



May 17, 2018

To: Mr. Paul Mood, PE
Town Engineer
Town of Paradise Valley
6401 E Lincoln Drive
Paradise Valley, AZ 85253

Re: **Cuculic Residence**
5204 E San Juan Ave
Paradise Valley, AZ 85253
LDG Project #1711162

DRAINAGE MEMORANDUM

Dear Mr. Mood:

In accordance with the Town of Paradise Valley Hillside Ordinance, we have prepared this drainage memorandum and preliminary grading and drainage plans, related to the construction of Cuculic Residence. The goal of this memorandum is to describe the existing and proposed drainage conditions and to identify the potential improvements to mitigate the drainage impact to the subject and the neighboring properties downstream.

The site is located at 5204 E San Juan Ave, Paradise Valley, AZ 85253 and it is also being Lot 32 of Stone Canyon, a subdivision, recorded in Book 62, Page 41, MCR). The lot is situated within a residential subdivision, at the northerly hills of Camelback Mountain and it is zoned R-43 Hillside. The 1.08-acre property is currently developed and it has a single-family residence (2,367 s.f.), constructed in 1956.

Site is located in FEMA Flood Zone "X" according to Flood Insurance Rate Map (FIRM) #: 04013C, Panel 1765 of 4425, Suffix L, dated October 16th, 2013, as published by FEMA. The FIRM Panel defines Zone "X" as follows: "Areas determined to be outside the 0.2% annual chance floodplain".

The proposed architectural plans call for a new single-family residence (4,498 s.f.) to be constructed within the currently disturbed building envelope. There are two washes, east and west of the residence, which run in northerly direction and leave the property at 52nd Place's right-of way. There is an existing 18" CMP culvert constructed under 52nd Place, just north of the driveway entry. There is also an 18" pipe at the ultimate outfall of the site that conveys flows under 52nd Place to the north. Based on the estimated peak discharges, overtopping of both pipes most likely will occur during a major storm event.

The mountainous terrain slopes southerly with an average slope of 23%. The lot is covered with large boulders, rock outcroppings and native desert vegetation. Field surveys and site inspections were conducted in 2017 to collect important information regarding the existing topographic characteristics, existing drainage conditions, to verify and confirm the extent of the tributary areas, local disturbances to the historic flows, and location and condition of the existing storm drainage structures. A topographic map was developed with a one-foot contour interval for the site and the adjacent street. Invert elevations of the existing culverts were picked up to facilitate the hydraulic calculations. The

elevation contours and survey spot elevations were tied to the GDACS monuments and are based on the Town of Paradise Valley vertical datum (NAVD 88).

Aerial and topographic maps were collected from the Maricopa County GIS and USGS web sites to facilitate further and clearly delineate the limits of each drainage tributary area contributing runoff to the subject project and to define the conveyance corridors. Maricopa County, FCDMC, City of Phoenix and USGS maps, aerial photography and surveyed topographic map for the sites were reviewed and used to establish the tributary areas within the watershed basin.

Computations were performed to estimate the 100-year design peak discharges from the sub-basins that contribute offsite flows to the project. Computer program DDMS provided by the Flood Control District of Maricopa County was utilized to generate the hydrology model and to estimate the 100-year peak discharges. Since the total drainage area of the watershed is less than 160 acres, the Rational Method has been used in accordance with the Flood Control District of Maricopa County (FCDMC) Drainage Design Manual Volume I – Hydrology. FCDMC Drainage Design Management System software was utilized for calculating the Rational Method parameters and the peak discharges of each contributing area. Precipitation data was derived from the NOAA Atlas 14, Volume 1, Version 4.

Three sub-basins were delineated for the watershed contributing runoff to the subject property. The overall area of the watershed is 10.79 ac. The peak discharges from each basin were depicted on the drainage map. Proposed grading and drainage plan is based on the architectural site plan. The finish floor elevation of the residence was set at 1553.50, which is 2' higher than the elevation of the existing house. This would help with the slope of the new driveway and with the construction of swales behind the new retaining wall on the south side of the home. The intent of the swales is to capture any sheet flows coming from south and to redirect them to the west and east washes. Check dams and rock outlet structures were proposed to dissipate the water energy and mitigate the erosion. Culverts under the driveway are proposed to convey the flows to the north following the historic drainage path. New on-site drainage system and a dry well are designed to capture the on-site generated runoff. The proposed on-site storm water retention will reduce the impact to downstream properties. Existing rock berm along the north edge of San Juan Ave. as well as on-site walking paths were called out for removal.

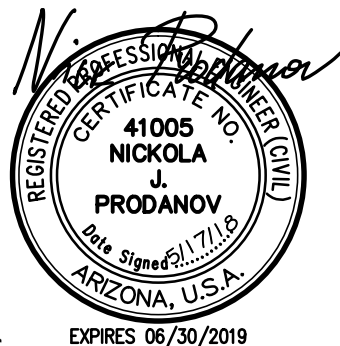
Please refer to the enclosed exhibits for more details in support of this drainage narrative.

A Drainage Easement and Maintenance Agreement for Drainage Easement Area will be required for this project. Required maintenance of the proposed drainage structures within the pipes, swales, check dams, inlets, scuppers will be owner's responsibility.

In conclusion, the proposed preliminary design has the potential to collect, convey and discharge off-site and on-site generated runoff safely and effectively. The proposed improvements reduce the drainage impact to the neighboring lots downstream and will not result in alteration and increase of the existing and historic drainage patterns or magnitudes.

Respectfully Submitted,

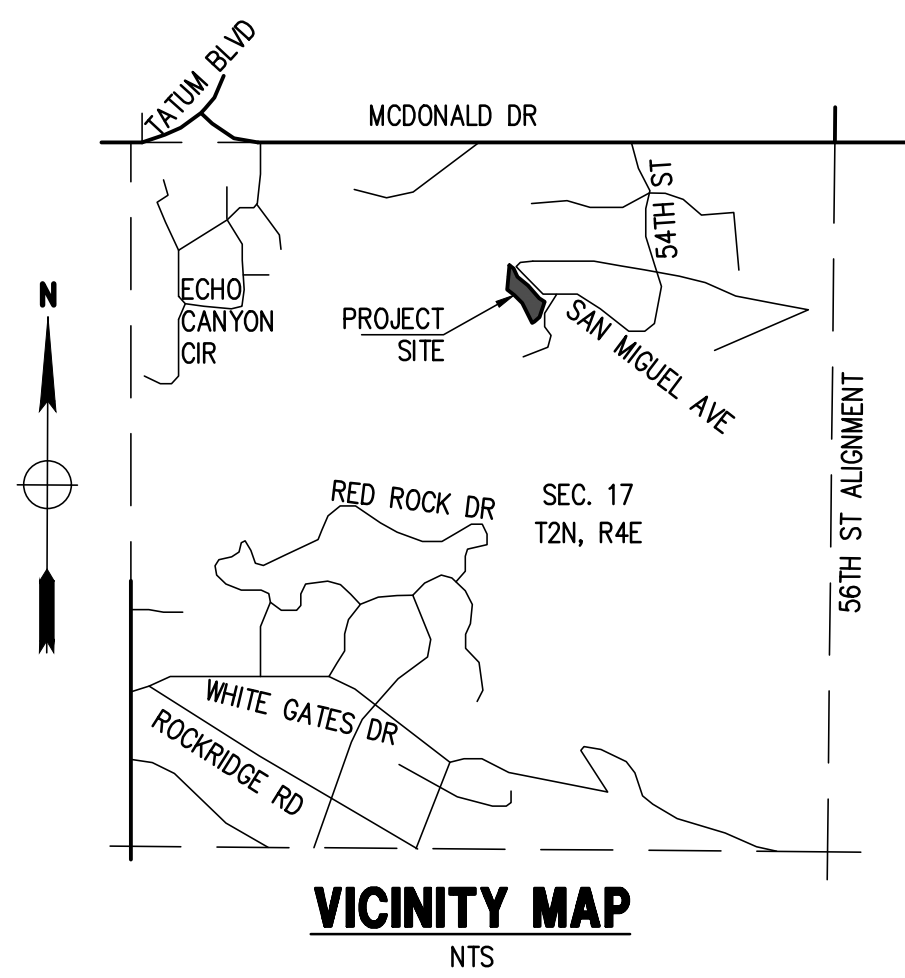
Nick Prodanov, PE, PMP
Principal
Land Development Group, LLC



