



Abbreviated Water and Sewer Needs

PRELIMINARY WATER & SEWER BASIS OF DESIGN REPORT FOR KERRY'S CAR CARE SHEA

Scottsdale, Arizona

5 September 2019

PREPARED FOR

Larson Associates Architects, LLC
3807 North 24th Street, Suite 100
Phoenix, Arizona 85016

DEVELOPER

SimonCRE
6900 East 2nd Street
Scottsdale, Arizona 85251

SITE ADDRESS

11653 East Sahuaro Drive
Scottsdale, Arizona 85259

PRELIMINARY Basis of Design Report

☐ ACCEPTED

☐ ACCEPTED AS NOTED

☒ REVISE AND RESUBMIT



Disclaimer: If accepted; the preliminary approval is granted under the condition that a final basis of design report will also be submitted for city review and approval (typically during the DR or PP case). The final report shall incorporate further water or sewer design and analysis requirements as defined in the city design standards and policy manual and address those items noted in the preliminary review comments (both separate and included herein). The final report shall be submitted and approved prior to the plan review submission.

For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY rsacks

DATE 9/30/2019

PREPARED BY

CYPRESS
CIVIL DEVELOPMENT
strength + sustainability

4450 north 12th street, #228

phoenix, arizona 85014

CYPRESS # 19.101



10-UP-2019
09/26/2019

PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Kerry's Car Care Shea' and is located at 11653 East Sahuaro Drive in Scottsdale, Arizona. It is located on the south side of East Sahuaro Drive, west of North 117th Place. Refer to Appendix A for location map.

The proposed project consists of the construction of a single story, free standing 5,400 square foot building with the required paved parking, access lanes, and amenity landscaping.

The utility provider for both water and sewer facilities is the City of Scottsdale.

WATER EXISTING CONDITIONS

Per available utility maps and as-built records, there is an 8" DIP main along the western boundary of the Project with an 8" stub to the Project northwest of the building and a 6" stub southwest of the building.

WATER PROPOSED CONDITIONS

As a result, the design team intends connect to the 8" northwest stub to serve a new fire hydrant at the northeast corner of the Project and to connect to the existing 6" southwest stub for fire service to the new building. The design team intends to tap the existing 8" main with a new 2" line and 2" meter for domestic service to the new building and a new 1" line and 1" meter for irrigation service. The 8" main is anticipated to provide adequate sizing and pressure to supply the intended domestic and fire services to the new building. Refer to Appendix B for City of Scottsdale Water and Sewer Quarter Section Map and Recent Survey showing existing water stub and sewer manhole locations.

WASTEWATER EXISTING CONDITIONS

Per available utility maps and as-built plans for the Mountainside Plaza development, there is an existing 8" VCP sewer main in the drive west of the project ending in a manhole at the southwest of the proposed building.

WASTEWATER PROPOSED CONDITIONS

The design team intends to core and connect to the existing manhole with a new 6" sewer service to the new building. Additionally, a second connection will be added with a new 6-inch stub to the future retail development area east of the new building.

REQUIRED WATER COMPUTATIONS

The total building area after the expansion will be 5,400 square feet. The building shall be type V-B construction. Per the International Fire Code, Table B105.1, the building requires a minimum fire flow of 2,000 GPM for a 2-hour duration. The existing building and new expansion will have automatic sprinklers installed resulting in an allowable 50% reduction in fire flow requirements,

Should use design criteria shown in DS & PM for demands not fixture demands. Will accept this time.

with a minimum fire flow of 1,500 GPM. Therefore, the required fire flow will be 1,500 GPM for a 2-hour duration. At the time of this report, no recent fire flow test had been conducted, but it is assumed that the existing line will be sufficient to meet this need.

Don't assume. Required to conduct fire flow test.

Average Day Demand (Commercial/Retail): $0.00111/\text{SF} \times 5,700 \text{ SF} = 6.33 \text{ GPM}$

Peak Hour Demand: $3.5 \times 6.33 \text{ GPM} = 22.16 \text{ GPM}$

Maximum Day Demand + Fire Flow Demand = $2 \times (6.33 \text{ GPM}) + 1,500 \text{ GPM} = 1,512.66 \text{ GPM}$

The table below contains the expected water supply fixture units for the new building:

TYPE	QUANTITY	WFSU/FIXTURE	TOTAL WFSU
WATER CLOSET (TANK)	2	5	10
LAVATORY	2	2	4
URINAL	1	5	5
HAND SINK	1	2	2
JANITOR'S SINK	1	2	2
		TOTAL	23

The Project is designed to have a water supply fixture unit count of 23. The project is designed with approximately 100 linear feet of 2-inch distribution pipe with a 2-inch meter. Per the International Plumbing Code, Table E201.1, the maximum WFSU based on the above parameters and a conservative assumed pressure under 60 PSI is 365 DFU; thus the expected maximum 23 WFSU is acceptable.

