CITY OF SCOTTSDALE

8/16/21

Jay Silverberg
Gensler/Douglas Sydnor Architects & Assoc.
201 E Washington St Ste 750
Phoenix, AZ 85004

RE: 23-DR-2021
AC Scottsdale AKA Kimsey
986U0 (Key Code)

Dear Jay Silverberg,

The Planning & Development Services Division has completed the review of the above referenced development application submitted on 6/29/21. The following 1st Review Comments represent the review performed by our team and is intended to provide you with guidance for compliance with city codes, policies, and guidelines related to this application.

Zoning Ordinance and Scottsdale Revise Code Significant Issues

The following code and ordinance related issues have been identified in the first review of this application and shall be addressed in the resubmittal of the revised application material. Addressing these items is critical to scheduling the application for public hearing and may affect the City Staff's recommendation. Please address the following:

Transportation, Phil Kercher:

1. Please dedicate two (2) to four (4) foot dedication, for a total ten (10) foot-wide east half-alley right-of-way width along the west property line. Case 10-ZN-2020.
2. The property owner shall dedicate a continuous Public Non-Motorized Access Easement to the City of Scottsdale to contain the public sidewalk in locations where the sidewalk crosses onto private property of the development project, including the full length and width of the new pedestrian sidewalk along the east property line, as illustrated in the Development Plan. Case 10-ZN-2020.
3. Please reconstruct existing site driveways on Indian School Road in conformance with city standard CL-1 driveway, with sidewalk, accordingly and properly, reconstructed across driveways. Site plan not consistent with CL driveway types. Need to have continuous sidewalk across the driveways. Case 10-ZN-2020.
4. Please construct a raised median along the western portion of the site frontage to eliminate the existing median opening on Indian School Road. Identify this on the site plan. Case 10-ZN-2020.
5. Please construct a pedestrian refuge in the raised median and sidewalk ramps on the north and south side of Indian School Road as necessary to provide an uncontrolled pedestrian crossing

aligning with the western side of the westernmost site driveway. Identify this on the site plan. Case 10-ZN-2020.

6. Please construct all project site driveways on 3rd Avenue in conformance with city standard CL-1 driveway, with sidewalk, accordingly and properly, reconstructed across driveways. Driveways shown are not consistent with CL driveway standards. Case 10-ZN-2020.
7. Please reconstruct the alley to include positive drainage, twenty-four feet of pavement width and city standard compliant driveways to project and to city street connections, with sidewalk crossings, accordingly and properly, reconstructed.
8. The owner shall replace the existing street light poles and luminaires along the Indian School Road and 3rd Avenue street frontages to current City standards, as well as install pedestrian light poles and luminaires, to the satisfaction of City staff.

<u>Engineering, Eliana Hayes:</u>

9. Ordinance 4491: Please update submittal to include the following ordinance requirements:
    A. RIGHT-OF-WAY DEDICATIONS. Prior to issuance of any permit for the development project, the property owner shall make the following fee-simple right-of-way dedications to the City of Scottsdale:
        i. E INDIAN SCHOOL ROAD. Ten (10) to fifteen (15) foot dedication, for a total fifty-five (55) foot-wide north half right of way width. ADDRESSED.
        ii. ALLEY. Two (2) to four (4) foot dedication, for a total ten (10) foot-wide east half-alley right-of-way width. NOT ADDRESSED. UPDATE SITE + CIVIL PLANS (UPDATING CROSS SECTIONS TO INCLUDE ROW DEDICATION REQUIREMENTS) + RESUBMIT ACCORDINGLY. BUILDING WILL NEED TO BE MODIFIED TO ACCOMMODATE, WHERE IN CONFLICT WITH THIS DEDICATION.
    b. PUBLIC NON-MOTORIZED ACCESS EASEMENT. Prior to issuance of any permit for the development project, the property owner shall dedicate a continuous Public Non-Motorized Access Easement to the City of Scottsdale to contain the public sidewalk in locations where the sidewalk crosses onto private property of the development project, including the full length and width of the new pedestrian sidewalk along the east property line, as illustrated in the Development Plan. NOT ADDRESSED UPDATE SUBMITTAL + RESUBMITT ACCORDINGLY.
    c. CIRCULATION IMPROVEMENTS. Prior to issuance of any permit for the development project, the property owner shall submit and obtain approval of construction documents to construct the following improvements along project frontage:
        a. E. INDIAN SCHOOL ROAD.
            1. Reconstruct existing site driveways in conformance with city standard CL-1 driveway, with sidewalk, accordingly and properly, reconstructed across driveways. TO BE CONFIRMED BY TRANSPORTATION IF ACCEPTABLE AS SUBMITTED; SUBMITTAL DOES NOT EXACTLY MEET CL-A STANDARDS (SUBMITTED ARCH. + CIVIL PLANS DO NOT MIRROR ONE ANOTHER, PLS FIX).
            2. Construct either an eight (8) foot wide sidewalk separated from the curb by a minimum of four (4) feet, or a ten (10) foot wide curb attached sidewalk. ADDRESSED, 8’ CURB SEPARATED.
            3. Construct a raised median along the western portion of the site frontage to eliminate the existing median opening. NOT ADDRESSED. CIVIL PLANS ARE NOT CALLING OUT, GRADING NOTE 2, VERTICAL CURB AT REQUESTED RAISED MEDIAN.

SITE PLAN IS NOT SHOWING THE IMPROVEMENT AT ALL. REVISE BOTH + RESUBMIT.

4. Construct a pedestrian refuge in the raised median and sidewalk ramps on the north and south side of Indian School Road as necessary to provide an uncontrolled pedestrian crossing aligning with the western side of the westernmost site driveway. ADDRESSED ON CIVIL BUT NOT SITE PLAN. REVISE SITE PLAN + RESUBMIT ACCORDINGLY.

b. E. 3rd AVENUE.

1. Construct all project site driveways in conformance with city standard CL-1 driveway, with sidewalk, accordingly and properly, reconstructed across driveways. NOT ADDRESSED ON EITHER SITE OR CIVIL PLANS. REVISE + RESUBMIT BOTH.

c. ALLEY.

1. 1. Reconstruct alley to include positive drainage, twenty-four feet of pavement width and city standard compliant driveways to project and to city street connections, with sidewalk crossings, accordingly and properly, reconstructed. NOT ADDRESSED IN SITE PLAN. ADD DIMENSIONED ALLEY IMPROVEMENT CROSS SECTION TO CIVIL PLANS (TO INCLUDE CENTERLINE + PROPERTY LINES). REVISE + RESUBMIT.
2. 2. Underground existing overhead utilities. ADDRESSED IN SITE PLAN BUT NOT CIVIL. UPDATE CIVIL + RESUBMIT.

d. PEDESTRIAN SIDEWALK (EASTERN EDGE OF SITE).

1. Construct a new minimum eight (8) feet wide concrete sidewalk along the eastern edge from E. Indian School Road to E. 3rd Avenue. ADDRESSED.

d. WATER AND WASTEWATER IMPROVEMENTS. Prior to issuance of any permit for the development project, the property owner shall submit and obtain approval of construction documents to construct all water and wastewater infrastructure improvements, including any new service lines, connection, fire-hydrants, and manholes, necessary to serve the development. including the following:

i. A new 8-inch water main shall be placed along the entire west frontage. ADDRESSED.
ii. A new 8-inch water main shall be installed to complete the 8-inch loop in the northeast corner of the site. ADDRESSED.
iii. In addition to new water lines shown in the Preliminary Basis of Design (BOD) report, an additional 200-feet of 8-inch water main shall be placed along 3rd Ave to complete an 8-inch loop around the site and bring the minimum pressure during fire flow plus maximum day demands closer to the required 30 psi. If proven to be unnecessary in the final BOD reports at time of Development Review Board approval, this requirement will be removed. WR TO DETERMINE.
iv. All newly proposed above and below ground structures shall provide a minimum 6-foot clearance from the public sewer. The east side Water and Sewer Facilities easement shall only be encroached with a building overhang located vertically 19-feet or more above the easement. To ensure this 6-foot clearance a 13-foot public utility easement shall be dedicated on the entire eastern frontage. The east side easement shall only be encroached with a building overhang located vertically 19-feet or more above the easement. PUE ADDRESSED BUT VERTICAL CLEARANCE REQUIREMENT NEEDS TO BE FURTHER CLARIFIED. CONFIRM

SHADED CANOPY PROVIDES THE 19' VERTICAL CLEARANCE REQUIREMENTS OVER PUE, SEE NOTE 23 ON SITE PLAN.

v. Complete analysis of the 15-inch section of existing sewer in Miller Road. The BOD report assumes "Gentry on the Green" will be routed into the 24-inch sewer main in Miller Road. Confirm with Design Review phase re-submittal. If "Gentry on the Green" sends flows into the 15-inch main in the Miller Road line shared by the proposed development and capacity is insufficient, the 15-inch main shall be upsized accordingly by "The Kimsey/Triangle" or via in lieu payment. WR TO DETERMINE.

vi. Where the underground garage abuts any easement or ROW soil nails shall not protrude into the easement or ROW. NOT ADDRESSED. ADD NOTE TO BOTH SITE PLAN + CIVIL PLANS.

e. STREETLIGHTS. At time of construction, the owner shall replace the existing street light poles and luminaires along the Indian School Road and 3rd Avenue street frontages to current City standards, as well as install pedestrian light poles and luminaires, to the satisfaction of City staff. NOT ADDRESSED ON EITHER CIVIL NOR SITE PLANS. REVISE + RESUBMIT.

f. UTILITY LINES. All existing above ground cable, power and other utility lines within, and adjacent to, the development project, and any new or relocated utility lines, shall be placed underground. Sections of overhead lines extending across E. 3rd Avenue shall be relocated under the street and up to the next existing riser on the north side of E. 3rd Avenue. NOT ADDRESSED ALONG EASTERN PROPERTY LINE (WITHIN PROPOSED PUE), ON CIVIL PLANS. REVISE + RESUBMIT.

g. CONSTRUCTION MANAGEMENT PLAN. PRIOR TO, AND INDEPENDENT OF THE DEVELOPMENT REVIEW BOARD SUBMITTAL, A CONSTRUCTION MANAGEMENT PLAN SHALL BE PROVIDED TO CITY STAFF THAT INCLUDES CONSTRUCTION TRAFFIC ROUTES, WORK FORCE VEHICLE PARKING, AND CONSTRUCTION VEHICLE PARKING. NOT ADDRESSED. PROVIDE WITH RESUBMITTAL.

<u>Land Survey, Eliana Hayes:</u>

10. SRC 48: Please have applicant clarify intent for property boundaries. The following options will require:

    a. Land Assemblage: Final plat submittal with permit submittal. Council approval required for recordation, post final plat determination of technical correctness.
    b. Reassembling of project parcels (shifting of property lines etc.)
        i. Not resulting in more than 4 parcels: A case submittal of proposed final plat for staff review + approval. Then final plat submittal, following Land Assemblage process for recordation given above.
        ii. Resulting in more than 4 parcels: PP case submittal for DRB approval. Then final plat submittal, following Land Assemblage process for recordation given above.

<u>Planning, Brad Carr and Katie Posler:</u>

11. Please update all plans to clearly show the new property lines in bold and new and existing ROW dedications.

12. On most of the plans (site plan / landscape plan) the dimensions, locations, and materials of the public sidewalks are not clear. Please update the plans so all public sidewalks (Indian School Road,

3rd Avenue, and eastern walkway) have a minimum 8' wide clear width if detached from curb or if not detached from curb the width must be 10'.

13. Please update the site plan to clearly label the existing building, residential building, and hotel building.
14. Please update the site plan to clearly list the required (or allowed) and proposed: FAR, dwelling units, hotel room, parking spaces, and open space.
15. The number of parking spaces has been reduced from what was approved at City Council. Guest parking for Kimsey should be 1 space per 4.6 units instead of 1 space per 6 units. Please update the plans accordingly.

    10-ZN-2020:

The Kimsey

Proposed Downtown Parking Code - Residential

Use	Parking Spaces	Quantity*	Units	Parking Stalls
Residential	1.25 Per each 1 Studio	27	Residential	34
	1.3 Per each 1 Bedroom	106	Residential	138
	1.7 Per each 2 Bedroom	43	Residential	74
	1.9 Per each 3 Bedroom	14	Residential	27
	1.0 Per each 8 Residences (Guest Space)	190	Residential (Guest Space)	24
Travel Accommodations	0.80 Per Guest Room	168	Hotel Rooms	134
Non-Residential Area	1.0 Per 350 Sq. Ft.	4,000	Square Feet	11
			Total	442
			Provided Stalls	459
			Excess Stalls	17

Residential Guest Parking Spaces: 1 space per **4.6** residences

*Mix of studios, 1-bedroom, 2-bedroom, and 3-bedroom residences is conceptual and will be finalized at time of Development Review Board submittal

03/30/2021

16. Please update all the building elevations to clearly show the proposed height to the top of the building and mechanical screening. The mechanical screening depicted on the building elevations for the apartment building (Sheet 40.2) extend higher than the callout for "T.O. MECH. RESIDENTIAL." Please clarify or revise the plans so that the mechanical screening (and building height) does not exceed 76' in height per the zoning stipulations.
17. Please provide floor plans for the residential building that show all units have private outdoor living space located beside the unit that is at least 6' deep and 60 square feet per the amended standards. Please list all widths and square footages.
18. Please update the roof plan to show the setback of roof top appurtenances from all sides of the building, minimum 15' per the amended standards.

19. Please provide information and details related to the roof drainage system. Roof drainage systems, excluding overflow scuppers, shall be interior to the building, or architecturally integrated within the design of the structure. If overflow scuppers are provided, they shall be integrated with the architectural design. Areas that are rooftop drainage shall be designed and constructed to minimize erosion or staining of nearby building walls and directs water away from the building foundations. Please refer to Zoning Ordinance Section 7.105.C.

20. Please address how stipulation #10 from 10-ZN-2020 is being resolved in regard to arborist involvement/analysis and retaining existing trees: LANDSCAPING. Street trees shall be provided along the E. Indian School Road street frontage consistent with the conceptual landscape plans included in the Development Plan. All trees adjacent to the street shall be mature, as defined in the applicable section of the Zoning Ordinance. Final placement and quantity shall be subject to Development Review Board approval. **FURTHER, THE DEVELOPER SHALL ENGAGE A QUALIFIED ARBORIST TO ASSIST IN PRESERVING, TO THE EXTENT POSSIBLE THROUGH SUCH METHODS THE ARBORIST DEEMS APPROPRIATE, THE EXISTING MATURE TREES ALONG INDIAN SCHOOL ROAD.**

21. On the parking plan, please address where the 25 designated hotel employee parking spaces are located and how they will be designated/identified per stipulation #11 from case 10-ZN-2020.

22. Public art requires DRB approval of the proposed location. Please clarify if that is a part of this DRB case request or further down the line when finalized.

Significant Policy Related Issues

The following policy related issues have been identified in the first review of this application. Even though some of these issues may not be critical to scheduling the application for public hearing, they may affect the City Staff's recommendation pertaining to the application and should be addressed with the resubmittal of the revised application material. Please address the following:

Water Resources, Levi Dillion:

23. V1 Water BOD:

B. 1) DS&PM 6-1.202 (also stipulated at zoning) STIPULATION: Add new water mains as shown on BOD utility plan to complete an 8-inch loop around the site.:
    a. Approx. 200 feet of 8-inch water main be placed along 3rd Ave
    b. Dead end main on east property line shall be extended connected to existing 3rd Ave 8" main.
    c. New 8" main along entire western frontage/alley shall be installed.

C. STIPULATION: Existing 6" main on 3rd Avenue to be removed as shown on utility plans to be replaced with new 8" main.
D. STIPULATION: Further detail shall be shown on submitted plans to clarify how the new 8" main will be coordinated with the existing 8" and 6" mains north of 3rd Avenue on Craftsman Ct. Refer to utility plan comments in BOD.

24. V1 Sewer BOD:

E. 1) STIPULATION: all newly proposed above and below ground structures are to provide 6ft clearance from the public sewer. To ensure this 6ft clearance a 13ft public utility easement shall be dedicated on the entire eastern frontage. The east side easement shall only be encroached with a building overhang located vertically 19 feet or more above the easement.
F. STIPULATION: Where underground garage abuts any easement or ROW sail nails shall not protrude into the easement or ROW.

Engineering, Eliana Hayes:

25. DSPM 2-1.309: Revise and resubmit refuse plan addressing the following:

G. 2 CUBIC YARD OF COMPACTED WASTE IS THE BIGGEST SIZE CONTAINER THAT CAN BE USED FOR A REFUSE SOLUTION REQUIRING THE MOVEMENT OF THE CONTAINERS FOR PICK UP.
H. Add refuse container path of travel to service locations.
I. Add not clarifying that on-site staff shall be responsible for moving containers to truck at time of pickup. Containers may not be staged in alley at any time.

Planning, Brad Carr and Katie Posler:

26. The Old Town Scottsdale Urban Design & Architectural Guidelines (OTSUDAG) promote the use of muted earth tones for building materials and colors, except when used as accents. Several pieces of the proposed building façade utilize variations of gray colors without color tone. Please revise the material palette to meet the intent of the OTSUDAG for portions of the building utilizing gray colors.

27. The OTSUDAG promote appropriate architectural responses to the unique climate of the desert southwest, including shading of windows and outdoor areas. Windows and balconies on the east, south, and west sides of the building are currently exposed and do not incorporate appropriate environmental response. Please revise the project plans to incorporate shading of windows and balcony areas into the architectural design.

28. In order to improve readability of the building elevations, please add number notations (0.0, +1.5, -0.5, etc.) that indicate the differences between planer surfaces or utilize thicker and thinner lines to indicate portions of the building that are nearer or farther from view. (Zoning Ordinance, Sec. 1.305.A.)

29. Please provide window sections that indicate that all exterior window glazing will be recessed a minimum of fifty (50) percent of the wall thickness, including glass curtain walls/windows within any tower/clerestory elements. Please demonstrate the amount of recess by providing dimensions from the face of the exterior wall to face of glazing, exclusive of external detailing. Please refer to the Scottsdale Sensitive Design Principle 9 and Scottsdale Commercial Design Guidelines.

30. Please provide door sections that indicate that all exterior doors will be recessed a minimum of thirty (30) percent of the wall thickness. Please demonstrate the amount of recess by providing dimensions from the face of the exterior wall to the face of the door frame or panel, exclusive of external detailing. Please refer to the Scottsdale Sensitive Design Principle 9 and Scottsdale Commercial Design Guidelines.

31. Please provide section drawings of the proposed exterior shade devices. Please provide information that describes the shadow/shade that will be accomplished by the proposed shade devices, given the vertical dimensions of the wall opening. All shade devices should be designed so that the shade material has a density of 75%, or greater, in order to maximize the effectiveness of the shade devices. Please refer to Scottsdale Sensitive Design Principle 9.

32. Please Indicate the locations of all building mounted lighting fixtures on the building elevation drawings. Please refer to the Plan & Report Requirements for Development Applications. (Zoning Ordinance, Sec. 1.305.A.)

33. Please indicate and illustrate the location of the electrical service entrance section or electrical meters and service panels for each unit. Service entrance sections (SES) or electrical meters and service panels shall be incorporated into the design of the building, either in a separate utility room,

or the face of the SES shall be flush with the building face. An SES that is incorporated into the building, with the face of the SES flush with the building, shall not be located on the side of a building that is adjacent to a public right-of-way, roadway easement, or private streets. Please refer to the Scottsdale Design Standards and Policies Manual, Section 2-1.402.

34. Please provide site wall screening for all ground mounted mechanical equipment on the west side of the hotel building.

35. Please update all cut sheets to list the fixture letter/number that matches the photometrics schedule. Please remove all proposed up lighting, especially from proposed trees in the City's right of way. Please account for all light fixtures on the photometrics schedule.

Technical Corrections

The following technical ordinance or policy related corrections have been identified in the first review of the project. While these items are not as critical to scheduling the case for public hearing, they will likely affect a decision on the final plans submittal (construction and improvement documents) and should be addressed as soon as possible. Correcting these items before the hearing may also help clarify questions regarding these plans. Please address the following:

Transportation, Phil Kercher:

36. A bike room is shown on the site plan. This location is for residents. If possible, the placement of two bike racks (four bicycle parking spaces) outside of the Haver Building would be beneficial for patrons visiting the Haver Building. Provide (4) bicycle parking spaces (2) racks per City of Scottsdale Zoning Ordinance Article IX. – Parking and Loading Requirements, Sec. 9.103. - Parking requirements. Bicycle racks to be located near front entrance. Bicycle racks can blend with the architectural context of development. Applicant to contact Transportation Department to ensure functionality of racks and dimension of placement prior to installation. Applicant also has the option to use City of Scottsdale Standard Detail #2285.

Drainage, Alex Menez:

37. LF88 seems low for some buildings when compared to adjacent grade (for example, building 2 on section B-B).

38. Provide a preliminary drainage report. Review FLO-2D results from LIBW ADMSW which indicates some minor offsite flow. Discuss how this affects the design.

39. Label offsite flow entering and leaving property on the plans.

Fire, Doug Wilson:

40. Please see fire hydrant comments on site plan.

41. ESVAE will be required for 24' width in alley.

Planning, Brad Carr and Katie Posler:

42. Please provide Light Reflective Values (LRV) of the building material finishes on the elevations or material samples.

43. Please provide details on the community amenities (pool, fountains, required private open space, etc) with the next submittal.

44. Please provide documentation of approval by the Water Resources Department on all proposed fountains.

45. Please update the vehicular and pedestrian circulation plan to accurately show access. The current plan shows vehicular access through the east side of the hotel building.
46. Please revise the photometrics plan to show proposed property lines.

Please resubmit the revised application requirements and additional information identified in Attachment A, Resubmittal Checklist, and a written summary response addressing the comments/corrections identified above as soon as possible for further review. The City will then review the revisions to determine if the application is to be scheduled for a hearing date, or if additional modifications, corrections, or additional information is necessary.

The Planning & Development Services Division has had this application in review for 38 Staff Review Days since the application was determined to be administratively complete.

These 1st Review Comments are valid for a period of 180 days from the date on this letter. The Zoning Administrator may consider an application withdrawn if a revised submittal has not been received within 180 days of the date of this letter (Section 1.305. of the Zoning Ordinance).

If you have any questions, or need further assistance please contact me at 480-312-2703 or at kposler@ScottsdaleAZ.gov.

Sincerely,

Katie Posler

Katie Posler
Senior Planner

cc: SCOTTSDALE INN, LLC
PO Box 4372
Scottsdale, AZ 85261
(801) 655-1998 (PHONE)

ATTACHMENT A
Resubmittal Checklist

Case Number: 23-DR-2021
Key Code: 986U0

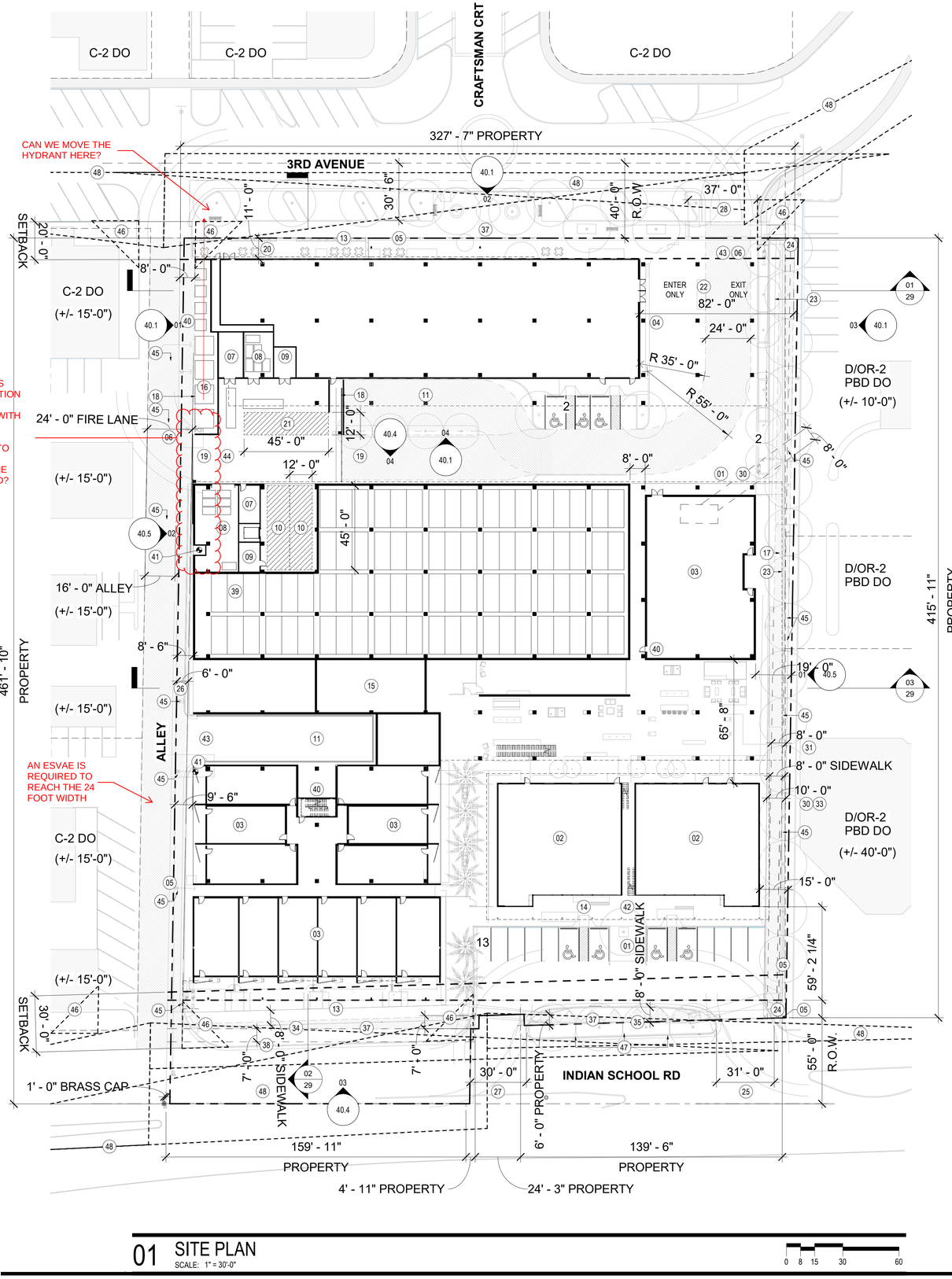
Please follow the plan and document submittal requirements below. All files shall be uploaded in PDF format. Provide one (1) full-size copy of each required plan document file. Application forms and other written documents or reports should be formatted to 8.5 x 11.

A digital submittal Key Code is required to upload your documents: 986U0. Files should be uploaded individually and in order of how they are listed on this checklist.

Submit digitally at: https://eservices.scottsdaleaz.gov/bldgresources/Cases/DigitalLogin

Digital submittals shall include one copy of each identified below.

