# CITY OF ALBUQUERQUE

*Planning Department* David Campbell, Director



Mayor Timothy M. Keller

December 21, 2018

Fred Arfman, P.E. Isaacson & Arfman, P.A. 128 Monroe St. N.E Albuquerque, NM 87108

RE: Nuevo Atrisco- North Tract Central and Unser NW Grading Plan Stamp Date: 12/03/18 Drainage Report Stamp Date: 12/03/18 Hydrology File: K10D058

Dear Mr. Arfman:

- PO Box 1293 Based on the submittal received on 12/11/18, the above-referenced plan is approved for Building Permit.
  - Prior to Certificate of Occupancy (For Information):

Albuquerque

1. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required.

NM 87103

2. The downstream conveyance (private storm drain shown on sheet CG-502) across the southern tract to the connection on Central will need to be constructed with this tract and certified prior to C.O.

www.cabq.gov

3. A Bernalillo County Recorded <u>Drainage Covenant (No Public Easement)</u> is required for the stormwater detention/ stormwater quality ponds. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee (\$25, payable to Bernalillo County) must be turned into DRC (4th, Plaza del Sol) for routing. Please contact Charlotte LaBadie (clabadie@cabq.gov, 924-3996) or Madeline Carruthers (mtafoya@cabq.gov, 924-3997) regarding the routing and recording process for covenants. The routing and recording process for covenants can take a month or longer; Hydrology recommends beginning this process as soon as possible as to not delay approval for certificate of occupancy.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

# CITY OF ALBUQUERQUE

Planning Department David Campbell, Director



Mayor Timothy M. Keller

Sincerely,

Dana Peterson, P.E. Senior Engineer, Planning Dept. Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



# City of Albuquerque

Planning Department Development & Building Services Division DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Nuevo Atrisco DRB#: PR-2018-1007489			
Legal Description: <u>Tract B-1, West Route</u>			
City Address: 7909 Central Ave. NW - Albu			
City Address. <u>7303 Octival Ave. NW - Abe</u>			
Applicant: Isaacson & Arfman, PA		Contact:	Fred C. Arfman
Address: _128 Monroe Street NE - Albuque		or	Bryan J. Bobrick
Phone#: (505) 268-8828			ireda@iacivil.com
	1 u.s.n.		anb@iacivil.com
Other Contact: Dekker Perich Sabatini		Contact:	
Address: 7601 Jefferson Street NE, Suite 1	00 - Albuquerque, NM	/ 87109	
Phone#: (505) 761-9700	Fax#:	E-mail:	
TYPE OF DEVELOPMENT:     X	KESIDENCE	DKB SITE	ADMIN SITE
Check all that Apply:			
DEPARTMENT:			
X HYDROLOGY/DRAINAGE		E OF APPROVAL/ACCEP	
TRAFFIC/ TRANSPORTATION		BUILDING PERMIT APPRO	
	0	CERTIFICATE OF OCCUPA	ANCY
TYPE OF SUBMITTAL:			DOTIAL
ENGINEER/ARCHITECT CERTIFICATION	N	PRELIMINARY PLAT APP	
PAD CERTIFICATION		SITE PLAN FOR SUB'D A	
CONCEPTUAL G & D PLAN		SITE PLAN FOR BLDG. PH	
X GRADING PLAN	]	FINAL PLAT APPROVAL	
DRAINAGE REPORT	т		
DRAINAGE MASTER PLAN		SIA/ RELEASE OF FINANC	
FLOODPLAIN DEVELOPMENT PERMIT A		FOUNDATION PERMIT AI	
ELEVATION CERTIFICATE		GRADING PERMIT APPRO	OVAL
CLOMR/LOMR		SO-19 APPROVAL	
TRAFFIC CIRCULATION LAYOUT (TCL)		PAVING PERMIT APPROV	
TRAFFIC IMPACT STUDY (TIS)		GRADING/ PAD CERTIFIC	CATION
STREET LIGHT LAYOUT		WORK ORDER APPROVAL	
X OTHER (SPECIFY) Supplemental Drainage		CLOMR/LOMR	
PRE-DESIGN MEETING?		FLOODPLAIN DEVELOPM	
IS THIS A RESUBMITTAL?: X Yes No	(	DTHER (SPECIFY)	
$\frac{15}{1115} \text{ A RESODMITTAL}, \underline{\Lambda} 165 \underline{\ } \text{NO}$			
DATE SUBMITTED: December 4, 2018	Bv: Fred C. Ar	fman	

DATE SUBMITTED: \_\_\_\_\_December 4, 2018 By: \_\_\_\_\_Fred C. Arfman \_\_\_\_\_\_

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED:

FEE PAID:\_\_\_\_

ISAACSON & ARFMAN, P.A.



**Consulting Engineering Associates** 

Thomas O. Isaacson, PE(RET.) & LS(RET.) . Fred C. Arfman, PE . Åsa Nilsson-Weber, PE

December 4, 2018

City of Albuquerque Hydrology Dept. Attn: Dana Peterson P.E.

### RE: NUEVO ATRISCO Grading and Drainage Plan Resubmittal Hydrology File: K10/D058

Dear Mr. Peterson:

Attached with this letter is a copy of the revised Grading and Drainage Plan for the above referenced project. Revisions are in response to your 'Prior to Building Permit' numbered comments dated November 14, 2018 as follows:

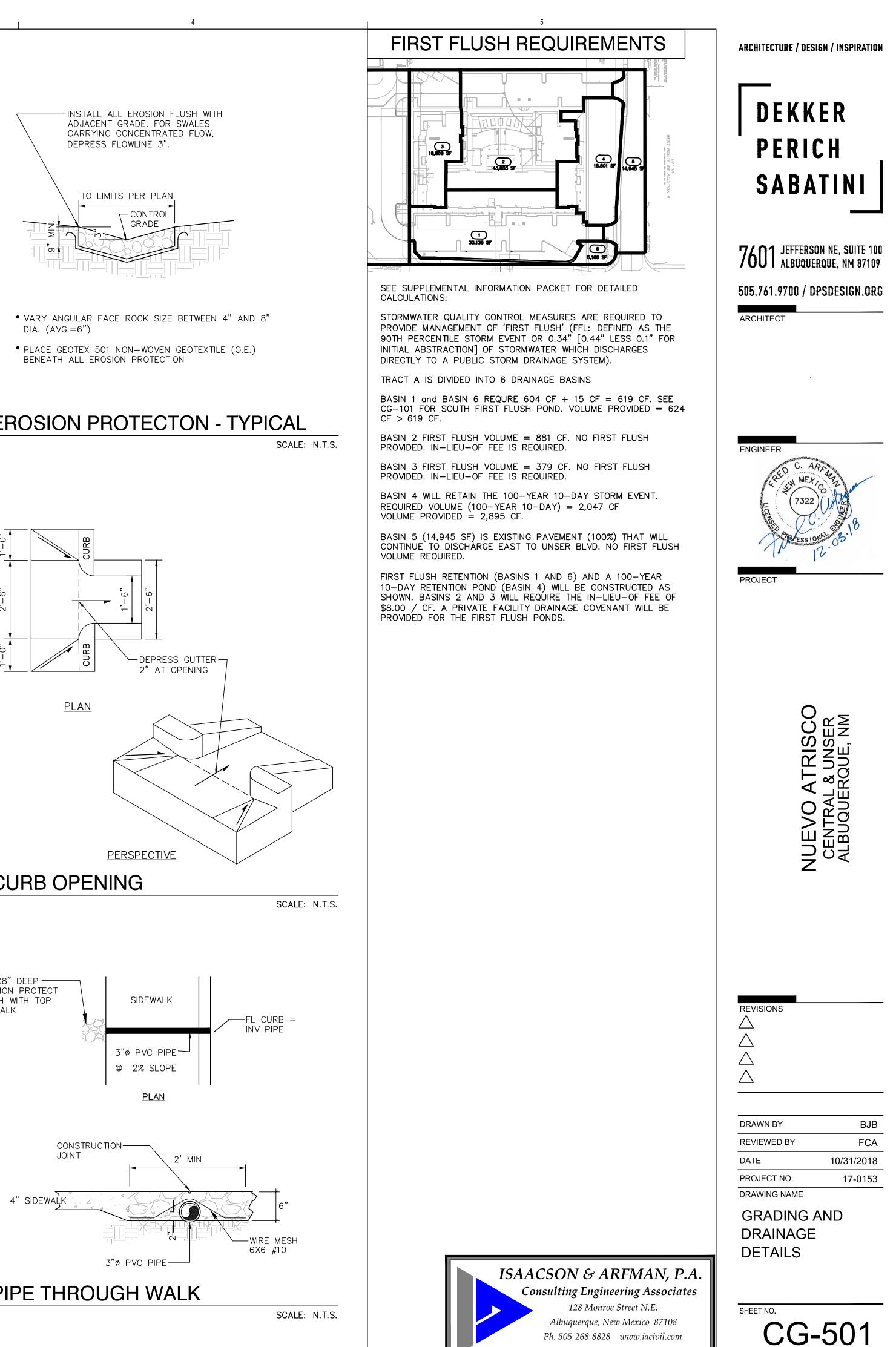
- 1. A digital (.pdf) submittal has been emailed to <u>PLNDRS@cabq.gov</u> as required.
- 2. A copy of the recorded plat is included in the e-mail submittal.
- 3. 'Conceptual' markings have removed from the Supplemental Information packet (SIP) cover.
- 4. The basin calculations have been reviewed and updated as needed.
- 5. A copy of the paid Fee-in-Lieu receipt for \$10,080 is attached.
- 6. Keyed note 11 has been addressed.
- 7. Owner has directed the contractor to obtain and submit an ESC plan to the Stormwater Quality Engineer.

