

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

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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 DSPM, 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

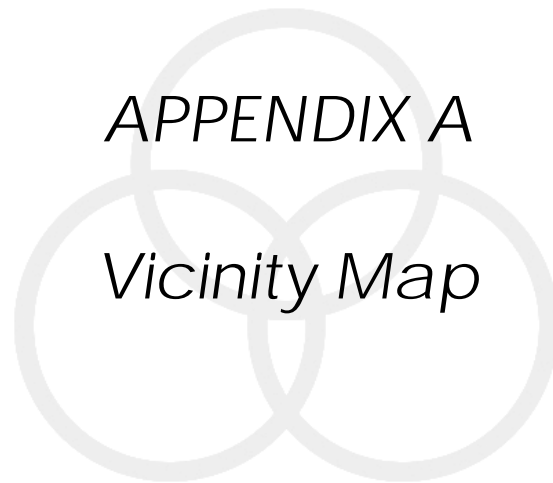
Total

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

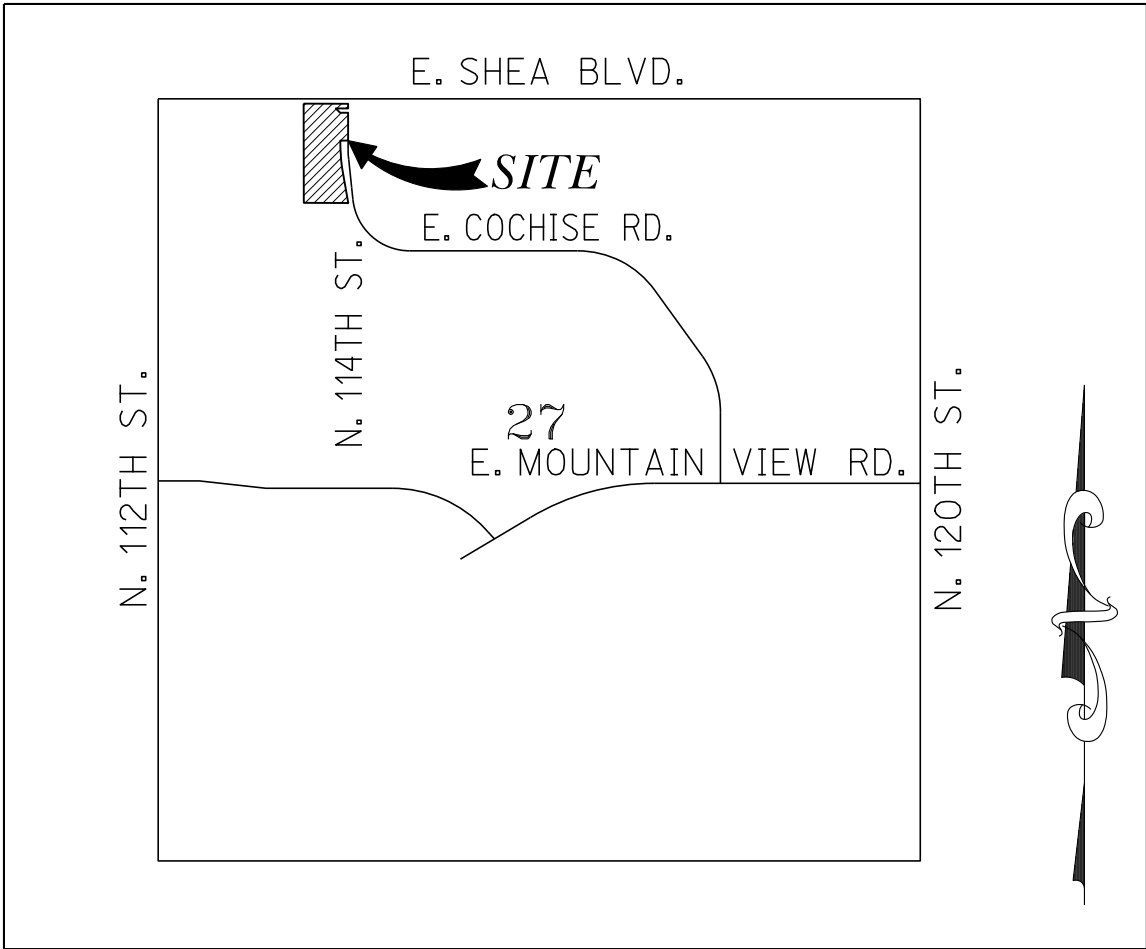
FlowMaster V8i by Bentley Systems was used to model and analyze the proposed sewer system for compliance with the C.O.S. design requirements. Based on the results from the sewer system analysis, the proposed 8" sewer system has a full flow capacity of 552,232.73 gpd and a maximum d/D of 0.133 at the 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

