

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director



Mayor Timothy M. Keller

January 7, 2021

Åsa Nilsson-Weber, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. N.E
Albuquerque, NM 87108

**RE: Aspire Subdivision Units 1
Interim Grading & Drainage Plan and Drainage Report
Engineer's Stamp Date: 12/14/20
Hydrology File: N08D006F2**

Dear Ms. Nilsson-Weber:

Based upon the information provided in your submittal received 12/15/20, the Interim Grading & Drainage Plan and Drainage Report are approved for Grading Permit and Work Order.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

Project Title: Aspire Subdivision, Unit 1 Building Permit #: _____ Hydrology File #: N-08-D006A
 DRB#: PR-2019-002411 EPC#: _____ Work Order#: _____
 Legal Description: Tracts A1A & B1, Anderson Heights, Unit 4
 City Address: East of 118th St. between Amole Mesa Ave. and Colobel Ave.

Applicant: Isaacson & Arfman, Inc. Contact: Åsa Nilsson-Weber
 Address: 128 Monroe Street NE - Albuquerque, NM 87108
 Phone#: (505) 268-8828 Fax#: _____ E-mail: asaw@iacivil.com
Owner: Heritage Trails Development I, LLC Contact: Scott Steffen
 Address: 3030 Roma Ave NW, Ste 110 - Albuquerque, NM 87102
 Phone#: (505) 243-3949 Fax#: _____ E-mail: ssteffen@pricedlg.com

TYPE OF SUBMITTAL: PLAT (151 # OF LOTS) _____ RESIDENCE _____ DRB SITE _____ ADMIN SITE
 IS THIS A RESUBMITTAL?: _____ Yes _____ No

DEPARTMENT: _____ TRAFFIC/ TRANSPORTATION HYDROLOGY/ DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

- ENGINEER/ARCHITECT CERTIFICATION
- PAD CERTIFICATION
- CONCEPTUAL G & D PLAN
- GRADING PLAN (Aspire Unit 1 Interim Grd Plan)
- DRAINAGE MASTER PLAN
- DRAINAGE REPORT
- FLOODPLAIN DEVELOPMENT PERMIT APPLIC
- ELEVATION CERTIFICATE
- CLOMR/LOMR
- TRAFFIC CIRCULATION LAYOUT (TCL)
- TRAFFIC IMPACT STUDY (TIS)
- OTHER (SPECIFY) _____
- PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- BUILDING PERMIT APPROVAL
- CERTIFICATE OF OCCUPANCY
- PRELIMINARY PLAT APPROVAL
- SITE PLAN FOR SUB'D APPROVAL
- SITE PLAN FOR BLDG. PERMIT APPROVAL
- FINAL PLAT APPROVAL
- SIA/ RELEASE OF FINANCIAL GUARANTEE
- FOUNDATION PERMIT APPROVAL
- GRADING PERMIT APPROVAL
- SO-19 APPROVAL
- PAVING PERMIT APPROVAL
- GRADING/ PAD CERTIFICATION
- WORK ORDER APPROVAL
- CLOMR/LOMR
- FLOODPLAIN DEVELOPMENT PERMIT
- OTHER (SPECIFY) _____

DATE SUBMITTED: December 15, 2020 By: Åsa Nilsson-Weber

COA STAFF: _____

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

DECEMBER 14, 2020

DRAINAGE REPORT

FOR

ASPIRE SUBDIVISION, UNIT 1 INTERIM DRAINAGE REPORT

ALBUQUERQUE, NEW MEXICO

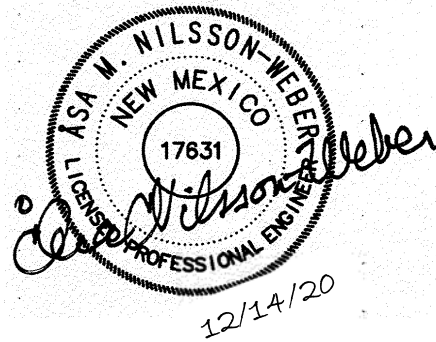
PREPARED BY

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION

APPROVED

DATE: 01/07/21
BY: *Renee C. Brissette*
HydroTrans # N08D006F2

THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE
CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY
ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT
THE CITY OF ALBUQUERQUE FROM REQUIRING
CORRECTION, OR ERROR OR DIMENSIONS IN PLANS,
SPECIFICATIONS, OR CONSTRUCTIONS, SUCH APPROVED PLANS
SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT
AUTHORIZATION.



Isaacson &
Arfman, Inc.
Civil Engineering Consultants



128 Monroe Street NE
Albuquerque, NM 87108
505-268-8828 | www.iacivil.com

I&A Project No. 2379

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PROJECT INFORMATION

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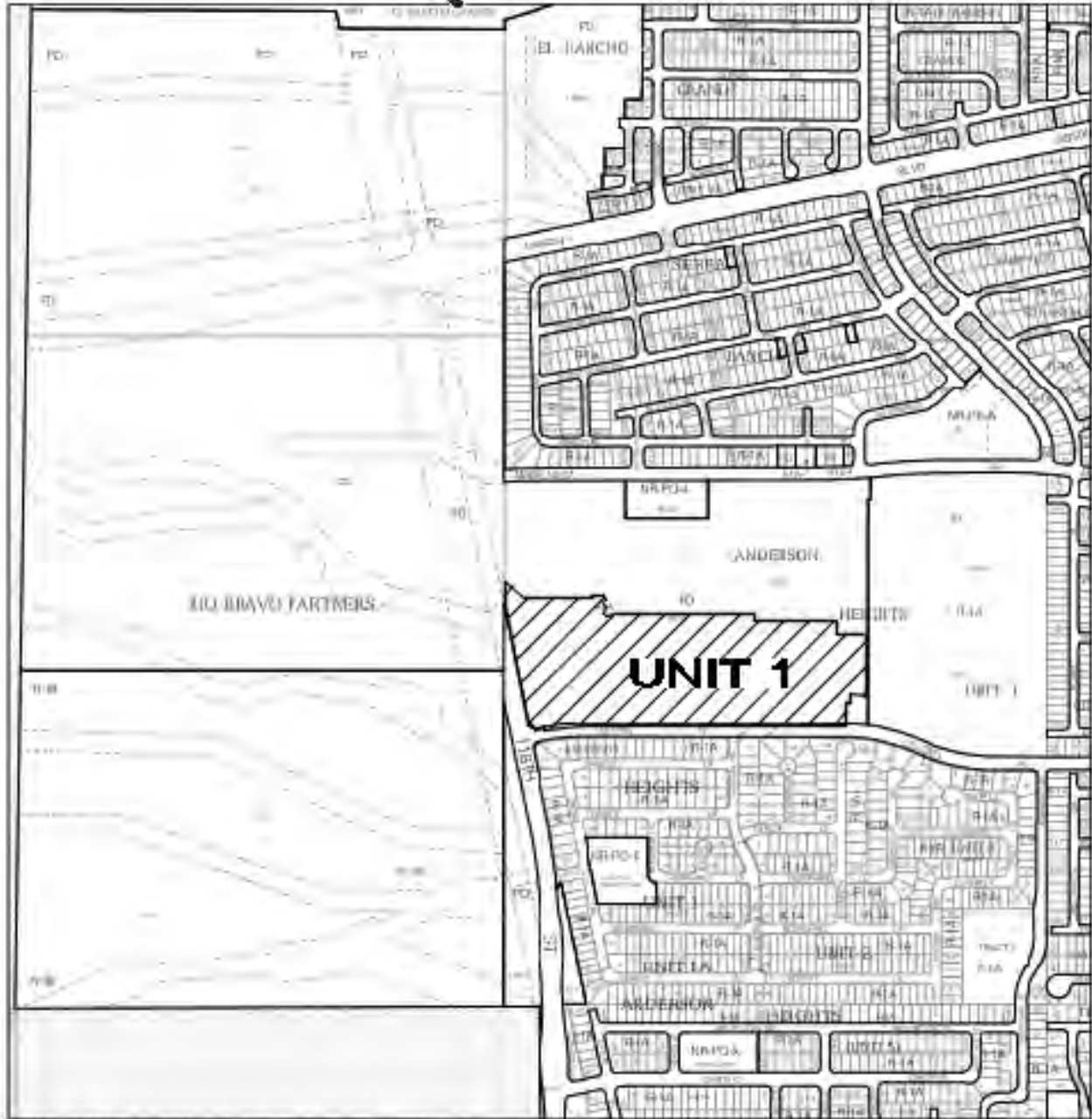
- APPENDIX A: Basin Area and Flow Summary Table
NOAA Atlas 14
AHYMO 100-yr, 6-hr Summary**

- APPENDIX B: Pond Volume Calculations
Channel Capacity Calculations
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- APPENDIX C: Storm Drain Calculations
Minimum Radius for Curvilinear Storm Drain,
By American Concrete Institute**

POCKET

- Interim Drainage Basin Exhibit**
- Unit 1 Interim Grading Plan**



For more details about the Integrated Development Ordinance visit: <http://www.cabq.gov/planning/cades-policies-regulations/integrated-development-ordinance>



LOCATION MAP

PROJECT INFORMATION

PROPOSED LEGAL DESCRIPTION:

Aspire Subdivision, Unit 1

EXISTING LEGAL DESCRIPTION:

Tracts A-1A and B-1, Anderson Height, Unit 4

ENGINEER:

Isaacson & Arfman, Inc.
128 Monroe Street NE
Albuquerque, NM 87108
(505) 268-8828
Attn: Åsa Nilsson-Weber

DEVELOPER:

Heritage Trails Development I, LLC
301 Roma Ave. NW, Ste. 110
Albuquerque, NM 87102
(505) 243-3949
Attn: Scott Steffen

SURVEYOR:

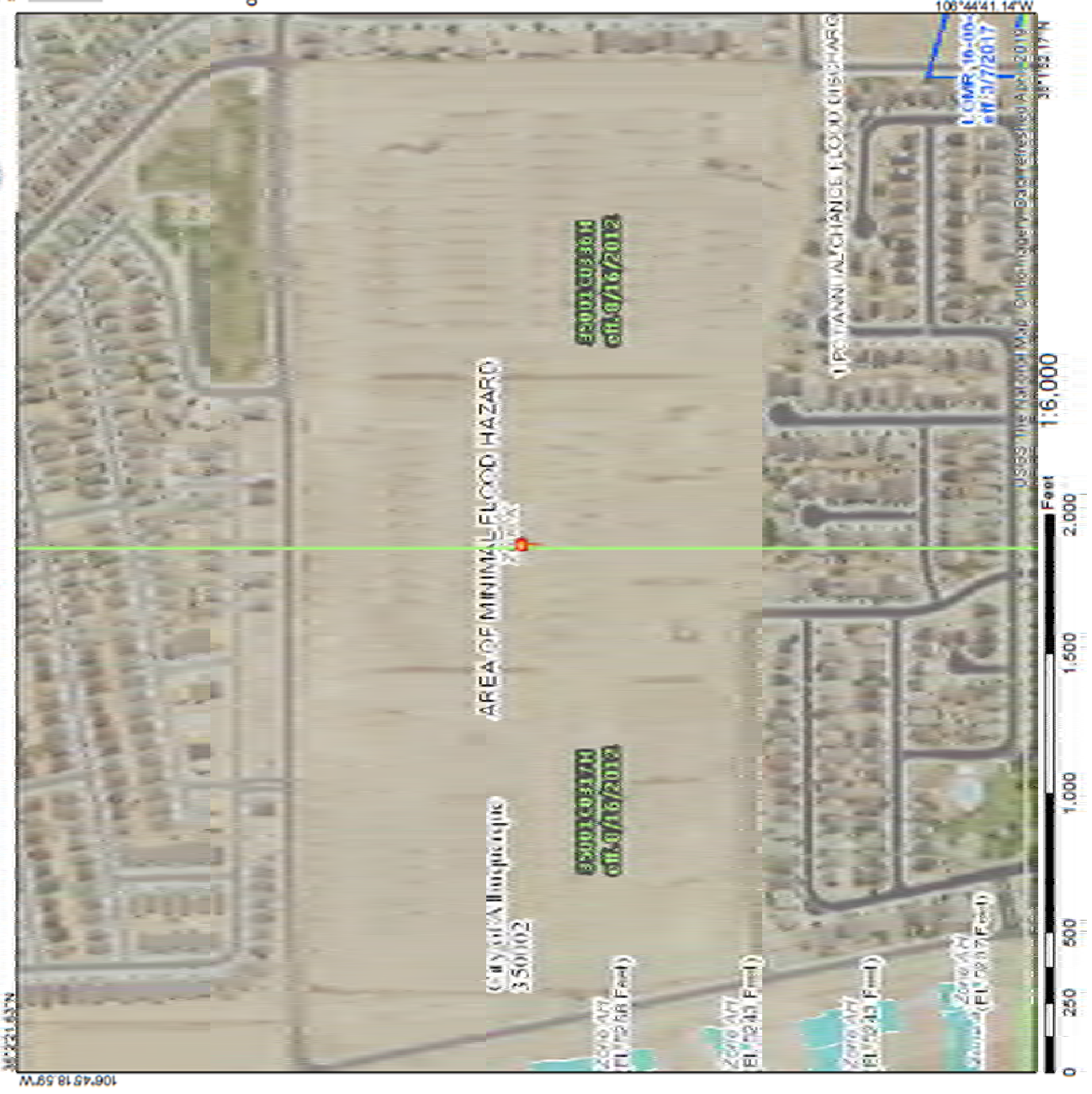
Cartesian Land Surveys, Inc.
1005 21st St, SE
Rio Rancho, NM 87124
(505) 896-3050
Attn: Will Plotner

DISTURBED AREA: 29.6 AC.± (Including 24.25 acres of Unit 1)

NUMBER OF PROPOSED DWELLING UNITS: 151

FLOOD PLAIN: This property lies within Flood Zone X which is defined as an area of minimal flood hazard as determined by F.E.M.A. and shown on the Flood Insurance Rate Maps dated August 16, 2012, Map No. 35001C0336H and Map No. 35001C0317H.

National Flood Hazard Layer FIRMette



Legend

SEE FIRM REPORT FOR DETAILED LEGEND AND WATER MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone X
- With BFE or Depth Zone X, AH, AE, VC, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone A
- Area with Reduced Flood Risk due to Levees, Sea Walls, etc. Zone D
- Area with Flood Risk due to Levees Zone D

OTHER AREAS

- Area of Minimal Flood Hazard Zone X
- Effective LOMR
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The Basemap shown complies with FEMA's Basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 07/20/20 at 5:45:43 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is valid if the one or more of the following map elements do not appear: Basemap Imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, firm panel numbers, and firm effective date. Map images for unmapped and unmolested areas cannot be used for regulatory purposes.

I. INTRODUCTION

Aspire Subdivision, Unit 1 is located east of 118th St. SW; south of Amole Mesa Ave. SW and north of Colobel Ave. SW. An approved drainage report is on file with City of Albuquerque Hydrology for Aspire Units 1-4 dated August 25, 2020 (DMP) including an approved grading and drainage plan for Units 1-4 dated August 21, 2020 prepared by Isaacson & Arfman, Inc.

Unit 1 will be developed with 151 lots and this report identifies the required drainage improvements required to mitigate developed and undeveloped flows in the interim condition until the remaining units develop.

II. EXISTING CONDITIONS

As part of previous development efforts, the site has been graded, and a series of retention ponds and retaining walls have been installed. The property drains from west to east and the storm water is retained in a series of ponds on the property. See back pocket for an Existing Ponds and Wall Plan.

III. INTERIM CONDITIONS

The Aspire Subdivision will be developed as a private, gated community with 506 lots, and the first phase of the development, Unit 1, consists of 151 lots. The existing ponds, retaining walls and perimeter walls in Unit 1 and the interior retaining walls and portions of the perimeter walls in Unit 2 will be demolished with the Unit 1 grading. See back pocket for the Existing Pond and Wall Plan.

Unit 1 drains to two storm drain systems. The southwest area (Basin INT-WEST) drains via 24”-30” storm drains that connect to the existing Colobel Ave. storm drain at a 20-foot storm drain easement at the southeast end of Unit 1 (Easement storm drain). The north and easterly area (Basin INT-EAST) drains to a 24”-42” storm drain system that will be partially installed within Unit 1 and ultimately be continued through future Unit 3 and connect to a storm drain in future Crestone Way and Colobel Ave. at the southeast end of the site (Crestone storm drain). In the interim condition, the storm water captured in the Crestone Way storm drain system along with the interim pond basin (INT-POND) will be retained in the interim pond east of the Unit 1 terminus of Caresso Loop.

Along the perimeter of Unit 1, a temporary drainage swale shall be graded to protect the Unit 1 development—Basin INT-NORTH. The storm water from this basin (17.3 cfs) is directed to an

existing pond at the southeast corner of the property (per historical drainage pattern). The swale capacity calculations are included in Appendix B and shows non-erosive velocities of 3.7 fps to 5.3 fps. A 20-foot wide emergency access road shall be graded from Arriba Lane to Amole Mesa Ave., and ten pads in Unit 2 and seven pads in Unit 3 shall be graded with Unit 1. See the back pocket for the Interim Drainage Basin Exhibit and Interim Grading Plans.

LAND TREATMENTS & BASIN AREAS

Land treatments for Basins INT-WEST and INT-EAST are 57.6% D; 38.2% B; 4.2% C (as calculated in the DMP). Basin INT-NORTH was designated 6% D; 94% C and the pond area, INT-POND, 50% B; 50% C. See Appendix A for a basin area and flow summary table and the back pocket for the Interim Drainage Basin Exhibit.

HYDROLOGY

The drainage calculations were performed for the 100-year, 6-hour storm using AHYMO-S4, 2009 with rainfall data from the NOAA Atlas 14. See Appendix A for AHYMO summary file.

WATER QUALITY VOLUMES

In-lieu payment will be made for the storm water quality volumes discharging from the site. The volumes calculated are based on the requirements in the previous Development Process Manual (DPM) of 0.34 inches of the impervious area since the preliminary plat and master grading & drainage plans were submitted in July 2020; the 2020 DPM took effect for projects submitted after August 1, 2020. The water quality volume calculations in the Basin Area and Flow Summary Table in Appendix A show that 17,242 cubic feet total is generated in Unit 1, and 9,515 cubic feet is discharged in the interim condition since the remaining volume is retained in the interim pond. With the Unit 1 development, payment shall be made for 9,515 cubic feet and payment for the remaining 7,727 cubic feet in Unit 1 shall be made with Unit 2 when the pond is abandoned and the Crestone storm drain system is fully installed.