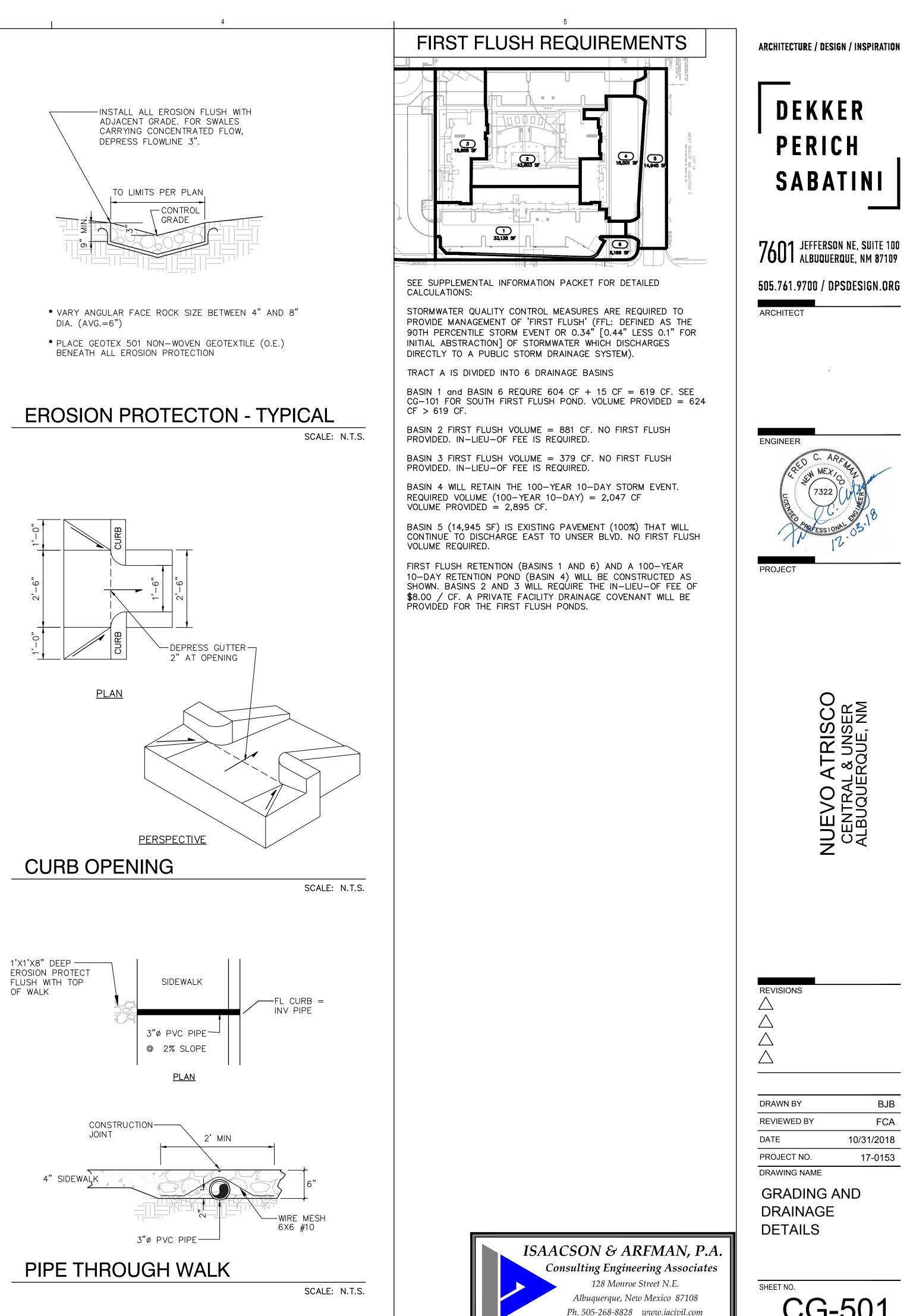
Please let me or Fred Arfman, PE (Project Engineer) know if you have any additional questions or comments.

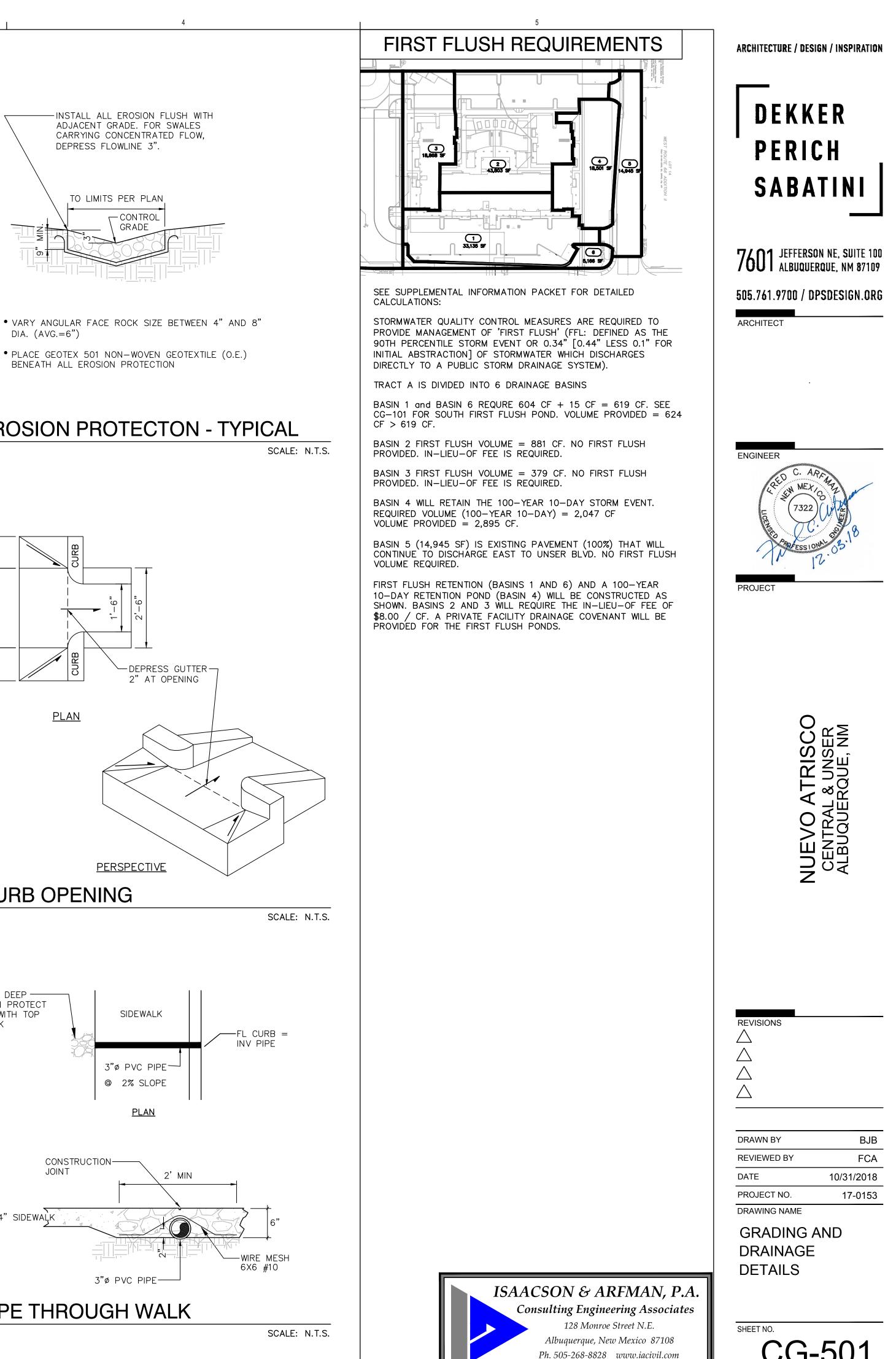
Sincerely, Isaacson & Arfman, PA

## Bryan J. Bobríck

Bryan J. Bobrick Project Manager CC: Fred Arfman, PE (Project Engineer)

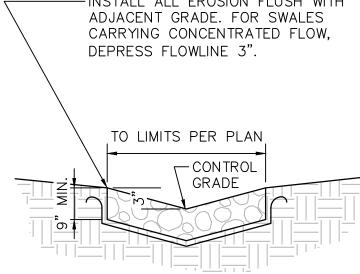


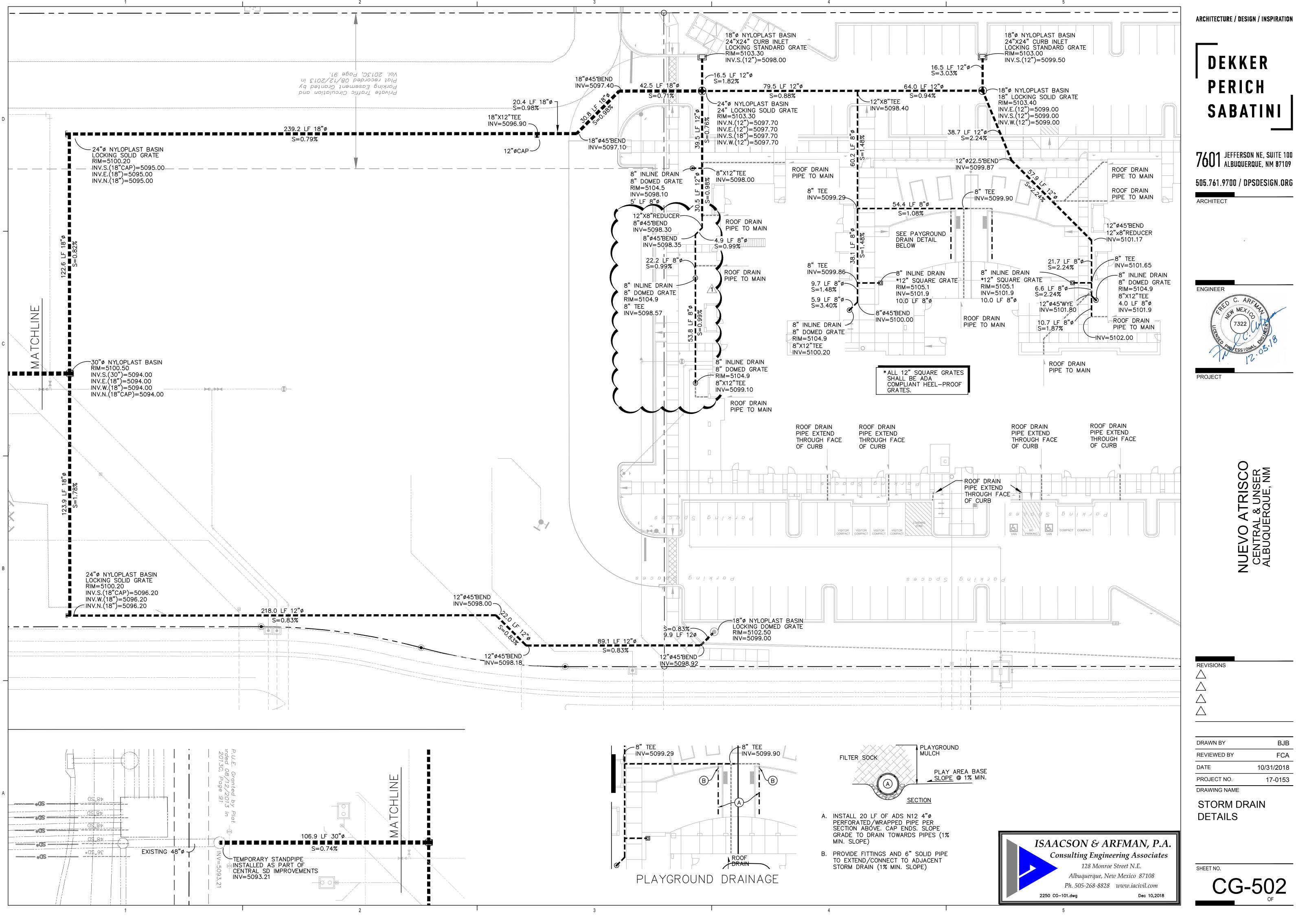




2250 CG-101.dwg

Dec 10,2018







City of Albuquerque Treasury J-24 Deposit 11/29/2018 Office: Date: ANNEX Station ID Cashier: E39083 9835 8atch: Trans€ 66 TREASURY DIVISION DAILY DEPOSIT 305 Activity ID7547210 Account: 461615 Project ID24\_MS4 Bus.Unit: PCDMD Dept ID: \$10,080.00 Alloc Amt: **PROJECTS Only** \$10,080.00 Trans Amt: Check Tendered : \$10,080.00

# Payment In-Lieu for Storm Water Quality **Volume Requirement**

Transmittals for:

CASH COUNT	AMOUNT	ACCOUNT NUMBER	FUND NUMBER	BUSINESS UNIT	PROJECT ID	ACTIVITY ID	AMOUNT
TOTAL CHECKS	\$ 10,080.00	461615	305	PCDMD	24_MS4	7547210	\$ 10,080.00
TOTAL AMOUNT	-					TOTAL DEPOSIT	\$10,080.00

Hydrology#: K10D058 Payment In-Lieu For Storm Water Quality Volume Requirement	Name: Nuevo Atrisco- North Tract, 44874 sf imp
Address/Legal Description: NWC of Central and Unser NW TrB-1, West Route 66 Add'n II	
DEPARTMENT NAME:Planning Department/Development	t Review Services, Hydrology
PREPARED BY Dana Peterson PH	HONE 924-3695
BUSINESS DATE11/14/18	
DUAL VERIFICATION OF DEPOSIT	RE
AND BY	
Remitter:	
BANK:	

The Payment-in-Lieu can be paid at the Plaza del Sol Treasury, 600 2<sup>nd</sup> St. NW. Bring two copies of this invoice to the Treasury and provide a copy of the receipt to Hydrology, Suite 201, 600 2<sup>nd</sup> St. NW, or e-mail with the Hydrology submittal to PLNDRS@cabq.gov.