Enclosures

- Drainage Map
- Hydrology Calculations
- Preliminary Grading and Drainage Plan

DRAINAGE MAP
CUCULIC RESIDENCE
5204 E SAN JUAN AVE., PARADISE VALLEY, AZ 85253
LOT 32 - STONE CANYON
A SUBDIVISION PLAT RECORDED IN BOOK 62 OF MAPS, PAGE 41, MCR.,
LOCATED IN A PORTION OF THE SW 1/4 OF THE NW 1/4 OF THE NE 1/4 OF SECTION 17, T.2N, R.4E
OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA



OWNER
MARY JO & LAWRENCE M. CUCULIC
5204 E SAN JUAN AVE.
PARADISE VALLEY, AZ 85253

SITE DATA
APN: 172-47-032
ADDRESS: 5204 E SAN JUAN AVE.,
PARADISE VALLEY, AZ 85253
ZONING: R-43
LOT AREA: 47,205 S.F. (1.084 AC.)
CONSTRUCTION YEAR: 1956
Q.S. 20-40
AREA UNDER ROOF: XXX S.F.

LEGAL DESCRIPTION
LOT 32, OF STONE CANYON, ACCORDING TO THE PLAT OF
RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA
COUNTY, ARIZONA, RECORDED BOOK 62 OF MAPS, PAGE 41;

EXCEPT ALL COAL AND MINERALS AS RESERVED IN THE PATENT
OF SAID LAND.

BENCHMARK
BRASS CAP FLUSH AT THE INTERSECTION OF 56TH STREET AND
MCDONALD DRIVE, HAVING AN ELEVATION OF 1417.52, (NAVD 88)
DATUM, GDACS# 24544-1.

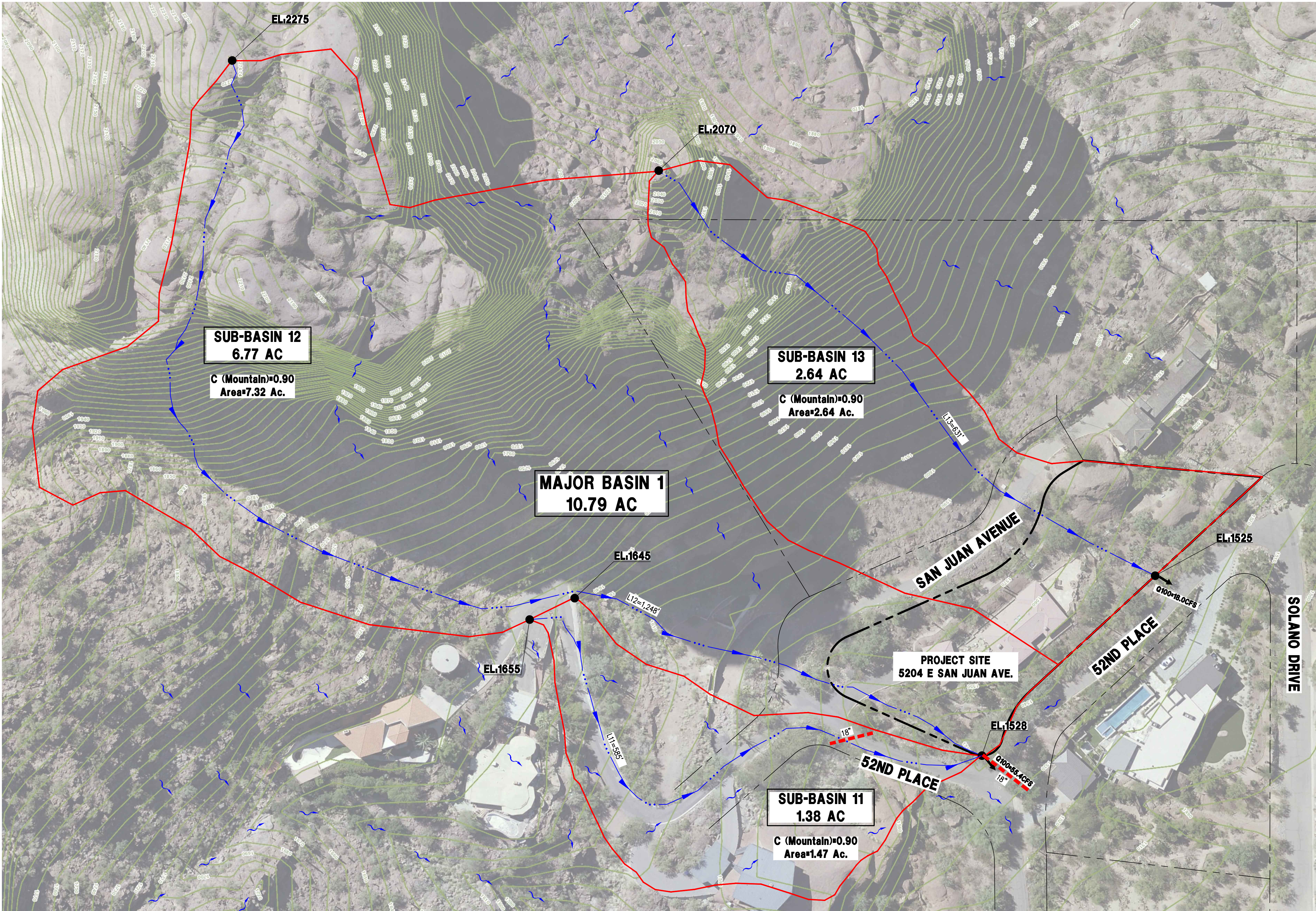
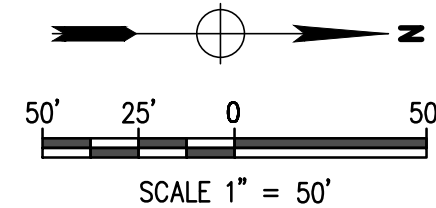
BASIS OF BEARINGS
THE FOUND SOUTH LINE OF LOT 21, THE BEARING OF WHICH IS
S89°53'20"E.

FLOOD INSURANCE RATE MAP (FIRM) DATA

COMMUNITY #	PANEL #	SUFFIX	BASED FLOOD ELEVATION
040049	1765 OF 4425	L	N/A
MAP #	PANEL DATE	ZONE	
04013C	10/16/2013	X*	

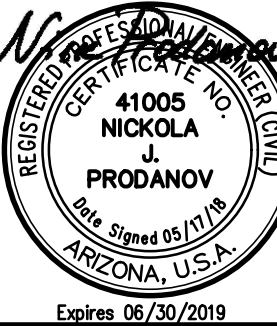
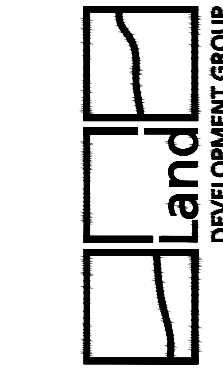
*AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

LEGEND	
	DRAINAGE FLOW
	SPOT ELEVATION
	TRIBUTARY AREA BOUNDARY
	FLOW LINE
	PIPE/CULVERT



LOT 32 - STONE CANYON
5204 E SAN JUAN AVE.,
PARADISE VALLEY,
AZ 85253

P. 602 889 1984 | F. 602 445 9482
8808 N CENTRAL AVE., SUITE 208
PHOENIX, AZ 85020
PHOENIXVALLEY6.COM



Town of Paradise Valley
Drainage Design Management System
MAJOR BASINS
Project Reference: 1711162

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Major Basin	Area (acres)	Description
01	10.79	Major Basin 01

Town of Paradise Valley
Drainage Design Management System
RAINFALL DATA
Project Reference: 1711162

