

DRAINAGE LETTER ADDENDUM FOR ACADEMY GATEWAY SUBDIVISION NO. 1

DRAINAGE LETTER STATEMENT

ENGINEER'S STATEMENT:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the El Paso County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

negligent acts, errors,	or omissions on my part in preparing this report.
Thulling	29/11/21/7 9/12/17
Kyle R Campbell Col	lorado P.E. #29794 Date
100	ONAL ENGINE
DEVELOPER'S ST	ATEMENT:
I, the developer, have	e read and will comply with all of the requirements specified in this drainage
report and plan.	
Business Name:	Academy Gateway II, LLC
Ву:	V Cural
Title:	Manager
Address:	403 S. Tejon Street
	Colorado Springs, CO 80903

EL PASO COUNTY ONLY:

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 and 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

	Approved
Jennifer Irvine, P.E.	Date
County Engineer / ECM Administrator	By:Jennifer Irvine, County Engineer
	Date:09/21/2017
Conditions:	El Paso County Department of Public Works



August 11, 2017

City of Colorado Springs Engineering Development Review Division 30 South Nevada, Suite 401 Colorado Springs, CO 80903

ATTN:

Mrs. Jennifer Irvine

RE:

Drainage Letter Addendum for Academy Gateway Subdivision Filing No. 1

Dear Jennifer:

Please consider this the Drainage Letter Addendum for Academy Gateway Subdivision Filing No. 1 This letter is being written to further define the storm system required for Lot 1 and Lot 2.

This letter will update storm sewer routing inlet sizes and alignment for Academy Gateway Subdivision Filing No. 1 Lot 1 and Lot 2. More specifically Basin D. Please see the "Preliminary/Final Drainage Report for Academy Gateway Subdivision Filing No. 1" by CCES approved July 6, 2017 report for drainage information. All basins and drainage patterns from the original report remain the same as previously approved with the exception of Design Points 2 & 4 and Basins B & D on attached drainage map excerpt.

Design Point 2 ($Q_5 = 5$ cfs, $Q_{100} = 8$ cfs) is the proposed developed flow from Basin B which is predominately the paved surface of Academy Gate View. A proposed private 5' Type R sump inlet will intercept these flows in their entirety. Basin B area has increased from 0.99 acres to 1.08 acres with the addition of a high point in in the access roadway adjacent to Lot 1 and Lot 2. No impact to proposed inlet sizing or developed flows.

Design Point 4 and Basin D from the approved report is further broken down based upon future use of Lot 1 and Lot 2. Basin D is broken down into Basins D, D1, D2 D3 and D4 with associated Design Points 4 and 4A for inlet and pipe sizing. Design Point 4 ($Q_5 = 0.1$ cfs, $Q_{100} = 3$ cfs) consists of flows from Basin D4 which is private drive aisle. A proposed 5' Type-R inlet will intercept flows. Design Point 4A ($Q_5 = 0.1$ cfs, $Q_{100} = 3$ cfs) consists of flows from Basin D2 which is private drive aisle between Lots 1 and 2. A proposed 5' Type-R-at grade inlet will intercept flows. Basin D ($Q_5 = 4$ cfs, $Q_{100} = 6$ cfs) consists of future commercial use on Lot 1. Flows will be captured onsite and routed to a provided 18" storm sewer stub (Pipe 5). Basin D3 ($Q_5 = 2$ cfs, $Q_{100} = 3$ cfs) consists of future commercial use on Lot 1. Flows will be captured on site and

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Mrs. Jennifer Irvine

Drainage Letter Addendum for

Academy Gateway Subdivision Filing No. 1

routed to a provided 12" storm stub. Basin D1 ($Q_5 = 4$ cfs, $Q_{100} = 7$ cfs) consists of future commercial use

on Lot 2. Flows will be captured onsite and routed to a provided 18" storm sewer stub (Pipe 3). All flows

will be routed to the proposed Detention Facility A as previously designed. Per original report Basin Design

Point 4 was (Q5 = 10 cfs, Q111) = 18 cfs) and was routed to the detention facility in a proposed 24" Storm

system. This is comparable to Pipe 6 ($Q_5 = 10$ cfs, $Q_{100} = 18$ cfs) in this addendum. No increase in

developed flows is anticipated.

