

CLIENT
REGAL AMERICAN HOMES
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PHOENIX, AZ 85014
PH: 480-430-1035

SURVEYOR/ENGINEER
D & M ENGINEERING
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1020 EAST GILBERT DRIVE, SUITE D
TEMPE, AZ 85281
(480) 350-9590

SHEET INDEX
SHEET 1 - GRADING PLAN AND X-SECTIONS
SHEET 2 - DEMOLITION PLAN
SHEET 3 & 4 - STORM WATER MANAGEMENT PLAN

GRADING PLAN FOR

6837 NORTH LOST DUTCHMAN, PARADISE VALLEY, ARIZONA
A PORTION OF SECTION 9, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER
BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

LEGAL DESCRIPTION

LOT 24 CLUB ESTATES, AS RECORDED IN BOOK 74 AND PAGE 49 OF THE OFFICIAL RECORDS OF MARICOPA COUNTY, ARIZONA

PROJECT DATA

- PROJECT ADDRESS: 6837 NORTH LOST DUTCHMAN ROAD, PARADISE VALLEY, AZ 85253
- LOT AREA: 46,983 SF - 1.08 ACRES
- ASSESSOR'S PARCEL NUMBER: 169-32-026
- ZONING: R-43
- FLOOR AREA RATIO (F.A.R.): 11,335/46,983 ~ 24%
- PROPOSED AREA UNDER ROOF: 11,335 SF
- NEW DRIVEWAY MATERIAL: CONCRETE PAVER - 6,763 SF
MAXIMUM DRIVEWAY SLOPE: 9%
- EARTHWORK QUANTITIES: CUT - 2,047 CY ~ FILL 1,408 CY

CIVIL SITE PLAN NOTES

NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL ALL TOWN CODE REQUIREMENTS ARE COMPLIED INCLUDING, BUT NOT LIMITED TO LANDSCAPING, GROUNDED RESTORATION, FIRE FLOW, FIRE SAFETY AND ALL ON-SITE AND OFF-SITE 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 MACHINERY 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.

BENCHMARK

BRASS CAP IN HAND HOLE MARKING THE EAST QUARTER CORNER OF SECTION 9, TOWNSHIP 2 NORTH, RANGE 4 EAST OF GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.
MCDOT POINT NAME: 10888
ELEVATION: 1342.92 (NAVD88)

RETAINING WALL NOTES

NUMBER OF RETAINING WALLS: 14
TOTAL LENGTH OF ALL WALLS: 608
MAXIMUM HEIGHT OF RETAINING WALLS: 8'
MAXIMUM CONTINUOUS LENGTH OF RETAINING WALLS: 100'
MAXIMUM CONTINUOUS OF VISIBLE RETAINING WALL MEASURED FROM ANY POINT AROUND THE PROPERTY: 211 SF

HILLSIDE DISTURBANCE CALCULATIONS

LOT AREA: 46,983 SF ~ 1.079 AC
AREA UNDER ROOF ~ 11,335 SF
FLOOR AREA RATIO ~ 24%
BUILDING PAD SLOPE: 11.7%
VERTICAL: 20'
HORIZONTAL: 170'

ALLOWABLE DISTURBED AREA: 47,94%
ALLOWABLE DISTURBED AREA: 28,190 SF
EXISTING DISTURBED AREA: 28,515 SF
PROPOSED DISTURBED AREA: 22,434 SF (EXCLUDES LIVABLE AREA & CREDITS PAVER D/W AT 75% SEE METHODOLOGY BELOW)
PERCENT OF LOT STEEPER THAN NATURAL GRADE: 0 SF
VOLUME OF CUT: 2,047 CY
VOLUME OF FILL: 1,408 CY