NPDES FORM 3510-9	Sepa	UNITED STATES ENVIRONMENTAL PRO WASHINGTON, DC 2040 NOTICE OF INTENT (NOI) FOR THE 2017 NPDE	50	FORM Approved OMB No. 2040-0004
identified in Section II of this form. IV of this form. Permit coverage is	Submission of this NOI also constitutes notice that the required prior to commencement of construction activity	ection III of this form requests authorization to discharge p operator identified in Section III of this form meets the elig y until you are eligible to terminate coverage as detailed in ate or if you were never eligible for permit coverage. Refer	ibility requirements of Part 1.1 CGP Part 8 of the CGP. To obtain authori	P for the project identified in Section ization, you must submit a complete
Permit Information				
NPDES ID: NMR1001RB				
State where your construction	site is located: NM			
Is your construction site locate	ed on Indian Country Lands? □ YES ☞ NC	)		
Are you requesting coverage u _definitions_508.pdf)? □ YES ☞ NO	nder this NOI as a <i>"Federal Operator"</i> as defined in	Appendix A (https://www.epa.gov/sites/production/file	s/2017-02/documents/2017_cgp_fi	nal_appendix_a
Have stormwater discharges fr	om your current construction site been covered pro	eviously under an NPDES permit?	)	
Will you use polymers, floccul	ants, or other treatment chemicals at your construc	tion site? □ YES ☞ NO		
Has a Stormwater Pollution Pro	evention Plan (SWPPP) been prepared in advance o	f filling this NOI, as required? ☑ YES □ NO		
		(https://www.epa.gov/sites/production/files/2017-02/do ndangered species listed under the Endangered Specie		
Have you completed the screen protection of historic propertie I YES I NO		tes/production/files/2017-02/documents/2017_cgp_final	_appendix_ehistoric_properti	es_reqs_508.pdf) relating to the
discharges not expressly authors permit via any means, Includin	orized in this permit cannot become authorized or any the Notice of Intent (NOI) to be covered by the per-	allowable stormwater discharges in Part 1.2.1 and the a shielded from liability under CWA section 402(k) by dis rmit, the Stormwater Pollution Prevention Plan (SWPP ges listed in Parts 1.2.1 and 1.2.2 will be discharged, ti	sclosure to EPA, state or local aut P), during an Inspection, etc. If a	thorities after issuance of this ny discharges requiring NPDES
Operator Information				
Operator Information				
Operator Name: Pavilion Constr	uction, LLC			
Mailing Address:				
Street/Location: 2511 Broadben	t Pkwy NE, Suite A			
City: Albuquerque		State: NM	Zip Code: 87107	
County or Similar Government	: Subdivision: BERNALILLO			
Operator Point of Contact				
First Name, Middle Initial, Last				
Phone: 505-503-8812	Ext.			
Email: igriffin@pavilionconstruct	ion.com			
Project/Site Information				
Project/Site Name: Nuevo Atriso	co Apartments			
Project/Site Address				
Street/Location: 201 Unser Bou	levard NW			
City: Albuquerque		State: NM	Zip Code: 87121	
County or Similar Government				
Latitude/Longitude: 35.0788°N	, 100.7242 VV			

Latitude/Longitude Data Source: Google Earth		Horizontal Reference Datum: NAL	0.83
Project Start Date: 2019-02-11	Project End Date: 2020-04-10		Estimated Area to be Disturbed: 35
Types of Construction Sites: • Multi-Family Residential • Utility			
Will there be demolition of any structure built or renovated before	e January 1, 1980?	⊮ NO	
Was the pre-development land use used for agriculture?	YES 🗹 NO		
Have earth-disturbing activities commenced on your project/site?	□YES I NO		
Is your project located on a property of religious or cultural sign	ficance to an Indian tribe?	□YES I INO	
Discharge Information			
Does your project/site discharge stormwater into a Municipal Sep	arate Storm Sewer System (MS4)?	⊠YES □NO	
Are there any waters of the U.S. within 50 feet of your project's ear	th disturbances? □ YES	I'NO	
Are any of the waters of the U.S. to which you discharge designat to support propagation of fish, shellfish, and wildlife and recreat (https://www.epa.gov/sites/production/files/2017-02/documents/20 YES INO	ion in and on the water) or as a Ti	er 3 water (Outstanding National Reso	
001: Unnamed Canal/Ditch Latitude/Longitude: 35.0662°N, 106.6985°W			
Tier Designation: N/A			
Is this receiving water impaired (on the CWA303(d) list)?	YES 🕼 NO		
Has a TMDL been completed for this receiving waterbody?	⊐YES ⊠rNO		
Stormwater Pollution Prevention Plan (SWPPP)			
First Name, Middle Initial, LastName: Kelley V Fetter, P.E., C	CPSWQ, CPMSM		
Phone: 505-867-4040	Ext.		
Email: info@e2rc.com			
Endangered Species Protection			
Using the Instructions in Appendix D of the CGP, under which cri	terion listed in Appendix D are yo	ou eligible for coverage under this per	mit? Criterion A
Provide a brief summary of the basis for criterion selection listed	above (the necessary content for	a supportive basis statement is provid	ded under the criterion you selected.):
The U.S. FWS Species Report and IPaC Co or candidate species in the action are. The consists of densely wooded riparian areas r other impediments. However, the action are species the habitat is near the action area.	nearest critical habitat is near a water source. As a a in question does not p	2.38 miles east of the proje an aviary species, the bird's rovide the preferred habitat	ect. The Yellow - Billed Cuckoo habitat s movement is not limited by borders or t or food requirements to support the
Historic Preservation			
Are you installing any stormwater controls as described in Appendiate require subsurface earth disturbances? (Appendix E (https://w	ww.epa.gov/sites/production/file	s/2017-02/documents/2017_cgp_final_a	appendix_ehistoric_properties_reqs_508.pdf), Step 1)
Have prior surveys or evaluations conducted on the site and (https://www.epa.gov/sites/production/files/2017-02/documer			nces have precluded the existence of historic properties? (Appendi p 2):

Certified By: Ira D. Griffin (IRAGRIFFIN)

Certified On: 11/30/2018 1:36 PM

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel property gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment for knowing violations. Signing an electronic document on behalf of another person is subject to criminal, civil, administrative, or other lawful action.

**DECEMBER 3, 2018** 

# Supplemental Drainage Calculations

for

Nuevo Atrisco

# Grading and Drainage Plan Submittal



# **Project Information**

<u>PROPERTY</u>: THE SITE IS A PARTIALLY DEVELOPED COMMERCIAL PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP K-10. THE SITE IS BOUND TO THE EAST BY UNSER BLVD, TO THE NORTH AND WEST BY DEVELOPED COMMERCIAL PROPERTY AND SARRACINO PI NW AND TO THE SOUTH BY UNDEVELOPED COMMERCIAL PROPERTY AND CENTRAL AVE.

<u>PROPOSED IMPROVEMENTS</u>: THE PROPOSED IMPROVEMENTS INCLUDE APARTMENTS, RETAIL/OFFICE, PARKING, AND LANDSCAPING.

LEGAL: TRACT A, NUEVO ATRISCO, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

<u>BENCHMARK</u>: VERTICAL DATUM IS BASED UPON THE ALBUQUERQUE CONTROL SURVEY MONUMENT "9-K10", ELEVATION = 5117.72 FEET (NAVD 1988).

OFF-SITE FLOW: NO OFF-SITE DRAINAGE AFFECTS THIS PROPERTY.

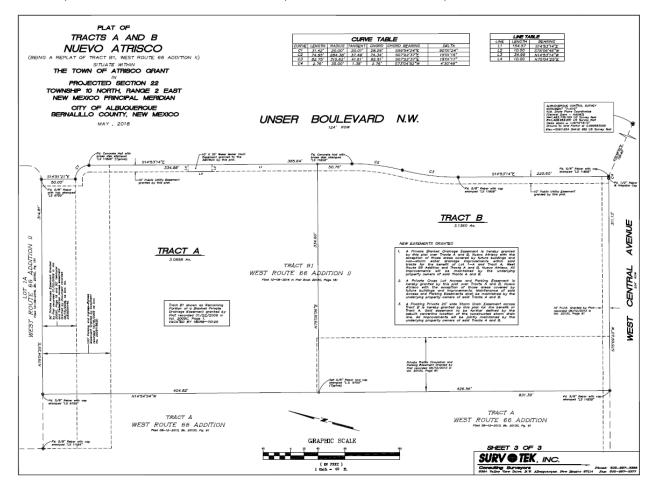
<u>FLOOD HAZARD</u>: PER BERNALILLO COUNTY FIRM MAP 35001C0328J, MAP (REVISION DATE NOVEMBER 4, 2016), THE SITE IS LOCATED WITHIN FLOODZONE 'X' DESIGNATED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN. A PORTION OF THE ADJACENT STREET, CENTRAL AVENUE, IS ENCUMBERED BY ZONE AO (DEPTH 1').

DRAINAGE PLAN CONCEPT: PER THE UNSER BOULEVARD RECONSTRUCTION DRAINAGE REPORT (COA HYDROLOGY FILE K10/D057,) BY HUITT-ZOLLARS DATED APRIL 2017, THIS PROPERTY FALLS WITHIN DRAINAGE BASIN 13D.3. THE OVERALL BASIN IS SIZED AT 17.613 ACRES WITH A CALCULATED DISCHARGE OF 60.77 CFS (3.45 CFS/ACRE). NEW STORM DRAIN IMPROVEMENTS WILL BE CONSTRUCTED (CITY PROJECT NO. 4383.91) WHICH INCLUDES STORM DRAIN ACCESS TO THE EXISTING 48" STORM DRAIN PROVIDED FOR THIS SITE (PASSING FLOW UNDER CENTRAL AVENUE).



