide documentation that the recommendations set forth are met. This firm possesses the capability of performing testing and inspection services during the course of construction. Such services include, pinning inspections and concrete sampling. Please notify this firm if a proposal for these services is desired.

# 6.0 LIMITATIONS

Please note that boulders may be present upslope from the property boundary that may warrant a stability analysis. However, per the Town of Paradise Valley Hillside Code, this study is limited to only the boulders on the subject property. Our study has addressed applicable boulders within an area as defined by the Town of Paradise Valley. Other boulders exist upslope that may pose conditions of instability, thereby affecting the subject property.

This report is not intended as a bidding document, and any contractor reviewing this report must draw their own conclusions regarding specific construction techniques to be used on this project. The scope of services carried out by this firm does not include an evaluation pertaining to



environmental issues. If these services are required by the lender, we would be most pleased to discuss the varying degrees of environmental site assessments.

This report is issued with the understanding that it is the responsibility of the owner to see that its provisions are carried out or brought to the attention of those concerned. In the event that any changes of the proposed project are planned, the conclusions and recommendations contained in this report shall be reviewed and the report shall be modified or supplemented as necessary. Prior to construction, we recommend the following:

- 1. Consultation with the design team in all areas that concern soils and rocks to ensure a clear understanding of all key elements contained within this report.
- 2. This firm be notified of all specific areas to be treated as special inspection items (designated by the architect, structural engineer or governmental agency).

This report and the recommendations contained herein are predicated on three reports serving in congress; 1) the Geotechnical Investigation Report, 2) this Boulder Stability Evaluation, and 3) the Rock Cut Slope Stability Evaluation. This report is, therefore, only a portion of the overall study of the site. Because of the uniqueness of each report, the contents are constrained to separate submittals. Notwithstanding, all reports will work together. The three reports are identified by the Project Number 28503.



# **DEFINITION OF TERMINOLOGY**

Allowable Soil Bearing Capacity Allowable Foundation Pressure	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Aggregate Base Course (ABC)	A sand and gravel mixture of specified gradation, used for slab and pavement support.
Backfill	A specified material placed and compacted in a confined area.
Base Course	A layer of specified material placed on a subgrade or subbase.
Base Course Grade	Top of base course.
Bench	A horizontal surface in a sloped deposit.
Caisson	A concrete foundation element cased in a circular excavation, which may have an enlarged base. Sometimes referred to as a cast-in-place pier.
Concrete Slabs-on-Grade	A concrete surface layer cast directly upon a base, subbase, or subgrade.
Controlled Compacted Fill	Engineered Fill. Specific material placed and compacted to specified density and/or moisture conditions under observation of a representative of a soil engineer.
Differential Settlement	Unequal settlement between or within foundation elements of a structure.
Existing Fill	Materials deposited through the action of man prior to exploration of the site.
Expansive Potential	The potential of a soil to increase in volume due to the absorption of moisture.
Fill	Materials deposited by the action of man.
Finish Grade	The final grade created as a part of the project.
Heave	Upward movement due to expansion or frost action.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil.
Overexcavate	Lateral extent of subexcavation.
Rock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting, or other methods of extraordinary force for excavation.
Scarify	To mechanically loosen soil or break down the existing soil structure.
Settlement	Downward movement of the soil mass and structure due to vertical loading.
Soil	Any unconsolidated material composed of disintegrated vegetable or mineral matter, which can be separated by gentle mechanical means, such as agitation in water.
Strip	To remove from present location.
Subbase	A layer of specified material between the subgrade and base course.
Subexcavate	Vertical zone of soil removal and recompaction required for adequate foundation or slab support
Subgrade	Prepared native soil surface.





# **SECTION II**



SITE PLAN | PROJECT 28503 PROPOSED CUSTOM RESIDENCE APN 169-11-004C 7602 NORTH MOONLIGHT LANE PARADISE VALLEY, ARIZONA 85253

BOULDER LOCATION



9013 North 24th Avenue, Suite 7, Phoenix, Arizona 85021-2851



# PRELIMINARY LEACH FIELD SEPTIC PERCOLATION TESTING

Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Prepared for:

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85250

July 13, 2021

Project 28503



GEOTECHNICAL ENGINEERING • ENVIRONMENTAL CONSULTING CONSTRUCTION TESTING & OBSERVATION



GEOTECHNICAL ENGINEERING • ENVIRONMENTAL CONSULTING • CONSTRUCTION TESTING & OBSERVATION July 13, 2021 Project 28503

Michael Caskey Moonlight Way Project 7672 East Solano Drive Scottsdale, Arizona 85250

### RE: Preliminary Leach Field Septic Percolation Testing Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

Michael,

Transmitted herewith are the results of the preliminary septic percolation tests completed as part of the proposed leach field system at the above referenced site. The services performed provide an evaluation of the subsurface soils with regard to determination of the constant head stabilized infiltration rate.

The results contained in this report may be used in the preliminary design of the waste-water treatment disposal system. Note: All of the information contained in this document must not be utilized for final design and construction until the final location has been selected, it should be considered preliminary. Should any questions arise concerning the content of this report, please feel free to contact this office as soon as possible.

Respectfully submitted,

VANN ENGINEERING, INC.

Mark Smelser, BS Project Geologist



Jeffry D. Vann, PhD PE D.GE F.ASCE Principal Engineer

Distribution: Addressee via email, <u>micaskey@icloud.com</u> David Dick, AIA, NCARB via email, <u>dd@ddarch.com</u>



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### TABLE OF CONTENTS

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# SECTION I

# <u>SCOPE</u>

This report is submitted pursuant to a preliminary subsurface leach field septic percolation testing conducted by this firm for the Note: All of the information contained in this document must not be utilized for final design and construction until the final location has been selected, it should be considered preliminary.

### Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Paradise Valley, Arizona 85253

This firm performed three (3) constant head-type percolation tests to be used in the design of the on-site waste-water treatment disposal system (leach field). The object of this investigation was two-fold: 1) to characterize the subsurface soils to a depth of 12.0 feet, and 2) to establish the stabilized infiltration rate of the subsurface soils at each selected location at a depth of 5.0 feet below the existing grade at the location of the proposed septic leach field. However, because we encountered moderately weathered and fractured phyllitic schist rock (limiting condition and defined herein as Layer 2) at an average depth of 1.5 feet (ranges from 1.1 to 1.8 feet) at the location of Seismic Survey Line M-N (PB-1, PB-2, and PB-3), percolation tests were conducted at a depth of 12.0 inches.



Figure 1: Aerial photograph showing the parcel (outlined in red) and surrounding features

Note: Because of the occurrence of shallow bedrock (limiting condition) shallow percolation tests were conducted in 12" x 12" x 12" holes in order to facilitate in the design of an alternative septic system.



# **AUTHORIZATION**

The obtaining of data from the site and the preparation of this preliminary report have been carried out according to this firm's proposal (VE21GT0119AC1 dated January 19, 2021), authorized by **Michael Caskey on May 6, 2021** to proceed with the work. Our efforts and report are limited to the scope and limitations set forth in the proposal.

# FIELD INVESTIGATION

Due to accessibility issues to the location of the septic leach field, and the shallow nature of the bedrock, the site's subsurface was explored through the utilization of one (1) 24 channel refraction seismic survey line. The seismic survey data indicates that moderately weathered and fractured phyllitic schist rock exists below an average depth of 1.5 feet (ranges from 1.1 to 1.8 feet) and is considered a limiting condition. The subsurface soils encountered were visually examined and classified in accordance with the Unified Soil Classification System (USCS). The location of the seismic survey line is shown on the Site Plan in Section II of this report and is denoted as M-N.

# PRELIMINARY FIELD PERCOLATION TESTING

As noted above and in Subsurface Limiting Conditions, shallow percolation tests were conducted 12" x 12" x 12" holes due to the occurrence of shallow bedrock. The following table indicates the locations of each percolation test. It should be noted that no primary or reserve area was supplied to this firm. Note: All of the information contained in this document must not be utilized for final design and construction until the final location has been selected, it should be considered preliminary. Refer to the Site Plan in Section II for the locations of each percolation test.

Table 1. Freininally Ferculation Test Locations and Results					
Percolation Test Location	Depth Interval (ft)	Stabilized Infiltration Rate (min/inch)			
P-1	0.0 to 1.0	14.0			
P-2	0.0 to 1.0	14.0			
P-3	0.0 to 1.0	13.0			

#### Table 1: Preliminary Percolation Test Locations and Results

Refer to Section IV (Uniform Site Investigation Report A.A.C. R18-9-A310 for the State of Arizona) which contains the results of the septic testing.

# PRELIMINARY SUBSURFACE SOIL CONDITIONS

The subsurface soils underlying the site, at the locations of P-1 through P-3, extending to a depth of 1.0 feet are generally comprised of slightly damp, weakly cemented gravelly silty sand soils with 38 percent rock retained on the #4 sieve. Refer to Section III of this report for the complete results of the laboratory testing. The sample will be stored for 30 days from the date of issue of this report, and then disposed of unless otherwise instructed in writing by the client.



# LOCAL GEOLOGY

Local Geology – The local geology and our field investigation indicate that a thin layer of surficial deposits comprised of alluvial deposits (defined herein as Layer 1) which overlies a rock mass comprised of moderately weathered and fractured phyllitic schist (Xpv - variable phyllite, defined herein as Layer 2). Refer to the following Geologic Map which shows the geologic units, the site-specific composition and the proximity to the site.



Figure 2: Geologic map

Geologic Map referenced from Arizona Geological Survey, Geologic Map of Arizona, Map 28 (by Johnson, Reynolds, and Jones, 2003, Phoenix Mountains). Produced in cooperation with the U.S. Geological Survey.



# GROUNDWATER

No groundwater was encountered during the course of this firm's site investigation. Groundwater is expected at a depth of approximately 593 feet according to site elevation and well data in the area (GWSI Registry ID: 55-638750).

Also, refer also to the following historic groundwater map (circa 2005) for an approximate location of the site in relation to surrounding wells:



# SUBSURFACE LIMITING CONDITIONS

The industry has established the terminology "Subsurface Limiting Conditions" to refer to the following:

- Presence of rock outcrops or boulders
- Presence of shallow relatively impervious rock within the zone of influence of the seepage disposal system
- Presence of fill (deep and pervious)
- Presence of visible earth fissures
- Site topography
- The needed separation of 50 feet from a wash

While advancing exploratory test borings, conducting test pits, or seismic refraction survey lines for septic projects, the study shall identify and report any of the following:

- Depth to bedrock or other "hard' stratum which may be impermeable (slower than 60 minutes per inch)
- Presence of groundwater



- Presence of free-draining soil layer (faster than 1 minute per inch)
- Deep non-engineered fill
- Fat clay

This firm encountered subsurface limiting conditions within the upper 12.0 feet of the existing land surface during our field effort. Moderately weathered and fractured phyllitic schist rock (limiting condition) was encountered below an average depth of 1.5 feet. The moderately weathered and fractured phyllitic schist is considered by this firm to be impermeable. The average vertical separation distance between the base of the 12' x 12" x 12" percolation test holes and the limiting conditions at each percolation test location 1.5 feet (ranges from 1.1 to 1.8 feet):

Table 2. One offatigraphy at the Lobations of the oeisine outvey					
Location	Depth of Occurrence (Layer 1) <sup>1</sup>	Depth of Occurrence (Layer 2 - Limiting Condition) <sup>2</sup>			
P-1	Above depths renains from	Below depths ranging from 1.1 to 1.8 feet			
P-2	1.1 to 1.8 feet at the location of Seismic Survey Line M-N	The average vertical separation distance between the base of the			
P-3		holes and the Layer 2 limiting condition is 0.5 feet			

# Table 2: Site Stratigraphy at the Locations of the Seismic Survey

<sup>1</sup>Percolation rates for Layer 1 range from 13.0 to 14.0 min/inch. <sup>2</sup>Considered impermeable

Because on the shallow rock encountered at the site, it shall be necessary that an alternative septic system be designed.

# LIMITATIONS

Since our investigation is based upon review of background data, observation of site materials and engineering analysis, the conclusions and recommendations are professional opinions. Our professional services have been performed using that degree and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. These opinions have been derived in accordance with current standards of practice and no other warranty, express or implied, is made. This report is not intended as a bidding document, and any contractor reviewing this report must draw their own conclusions regarding specific construction techniques to be used on this project. The scope of services carried out by this firm does not include an evaluation pertaining to environmental issues. If these services are required by the lender, we would be most pleased to discuss the varying degrees of environmental site assessments.



# **DEFINITION OF TERMINOLOGY**

Allowable Soil Bearing Capacity Allowable Foundation Pressure	The recommended maximum contact stress developed at the interface of the foundation element and the supporting material.
Aggregate Base Course (ABC)	A sand and gravel mixture of specified gradation, used for slab and pavement support.
Backfill	A specified material placed and compacted in a confined area.
Base Course	A layer of specified material placed on a subgrade or subbase.
Base Course Grade	Top of base course.
Bench	A horizontal surface in a sloped deposit.
Caisson	A concrete foundation element cased in a circular excavation, which may have an enlarged base. Sometimes referred to as a cast-in-place pier.
Concrete Slabs-on-Grade	A concrete surface layer cast directly upon a base, subbase, or subgrade.
Controlled Compacted Fill	Engineered Fill. Specific material placed and compacted to specified density and/or moisture conditions under observation of a representative of a soil engineer.
Differential Settlement	Unequal settlement between or within foundation elements of a structure.
Existing Fill	Materials deposited through the action of man prior to exploration of the site.
Expansive Potential	The potential of a soil to increase in volume due to the absorption of moisture.
Fill	Materials deposited by the action of man.
Finish Grade	The final grade created as a part of the project.
Heave	Upward movement due to expansion or frost action.
Native Grade	The naturally occurring ground surface.
Native Soil	Naturally occurring on-site soil.
Over excavate	Lateral extent of subexcavation.
Rock	A natural aggregate of mineral grains connected by strong and permanent cohesive forces. Usually requires drilling, wedging, blasting, or other methods of extraordinary force for excavation.
Scarify	To mechanically loosen soil or break down the existing soil structure.
Settlement	Downward movement of the soil mass and structure due to vertical loading.
Soil	Any unconsolidated material composed of disintegrated vegetable or mineral matter which can be separated by gentle mechanical means, such as agitation in water.
Strip	To remove from present location.
Subbase	A layer of specified material between the subgrade and base course.
Subexcavate	Vertical zone of soil removal and recompaction required for adequate foundation or slab support
Subgrade	Prepared native soil surface.





