

**FINAL DRAINAGE REPORT
FOR
NORTHGATE SUBARU
208 GLENEAGLE GATE VIEW
COLORADO SPRINGS, COLORADO**

(TR D ACADEMY GATEWAY SUB FIL NO 1 EX THAT PT CONV TO ROW BY REC #
221096004 AND TR E ACADEMY GATEWAY SUB FIL NO 1)

FEBRUARY 2025

Prepared For:
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SF2510 and
PPR2514

TNE Job No. 2326.00
County Job No. #####

TNE Response: It's already there.

show fee basin boundaries
on the drainage maps

The northwest portion of the site lies within the Black Forest Drainage Basin and the southeast portion of the site lies within the Smith Creek Drainage Basin. Both basins drain to Monument Creek, which is southwest of the site. The northern parcel of the site currently drains to the west. The southern portion of the site has previously been graded to drain to a stormwater detention pond located immediately south of the site across Gleneagle Gate View.

Soils for this project are delineated by the map in the appendix as 27% Kettle-Rock outcrop complex (42) and 73% Pring coarse sandy loam (71). Soils in the study area are shown as mapped by NRCS in the “Soils Survey of El Paso County Area” and contains soils of Hydrologic Group B.

The site is currently undeveloped with mostly grass surfaces. The entire site has previously been overlot graded. The north portion of the site drains to the west, with an average slope of 5.3%. The south portion of the site drains to the south, with an average slope of 8.8%.

EXISTING DRAINAGE CONDITIONS

There are five drainage basins, three of which are offsite. Drainage from the southern portion of the site and Gleneagle Gate View are currently mixed. See attached Existing Drainage Map (in appendix).

Basin OS-Z is 1.53 acres and drains to Design Point Z at the south point in the basin. This basin is the My Place Hotel lot. This basin is offsite and runoff from this basin flows onto Gleneagle Gate View and into basin OS-Y. Basin OS-Z has flows of $Q_5 = 6.2$ cfs and $Q_{100} = 11.5$ cfs.

Basin OS-Y is 1.57 acres and drains to Design Point Y south of the site. This basin is portions of Struthers Road and Gleneagle Gate View. This basin is offsite and runoff from this basin flows into a curb inlet at the design point. Basin OS-Y has flows of $Q_5 = 6.0$ cfs and $Q_{100} = 11.3$ cfs. Combined flows at Design Point Y are $Q_5 = 12.3$ cfs and $Q_{100} = 22.8$ cfs.

Basin EX-A is 4.12 acres and drains to Design Point A on the west side of the site. This basin is

Basin PR-16 is 1.18 acres and drains to Design Point 16 on the east side of the south lot. Basin PR-16 is primarily parking lot and the car wash building on the east part of the south lot. Basin PR-16 has flows of $Q_5 = 4.7$ cfs and $Q_{100} = 8.9$ cfs.

Basin PR-17 is 0.63 acres and drains to Design Point 17 on the south side of the south lot. Basin PR-17 is parking lot on the south part of the south lot. Basin PR-17 has flows of $Q_5 = 2.7$ cfs and $Q_{100} = 4.9$ cfs.

Basin PR-18 is 0.27 acres and drains to Design Point 18 on the south side of the south lot. Basin PR-18 is primarily parking lot on the south part of the south lot. Basin PR-18 has flows of $Q_5 = 1.1$ cfs and $Q_{100} = 2.0$ cfs.

Drainage from the north lot is primarily collected in a series of curb inlets and carried by storm pipe to the existing storm sewer system in Gleneagle Gate View. A section of the existing storm sewer is being replaced to allow gravity flow in the proposed storm sewer. One storm sewer run drains the entire lot.

Drainage from the south lot is primarily collected by storm inlets and roof drains, and carried by storm pipe to the existing storm sewer system. The west and east sides of the building connect to the building roof drains.

TNE Note: The comparison calcs are shown pretty simply in the design point table on the proposed drain map.

