

Basis of Design Report- Water

Siena Estates

WATER BASIS OF DESIGN REPORT

Northwest Corner of Palo Verde and Cattletrack Rd.

Scottsdale, Arizona

5805 N Sundown Dr
Scottsdale 85250

Prepared for:
Adams Craig Acquisitions
7904 E Chaparral Rd
Ste A110-113
Scottsdale 85250

Prepared by:
6K CONSULTING L.L.C.
4858 E Baseline Road, Suite 101
Mesa, AZ 85206
Phone: (480) 664-8592
Fax: (480) 275-5512

April 25, 2018

FINAL Basis of Design Report

- ☐ APPROVED
☒ APPROVED AS NOTED
☐ REVISE AND RESUBMIT

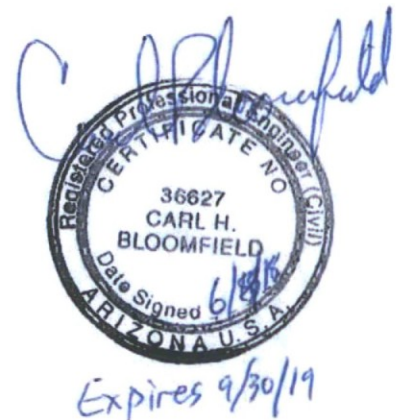


Disclaimer: If approved; the approval is granted under the condition that the final construction documents submitted for city review will match the information herein. Any subsequent changes to the water or sewer design that materially impact design criteria or standards will require re-analysis, re-submittal, and approval of a revised basis of design report prior to the plan review submission.; this approval is not a guarantee of construction document acceptance. For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY Idillon

DATE 6/29/2018

Address comments noted herein on submitted plans. Coordinate sewer and water alignment and crossings per COS details and requirements. Adequate fire flow determination and verification is the responsibility of Epcor water.



2-PP-2013
06/08/18

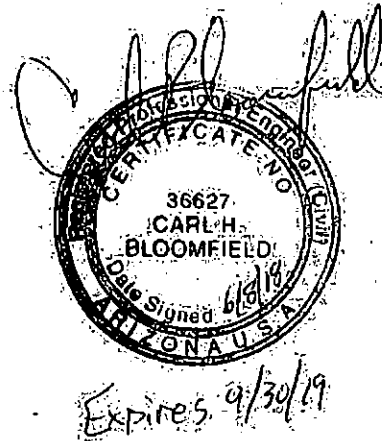
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II.	DATA ANALYSIS METHODS.....	2
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APPENDICES

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Appendix B

Vicinity Map, Pre-plat
Improvements requested by EPCOR



I. INTRODUCTION

Location & Description

The project address is on the cover of this report. The property consists of three separate parcels and is located on the west side of Cattletrack Road north of Palo Verde Ln. They are further identified as APN 173-04-018, 173-04-017, and 173-04-016. The properties are vacant having had all of the existing structures demolished and removed. There are roads surrounding the properties on three sides (east, west and south). The three parcels have been up-zoned to a suburban general plan designation with R1-18 PRD zoning as of Dec 2017. This report will detail the conditions being proposed through a pre-plat of a seven lot community on the three acre property.

Existing System

The property is provided water by EPCOR. The current infrastructure in the area is varied. The existing lots were provided services off of waterlines in the streets around the properties. Sundown Drive and Sundown Circle have a single 4" ACP pipe connecting to a 4" line in Palo Verde to provide water to the western two properties. The northeast property is serviced from a line in Cattletrack. EPCOR has a water treatment facility on the east side of Cattletrack and therefore has several waterlines located in Palo Verde Dr. and Cattletrack Ln. Palo Verde has three waterlines; working south to north in the street, there is a 16" CIU line, an 8" AC line and a 4" AC line. Cattletrack has 5 waterlines; working west to east, there is a 6" CIU 24" DI, an 8" AC, a 24" DI, and a 16" CIU.

Design Requirements

The design requirements for the new subdivision will be according to the EPCOR Water 2015 Developer and Engineering Guide.

Single family residences will utilize 360 gallons per day per unit average with a Max Day peaking factor of 1.8 and a peak hour factor of 3.0. The open space will be included in the demand for the project at 1,800 gal/acre with no additional peaking factors.

The system pressures are to be between 55 and 80 psi static pressure. The pressure can reduce to 40 psi at peak hour and 20 psi at max day plus fire flow.

The required residential fire flow according to the 2012 International Fire Code, Appendix B is as follows:

- Up to 3,600 sf residences is 1,000 GPM for one hour.
- Up to 4,800 sf residences is 1,750 GPM for two hours.
- Up to 6,200 sf residences is 2,000 GPM for two hours.

A reduction of 50% for required fire flow is allowed for structures that provide an approved fire sprinkler system in the constructed residence.

The project is located in EPCOR's main zone. Given that the project is so near the water treatment and distribution facility, EPCOR expects average day pressures to be greater than 100 psi. This will necessitate an individual PRV for each residence.

Proposed System

EPCOR has requested that Adams Craig install an 8" line from the 16" line in Palo Verde up to the 4" line in Sundown Circle with an 8" stub into the planned cul-de-sac for Siena Estates. These proposed improvements will naturally connect all existing, and required to remain, services into the new line, add all new service lines for the 7 lots and required fire hydrants.

show this is the utility plan or submitted plans, see notes on utility plan herein

The existing 4" line in Sundown Drive will be abandoned in place. Two hydrants will be added; one to be used as an end of the line blow off for the property system in the proposed cul-de-sac and one along Sundown Drive to help provide better service for the existing residents in case of fire. The project plans will provide 7- 1" service lines and meters as shown on the subdivision plan. One 2" meter will be provided for the common area landscaping on the project.

II. DATA ANALYSIS METHODS

If a model of the system is required, the model will be completed using Water CAD by Haestad Methods to analyze the system data obtained from hydrant pressure and flow testing done for the project.

III. CONCLUSION

The project is small and will have little additional impact to the water system in the area. The waterline extension from the adjacent 16" line in Palo Verde and the upsizing of the 4" existing waterline to an 8" waterline in Sundown Drive will serve the needs of the future residents and better serve the needs of the existing residents in the area surrounding this community called Siena Estates.

The provided design constraints will be met or exceeded by the improvements proposed in this report.

show this is the utility
plan or submitted
plans, see notes on
utility plan herein

APPENDIX A

Vicinity Map Siena Estates Pre-Plat

VICINITY MAP

STREET MAP



Siena Estates

PROJ: #3639

DRAFTED: BJ

DATE: JUN 2017

Adams Craig Aquisitons

CITY: Scottsdale

COUNTY: Maricopa

STATE: AZ

APPENDIX B

EPCOR Requested Improvements Exhibit

EPCOR Water USA (Inc) has made every reasonable effort to obtain and maintain this document. Replace the 47-year old 16" sewer, human or mechanical en-cast-iron pipe with 16" DIP

Printed: 8/18/2017 11:37 AM

SIENA ESTATES by ADAMS CRAIG ACQUISITIONS
REPLAT OF LOTS 3-5 OF SCHAFFNER ESTATES
PALO VERDE LANE AND CATTLETRACK ROAD SCOTTSDALE, AZ 85250
APN's 173-04-016, 173-04-017, 173-04-018

DRAINAGE NARRATIVE:

THE EXISTING PARCELS AND HOMES DRAIN GENERALLY TO THE SOUTHEAST. THE LOTS WILL DRAIN TO THE COL-OF-SAC TO BE COLLECTED AND DIRECTED BY STORM DRAIN TO A PROPOSED SHALLOW BASIN WHICH WILL DRAIN INTO EXISTING CATCH BASIN IN CATTLE TRACK THAT DIRECTLY ADJACENT TO THE EXISTING STORM DRAIN BASIN LOCATED EAST OF CATTLETRACK AND SOUTH OF MCKINLEY DRIVE. PORTIONS OF LOTS 4-7 WILL DRAIN TO CATTLETRACK AND TO PALO VERDE TO BE REMOVED IN SMALL DETENTION BASINS DESIGNED TO ASSIST IN PROMOTING ADDITIONAL RUNOFF GENERATED BY THE DEVELOPMENT.