# **SECTION II**



# **VELOCITY CLASSIFICATION DATA**

Proposed Custom Residence APN 169-11-004C 7602 North Moonlight Lane Pardise Valley, Arizona 85253

Average Velocity of	of Layer 1:	726 fps
Average Velocity	of Layer 2:	5755 fps
Average Depth	to Layer 2:	1.5 feet
	Range:	1.1 to 1.8 feet
Layer 1:	Moderately of gravelly sand	dense coarse-grained alluvium comprised of silty d (SM)

Layer 2: Moderately weathered and fractured, fair, moderately weak phyllitic schist

Lino		Layer 1			Layer 2	
Line	Velocity	Depth (ft)		Velocity	Depth (ft)	
M - N	726	-	-	5755	1.1	1.8
Averages	726		-	5755	1.	5

Project 28503 - Vann Engineering, Inc. - Phoenix, Arizona



# LEGEND

		Major Divisio	ons	Group Symbol	Typical Names
(e)	ined Soils ined Soils ined Soils ined Soils ined Soils ined Soils ined Soils ined Soils ined Soils ined Soils ines	Clea	n Gravels	GW	Well graded gravels, gravel- sand mixtures, or sand-gravel- cobble mixtures.
0 sieve		passes No. 200 sieve)	GP	Poorly graded gravels, gravel- sand mixtures, or sand-gravel- cobble mixtures.	
oils No. 20		Gravels with Fines (More than 12%	Limits plot below "A" line & hatched zone on Plasticity Chart.	GM	Silty gravels, gravel-sand-silt mixtures.
ained S asses		passes No. 200 sieve)	Limits plots above "A" line & hatched zone on Plasticity Chart.	GC	Clayey gravels, gravel-sand- clay mixtures.
ie-Gra 50% p	(Less than 5% provided in the second	Sands	sw	Well graded sands, gravelly sands.	
Coars than 5		asses No. 200 sieve)	SP	Poorly graded sands, gravelly sands.	
(Less		Limits plots below "A" line & hatched zone on Plasticity Chart.	SM	Silty sands, sand-silt mixtures.	
		Limits plots above "A" line & hatched zone on Plasticity Chart.	SC	Clayey sands, sand-clay mixtures.	
sieve)	elow "A" ied zone / Chart	Silts of L (Liquid Limit	ow Plasticity t Less Than 50)	ML	Inorganic silts, clayey silts with slight plasticity.
d Soils ses No. 200	Silts-Plot be line & hatch on Plasticity	Silts of H (Liquid Limit	ligh Plasticity t More Than 50)	МН	Inorganic silts, micaceous or diatomaceous silty soils, elastic silts.
ine-Graine r more pass	e Ligues of Low Plasticity (20% or Ligues Clays of Low Plasticity (20% or Ligues Clays of Low Plasticity (20% or Ligues Clays of High Plasticity (Liquid Limit More Than 50) (Liquid Limit More Than 50)	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.		
F (50% o		Clays of High Plasticity (Liquid Limit More Than 50)		СН	Inorganic clays of high plasticity, fat clays, sandy clays of high plasticity.
Note:	Coarse gra in the hatcl	ined soils with between 5 hed zone on the Plasticity	% & 12% passing the No. 200 s Chart to have double symbol.	sieve and fine grained	soils with limits plotting



#### DEFINITIONS OF SOIL FRACTIONS

SOIL COMPONENT	PARTICLE SIZE RANGE
Cobbles	Above 3 in.
Gravel	3 in. to No. 4 sieve
Coarse gravel	3 in. to 3/4 in.
Fine gravel	3/4 in. to No. 4 sieve
Sand	No. 4 to No. 200
Coarse	No. 4 to No. 10
Medium	No. 10 to No. 40
Fine	No. 40 to No. 200
Fines (silt or clay)	Below No. 200 sieve

# INTRODUCTION TO SEISMIC REFRACTION PRINCIPLES

Any disturbance to a soil or rock mass creates seismic waves which are merely the propagation of energy into that mass, manifested by distinct waveforms. There are two basic types of seismic waves; body waves and surface waves.

Body waves are either compressional or shear in nature, they penetrate deep into the substrata, and reflect from or refract through the various geologic layers. Any emission of an energy source into a medium exhibits both a compression wave (P Wave) and a shear wave (S Wave). P-Waves propagate in the form of oscillating pulses, traveling forward and backward, parallel to the direction of the wave front. S-Waves propagate in the form of distortional pulses, oscillating perpendicular to the wave front.

P-Waves travel at the highest velocities. Recording instruments that detect an energy transmission will generally observe the arrival of the P-Wave, followed by the S-Wave and surface waves.

All geologic materials exhibit P-Wave velocities in certain ranges, which relate to the density, specific gravity, elastic modulus, and moisture content of the specific material. As a material density and specific gravity increase so does its P-Wave velocity. Similarly, an increase in moisture content will cause an increase in P-Wave velocity. Generally, materials exhibiting higher P-Wave velocities will display higher elastic moduli.

In keeping with this relationship, determining the P-Wave velocities for the various subsurface layers, may yield very important and useful data relative to the engineering properties of the individual layers. In order to accomplish this task, methods of investigation, or surveys, were developed to establish the P-Wave velocity for subsurface layers. The method adopted by the VANN ENGINEERING INC Geophysical team examines the layer velocities, through refraction theory. Assuming that a P-Wave will refract through the various layers, according to the angle of incidence of the propagating wave form and the medium it is traveling through, it is then possible to detect a contrasting subsurface stratum by changes in the velocity of an induced seismic wave.

The procedure is outlined as follows:

A geophone is inserted into the ground or on a rock surface. Attached to it is a recording device. At predetermined intervals away from the geophone, in a linear array, a heavy sledgehammer strikes a stable plate or rock surface. Typically, the intervals of successive hammer impacts range from five to twenty feet. A timing device attached to the hammer, trips a measured recording sweep time, at the moment of impact. The arrival time of the induced P-Wave is measured and recorded at each interval. The length of a survey is closely related to the depth of investigation. Generally, the depth of investigation is approximately equal to one-third the length of the survey. For example, if it is desired to examine the substrata to a depth of twenty feet, the survey should extend a distance of at least sixty feet. Changes in the calculated velocity indicate strata breaks or distinct changes within the same stratum. The important concept to remember with this method is that it is predominantly effective where velocities increase from layer to layer, moving downward from the surface. Analytical methods are also available for determining the depth to the various layers, even in the most complex multi-layer situations



# **SECTION III**
## CLASSIFICATION TEST DATA

## PROPOSED CUSTOM RESIDENCE APN 169-11-004C 7602 NORTH MOONLIGHT LANE PARADISE VALLEY, ARIZONA 85253

Sample	Sieve Analysis (% Passing Sieve Size)								Atterberg Limits				
Location	3"	2"	1"	#4	#10	#40	#100	#200	LL	PI	USCS	%	
SG-A (0.0'-1.0')	-	100	86	62	53	39	-	22	21	2	SM	0.9	

1	Authorization For Site Investigation	
1	I certify that I am (check one) T the Owner T the Authorized R	epresentative or an Other Person and have authority to
	grant the investigator access to the property for this site investigator	and authorize the work certified in this site assessment
	Name & Address	
	(Printed)	
	Signature	
2	Project Identification	
	Property Owner or Project Name	
3	Site Information [A.A.C. R18-9-A309(B)(2)(a)]	
	Address	City
	Parcel Number L	ot Number
	Township Range Section	
	Latitude ° ' " N	Longitude ° ' " W
4	Investigator Information [A.A.C. R18-9-A310(H)]	
	Name	Phone
	Title F	irm Name
	Mailing Address	City State
	Zıp E-Mail	
5	Surface Characterization [A.A.C. R18-9-A310(C)]	
	Identify the presence or absence of all of the following possible limit	ing conditions in the intended location of the treatment
	A) The surface slope is greater than 15 % at the intended location of	f the on-site wastewater facility YES No
	B) Setback distances do NOT meet all the minimum values specifie	ed in R18-9-A312(C) 🗌 YES 🗍 No
	NOTE: Check YES if the location or size of the dwellin	g or other improvements, or the bedroom count
	C) Surface drainage characteristics could adversely affect the abilit	v of the facility to function properly
	<b>YES</b> No NOTE: If YES, please describe in Attachmer	it 4.
	D) A 100-year flood hazard zone, as indicated on the applicable flo	od insurance rate map, is located within the property on
	which the on-site wastewater treatment facility will be installed the FEMA Flood Insurance Map Number or Other So	UYES NO NOTE: If YES, please specify
	E) An outcropping of rock that cannot be excavated is present and	could impair the function of soil receiving the discharge
	$\Box YES \Box No$	
	F) Fill material deposits are present YES No	
	If the answer is YES to any of the above potential sur	face limiting conditions, please show location
	and note the condition type on Site Investigation Map	(Item 7).
6	Subsurface Characterization Method [A.A.C. R18-9-A310	[D)]
	Check method used to perform subsurface characterization per A.A.	C. R18-9-A310(D)(1) and (3)
	A) ASTM D5921 used? 🗌 Yes 🗌 No (if Yes, please enclos	e Attachment 1)
	B) Percolation test method used? 🗌 Yes 🗌 No (if Yes, pleas	e enclose Attachment 2)
	C) Seepage performance test method used? Yes No (if Y	(es, please enclose Attachment 3)
	D) Other ADEQ approved method?  Yes No (if Yes, ple	ase provide in Attachment 4 the method and data)

7	7 Site Investigation Map Showing the Location of Limiting Conditions and Setbacks from Features and Improvements [A.A.C. R18-9-A309(B)(2)(a)]																											
A.	C R	HEC ECC	CK b ORD	elov belc	v the w th	e fea he se	ture. epar	s sh atio	own n (fe	on (et)	the that	Site will	Inve be 1	estig maii	gatic ntair	n M ned t	lap. Detw	WR veen	ITE the	N/A syst	<b>A</b> if tem	item and	is I the	NOT chec	PR R	ESE feat	NT. ture.	
	Water supply well(ft)       Boundary of 100-year flood hazard zone(ft)         Water main or branch water line(ft)       Drainage easement or wash with         Domestic service water line(ft)       Drainage area more than twenty acres(ft)         Drinking water intake from(ft)       Other Easement(ft)         a surface water source(ft)       Downslope cut banks and culvert or roadway ditches(ft)         Perennial or intermittent stream(ft)       Planned cut bank over 2 feet deep(ft)         Lake, reservoir, or canal(ft)       Wall or planned wall over 2 feet high(ft)         Pond or other water feature(ft)       Driveway or parking area(ft)         Swimming pool(ft)       Storage Area(ft)       Earth fissure(ft)         Planned building(ft)       Other(ft) Describe:(ft)       No         Minimum setback distances are within the limits specified in R18-9-A312(C); []Yes [] UNKNOWN [] No         Check UNKNOWN if the dwelling location or size (including building footprint, bedroom count & fixture unit count) or the heation of other improvements is not known to the person performing the site investing time for the person performing the site investing timprovements is not known to the person performing the site invest																											
C.	count), or the location of other improvements is not known to the person performing the site investigation.Show all soil test locations. Show any condition or feature observed during the site investigation which may affect on-site system design & is located within the SITE INVESTIGATION AREA (defined as the planned excavation boundaries for the treatment works, primary disposal area and reserve disposal area plus the surrounding area out to 100 feet) including :C.(1) Show land surface contours at appropriate intervals when the elevations across the Site Investigation Area differ by more than 5 feet, and (2) Any other factor is observed that may affect system design regardless of property ownership (please include the																											
																			-									
					Not	e: <sup>-</sup>	Гhe	prim	hary	and	res	erve	e are	as	are	not k	knov	vn										