REQUIRED WASTEWATER COMPUTATIONS

Average Day Demand (Commercial/Retail): $0.5 \text{ GPD/SF} \times 5,700 \text{ SF} = 2,850 \text{ GPD}$

Peak Demand: $3 \times 2,850 \text{ GPD} = 8,550 \text{ GPD}$

The table below contains the expected drainage fixture units for the new building:

TYPE	QUANTITY	DFU/FIXTURE	TOTAL DFU
WATER CLOSET (PUBLIC)	2	4	8
LAVATORY	2	1	2
URINAL	1	4	4
HAND SINK	1	2	2
JANITOR'S SINK	1	2	2
FLOOR DRAIN (7.5"X7.5")	1	2	2
GARAGE FLOOR DRAIN (1'X63')	2	252	504
		TOTAL	524

The Project's anticipated drainage fixture unit count is 524 and is designed with a 6-inch existing sewer lateral with a minimum slope of 1.0%. Per the International Plumbing Code, Table 710.1(1),

Need to include grease, oil and sand interceptor.

the maximum DFU based on the above parameters is 700. Thus, the expected maximum 524 DFU is acceptable with a slope of at least 1.0%.

CONCLUSION

CYPRESS respectfully submits this preliminary report as the Preliminary Water & Wastewater Design Report for the proposed Kerry's Car Care Shea Development. The proposed water and wastewater systems shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

PRELIMINARY WATER & SEWER BASIS OF DESIGN REPORT FOR KERRY'S CAR CARE SHEA

Scottsdale, Arizona

5 September 2019

PREPARED FOR
Larson Associates Architects, LLC
3807 North 24th Street, Suite 100
Phoenix, Arizona 85016

DEVELOPER
SimonCRE
6900 East 2nd Street
Scottsdale, Arizona 85251

SITE ADDRESS
11653 East Sahuaro Drive
Scottsdale, Arizona 85259

PREPARED BY

CYPRESS
CIVIL DEVELOPMENT
strength + sustainability

4450 north 12th street, #228

phoenix, arizona 85014

CYPRESS # 19.101



10-UP-2019
09/26/2019

PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Kerry's Car Care Shea' and is located at 11653 East Sahuaro Drive in Scottsdale, Arizona. It is located on the south side of East Sahuaro Drive, west of North 117th Place. Refer to Appendix A for location map.

The proposed project consists of the construction of a single story, free standing 5,400 square foot building with the required paved parking, access lanes, and amenity landscaping.

The utility provider for both water and sewer facilities is the City of Scottsdale.

WATER EXISTING CONDITIONS

Per available utility maps and as-built records, there is an 8" DIP main along the western boundary of the Project with an 8" stub to the Project northwest of the building and a 6" stub southwest of the building.

WATER PROPOSED CONDITIONS

As a result, the design team intends connect to the 8" northwest stub to serve a new fire hydrant at the northeast corner of the Project and to connect to the existing 6" southwest stub for fire service to the new building. The design team intends to tap the existing 8" main with a new 2" line and 2" meter for domestic service to the new building and a new 1" line and 1" meter for irrigation service. The 8" main is anticipated to provide adequate sizing and pressure to supply the intended domestic and fire services to the new building. Refer to Appendix B for City of Scottsdale Water and Sewer Quarter Section Map and Recent Survey showing existing water stub and sewer manhole locations.

WASTEWATER EXISTING CONDITIONS

Per available utility maps and as-built plans for the Mountainside Plaza development, there is an existing 8" VCP sewer main in the drive west of the project ending in a manhole at the southwest of the proposed building.

WASTEWATER PROPOSED CONDITIONS

The design team intends to core and connect to the existing manhole with a new 6" sewer service to the new building. Additionally, a second connection will be added with a new 6-inch stub to the future retail development area east of the new building.

REQUIRED WATER COMPUTATIONS

The total building area after the expansion will be 5,400 square feet. The building shall be type V-B construction. Per the International Fire Code, Table B105.1, the building requires a minimum fire flow of 2,000 GPM for a 2-hour duration. The existing building and new expansion will have automatic sprinklers installed resulting in an allowable 50% reduction in fire flow requirements,

with a minimum fire flow of 1,500 GPM. Therefore, the required fire flow will be 1,500 GPM for a 2-hour duration. At the time of this report, no recent fire flow test had been conducted, but it is assumed that the existing line will be sufficient to meet this need.

Average Day Demand (Commercial/Retail): $0.00111/\text{SF} \times 5,700 \text{ SF} = 6.33 \text{ GPM}$

Peak Hour Demand: $3.5 \times 6.33 \text{ GPM} = 22.16 \text{ GPM}$

Maximum Day Demand + Fire Flow Demand = $2 \times (6.33 \text{ GPM}) + 1,500 \text{ GPM} = 1,512.66 \text{ GPM}$

The table below contains the expected water supply fixture units for the new building:

TYPE	QUANTITY	WFSU/FIXTURE	TOTAL WFSU
WATER CLOSET (TANK)	2	5	10
LAVATORY	2	2	4
URINAL	1	5	5
HAND SINK	1	2	2
JANITOR'S SINK	1	2	2
		TOTAL	23

The Project is designed to have a water supply fixture unit count of 23. The project is designed with approximately 100 linear feet of 2-inch distribution pipe with a 2-inch meter. Per the International Plumbing Code, Table E201.1, the maximum WFSU based on the above parameters and a conservative assumed pressure under 60 PSI is 365 DFU; thus the expected maximum 23 WFSU is acceptable.

