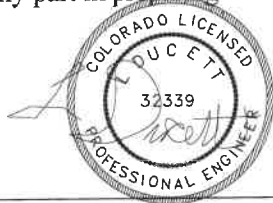


**DRAINAGE LETTER  
FOR  
14982 LONGWALL COURT  
COLORADO SPRINGS, COLORADO**

**DESIGN 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 County for drainage reports and said report is in conformity with the applicable 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.



\_\_\_\_\_  
L Ducett, P.E. 32339 10/5/2024  
On behalf of Terra Nova Engineering, Inc.

\_\_\_\_\_  
10/5/2024  
Date

**OWNER/DEVELOPER'S STATEMENT:**

I, the owner/developer have read and will comply with all of the requirements specified in this drainage report and plan.

\_\_\_\_\_  
*Jason Cain*  
Authorized Signature  
\_\_\_\_\_  
*Jason Cain, Owner*  
Printed Name, Title

\_\_\_\_\_  
10/9/2024  
Date

\_\_\_\_\_  
Business Name  
14982 Longwall Court, Colorado Springs, 80908  
Address

**EL PASO COUNTY:**

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.

\_\_\_\_\_  
Joshua Palmer, P.E.  
County Engineer / ECM Administrator

\_\_\_\_\_  
10/21/2024  
Date

Conditions:

August 2, 2024

RE: 14982 Longwall Court  
Colorado Springs, CO 80908

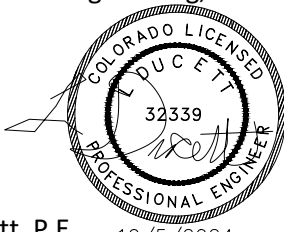
To Whom It May Concern:

We have reviewed the previously approved "Preliminary Drainage Report for Flying Horse North Preliminary Plan and Final Drainage Report for Flying Horse North Filing No. 1" by Classic Consulting dated June 2018, relating to 14982 Longwall Court (AKA Lot 60 Flying Horse North Filing No. 1) and have gathered information from aerial views and on site photos. Terra Nova Engineering is of the opinion that stormwater drainage will be in an acceptable condition pending the installation of turf reinforcement mat per the approved drainage report and the amended final plat which will revise the existing drainage easement so that the 100-year flow will be maintained inside of it. Calculations show that the existing flow path should provide stability once the turf reinforcement mat is installed. See the attached drawing below. The flow path was altered from the intended path by the placement of retaining walls and associated grading on 14982 Longwall Court. The adjacent neighbor's lot at 5021 Gold Run Court (AKA Lot 61 Flying Horse North Filing No. 1) is affected by the revised drainage easement but has agreed to the revision. An easement agreement has been written between the two lot owners to revise the easement and will be recorded along with the revised plat. The change will not affect the drainage as prescribed in the approved drainage report and will not affect any other neighboring or downstream sites.

If you require any additional information, please feel free to contact me directly.