REQUIRED HILLSIDE ASSURANCE (CUT + FILL) X \$25: \$86,375

LOT DISTURBANCE METHODOLOGY

AREA OF EXISTING DRIVE TO BE RE-BUILT: 1,290 SF
AREA OF NEW DRIVE WAY: 6,763 SF
NEW DRIVE AREA - LESS EXISTING DRIVE RE-BUILT: 6,763 SF - 1,290 SF = 5,473 SF
NEW DRIVE TO BE CONCRETE PAVER AND COUNT AT A RATE OF 75% TOWARDS DISTURBANCE.
EFFECTIVE DRIVE AREA: 5,473 X 0.75 = 4,105
DISTURBED AREA EXCLUSIVE OF DRIVEWAY, GARAGE AND LIVABLE AREAS: 18,329 SF

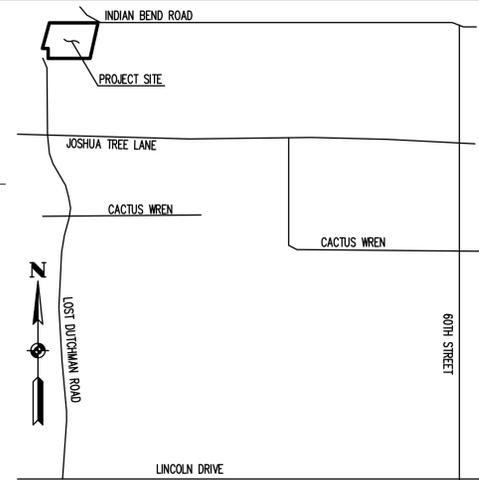
TOTAL LOT DISTURBANCE: 18,329 SF + 4,105 SF = 22,434 SF ~ 47.75%

LEGEND

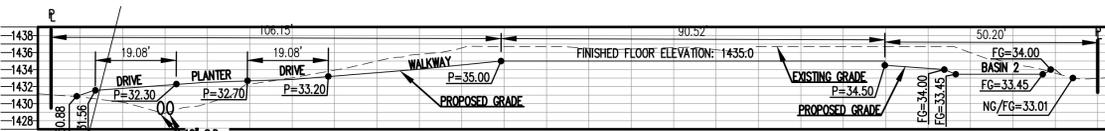
- BOUNDARY/LOT LINE
- EASEMENT LINE
- SETBACK LINE
- EXISTING CONTOUR
- EXISTING WALL
- FLOWLINE
- EDGE OF PAVEMENT
- EX. BACK OF CURB
- CENTERLINE
- DISTURBANCE LIMITS
- NEW RETAINING/STEM WALL
- EXISTING STORM DRAIN
- EXISTING BUILDING
- EXISTING DISTURBANCE LINE
- HMC
- TRW TOP RETAINING WALL
- BSL BUILDING SETBACK LINE
- UTL UTILITY
- R/W RIGHT OF WAY
- B/C BACK OF CURB
- C CONCRETE
- P PAVEMENT/PAVER GRADE
- TF TOP OF FOOTER
- ESMT. EASEMENT
- FG FINISHED GRADE
- TSW TOP STEM WALL
- FL FLOW LINE