COA Hydrology and Transportation Map

The property (West Route 66 Addition II, Tract B1) is 6.2218 acres has been subdivided into two tracts. Tract A (north side @ 3.0858 ac. and Tract B (south side @ 3.1360 acres).



### NEW EASEMENTS GRANTED

- A Private Blanket Drainage Easement is hereby granted by this plat over Tracts A and B, Nuevo Atrisco with the exception of those areas covered by future buildings and non-storm water drainage improvements within said tracts for the benefit of Lot 1-A and Tract A, West Route 66 Addition and Tracts A and B, Nuevo Atrisco. All improvements will be maintained by the underlying property owners of said Tracts A and B.
- 2. A Private Cross Lot Access and Parking Easement is hereby granted by this plat over Tracts A and B, Nuevo Atrisco with the exception of those areas covered by future buildings and improvements. Maintenance of said Access and Parking Easements shall be maintained by the underlying property owners of said Tracts A and B.
- 3. A Floating Private 20' wide Storm Drain Easement across Tract B is hereby granted by this plat for the benefit of Tract A. Said easement to be further defined by the asbuilt centerline location of the constructed storm drain line. All improvements will be jointly maintained by the underlying property owners of said Tracts A and B.

### ALLOWABLE DISCHARGE

Per the Unser Boulevard Reconstruction Drainage Report (COA Hydrology File K10/D057 dated April 2017) by Huitt-Zollars, West Route 66 Addition II, Tracts A and B fall within Drainage Basin 13D.3 (17.613 acres) which has an allowable release rate of 60.77 cfs or 3.45 cfs / acre.

Tract A is 3.0858 acres. At 3.45 cfs/acre, the property is permitted to discharge:

### 3.45 \* 3.0858 = 10.65 cfs ALLOWABLE DISCHARGE FROM TRACT A

Note: Once it develops, Tract B will be permitted an equivalent discharge rate of 3.45 cfs/acre or

3.45 \* 3.1361 = 10.82 cfs TOTAL ALLOWABLE DISCHARGE FROM TRACT B

The cumulative non-pervious area = 41570 sf or 30.9% of the property.

Based on Drainage Design Criteria for City or	ON-SI	,		eu Jan.,	1995
AREA OF TRACT A	134418	SF	=	3.0858	ACRE
	100-year, 6-hour				-
	<b>DEVELOPED FI</b>	LOWS:			<b>EXCESS PRECIP:</b>
			Treatment SF	%	Precip. Zone 1
At an allowable discharge of 3.45 cfs/acre	Area A	=	0	0%	$E_{A} = 0.44$
This tract is permitted to discharge	Area B	=	20163	15.0%	$E_{\rm B} = 0.67$
10.65 cfs	Area C	=	21372	15.9%	$E_{\rm C} = 0.99$
	Area D	=	92883	69.1%	$E_{D} = 1.97$
	Total Area	=	134418	100%	-
On-Site Weighted Excess Precipitation (100-Y	Year, 6-Hour Storm)				
Weighted E =	$\underline{E}_{A}A_{A} + \underline{E}_{B}A_{B} + \underline{E}_{B}$	$_{C}A_{C} + E$	$_{\rm D}A_{\rm D}$		
	$A_A + A_B + A_B$	$A_{C} + A_{D}$			

	$A_A + A_B + A_C + A_D$		
	Developed E	=	1.62 in.
On-Site Volume of Runoff: V360 =	E*A / 12		
	Developed V <sub>360</sub>	=	18137 CF

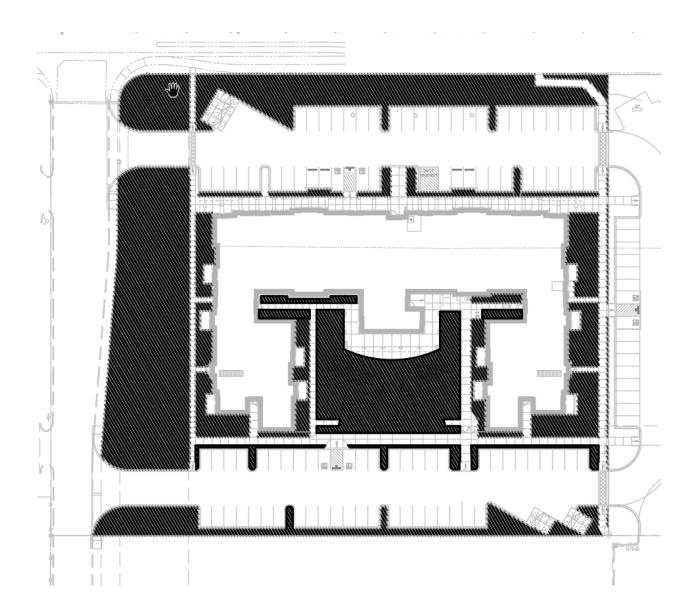
On-Site Peak Discharge Rate:  $Qp = Q_{pA}A_A + Q_{pB}A_B + Q_{pC}A_C + Q_{pD}A_D / 43,560$ For Precipitation Zone 1

$Q_{pA}$	=	1.29	$Q_{pC}$	=	2.87			
$Q_{pB}$	=	2.03	Q <sub>pD</sub>	=	4.37			_
			Developed Q <sub>p</sub>	=		11.7	CFS	

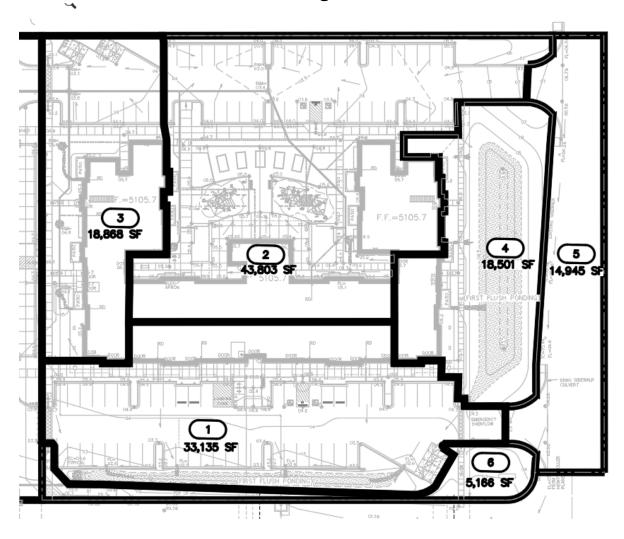
The property will generate 11.7 cfs druing the 100-eyar 6-hour storm event. The allowable discharge is 10.65 cfs. The difference must be retained / detained on-site.

# Pervious / Impervious Area Exhibit

Pervious area = hatched (41570 sf or 30.9%).



## Drainage Basins

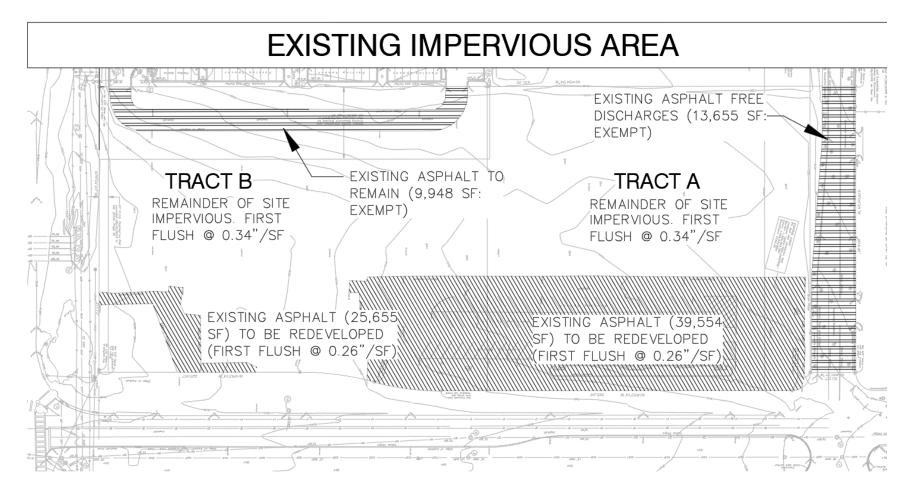


### STORMWATER QUALITY FIRST FLUSH

Stormwater quality control measures are required to provide management of 'first flush'. COA Hydrology currently has three categories relating to stormwater quality volume requirements:

- New Construction: Stormwater quality volume based on the 90th percentile storm event or 0.34" [0.44" less 0.1" for initial abstraction] of stormwater which discharges directly to a public storm drainage system).
- Existing Construction: Existing impervious area to remain is excempt.
- Redevelopment: Existing impervious area that is being redeveloped (removed/replaced) is subject to a reduced rate of 0.26"/sf.

Per the Hydrology approved supplemental calculations provided for Preliminary / Final Plat and DRB Site Plan:



BASIN NO. 1		DESCRIPTION	to east storm drain system
Area of basin flows =	33135	SF =	0.8 Ac.
		Freatment areas as shown in table to the right	
The following culculate		hted Excess Precipitation (see formula above	
	Weighted E	= 1.83 in.	$\mathbf{B} = \mathbf{6\%}$
	0	ne of Runoff (see formula above)	C = 6%
	V <sub>360</sub>	= 5062 CF	$\mathbf{D} = 88\%$
		Discharge Rate: (see formula above)	
	Q <sub>P</sub>	= 3.15 cfs	
BASIN NO. 2	٦		o southwest storm drain system
Area of basin flows =	43803	SF =	1.0 Ac.
The following calculation	ons are based on '	Freatment areas as shown in table to the right	nt LAND TREATMENT
U		hted Excess Precipitation (see formula above	
	Weighted E	= 1.64 in.	B = 14.0%
		ne of Runoff (see formula above)	C = 15.0%
	V <sub>360</sub>	= 5990 CF	D = 71.0%
		Discharge Rate: (see formula above)	
	Q <sub>P</sub>	= 3.8 cfs	
BASIN NO. 3		<b>DESCRIPTION</b> t	o southwest storm drain system
Area of basin flows =	18868	SF =	0.4 Ac.
The following calculation	ons are based on '	Treatment areas as shown in table to the righ	nt LAND TREATMENT
	Sub-basin Weigl	hted Excess Precipitation (see formula above	A = 0%
	Weighted E	= 1.66 in.	B = 13%
	Sub-basin Volun	ne of Runoff (see formula above)	C = 14%
	V <sub>360</sub>	= 2616 CF	D = 73%
	Sub-basin Peak I	Discharge Rate: (see formula above)	
	0-	17 -6	
	Qp	= 1.7 cfs	
BASIN NO. 4	QP	= 1.7 CIS DESCRIPTION	self ponding (100% retention)
<b>BASIN NO.</b> 4 Area of basin flows =	18501		self ponding (100% retention) 0.4 Ac.
Area of basin flows =	18501	DESCRIPTION	0.4 Ac.
Area of basin flows =	18501 ons are based on 7	DESCRIPTION SF =	0.4 Ac. nt LAND TREATMENT
Area of basin flows =	18501 ons are based on 7	DESCRIPTION SF = Treatment areas as shown in table to the right	0.4 Ac. nt LAND TREATMENT
Area of basin flows =	18501 ons are based on ' Sub-basin Weigl Weighted E	DESCRIPTION SF = Treatment areas as shown in table to the righted Excess Precipitation (see formula above	$\begin{array}{c} 0.4  Ac. \\ Iterational of the second seco$
Area of basin flows =	18501 ons are based on ' Sub-basin Weigl Weighted E	DESCRIPTION         SF       =         Treatment areas as shown in table to the righted Excess Precipitation (see formula above =         1.05 in.	$\begin{array}{c} 0.4  Ac. \\ \text{Int}  \boxed{\text{LAND TREATMENT}} \\ e)  A = 0\% \\ B = 40\% \end{array}$
Area of basin flows =	18501 ons are based on ' Sub-basin Weigh Weighted E Sub-basin Volun V360	DESCRIPTION         SF       =         Treatment areas as shown in table to the righted Excess Precipitation (see formula above)         =       1.05 in.         me of Runoff (see formula above)	$\begin{array}{rcl} 0.4 & Ac. \\ \text{Int} & \hline \text{LAND TREATMENT} \\ \text{e)} & A = & 0\% \\ & B = & 40\% \\ & C = & 41\% \\ \end{array}$
Area of basin flows =	18501 ons are based on ' Sub-basin Weigh Weighted E Sub-basin Volun V360	DESCRIPTION         SF       =         Treatment areas as shown in table to the righted Excess Precipitation (see formula above)         =       1.05 in.         ne of Runoff (see formula above)         =       1616	$\begin{array}{rcl} 0.4 & Ac. \\ \text{Int} & \hline \text{LAND TREATMENT} \\ \text{e)} & A = & 0\% \\ & B = & 40\% \\ & C = & 41\% \\ \end{array}$
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Area of basin flows = The following calculation BASIN NO. 5 Area of basin flows =	$\begin{array}{c} 18501 \\ \text{ons are based on } \\ \text{Sub-basin Weig} \\ \hline \\ \text{Weighted E} \\ \text{Sub-basin Volun} \\ \hline \\ \\ \text{Sub-basin Peak I} \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	DES CRIPTIONSF=Treatment areas as shown in table to the righ hted Excess Precipitation (see formula above)= $1.05$ in.ne of Runoff (see formula above)= $1616$ CFDischarge Rate: (see formula above)= $1.2$ cfsDESCRIPTIONSF=Treatment areas as shown in table to the righ hted Excess Precipitation (see formula above)=1.2Image: SF=Treatment areas as shown in table to the righ hted Excess Precipitation (see formula above)= $1.97$ in.	$\begin{array}{c} 0.4  Ac. \\ \text{IAND TREATMENT} \\ e)  A = & 0\% \\ B = & 40\% \\ C = & 41\% \\ D = & 19\% \end{array}$ $\begin{array}{c} \text{toric free discharge to Unser Blvd.} \\ 0.3  Ac. \\ \text{IAND TREATMENT} \\ e)  A = & 0\% \\ B = & 0\% \end{array}$
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Area of basin flows =         The following calculation         BASIN NO.       5         Area of basin flows =         The following calculation         TRACT       6         Area of basin flows =	18501         ons are based on '         Sub-basin Weig!         Weighted E         Sub-basin Volun         Sub-basin Peak I         QP         14945         ons are based on '         Sub-basin Weig!         Weighted E         Sub-basin Weig!         Weighted E         Sub-basin Peak I         QP         Sub-basin Weig!         Weighted E         Sub-basin Peak I         QP         5166         ons are based on '         Sub-basin Weig!         Weighted E	DESCRIPTIONSF=Treatment areas as shown in table to the righ hted Excess Precipitation (see formula above)=1.05 in.ac of Runoff (see formula above)=1616CFDischarge Rate: (see formula above)=1.2cfsDESCRIPTIONhisSF=1.97 in.ac of Runoff (see formula above)=1.97 in.ac of Runoff (see formula above)=2453CFDischarge Rate: (see formula above)=1.5cfsDESCRIPTIONSF=1.5cfsDESCRIPTIONSF=1.5cfsDESCRIPTIONSF=Treatment areas as shown in table to the righthed Excess Precipitation (see formula above)=1.5cfsDESCRIPTIONSF=Treatment areas as shown in table to the righthed Excess Precipitation (see formula above)	$\begin{array}{c} 0.4  Ac. \\ \hline \text{LAND TREATMENT} \\ \text{e})  A = & 0\% \\ B = & 40\% \\ C = & 41\% \\ D = & 19\% \\ \hline \\ \hline \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ B = & 0\% \\ C = & 0\% \\ D = & 100\% \\ \hline \\ \hline \\ \text{to east storm drain system} \\ \hline \\ 0.119  Ac. \\ \hline \\ \text{to east storm drain system} \\ \hline \\ 0.119  Ac. \\ \hline \\ th Interaction of the transmission of transmission of the transmission of the transmission of the transmission of transmission of the transmission of tr$
Area of basin flows = The following calculation BASIN NO. 5 Area of basin flows = The following calculation TRACT 6 Area of basin flows =	18501         Ins are based on '         Sub-basin Weigl         Weighted E         Sub-basin Peak I         QP         14945         ons are based on '         Sub-basin Weigl         Weighted E         Sub-basin Weigl         Weighted E         Sub-basin Volun         V360         Sub-basin Velun         V360         Sub-basin Velun         Sub-basin Velun         Sub-basin Velun         Sub-basin Velun         Sub-basin Velun         Sub-basin Weigl         Sub-basin Velun         Sub-basin Velun         Sub-basin Velun	DESCRIPTIONSF=Treatment areas as shown in table to the righ hted Excess Precipitation (see formula above)=1.05 in.ac of Runoff (see formula above)=1616CFDischarge Rate: (see formula above)=1.2cfsDESCRIPTIONhisSF=1.97 in.ac of Runoff (see formula above)=1.97 in.ac of Runoff (see formula above)=2453CFDischarge Rate: (see formula above)=1.5cfsDESCRIPTIONSF=1.5cfsDESCRIPTIONSF=0.94 in.	$\begin{array}{c} 0.4  \text{Ac.} \\ \hline \text{IAND TREATMENT} \\ \text{e})  A = & 0\% \\ B = & 40\% \\ C = & 41\% \\ D = & 19\% \\ \hline \text{toric free discharge to Unser Blvd.} \\ \hline \text{0.3 }  \text{Ac.} \\ \hline \text{nt}  \boxed{\text{LAND TREATMENT}} \\ \text{e})  A = & 0\% \\ B = & 0\% \\ C = & 0\% \\ D = & 100\% \\ \hline \hline \text{to east storm drain system} \\ \hline \text{0.119 }  \text{Ac.} \\ \hline \text{nt}  \boxed{\text{LAND TREATMENT}} \\ \text{e})  A = & 0\% \\ B = & 45\% \\ \hline \end{array}$
Area of basin flows = The following calculation BASIN NO. 5 Area of basin flows = The following calculation TRACT 6 Area of basin flows =	18501         ons are based on '         Sub-basin Weigl         Weighted E         Sub-basin Volun         V360         Sub-basin Peak I         QP         14945         ons are based on '         Sub-basin Weigl         Weighted E         Sub-basin Volun         V360         Sub-basin Veigl         Weighted E         Sub-basin Veigl         QP         5166         ons are based on '         Sub-basin Weigl         Weighted E         Sub-basin Volun         Sub-basin Volun         Sub-basin Volun         Sub-basin Volun         Veighted E         Sub-basin Volun         V360	DESCRIPTIONSF=Treatment areas as shown in table to the righ hed Excess Precipitation (see formula above)=1.05 in.me of Runoff (see formula above)=1616CFDischarge Rate: (see formula above)=1.2cfsDESCRIPTIONhisSF=Treatment areas as shown in table to the righ hed Excess Precipitation (see formula above)=1.97 in.me of Runoff (see formula above)=2453CFDischarge Rate: (see formula above)=1.5cfsDischarge Rate: (see formula above)=0.94 in.me of Runoff (see formula above)=0.94 in.me of Runoff (see formula above)=0.94 in.me of Runoff (see formula above)=406CF	$\begin{array}{c} 0.4  Ac. \\ \hline \text{LAND TREATMENT} \\ \text{(b)}  A = & 0\% \\ B = & 40\% \\ C = & 41\% \\ D = & 19\% \\ \hline \\ \hline \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.4  C = & 0\% \\ \hline \\ D = & 100\% \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \ \\ \end{tabularge to Unser Blvd.} \\ \hline \\ \ \\ \end{tabularge to Unser Blvd.} \\ \hline \\ \end{tabularget to Unser Blvd.} \\ \hline \\ \end{tabularget to Unser Blvd.} \\ $
Area of basin flows = The following calculation BASIN NO. 5 Area of basin flows = The following calculation TRACT 6 Area of basin flows =	18501         ons are based on '         Sub-basin Weigl         Weighted E         Sub-basin Volun         V360         Sub-basin Peak I         QP         14945         ons are based on '         Sub-basin Weigl         Weighted E         Sub-basin Volun         V360         Sub-basin Veigl         Weighted E         Sub-basin Veigl         QP         5166         ons are based on '         Sub-basin Weigl         Weighted E         Sub-basin Volun         Sub-basin Volun         Sub-basin Volun         Sub-basin Volun         Veighted E         Sub-basin Volun         V360	DESCRIPTIONSF=Treatment areas as shown in table to the righted Excess Precipitation (see formula above)=1.05 in.ne of Runoff (see formula above)=1616CFDischarge Rate: (see formula above)=1.2cfsDESCRIPTIONhisSF=1.97 in.ne of Runoff (see formula above)=1.97 in.ne of Runoff (see formula above)=1.97 in.ne of Runoff (see formula above)=1.97 in.se of Runoff (see formula above)=1.5cfsDESCRIPTIONSF=1.5cfsDESCRIPTIONse of Runoff (see formula above)=0.94 in.ne of Runoff (see formula above)	$\begin{array}{c} 0.4  Ac. \\ \hline \text{LAND TREATMENT} \\ \text{(b)}  A = & 0\% \\ B = & 40\% \\ C = & 41\% \\ D = & 19\% \\ \hline \\ \hline \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.3  Ac. \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ 0.4  C = & 0\% \\ \hline \\ D = & 100\% \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \text{toric free discharge to Unser Blvd.} \\ \hline \\ \ \\ \ \\ \end{tabularge to Unser Blvd.} \\ \hline \\ \ \\ \end{tabularge to Unser Blvd.} \\ \hline \\ \end{tabularget to Unser Blvd.} \\ \hline \\ \end{tabularget to Unser Blvd.} \\ $

## Site Discharge

The property will generate 11.7 cfs druing the 100-year 6-hour storm event.