Sincerely,

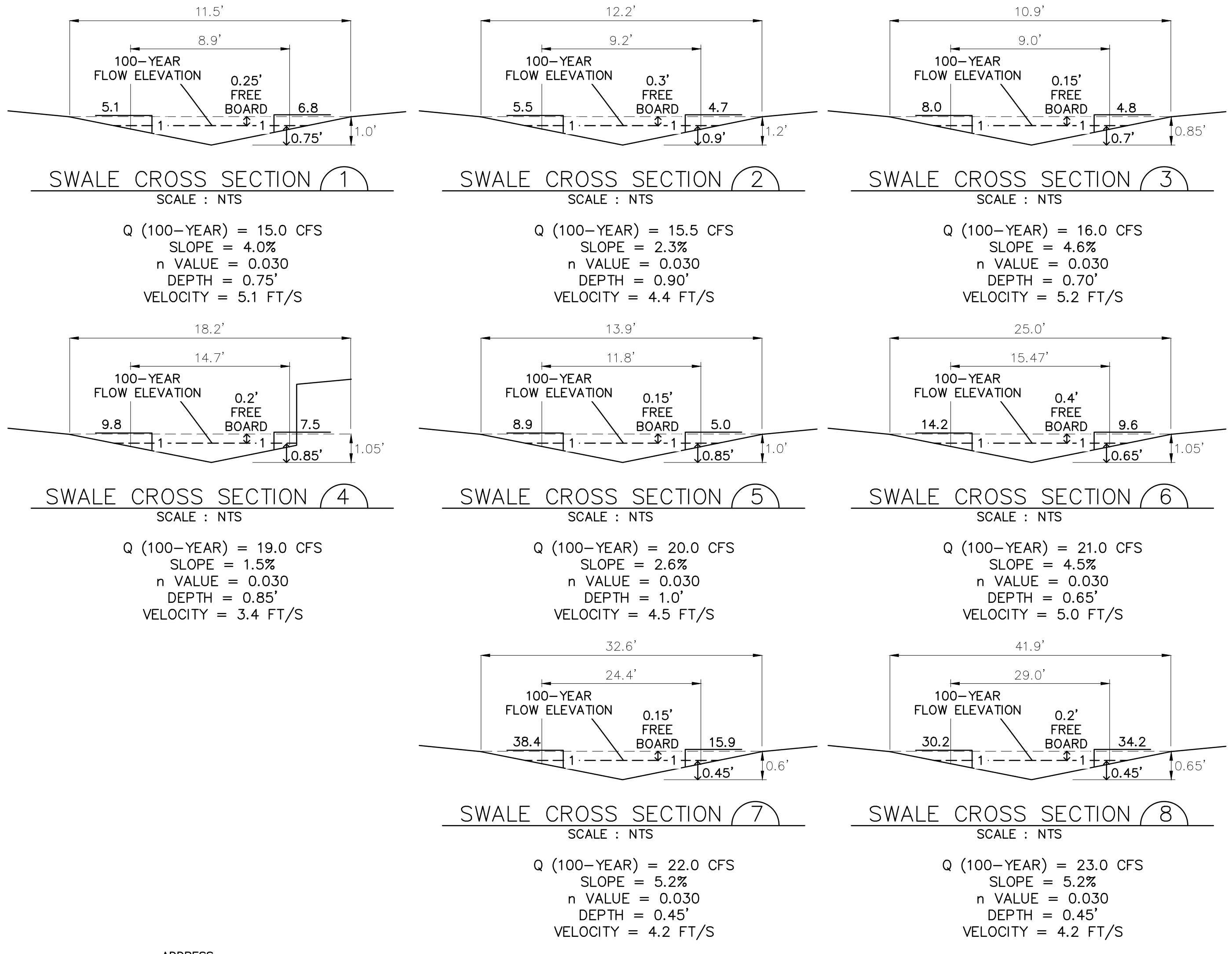