STORM DRAIN

Inlet and storm drain capacities for the two storm drain systems serving Unit 1--Easement storm drain and Crestone storm drain were calculated in the DMP. The Easement storm drain (24"-30" dia.) discharges 47.2 cfs to the existing Colobel storm drain at the 20-foot storm drain easement at the east end of the site in both the ultimate and interim condition. The Crestone storm drain discharges 123.4 cfs from the site in the ultimate condition (including 5.2 cfs from Memorial Park) and 33.3 cfs to the temporary pond in the interim condition. A 42" RCP end section shall be installed with the public work order. Appendix C includes storm drain calculations for the last 42" leg of the Crestone storm drain that discharges 33.3 cfs to the interim pond

INTERIM TEMPORARY POND

The required volumes for the interim pond is 86,217 cubic feet and the provided pond volume is 113,044 cubic feet which includes 1.4 feet of free board; the top of the pond elevation is 5182 and the bottom of the pond is at 5174.4 (invert elevation of the 42" storm drain). An erosion control apron shall be installed at the outlet of the pipe and a six-foot chain link fence shall be installed around the perimeter of the pond as shown on the Interim Grading Plan included in the back pocket. Pond volume and erosion control calculations are included in Appendix B.

This pond shall remain in place until the Crestone storm drain system is installed and connected to the 78" storm drain in Colobel Ave. that drains to the regional pond.

IV. SUMMARY & CONCLUSIONS

Unit 1 shall be graded per the approved grading plan included in the DMP and infrastructure as specified in the approved infrastructure list shall be installed with a public work order. The interim grading shall include the following:

- Removal of existing retaining walls and perimeter walls and filling the existing ponds located in Unit 1.
- Construction of an interim pond with outlet erosion protection and chain link perimeter fence.
- Grading for a 20' temporary access road to Amole Mesa Ave.
- Grading for a swale along the north and east perimeter of Unit 1 to divert offsite storm water.
- The developer shall pay in-lieu fees for the volumes of Unit 1 that drains to the Easement storm drain system—9,515 cubic feet. The remaining volume of Unit 1 that drains to the interim pond—7,727 cubic feet—shall be paid with the Unit 2 development when the Crestone storm drain system is installed and the interim pond is filled in.

APPENDIX A

Basin Area and Flow Summary Table

NOAA Atlas 14

AHYMO 100-yr, 6-hr Summary

**ASPIRE SUBDIVISION, UNIT 1
 INTERIM BASIN AREA, FLOW SUMMARY AND
 UNIT 1 INTERIM WATER QUALITY VOLUMES**

INTERIM BASIN AREAS & FLOW SUMMARY							
BASIN	AREA (SF)	AREA (AC.)	AREA (SQ.MI.)	Q100 (CFS)	v100 (AC-FT)	v100 (CF)	
INT-EAST	411,360	9.4435	0.01476	33.3	1.215	52,925	TO POND
INT-POND	21,989	0.5048	0.00079	1.4	0.039	1,699	TO POND
INT-WEST	583,033	13.3846	0.02091	47.2	1.722	75,010	TO EASEMENT SD
INT-NORTH	241,590	5.5462	0.00867	17.3	0.516	22,477	TO OFFSITE

Disturbed Area: 29.58 ac. (including 0.7 ac. grading of access road)
Unit 1 Area: 24.25 ac.

100-year 10-day Storm Volume to Interim Pond Volumes from INT-EAST & INT-POND		
V ₃₆₀ (from AHYMO)		54,624
Int-East Area @ 57.6% Type D		236,943
For 100-year 10 Day Storms: $V_{10day} = V_{360} + (A_D * (P_{10day} - P_{360})/12"$ per foot)		
V ₃₆₀ (CF)	=	54,624
A _D (SF)	=	236,943
P _{10day} (IN)	=	3.91
P ₃₆₀ (IN)	=	2.31
V ₃₆₀ (CF)	=	54,624
+ imp. Area (CF)	=	31,592
Total Volume (V_{10 day}) (CF)	=	86,217

UNIT 1 STORM WATER QUALITY VOLUME				
BASINS	AREA (AC.)	%D	WATER QUAL. DEPTH (IN.)	WATER QUAL. VOLUME (CF)
INT-WEST	13.3846	57.6	0.34	9,515
TOTAL INTERIM UNIT 1				9,515
TOTAL UNIT 1	24.2538	57.6	0.34	17,242
TOTAL ULTIMATE UNIT 1				17,242

IN-LIEU PAID WITH UNIT 1

REMAINDER UNIT 1	7,727	REMAINING IN-LIEU PAID WITH UNIT 2
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NOAA Atlas 14, Volume 1, Version 5
Location name: Albuquerque, New Mexico, USA*
Latitude: 35.0355°, Longitude: -106.7515°
Elevation: 5229.74 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.175 (0.150-0.203)	0.226 (0.194-0.263)	0.303 (0.259-0.352)	0.363 (0.309-0.420)	0.445 (0.377-0.514)	0.508 (0.430-0.588)	0.576 (0.483-0.665)	0.646 (0.538-0.746)	0.741 (0.612-0.858)	0.817 (0.670-0.946)
10-min	0.265 (0.228-0.309)	0.344 (0.295-0.400)	0.461 (0.395-0.537)	0.553 (0.471-0.640)	0.677 (0.575-0.783)	0.774 (0.654-0.895)	0.876 (0.735-1.01)	0.983 (0.819-1.14)	1.13 (0.931-1.31)	1.24 (1.02-1.44)
15-min	0.329 (0.283-0.383)	0.426 (0.366-0.496)	0.572 (0.489-0.665)	0.685 (0.585-0.793)	0.840 (0.713-0.971)	0.959 (0.811-1.11)	1.09 (0.912-1.25)	1.22 (1.02-1.41)	1.40 (1.16-1.62)	1.54 (1.26-1.78)
30-min	0.443 (0.381-0.516)	0.574 (0.493-0.668)	0.770 (0.659-0.896)	0.923 (0.787-1.07)	1.13 (0.960-1.31)	1.29 (1.09-1.49)	1.46 (1.23-1.69)	1.64 (1.37-1.90)	1.88 (1.56-2.18)	2.08 (1.70-2.40)
60-min	0.549 (0.471-0.638)	0.711 (0.610-0.827)	0.953 (0.815-1.11)	1.14 (0.974-1.32)	1.40 (1.19-1.62)	1.60 (1.35-1.85)	1.81 (1.52-2.09)	2.03 (1.69-2.35)	2.33 (1.92-2.70)	2.57 (2.11-2.97)
2-hr	0.637 (0.546-0.755)	0.817 (0.698-0.968)	1.08 (0.922-1.28)	1.29 (1.10-1.52)	1.59 (1.34-1.86)	1.82 (1.53-2.13)	2.07 (1.72-2.42)	2.33 (1.93-2.72)	2.70 (2.20-3.15)	3.00 (2.42-3.50)
3-hr	0.683 (0.590-0.804)	0.867 (0.748-1.02)	1.14 (0.980-1.34)	1.35 (1.16-1.58)	1.65 (1.40-1.93)	1.89 (1.60-2.20)	2.14 (1.80-2.49)	2.41 (2.01-2.81)	2.78 (2.29-3.24)	3.09 (2.52-3.60)
6-hr	0.787 (0.686-0.918)	0.992 (0.867-1.16)	1.28 (1.12-1.49)	1.50 (1.31-1.75)	1.81 (1.57-2.10)	2.05 (1.77-2.38)	2.31 (1.97-2.67)	2.57 (2.18-2.97)	2.93 (2.47-3.39)	3.23 (2.69-3.74)
12-hr	0.873 (0.767-0.998)	1.10 (0.969-1.26)	1.40 (1.22-1.59)	1.63 (1.42-1.85)	1.94 (1.69-2.20)	2.18 (1.89-2.48)	2.43 (2.10-2.76)	2.69 (2.30-3.06)	3.04 (2.58-3.46)	3.33 (2.80-3.79)
24-hr	0.980 (0.868-1.12)	1.23 (1.09-1.40)	1.54 (1.36-1.75)	1.78 (1.58-2.02)	2.12 (1.86-2.39)	2.37 (2.08-2.68)	2.64 (2.30-2.97)	2.90 (2.53-3.27)	3.26 (2.82-3.68)	3.55 (3.05-4.00)
2-day	1.03 (0.921-1.16)	1.30 (1.15-1.46)	1.62 (1.44-1.81)	1.87 (1.66-2.09)	2.21 (1.96-2.47)	2.47 (2.18-2.76)	2.74 (2.42-3.06)	3.01 (2.64-3.37)	3.38 (2.95-3.78)	3.66 (3.17-4.10)
3-day	1.14 (1.03-1.26)	1.42 (1.29-1.58)	1.76 (1.59-1.95)	2.03 (1.83-2.24)	2.38 (2.15-2.63)	2.65 (2.38-2.93)	2.93 (2.62-3.23)	3.21 (2.86-3.54)	3.58 (3.18-3.95)	3.86 (3.41-4.27)
4-day	1.25 (1.15-1.37)	1.55 (1.42-1.70)	1.91 (1.74-2.08)	2.18 (2.00-2.38)	2.56 (2.33-2.79)	2.84 (2.58-3.09)	3.12 (2.83-3.40)	3.41 (3.08-3.71)	3.78 (3.41-4.13)	4.06 (3.65-4.44)
7-day	1.44 (1.32-1.57)	1.79 (1.63-1.95)	2.17 (1.99-2.37)	2.47 (2.27-2.69)	2.87 (2.63-3.11)	3.17 (2.89-3.43)	3.46 (3.15-3.75)	3.74 (3.41-4.06)	4.11 (3.73-4.46)	4.38 (3.96-4.76)
10-day	1.59 (1.46-1.73)	1.97 (1.81-2.15)	2.42 (2.22-2.63)	2.76 (2.54-3.00)	3.22 (2.95-3.49)	3.56 (3.25-3.86)	3.91 (3.56-4.23)	4.24 (3.86-4.59)	4.68 (4.24-5.07)	5.00 (4.52-5.43)
20-day	2.00 (1.84-2.19)	2.49 (2.29-2.71)	3.02 (2.78-3.29)	3.42 (3.14-3.72)	3.93 (3.61-4.27)	4.30 (3.94-4.67)	4.66 (4.26-5.05)	5.00 (4.57-5.41)	5.42 (4.94-5.87)	5.72 (5.21-6.20)
30-day	2.40 (2.21-2.60)	2.98 (2.74-3.23)	3.59 (3.30-3.88)	4.04 (3.71-4.36)	4.60 (4.22-4.95)	5.00 (4.58-5.38)	5.37 (4.92-5.79)	5.73 (5.24-6.17)	6.15 (5.62-6.63)	6.45 (5.88-6.95)
45-day	2.92 (2.70-3.16)	3.62 (3.34-3.91)	4.31 (3.98-4.65)	4.80 (4.43-5.17)	5.40 (4.99-5.81)	5.81 (5.37-6.25)	6.18 (5.71-6.64)	6.50 (6.01-6.99)	6.87 (6.35-7.38)	7.09 (6.56-7.61)
60-day	3.38 (3.12-3.65)	4.18 (3.86-4.52)	4.98 (4.60-5.38)	5.55 (5.13-5.99)	6.25 (5.77-6.73)	6.71 (6.20-7.24)	7.14 (6.60-7.71)	7.53 (6.95-8.12)	7.96 (7.36-8.60)	8.23 (7.63-8.89)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