☒ COVER LETTER – Respond to all the issues identified in this 1st Review Comment Letter
☒ Revised Narrative for Project
☒ Site Plan
☒ G&D
☒ Drainage Report
☒ Elevations (b&w and color)
☒ Material Board
☒ Perspective(s)
☒ Streetscape Elevation(s)
☒ Landscape Plan
☒ Lighting Site Plan(s)
☒ Photometric Analysis Plan(s)
☒ Manufacturer Cut Sheets of All Proposed Lighting
☒ Floor Plan(s)
☒ Floor Plan worksheet(s)
☒ Water Resources Department Approval
☒ Circulation Plan



01 SITE PLAN

SCALE: 1" = 30'-0"

0 8 15 30 60

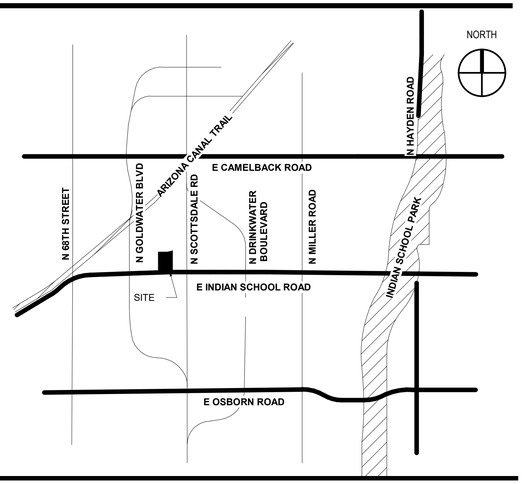
PROJECT DATA

	REQUIRED AND PROPOSED
GROSS LOT AREA (SF)	168,391 GSF (INCL. R.O.W)
NET LOT AREA (SF)	144,173 SF (INCL. R.O.W)
PARCEL ZONING	D/DMU-2 PBD DO
GROSS FLOOR AREA	473,300 GSF
GFAR	0.71

	PROVIDED
BIKE PARKING 1 PER 10 VEHICLE	47
OPEN SPACE	23,489 SF
PARKING	
RESIDENTIAL	271
HOTEL	134
RESTAURANT	11
GUEST	31
TOTAL	447
ACCESSIBLE PARKING	
ADA VAN	2
ADA CAR	16
TOTAL	18

	PROVIDED
COMMERCIAL LOADING 30,001 TO 100,000 SF	1
RESIDENTIAL LOADING 151 TO 450 UNITS	2

VICINITY MAP



SHEET NOTES

01 RESIDENTIAL DROP-OFF
02 EXISTING HAVER BUILDING
03 GROUND FLOOR RESIDENTIAL
04 HOTEL DROP-OFF
05 PROPERTY LINE
06 FIRELANE
07 ELECTRICAL EQUIPMENT
08 REFUSE
09 FIRE RISER AND PUMP ROOM
10 RESIDENTIAL LOADING AREA
11 RAMP DOWN TO PARKING STRUCTURE BELOW
13 CANOPY ABOVE
14 LINE OF ROOF ABOVE
15 BIKE PARKING
16 ELECTRICAL TRANSFORMERS, SWITCHGEAR FULLY SCREENED
17 PUBLICLY ACCESSIBLE SIDEWALK
18 DECORATIVE SCREEN WALL
19 DECORATIVE SLIDING GATE
20 OUTDOOR DINING
21 DELIVERY AREA
22 ONE WAY ONLY SIGNAGE AND PAVEMENT MARKING
23 SHADE STRUCTURE ABOVE
24 PUBLIC CONCRETE PEDESTRIAN WALKWAY
25 SITE DRIVEWAY DESIGNED IN CONFORMANCE OF COS STANDARD DETAIL #2256. SIDEWALK TO BE CONTINUOUS PER DSPM 5-3.200 AND 5-3.205 DETAIL CL-3
26 DEDICATED IN FIRE LANE EASEMENT
27 SITE DRIVEWAY DESIGNED IN CONFORMANCE OF COS STANDARD DETAIL #2256. SIDEWALK TO BE CONTINUOUS PER DSPM 5-3.200 AND 5-3.205 DETAIL CL-4
28 SITE DRIVEWAY DESIGNED IN CONFORMANCE OF COS STANDARD DETAIL #2256. SIDEWALK TO BE CONTINUOUS PER DSPM 5-3.200 AND 5-3.205 DETAIL CL-1
30 EXISTING ELECTRICAL EASEMENT
31 EXISTING SEWER AND WATER EASEMENT
33 EXISTING TELEPHONE LINE EASEMENT
34 EXISTING ROAD MAINTENANCE AND PUBLIC UTILITY EASEMENT
35 EXISTING LANDSCAPE EASEMENT
37 EXISTING SIDEWALK
38 EXISTING ROAD AND PUBLIC UTILITY EASEMENT
39 STACKING MECHANICAL PARKING SYSTEM
40 KNOX BOX
41 FIRE HYDRANT
42 ADA ACCESS ROUTE
43 VEHICULAR ENTRY
44 EXTERIOR SERVICE YARD CONCRETE SLAB. OPEN TO SKY ABOVE
45 EXISTING OVERHEAD UTILITY LINES TO BE RELOCATED UNDERGROUND
46 25'x25' VISIBILITY TRIANGLE
47 EXISTING 4 TREES ARE REPLACED BY SAME QUANTITIES AND SPECIES
48 INTERSECTION SIGHT DISTANCE

COS STAMP

THE KIMSEY

7120 E INDIAN SCHOOL RD,
SCOTTSDALE, AZ 85251

- CASE PRE-APP NUMBER -
63-PA-2020

Gensler

2575 E Camelback Road
Suite 175
Phoenix, AZ 85016
United States

Tel 602.523.4900
Fax 602.523.4949

SYDNOR

4806 N 78TH Place
Scottsdale, AZ 85251
United States

Tel 480.206.4593

△ Date	Description
06/18/21	Development Review Board

Seal / Signature

NOT FOR CONSTRUCTION

Project Name
3RD AVENUE + INDIAN SCHOOL ROAD - SCOTTSDALE, AZ

Project Number
057.6850.000

Description
SITE PLAN & PROJECT DATA

Scale
As indicated

Ref North

24

6/18/2021 2:33:36 PM BIM 360://057.6850.000 - PEG - Indian School + 3rd Avenue/57.6850.000_ The Kimsey_DRB_R20.rvt

FINAL SEWER REPORT

The Triangle

7120 E. Indian School Road
Scottsdale, AZ 85251

FINAL Basis of Design Report

☐ APPROVED

☑ APPROVED AS NOTED

☐ REVISE AND RESUBMIT

CITY OF SCOTTSDALE

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

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 in 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 ldillon DATE 7/12/2021

Conform to following stipulations and address comments below and herein in the submitted improvement plans:

1) Stipulation: all newly proposed above and below ground structures are to provide 6ft clearance from the public sewer. To ensure this 6ft clearance a 13ft public utility easement shall be dedicated on the entire eastern frontage. The east side easement shall only be encroached with a building overhang located vertically 19 feet or more above the easement.

2) Stipulation: Where underground garage abuts any easement or ROW sail nails shall not protrude into the easement or ROW.

Prepared For:

Gensler

2575 E. Camelback Rd Suite 175
Phoenix, AZ 85016
Phone: 602-523-4900

Registered Professional Engineer (Civil)
CERTIFICATE NO.
45621
ALI SAMIH FAKIH
Date Signed 06/15/21
ARIZONA, U. S. A.

Prepared by:

SEG

Sustainability Engineering Group
8280 E. Gelding Drive, Suite 101
Scottsdale, AZ 85260
480.588.7226 www.azSEG.com

Project Number: 200504
Revision Date: June 25, 2020 (Rezoning)
Revision Date: August 28, 2020 (Rezoning)
Revision Date: October 16, 2020 (Rezoning)
Revision Date: June 15, 2021 (DRB)

Case No.: 10-ZN-2020 **Plan Check No.: TBD**

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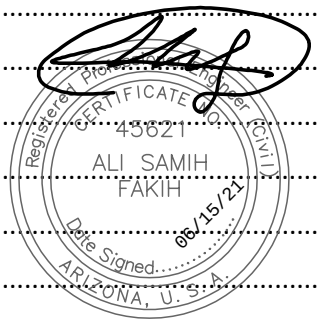

LIST OF TABLES:

LIST OF FIGURES:

APPENDIX:

1. INTRODUCTION

1.1 SUMMARY OF PROPOSED DEVELOPMENT:

The proposed development consists of a mixed residential use with commercial amenities located north of Indian School Road and south of 3rd Avenue between Marshall Way and Scottsdale Road in Scottsdale Arizona. An existing inn and several commercial buildings will be razed. The lot area is 144,173 square feet (3.31 acres) per the A.L.T.A. surveys. The proposed structures will have a maximum of seven floors and include a maximum of 190 residential units, 168 hotel rooms, a 4,000 square foot restaurant, 14,000 square feet of miscellaneous retail/fitness/clubhouse amenities and two pools.

1.2 REPORT INTENT:

This report is provided to support the proposed development and evaluate the existing and proposed wastewater demands compliant to the City's 2017 DS+PM (ref. 2) and the projects impact to the area's wastewater collection system along Indian School Road east to the Miller Road sewer trunk line.

1.3 SITE AND LEGAL DESCRIPTION:

The project property consists of three land parcels located in SE ¼ of Section 22, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, with the following Assessor Parcel Numbers:

- 173-50-108A, 173-50-034 and 173-50-117B

Refer to **FIGURE 1** for a vicinity map of the project's location with respect to major cross streets.

2. DESIGN DOCUMENTATION

2.1 DESIGN COMPLIANCE:

The proposed sewer system is designed to meet the criteria of the City of Scottsdale ("the City") Water Resources Department, the Arizona Department of Environmental Quality ("ADEQ"), and Maricopa County Environmental Services Department ("MCESD").

2.2 PROCEDURES, POLICIES AND METHODOLOGIES:

The general methodology used to evaluate the wastewater infrastructure consists of utilizing the DS+PM unit demands for onsite flows and monitoring flows in offsite sewer mains at two locations as requested by the City's Water Resources Department. Additional area flows for projects recently or in the process of being approved by the City have been provided by City staff and will be added to the monitored flows. Sewer pipe hydraulic capacities will be analyzing to assure conformance to the City's DS+PM criteria.

2.3 SOFTWARE ACKNOWLEDGEMENT:

Bentley FlowMaster® Version 8i is the computer software used for analyzing sewer hydraulics.

3. EXISTING CONDITIONS

3.1 ZONING & LAND USE:

The overall project parcel is zoned D/OC-2 PBD DO-Type 2. Land uses consist of a motel and commercial/retail/office activities.

3.2 EXISTING TOPOGRAPHY, VEGETATION AND LANDFORM FEATURES:

The site has approximately five feet of fall from 3rd Avenue to Indian School Road in a south east direction. The site is covered with building and paved parking with only minor landscaping. Refer to **FIGURE 2** for an aerial of the overall project existing conditions.

FIRM Map Number 04013C2235L dated October 16, 2013, indicates this site is designated as Zone "X". As such, it is defined as areas outside of the 0.2% annual chance of flooding. Refer to **FIGURE 3** for an excerpt from the FIRM.

3.3 EXISTING SEWER MAINS:

City of Scottsdale Q-S 17-44 includes the proposed development. Q-S 17-45, 17-46 and 16-45 are included to reference the downstream system being evaluated for capacity. Existing sewer lines consist of:

- an 8" vitreous clay pipe (VCP) running north-south along the west and east property lines,
- a 10" vitreous clay pipe (VCP) under Indian School Road from the site and connecting to
- a 15" vitreous clay pipe (VCP) under Miller Road flowing south and connecting to a 24" sewer trunk line near 2nd Street.

Refer to **FIGURE 4** for the referenced COS sewer Q-S Maps.

3.4 FLOW MONITORING:

Flow monitoring was performed on the 10" Indian School Road sewer just west of Miller Road (manhole #73). The data includes 17 days and three weekends between June 24th and July 10th, 2020. The location and flow data are included in **APPENDIX I**.

3.5 ADDITIONAL AREA FLOWS TO BE INCLUDED:

Scottsdale has approved, or is reviewing, reports for projects that may eventually contribute additional sewer flows to the Indian School and Miller Roads sewer systems.

The following projects are proposed to flow into the 10" Indian School Road :

- The Triangle
- Craftsman Court
- The Marquee (partial)

For reference, wastewater flow from the following potential developments is being directed to the 24" sewer trunk line in Miller Road and are not being evaluated in this report:

- Safari, Phase II
- Blue Sky
- City Center
- Water View
- DC Hotel
- The Mint
- The Maya
- Winfield Scott Hotel
- The Marquee (partial)
- The Gentry (Phase 2)

4. PROPOSED CONDITIONS

4.1 SITE PLAN:

The property is proposed to be re-developed to include residential apartment and hotel use with supporting commercial, office and retail facilities. Development will include relocated drive entrances from both Indian School Road and 3rd Avenue. A new pedestrian crossing is proposed at 3rd Avenue connecting the project to Craftsman Court. A new pedestrian crossing is also proposed across Indian School Road west of the western driveway with a pedestrian refuge area in the median.

4.2 PROPOSED SEWER SYSTEM:

Sanitary sewer service will be provided by connections to the existing 8" VCP sewer lines along the west and east drives fronting the property. Grease interceptors will be installed for any proposed food service uses. See **APPENDIX II** for a site plan/utility plan.

4.3 SEWER REQUIREMENTS:

The City's design standards govern pipe hydraulics. Sewer should be designed to provide 2.5 fps full flow velocity while not exceeding 15 fps. The design depth over diameter (d/D) ratio of the pipe is 0.65 for pipes 12" and smaller. The d/D ratio may be bumped to 0.80 when accounting for backwash from proposed pools. Service lines will be a minimum 6" diameter at 1% minimum slope.

The Triangle site will propose additional easement along the eastern boundary to extend the existing water and sewer easement from 8' to 13'. Refer to **FIGURE 5** – Proposed Easement Exhibit.

4.4 MAINTENANCE RESPONSIBILITIES:

The on-site sewer service lines will be private and maintained by the property owner. Any grease interceptors provided will be owned and maintained by the property owner.

5. SEWER SYSTEM COMPUTATIONS

5.1 ONSITE SEWER DEMANDS:

The proposed development at the site consists of residential apartment units including a community pool, a private pool and commercial/office/retail facilities. The associated DS+PM demands along with the peaking factors are shown in Table 1 below. Note: only one pool is included in the demand calculation as they will not be backwashed at the same time. A summary of the total sewer demands for The Triangle site are presented below in Table 2.

Table 1: COS DESIGN CRITERIA BY DEMAND TYPE

Land Use	Average Day Demand (gpd)	Unit	Design Peaking Factor
High Density Residential	140	per unit	4.5
Hotel	380	per room	4.5
Restaurant	1.2	per sq. ft.	6
Retail amenities	0.5	per sq. ft.	3
Pool Backwash	144,000	per pool	n/a

Table 2: ONSITE SEWER DEMAND CALCULATIONS PER DS+PM

Land Use	Count	Unit	ADD per Unit (gpd)	Avg. Day Demand (gpm)	Peak Demand (gpm)
B-1 Hotel	168	Rooms	380	44.3	199.5
B-1 Restaurant	4,000	Sq. Ft.	1.2	3.3	20.0
B-2/3 High Density Residential	180	Units	140	17.5	78.8
B-4 Townhomes	2	Units	140	0.2	0.9
B-5 Townhomes	2	Units	140	0.2	1.2
B-6 Townhomes	6	Units	140	0.6	1.8
Ex - Retail amenities	14,000	Sq. Ft.	0.5	4.9	14.6
Pool Backwash	1	EA	144,000	100.0	100.0
			Totals	171.0	416.6

The proposed 6" sewer service lines per **APPENDIX I** have a full flow capacity of 251.8 gpm each. Splitting the flow from The Triangle, 50/50, results in 208.3 gpm to each of the 8" pipes along the west and east property lines. It should be noted two services are proposed to each of the 8" pipes.

5.2 SOFTWARE ANALYSIS:

Bentley FlowMaster® Version 8i is the computer software tool used in this study.
Analysis input parameters included the following:

1. Pipe diameters (inches)
2. Pipes slopes
3. System demands (gpm)
4. Piping is PVC Manning's N-Values (n = 0.013)

Output parameters included but were not limited to:

1. Flow rate (gpm)
2. Velocities (fps)
3. Percent Full (d/D)

5.3 OFFSITE SEWER DEMANDS:

8" Sewer Lines Adjacent to The Triangle's Property Lines:

COS Water Resources staff has provided a 74-gpm existing flow in the Indian School Road sewer system just east of The Triangle site and recommends a 60/40 (east/west) split in evaluating the proposed impact to the two 8" sewers adjacent to The Triangle site. Table 3 summarizes the offsite and onsite sewer demands in the two 8" sewer pipe. Flow from the Triangle site's six buildings was split 50/50.

Table 3 - 8" SEWER LINES ADJACENT TO PEG SCOTTSDALE

	Ex Flow (gpm)	PEG site (gpm)	Total Flow (gpm)	Depth (in)	Velocity (fps)	d/D
West line	29.6	208.3	237.9	3.3	3.9	0.41
East line	44.4	208.3	252.7	3.4	4	0.43
Allowable			505.8	5.2	4.7	0.65

As described in Section 3.5, wastewater from Craftsman Court and The Triangle will enter the Indian School Road 10" pipe via the existing 8" sewers adjacent to The Triangle site. Partial flow from The Marquee will enter the 10" Indian School Road sewer at Buckboard. Table 4 accounts for an allowable flow reduction based on the distance of a project from the monitored manhole with a maximum allowable reduction of ten percent.

Table 4: ADDED FLOWS TO THE 10" INDIAN SCHOOL RD MONITORED RESULTS

Project	Peak Flow (gpm)	Distance to Point of Analysis* (mi)	Allowable Reduction (%)	Resulting Peak Flow (gpm)
The Triangle (W/ Pool Backwash)	416.6	0.5	5.0	395.8
Craftsman Court	4.0	0.7	7.0	3.7
The Marquee	166.5	0.8	8.0	153.2
Monitored Manhole	128.8	0.0	0.0	128.8
			Total Peak Flow	681.5

* Analysis point is monitored manhole on Indian School Road west of Miller Road

These flows within the 10" Indian School Road sewer line have been verified by COS Water Operations staff to discharge into the 24" sewer trunk line at Miller Road.

Referring to **APPENDIX III,** Table 5 summarizes flow hydraulics in the Indian School Road sewer line with and without The Triangle pool backwash.

incorrect, there is a section of 15" sewer where flows discharge prior to the 24" . Note: the 15" section is analyzed on next page.

Table 5 - 10" INDIAN SCHOOL ROAD LINE HYDRAULIC CAPACITY AT MONITORED MH

Scenario	Sewer Demand (gpm)	n-value	Slope (ft/ft)	Depth (in)	d/D	Velocity (fps)	Available Capacity (gpm)
Peak Flow w/ Pool - Table 3	698.1	0.013	0.0049	8.3	0.83	3.2	-
d/D=0.8 Capacity	-	0.013	0.0049	8.0	0.80	3.2	672.8
Peak Flow w/o Pool - Table 3	603.1	0.013	0.0049	7.2	0.73	3.2	-
d/D=0.65 Capacity	-	0.013	0.0049	6.5	0.65	3.1	520.7

(1) Pool flow = 95 gpm with 5% reduction for distance from monitored manhole

ok good

The Atwell Report for Gentry on the Green monitored a peak existing flow of 127.5 gpm at the intersection of N. Parkway Avenue and Indian School Road in December 2018 and a calculated rezoned/entitled flow of 0.998 mgd (693 gpm). The entitled flow will be carried to the Miller Road intersection and added to the 698.1 gpm flow from west of the intersection (per Table 4) to evaluate impacts to the existing 15" pipes at 1391.1 gpm prior to connecting with the 24" trunk line in Miller Road.

Typo? 698 is value from zoning case BOD, Table 4 states here 681.5gpm

The referenced 15" pipes were surveyed on June 10, 2021, and the invert, length and slope information provided as **FIGURE 4A**. Table 6 represents the hydraulics of the Miller Road 15" pipe and first reach of 24" pipe (see **APPENDIX III**).

Calc:681.5+693= 1,374 gpm

Table 6 - MILLER ROAD LINE HYDRAULIC CAPACITY SOUTH OF INDIAN SCHOOL

Scenario	Sewer Demand (gpm)	n-value	Slope (ft/ft)	Depth (in)	d/D	Velocity (fps)	Available Capacity (gpm)
MH A to B	1391.1	0.013	0.0439	4.9	0.33	9.0	6534
MH B to C	1391.1	0.013	0.0065	8.3	0.56	4.4	2514
South of MH C	-	0.013	0.0085	-	0.70	7.4	10,069

Recalculated as 0.55 with revised flow of 1,374gpm. Acceptable d/D.

Note: d/D=0.94 not valid max. Design max is @ d/D=0.70

6. SUMMARY

6.1 SUMMARY OF PROPOSED SEWER IMPROVEMENTS:

- Onsite and offsite sewer mains were evaluated in accordance with City of Scottsdale's design standards and policies[2] and direction received from COS Water Resources staff.
- The allowable d/D criteria are slightly exceeded.
- Backwater valves will be installed on any service line where the upstream manhole is higher than the finish floor of the building being served.
- Privately owned and maintained grease interceptors will be installed to serve all food preparation facilities.

6.2 PROJECT SCHEDULE:

The infrastructure and buildings are proposed to be constructed in a single phase.

7 SUPPORTING MAPS

7.1 SITE UTILITY PLAN

Refer to Utility Plan in **APPENDIX II.**

8 REFERENCES

1. *COS QS Sewer Plan number 17-45*
2. *City of Scottsdale Design Standards & Policies Manual, 2017 (Chapter 7 – Sewer)*

FIGURES

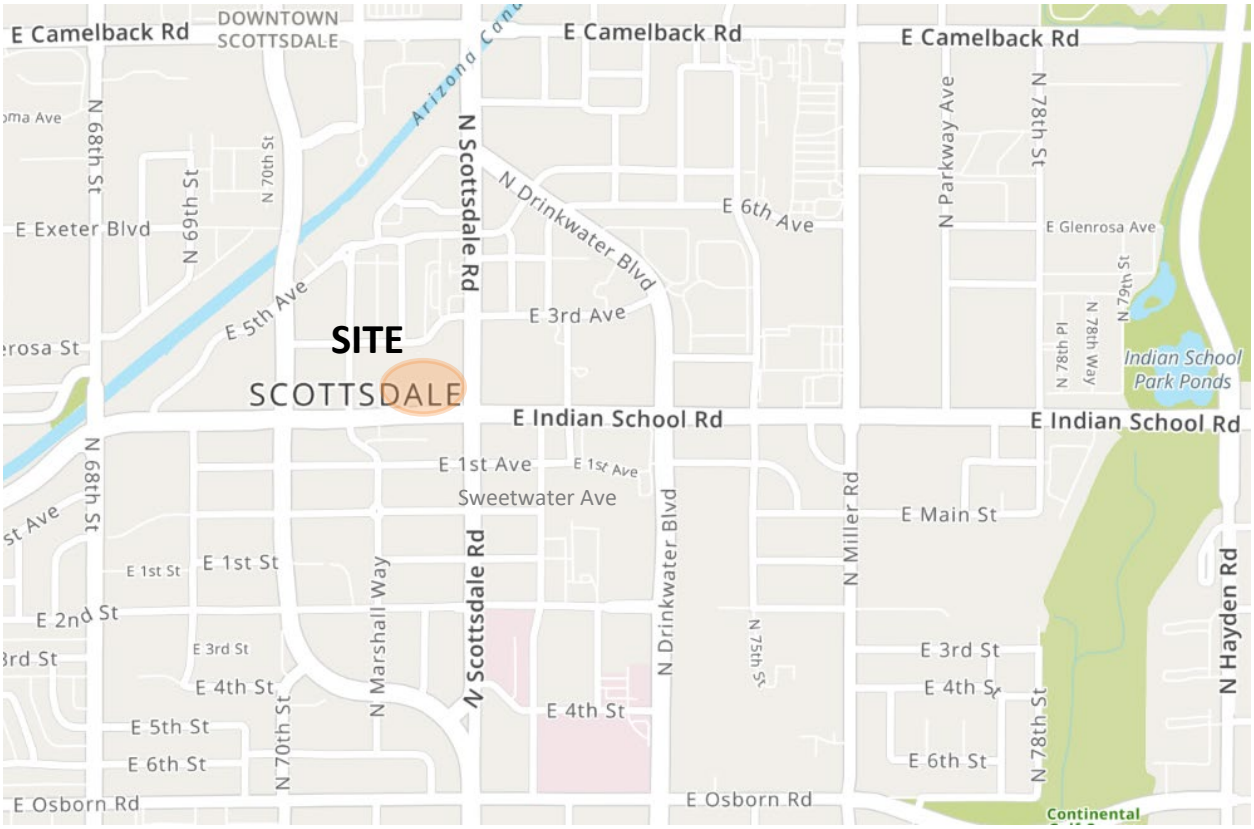

FIGURE 1 – Vicinity Map

FIGURE 2 - Aerial

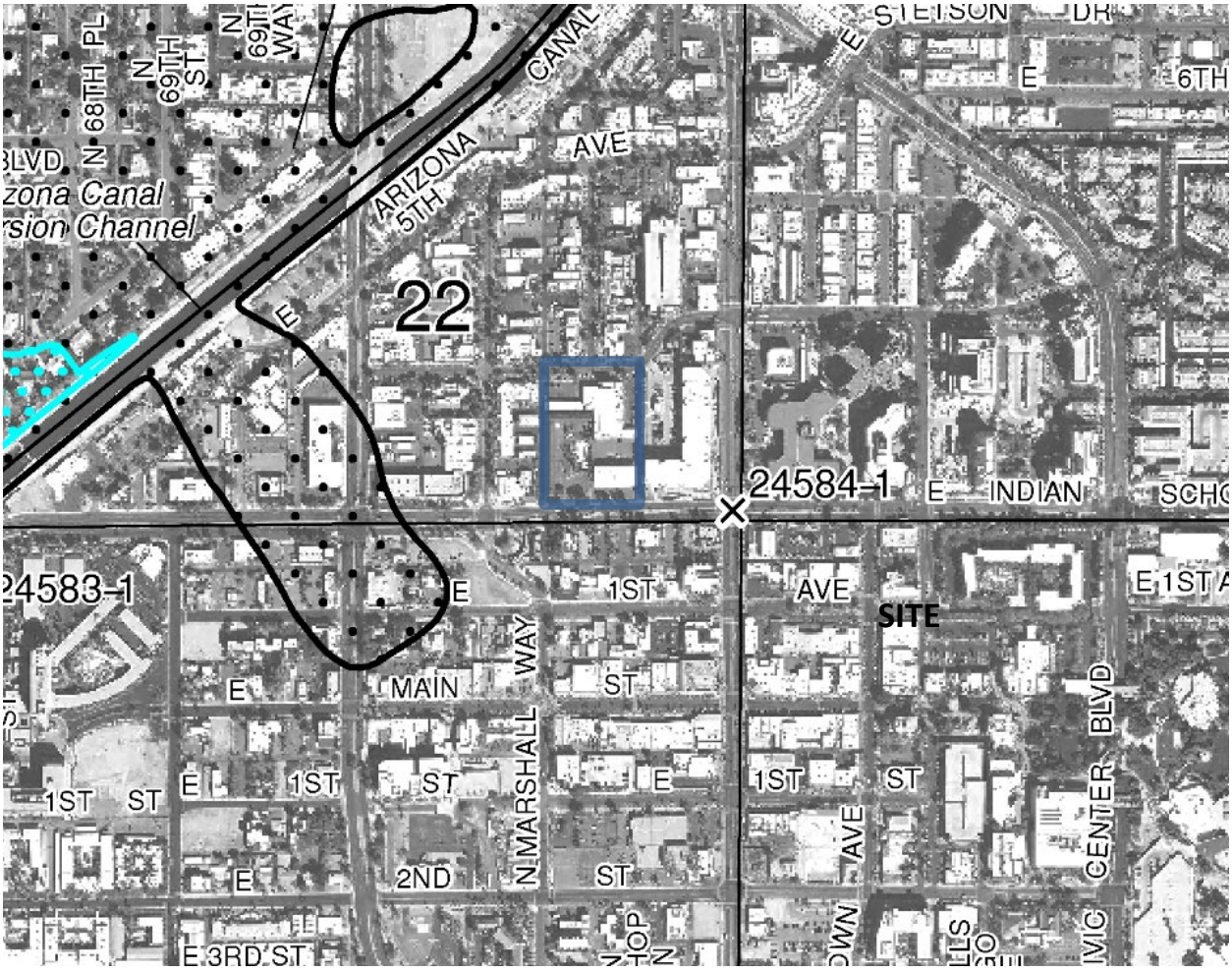

FIGURE 3 – FEMA FIRM

Excerpt from 04013C2235L

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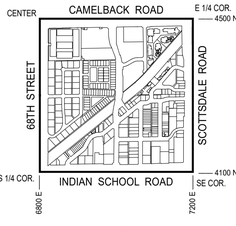
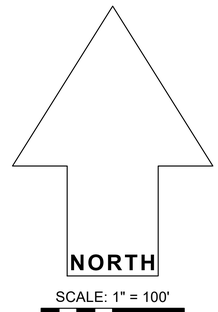
LEGEND:

- Cleanout
- Lift Station (LS)
- Manhole (S)
- Non-GPS Point
- Plug
- Sewer Service Point
- Sewer Tap Point
- Sewer Valve
- Treatment Plant
- Sewer Main - Gravity
- Sewer Main - Force (Force)
- Sewer Main - Private

VICINITY MAP





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

SEWER

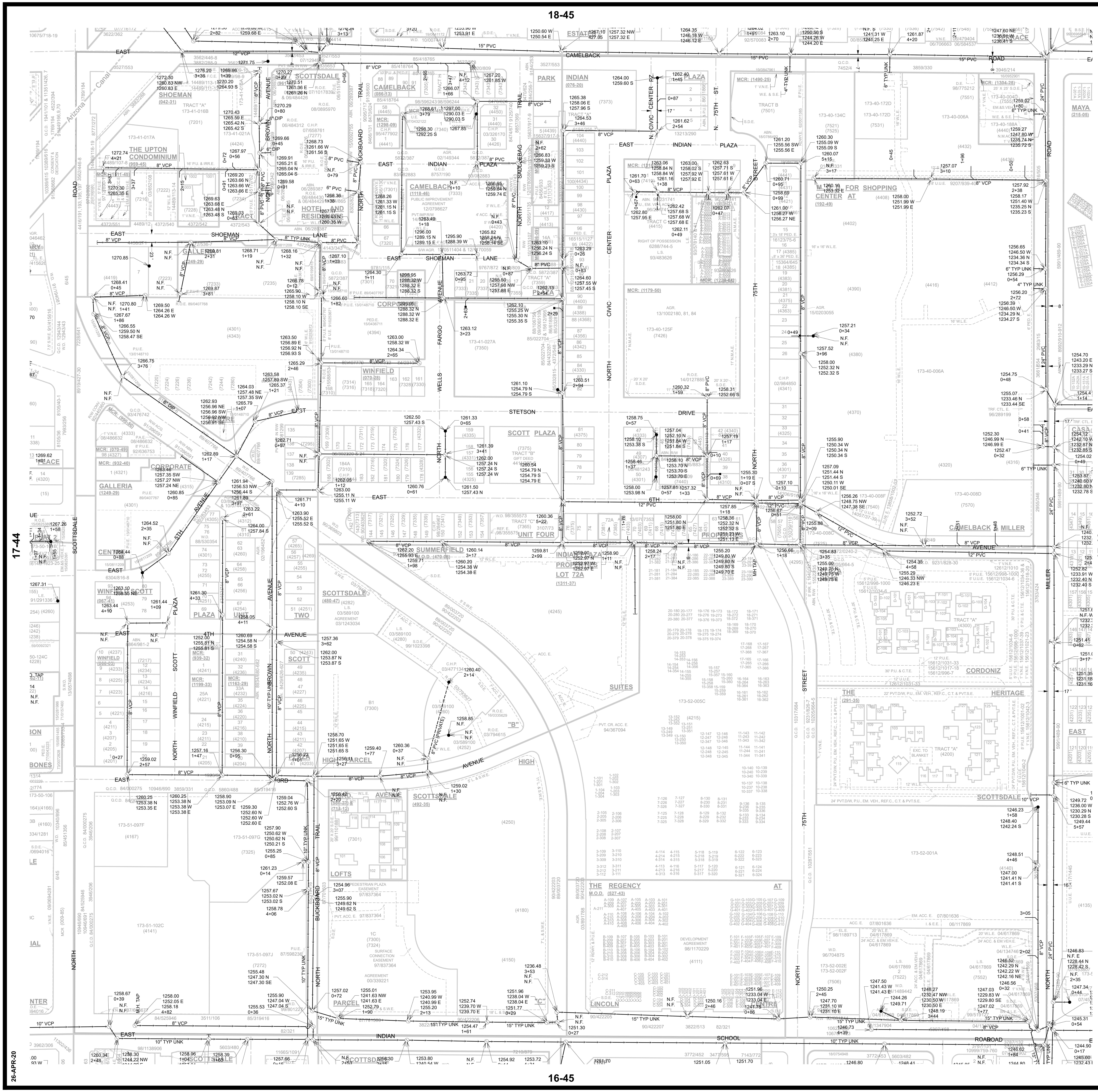
QUARTER SECTION MAP

17-44

SE 1/4 SEC. 22 T2N R4E

FIGURE 4

CITY OF SCOTTSDALE
SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251



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LEGEND:

- Cleanout
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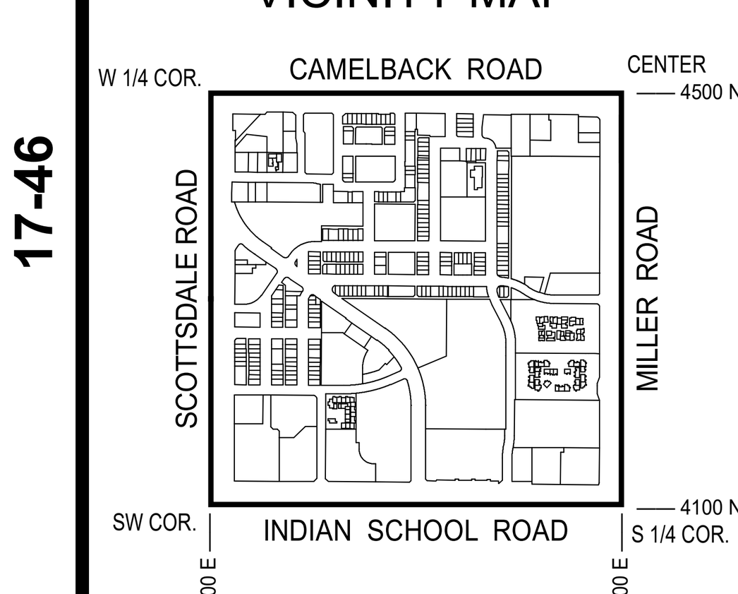
VICINITY MAP



NORTH

SCALE: 1" = 100'

0 50 100 200

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

SEWER

QUARTER SECTION MAP

17-45

SW 1/4 SEC. 23 T2N R4E

FIGURE 4

CITY OF SCOTTSDALE

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

N O T I C E

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THE CITY OF SCOTTSDALE

26-APR-20

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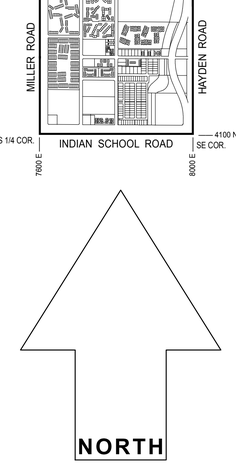
LEGEND:

- Cleanout
- Lift Station (SLS)
- Manhole
- Non-GPS Point
- Plug
- Sewer Service Point
- Sewer Tap Point
- Sewer Valve
- Treatment Plant
- Sewer Main - Gravity
- Sewer Main - Force (Force)
- Sewer Main - Private

VICINITY MAP



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0 50 100 200

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

SEWER

QUARTER SECTION MAP

17-46

SE 1/4 SEC. 23 T2N R4E

FIGURE 4

CITY OF SCOTTSDALE
SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

08-DEC-19

17-45

16-44

16-46

15-45

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LEGEND:

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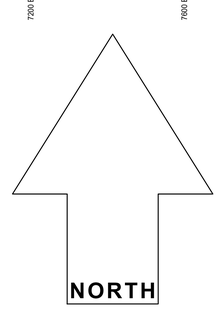
- Manhole (S)
- Non-GPS Point
- Plug
- Sewer Service Point
- Sewer Tap Point
- Sewer Valve
- Treatment Plant
- Sewer Main - Gravity
- Sewer Main - Force (Force)
- Sewer Main - Private

Existing Sewer

Street	Sewer (ID)	Size (inch)	Slope (ft/ft)
ISR	A	10	0.006
	B	10	0.006
	C	10	0.0049
	D	10	0.0049
	E	10	0.0049
	F	10	0.0049
	G	10	0.0049
	H	10	0.0049
	I	10	0.0049
	J	15	UNKNOWN
Miller Rd	K	15	UNKNOWN
	L	24	0.0085

VICINITY MAP



SEWER

QUARTER SECTION MAP

16-45

NW 1/4 SEC. 26 T2N R4E

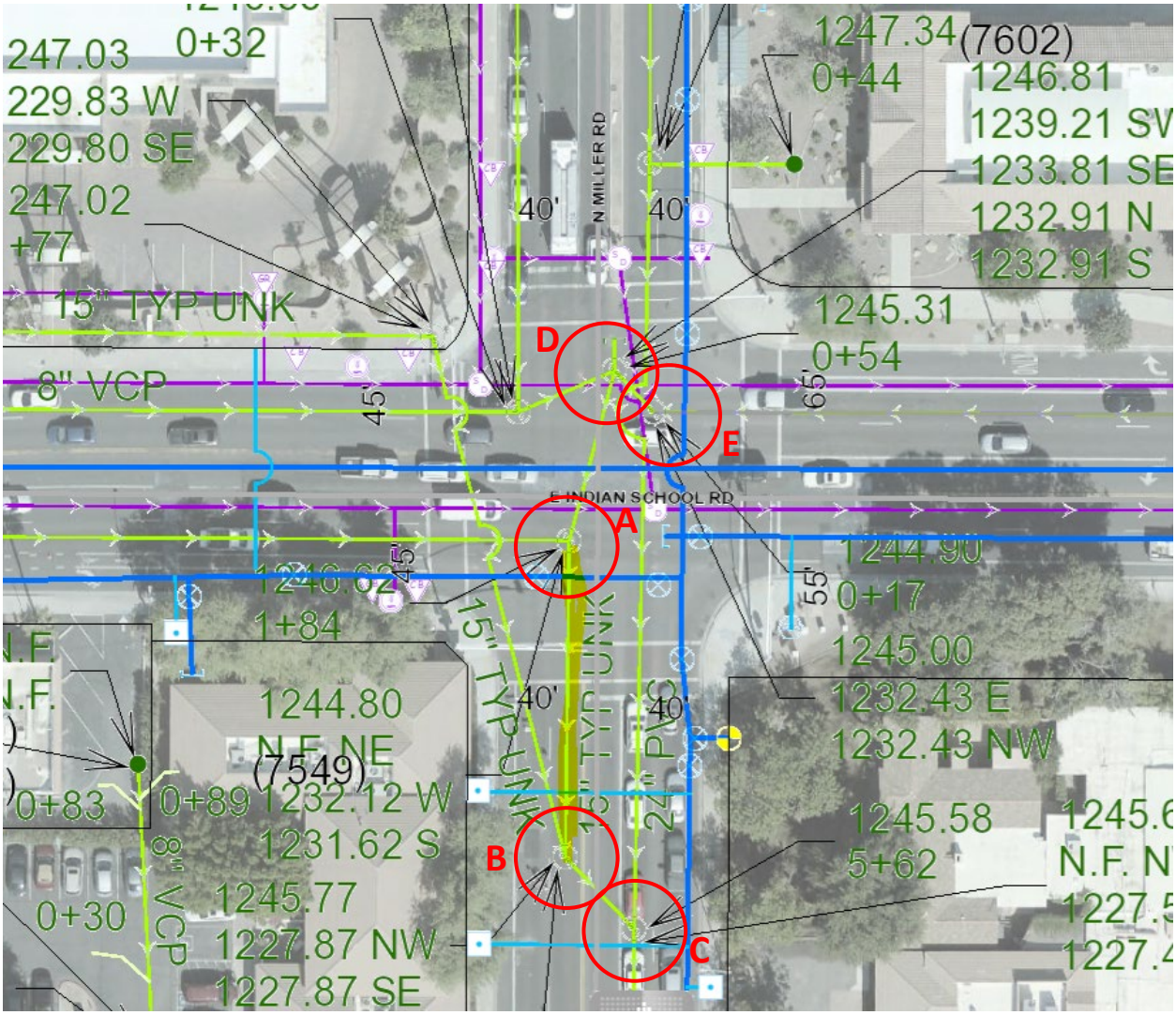
FIGURE 4

CITY OF SCOTTSDALE

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

26-APR-20



MH	Rim	Inverts		Pipe Reach	Length	Slope
E	1246.49	E & NW	1233.9			
D	1246.6	SE 1233.6	S 1232.7	E-D	17.6’	0.017’/’
A	1246.5	N, W & S	1232.1	D-A	53.4’	0.028’/’
B	1245.7	N & SE	1227.8	A-B	96.8’	0.0439’/’
C	1245.7	N & S	1227.6	B-C	30.9’	0.0065’/’

FIGURE 4A - Indian School /Miller Roads Manhole Survey

THE TRIANGLE

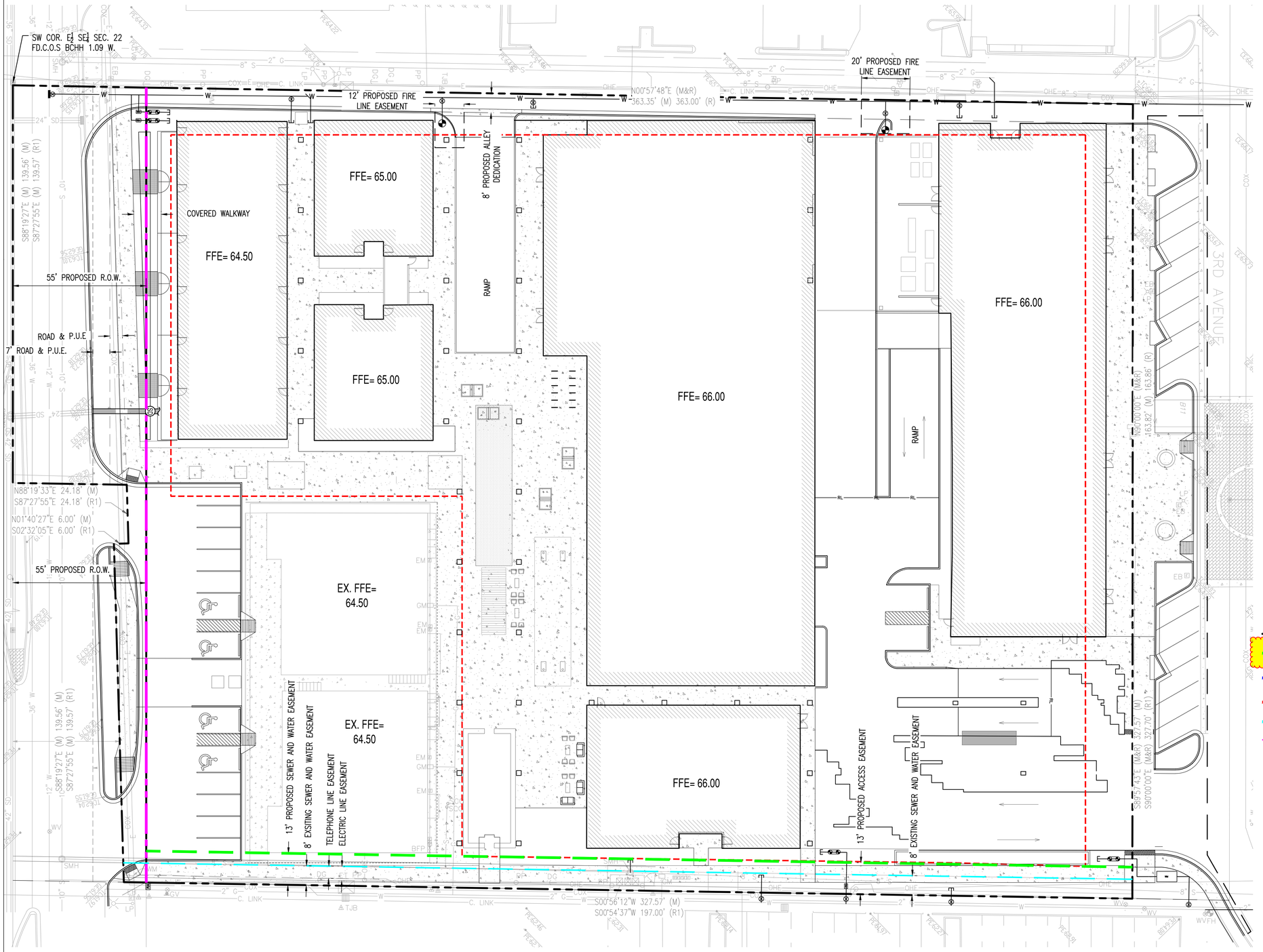
7120 E. INDIAN SCHOOL ROAD SCOTTSDALE, AZ 85251

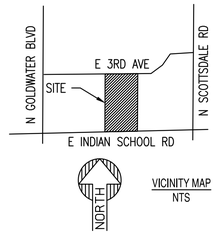
PROPOSED EASEMENT EXHIBIT

CIVIL ENGINEER:
SEG
8280 E. GELDING DR, SUITE #101
SCOTTSDALE, AZ 85260
480-588-7226
ATTN: ALI FAKIH

CLIENT:
PEG DEVELOPMENT
180 N. UNIVERSITY AVE
SUITE 200, PROVO UT 84601
801-655-1998
ATTN: MATT KRAMBULE

ARCHITECT:
GENSLER
2575 E. CAMELBACK RD
SUITE 175, PHOENIX AZ 85016
602-253-4900
ATTN: JOHANNA COLLINS





VICINITY MAP
NTS

No, not access easement. PUE. IS this an old figure? Subsequent figures show this is as a PUE.

PROPOSED LEGEND:

- PROPERTY LINE
- PROPOSED ACCESS EASEMENT
- PROPOSED WATER AND SEWER EASEMENT
- UNDERGROUND PARKING
- EXISTING WATER EASEMENT
- PROPOSED R.O.W.

NORTH

0' 20' 40' 60'

SCALE: 1" = 20'

6/19/2020 3:38:59 PM

THE TRIANGLE

7120 E INDIAN SCHOOL RD,
SCOTTSDALE, AZ 85251

- CASE PRE-APP NUMBER -
63-PA-2020

Gensler
2575 E Camelback Road
Suite 175
Phoenix, AZ 85016
United States
Tel 602.523.4900
Fax 602.523.4949

SYDNOR
4806 N 78TH Place
Scottsdale, AZ 85251
United States
Tel 480.206.4593

SEG
8280 E. GELDING DRIVE
Suite 101
Scottsdale, AZ 85260
United States
Tel 480.588.7226

△ Date	Description
10/16/20	Resubmittal

Seal / Signature

NOT FOR CONSTRUCTION

Project Name
3RD AVENUE+INDIAN SCHOOL ROAD - SCOTTSDALE, AZ

Project Number
200504 (SEG)

Description
PROPOSED EASEMENT EXHIBIT

Scale
As indicated

FIGURE 5

APPENDIX I

Monitored Sewer Flow Report

Indian School/Miller Road Survey

Flow Monitoring Site Report

Project Number: SL861 SEG Engineering

Site Location & Traffic Control

Site reference ID: QS16-45, MH 73

Monitoring Address: On Indian School, 100 yards East of 75th St., East bound fast lane

Traffic Control Requirements: YES, provided by Action Barricade Company

Site Structure / Channel/Pipe

Installation structure: 4ft. Manhole, Brick

Structure Size/dimensions: 4’ with ring and cover

Rim to pipe invert: 157.675”

Flow configuration: Pipe

Flow Direction: East

Main Pipe size inches: 10”

Type of Pipe: VCP

Scum line: 4”

Pipe/Channel Condition: Intact

Inside the pipe: Reasonably clean

Lateral Pipe(s): No

Logger Sensors Monitoring

Meters/Loggers: FL900

Sensor: Flo-Dar (AV) noninvasive

Units Measurement:

GPM (gallons per minute)
GPD (gallons per day)
Level (inches)
Velocity FPS (feet per second)

Data logging intervals (minutes and or Hours): 5 minute intervals

Remote monitoring: N/A

Flow Monitoring Site Report – SEG Engineering

Duration of monitoring Days: Nine (9) day, including two (2) weekends

Data Start Date/Zulu Time: 06-24-2020, 13:00

Data Ending Date/Zulu Time: 07-10-2020, 8:00

Equipment Removal Date/Time: 07-10-2020, 8:50

General Notes:
RDH performed a Confined Space Entry for Installation and Calibration of flow monitoring equipment. The 10" pipe had no debris with about 3.5" of flow with good velocity at the time of the installation. Based on the scum line the flows appear to be in the lower 4" of the pipe with minimal scum build up. The sensor was mounted in the upstream pipe. The manhole appears to be in good condition with thin rusted steps and there were no equipment errors. Below are photos and flow data summaries showing Level, Velocity, Flow and attached excel raw data file.

Flow Monitoring Site Report – SEG Engineering

Flow Monitoring Site Report – SEG Engineering

Sustainability MH73 Level (in.)			
Date	Maximum	Minimum	Average
Wednesday, June 24, 2020	3.22	2.06	2.69
Thursday, June 25, 2020	3.42	1.83	2.60
Friday, June 26, 2020	3.24	2.07	2.63
Saturday, June 27, 2020	3.03	1.77	2.43
Sunday, June 28, 2020	2.77	1.77	2.27
Monday, June 29, 2020	3.26	1.95	2.48
Tuesday, June 30, 2020	3.29	1.74	2.43
Wednesday, July 1, 2020	3.27	2.01	2.57
Thursday, July 2, 2020	3.46	2.04	2.65
Friday, July 3, 2020	3.42	1.95	2.74
Saturday, July 4, 2020	2.94	2.03	2.42
Sunday, July 5, 2020	2.83	1.82	2.24
Monday, July 6, 2020	3.19	1.78	2.47
Tuesday, July 7, 2020	3.36	1.92	2.52
Wednesday, July 8, 2020	3.37	1.74	2.61
Thursday, July 9, 2020	3.53	1.99	2.69
Friday, July 10, 2020	2.99	2.21	2.61

MH73 Period Summary: Level				
Measures	Value	Unit	Date	Time
Max.	3.53	in.	Thursday, July 9, 2020	2:55 PM
Min.	1.74	in.	Wednesday, July 8, 2020	1:50 AM
Avg.	2.52	in.		

*Data begins at 1:00pm on June 24th and ends at 8:00am on July 10th.

Flow Monitoring Site Report – SEG Engineering

Sustainability MH73 Velocity (fps)			
Date	Maximum	Minimum	Average
Wednesday, June 24, 2020	1.58	1.12	1.4
Thursday, June 25, 2020	1.65	1.04	1.36
Friday, June 26, 2020	1.57	1.08	1.33
Saturday, June 27, 2020	1.54	0.98	1.29
Sunday, June 28, 2020	1.42	1.00	1.23
Monday, June 29, 2020	1.59	1.06	1.31
Tuesday, June 30, 2020	1.55	0.95	1.27
Wednesday, July 1, 2020	1.57	1.02	1.32
Thursday, July 2, 2020	1.56	1.01	1.30
Friday, July 3, 2020	1.56	0.93	1.29
Saturday, July 4, 2020	1.46	1.03	1.24
Sunday, July 5, 2020	1.40	0.93	1.16
Monday, July 6, 2020	1.55	0.94	1.24
Tuesday, July 7, 2020	1.65	0.97	1.25
Wednesday, July 8, 2020	1.59	0.99	1.31
Thursday, July 9, 2020	1.67	1.06	1.34
Friday, July 10, 2020	1.48	1.11	1.29

MH73 Period Summary: Velocity				
Measures	Value	Unit	Date	Time
Max.	1.67	fps.	Thursday, July 9, 2020	2:55 PM
Min.	0.93	fps.	Friday, July 3, 2020	1:45 AM
Avg.	1.29	fps.		

*Data begins at 1:00pm on June 24th and ends at 8:00am on July 10th.

Flow Monitoring Site Report – SEG Engineering

Sustainability MH73 Flow				
Date	Maximum (gpm)	Minimum (gpm)	Average (gpm)	Total (gal)
Wednesday, June 24, 2020	105.32	40.76	75.41	49,772.80
Thursday, June 25, 2020	117.30	32.91	71.13	102,424.40
Friday, June 26, 2020	107.48	39.53	69.37	99,890.10
Saturday, June 27, 2020	96.72	28.48	60.85	87,630.80
Sunday, June 28, 2020	78.66	29.19	52.00	74,882.80
Monday, June 29, 2020	110.12	36.40	63.28	91,125.30
Tuesday, June 30, 2020	109.06	28.08	60.09	86,533.80
Wednesday, July 1, 2020	109.38	36.44	66.74	96,099.20
Thursday, July 2, 2020	117.17	36.44	68.87	99,174.60
Friday, July 3, 2020	112.99	31.20	71.70	103,251.90
Saturday, July 4, 2020	86.91	37.12	57.34	82,566.20
Sunday, July 5, 2020	79.70	28.49	48.21	69,421.20
Monday, July 6, 2020	104.04	27.75	60.47	87,081.60
Tuesday, July 7, 2020	119.09	35.14	61.83	89,030.80
Wednesday, July 8, 2020	112.87	28.33	69.17	99,610.50
Thursday, July 9, 2020	128.82	36.49	73.07	105,224.50
Friday, July 10, 2020	91.03	44.83	65.97	15,832.30

MH73 Period Summary: Flow				
Measures	Value	Unit	Date	Time
Max.	128.82	gpm	Thursday, July 9, 2020	2:55 PM
Min.	27.75	gpm	Monday, July 6, 2020	2:30 AM
Avg.	63.98	gpm		
Total	1,439,553.00	gal		

*Data begins at 1:00pm on June 24th and ends at 8:00am on July 10th.