The allowable discharge is 10.65 cfs.

Basin 4 will retain the 100-year 10-day storm event reducing the total discharge by 1.2 cfs. Therefore, the total discharge from the property = 11.7 - 1.2 = 10.5 cfs < 10.65 cfs allowable.

## Drainage basins and first flush

Basin 1 (33,135 sf) includes 88% impervious area (29,159 sf). The basin was previously 100% impervious so the basin is permitted a reduced rate of 0.26"/sf. Required volume = (29,159 x 0.26 / 12) = 604 cf. Design volume = 624 cf.

Basin 2 (43,803 sf) includes 71% impervious area (31,100 sf). Required first flush = (31,100 x 0.34 / 12) = 881 cf.

No first flush provided. In-lieu-of fee = 881 \*\$/cf = \$7,048.00.

Basin 3 (18,868 sf) includes 73% impervious area (13,774 sf). The basin was previously 9% impervious so that portion is permitted a reduced rate of 0.26"/sf. Required first flush = ((1,698 x 0.26) + (12,076 x 0.34)) / 12 = 379 cf. No first flush provided. In-lieu-of fee =  $379 * \frac{8}{50} = \frac{3}{50} = \frac{12}{50} = \frac{1$ 

Basin 4 (18,501 sf) includes 19% impervious area (3,515 sf). Basin 4 will fully retain the 100-year 10-day storm event

Required volume (100-year 10-day) = 1,616 cf + 431 cf = 2,047 cf. Volume provided = 2,840 cf.

Note: For ponds which hold water for longer than 6 hours, longer duration storms are required to establish runoff volumes. Since the additional precipitation is assumed to occur over a long period, the additional volume is based on the runoff from the impervious areas only.

V <sub>360</sub> (from previous calculation)	1616
Area Treatment D (SF)	3515
Zone	1

For 10 Day Storms:

 $V_{10day} \;=\; V_{360} \;+\; A_D \;\; \ast \;\; (P_{10day} \;\text{--}\; P_{360}) \ast 43560 \; SF\!/AC$ 

V <sub>360</sub>	=	1616
A <sub>D</sub> (SF)	=	3515
Zone	=	1
P <sub>10day</sub>	=	3.67
P <sub>360</sub>	=	2.2
V <sub>360</sub>	=	1616
+ imp. area	=	431
mp: area		
, inp. aca		4

	P <sub>360</sub>
Zone	D
1	2.20
2	2.35
3	2.60
4	2.90

P <sub>10</sub>	Oday
Zone	D
1	3.67
2	3.95
3	4.90
4	5.95

from Table A-2 Depth (inches) at 100-yr Storm

Basin 5 (14,945 sf) is existing pavement (100%) that will continue to discharge east to Unser Blvd. No first flush volume required.

Basin 6 (5,166 sf) includes 10% impervious area (517 sf). The basin was previously 100% paved so it is permitted a reduced rate of 0.26"/sf. (517 x 0.26 / 12) = 15 cf.

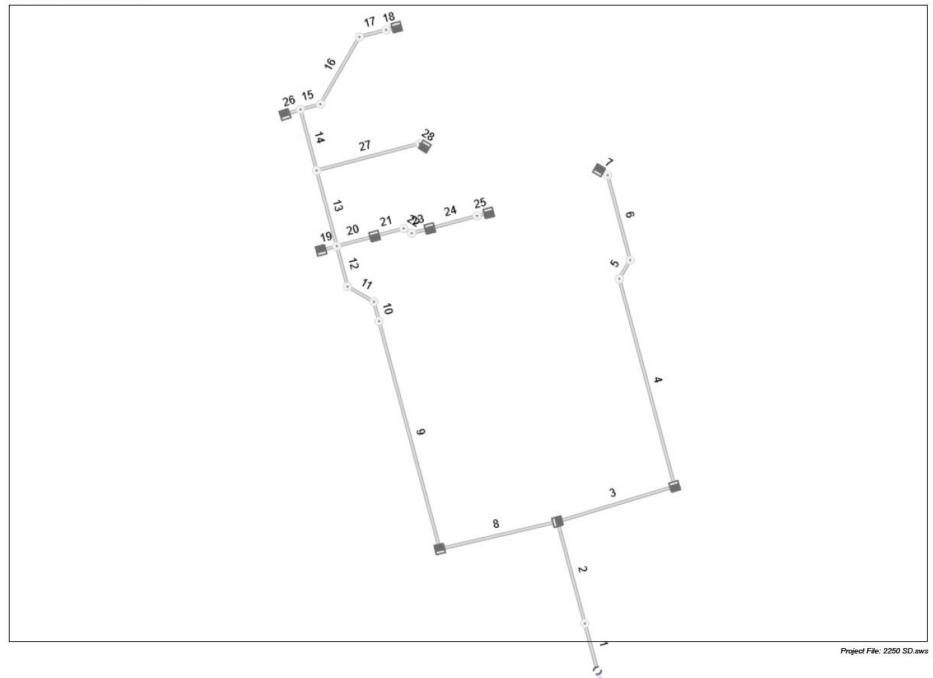
First flush is provided within the depressed landscaping before passing discharge to the east storm drain system..

First flush retention (basins 1 and 6) and a 100-year 10-day retention pond (basin 4) will be constructed as shown on the Grading and Drainage plans. Basins 2 and 3 will require the in-lieu-of fee of \$8.00 / cf = \$10,080. A private facility drainage covenant will be provided for the first flush pond.

## Plan View

Stormwater Studio 2018 v 2.0.0.61

10-31-2018



# Energy Grade Line Calculations

Stormwater Studio 2018 v 2.0.0.61

Line	Line Size	Q	Downstream						Length	Upstream							Pipe		Junction			
No			Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev	Len	Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev	n Value	Enrgy Loss	HGLa Elev	EGLa Elev	Enrgy Loss
	(in)	(cfs)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
1	48	19.60	5093.00	2.80	9.39	5095.80	2.09	0.07	5095.87	49.50	5093.21	2.60	8.63	5095.81	2.27	0.08	5095.89	0.013	0.015	5095.82	5095.90	0.02
2	24	19.60	5093.21	2.00	3.14	5095.54	6.24	0.61	5096.15	106.90	5094.00	2.00	3.14	5096.22	6.24	0.61	5096.83	0.012	0.684	5096.39	5096.99	0.16
3	18	6.70	5094.00	1.50	1.77	5096.86	3.79	0.22	5097.08	124.01	5096.20	1.00	1.25	5097.20	5.36	0.45	5097.65	0.012	0.567	5097.49	5097.94	0.29
4	12	3.00	5096.20	1.00	0.79	5097.80	3.82	0.23	5098.03	217.99	5098.00	1.00	0.79	5099.12	3.82	0.23	5099.35	0.012	1.318	5099.24	5099.47	0.12
5	12	3.00	5098.00	1.00	0.79	5099.33	3.82	0.23	5099.56	21.95	5098.18	1.00	0.79	5099.47	3.82	0.23	5099.69	0.012	0.133	5099.59	5099.82	0.12
6	12	3.00	5098.18	1.00	0.79	5099.68	3.82	0.23	5099.91	89.06	5098.92	1.00	0.79	5100.31	3.82	0.23	5100.54	0.013	0.632	5100.44	5100.66	0.12
7	12	3.00	5098.92	1.00	0.79	5100.53	3.82	0.23	5100.75	9.93	5099.00	1.00	0.79	5100.59	3.82	0.23	5100.81	0.012	0.060	5100.71	5100.93	0.12
8	18	9.20	5094.00	1.50	1.77	5096.74	5.21	0.42	5097.16	122.56	5095.00	1.50	1.77	5097.54	5.21	0.42	5097.96	0.012	0.802	5097.69	5098.11	0.15
9	18	5.60	5095.00	1.50	1.77	5098.02	3.17	0.16	5098.17	239.24	5096.90	1.50	1.77	5098.60	3.17	0.16	5098.75	0.012	0.580	5098.63	5098.78	0.03
10	18	5.60	5096.90	1.50	1.77	5098.69	3.17	0.16	5098.85	20.37	5097.10	1.50	1.77	5098.74	3.17	0.16	5098.90	0.012	0.049	5098.82	5098.98	0.08
11	18	5.60	5097.10	1.50	1.77	5098.89	3.17	0.16	5099.04	30.75	5097.40	1.50	1.77	5098.96	3.17	0.16	5099.12	0.012	0.075	5099.05	5099.20	0.09
12	18	5.60	5097.40	1.50	1.77	5099.11	3.17	0.16	5099.27	42.45	5097.70	1.50	1.77	5099.20	3.17	0.16	5099.36	0.012	0.102	5099.26	5099.42	0.06
13	12	3.90	5097.70	1.00	0.79	5099.19	4.97	0.38	5099.57	79.48	5098.40	1.00	0.79	5100.00	4.97	0.38	5100.39	0.012	0.812	5100.14	5100.52	0.13
14	12	3.10	5098.40	1.00	0.79	5100.37	3.95	0.24	5100.62	64.00	5099.00	1.00	0.79	5100.79	3.95	0.24	5101.03	0.012	0.413	5100.99	5101.23	0.21
15	8	0.80	5099.00	0.67	0.35	5101.19	2.29	0.08	5101.27	20.92	5099.50	0.67	0.35	5101.26	2.29	0.08	5101.35	0.012	0.078	5101.31	5101.39	0.04
16	8	0.80	5099.50	0.67	0.35	5101.34	2.29	0.08	5101.42	78.80	5101.20	0.45	0.25	5101.65	3.23	0.16	5101.81	0.012	0.386	5101.81	5101.97	0.16
17	8	0.80	5101.20	0.67	0.35	5101.92	2.29	0.08	5102.00	28.29	5101.80	0.42²	0.23	5102.22	3.44	0.18	5102.41	0.012	0.153	5102.22	5102.41	0.00
18	8	0.80	5101.80	0.55	0.31	5102.35	2.59	0.10	5102.46	10.93	5102.00	0.42²	0.23	5102.42	3.44	0.18	5102.61	0.012	0.059	5102.42	5102.61	0.00
19	12	0.90	5097.70	1.00	0.79	5099.41	1.15	0.02	5099.43	16.52	5098.00	1.00	0.79	5099.42	1.15	0.02	5099.44	0.012	0.009	5099.44	5099.46	0.02
20	8	0.80	5097.70	0.67	0.35	5099.37	2.29	0.08	5099.45	39.52	5098.00	0.67	0.35	5099.52	2.29	0.08	5099.60	0.012	0.148	5099.57	5099.65	0.05
21	8	0.60	5098.00	0.67	0.35	5099.62	1.72	0.05	5099.67	30.52	5098.30	0.67	0.35	5099.68	1.72	0.05	5099.73	0.012	0.064	5099.71	5099.76	0.03
22	8	0.60	5098.30	0.67	0.35	5099.73	1.72	0.05	5099.77	9.52	5098.40	0.67	0.35	5099.75	1.72	0.05	5099.79	0.012	0.020	5099.77	5099.82	0.03

Notes: 2 Critical depth.