ENGINEER'S NOTES:

1. THE POWER, GAS AND WATER UTILITIES ARE ALREADY LOCATED IN THE EXISTING STREETS. THE EXISTING EASEMENTS AND UTILITIES LOCATED WITHIN THE LOTS WILL BE REMOVED AND RELOCATED. NEW FACILITY LINES WILL BE EXTENDED INTO THE PROPOSED COL-OF-SAC AND SERVICES PROVIDED TO EACH LOT.
2. THE EXISTING SEWER SYSTEM WILL BE REMOVED AND RELOCATED. THE PROPOSED LOTS WILL BE CONNECTED TO A LOT SEWER LINE THAT HAS BEEN ENGINEERED AND WILL BE CONSTRUCTED IN SUNDOWN DRIVE AND SUNDOWN CIRCLE FROM PALO VERDE LANE. THERE ARE NO APPROPRIATE NATURAL WATERCOURSES WITHIN CLOSE PROXIMITY TO THE PROPERTY.
3. THIS SEWERLINE WILL BE EXTENDED ALONG PALO VERDE.
4. CURB, CUTTER AND SIDEWALK WILL BE ADDED ALONG THE EAST SIDE OF SUNDOWN DRIVE.
5. THE PAVEMENT IN SUNDOWN WILL BE REMOVED BY MILLING AND REPLACED WITH NEW ASPHALT PAVEMENT AND REPAIR CURB ALONG THE WEST SIDE OF THE STREET DURING THE CONSTRUCTION OF THIS PROJECT.
6. THE EXISTING SIDEWALK LOCATING ALONG CATTLETRACK AND PALO VERDE WILL BE REMOVED AND REPLACED WITH CURB AND CUTTER TO MATCH THE EXISTING THIS IS SHOWN IN THE PRELIM PLAT.
7. THE NEW STREET IS TO BE CONSTRUCTED FOR SUBURBAN LOCAL RESIDENTIAL SECTION.
8. EACH LOT WILL BE REQUIRED TO HAVE PAVING FOR AT LEAST FOUR (4) VEHICLES, TWO CONCERNS (GARAGE) AND TWO ON THE DRIVEWAY.
9. ALL STRUCTURES SHALL BE LIMITED TO 1-STORY. NO STRUCTURE SHALL BE ALLOWED TO PROVIDE A 2-STORY DESIGN.

LEGAL DESCRIPTION:

THAT PART OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE CLAY AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, DESCRIBED AS FOLLOWS: PARCELS 3, 4 AND 5 OF SCHAFFNER ESTATES RECORDED IN BOOK OF MAPS 75, PAGE 25.

HIGHLIGHT PROPOSED WATERLINE, INDICATE DAIMETER AND EXISTING VERSUS PROPOSED LIMITS, ADD KEY NOTES TO ADDRESS SEWER/WATER CROSSINGS PER COS DETAILS/REQUIREMENTS, ADDRESS NOTES INCLUDED HEREIN

Coordinate sewer crossing per COS requirements

isolation valves here or along new water line??

New 8" proposed per description

Coordinate sewer crossing per COS requirements

New 8" proposed per description

Indicate if this is the existing water line alignment

16" exist per description

Coordinate sewer crossing per COS requirements

COS requires a minimum 6ft pipe wall to wall or pipe wall to manhole wall separation between water and sewer, maintain and indicate this separation.

water line shown as curved??



VICINITY MAP

PROJECT DATA

EXISTING ZONING: R1-18 PRO
 EXISTING CP: SUBURBAN
 CROSS AREA: 3.80 AC
 DENSITY: 1.84 UNITS/AC
 EX. PARCEL AREA: 2.88 AC
 PROP. ROW AREA: 0.59 AC
 NET AREA: 2.70 AC
 TRACT AREA: 0.59 AC
 OPEN SPACE: 17,057 SF
 NET OPEN SPACE R: 14.5%

NOTE:
 - CROSS AREA IS CALCULATED AS THE AREA TO THE CL OF THE ADJACENT STREETS (ZONING BOUNDARY).
 - EX. PARCEL AREA IS THE AREA OF LOTS 3-5 OF SCHAFFNER ESTATES.

BUILDER:

ADAMS CRAIG ACQUISITIONS
 7904 E. CHAPARRAL RD.
 SUITE 101-113
 SCOTTSDALE, ARIZONA 85250
 PHONE: (480) 634-5015

ENGINEER:

AK CONSULTING, L.L.C.
 4858 EAST BASELINE ROAD
 SUITE 101
 MESA, ARIZONA 85206
 PHONE: (480) 664-8592



SIENA ESTATES
 PALO VERDE LANE AND CATTLETRACK ROAD
 SCOTTSDALE, AZ 85250

PRELIMINARY PLAT

PROJ. NO: 3639
 DATE: MAY 2018
 SCALE: 1"=50'
 DESIGNED BY: (DPN) BK
 REV. 1
 APPROVED: CHB
 DRAWING NO. 1
 SHEET 1 OF 1

APN 173-04-016

APN's 173-04-016, 173-04-017, 173-04-018

Siena Estates

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Prepared for:

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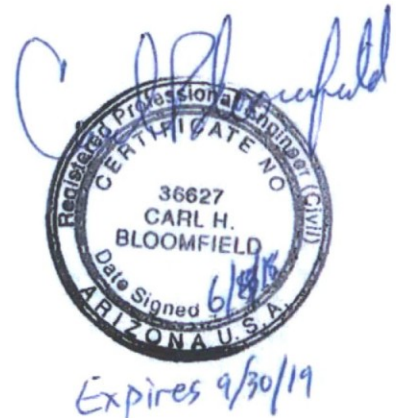
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VICINITY MAP