CONSTRUCTION NOTES

- CONSTRUCT CONCRETE PAVER DRIVEWAY. MATERIAL PER OWNER.
- FURNISH AND INSTALL 18" CMP STORM DRAIN. INVERT PER PLAN. MITER END OF PIPE TO MATCH ADJACENT FINISHED GRADE. PIPE TO BE SLEEVED THROUGH ON-SITE WALLS.
- FURNISH AND INSTALL 4" HDPE STORM DRAIN. INVERT PER PLAN. MITER END OF PIPE TO MATCH ADJACENT FINISHED GRADE.
- CONSTRUCT BUILDING PAD PER RECOMMENDATIONS OF SITE GEOTECHNICAL REPORT.
- CONSTRUCT RETAINING WALL. SHOWN HERE FOR REFERENCE AND GRADE. DETAILS BY SEPARATE SHOP DRAWING AND PERMIT.
- INSTALL 5" SLOTTED DRAIN. INDS PRO SERIES CHANNEL, OR EQUIVALENT.
- CONNECT TO EXISTING AND EXTEND DOMESTIC WATER SERVICE. SERVICE SIZE PER PLUMBING PLANS. COORDINATE METER INSTALLATION AND CONNECTION WITH UTILITY PROVIDER.
- INSTALL 4" SANITARY SERVICE CONNECTION WITH CLEAN-OUTS LOCATED AT ALL BENDS, 100' O.C. AND AT 5' FROM THE BUILDING. COORDINATE CONNECTION TO EXISTING SERVICE STUB WITH UTILITY PROVIDER. MINIMUM SLOPE 1/8" PER FOOT. SEWER MAIN EXTENSION TO PROJECT SITE TO BE CONSTRUCTED CONCURRENTLY WITH LOT DEVELOPMENT.
- CONSTRUCT EXTENDED STEM WALL. SHOWN FOR REFERENCE AND GRADE ONLY. BY SEPARATE SHOP DRAWING AND PERMIT.
- CONSTRUCT VIEW FENCE/POOL BARRIER AT LOCATION WHERE TOP OF RETAINING WALL IS LESS THAN 54" ABOVE ADJACENT FINISHED GRADE OUTSIDE OF THE RETAINING WALL.
- FURNISH AND INSTALL DUMPED ANGULAR RIP-RAP, D50: 18", MINIMUM SIZE 12". PROVIDE GEOTEXTILE FILTER FABRIC BELOW RIP-RAP INSTALLATION. INSTALLATION METHOD TO PRESERVE INTEGRITY OF FILTER MATERIAL AND MATCH FINISHED GRADE OF RIP TO EXISTING NATIVE GRADES. MINIMUM DEEP OF RIP-RAP LAYER TO BE 24".



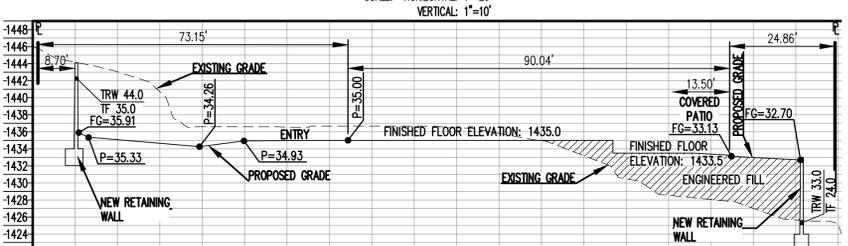
VICINITY MAP
SCALE: 1"=500'



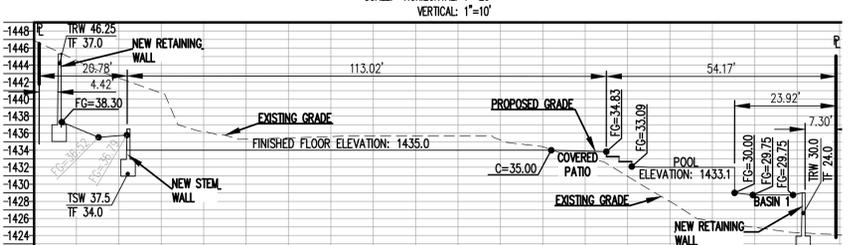
SECTION 1-1
SCALE: HORIZONTAL: 1"=20'
VERTICAL: 1"=10'



SECTION 2-2
SCALE: HORIZONTAL: 1"=20'
VERTICAL: 1"=10'



SECTION 3-3
SCALE: HORIZONTAL: 1"=20'
VERTICAL: 1"=10'



SECTION 4-4
SCALE: HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

RETENTION CALCULATIONS

PRE-IMPROVEMENT CONDITIONS:

LANDSCAPED AREA (DESERT): 36,430 sf (C: 0.50)
DEVELOPED AREA (IMPERVIOUS): 10,553 sf (C: 0.95)

IMPROVED CONDITIONS:

IMPERVIOUS AREA (ROOF/CONCRETE): 20,184 SF (C: 0.95)
LANDSCAPED AREA (DESERT): 26,799 SF (C: 0.50)

PRE-IMPROVEMENT WEIGHTED RUN-OFF COEFFICIENT (C_{w-pre}):