REQUIRED WASTEWATER COMPUTATIONS

Average Day Demand (Commercial/Retail): $0.5 \text{ GPD/SF} \times 5,700 \text{ SF} = 2,850 \text{ GPD}$

Peak Demand: $3 \times 2,850 \text{ GPD} = 8,550 \text{ GPD}$

The table below contains the expected drainage fixture units for the new building:

TYPE	QUANTITY	DFU/FIXTURE	TOTAL DFU
WATER CLOSET (PUBLIC)	2	4	8
LAVATORY	2	1	2
URINAL	1	4	4
HAND SINK	1	2	2
JANITOR'S SINK	1	2	2
FLOOR DRAIN (7.5"X7.5")	1	2	2
GARAGE FLOOR DRAIN (1'X63')	2	252	504
		TOTAL	524

The Project's anticipated drainage fixture unit count is 524 and is designed with a 6-inch existing sewer lateral with a minimum slope of 1.0%. Per the International Plumbing Code, Table 710.1(1),

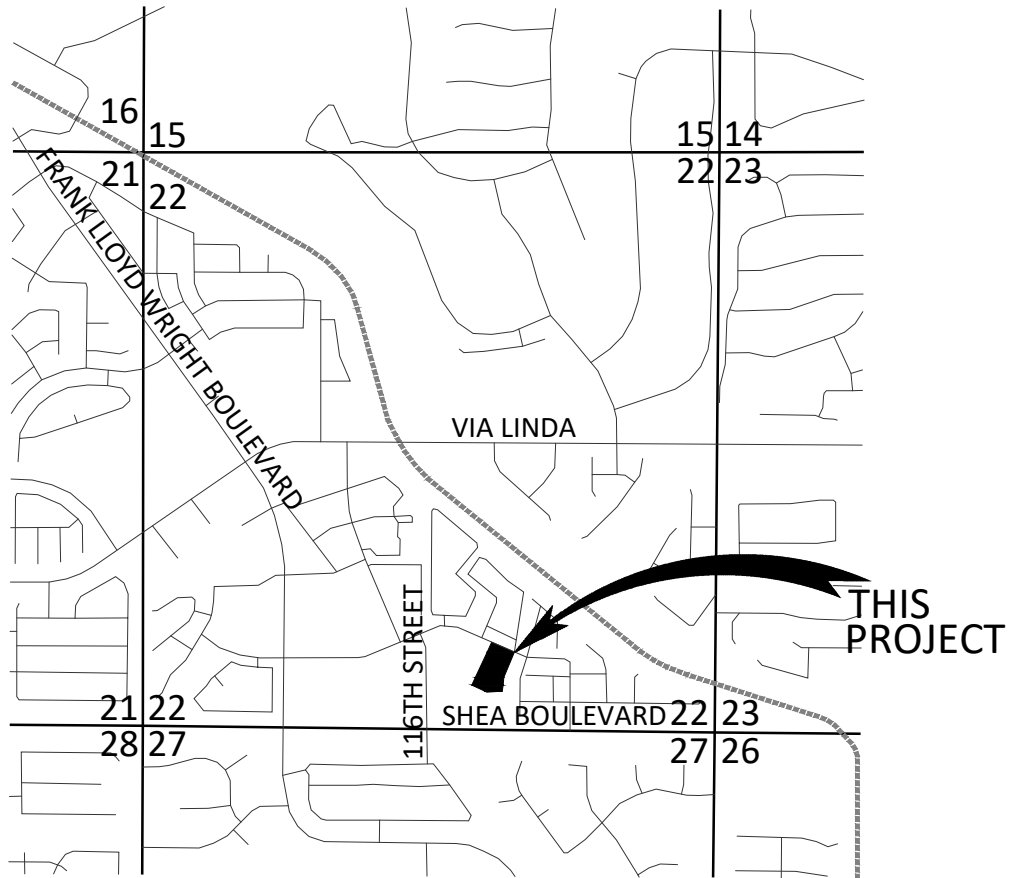
the maximum DFU based on the above parameters is 700. Thus, the expected maximum 524 DFU is acceptable with a slope of at least 1.0%.

CONCLUSION

CYPRESS respectfully submits this preliminary report as the Preliminary Water & Wastewater Design Report for the proposed Kerry's Car Care Shea Development. The proposed water and wastewater systems shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

