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 rsacks **DATE** 1/26/2022

3 engineering
planning civil engineering surveying

114th & Shea Retail

Final Wastewater Basis of Design Report

3 engineering Job #: 1831

November 3, 2021

See comments on 8-PP-2020

3 engineering
planning civil engineering surveying

114TH & SHEA RETAIL

FINAL WASTEWATER BASIS OF DESIGN REPORT

Prepared for:

Hawkins Companies LLC
4700 S. McClintock Drive #160
Scottsdale, Arizona 85257
Contact: Mark Mitchell
Phone: (480) 223-8239

Daniel G. Mann, P.E.

November 3, 2021

Submittal to:

City of Scottsdale
7447 E. Indian School Road, Suite 105
Scottsdale, AZ 85251

Prepared by:

3 engineering, LLC
6370 E. Thomas Road, Suite #200
Scottsdale, Arizona 85251
Contact: Dan G. Mann, P.E.

Job Number 1831

3 engineering
planning civil engineering surveying

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Appendices

1. Introduction

The project site, 114th & Shea Retail, is located in the northwest quarter of Section 27, Township 3 North, Range 5 East of the Gila and Salt River Meridian, Maricopa County, Arizona within the City of Scottsdale. The project is located at the southwest corner of 114th Street and Shea Boulevard, Scottsdale, AZ 85259. The site is bounded on the north by Shea Boulevard, on the east by 114th Street, on the south by Beryl Avenue, and on the west by single family residential homes. See Appendix A for a site map.

The existing zoning is C-O and R1-18. The site is currently undeveloped. The proposed zoning is C1, SR, and R1-18. The City of Scottsdale 2001 General Plan shows the site land use is Office and Rural Neighborhood. Additionally, the site is located within the Shea Corridor. The proposed site consists of two portions that are separated by an existing wash that runs west through the site. The northern portion is a mixed-use office, medical office, and retail center with three pads. Access is provided by 114th Street. The southern portion consists of two residential lots with access provided by Beryl Avenue. The residential lots will be developed at a future date. The proposed mixed-use site will connect to existing City of Scottsdale sewer facilities within 114th Street.

2. Existing Conditions

The existing zoning is C-O and R1-18. The site is currently undeveloped. See Appendix A for a site map. There is an existing 8" V.C.P. public sewer main that adjacent to the site in 114th Street. This 8" line flows south to a manhole in 114th Street that is aligned with Beryl Avenue. There is an existing 8" V.C.P. public sewer main in Beryl Avenue that flows west beyond the site. See Sewer System Exhibit in Appendix C and Sewer Plans in Appendix D for existing sewer line layout.

3. Proposed Conditions

The proposed project consists a mixed-use office and retail center and two residential lots. There are three proposed buildings in the mixed-use center. Building A is 3,000 s.f. of retail/office space, building B is 5,100 s.f. of retail/office space, and building C is 7,236 s.f. of medical office space. The three buildings are serviced by 6" P.V.C. service lines that connect to a proposed 8" P.V.C. public sewer line that connects to an existing manhole in 114th Avenue, east of the site. There are no proposed improvements to the two residential lots at this time but the 4" sewer stubs will be installed. See Sewer System Exhibit in Appendix C and Sewer Plans in Appendix D for proposed sewer line layout. The proposed sewer line is to be private and is to be maintained by the owner of the property.

4. Design Documentation/ Computations/ Hydraulic Modeling

The purpose of this basis of design report is to verify that the proposed private sewer system is able to accommodate demands generated by the project, 114th & Shea Retail. FlowMaster V8i by Bentley Systems was used to model and analyze the proposed sewer system for compliance with the City of Scottsdale design requirements. Demands were calculated using Section 7-1.403B of the City of Scottsdale Design Standards and Policies Manual dated 2018. It is our opinion that this report is in accordance with the 2018 City of Scottsdale Design Standards and Policies Manual.

The following demand criteria were used in determining the system demands for the proposed site.

1. Building A – 3,000 s.f. proposed Retail space
2. Building B – 5,100 s.f. proposed Retail space
3. Building C – 7,236 s.f. proposed Office space
4. Residential lots not included in analysis as they are just service taps.
5. 0.5 gpd/s.f. (Per DSPM, Commercial/Retail)
6. 0.4 gpd/s.f. (Per DPSM, Office)
7. Peaking factor = 3 (Per DSPM, Commercial/Retail, Office)

TABLE 1: ON-SITE SEWER DEMANDS	
Avg. daily demand	6,944.4 gpd
Design Flow Rate	20,833.2 gpd

Retail (Buildings A & B)
Average daily demand: 8,100 s.f. x 0.5 gpd per s.f. = 4,050 gpd
= 4,050 gpd/1440 mpd = 2.81 gpm

Peak flow rate = 3.0 x 4,050 gpd = 12,150 gpd
= 12,150 gpd/1440 mpd = 8.44 gpm

Office (Building C)
Average daily demand: 7,236 s.f. x 0.4 gpd per s.f. = 2,894.4 gpd
= 2,894.4 gpd/1440 mpd = 2.01 gpm

Peak flow rate = 3.0 x 2,894.4 gpd = 8,683.2 gpd
= 8,683.2 gpd/1440 mpd = 6.03 gpm

