Tech Contractors
ENGINEERING GROUP

Keith Curtis
Floodplain Administrator
Pikes Peak Regional Building Department
2880 International Circle
Colorado Springs CO, 80910

RE: Substantial Compliance
Rolling Hills Ranch North Filings 1 & 2 PUD
EPC # PUDSP235

December 18, 2023

Dear Mr. Curtis,

FEMA mapping shows the above project within 300 feet of a Zone A floodplain. An analysis of the hydrology of the tributary area, topographic mapping, and hydraulics of the flow swale, shows the runoff will flow at a depth of less than 2.0' and the edge of the 100-yr water surface to be more than 300' from the subdivision boundary. Please see the attached calculation sheets, cross-sections, and exhibit for more information. The hydrology yielded a 100-yr flow rate of 170 CFS out of the existing detention basin north of the project in Latigo Trails.

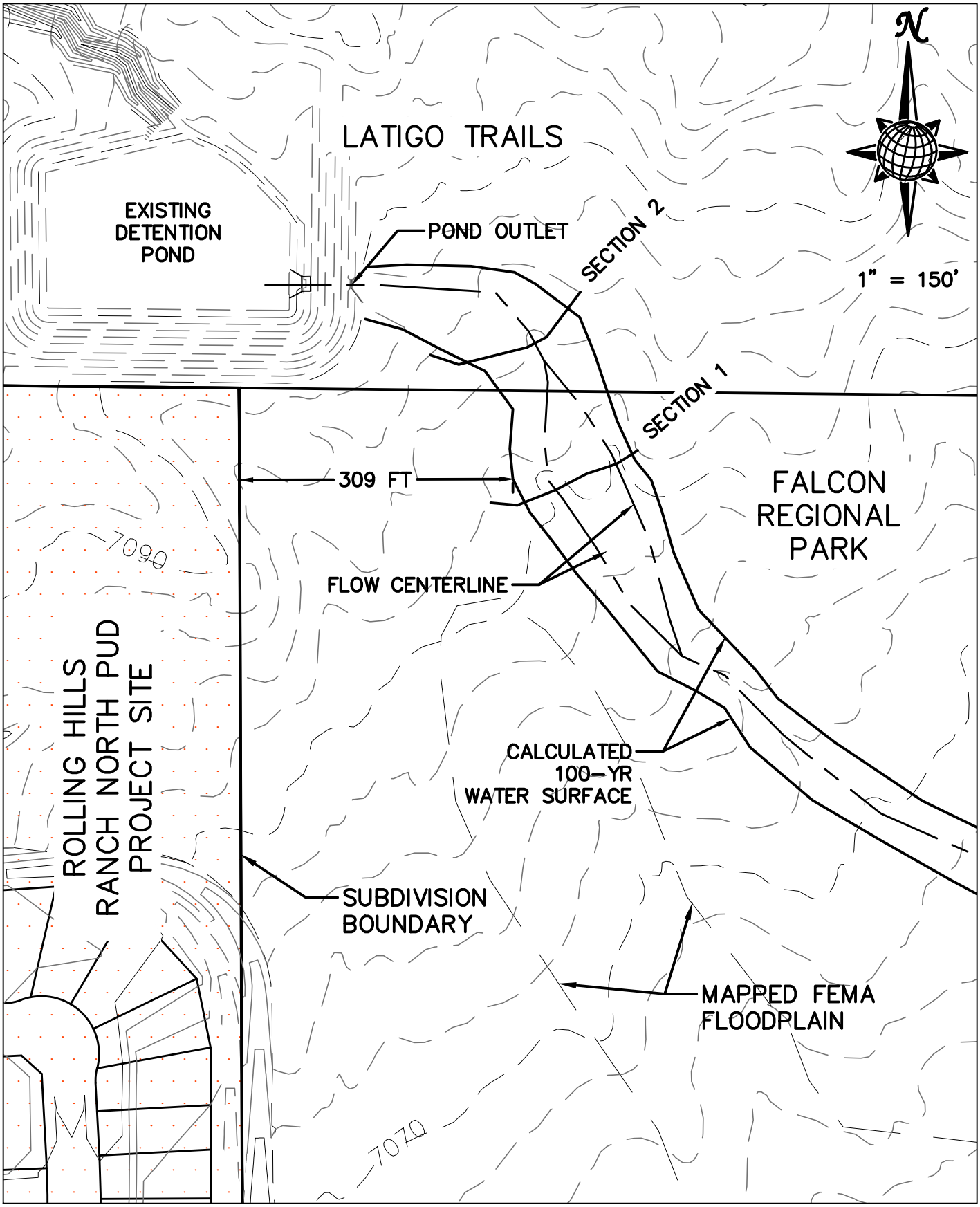
Based on field verified characteristics of the property, the property is reasonably safe from flooding and to the best of the engineer's knowledge if the 100-year floodplain were studied it would not enter the property in question