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ID	Method	Duration	2 Yr	5 Yr	10 Yr	25 Yr	50 Yr	100 Yr
DEFAULT	NOAA14	5 MIN	0.244	0.332	0.399	0.490	0.559	0.630
	NOAA14	10 MIN	0.372	0.505	0.607	0.745	0.851	0.958
	NOAA14	15 MIN	0.461	0.626	0.753	0.924	1.055	1.188
	NOAA14	30 MIN	0.621	0.844	1.014	1.243	1.420	1.600
	NOAA14	1 HOUR	0.768	1.044	1.255	1.539	1.758	1.980
	NOAA14	2 HOUR	0.879	1.178	1.404	1.714	1.951	2.196
	NOAA14	3 HOUR	0.950	1.249	1.485	1.815	2.078	2.353
	NOAA14	6 HOUR	1.131	1.451	1.703	2.050	2.322	2.605
	NOAA14	12 HOUR	1.270	1.610	1.876	2.236	2.512	2.796
	NOAA14	24 HOUR	1.533	1.989	2.348	2.848	3.243	3.655

Town of Paradise Valley
Drainage Design Management System
LAND USE
Project Reference: 1711162

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Sub Basin	Land Use Code	Area (acres)	Area (%)	Kb	Runoff Coefficient C						Description
					2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	
Major Basin ID: 01											
11	MOUNT	1.38	100.0	0.196	0.70	0.70	0.70	0.77	0.84	0.90*	Mountain Terrain (Slopes > 10%)
		1.380	100.0								
12	MOUNT	6.77	100.0	0.175	0.70	0.70	0.70	0.77	0.84	0.90*	Mountain Terrain (Slopes > 10%)
		6.770	100.0								
13	MOUNT	2.64	100.0	0.187	0.70	0.70	0.70	0.77	0.84	0.90*	Mountain Terrain (Slopes > 10%)
		2.640	100.0								

* Non default value

(stLuDatRat.rpt)

Town of Paradise Valley
Drainage Design Management System
SUB BASINS
Project Reference: 1711162

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ID	Sub Basin Data						Sub Basin Hydrology Summary						
	Area (acres)	Length (ft)	USGE	DSGE	Slope (ft/mi)	Kb		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Major Basin ID: 01													
11	1.4	585	1,655.00	1,528.00	1,146.3	0.196	Q (cfs)	2.5	3.5	4.4	6.0	7.7	9.4
							C	0.70	0.70	0.70	0.77	0.84	0.90
							CA (ac)	0.97	0.97	0.97	1.06	1.16	1.24
							Volume (ac-ft)	0.0349	0.0425	0.0494	0.0618	0.0750	0.0864
							Tc (min)	8	7	6	6	5	5
							i (in/hr)	2.54	3.65	4.51	5.69	6.60	7.56
12	6.8	1,248	2,275.00	1,528.00	3,160.4	0.175	Q (cfs)	12.0	17.2	21.4	29.6	37.6	46.0
							C	0.70	0.70	0.70	0.77	0.84	0.90
							CA (ac)	4.74	4.74	4.74	5.21	5.69	6.09
							Volume (ac-ft)	0.1699	0.2119	0.2400	0.3048	0.3664	0.4229
							Tc (min)	8	7	6	6	5	5
							i (in/hr)	2.53	3.63	4.51	5.69	6.60	7.56
13	2.6	631	2,070.00	1,525.00	4,560.4	0.187	Q (cfs)	5.4	7.4	8.9	11.9	14.9	18.0
							C	0.70	0.70	0.70	0.77	0.84	0.90
							CA (ac)	1.85	1.85	1.85	2.03	2.22	2.38
							Volume (ac-ft)	0.0496	0.0680	0.0818	0.1094	0.1370	0.1655
							Tc (min)	5	5	5	5	5	5
							i (in/hr)	2.93	3.98	4.79	5.88	6.71	7.56

* Non default value

(stSubBasRat.rpt)

Town of Paradise Valley
Drainage Design Management System
RATIONAL METHOD NETWORK
Project Reference: 1711162

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	Type	Model ID	Sort	Comments
Major Basin: 01	Sub Basin	11	2	
	Sub Basin	12	4	
	Combine	12	6	

Town of Paradise Valley
Drainage Design Management System
RATIONAL METHOD FLOW SUMMARY - ALL
Project Reference: 1711162

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Type	Conveyance			Combine	Return Period (Years)						
ID	Length (ft)	Velocity (ft/sec)	Tpipe (min)		2	5	10	25	50	100	
Major Basin ID: 01											
Sub Basin	-	-	-	-	Q (cfs)	-	-	-	-	-	9.4
11					CA (ac)	0.97	0.97	0.97	1.06	1.16	1.24
					Tc (min)	7.6	6.6	6.1	5.6	5.3	5.0
					i (in/hr)	2.54	3.65	4.51	5.69	6.60	7.56
Sub Basin	-	-	-	-	Q (cfs)	-	-	-	-	-	46.0
12					CA (ac)	4.74	4.74	4.74	5.21	5.69	6.09
					Tc (min)	7.7	6.7	6.1	5.6	5.3	5.0
					i (in/hr)	2.53	3.63	4.51	5.69	6.60	7.56
Combine	-	-	-	2	Q (cfs)	-	-	-	-	-	55.4
12					CA (ac)	-	-	-	-	-	7.33
					Tc (min)	-	-	-	-	-	-
					i (in/hr)	-	-	-	-	-	-

* First Pipe

(stRatNalAll.rpt)