APPENDIX B

Pond Volume Calculations

Channel Capacity Calculations

Outlet Erosion Protection Calculations

ASPIRE UNIT 1 INTERIM POND VOLUME

REQUIRED MINIMUM VOLUME = 86,217 CU. FT.

PROVIDED VOLUME = 113,044 CU. FT.

INTERIM POND VOLUME					
ELEVATION OF CONTOUR	CONTOUR AREA (SF)	PARTIAL VOLUME (CF)	PARTIAL VOLUME (Ac-ft)	VOLUME SUMMARY AT ELEVATION (Ac-ft)	VOLUME SUMMARY AT ELEVATION (CF)
5274.4	8,874				
5275	10,240	5734	0.1316	0.1316	5,734
5276	11,569	10904	0.2503	0.3820	16,638
5277	12,923	12246	0.2811	0.6631	28,884
5278	14,337	13630	0.3129	0.9760	42,514
5279	15,850	15094	0.3465	1.3225	57,608
5280	17,502	16676	0.3828	1.7053	74,284
5281	19,192	18347	0.4212	2.1265	92,631
5282	21,634	20413	0.4686	2.5951	113,044
TOTAL INTERIM POND VOLUME VOLUME =				2.5951	113,044

WSEL=80.6

Channel Report

Channel Section 1

Trapezoidal

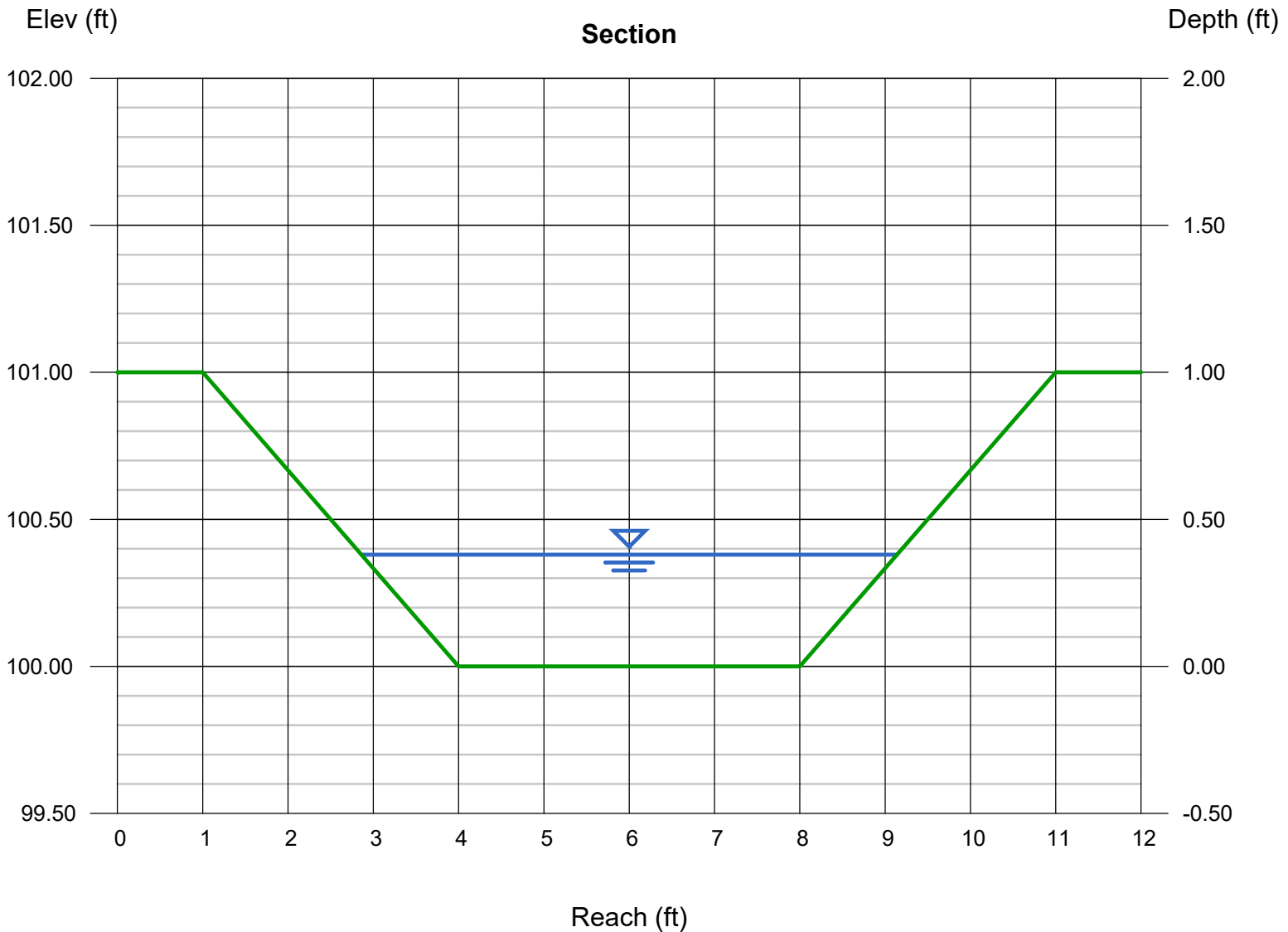
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.00
Invert Elev (ft) = 100.00
Slope (%) = 4.80
N-Value = 0.030

Highlighted

Depth (ft) = 0.38
Q (cfs) = 9.300
Area (sqft) = 1.95
Velocity (ft/s) = 4.76
Wetted Perim (ft) = 6.40
Crit Depth, Yc (ft) = 0.49
Top Width (ft) = 6.28
EGL (ft) = 0.73

