

Preliminary Basis of Design
Sewer
FOR
Springhill Suites – 68th & Camelback Road

APN# 173-36-008B

6808 E Camelback Rd.

Scottsdale, AZ 85251

Submittal - August 12, 2019

Prepared for:

Kuber Development

1550 S. 52nd Street

Tempe, Arizona 85281

Prepared by:

Mike Jackson, P.E.



1600 N Desert Drive, Suite 230

Tempe, AZ 85281

Phone: (480) 951-0517 Fax: (480) 951-2353

August 12, 2019



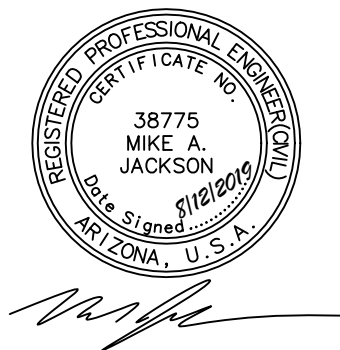
A handwritten signature in black ink, likely of Mike A. Jackson, written over the bottom of the professional seal.

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INTRODUCTION

Springhill Suites is planning to develop a new 4 story hotel near the intersection of the NEC of Camelback Road and 68th Street in the City of Scottsdale. The hotel will have 122 rooms in total. The proposed project is approximately 2.06 acres of undeveloped land. A new 6" sewer service is proposed to serve this project. Enclosed in this report are preliminary proposed demand calculations, and capacity calculations of the proposed 6" service.

EXISTING CONDITIONS

There is an existing 8" sanitary sewer proposed for connection in 68th street. The exact flow, slope, and capacity are unknown and to be verified by the City of Scottsdale.

PROPOSED CONDITIONS

122 Guest Rooms

A grease trap will be installed within the hotel for waste from the food service area. No exterior grease interceptor will be required. The hotel will have laundry facilities.

DESIGN CRITERIA

380 gpd per room. Peaking factor = 4.5.
30 gpm for pool

PROPOSED DESIGN FLOW

Average Day Demand = $380 \text{ gpd/room} \times 122 = 46,360 \text{ gpd}$ (32.19 gpm or 0.072 cfs)

DESIGN FLOW WITH PEAKING FACTOR

Design Flow with Peaking Factor = $46,360 \times 4.5 = 208,620 \text{ gpd}$ (144.87 gpm or 0.323 cfs)
Off-Peak Additional Demand (Pool Backwash) = 30 gpm
Maximum Design Flowrate = 174.87 gpm (.390 cfs)

CAPACITY CALCULATIONS

The proposed Springhill Suites demand based on unit demands and peaking factor above is 144.87 gpm plus 30 gpm for Pool Backwash.

Based on the City of Scottsdale existing sewer model, to be verified by the City, it is our understanding that there is capacity in the existing 8" line for this additional flow. However, this has not been confirmed with existing demand data or existing flow modeling.

Proposed 6" Service

The capacity of the proposed 6" sewer at a slope of 2.0% @ 0.70 d/D = 298 gpm (0.665 cfs)

The depth of flow at the Maximum Design Flowrate = 0.25 feet, which is d/D = 0.50

The velocity of flow at the Maximum Design Flowrate = 3.95 ft/s

CONCLUSIONS

The proposed project improvements including a new 6" sewer service connection to the existing 8" VCP sewer main in 68th Street will be adequate to serve the proposed project, pending slope verification and existing flow modeling. All sewer lines in the Springhill Suites project will conform to the City of Scottsdale and UPC standards with a minimum pipe slope of 2%. Proposed sewer construction, materials, and appurtenances shall be per DSPM, Chapters 6 & 7 and the City of Scottsdale Standard Detail Series 2300 and 2400.