Total
Average daily demand = 6,944.4 gpd
Peak flow rate = 20,833.2 gpd

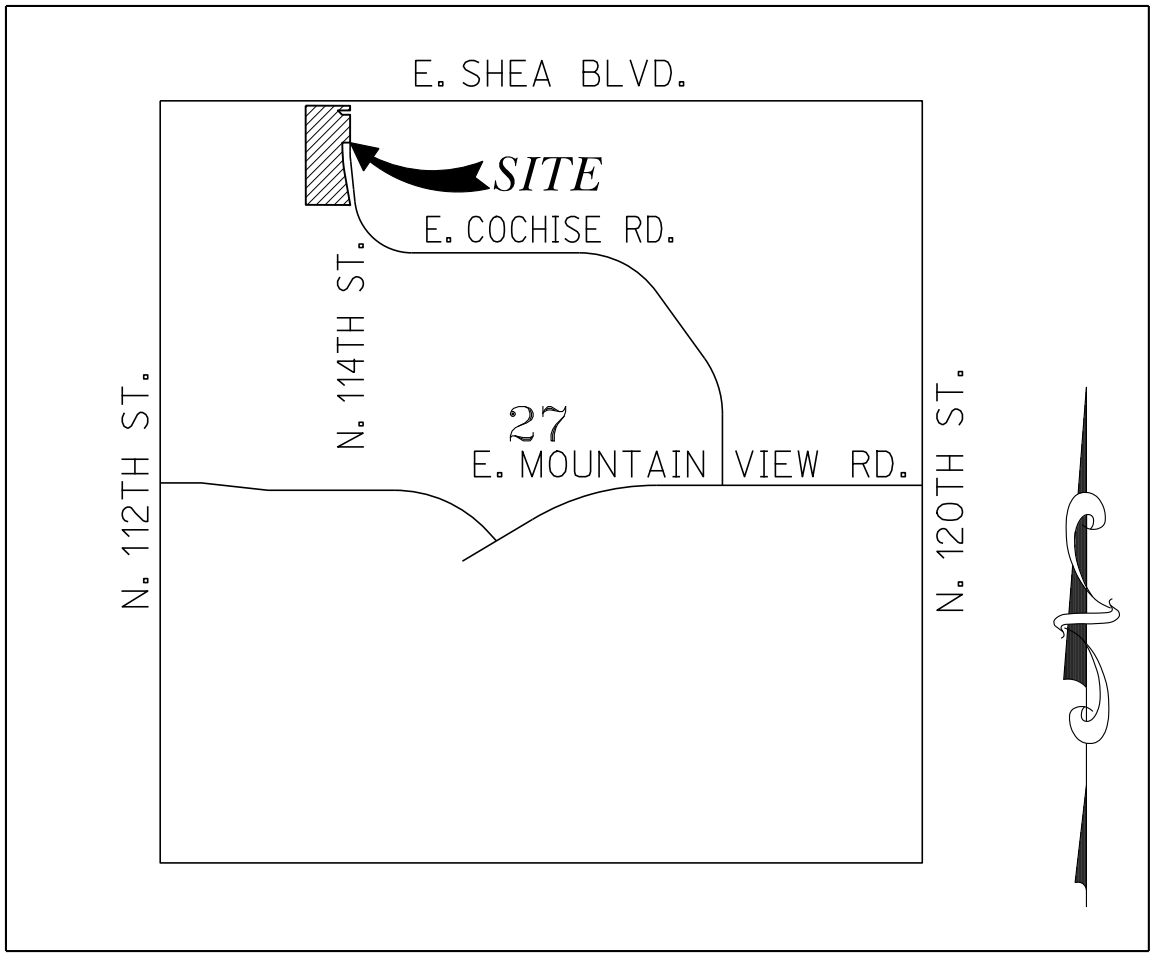
FlowMaster V8i by Bentley Systems was used to model and analyze the proposed sewer system for compliance with the C.O.S. design requirements. Based on the results from the sewer system analysis, the proposed 8" sewer system has a full flow capacity of 552,232.73 gpd and a maximum d/D of 0.133 at the design flow rate of 20,833.2 gpd. The analysis was performed using a minimum slope of 0.50%. The maximum allowable d/D for lines less than 12" is 0.65 per the C.O.S. design requirements. Refer to the FlowMaster data in Appendix B for loading of the sewer line with the peak flow. See Sewer System Exhibit in Appendix C and Sewer Plans in Appenix D for proposed sewer line layout.

5. ***Summary***

The Peak Flow for the proposed site is 20,833.2 gpd. The proposed sewer system has a maximum d/D of 0.133 at peak flow. The proposed sewer facilities are in accordance with the City of Scottsdale Design Standards.

APPENDIX A

Vicinity Map



VICINITY MAP

N.T.S.