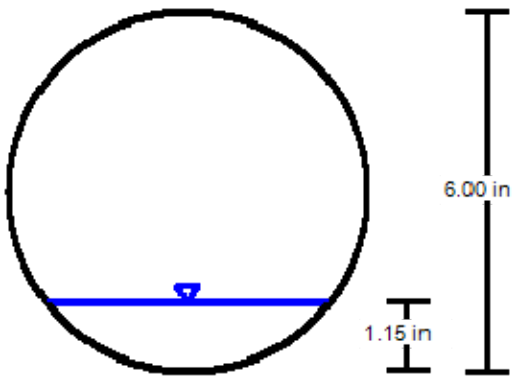
Project Description


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	ft ²
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	ft ³ /s
Discharge Full	0.40	ft ³ /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

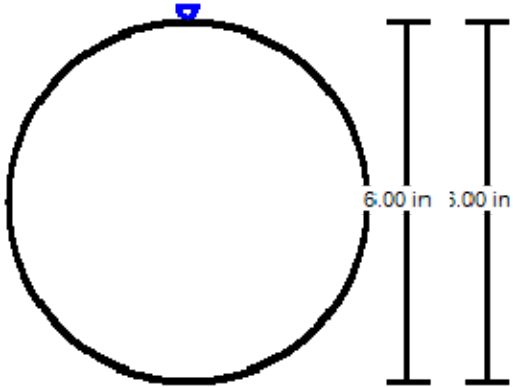
Project Description

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



V: 1
H: 1

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	ft ²
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	ft ³ /s
Discharge Full	0.40	ft ³ /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

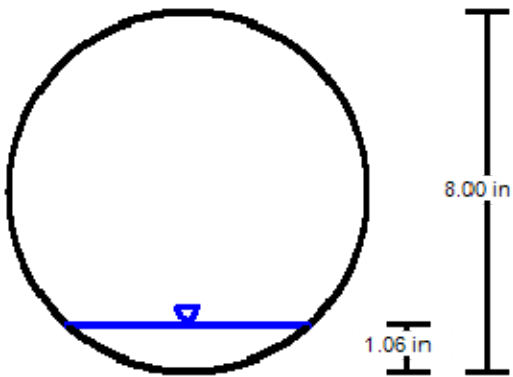
Project Description

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



V: 1
H: 1

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	ft ²
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	ft ³ /s
Discharge Full	0.85	ft ³ /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

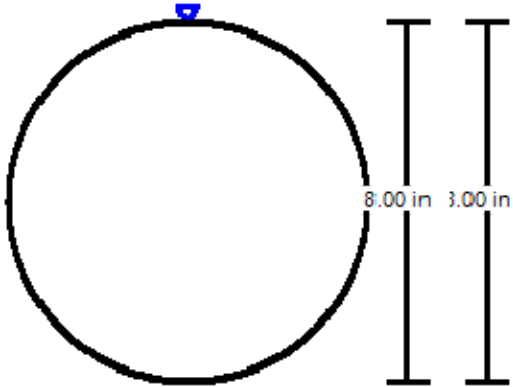
Project Description

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



V: 1
H: 1

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	ft ²
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	ft ³ /s
Discharge Full	0.85	ft ³ /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	%