Figure 1: Utility Plan

68TH ST & CAMELBACK ROAD

A PORTION OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 22,
TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN,
MARICOPA COUNTY, ARIZONA

PRELIMINARY GRADING AND DRAINAGE PLAN

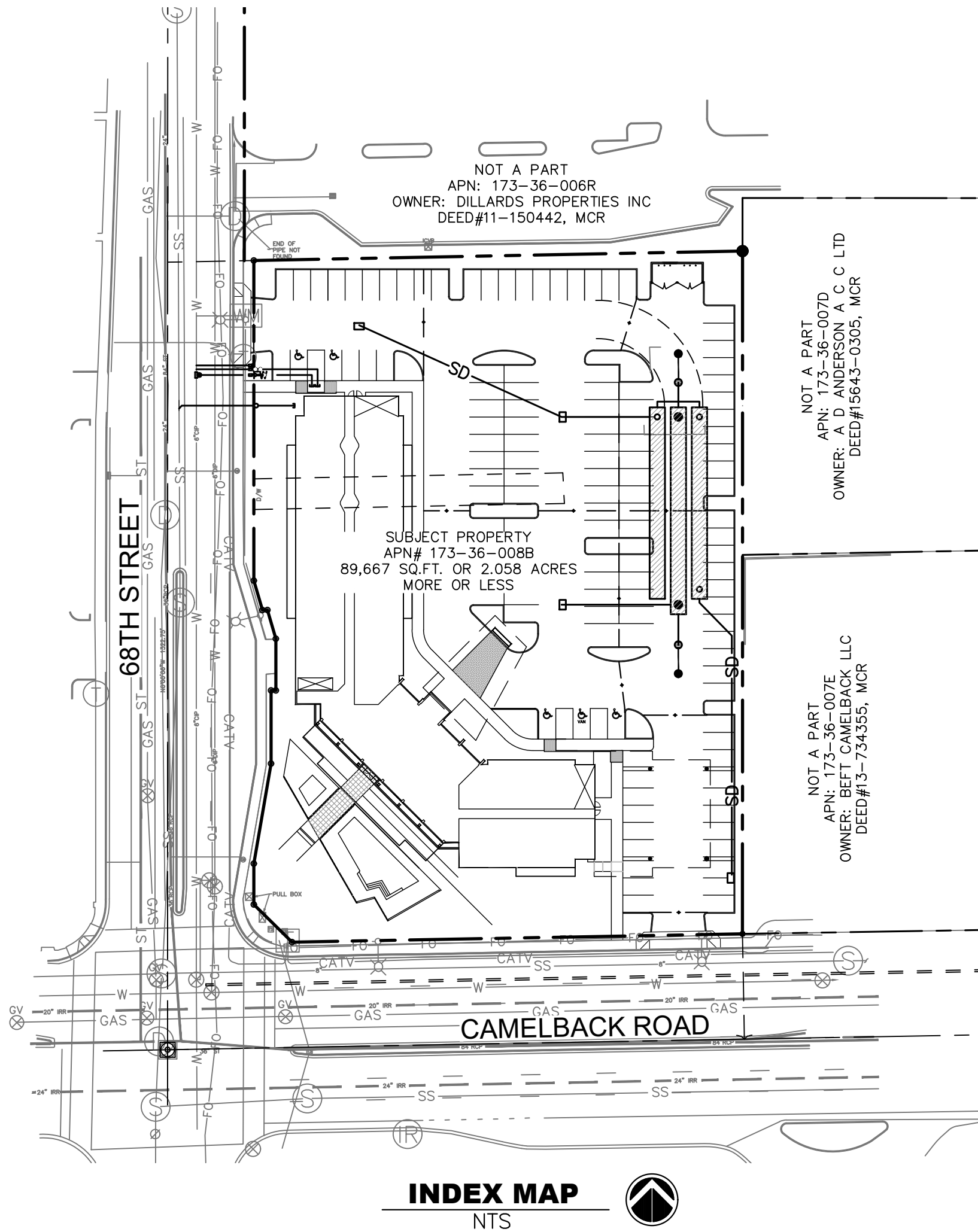
LEGAL DESCRIPTION

PARCEL NO. 1:

LOT 7, ARCADIA VISTA UNIT 4, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 21 OF MAPS, PAGE 38;
EXCEPT THE EAST 355.00 FEET; AND
EXCEPT THE NORTH 250.00 FEET; AND
EXCEPT THAT PORTION CONVEYED IN WARRANTY DEED RECORDED IN RECORDING NO. 93-0011829.