APPENDIX B

FlowMaster Data

Cross Section for Proposed 6" Sewer Peak Flow

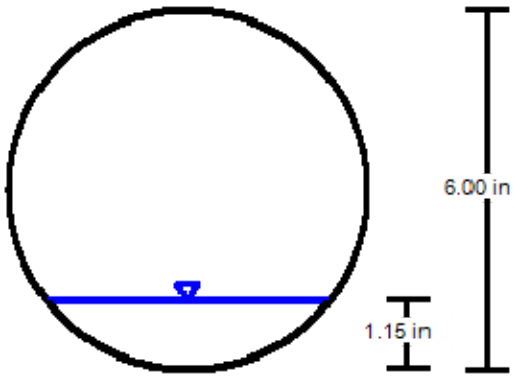
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Normal Depth	1.15	in
Diameter	6.00	in
Discharge	20833.20	gal/day

Cross Section Image



V: 1
H: 1

Worksheet for Proposed 6" Sewer Peak Flow

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Diameter	6.00	in
Discharge	20833.20	gal/day

Results

Normal Depth	1.15	in
Flow Area	0.03	ft²
Wetted Perimeter	0.45	ft
Hydraulic Radius	0.70	in
Top Width	0.39	ft
Critical Depth	0.09	ft
Percent Full	19.2	%
Critical Slope	0.00740	ft/ft
Velocity	1.22	ft/s
Velocity Head	0.02	ft
Specific Energy	0.12	ft
Froude Number	0.83	
Maximum Discharge	0.43	ft³/s
Discharge Full	0.40	ft³/s
Slope Full	0.00003	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	19.23	%
Downstream Velocity	Infinity	ft/s

Worksheet for Proposed 6" Sewer Peak Flow

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.15	in
Critical Depth	0.09	ft
Channel Slope	0.50000	%
Critical Slope	0.00740	ft/ft

Cross Section for Proposed 6" Sewer Full Flow

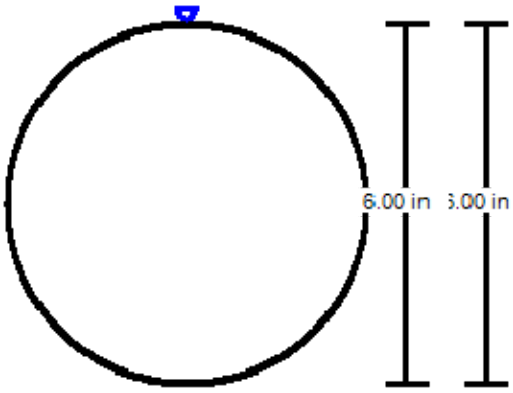
Project Description

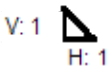
Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Normal Depth	6.00	in
Diameter	6.00	in
Discharge	256420.17	gal/day

Cross Section Image





Worksheet for Proposed 6" Sewer Full Flow

Project Description

Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Normal Depth	6.00	in
Diameter	6.00	in
Discharge	256420.17	gal/day

Results

Discharge	256420.17	gal/day
Normal Depth	6.00	in
Flow Area	0.20	ft²
Wetted Perimeter	1.57	ft
Hydraulic Radius	1.50	in
Top Width	0.00	ft
Critical Depth	0.32	ft
Percent Full	100.0	%
Critical Slope	0.00911	ft/ft
Velocity	2.02	ft/s
Velocity Head	0.06	ft
Specific Energy	0.56	ft
Froude Number	0.00	
Maximum Discharge	0.43	ft³/s
Discharge Full	0.40	ft³/s
Slope Full	0.00500	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%

Worksheet for Proposed 6" Sewer Full Flow

GVF Output Data

Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	6.00	in
Critical Depth	0.32	ft
Channel Slope	0.50000	%
Critical Slope	0.00911	ft/ft

Cross Section for Proposed 8" Sewer Peak Flow

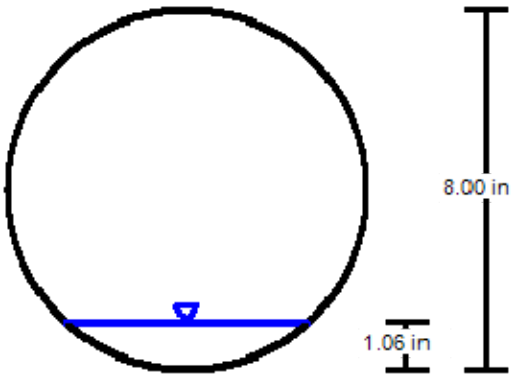
Project Description

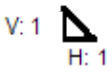
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Normal Depth	1.06	in
Diameter	8.00	in
Discharge	20833.20	gal/day

Cross Section Image





Worksheet for Proposed 8" Sewer Peak Flow

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Diameter	8.00	in
Discharge	20833.20	gal/day

Results

Normal Depth	1.06	in
Flow Area	0.03	ft²
Wetted Perimeter	0.50	ft
Hydraulic Radius	0.66	in
Top Width	0.45	ft
Critical Depth	0.08	ft
Percent Full	13.3	%
Critical Slope	0.00722	ft/ft
Velocity	1.17	ft/s
Velocity Head	0.02	ft
Specific Energy	0.11	ft
Froude Number	0.84	
Maximum Discharge	0.92	ft³/s
Discharge Full	0.85	ft³/s
Slope Full	0.00001	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	13.27	%
Downstream Velocity	Infinity	ft/s

Worksheet for Proposed 8" Sewer Peak Flow

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.06	in
Critical Depth	0.08	ft
Channel Slope	0.50000	%
Critical Slope	0.00722	ft/ft