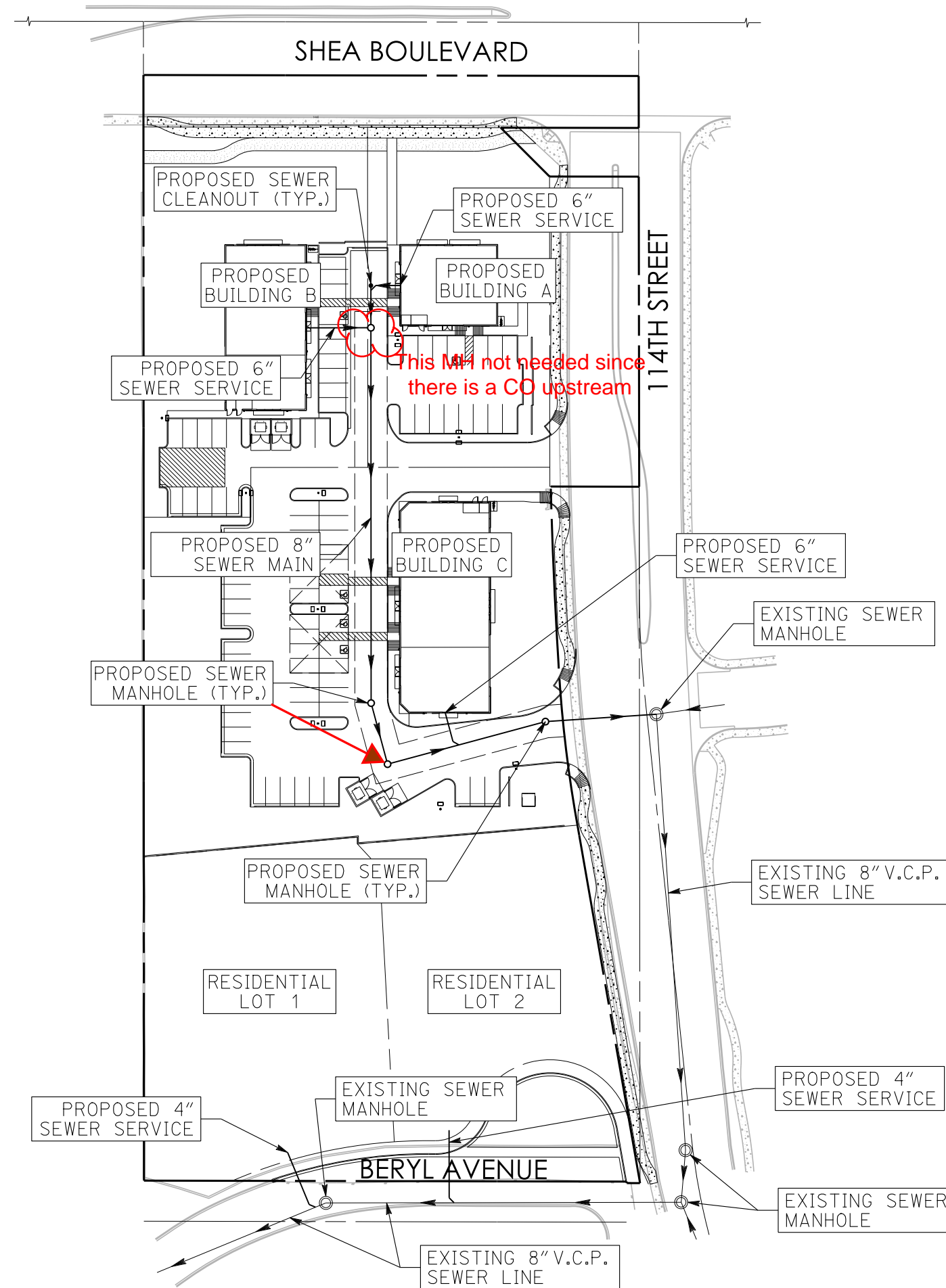
Worksheet for Proposed 8" Sewer Full Flow

GVF Output Data

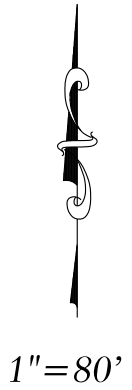
Normal Depth Over Rise	100.00	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	8.00	in
Critical Depth	0.44	ft
Channel Slope	0.50000	%
Critical Slope	0.00848	ft/ft