TOWN OF PARADISE VALLEY NOTES

- GRADING SHALL BE IN CONFORMANCE WITH 2015 IBC.
- PRIOR TO FIRST FOOTING INSPECTION OF ANY TYPE, ALL PROPERTY PINS SHALL BE PLACED BY A REGISTERED LAND SURVEYOR OF THE STATE OF ARIZONA, AND PROPERTY LINES MUST BE PHYSICALLY IDENTIFIED PRIOR TO INSPECTION.
- 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 CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) SPECIFICATIONS AND STANDARD DETAILS.
- ALL EXTERIOR SITE LIGHTING SHALL COMPLY WITH REQUIREMENTS OF SECTION 2208 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCES FOR FUTURE TYPE, LOCATION, HEIGHT, WATTAGE BASED UPON FIXTURES INSTALLED.
- A DUST CONTROL PLAN MEETING THE REQUIREMENTS OF RULE 310 OF THE MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS, AS AMENDED, IS REQUIRED.
- A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION.
- 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.
- EAVE PROJECTIONS INTO REQUIRED SETBACKS ARE LIMITED TO A MAXIMUM OF 24" PURSUANT TO SECTION 1008 OF THE TOWN OF PARADISE VALLEY ZONING ORDINANCES.
- ALL STRUCTURES AND LANDSCAPING WITHIN THE SIGHT VISIBILITY TRIANGLE SHALL HAVE A 2 FOOT MAXIMUM HEIGHT.
- ALL NEW AND EXISTING ELECTRICAL SERVICE TO BE BURIED UNDERGROUND PER THE TOWN OF PARADISE VALLEY STANDARDS.
- POOL, SPA, BARBECUE AND ANY PROPOSED STRUCTURES OVER 8 INCHES ABOVE GRADE REQUIRE SEPARATE PERMIT APPLICATIONS.
- POOLS SHALL BE CONSTRUCTED BY SEPARATE PERMIT AND SECURED FROM UNWANTED ACCESS PER SECTION 5-2-2 OF THE TOWN OF PARADISE VALLEY ORDINANCES.
- A SETBACK CERTIFICATION IS REQUIRED AND MUST BE GIVEN TO TOWN INSPECTOR AT STEM WALL INSPECTION.
- MAIL BOX TO COMPLY WITH THE TOWN OF PARADISE VALLEY STANDARDS FOR MAIL BOXES IN THE R.O.W. FOR HEIGHT, WIDTH AND BREAK AWAY FEATURES.
- 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 GRADED TO 2" BELOW THE TOP OF SLAB. TYPICAL FINISHED GRADE AROUND PERIMETER OF BUILDING IS MINUS 6" BELOW FINISHED FLOOR UNLESS SPECIFIED OTHERWISE.
- ALL MATERIAL TO BE UNDER SLABS AND WALKS SHALL BE COMPACTED TO NOT LESS THAN 95% PER ASTM D698.
- SOILS COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE TOWN ENGINEER'S OFFICE FOR BUILDING PADS THAT HAVE ONE (1) FOOT OR MORE OF FILL MATERIAL INDICATED. THIS INFORMATION MUST BE SUPPLIED PRIOR TO REQUEST FOR FINAL INSPECTION.
- TRENCH BED SHALL BE FREE OF ROCKS AND DEBRIS.
- REGULATION II RULE 20-3 OF THE MARICOPA COUNTY HEALTH DEPARTMENT, BUREAU OF AIR POLLUTION CONTROL SHALL BE OBSERVED AND ENFORCED.
- ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE 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.
- THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
- ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION.
- THE TOWN ONLY APPROVES THE SCOPE, NOT THE DETAIL, OF ENGINEERING DESIGNS; THEREFORE, IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE TOWN.
- THE APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS; IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS MUST BE RESUBMITTED TO THE TOWN FOR RE-APPROVAL.
- A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE TOWN OF PARADISE VALLEY RIGHTS-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO BEGINNING CONSTRUCTION BY CALLING 480-312-5750.
- WHENEVER EXCAVATION IS NECESSARY, CALL THE BLUE STAKE CENTER, 602-263-1100, TWO WORKING DAYS BEFORE EXCAVATION BEGINS. THE CENTER WILL TELL THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THAT PROJECT. IF NECESSARY.
- ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE TOWN ONLY AFTER THE REGISTRANT HAS PAID A BASE FEE PLUS A FEE FOR INSPECTION SERVICES. COPIES OF ALL PERMITS MUST BE RETAINED ON-SITE AND BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE SUSPENSION OF ALL WORK UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
- ALL EXCAVATION AND GRADING THAT IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING, OF THE LATEST EDITION OF THE IBC BY THE ICC. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE TOWN FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.
- 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.
- ON DEMOLITION, GRADING, REMODELING AND NEW CONSTRUCTION PROJECTS, PERMITTEE MUST NOTIFY ADJACENT PROPERTY OWNERS REGARDING THE NATURE OF THE PROJECT, THE TIME PERIOD FOR CONSTRUCTION, AND ANY UNUSUAL ACTIVITIES THAT MAY CAUSE DISRUPTION OF THE NORMAL COURSE OF TRAFFIC DURING CONSTRUCTION.
- ALL PERMITTEES MUST 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 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, AND ADDRESS OF PROJECT.
- WHEN DEMOLITION OR EXCAVATION MUST BE INSTALLED AROUND THE CONSTRUCTION AREA TO PREVENT ANY POTENTIAL SAFETY HAZARD FOR THE PUBLIC, THE FENCE SHALL BE SETBACK AT LEAST TO FEET FROM ALL RIGHTS-OF-WAY AND HAVE A 50-FOOT STREET CORNER SITE TRIANGLE WHERE APPLICABLE.
- 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. IF A STAGING AREA IS NEEDED ON A PROPERTY OTHER THAN THE CONSTRUCTION SITE FOR CONSTRUCTION SUPPLIES AND EQUIPMENT, THE PERMITTEE MUST OBTAIN PROPERTY OWNER AND TOWN APPROVAL FIRST AND MUST INFORM THE ADJACENT PROPERTY OWNERS OF THE LOCATION OF STAGING AREA, AND TIME AND HOURS DURING THE DAY THE AREA WILL BE USED.
- EXCEPT AS OUTLINED IN ITEM 4, 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 RIGHT-OF-WAY OR NEAR ADJACENT PROPERTIES.
- BUILDING CONSTRUCTION MUST NOT START SOONER THAN SUNRISE AND MUST STOP NO LATER THAN SUNSET. ALSO, ORDINANCE #561 IMPOSES RESTRICTIONS ON CONSTRUCTION WORK ON SATURDAYS, SUNDAYS AND MAJOR BUSINESS HOLIDAYS. HILLSIDE PROJECTS MAY HAVE ADDITIONAL RESTRICTIONS. EQUIPMENT WITH AUDIBLE REVERSE DIRECTION WARNINGS MUST NOT BE OPERATED PRIOR TO 7:00 A.M.
- THE USE AND OPERATION OF FUEL-FIRED GENERATORS ON ANY CONSTRUCTION SITE, NEW, EXISTING OR REMODELING, IS PROHIBITED UNLESS DUE TO A HARSHTOP TOWN APPROVAL IS OBTAINED.
- THE CONTRACTOR AND PROPERTY OWNER WILL 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, OR UNTIL SUCH TIME THAT A WRITTEN, SIGNED AND LEGALLY BINDING AGREEMENT HAS BEEN REACHED BY THE PARTIES INVOLVED TO REMEDY ANY VIOLATION WITHIN A REASONABLE TIME PERIOD, AND UNTIL ALL REQUIRED FEES ARE PAID IN FULL.
- THE NATURAL FLOW OF RAINWATER AND OTHER SURFACE DRAINAGE FROM THE PROPERTY MAY NOT BE ALTERED IN ANY WAY.
- A KEY SWITCH SHALL BE REQUIRED ON ALL NEW AND EXISTING ELECTRIC ENTRY CONTROL GATES. THE KEY SWITCH SHALL BE INSTALLED IN A LOCATION ON THE GATE CONTROL PANEL THAT IS READILY VISIBLE AND ACCESSIBLE. KNOX BOX ORDER FORMS ARE AVAILABLE AT THE PARADISE VALLEY BUILDING DEPARTMENT.
- ALL EQUIPMENT OF ALL TRADES ON OR AFFECTING THE JOB MUST BE CLEANED ONLY IN A PRE-DETERMINED AND DESIGNATED AREA. DEBRIS AND RUNOFF FROM SAID AREA MAY NOT EXTEND BEYOND THE BUILDING AREA.
- 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 CAUSE OF DUST CAUSED BY ANY ACTIVITIES, DUSTY EQUIPMENT, APPLICATION OF MATERIALS, OR OTHER DUST-CAUSING PRACTICES REQUIRED BY THE CONSTRUCTION PROCESS.
- AN INSPECTION FEE WILL BE CHARGED IF THE INSPECTION IS REQUIRED AS A RESULT OF A CODE VIOLATION.
- FOR DEMOLITION INSPECTION OWNER OR PERMITTEE SHALL NOTIFY OSHA FOR ASBESTOS INSPECTION. ALL DEMOLITIONS AND ALL RENOVATION ACTIVITIES THAT WILL DISTURB FRIABLE ASBESTOS CONTAINING MATERIALS MUST BE REPORTED TO THE MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT.

PRELIMINARY GRADING & DRAINAGE PLAN
CUCULIC RESIDENCE
5204 E SAN JUAN AVE., PARADISE VALLEY, AZ 85253
LOT 32 - STONE CANYON

A SUBDIVISION PLAT RECORDED IN BOOK 62 OF MAPS, PAGE 41, MCR.,
LOCATED IN A PORTION OF THE SW 1/4 OF THE NW 1/4 OF THE NE 1/4 OF SECTION 17, T.2N, R.4E
OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