Provide excerpts from the previous report showing the calculations and design points that support this comparison in the appendices

Southeast of the site in Tract C Academy Gateway Sub Fil No 1 is an existing private regional detention pond (FSD EDB) that was designed to treat runoff from the site, plus other lots. The pond design is included in the Preliminary/Final Drainage Report for Academy Gateway Subdivision Filing No.1, dated March 2017, prepared by Classic Consulting. The plans for this pond are included in Construction Plans, Academy Gateway Subdivision Filing No. 1, dated 10/17/16, by Classic Consulting. The pond design has $Q_5 = 54$ cfs and $Q_{100} = 93$ cfs flowing into the pond from the storm sewer. The proposed design for the site has $Q_5 = 47.7$ cfs and $Q_{100} = 91.1$ cfs.

State that the pond is functioning properly

10. Double Type 13 Area Inlet	4 EA	\$ 7,000	\$ 28,000
11. Storm Manhole	3 EA	\$ 8,946	\$ 26,838
		Total	\$ 337,600

DRAINAGE FEE

Existing Tracts C, due for them.

TNE Response: The 85% was just the placeholder text from the past report I used as a template. It's not related to the site. I determine percent impervious by measuring the proposed impervious area in each basin and then rounding up to a round number (numbers are shown on the drainage maps).

Tract C is 2.22 acres. Tract D is 6.03 acres. Tract E is 4.12 acres. All three tracts are in the Black Forest Drainage Basin. The basin boundary for Black Forest Drainage Basin and Smith Creek Drainage Basin is shown on the drainage maps. Tracts D and E. 4.13 acres of the site is in the Black Forest Drainage Basin and 8.24 acres of the site is in the Smith Creek Drainage Basin.

Provide break out by basin for fees
Black Forest \$26695/\$727 per imper ac
Smith Creek \$10883/\$1460
Provide detail as to how overall 85% was calculated per basin and imper ac.
Commercial Development is 95% Impervious Per Appendix L Drainage Criteria Manual Addendum

Update needed

*** Drainage fee numbers to be provided by the County reviewer. ***

2025 Drainage Fees due prior to final plat recordation are as follows:

FEE TYPE	% IMP.	PARCEL AREA	MOD.	FEE PER IMP. AC.	SUBTOTAL
DRAINAGE FEES:	85% x	2.25 acres x	100% x	\$19,698 =	\$37,672
BRIDGE FEES:	85% x	2.25 acres x	100% x	\$ 8,057 =	\$15,409
					TOTAL \$53,081

MAINTENANCE

The proposed storm sewers are private and will be maintained by the property owner.

SUMMARY

Development of this site will not adversely affect the surrounding development. Site runoff and storm drain appurtenances from the development will not adversely affect the downstream and surrounding developments and will be safely routed to the existing extended detention basin to the allowable pre-developed rates while slowly treating the water quality capture volume.

TNE Response: This is already included with the hydrology calcs.

We need to know how much of the proposed area of disturbance (not just the impervious surfaces) is treated vs untreated and if there are any exclusions that apply to the untreated areas. So please create a basic overview map (or modify an existing drainage map) with color shading/hatching that shows areas tributary to each PCM (pond, runoff reduction, etc.) and those disturbed areas that are not treated by a PCM, with the applicable exclusion labeled (ex: 20% up to 1ac of development can be excluded per ECM App I.7.1.C.1 (only if using the WQCV Design Base Standard) and exclusions listed in ECM App I.7.1.B.#). An accompanying summary table on this map would also be very helpful (example provided):

DRAINAGE MAPS

Water Quality Treatment Summary Table							
Basin ID	Total Area (ac)	Total Proposed Disturbed Area (ac)	Area Trib to Pond A (ac)	Disturbed Area Treated via Runoff Reduction (ac)	Disturbed Area Excluded from WQ per ECM App I.7.1.C.1 (ac)	Disturbed Area Excluded from WQ per ECM App I.7.1.B.# (ac)	Applicable WQ Exclusions (App I.7.1.B.#)
A	4.50	4.50	4.50				
B	1.25	1.25		1.25			
C	6.00	4.00				4.00	ECM App I.7.1.B.5
D	2.50	2.50	1.00		0.50	1.00	ECM App I.7.1.B.7
E	3.00		3.00				
F	8.25						
Total	25.50	12.25	8.50	1.25	0.50	5.00	
Comments		[For each row, the sum of the values in Columns 4-7 must be greater than or equal to the value in Column 3 above.]	[Values in this column can be more than Column 3 if over-treating non-disturbed areas of the same land-use.]	[See RR calc spreadsheet.]	[Total must be <20% of site and <1ac.]		
		Total Proposed Disturbed Area (ac)	Total Proposed Treated Area (ac)		Total Proposed Disturbed Area Excluded from WQ (ac)		Minimum Area to be Treated (ac)
		12.25	9.75		5.50		6.75