Calculations

Compute by: Known Q
Known Q (cfs) = 9.30



Channel Report

Channel Section 2

Trapezoidal

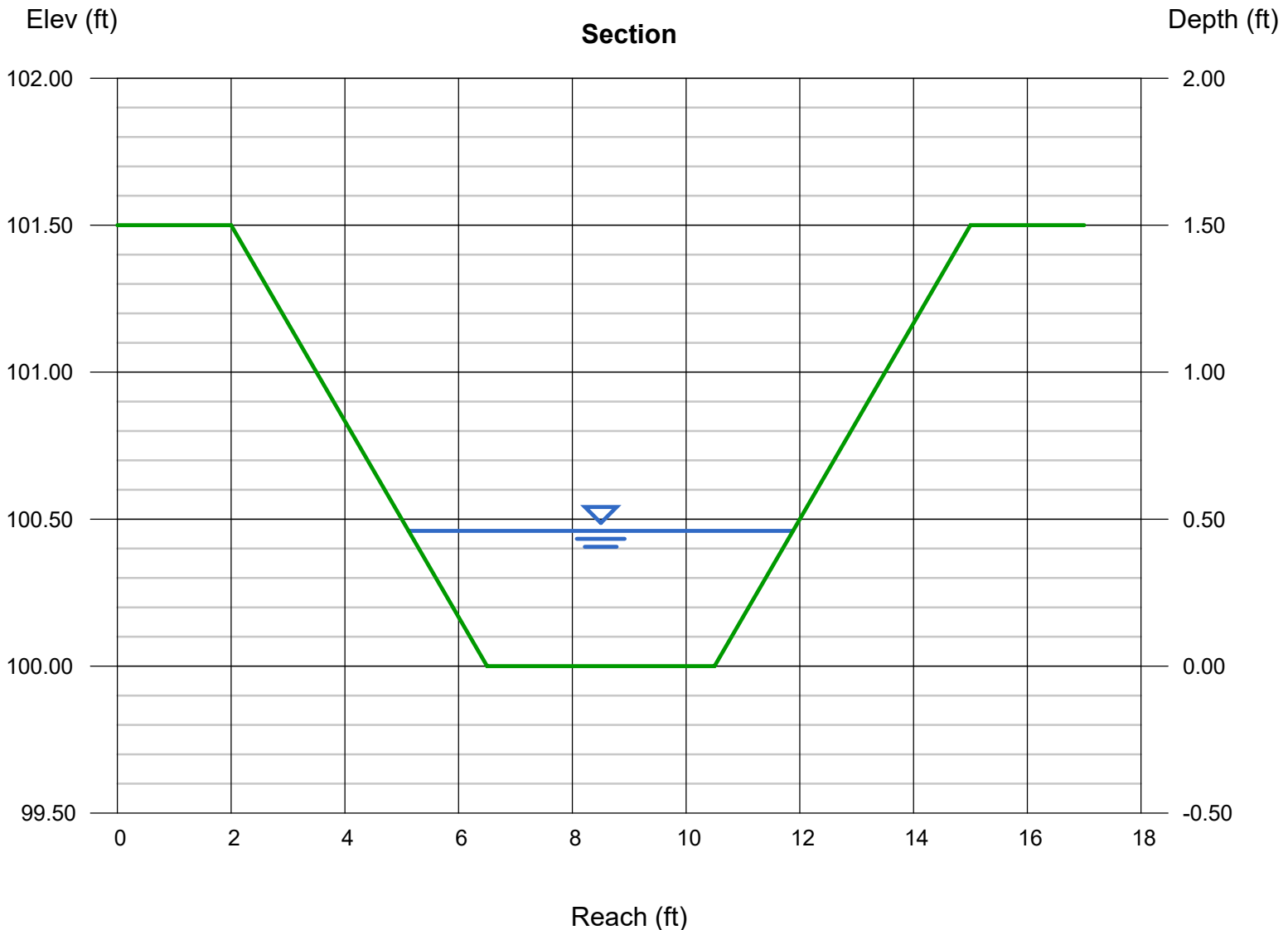
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 100.00
Slope (%) = 4.80
N-Value = 0.030

Highlighted

Depth (ft) = 0.46
Q (cfs) = 13.20
Area (sqft) = 2.47
Velocity (ft/s) = 5.33
Wetted Perim (ft) = 6.91
Crit Depth, Yc (ft) = 0.60
Top Width (ft) = 6.76
EGL (ft) = 0.90

Calculations

Compute by: Known Q
Known Q (cfs) = 13.20



Channel Report

Channel Section 3

Trapezoidal

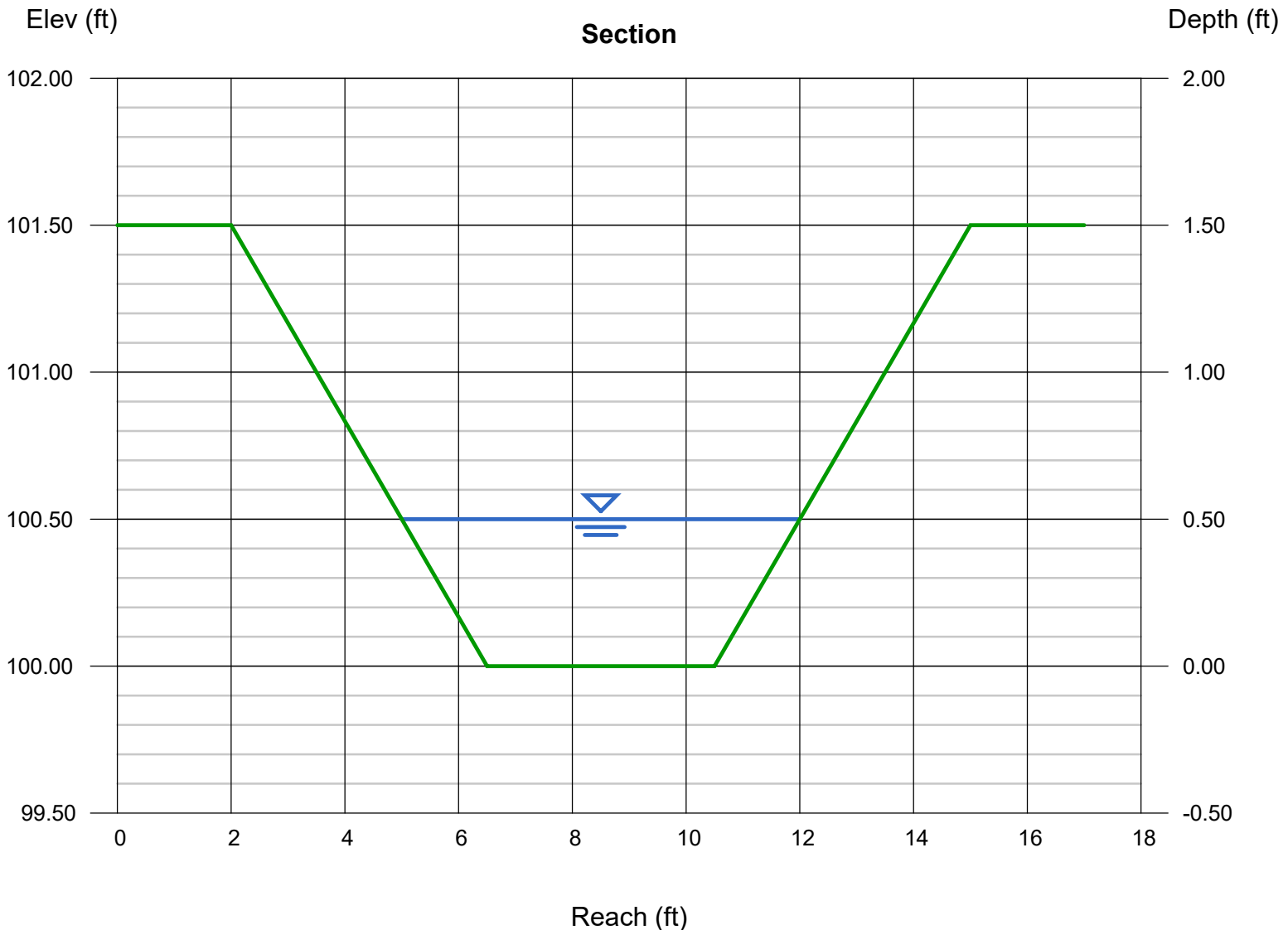
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 100.00
Slope (%) = 4.20
N-Value = 0.030

Highlighted

Depth (ft) = 0.50
Q (cfs) = 14.30
Area (sqft) = 2.75
Velocity (ft/s) = 5.20
Wetted Perim (ft) = 7.16
Crit Depth, Yc (ft) = 0.63
Top Width (ft) = 7.00
EGL (ft) = 0.92