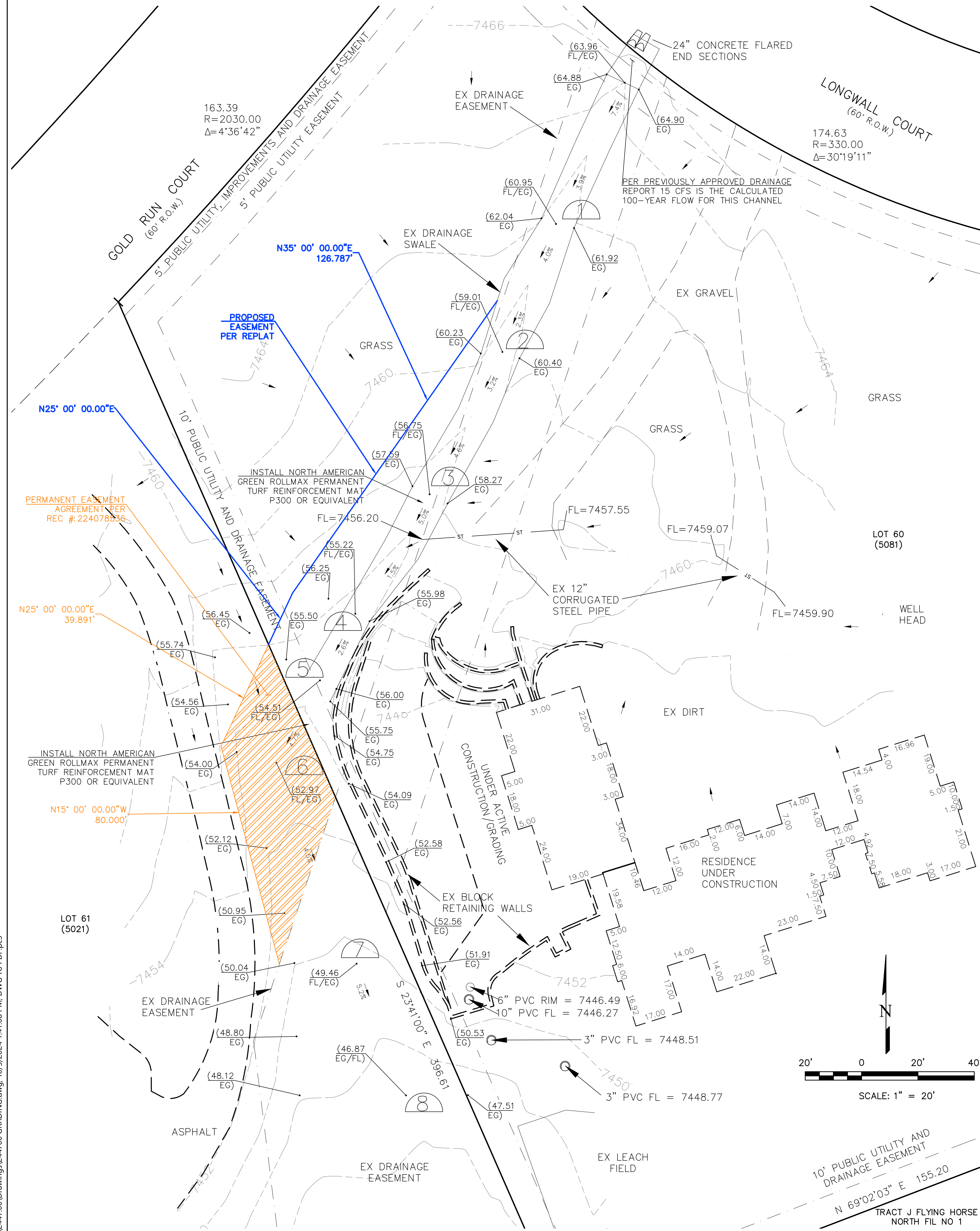
Terra Nova Engineering, Inc.