APPENDIX II

Utility Plan

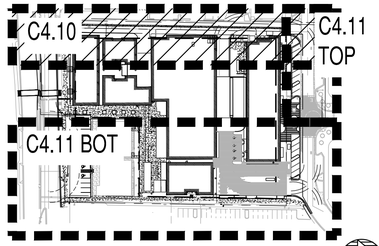
KIMSEY HOTEL & APARTMENT
UTILITY PLAN
7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251

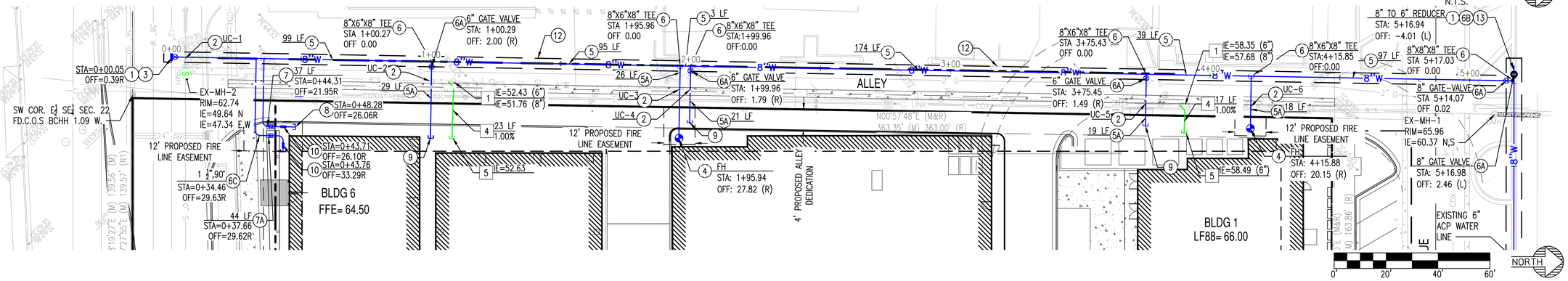
SEWER CONSTRUCTION KEY NOTES

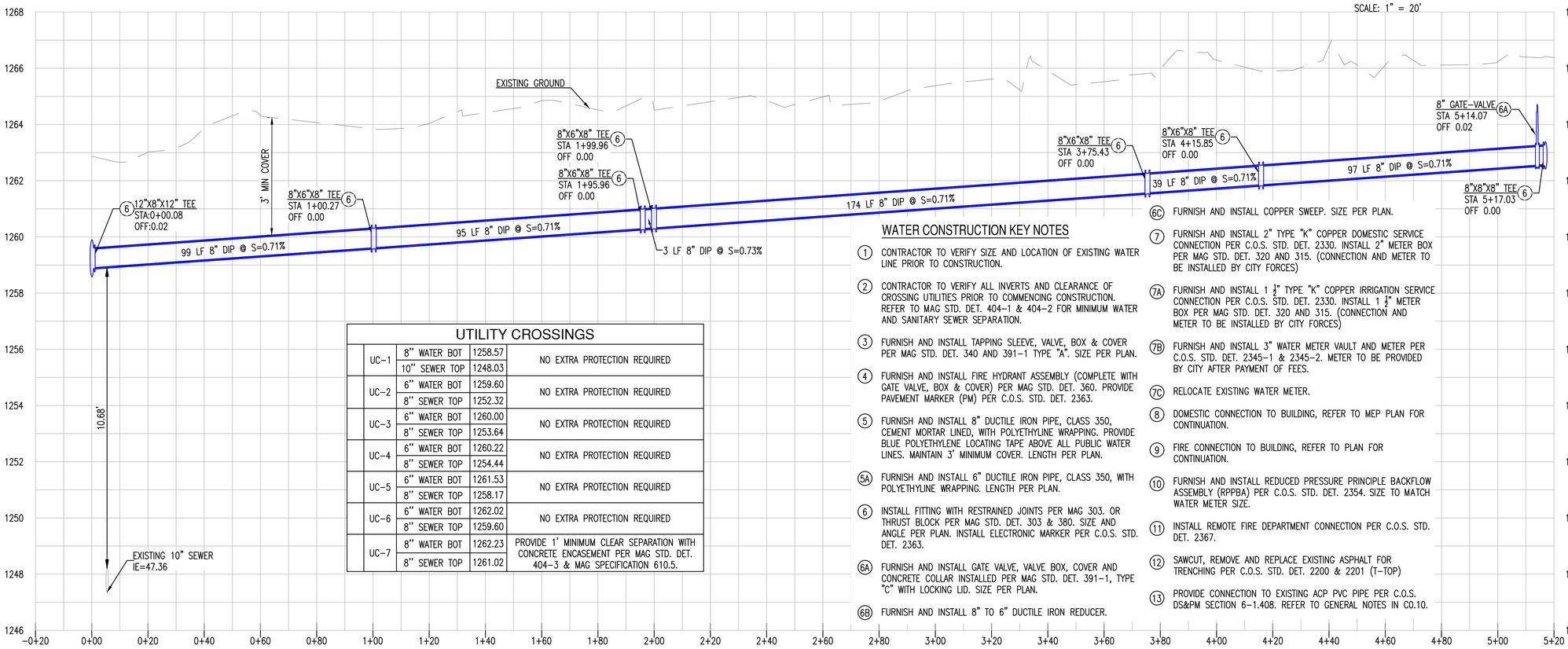
1. CONTRACTOR SHALL VERIFY THE LOCATION OF THE EXISTING SANITARY SEWER LINE BEFORE PROCEEDING WITH TRENCHING. CONTRACTOR SHALL CONTACT ENGINEER IF EXISTING SEWER ELEVATION IS HIGHER THAN PROPOSED TIE-IN INVERT PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. CONTRACTOR SHALL VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
3. FURNISH AND INSTALL 6" PVC SDR-35 SEWER LINE. SIZE, LENGTH AND SLOPE PER PLAN. MAINTAIN 4' MINIMUM COVER.
4. FURNISH AND INSTALL 6" PVC-SDR 35 SEWER LINE CONNECTION PER MAG STD. DET. 440-1. LENGTH AND SLOPE PER PLAN.
5. REFER TO BUILDING PLUMBING PLANS FOR CONTINUATION.
6. CORE EXISTING MANHOLE AND PROVIDE WATERTIGHT CONNECTION FOR NEW SEWER. RECONSTRUCT PAVED INVERT AS REQUIRED.

CONSTRUCTION TYPE:
BUILDING 1: TYPE IIB
BUILDINGS 2-6: TYPE IIIA

NOTES:
1. EXISTING MANHOLES RIMS AND INVERTS HAS BEEN SET BASED ON THE SURVEY RECEIVED FROM 3 ENGINEERS, LLC. DATED 02/13/20.
2. EXISTING MANHOLES RIMS AND INVERTS HAS BEEN SET BASED ON QUARTER SECTION MAP QS# 17-44. DATED 06/11/20.
3. EXISTING WATER MAIN INVERT ELEVATIONS TO BE VERIFIED IN FIELD.
4. EXISTING OVERHEAD LINES EXTENDING ACROSS E.3RD AVENUE SHALL BE RELOCATED UNDER THE STREET AND UP TO THE NEXT EXISTING RISER ON THE NORTH SIDE OF E 3RD AVENUE.







UTILITY CROSSINGS

UC-1	8" WATER BOT	1258.57	NO EXTRA PROTECTION REQUIRED
	10" SEWER TOP	1248.03	
UC-2	6" WATER BOT	1259.60	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1252.32	
UC-3	6" WATER BOT	1260.00	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1253.64	
UC-4	6" WATER BOT	1260.22	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1254.44	
UC-5	6" WATER BOT	1261.53	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1258.17	
UC-6	6" WATER BOT	1262.02	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1259.60	
UC-7	8" WATER BOT	1262.23	PROVIDE 1' MINIMUM CLEAR SEPARATION WITH CONCRETE ENCASEMENT PER MAG STD. DET. 404-3 & MAG SPECIFICATION 610.5.
	8" SEWER TOP	1261.02	

WATER CONSTRUCTION KEY NOTES

1. CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER LINE PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. REFER TO MAG STD. DET. 404-1 & 404-2 FOR MINIMUM WATER AND SANITARY SEWER SEPARATION.
3. FURNISH AND INSTALL TAPPING SLEEVE, VALVE, BOX & COVER PER MAG STD. DET. 340 AND 391-1 TYPE "A". SIZE PER PLAN.
4. FURNISH AND INSTALL FIRE HYDRANT ASSEMBLY (COMPLETE WITH GATE VALVE, BOX & COVER) PER MAG STD. DET. 360. PROVIDE PAVEMENT MARKER (PM) PER C.O.S. STD. DET. 2363.
5. FURNISH AND INSTALL 8" DUCTILE IRON PIPE, CLASS 350, CEMENT MORTAR LINED, WITH POLYETHYLINE WRAPPING. PROVIDE BLUE POLYETHYLENE LOCATING TAPE ABOVE ALL PUBLIC WATER LINES. MAINTAIN 3' MINIMUM COVER. LENGTH PER PLAN.
5A. FURNISH AND INSTALL 6" DUCTILE IRON PIPE, CLASS 350, WITH POLYETHYLINE WRAPPING. LENGTH PER PLAN.
6. INSTALL FITTING WITH RESTRAINED JOINTS PER MAG 303. OR THRUST BLOCK PER MAG STD. DET. 303 & 380. SIZE AND ANGLE PER PLAN. INSTALL ELECTRONIC MARKER PER C.O.S. STD. DET. 2363.
6A. FURNISH AND INSTALL GATE VALVE, VALVE BOX, COVER AND CONCRETE COLLAR INSTALLED PER MAG STD. DET. 391-1, TYPE "C" WITH LOCKING LID. SIZE PER PLAN.
6B. FURNISH AND INSTALL 8" TO 6" DUCTILE IRON REDUCER.
6C. FURNISH AND INSTALL COPPER SWEEP. SIZE PER PLAN.
7. FURNISH AND INSTALL 2" TYPE "K" COPPER DOMESTIC SERVICE CONNECTION PER C.O.S. STD. DET. 2330. INSTALL 2" METER BOX PER MAG STD. DET. 320 AND 315. (CONNECTION AND METER TO BE INSTALLED BY CITY FORCES)
7A. FURNISH AND INSTALL 1 ½" TYPE "K" COPPER IRRIGATION SERVICE CONNECTION PER C.O.S. STD. DET. 2330. INSTALL 1 ½" METER BOX PER MAG STD. DET. 320 AND 315. (CONNECTION AND METER TO BE INSTALLED BY CITY FORCES)
7B. FURNISH AND INSTALL 3" WATER METER VAULT AND METER PER C.O.S. STD. DET. 2345-1 & 2345-2. METER TO BE PROVIDED BY CITY AFTER PAYMENT OF FEES.
7C. RELOCATE EXISTING WATER METER.
8. DOMESTIC CONNECTION TO BUILDING, REFER TO MEP PLAN FOR CONTINUATION.
9. FIRE CONNECTION TO BUILDING, REFER TO PLAN FOR CONTINUATION.
10. FURNISH AND INSTALL REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (RPPBA) PER C.O.S. STD. DET. 2354. SIZE TO MATCH WATER METER SIZE.
11. INSTALL REMOTE FIRE DEPARTMENT CONNECTION PER C.O.S. STD. DET. 2367.
12. SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT FOR TRENCHING PER C.O.S. STD. DET. 2200 & 2201 (T-TOP)
13. PROVIDE CONNECTION TO EXISTING ACP PVC PIPE PER C.O.S. DS&PM SECTION 6-1.408. REFER TO GENERAL NOTES IN C0.10.

PROPOSED UTILITY LEGEND:
PROPERTY LINE · EASEMENT LINE · 8"W WATER LINE · 8"S SEWER LINE · FIRE HYDRANT · FDC · WATER METER · GATE VALVE · T.S.V.B.&C · BACK FLOW PREVENTER · REDUCER · CAP · BUILDING CONNECTION · SEWER MANHOLE · SEWER CLEAN OUT

8" ALLEY WATERLINE PROFILE VIEW
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

EXISTING LEGEND:
CENTERLINE · EASEMENT LINE AS NOTED · CHAINLINKE FENCE · TREE · EX. S SEWER LINE · SEWER MANHOLE · EX. W WATER LINE · WV WATER VALVE · FIRE HYDRANT · STORM DRAIN LINE · CB STORM CATCH BASIN · STORM MANHOLE · GAS LINE · IRR IRRIGATION LINE · SIGN · STREET LIGHT · FO FIBER OPTIC LINE

NOT FOR CONSTRUCTION

SUSTAINABILITY ENGINEERING GROUP
8280 E. GELDING DRIVE SUITE 101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534

Gensler

Blue Stake, Inc. Arizona 811 at least two full working days before you begin excavation. ARIZONA811 Call 811 or visit Arizona811.com

PROJECT	KIMSEY HOTEL & APARTMENT
LOCATION	7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251

DRAWN	LP	6/14/2021
DESIGNED	LP	6/14/2021
QC	SC	6/15/2021
FINAL QC		
PROJ. MGR.	AF	

DATE: 06/15/2021
ISSUED FOR: DRB

REVISION NO.:	DATE:
1	
2	
3	
4	

JOB NO.: 200504
SHEET TITLE: **UTILITY PLAN**

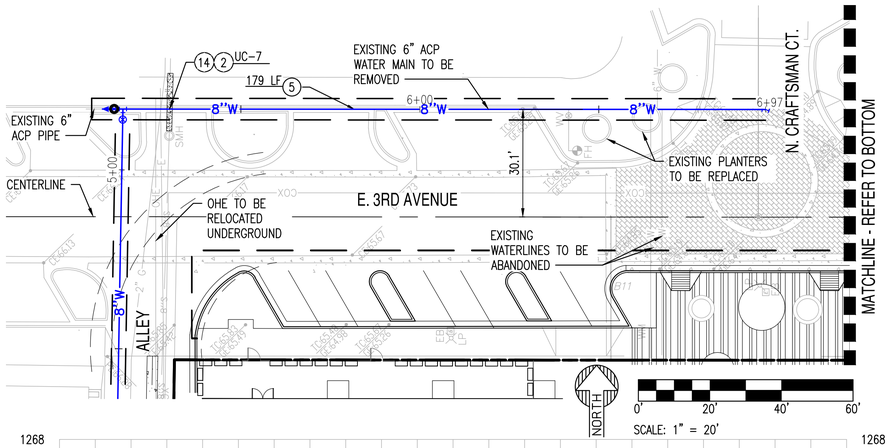
PAGE NO.: 8 OF 9
SHEET NO.: **C4.10**

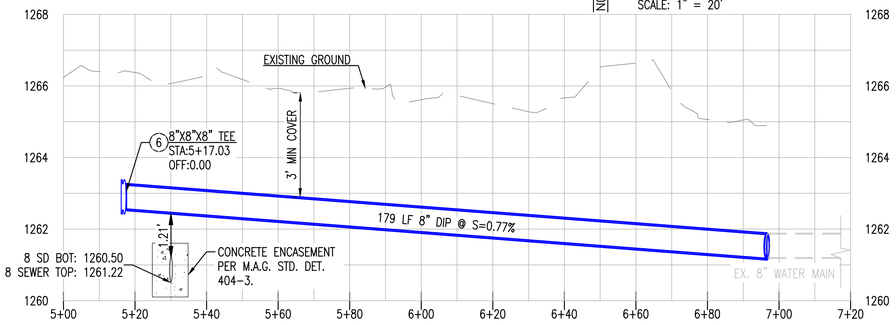
CASE NO.: 10-ZN-2020

LOCATION: Z:\SHARED\PROJECTS\GENSLER\HOJO APARTMENTS SCOTTSDALE 200504\11 CAD (SEG)\11.3 CD'S\200504-CD-C4.00.DWG SAVED BY: LAPTOP02 DATE: 6/15/2021

KIMSEY HOTEL & APARTMENT
UTILITY PLAN

7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251





8" E. 3RD AVENUE WATERLINE REPLACEMENT PROFILE VIEW

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

WATER CONSTRUCTION KEY NOTES

1. CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER LINE PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. REFER TO MAG STD. DET. 404-1 & 404-2 FOR MINIMUM WATER AND SANITARY SEWER SEPARATION.
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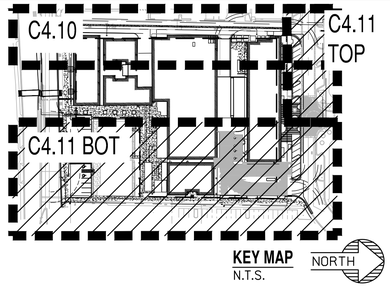
12. SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT FOR TRENCHING PER C.O.S. STD. DET. 2200 & 2201 (T-TOP)
13. PROVIDE CONNECTION TO EXISTING ACP PVC PIPE PER C.O.S. DS&PM SECTION 6-1.408. REFER TO GENERAL NOTES IN C0.10.
14. PROTECT WATERMAIN USING REINFORCED CONCRETE ENCASEMENT ON SEWER PIPE AND WATERMAIN PER MAG STD. DET. 404-3.
15. FURNISH AND INSTALL 6" X 6" CUT-IN TEE.
16. FURNISH AND INSTALL 6" DIP COUPLER AND CONNECT TO EXISTING 6" ACP WATER MAIN.



SEWER CONSTRUCTION KEY NOTES

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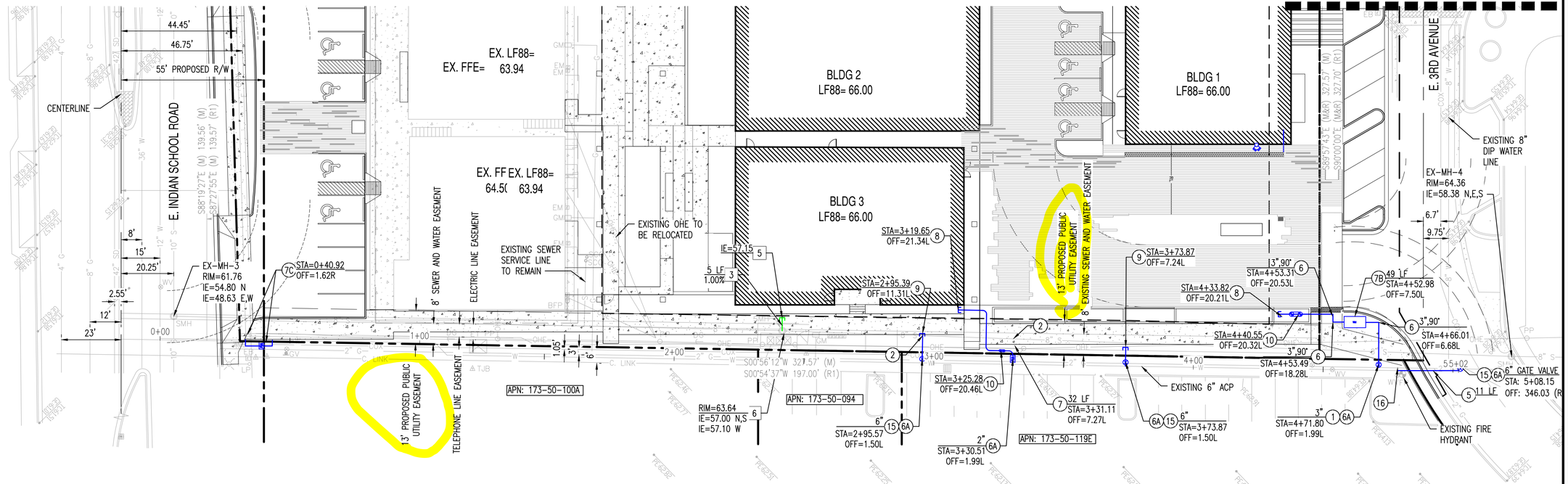
2. CONTRACTOR SHALL VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
4. FURNISH AND INSTALL 6" PVC-SDR 35 SEWER LINE CONNECTION PER MAG STD. DET. 440-1. LENGTH AND SLOPE PER PLAN.
5. REFER TO BUILDING PLUMBING PLANS FOR CONTINUATION.

UTILITY CROSSINGS

UC-7	8" WATER BOT	1262.23	PROVIDE 1' MINIMUM CLEAR SEPARATION WITH CONCRETE ENCASEMENT PER MAG STD. DET. 404-3 & MAG SPECIFICATION 610.5.
	8" SEWER TOP	1261.22	



PROPOSED UTILITY LEGEND:

- PROPERTY LINE
- EASEMENT LINE
- 8"W WATER LINE
- 8"S SEWER LINE
- FIRE HYDRANT
- FDC
- WATER METER
- GATE VALVE
- T.S.V.B.&C
- BACK FLOW PREVENTER
- REDUCER
- CAP
- BUILDING CONNECTION
- SEWER MANHOLE
- SEWER CLEAN OUT

EXISTING LEGEND:

- CENTERLINE
- EASEMENT LINE AS NOTED
- CHAINLINKE FENCE
- TREE
- EX. S SEWER LINE
- SEWER MANHOLE
- EX. W WATER LINE
- WATER VALVE
- FIRE HYDRANT
- STORM DRAIN LINE
- CB
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Gensler

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PROJECT	LOCATION
KIMSEY HOTEL & APARTMENT	7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251

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APPENDIX III

Sewer Hydraulic Calculations

6" ONSITE SERVICE LINES - Allowable Capacity

Project Description	
Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Normal Depth	6.0 in
Diameter	6.0 in
Discharge	251.83 gal/min

Results	
Discharge	251.83 gal/min
Normal Depth	6.0 in
Flow Area	0.2 ft²
Wetted Perimeter	1.6 ft
Hydraulic Radius	1.5 in
Top Width	0.00 ft
Critical Depth	4.6 in
Percent Full	100.0 %
Critical Slope	0.012 ft/ft
Velocity	2.86 ft/s
Velocity Head	0.13 ft
Specific Energy	0.63 ft
Froude Number	(N/A)
Maximum Discharge	270.89 gal/min
Discharge Full	251.83 gal/min
Slope Full	0.010 ft/ft
Flow Type	Undefined

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	6.0 in
Critical Depth	4.6 in
Channel Slope	0.010 ft/ft
Critical Slope	0.012 ft/ft

8" Sewer at 0.0152'/' - PEG West Lot Line

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.015 ft/ft
Diameter	8.0 in
Discharge	238.00 gal/min

Results	
Normal Depth	3.3 in
Flow Area	0.1 ft²
Wetted Perimeter	0.9 ft
Hydraulic Radius	1.8 in
Top Width	0.66 ft
Critical Depth	4.1 in
Percent Full	41.2 %
Critical Slope	0.007 ft/ft
Velocity	3.91 ft/s
Velocity Head	0.24 ft
Specific Energy	0.51 ft
Froude Number	1.517
Maximum Discharge	719.27 gal/min
Discharge Full	668.65 gal/min
Slope Full	0.002 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	41.2 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	3.3 in
Critical Depth	4.1 in
Channel Slope	0.015 ft/ft
Critical Slope	0.007 ft/ft

8" Sewer at 0.0152 ft/ft - East Lot Line

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.015 ft/ft
Diameter	8.0 in
Discharge	253.00 gal/min

Results	
Normal Depth	3.4 in
Flow Area	0.1 ft²
Wetted Perimeter	1.0 ft
Hydraulic Radius	1.8 in
Top Width	0.66 ft
Critical Depth	4.2 in
Percent Full	42.8 %
Critical Slope	0.007 ft/ft
Velocity	3.95 ft/s
Velocity Head	0.24 ft
Specific Energy	0.53 ft
Froude Number	1.499
Maximum Discharge	714.52 gal/min
Discharge Full	664.23 gal/min
Slope Full	0.002 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	42.8 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	3.4 in
Critical Depth	4.2 in
Channel Slope	0.015 ft/ft
Critical Slope	0.007 ft/ft

8" Pipe at 0.0152 ft/ft; d/D=0.65

Project Description	
Friction Method	Manning Formula
Solve For	Discharge

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.015 ft/ft
Normal Depth	5.2 in
Diameter	8.0 in

Results	
Discharge	505.77 gal/min
Flow Area	0.2 ft²
Wetted Perimeter	1.3 ft
Hydraulic Radius	2.3 in
Top Width	0.64 ft
Critical Depth	6.0 in
Percent Full	65.0 %
Critical Slope	0.010 ft/ft
Velocity	4.69 ft/s
Velocity Head	0.34 ft
Specific Energy	0.78 ft
Froude Number	1.346
Maximum Discharge	719.27 gal/min
Discharge Full	668.65 gal/min
Slope Full	0.009 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	65.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	5.2 in
Critical Depth	6.0 in
Channel Slope	0.015 ft/ft
Critical Slope	0.010 ft/ft

10" Pipe at 0.0049 ft/ft = Peak Flow w/ Pool

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Diameter	10.0 in
Discharge	681.50 gal/min

Results	
Normal Depth	8.1 in
Flow Area	0.5 ft²
Wetted Perimeter	1.9 ft
Hydraulic Radius	3.0 in
Top Width	0.65 ft
Critical Depth	6.6 in
Percent Full	81.1 %
Critical Slope	0.008 ft/ft
Velocity	3.21 ft/s
Velocity Head	0.16 ft
Specific Energy	0.84 ft
Froude Number	0.663
Maximum Discharge	740.45 gal/min
Discharge Full	688.33 gal/min
Slope Full	0.005 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	8.1 in
Critical Depth	6.6 in
Channel Slope	0.005 ft/ft
Critical Slope	0.008 ft/ft

10" Pipe at 0.0049'/' d/D=0.8

Project Description	
Friction Method	Manning Formula
Solve For	Discharge

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Normal Depth	8.0 in
Diameter	10.0 in

Results	
Discharge	672.82 gal/min
Flow Area	0.5 ft²
Wetted Perimeter	1.8 ft
Hydraulic Radius	3.0 in
Top Width	0.67 ft
Critical Depth	6.6 in
Percent Full	80.0 %
Critical Slope	0.008 ft/ft
Velocity	3.20 ft/s
Velocity Head	0.16 ft
Specific Energy	0.83 ft
Froude Number	0.675
Maximum Discharge	740.45 gal/min
Discharge Full	688.33 gal/min
Slope Full	0.005 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	8.0 in
Critical Depth	6.6 in
Channel Slope	0.005 ft/ft
Critical Slope	0.008 ft/ft

10" Pipe at 0.0049 ft/ft - Peak Flow w/o Pool

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Diameter	10.0 in
Discharge	586.50 gal/min