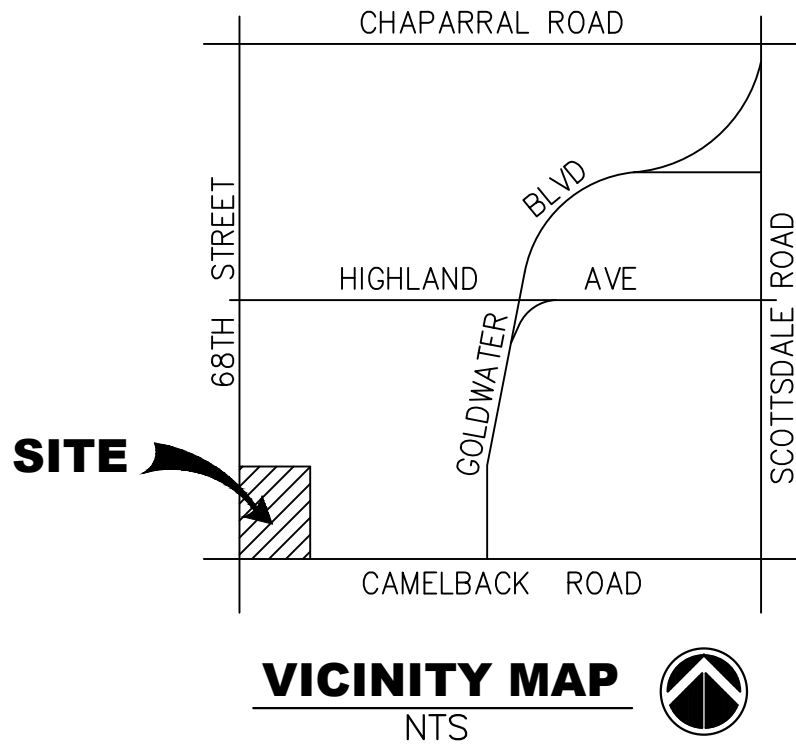
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LEGEND

---	PROPERTY BOUNDARY	S	SLOPE
---	SAWCUT LINE/LIMITS OF GRADING	FT	FOOT
---	CENTER LINE	TC	TOP OF CURB ELEVATION
1581 ---	EXISTING MINOR CONTOUR	GB	GRADE BREAK
1580 ---	EXISTING MAJOR CONTOUR	SW	SIDEWALK
1581 ---	PROPOSED MINOR CONTOUR	P	PAVEMENT
1580 ---	PROPOSED MAJOR CONTOUR	C	CONCRETE
W ---	PROPOSED WATER LINE SERVICE	—◆—	GRADE BREAK
---S---	CONCEPTUAL GAS LINE	1.0%	FLOW ARROW
6"S ---	PROPOSED SANITARY SEWER LINE	P=1425.00	PROPOSED SPOT ELEVATION
		(P=1424.25)	EXISTING SPOT ELEVATION



SHEET INDEX	
SHEET NO.	SHEET TITLE
C1	PRELIMINARY G&D COVER SHEET
C2	PRELIMINARY GRADING & DRAINAGE PLAN

ARCHITECT

KULTNA LLC
1550 N 52ND STREET
TEMPE, AZ 85
480-966-0955
EMAIL: SHANEKUBER@GMAIL.COM

CIVIL ENGINEER

IMEG CORP
1600 N. DESERT DRIVE, SUITE 230
TEMPE, AZ 85281
PHONE: 480-378-3925
CONTACT: MIKE JACKSON

SITE DATA

A.P.N.: 173-36-008B
AREA : 86,664 S.F. OR 2.06 AC.
ADDRESS: NE CORNER 68TH ST. & CAMELBACK ROAD
SCOTTSDALE, ARIZONA 85251

BASIS OF BEARING

THE BASIS OF BEARING USED FOR THIS SURVEY IS THE SOUTH LINE OF THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 2 NORTH, RANGE 4 EAST, AS SHOWN ON THE SUBDIVISION PLAT OF "ARCADIA VISTA UNIT 4" FILED IN BOOK 21, PAGE 48, MARICOPA COUNTY RECORDS.