APPENDIX C

Sewer System Exhibit



This MH not needed since there is a CO upstream



114TH & SHEA RETAIL

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

SEWER SYSTEM EXHIBIT

300engineering
planning civil engineering surveying

300 ENGINEERING, LLC
 6370 E. THOMAS ROAD, SUITE # 200 - SCOTTSDALE, ARIZONA 85251
 PHONE: (602) 334-4387 - FAX: (602) 490-3230
 WWW.300ENGINEERING.COM

DATE: 11/03/21

PROJECT NO.
1831

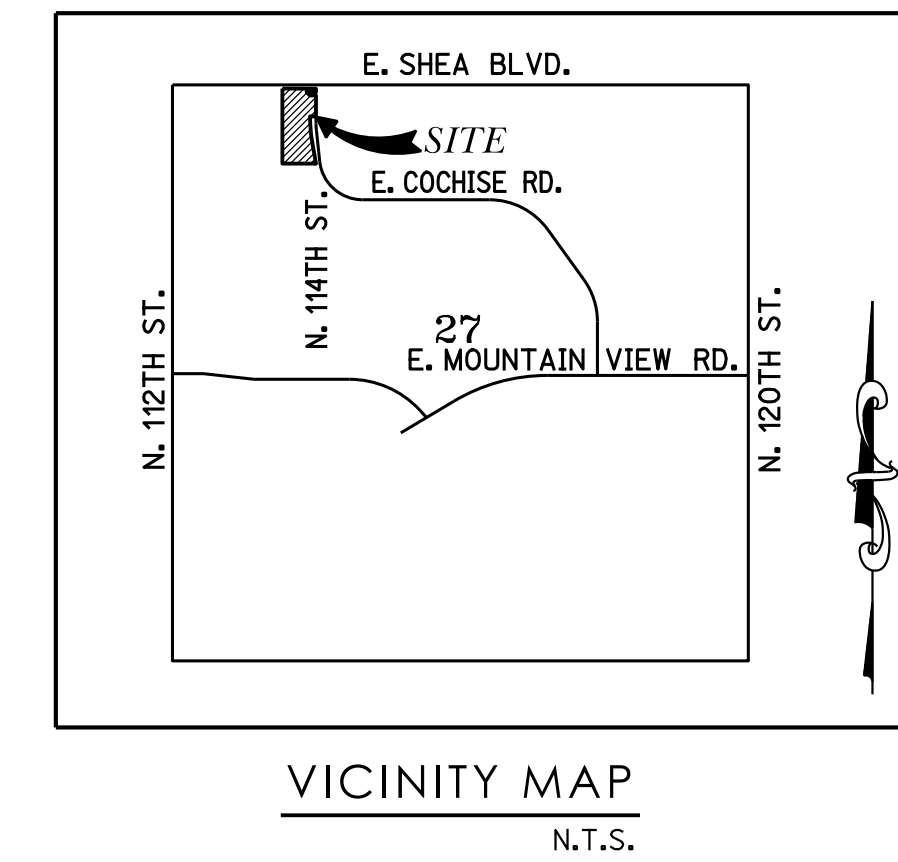
APPENDIX D

Preliminary Sewer Plans

PRELIMINARY UTILITY PLAN FOR 114TH & SHEA RETAIL

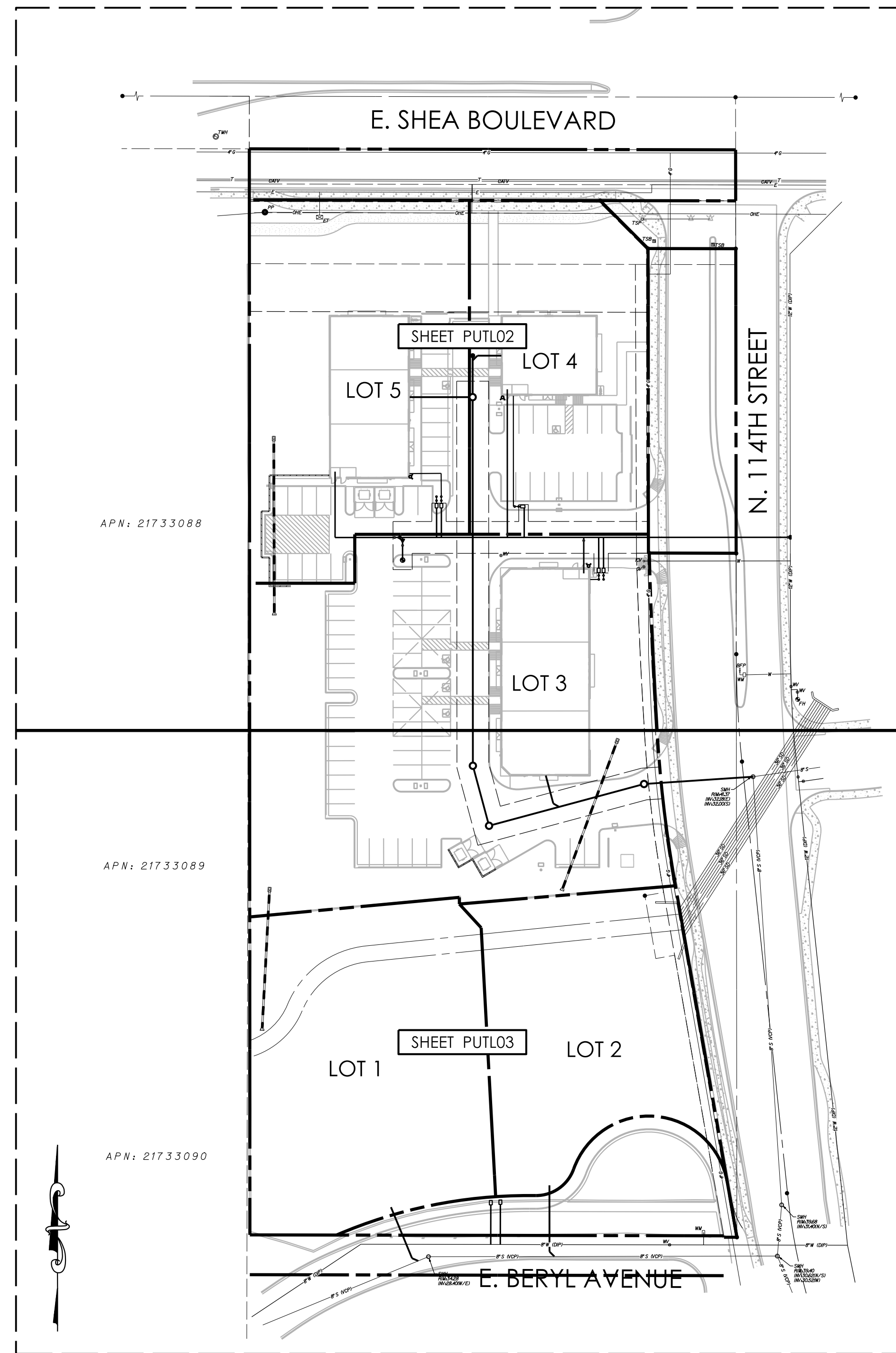
SWC 114TH ST. & SHEA BLVD., SCOTTSDALE, AZ 85259

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:

- 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.
- 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.
- 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.
- A CITY INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE. NOTIFY INSPECTION SERVICES 72 HOURS BEFORE BEGINNING WORK.
- WHENEVER EXCAVATION IS NECESSARY, CALL THE BLUE STAKE CENTER, 811, TWO WORKING DAYS BEFORE EXCAVATION BEGINS.
- 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.