SUMMARY

The original drainage report for Academy Gateway Subdivision Filing No. 1 calculations and report details

remain the same. This letter further defines the storm sewer system for Lot 1 and Lot 2 from the previous

report.

If you have any questions or comments regarding this drainage, please do not hesitate to call.

Respectfully submitted,

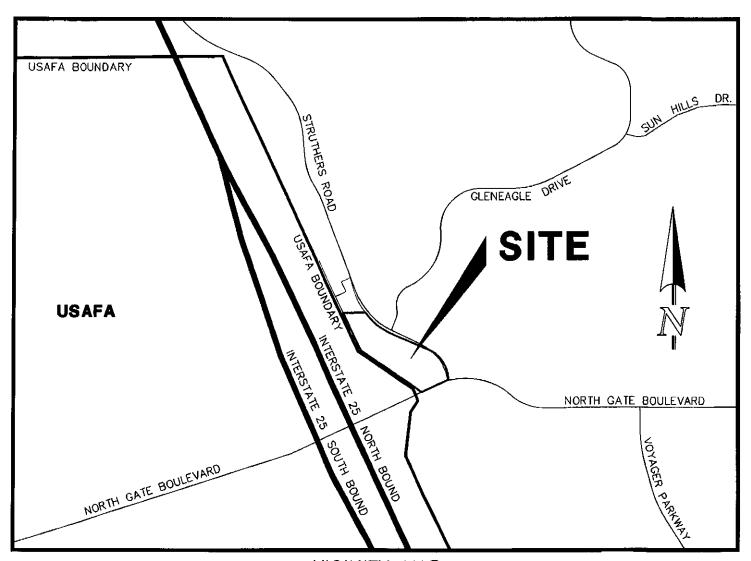
David L. Gibson, P.E.

Project Engineer

dlg/250700/drainage letter addendum.doc



VICINITY MAP



VICINITY MAP
NOT TO SCALE



REVISED CALCULATIONS

					WEIGHTED CA	,	CA(100)	0.98	0.74	0.84	0.07	0.34	0.10
					WEIGH		CA(5)	0.30	69.0	0.78	0.06	0.32	60 0
				RIM	WEIGHTED		C(100)	0.91	96.0	96.0	96.0	96.0	96 0
				RY - INTE	WEIG		C(9)	0.83	0.90	0.30	0.30	0.90	06.0
				FINAL DRAINAGE REPORT ~ BASIN RUNOFF COEFFICIENT SUMMARY - INTERIM	AREAS		C(180)	0.35	0.35	0.35	0.35	0.35	0.35
				FFICIEN.	LANDSCAPE/UNDEVELOPED AREAS		C(5)	90:0	90.0	0.08	90.0	90.0	90.0
				OFF CO	SCAPEJUNE		C(2)	0.02	0.02	0.02	0.02	0.02	0.02
				SIN RUN	LAND		AREA (AC)	60'0	00.0	0.00	00.0	00'0	00.0
				RT ~ BA	EETS		C(100)	96:0	96.0	96:0	96:0	96.0	96 0
				GE REPC	REA / STREE		C(5)	06:0	0.30	0.30	0.30	0.90	060
Fil. No. 1				DRAINA	IMPERVIOUS AREA / STRE		C(2)	0.89	0.89	0.89	0.89	0.89	0.89
teway Subd.				FINAL	IMP		AREA (AC)	0.99	0.77	0.87	0.07	0.35	0.10
Academy Gateway Subd. Fil. No. 1	2507.00	21/11/80	KRC			TOTAL	AREA (AC)	1.08	0.77	0.87	0.07	0.35	0.10
JOB NAME:	JOB NUMBER:	DATE:	CALCULATED BY:				BASIN	B	O	D1	D2	D3	D4