SAID BEARING = SOUTH 88° 57' 00" WEST

PROJECT BENCHMARK

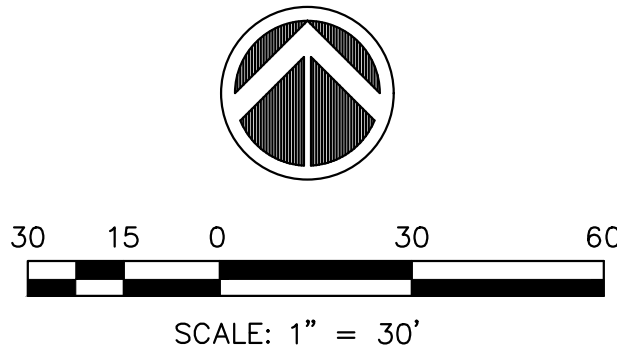
THE BENCHMARK USED FOR THIS SURVEY IS THE EAST 1/4 CORNER OF SECTION 21, UNIQUE POINT ID 3158, BEING MARKED BY A 3" AZ HIGHWAY DPT BRASS CAP IN HANDHOLE, 0.75' DOWN, HAVING AN ELEVATION OF 1,305.137 FEET, MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION (NAVD88).

SITE BENCHMARK

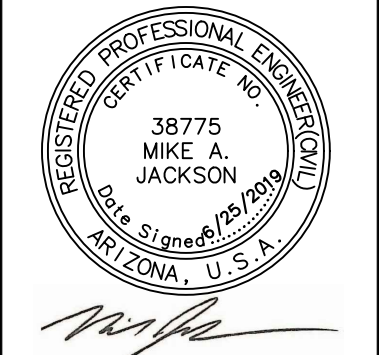
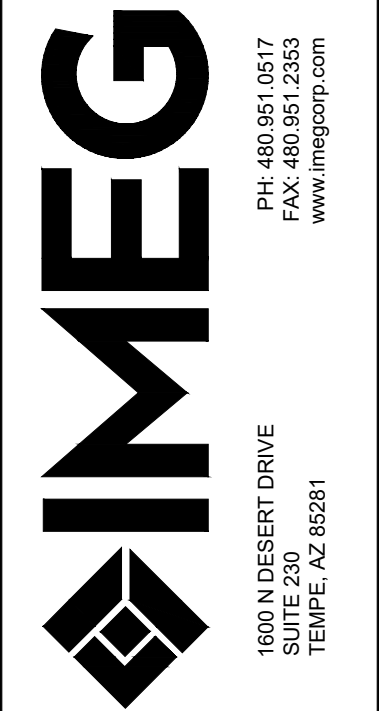
THE BRASS CAP IN HANDHOLE BEING THE CENTER OF SECTION 22, TOWNSHIP 2 NORTH, RANGE 4 EAST, LOCATED IN THE CENTERLINE INTERSECTION OF 68TH STREET & CAMELBACK ROAD.
SAID ELEVATION = 1288.75 (N.A.V.D.88)

FLOOD PLAIN CERTIFICATION

THIS IS TO CERTIFY THAT THE ABOVE SUBJECT PROPERTY LIES WITHIN SHADED ZONE 'X' AS DESIGNATED ON THE FIRM FLOOD INSURANCE RATE MAP, MAP NUMBER 04013C1770L, DATED OCTOBER 16, 2013. SHADED ZONE 'X' IS DESIGNATED AS BEING AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY UNDER THAT CIRCUMSTANCE.