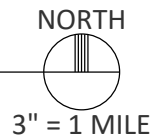
Appendix A

Location Map

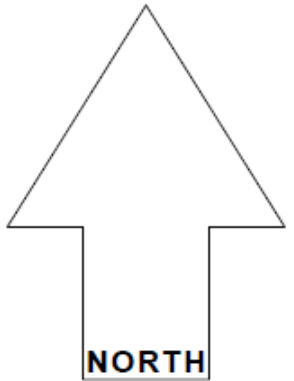
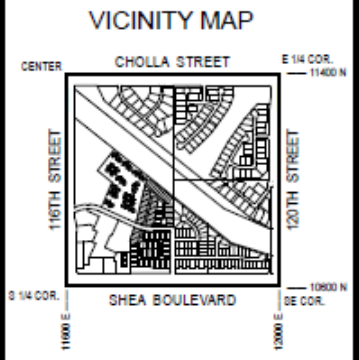
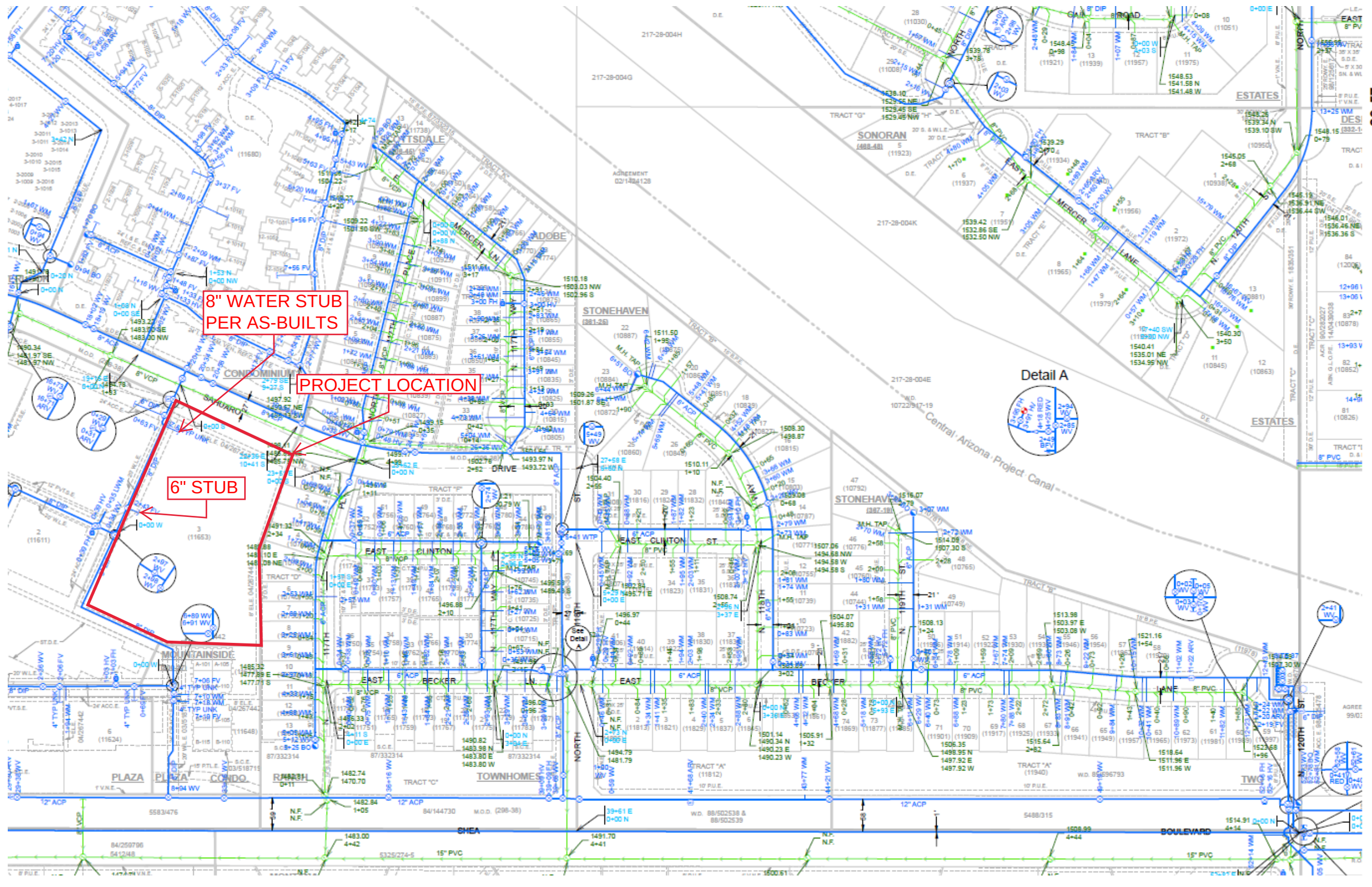


IN THE SW 1/4 OF THE SE 1/4 OF SECTION 22,
T. 3 N., R. 5 E., G.&S.R.M.,
CITY OF SCOTTSDALE, MARICOPA COUNTY, ARIZONA

LOCATION MAP



Appendix B
City of Scottsdale Water and Sewer Quarter Section Map
& Recent Survey



SCALE: 1" = 100'