STREET MAP



Siena Estates

PROJ: #3639

DRAFTED: BJ

DATE: JUN 2017

Adams Craig Aquisitons

CITY: Scottsdale

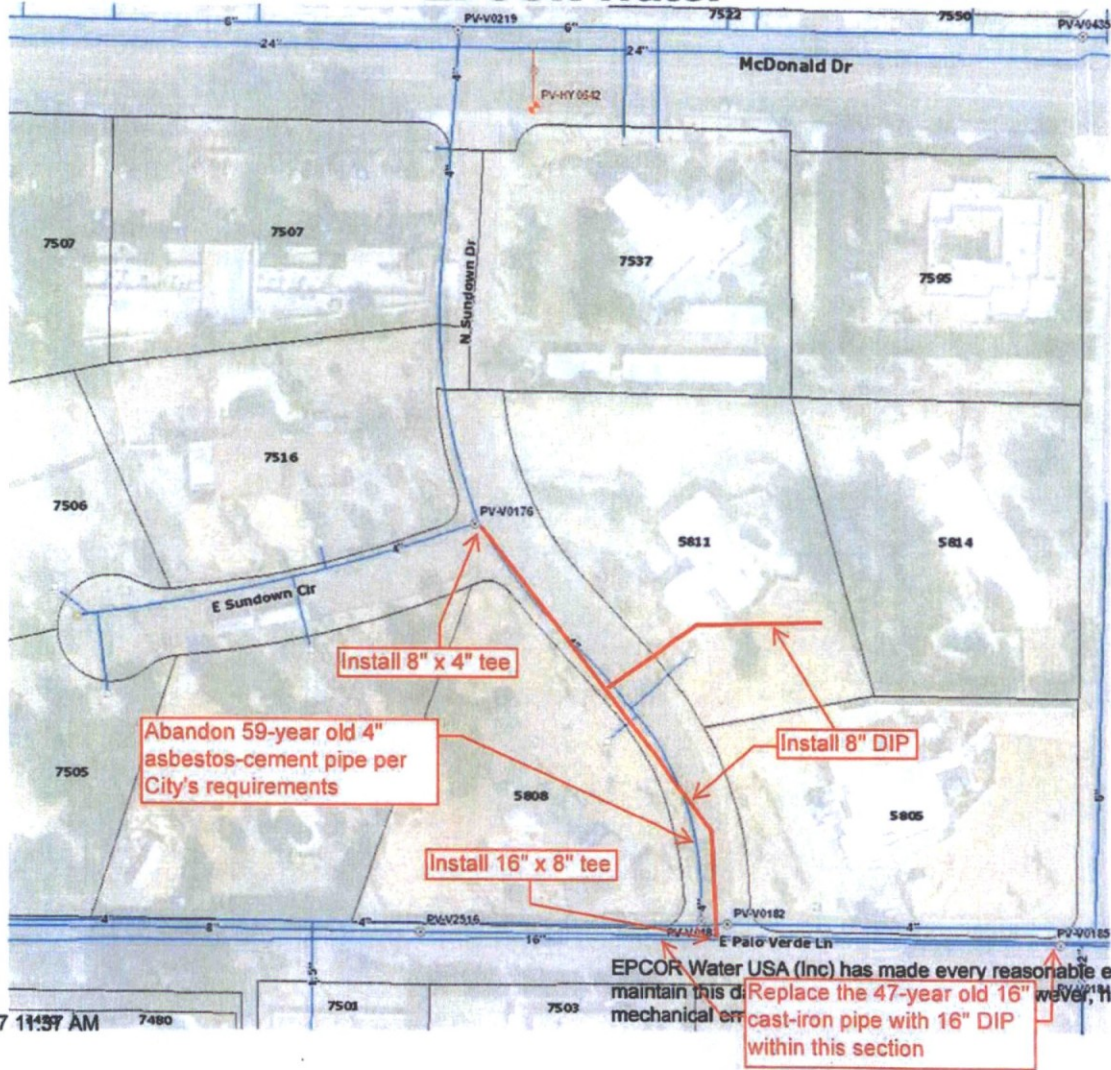
COUNTY: Maricopa

STATE: AZ

APPENDIX B

EPCOR Requested Improvements Exhibit

EPCOR Water



SIENA ESTATES by ADAMS CRAIG ACQUISITIONS
REPLAT OF LOTS 3-5 OF SCHAFFNER ESTATES
PALO VERDE LANE AND CATTLETRACK ROAD SCOTTSDALE, AZ 85250
APN's 173-04-016, 173-04-017, 173-04-018

LEGAL DESCRIPTION

THAT PART OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE CL
AND ONLY UNDER RECORD, MARICOPA COUNTY, ARIZONA, DESCRIBED AS
PARCELS 3, 4 AND 5 OF SCHAFFNER ESTATES RECORDED IN BOOK 60 OF
PAGE 75, PAGE 75.

DRAINAGE NARRATIVE:

THE EXISTING PARCELS AND HOMES DRAIN GENERALLY TO THE SOUTHWEST. THE LOTS WILL
DRAIN TO THE OLD 4-4-4-4 TO BE COLLECTED AND DISCHARGED BY STORM DRAIN TO A PROPOSED
SEWER MAIN WHICH WILL DRAIN INTO EXISTING CATCH BASIN & CATTLE TRACK THAT DRAIN
WATER TO THE EXISTING RETENTION BASIN LOCATED EAST OF CATTLETRACK AND SOUTH OF
RETIRED DRIVE. PROPOSED LOTS 3-5 WILL DRAIN TO CATTLETRACK AND TO PALO VERDE TO
BE RETAINED IN DRAIN DETENTION BASIN (DESIGNED TO ASSIST IN PROVIDING ADDITIONAL FLOOD
CONTROL) BY THE DEVELOPER.

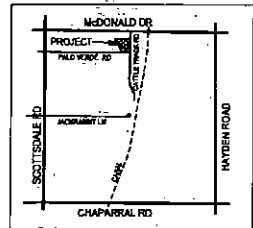
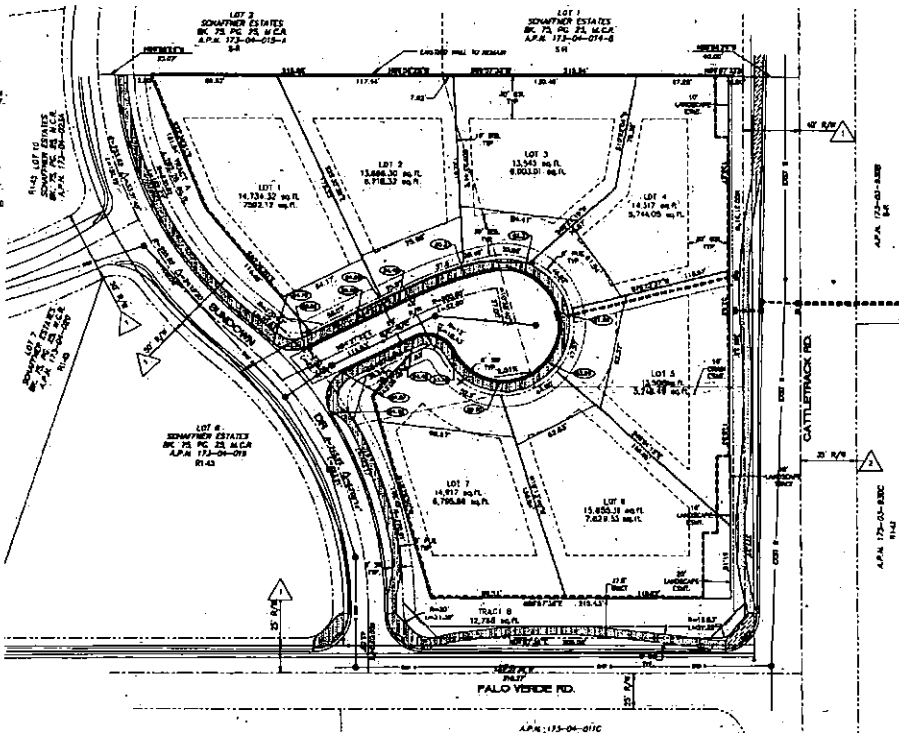
ENGINEER'S NOTES

1. THE POWER LINE AND WATER LINES ARE ALREADY
LOCATED IN THE EXISTING STREETS. THE EXISTING
EASEMENTS AND UTILITIES LOCATED WITHIN THE LOTS
WILL BE ABANDONED AND REMOVED. NEW UTILITY
LINES WILL BE EXTENDED INTO THE PROPOSED
COLLECTOR AND SERVICES PROVIDED TO EACH LOT.
2. THE EXISTING STORM SYSTEMS WILL BE ABANDONED
AND REMOVED. THE PROPOSED LOTS WILL BE
CONNECTED TO A CITY SEWER LINE THAT HAS BEEN
ENGINEERED AND WILL BE CONSTRUCTED IN SCHAFFNER
DRIVE AND SCHAFFNER DRIVE FROM PALO VERDE LANE.
3. THERE ARE NO ADJACENT NATURAL NEIGHBORHOODS
WITHIN CLOSE PROXIMITY TO THE PROPERTY.
4. THE EXISTING WILL BE EXTENDED ALONG PALO
VERDE.
5. CURB CUTTER AND SIDEWALKS WILL BE ADDED ALONG
THE EAST SIDE OF SCHAFFNER DRIVE.
6. THE PROPOSED IN SCHAFFNER DRIVE WILL BE REMOVED
AND REPLACED WITH NEW SIDEWALKS. EXISTING
AND REMAIN DRIVE ALONG THE WEST SIDE OF THE
STREET DURING THE CONSTRUCTION OF THIS PROJECT.
7. THE EXISTING DRIVEWAY LOCATIONS ALONG
CATTLETRACK AND PALO VERDE WILL BE REMOVED AND
REPLACED WITH CURB AND DUTTER TO MATCH THE
EXISTING. THIS IS SHOWN IN THE PRE-PLAN.
8. THE NEW STREET IS TO BE CONSTRUCTED FOR
SUBSTANTIAL LOCAL RESIDENTIAL TRAFFIC.
9. EACH LOT WILL BE REQUIRED TO HAVE PARKING FOR
AT LEAST FOUR (4) VEHICLES. THIS COMPREHENSIVE
(GARAGE) AND TWO ON THE DRIVEWAY.
10. ALL STRUCTURES SHALL BE LIMITED TO 1-STORY.
NO STRUCTURE SHALL BE ALLOWED TO EXCEED A
7-FOOT HEIGHT.