Should you have any questions or concerns please feel free to contact me at 719-495-7444 or by email at tom@meridianranch.com

Sincerely

Thomas A. Kerby, PE
Tech Contractors
11910 Tourmaline Drive
Falcon, Colorado 80831

cc
Raul Guzman (GTL Development)
Ryan Howser (El Paso County)



A	SCALE: 1"=150'	**CALCULATED WATER SURFACE**	TECH CONTRACTORS
	DATE: DEC 2023	FALCON REGIONAL PARK	11910 TOURMALINE DR #130
	DRAWN: TAK	ROLLING HILLS RANCH NORTH PUD	FALCON, CO 80831
	CHECK:		TELEPHONE: 719.495.7444

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Worksheet for Section - 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.007 ft/ft
Discharge	170.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	7,082.00
0+63	7,080.00
0+76	7,079.00
0+91	7,080.00
1+16	7,081.00
1+44	7,080.00
1+52	7,079.00
1+58	7,080.00
1+80	7,082.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 7,082.00)	(1+80, 7,082.00)	0.035

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	19.3 in
Roughness Coefficient	0.035
Elevation	7,080.61 ft
Elevation Range	7,079.0 to 7,082.0 ft
Flow Area	64.4 ft²
Wetted Perimeter	100.6 ft
Hydraulic Radius	7.7 in
Top Width	100.27 ft
Normal Depth	19.3 in
Critical Depth	16.0 in
Critical Slope	0.022 ft/ft
Velocity	2.64 ft/s

Worksheet for Section - 1

Results	
Velocity Head	0.11 ft
Specific Energy	1.72 ft
Froude Number	0.581
Flow Type	Subcritical

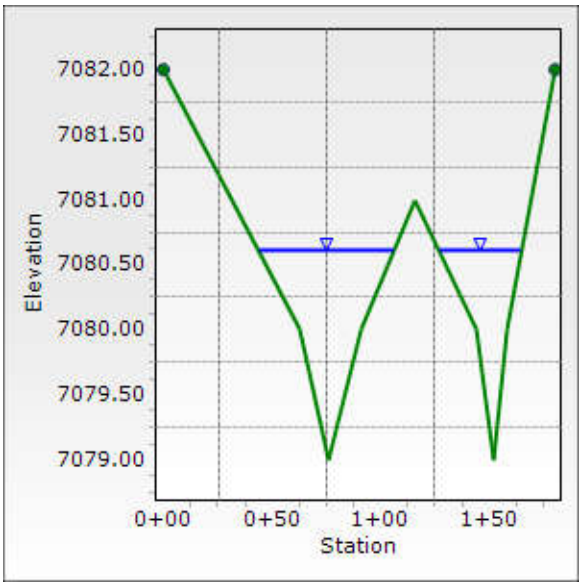
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	19.3 in
Critical Depth	16.0 in
Channel Slope	0.007 ft/ft
Critical Slope	0.022 ft/ft

Cross Section - 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.007 ft/ft
Normal Depth	19.3 in
Discharge	170.00 cfs



Worksheet for Section - 2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.007 ft/ft
Discharge	170.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	7,086.00
0+34	7,085.00
1+14	7,084.00
1+25	7,083.00
1+40	7,084.00
2+05	7,086.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 7,086.00)	(2+05, 7,086.00)	0.035

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	21.4 in
Roughness Coefficient	0.035
Elevation	7,084.78 ft
Elevation Range	7,083.0 to 7,086.0 ft
Flow Area	67.8 ft²
Wetted Perimeter	114.1 ft
Hydraulic Radius	7.1 in
Top Width	114.01 ft
Normal Depth	21.4 in
Critical Depth	18.4 in
Critical Slope	0.023 ft/ft
Velocity	2.51 ft/s
Velocity Head	0.10 ft
Specific Energy	1.88 ft
Froude Number	0.574

Worksheet for Section - 2

Results	
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	21.4 in
Critical Depth	18.4 in
Channel Slope	0.007 ft/ft
Critical Slope	0.023 ft/ft

Cross Section - 2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.007 ft/ft
Normal Depth	21.4 in
Discharge	170.00 cfs