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
- +62.52 INDICATES EXISTING GROUND ELEVATION
- +P: 60.11 INDICATES EXISTING PAVEMENT ELEVATION
- +C: 56.69 INDICATES EXISTING CONCRETE ELEVATION
- x 15.9 INDICATES PROPOSED GROUND ELEVATION
- 1% INDICATES DIRECTION OF FLOW & SLOPE
- ◆ INDICATES GRADE BREAK
- P= INDICATES PROPOSED PAVEMENT ELEVATION
- C= INDICATES PROPOSED TOP OF CONC. ELEVATION
- G= INDICATES PROPOSED GUTTER ELEVATION
- LF₈₈= 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)--- 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
- x LP INDICATES EXISTING LIGHT POLE
- ET ⊠ INDICATES EXISTING ELECTRIC TRANSFORMER
- EB ⊙ INDICATES EXISTING ELECTRIC BOX
- WM ⊙ INDICATES EXISTING WATER METER
- BMW ⊙ INDICATES EXISTING BACKFLOW PREVENTER VALVE

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
PUTLO1	COVER SHEET - PRELIMINARY UTILITY PLAN
PUTLO2	PRELIMINARY UTILITY PLAN
PUTLO3	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 ELEVATIONS AND/OR FLOOD PROOFING ELEVATIONS 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.

PROJECT SCOPE:

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

CLIENT:

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

ENGINEER:

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

CONTACT: MARK MITCHELL

PHONE: (480) 223-8239
EMAIL: MMITCHELL@HCOLLCC.COM

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

CIVIL APPROVAL			
REVIEW & RECOMMENDED APPROVAL 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

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

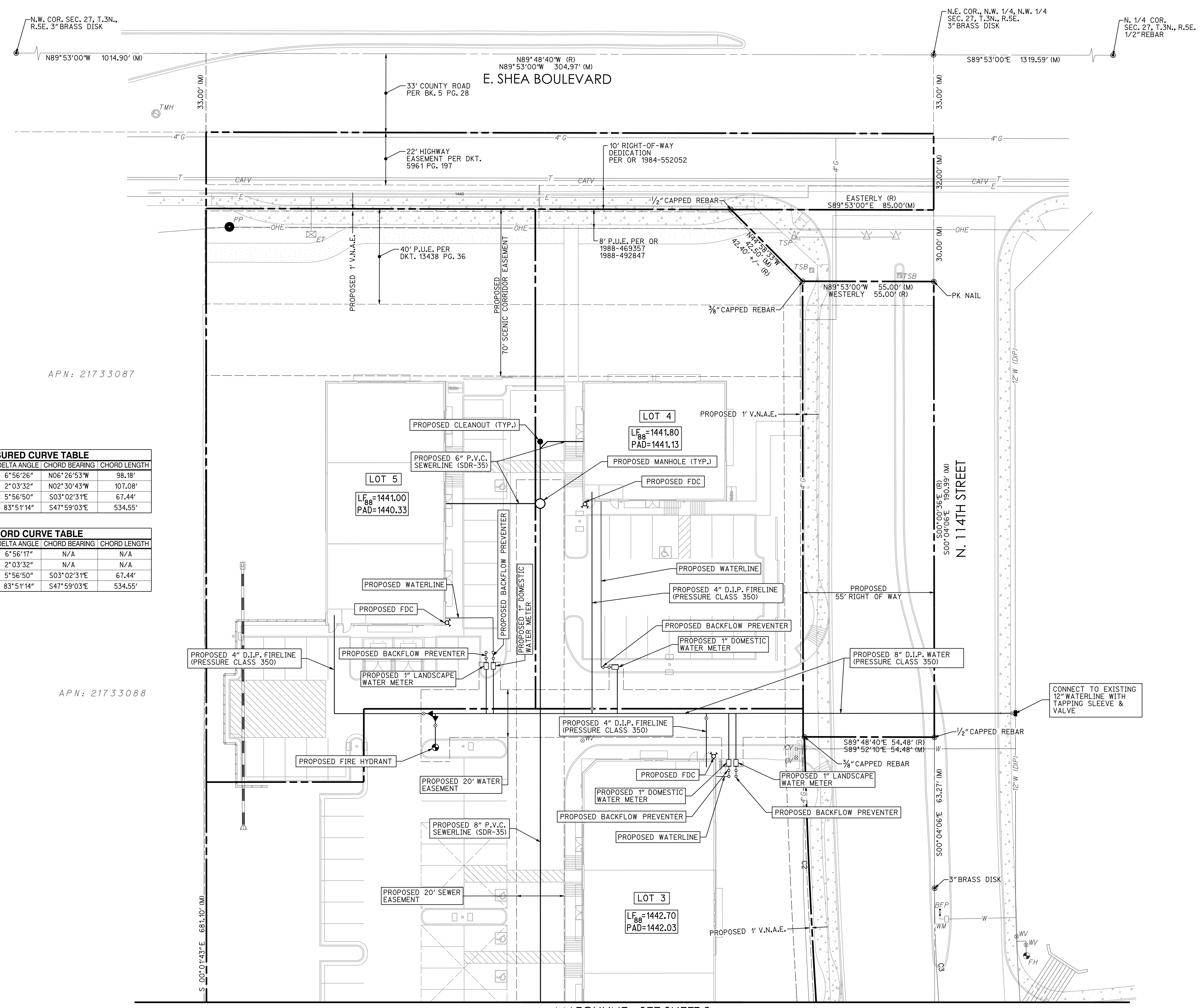
PRELIMINARY UTILITY PLAN



3engineering
planning
civil engineering
SURVEYING
REGISTERED ENGINEER/LAND SURVEYOR
D. MANN
D. MANN
D. MANN
COPYRIGHT © 2021, 3 ENGINEERING, LLC
CAD FILE: 114TH_V1

3 ENGINEERING, LLC
6370 E. THOMAS ROAD
SUITE # 200
SCOTTSDALE, ARIZONA 85251
PHONE: (602) 334-4387
FAX: (602) 495-3230
WWW.3ENGINEERING.COM
DATE: 11/03/21
PROJECT NO.
1831
SHEET NO.
PUTLO1
1 of 3

Q.S.#28-55



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'

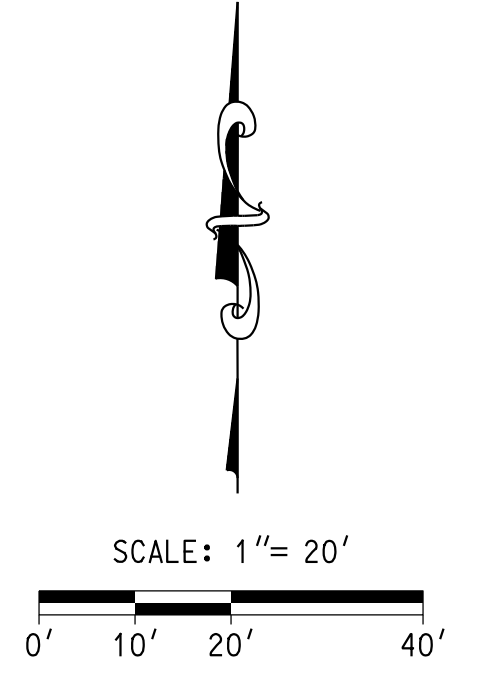
RECORD CURVE TABLE

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'