IMPERVIOUS AREA X 0.95 + LANDSCAPED (DESERT) AREA X 0.50
46,983

C_{w-pre} = 0.60

POST-IMPROVEMENT WEIGHTED RUN-OFF COEFFICIENT (C_{w-post}):

IMPERVIOUS AREA X 0.95 + LANDSCAPED (DESERT) AREA X 0.50
46,983

C_{w-post} = 0.69

RETENTION REQUIRED V (1.100 CF MIN.):

V_r = AREA X DEPTH X (C_{w-post} - C_{w-pre})

V_r = 46,983 X 2.82 X (0.69 - 0.60)

12

V_r = 994 CF USE 1,100 CF

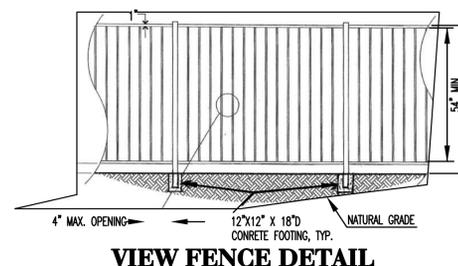
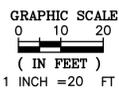
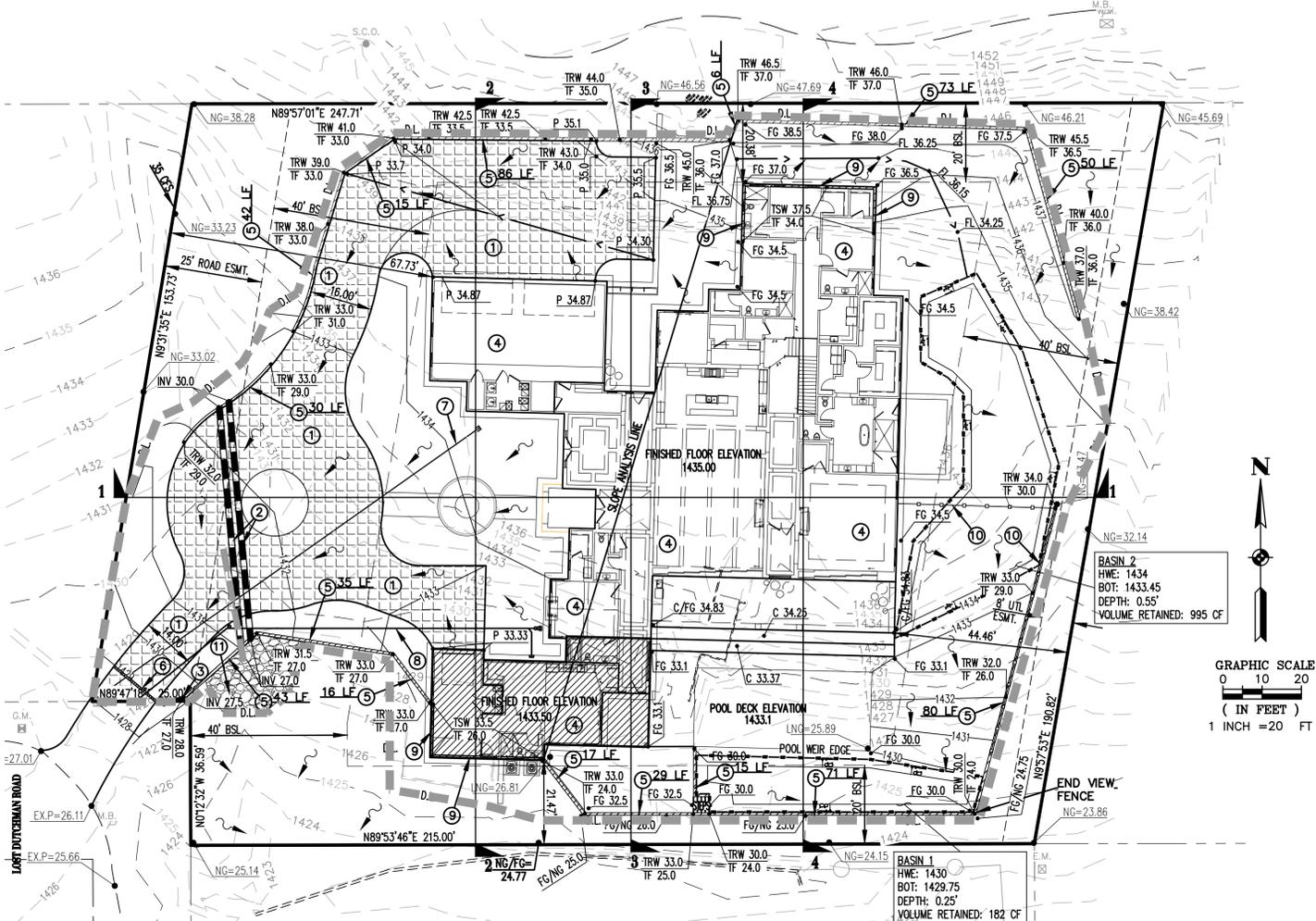
V_p = 1,177 CF