Ė			CA(100)	96.0	0.74	0.84	0.07	0.34	0.10								
	WEIGHTED CA	Ī	CA(5)	0.90	69:0	0.78	90.0	0.32	90:0								
			CA(Z)	0.88	0.69	0.77	90:0	0.31	90.0								
ATE			C(100)	0.91	96:0	96.0	96.0	96.0	96:0								
- ULTIM	WEIGHTED		(S)	0.83	0.90	06:0	06:0	0.30	06:0								
			C(2)	0.82	0.89	0.89	0.89	0.89	0.89								
FFICIENT	O AREAS		C(100)	0.35	0.35	0.35	0.35	0.35	0.35								
OFF COE	IMPERVIOUS AREA / STREETS LANDSCAPEUNDEVELOPED AREAS		C(9)	0.08	90:0	90:0	90.0	0.08	90'0								
SIN RUN			SCAPEJUNDE	SCAPETUNDEVELOR	DSCAPEJUNDEVELC	INDSCAPETUNDEVE	ANDSCAPETUNDE	ANDSCAPEJUND	SCAPE/UNDEY		C(2)	0.02	0.02	0.02	0.02	0.02	0.02
JRT ~ BA				AREA (AC)	0.09	0.00	0.00	0.00	0.00	0.00							
			REA / STREETS	REA / STREETS	AREA / STREETS		C(100)	96'0	96.0	0.96	0.36	0.96	0.36				
L.No. 1 FINAL DRAINAGE REI						REA / STREET	REA / STREET	REA / STREE	REA / STREE	AREA / STREE	REA / STREE	REA / STREET		C(2)	06:0	0.30	0.00
i Fil. No. I				C(2)	0.89	0.89	0.89	0.89	0.89	0.89							
пежаў Suba	JWI .		AREA (AC)	0.99	0.77	0.87	0.07	0.35	0.10								
Academy Gateway Subd. Fil. No. 2507.00 08/11/17 KRC		TOTAL	AREA (AC)	1.08	0.77	0.87	0.07	0.35	0.10								
JOB NAME: JOB NUMBER: DATE: CALCULATED BY:			BASIN	В	0	5	20	ස	Ճ								

JOB NAME: Academy Gateway Subd. JOB NUMBER: 2507.00 DATE: 08/11/17 CALC'D BY: KRC	Academy Gatewi 2507.00 08/11/17 KRC	Затем	y Sub	d. Fil. No. I	Vo. 1													
FINAL DRAINAGE REPORT ~ BASIN RUNOFF SUMMARY - INTERIM	FINAL DRAINAGE REP	FINAL DRAINAGE REP	RAINAGE REP	AGE REP	빏	Ď	{T ~ B	ASIN	RUNC	FF SI	JMMA	RY - 1	NTER	IN.				
WEIGHTED OVERLAND			OVERLAN	OVERLAN	Ŝ	9		STREE	대 (유	STREET / CHANNEL FLOW	-LOW	Tc	Z	NTENSITY	-	101	TOTAL FLOWS	S¥.
CA(2) CA(5) CA(100) C(5) Length Height	CA(5) CA(100) C(5)	(g)	C(5) Length He	Length He	¥ `	eight	Tc (min)	Length	Slope	Length Slope Velocity	Tc (min)	TOTAL (min)	(ic/hr)	(5)	(100)	Q(2)	Q(5)	Q(100)
	0.98 0.08	0.08	0		1		5.0	°	0.0%	0.0	0.0	5.0	4.12	5.17	89.8	4	2	6
0.69 0.69 0.74 0.08 0 0	0.74 0.08 0	0.08	0		0		5.0	0	0.0%	0.0	0.0	5.0	4.12	5.17	8.68	3	4	9
0.77 0.78 0.84 0.08 0	0.84 0.08 0	0.08	0		0		5.0	0	0.0%	0.0	0.0	5.0	4.12	5.17	8.68	3	4	7
0 0 800 0.06 0.08 0	0.08 0.00	0.08	0				5.0	0	0.0%	0.0	0.0	5.0	4.12	5.17	8.68	0	0	1
0.31 0.32 0.34 0.08 0 0	0.34 0.08 0	0.08	0		0		5.0	0	0.0%	0.0	0.0	5.0	4.12	5.17	8.68	1	2	3
0.09 0.10 0.08 0	0.10 0.08 0	0.08	0		0		5.0	0	%0.0	0.0	0.0	5.0	4.12	5.17	89.8	0	0	1