APN: 21733087

APN: 21733088

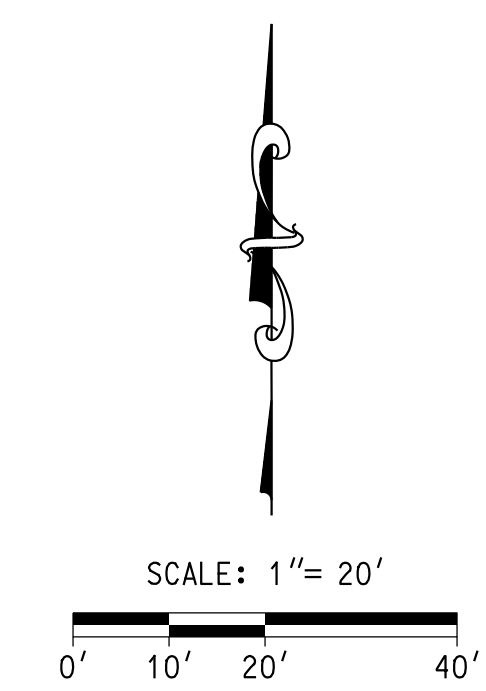
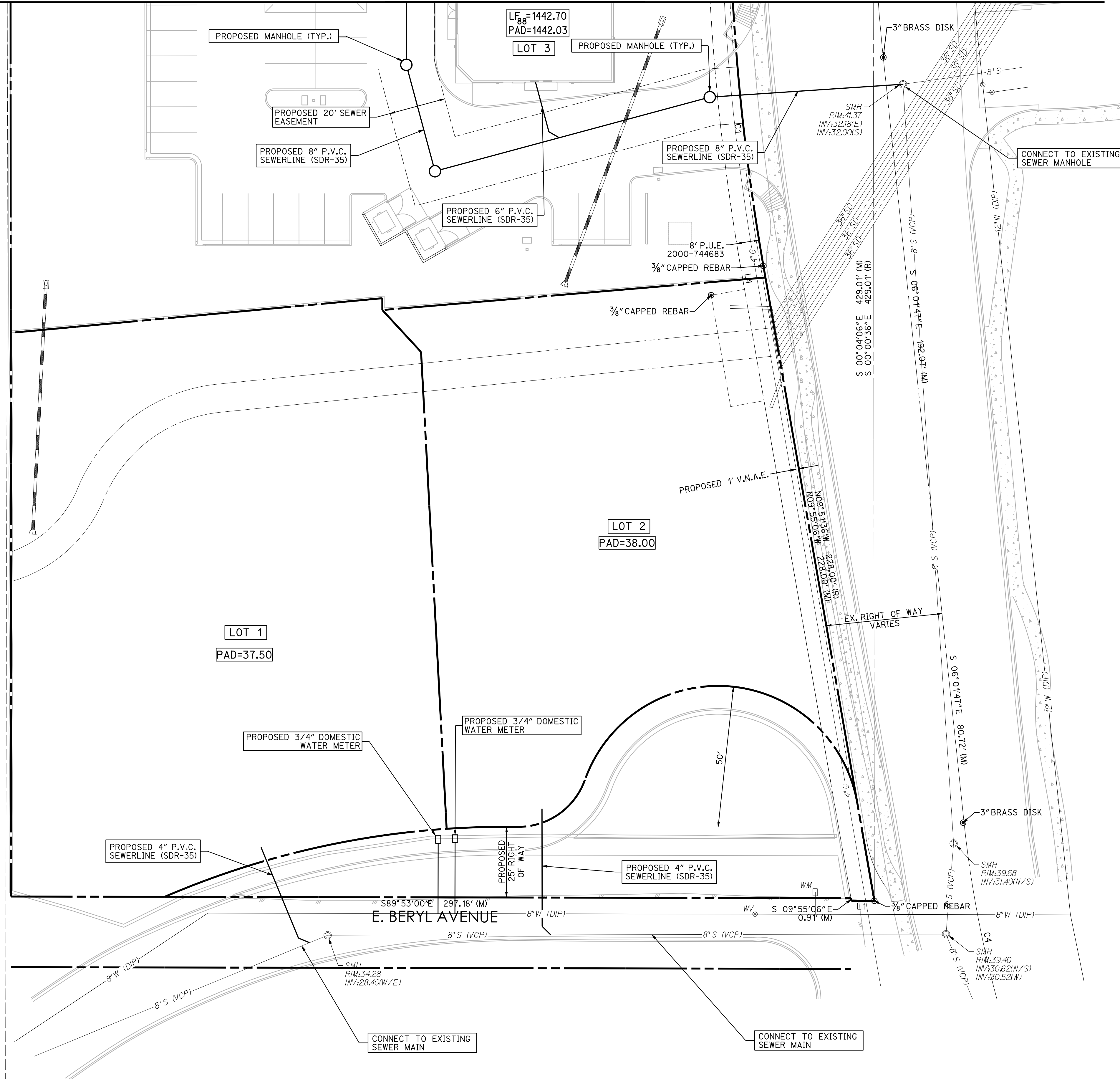
MATCHLINE - SEE SHEET 3



MATCHLINE - SEE SHEET 2

APN: 21733089

APN: 21733090



Contact Arizona 911 at least two full working days before you begin excavation
 Call 911 or click Arizona911.com

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 PRELIMINARY UTILITY PLAN



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 PROJECT NO. 1831
 SHEET NO. PUTL03 3 of 3

Q.S.#28-55

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