ENGINEERS NOTES

- MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR 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.
- ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE 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.
- GRADING SHALL BE IN CONFORMANCE WITH 2012 IBC SEC. 1803 AND APPENDIX J.
- 5% MINIMUM SLOPE AWAY FROM BUILDING FOR A MINIMUM 10', U.N.O.
- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) SPECIFICATIONS AND STANDARD DETAILS.
- A DUST CONTROL PLAN MEETING THE REQUIREMENTS OF RULE 310 OF THE MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS, AS AMENDED, IS REQUIRED.
- A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION.
- 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.
- ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS, BARRIER WALLS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT ADJACENT BUILDINGS OR PROPERTY FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO BUILDING CONSTRUCTION.
- ALL STRUCTURES AND LANDSCAPING WITHIN THE SIGHT VISIBILITY TRIANGLE SHALL HAVE A 2 FOOT MAXIMUM HEIGHT.
- 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 GRADED TO 2" BELOW THE TOP OF SLAB. TYPICAL FINISHED GRADE AROUND PERIMETER OF BUILDING IS MINUS 6" BELOW FINISHED FLOOR UNLESS SPECIFIED OTHERWISE.
- ALL MATERIAL TO BE UNDER SLABS AND WALKS SHALL BE COMPACTED TO NOT LESS THAN 95% PER ASTM D698.
- THE CONTRACTOR IS RESPONSIBLE FOR SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY CONCERNS ASSOCIATED WITH THIS PROJECT DURING CONSTRUCTION, UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THIS PLAN OR ELSEWHERE.
- 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 UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL 48 HOURS IN ADVANCE FOR BLUE STAKE (1-800-STAKE-11) PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
- 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.
- 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 FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
- 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.
- COORDINATION BETWEEN ALL PARTIES IS ESSENTIAL PART OF CONTRACT.
- 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.
- 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, 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 DESIGN INTENT REFLECTED ON THESE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL NOTIFY THE OWNER'S AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED.
- CONTRACTOR IS RESPONSIBLE TO COORDINATE UTILITY CROSSINGS AT CULVERT CROSSINGS BEFORE STARTING WORK ON CULVERT. COORDINATE WITH OWNER REPRESENTATIVE. VERIFY UTILITY LINES AND/OR CONDUITS ARE IN PLACE BEFORE STARTING CULVERT WORK.
- ALL ON-SITE UTILITIES PER OTHERS.
- THIS PROJECT REQUIRES A REGULAR ONGOING MAINTENANCE PROGRAM FOR THE DESIGNED DRAINAGE 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.
- 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.
- ALL DISTURBED AREAS ARE TO BE ROPED AND ROPING MUST MATCH PLAN.
- VEGETATION OUTSIDE OF CONSTRUCTION AREA TO REMAIN.
- AREAS OUTSIDE THE WALL AND CUT AND FILL SLOPES SHALL BE REVEGETATED WITH SIMILAR PLANT TYPES AND DENSITIES FOUND ON THE SITE. REVEGETATION SHALL BE COMPLETED PRIOR TO OCCUPANCY AND THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- MECHANICAL EQUIPMENT SHALL BE SCREENED TO A MINIMUM OF ONE FOOT ABOVE TOP OF EQUIPMENT.
- ANY FUTURE IMPROVEMENTS SHOWN HEREON SHALL REQUIRE A SEPARATE PERMIT.
- ANY POINTS OF DRAINAGE CONCENTRATION SHOULD BE PROTECTED AGAINST EROSION WITH NATIVE STONE.
- 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.
- ALL DRAINAGE FACILITIES TO BE MAINTAINED BY HOMEOWNER.
- 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 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).
- REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING LAYOUT, DIMENSIONS AND ELEVATIONS.
- REFER TO STRUCTURAL DRAWINGS, DETAILS AND CALCULATIONS FOR ALL PROPOSED RETAINING WALLS.
- FOR CHANGE IN ELEVATION THAT ARE GREATER THAN 30", PROVIDE 36" HIGH GUARDRAILS FOR TOTAL OF 42" FALL PROTECTION BARRIER U.N.O.
- CONTRACTOR TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURE - 5% MIN SLOPE FOR FIRST 10 FEET, U.N.O.
- ALL WATER AND SEWER LINES AND CONNECTIONS MUST BE INSTALLED PER IPC 2012, MAG AND TOWN OF PARADISE VALLEY SUPPLEMENT TO MAG.
- WATERPROOF ALL EXTERIOR WALLS 18" ABOVE FINISH GRADE--(BITUTHENE@ 3000 HC MEMBRANE W/ GRAPE PROTECTION 03 OR APPROVED EQUAL).
- ALL PIPES AND FITTINGS SHALL BE INSTALLED PER MANUFACTURE'S SPECIFICATIONS AND DETAILS.
- ABANDONMENT OF EXISTING AND INSTALLATION OF NEW SEPTIC SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT RULES AND STANDARDS, AND WILL REQUIRE SEPARATE PERMIT.
- COORDINATE RIPRAP COLOR WITH LANDSCAPE PLANS AND DETAILS.
- VERIFY AND COORDINATE WITH LANDSCAPE PLANS FINAL LOCATION AND GRATE TYPE OF SPECIFIED AREA DRAINS AND TRENCH DRAINS.
- VERIFY AND COORDINATE WITH ARCHITECTURAL AND LANDSCAPE PLANS LOCATION AND HEIGHT OF ALL SITE WALLS.
- DISTURBED AREA: TOTAL ACRES = 0.5 ACRES < 1 ACRE; NPDES PERMIT IS NOT REQUIRED.
- REFER TO ARCHITECTURAL PLANS AND DETAILS FOR DEMOLITION AND REMOVAL OF ANY EXISTING BUILDING STRUCTURES, SITE WALLS, POOL AND PAVEMENT ETC.
- REFER TO GEOTECHNICAL REPORT FOR SPECIFIC RECOMMENDATIONS AND MAXIMUM ALLOWED FILL AND CUT SLOPES.
- THE PROPOSED POOL EQUIPMENT FOR THIS PROJECT SHALL BE EQUIPED WITH CARTRIDGE FILTER IN ORDER TO AVOID THE BACKWASH.

LEGEND

●	FOUND REBAR OR AS NOTED
○	SET 1/2" REBAR & TAG OR AS NOTED
---	PROPERTY LINE
---	EASEMENT LINE
---	MONUMENT LINE
WM	WATER METER
⊗	WATER VALVE
⊙	FIRE HYDRANT
E.M.T.	ELECTRIC METER
A	A/C UNIT
GM	GAS METER
⊠	TELEPHONE PEDESTAL
⊙	SEWER CLEANOUT
CTV	CABLE TV RISER
MAILBOX	MAILBOX
CATV, PHONE	CATV, PHONE
S	SEWER LINE
W	WATER LINE
E	ELECTRIC LINE
C	COMMUNICATIONS LINE
G	GAS LINE
○-○-○	FENCE
1321	EXISTING CONTOUR
2112	EXIST. DRAINAGE FLOW
EXIST. SPOT ELEVATION	EXIST. SPOT ELEVATION
TREE	TREE
IRONWOOD TREE	IRONWOOD TREE
PALM TREE	PALM TREE
MESQUITE TREE	MESQUITE TREE
TREE	TREE
CACTUS	CACTUS
EXISTING DISTURBED AREA	EXISTING DISTURBED AREA
PROPOSED DISTURBED AREA	PROPOSED DISTURBED AREA
FLOW LINE	FLOW LINE
DRAINAGE FLOW ARROW	DRAINAGE FLOW ARROW
PROPOSED SPOT ELEVATION	PROPOSED SPOT ELEVATION
PROPOSED CONTOUR	PROPOSED CONTOUR
TOP OF RAILING/NON-RET. WALL	TOP OF RAILING/NON-RET. WALL
TOP OF RETAINING WALL	TOP OF RETAINING WALL
FINISH GRADE	FINISH GRADE
TOP OF FOOTING	TOP OF FOOTING
FINISH GRADE AT BOTTOM OF WALL	FINISH GRADE AT BOTTOM OF WALL
RETAINING WALL/AGAINST BUILDING	RETAINING WALL/AGAINST BUILDING

ABBREVIATIONS

BC	BACK OF CURB
BSL	BUILDING SETBACK LINE
BW	BOTTOM OF WALL
C	CONCRETE, CALCULATED
TPV	TOWN OF PARADISE VALLEY
DE	DRAINAGE EASEMENT
ESMT	EASEMENT
EXIST.	EXISTING
EG	EXISTING GRADE
FG	FINISH GRADE
FFE	FINISH FLOOR ELEVATION
FL	FLOW LINE
FND	FOUND
G	GUTTER, GAS
INV	INVERT
MAG	MARICOPA ASSOCIATION OF GOVERNMENTS
(M)	MEASURED
MCR	MARICOPA COUNTY RECORDER
P	PAVEMENT
PUE	PUBLIC UTILITY EASEMENT
(R)	RECORDED
R	RADIUS
R/W	RIGHT OF WAY
T	TANGENT, TELEPHONE
W	WEST, WATERLINE
TP	TOP OF PARAPET
TC	TOP OF CURB
TG	TOP OF GRATE
TF	TOP OF FOOTING
TR	TOP OF RAILING
TRW	TOP OF RETAINING WALL
TW	TOP OF WALL
WM	WATER METER