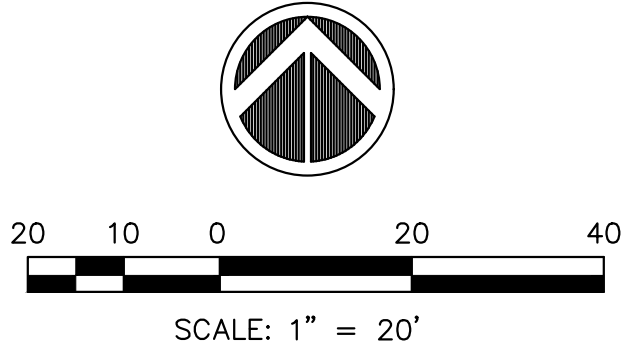
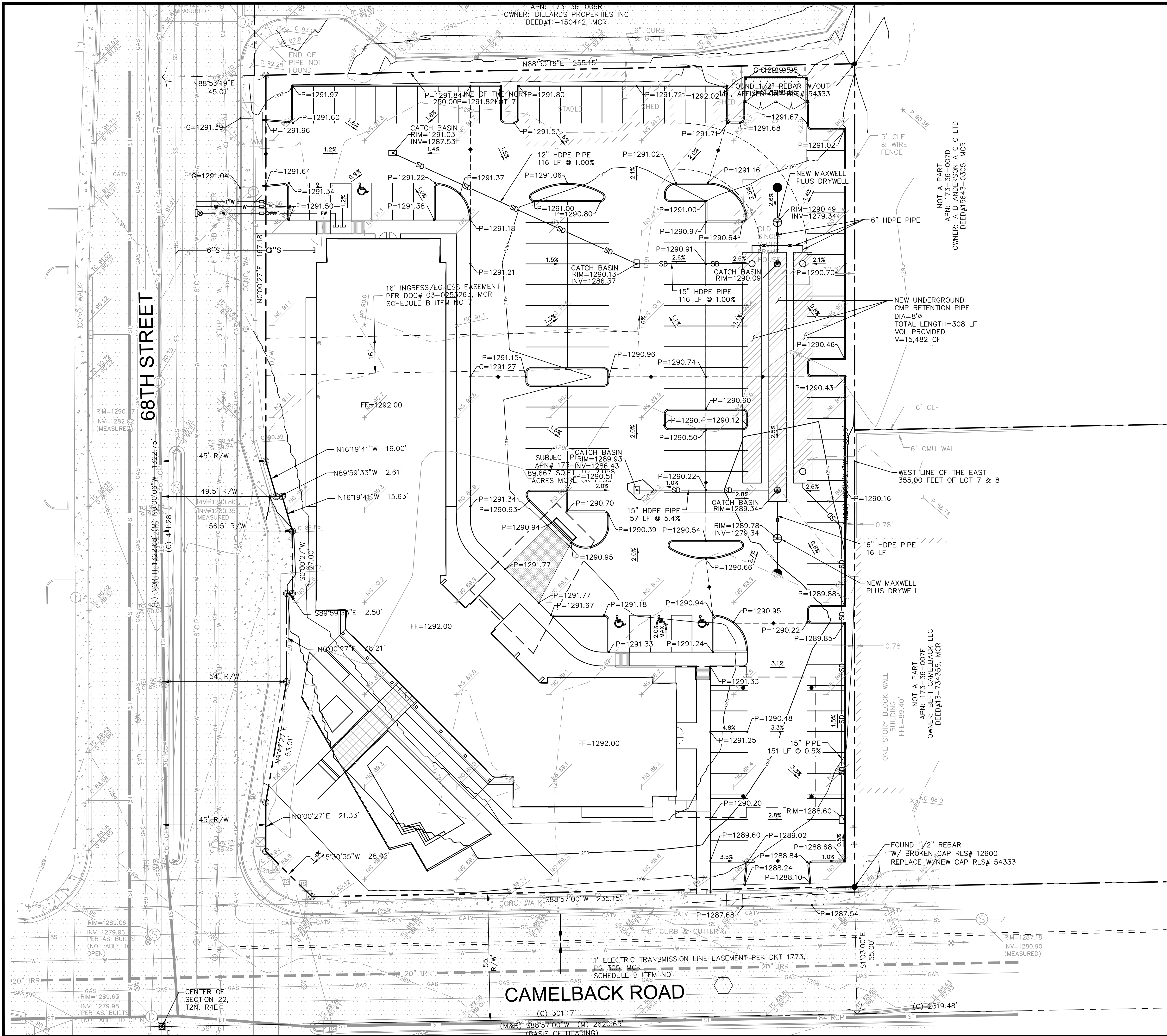
REVISIONS		DATE
DESCRIPTION		
No.		