DRAINAGE STATEMENT

SITE GRADING AND DEVELOPMENT WILL MAINTAIN EXISTING DRAINAGE PATTERNS. THE PROPOSED FINISHED FLOOR ELEVATION IS ELEVATED SUFFICIENTLY TO BE A MINIMUM OF 1" ABOVE THE 100-YEAR WATER SURFACE ELEVATION. THE SUBJECT PROPERTY IS IMPACTED BY OFF-SITE STORM WATER RUN-OFF DEVELOPED OVER APPROXIMATELY 6 ACRES OF THE SOUTHERN SLOPES OF MUMMY MOUNTAIN. THE ANTICIPATED PEAK DISCHARGE FROM THE CONTRIBUTING DRAINAGE AREA IS 35 CFS. THE STORM WATER WILL BE ALLOWED TO TRAVERSE THE PROJECT SITE ALONG THE HISTORIC FLOW PATH AND BE CONVEYED VIA TWO 18" CMP STORM DRAIN PIPE UNDER THE DRIVE IN A MANNER CONSISTENT WITH THE EXISTING CONDITIONS. THE CAPACITY OF EACH OF THE PROPOSED STORM DRAIN PIPES GIVEN BY MANNING'S EQUATION FOR OPEN CHANNEL FLOW IS 22.5 CFS. THE PROPOSED ANALYSIS NEGLECTS THE EFFECTS OF PRESSURE HEAD ON THE STORM DRAIN SYSTEM AND YIELDS A CONSERVATIVE ESTIMATE THE OF THE SYSTEMS CAPACITY. THE SITE WILL PROVIDE 1,100 CF OF STORM WATER RETENTION PER THE TOWN'S DESIGN REQUIREMENTS.

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

| COMMUNITY NUMBER | PANEL # | SUFFIX | DATE OF FIRM (INDEX DATE) | FLOOD ZONE | BASE FLOOD ELEV. (IN AO ZONE, USE DEPTH) |
|------------------|---------|--------|---------------------------|------------|--|
| 040049 | 1765 | L | 10-16-13 | X | NA |



VIEW FENCE DETAIL
N.T.S.

CALL TWO WORKING DAYS BEFORE YOU DIG BLUE STAKE CENTER 602-263-1100 OR 811 INSIDE MARICOPA COUNTY

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REGAL AMERICAN HOMES - LOST DUTCHMAN
6837 NORTH LOST DUTCHMAN ROAD
PARADISE VALLEY, ARIZONA 85253

CLIENT/PROJECT

REVISIONS

NO. DATE APP. DESCRIPTION

DESIGNED SWB
DRAWN AGY
CHECKED DTT
DATE 7-7-17
SCALE 1"=20'
PROJECT 170112
FILE NAME Survey.dwg

EXPIRES: 3/31/20

DESIGNED SWB
DRAWN AGY
CHECKED DTT
DATE 7-7-17
SCALE 1"=20'
PROJECT 170112
FILE NAME Survey.dwg

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SHEET 1 OF 4