L Ducett, P.E. 10/5/2024

President

# 14982 LONGWALL COURT



ADDRESS:  
14982 LONGWALL COURT  
COLORADO SPRINGS, CO 80908

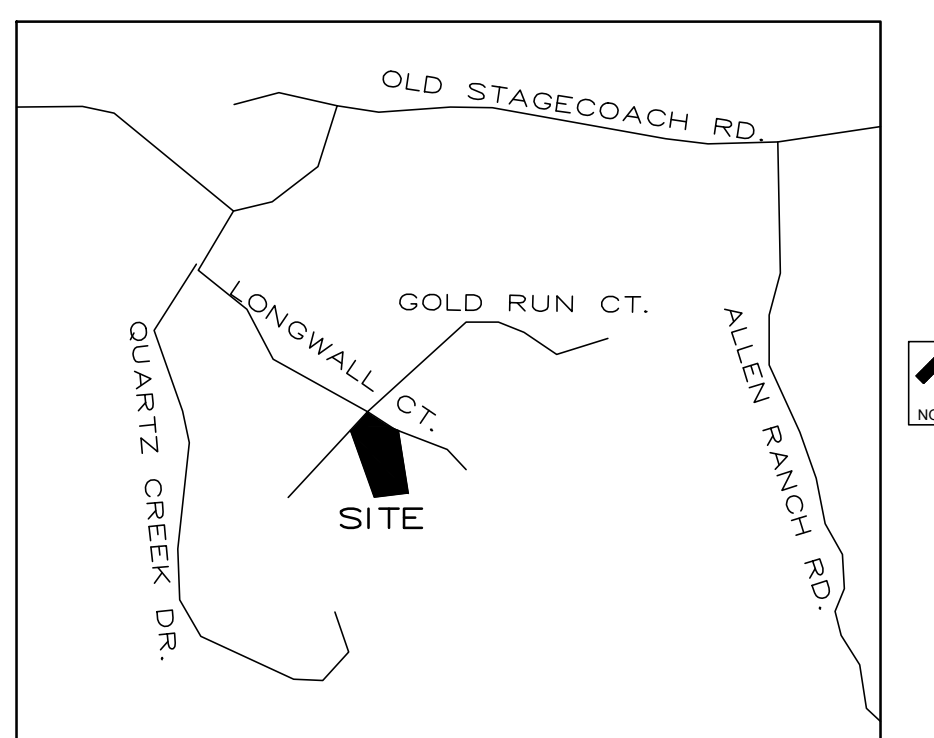
LAND DESCRIPTION:  
LOT 60 FLYING HORSE  
NORTH FILING NO 1

OWNER: JASON CAIN  
9946 BUFFER CREEK COURT  
COLORADO SPRINGS, CO 80924

CIVIL ENGINEER: TERRA NOVA ENGINEERING  
721 S. 23RD ST.  
COLORADO SPRINGS, COLORADO 80904  
L. DUCETT, P.E. (719) 635-6422, (719) 635-6426  
L@TNSINC.COM

### GRADING LEGEND

- 2302--- EXISTING CONTOURS - MINOR
- 2300--- EXISTING CONTOURS - MAJOR
- FL FLOW LINE
- PROPERTY LINE
- EXISTING FLOW
- - - - - LIMITS OF DISTURBANCE
- == PROP RETAINING WALL
- - - - - EXISTING GRAVEL EDGE
- - - - - EXISTING EASEMENT
- - - - - EXISTING ASPHALT EDGE
- - - - - EXISTING BUILDING



**STATEMENTS**  
**DESIGN ENGINEER'S STATEMENT:**  
THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART TO PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

L. DUCETT, P.E. #32339  
FOR AND ON BEHALF OF TERRA NOVA ENGINEERING, INC.  
PROFESSIONAL ENGINEER  
10/5/2024

REVISIONS	NO.	DESCRIPTION	DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, INCORPORATING THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