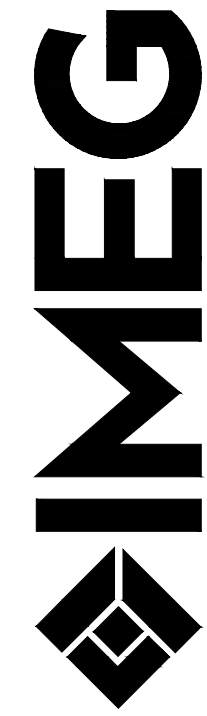
68TH ST & CAMELBACK ROAD
68TH ST & CAMELBACK ROAD, SCOTTSDALE, AZ
PRELIMINARY G&D COVER SHEET

IMEG Project No:
19001014.00
File Name:
19001014-C1-Prelim Cover.dwg
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Field Book No:
Drawn By: RMR
Checked By: MAJ
Date: 05/16/2019

C1
Sheet 1 of 2



REVISIONS	
No.	DESCRIPTION



1600 N DESERT DRIVE
SUITE 230
TEMPE, AZ 85281

PH: 480.951.0517
FAX: 480.951.1353
www.imegcorp.com



68TH ST & CAMELBACK ROAD
68TH ST & CAMELBACK ROAD, SCOTTSDALE, AZ
PRELIMINARY GRADING & DRAINAGE PLAN

IMEG Project No:
19001014.00
File Name:
19001014-C2-Prelim G&D.dwg
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Field Book No:
Drawn By: RMR
Checked By: MAJ
Date: 05/16/2019

C2
Sheet 1 of 2

LEGEND

---	PROPERTY BOUNDARY	□	NEW WATER METER
---	EASEMENT LINE	○	NEW BACKFLOW PREVENTOR
---	CENTER LINE	●	NEW FIRE HYDRANT
---	6"F	+	NEW FIRE DEPARTMENT CONNECTION
---	6"S	○	NEW CLEANOUT
---	2"W	ESMT	NEW EASEMENT
---	G		
---	E		

68TH ST & CAMELBACK ROAD

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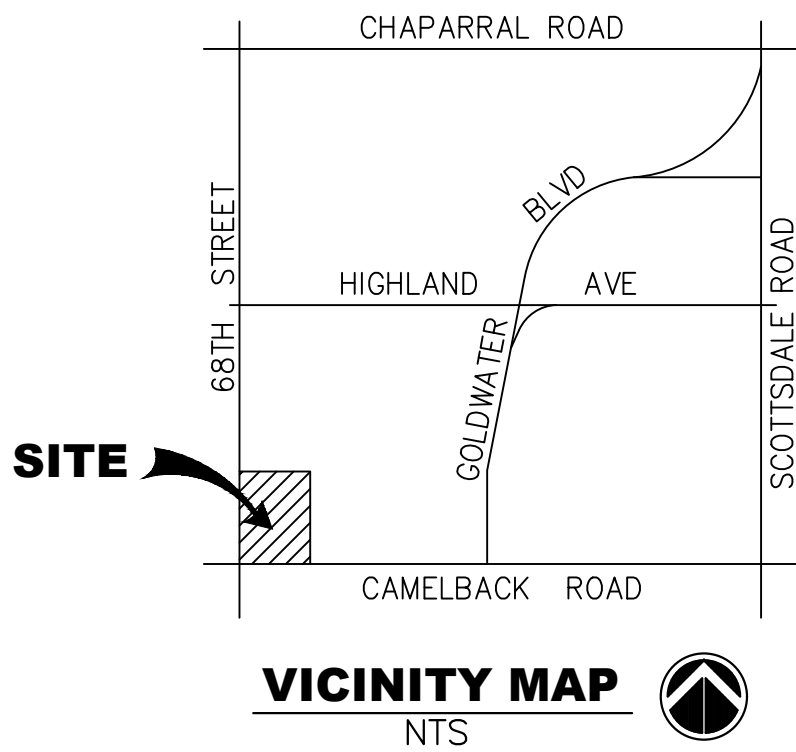
PRELIMINARY UTILITY PLAN