_	TOTAL FLOWS	Q(2) Q(5) Q(100)	2	3 4 6	3 4 7	0 0 1	1 2 3	0 0
		(in/hr)	<u> </u>	8.68	89.8	8.68	89.8	8.68
<u>H</u>	NTENSITY	(5) (fo/hr)	_	5.17	5.17	5.17	5.17	5.17
ZHIL		(2) (in/hr)	4.12	4.12	4.12	4.12	4.12	4.12
AINAGE REPORT ~ RASIN RIINOEF SIIMMARY - 111 TIMATE	15	TOTAL (min)		5.0	5.0	9:0	2:0	5.0
3 V WW	FLOW	Tc (min)	0.0	0.0	0.0	0.0	0.0	0.0
	STREET / CHANNEL FLOW	Length Stope Velocity (ft) (fbs)	0:0	0.0	0.0	0.0	0.0	0.0
	등 등	Stope (%)	%0.0	0.0%	%0:0	%0:0	0.0%	0.0%
NO.	STREE	Length	o	0	0	0	0	0
		Tc (min)	5.0	5.0	5.0	5.0	5.0	5.0
àOd:	OVERLAND	Height	o	0	0	0	0	0
Vo. 1	OVER	Length Height	0	0	0	0	0	0
d. Fil. No. 1 Rainage		C(9)	80.0	80.0	90:0	90:0	80.0	80'0
Academy Gateway Subd. 2507.00 08/11/17 KRC FINAL DRA		CA(100)	0.95	0.74	0.84	20:0	0.34	0.10
Academy G 2507.00 08/11/17 KRC	WEIGHTED	CA(5)	0.89	69.0	0.78	90.0	0.32	60.0
ë.		CA(2)	0.88	69:0	0.77	90:0	0.31	60:0
JOB NAME: JOB NUMBER: DATE: CALC'D BY:		BASIN	8	0	D1	D2	03	D4

JOB NAME:	y Gateway Subd.
JOB NUMBER:	2507.00

DATE: 08/11/17
CALCULATED BY: KRC

	FINAL DRAINAGE REPORT ~ SURFACE ROUTING SUMMARY INTERIM	REPORT ~ (SURFACE F	ROUTING S	UMMARY	INTERIM		
					Intensity	sity	Fi	Flow
Design Point(s)	Contributing Basins	Equivalent CA(5)	Equivalent Equivalent CA(5) CA(100)	Maximum Tc	(2)	1(100)	Q(5)	Q(100)
2	В	0.89	96:0	5.0	5.17	8:58	5	80
4	D4	0.09	0.10	5.0	5.17	8.68	0.5	-
44	D2	90:0	20:0	5.0	5.17	89.8	0.3	-

Classic Consuling	FDR AMEND calcs	

JOB NAME: JOB NUMBER: DATE:	Academy Gateway Subd. Fil. No. 1 2507.00 08/11/17	No. I			ļ			
CALCULATED BY:	KRC							
	FINAL DRAINAGE REPORT ~ SURFACE ROUTING SUMMARY - ULTIMATE	PORT ~ St	JRFACE RO	UTING SU	MMARY -	ULTIMAT	ш	
					Intensity	sity	Flow	W
Design Point(s)	Contributing Basins	Equivalent CA(5)	Equivalent Equivalent Maximum CA(5) CA(100) Tc	Maximum Tc	(2)	(100)	(2)0	Q(100)
2	8	0.89	0.95	5.0	5.17	8.68	5	80
4	D4	60:0	0.10	5.0	5.17	8.68	0.5	-
44	D2	90'0	20:0	5.0	5.17	8.68	6.0	_