DISTURBED AREA CALCULATIONS

AREA OF LOT:	47,205 S.F. (1.084 AC.)
BUILDING PAD SLOPE:	23%
VERTICAL:	19'
HORIZONTAL:	84'
ALLOWABLE NET DISTURBED AREA:	7,156 S.F. (15.16%)
GROSS EXISTING DISTURBED AREA:	19,830 S.F.
EXISTING BUILDING FOOTPRINT:	2,367 S.F.
NET EXISTING DISTURBED AREA:	17,463 S.F.
GROSS PROPOSED DISTURBED AREA:	18,426 S.F.
LESS TEMPORARY AREAS OF DISTURBANCE TO BE RESTORED AND REVEGETATED:	0 S.F.
LESS 25% OF NEW DRIVEWAY PAVERS:	484 S.F. (0.25x1,934 S.F.)
LESS BUILDING FOOTPRINT AREA:	4,498 S.F.
PROPOSED NET DISTURBED AREA:	13,895 S.F.
ALLOWED SLOPES STEEPER THAN NATURAL GRADE (5% MAX.):	2,360 S.F. (5%)
PROPOSED SLOPES STEEPER THAN NATURAL GRADE (AREA):	2,360 S.F. (5%)

GRADING SPECIFICATIONS

- EXCAVATION AND GRADING OF THIS SITE IS CLASSIFIED AS "ENGINEERED GRADING" PER 2015 I.B.C. AND WILL BE PERFORMED ACCORDINGLY.
- THE CONTRACTOR WILL RETAIN A SOILS ENGINEER DURING CONSTRUCTION TO INSPECT PROGRESS OF CONSTRUCTION. CONCERNING PREPARATION OF GROUND TO RECEIVE FILLS, TESTING AND REQUIRED COMPACTION SPECIFICATION OF ALL FINISH SLOPES INCLUDING CUT SLOPES.
- COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601 AND PROVISIONS AS SET FORTH IN THE SOILS REPORT.
- BEARING MATERIALS FOR FILL UNDER RESIDENCE PAD IF NATIVE MATERIAL IS USED. LARGE ROCK FRAGMENTS MUST BE REMOVED THAT ARE IN EXCESS OF SIX INCHES. REMAINING MATERIAL MUST BE SMALLER PARTICLES OF SAND AND ROCK THAT CAN BE COMPACTED INTO A DENSE CONDITION.
MAXIMUM PARTICLE SIZE 6 INCHES
PERCENT PASSING NO. 4 SIEVE 35% TO 70%
PERCENT PASSING NO. 200 SIEVE 25% MAX.
PLASTICITY INDEX 10% MAX.
- CUT-SLOPES: MAXIMUM ROCK CUT SLOPE TO BE 1.0 FEET HORIZONTAL TO 3.0 FEET VERTICAL PER GEOTECHNICAL STUDY.
- FILL SLOPES: MAXIMUM FILL SLOPE TO BE 2.0 FEET HORIZONTAL TO 1.0 FEET VERTICAL.
- COMPACTION FILL MATERIAL MUST BE PLACED ON LEVELED BENCHES CUT INTO UNDISTURBED EXISTING HILLSIDE. PLACE FILL IN HORIZONTAL LIFTS OF THICKNESS COMPATIBLE WITH THE COMPACTION EQUIPMENT USED. COMPACT TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM A.S.T.M. DENSITY AT THE OPTIMUM MOISTURE CONTENT OF ± TWO PERCENT. THIS PERTAINS TO ALL ENGINEERED STRUCTURAL FILL SUPPORTING STRUCTURES AND INCLUDING FILL UNDER ANY OF THE RETAINING WALLS. COMPACTION TEST RESULTS SHALL BE SUBMITTED TO THE SOILS ENGINEER AND TOWN OF PARADISE VALLEY BUILDING AND SAFETY DEPARTMENT.
- ANY RETAINING WALLS ADJACENT TO THE PROPERTY LINES WILL BE UNDER THE SCOPE OF SPECIAL INSPECTION BY THE SOILS ENGINEER. THE DEVELOPER SHALL NOTIFY THE ADJOINING PROPERTY OWNERS IN WRITING, TEN DAYS PRIOR TO START OF CONSTRUCTION ON THESE WALLS PER SECTION 2903-B OF IBC. THE DEVELOPER WILL HAVE TO PROVIDE MEANS OF PROTECTION OF ADJACENT PROPERTY WHILE THIS WORK IS UNDER CONSTRUCTION.
- ALL EXPOSED CUT AND FILL SHALL BE TREATED WITH AN APPROVED AGING AGENT TO MINIMIZE TO VISUAL CONTINUITY.
- NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL ALL HILLSIDE STIPULATIONS AND ALL TOWN CODE REQUIREMENTS ARE COMPLIED INCLUDING, BUT NOT LIMITED TO LANDSCAPING, GROUND RESTORATION, FIRE FLOW, FIRE SAFETY AND ALL ONSITE AND OFFSITE IMPROVEMENTS.
- ALL OUTDOOR LIGHTING SHALL BE IN CONFORMANCE WITH ARTICLE XXII OF THE TOWN ZONING ORDINANCE.
- ALL EXCESS FILL MATERIAL SHALL BE REMOVED FROM THE SITE WITH NO NEW SPILL SLOPES.
- THE USE OF HYDRAULIC RAM HAMMERS, OR OTHER HEAVY EQUIPMENT USED TO CUT THROUGH ROCK, INCLUDING MACHINERY WITH AUDIBLE BACK UP WARNING DEVICES SHALL BE LIMITED TO USE BETWEEN THE HOURS OF 7:00AM OR SUNRISE, WHICHEVER IS LATER, AND 6:00PM OR SUNSET, WHICHEVER IS EARLIER, MONDAY THROUGH FRIDAY, WITH LIMITED WORK ON SATURDAY AND NO WORK ON SUNDAY OR LEGAL HOLIDAYS.
- CONSTRUCTION STAKING AND/OR FENCING SHALL BE PLACED AROUND THE CONSTRUCTION SITE SO AS TO PROTECT THE UNDISTURBED NATURAL AREAS.