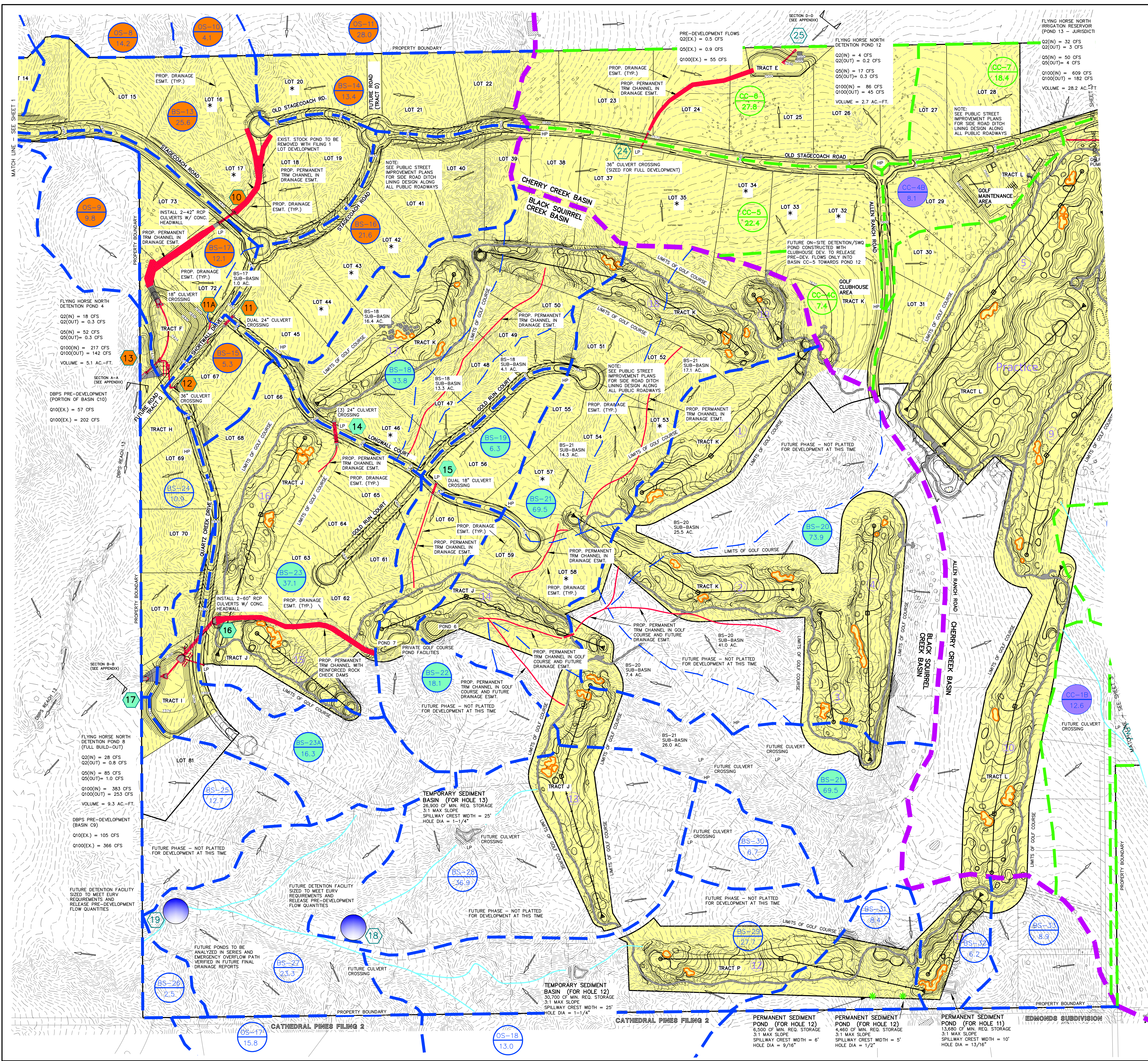
PREPARED FOR:  
**JASON CAIN**  
ATTN:  
9946 BUFFER CREEK COURT  
COLORADO SPRINGS, CO 80924

**Terra Nova Engineering, Inc.**  
721 S. 23RD STREET  
COLORADO SPRINGS, CO 80904  
OFFICE: 719-635-6422  
FAX: 719-635-6426  
www.tnsinc.com

**14982 LONGWALL COURT**  
GRADING PLAN

DESIGNED BY JF  
DRAWN BY JF  
CHECKED BY LD  
H-SCALE AS SHOWN  
V-SCALE N/A  
JOB NO. 2447.00  
DATE ISSUED 10/5/24  
SHEET NO. 1 OF 1