LEGEND

- 1" = 10' OF CURB
- 1" = 10' OF DRIVE
- 1" = 10' OF EXISTING SPOT ELEVATION
- 1" = 10' OF EXISTING CONTAINMENT
- 1" = 10' OF EXISTING DETENTION LINE (HWS)
- 1" = 10' OF EXISTING CONCRETE (TO REMAIN)
- 1" = 10' OF PROPOSED CONCRETE
- 1" = 10' OF PROPOSED DRIVE
- 1" = 10' OF EXISTING LOT LINE
- 1" = 10' OF EXISTING WALL (TO REMAIN)
- 1" = 10' OF EXISTING WALL (TO REMAIN)
- 1" = 10' OF EXISTING WALL
- 1" = 10' OF STORM DRAIN

- ▲ RIGHT-OF-WAY AS DEFINED BY
SCHAFFNER ESTATES PLAN
BOOK 60, PAGE 75
- ▲ RIGHT-OF-WAY AS DEFINED BY
MCDONALD PROFESSIONAL CENTER PLAN
BOOK 60, PAGE 34



VICINITY MAP

PROJECT DATA

EXISTING TRACT: 11-18 PWD
LISTING OF: 11-18 PWD
ORIGIN AREA: 3.80 AC
LOT AREA: 1.84 AC
TOTAL AREA: 2.96 AC
PROP. LOT AREA: 0.77 AC
TOTAL LOT AREA: 2.19 AC
TOTAL LOT AREA: 2.19 AC
TOTAL LOT AREA: 2.19 AC

NOTE:
- CREDIT AREA IS CALCULATED AS THE AREA TO THE
CL OF THE ADJACENT STREETS (DRAINAGE BOUNDARY).
- IS. FENCED AREA IS THE AREA OF LOTS 3-5 OF
SCHAFFNER ESTATES.

BUILDER

ADAMS CRAIG ACQUISITIONS
7700 E. CHAPARRAL RD.
SUITE 110-112
SCOTTSDALE, ARIZONA 85250
PHONE: (480) 554-5015

ENGINEER

MR. CONRAD, L.L.C.
4550 EAST BASELINE ROAD
SUITE 101
MESA, ARIZONA 85204
PHONE: (480) 564-0552



SIENA ESTATES	
PALO VERDE LANE AND CATTLETRACK ROAD SCOTTSDALE, AZ 85250	
PRELIMINARY PLAT	
PROJ. NO. 163	DATE: MAY 2008
SCALE: 1" = 30'	DESIGNED BY: [blank]
DRWN. BY: [blank]	CHECKED BY: [blank]
APP. BY: [blank]	DATE: [blank]
SHEET 1 OF 1	

SIENA ESTATES by ADAMS CRAIG ACQUISITIONS
REPLAT OF LOTS 3-5 OF SCHAFFNER ESTATES
PALO VERDE LANE AND CATTLETRACK ROAD SCOTTSDALE, AZ 85250
APN's 173-04-016, 173-04-017, 173-04-018

DRAINAGE NARRATIVE:

THE EXISTING PARCELS AND HOMES DRAIN GENERALLY TO THE SOUTHWEST. THE LOTS WILL DRAIN TO THE COLLECTOR DRAIN TO BE COLLECTED AND DIVERGED BY STORM DRAIN TO A PROPOSED SWELLOW BASIN WHICH WILL DRAIN INTO EXISTING CATCH BASINS IN CATTLE TRACK ROAD. STREET WATER TO THE EXISTING RETENTION BASIN LOCATED EAST OF CATTLETRACK ROAD AND SOUTH OF MIDCHAMBER DRIVE. PORTIONS OF LOTS 4-5 WILL DRAIN TO CATTLETRACK ROAD TO PAID WOOD TO BE INSTALLED IN SMALL RETENTION BASIN DESIGNED TO ASSIST IN PREVENTING ADDITIONAL SURFLOD DRAINAGE BY THE DEVELOPER.

ENGINEER'S NOTES:

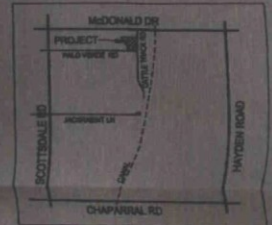
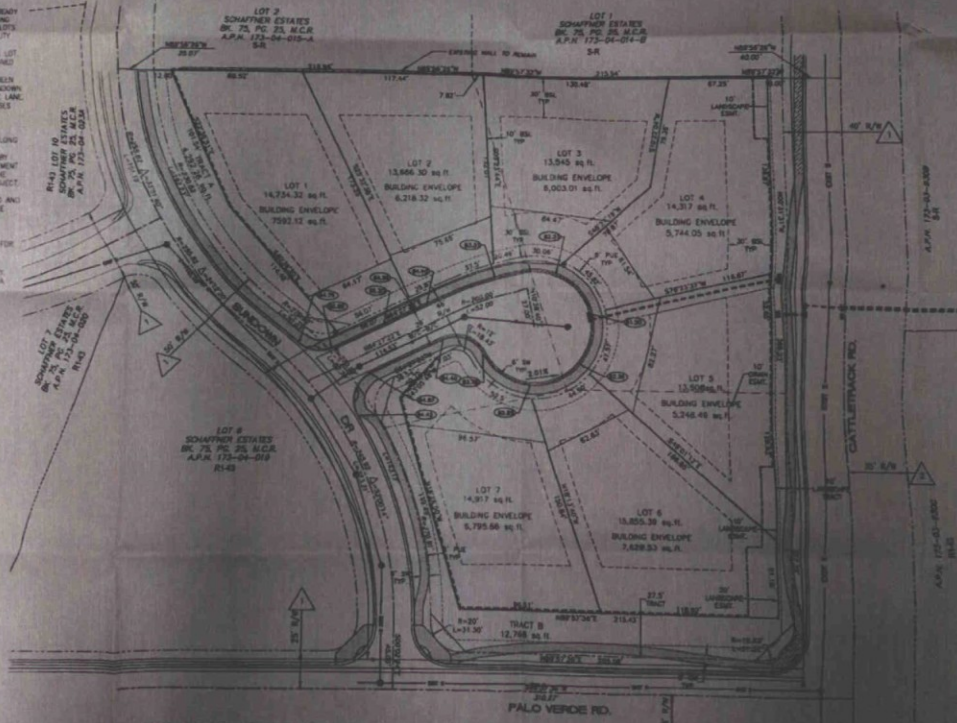
1. THE FORMER, CATTLE TRACK WATER SYSTEMS ARE ALREADY LOCATED IN THE EXISTING STREETS. THE EXISTING SYSTEMS AND UTILITIES LOCATED WITHIN THE LOTS WILL BE REMOVED AND RELOCATED. NEW FACILITY LINES WILL BE EXTENDED INTO THE PROPOSED COLLECTOR DRAIN AND SERVICES PROVIDED TO EACH LOT.
2. THE EXISTING SEPTIC SYSTEMS WILL BE REMOVED AND RELOCATED. THE PROPOSED LOTS WILL BE CONNECTED TO A CITY SEWER LINE THAT HAS BEEN ENGINEERED AND WILL BE CONSTRUCTED IN SANDOWN DRIVE AND SANDOWN CIRCLE FROM PALO VERDE LANE.
3. THERE ARE NO EXISTING NATURAL ANTICLIPURES WITHIN CLOSE PROXIMITY TO THE PROPERTY.
4. THE GROUNDWATER WILL BE EXTENDED ALONG PALO VERDE.
5. CURB, DUTCH AND SIDEWALKS WILL BE ADDED ALONG THE EAST SIDE OF SANDOWN DRIVE.
6. THE PAVEMENT IN SANDOWN WILL BE REMOVED BY MILLING AND REPLACED WITH NEW ASPHALT PAVEMENT AND RUBBER CURB ALONG THE WEST SIDE OF THE STREET DURING THE CONSTRUCTION OF THE PROJECT.
7. THE EXISTING UTILITY LOCATIONS ALONG CATTLETRACK ROAD AND PALO VERDE WILL BE REMOVED AND REPLACED WITH CURB AND GUTTER TO MATCH THE EXISTING THIS IS SHOWN IN THE PRELIMINARY.
8. THE NEW STREET IS TO BE CONSTRUCTED PER SUBMITTER EACH RESIDENTIAL SECTION.
9. EACH LOT WILL BE REQUIRED TO HAVE PARKING FOR AT LEAST FOUR (4) VEHICLES. TWO COINED (LANDSCAPED) AND TWO ON THE STREET.
10. ALL STRUCTURES SHALL BE LIMITED TO 1-STORY. NO STRUCTURE SHALL BE ALLOWED TO PROVIDE A 2-STORY DESIGN.