8	Subsurface Limiting Conditions [A.A.C. R18-9-A310(D)(2)]									
	<ul> <li>Identify the presence of absence of all of the following possible limiting conditions in the intended location of the primary and reserve disposal areas of the on-site wastewater treatment facility to a depth of at least 12 feet below land surface or to an impervious soil or rock layer if encountered at a shallower depth:</li> <li>A) The soil absorption rate determined under A.A.C. R18-9-A312(D)(2) is: <ol> <li>More than 1.20 gallons per day per square foot? Yes No</li> <li>Less than 0.20 gallons per day per square foot? Yes No</li> <li>A site-specific soil absorption rate (SAR) is required per A.A.C. R18-9-A312 (D)(2)(b)? Yes No</li> </ol> </li> <li>B) The vertical separation distance from the bottom of the lowest point of the disposal works to the seasonal high water table is less than the minimum vertical separation specified in A.A.C. R18-9-A312(E)(1)? Yes No</li> <li>C) Does seasonal saturation occur within surface soils that could affect the performance of the on-site wastewater treatment facility? Yes No</li> </ul>									
	facility? Yes No If Yes, describe evidence:	ie on-site wastewater treatment								
	<ul> <li>D) Do any of the following subsurface limiting conditions that may cause or contribute to surwithin 12 feet of the land surface: <ol> <li>An impervious soil or rock layer?</li> <li>Yes</li> <li>No</li> </ol> </li> <li>A zone of saturation that substantially limits downward percolation from the disposal 3. Soil with more than 50 percent rock fragments? <ol> <li>Yes</li> <li>No</li> </ol> </li> <li>E) Do any of the following subsurface limiting conditions that may promote accelerated dow insufficiently treated wastewater occur within 12 feet of the land surface:</li> </ul>	rfacing of wastewater occur I works?  Yes No wward movement of								
	<ol> <li>Fractures or joints in rock that are open, continuous, or interconnected? Yes No</li> <li>Karst voids or channels? Yes No</li> <li>Highly permeable materials such as deposits of cobbles or boulders? Yes No</li> <li>F) Does subsurface conditions exist that may convey wastewater to a Water of the State and cause or contribute to an exceedance of a water quality standard established in 18 A.A.C. 11, Articles 1 and 4? Yes No</li> </ol>									
	G) Depth to groundwater below land surface feet as determined by [] Irench or boring, [] Subdivision report, Published groundwater data or [] Relevant well data.									
	If the answer is Yes to any of the above subsurface limiting conditions, ple the associated limiting condition type on Site Investigation Man (Item 7).	ease show location and note								
9	Site Investigation Attachments									
9	#     Attachment Description	Attached?								
9	Site Investigation Attachments       #       Attachment Description	Attached?								
9	#     Attachment Description	Attached?         Yes, total of       pages.         Yes, total of       pages.								
9	Site Investigation Attachments       #       Attachment Description	Attached?         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.								
9 10	#     Attachment Description       Investigator Certification	Attached?         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.								
9 10	Attachment Description         #       Attachment Description         Investigator Certification         A)       Arizona-registered Professional engineer         Certification Number:	Attached?         Yes, total of pages.         Yes, total of pages.         Yes, total of pages.         Yes, total of pages.         Expiration Date:								
9	Site Investigation Attachments         #       Attachment Description         Investigator Certification         A)       Arizona-registered Professional engineer         B)       Arizona-registered Professional geologist         Certification Number:         B)       Arizona-registered Professional geologist         Certification Number:         B)       Arizona-registered Professional geologist	Attached?         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.         Expiration Date:								
9	Site Investigation Attachments         #       Attachment Description         #       Attachment Description         Investigator Certification       Investigator Certification         A)       Arizona-registered Professional engineer       Certification Number:         B)       Arizona-registered Professional geologist       Certification Number:         C)       Arizona-registered Sanitarian       Registration Number:         D)       A certificate of function form a communication Number:	Attached?         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.         Expiration Date:								
9	Site Investigation Attachments         #       Attachment Description         Investigator Certification         A)       Arizona-registered Professional engineer         Certification Number:         B)       Arizona-registered Professional geologist         Certification Number:         C)       Arizona-registered Professional geologist         Certification Number:         D)       A certificate of training from a course recognized by ADEQ	Attached?         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.         Yes, total of       pages.         Expiration Date:								
9	Site Investigation Attachments         #       Attachment Description         Investigator Certification         A)       Arizona-registered Professional engineer       Certification Number:         B)       Arizona-registered Professional geologist       Certification Number:         C)       Arizona-registered Sanitarian       Registration Number:         D)       A certificate of training from a course recognized by ADEQ         Course Name:       Completion Date:         Qualifies under another category designated in writing by ADEQ. Please use         E)       Attachment 4 to provide approved Qualification Category & Date	Attached?         Yes, total of pages.         Yes, total of pages.         Yes, total of pages.         Yes, total of pages.         Expiration Date:         Expiration Date:         Expiration Date:         Expiration Date:         Output         Expiration Date:         Expiration Date:         Expiration Date:								
9 10 By s R18 a sit and Prin Date Inv Date	Site Investigation Attachments         #       Attachment Description         Investigator Certification         A)       Arizona-registered Professional engineer         Certification Number:         B)       Arizona-registered Professional geologist         Certification Number:         C)       Arizona-registered Professional geologist         Certification Number:         D)       A certificate of training from a course recognized by ADEQ         Course Name:       Completion Date:         Qualifies under another category designated in writing by ADEQ. Please use         E)       Attachment 4 to provide approved Qualification Category & Date         Approved.         signing this section, I certify that I am qualified to conduct this investigation as specified in         I-9-A310(H) and have inspected the property identified in Item 3 for purposes of performing         e investigation.       I have performed this site investigation in accordance with R18-9-A310         have completed this investigation to the bestor my knowledge.         ted Investigation:       Estigator Signature/         estigator Signature/       Estigned	Attached?   Yes, total of pages.  Yes, total of pages.  Yes, total of pages.  Expiration Date: Expiration Da								

## ATTACHMENT 1 – ASTM 5921 METHOD FOR SUBSURFACE SOIL CHARACTERIZATION

Facility Ad	dress:
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Parcel Number:

Tested by:	

Depth to Groundwater: **PLEASE REPORT IN ITEM 8.G** 

Date Test Completed:

Test	Depth Interval Below	Texture	Structure	Rock	Mottles %	Boundary	Dry	Moist	SAR
Hole #	Land Surface (Inches)			Fragments %			Consistency	Consistency	
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## ATTACHMENT 1, CONTINUED – ASTM 5921 METHOD FOR SUBSURFACE SOIL CHARACTERIZATION

Parcel Number:

Tested by:

Depth to Groundwater: PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

Date Test Completed:

Test Hole #	Depth Interval Below Land Surface (Inches)	Texture	Structure	Rock Fragments %	Mottles %	Boundary	Dry Consistency	Moist Consistency	SAR
							Consistency	consistency	
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## ATTACHMENT 2 – PERCOLATION TEST DATASHEET

Facility Address:	Parcel Number:
Test Hole Number/Location:	Depth of Test Hole Bottom Below Land Surface (inches):
Date Test Complete:	Test Hole Cross-section: Please check a box and indicate size Diameter inches Square inches
Describe the land surface at the top of the Test Hole is (ple Undisturbed Native Soil Cut Surface Fill Surf	ease check one): face D Other (describe)

## **SOIL DATA FROM TEST HOLE:**

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

## **TEST HOLE PRESOAKING:**

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

## **TEST HOLE PERCOLATION TEST:**

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T <sub>i</sub> (min)	Measured Water Drop (inches)	Percolation Rate, P <sub>i</sub> (min/in.)	$\frac{(T_i + T_{i+1})/2}{\Delta T(\min)}$	$\begin{array}{c} \mathbf{P_{i+1}} - \mathbf{P_i} \\ \Delta \mathbf{P} \end{array}$	ΔΡ/ ΔΤ
						N/A	N/A	N/A
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Depth to groundwater (feet bls): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

Stabilized Percolation Rate (from Graph) minutes per inch							
PERSON WHO PERFORMED THE TEST:							
Name:							
Company:			_				
Address:			_				
Phone:		Fax:					
Email:							



## ATTACHMENT 2, CONTINUED – PERCOLATION TEST DATASHEET

Facility Address:	Parcel Number:			
Test Hole Number/Location:	Depth of Test Hole Bottom Below Land Surface (inches):			
Date Test Complete:	Test Hole Cross-section: Please check a box and indicate size         Diameter inches       Square inches			

Describe the land surface at the top of the Test Hole is (please check one):

## SOIL DATA FROM TEST HOLE:

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

## **TEST HOLE PRESOAKING:**

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

## **TEST HOLE PERCOLATION TEST:**

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T <sub>i</sub> (min)	Measured Water Drop (inches)	Percolation Rate, P <sub>i</sub> (min/in.)	$\frac{(T_i + T_{i+1})/2}{\Delta T(\min)}$	$\begin{array}{c} \mathbf{P_{i+1}} - \mathbf{P_i} \\ \Delta \mathbf{P} \end{array}$	ΔΡ/ ΔΤ
						N/A	N/A	N/A
							1	
							)	/

Depth to groundwater (feet bls): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

\_\_\_\_\_

Stabilized Percolation Rate (from Graph) \_\_\_\_\_ minutes per inch

## **PERSON WHO PERFORMED THE TEST:**

Name:

Company:

Address:

Phone: Fax:

Email:



## ATTACHMENT 2, CONTINUED – PERCOLATION TEST DATASHEET

Facility Address:	Parcel Number:			
Test Hole Number/Location:	Depth of Test Hole Bottom Below Land Surface (inches):			
Date Test Complete:	Test Hole Cross-section: Please check a box and indicate size         Diameter inches       Square inches			

Describe the land surface at the top of the Test Hole is (please check one):

## SOIL DATA FROM TEST HOLE:

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

## **TEST HOLE PRESOAKING:**

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

## **TEST HOLE PERCOLATION TEST:**

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T <sub>i</sub> (min)	Measured Water Drop (inches)	Percolation Rate, P <sub>i</sub> (min/in.)	$\frac{(T_i + T_{i+1})/2}{\Delta T(\min)}$	$\begin{array}{c} \mathbf{P}_{i+1} - \mathbf{P}_i \\ \Delta \mathbf{P} \end{array}$	ΔΡ/ ΔΤ
						N/A	N/A	N/A
							1	
								/

Depth to groundwater (feet bls): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

\_\_\_\_\_

Stabilized Percolation Rate (from Graph) \_\_\_\_\_ minutes per inch

## **PERSON WHO PERFORMED THE TEST:**

Name:

Company:

Address:

Phone: Fax:

Email:



Facility Address:	Parcel Number:	
	Date Test Completed:	
ther Information pertinent to this Site Investigation a tachments or Other Information provided.	<b>Report:</b> Please specify the Report Item rela	ted to all
As notAs noted in the report text and associated test boring	logs:ed in the report text and associated test	ooring log
	Continued on pages	_ through
renared by (Please Print):		



9013 North 24th Avenue, Suite 7, Phoenix, Arizona 85021-2851



# FRONT ELEVATION (EAST)

SCALE: N.T.S.



## ELEVATION (NORTH)





# REAR ELEVATION (WEST)

SCALE: N.T.S.



# ELEVATION (SOUTH)

PRELIMINARY NOT FOR CONSTRUCTION	DAVID DICK, ARCHITECT 7400 E. MEDONALD DR., SMITE MA 80001150ALE, SMITE MA 86250 (480) 545-5856 193
	EXTERIOR ELEVATIONS
	DATE 04.25.2022 SCALE AS NOTED PRINT DATE: 04.20.2022
	A CUSTOM RESIDENCE FOR: CASKEY RESIDENCE 7602 N MOONLIGHT LANE PARADISE VALLEY AZ 85253

# PRELIMINARY GRADING & DRAINAGE PLAN 7602 N MOONLIGHT LN., PARADISE VALLEY, AZ 85253 **PARCEL NO: 169-11-004C**

# TOWN OF PARADISE VALLEY NOTES

- . PRIOR TO THE FIRST INSPECTION OF STRUCTURES WITHIN 3 FEET OF A SETBACK LINE, THE PROPERTY PINS SHALL BE PLACED BY A REGISTERED CIVIL ENGINEER OR LAND SURVEYOR OF THE STATE OF ARIZONA, AND THE PROPERTY LINE(S) IDENTIFIED.
- 2. WHERE EXCAVATION IS TO OCCUR THE TOP 4" OF EXCAVATED NATIVE SOIL SHALL REMAIN ON THE SITE AND SHALL BE REUSED IN A MANNER THAT TAKES ADVANTAGE OF THE NATURAL SOIL SEED BANK IT CONTAINS.
- . ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE WITH THE MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL MUNICIPALITY UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS
- 4. THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THIS PLAN.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
- 6. ALL EXTERIOR SITE LIGHTING SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR TYPE, LOCATION. HEIGHT, WATTAGE, AND LUMEN BASED UPON THE FIXTURES INSTALLED PURSUANT TO SECTION 1023 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCE FOR NON-HILLSIDE PROPERTIES, SECTION 2208 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCE FOR HILLSIDE PROPERTIES, OR AS SPECIFIED IN THE SPECIAL USE PERMIT FOR SPECIAL USE PERMIT PROPERTIES.
- 7. A DUST CONTROL PLAN AND PERMIT MEETING THE REQUIREMENTS OF RULE 310 OF THE
- MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS, AS AMENDED, IS REQUIRED. A SEPARATE RIGHT-OF-WAY PERMIT IS NECESSARY FOR ANY OFF-SITE CONSTRUCTION. 9. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES.
- DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
- 10. EAVE PROJECTIONS INTO REQUIRED SETBACKS ARE LIMITED TO A MAXIMUM OF 24" PURSUANT TO SECTION 1008 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCES. 11. ALL STRUCTURES AND LANDSCAPING WITHIN THE SIGHT VISIBILITY TRIANGLE SHALL HAVE A 2
- FOOT MAXIMUM HEIGHT. 12. ALL NEW AND EXISTING ELECTRICAL SERVICE LINES SHALL BE BURIED PER THE TOWN OF
- PARADISE VALLEY REQUIREMENTS. 13. IT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE TO ARRANGE FOR THE RELOCATION AND RELOCATION COSTS OF ALL UTILITIES. AND TO SUBMIT A UTILITY RELOCATION SCHEDULE PRIOR TO
- THE ISSUANCE OF AN ENGINEERING CONSTRUCTION PERMIT. 14. EXISTING AND/OR NEW UTILITY CABINETS AND PEDESTALS SHALL BE LOCATED A MINIMUM OF 4' BEHIND ULTIMATE BACK OF CURB LOCATION.
- 15. POOL, SPA, BARBECUE AND ANY PROPOSED STRUCTURES OVER 8" ABOVE GRADE REQUIRE SEPARATE PERMIT APPLICATIONS.
- 16. POOLS SHALL BE CONSTRUCTED BY SEPARATE PERMIT AND SECURED FROM UNWANTED ACCESS PER TOWN CODE, ARTICLE 5-2. 17. ALL FILL MATERIAL UNDER SLABS AND WALKS SHALL BE COMPACTED TO NOT LESS THAN 95%.
- 18. SETBACK CERTIFICATION IS REQUIRED AND SHALL BE PROVIDED TO TOWN INSPECTOR PRIOR TO STEM WALL INSPECTION.
- 19. FOR BUILDING PADS THAT HAVE 1'OR MORE OF FILL MATERIAL, SOILS COMPACTION TEST RESULTS ARE REQUIRED AND SHALL BE PROVIDED TO TOWN INSPECTOR PRIOR TO PRE-SLAB INSPECTION. 20. FINISHED FLOOR ELEVATION CERTIFICATION IS REQUIRED AND SHALL BE PROVIDED TO TOWN
- INSPECTOR PRIOR TO STRAP AND SHEAR INSPECTION. 21. MAIL BOXES SHALL COMPLY WITH THE TOWN OF PARADISE VALLEY STANDARDS FOR MAIL BOXES IN THE RIGHTOF-WAY FOR HEIGHT, WIDTH AND BREAK AWAY FEATURES.
- 22. ALL PATIOS, WALKS, AND DRIVES TO SLOPE AWAY FROM BUILDING AND GARAGES AT A MINIMUM SLOPE OF 1/4" PER FOOT UNLESS SPECIFIED OTHERWISE. TRENCH BEDDING AND SHADING SHALL BE FREE OF ROCKS AND DEBRIS.
- 24. THE TOWN ONLY APPROVES THE SCOPE OF WORK AND NOT THE ENGINEERING DESIGN. ANY CONSTRUCTION QUANTITIES SHOWN ARE NOT VERIFIED BY THE TOWN.
- 25. THE APPROVAL OF THE PLANS IS VALID FOR 180 DAYS. IF A PERMIT FOR CONSTRUCTION HAS NOT BEEN ISSUED WITHIN 180 DAYS, THE PERMIT MUST BE RENEWED. 26. A TOWN INSPECTOR WILL INSPECT ALL WORK WITHIN THE TOWN'S RIGHTS-OF-WAY. NOTIFY TOWN
- INSPECTION SERVICES TO SCHEDULE A PRECONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION. 27. WHENEVER EXCAVATION IS NECESSARY, CALL ARIZONA811 BY DIALING 811 or 602-263-1100. TWO
- (2) WORKING DAYS BEFORE EXCAVATION BEGINS. 28. EXCAVATIONS SHALL COMPLY WITH REQUIREMENTS OF OSHA EXCAVATION STANDARDS (29 CFR,
- PART 1926, SUBPART P). UNDER NO CIRCUMSTANCES WILL THE CONTRACTORS BE ALLOWED TO WORK IN A TRENCH LOCATED WITHIN THE TOWN'S RIGHT-OF-WAY WITHOUT PROPER SHORING OR EXCAVATION METHODS.
- 29. PERMIT HOLDER SHALL POST A 6 SQUARE FOOT (2'X3') IDENTIFICATION SIGN, MADE OF DURABLE MATERIAL. IN THE FRONT YARD OF SUBJECT PROPERTY AND NOT IN THE TOWN'S RIGHT-OF-WAY. THE SIGN MAY NOT EXCEED A MAXIMUM OF 6 FEET IN HEIGHT FROM GRADE TO TOP OF THE SIGN. THE SIGN MUST INCLUDE THE PERMITTEE OR COMPANY NAME, PHONE NUMBER. TYPE OF WORK. ADDRESS OF PROJECT AND TOWN CONTACT NUMBER. 480-348-3556.
- 30. WHEN DEEMED NECESSARY, A 6-FOOT HIGH CHAIN LINK FENCE MUST BE INSTALLED AROUND THE CONSTRUCTION AREA TO PREVENT ANY POTENTIAL SAFETY HAZARD FOR THE PUBLIC. THE FENCE SHALL BE SETBACK AT LEAST 10 FEET FROM ALL RIGHTS-OF-WAY AND HAVE A 50-FOOT STREET CORNER SITE TRIANGLE WHERE APPLICABLE
- 31. CLEAR ACCESS FOR NEIGHBORING PROPERTIES AND EMERGENCY VEHICLES MUST BE MAINTAINED AT ALL TIMES. CONSTRUCTION RELATED VEHICLES MUST BE LEGALLY PARKED ONLY ON ONE SIDE OF THE STREET OR JOB SITE PROPERTY.
- 32. ALL CONSTRUCTION DEBRIS AND EQUIPMENT MUST BE CONTAINED ON SITE AT ALL TIMES. CONTRACTOR AND PROPERTY OWNER MUST MAINTAIN THE JOB SITE FREE OF LITTER AND UNSIGHTLY MATERIALS AT ALL TIMES. CONSTRUCTION MATERIALS ARE PROHIBITED IN THE TOWN'S RIGHT-OF-WAY.
- 33. CONSTRUCTION ACTIVITIES ARE PERMITTED BETWEEN THE HOURS OF 7 AM AND 5 PM MONDAY THROUGH CONSTRUCTION ACTIVITIES MAY START ONE (1) HOUR EARLIER DURING THE SUMMER (MAY 1ST THROUGH SEPTEMBER 30TH).
- 34. THE USE AND OPERATION OF FUEL-FIRED GENERATORS IS PROHIBITED UNLESS DUE TO A HARDSHIP. TOWN APPROVAL SHALL BE REQUIRED.
- 35. THE CONTRACTOR AND PROPERTY OWNER SHALL BE LIABLE FOR ANY DAMAGE DONE TO ANY PUBLIC PROPERTY AS A RESULT OF ANY CONSTRUCTION OR CONSTRUCTION RELATED ACTIVITIES. NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED UNTIL ALL AFFECTED RIGHTS-OF-WAY ARE CLEANED AND/OR REPAIRED TO THEIR ORIGINAL CONDITION AND UNTIL ANY AND ALL DAMAGES TO AFFECTED PROPERTIES ARE RESTORED TO ORIGINAL CONDITION.
- 36. A KEYED SWITCH SHALL BE REQUIRED ON ALL NEW AND EXISTING ELECTRIC ENTRY GATES. THE KEYED SWITCH SHALL BE INSTALLED IN A LOCATION THAT IS READILY VISIBLE AND ACCESSIBLE. KNOX BOX ORDER FORMS ARE AVAILABLE AT THE TOWN'S BUILDING SAFETY DEPARTMENT.
- 37. PROPERTY OWNER, BUILDER, OR GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR CONTROLLING DUST FROM THE SITE AT ALL TIMES. ALL MEANS NECESSARY SHALL BE USED BY THE BUILDER OR GENERAL CONTRACTOR TO CONTROL THE EXISTENCE OF DUST CAUSED BY ANY EARTHWORK, SPRAY APPLICATION OF MATERIALS, OR OTHER DUST-CAUSING PRACTICES REQUIRED BY THE CONSTRUCTION PROCESS.
- 38. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT THE TOWN FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, HEALTH, SAFETY, OR OTHER DESIGN ISSUES.
- 39. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTION DITCHES, PIPES PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT PROPOSED AND EXISTING IMPROVEMENTS FROM RUNOFF OR DAMAGE FROM STORM WATER, MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS.