Calculations

Compute by: Known Q
Known Q (cfs) = 14.30



Channel Report

Channel Section 4

Trapezoidal

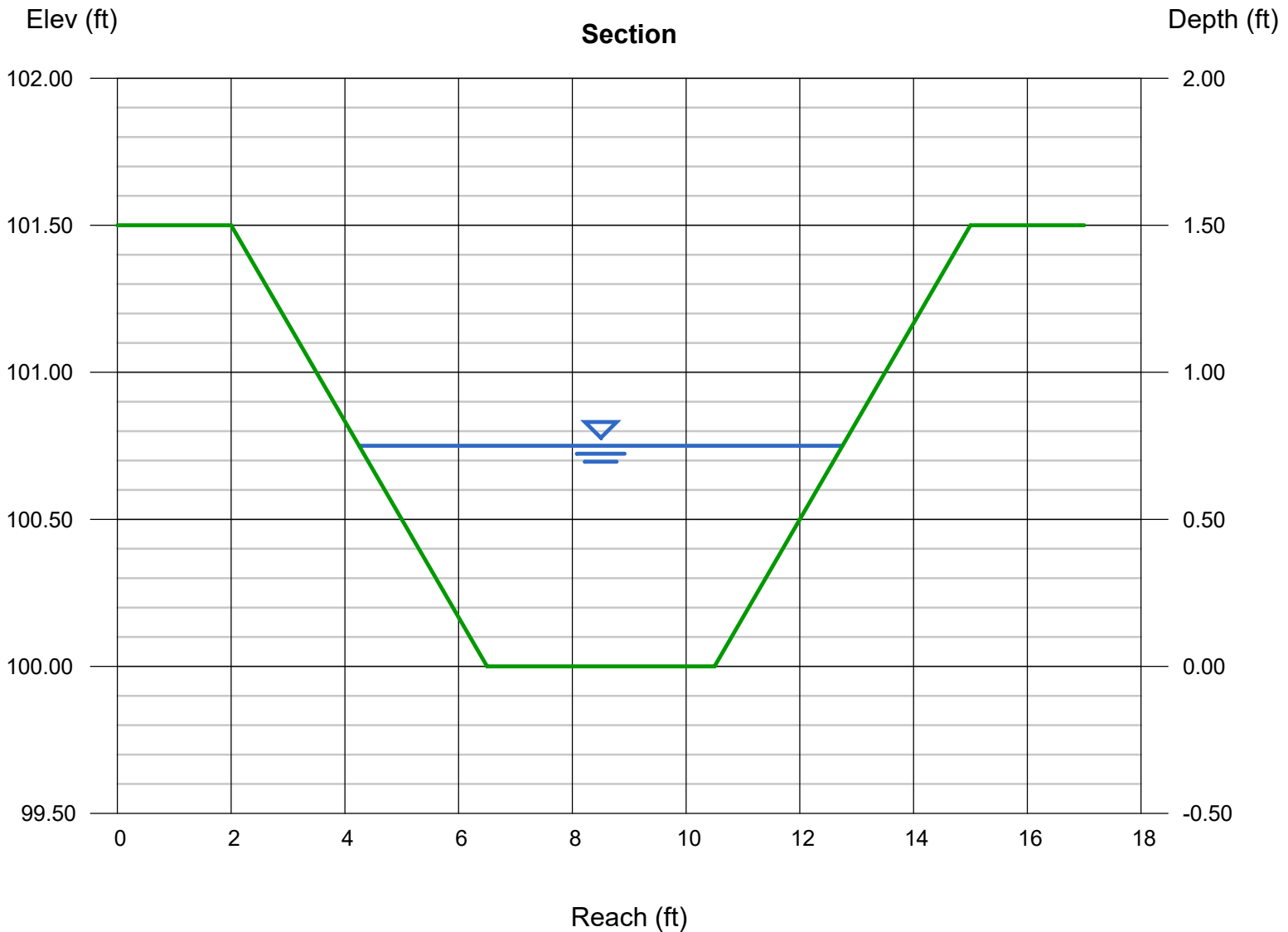
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 100.00
Slope (%) = 1.30
N-Value = 0.030

Highlighted

Depth (ft) = 0.75
Q (cfs) = 17.30
Area (sqft) = 4.69
Velocity (ft/s) = 3.69
Wetted Perim (ft) = 8.74
Crit Depth, Yc (ft) = 0.70
Top Width (ft) = 8.50
EGL (ft) = 0.96

Calculations

Compute by: Known Q
Known Q (cfs) = 17.30



**ASPIRE UNIT 1
INTERIM POND OUTLET EROSION PROTECTION
11/17/2020**

Q= 33.3 cfs
D= 3.5 ft
y_n= 1.55 ft
D' supercritical
(D+y_n)/2= 2.53 ft
TW=0.4*D 1.01

D₅₀= 0.2D(Q/G^{1.5}*d^{2.5})^{4/3}*(D/TW)
D₅₀= 0.61 ft
7.32 in.

USE D50= 9 in. Type L

From Table 10.1

L=5*D 12.63 ft
USE LENGTH= 13 ft

Depth=2.4*D₅₀= 1.8 ft
USE DEPTH= 1.8 ft

Table 10.1. Example Riprap Classes and Apron Dimensions

Class	D ₅₀ (mm)	D ₅₀ (in)	Apron Length ¹	Apron Depth
1	125	5	4D	3.5D ₅₀
2	150	6	4D	3.3D ₅₀
3	250	10	5D	2.4D ₅₀
4	350	14	6D	2.2D ₅₀
5	500	20	7D	2.0D ₅₀
6	550	22	8D	2.0D ₅₀

¹D is the culvert rise.



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July 2006

U.S. Department of Transportation

**Federal Highway
Administration**

Hydraulic Engineering Circular No. 14, Third Edition

Hydraulic Design of Energy Dissipators for Culverts and Channels

Several relationships have been proposed for riprap sizing for culvert aprons and several of these are discussed in greater detail in Appendix D. The independent variables in these relationships include one or more of the following variables: outlet velocity, rock specific gravity, pipe dimension (e.g. diameter), outlet Froude number, and tailwater. The following equation (Fletcher and Grace, 1972) is recommended for circular culverts:

$$D_{50} = 0.2 D \left(\frac{Q}{\sqrt{g} D^{2.5}} \right)^{4/3} \left(\frac{D}{TW} \right) \quad (10.4)$$

where,

- D₅₀ = riprap size, m (ft)
- Q = design discharge, m³/s (ft³/s)
- D = culvert diameter (circular), m (ft)
- TW = tailwater depth, m (ft)
- g = acceleration due to gravity, 9.81 m/s² (32.2 ft/s²)

Tailwater depth for Equation 10.4 should be limited to between 0.4D and 1.0D. If tailwater is unknown, use 0.4D.

Whenever the flow is supercritical in the culvert, the culvert diameter is adjusted as follows:

$$D' = \frac{D + y_n}{2} \quad (10.5)$$

where,

- D' = adjusted culvert rise, m (ft)
- y_n = normal (supercritical) depth in the culvert, m (ft)

Equation 10.4 assumes that the rock specific gravity is 2.65. If the actual specific gravity differs significantly from this value, the D₅₀ should be adjusted inversely to specific gravity.

APPENDIX C

Storm Drain Calculations

Energy Grade Line Calculations

Project Name: CRESTONE SD - INTERIM

Stormwater Studio 2018 v 1.0.0.0

11-23-2020

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction				
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
1	42	33.30	74.45	1.55†	4.10	76.00	8.11	1.02	76.94	39.60	75.04	1.77 ²	4.87	76.81	6.84	0.73	77.53	0.013	0.168	76.81	77.53	0.00

Notes: † Critical depth. ‡ Supercritical.