JOB NAME: JOB NUMBER:	Academy Gateway Subd. Fil. 1 2507.00	No. 1							
DATE: CALCULATED BY;	08/11/17 KRC								
*	* PIPES ARE LISTED AT MAXIMUM SIZE REQUIRED TO ACCOMMODATE Q100 FLOWS AT MINIMUM GRADE. REFER TO INDIVIDUAL PIPE SHEETS FOR HYDRAULIC INFORMATION.	M SIZE REQUIRI IEETS FOR HYD	ED TO ACCOMI RAULIC INFORI	MODATE Q100 F MATION.	LOWS AT MIN	IIMUM GRAD	ய்		
	FINAL	L DRAINAGE REPORT ~ PIPE ROUTING SUMMARY	E REPORT	~ PIPE RO	UTING SU	MMARY			
					Intensity	sity	Flow	M(
Pipe Run	Contributing Basins	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	(2)	(100)	Q(5)	Q(100)	Pipe Size*
1	BASIN D3	0.32	0.34	5.00	5.17	89'8	2	3	12" STORM
2	PIPE 1 DP 4A	0.38	0.40	9.00	5.17	89.8	2	3	18" STORM
3	BASIN D1	0.78	0.84	2.00	5.17	89.8	4	7	18" STORM
4	PIPE 2 & PIPE 3	1.16	1.24	9:00	5.17	89'8	9	11	24" STORM
5	BASIN D	0.69	0.74	5.00	5.17	8.68	4	9	18" STORM
9	PIPE 4, PIPE 5 & DP 4	1.94	2.07	5.00	5.17	89.8	10	18	24" STORM

JOB NAME:	Academy G	ate	way Subd. Fil. No. 1
JOB NUMBER:	2507.00		_
DATE:	08/11/17	,	-
CALCULATED BY:	KRC		- -
DESIGN POINT	4		
	Total Flow: Q ₅	=	0 cfs
	Q ₁₀₀	=	1 cfs
Maximum allowable	e ponding depth at sum	p:	
	D ₅	=	0.50
	D ₁₀₀	=	1.00 (dmax)
	Qi	=	1.7(Li+1.8(W))(dmax + w/12)^1.85
	Clogging Factor	=	1.25
	Li (1.25)	=	Length of inlet opening
5-Year Event:	4	1	foot inlet required
100-Year Event:	4		foot inlet required
INSTALL A PUBLIC	C 4 ED FLOWS AT THIS D	 ESI	FT D-10-R INLET TO ACCEPT BOTH 5YR &

JOB NAME:	Academy Gateway Subd. Fil. No. 1 2507.00 08/11/17 KRC				
JOB NUMBER:					
DATE:					
CALCULATED BY:					
DESIGN POINT	4A	100 YEAR FLOW			
Q(100)	1	l(100)	8.7		
Q(100)	'	1(100)			
DEPTH	0.20	Fr	1.83	Inlet size ? L(I) =	5
SPREAD	3.5	L(1)	4.9	If Li < L(2) then Qi =	1
CROSS SLOPE	2.0%	L(2)	3.0	If Li > L(2) then Qi =	0.4
STREET SLOPE	4.0%	L(3)	10.5	FB =	0
			. 	CA(eqv.)=	0.00
	1			(Oxlede.)	0,00
	•••				
				5 YEAR FLOW	
Q(5)	0.3	I(5)	5.2	<u> </u>	
DEPTH	0.20	Fr	1.87	Inlet size ? L(i) =	5
SPREAD	3.8	L(1)	5.4	if Li < L(2) then Qi =	
CROSS SLOPE	2.0%	L(2)	3.2	If Li > L(2) then Qi =	0
•					
STREET SLOPE	4.0%	L(3)	11.6	FB=	0
				CA(eqv.)=	0.00



DRAINAGE MAP