10-31-2018

Project File: 2250 SD.sws

# Energy Grade Line Calculations

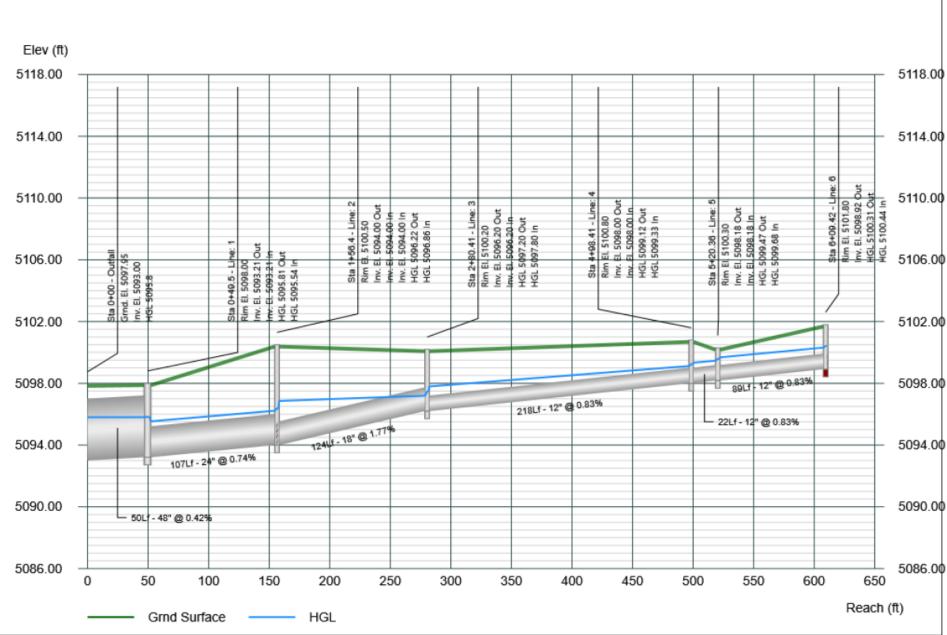
#### 10-31-2018

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Line Line		Downstream						Length	Upstream								pe	Junction		
No Size Q	Invert Elev	t Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev	Len	Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev	n Value	Enrgy Loss	HGLa Elev	EGLa Elev	Enrgy Loss
(in) (cfs)	) (ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
23 8 0.60	5098.40	0 0.67	0.35	5099.79	1.72	0.05	5099.84	18.95	5098.60	0.67	0.35	5099.83	1.72	0.05	5099.88	0.012	0.040	5099.88	5099.92	0.04
24 8 0.30	5098.60	0 0.67	0.35	5099.91	0.86	0.01	5099.93	49.56	5099.10	0.67	0.35	5099.94	0.86	0.01	5099.95	0.012	0.026	5099.94	5099.95	0.00
25 8 0.30	5099.10	0 0.67	0.35	5099.95	0.86	0.01	5099.96	12.20	5099.20	0.67	0.35	5099.95	0.86	0.01	5099.97	0.012	0.006	5099.97	5099.99	0.02
26 12 2.30	5099.00	0 1.00	0.79	5101.15	2.93	0.13	5101.29	16.50	5099.50	1.00	0.79	5101.21	2.93	0.13	5101.35	0.012	0.059	5101.28	5101.42	0.07
27 8 0.80	5098.40	0 0.67	0.35	5100.47	2.29	0.08	5100.55	108.10	5100.00	0.67	0.35	5100.87	2.29	0.08	5100.96	0.012	0.404	5100.92	5101.00	0.04
28 8 0.80	5100.00	0 0.67	0.35	5100.95	2.29	0.08	5101.03	5.90	5100.20	0.67	0.35	5100.97	2.29	0.08	5101.05	0.012	0.022	5101.09	5101.17	0.11
Notes:																			Project File: 2	250 SD suga