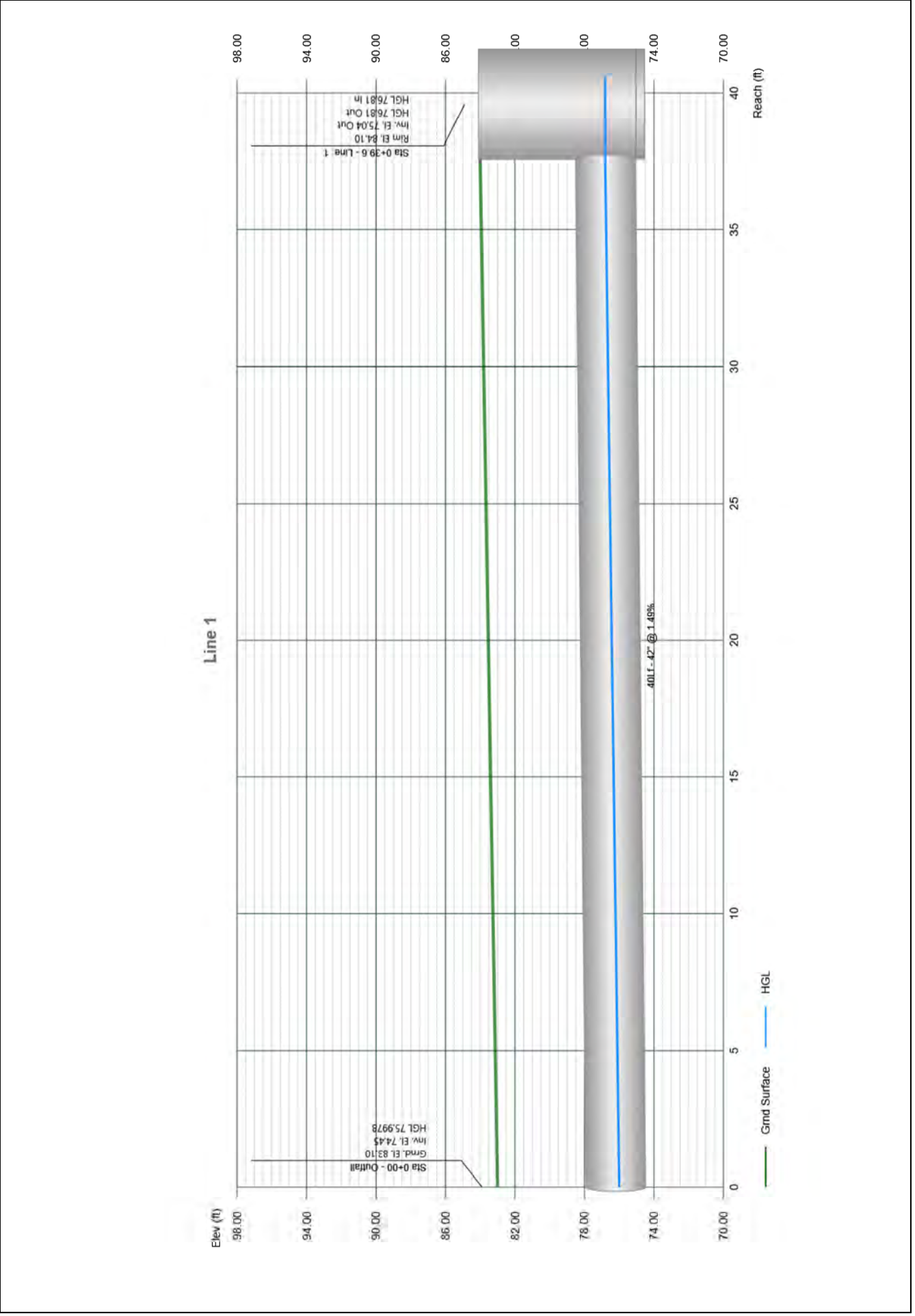
Project File: CRESTONE SD INTERIM.sws

Profile View

Stormwater Studio 2018 v 1.0.0.0

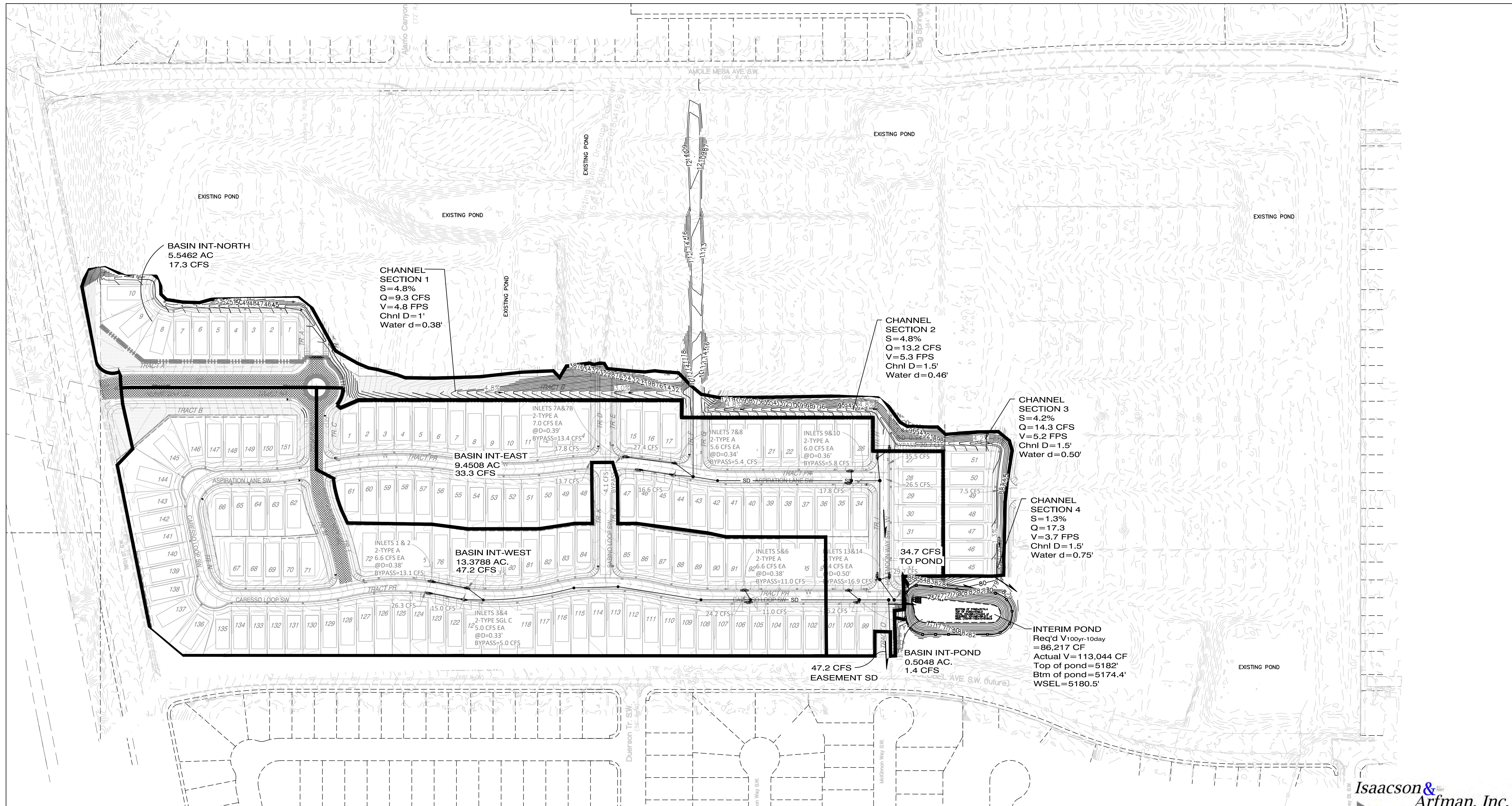
Project Name: CRESTONE SD - INTERIM

11-23-2020



BACK POCKET

**Interim Drainage Basin Exhibit
Unit 1 Interim Grading Plan**



BASIN INT-NORTH
5.5462 AC
17.3 CFS

CHANNEL SECTION 1
S=4.8%
Q=9.3 CFS
V=4.8 FPS
Chnl D=1'
Water d=0.38'

BASIN INT-EAST
9.4508 AC
33.3 CFS

BASIN INT-WEST
13.3788 AC
47.2 CFS

CHANNEL SECTION 2
S=4.8%
Q=13.2 CFS
V=5.3 FPS
Chnl D=1.5'
Water d=0.46'

CHANNEL SECTION 3
S=4.2%
Q=14.3 CFS
V=5.2 FPS
Chnl D=1.5'
Water d=0.50'

CHANNEL SECTION 4
S=1.3%
Q=17.3
V=3.7 FPS
Chnl D=1.5'
Water d=0.75'

INTERIM POND
Req'd V_{100yr-10day}
=86,217 CF
Actual V=113,044 CF
Top of pond=5182'
Btm of pond=5174.4'
WSEL=5180.5'

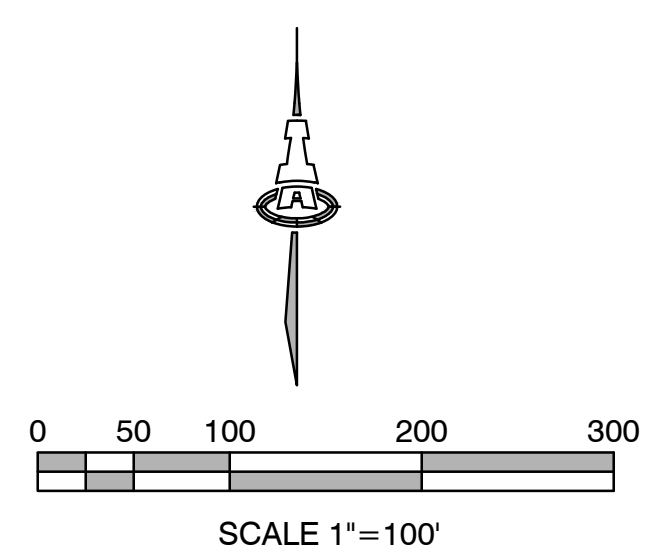
BASIN INT-POND
0.5048 AC.
1.4 CFS

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Civil Engineering Consultants

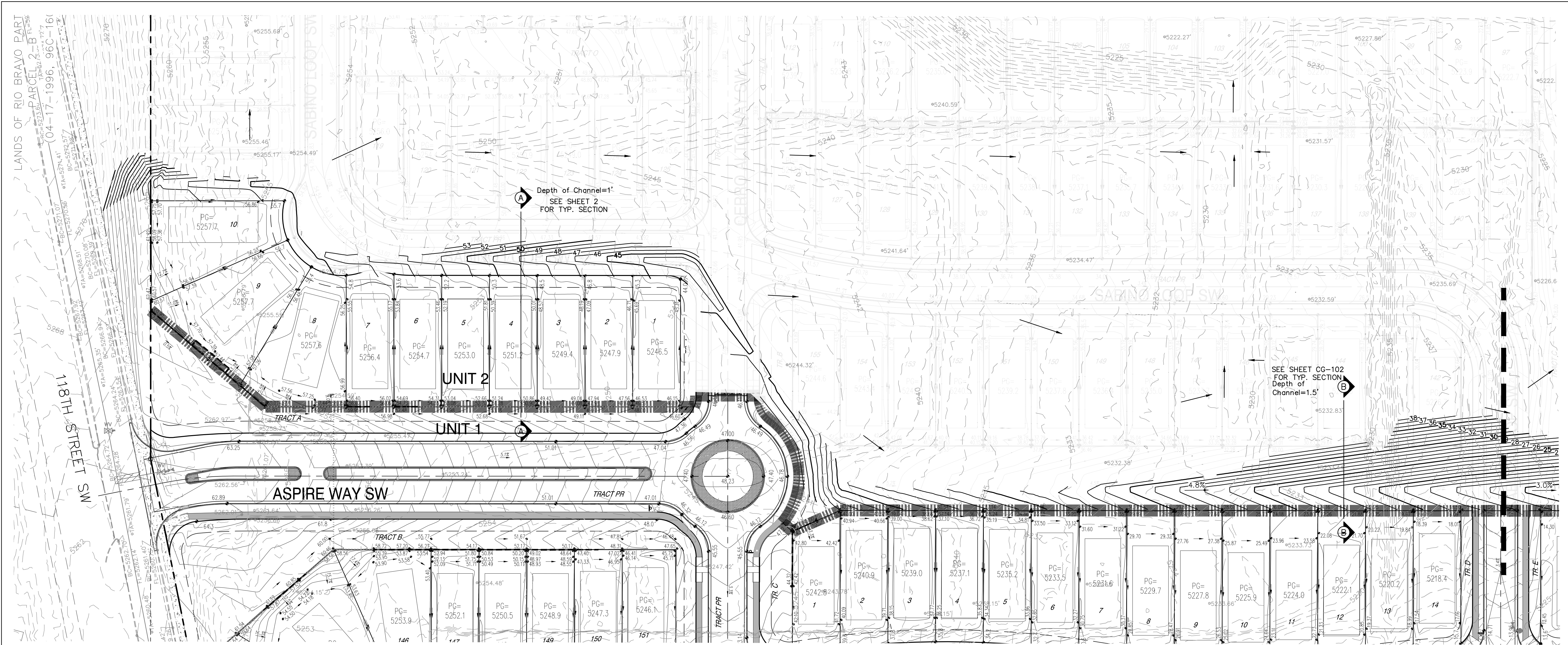
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ASPIRE SUBDIVISION UNIT 1 HERITAGE TRAILS DEVELOPMENT I, LLC			
INTERIM DRAINAGE BASIN EXHIBIT			
Date:	No. Revision:	Date:	Job No. 2379
Drawn By:			
Clk By:			
ANW			SH OF