0 50 100 200

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

WATER & SEWER QUARTER SECTION MAP **29-56** SE 1/4 SEC. 22 T3N R5E

CITY OF SCOTTSDALE

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

28-56

BOULEVARD
SHEA

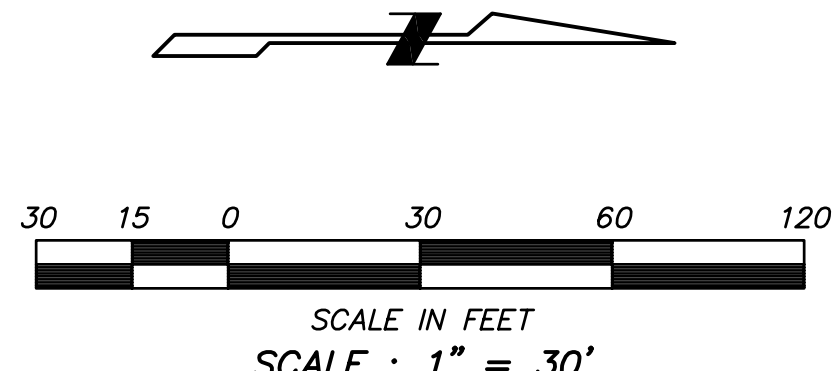
SOUTH 1/4 CORNER
SECTION 22, T03N, R05E
FOUND 5/8" CAPPED REBAR
MARICOPA COUNTY ALUMINUM
CAP STAMPED RLS 2178

$\Delta=23^{\circ}54'47''$ (R)
 $\Delta=23^{\circ}53'23''$ (M)
 $R=600.00'$
 $L=250.42'$ (R)
 $L=250.17'$ (M)

$S\ 23^{\circ}42'51''\ E$ (R)
 $S\ 23^{\circ}44'03''\ E$ (M)
 $30.01'$ (R)
 $29.96'$ (M)

$N\ 66^{\circ}07'09''\ E$
 $93.24'$ (R)
 $93.20'$ (M)

$\Delta=48^{\circ}28'48''$ (R)
 $\Delta=48^{\circ}26'34''$ (M)
 $R=400.00'$
 $L=338.45'$ (R)
 $L=338.19'$ (M)



LEGEND

- BOUNDARY LINE
- CENTER LINE OR MONUMENT LINE
- CONCRETE SURFACE
- 24 INCH VERTICAL CURB & GUTTER
- 6 INCH CONCRETE CURB
- INDICATES DRIVEWAY (MEANS OF ACCESS)
- WALL
- FENCE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND GAS LINE
- UNDERGROUND SANITARY SEWER LINE
- UNDERGROUND STORM SEWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND WATER LINE
- FOUND 1/2" CAPPED REBAR STAMPED 45761
- FOUND NAIL IN WASHER STAMPED 45761
- FOUND NAIL IN WASHER STAMPED 37258
- FOUND NAIL IN WASHER IN TOP OF WALL STAMPED 37258
- NO MONUMENT FOUND OR SET
- FOUND 3" CITY OF SCOTTSDALE BRASS CAP FLUSH
- SCHEDULE B ITEM
- BACK FLOW PREVENTER
- ELECTRIC BOX
- ELECTRIC TRANSFORMER
- FIRE HYDRANT
- GAS METER
- GUARD POST OR GATE POST
- HANDICAPPED SPACE
- METAL GRATE (RECTANGULAR)
- LIGHT POLE
- SEWER CLEAN OUT
- STORM DRAIN MANHOLE
- SEWER MANHOLE
- STREET SIGN
- WATER METER
- WATER MANHOLE
- WATER VALVE
- FLOW LINE
- TC TOP OF CURB
- NG NATURAL GROUND
- P PAVEMENT
- C CONCRETE
- RIM TOP OF RIM
- INV INVERT ELEVATION
- A.P.N. ASSESSORS' PARCEL NUMBER
- M.C.R. MARICOPA COUNTY RECORDS
- R/W RIGHT OF WAY
- BK. BOOK
- PG. PAGE
- (TYP.) TYPICAL
- (R) RECORD PER BK. 632, PG. 30, M.C.R.
- (M) MEASURED

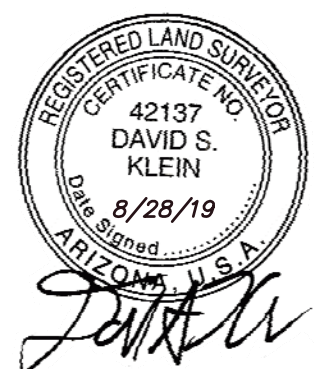
ALTA/NSPS LAND TITLE SURVEY

11653 E. SAHUARO DRIVE
SCOTTSDALE, AZ 85259

2122 W. Lone Cactus Drive, Suite 11
Phoenix, AZ 85027
623-869-0223 (office) 623-869-0726 (fax)
www.superiorsurveying.com
info@superiorsurveying.com

SUPERIOR
SURVEYING SERVICES, INC.

DWN: GBF CHK: DK
SHEET 2 OF 2
DATE: 8/13/19
JOB NO.: 190759



MOUNTAINSIDE PLAZA CONDOMINIUM
BK. 800, PG. 37, M.C.R.
A.P.N. 217-29-844
MOUNTAINSIDE PLAZA F & G LLC
2005-1925900 M.C.R.

LOT 2
MOUNTAINSIDE PLAZA
BK. 632, PG. 30, M.C.R.
A.P.N. 217-28-985
STORE MASTER FUNDING II LLC
2013-0066885 M.C.R.

