SEWER BASIS OF DESIGN REPORT
FOR
HUNTINGTON OASIS APARTMENTS

PRELIMINARY Basis of Design Report

- ☐ ACCEPTED
- ☑ ACCEPTED AS NOTED
- ☐ REVISE AND RESUBMIT

CITY OF SCOTTSDALE
SCOTTSDALE WATER
9379 E San Salvador Dr.
Scottsdale, AZ 85258

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 ldillon **DATE** 12/28/2020

Address comments below and herein within the DR case final BOD:
1) Stipulation: Provide 20ft combined public water and sewer line easement for new water and sewer lines. Lines to be located only entirely within drive aisles with public line 6ft from any structures. DS&PM 7-1.402
2) For all restaurant pads you need to add an accessible grease interceptor DS&PM 7-1.411.
3) All new sewer service lines to be 6" minimum and per MAG 440-3 per DS&PM 7-1.409, A&B.
4) If water is not separately metered for the restaurant both sewer for the entire building will be billed at the higher commercial rate. Consider financial billing implications. Refer to DS&PM 6-1.416.

15-ZN-2020

Scottsdale, Arizona

20 November 2020

PREPARED FOR
Nelson Partners, Inc
15210 North Scottsdale Road, Suite 300
Scottsdale, Arizona 85254

DEVELOPER
Village Property Management, LLC
PO BOX 88
Beverly Hills, California 90213

SITE ADDRESS
3302 -3388 North Hayden Road
Scottsdale, Arizona 85251

PREPARED BY

CYPRESS CIVIL

4450 north 12th street, #228
phoenix, arizona 85014
CYPRESS # 20.122

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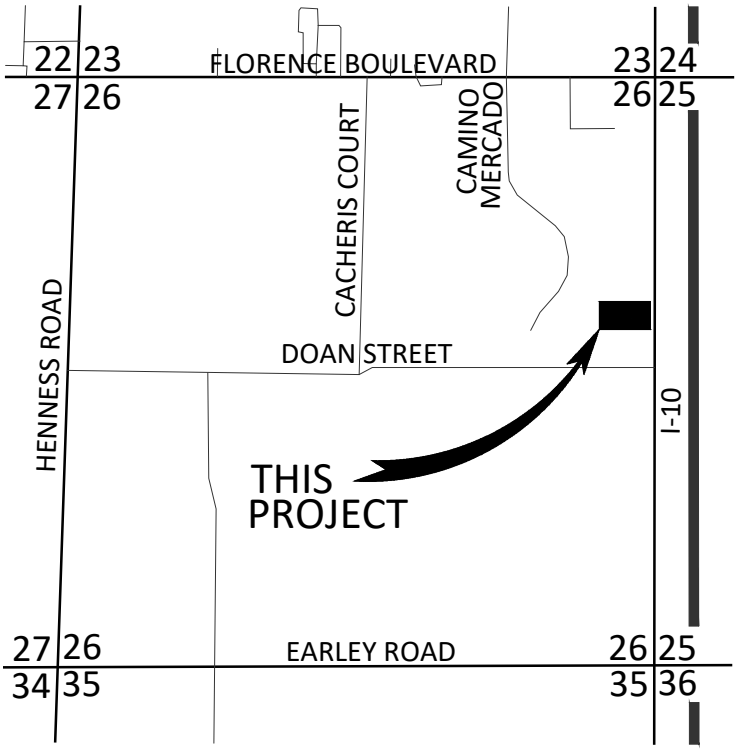


IN THE SE 1/4 OF THE NE 1/4 OF SECTION 26,
T. 6 S., R. 6 E., G.&S.R.M.,
CITY OF CASA GRANDE, PINAL COUNTY, ARIZONA

LOCATION MAP

NORTH

3" = 1 MILE

15-ZN-2020
12/04/20

INTRODUCTION: PROJECT DESCRIPTION AND LOCATION

The Project is known as 'Huntington Oasis Apartments' and is located at 3302 through 3388 North Hayden Road in Scottsdale, Arizona. The Project is located on the west side of Hayden Road, south of Osborn Road. The Project consists of the construction of a new multi-story apartment building, a restaurant building, and a retail building with all required grading and drainage, parking, utility and paving improvements.

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

EXISTING CONDITIONS

Per available utility maps and as-built records, the site is currently developed with five existing buildings onsite. The existing buildings are served by individual connections to an existing 8" VCP sewer main, which ties into an existing main in Hayden Road at the southeast and wraps around the site, ending in a terminal manhole. Refer to Appendix A for City of Scottsdale Water and Sewer Quarter Section Map.

PROPOSED CONDITIONS

The five existing buildings shall be demolished and three new buildings shall be built on site. Building 1 shall be a restaurant. Building 2 shall be a mixed-use restaurant/retail building and Building 3 an apartment building with portions of mixed-use restaurant/retail. The existing 8" sewer main shall be cut in the drive aisle at the south. The entire sewer system, including the existing 8" main and the service connections, shall be abandoned west of this cut. The main to the east that taps Hayden Road and comes onsite shall remain, along with one service to an existing drive-thru restaurant at the southeast corner. A new manhole shall be installed to connect a new 8" sewer main to the existing 8" sewer main here. From this manhole, the new sewer main shall run north, where all three buildings shall tap the new main with new 6" services at 2.0% slopes. Refer to Appendix B for Site Plan and Appendix C for Preliminary Improvement Plans.

Why 2%? 1% should satisfy IPC. Grease interceptors must be provided for restaurants and shown on final plans.

ok

REQUIRED COMPUTATIONS

PROPOSED SEWER DEMAND

Building 1

Average Day Demand (Restaurant): 1.2 GPD/SF x 3,309 SF = 3,970.8 GPD

Peak Demand: 6 x 3,970.8 = 23,824.8 GPD

Using calculations per the AAC Title 18, Chapter 9, with a population less than 100, the velocity for the partial flow in a 6-inch line at 2.0% slope is 4.05 ft/sec and the d/D ratio is 0.17. Thus, the expected maximum demand of 23,824.8 GPD is acceptable in the 6" service. Refer to Appendix D for Sewer Flow Calculations.

Building 2

Average Day Demand (Restaurant): 1.2 GPD/SF x 3,600 SF = 4,320 GPD
(Commercial/Retail): 0.5 GPD/SF x 3,600 SF = 1,800 GPD
Total: 6,120 GPD

Peak Demand (Restaurant): 6 x 4,320 = 25,920 GPD
(Commercial/Retail): 3 x 1,800 = 5,400 GPD
Total: 31,320 GPD

Using calculations per the AAC Title 18, Chapter 9, with a population less than 100, the velocity for the partial flow in a 6-inch line at 2.0% slope is 4.05 ft/sec and the d/D ratio is 0.18. Thus, the expected maximum demand of 31,320 GPD is acceptable in the 6" service. Refer to Appendix D for Sewer Flow Calculations.