# **ENGINEERS NOTES**

- 1. MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR
- 2. ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE
- 3. GRADING SHALL BE IN CONFORMANCE WITH 2018 IBC SEC. 1803 AND APPENDIX J.
- 4. 5% MINIMUM SLOPE AWAY FROM BUILDING FOR A MINIMUM 10', U.N.O.
- SPECIFICATIONS AND STANDARD DETAILS.
- POLLUTION CONTROL REGULATIONS, AS AMENDED, IS REQUIRED.
- A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION. 8. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM
- THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
- OR PROPERTY FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO BUILDING CONSTRUCTION. 10. ALL STRUCTURES AND LANDSCAPING WITHIN THE SIGHT VISIBILITY TRIANGLE SHALL HAVE A 2 FOOT
- MAXIMUM HEIGHT. 11. ALL PATIOS, WALKS, AND DRIVES TO SLOPE AWAY FROM BUILDING AND GARAGES AT A MINIMUM SLOPE OF
- 1/4" PER FOOT UNLESS SPECIFIED OTHERWISE. ALL LAWN AREAS ADJOINING WALKS OR SLABS WILL BE MINUS 6" BELOW FINISHED FLOOR UNLESS SPECIFIED OTHERWISE. 12. ALL MATERIAL TO BE UNDER SLABS AND WALKS SHALL BE COMPACTED TO NOT LESS THAN 95% PER ASTM D698.
- 13. THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO BY THIS PLAN.
- 14. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO
- COMPLETE ALL WORK COVERED BY THIS PLAN. 15. THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY CONCERNS ASSOCIATED
- FI SFWHFRF 16. A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO
- 17. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
- WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS.
- FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
- SITE PLAN AND FINAL BUILDING DIMENSIONS BEFORE STARTING WORK. REPORT DISCREPANCIES TO OWNER'S AGENT.
- 21. COORDINATION BETWEEN ALL PARTIES IS ESSENTIAL PART OF CONTRACT. 22. CONTRACTOR IS RESPONSIBLE FOR PROJECT AND SITE CONDITIONS. AND TO WORK WITH WEATHER CONDITIONS AS THE PROJECT SITE MAY BE LOCATED IN A FLOOD PRONE AREA AND SUBJECT TO FLOODING AND ITS HAZARDS.
- 23. THE CONTRACTOR IS TO VERIFY THE LOCATION, ELEVATION, CONDITION, AND PAVEMENT CROSS-SLOPE OF ALL EXISTING SURFACES AT POINTS OF TIE-IN AND MATCHING, PRIOR TO COMMENCEMENT OF GRADING, DESIGN INTENT REFLECTED ON THESE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED.
- 24. CONTRACTOR IS RESPONSIBLE TO COORDINATE UTILITY CROSSINGS AT CULVERT CROSSINGS BEFORE CONDUITS ARE IN PLACE BEFORE STARTING CULVERT WORK.
- 25. ALL ON-SITE UTILITIES PER OTHERS. 26. THIS PROJECT REQUIRES A REGULAR ONGOING MAINTENANCE PROGRAM FOR THE DESIGNED DRAINAGE LEAD TO IT'S INABILITY TO PERFORM PROPERLY AND/OR CAUSE DAMAGE ELSEWHERE IN THE PROJECT.
- 27. IF A DISCREPANCY IS FOUND BETWEEN ENGINEER'S PLAN OR SURVEYOR'S STAKING AND THE ARCHITECTURAL PLAN. ENGINEER SHALL BE NOTIFIED IMMEDIATELY. FAILURE TO NOTIFY ENGINEER SHALL NEGATE ENGINEER'S LIABILITY.
- 28. ALL DISTURBED AREAS ARE TO BE ROPED AND ROPING MUST MATCH PLAN. 29. VEGETATION OUTSIDE OF CONSTRUCTION AREA TO REMAIN. 30. AREAS OUTSIDE THE WALL AND CUT AND FILL SLOPES SHALL BE REVEGETATED WITH SIMILAR PLANT TYPES
- ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- 32. ANY FUTURE IMPROVEMENTS SHOWN HEREON SHALL REQUIRE A SEPARATE PERMIT.
- 34. THIS PLAN IS DESIGNED TO SHOW SITE GRADING AND DRAINAGE CONTRACTOR SHALL USE THE
- ARCHITECTURAL SITE PLAN TO DETERMINE FINAL HOUSE, WALL, STEP, ETC., LOCATIONS AND ELEVATIONS. 35. ALL DRAINAGE FACILITIES TO BE MAINTAINED BY HOMEOWNER.
- TO BE DETERMINED AT TIME OF CONSTRUCTION AND TO BE A MINIMUM OF SIX INCHES BELOW EXISTING NATURAL GRADE OR FINISHED GRADE WHICHEVER IS LOWER (TYPICAL).
- 38. REFER TO STRUCTURAL DRAWINGS, DETAILS AND CALCULATIONS FOR ALL PROPOSED RETAINING WALLS.
- 39. FOR CHANGE IN ELEVATION THAT ARE GREATER THAN 30", PROVIDE 36" HIGH GUARDRAILS FOR TOTAL OF 42" FALL PROTECTION BARRIER U.N.O.
- PHOENIX SUPPLEMENT TO MAG. 41. ALL PIPES AND FITTINGS SHALL BE INSTALLED PER MANUFACTURE'S SPECIFICATIONS AND DETAILS.
- 42. ABANDONMENT OR REMOVAL OF EXISTING SEPTIC SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH SEPARATE PERMIT. 43. COORDINATE RIPRAP COLOR WITH LANDSCAPE PLANS AND DETAILS.
- 44. VERIFY AND COORDINATE WITH ARCHITECTURAL AND LANDSCAPE PLANS LOCATION AND HEIGHT OF ALL SITE WALLS.
- 45. DISTURBED AREA 0.503 < 1 ACRE; NPDES PERMIT IS NOT REQUIRED. 46. REFER TO ARCHITECTURAL PLANS AND DETAILS FOR DEMOLITION OF EXISTING BUILDING STRUCTURE, SITE WALLS AND PAVEMENT.
- 47. VERIFY AND COORDINATE WITH LANDSCAPE PLANS FINAL LOCATION AND GRATE TYPE OF SPECIFIED AREA DRAINS AND TRENCH DRAINS.
- 48. CONTRACTOR TO COORDINATE ALL ELEVATIONS OF RETAINING, FREE STANDING AND STEM WALLS WITH COORDINATION BETWEEN THE PROJECT STAKEHOLDERS.

LOCATED IN A PORTION OF THE N 1/2 OF THE SE 1/4 OF THE NE 1/4 OF SECTION 6, T.2N, R.4E OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THIS PLAN IN THEIR ENTIRETY. WITH THE M.A.G. STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL CITY OR TOWN UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.

5. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.)

6. A DUST CONTROL PLAN MEETING THE REQUIREMENTS OF RULE 310 OF THE MARICOPA COUNTY AIR

9. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS, BARRIER WALLS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT ADJACENT BUILDINGS

GRADED TO 2" BELOW THE TOP OF SLAB. TYPICAL FINISHED GRADE AROUND PERIMETER OF BUILDING IS

ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED

WITH THIS PROJECT DURING CONSTRUCTION, UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THIS PLAN OR

UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL 48 HOURS IN ADVANCE FOR BLUE STAKE (1-800-STAKE-IT) PRIOR TO ANY EXCAVATION.

18. ALL PAVING, GRADING, EXCAVATION, TRENCHING, PIPE BEDDING, CUT, FILL AND BACKFILL SHALL COMPLY

19. THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER 20. CONTRACTOR TO VERIFY AND COORDINATE ALL DIMENSIONS AND SITE LAYOUT WITH ARCHITECTURE'S FINAL

PAVING, CURB AND GUTTER, OR OTHER SURFACE CONSTRUCTION. SHOULD EXISTING LOCATIONS, ELEVATIONS, CONDITION, OR PAVEMENT CROSS-SLOPE DIFFER FROM THAT SHOWN ON THESE PLANS, RESULTING IN THE NOTIFY THE OWNER'S AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT

STARTING WORK ON CULVERT. COORDINATE WITH OWNER REPRESENTATIVE. VERIFY UTILITY LINES AND/OR

SYSTEM(S) TO PRESERVE THE DESIGN INTEGRITY AND THE ABILITY TO PERFORM ITS OPERATIONAL INTENT. FAILURE TO PROVIDE MAINTENANCE WILL JEOPARDIZE THE DRAINAGE SYSTEM(S)' PERFORMANCE AND MAY

AND DENSITIES FOUND ON THE SITE. REVEGETATION SHALL BE COMPLETED PRIOR TO OCCUPANCY AND THE

31. MECHANICAL EQUIPMENT SHALL BE SCREENED TO A MINIMUM OF ONE FOOT ABOVE TOP OF EQUIPMENT. 33. ANY POINTS OF DRAINAGE CONCENTRATION SHOULD BE PROTECTED AGAINST EROSION WITH NATIVE STONE.

36. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR SITE AND RETAINING WALLS LAYOUT, DIMENSIONS, AND DETAILS. TOP OF FOOTING ELEVATIONS SHOWN IN PLAN ARE APPROXIMATE ONLY. ACTUAL TOP OF FOOTINGS

37. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING LAYOUT, DIMENSIONS AND ELEVATIONS.