LOT 2
MOUNTAINSIDE PLAZA
BK. 632, PG. 30, M.C.R.
A.P.N. 217-28-985
STORE MASTER FUNDING II LLC
2013-0066885 M.C.R.

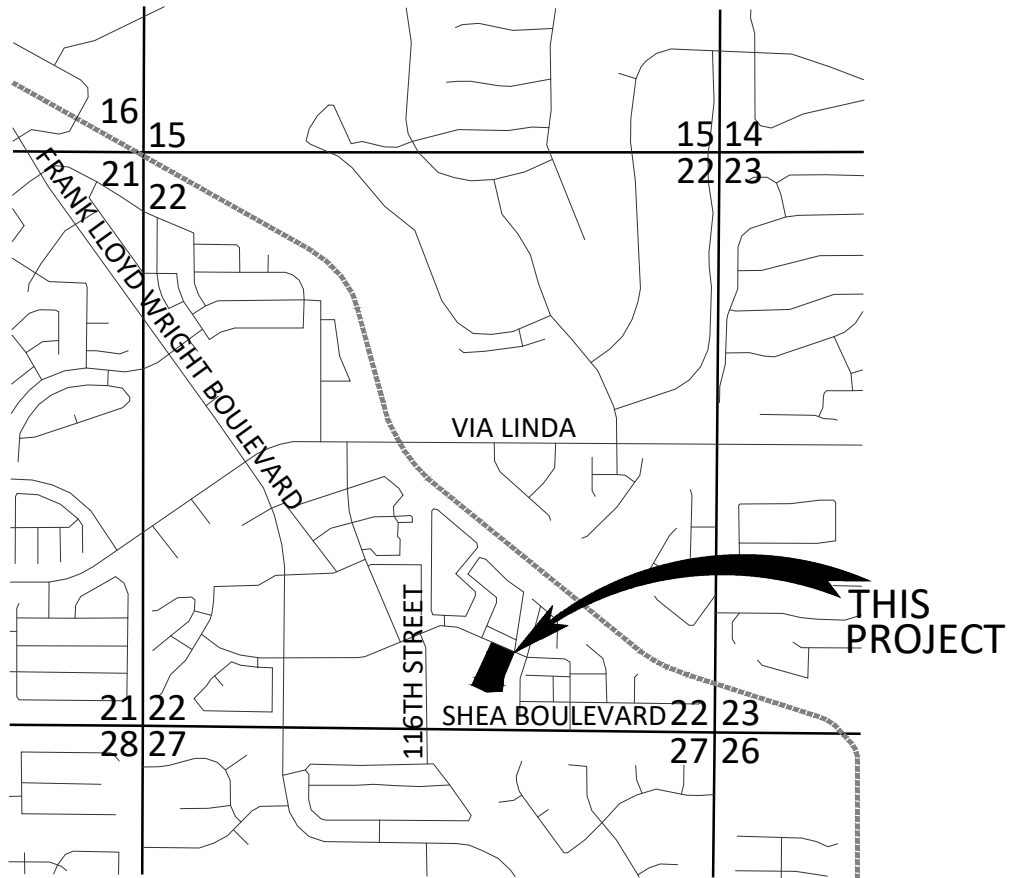
PARCEL NO 1
LOT 3
A.P.N. 27-28-986

TRACT D
A.P.N. 217-28-353
SCOTTSDALE ADOBE RANCH TH ASSN
2005-1925900 M.C.R.
SCOTTSDALE ADOBE RANCH TOWNHOMES PAR 15 & TR A-L
BK. 306, PG. 45, M.C.R.

TRACT E
A.P.N. 217-28-354
SCOTTSDALE ADOBE RANCH TH ASSN
1987-0590040 M.C.R.