Building 3

Average Day Demand (Restaurant): 1.2 GPD/SF x 7,472 SF = 8,966.4 GPD
(Commercial/Retail): 0.5 GPD/SF x 4,353 SF = 2,176.5 GPD
(Condo): 140 GPD/Unit x 300 Units = 42,000 GPD
Total: 53,142.9 GPD

Peak Demand (Restaurant): 6 x 8,966.4 = 53,798.4 GPD
(Commercial/Retail): 3 x 2,176.5 = 6,529.5 GPD
(Condo): 4.5 x 42,000 =189,000 GPD
Total: 249,327.9 GPD

Using calculations per the AAC Title 18, Chapter 9, with a population less than 1,500, the velocity for the partial flow in a 6-inch line at 2.0% slope is 4.05 ft/sec and the d/D ratio is 0.49. Thus, the expected maximum demand of 249,327.9 GPD is acceptable in the 6" service. Refer to Appendix D for Sewer Flow Calculations.

Existing Drive-thru

Average Day Demand (Restaurant): 1.2 GPD/SF x 3,089 SF = 3,706.8 GPD
Peak Demand (Restaurant): 6 x 3,706.8 = 22,240.8 GPD

Total Demand for New/Existing 8" Main:

Average Day Demand: 3,970.8 + 6,120 + 53,142.9 + 3,706.8 = 66,940.5 GPD

227gpm

Peak Demand: 23,824.8 + 31,320 + 249,327.9 + 22,240.8 = 326,713.5

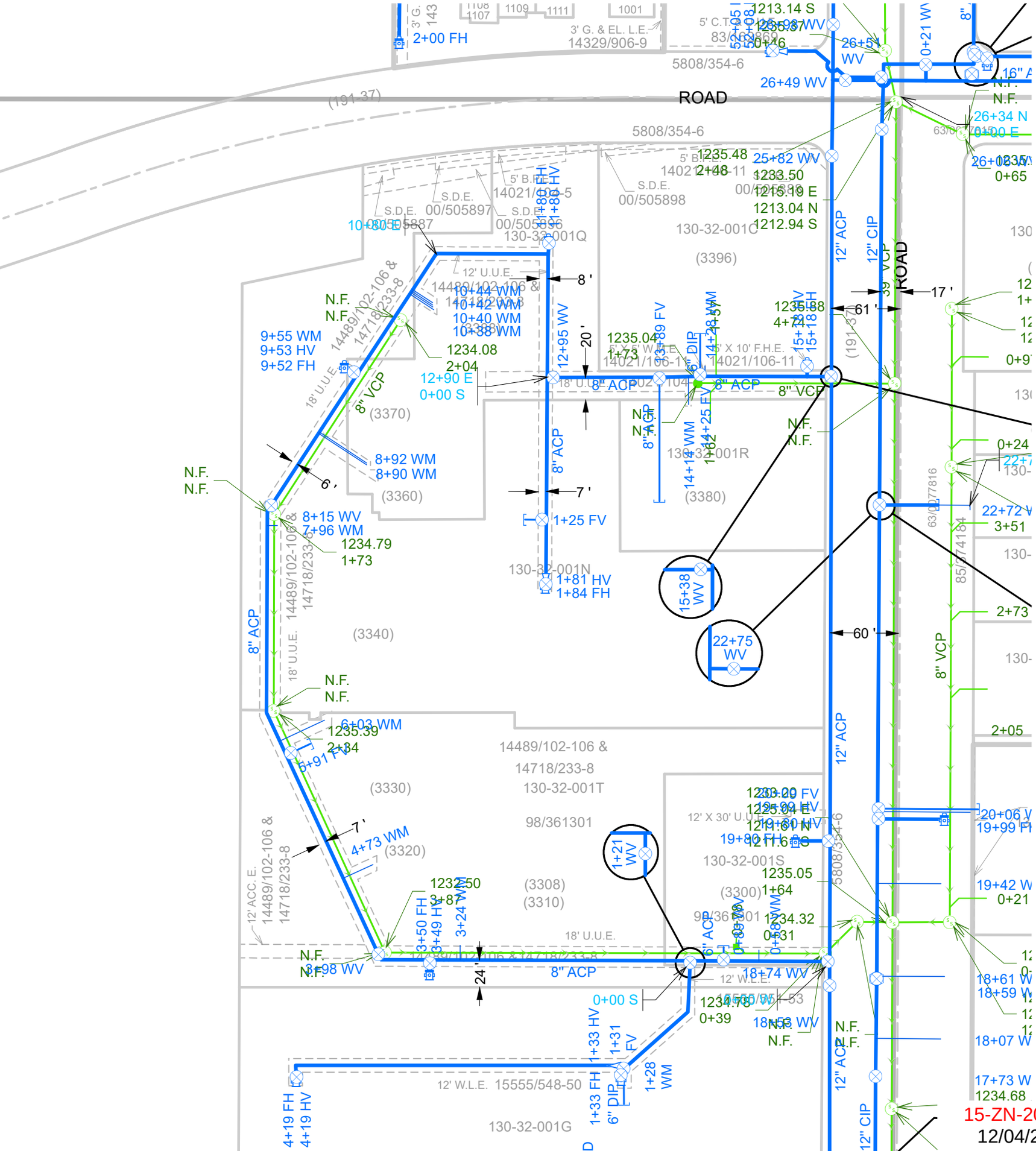
Using calculations per the AAC Title 18, Chapter 9, with a population less than 1,700, the velocity for the partial flow in an 8-inch line at 0.5% slope is 2.45 ft/sec and the d/D ratio is 0.55. Thus, the expected maximum demand of 326,713.5 GPD is acceptable in the 8" main. Refer to Appendix D for Sewer Flow Calculations.