40. ALL WATER AND SEWER LINES AND CONNECTIONS MUST BE INSTALLED PER IPC 2018, MAG AND CITY OF

THE MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT RULES AND STANDARDS, AND WILL REQUIRE

ARCHITECT, LANDSCAPE ARCHITECT AND STRUCTURAL ENGINEER. LDG ASSUMES NO LIABILITY FOR LACK OF

# I ECENID

۲	BRASS CAP FLUSH			
٠	FOUND REBAR OR AS NOTED			
0	SET 1/2" REBAR & TAG OR AS NOTED			
0	CALCULATED POINT			
<u> </u>	PROPERTY LINE			
	EASEMENT LINE			
	MONUMENT LINE			
WM	WATER METER			
$\otimes$	WATER VALVE			
•	FIRE HYDRANT			
Ī	CABLE TV RISER			
$[\vee]$	UTILITY VAULT			
Ē	MAILBOX			
T	CATV, PHONE			
S	SEWER LINE			
o	CHAINLINK FENCE			
□	WATED LINE			
——————————————————————————————————————	ELECTRIC LINE			
C	COMMUNICATIONS LINE			
G	GAS LINE			
1321/	EXISTING CONTOUR			
$\sim$	EXIST. DRAINAGE FLOW			
+12. <sup>2</sup>	EXIST. SPOT ELEVATION			
AC CON	TREE			
	SAGUARO			
	ASPHALT PAVEMENT			
4 4 4 4 4	CONCRETE PAVEMENT			
	EXISTING DISTURBED AREA			

PROPOSED DISTURBED AREA DRAINAGE FLOW ARROW PROPOSED SPOT ELEVATION

> PROPOSED CONTOUR TOP OF WALL TOP OF RETAINING WALL

FINISH GRADE BOTTOM OF WALL TOP OF FOOTING

STORM DRAIN PIPE CATCH BASIN

RETAINING AGAINST BUILDING EXTENDED BUILDING STEM WALL

# **ABBREVIATIONS**

-

XX.XX

— XX \_

TW: XX.XX

TRW: XX.XX

/FG:XX.XX

(BW:XX.XX

ŤF: XX.XX

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BUILDING SETBACK LINE BSL EXISTING GRADE EL, ELEV ELEVATION EDGE OF PAVEMENT ESMT EASEMENT EX. EXIST. EXISTING GUTTER, GAS INVERT INV MEASURED MCR MARICOPA COUNTY RECORDER MANHOLE MH P, PVMT PAVEMENT PUBLIC UTILITY EASEMENT (R), REC. RECORDED RADIUS RIGHT OF WAY R/W TANGENT. TELEPHONE TC TOP OF CURB ΤΡV TOWN OF PARADISE VALLEY TSW TOP OF STEM WALL WEST, WATERLINE WALL DRAINAGE OPENING WM WATER METER

# UTILITIES NOTES

HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLAN ARE APPROXIMATE ONLY AND WILL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO START OF CONSTRUCTION WORK. CALL BLUE STAKE @ (602) 263–1100.

# UTILITIES

WATER: EPCOR WATER SANITARY SEWER: SEPTIC ELECTRIC: APS TELEPHONE: CENTURY LINK. COX COMMUNICATIONS NATURAL GAS: SOUTHWEST GAS CABLE TV: CENTURY LINK, COX COMMUNICATIONS

# **GRADING SPECIFICATIONS**

- 1. EXCAVATION AND GRADING OF THIS SITE IS CLASSIFIED AS "ENGINEERED GRADI PERFORMED ACCORDINGLY.
- 2. THE CONTRACTOR WILL RETAIN A SOILS ENGINEER DURING CONSTRUCTION TO I CONCERNING PREPARATION OF GROUND TO RECEIVE FILLS, TESTING AND REQU SLOPES INCLUDING CUT SLOPES.
- 3. COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601 AND PROVISIONS AS SE 4. BEARING MATERIALS FOR FILL UNDER RESIDENCE PAD IF NATIVE MATERIAL IS U REMOVED THAT ARE IN EXCESS OF SIX INCHES. REMAINING MATERIAL MUST BE THAT CAN BE COMPACTED INTO A DENSE CONDITION.
- 5. CUT-SLOPES: MAXIMUM ROCK CUT SLOPE TO BE 1.0 FEET HORIZONTAL TO 3.
- 6. FILL SLOPES: MAXIMUM FILL SLOPE TO BE 2.0 FEET HORIZONTAL TO 1.0 FEET 7. COMPACTION FILL MATERIAL MUST BE PLACED ON LEVELED BENCHES CUT INTO FILL IN HORIZONTAL LIFTS OF THICKNESS COMPATIBLE WITH THE COMPACTION OF 95 PERCENT OF THE MAXIMUM A.S.T.M. DENSITY AT THE OPTIMUM MOISTU PERTAINS TO ALL ENGINEERED STRUCTURAL FILL SUPPORTING STRUCTURES AN RETAINING WALLS. COMPACTION TEST RESULTS SHALL BE SUBMITTED TO THE VALLEY BUILDING AND SAFETY DEPARTMENT.
- 8. ANY RETAINING WALLS ADJACENT TO THE PROPERTY LINES WILL BE UNDER TH SOILS ENGINEER. THE DEVELOPER SHALL NOTIFY THE ADJOINING PROPERTY OW START OF CONSTRUCTION ON THESE WALLS PER SECTION 2903-B OF IBC. THE MEANS OF PROTECTION OF ADJACENT PROPERTY WHILE THIS WORK IS UNDER
- 9. ALL EXPOSED CUT AND FILL SHALL BE TREATED WITH AN APPROVED AGING A 10. NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL ALL HILLSIDE STIPUL REQUIREMENTS ARE COMPLIED INCLUDING, BUT NOT LIMITED TO LANDSCAPING, SAFETY AND ALL ONSITE AND OFFSITE IMPROVEMENTS.
- 11. ALL OUTDOOR LIGHTING SHALL BE IN CONFORMANCE WITH ARTICLE XXII OF TH 12. ALL EXCESS FILL MATERIAL SHALL BE REMOVED FROM THE SITE WITH NO NEW 13. THE USE OF HYDRAULIC RAM HAMMERS, OR OTHER HEAVY EQUIPMENT USED
- MACHINERY WITH AUDIBLE BACK UP WARNING DEVICES SHALL BE LIMITED TO SUNRISE, WHICHEVER IS LATER, AND 6:00PM OR SUNSET, WHICHEVER IS EARL LIMITED WORK ON SATURDAY AND NO WORK ON SUNDAY OR LEGAL HOLIDAYS.
- 14. CONSTRUCTION STAKING AND/OF FENCING SHALL BE PLACED AROUND THE CO UNDISTURBED NATURAL AREAS.

# TOWN OF PARADISE VALLEY HILLSIDE NO

- A. NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL ALL HILLSIDE STIPULA REQUIREMENTS ARE COMPLIED INCLUDING, BUT NOT LIMITED TO LANDSCAPING, GI SAFETY, AND ALL ONSITE AND OFFSITE IMPROVEMENTS.
- B. ALL OUTDOOR LIGHTING SHALL BE IN CONFORMANCE WITH ARTICLE XXII OF THE
- C. ALL EXCESS FILL MATERIAL SHALL BE REMOVED FROM THE SITE WITH NO NEW S
- D. THE USE OF HYDRAULIC RAM HAMMERS. OR OTHER HEAVY EQUIPMENT USED TO MACHINERY WITH AUDIBLE BACK UP WARNING DEVICES SHALL BE LIMITED TO US SUNRISE, WHICHEVER IS LATER, AND 6:00PM OR SUNSET, WHICHEVER IS EARLIER LIMITED WORK ON SATURDAY AND NO WORK ON SUNDAY OR LEGAL HOLIDAYS. I EQUIPMENT CANNOT BE USED ON SATURDAYS WITHOUT A WAIVER FROM THE TOW
- . CONSTRUCTION STAKING AND/OR FENCING SHALL BE PLACES AROUND THE CON UNDISTURBED NATURAL AREA.
- F. ALL RETAINING WALLS SHALL NOT EXTEND MORE THAN 6 INCHES ABOVE THE MA OF DRIVEWAY RETAINING WALLS IN ACCORDANCE WITH 2207.VI.6).

# DRAINAGE STATEMENT

- 1. ULTIMATE STORM OUTFALL IS LOCATED NEAR THE SOUTHEASTERLY PROP. CORI 2. PROPOSED DEVELOPMENT DOES NOT IMPACT DRAINAGE CONDITIONS OF ADJOINI
- 3. EXISTING DRAINAGE PATTERNS ARE PRESERVED.
- 4. THE MINIMUM FINISH FLOOR ELEVATION SHOWN IS SAFE FROM INUNDATION DUF EVENT IF CONSTRUCTED PER THE APPROVED CIVIL PLANS.
- 5. PROPOSED STORM DRAIN SYSTEM SHALL BE INSPECTED AND CLEANED FROM MAJOR STORM EVENT.
- 6. RIPRAP AND BOULDERS ARE SPECIFIED AT ALL POINTS OF DISCHARGE TO MIT
- CONCENTRATED FLOWS BACK TO SHEET FLOWS. 7. ON-SITE RETENTION IS PROPOSED FOR THE RUNOFF GENERATED BY THE ROC AREA.

# DISTURBED AREA CALCULATIONS

AREA OF LOT: TOTAL FLOOR AREA:	142,335 S.F (3.268 AC.) 7,724 S.F.	CUT: CUT FI
FLOOR AREA RATIO: (TOTAL FLOOR AREA/AREA OF LOT)	5.42% < 25%	<u>FILL:</u> NET CI
BUILDING PAD SLOPE:	34.41%	ALL QU
VERTICAL:	57.00'	
HORIZONTAL:	165.67'	OWN D
ALLOWABLE NET DISTURBED AREA:	14,290 S.F. (10.04%)	BASE
EXISTING DISTURBED AREA:	2,849 S.F. (2.00%)	
GROSS PROPOSED DISTURBED AREA:	24,298 S.F.	FIR
LESS TEMPORARY AREAS OF DISTURBANCE TO BE RESTORED AND REVEGETATED:	6,814 S.F.	FIRE S THE R
LESS BUILDING FOOTPRINT AREA:	<u>5,111 S.F.</u>	VALLE'
PROPOSED NET DISTURBED AREA:	12,373 S.F. (8.69%)	904.2.
TOTAL DISTURBED AREA:	15,222 S.F. (10.69%)	
ALLOWED SLOPES STEEPER THAN NATURAL GRADE (5% MAX.):	7,116 S.F. (5%)	DR
THAN NATURAL GRADE:	1.974 S.F. (1.4%)	
VOLUME OF CUT:	4,321 C.Y.	NEW
VOLUME OF FILL:	<u>446 C.Y.</u>	
TOTAL CUT & FILL:	4,767 C.Y.	SH
HILLSIDE ASSURANCE = 35 TIMES THE GRA	DING PERMIT FEE. =	C-1

\$161,245 GRADING PERMIT FEE: \$4,607 (\$142 FIRST 100 CY / \$95 EA. ADDITIONAL 100 CY).

ALL QUANTITIES LISTED ON THESE PLANS ARE ESTIMATES ONLY. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF THE QUANTITIES AND BASE THEIR BIDS ON THEIR ESTIMATES.