LEGEND

- 36" TOP OF CURB
 - GRASSY AREA
 - EXISTING SPOT ELEVATION
 - 1284' PERFORMING CONTOUR
 - BUILDING FOOTPRINT (BFL)
 - EXISTING CONCRETE (TO REMAIN)
 - PROPOSED CONCRETE
 - PROPOSED CONTOUR
 - EXISTING LOT LINE
 - PROPOSED LOT LINE
 - EXISTING WALL (TO REMAIN)
 - EXISTING WALL (TO REMOVE)
 - PROPOSED WALL
 - STORM DRAIN
- RIGHT-OF-WAY AS DEFINED BY SCHAFFNER ESTATES PLAT
 WORK BOOK 75, PAGE 25
- RIGHT-OF-WAY AS DEFINED BY MIDCHAMBER PROFESSIONAL CENTER PLAT
 WORK BOOK 82, PAGE 34

LEGAL DESCRIPTION

THAT PART OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, DESCRIBED AS FOLLOWS:



VICINITY MAP

PROJECT DATA

EXISTING ZONING: R1-15 RES
 EXISTING DP: SUBDIVISION
 EXISTING AREA: 1.80 AC
 DENSITY: 1.84 B/LAC
 EX. PARCEL AREA: 2.89 AC
 PROP. ROW AREA: 2.89 AC
 NET AREA: 2.76 AC
 TRACT AREA: 5.39 AC
 OPEN SPACE: 17,257 SF
 NET OPEN SPACE: 14.55

NOTE: - GROSS AREA IS CALCULATED AS THE AREA TO THE CL OF THE ADJACENT STREETS (ZONING BOUNDARY).
 - EX. PARCEL AREA IS THE AREA OF LOTS 3-5 OF SCHAFFNER ESTATES.

BUILDER:
 ADAMS CRAIG ACQUISITIONS
 7904 E. CHAPARRAL RD.
 SUITE A110-113
 SCOTTSDALE, ARIZONA 85250
 PHONE: (480) 534-5015

ENGINEER:
 BK CONSULTING, L.L.C.
 4830 EAST BASILAR ROAD
 SUITE 101
 MESA, ARIZONA 85205
 PHONE: (480) 884-8282



SIENA ESTATES
 PALO VERDE LANE AND CATTLETRACK ROAD
 SCOTTSDALE, AZ 85250

PRELIMINARY PLAT			
FILE NO. 1637	DATE 08/08	6	CONSULTING L.L.C.
FILE 173-04-016	DATE 08/08		
APPROVED BY	DATE 08/08	APPROVED BY	DATE 08/08
APN: 173-04-016		APN: 173-04-017	

Siena Estates

WATER BASIS OF DESIGN REPORT

Northwest Corner of Palo Verde and Cattletrack Rd.

Scottsdale, Arizona

5805 N Sundown Dr

Scottsdale 85250

Prepared for:

Adams Craig Acquisitions

7904 E Chaparral Rd

Ste A110-113

Scottsdale 85250

Prepared by:

**6K CONSULTING
L.L.C.**

4858 E Baseline Road, Suite 101

Mesa, AZ 85206

Phone: (480) 664-8592

Fax: (480) 275-5512



Expires 9/30/19

April 25, 2018

2-PP-2018

06/08/18

TABLE OF CONTENTS

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II.	DATA ANALYSIS METHODS.....	2
III.	CONCLUSIONS.....	2

APPENDICES

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Appendix B

Vicinity Map, Pre-plat
Improvements requested by EPCOR



I. INTRODUCTION

Location & Description

The project address is on the cover of this report. The property consists of three separate parcels and is located on the west side of Cattletrack Road north of Palo Verde Ln. They are further identified as APN 173-04-018, 173-04-017, and 173-04-016. The properties are vacant having had all of the existing structures demolished and removed. There are roads surrounding the properties on three sides (east, west and south). The three parcels have been up-zoned to a suburban general plan designation with R1-18 PRD zoning as of Dec 2017. This report will detail the conditions being proposed through a pre-plat of a seven lot community on the three acre property.

Existing System

The property is provided water by EPCOR. The current infrastructure in the area is varied. The existing lots were provided services off of waterlines in the streets around the properties. Sundown Drive and Sundown Circle have a single 4" ACP pipe connecting to a 4" line in Palo Verde to provide water to the western two properties. The northeast property is serviced from a line in Cattletrack. EPCOR has a water treatment facility on the east side of Cattletrack and therefore has several waterlines located in Palo Verde Dr. and Cattletrack Ln. Palo Verde has three waterlines; working south to north in the street, there is a 16" CIU line, an 8" AC line and a 4" AC line. Cattletrack has 5 waterlines; working west to east, there is a 6" CIU 24" DI, an 8" AC, a 24" DI, and a 16" CIU.

Design Requirements

The design requirements for the new subdivision will be according to the EPCOR Water 2015 Developer and Engineering Guide.

Single family residences will utilize 360 gallons per day per unit average with a Max Day peaking factor of 1.8 and a peak hour factor of 3.0. The open space will be included in the demand for the project at 1,800 gal/acre with no additional peaking factors.

The system pressures are to be between 55 and 80 psi static pressure. The pressure can reduce to 40 psi at peak hour and 20 psi at max day plus fire flow.

The required residential fire flow according to the 2012 International Fire Code, Appendix B is as follows:

- Up to 3,600 sf residences is 1,000 GPM for one hour.
- Up to 4,800 sf residences is 1,750 GPM for two hours.
- Up to 6,200 sf residences is 2,000 GPM for two hours.

A reduction of 50% for required fire flow is allowed for structures that provide an approved fire sprinkler system in the constructed residence.

The project is located in EPCOR's main zone. Given that the project is so near the water treatment and distribution facility, EPCOR expects average day pressures to be greater than 100 psi. This will necessitate an individual PRV for each residence.