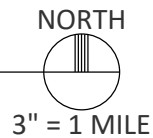
Appendix A

Location Map

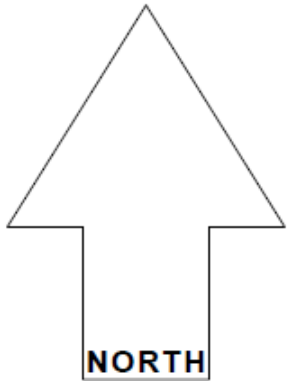
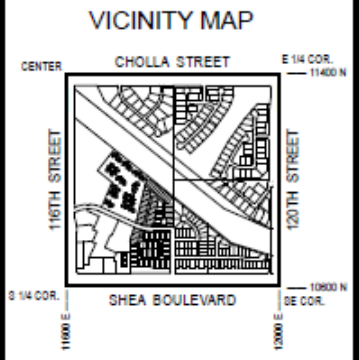
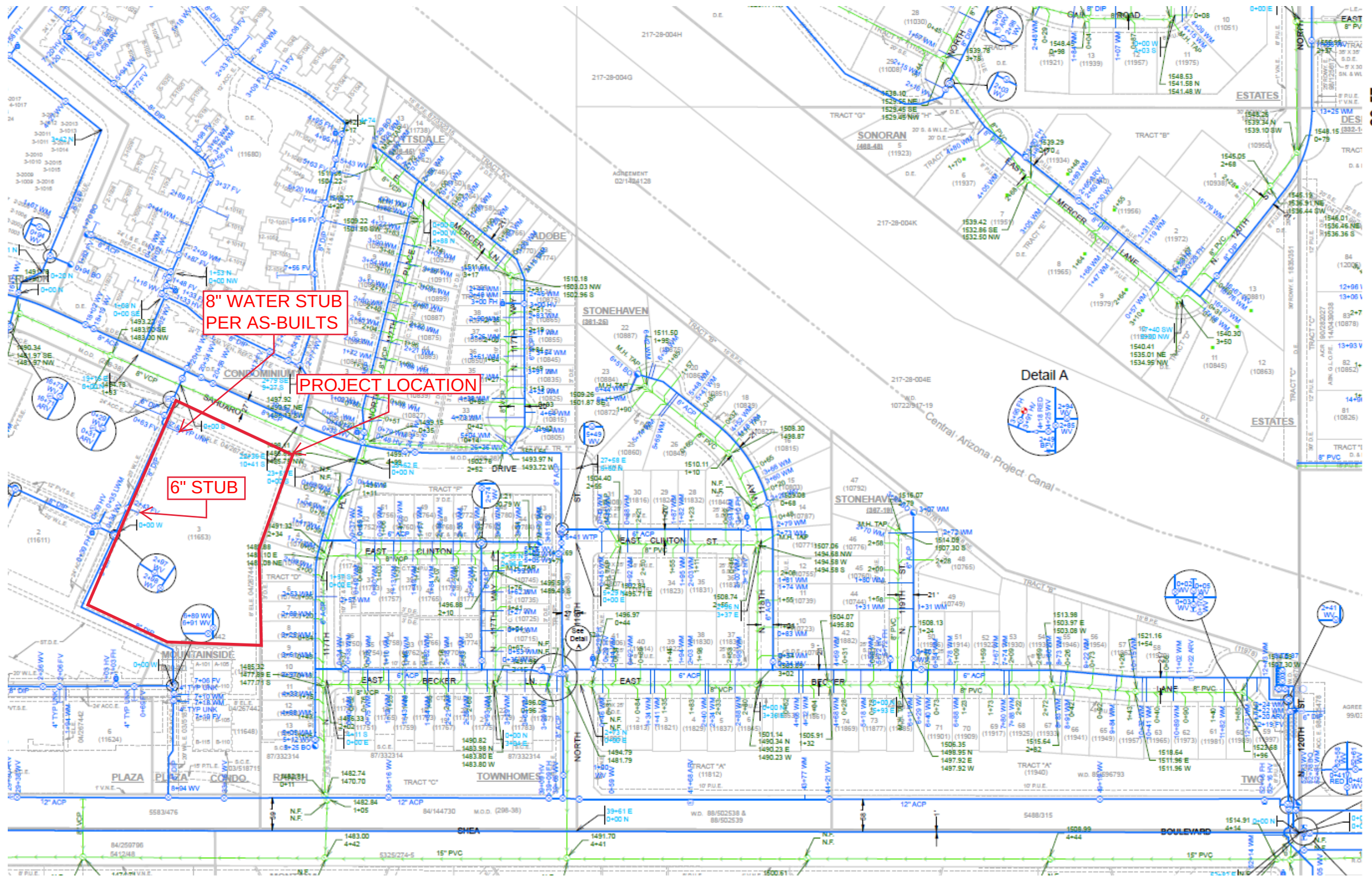


IN THE SW 1/4 OF THE SE 1/4 OF SECTION 22,
T. 3 N., R. 5 E., G.&S.R.M.,
CITY OF SCOTTSDALE, MARICOPA COUNTY, ARIZONA

LOCATION MAP



Appendix B
City of Scottsdale Water and Sewer Quarter Section Map
& Recent Survey



SCALE: 1" = 100'

0 50 100 200

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

WATER & SEWER

QUARTER SECTION MAP

29-56

SE 1/4 SEC. 22 T3N R5E

CITY OF SCOTTSDALE

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

28-56

BOULEVARD
SHEA

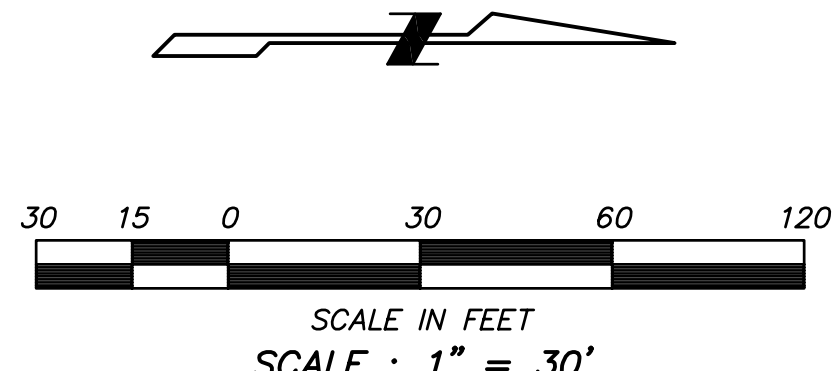
SOUTH 1/4 CORNER
SECTION 22, T03N, R05E
FOUND 5/8" CAPPED REBAR
MARICOPA COUNTY ALUMINUM
CAP STAMPED RLS 2178