OK capacity 300gpm

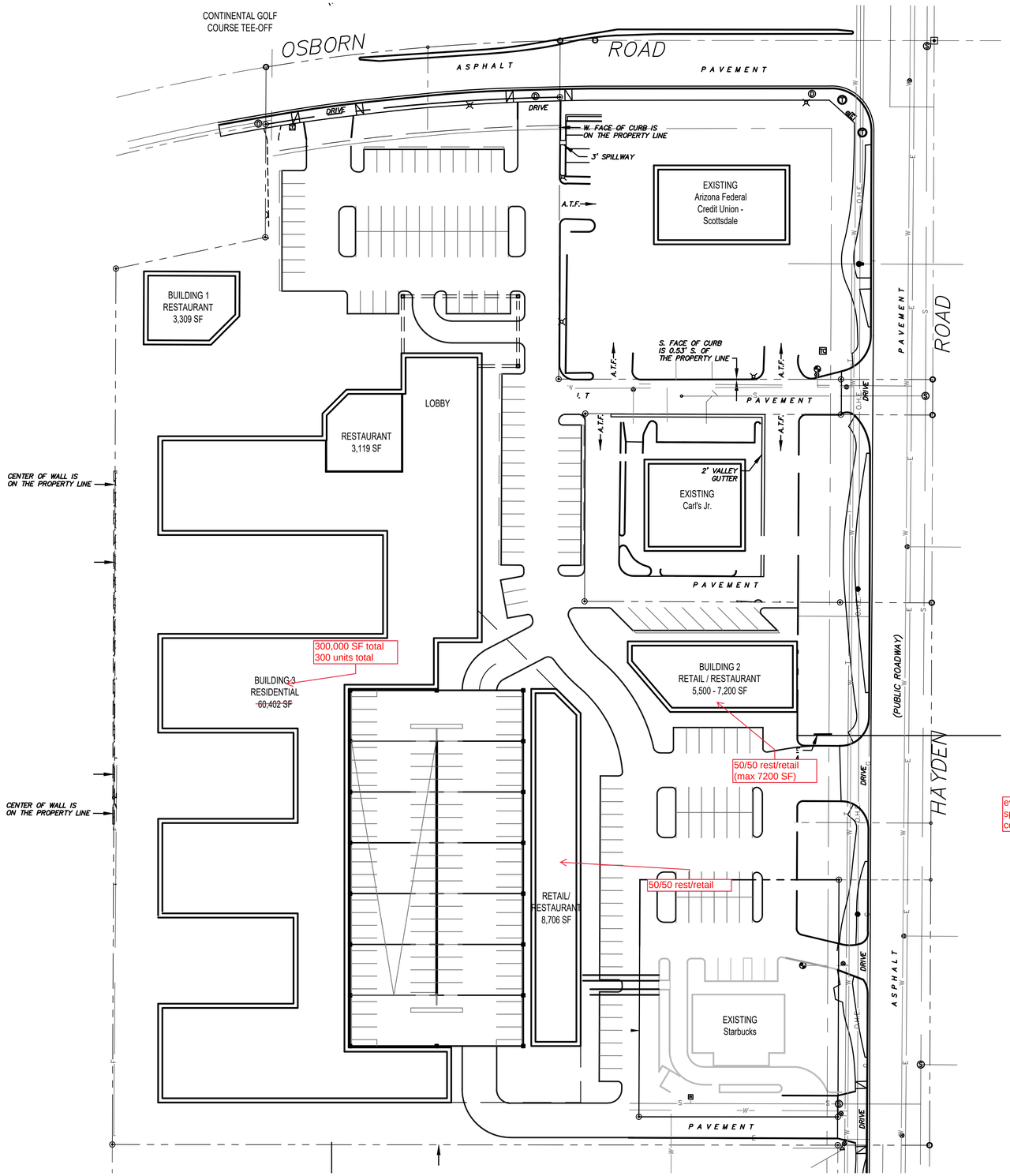
CONCLUSION

CYPRESS respectfully submits this report as the Wastewater Design Report for the proposed Huntington Oasis Development. The proposed wastewater system shall be designed in accordance with ADEQ, International Building Code, and the City of Scottsdale standards.

Appendix A
City of Scottsdale Water and Sewer Quarter Section Map


ROAD
ROAD
5808/354-6
14329/906-9
130-32-001Q
130-32-001C
(3396)
130-32-001R
(3380)
130-32-001N
(3370)
(3360)
(3340)
130-32-001T
(3330)
130-32-001S
(3300)
(3308)
(3310)
(3320)
14489/102-106 &
14718/233-8
98/361301
130-32-001G
12" ACP
12" CIP
8" VCP
8" ACP
18' U.U.E.
12' U.U.E.
12' W.L.E. 15555/548-50
S.D.E. 00/505897
S.D.E. 00/505898
2+00 FH
1213.14 S
1235.87 WV
26+51 WV
26+49 WV
25+82 WV
1233.50
1215.19 E
1213.04 N
1212.94 S
1235.48
2+48
10+80 HV
10+80 FH
10+44 WM
10+42 WM
10+40 WM
10+38 WM
1234.08
2+04
12+90 E
0+00 S
12+95 WV
1235.04
1+73
13+89 FV
14+28 WM
14+25 FV
1235.88
4+78
8+92 WM
8+90 WM
8+15 WV
7+96 WM
1234.79
1+73
1+25 FV
1+81 HV
1+84 FH
6+03 WM
1235.39
2+84
6+91 FV
4+73 WM
1232.50
3+87
3+50 FH
3+49 HV
3+24 WV
3+98 WV
1+21 WV
15+38 WV
22+75 WV
18+74 WV
18+53 WV
1234.78
0+39
1+33 HV
1+31 FV
1+28 WM
1+33 FH
6" DIP
4+19 FH
4+19 HV
1235.05
1+64
1234.32
0+31
0+00 E
0+65
0+24
2+73
2+05
3+51
60 '
61 '
17 '
24 '
20 '
8 '
7 '
6 '
N.F.
15-ZN-2020
12/04/20

Appendix B
Site Plan



NORTH — 01 **SITE PLAN**

SCALE: 1"=40' REF:

0 40' 80'

PLANS, DESIGNS, GUIDELINES AND OTHER ELEMENTS OF THIS DOCUMENT ARE CONCEPTUAL ONLY AND SUBJECT TO FUTURE MODIFICATIONS

PROJECT INFORMATION

CURRENT ZONING:	**PNC**
PROPOSED ZONING:	**PUD** **Planned Unit Development**
GROSS SITE AREA:	**7.00 ACRES** **(304,920 SF)**
NET LOT AREA:	**6.6 ACRES** **(288,288 SF)**
PROPOSED GFAR :	**308,000 SF (+/- 1,000 SF)**
MAX. HEIGHT ALLOWED:	**48 FT**
PROPOSED HEIGHT:	**48 FT**
NUMBER OF UNITS:	**300 UNITS**

AREA TABULATIONS

RESTAURANT/RETAIL	21,000 SF (+/- 1,000 SF)
RESIDENTIAL	286,606 SF
850 AVG (EXCLUDING	
EFF. UNITS /85% EFF	300 UNITS

PARKING TABULATIONS

SURFACE PARKING	132 STALLS
STRUCTURED	
LEVEL B1	62 CARS
LEVEL GRADE	98 CARS
LEVEL 2	98 CARS
LEVEL 3	98 CARS
LEVEL 4	98 CARS
TOTAL	454 STALLS
TOTAL	586 STALLS

NELSEN PARTNERS
ARCHITECTS & PLANNERS

Nelsen Partners, Inc.
Austin | Scottsdale

15210 North Scottsdale Road
Suite #300
Scottsdale, Arizona 85254
t 480.949.6800
nelsenpartners.com

PRELIMINARY

NOT FOR CONSTRUCTION OR RECORDING

Huntington Oasis

N Hayden Rd and E Osborn Rd
Scottsdale, AZ 85251

Date
JUNE 24, 2020

PRE-APP # **ZONING #** **DRB #**

Project No.
319078

15-ZN-2020
12/04/20

Appendix C
Preliminary Improvement Plans

PRELIMINARY IMPROVEMENT PLAN for HUNTINGTON OASIS APARTMENTS

3302 - 3388 NORTH HAYDEN ROAD SCOTTSDALE, ARIZONA

A PORTION SOUTHEAST QUARTER OF SECTION 26, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

PROJECT INFORMATION

PROJECT DESCRIPTION:
THE PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW MULTI-STORY APARTMENT BUILDING, A RESTAURANT BUILDING AND A RETAIL BUILDING WITH ALL REQUIRED GRADING & DRAINAGE, PARKING, UTILITY AND PAVING IMPROVEMENTS.