Cross Section for Proposed 8" Sewer Full Flow

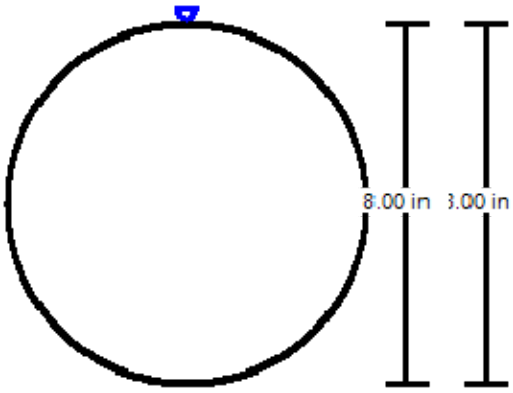
Project Description

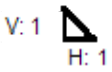
Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Normal Depth	8.00	in
Diameter	8.00	in
Discharge	552232.73	gal/day

Cross Section Image





Worksheet for Proposed 8" Sewer Full Flow

Project Description

Friction Method	Manning Formula
Solve For	Full Flow Capacity

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.50000	%
Normal Depth	8.00	in
Diameter	8.00	in
Discharge	552232.73	gal/day

Results

Discharge	552232.73	gal/day
Normal Depth	8.00	in
Flow Area	0.35	ft²
Wetted Perimeter	2.09	ft
Hydraulic Radius	2.00	in
Top Width	0.00	ft
Critical Depth	0.44	ft
Percent Full	100.0	%
Critical Slope	0.00848	ft/ft
Velocity	2.45	ft/s
Velocity Head	0.09	ft
Specific Energy	0.76	ft
Froude Number	0.00	
Maximum Discharge	0.92	ft³/s
Discharge Full	0.85	ft³/s
Slope Full	0.00500	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%

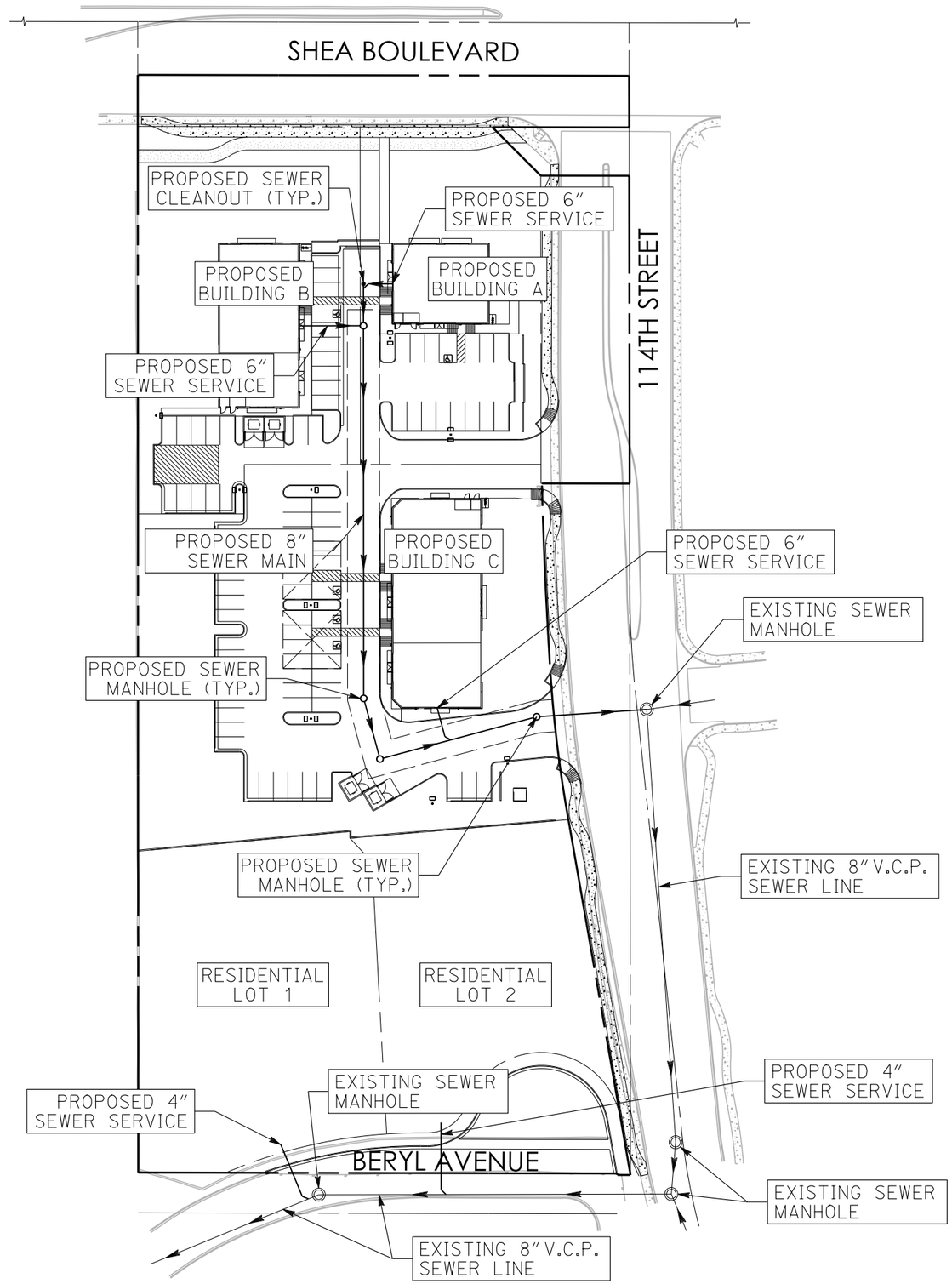
Worksheet for Proposed 8" Sewer Full Flow