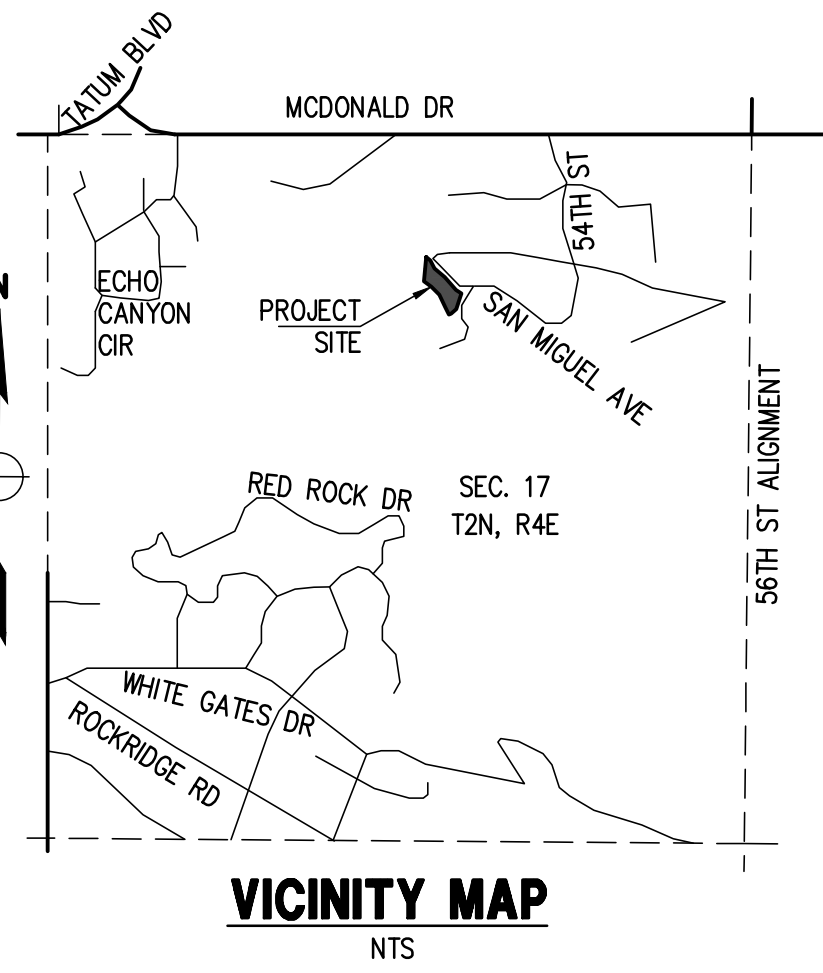
DRAINAGE STATEMENT

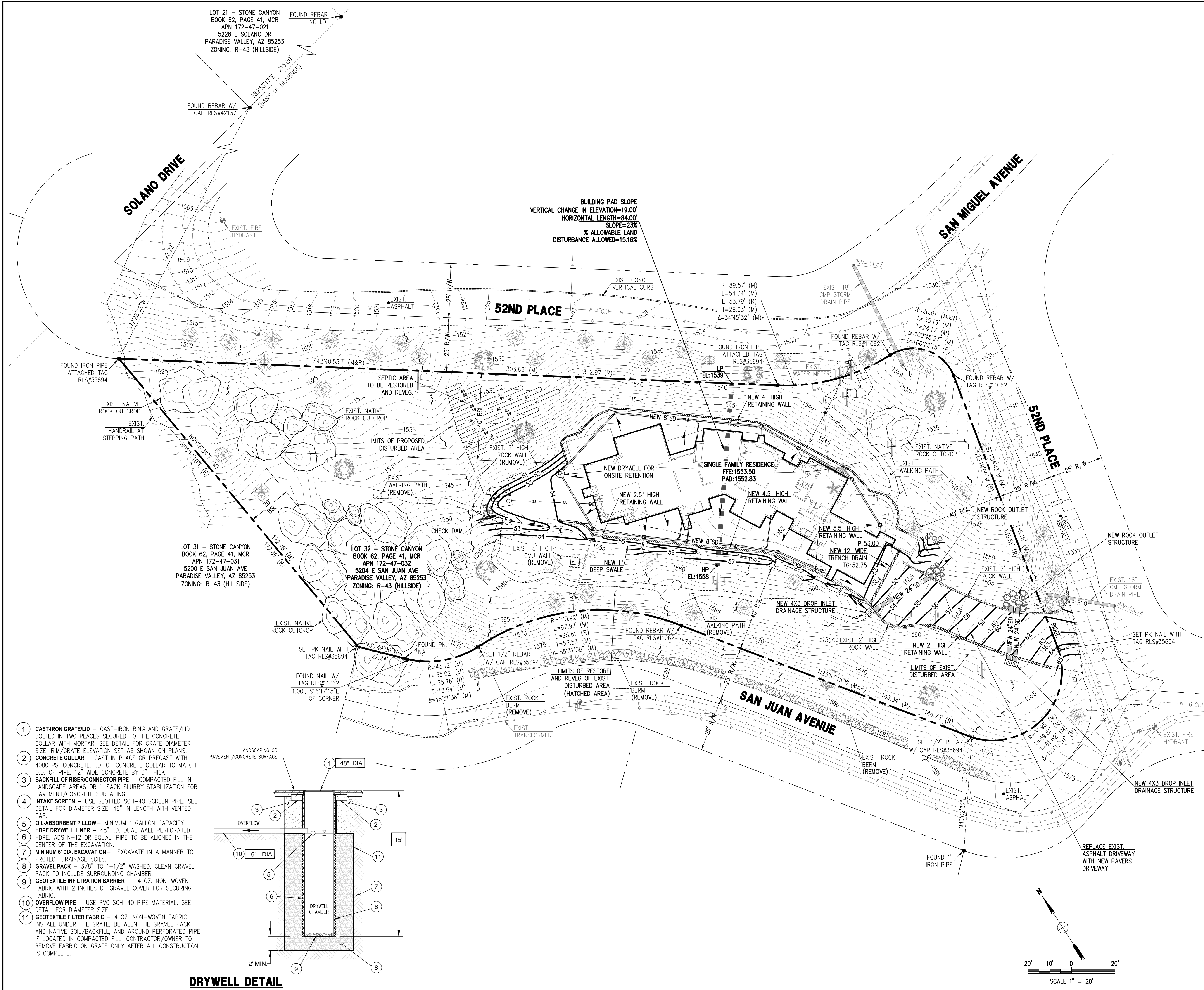
- NEW SINGLE FAMILY RESIDENCE, GARAGE AND SITE IMPROVEMENTS ARE PROPOSED WITH THIS PROJECT.
- PROPOSED DEVELOPMENT DOES NOT IMPACT DRAINAGE CONDITIONS OF ADJOINING LOTS.
- HISTORIC DRAINAGE PATTERNS ARE PRESERVED.
- THE MINIMUM FINISH FLOOR ELEVATIONS SHOWN ARE SAFE FROM INUNDATION DURING A 100-YEAR PEAK RUN-OFF EVENT IF CONSTRUCTED PER THE APPROVED CIVIL PLANS.
- PROPOSED STORM DRAIN SYSTEM SHALL BE INSPECTED AND CLEANED FROM DEBRIS AND SILT AFTER EVERY MAJOR STORM EVENT.
- CHECK DAMS, RIPRAP AND Boulders ARE SPECIFIED AT ALL POINTS OF DISCHARGE TO MITIGATE EROSION AND TO CONVERT CONCENTRATED FLOWS BACK TO SHEET FLOWS.
- ON-SITE RETENTION IS PROVIDED FOR THE PRE VS. POST DEVELOPMENT RUNOFF FROM 100-YEAR, 2-HOUR STORM EVENT.

ON-SITE RETENTION FOR THE PRE VS. POST DEVELOPMENT RUNOFF FROM 100-YEAR, 2-HOUR STORM EVENT				
V=DxAx(Cw-0.75)/12=2.82x19,830x(0.79-0.75)/12=186 C.F.				
D - RAINFALL DEPTH=2.82" A - TRIBUTARY AREA, SF Cw - WEIGHTED RUNOFF COEFFICIENT				
DRAINAGE AREA	AREA	RUNOFF COEFFICIENT	VOLUME REQUIRED	VOLUME PROVIDED
	S.F.	C	C.F.	C.F.
A	19,830	0.04	186	188
TOTAL			186	188

TOWN OF PARADISE VALLEY HILLSIDE NOTES

- NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL ALL HILLSIDE STIPULATIONS AND ALL TOWN CODE REQUIREMENTS ARE COMPLIED INCLUDING, BUT NOT LIMITED TO LANDSCAPING, GROUND RESTORATION, FIRE FLOW, FIRE SAFETY, AND ALL ONSITE AND OFFSITE IMPROVEMENTS.
- ALL OUTDOOR LIGHTING SHALL BE IN CONFORMANCE WITH ARTICLE XXII OF THE TOWN ZONING ORDINANCE.
- ALL EXCESS FILL MATERIAL SHALL BE REMOVED FROM THE SITE WITH NO NEW SPILL SLOPES.
- THE USE OF HYDROLOGIC RAM HAMMERS, OR OTHER HEAVY EQUIPMENT USED TO CUT THROUGH ROCK, INCLUDING MACHINERY WITH AUDIBLE BACK UP WARNING DEVICES SHALL BE LIMITED TO USE BETWEEN THE HOURS OF 7:00AM OR SUNRISE, WHICHEVER IS LATER, AND 6:00PM OR SUNSET, WHICHEVER IS EARLIER, MONDAY THROUGH FRIDAY, WITH LIMITED WORK ON SATURDAY AND NO WORK ON SUNDAY OR LEGAL HOLIDAYS. RAM HAMMERS AND OTHER HEAVY EQUIPMENT CANNOT BE USED ON SATURDAYS WITHOUT A WAIVER FROM THE TOWN MANAGER.
- CONSTRUCTION STAKING AND/OR FENCING SHALL BE PLACED AROUND THE CONSTRUCTION SITE SO AS TO PROTECT THE UNDISTURBED NATURAL AREA.