ADDRESS:
3302-3388 NORTH HAYDEN ROAD
SCOTTSDALE, ARIZONA 85251

APN: 130-32-001T
130-32-001Q
130-32-001N

ZONING: PNC

SITE AREA: 280,609 SF (6.44 AC)

SURVEY NOTES

1. THE SURVEY FOR THIS PROJECT WAS PERFORMED BY:
   SUPERIOR SURVEYING SERVICES, INC.
   2122 WEST LONE CACTUS DRIVE, SUITE 11
   PHOENIX, ARIZONA 85027
   PH: 623-869-0223
   CONTACT: DAVID S. KLEIN, R.L.S.
2. THE BASIS OF BEARINGS FOR THIS PROJECT IS THE MONUMENT LINE OF HAYDEN ROAD, ALSO BEING THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 26, USING A BEARING OF NORTH 00°14'21" EAST PER THE MAP OF DEDICATION, BOOK 191 OF MAPS, PAGE 37, RECORDS OF MARICOPA COUNTY, ARIZONA.
3. THE BASIS OF ELEVATION FOR THIS PROJECT IS THE MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION 3" BRASS CAP IN HANDHOLE (0.50' DEPTH) MARKING THE INTERSECTION OF OSBORN ROAD AND HAYDEN ROAD HAVING AN ELEVATION OF 1235.015 FEET (NAVD88).

BENCHMARK

THE BENCHMARK USED FOR THIS PLAN IS THE MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION 3" BRASS CAP IN HANDHOLE (0.50' DEPTH) MARKING THE INTERSECTION OF OSBORN ROAD AND HAYDEN ROAD HAVING AN ELEVATION OF 1235.015 FEET (NAVD88).

LEGAL DESCRIPTION

PARCEL NO. 1:
A PART OF THE SOUTHEAST QUARTER OF SECTION TWENTY-SIX (26), TOWNSHIP TWO (2) NORTH, RANGE FOUR (4) EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE EAST QUARTER CORNER OF SECTION 26;
THENCE SOUTH 00°14'21" WEST ALONG THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 26 AND ALONG THE CENTERLINE OF HAYDEN ROAD A DISTANCE OF 554.25 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING SOUTH 00°14'21" WEST ALONG THE AFOREMENTIONED LINE A DISTANCE OF 228.23 FEET;
THENCE NORTH 89°56'59" WEST A DISTANCE OF 578.94 FEET;
THENCE NORTH 00°14'00" EAST A DISTANCE OF 245.85 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 35.02 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 2.09 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 25.30 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 6.00 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 10.00 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 6.00 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 170.62 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 13.62 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 338.02 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION CONVEYED TO RIGEL CORPORATION, A NEBRASKA CORPORATION, IN DEED RECORDED MARCH 18, 1998 IN DOCUMENT NO. 98-0207776 AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:
THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION 26, TOWNSHIP 2 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, DESCRIBED AS FOLLOWS:
COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 26;
THENCE SOUTH 00°14'21" WEST ALONG THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 26, A DISTANCE OF 594.48 FEET;
THENCE NORTH 89°58'16" WEST, 65.00 FEET TO THE WEST RIGHT-OF-WAY LINE OF HAYDEN ROAD AND THE POINT OF BEGINNING;
THENCE SOUTH 00°14'21" WEST ALONG SAID WEST RIGHT-OF-WAY LINE, 168.00 FEET;
THENCE NORTH 89°58'16" WEST, 141.00 FEET;
THENCE NORTH 00°14'21" EAST, 168.00 FEET;
THENCE SOUTH 89°58'16" EAST, 141.00 FEET TO THE POINT OF BEGINNING; AND
EXCEPT AN UNDIVIDED ONE-HALF (1/2) INTEREST IN AND TO ALL OIL, PETROLEUM, NAPHTHA AND OTHER HYDROCARBON SUBSTANCES AND MINERALS LYING BELOW A DEPTH OF 500 FEET, AS RESERVED IN THE DEED RECORDED IN DOCKET 9943, PAGE 719, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2:
A PART OF THE SOUTHEAST QUARTER OF SECTION TWENTY-SIX (26), TOWNSHIP TWO (2) NORTH, RANGE FOUR (4) EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION TWENTY-SIX (26);
THENCE SOUTH 00°14'21" WEST ALONG THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 26 AND ALONG THE CENTERLINE OF HAYDEN ROAD A DISTANCE OF 240.00 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING SOUTH 00°14'21" WEST ALONG THE AFOREMENTIONED LINE A DISTANCE OF 158.21 FEET;

LEGAL DESCRIPTION

THENCE NORTH 89°45'39" WEST A DISTANCE OF 246.00 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 133.00 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 120.17 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 104.48 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 92.44 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 6.28 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 6.00 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 16.19 FEET;
THENCE NORTH 89°45'39" WEST, A DISTANCE OF 21.67 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 118.64 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 59.00 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 110.48 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 68.64 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 112.00 FEET TO A POINT ON THE CENTERLINE OF OSBORN ROAD, SAID POINT BEING ON A CURVE CONCAVE SOUTHERLY THE CENTER LINE OF WHICH BEARS SOUTH 04°42'05" EAST A DISTANCE OF 1432.40 FEET;
THENCE EASTERLY ALONG THE ARC OF SAID CURVE AND ALONG THE AFOREMENTIONED CENTERLINE THROUGH A CENTRAL ANGLE OF 03°45'05" AND A DISTANCE OF 93.79 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 239.78 FEET;
THENCE SOUTH 89°56'59" EAST A DISTANCE OF 265.00 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION TWENTY-SIX (26), TOWNSHIP TWO (2) NORTH, RANGE FOUR (4) EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 26;
THENCE SOUTH 00°14'21" WEST ALONG THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 26 AND ALONG THE CENTERLINE OF HAYDEN ROAD FOR A DISTANCE OF 265.21 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING SOUTH 00°14'21" WEST ALONG THE AFOREMENTIONED LINE FOR A DISTANCE OF 133.00 FEET;
THENCE NORTH 89°45'39" WEST FOR A DISTANCE OF 246.00 FEET;
THENCE NORTH 00°14'21" EAST FOR A DISTANCE OF 133.00 FEET;
THENCE SOUTH 89°45'39" EAST FOR A DISTANCE OF 246.00 FEET TO THE TRUE POINT OF BEGINNING; AND
EXCEPT AN UNDIVIDED ONE-HALF (1/2) INTEREST IN AND TO ALL OIL, PETROLEUM, NAPHTHA AND OTHER HYDROCARBON SUBSTANCES AND MINERALS LYING BELOW A DEPTH OF 500 FEET, AS RESERVED IN THE DEED RECORDED IN DOCKET 9943, PAGE 719, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 3:
NON-EXCLUSIVE EASEMENTS FOR THE INGRESS AND EGRESS AND FOR THE PASSAGE AND PARKING OF MOTOR VEHICLES INTO, OUT OF, ON, OVER AND ACROSS ALL PARKING AREAS, DRIVEWAYS AND SERVICE AREAS; FOR THE INGRESS AND EGRESS AND PASSAGE FOR PEDESTRIANS INTO, OUT OF, ON, OVER AND ACROSS THE COMMON AREAS; TOGETHER WITH NON-EXCLUSIVE EASEMENTS UNDER, THROUGH AND ACROSS THE COMMON AREA FOR WATER DRAINAGE SYSTEMS OR STRUCTURES, WATER MAINS, SEWERS, WATER SPRINKLER SYSTEM LINES, TELEPHONES OR ELECTRIC CONDUITS OR SYSTEMS, GAS MAINS AND OTHER PUBLIC UTILITIES AND SERVICE EASEMENTS, AS PROVIDED IN DECLARATION RECORDED SEPTEMBER 29, 1980 IN DOCKET 14718, PAGE 242 AND AMENDED IN DOCUMENT NO. 83 -150223.