Results	
Normal Depth	7.1 in
Flow Area	0.4 ft²
Wetted Perimeter	1.7 ft
Hydraulic Radius	3.0 in
Top Width	0.76 ft
Critical Depth	6.1 in
Percent Full	71.0 %
Critical Slope	0.007 ft/ft
Velocity	3.16 ft/s
Velocity Head	0.15 ft
Specific Energy	0.75 ft
Froude Number	0.752
Maximum Discharge	740.45 gal/min
Discharge Full	688.33 gal/min
Slope Full	0.004 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	7.1 in
Critical Depth	6.1 in
Channel Slope	0.005 ft/ft
Critical Slope	0.007 ft/ft

10" Pipe at 0.0048'/' d/D =0.65

Project Description	
Friction Method	Manning Formula
Solve For	Discharge

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.005 ft/ft
Normal Depth	6.5 in
Diameter	10.0 in

Results	
Discharge	520.66 gal/min
Flow Area	0.4 ft²
Wetted Perimeter	1.6 ft
Hydraulic Radius	2.9 in
Top Width	0.79 ft
Critical Depth	5.8 in
Percent Full	65.0 %
Critical Slope	0.007 ft/ft
Velocity	3.09 ft/s
Velocity Head	0.15 ft
Specific Energy	0.69 ft
Froude Number	0.793
Maximum Discharge	740.45 gal/min
Discharge Full	688.33 gal/min
Slope Full	0.003 ft/ft
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	0.0 %
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	6.5 in
Critical Depth	5.8 in
Channel Slope	0.005 ft/ft
Critical Slope	0.007 ft/ft

Miller Road 15" at 0.0439 ft/ft - Total Peak Flow w/ Pools

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Roughness Coefficient	0.013	
Channel Slope	0.044	ft/ft
Diameter	15.0	in
Discharge	1,391.10	gal/min

Results		
Normal Depth	4.9	in
Flow Area	0.3	ft^2
Wetted Perimeter	1.5	ft
Hydraulic Radius	2.7	in
Top Width	1.17	ft
Critical Depth	8.5	in
Percent Full	32.5	%
Critical Slope	0.006	ft/ft
Velocity	8.95	ft/s
Velocity Head	1.25	ft
Specific Energy	1.65	ft
Froude Number	2.902	
Maximum Discharge	6,534.37	gal/min
Discharge Full	6,074.50	gal/min
Slope Full	0.002	ft/ft
Flow Type	Supercritical	

GVF Input Data		
Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data		
Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.0	%
Normal Depth Over Rise	32.5	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	4.9	in
Critical Depth	8.5	in
Channel Slope	0.044	ft/ft
Critical Slope	0.006	ft/ft

Miller Road 15" at 0.0065 ft/ft - Total Peak Flow w/ Pools

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.007 ft/ft
Diameter	15.0 in
Discharge	1,391.10 gal/min

Results	
Normal Depth	8.3 in
Flow Area	0.7 ft²
Wetted Perimeter	2.1 ft
Hydraulic Radius	4.0 in
Top Width	1.24 ft
Critical Depth	8.5 in
Percent Full	55.5 %
Critical Slope	0.006 ft/ft
Velocity	4.43 ft/s
Velocity Head	0.30 ft
Specific Energy	1.00 ft
Froude Number	1.040
Maximum Discharge	2,514.36 gal/min
Discharge Full	2,337.41 gal/min
Slope Full	0.002 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	55.5 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	8.3 in
Critical Depth	8.5 in
Channel Slope	0.007 ft/ft
Critical Slope	0.006 ft/ft

24" Pipe at 0.0085'/' d/D=0.7

Project Description	
Friction Method	Manning Formula
Solve For	Discharge

Input Data		
Roughness Coefficient	0.013	
Channel Slope	0.009	ft/ft
Normal Depth	16.8	in
Diameter	24.0	in

Results		
Discharge	7,837.11	gal/min
Flow Area	2.3	ft²
Wetted Perimeter	4.0	ft
Hydraulic Radius	7.1	in
Top Width	1.83	ft
Critical Depth	18.1	in
Percent Full	70.0	%
Critical Slope	0.007	ft/ft
Velocity	7.43	ft/s
Velocity Head	0.86	ft
Specific Energy	2.26	ft
Froude Number	1.158	
Maximum Discharge	10,069.34	gal/min
Discharge Full	9,360.68	gal/min
Slope Full	0.006	ft/ft
Flow Type	Supercritical	

GVF Input Data		
Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data		
Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.0	%
Normal Depth Over Rise	70.0	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	16.8	in
Critical Depth	18.1	in
Channel Slope	0.009	ft/ft
Critical Slope	0.007	ft/ft

FINAL WATER REPORT

FINAL Basis of Design Report

☐ APPROVED

☑ APPROVED AS NOTED

☐ REVISE AND RESUBMIT

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

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 in 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 ldillon DATE 7/12/2021

Conform to following stipulations and address comments below and herein in the submitted improvement plans:

1) STIPULATION: Add new water mains as shown on utility plan to complete an 8-inch loop around the site.:
a.) Approx. 200 feet of 8-inch water main be placed along 3rd Ave
b.) Dead end main on east property line shall be extended connected to existing 3rd Ave 8" main.
c.) New 8" main along entire western frontage/alley shall be installed.

2) STIPULATION: Existing 6" main on 3rd Avenue to be removed as shown on utility plans to be replaced with new 8" main.

3) STIPULATION: Further detail shall be shown on submitted plans to clarify how the new 8" main will be coordinated with the existing 8" and 6" mains north of 3rd Avenue on Craftsman Ct. Refer to utility plan comments herein.

The Triangle

7120 E. Indian School Road
Scottsdale, AZ 85251

Registered Professional Engineer (Civil)
CERTIFICATE NO.
45621
ALI SAMIH
FAKIH
Date Signed 06/15/21
ARIZONA, U.S.A.

Prepared For:

Gensler

2575 E. Camelback Rd Suite 175
Phoenix, AZ 85016
Phone: 602-523-4900

Prepared by:

SEG

Sustainability Engineering Group
8280 E. Gelding Drive, Suite 101
Scottsdale, AZ 85260
480.588.7226 www.azSEG.com

Project Number: 200504
Revision Date: June 25, 2020 (Rezoning)
Revision Date: August 28, 2020 (Rezoning)
Revision Date: October 16, 2020 (Rezoning)
Revision Date: June 15, 2021 (DRB)

Case No.: 10-ZN-2020 **Plan Check No.: TBD**

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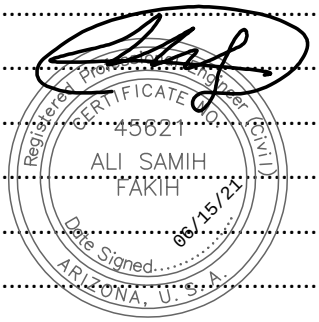

LIST OF TABLES:

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APPENDIX:

1. INTRODUCTION

1.1 SUMMARY OF PROPOSED DEVELOPMENT:

The proposed development consists of a mixed residential use with commercial amenities located north of Indian School Road and south of 3rd Avenue between Marshall Way and Scottsdale Road in Scottsdale Arizona. An existing inn and several commercial buildings will be razed. The lot area is 144,173 square feet (3.31 acres) per the A.L.T.A. surveys. The proposed structures will have a maximum of seven floors and include a maximum of 190 residential units, 168 hotel rooms, a 4,000 square foot restaurant, 14,000 square feet of miscellaneous retail/fitness/clubhouse amenities and a pool.

1.2 REPORT INTENT:

This report is provided to support the proposed redevelopment and evaluate existing and proposed water demands compliant to the City's 2017 Design Standards and Policies Manual and the projects impact to the local area's water distribution system.

1.3 SITE AND LEGAL DESCRIPTION:

The project property consists three land parcels located in the SE ¼ of Section 22, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, with the following Assessor Parcel Numbers:

- 173-50-108A, 173-50-034 and 173-50-117B

Refer to **FIGURE 1** for a vicinity map of the project's location with respect to major cross streets.

2. DESIGN DOCUMENTATION

2.1 DESIGN COMPLIANCE:

The proposed water system is designed to meet the criteria of the City of Scottsdale ("the City") Water Resources Department, the Arizona Department of Environmental Quality ("ADEQ"), and Maricopa County Environmental Services Department ("MCESD").

2.2 PROCEDURES, POLICIES AND METHODOLOGIES:

The general methodology used to design this public water infrastructure consists of modeling a network of water distribution mains to meet the City's pressure, head loss, and water demand requirements during daily demands and fire events. The connection to the water system is modeled as a reservoir and pump. The pump will simulate the pressure drop and the available flow from the existing water system as depicted by the fire flow test.

2.3 SOFTWARE ACKNOWLEDGEMENT:

Bentley WaterCAD® Version 8i is the computer modeling tool used in this water study.

3. EXISTING CONDITIONS

3.1 ZONING & LAND USE:

The overall project parcel is zoned D/OC-2 PBD DO-Type 2. Land uses consist of a motel and commercial/retail/office activities.

3.2 EXISTING TOPOGRAPHY, VEGETATION AND LANDFORM FEATURES:

The site has approximately five feet of fall from 3rd Avenue to Indian School Road in a south east direction. The site is covered with building and paved parking with only minor landscaping. Refer to **FIGURE 2** for an aerial of the overall project existing conditions.

FIRM Map Number 04013C2235L dated October 16, 2013 indicates this site is designated as Zone "X". As such, it is defined as areas outside of the 0.2% annual chance of flooding. Refer to **FIGURE 3** for an excerpt from the FIRM.

3.3 EXISTING WATER MAIN:

Water: City of Scottsdale (QS 17-45)

- The site is located within COS Water Pressure Zone 1A.
- An existing 12" ductile iron (DIP) water distribution main serving Zone 1A fronts the site under Indian School Road.
- An existing 6" asbestos cement (ACP) and 8" DIP water distribution main serving Zone 1A fronts the site under 3rd Avenue.
- An existing 8" ACP water extends north along the site's east property line from Indian School Road and dead ends just south of 3rd Avenue.
- Fire hydrants exist to the east and west of the project along Indian School Road and fronting the site along 3rd Avenue.
- Four existing water meters to the parcels are indicated on the City's quarter-section maps to the site along Indian School Road and 3rd Avenue.
- An existing 36" DIP water transmission line fronts the site under Indian School Road and serves Pressure Zone 1 to the south of Indian School Road.

Refer to **FIGURE 4** for COS Water QS Map 17-45 showing water line locations.

3.4 CERTIFIED FLOW TEST RESULTS OF EXISTING WATER SYSTEM:

Certified fire hydrant flow testing was performed on the 3rd Avenue system on May 14, 2020 by Arizona Flow Testing LLC at 7:00 a.m. A second test was performed on the Indian School Road system on November 20, 2020 by Arizona Flow Testing LLC at 7:00 a.m. The test documentation is included in the **APPENDIX I** and summarized in the tables below.

3rd Avenue Test (May 14, 2020)					
	Static Pressure (psi)	**Residual Pressure (psi)**	**Pitot Pressure (psi)**	**Flowing GPM**	**GPM @ 20 psi**
Raw Test Data	106	76	30	2354	4156
Data w/ 34 psi Safety Factor	72	42	-	2354	3168
Indian School Road Test (Nov. 20, 2020)					
	Static Pressure (psi)	**Residual Pressure (psi)**	**Pitot Pressure (psi)**	**Flowing GPM**	**GPM @ 20 psi**
Raw Test Data	106	91	29	2025	5199
Data w/ 34 psi Safety Factor	72	57	-	2025	3962
Note: The WaterCad Model in **APPENDIX I** Utilizes the Indian School Road Test Data w/ 34 psi Safety Factor (AFES Design)					

Per requirements of the City's DS&PM (ref. 2), the modeled water system uses the "derated" pressure and flow data from the Indian School Road test as a basis for evaluating the City's water supply. The "derated" pressure is approximately 34 psi lower than the recorded pressure. "Derated" AFES (Automated Fire Extinguishing System) data is typically used by the building fire sprinkler engineer to design the automated fire sprinkler system.

stipulation in zoning case confirmed valid

4. PROPOSED CONDITIONS

4.1 SITE PLAN:

The property is proposed to be re-developed as residential apartment and hotel use with supporting commercial, office and retail facilities. Development will include new drive entrances from both Indian School Road and 3rd Avenue. A new pedestrian crossing is proposed at 3rd Avenue connecting the project to Craftsman Court. A new pedestrian crossing is also proposed across Indian School Road west of the western driveway with a pedestrian refuge area in the median.

completes 8" loop around site

4.2 PROPOSED WATER SYSTEM:

A reach of 6" AC pipe along the site's 3rd Street frontage will be removed and replaced with 8" DIP to minimize line losses during fire flow. A new reach of 8" DIP water main is proposed along the west property line connecting the 12" DIP in Indian School Road to the new 8" ACP replacement in 3rd Avenue. This line will support fire service to the hotel and apartment buildings. The existing dead-end water line along the northeast property line is proposed to be connected into the 3rd Avenue 8" DIP and will be used for fire and domestic service to the residential buildings.

Domestic, irrigation and fire line service connections for the existing commercial building are off the 12" DIP in Indian School Road. Meters not reused will be inventories for development fee credit and removed per City requirements.

The extensions and connections noted above will provide redundant sourcing to the site from Indian School Road and 3rd Avenue. New fire hydrants will be provided to meet City spacing requirements.

4.3 WATER REQUIREMENTS:

The City's design standards govern the domestic and fire flow demands per Chapter 6 of the City of Scottsdale's DS&PM, dated January 2017. The maximum fire flow demand used is 2,500 gpm based on the proposed high-rise building and 1,500 gpm for the low-rise residential buildings.

Building 1 Height = 76' Building 2 Height = 76'
Building 3 Height = 40' Building 4,5,6 Height = 32'

The required fire flow was determined to be 1,500 gpm for low-rise based on DS&PM.

4.4 MAINTENANCE RESPONSIBILITIES:

On-site water lines and meters for the proposed development will be public, located within easements dedicated to the City of Scottsdale. An additional easement will be proposed along the eastern boundary to provide a total width of 13'. An alleyway will be dedicated to the City along the western boundary. Refer to **FIGURE 5** – Proposed Easement Exhibit.

The existing offsite water lines are in public rights-of-ways and/or easements. All metered services will be installed with reduced pressure principle backflow preventers owned and maintained by the property owner.

5. WATER SYSTEM COMPUTATIONS

5.1 WATER DEMANDS:

The proposed development at the site consists of residential apartment units and a hotel including two swimming pools and commercial/office/retail facilities. The associated DS+PM demands along with the peaking factors are shown in Table 1 below. A summary of the total water demands for the site are presented below in Table 2.

Table 1: COS DESIGN CRITERIA BY DEMAND TYPE

Land Use	Average Day Demand (gpm)	Unit	*Peaking Factors*	
			Max Day	Peak Hour
High Density Residential	0.27	per unit	2	3.5
Hotel	0.63	per unit	2	3.5
Restaurant	1.81E-03	per sq. ft.	2	3.5
Retail amenities	1.11E-03	per sq. ft.	2	3.5

Table 2: ONSITE WATER DEMAND CALCULATIONS PER DS+PM

Land Use	Unit Count or Area (sq ft)	Unit	ADD per Unit (gpm)	Avg. Day Demand (gpm)	Max Day Demand (gpm)	Peak Hour Demand (gpm)
B-1 Hotel	168	Rooms	0.63	105.8	211.7	370.4
B-1 Restaurant	4,000	Sq. Ft.	1.81E-03	7.2	14.5	25.3
B-2/3 High Density Resider	180	Units	0.27	48.6	97.2	170.1
B-4 Townhomes	2	Units	0.27	0.5	1.1	1.9
B-5 Townhomes	2	Units	0.27	0.5	1.1	1.9
B-6 Townhomes	6	Units	0.27	1.6	3.2	5.7
Ex - Retail amenities	14,000	Sq. Ft.	1.11E-03	15.5	31.1	54.4
			Totals	179.9	359.8	629.7

5.2 SOFTWARE MODELING:

Bentley WaterCAD® Version 8i is the computer modeling tool used in this study.

Network analysis input parameters included the following:

1. Pipe diameters (inches)
2. Pipe lengths (feet)
3. Pipes invert elevations (feet – MSL)
4. A reservoir and a pump to model the fire flow test perfor
5. System demands (gpm)
6. Fire flows (gpm)
7. Model piping is ductile iron pipe using Hazen-Williams fri

values don't match table 3. Modeling herein appears to be using the higher values from zoning case. Conservative but ok. Not a big difference.

Output parameters included but were not limited to:

1. Pressure (psig)
2. Flow rates (gpm)
3. Velocities (fps)
4. Head loss (feet)

Modeling output will include junction, pipe, pump and reservoir reports for the average day, maximum day and peak hour domestic demands. Fire flow analysis includes the following two modeling scenarios compliant with NFPA 1 allowing the total available flow to be split among hydrants adjacent to the site:

- 2500 gpm split equally among two fire hydrants under the maximum day scenario, and
- 1250 gpm assigned to a hydrant adjacent to the west side of the hotel and with 1250 gpm assigned to the remaining nodes, including the maximum day domestic demands.

5.3 MINIMUM PRESSURE REQUIREMENTS:

The following system pressure requirements are in accordance with the City's design standards:

- Average day, maximum day and peak hour flow demands:
  - Minimum pressure = 50 psig
    - At the highest finished floor level to be served by the system pressure during normal daily operating conditions.

- Maximum pressure = 120 psig
- Maximum day plus coincident fire flow demand:
  - Minimum pressure = 30 psig
    - At the highest ceiling level to be served by the system pressure during normal daily operating conditions.
  - Maximum pressure = 120 psig
- Daily scenario head loss shall not exceed 10 feet per 1,000 feet length of pipe.

The minimum pressure locations noted above may require the project's mechanical engineer to consider domestic and/or fire pumps. Refer to **APPENDIX II** for computer modeling results.

5.4 WATER SYSTEM ANALYSIS:

A summary of the modeling results is presented below in Table 3. Detailed WaterCAD® results are presented in **APPENDIX II**. Water pressure for domestic and fire service to the upper floors of the structures may require internal pumps and will be designed by the Mechanical Engineer. The following table represents flow and pressure available at ground level.

good summary of model results, thank you!

Table 3 - WaterCAD® Analysis Results

Demand Scenario	Water Demand (GPM)	Pressure (PSIG)				Max Pipe Vel (ft/s)	Pipe ID
		Min.	Node	Max.	Node		
Average Day	191	69	J-7	74	J-13	0.6	P-21
Maximum Day	381	69	J-7	74	J-13	1.2	P-21
Peak Hour	667	67	J-7	72	J-13	2.1	P-21
Fire Flow (1)	2881	39	J-7	45	J-13	5.8	P-18
Fire Flow (2)	2881	27	J-6	45	J-13	9.9	P-26
Fire Flow (3)	3031	30	J-1	45	J-14	15	P-27

Notes (1) MD + 1250 gpm split between J-20 and J-15
(2) MD + 1250 gpm routed to all junctions with constant 1250 gpm at J-20
(3) MD + FF range of 2500 to 3000 gpm routed to the local junctions

These results indicate that the proposed water system meets the City's criteria for daily water usage and fire flow events. The flows and pressures shown in APPENDIX II support the domestic and fire flow demands for the high-rise apartment and hotel buildings.

values from zoning case BOD, not a big difference

meets criteria

not sure what criteria this is referencing

6. SUMMARY

6.1 SUMMARY OF PROPOSED WATER IMPROVEMENTS:

- The proposed water main is designed in accordance with City of Scottsdale's design standards and policies[2].
  - Minimum 50 psi @ peak hour required; 67 psi provided.
  - Minimum 30 psi @ max+ fire flow required; 30+ psi provided.
  - The system supports the total 1500 gpm for low-rise commercial buildings plus 381 gpm at maximum day.
- The results shown in the modeling summary (refer to Section 5.4) indicate that the proposed water system meets the City's criteria for Daily water usage and fire flow events as described in Section 5.3.
- Pressure regulating valves will be installed on all building services and backflow prevention devices on all metered services.

6.2 PROJECT SCHEDULE:

The infrastructure and buildings are proposed to be constructed in a single phase.

7 SUPPORTING MAPS

7.1 SITE UTILITY PLAN

Refer to the Site Plan / Utility Plan in **APPENDIX III.**

8 REFERENCES

1. *COS QS Water Plan number 17-44*
2. *City of Scottsdale Design Standards & Policies Manual, 2017 (Chapter 6 – Water)*

Table 1: COS DESIGN CRITERIA BY DEMAND TYPE

Land Use	Average Day Demand (gpm)	Unit	*Peaking Factors*	
			Max Day	Peak Hour
High Density Residential	0.27	per unit	2	3.5
Hotel	0.63	per unit	2	3.5
Restaurant	1.81E-03	per sq. ft.	2	3.5
Retail amenities	1.11E-03	per sq. ft.	2	3.5

Table 2: ONSITE WATER DEMAND CALCULATIONS PER DS+PM

Land Use	Unit Count or Area (sq ft)	Unit	ADD per Unit (gpm)	Avg. Day Demand (gpm)	Max Day Demand (gpm)	Peak Hour Demand (gpm)
B-1 Hotel	168	Rooms	0.63	105.8	211.7	370.4
B-1 Restaurant	4,000	Sq. Ft.	1.81E-03	7.2	14.5	25.3
B-2/3 High Density Residentia	180	Units	0.27	48.6	97.2	170.1
B-4 Townhomes	2	Units	0.27	0.5	1.1	1.9
B-5 Townhomes	2	Units	0.27	0.5	1.1	1.9
B-6 Townhomes	6	Units	0.27	1.6	3.2	5.7
Ex - Retail amenities	14,000	Sq. Ft.	1.11E-03	15.5	31.1	54.4
			Totals	179.9	359.8	629.7

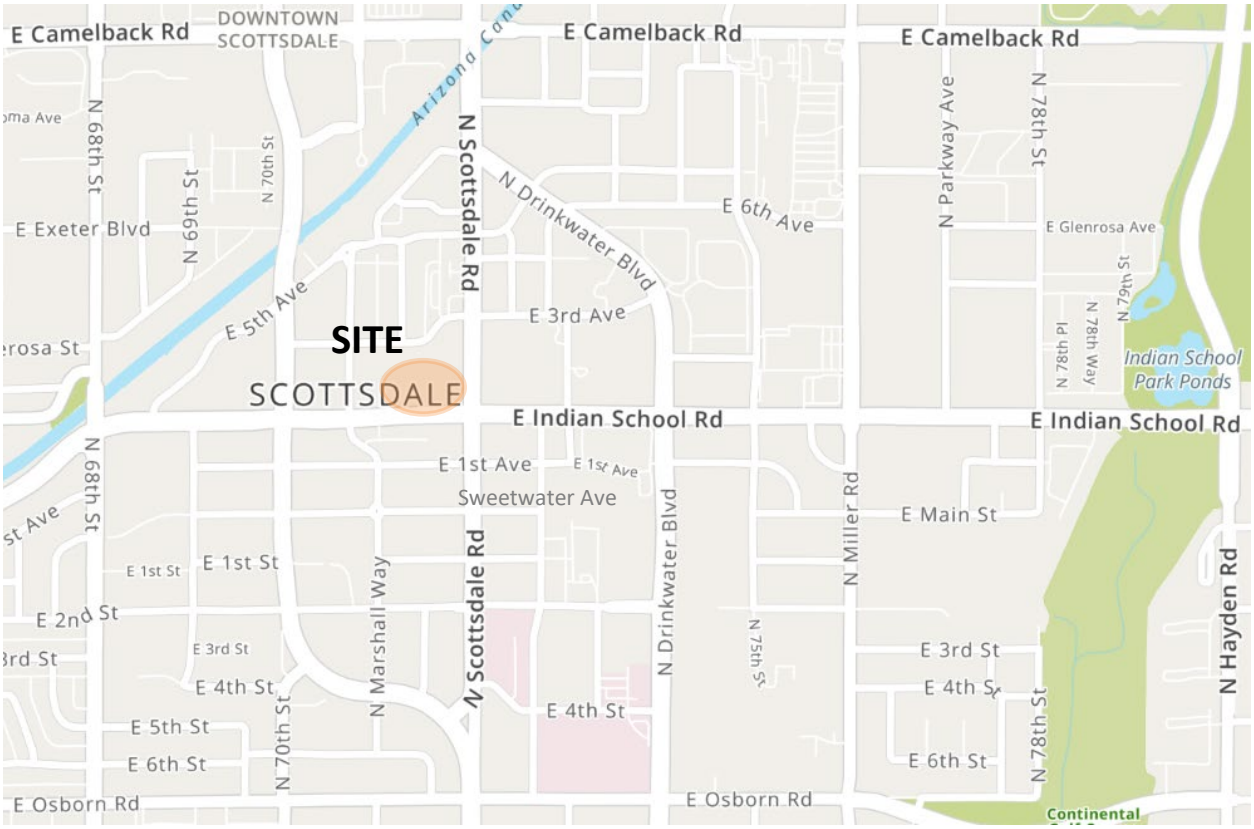


FIGURE 1 – Vicinity Map

FIGURE 2 - Aerial

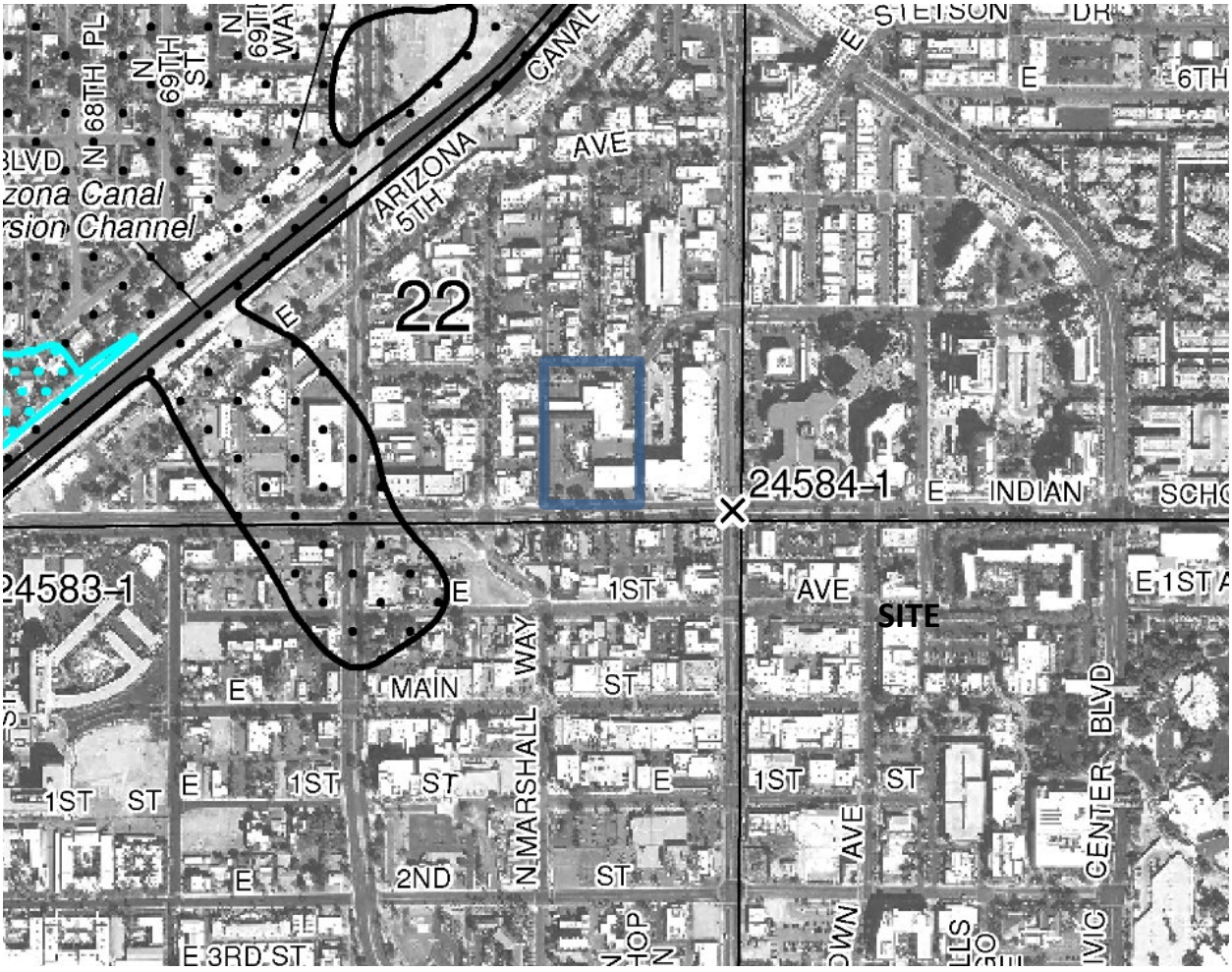


FIGURE 3 – FEMA FIRM

Excerpt from 04013C2235L

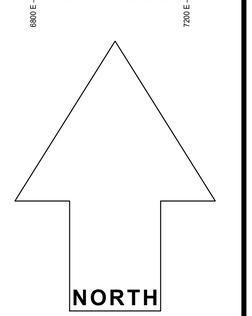
GENERAL NOTES:

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

- Air Release Valve
- Non-potable Air Release Valve
- Blowoff
- Cap
- Cathodic Protection
- Fill Drain
- Fire Hydrant
- Non-GPS Point
- Pressure Reducing Valve
- Pump
- Reducer
- Sample Station
- Water Manhole
- Non-Potable Manhole
- Well
- Valve
- Non-potable Valve
- Vault
- Water Main
- Non-Potable Main
- Fire / Private Main
- Non-Scottsdale Main

VICINITY MAP



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

WATER

QUARTER SECTION MAP

17-44

SE 1/4 SEC. 22 T2N R4E

FIGURE 4

CITY OF SCOTTSDALE

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

CIVIL ENGINEER:
SEG
8280 E. GELDING DR, SUITE #101
SCOTTSDALE, AZ 85260
480-588-7226
ATTN: ALI FAKIH
EMAIL: ALI@AZSEG.COM

CLIENT/OWNER:
PEG DEVELOPMENT
180 N. UNIVERSITY AVE
SUITE 200, PROVO UT 84601
801-655-1998
ATTN: MATT KRAMBULE
EMAIL: MKRAMBULE@PEGCOMPANIES.COM

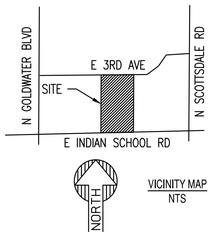
ARCHITECT:
GENSLER
2575 E. CAMELBACK RD
SUITE 175, PHOENIX AZ 85016
602-253-4900
ATTN: JOHANNA COLLINS
EMAIL: JOHANNA_COLLINS@GENSLER.COM

LANDSCAPE ARCHITECT:
COLWELL SHELOR
4450 N. 12TH STREET, SUITE 104
PHOENIX, AZ 85014
602-633-2195
EMAIL: ACOLWELL@COLWELLSHELOR.COM

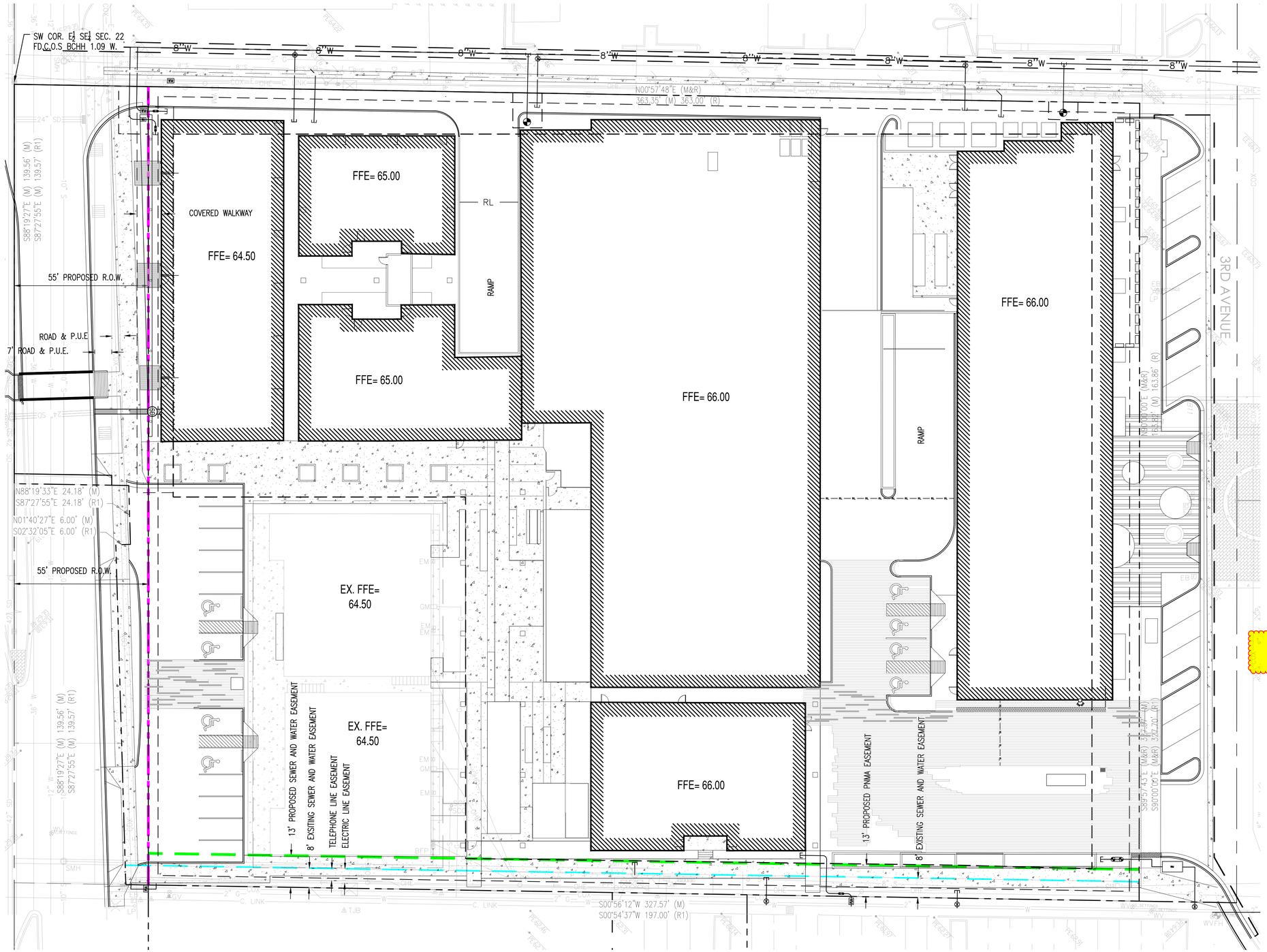
KIMSEY HOTEL & APARTMENT

PROPOSED EASEMENT EXHIBIT

7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251



VICINITY MAP
NTS



PROPOSED LEGEND:

- PROPERTY LINE
- PROPOSED ACCESS EASEMENT
- PROPOSED WATER AND SEWER EASEMENT
- UNDERGROUND PARKING
- EXISTING WATER EASEMENT
- PROPOSED R.O.W.

NORTH

0' 20' 40' 60'

SCALE: 1" = 20'

NOT FOR CONSTRUCTION

SEG SUSTAINABILITY ENGINEERING GROUP
8280 E. GELDING DRIVE SUITE 101, SCOTTSDALE, ARIZONA 85260
WWW. AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534

Gensler

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 Call 811 or visit Arizona811.com

PROJECT: KIMSEY HOTEL & APARTMENT
LOCATION: 7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251

DRAWN	LP	6/14/2021
DESIGNED	LP	6/14/2021
QC	SC	6/15/2021
FINAL QC		
PROJ. MGR.	AF	

DATE: 06/15/2021
ISSUED FOR: DRB

REVISION NO.:	DATE:
1	
2	

PROPOSED EASEMENT EXHIBIT

JOB NO.: 200504
SHEET TITLE: **PROPOSED EASEMENT EXHIBIT**
PAGE NO.: FIGURE 5
SHEET NO.:

CASE NO.: 10-ZN-2020

LOCATION: Z:\SHARED\PROJECTS\GENSLER\HOJO APARTMENTS SCOTTSDALE 200504\11 CAD (SEG)\11.3 CD'S\200504_PROPOSED EASEMENT EXHIBIT.DWG SAVED BY: LAPTOP02 DATE: 6/15/2021

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name:	The Triangle
Project Address:	7100 East Indian School Road, Scottsdale, Arizona, 85251
Client Project No.:	Not Provided
Arizona Flow Testing Project No.:	20456
Flow Test Permit No.:	C63790
Date and time flow test conducted:	November 20, 2020 at 7:00 AM
Data is current and reliable until:	May 20, 2021
Conducted by:	Floyd Vaughan– Arizona Flow Testing, LLC (480-250-8154)
Coordinated by:	Chris Mendez –City of Scottsdale-Inspector (602-9028-9046)

Raw Test Data

Static Pressure: **106.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **91.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **29.0 PSI**
(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Hose Monster
(Measured in inches)

Coefficient of Diffuser 0.7875

Flowing GPM: **2,025 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **5,199 GPM**

Data with 34 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **57.0 PSI**
(Measured in pounds per square inch)

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.

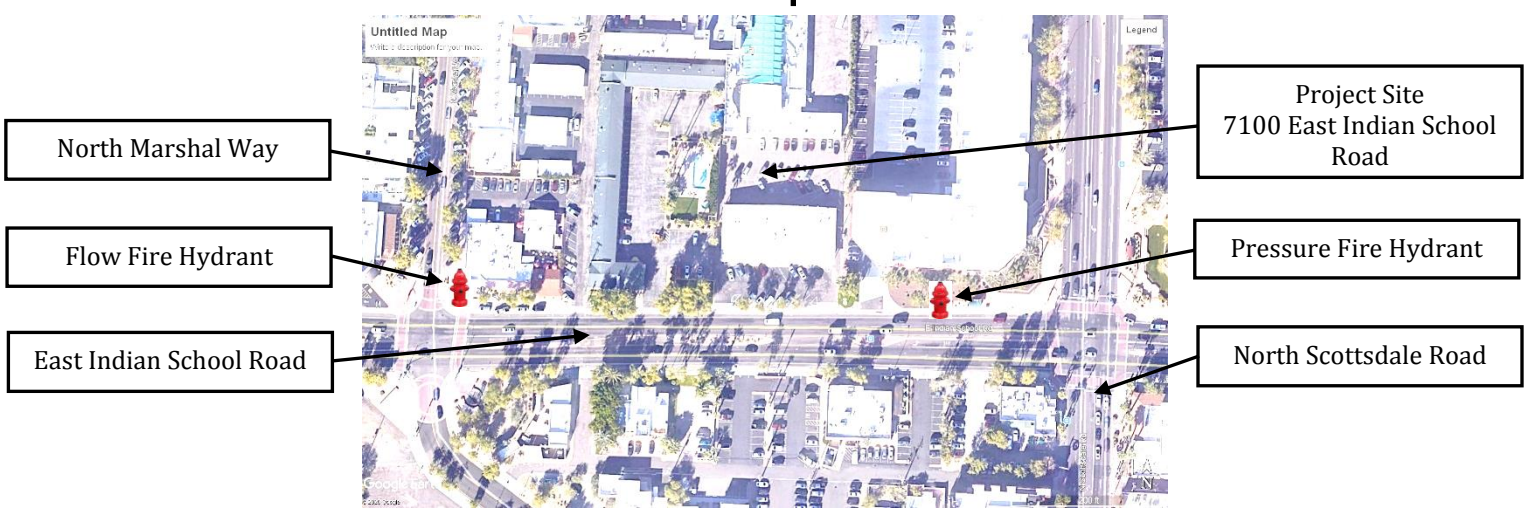
Distance between hydrants: Approx.: 630-Feet

Main size: Not Provided

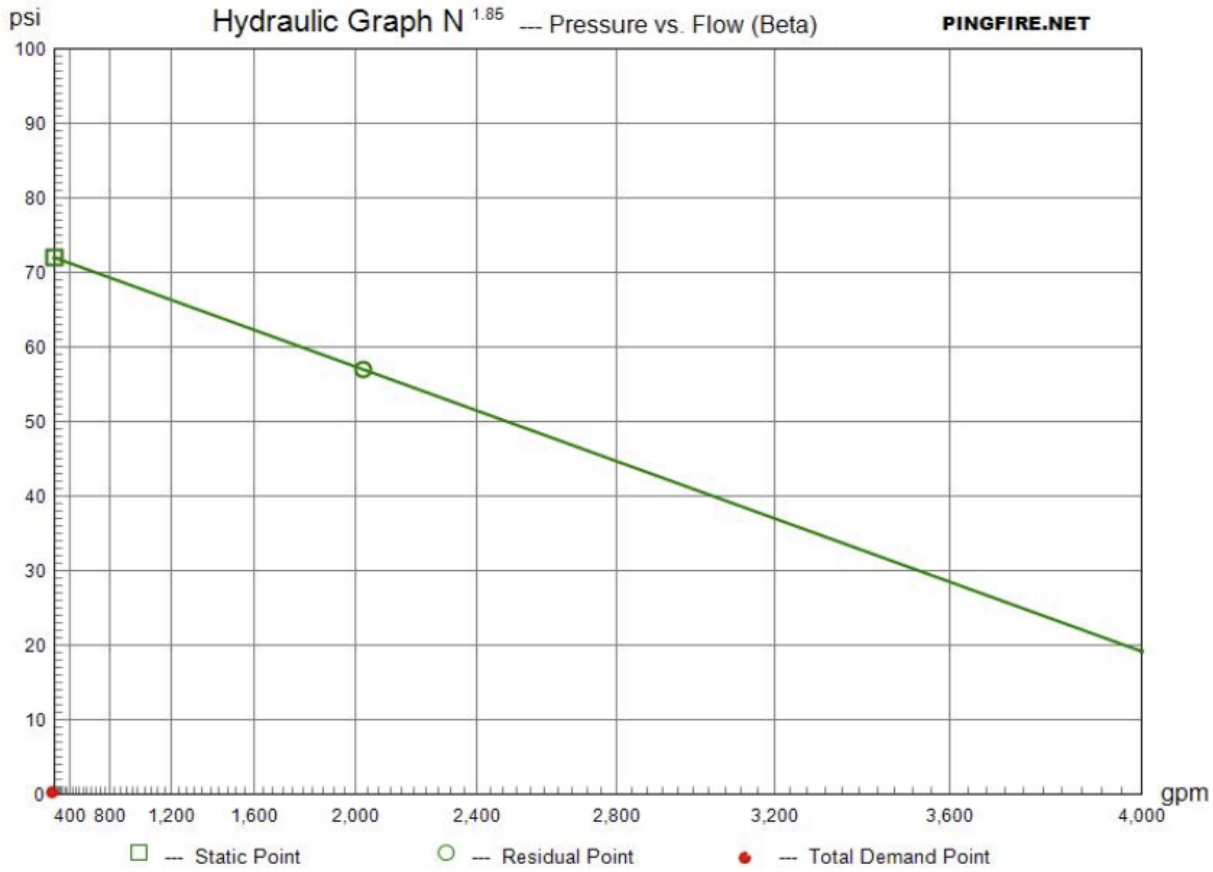
Flowing GPM: **2,025 GPM**

GPM @ 20 PSI**:** **3,962 GPM**

Flow Test Location **North**



Indian School Road Flow Test With 34 psi Safety Factor

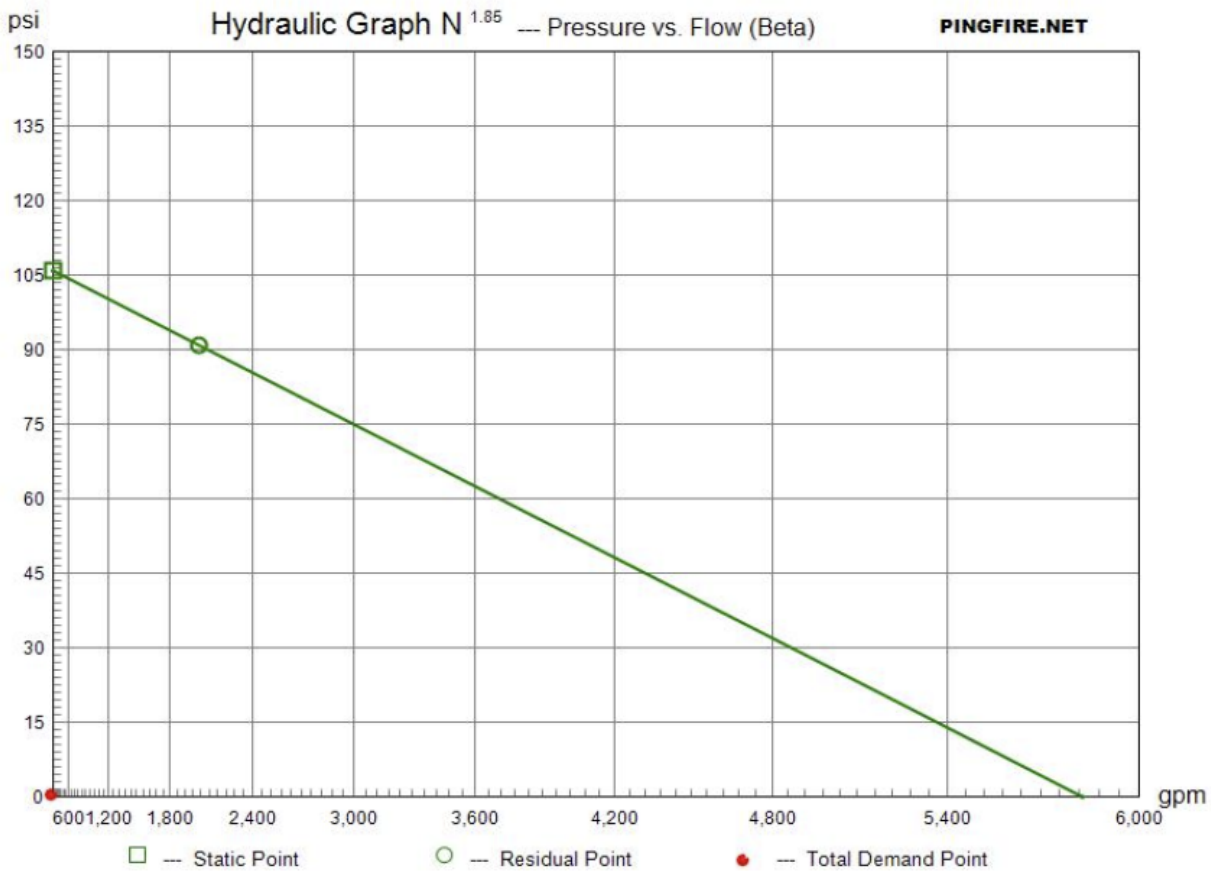


Project Location: Indian School Road 12" Water Line - West of Scottsdale Road

Flow Test: Hydrant Elev.= 1265 ft., Static Pressure= 72 psi, Residual Pressure= 57 psi, Flow= 2025 gpm

APPENDIX I
ISR FH Flow Test Plot

Indian School Road Flow Test - Raw Data



Project Location: Indian School Road 12" Water Line - West of Scottsdale Road

Flow Test: Hydrant Elev.= 1265 ft., Static Pressure= 106 psi, Residual Pressure= 91 psi, Flow= 2025 gpm

APPENDIX I
ISR FH Flow Test Plot

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name:	Arts District in Scottsdale
Project Address:	7100 East Indian School Road, Scottsdale, Arizona 85251
Client Project No.:	200504
Arizona Flow Testing Project No.:	20174
Flow Test Permit No.:	C62135
Date and time flow test conducted:	May 14, 2020 at 7:00 AM
Data is current and reliable until:	November 14, 2020
Conducted by:	Floyd Vaughan – Arizona Flow Testing, LLC (480-250-8154)
Witnessed by:	Ray Padilla – City of Scottsdale-Inspector (602-541-0586)

Raw Test Data

Static Pressure: **106.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **76.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **30.0 PSI**
(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Hose Monster
(Measured in inches)

Coefficient of Diffuser: .7875

Flowing GPM: **2,354 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **4,156 GPM**

Data with 34 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.

Residual Pressure: **42.0 PSI**
(Measured in pounds per square inch)

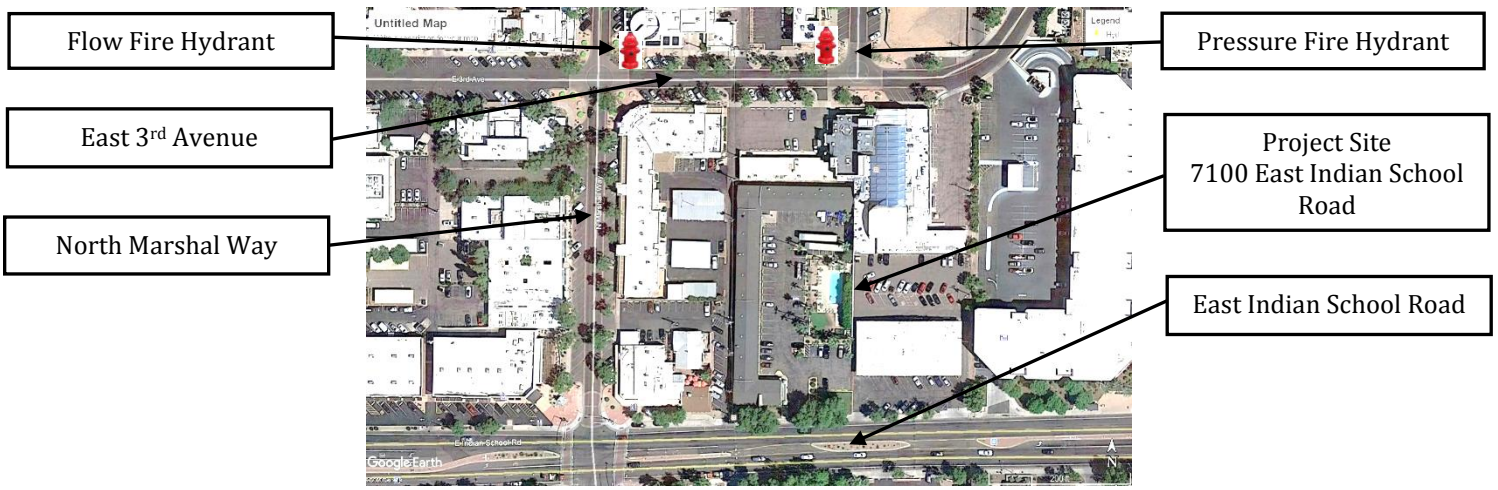
Distance between hydrants: Approx. 280 Feet