GVF Output Data

Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	8.00	in
Critical Depth	0.44	ft
Channel Slope	0.50000	%
Critical Slope	0.00848	ft/ft

APPENDIX C

Sewer System Exhibit



1"=80'

114TH & SHEA RETAIL

SWC 114TH ST. & SHEA BLVD., SCOTTSDALE, AZ 85259

SEWER SYSTEM EXHIBIT

3engineering
planning civil engineering surveying
3 ENGINEERING, LLC
6370 E. THOMAS ROAD, SUITE # 220 - SCOTTSDALE, ARIZONA 85251
PHONE: (602) 536-4882 - FAX: (602) 496-3280
WWW.3ENGINEERING.COM

DATE: 11/03/21

PROJECT NO.
1831

APPENDIX D

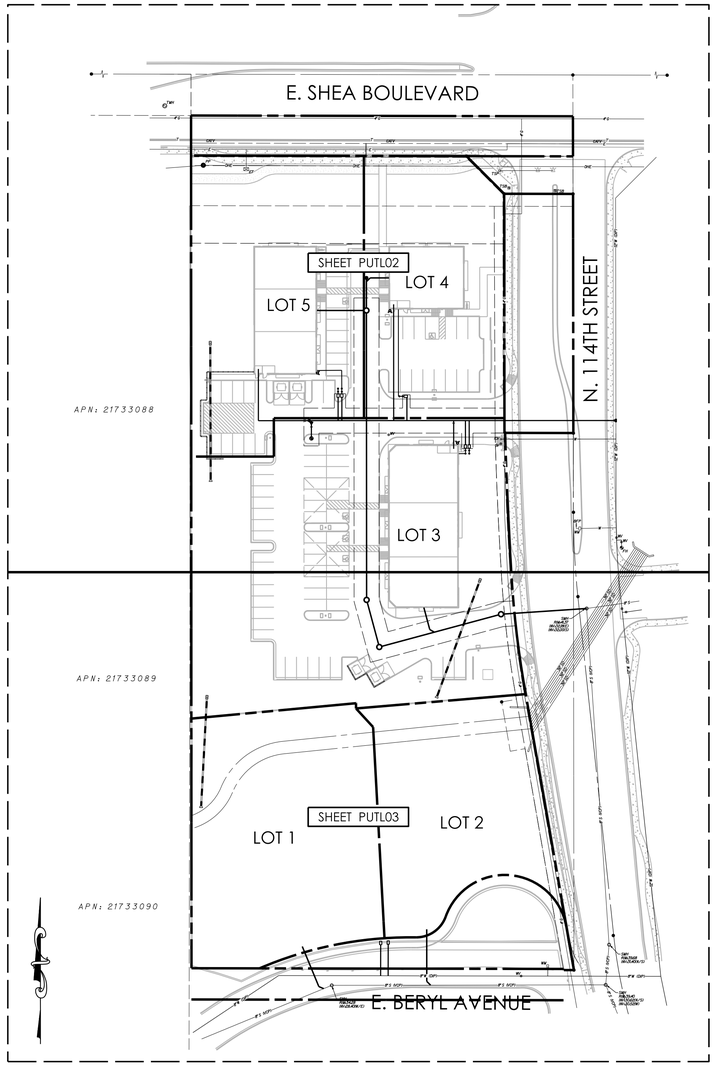
Preliminary Sewer Plans

PRELIMINARY UTILITY PLAN FOR
114TH & SHEA RETAIL
SWC 114TH ST. & SHEA BLVD., SCOTTSDALE, AZ 85259

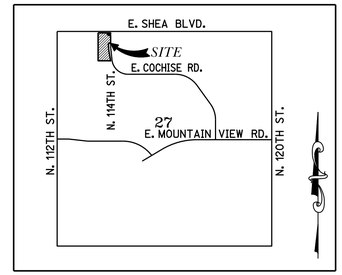
LOCATED IN A PORTION OF THE NORTHWEST QUARTER OF SECTION 27, TOWNSHIP 3 NORTH, RANGE 5 EAST
OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

GENERAL NOTES FOR PUBLIC WORKS CONSTRUCTION:

1. ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE CITY'S SUPPLEMENTAL STANDARD DETAILS WILL GOVERN.
2. THE CITY ONLY APPROVES THE SCOPE, NOT THE DETAIL OF ENGINEERING DESIGNS; THEREFORE IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. THE APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF ASSOCIATED PERMIT HAS NOT BEEN ISSUED WITHIN THIS TIME FRAME, THE PLANS MUST BE RESUBMITTED TO THE CITY FOR RE-APPROVAL.
4. A CITY INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE. NOTIFY INSPECTION SERVICES 72 HOURS BEFORE BEGINNING WORK.
5. WHENEVER EXCAVATION IS NECESSARY, CALL THE BLUE STAKE CENTER, 811, TWO WORKING DAYS BEFORE EXCAVATION BEGINS.
6. PERMISSION TO WORK IN THE RIGHT-OF-WAY (PWR) PERMITS ARE REQUIRED FOR ALL WORKS WITHIN THE RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. COPIES OF ALL PERMITS MUST BE RETAINED ON-SITE AND BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE SUSPENSION OF ALL WORK UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.