$\Delta=23^{\circ}54'47''$ (R)
 $\Delta=23^{\circ}53'23''$ (M)
 $R=600.00'$
 $L=250.42'$ (R)
 $L=250.17'$ (M)

$S\ 23^{\circ}42'51''\ E$ (R)
 $S\ 23^{\circ}44'03''\ E$ (M)
 $30.01'$ (R)
 $29.96'$ (M)

$N\ 66^{\circ}07'09''\ E$
 $93.24'$ (R)
 $93.20'$ (M)

$\Delta=48^{\circ}28'48''$ (R)
 $\Delta=48^{\circ}26'34''$ (M)
 $R=400.00'$
 $L=338.45'$ (R)
 $L=338.19'$ (M)



LEGEND

- BOUNDARY LINE
- CENTER LINE OR MONUMENT LINE
- CONCRETE SURFACE
- 24 INCH VERTICAL CURB & GUTTER
- 6 INCH CONCRETE CURB
- INDICATES DRIVEWAY (MEANS OF ACCESS)
- WALL
- FENCE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND GAS LINE
- UNDERGROUND SANITARY SEWER LINE
- UNDERGROUND STORM SEWER LINE
- UNDERGROUND TELECOMMUNICATIONS LINE
- UNDERGROUND WATER LINE
- FOUND 1/2" CAPPED REBAR STAMPED 45761
- FOUND NAIL IN WASHER STAMPED 45761
- FOUND NAIL IN WASHER STAMPED 37258
- FOUND NAIL IN WASHER IN TOP OF WALL STAMPED 37258
- NO MONUMENT FOUND OR SET
- FOUND 3" CITY OF SCOTTSDALE BRASS CAP FLUSH
- SCHEDULE B ITEM
- BACK FLOW PREVENTER
- ELECTRIC BOX
- ELECTRIC TRANSFORMER
- FIRE HYDRANT
- GAS METER
- GUARD POST OR GATE POST
- HANDICAPPED SPACE
- METAL GRATE (RECTANGULAR)
- LIGHT POLE
- SEWER CLEAN OUT
- STORM DRAIN MANHOLE
- SEWER MANHOLE
- STREET SIGN
- WATER METER
- WATER MANHOLE
- WATER VALVE
- FLOW LINE
- TC TOP OF CURB
- NG NATURAL GROUND
- P PAVEMENT
- C CONCRETE
- RIM TOP OF RIM
- INV INVERT ELEVATION
- A.P.N. ASSESSORS' PARCEL NUMBER
- M.C.R. MARICOPA COUNTY RECORDS
- R/W RIGHT OF WAY
- BK. BOOK
- PG. PAGE
- (TYP.) TYPICAL
- (R) RECORD PER BK. 632, PG. 30, M.C.R.
- (M) MEASURED

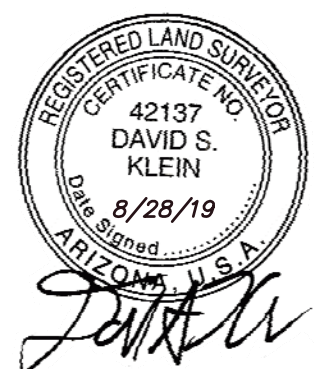
ALTA/NSPS LAND TITLE SURVEY

11653 E. SAHUARO DRIVE
SCOTTSDALE, AZ 85259

2122 W. Lone Cactus Drive, Suite 11
Phoenix, AZ 85027
623-869-0223 (office) 623-869-0726 (fax)
www.superiorsurveying.com
info@superiorsurveying.com

SUPERIOR
SURVEYING SERVICES, INC.

DWN: GBF CHK: DK
SHEET 2 OF 2
DATE: 8/13/19
JOB NO.: 190759



MOUNTAINSIDE PLAZA CONDOMINIUM
BK. 800, PG. 37, M.C.R.
A.P.N. 217-29-844
MOUNTAINSIDE PLAZA F & G LLC
2005-1925900 M.C.R.

LOT 2
MOUNTAINSIDE PLAZA
BK. 632, PG. 30, M.C.R.
A.P.N. 217-28-985
STORE MASTER FUNDING II LLC
2013-0066885 M.C.R.

LOT 2
MOUNTAINSIDE PLAZA
BK. 632, PG. 30, M.C.R.
A.P.N. 217-28-985
STORE MASTER FUNDING II LLC
2013-0066885 M.C.R.

PARCEL NO 1
LOT 3
A.P.N. 27-28-986

TRACT D
A.P.N. 217-28-353
SCOTTSDALE ADOBE RANCH TH ASSN
2005-1925900 M.C.R.
SCOTTSDALE ADOBE RANCH TOWNHOMES PAR 15 & TR A-L
BK. 306, PG. 45, M.C.R.

TRACT E
A.P.N. 217-28-354
SCOTTSDALE ADOBE RANCH TH ASSN
1987-0590040 M.C.R.