Proposed System

EPCOR has requested that Adams Craig install an 8" line from the 16" line in Palo Verde up to the 4" line in Sundown Circle with an 8" stub into the planned cul-de-sac for Siena Estates. These proposed improvements will naturally connect all existing, and required to remain, services into the new line, add all new service lines for the 7 lots and required fire hydrants.

The existing 4" line in Sundown Drive will be abandoned in place. Two hydrants will be added; one to be used as an end of the line blow off for the property system in the proposed cul-de-sac and one along Sundown Drive to help provide better service for the existing residents in case of fire. The project plans will provide 7- 1" service lines and meters as shown on the subdivision plan. One 2" meter will be provided for the common area landscaping on the project.

II. DATA ANALYSIS METHODS

If a model of the system is required, the model will be completed using Water CAD by Haestad Methods to analyze the system data obtained from hydrant pressure and flow testing done for the project.

III. CONCLUSION

The project is small and will have little additional impact to the water system in the area. The waterline extension from the adjacent 16" line in Palo Verde and the upsizing of the 4" existing waterline to an 8" waterline in Sundown Drive will serve the needs of the future residents and better serve the needs of the existing residents in the area surrounding this community called Siena Estates.

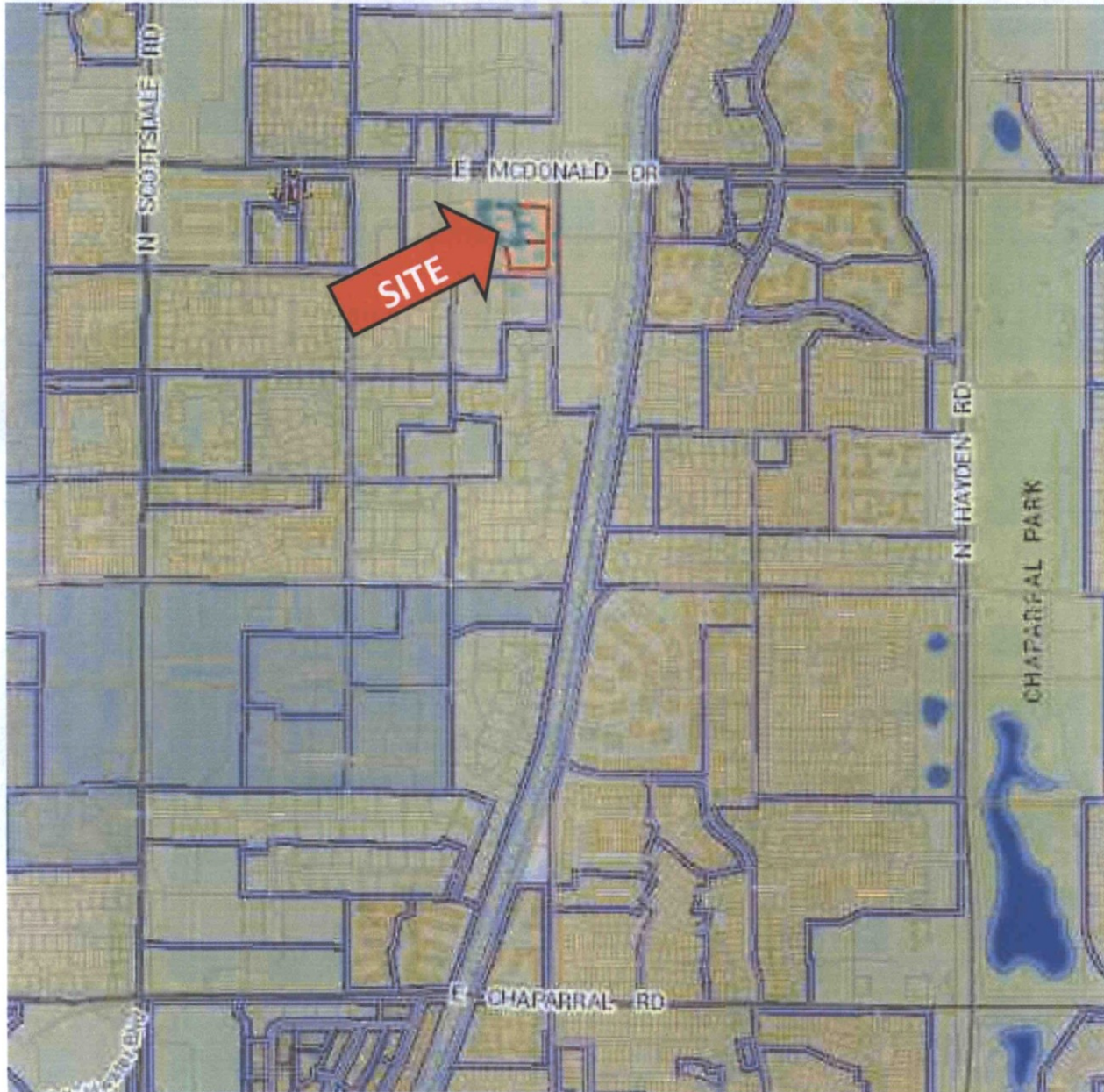
The provided design constraints will be met or exceeded by the improvements proposed in this report.

APPENDIX A

Vicinity Map Siena Estates Pre-Plat

VICINITY MAP

STREET MAP



Siena Estates

PROJ: #3639	Adams Craig Aquisitons	CITY: Scottsdale
DRAFTED: BJ		COUNTY: Maricopa
DATE: JUN 2017		STATE: AZ

SIENA ESTATES by ADAMS CRAIG ACQUISITIONS

REPLAT OF LOTS 3-5 OF SCHAFFNER ESTATES

PALO VERDE LANE AND CATTLETRACK ROAD SCOTTSDALE, AZ 85250

APN's 173-04-016, 173-04-017, 173-04-018

DRAINAGE NARRATIVE:

THE EXISTING PARCELS AND HOMES DRAIN GENERALLY TO THE SOUTHEAST. THE LOTS WILL DRAIN TO THE CUL-DE-SAC TO BE COLLECTED AND DIRECTED, BY STORM DRAIN, TO A PROPOSED SHALLOW BASIN WHICH WILL DRAIN INTO EXISTING CATCH BASINS IN CATTLE TRACK THAT DIRECT WATER TO THE EXISTING RETENTION BASIN LOCATED EAST OF CATTLETRACK AND SOUTH OF McDONALD DRIVE. PORTIONS OF LOTS 4-7 WILL DRAIN TO CATTLETRACK AND TO PALO VERDE TO BE RETAINED IN SMALL DETENTION BASINS DESIGNED TO ASSIST IN PROVIDING ADDITIONAL RUNOFF GENERATED BY THE DEVELOPMENT.

ENGINEER'S NOTES:

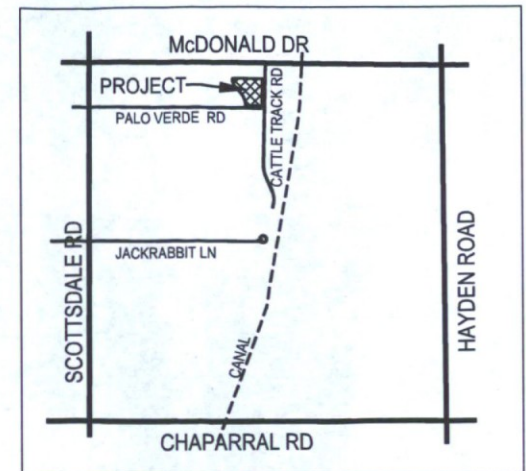
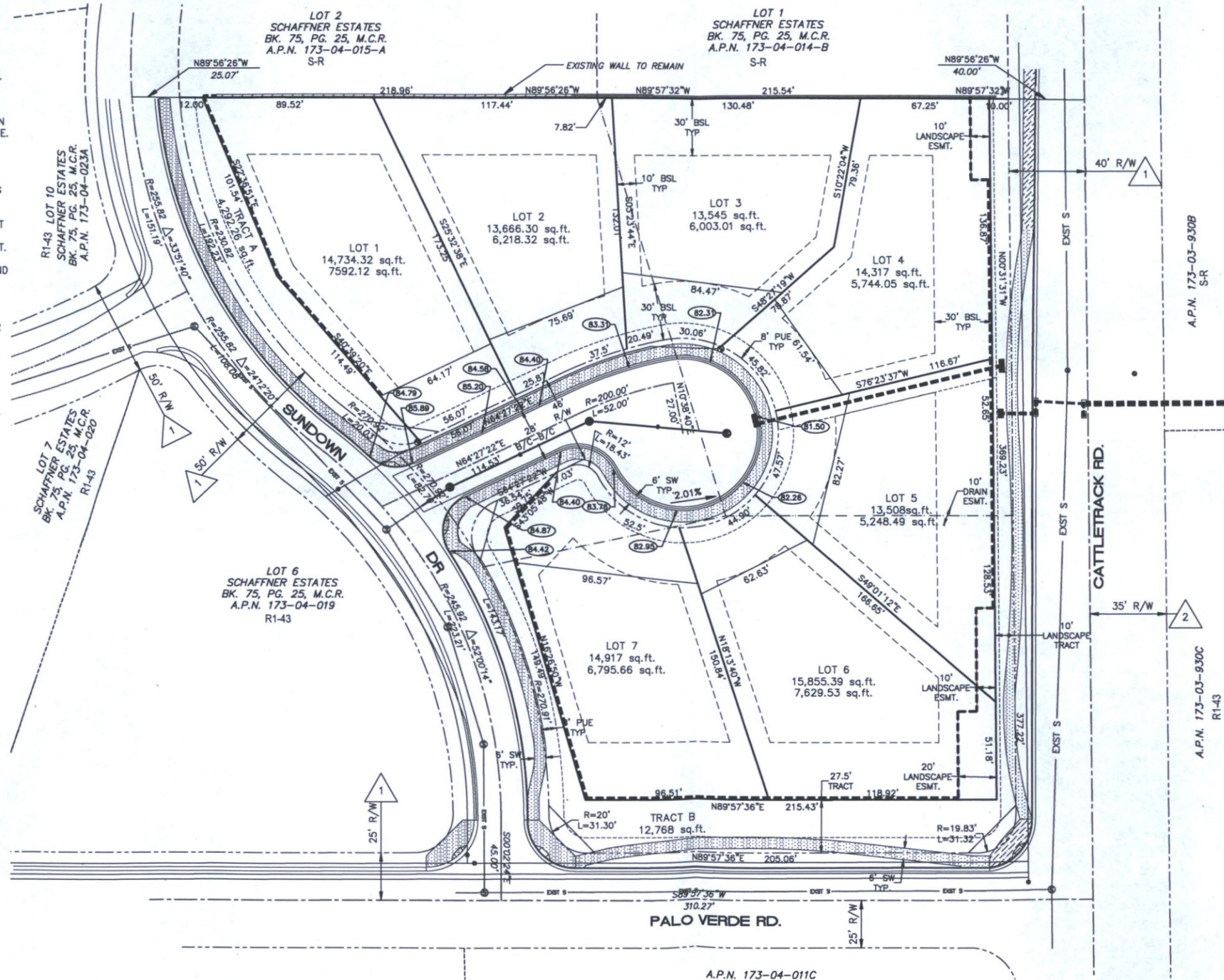
1. THE POWER, GAS AND WATER UTILITIES ARE ALREADY LOCATED IN THE EXISTING STREETS. THE EXISTING EASEMENTS AND UTILITIES LOCATED WITHIN THE LOTS WILL BE ABANDONED AND REMOVED. NEW FACILITY LINES WILL BE EXTENDED INTO THE PROPOSED CUL-DE-SAC AND SERVICES PROVIDED TO EACH LOT.
2. THE EXISTING SEPTIC SYSTEMS WILL BE ABANDONED AND REMOVED. THE PROPOSED LOTS WILL BE CONNECTED TO A CITY SEWER LINE THAT HAS BEEN ENGINEERED AND WILL BE CONSTRUCTED IN SUNDOWN DRIVE AND SUNDOWN CIRCLE FROM PALO VERDE LANE.
3. THERE ARE NO APPARENT NATURAL WATERCOURSES WITHIN CLOSE PROXIMITY TO THE PROPERTY.
4. THE SIDEWALK WILL BE EXTENDED ALONG PALO VERDE.
5. CURB, GUTTER AND SIDEWALK WILL BE ADDED ALONG THE EAST SIDE OF SUNDOWN DRIVE.
6. THE PAVEMENT IN SUNDOWN WILL BE REMOVED BY MILLING AND REPLACED WITH NEW ASPHALT PAVEMENT AND RIBBON CURB ALONG THE WEST SIDE OF THE STREET DURING THE CONSTRUCTION OF THIS PROJECT.
7. THE EXISTING DRIVEWAY LOCATIONS ALONG CATTLETRACK AND PALO VERDE WILL BE REMOVED AND REPLACED WITH CURB AND GUTTER TO MATCH THE EXISTING. THIS IS SHOWN IN THE PRE-PLAT.
8. THE NEW STREET IS TO BE CONSTRUCTED PER SUBURBAN LOCAL RESIDENTIAL SECTION.
9. EACH LOT WILL BE REQUIRED TO HAVE PARKING FOR AT LEAST FOUR (4) VEHICLES. TWO COVERED (GARAGE) AND TWO ON THE DRIVEWAY.
10. ALL STRUCTURES SHALL BE LIMITED TO 1-STORY. NO STRUCTURE SHALL BE ALLOWED TO PROVIDE A 2-STORY DESIGN.

LEGEND

- 85.30 TOP OF CURB
- GRADE BREAK
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- BUILDING SETBACK LINE (BSL)
- EXISTING CONCRETE (TO REMAIN)
- PROPOSED CONCRETE
- PROPOSED CONTOUR
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING WALL (TO REMOVE)
- EXISTING WALL (TO REMAIN)
- PROPOSED WALL
- STORM DRAIN
- RIGHT-OF-WAY AS DEFINED BY SCHAFFNER ESTATES PLAT MCR BOOK 75, PAGE 25
- RIGHT-OF-WAY AS DEFINED BY McDONALD PROFESSIONAL CENTER PLAT MCR BOOK 895, PAGE 34

LEGAL DESCRIPTION:

THAT PART OF SECTION 14, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, DESCRIBED AS FOLLOWS:
PARCELS 3, 4 AND 5 OF SCHAFFNER ESTATES RECORDED IN MCR BOOK OF MAPS 75, PAGE 25.



VICINITY MAP

PROJECT DATA

EXISTING ZONING: R1-18 PRD
EXISTING GP: SUBURBAN
GROSS AREA: 3.80 AC
DENSITY: 1.84 DU/AC
EX. PARCEL AREA: 2.99 AC
PROP. ROW AREA: 0.29 AC
NET AREA: 2.70 AC
TRACT AREA: 0.39 AC
OPEN SPACE: 17,057 SF
NET OPEN SPACE %: 14.5%

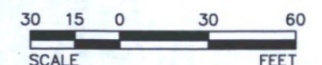
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SUITE 101
MESA, ARIZONA 85206
PHONE: (480) 664-8592



SIENA ESTATES
PALO VERDE LANE AND CATTLETRACK ROAD
SCOTTSDALE, AZ 85250

PRELIMINARY PLAT

PROJ. No.: 3639	6K CONSULTING L.L.C.
DATE: MAY 2018	
SCALE: 1"=30'	
DESIGNED: 6K	DRAWN: 6K
REV.	APPROVED: CHB
	DRAWING NO. 1
	SHT. 1 OF 1