ARCHITECT

KULTNA LLC
1550 N 52ND STREET
TEMPE, AZ 85
480-966-0955
EMAIL: SHANEKUBER@GMAIL.COM

CIVIL ENGINEER

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WATER KEYNOTES

- CONTRACTOR TO POTHOLE AND VERIFY VERTICAL AND HORIZONTAL LOCATION OF EXISTING 6" CIP WATER LINE PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES. INSTALL 2" DOMESTIC SERVICE (TYPE K COPPPER) PER COS STD DTL 2330.
- INSTALL 2" METER PER COS STD DTL 2345, 2345-1 AND 2345-2 TO BE INSTALLED BY CITY OF SCOTTSDALE CREWS AND AFTER APPROPRIATE FEES HAVE BEEN PAID.
- INSTALL 3" REDUCED PRESSURE BACK FLOW PREVENTOR PER COS STD DTL 2352.
- INSTALL 3" PVC WATERLINE, SCHEDULE 80 OR BETTER. LENGTH PER PLAN.
- REFER TO PLUMBING PLANS FOR CONTINUATION.
- CONTRACTOR TO POTHOLE AND VERIFY VERTICAL AND HORIZONTAL LOCATION OF EXISTING 12" WATER LINE PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES. INSTALL 1" PVC LANDSCAPE WATERLINE.
- CONSTRUCT 1" LANDSCAPE METER.
- REFER TO LANDSCAPE PLANS FOR CONTINUATION.
- PROVIDE 12" CLEAR VERTICAL SEPARATION FROM UNDERGROUND ELECTRICAL UTILITY PER APS ELECTRICAL SERVICE REQUIREMENTS.
- SAWCUT EXISTING AC PAVEMENT, REMOVED AND REPLACE TO MATCH EXISTING.

SEWER KEYNOTES

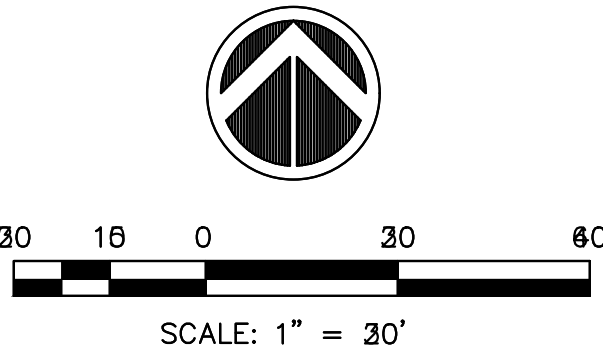
- CONTRACTOR TO FIELD VERIFY VERTICAL AND HORIZONTAL LOCATION OF THE EXISTING SEWER STUB PRIOR TO TRENCHING AND CONTACT ENGINEER WITH ANY DISCREPANCIES ARE FOUND.
- CONSTRUCT SEWER 6" SEWER BUILDING CONNECTION PER MAG STD DTL 440-1, TYPE "A".
- INSTALL CLEANOUT PER MAG STD DTL 441.
- INSTALL 6" PVC (SDR-35) SANITARY SEWER LINE. LENGTH & SLOPE PER PLAN.
- REFER TO PLUMBING PLANS FOR CONTINUATION. CAP LINE.
- SAWCUT EXISTING AC PAVEMENT, REMOVED AND REPLACE TO MATCH EXISTING.