PARCEL NO. 4:
A PART OF THE SOUTHEAST QUARTER OF SECTION TWENTY-SIX (26), TOWNSHIP TWO (2) NORTH, RANGE FOUR (4) EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;
COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 26;
THENCE SOUTH 00°14'21" WEST ALONG THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 26 AND ALONG THE CENTERLINE OF HAYDEN ROAD A DISTANCE OF 398.21 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING SOUTH 00°14'21" WEST ALONG THE AFOREMENTIONED LINE A DISTANCE OF 156.04 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 338.02 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 13.62 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 170.62 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 6.00 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 10.00 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 6.00 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 25.30 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 2.09 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 35.02 FEET;
THENCE NORTH 00°14'00" EAST A DISTANCE OF 374.67 FEET;
THENCE NORTH 78°10'21" EAST A DISTANCE OF 108.14 FEET;
THENCE NORTH 00°14'00" EAST A DISTANCE OF 120.58 FEET TO A POINT ON THE CENTERLINE OF OSBORN ROAD, SAID POINT BEING A POINT OF A CURVE CONCAVE SOUTHERLY THE CENTER OF WHICH BEARS SOUTH 09°19'29" EAST A DISTANCE OF 1432.40 FEET;
THENCE EASTERLY ALONG THE ARC OF SAID CURVE AND ALONG THE AFOREMENTIONED CENTERLINE THROUGH A CENTRAL ANGLE OF 04°37'24" AND A DISTANCE OF 115.59 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 112.00 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 68.64 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 110.48 FEET;
THENCE NORTH 89°45'39" WEST A DISTANCE OF 59.00 FEET;
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 118.64 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 21.67 FEET;
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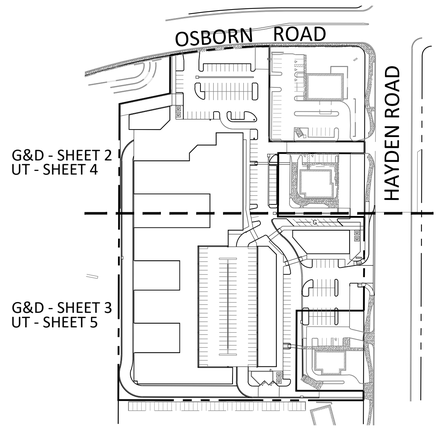
THENCE SOUTH 00°14'21" WEST A DISTANCE OF 6.28 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 92.44 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 104.48 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 120.17 FEET;
THENCE NORTH 00°14'21" EAST A DISTANCE OF 133.00 FEET;
THENCE SOUTH 89°45'39" EAST A DISTANCE OF 246.00 FEET TO THE TRUE POINT OF BEGINNING;
EXCEPTING THEREFROM AN UNDIVIDED ONE-HALF INTEREST IN AND TO ALL OIL, GAS, PETROLEUM, NAPTHA AND OTHER HYDROCARBON SUBSTANCES AND MINERALS LYING BELOW A DEPTH OF 500 FEET, AS RESERVED IN THE DEED RECORDED IN DOCKET 9943, PAGE 719, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 5:
NONEXCLUSIVE EASEMENTS FOR INGRESS AND EGRESS AND PASSAGE OF PEDESTRIANS, PARKING AND PASSAGE OF MOTOR VEHICLES INTO, OUT OF, ON, OVER AND ACROSS ALL PARKING AREAS, DRIVEWAYS AND SERVICE AREAS, ALL AS SET FORTH IN INSTRUMENTS RECORDED IN DOCKET 14494, PAGE 634 AND IN DOCKET 14547, PAGE 57.



PROJECT OVERVIEW

DRAINAGE STATEMENT

-SITE IS IN A SPECIAL FLOOD HAZARD AREA - NO
-OFFSITE FLOWS AFFECT THIS SITE - NO
-RETENTION PROVIDED IS FIRST FLUSH.
-EXTREME STORM OUTFALLS THE SITE AT THE WEST CURBLINE AT THE ELEVATION OF 1232.00

PROJECT RETENTION

THE REQUIRED RETENTION IS THE GREATER OF THE 100-YEAR, 2-HOUR PRE VS POST VOLUME OR THE FIRST FLUSH VOLUME.

PRE VS POST RETENTION VOLUME:
VOLUME [CF] = C x (P [IN] / 12) x AREA [SF]

EXISTING CONDITION 100-YR, 2-HR:
V = 0.88 x (2.27/12) x 309,416 = 51,508 CF

PROPOSED CONDITION 100-YR, 2-HR:
V = 0.87 x (2.27/12) x 309,416 = 51,508 CF

PRE VS POST RETENTION VOLUME:
51,508 CF - 51,508 CF =0 CF

FIRST FLUSH VOLUME:
VOLUME [CF] = C x (P [IN] / 12) x AREA [SF]
VOL. REQUIRED = 1.0 x (0.5/12) x 245,640* = 10,235 CF ← GOVERNS

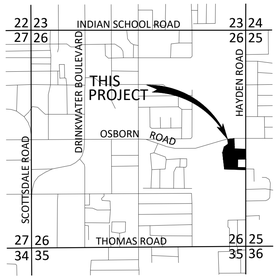
*AREA DOES NOT INCLUDE RESIDENTIAL ROOF

PROVIDED:
TOTAL PROVIDED VOLUME = 10,570 CF VIA 6 SEPARATE UNDERGROUND STORMTECH MC-3500 STORM CHAMBER SYSTEMS.

- (56) STORMTECH MC-3500 CHAMBERS, 178.9 CF PER CHAMBER
- (12) STORMTECH MC-3500 END CAPS, 46.0 CF PER END CAP
- INSTALLED WITH 12" COVER STONE AND 9" BASE STONE (STONE SHALL HAVE 40% VOID RATIO)

161.6 CF/CHAMBER X 56 CHAMBERS = 10,018.4
46.0 CF/END CAP X 12 END CAPS = 552 CF
TOTAL INSTALLED VOLUME OF CHAMBER SYSTEM = 10,570.4 CF

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
COMMUNITY NUMBER	PANEL # / PANEL DATE	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION
045012	2235 / 10/16/2013	L	11/04/2015	ZONE X	N/A