Main size: Not Provided

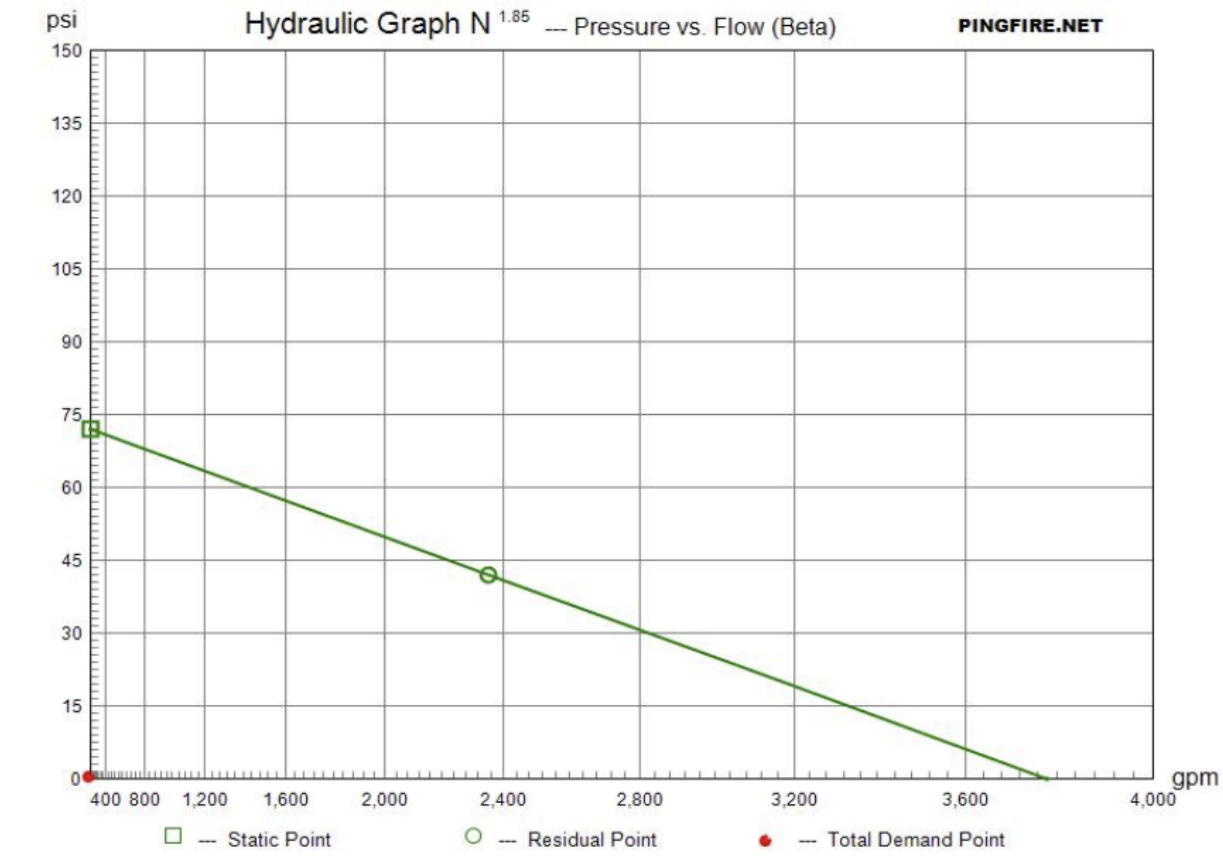
Flowing GPM: **2,354 GPM**

GPM @ 20 PSI**:** **3,168 GPM**

Flow Test Location **North**



3rd Avenue Flow Test With 34 psi Safety Factor



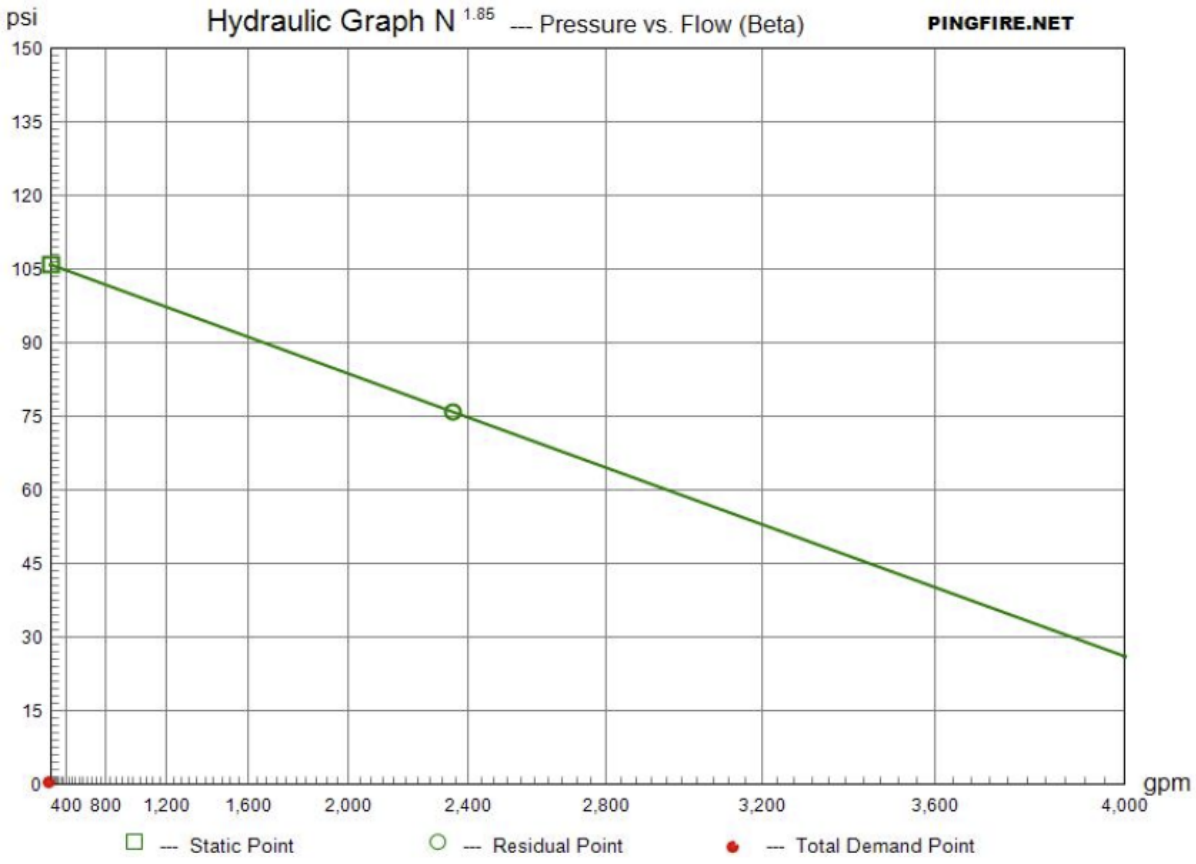
Project Location: Gensler - Triangle Building

Flow Test: Hydrant Elev.= 1265 ft., Static Pressure= 72 psi, Residual Pressure= 42 psi, Flow= 2354 gpm

APPENDIX I
3rd Ave FH Flow Test Plot

8280 E. Gelding Dr., Suite 101
Scottsdale, AZ 85260
info@azSEG.com 480.588.7226 www.azSEG.com

3rd Avenue Flow Test - Raw Data

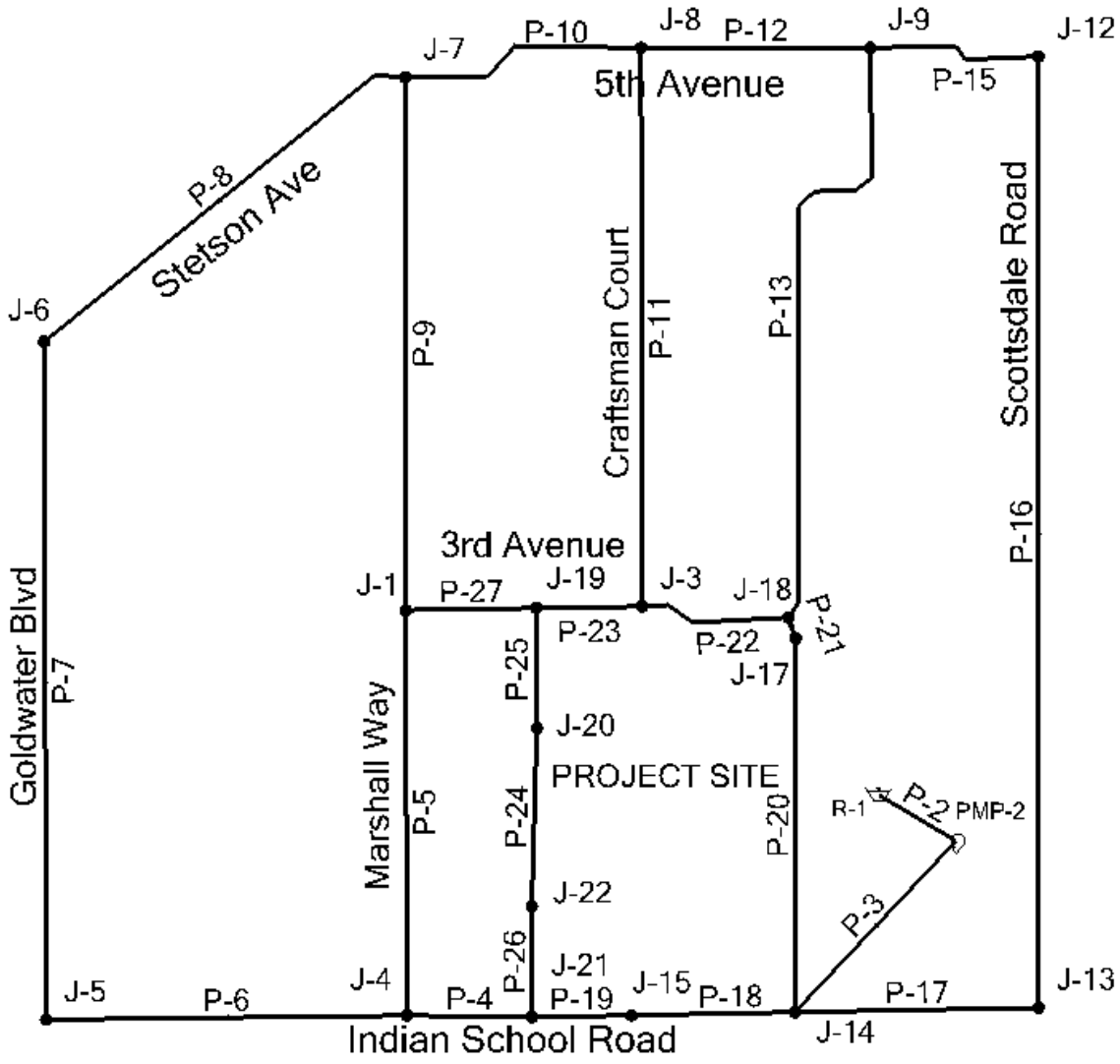


Project Location: Gensler - Triangle Building

Flow Test: Hydrant Elev.= 1265 ft., Static Pressure= 106 psi, Residual Pressure= 76 psi, Flow= 2354 gpm

APPENDIX I
3rd Ave FH Flow Test Plot

8280 E. Gelding Dr., Suite 101
Scottsdale, AZ 85260
info@azSEG.com 480.588.7226 www.azSEG.com



APPENDIX II - WaterCAD Modeling Analysis

2020-11-13 AD, MD & PH model.wtg

Active Scenario: AD

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	1,267.10	0	1,431.08	71
36	J-3	1,265.20	0	1,431.06	72
39	J-4	1,263.90	0	1,431.10	72
41	J-5	1,266.00	0	1,431.10	71
43	J-6	1,270.20	0	1,431.09	70
45	J-7	1,270.80	0	1,431.08	69
48	J-8	1,268.20	0	1,431.07	70
51	J-9	1,267.50	0	1,431.07	71
57	J-12	1,267.00	0	1,431.08	71
59	J-13	1,259.90	0	1,431.11	74
61	J-14	1,261.90	16	1,431.11	73
63	J-15	1,262.50	0	1,431.10	73
78	J-17	1,265.65	157	1,431.04	72
80	J-18	1,265.65	0	1,431.05	72
84	J-19	1,266.06	0	1,431.07	71
87	J-20	1,266.00	0	1,431.08	71
89	J-21	1,263.12	0	1,431.10	73
92	J-22	1,266.00	7	1,431.09	71

2020-11-13 AD, MD & PH model.wtg

Active Scenario: AD

FlexTable: Pipe Table

Label	Diameter (in)	Length (Scaled) (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Status (Initial)
P-2	30.0	126	Ductile Iron	130.0	180	0.08	0.000	Open
P-3	30.0	328	Ductile Iron	130.0	180	0.08	0.000	Open
P-4	12.0	174	Ductile Iron	130.0	25	0.07	0.000	Open
P-5	6.0	566	Asbestos Cement	130.0	-16	0.18	0.000	Open
P-6	12.0	504	Ductile Iron	130.0	9	0.03	0.000	Open
P-7	6.0	947	Ductile Iron	130.0	9	0.11	0.000	Open
P-8	6.0	635	Ductile Iron	130.0	9	0.11	0.000	Open
P-9	6.0	744	Asbestos Cement	130.0	-3	0.03	0.000	Open
P-10	6.0	349	Ductile Iron	130.0	12	0.14	0.000	Open
P-11	6.0	780	Asbestos Cement	130.0	7	0.08	0.000	Open
P-12	8.0	320	Ductile Iron	130.0	5	0.03	0.000	Open
P-13	8.0	877	Ductile Iron	130.0	31	0.20	0.000	Open
P-15	8.0	246	Asbestos Cement	130.0	-26	0.17	0.000	Open
P-16	8.0	1,328	Asbestos Cement	130.0	-26	0.17	0.000	Open
P-17	12.0	340	Ductile Iron	130.0	-26	0.07	0.000	Open
P-18	12.0	228	Ductile Iron	130.0	69	0.20	0.000	Open
P-19	12.0	140	Ductile Iron	130.0	69	0.20	0.000	Open
P-20	8.0	522	Ductile Iron	130.0	69	0.44	0.000	Open
P-21	8.0	31	Ductile Iron	130.0	-88	0.56	0.000	Open
P-22	8.0	213	Ductile Iron	130.0	-57	0.36	0.000	Open
P-23	8.0	148	Asbestos Cement	130.0	-50	0.32	0.000	Open
P-24	8.0	249	Ductile Iron	130.0	-36	0.23	0.000	Open
P-25	8.0	168	Ductile Iron	130.0	-36	0.23	0.000	Open
P-26	8.0	154	Ductile Iron	130.0	43	0.28	0.000	Open
P-27	6.0	183	Ductile Iron	130.0	-13	0.15	0.000	Open

2020-11-13 AD, MD & PH model.wtg

Active Scenario: AD

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-2	1,265.00	On	1,265.20	1,431.11	180	165.91

2020-11-13 AD, MD & PH model.wtg

Active Scenario: AD

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,265.20	180	1,265.20

2020-11-13 AD, MD & PH model.wtg

Active Scenario: MD

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	1,267.10	0	1,429.98	70
36	J-3	1,265.20	0	1,429.93	71
39	J-4	1,263.90	0	1,430.06	72
41	J-5	1,266.00	0	1,430.05	71
43	J-6	1,270.20	0	1,430.01	69
45	J-7	1,270.80	0	1,429.98	69
48	J-8	1,268.20	0	1,429.95	70
51	J-9	1,267.50	0	1,429.95	70
57	J-12	1,267.00	0	1,429.97	71
59	J-13	1,259.90	0	1,430.08	74
61	J-14	1,261.90	31	1,430.08	73
63	J-15	1,262.50	0	1,430.07	72
78	J-17	1,265.65	314	1,429.84	71
80	J-18	1,265.65	0	1,429.86	71
84	J-19	1,266.06	0	1,429.97	71
87	J-20	1,266.00	0	1,429.99	71
89	J-21	1,263.12	0	1,430.06	72
92	J-22	1,266.00	14	1,430.03	71

2020-11-13 AD, MD & PH model.wtg

Active Scenario: MD

FlexTable: Pipe Table

Label	Diameter (in)	Length (Scaled) (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Status (Initial)
P-2	30.0	126	Ductile Iron	130.0	359	0.16	0.000	Open
P-3	30.0	328	Ductile Iron	130.0	359	0.16	0.000	Open
P-4	12.0	174	Ductile Iron	130.0	51	0.14	0.000	Open
P-5	6.0	566	Asbestos Cement	130.0	-32	0.36	0.000	Open
P-6	12.0	504	Ductile Iron	130.0	19	0.05	0.000	Open
P-7	6.0	947	Ductile Iron	130.0	19	0.21	0.000	Open
P-8	6.0	635	Ductile Iron	130.0	19	0.21	0.000	Open
P-9	6.0	744	Asbestos Cement	130.0	-5	0.06	0.000	Open
P-10	6.0	349	Ductile Iron	130.0	24	0.27	0.000	Open
P-11	6.0	780	Asbestos Cement	130.0	15	0.17	0.000	Open
P-12	8.0	320	Ductile Iron	130.0	9	0.06	0.000	Open
P-13	8.0	877	Ductile Iron	130.0	62	0.40	0.000	Open
P-15	8.0	246	Asbestos Cement	130.0	-53	0.34	0.000	Open
P-16	8.0	1,328	Asbestos Cement	130.0	-53	0.34	0.000	Open
P-17	12.0	340	Ductile Iron	130.0	-53	0.15	0.000	Open
P-18	12.0	228	Ductile Iron	130.0	138	0.39	0.000	Open
P-19	12.0	140	Ductile Iron	130.0	138	0.39	0.000	Open
P-20	8.0	522	Ductile Iron	130.0	138	0.88	0.000	Open
P-21	8.0	31	Ductile Iron	130.0	-176	1.12	0.001	Open
P-22	8.0	213	Ductile Iron	130.0	-114	0.73	0.000	Open
P-23	8.0	148	Asbestos Cement	130.0	-99	0.63	0.000	Open
P-24	8.0	249	Ductile Iron	130.0	-73	0.46	0.000	Open
P-25	8.0	168	Ductile Iron	130.0	-73	0.46	0.000	Open
P-26	8.0	154	Ductile Iron	130.0	87	0.55	0.000	Open
P-27	6.0	183	Ductile Iron	130.0	-27	0.30	0.000	Open

2020-11-13 AD, MD & PH model.wtg

Active Scenario: MD

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-2	1,265.00	On	1,265.20	1,430.08	359	164.88

2020-11-13 AD, MD & PH model.wtg

Active Scenario: MD

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,265.20	359	1,265.20

2020-11-13 AD, MD & PH model.wtg

Active Scenario: PH

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	1,267.10	0	1,427.23	69
36	J-3	1,265.20	0	1,427.08	70
39	J-4	1,263.90	0	1,427.43	71
41	J-5	1,266.00	0	1,427.43	70
43	J-6	1,270.20	0	1,427.31	68
45	J-7	1,270.80	0	1,427.22	68
48	J-8	1,268.20	0	1,427.15	69
51	J-9	1,267.50	0	1,427.14	69
57	J-12	1,267.00	0	1,427.20	69
59	J-13	1,259.90	0	1,427.49	73
61	J-14	1,261.90	54	1,427.50	72
63	J-15	1,262.50	0	1,427.46	71
78	J-17	1,265.65	550	1,426.82	70
80	J-18	1,265.65	0	1,426.88	70
84	J-19	1,266.06	0	1,427.18	70
87	J-20	1,266.00	0	1,427.25	70
89	J-21	1,263.12	0	1,427.44	71
92	J-22	1,266.00	25	1,427.35	70

2020-11-13 AD, MD & PH model.wtg

Active Scenario: PH

FlexTable: Pipe Table

Label	Diameter (in)	Length (Scaled) (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Status (Initial)
P-2	30.0	126	Ductile Iron	130.0	629	0.29	0.000	Open
P-3	30.0	328	Ductile Iron	130.0	629	0.29	0.000	Open
P-4	12.0	174	Ductile Iron	130.0	89	0.25	0.000	Open
P-5	6.0	566	Asbestos Cement	130.0	-56	0.64	0.000	Open
P-6	12.0	504	Ductile Iron	130.0	33	0.09	0.000	Open
P-7	6.0	947	Ductile Iron	130.0	33	0.37	0.000	Open
P-8	6.0	635	Ductile Iron	130.0	33	0.37	0.000	Open
P-9	6.0	744	Asbestos Cement	130.0	-9	0.11	0.000	Open
P-10	6.0	349	Ductile Iron	130.0	42	0.48	0.000	Open
P-11	6.0	780	Asbestos Cement	130.0	26	0.30	0.000	Open
P-12	8.0	320	Ductile Iron	130.0	16	0.10	0.000	Open
P-13	8.0	877	Ductile Iron	130.0	108	0.69	0.000	Open
P-15	8.0	246	Asbestos Cement	130.0	-92	0.59	0.000	Open
P-16	8.0	1,328	Asbestos Cement	130.0	-92	0.59	0.000	Open
P-17	12.0	340	Ductile Iron	130.0	-92	0.26	0.000	Open
P-18	12.0	228	Ductile Iron	130.0	241	0.68	0.000	Open
P-19	12.0	140	Ductile Iron	130.0	241	0.68	0.000	Open
P-20	8.0	522	Ductile Iron	130.0	241	1.54	0.001	Open
P-21	8.0	31	Ductile Iron	130.0	-308	1.97	0.002	Open
P-22	8.0	213	Ductile Iron	130.0	-200	1.27	0.001	Open
P-23	8.0	148	Asbestos Cement	130.0	-174	1.11	0.001	Open
P-24	8.0	249	Ductile Iron	130.0	-127	0.81	0.000	Open
P-25	8.0	168	Ductile Iron	130.0	-127	0.81	0.000	Open
P-26	8.0	154	Ductile Iron	130.0	152	0.97	0.001	Open
P-27	6.0	183	Ductile Iron	130.0	-47	0.53	0.000	Open

2020-11-13 AD, MD & PH model.wtg

Active Scenario: PH

FlexTable: Pump Table

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)
PMP-2	1,265.00	On	1,265.20	1,427.51	629	162.31

2020-11-13 AD, MD & PH model.wtg

Active Scenario: PH

FlexTable: Reservoir Table

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,265.20	629	1,265.20

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Watertown, CT 06795 USA +1-203-755-1666

2020-11-13 MDD - FF split to J20 and J15.wtg

Active Scenario: MD

FlexTable: Pipe Table

ID	Label	Diameter (in)	Length (Scaled) (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Status (Initial)
35	P-2	30.0	129	Ductile Iron	130.0	2,859	1.30	0.000	Open
37	P-3	30.0	272	Ductile Iron	130.0	2,859	1.30	0.000	Open
91	P-4	12.0	174	Ductile Iron	130.0	167	0.47	0.000	Open
40	P-5	6.0	566	Asbestos Cement	130.0	-124	1.41	0.002	Open
42	P-6	12.0	504	Ductile Iron	130.0	43	0.12	0.000	Open
44	P-7	6.0	947	Ductile Iron	130.0	43	0.48	0.000	Open
46	P-8	6.0	635	Ductile Iron	130.0	43	0.48	0.000	Open
47	P-9	6.0	744	Asbestos Cement	130.0	82	0.93	0.001	Open
49	P-10	6.0	349	Ductile Iron	130.0	-39	0.45	0.000	Open
50	P-11	6.0	780	Asbestos Cement	130.0	96	1.09	0.001	Open
52	P-12	8.0	320	Ductile Iron	130.0	-135	0.86	0.000	Open
81	P-13	8.0	877	Ductile Iron	130.0	130	0.83	0.000	Open
58	P-15	8.0	246	Asbestos Cement	130.0	-266	1.70	0.002	Open
60	P-16	8.0	1,328	Asbestos Cement	130.0	-266	1.70	0.002	Open
62	P-17	12.0	340	Ductile Iron	130.0	-266	0.75	0.000	Open
64	P-18	12.0	228	Ductile Iron	130.0	2,039	5.78	0.009	Open
90	P-19	12.0	140	Ductile Iron	130.0	789	2.24	0.002	Open
79	P-20	8.0	522	Ductile Iron	130.0	524	3.34	0.006	Open
83	P-21	8.0	31	Ductile Iron	130.0	210	1.34	0.001	Open
82	P-22	8.0	213	Ductile Iron	130.0	340	2.17	0.002	Open
85	P-23	8.0	148	Asbestos Cement	130.0	436	2.78	0.004	Open
95	P-24	8.0	249	Ductile Iron	130.0	-607	3.88	0.007	Open
88	P-25	8.0	168	Ductile Iron	130.0	643	4.10	0.008	Open
93	P-26	8.0	154	Ductile Iron	130.0	622	3.97	0.008	Open
86	P-27	6.0	183	Ductile Iron	130.0	-206	2.34	0.004	Open

2020-11-13 MDD - FF split to J20 and J15.wtg

Active Scenario: MD

FlexTable: Junction Table

ID	Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
30	J-1	1,267.10	0	1,362.43	41
36	J-3	1,265.20	0	1,362.28	42
39	J-4	1,263.90	0	1,363.32	43
41	J-5	1,266.00	0	1,363.31	42
43	J-6	1,270.20	0	1,363.11	40
45	J-7	1,270.80	0	1,362.97	40
48	J-8	1,268.20	0	1,363.04	41
51	J-9	1,267.50	0	1,363.18	41
57	J-12	1,267.00	0	1,363.57	42
59	J-13	1,259.90	0	1,365.65	46
61	J-14	1,261.90	31	1,365.72	45
63	J-15	1,262.50	1,250	1,363.56	44
78	J-17	1,265.65	314	1,362.84	42
80	J-18	1,265.65	0	1,362.81	42
84	J-19	1,266.06	0	1,361.70	41
87	J-20	1,266.00	1,250	1,360.35	41
89	J-21	1,263.12	0	1,363.33	43
92	J-22	1,266.00	14	1,362.16	42

2020-11-13 MD+FF - 1250 routed to all nodes with constant 1250 at J20.wtg

Active Scenario: MD+FF

Fire Flow Node FlexTable: Fire Flow Report

Label	Fire Flow (Needed) (gpm)	Calculated Pressure at Junction (psi)	Max Day + Fire Flow at Junction (gpm)	Junction w/ Minimum Pressure (System)	Junction Pressure (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)
J-1	1,250	37	1,251	J-7	38	P-26	6.38
J-3	1,250	39	1,251	J-7	38	P-26	6.74
J-4	1,250	42	1,251	J-7	39	P-18	5.52
J-5	1,250	41	1,251	J-7	39	P-18	5.45
J-6	1,250	28	1,251	J-7	36	P-8	7.27
J-7	1,250	34	1,251	J-6	37	P-10	6.33
J-8	1,250	37	1,251	J-7	37	P-26	6.00
J-9	1,250	38	1,251	J-7	38	P-26	5.93
J-12	1,250	38	1,251	J-7	38	P-26	5.76
J-13	1,250	45	1,251	J-7	40	P-26	4.38
J-14	1,250	45	1,282	J-7	40	P-26	4.27
J-15	1,250	44	1,251	J-7	40	P-18	5.79
J-17	1,250	39	1,565	J-7	38	P-26	6.22
J-18	1,250	39	1,251	J-7	38	P-26	6.26
J-19	1,250	38	1,251	J-20	38	P-26	7.15
J-20	1,250	37	2,501	J-7	39	P-26	8.15
J-21	1,250	43	1,251	J-7	40	P-18	5.61
J-22	1,250	39	1,265	J-20	39	P-26	9.89

2020-11-13 AD, MD & PH model.wtg

Active Scenario: MD+FF

Fire Flow Node FlexTable: Fire Flow Report

Label	Fire Flow (Needed) (gpm)	Calculated Pressure at Junction (psi)	Max Day + Fire Flow at Junction (gpm)	Fire Flow (Available) (gpm)	Junction w/ Minimum Pressure (System)	Junction Pressure (psi)	Pipe w/ Maximum Velocity	Pipe Velocity (ft/s)
J-1	2,500	25	2,711	2,711	J-7	32	P-27	15.00
J-3	2,500	29	2,873	2,873	J-7	30	P-23	8.89
J-4	2,500	32	2,951	2,951	J-6	30	P-4	7.37
J-5	2,500	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-6	2,500	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-7	2,500	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-8	2,500	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-9	2,500	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-12	2,500	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-13	2,500	34	3,000	3,000	J-7	31	P-17	7.56
J-14	2,500	35	3,031	3,000	J-7	31	P-2	1.52
J-15	2,500	33	3,000	3,000	J-7	30	P-18	7.46
J-17	2,500	29	3,154	2,840	J-18	30	P-21	11.36
J-18	2,500	30	2,833	2,833	J-17	30	P-20	8.40
J-19	2,500	29	2,883	2,883	J-7	30	P-26	7.36
J-20	2,500	27	2,904	2,904	J-19	30	P-26	9.41
J-21	2,500	33	2,978	2,978	J-7	30	P-18	7.04
J-22	2,500	28	2,961	2,947	J-20	30	P-26	12.78

2020-11-13 AD, MD & PH model.wtg
Active Scenario: MD+FF
Pump Definition Detailed Report: PMP-2

Element Details			
ID	106	Notes	
Label	PMP-2		

Pump Definition Type			
Pump Definition Type	Standard (3 Point)	Design Head	131.60 ft
Shutoff Flow	0 gpm	Maximum Operating Flow	3,962 gpm
Shutoff Head	166.30 ft	Maximum Operating Head	46.20 ft
Design Flow	2,025 gpm		

Pump Efficiency Type			
Pump Efficiency Type	Best Efficiency Point	Motor Efficiency	100.0 %
BEP Efficiency	100.0 %	Is Variable Speed Drive?	False
BEP Flow	0 gpm		

Transient (Physical)			
Inertia (Pump and Motor)	0.000 lb·ft²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