FIRE KEYNOTES

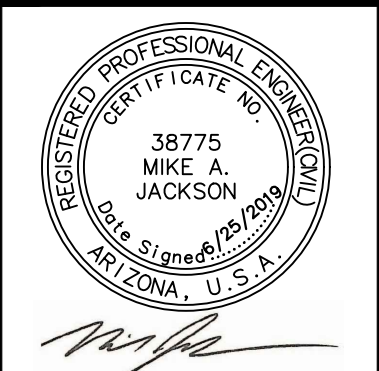
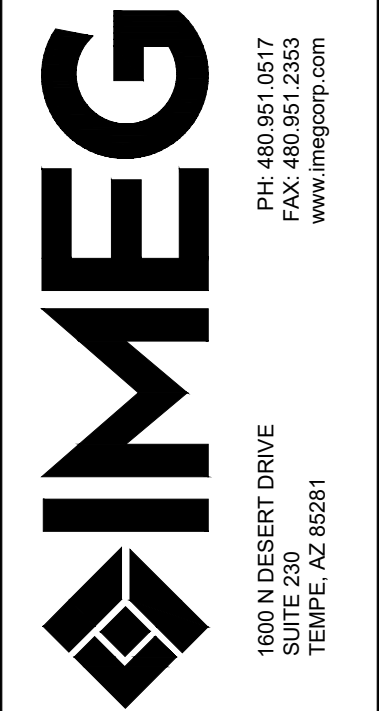
- INSTALL FIRELINE CONNECTION PER COS STD DTL 2362-2 AND MAG STD DTL 340. CONTRACTOR TO FIELD VERIFY VERTICAL AND HORIZONTAL LOCATION OF EXISTING WATERLINE PRIOR TO TRENCHING CONTRACTOR SHALL ADJUST PROPOSED VERTICAL AND HORIZONTAL WATERLINE ALIGNMENT AS REQUIRED TO TIE INTO EXISTING WATERLINE.
- INSTALL 6" DUCTILE IRON PIPE (DIP) CLASS 350 WATERLINE, JOINT RESTRAINT PER MAG STD DTL 303-1 & 303-2 WITH POLY WRAP. LENGTH PER PLAN.
- INSTALL 6" DUCTILE IRON PIPE (DIP) FITTING. TYPE PER PLAN.
- INSTALL CAP. SEE PLUMBING PLAN FOR CONTINUATION.

DRY UTILITY KEYNOTES

- APPROXIMATE LOCATION OF ELECTRICAL TRANSFORMER. CONTRACTOR TO COORDINATE WITH ELECTRICAL PLANS FOR INSTALLATION AND EXACT LOCATION.
- CONCEPTUAL ROUTING FOR ELECTRICAL CONDUIT. CONTRACTOR TO COORDINATE WITH ELECTRICAL PLANS FOR INSTALLATION AND EXACT ROUTING.
- SEE ELECTRICAL PLAN FOR CONNECTION TO PROVIDER.



REVISIONS	DESCRIPTION	DATE
No.		



68TH ST & CAMELBACK ROAD
68TH ST & CAMELBACK ROAD, SCOTTSDALE, AZ
PRELIMINARY UTILITY PLAN

IMEG Project No:
19001014.00
File Name:
19001014-C3-Utility.dwg
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Field Book No:
Drawn By: RMR
Checked By: MAJ
Date: 05/16/2019
UT-1
Sheet 1 of 1

Figure 2: Capacity Calculations

Channel Report

6 VCP @ 2.0 Full Capacity

Circular

Diameter (ft)	= 0.50
Invert Elev (ft)	= 100.00
Slope (%)	= 2.00
N-Value	= 0.013
Calculations	
Compute by:	Known Depth
Known Depth (ft)	= 0.35

Highlighted

Depth (ft)	= 0.35
Q (cfs)	= 0.665
Area (sqft)	= 0.15
Velocity (ft/s)	= 4.52
Wetted Perim (ft)	= 0.99
Crit Depth, Yc (ft)	= 0.42
Top Width (ft)	= 0.46
EGL (ft)	= 0.67