## **Profile View**

Stormwater Studio 2018 v 2.0.0.61

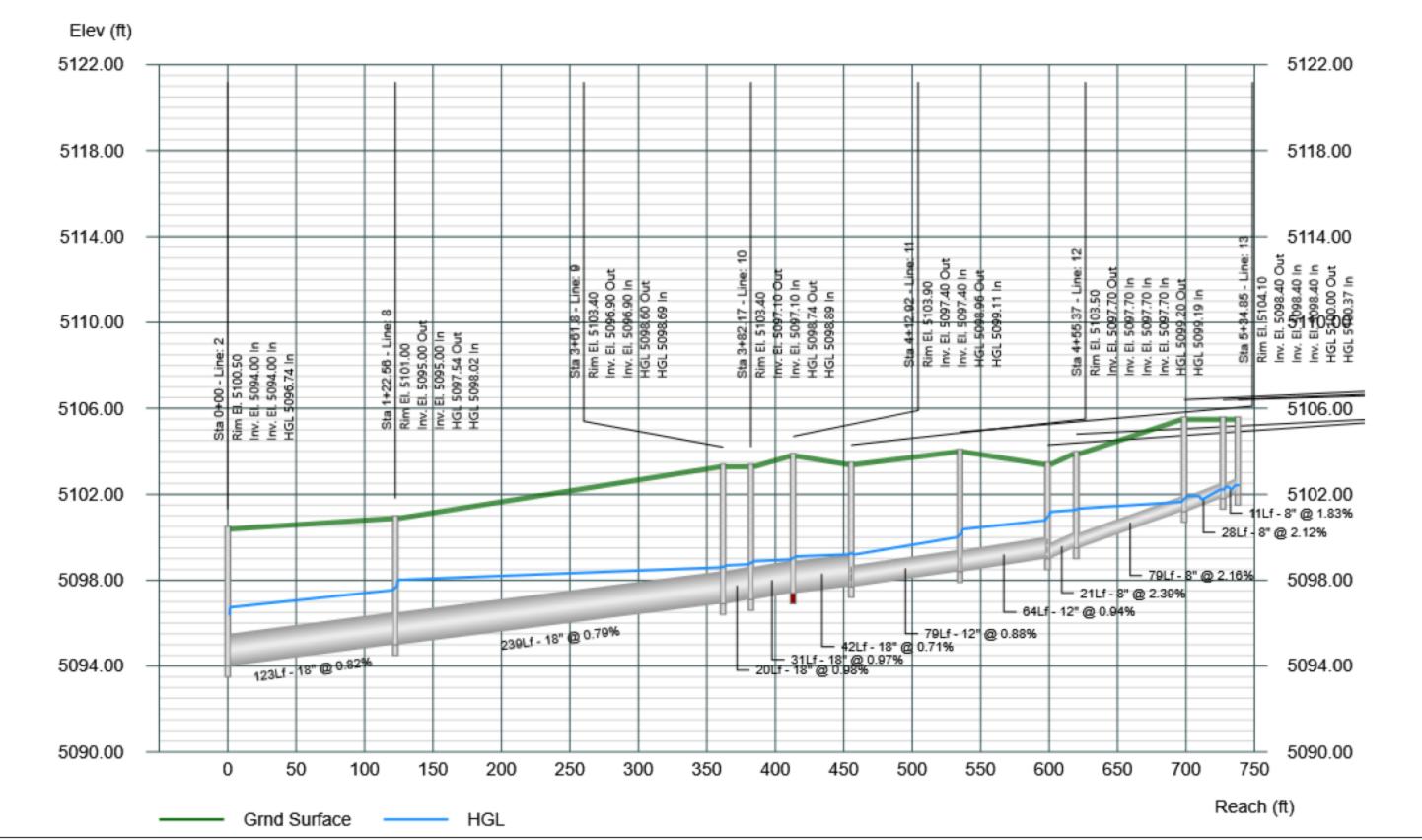


Project Name: NUEVO ATRISCO SD

10-31-2018

## **Profile View**

Stormwater Studio 2018 v 2.0.0.61

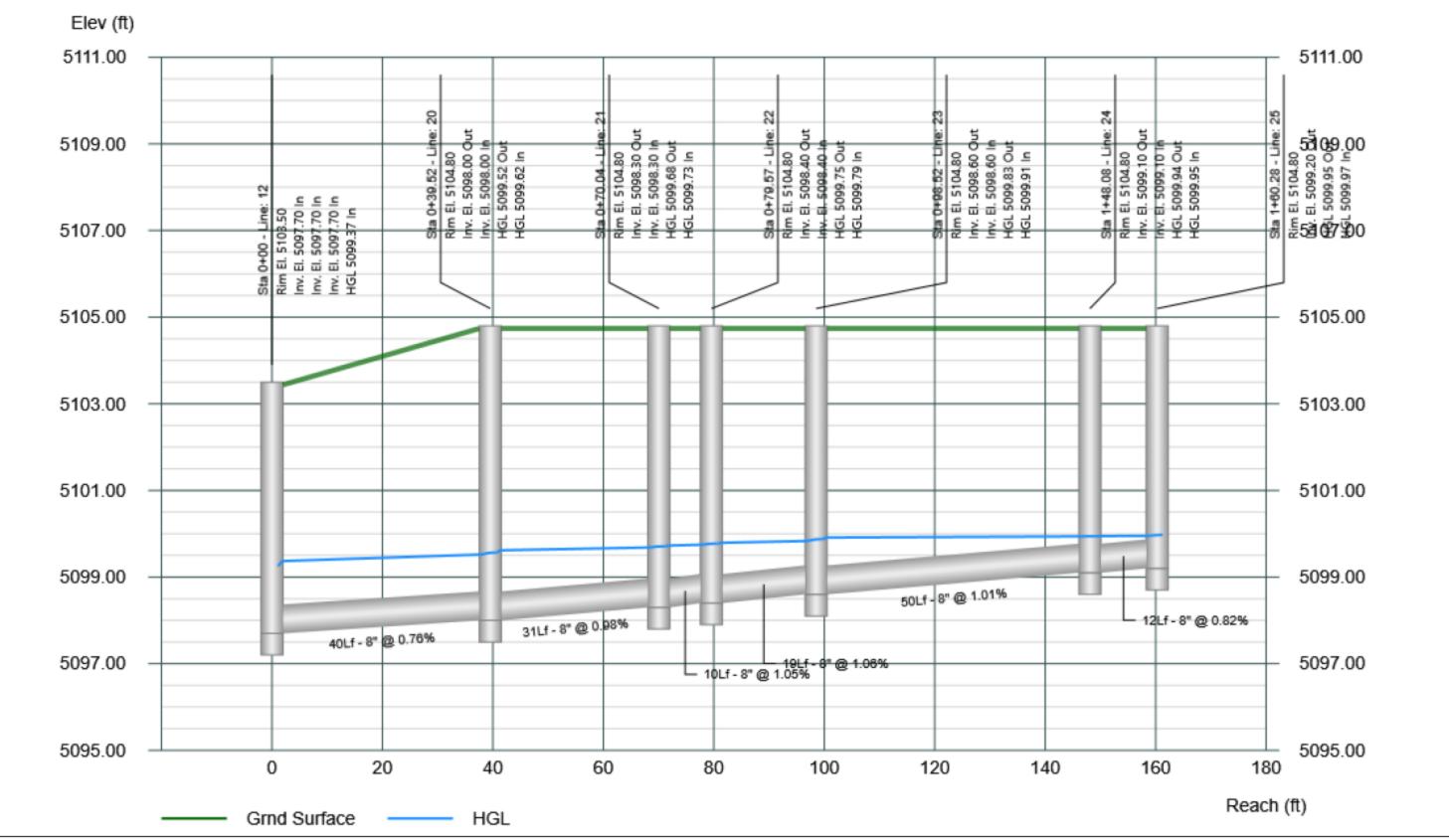




10-31-2018

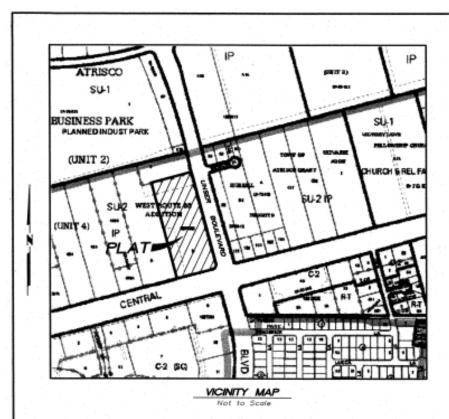
**Profile View** 

Stormwater Studio 2018 v 2.0.0.61



#### 10-31-2018

Project File: 2250 SD.sws

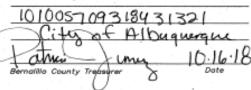


#### GENERAL NOTES

- Bearings are grid and based on the New Mexico State Plane Coordinate System, Central Zone (NAD83).
- 2. Distances are ground.
- 3. Distances along curved lines are arc lengths.
- Plat bearings and distances do not differ from those established by the original plat of record. 4.
- All corners found in place and held were tagged with a brass disk stamped "HUGG L.S. 9750" unless otherwise indicated herenn
- All corners that were set are either a 5/8" rebar with cap stamped "HUGG L.S. 9750" or a concrete nall with brass disk stamped "HUGG L.S. 9750" unless otherwise indicated hereon.
- 7. City of Albuquerque Zone Atlas Page K-10.

### TREASURERS CERTIFICATION

This is to certify that taxes are current and paid on the following



#### PUBLIC UTILITY EASEMENTS

PUBLIC UTILITY EASEMENTS shown on this plat are granted for the and joint use of

- Public Service Company of New Mexico ("PNM"), a New Mexico corporation, (PNM Electric) for installation, maintenance, and service of overhead and underground electrical lines, transformers, and other equipment and related facilities reasonably necessary to provide electrical services.
- B. New Mexico Gas Company for installation, maintenance, and service of natural gas lines, valves and other equipment and facilities reasonably necessary to provide natural gas services.
- C. Qwest for the Installation, maintenance, and service of such lines, cable, and other related equipment and facilities reasonably necessary to provide communication services.
- Cable TV for the installation, maintenance, and service of such lines, cable, and other related equipment and facilities reasonably necessary to provide Cable services. D.

reasonably necessary to provide Cable services. Included, is the right to build, rebuild, construct, reconstruct, locate, relocate, change, remove, replace, modify, renew, operate and maintain facilities for purposes described above, together with free occess to, from, and over said easements, with the right and privilege of going upon, over and across adjoining lands of Granter for the purposes set forth herein and with the right to utilize the right of way and, easement to extend services to customers of Grantee, including sufficient working area space for electric transformers, with the right and privilege to trim and remove trees, shrubs or busites which interfere with the purposes set forth herein. No building, sign, pool (aboveground or subsurface), hot tub, concrete or wood pool decking, or other structure shal be erected or constructed on said easements, nor shall any well be drilled or operated thereon. Property owners shall be solely responsible for operating any violations of National Electrics Safety Code by construction of pools, decking, or other structures adjacent to or near easements shown on this plat.

Easements for electric transformer/switchgears, as installed, shall extend ten (10) feet in front of transformer/switchgear doors and five (5) feet on each side.

#### DISCLAIMER

In approving this plot, Public Service Company of New Mexico (PNM) and New Mexico Gas Company (NMGC) did not conduct a Thie Search of the properties shown hereon. Consequently, PNM and NMGC do not waive or release any easement or easement rights which may have been granted by prior plot, replat or other document and which are not shown on this plot.

#### PURPOSE OF PLAT

The purpose of this plat is to:

- Acknowledge the Portion of Private Bionket Drainage Easement VACATED by 18DRB-10125.
- B. Grant the new Public and Private Easements as shown hereon.

#### SURVEYORS CERTIFICATION

I, Russ P., Hugg, New Mexico Professional Surveyor Number 9750, hereby certify that this plot of survey was prepared from field notes of an actual ground survey performed by me or under my supervision; that it meets the Standards for Land Surveys in New Mexico as adopted by the New Mexico State Board of Registration for Professional Engineers and Professional Surveyors; that it meets the minimum requirements for surveys and monumentation of the Albuquerque Subdivision Ordinance; that it shows all ensements of recent, and that it is two and correct to the best easements of record; and that it is true and correct to the best of my knowledge and you'r.

SS P. HU

ATE ATEO Hugg 9750 No. 9750 MET

20186-133

PLAT OF TRACTS A AND B NUEVO ATRISCO (BEING A REPLAT OF TRACT B1, WEST ROUTE 66 ADDITION II) SITUATE WITHIN THE TOWN OF ATRISCO GRANT iN **PROJECTED SECTION 22** TOWNSHIP 10 NORTH, RANGE 2 EAST NEW MEXICO PRINCIPAL MERIDIAN CITY OF ALBUQUERQUE BERNALILLO COUNTY, NEW MEXICO APRIL , 2018 001405 PROJECT NUMBER PR-2018-(1007489) 18 DRB - 70120 PLAT APPROVAL UTILITY APPROVALS 5-14-18 . 5.14.1B his selles Mexico Gos Co Date 5 14 2018 a CenturyLink QC 0 5/14/2018 au. CITY APPROVALS Loron M. Risenhoover 4/16/18 Department of Municipal Development Real Property Division Date NA Environmental Health Departy Date Ullin 7/18/18 Etspaand 7/16/2016 U 10.5.2018 Chairperson, Planning Departmen Date 7/18/18 PATE 22 LODE ENFORCEMENT SHEET 1 OF 3 SURV OTEK, INC. Consulting Surveyors Phone: 505-897-3360 9364 Yalley View Drive, N.W. Albuquerque, New Mexico 87114 Fax: 505-897-3377



10/19/2018 02:48 PM Deep: 1 pf 3 p.pt 9:525.00 p. 2018C P. 0133 Linea Ster III KAARAILANAA MANADADADA ANAC PROPADA III II

180042. DWG

SUBDIVISION DATA

1. Total number of existing Tracts: 1 2. Total number of Tracts created: 2

4. Gross Subdivision acreage: 6.2218 acres.

DOC# 2818891923

3. No Public Street right of way dedicated by this plat.

DISTORT OF ALL

offering Game

### PLAT OF TRACTS A AND B NUEVO ATRISCO

(BEING A REPLAT OF TRACT B1, WEST ROUTE 66 ADDITION II) SITUATE WITHIN

PROJECTED SECTION 22 TOWNSHIP 10 NORTH, RANGE 2 EAST NEW MEXICO PRINCIPAL MERIDIAN

CITY OF ALBUQUERQUE BERNALILLO COUNTY, NEW MEXICO

#### LEGAL DESCRIPTION

Tract B1, West Route 66 Addition N, as the same is shown and designated on the plot entitled "MEST ROUTE 66 ADDITION N, BEING A REPLAT OF TRACT B OF WEST ROUTE 66 ADDITION AS RECORDED ON AUGUST 12, 2013 IN BOOK 2013C, PAGE 91 AND LOT 1 OF UNM HOSPITALS CLINIC AS RECORDED ON JANUARY 22, 2009 IN BOOK 2009C, PAGE 18, SITUATE WITHIN PROJECTED SECTION 22, TION, R.2E., N.M.P.M., TOWN OF ATRISCO LAND GRANT, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, DATE OF SURVEY: SEPTEMBER 2016, BERNALLLO COUNTY, NEW MEXICO, DATE OF SURVEY: SEPTEMBER 2016, on December 9, 2016, In Plat Book 2016c, Page 151.

#### FREE CONSENT

SURVEYED and REPLATTED and now comprising PLAT OF TRACTS A AND B, NUEVO ATRISCO (BEING A REPLAT OF TRACT BI, WEST ROUTE 66 ADDITION II) SITUATE WITHIN THE TOWN OF ATRISCO GRANT IN PROJECTED SECTION 22, TOWNSHIP 10 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUEROUT, BURNALLIO COUNTY, NeW MEXICO, is with the free consent of and in accordance with the desires of the undersigned owner thereof, Said owner does hereby grant the public and private easements as shown hereon and does hereby certify that this subdivision is its free act and deed.

OWNER

CITY OF ALBUQUERQUE

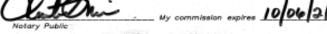
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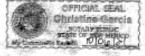
By: Sarita Nair, Chief Administrative Officer, City of Albuquerque, a New Mexico Municipal Corporation

#### ACKNOWLEDGMENT

STATE OF NEW MEXICO COUNTY OF BERNALILLO SS

instrument was acknowledged before me this 21 





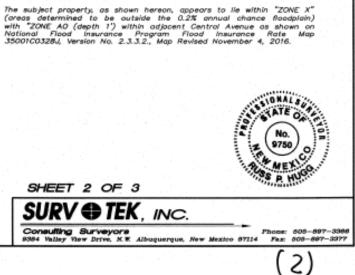
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#### SECTION 14-14-4-7 PROHIBITION ON PRIVATE RESTRICTIONS ON THE INSTALLATION OF SOLAR COLLECTORS

plat.

### FLOOD ZONE DETERMINATION



20186-133

THE TOWN OF ATRISCO GRANT . IN

APRIL , 2018

#### DOCUMENTS USED IN THE PREPARATION OF THIS SURVEY!

Plot entitled "WEST ROUTE 66 ADDITION N, BEING A REPLAT OF TRACT B OF WEST ROUTE 66 ADDITION AS RECORDED ON AUGUST 12, 2013 IN BOOK 2013C, PAGE 91 AND LOT 1 OF UNM HOSPITALS CLINIC AS RECORDED ON JANUARY 22, 2009 IN BOOK 2009C, PAGE 18, SITUATE WITHIN PROJECTED SECTION 22, TION, R.2E, N.M.P.M., TOWN OF ATRISCO LAND GRANT, CITY OF ALBUQUEROUS, BERNALLLO COUNTY, NEW MEXICO, DATE OF SURVEY: SEPTEMBER 2018", filed in the office of the County Clerk of Bernatillo County, New Mexico, on December 9, 2016, in Plot Book 2016c, Page 151.

"No property within the area of this plat shall at any time be subject to a deed restriction, covenant, or binding agreement prohibiting solar collectors from being installed on buildings or erected on the lots or parcels within the area of proposed plat. The foregoing requirement shall be a condition to approval of this