LL QU STIM SSUM WN ASE

EA

'HE RE ALLEY 04.2.2

NEW NEW (

:—1 C-2 C-3



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	<u> </u>						
	SEC.6 T2N R4E	PROJECT SITE MOONLIGHT NOONLIGHT WAY	DATE: 04/21/22	JOB: 2101034	VERSION: 2.4	PLOT DATE: 04/21/22	WAS PREPARED.
NG" PER 2018 I.B.C. AND WILL BE NSPECT PROGRESS OF CONSTRUCTION. IRED COMPACTION STABILITY OF ALL FINISH T FORTH IN THE SOILS REPORT. JSED. LARGE ROCK FRAGMENTS MUST BE SMALLER PARTICLES OF SAND AND ROCK	LAKESIDE LN HILLSIDE DR HILLSIDE DR HILLSIDE DR HILLSIDE DR HILLSIDE DR HILLSIDE DR HILLSIDE DR HILLSIDE DR HILLSIDE DR	CRYSTAL LN	ALE: N.T.S.	SIGNED BY: NP	AWN BY: CM	ECKED BY: JI	EVELOPMENT GROUP, LLC. ART WITHOUT THE WRITTEN BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH IT '
) FEET VERTICAL PER GEOTECHNICAL STUDY. VERTICAL. ) UNDISTURBED EXISTING HILLSIDE. PLACE EQUIPMENT USED. COMPACT TO A MINIMUM 2E CONTENT OF ± TWO PERCENT. THIS D INCLUDING FILL UNDER ANY OF THE SOILS ENGINEER AND TOWN OF PARADISE	OWNER MICHAEL P. CASKEY & MICHELLE D. CASKEY 7672 E SOLANO DR SCOTTSDLAE, AZ 85250	ARCHITECT DAVID DICK ARCHITECT, AIA, NCARB 7400 E. MCDONALD DRIVE, SUITE 122, SCOTTSDALE, AZ 85250 P: 480–945–1895 DD@DDARCHSTUDIO.COM	DATE: SC	DES	DR	CHI	VID AS SUCH SHALL REMAIN PROPERTY OF LAND DE R PUBLICATION BY ANY METHOD IN WHOLE OR IN PA IS PROHIBITED. THE USE OF THIS DRAWING SHALL I
E SCOPE OF SPECIAL INSPECTION BY THE NERS IN WRITING, TEN DAYS PRIOR TO E DEVELOPER WILL HAVE TO PROVIDE CONSTRUCTION. GENT TO MINIMIZE TO VISUAL CONTINUITY. ATIONS AND ALL TOWN CODE GROUND RESTORATION, FIRE FLOW, FIRE E TOWN ZONING ORDINANCE.	SILE DATA         APN:       169–11–004C         ADDRESS:       7602 N MOONLIGHT LN.,         PARADISE VALLEY, AZ 85253         ZONING:       R-43 (HILLSIDE)         LOT AREA:       142,335 S.F (3.267 AC.)         QS #:       24–34	CIVIL ENGINEER LAND DEVELOPMENT GROUP, LLC 8808 N CENTRAL AVE, SUITE 288 PHOENIX, AZ 85020 CONTACT: NICK PRODANOV, PE P: 602–889–1984	VISIONS:				DRAWING IS AN INSTRUMENT OF SERVICE AN VITHORIZED USE, REUSE, REPRODUCTIONS, OR IISSION OF LAND DEVELOPMENT GROUP, LLC
TO CUT THROUGH ROCK, INCLUDING USE BETWEEN THE HOURS OF 7:00AM OR ER, MONDAY THROUGH FRIDAY, WITH ONSTRUCTION SITE SO AS TO PROTECT THE <b>OTES</b> TONS AND ALL TOWN CODE ROUND RESTORATION, FIRE FLOW, FIRE TOWN ZONING ORDINANCE. SPILL SLOPES. CUT THROUGH ROCK, INCLUDING E BETWEEN THE HOURS OF 7:00AM OR R, MONDAY THROUGH FRIDAY, WITH RAM HAMMERS AND OTHER HEAVY WN MANAGER. STRUCTION SITE SO AS TO PROTECT THE	VANN ENGINEERING 9013 NORTH 24TH AVE, STE 7 PHOENIX, AZ 85021 P: 602 943 6997 CONTACT: JEFFRY VANN DATE: JULY 20, 2021 PROJECT: 28503 BENCHMARK BRASS CAP FLUSH AT THE INTERSECTION O ROAD HAVING AN ELEVATION OF 1419.80 NA BASIS OF BEARINGS THE SOUTH LINE LINE OF LOT 1, SECTION 6 N89'45'40"E.	F 48TH ST ALIGNMENT AND INDIAN BEND AVD 88 DATUM, GDACS# 24521–2. , T2N, R4E, THE BEARING OF WHICH IS	2	CDANING & DDAINAGE			PEG PEG
ATERIAL THEY RETAIN (WITH EXCEPTION RNER AT ELEVATION OF 1514.99 NING LOTS. RING A 100-YEAR PEAK RUN-OFF DEBRIS AND SILT AFTER EVERY IGATE EROSION AND TO CONVERT IF, HARDSCAPE AND AUTO-COURT	THE WEST 706 FEET OF THE SOUTH 200 FE SECTION 6, TOWNSHIP 2 NORTH, RANGE 4 F BASE AND MERIDIAN, MARICOPA COUNTY, A EXCEPT ALL COAL AND OTHER MINERALS AS LAND.	EET OF THE EAST 980 FEET OF LOT 1, EAST OF THE GILA AND SALT RIVER RIZONA; S SET FORTH IN THE PATENT OF SAID MAP (FIRM) DATA SUFFIX L BASE FLOOD ELEVATION ATE ZONE X* 0.2% ANNUAL CHANCE		PARCEL NO. 169-11-004C	7602 N MOONLIGHT LN.,	PARADISE VALLEY, AZ 85253	
RTHWORK QUANTITIES         4.288 C.R.         YMM PIPES:       33 C.Y.         4.46 C.Y.         YMM THES LISTED ON THESE PLANS ARE         ATES ONLY. NO SHRINK OR SWELL IS         YMM THE CONTRACTOR SHALL MAKE THEIR         YMM THE BIDS ON THE STIMATES AND         YMM THE BIDS ON THEIR ESTIMATES         YMM THE BIDS ON THEIR ESTIMATES.         YMM THE BIDS ON THEIR ESTIMATES.         YMM THE BIDS ON THEIR ESTIMATES.         YMM THE BIDS OF THE TOWN OF PARADISE         YMM THE SYSTEM TO BE INSTALLED PER         YMM THE TOWN OF PARADISE         YMM THE ACCORDANCE WITH I.B.C. SECT.         YMM THE ACTION OF THE TOWN OF PARADISE         YMM THE TOWN OF THE	I HEREBY CERTIFY THAT THE "RECORD DR/ HEREON WERE MADE UNDER MY SUPERVISI THE BEST OF MY KNOWLEDGE AND BELIEF. REGISTERED ENGINEER/ LAND SURVEYOR REGISTRATION NUMBER I HEREBY CERTIFY THAT FINISHED FLOOR E 1547.00 AND 1536.40 ARE MINIMUM OF 12 ELEVATION OF 1535.40 ACCORDING TO THE ORDINANCE. REGISTERED CIVIL ENGINEER	AWING" MEASUREMENTS AS SHOWN ON OR AS NOTED AND ARE CORRECT TO DATE DATE ELEVATIONS SHOWN ON THE PLAN OF " ABOVE THE 100-YEAR STORM TOWN OF PARADISE VALLEY CODE OF		D 600 880 1081   E 600 115 0180	PHOFNIX A7 85000 PHOFNIX A7 85000	COMENT GROUP PHOENIX@LDGENG.COM	
OJECT DESCRIPTION SINGLE FAMILY RESIDENCE, NEW DRIVEWAY, GARAGE, POOL AND SITE IMPROVEMENTS.	APPROVAL         THIS SET OF PLANS HAS BEEN REVIEWED FOR PARADISE VALLEY REQUIREMENTS PRIOR TO NEITHER ACCEPTS NOR ASSUMES ANY LIABLI COMPLIANCE APPROVAL SHALL NOT PREVEN CORRECTIONS OF ERRORS OR OMISSIONS IN OF LAWS OR ORDINANCES.         TOWN ENGINEER       DATE TOWN OF PARADISE VALLEY	OR COMPLIANCE WITH TOWN OF ISSUANCE OF PERMIT. THE TOWN LITY FOR ERRORS OR OMISSIONS. THIS T THE TOWN ENGINEER FROM REQUIRING THE PLANS TO BE FOUND IN VIOLATION				DEVEL DEVEL	



ID NUMBER	MAX. HEIGHT	LENGTH	VISIBLE WALL LENGTH			
	FT	FT	A	В	С	D
1	5.5	19.33	19.33	19.33		
2	5.5	28.83	28.83	28.83		
3	6	61.67	61.67	61.67		
4	4	12.50	12.50	12.50		
5	4	25.67	25.67	25.67		
6	5.67	18.50		18.50		
7	5.67	8.75		8.75		
8	5.67	19.67		19.67		
9	5.67	7.75		7.75		
10	5.67	84.50			84.50	84.50
11	5.67	43.00			43.00	43.00
12	5.67	58.67			58.67	58.67
13	5.67	15.83	15.83			
14	6	66.50	66.50	66.50		
15	4.83	27.50	27.50	27.50		
TOTAL		498.67	257.83	296.67	186.17	186.17



## AFFIDAVIT OF MAILING NOTIFICATION

## STATE OF ARIZONA )

) ss:

)

County of Maricopa

In accordance with the requirements of the Town of Paradise Valley, the undersigned hereby certifies that the mailing list for the proposed project is a complete list of property owners within <u>1,500</u> feet of the subject property, as obtained from the Maricopa County Assessor's Office on the following date <u>01/27/2022</u>, 201\_, and such notification has been mailed on the following date <u>592022</u>, 201\_.

olissa union Signature

bv The foregoing instrument was acknowledged day of me ,20 22, by Name Layla Torabl Notary Pub NOTARY PUBLIC **05-31-2** Commission No. 609518 My commission expires



## COMMUNITY DEVELOPMENT DEPARTMENT VARIANCE APPLICATION GUIDE

Town of Paradise Valley • 6401 East Lincoln Drive • Paradise Valley, Arizona 85253 • Phone: (480) 348-3692

## NOTICE OF PUBLIC HEARING

## NOTICE IS HEREBY GIVEN THAT THE TOWN OF PARADISE VALLEY BOARD OF ADJUSTMENT WILL HOLD A HEARING ON THE FOLLOWING PROPOSED PROJECT. IF YOU HAVE QUESTIONS ABOUT THIS APPLICATION, PLEASE CALL THE PLANNING DIVISION AT (480) 348-3692.

Applicant/Representative:						
Applicant's Company Name:						
Phone Number:						
E-mail Address:						
Project/Property Address:						
Zoning:	Acreage:					
Project Narrative:						
MEETING DATE/ TIME/PLACE						
Meeting Date:	Meeting Time:					
Meeting Place: Town of Paradise Valley Town Hall Bu	Meeting Place: Town of Paradise Valley Town Hall Building. 6401 E. Lincoln Drive. Paradise Valley, AZ 85253					
Planning Division: 480 <u>-348-3692</u>	tion requirements on next page (as determined by staff)					

# Feature Information (1 of 2) Clear

## 169-11-004C

## Owner Information

Owner Name:	CASKEY MICHAEL P/MICHELLE D
Property Address:	7602 N MOONLIGHT LN PARADISE VALLEY 85253
Mailing Address:	7672 E SOLANO DR SCOTTSDALE AZ 85250
Deed Number:	210043467
Sale Date:	
Sale Price:	\$

## Property Information

Lat/Long:	33.549456, -111.979854
S/T/R:	6 2N 4E
Jurisdiction:	PARADISE VALLEY
Zoning:	R-43
PUC:	0012
Lot Size (sq ft):	171,634
MCR#:	
Subdivision:	
Lot #:	
Floor:	1
Construction Year:	
Living Space (sq ft):	

## Valuation Information

Tax Year:	2022	2021
FCV:	\$741,300	\$681,000
LPV:	\$498,124	\$474,404
Legal Class:	2.R	2.R

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Parcel Number	Owner	MAIL_ADDR1	MAIL_CITY	MAIL_STA	AT MAIL_ZIP
169-11-112	4612 E FOOTHILL DR LLC	22060 ROLLING RIDGE DR	SANTA CLARITA	CA	91350
169-07-041	7721 TATUM LLC	1152 E INDIAN SCHOOL RD	PHOENIX	AZ	85014
169-11-042	AALLIAM LLC	4623 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-100	ABRAMS FAMILY REVOCABLE TRUST	4632 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-107	ABRAMS RICHARD M TR	4524 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-07-099	ACHARYA ANAND/VALENTINA CHAMORRO	7901 N 47TH ST	PARADISE VALLEY	AZ	85253
169-11-007	AK FAMILY TRUST	4824 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-14-007	ALLENBY FAMILY TRUST	4631 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-11-051	ALMAN MARK D/LAURA A	4707 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-012	AMES TONY R/MICHELLE P	4801 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-07-095	ANIJEKWE BENNETH	4723 E SAGUARO PL	PARADISE VALLEY	AZ	85253
169-16-091	ANT II HOLDINGS LLC	50 PORTLAND PIER SUITE 400	PORTLAND	ME	4101
169-16-102	ASCHENBRAND AND OBRIEN FAMILY TRUST	22827 N 39TH TER	PHOENIX	AZ	85050
169-16-090	ATLANTIC COMMERCIAL HOLDINGS LLC	50 PORTLAND PEIR STE 400	PORTLAND	ME	4101
169-11-054	AUM PACK LIVING TRUST	4800 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-07-115	AW ROAD RUNNER PROPERTIES LLC	7526 N VIA DE LA CAMPANA	SCOTTSDALE	AZ	85258
169-07-097	AZNZ INVESTMENTS LLC	41802 N KACHINA RD	CAVE CREEK	AZ	85331
169-11-114	AZPHXIL INC	1211 W 22ND ST STE 1100	OAK BROOK	IL	60523
169-07-035	BABBRAH BHUPINDER S/POOJA K	7535 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-16-100	BAYSIDE VENTURES LLC	50 PORTLAND PIER STE 400	PORTLAND	ME	4101
169-11-085	BECKER DREW	7721 N MOONLIGHT LN	PARADISE VALLEY	AZ	85253
169-11-033	BEETHE MICHAEL F	4835 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-11-078	BIENIARZ CHRISTOPHER/SUSAN T	7809 N SHERRI LN	PARADISE VALLEY	AZ	85253
169-07-059	BISHOP NOREEN/HILL STEVEN	7812 N RIDGEVIEW DR	PARADISE VALLEY	AZ	85253
169-11-144	BLASDELL REVOCABLE TRUST/ETAL	4698 FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-139	BORCH-CHRISTENSEN OLE/MARIANNE TR	4561 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-16-104	BOURG JAMES/SHARON	7535 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-11-146	BRADLEY TIMOTHY SCOTT/RICH KATIE FLETC	CH4834 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-07-029	BRENNAN KATHLEEN M	<b>313 CONSTITUTION AVE NE</b>	WASHINGTON	DC	20002
169-11-071	BROWN ROY A/VIVIAN S	4515 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-002M	BUCHER LIVING TRUST	4636 E MOONLIGHT WY	PARADISE VALLEY	AZ	85253
169-11-062A	BUCKLES ANDRE/PAMELA	132 PRESTON RD	COLUMBUS	ОН	43209
169-11-072	BUNTON ROBERT M/KIMBERLY M	4532 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-109	CADWELL FAMILY TRUST/CADWELL ALICE JC	04 4550 E FOOTHILLS DR	PARADISE VALLEY	AZ	85253

169-07-060	CALVIN FAMILY TRUST	4901 E CRESTVIEW DR	PARADISE VALLEY	AZ	85253
169-07-116	CARL C MUELLER TRUST	4723 E ROADRUNNER PL	PARADISE VALLEY	AZ	85253
169-11-013	CAROL DAVIDSON MCCRADY TRUST	4717 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-11-004C	CASKEY MICHAEL P/MICHELLE D	7672 E SOLANO DR	SCOTTSDALE	AZ	85250
169-16-003A	CHANNEL RED LLC	5912 W RIVIERA DR	GLENDALE	AZ	85304
169-11-045	CHILDS FAMILY REV TR/CHILDS D/BAKER-CH	IL 4734 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-07-113	CINDY L BASS TRUST	23W711 HOBSON RD	NAPERVILLE	IL	60540
169-16-006C	CLARK TAMI LYNN	3120 N 19TH AVE	PHOENIX	AZ	85015
169-13-066A	CLEARWATER HILLS IMPROVEMENT ASSOC	7300 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-16-140	CLEARWATER HILLS LAND CO	8502 E VIA DE VENTURA STE 105	SCOTTSDALE	AZ	85258
169-11-108	CLIMB SD LLC	11516 NICHOLAS ST STE 303	OMAHA	NE	68118
169-07-107	CLOUSE MARK A	3444 E NORWOOD CIR	MESA	AZ	85213
169-11-022	CMA FAMILY TRUST	4600 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-11-141	COCCO RADAMES/KRISTIE	4628 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-07-033	COHEN MARILYN/CHERI A	7605 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-11-111	CONTRIS PAUL J/ALLISON J	4602 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-034	COOPER MICHAEL L/TERESA S TR	4825 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-11-032	DAIZA MAYAR M	PO BOX 15704	SCOTTSDALE	AZ	85267
169-07-062	DALTON BRYAN A/HEATHER	5005 E CRESTVIEW DR	PARADISE VALLEY	AZ	85253
169-07-100	DAUGHERTY CHRISTOPHER	7837 N 47TH ST	PARADISE VALLEY	AZ	85253
169-07-111	DAVENPORT DAVID & RITA	3023 W SAHUARO DR	PHOENIX	AZ	85029
169-11-931	DAVID P WEINSTEIN REVOCABLE TRUST	10645 N TATUM BLVD	SCOTTSDALE	AZ	85254
169-11-133	DAVIS STEPHEN E/JANIE E	4627 E FOOTHILL DR	PARADISE VALLEY	AZ	85260
169-11-036	DECEDENTS TRUST/SURVIVORS TRUST	4807 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-16-114	DEDINSKY BRIAN D/PAMELA K TR	7309 N LAKESIDE LN	PARADISE VALLEY	AZ	85353
169-11-056	DEEPALI SINGLA LIVING TRUST/ISH KUMAR	SI 4824 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-07-055	DODENHOFF STEVEN W/BRENDA S TR	5001 E DESERT PARK AVE	PARADISE VALLEY	AZ	85253
169-07-101	DONNELLY J E/E RENEE TR	4723 E FOOTHILLS DR	PARADISE VALLEY	AZ	85253
169-14-006	DOWNS BRYAN H/LYDA D TR	4621 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-11-027	DUFFEY LEONARD E/ROSEMARY P TR	4800 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-07-028	DUNLAP CHARLES H II/BARBARA B TR	5767 W OAKLAND ST	CHANDLER	AZ	85226
169-11-041	EAST CRYSTAL LANE LLC	4601 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-16-001	EAST WILLETTA ST LLC	7147 E RANCHO VISTA DR NO 6010	PARADISE VALLEY	AZ	85253
169-07-092	ECKLEY ROBERT	4724 E SAGUARO PL UNIT R	PARADISE VALLEY	AZ	85253
169-11-019	EMILY JOY TWIST TRUST	4612 E SPARKLING LN	PARADISE VALLEY	AZ	85253