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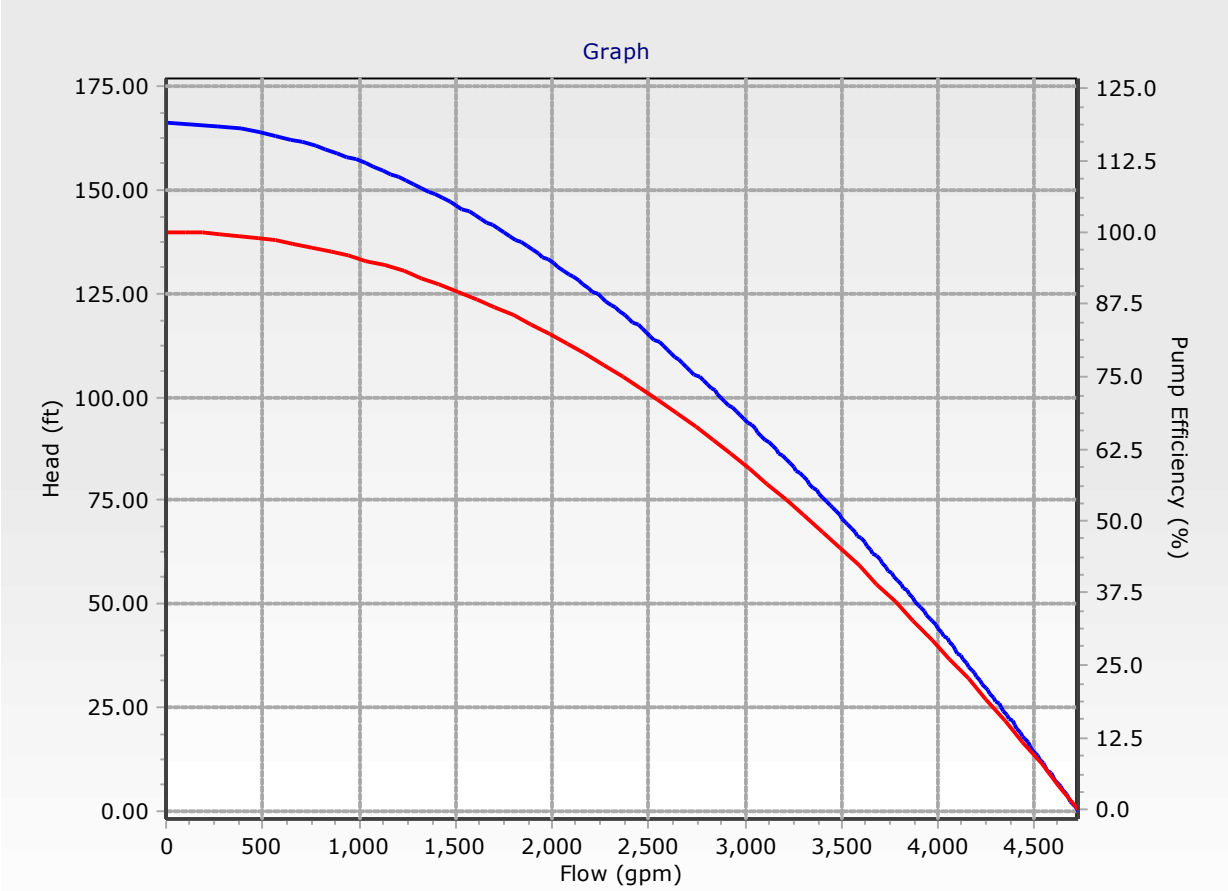
2020-11-13 AD, MD & PH model.wtg
Active Scenario: MD+FF
Pump Definition Detailed Report: PMP-2



APPENDIX III

UTILITY PLAN

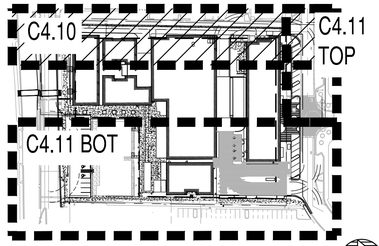
KIMSEY HOTEL & APARTMENT
UTILITY PLAN
7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251

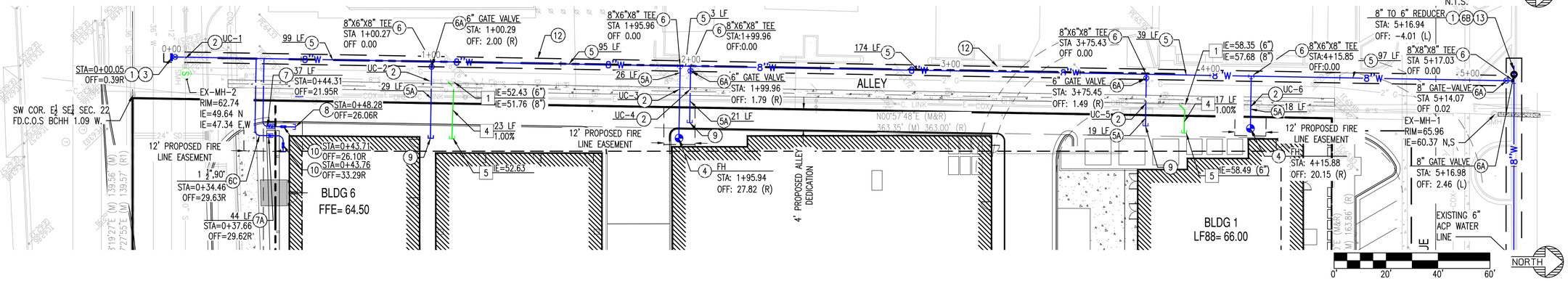
SEWER CONSTRUCTION KEY NOTES

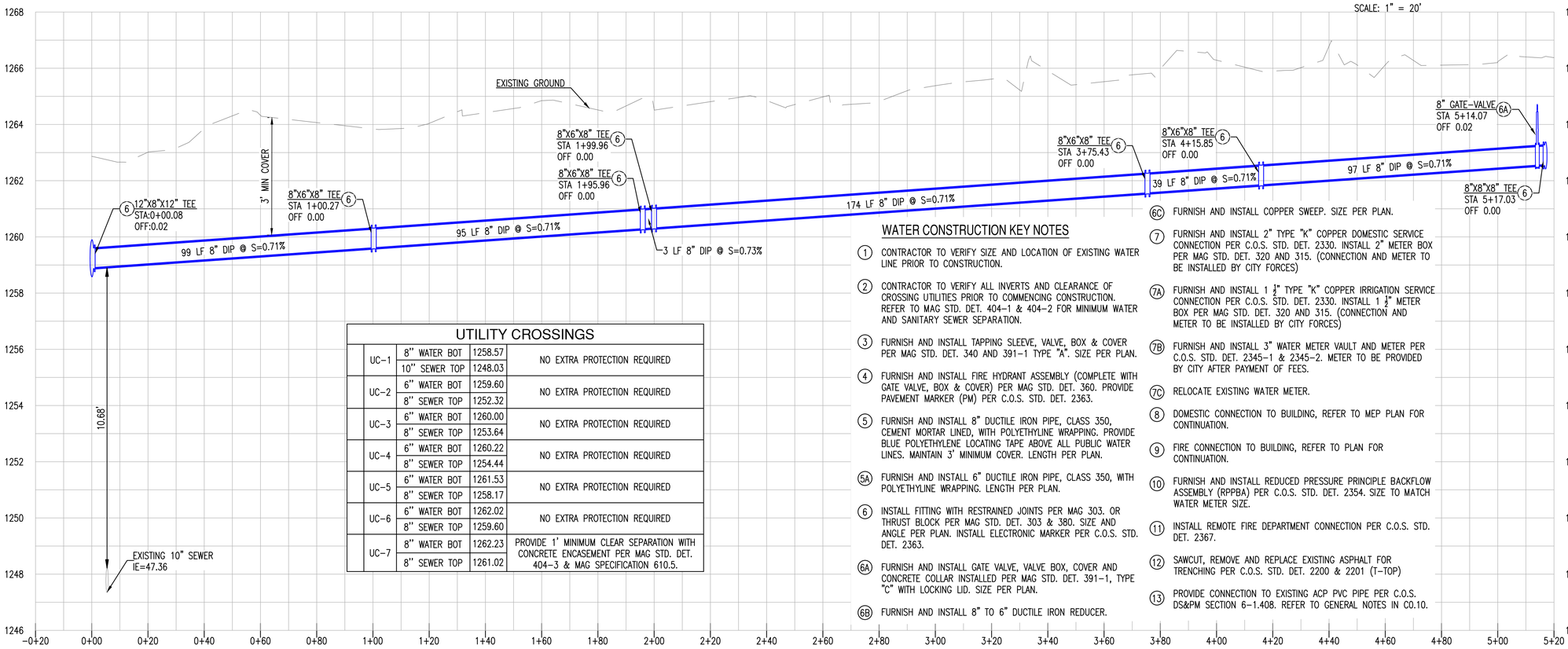
1. CONTRACTOR SHALL VERIFY THE LOCATION OF THE EXISTING SANITARY SEWER LINE BEFORE PROCEEDING WITH TRENCHING. CONTRACTOR SHALL CONTACT ENGINEER IF EXISTING SEWER ELEVATION IS HIGHER THAN PROPOSED TIE-IN INVERT PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. CONTRACTOR SHALL VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
3. FURNISH AND INSTALL 6" PVC SDR-35 SEWER LINE. SIZE, LENGTH AND SLOPE PER PLAN. MAINTAIN 4' MINIMUM COVER.
4. FURNISH AND INSTALL 6" PVC-SDR 35 SEWER LINE CONNECTION PER MAG STD. DET. 440-1. LENGTH AND SLOPE PER PLAN.
5. REFER TO BUILDING PLUMBING PLANS FOR CONTINUATION.
6. CORE EXISTING MANHOLE AND PROVIDE WATERTIGHT CONNECTION FOR NEW SEWER. RECONSTRUCT PAVED INVERT AS REQUIRED.

CONSTRUCTION TYPE:
BUILDING 1: TYPE IIB
BUILDINGS 2-6: TYPE IIIA

NOTES:
1. EXISTING MANHOLES RIMS AND INVERTS HAS BEEN SET BASED ON THE SURVEY RECEIVED FROM 3 ENGINEERS, LLC. DATED 02/13/20.
2. EXISTING MANHOLES RIMS AND INVERTS HAS BEEN SET BASED ON QUARTER SECTION MAP QS# 17-44. DATED 06/11/20.
3. EXISTING WATER MAIN INVERT ELEVATIONS TO BE VERIFIED IN FIELD.
4. EXISTING OVERHEAD LINES EXTENDING ACROSS E.3RD AVENUE SHALL BE RELOCATED UNDER THE STREET AND UP TO THE NEXT EXISTING RISER ON THE NORTH SIDE OF E 3RD AVENUE.







UTILITY CROSSINGS

UC-1	8" WATER BOT	1258.57	NO EXTRA PROTECTION REQUIRED
	10" SEWER TOP	1248.03	
UC-2	6" WATER BOT	1259.60	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1252.32	
UC-3	6" WATER BOT	1260.00	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1253.64	
UC-4	6" WATER BOT	1260.22	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1254.44	
UC-5	6" WATER BOT	1261.53	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1258.17	
UC-6	6" WATER BOT	1262.02	NO EXTRA PROTECTION REQUIRED
	8" SEWER TOP	1259.60	
UC-7	8" WATER BOT	1262.23	PROVIDE 1' MINIMUM CLEAR SEPARATION WITH CONCRETE ENCASEMENT PER MAG STD. DET. 404-3 & MAG SPECIFICATION 610.5.
	8" SEWER TOP	1261.02	

WATER CONSTRUCTION KEY NOTES

1. CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER LINE PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. REFER TO MAG STD. DET. 404-1 & 404-2 FOR MINIMUM WATER AND SANITARY SEWER SEPARATION.
3. FURNISH AND INSTALL TAPPING SLEEVE, VALVE, BOX & COVER PER MAG STD. DET. 340 AND 391-1 TYPE "A". SIZE PER PLAN.
4. FURNISH AND INSTALL FIRE HYDRANT ASSEMBLY (COMPLETE WITH GATE VALVE, BOX & COVER) PER MAG STD. DET. 360. PROVIDE PAVEMENT MARKER (PM) PER C.O.S. STD. DET. 2363.
5. FURNISH AND INSTALL 8" DUCTILE IRON PIPE, CLASS 350, CEMENT MORTAR LINED, WITH POLYETHYLINE WRAPPING. PROVIDE BLUE POLYETHYLENE LOCATING TAPE ABOVE ALL PUBLIC WATER LINES. MAINTAIN 3' MINIMUM COVER. LENGTH PER PLAN.
5A. FURNISH AND INSTALL 6" DUCTILE IRON PIPE, CLASS 350, WITH POLYETHYLINE WRAPPING. LENGTH PER PLAN.
6. INSTALL FITTING WITH RESTRAINED JOINTS PER MAG 303. OR THRUST BLOCK PER MAG STD. DET. 303 & 380. SIZE AND ANGLE PER PLAN. INSTALL ELECTRONIC MARKER PER C.O.S. STD. DET. 2363.
6A. FURNISH AND INSTALL GATE VALVE, VALVE BOX, COVER AND CONCRETE COLLAR INSTALLED PER MAG STD. DET. 391-1, TYPE "C" WITH LOCKING LID. SIZE PER PLAN.
6B. FURNISH AND INSTALL 8" TO 6" DUCTILE IRON REDUCER.
6C. FURNISH AND INSTALL COPPER SWEEP. SIZE PER PLAN.
7. FURNISH AND INSTALL 2" TYPE "K" COPPER DOMESTIC SERVICE CONNECTION PER C.O.S. STD. DET. 2330. INSTALL 2" METER BOX PER MAG STD. DET. 320 AND 315. (CONNECTION AND METER TO BE INSTALLED BY CITY FORCES)
7A. FURNISH AND INSTALL 1 ½" TYPE "K" COPPER IRRIGATION SERVICE CONNECTION PER C.O.S. STD. DET. 2330. INSTALL 1 ½" METER BOX PER MAG STD. DET. 320 AND 315. (CONNECTION AND METER TO BE INSTALLED BY CITY FORCES)
7B. FURNISH AND INSTALL 3" WATER METER VAULT AND METER PER C.O.S. STD. DET. 2345-1 & 2345-2. METER TO BE PROVIDED BY CITY AFTER PAYMENT OF FEES.
7C. RELOCATE EXISTING WATER METER.
8. DOMESTIC CONNECTION TO BUILDING, REFER TO MEP PLAN FOR CONTINUATION.
9. FIRE CONNECTION TO BUILDING, REFER TO PLAN FOR CONTINUATION.
10. FURNISH AND INSTALL REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (RPPBA) PER C.O.S. STD. DET. 2354. SIZE TO MATCH WATER METER SIZE.
11. INSTALL REMOTE FIRE DEPARTMENT CONNECTION PER C.O.S. STD. DET. 2367.
12. SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT FOR TRENCHING PER C.O.S. STD. DET. 2200 & 2201 (T-TOP)
13. PROVIDE CONNECTION TO EXISTING ACP PVC PIPE PER C.O.S. DS&PM SECTION 6-1.408. REFER TO GENERAL NOTES IN C0.10.

PROPOSED UTILITY LEGEND:
PROPERTY LINE · EASEMENT LINE · 8"W WATER LINE · 8"S SEWER LINE · FIRE HYDRANT · FDC · WATER METER · GATE VALVE · T.S.V.B.&C · BACK FLOW PREVENTER · REDUCER · CAP · BUILDING CONNECTION · SEWER MANHOLE · SEWER CLEAN OUT

8" ALLEY WATERLINE PROFILE VIEW
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

EXISTING LEGEND:
CENTERLINE · EASEMENT LINE AS NOTED · CHAINLINKE FENCE · TREE · EX. S SEWER LINE · SEWER MANHOLE · EX. W WATER LINE · WV WATER VALVE · FIRE HYDRANT · STORM DRAIN LINE · CB STORM CATCH BASIN · STORM MANHOLE · GAS LINE · IRR IRRIGATION LINE · SIGN · STREET LIGHT · FO FIBER OPTIC LINE

NOT FOR CONSTRUCTION

SUSTAINABILITY ENGINEERING GROUP
8280 E. GELDING DRIVE SUITE 101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534

Gensler

Blue Stake, Inc. Arizona 811 at least two full working days before you begin excavation. ARIZONA811 Call 811 or visit Arizona811.com

PROJECT	KIMSEY HOTEL & APARTMENT
LOCATION	7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251

DRAWN	LP	6/14/2021
DESIGNED	LP	6/14/2021
QC	SC	6/15/2021
FINAL QC		
PROJ. MGR.	AF	

DATE: 06/15/2021
ISSUED FOR: DRB

REVISION NO.:	DATE:
1	
2	
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JOB NO.: 200504
SHEET TITLE: **UTILITY PLAN**

PAGE NO.: 8 OF 9
SHEET NO.: **C4.10**

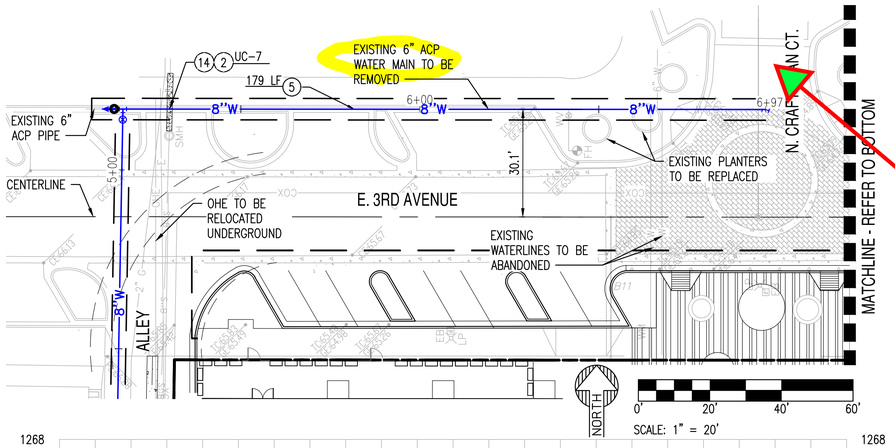
CASE NO.: 10-ZN-2020

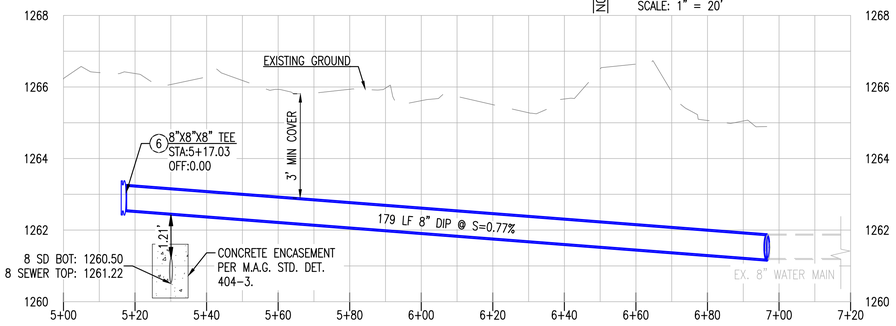
LOCATION: Z:\SHARED\PROJECTS\GENSLER\HOJO APARTMENTS SCOTTSDALE 200504\11 CAD (SEG)\11.3 CD'S\200504-CD-C4.00.DWG SAVED BY: LAPTOP02 DATE: 6/15/2021

KIMSEY HOTEL & APARTMENT

UTILITY PLAN

7120 E. INDIAN SCHOOL ROAD. SCOTTSDALE, AZ. 85251





8" E. 3RD AVENUE WATERLINE REPLACEMENT PROFILE VIEW

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

Clarify what is being done with the existing 8-inch on Craftsman Ct. Not shown to right.

KEY MAP
N.T.S.

NORTH

WATER CONSTRUCTION KEY NOTES

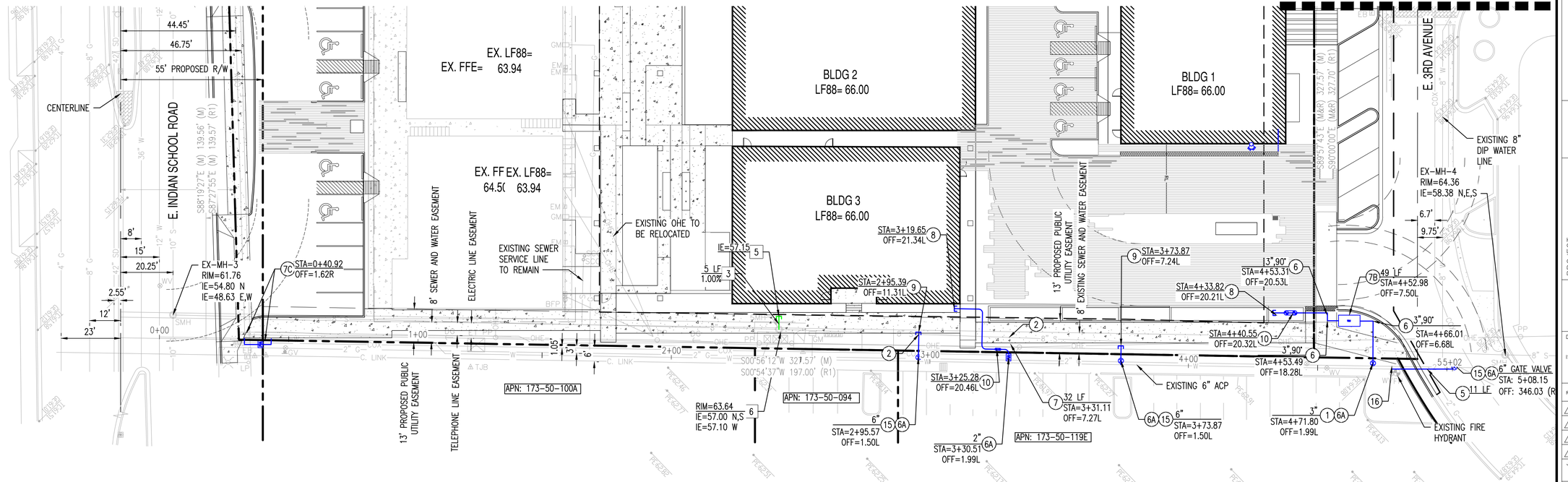
1. CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER LINE PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. REFER TO MAG STD. DET. 404-1 & 404-2 FOR MINIMUM WATER AND SANITARY SEWER SEPARATION.
4. FURNISH AND INSTALL FIRE HYDRANT ASSEMBLY (COMPLETE WITH GATE VALVE, BOX & COVER) PER MAG STD. DET. 360. PROVIDE PAVEMENT MARKER (PM) PER C.O.S. STD. DET. 2363.
5. FURNISH AND INSTALL 8" DUCTILE IRON PIPE, CLASS 350, CEMENT MORTAR LINED, WITH POLYETHYLINE WRAPPING. PROVIDE BLUE POLYETHYLENE LOCATING TAPE ABOVE ALL PUBLIC WATER LINES. MAINTAIN 3' MINIMUM COVER. LENGTH PER PLAN.
6. INSTALL FITTING WITH RESTRAINED JOINTS PER MAG 303. OR THRUST BLOCK PER MAG STD. DET. 303 & 380. SIZE AND ANGLE PER PLAN. INSTALL ELECTRONIC MARKER PER C.O.S. STD. DET. 2363.
6A. FURNISH AND INSTALL GATE VALVE, VALVE BOX, COVER AND CONCRETE COLLAR INSTALLED PER MAG STD. DET. 391-1, TYPE "C" WITH LOCKING LID. SIZE PER PLAN.
6C. FURNISH AND INSTALL COPPER SWEEP. SIZE PER PLAN.
7. FURNISH AND INSTALL 2" TYPE "K" COPPER DOMESTIC SERVICE CONNECTION PER C.O.S. STD. DET. 2330. INSTALL 2" METER BOX PER MAG STD. DET. 320 AND 315. (CONNECTION AND METER TO BE INSTALLED BY CITY FORCES)
7A. FURNISH AND INSTALL 1 ½" TYPE "K" COPPER IRRIGATION SERVICE CONNECTION PER C.O.S. STD. DET. 2330. INSTALL 1 ½" METER BOX PER MAG STD. DET. 320 AND 315. (CONNECTION AND METER TO BE INSTALLED BY CITY FORCES)
7B. FURNISH AND INSTALL 3" WATER METER VAULT AND METER PER C.O.S. STD. DET. 2345-1 & 2345-2. METER TO BE PROVIDED BY CITY AFTER PAYMENT OF FEES.
7C. RELOCATE EXISTING WATER METER.
8. DOMESTIC CONNECTION TO BUILDING, REFER TO MEP PLAN FOR CONTINUATION.
9. FIRE CONNECTION TO BUILDING, REFER TO PLAN FOR CONTINUATION.
10. FURNISH AND INSTALL REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (RPPBA) PER C.O.S. STD. DET. 2354. SIZE TO MATCH WATER METER SIZE.
11. INSTALL REMOTE FIRE DEPARTMENT CONNECTION PER C.O.S. STD. DET. 2367.
12. SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT FOR TRENCHING PER C.O.S. STD. DET. 2200 & 2201 (T-TOP)
13. PROVIDE CONNECTION TO EXISTING ACP PVC PIPE PER C.O.S. DS&PM SECTION 6-1.408. REFER TO GENERAL NOTES IN C0.10.
14. PROTECT WATERMAIN USING REINFORCED CONCRETE ENCASEMENT ON SEWER PIPE AND WATERMAIN PER MAG STD. DET. 404-3.
15. FURNISH AND INSTALL 6" X 6" CUT-IN TEE.
16. FURNISH AND INSTALL 6" DIP COUPLER AND CONNECT TO EXISTING 6" ACP WATER MAIN.

SEWER CONSTRUCTION KEY NOTES

1. CONTRACTOR SHALL VERIFY THE LOCATION OF THE EXISTING SANITARY SEWER LINE BEFORE PROCEEDING WITH TRENCHING. CONTRACTOR SHALL CONTACT ENGINEER IF EXISTING SEWER ELEVATION IS HIGHER THAN PROPOSED TIE-IN INVERT PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. CONTRACTOR SHALL VERIFY ALL INVERTS AND CLEARANCE OF CROSSING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
4. FURNISH AND INSTALL 6" PVC-SDR 35 SEWER LINE CONNECTION PER MAG STD. DET. 440-1. LENGTH AND SLOPE PER PLAN.
5. REFER TO BUILDING PLUMBING PLANS FOR CONTINUATION.

UTILITY CROSSINGS

UC-7	8" WATER BOT	1262.23	PROVIDE 1' MINIMUM CLEAR SEPARATION WITH CONCRETE ENCASEMENT PER MAG STD. DET. 404-3 & MAG SPECIFICATION 610.5.
	8" SEWER TOP	1261.22	



PROPOSED UTILITY LEGEND:

PROPERTY LINE · EASEMENT LINE · 8"W WATER LINE · 8"S SEWER LINE · FIRE HYDRANT · FDC · WATER METER · GATE VALVE · T.S.V.B.&C · BACK FLOW PREVENTER · REDUCER · CAP · BUILDING CONNECTION · SEWER MANHOLE · SEWER CLEAN OUT

EXISTING LEGEND:

CENTERLINE · EASEMENT LINE AS NOTED · CHAINLINKE FENCE · TREE · SEWER LINE · SEWER MANHOLE · WATER LINE · WATER VALVE · FIRE HYDRANT · STORM DRAIN LINE · STORM CATCH BASIN · STORM MANHOLE · GAS LINE · IRRIGATION LINE · SIGN · STREET LIGHT · FIBER OPTIC LINE

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