SITE MAP
N.T.S.



VICINITY MAP
N.T.S.

LEGEND

	INDICATES PROPERTY / BOUNDARY LINE
1560	INDICATES EXISTING CONTOUR ELEVATION
58	INDICATES PROPOSED CONTOUR ELEVATION
TC: 59.13 G: 58.64	INDICATES EXISTING TOP OF CURB ELEVATION / INDICATES EXISTING GUTTER ELEVATION
+ 62.52	INDICATES EXISTING GROUND ELEVATION
+ P: 60.11	INDICATES EXISTING PAVEMENT ELEVATION
+ C: 56.69	INDICATES EXISTING CONCRETE ELEVATION
15.9	INDICATES PROPOSED GROUND ELEVATION
1%	INDICATES DIRECTION OF FLOW & SLOPE
GB	INDICATES GRADE BREAK
P=	INDICATES PROPOSED PAVEMENT ELEVATION
C=	INDICATES PROPOSED TOP OF CONC. ELEVATION
G=	INDICATES PROPOSED GUTTER ELEVATION
LF_{88}=	INDICATES LOWEST FINISH FLOOR ELEVATION
W	INDICATES PROPOSED WATERLINE
S	INDICATES PROPOSED SEWERLINE
	INDICATES PROPOSED METER
	INDICATES PROPOSED SEWER CLEANOUT
	INDICATES PROPOSED CATCH BASIN
	INDICATES PROPOSED STORM DRAIN PIPE
	INDICATES PROPOSED STORM DRAIN MANHOLE
	INDICATES PROPOSED FIRE HYDRANT
FH	INDICATES EXISTING FIRE HYDRANT
24" SD	INDICATES EXISTING STORM DRAIN PIPE
8" S	INDICATES EXISTING SEWER LINE & SIZE
12" W (ACP) WV	INDICATES EXISTING WATER LINE,VALVE & SIZE
E	INDICATES EXISTING BURIED ELECTRIC CONDUIT
G	INDICATES EXISTING GAS LINE
OHE	INDICATES EXISTING OVERHEAD ELECTRIC
PP	INDICATES EXISTING POWER POLE
LP	INDICATES EXISTING LIGHT POLE
ET	INDICATES EXISTING ELECTRIC TRANSFORMER
EB	INDICATES EXISTING ELECTRIC BOX
WM	INDICATES EXISTING WATER METER
BWV	INDICATES EXISTING BACKFLOW PREVENTER VALVE

PROJECT SCOPE:

THE SCOPE OF THIS PROJECT IS A NEW RETAIL DEVELOPEMENT, UTILITY IMPROVEMENTS AND LANDSCAPE.

CLIENT:

HAWKINS COMPANIES LLC
4700 S. MCCLINTOCK DR. #160
TEMPE, ARIZONA 85282

CONTACT: MARK MITCHELL
PHONE: (480) 223-8239
EMAIL: MMITCHELL@HCOLLC.COM

ENGINEER:

3 ENGINEERING
6370 E. THOMAS ROAD, SUITE #200
SCOTTSDALE, ARIZONA 85251

CONTACT: DANIEL G. MANN, P.E.
PHONE: (602) 334-4387
EMAIL: DAN@3ENGINEERING.COM

ASSESSORS PARCEL NUMBERS:

PORTIONS OF APN 217-33-034G, 034F, 034M, 034K, & 034N.

BENCHMARK:

3" BRASS DISK, LOCATED AT THE INTERSECTION OF SHEA BOULEVARD & 114TH STREET.

ELEVATION = 1444.23 (NAVD'88)
CITY OF SCOTTSDALE DATUM

I HEREBY CERTIFY THAT ALL ELEVATIONS REPRESENTED ON THIS PLAN ARE BASED ON THE ELEVATION DATUM FOR THE CITY OF SCOTTSDALE BENCHMARK PROVIDED ABOVE.

ENGINEER — 11/3/2021 DATE

BASIS OF BEARING

THE BASIS OF BEARING IS THE CENTERLINE OF EAST SHEA BOULEVARD, ALSO BEING THE NORTHERN SECTION LINE OF SECTION 27, TOWNSHIP 3 NORTH, RANGE 5 EAST, WHICH BEARS N89°53'00"W PER GPS COORDINATE OBSERVATIONS ARIZONA STATE PLANE, CENTRAL ZONE NAD83.

ENGINEER'S STATEMENT:

THE ENGINEER OF RECORD ON THESE PLANS HAS RECEIVED A COPY OF THE APPROVED STIPULATIONS FOR THIS PROJECT AND HAS DESIGNED THESE PLANS IN CONFORMANCE WITH THE APPROVED STIPULATIONS

AS-BUILT CERTIFICATION:

I HEREBY CERTIFY THAT THE RECORD DRAWING MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED ENGINEER/LAND SURVEYOR — DATE

REGISTRATION NUMBER

UTILITY	UTILITY COMPANY	NAME OF COMPANY REPRESENTATIVE	TELEPHONE NUMBER	DATE SIGNED
ELECTRIC	APS			
TELEPHONE	CENTURY LINK			
NATURAL GAS	SOUTHWEST GAS			
CABLE TV	COX COMMUNICATIONS			
OTHER	A.T.&T.			
OTHER				

ENGINEER'S CERTIFICATION

I DANIEL G. MANN, AS THE ENGINEER OF RECORD FOR THIS DEVELOPMENT, HEREBY CERTIFY THAT ALL UTILITY COMPANIES LISTED ABOVE HAVE BEEN PROVIDED FINAL IMPROVEMENT PLANS FOR REVIEW, AND THAT ALL CONFLICTS IDENTIFIED BY THE UTILITIES HAVE BEEN RESOLVED. IN ADDITION "NO CONFLICT" FORMS HAVE BEEN OBTAINED FROM EACH UTILITY COMPANY AND ARE INCLUDED IN THIS SUBMITTAL.