IN THE NE 1/4 OF THE SE 1/4 OF SECTION 26,
T. 2 N., R. 4 E., G.&S.R.M.,
CITY OF SCOTTSDALE, MARICOPA COUNTY, ARIZONA

LOCATION MAP

NORTH
3" = 1 MILE

LEGEND

PROJECT RIGHT-OF-WAY	NEW SEWER MANHOLE
EXISTING RIGHT-OF-WAY	NEW SEWER CLEANOUT
PROJECT/NEW PROPERTY LINE	NEW WATER VALVE
EXISTING PROPERTY LINE	NEW WATER METER
ROADWAY CENTERLINE	NEW BACKFLOW PREVENTER
FLOW-LINE	NEW FIRE HYDRANT
EXISTING EASEMENT	SURVEY MONUMENT AS NOTED
NEW EASEMENT	SPOT ELEV. (EXIST. GRADE)
EXISTING CONTOUR	SPOT ELEV. (NEW GRADE)
NEW CONTOUR	ROW RIGHT-OF-WAY
EXISTING CONCRETE	B/C BACK OF CURB
EXISTING WALL	S/W SIDEWALK
NEW ASPHALT	(R) RECORDED VALUE
NEW CONCRETE	(M) MEASURED VALUE
NEW WALL	R RADIUS
EXISTING CURB	P PAVEMENT (ASPHALT)
EXISTING PAINT STRIPE	C CONCRETE
NEW CURB	G GUTTER
NEW PAINT STRIPE	TC TOP OF CURB
EXISTING STORM DRAIN PIPE	FG FINISHED GRADE
EXISTING UNDERGROUND ELECTRIC	TF TOP OF FOOTING
EXISTING COMMUNICATION LINE	TW TOP OF WALL
EXISTING OVERHEAD ELECTRIC	LP LOW POINT
EXISTING FIBER OPTIC	HP HIGH POINT
EXISTING SEWER LINE	GB GRADE BREAK
EXISTING WATER LINE	FFE FINISHED FLOOR ELEVATION
EXISTING FIRE SERVICE	FGH FINISH GRADE HIGH
EXISTING GAS LINE	FGL FINISH GRADE LOW
NEW STORM DRAIN PIPE	PUE PUBLIC UTILITY EASEMENT
NEW SEWER LINE	ME MATCH EXISTING
NEW WATER LINE	R: RIM
NEW FIRE SERVICE	I: INVERT
NEW GAS LINE	L: LENGTH
EXISTING SEWER MANHOLE	S: SLOPE
EXISTING SEWER CLEANOUT	
EXISTING WATER VALVE	
EXISTING WATER METER	
EXISTING BACKFLOW PREVENTER	
EXISTING FIRE HYDRANT	
EXISTING STORM DRAIN MANHOLE	
EXISTING TRANSFORMER	
EXISTING SIGN	
EXISTING SITE LIGHT	
EXISTING STREET LIGHT	
EXISTING TRAFFIC SIGNAL STRUCTURE	
EXISTING COMMUNICATION PEDESTAL	
EXISTING TRAFFIC LIGHT PULL BOX	
EXISTING UTILITY POLE	

OWNER/DEVELOPER

VILLAGE PROPERTY MANAGEMENT, LLC
PO BOX 88
BEVERLY HILLS, CALIFORNIA 90213
PH: 310-888-2888
ATTN: TODD SILVER

CIVIL ENGINEER

CYPRESS CIVIL DEVELOPMENT
4450 NORTH 12TH STREET, #228
PHOENIX, ARIZONA 85014
PH: 623-282-2498
ATTN: JEFF HUNT, PE

ARCHITECT

NELSON PARTNERS, INC
15210 NORTH SCOTTSDALE ROAD, STE 300
SCOTTSDALE, ARIZONA 85254
PH: 480-949-6800
ATTN:

UTILITIES

WATER:	CITY OF SCOTTSDALE
SEWER:	CITY OF SCOTTSDALE
ELECTRIC:	SALT RIVER PROJECT
GAS:	SOUTHWEST GAS
TELEPHONE:	CENTURYLINK
CABLE:	COX COMMUNICATIONS

SHEET INDEX

1 COVER SHEET
2-3 GRADING AND DRAINAGE PLAN
4-5 ONSITE UTILITY PLAN

Call at least two full working days before you begin excavation.
ARIZONA 811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

THESE PLANS PRELIMINARY AND ARE NOT FOR CONSTRUTION OR RECORDING

CYPRESS CIVIL
4450 north 12th street
suite 228
phoenix, arizona 85014
p: 623.282.2498
e: jphunt@cypresscivil.com

NO.	DATE	REVISION

PRELIMINARY IMPROVEMENT PLAN for
HUNTINGTON OASIS APARTMENTS
3302-3388 NORTH HAYDEN ROAD SCOTTSDALE, ARIZONA

cover

Registered Professional Engineer (Civil)
CERTIFICATE NO
53640
JEFFREY P. HUNT
11-23-2020
ARIZONA, U.S.A.

DRAWN:	PT
DESIGNED:	AS
CHECKED:	JH
DATE:	11-23-2020
JOB NO:	20.122

SHEET NUMBER

15-ZN-2020
12/04/20

WATER KEYNOTES

1. EXISTING PUBLIC WATER LINE TO BE ABANDONED AND REMOVED.
2. NEW 8" PUBLIC WATER MAIN.
3. NEW PUBLIC FIRE HYDRANT.
4. NEW DOMESTIC SERVICE, METER, AND BACKFLOW PREVENTER.
5. NEW LANDSCAPE SERVICE, METER, AND BACKFLOW PREVENTER.
6. NEW PRIVATE DOMESTIC WATER LINE.
7. NEW PRIVATE FIRE LINE.

SEWER KEYNOTES

1. EXISTING PUBLIC SEWER LINE TO BE ABANDONED AND REMOVED.
2. NEW PUBLIC SEWER MANHOLE.
3. NEW 8" PUBLIC SEWER MAIN.
4. NEW PRIVATE SEWER LINE.

SCALE: 1"=30'
0' 15' 30' 60'

FOUND 3" CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE CENTER OF SECTION 26, T2N, R4E

EXISTING 5' BIKE PATH EASEMENT PER DKT. 14021, PG. 102

EXISTING EASEMENT FOR SIGHT TRIANGLE VISIBILITY PER DOC. 2000-0505897

EXISTING EASEMENT FOR SIGHT TRIANGLE VISIBILITY PER DOC. 2000-0505896

EXISTING 40' DEDICATED RIGHT-OF-WAY FOR STREET NOT EXCEPTED FROM DESCRIPTION IN TITLE REPORT PER BK. 191 OF MAPS PG. 37

EXISTING EASEMENT FOR SLOPE PER BK. 191 OF MAPS PG. 37

EXISTING EASEMENT FOR SIGHT VISIBILITY TRIANGLE PER DOC. 2000-0505887

2387.59'

EXISTING 40' EASEMENT FOR ROADWAY PER DKT. 5808, PG. 354

OSBORN ROAD
S 89°57'08" E 2627.77'

240.18'

R=1432.40'
Δ=04°37'24"
L=209.38'

R=1432.40'
Δ=00°59'35"
L=24.82'

EXISTING SEWER MANHOLE
RIM=35.62
INV=17.31(E)
INV=15.16(N)
INV=15.06(S)

FOUND 3" BRASS CAP IN HANDHOLE (NO IDENTIFICATION)
BENCHMARK = 1235.015'
EAST QUARTER CORNER OF SECTION 26, T2N, R4E

need to add grease interceptor DS&PM 7-1.411. Service line to be 6" and per MAG 440-3 per DS&PM 7-1.409, A&B.