MAP AND CHANNEL CROSS-SECTION FROM  
PREVIOUSLY APPROVED DRAINAGE REPORT



**BASIN SUMMARY - DEVELOPED CONDITIONS**

BASIN (label)	AREA (acres)	COMPOSITE CN	LAG TIME (hours)	Q 2 Yr. (cfs)	Q 5 Yr. (cfs)	Q 100 Yr. (cfs)
OS-8	14.20	65.0	0.27	2.1	6.2	24.7
OS-9	9.80	65.0	0.37	0.1	1.0	9.1
OS-10	4.10	65.0	0.17	0.7	2.1	8.2
OS-11	28.00	65.0	0.35	2.4	8.2	38.7
OS-12	68.10	62.7	0.37	2.2	11.9	76.8
OS-13	38.90	65.0	0.33	1.4	7.4	45.0
OS-14	28.40	62.0	0.31	0.7	4.6	31.0
OS-15	70.80	63.9	0.38	3.3	14.8	84.2
OS-16	4.50	65.0	0.24	0.4	1.5	7.2
OS-17	15.80	65.0	0.19	1.6	5.9	27.7
OS-18	13.00	65.0	0.20	1.3	4.7	22.6
BS-13	25.60	65.0	0.23	3.7	10.2	40.7
BS-14	13.40	65.0	0.23	2.6	6.8	26.5
BS-15	5.30	65.0	0.18	1.6	3.7	12.2
BS-16	21.50	65.0	0.34	4.6	11.8	44.1
BS-17	12.10	65.0	0.21	3.1	7.7	26.7
BS-18	33.80	63.6	0.41	3.5	12.4	56.0
BS-19	6.30	65.0	0.18	2.1	4.6	15.0
BS-20	73.90	63.4	0.31	7.4	24.6	112.4
BS-21	69.50	64.3	0.35	7.8	23.9	103.0
BS-22	18.10	64.4	0.22	3.7	9.6	36.5
BS-23	37.10	63.3	0.33	4.5	13.6	58.2
BS-24	18.30	64.4	0.29	5.5	12.0	38.3
BS-25	19.90	63.0	0.17	0.6	3.3	17.6
EX-24 (Pre-Dev)	13.20	60.0	0.17	0.2	2.2	17.8
BS-25	12.70	63.0	0.23	0.4	2.7	17.3
BS-26	2.90	65.0	0.18	0.0	0.4	3.4
BS-27	23.30	65.0	0.22	2.1	8.0	38.8
BS-28	38.90	64.4	0.32	2.2	9.3	49.4
BS-29	27.70	64.0	0.33	1.4	6.5	36.9
BS-30	6.70	65.0	0.20	0.7	2.4	11.7
BS-31	8.40	63.1	0.43	1.8	1.9	11.8
BS-32	6.20	62.6	0.20	0.3	1.6	9.4
BS-33	8.90	64.7	0.19	0.8	3.2	15.3
CC-1A	9.80	65.0	0.23	0.8	3.3	16.0
CC-1B	12.60	64.8	0.28	1.0	4.0	19.4
CC-2A	11.00	65.0	0.22	1.0	3.8	18.3
CC-2B	20.80	65.0	0.22	1.9	7.1	34.6
CC-2C	6.40	65.0	0.18	0.7	2.5	11.5
CC-3	52.50	63.1	0.43	1.8	8.8	54.5
CC-4A	108.70	62.6	0.44	15.4	39.0	156.0
CC-4B	8.10	76.1	0.26	4.0	7.3	20.6
CC-4C (Pre-Dev)	7.40	61.0	0.13	0.2	1.8	11.2
CC-5	22.40	65.0	0.26	1.8	7.1	34.3
CC-6	72.80	65.0	0.25	2.3	9.1	43.2
CC-7	18.40	65.0	0.29	1.4	5.4	27.0