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NORTHGATE SUBARU
COLORADO SPRINGS, CO
EXISTING DRAINAGE MAP
FEBRUARY 2025

LEGEND

BASIN DESIGNATION
AREA IN BASIN (AC)
PERCENT IMPERVIOUS

DESIGN POINT

BASIN BOUNDARY

EXISTING MINOR CONTOUR

EXISTING MAJOR CONTOUR

PROPOSED GROUND SURFACE CONTOUR

ROAD AND DITCH FLOW DIRECTION

GROUND SURFACE FLOW DIRECTION

STORM SEWER LINE

DRAINAGE SUMMARY

BASIN	AREA TOTAL (Acres)	TOTAL FLOWS	
		Q _s (cfs)	Q ₁₀₀ (cfs)
OS-Z	1.53	6.2	11.5
OS-Y	1.17	4.5	8.4
OS-X	0.60	2.4	4.5
EX-A	4.12	1.3	8.4
EX-B	6.86	3.8	15.7

TNE Response: It's already there, and even off to the side where it's easy to see.

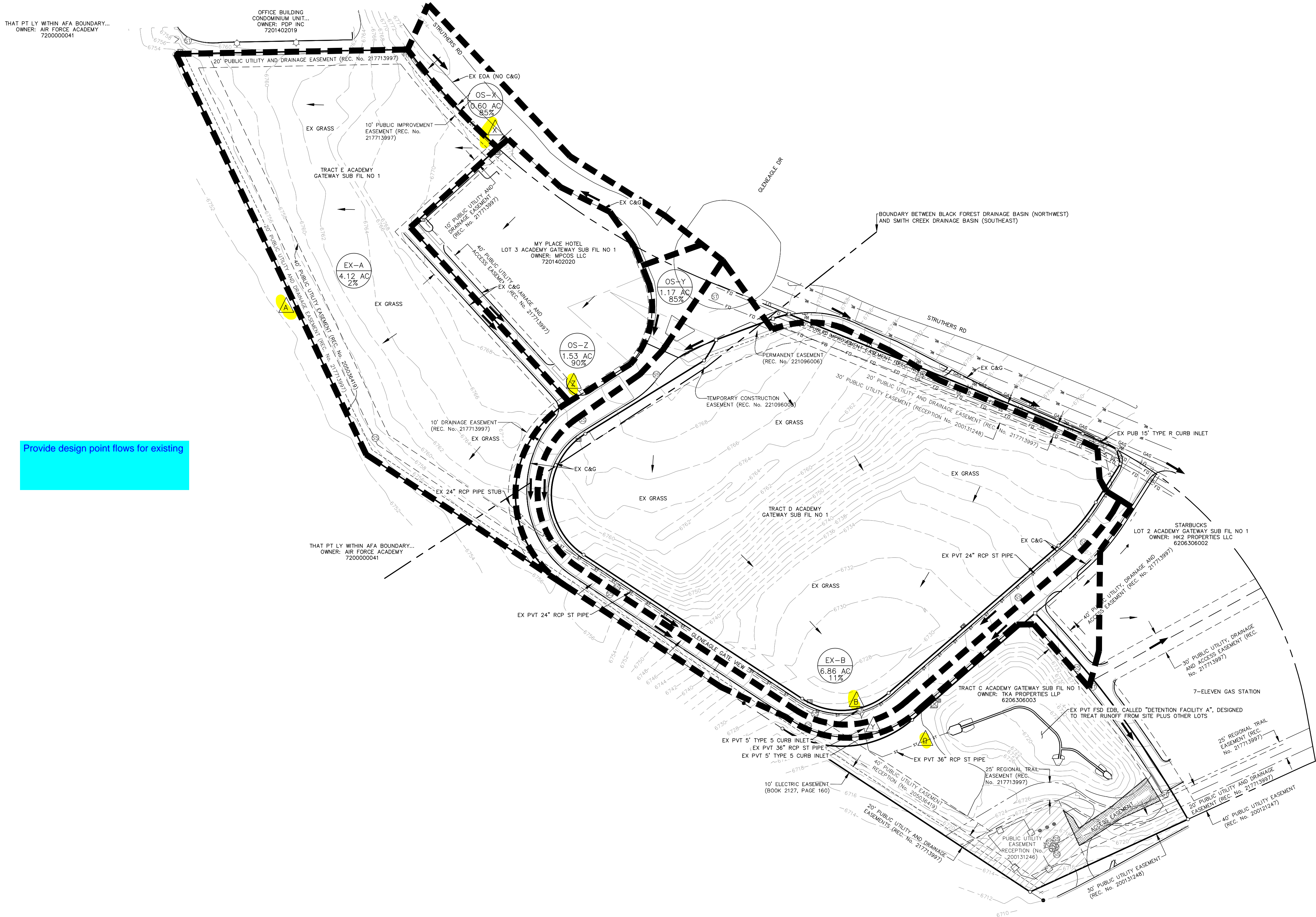
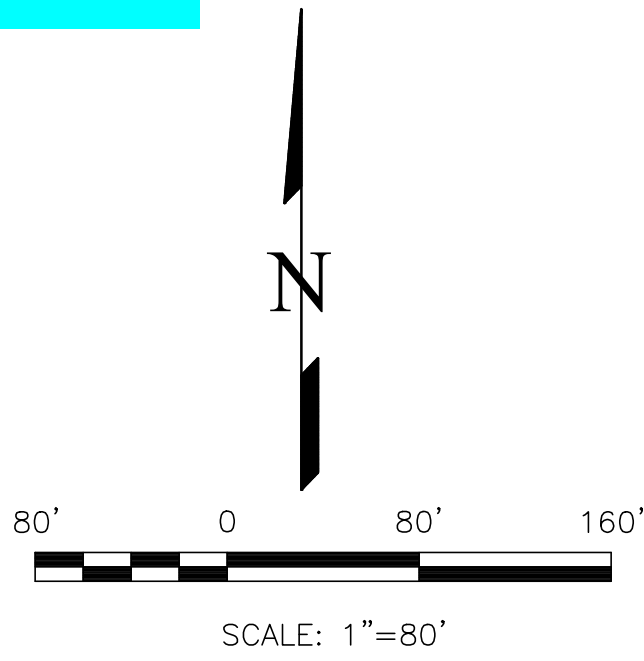
show basin boundaries on the drainage maps for Black Forest and Smith Creek

Provide design point flows for existing

PLAT NAME
TR D ACADEMY GATEWAY SUB FIL NO 1 EX THAT PT CONV TO ROW BY REC # 221096004
AND
TR E ACADEMY GATEWAY SUB FIL NO 1

NOTES
1. THE SITE IS NOT WITHIN A 100 YEAR FEMA FLOOD PLAIN.
2. THE SITE HAS PREVIOUSLY BEEN OVERLOT GRADED.

Will need to be updated



REVISIONS	NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE REVIEWING AGENCIES, TERRA NOVA ENGINEERING, INC. APPROVES THEIR USE ONLY FOR THE PROJECT AND SITE SPECIFIC DESIGNATION BY WRITTEN AUTHORIZATION.

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NORTHGATE SUBARU

EXISTING DRAINAGE MAP

DESIGNED BY DLF
DRAWN BY DLF
CHECKED BY LD

H-SCALE AS NOTED
V-SCALE N/A

JOB NO. 2326.00
DATE ISSUED 02/05/25
SHEET NO. 1 OF 2

RETAINING WALL

THAT PT LY WITHIN AFA BOUNDARY
OWNER: AIR FORCE ACADEMY
7200000041

DATE ISSUED 02/05/25
SHEET NO. 2 OF 2