N 00°14'00" E 120.59'

N 78°10'21" E 108.14'

NEW BUILDING
FFE=1236.50

need to add grease interceptor DS&PM 7-1.411. Service line to be 6" and per MAG 440-3 per DS&PM 7-1.409, A&B.

N 00°14'00" E 620.52'

NEW BUILDING
FFE=1236.50

restaurant shown here should have own water and sewer service. Grease interceptor required DS&PM 7-1.411.

6" min and per MAG 440-3

I:30.23

S 00°14'21" W 239.78'

6" min and per MAG 440-3

N 00°14'21" E 133.00'

EXISTING 25' EASEMENT FOR ROADWAY PER DKT. 5808, PG. 354

EXISTING 40' EASEMENT FOR HIGHWAY PURPOSES PER BK. 1, 2 AND 11 OF ROAD MAPS, PGS. 60, 15 AND 44 RESPECTIVELY, AND DKT. 3647, PG. 330

NOT A PART
APN: 130-32-001C
2006-0248212, M.C.R.

EXISTING 65' DEDICATED RIGHT-OF-WAY FOR STREET NOT EXCEPTED FROM DESCRIPTION IN TITLE REPORT PER BK. 191 OF MAPS, PG. 37

EXISTING 33' COUNTY ROADWAY PER BK. 1, 2 AND 11 OF ROAD MAPS, PGS. 60, 15 AND 44 RESPECTIVELY

EXISTING FIRE HYDRANT

EXISTING 18' PUE PER DKT. 14021, PG. 102

S 89°56'59" E 265.00'

N 89°45'39" W 366.17'

NOT A PART
APN: 130-32-001R
2005-0465702, M.C.R.

EXISTING SEWER MANHOLE
RIM=35.95
INV=14.15

240.00'

25.00'

HAYDEN ROAD

S 00°14'21" W 2634.66' (BASIS OF BEARINGS)

133.00'

MATCH LINE - SEE SHEET 5

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CYPRESS CIVIL
4450 north 12th street
suite 228
phoenix, arizona 85014
p: 623.282.2498
e: jphunt@cypresscivil.com

NO.	DATE	REVISION

PRELIMINARY IMPROVEMENT PLAN for HUNTINGTON OASIS APARTMENTS

3302-3388 NORTH HAYDEN ROAD SCOTTSDALE, ARIZONA

onsite utility plan

Registered Professional Engineer (Civil)
CERTIFICATE NO.
53640
JEFFREY P. HUNT
11-23-2020
ARIZONA, U.S.A.

DRAWN:	PT
DESIGNED:	AS
CHECKED:	JH
DATE:	11-23-2020
JOB NO:	20.122

SHEET NUMBER

15-ZN-2020
12/04/20

WATER KEYNOTES

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2. NEW 8" PUBLIC WATER MAIN.
3. NEW PUBLIC FIRE HYDRANT.
4. NEW DOMESTIC SERVICE, METER, AND BACKFLOW PREVENTER.
5. NEW LANDSCAPE SERVICE, METER, AND BACKFLOW PREVENTER.
6. NEW PRIVATE DOMESTIC WATER LINE.
7. NEW PRIVATE FIRE LINE.

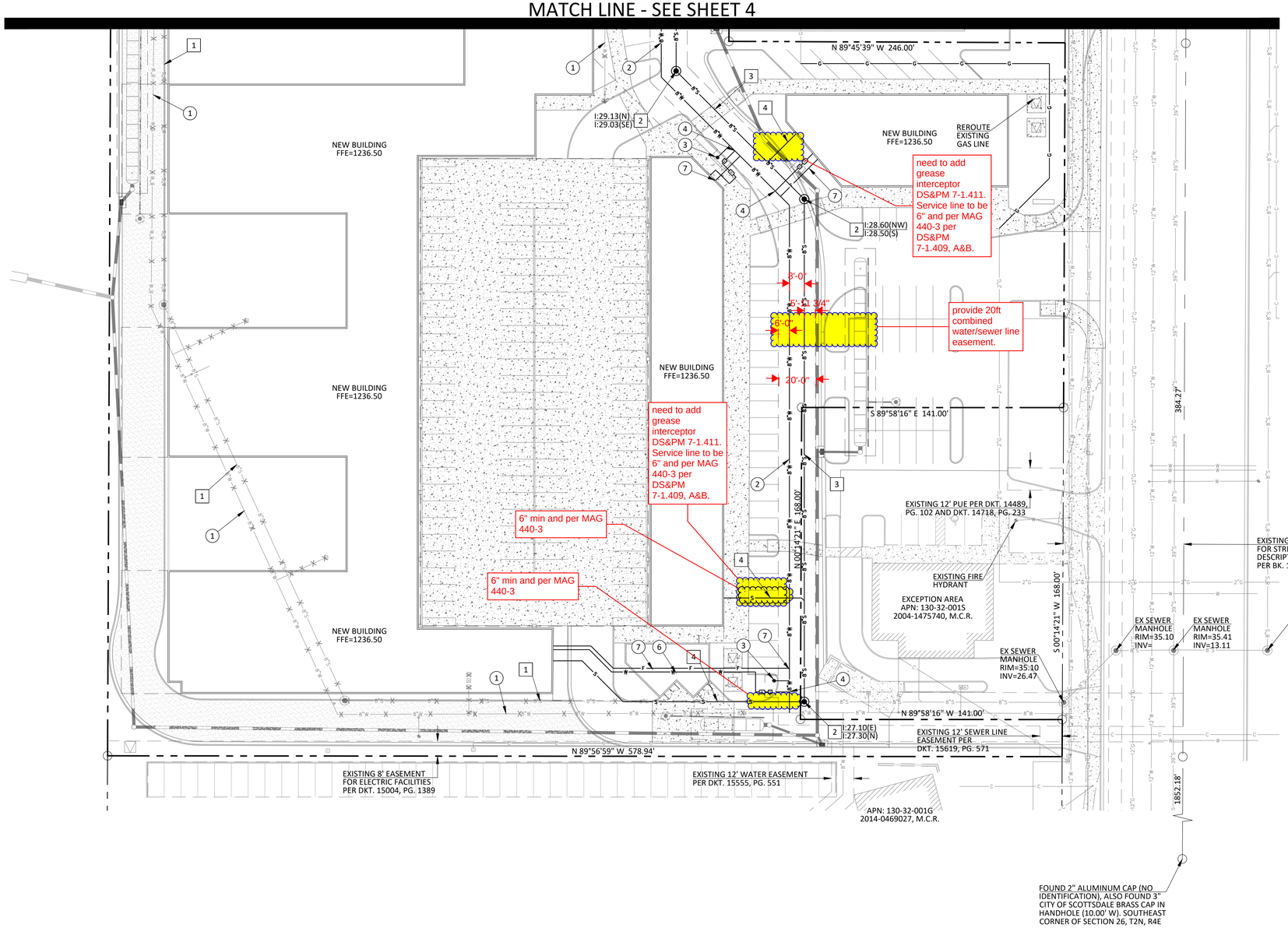
SEWER KEYNOTES

1. EXISTING PUBLIC SEWER LINE TO BE ABANDONED AND REMOVED.
2. NEW PUBLIC SEWER MANHOLE.
3. NEW 8" PUBLIC SEWER MAIN.
4. NEW PRIVATE SEWER LINE.