SIGNATURE — DATE

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
PUTL01	COVER SHEET - PRELIMINARY UTILITY PLAN
PUTL02	PRELIMINARY UTILITY PLAN
PUTL03	PRELIMINARY UTILITY PLAN

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION:

COMMUNITY NUMBER	PANEL NUMBER	PANEL DATE	SUFFIX	FIRM DATE	FIRM ZONE	BASE FLOOD ELEVATION
045012	1780	OCTOBER 16, 2013	L	OCTOBER 16, 2013	X	N/A

ENGINEER'S CERTIFICATION:

THE LOWEST FINISH FLOOR ELEVATION(S) AND/OR FLOOD PROOFING ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A 100-YEAR STORM, AND ARE IN ACCORDANCE WITH SCOTTSDALE REVISED CODE, CHAPTER 37 - FLOODPLAIN AND STORMWATER REGULATION.

CIVIL APPROVAL

REVIEW & RECOMMENDED APRROVAL BY:			
PAVING		TRAFFIC	
G & D		PLANNING	
W & S		FIRE	
RET. WALLS			

ENGINEERING COORDINATION MGR. (OR DESIGNEE) — DATE

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

SNOISIA3H

114TH & SHEA RETAIL
SWC 114TH ST. & SHEA BLVD., SCOTTSDALE, AZ 85259
PRELIMINARY UTILITY PLAN

Registered Professional Engineer (Civil) CERTIFICATE NO. 46857 DANIEL G. MANN 11/3/21 Date Signed ARIZONA U.S.A.

3engineering civil engineering surveying planning

CAD TECH: PHILIP V. | DESIGNER: D. MANN | ENGINEER: D. MANN

3 ENGINEERING, LLC
6370 E. THOMAS ROAD
SUITE # 200
SCOTTSDALE, ARIZONA 85251
PHONE: (602) 334-4387
FAX: (602) 490-3230
WWW.3ENGINEERING.COM

DATE: 11/03/21

PROJECT NO. 1831

SHEET NO. PUTL01 1 of 3

Q.S.#28-55

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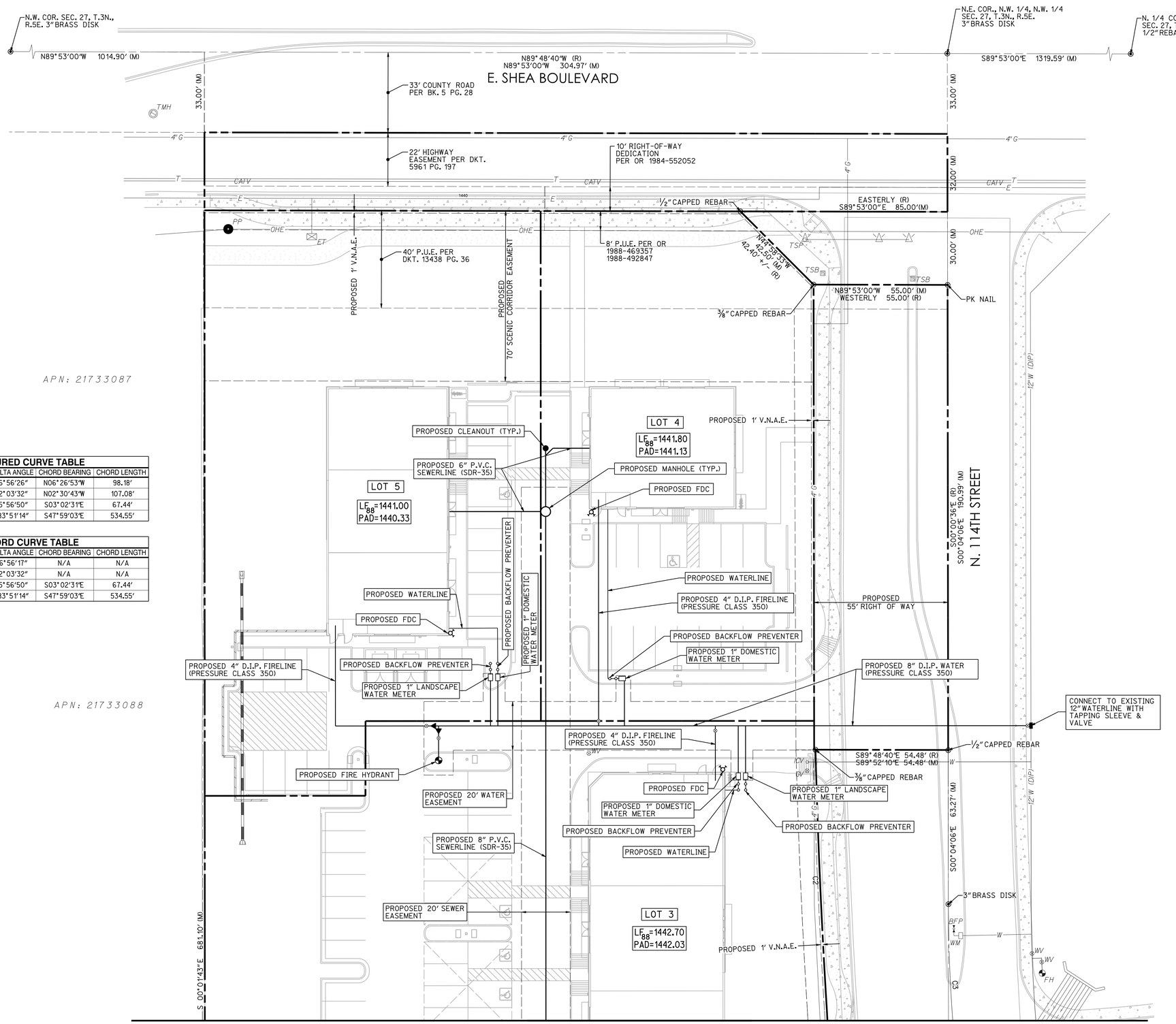