169-11-098	ENID M STUEBER SEPERATE PROPERTY TRUS	T4541 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-097	ENRIGHT LINDA J TR/GREENER JAMES T TR	4551 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-015	ERICKSON FAMILY	4660 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-074	EVANS FAMILY REVOCABLE LIVING TRUST	7818 N SHERRI LN	PARADISE VALLEY	AZ	85253
169-11-047A	F&C TRUST	4816 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-11-002R	FABER BARTON	4339 E ROSE LN	PARADISE VALLEY	AZ	85253
169-11-090	FARMER FAMILY TRUST	10645 N TATUM BLVD STE C200	PHOENIX	AZ	85028
169-11-135A	FELDBERG/ WILKINS FAMILY TRUST	7815 N SHERRIE LN	PARADISE VALLEY	AZ	85253
169-11-140	FOOTHILL DRIVE LLC	4622 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-048A	FORSYTHE LAWRENCE C/MARIANNE ASHLEY	4824 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-11-055	FRANCIS AND CAROL SLAVIN FAMILY TRUST	4816 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-16-097	FRANCIS PHILIP L/JUANITA A TR	4469 E MOONLIGHT WY	PARADISE VALLEY	AZ	85253
169-11-053	FRIEDMAN GLENN M & ARLENE B TR	4639 SPARKLING LANE	PARADISE VALLEY	AZ	85253
169-07-106	GANDY MICHAEL J	5331 E VALLE VISTA RD	PHOENIX	AZ	85018
169-11-105	GERSON MATTHEW B/MARIA J TR	4546 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-040	GERSTER KURT/KRISTINE	2436 WATERFRONT DR	BRIGHTON	MI	48114
169-11-028	GERSTMAN FAMILY TR	4820 E CLEARWATER PARKWAY	PARADISE VALLEY	AZ	85253
169-07-003	GHK LLC	3219 E CAMELBACK RD STE 517	PHOENIX	AZ	85018
169-11-082	GORDON BRADLEY/BARBARA H TR	4658 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-07-038A	GRAY KAREN CASTLES	4900 E DESERT FAIRWAYS DR	PARADISE VALLEY	AZ	85253
169-07-112	GREEN RONALD R/GAILE B TR	4708 E ROAD RUNNER PL	PARADISE VALLEY	AZ	85253
169-16-110	GROUP 11 LLC	7330 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-07-001	H GARY BANKER LIVING TRUST	4800 E ROADRUNNER RD	PARADISE VALLEY	AZ	85253
169-11-067	H MAX HARRISON REVOCABLE TRUST	4541 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-47-005	HADDOCK ROBERT M/ANN M TR	7548 N EUCALYPTUS	PARIDISE VALLEY	AZ	85253
169-16-011A	HAENFLER THOMAS/ANNEMARIE	7531 N SILVERCREST WAY	PARADISE VALLEY	AZ	85253
169-07-036	HEGLE TROND U	7521 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-07-094	HENRICH BRADLEY ALAN/LISA MAY	4707 E SAGUARO PL	PARADISE VALLEY	AZ	85253
169-07-103	HERROLD LORI L/ACHESON ROBERT P	7819 N 47TH PL	PARADISE VALLEY	AZ	85253
169-11-081	HEWSON GARY J/JUDY A TR	4636 E UNIVERSITY DR UNIT 265	PHOENIX	AZ	85034
169-16-012	HINRICHSEN NICHOLAS	7545 N SILVERCREST WAY	PARADISE VALLEY	AZ	85253
169-16-088	HORSEMAN JOHN M/SUSAN M	7312 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-11-011	HUETTE PATRICK/ANGELA J	1001 N 1ST ST	FAIRBURY	IL	61739
169-11-044	HURRKURRMURR LOGISTICS LLC/GWN DEVE	L 23218 N LAS LAVATAS	SCOTTSDALE	AZ	85255
169-07-057	IN GOD WE TRUST	7832 N RIDGEVIEW DR	PARADISE VALLEY	AZ	85253

169-11-050	J A MIHALEK TRUST	4801 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-031	JAMILA H DAIZA TRUST	7424 N TATUM	PARADISE VALLEY	AZ	85253
169-11-046A	JAQUELINE AND ROBERT WILLIS FAMILY TR	RUS 4800 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-11-116	JARVIE LIVING TRUST	4636 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-010	JASON DANIEL KLEIN AND EMILY ANNE MA	LL 4825 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-16-093	JENNIFER MUMFORD SEPARATE PROPERTY	' RI 4402 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-07-098	JHA RUCHIRA M/JADHAV ASHUTOSH P	4724 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-086	JO ANN JONES FINLEY LIVING TRUST	7711 N MOONLIGHT LN	PARADISE VALLEY	AZ	85253
169-07-042	JOHNSON ADAM C	7745 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-07-108	JOHNSON HOUSE TRUST	4744 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-002P	JOHNSON STEPHEN L/DONNA L	4700 E MOONLIGHT WY	PARADISE VALLEY	AZ	85253
169-07-004A	KAITZ QUALIFIED PERSONAL RESIDENCE TR	SUS 5026 E ROADRUNNER RD	PARADISE VALLEY	AZ	85253
169-11-018	KALIK JOANNE C TR	4626 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-07-104	KALLA SUBHI M FAMILY TRUST	7820 N 47TH PL	PARADISE VALLEY	AZ	85253
169-07-105	KASPER LAWRENCE M/CATHERINE	7819 N 47TH ST	PARADISE VALLEY	AZ	85253
169-11-029	KATHERINE JOHNSON PEDERSEN TRUST	4828 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-16-107	KELMAN TERRY J/ROCHELLE J TR	7520 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-11-017	KRESL JOHN J/JULIE R	4634 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-060	KROGH ENTERPRISES LLC	5517 E CALLE REDONDA	PHOENIX	AZ	85018
169-16-105	LAKESIDE DEVELOPMENT LLC	4651 BABCOCK ST NE	PALM BAY	FL	32905
169-16-112	LAMBER MARC H/SARAH	4541 E MOONLIGHT WY	PARADISE VALLEY	AZ	85253
169-16-092	LANGONE DEREK	42 REGGIO AVE	OLD ORCHARD BEACH	ME	4101
169-11-083	LEE HARRY/WENDY NGO TR	7816 N 47T ST	PARADISE VALLEY	AZ	85253
169-11-014	LEMARR ROBERT P/LOIS J TR	4716 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-07-117	LEVENBAUM FAMILY LIVING TRUST	4707 E ROADRUNNER PL	PARADISE VALLEY	AZ	85253
169-11-136	LINNEMAN KATHLEEN M	2525 S DELAWARE ST	DENVER	CO	80223
169-47-004	LIPPINCOTT PARADISE FOREST LLC	6719 E CARON DR	PARADISE VALLEY	AZ	85253
169-11-065	LOVELL FAMILY TRUST	4601 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-07-110	LOW RUPA/JASON	4723 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-14-009	LOWE IRVING & MIRIAM TR	4729 E CLEARWATER PKWY	SCOTTSDALE	AZ	85253
169-11-004D	LOWRY F LOWRY JR/PATRICIA P	7600 MOONLIGHT LN	PARADISE VALLEY	AZ	85253
169-07-032	MANVILLE FAMILY TRUST	7619 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-11-103	MARK J MURPHY TRUST	4502 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-122	MARQUIS REVOCABLE LIVING TRUST	7918 N 47TH ST	PARADISE VALLEY	AZ	85253
169-07-093	MARVIN E LORY REVOCABLE TRUST	4708 E SAGUARO PL	PARADISE VALLEY	AZ	85253

169-11-145	MC2 EXCHANGE ACCOMMODATION TITLE H	IC 5319 MENAUL BLVD NE	ALBUQUERQUE	NM	87110
169-11-052	MCCUNE JAMES DAVID	4701 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-079	MELMED RAUN D/HELEN DAVIS	7801 N SHERRI LN	PARADISE VALLEY	AZ	85253
169-07-096	MICHAEL AND FRAN MALLACE FAMILY TRUS	ST 4743 E SAGUARO PL	PARADISE VALLEY	AZ	85253
169-14-010	MICHAEL AND JANE KUNDE 2014 REVOCAB	LE 4801 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-11-061	MICOU E VENABLE/JANE W TR	4679 FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-038	MILLIGAN ROBERT J/KERRY E R TR	4737 E CRYSTAL LN	SCOTTSDALE	AZ	85253
169-11-084	MOHRHAUSER PETER J/JULIE F TR	4674 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-07-114	MOIO WILLIAM G/MORANDO MARTA L	4744 E ROADRUNNER PL	PARADISE VALLEY	AZ	85253
169-11-006	MOSALLAIE KEIKHOSROW	6151 E ROYAL PALM RD	PARADISE VALLEY	AZ	85253
169-16-101	MP MOONLIGHT LLC	6900 E CAMELBACK RD STE 1060	SCOTTSDALE	AZ	85251
169-07-034	MSAAD-ABDELHEDI FAMILY 2008 TRUST	7549 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-11-016A	MUNSON CHARLES J II/KATHLEEN A TR	4650 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-030	NAINI ABBAS/NAEINI FIROUZEH	PO BOX 7982	TEMPE	AZ	85281
169-11-117	NEAL ROBERT R/JULIET P	4656 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-069	NUTE HOWARD TR	4517 E FOOTHILL DR	PARADISE VLY	AZ	85253
169-11-091	OGDEN JOHN M	4653 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-002N	OTTO KRUGER INVESTMENTS LLC/ETAL	PO BOX 33248	PHOENIX	AZ	85067
169-07-043	P&P FAMILY TRUST	5000 E DESERT PARK LN	PARADISE VALLEY	AZ	85253
169-11-026	PALERMO STEPHEN T	4720 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-47-012A	PARADISE VALLEY COUNTRY CLUB INC	7101 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-11-070	PARADISE VALLEY HOME LLC	9530 N 52ND PL	PARADISE VALLEY	AZ	85253
169-16-007	PARADISE VALLEY LAND COMPANY LLC	7528 N CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
168-73-001H	PARADISE VALLEY TOWN OF	6401 E LINCOLN DR	PARADISE VALLEY	AZ	85253
169-11-930	PARADISE VALLEY WATER CO	15626 N DEL WEBB BLVD	SUN CITY	AZ	85351
169-16-095	PARISCOPE TRUST	4427 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-11-134	PASCO VALE TRUST	7828 N SHERRI LN	PARADISE VALLEY	AZ	85253
169-11-147	PAUL DAVIDSON REVOCABLE TRUST/DANIE	LL 4848 E CYRSTAL LN	PARADISE VALLEY	AZ	85253
169-11-066	PAUL S RUSNOCK TRUST/LYNNETTE BARBO	A PO BOX 910	SEAL BEACH	CA	90740
169-16-005B	PAVIO LAYNIE/MEYER DANIEL PATRICK	16470 MATILIJIA DR	LOS GATOS	CA	95030
169-11-021	PH TRUST	4601 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
168-72-001C	PHOENIX CITY OF	251 W WASHINGTON ST 8TH FL	PHOENIX	AZ	85003
169-11-005	PREMIER REAL ESTATE FUNDING LLC	10645 N TATUM BLVD	PHOENIX	AZ	85028
169-16-108	PRESCOTT FAMILY REVOCABLE TRUST	7512 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-11-023	PUZISS IRVING	PO BOX 6328	PORTLAND	OR	97228

169-16-096	PV PEEPES 2020 LLC	4455 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-11-099	PVJJAZ LLC	4529 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-110	R L JOHNSON FAMILY TRUST	4560 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-16-009A	RAGO NICHOLAS A	4402 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-16-003B	RAMSEY MICHAEL/MAURICE MARCIANO TRU	4545 E MOONLIGHT WY	PARADISE VALLEY	AZ	85253
169-16-099A	REALE JOSEPH/KAREN JEAN	7537 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-07-102	REDMOND FRANKLIN	4743 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-11-059	RGM HOLDINGS LLC	7616 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-11-089	RICE FAMILY TRUST	7712 N MOONLIGHT LN	PARADISE VALLEY	AZ	85253
169-11-080	RICHARD M ABRAMS FAMILY TRUST	4632 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-142	RIMNATT INC	7320 E BUTHERUS DR	SCOTTSDALE	AZ	85260
169-16-109	ROBKER AND WHITE TRUST	7340 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-11-087	RONALD J STILLMAN AND STACY A STILLMAN	3728 LAWSON RD	GLENVIEW	IL	60026
169-11-043	ROSEN LAWRENCE J/SANDRA H	4628 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-11-106	ROSENBLUM JAY/IRENE	4514 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-07-054	ROSSLAND HOLDINGS LLC	12050 N 76TH CT	SCOTTSDALE	AZ	85260
169-11-068	ROUSH DIANE G TR	4529 FOOTHILL DR	SCOTTSDALE	AZ	85253
169-16-094	SARGENT FRANCESANNA TR	11 DAVIS DR	SAGINAW	MI	48602
169-07-109	SHANKAR VENKATESWAR K/SANKARRAM KA\4	4743 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-025	SHOOTING STAR REVOCABLE TRUST	4710 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-16-103C	SIGALOVE STEVEN/NOEMI	7521 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-11-039B	SIGGINS SCOTT E/SANDRIA K TR	4711 E CRYSTAL LANE	PARADISE VALLEY	AZ	85253
169-11-088	SLOTEN BRENT D	7702 N MOONLIGHT LN	PARADISE VALLEY	AZ	85253
169-07-056	SMITH JASON R/SARAH T	7728 N 50TH ST	PARADISE VALLEY	AZ	85253
169-11-073	SRD EQUITIES LLC	6802 E BERYL AVE	PARADISE VALLEY	AZ	85253
169-16-098A	STERN RICHARD D/PHYLLIS E TR	7547 N LAKESIDE	PARADISE VALLEY	AZ	85253
169-16-013W	STUMPF RUTH A	7560 N SILVERCREST WAY	PARADISE VALLEY	AZ	85253
169-11-137	SURVIVORS TRUST	4613 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-11-024	SUZANNE R MOBLEY TRUST/ROOKE WILLIAM	4630 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-07-044	SYMONDS WILLIAM C/CATHERINE A	5014 E DESERT PARK LN	PARADISE VALLEY	AZ	85253
169-11-037	TALEEN JOHN THOMAS/SARA J TR	4801 E CRYSTAL LN	PARADISE VALLEY	AZ	85253
169-16-106	TIFFANY FAMILY TRUST	7528 N LAKESIDE LN	PARADISE VALLEY	AZ	85253
169-07-037	TIM AND SHAWN HARRISON TRUST	7511 N TATUM BLVD	PARADISE VALLEY	AZ	85253
169-07-038	TIMOTHY AND JANIECE WEBB REVOCABLE TR 4	4906 E DESERT FAIRWAYS DR	PARADISE VALLEY	AZ	85253
169-07-030	TOMASELLO THOMAS D	10580 SW MCDONALD ST STE 204	TIGARD	OR	97224