SCALE: 1"=30'

0' 15' 30' 60'

MATCH LINE - SEE SHEET 4



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onsite utility plan

Registered Professional Engineer (Civil) CERTIFICATE NO. 53640 JEFFREY P. HUNT STATE OF ARIZONA, U.S.A. 11-23-2020

DRAWN:	PT
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SHEET NUMBER

5 OF 5

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15-ZN-2020
12/04/20

Appendix D
Sewer Flow Calculations

Sewer Design Report Calculations
Huntington Oasis - Building 1 - 6" Sewer Service Lateral

Sewage Flow Per Day (From Table 1, A.A.C. Title 18, Chapter 9)

Total Flow (GPD)	3,971
Upstream Population	100
Dry Peaking Factor	6.0
Wet Weather Peaking Factor	1
Dry Peak Flow (GPD)	23,825
Wet Peak Flow (GPD)	23,825

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Where:
Q = flow in cfs
n = Manning's Roughness Coefficient
A = Cross sectional area of flow
R = hydraulic radius
S = pipe slope

EXISTING/NEW 6" LATERAL AT 1.0%

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.01

Full Flow*

Area (in^2) =	28.274
R (in) =	1.50
Velocity (ft/sec) =	2.86
Pipe Capacity (GPD)	363,352

Partial Flow

ϕ (radian) =	1.72
Area (in2) =	3.28
Wetted Perimeter (in) =	5.15
Hydraulic Radius (in) =	0.64
Velocity (ft/sec) =	1.62
d/D ratio =	0.17

EXISTING/NEW 6" LATERAL AT 2.0%

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.02

Full Flow*

Area (in^2) =	28.274
R (in) =	1.50
Velocity (ft/sec) =	4.05
Pipe Capacity (GPD)	513,857

Partial Flow

ϕ (radian) =	1.57
Area (in2) =	2.57
Wetted Perimeter (in) =	4.71
Hydraulic Radius (in) =	0.55
Velocity (ft/sec) =	2.06
d/D ratio =	0.15

**per AAC R18-9-E301.4.01.D.2.e*

Sewer Design Report Calculations
Huntington Oasis - Building 2 - 6" Sewer Service Lateral

Sewage Flow Per Day (From Table 1, A.A.C. Title 18, Chapter 9)

Total Flow (GPD)	6,120
Upstream Population	100
Dry Peaking Factor	Varies
Wet Weather Peaking Factor	1
Dry Peak Flow (GPD)	31,320
Wet Peak Flow (GPD)	31,320

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Where:
Q = flow in cfs
n = Manning's Roughness Coefficient
A = Cross sectional area of flow
R = hydraulic radius
S = pipe slope

EXISTING/NEW 6" LATERAL AT 1.0%

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.01

Full Flow*

Area (in^2) =	28.274
R (in) =	1.50
Velocity (ft/sec) =	2.86
Pipe Capacity (GPD)	363,352

Partial Flow

ϕ (radian) =	1.85
Area (in2) =	3.98
Wetted Perimeter (in) =	5.54
Hydraulic Radius (in) =	0.72
Velocity (ft/sec) =	1.75
d/D ratio =	0.20

EXISTING/NEW 6" LATERAL AT 2.0%

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.02

Full Flow*

Area (in^2) =	28.274
R (in) =	1.50
Velocity (ft/sec) =	4.05
Pipe Capacity (GPD)	513,857

Partial Flow

ϕ (radian) =	1.69
Area (in2) =	3.12
Wetted Perimeter (in) =	5.06
Hydraulic Radius (in) =	0.62
Velocity (ft/sec) =	2.24
d/D ratio =	0.17

**per AAC R18-9-E301.4.01.D.2.e*

Sewer Design Report Calculations
Huntington Oasis - Building 3 - 6" Sewer Service Lateral

Sewage Flow Per Day (From Table 1, A.A.C. Title 18, Chapter 9)

Total Flow (GPD)	53,143
Upstream Population	1500
Dry Peaking Factor	Varies
Wet Weather Peaking Factor	1
Dry Peak Flow (GPD)	249,328
Wet Peak Flow (GPD)	249,328

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Where:
Q = flow in cfs
n = Manning's Roughness Coefficient
A = Cross sectional area of flow
R = hydraulic radius
S = pipe slope

EXISTING/NEW 6" LATERAL AT 1.0%

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.01

Full Flow*

Area (in^2) =	28.274
R (in) =	1.50
Velocity (ft/sec) =	2.86
Pipe Capacity (GPD)	363,352

Partial Flow

ϕ (radian) =	3.58
Area (in2) =	18.00
Wetted Perimeter (in) =	10.73
Hydraulic Radius (in) =	1.68
Velocity (ft/sec) =	3.09
d/D ratio =	0.61

EXISTING/NEW 6" LATERAL AT 2.0%

n =	0.013
Pipe diameter (in) =	6
Pipe Slope (ft/ft) =	0.02

Full Flow*

Area (in^2) =	28.274
R (in) =	1.50
Velocity (ft/sec) =	4.05
Pipe Capacity (GPD)	513,857

Partial Flow

ϕ (radian) =	3.11
Area (in2) =	13.82
Wetted Perimeter (in) =	9.32
Hydraulic Radius (in) =	1.48
Velocity (ft/sec) =	4.02
d/D ratio =	0.49

**per AAC R18-9-E301.4.01.D.2.e*

Sewer Design Report Calculations
Huntington Oasis - 8" Sewer Main

Sewage Flow Per Day (From Table 1, A.A.C. Title 18, Chapter 9)

Total Flow (GPD)	66,941
Upstream Population	1700
Dry Peaking Factor	Varies
Wet Weather Peaking Factor	1
Dry Peak Flow (GPD)	326,714
Wet Peak Flow (GPD)	326,714

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Where:
Q = flow in cfs
n = Manning's Roughness Coefficient
A = Cross sectional area of flow
R = hydraulic radius
S = pipe slope

EXISTING/NEW 8" LATERAL AT 0.5%

n =	0.013
Pipe diameter (in) =	8
Pipe Slope (ft/ft) =	0.005

Full Flow*

Area (in^2) =	50.265
R (in) =	2.00
Velocity (ft/sec) =	2.45
Pipe Capacity (GPD)	553,380

Partial Flow

ϕ (radian) =	3.35
Area (in2) =	28.49
Wetted Perimeter (in) =	13.41
Hydraulic Radius (in) =	2.12
Velocity (ft/sec) =	2.56
d/D ratio =	0.55

EXISTING/NEW 8" LATERAL AT 1.0%

n =	0.013
Pipe diameter (in) =	8
Pipe Slope (ft/ft) =	0.01

Full Flow*

Area (in^2) =	50.265
R (in) =	2.00
Velocity (ft/sec) =	3.47
Pipe Capacity (GPD)	782,598

Partial Flow

ϕ (radian) =	2.94
Area (in2) =	21.96
Wetted Perimeter (in) =	11.77
Hydraulic Radius (in) =	1.87
Velocity (ft/sec) =	3.31
d/D ratio =	0.45

**per AAC R18-9-E301.4.01.D.2.e*