**DESIGN POINTS SURFACE ROUTING SUMMARY - DEVELOPED CONDITIONS**

Design Point (label)	Contributing Basins	Q 2 Yr. (cfs)	Q 5 Yr. (cfs)	Q 100 Yr. (cfs)
DP-10 DEV	OS-8, OS-10, OS-11, BS-13, BS-14	10.7	32.0	143
DP-11 DEV	BS-16	4.6	11.8	36
DP-12 DEV	DP-11, 1.0 Ac. Portion of BS-17 and BS-15	4.2	11.8	46
<b>TOTAL INFLOW TO POND 4 (UD Detention hydrograph)</b>	<b>DP-10, DP-12, BS-17, OS-9</b>	<b>10</b>	<b>16</b>	<b>217</b>
DP-13 DEV	Release from FHN Pond 4	0.3	0.3	142
DP-14 DEV	BS-18	3.5	12.4	56
DP-15 DEV	BS-19	2.1	4.6	15
DP-16 DEV	DP-14, DP-15, BS-20, BS-21, BS-22, BS-23	25.0	78.0	362
<b>TOTAL INFLOW TO FHN POND 8 (Full Build-out) (UD Detention hydrograph)</b>	<b>DP-10, DP-12, BS-17, OS-9</b>	<b>24</b>	<b>37</b>	<b>390</b>
DP-17 DEV (Full Build-out)	Release from FHN Pond 8	0.8	1.0	253
<b>TOTAL INFLOW TO FHN POND 8 (Filling 1 Only) (UD Detention hydrograph)</b>	<b>DP-10, DP-12, BS-17, OS-9</b>	<b>9</b>	<b>14</b>	<b>301</b>
DP-17 DEV (Filling 1 Only)	Release from FHN Pond 8	0.4	0.5	219
DP-18 DEV	BS-28, BS-29, BS-30, OS-18	5.0	21.6	115
DP-19 DEV	BS-27, OS-17, Release from DP-18	3.8	16.8	126
DP-20 DEV	CC-1A, OS-12	3.2	14.3	88
DP-21 DEV	CC-2A, OS-13	2.1	10.5	62
DP-22 DEV	CC-2B, Release from DP-21	3.7	16.6	92
DP-23 DEV	CC-3, OS-14	2.5	13.0	84
DP-24 DEV	CC-4C (Pre-Dev), CC-5	1.9	8.4	45
<b>TOTAL INFLOW TO POND 12 (UD Detention hydrograph)</b>	<b>CC-4C, CC-5, CC-6</b>	<b>6</b>	<b>9</b>	<b>85</b>
DP-25 DEV	Release from FHN Pond 12	0.2	0.3	45

**LEGEND**

DESCRIPTION	SYMBOL
EXISTING GROUND CONTOUR	6910
PROPOSED FINISHED CONTOUR	6910
BASIN BOUNDARY EAST CHERRY CREEK	---
MAJOR BASIN BOUNDARY	---
BASIN BOUNDARY BLACK SQUIRREL	---
DESIGN POINT	3
LOTS WITH NON-STANDARD CULVERT SIZE	*
BASIN IDENTIFIER	BB 10.0
EXISTING DIRECTION OF FLOW	→
PROPOSED DIRECTION OF FLOW	→
STORM SEWER	---
FILING NO. 1 PLAT AREA	---

SCALE: 1" = 200'

**CLASSIC CONSULTING ENGINEERS & SURVEYORS**

FLYING HORSE NORTH PRELIMINARY/FINAL DRAINAGE REPORT  
FILING NO. 1 DRAINAGE MAP

DESIGNED BY: MAW SCALE: 1" = 200' DATE: 10-25-17  
 DRAIN BY: MAW (H) SHEET: 2 OF 4  
 CHECKED BY: (V) N/A JOB NO.: 1096.11

619 N. Cascade Avenue, Suite 200 (719)785-0790  
 Colorado Springs, Colorado 80903 (719)785-0799 (Fax)

# Channel Report

## Permanent TRM Channel from DP 15

### Trapezoidal

Bottom Width (ft) = 5.00  
Side Slopes (z:1) = 4.00, 4.00  
Total Depth (ft) = 1.50  
Invert Elev (ft) = 7460.00  
Slope (%) = 4.50  
N-Value = 0.040

### Highlighted

Depth (ft) = 0.51  
Q (cfs) = 15.00  
Area (sqft) = 3.59  
Velocity (ft/s) = 4.18  
Wetted Perim (ft) = 9.21  
Crit Depth, Yc (ft) = 0.56  
Top Width (ft) = 9.08  
EGL (ft) = 0.78  
Froude No. = 1.17

### Calculations

Compute by: Known Q  
Known Q (cfs) = 15.00

Permissible Velocity (ft/s) = 9.0 - 16.0  
North American Green  
Rollmax Permanent Turf Reinforcement Mat  
P300 or Equiv.