169-07-031A	TRD PROPERTIES LLC	4805 E ROADRUNNER RD	PARADISE VALLEY	AZ	85253
169-11-132	VARELA HERIBERTO/JIMENEZ JESSICA	6512 E CAMINO SANTO	SCOTTSDALE	AZ	85254
169-11-002Q	VAUGHN VERNON L TR	4800 E MOONLIGHT WY	PARADISE VALLEY	AZ	85253
169-11-138	WARNICK-LUKE TRUST	4601 E DESERT PARK PL	PARADISE VALLEY	AZ	85253
169-16-008	WEATHERLY JAMES E/SHARON ANN	4423 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-11-008	WEBB KEITH E	4836 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-14-008	WEISSKOPF REVOCABLE LIVING TRUST	4709 E CLEARWATER PKWY	PARADISE VALLEY	AZ	85253
169-07-002	WELLS J GLEN/KAREN F	4818 E ROAD RUNNER RD	PARADISE VALLEY	AZ	85253
169-16-113	WETHERBEE ROD/BARBARA	2309 TACOMA POINT DR E	LAKE TAPPS	WA	98391
169-11-009	WIECHERT KENT E/ANITA K	4835 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-07-061	WILLIAM JASON AUSTIN REVOCABLE LIVIN	G 14927 E CRESTVIEW DR	PARADISE VALLEY	AZ	85253
169-11-143	WILLIAMS REVOCABLE TRUST	4678 E FOOTHILL DR	PARADISE VALLEY	AZ	85253
169-16-111	WILSON FAMILY TRUST	4525 E MOONLIGHT WAY	PARADISE VALLEY	AZ	85253
169-11-035	WINOGRAD REVOCABLE TRUST	4815 E CRYSTAL LANE	PARADISE VALLEY	AZ	85253
169-11-049A	WRIGHT FAMILY TRUST	4747 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-11-020	YORK RICHARD ALAN/VICTORIA ANN TR	4600 E SPARKLING LN	PARADISE VALLEY	AZ	85253
169-07-079	ZACANTI JAMES LEO/NICOLE PFAFF	7815 N RIDGEVIEW DR	PARADISE VALLEY	AZ	85253
169-11-104	ZACH FAMILY LIVING TRUST	4506 E FOOTHILL DR	PARADISE VALLEY	AZ	85253



## COMMUNITY DEVELOPMENT DEPARTMENT AFFIDAVIT OF POSTING

Town of Paradise Valley • 6401 East Lincoln Drive • Paradise Valley, Arizona 85253 • Phone: (480) 348-3692					
STATE OF ARIZONA )					
County of Maricopa )					
I,David Dick, depo	ose and state that the attached notice,				
of proposed application sign posting	located at				
7602 N Moonlight Lane, for the Board of Adjustmen	t meeting date of				
June 1, 20 22 is					
a true and correct copy of a notice which I cause to be posted by the week_Tuesday	ne following day of the				
and on the following date May 17th , 20 2	in the following location(s):				
All in the Town of Paradise Valley, Arizona and County and State aforesaid, the same being public					
All to the Town of Paradise Valley, Arizona and County and State at	foresaid				
DATED this 17th day of May , 2022.					
This affidavit was Subscribed and sworn to before me on this day of					
×					

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Action Report

File #: 22-175

Approval of the April 6, 2022 Board of Adjustment Minutes



## Minutes - Draft

## **Board of Adjustment**

5:30 PM	Council Chambers
Boardmember Rohan Sahani	
Boardmember Hope Ozer	
Boardmember Jon Newman	
Boardmember Leibsohn	
Boardmember Priti Kaur	
Boardmember Robert Brown	
Chair Quinn Williams	
	Chair Quinn Williams Boardmember Robert Brown Boardmember Priti Kaur Boardmember Leibsohn Boardmember Jon Newman Boardmember Hope Ozer Boardmember Rohan Sahani 5:30 PM

5:30 PM

**Council Chambers** 

## 1. CALL TO ORDER

## 2. ROLL CALL

Present 7 - Boardmember Robert Brown Boardmember Priti Kaur Boardmember Eric. Leibsohn Boardmember Jon Newman Boardmember Hope Ozer Boardmember Rohan Sahani **Chairperson Quinn Williams** 

## 3. EXECUTIVE SESSION

None.

## 4. STUDY SESSION ITEMS

None.

## 5. PUBLIC HEARINGS

22-139 Bluechip Investment Company (Kenneth Ricci/Pamela Ricci) Α. Hillside Variance - 7011 N Invergordon Road (APN 174-52-005C). Case No. BA-22-03.

> George Burton, Senior Planner, provided an overview of the request to maintain an existing non-conforming retaining wall as well as maintain and modify an existing non-conforming hillside cut. He noted that the applicant was doing an extensive remodel and addition of over 50% of the existing square footage of the home which would require nonconforming cuts and retaining walls to come into compliance per code. He pointed out that the applicant was in the process of combining this lot with the neighboring property to the southwest.

Mr. Burton explained that the Town Code allows for a maximum height of 8 feet on retaining walls and the applicant is requesting to maintain a portion of existing driveway retaining wall that is 10 feet 6 inches at its highest point in one area. He stated staff recommended approval of the variance request due to property hardship and belief that the request to maintain the non-conforming portion of driveway retaining wall met the intent of the code.

Mr. Burton also shared that the applicant was requesting to maintain and modify the existing and nonconforming hillside cut (which has a maximum height of 44 feet even and the current Town Code only allows for a maximum cut height of 30 feet). He announced that staff recommended approval of this variance request due to property hardship as well as the special circumstance associated with this property.

Mr. Burton presented information regarding public comments received on the item. He indicated one neighbor inquired about the scope of the request and another neighbor asked how the improvements would affect his property.

Boardmember Eric Leibsohn asked what the retaining wall and cut height limits were when the property was originally developed in 1995.

Hugo Vasquez, Hillside Administrator, stated that the 1984 code would have been in affect at that time. He noted that code had an 8-foot height limit for retaining walls and a 30-foot cut height limit. He noted that the difference in height could be due to changes in interpretation to the code or from erosion.

Doug Jordan, Applicant Representative, remarked that he was representing Ken and Pamela Ricci who are the property owners. He pointed out that the Ricci's own two neighboring lots which they were in the process of combining into one lot. He commented that they received a letter from Nick Prodanov which indicated that removing the retaining wall could have negative drainage implications.

Chairperson Quinn Williams called for public comments on the application. No comments were offered, and the public comment period was closed.

Boardmember Hope Ozer remarked that the application met all six of the criteria for a variance and stated she had no issue with approving.

Boardmember Leibsohn agreed that there were existing hardships with the site that warranted approval.

Boardmember Rohan Sahani commented that he agreed and desired to grant approval of the request.

Boardmember Ozer motioned to approve the variance subject to the stipulations included in the staff report.

A motion was made by Board Member Ozer, seconded by Board Member Leibsohn to approve a variance from Article XXII, Hillside Development Regulations to maintain an existing nonconforming retaining wall and to maintain and modify an existing nonconforming hillside cut, subject to the following stipulations: The improvements shall be in compliance with submitted plans & documents: Architectural Site Plan Exhibits, Page 6, prepared by Swaback Architects & Planners and dated March 8, 2022.

Proposed Site Plan, Page 7, prepared by Swaback Architects & Planners and dated March 8, 2022.

Aerial View of Existing Retaining Wall, Page 10, prepared by Swaback Architects & Planners and dated March 8, 2022.

Satellite Image with Section Cuts, Page 17, prepared by Swaback Architects & Planners and dated March 8, 2022.

Cut Section A, Page 18, prepared by Swaback Architects & Planners and dated March 8, 2022.

Cut Section B, page 19, prepared by Swaback Architects & Planners and dated March 8, 2022.

The applicant must obtain Hillside Committee approval.

The applicant must obtain the required building permits and inspections from the Building Department.

The motion carried by the following vote:

Aye: 7 - Boardmember Brown, Boardmember Kaur, Boardmember Leibsohn, Boardmember Newman, Boardmember Ozer, Boardmember Sahani and Chairperson Williams

B. <u>22-142</u> Ford Variance - 8624 N 64th Street (APN 174-32-050) Case No. BA-22-02

Jose Mendez, Hillside Development Planner, provided an overview of the variance request to allow a golf course netting structure to encroach into the setback and height limit (with a height of 18 feet tall and a west side setback of 10 foot 6 inches). He noted the property was bisected by a golf course and drainage easement and the tee box and hole 17 of the golf course were located directly behind the property. He shared that the Town of Paradise Valley and the Golf Club did work in January 2021 to reduce the amount of golf balls going onto the subject property.

Mr. Mendez reviewed the findings in favor, including property hardships such as the proximity to the golf course and tee boxes for hole 17. He noted that the request met the intent of the code. He reported that staff received one public comment indicating support for the project. He pointed out that the setback and height encroachments are needed to properly protect the property. He further explained that the net would have been within the maximum sixteen feet height limit but the change in grade between the backyard and the golf course necessitated an extra two feet of height.

Chairperson Williams remarked that he had seen other netting like this along the course and believed there may be a precedence for allowing the variance.

Boardmember Ozer inquired why the applicant was responsible to remedy the situation rather than Camel Back Golf Course.

Deborah Robberson, Assistant Town Attorney, expressed that it was her understanding that golf courses typically functioned in a way that make the individual players responsible for where their golf balls were hit and not the golf course itself. Jeremy Ford, Applicant, stated that even after the work the golf course was completed and his own work planting bushes to keep balls out of his yard, he was still having them land on his property at which point he started working on the variance request.

Boardmember Newman asked what damage had been done to the property from golf balls.

Mr. Ford stated that in addition to balls in their yard and pool they have gotten holes in the stucco and broken roof tiles. He noted that he has also been hit by a golf ball before.

Chairperson Williams opened the meeting up for public comments on the application. No comments were made, and the public comment period was closed.

Member Ozer remarked that she felt the variance should be approved.

A motion was made by Board Member Brown, seconded by Chairperson Williams, to approve a variance to allow a golf net structure to encroach into the side yard setback and exceed the maximum height for accessory structures, subject to the following stipulations:

The improvements shall be in compliance with submitted plans & documents: Sheet A1, Architectural Site Plan, prepared by John Anthony Drafting & Design and dated September 28, 2021. The applicant must obtain the required building permits and inspections from the Building Department.

The motion carried by the following vote:

Aye: 7 - Boardmember Brown, Boardmember Kaur, Boardmember Leibsohn, Boardmember Newman, Boardmember Ozer, Boardmember Sahani and Chairperson Williams

## 6. ACTION ITEMS

A. <u>22-138</u> Election of Chair per Section 2-5-3.A of the Town Code

Boardmember Leibsohn nominated Hope Ozer for Chairperson.

Boardmember Sahani indicated that he was in full support of the nomination of Hope Ozer for Chairperson.

Chairperson Williams closed the nomination process.

A motion was made by Board Member Leibsohn, seconded by Board Member Sahani, to nominate Board Member Ozer as Board of Adjustment Chairperson. Town Council will confirm the nomination at a future Council meeting. The motion carried by the following vote: Aye: 7 - Boardmember Brown, Boardmember Kaur, Boardmember Leibsohn, Boardmember Newman, Boardmember Ozer, Boardmember Sahani and Chairperson Williams

## 7. CONSENT AGENDA

A. <u>22-136</u> Approval of the March 2, 2022 Board of Adjustment Minutes

A motion was made by Board Member Ozer, seconded by Chair Williams, to approve the March 2, 2022 Board of Adjustment minutes. The motion carried by the following vote:

Aye: 7 - Boardmember Brown, Boardmember Kaur, Boardmember Leibsohn, Boardmember Newman, Boardmember Ozer, Boardmember Sahani and Chairperson Williams

## 8. STAFF REPORTS

Lisa Collins, Community Development Director, noted that staff was still working to update the Board's criteria for approving variances and the bylaws and processes for the Board of Adjustment. She shared that when they have all the information ready to send to Council for a workshop that all the members of the Board of Adjustment would additionally be sent that information.

## 9. PUBLIC BODY REPORTS

None.

## **10. FUTURE AGENDA ITEMS**

Mr. Burton announced that he did not anticipate a meeting in May but would send out a notice. He indicated there would be a meeting in June before they take a recess for the months of July and August.

## **11. ADJOURNMENT**

A motion was made at 6:15 pm by Chair Williams and seconded by Board Member Ozer to adjourn the meeting. The motion carried by the following vote:

**Aye:** 7 - Boardmember Brown, Boardmember Kaur, Boardmember Leibsohn, Boardmember Newman, Boardmember Ozer, Boardmember Sahani and Chairperson Williams

## Town of Paradise Valley Board of Adjustment

Ву: \_\_\_\_\_

James Zuganelis, Secretary