MEASURED LINE TABLE

LINE	BEARING	DISTANCE
L1	N89°52'10"W	8.12'

RECORD LINE TABLE

LINE	BEARING	DISTANCE
L1	N89°48'40"W	8.12'

MEASURED CURVE TABLE

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	98.24'	811.00'	6°56'26"	N06°26'53"W	98.18'
C2	107.09'	2979.97'	2°03'32"	N02°30'43"W	107.08'
C3	67.47'	650.00'	5°56'50"	S03°02'31"E	67.44'
C4	585.41'	400.00'	83°51'14"	S47°59'03"E	534.55'

RECORD CURVE TABLE

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	98.21'	811.00'	6°56'17"	N/A	N/A
C2	107.13'	2981.15'	2°03'32"	N/A	N/A
C3	67.47'	650.00'	5°56'50"	S03°02'31"E	67.44'
C4	585.41'	400.00'	83°51'14"	S47°59'03"E	534.55'

SCALE: 1"= 20'
0' 10' 20' 40'

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114TH & SHEA RETAIL
SWC 114TH ST. & SHEA BLVD., SCOTTSDALE, AZ 85259

PRELIMINARY UTILITY PLAN

Registered Professional Engineer
CERTIFICATE NO. 46857
DANIEL C. MANN
11/3/21
Date Signed
ARIZONA, U.S.A.

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civil engineering surveying planning

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PROJECT NO. 1831

SHEET NO. PUTL02 2 of 3

Q.S.#28-55

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MATCHLINE - SEE SHEET 2

APN: 21733089

APN: 21733090

LOT 3

LF=1442.70
PAD=1442.03

LOT 2

PAD=38.00

LOT 1

PAD=37.50

PROPOSED MANHOLE (TYP.)

PROPOSED MANHOLE (TYP.)

PROPOSED 20' SEWER EASEMENT

PROPOSED 8" P.V.C. SEWERLINE (SDR-35)

PROPOSED 8" P.V.C. SEWERLINE (SDR-35)

PROPOSED 6" P.V.C. SEWERLINE (SDR-35)

3" BRASS DISK

SMH
RIM=41.37
INV=32.18(E)
INV=32.00(S)

CONNECT TO EXISTING SEWER MANHOLE

8' P.U.E.
2000-744683

3/8" CAPPED REBAR

3/8" CAPPED REBAR

S 00°00'36" E 423.01' (M)
S 00°00'00" E 423.01' (R)

S 09°01'47" E 192.07' (M)

PROPOSED 1' V.N.A.E.

N09°51'36"W
N09°55'06"W 228.00' (R)
228.00' (M)

EX. RIGHT OF WAY VARIES

S 09°01'47" E 80.72' (M)

3" BRASS DISK

SMH
RIM=39.68
INV=31.40(N/S)

PROPOSED 3/4" DOMESTIC WATER METER

PROPOSED 3/4" DOMESTIC WATER METER

PROPOSED 4" P.V.C. SEWERLINE (SDR-35)

PROPOSED 25' RIGHT OF WAY

PROPOSED 4" P.V.C. SEWERLINE (SDR-35)

S89°53'00"E 297.18' (M)

E. BERYL AVENUE

S 09°55'06"E 0.91' (M)

3/8" CAPPED REBAR

SMH
RIM=34.28
INV=28.40W/E)

SMH
RIM=39.40
INV=30.62(N/S)
INV=30.52(W)

CONNECT TO EXISTING SEWER MAIN

CONNECT TO EXISTING SEWER MAIN

8" W (DIP)
8" S (VCP)

SCALE: 1"= 20'

0' 10' 20' 40'

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114TH & SHEA RETAIL

SWC 114TH ST. & SHEA BLVD., SCOTTSDALE, AZ 85259

PRELIMINARY UTILITY PLAN

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Date Signed
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DESIGNER:	D. MANN
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PROJECT NO.
1831

SHEET NO.
PUTL03
3 of 3

Q.S.#28-55

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