LOT 21 - STONE CANYON
BOOK 62, PAGE 41, MCR
APN 172-47-021
5228 E SOLANO DR
PARADISE VALLEY, AZ 85253
ZONING: R-43 (HILLSIDE)

FOUND REBAR W/
CAP RLS#42137

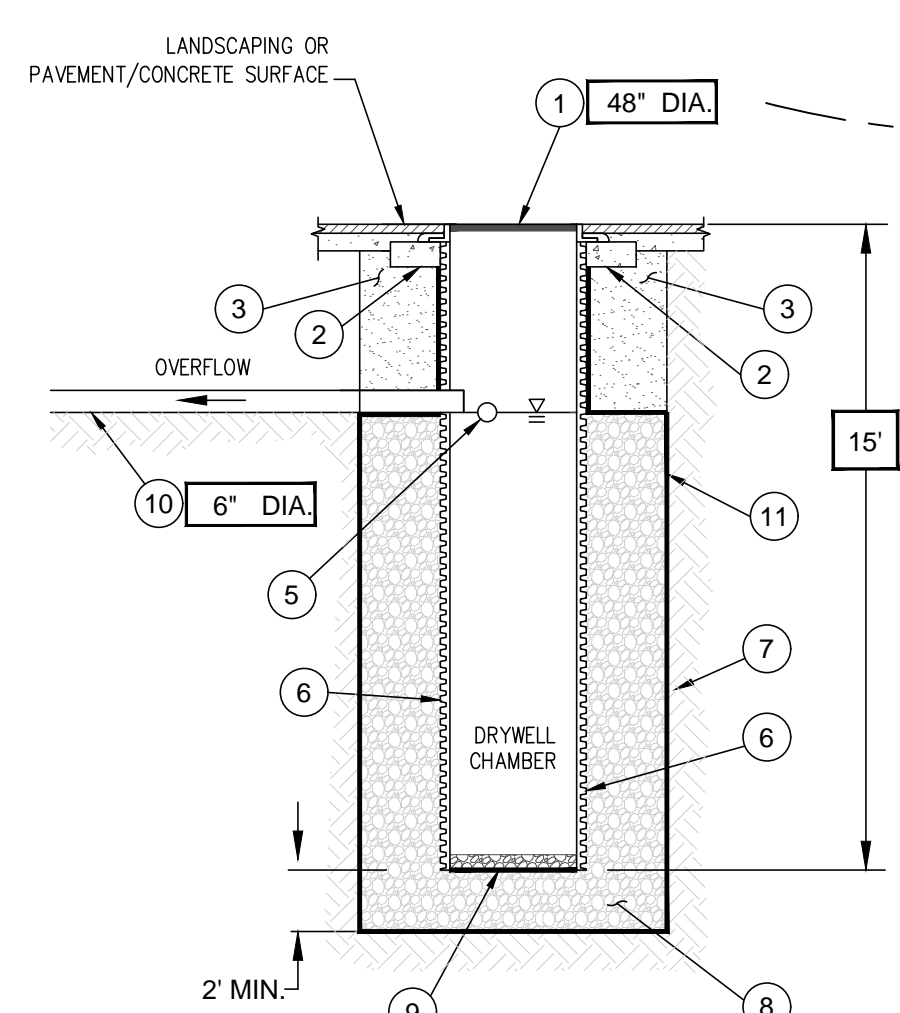
FOUND REBAR
NO I.D.

BUILDING PAD SLOPE
VERTICAL CHANGE IN ELEVATION=19.00'
HORIZONTAL LENGTH=84.00'
SLOPE=23%
ALLOWABLE LAND
DISTURBANCE=15.16%

LOT 31 - STONE CANYON
BOOK 62, PAGE 41, MCR
APN 172-47-031
5200 E SAN JUAN AVE
PARADISE VALLEY, AZ 85253
ZONING: R-43 (HILLSIDE)

LOT 32 - STONE CANYON
BOOK 62, PAGE 41, MCR
APN 172-47-032
5204 E SAN JUAN AVE
PARADISE VALLEY, AZ 85253
ZONING: R-43 (HILLSIDE)

- 1 CAST-IRON GRATE/LID - CAST-IRON RING AND GRATE/LID BOLTED IN TWO PLACES SECURED TO THE CONCRETE COLLAR WITH MORTAR. SEE DETAIL FOR GRATE DIAMETER SIZE. RIM/GRATE ELEVATION SET AS SHOWN ON PLANS.
- 2 CONCRETE COLLAR - CAST IN PLACE OR PRECAST WITH 4000 PSI CONCRETE. I.D. OF CONCRETE COLLAR TO MATCH O.D. OF PIPE. 12" WIDE CONCRETE BY 6" THICK.
- 3 BACKFILL OF RISER/CONNECTOR PIPE - COMPACTED FILL IN LANDSCAPE AREAS OR 1-SACK SLURRY STABILIZATION FOR PAVEMENT/CONCRETE SURFACING.
- 4 INTAKE SCREEN - USE SLOTTED SCH-40 SCREEN PIPE. SEE DETAIL FOR DIAMETER SIZE. 48" IN LENGTH WITH VENTED CAP.
- 5 OIL-ABSORBENT PILLOW - MINIMUM 1 GALLON CAPACITY.
- 6 HDPE DRYWELL LINER - 48" I.D. DUAL WALL PERFORATED HDPE. ADS N-12 OR EQUAL PIPE TO BE ALIGNED IN THE CENTER OF THE EXCAVATION.
- 7 MINIMUM 6" DIA. EXCAVATION - EXCAVATE IN A MANNER TO PROTECT DRAINAGE SOILS.
- 8 GRAVEL PACK - 3/8" TO 1-1/2" WASHED, CLEAN GRAVEL PACK TO INCLUDE SURROUNDING CHAMBER.
- 9 GEOTEXTILE INFILTRATION BARRIER - 4 OZ. NON-WOVEN FABRIC WITH 2 INCHES OF GRAVEL COVER FOR SECURING FABRIC.
- 10 OVERFLOW PIPE - USE PVC SCH-40 PIPE MATERIAL. SEE DETAIL FOR DIAMETER SIZE.
- 11 GEOTEXTILE FILTER FABRIC - 4 OZ. NON-WOVEN FABRIC. INSTALL UNDER THE GRATE, BETWEEN THE GRAVEL PACK AND NATIVE SOIL/BACKFILL, AND AROUND PERFORATED PIPE IF LOCATED IN COMPACTED FILL. CONTRACTOR/OWNER TO REMOVE FABRIC ON GRATE ONLY AFTER ALL CONSTRUCTION IS COMPLETE.



DRYWELL DETAIL
N.T.S.

REVISIONS:	DATE:	SCALE: 1"=20'	DATE: 05/14/18
		DESIGNED BY: NP	JOB: 171162
		DRAWN BY: DW	VERSION: 1.1
		CHECKED BY: JJ	PLOT DATE: 05/14/18

PRELIMINARY GRADING & DRAINAGE PLAN IMPROVEMENT PLAN

**LOT 32 - STONE CANYON
5204 E SAN JUAN AVE.,
PARADISE VALLEY,
AZ 85253**

P 602 889 1984 | F 602 445 9482
8808 N CENTRAL AVE., SUITE 288
PHOENIX, AZ 85020
PHOENIXLANDSCAPE.COM

Land DEVELOPMENT GROUP

PRELIMINARY NOT FOR CONSTRUCTION

DATE: 08/20/2019

C-2

2 OF 2

CALL TWO WORKING DAYS BEFORE YOU DIG
(602) 263 1100
BLUE STATE CENTER