SIENA ESTATES by ADAMS CRAIG ACQUISITIONS
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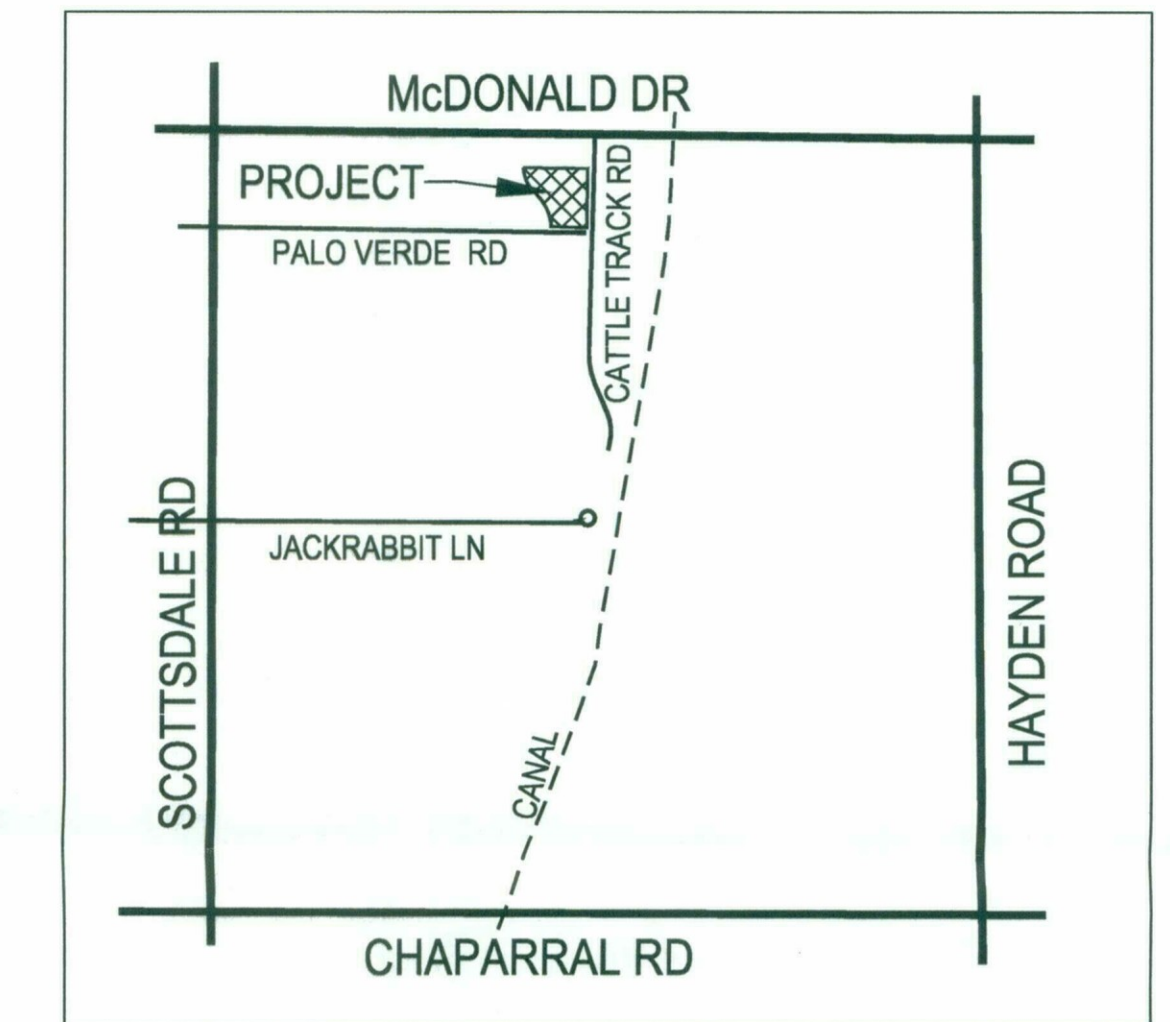
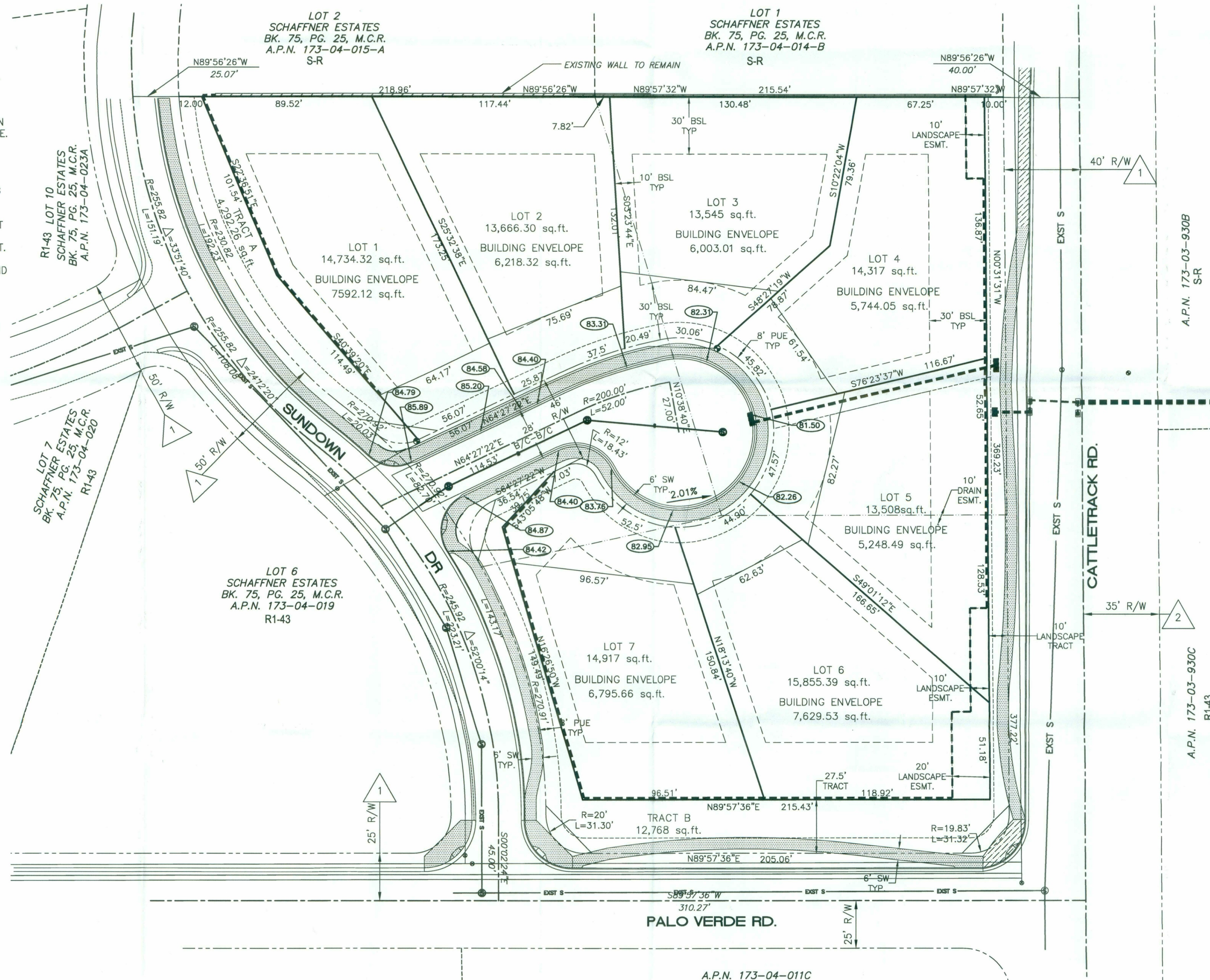
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REV.		DRAWING NO.
		1
		SHT. 1 OF 1

APPENDIX B

EPCOR Requested Improvements Exhibit

EPCOR Water