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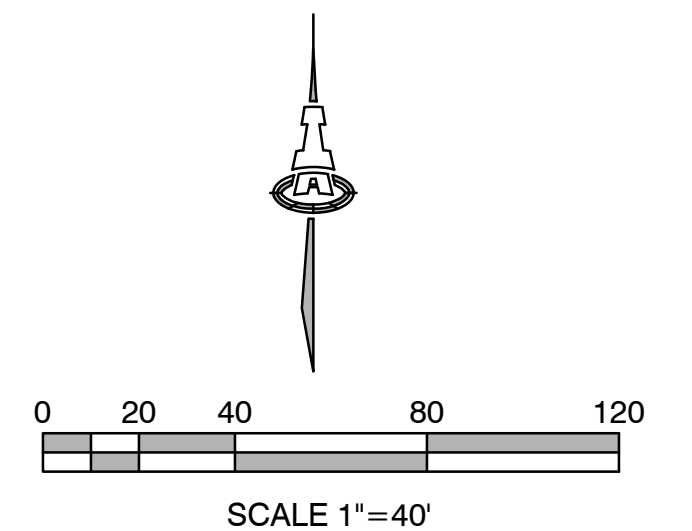
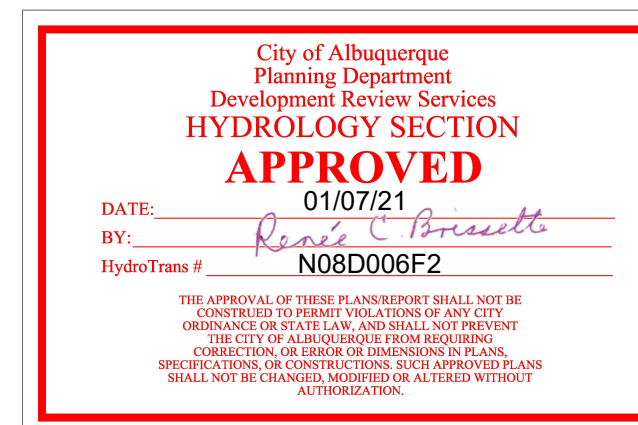


SEE SHEET CG-102

STORM WATER QUALITY VOLUMES

UNIT 1 STORM WATER QUALITY VOLUMES (SWQV) IN-LIEU FEE SHALL BE PAID FOR THE VOLUME DISCHARGED TO THE EASEMENT STORM DRAIN SYSTEM.
 THE REMAINING UNIT 1 SWQV SHALL BE PAID WITH UNIT 2 WHEN THE INTERIM POND IS FILLED IN AND THE CRESTONE STORM DRAIN SYSTEM IS CONSTRUCTED.

UNIT 1 STORM WATER QUALITY VOLUME				
BASINS	AREA (AC.)	%D	WATER QUAL. DEPTH (IN.)	WATER QUAL. VOLUME (CF)
INT-WEST	13.3846	57.6	0.34	9,515
TOTAL INTERIM UNIT 1				9,515
TOTAL UNIT 1				17,242
TOTAL ULTIMATE UNIT 1				17,242
REMAINDER UNIT 1				7,727
REMAINING IN-LIEU PAID WITH UNIT 2				



GENERAL NOTES

- A. **UNDISTURBED AREAS:** PRIOR TO GRADING, BRUSH REMOVAL, OR SITE CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE DEVELOPER AT THE SITE TO ASCERTAIN THE AREAS OF THE PROJECT SITE THAT ARE TO BE PROTECTED AND PRESERVED.
- B. **TESTING:** ALL EARTHWORK OPERATIONS SHALL BE OBSERVED AND TESTED BY THE GEOTECHNICAL ENGINEER FOR CONFORMANCE WITH THE REQUIREMENTS SET FORTH IN THE GEOTECHNICAL STUDY.
- C. **STRIPPING AND DEBRIS REMOVAL:** THE BUILDING PAD SITES, AREAS TO BE PAVED, AND ALL AREAS THAT ARE TO RECEIVE FILL MATERIAL SHALL BE STRIPPED OF VEGETATION, TREES, ROOTS, STUMPS, DEBRIS, AND OTHER ORGANIC MATERIAL. THE DEPTH OF STRIPPING IS ESTIMATED TO BE ON THE ORDER OF SIX (6) INCHES IN ORDER TO REMOVE THE SURFACE SOIL CONTAINING ORGANIC MATERIAL. THE ACTUAL STRIPPING DEPTH SHALL BE BASED ON FIELD OBSERVATIONS. STRIPPED TOPSOIL SHALL BE STOCKPILED IN A LOCATION ON-SITE APPROVED BY THE DEVELOPER. ALL WASTE PRODUCTS FROM THE CONSTRUCTION SITE SHALL BE APPROPRIATELY DISPOSED OF OFF-SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN PERMITS REQUIRED TO HAUL OR DISPOSE OF WASTE PRODUCTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE WASTE DISPOSAL SITE COMPLIES WITH GOVERNMENT REGULATIONS. ALL COSTS ASSOCIATED WITH DISPOSAL OF MATERIAL SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- D. **PROOF ROLLING:** UPON COMPLETION OF STRIPPING OPERATIONS, AND PRIOR TO PLACEMENT OF ANY FILL MATERIALS, THE STRIPPED AREAS SHOULD BE OBSERVED TO DETERMINE IF ADDITIONAL EXCAVATION IS REQUIRED TO REMOVE WEAK OR OTHERWISE OBJECTIONABLE MATERIALS THAT WOULD ADVERSELY AFFECT THE FILL PLACEMENT. THE SUBGRADE SHOULD BE FIRM AND ABLE TO SUPPORT CONSTRUCTION EQUIPMENT WITHOUT DISPLACEMENT. SOFT OR YIELDING SUBGRADE SHOULD BE CORRECTED AND MADE STABLE BEFORE CONSTRUCTION PROCEEDS. PROOF ROLLING SHOULD BE PERFORMED USING A HEAVY PNEUMATIC TIRE ROLLER, LOADED DUMP TRUCK, OR SIMILAR PIECE OF EQUIPMENT WEIGHING AT LEAST 25 TONS. THE PROOF ROLLING OPERATIONS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE.
- E. **UNSTABLE MATERIAL:** WHEN CLAY OR OTHER UNSTABLE MATERIAL IS PRESENT IN AREAS OF PROPOSED BUILDING PADS OR PAVED AREAS, THE GEOTECHNICAL ENGINEER SHALL OBSERVE THE STABILITY OF ANY EXISTING CLAY OR WEATHERED MATERIAL THAT IS PRESENT IN THE SUBBASE, AND SHALL DETERMINE WHETHER ADDITIONAL EXCAVATION OF THESE MATERIALS WILL BE REQUIRED. IF THIS MATERIAL IS DEEMED SUITABLE FOR SUBBASE MATERIAL, THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF EIGHT (8) INCHES, ITS MOISTURE CONTENT ADJUSTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER, AND THEN RE-COMPACTED TO ONE HUNDRED (100) PERCENT OF THE OPTIMUM DENSITY DETERMINED BY THE STANDARD PROCTOR TEST, ASTM D-698 PRIOR TO PLACEMENT OF FILL MATERIALS.
- F. **CONTROLLED FILL:** ALL SOILS USED FOR CONTROLLED FILL SHOULD BE FREE OF ROOTS, VEGETATION, AND OTHER DELETERIOUS OR UNDESIRABLE MATTER. ROCKS LESS THAN 4 INCHES IN LARGEST DIMENSION WITHIN 15" OF PROPOSED SUBGRADE ELEVATION, LESS THAN 6 INCHES IN SIZE FROM 15" TO 36" OF PROPOSED SUBGRADE ELEVATION, LESS THAN 12 INCHES IN SIZE FROM 36" TO 72" OF PROPOSED SUBGRADE ELEVATION, AND LESS THAN 18 INCHES IN LARGEST DIMENSION FOR FILLS IN EXCESS OF 72" FROM SUBGRADE ELEVATION, WILL BE ALLOWED AS ACCEPTABLE FILL MATERIAL. ROCK FILLS SHOULD BE SUPPLEMENTED WITH A SUFFICIENT AMOUNT OF FINE MATERIAL TO PREVENT VOIDS. SOILS IMPORTED FROM OFF-SITE FOR USE AS FILL SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHOULD BE PLACED IN LEVEL, UNIFORM LIFTS, WITH EACH LIFT COMPACTED TO THE MINIMUM DRY DENSITY WITHIN THE COMPACTION SOIL MOISTURE RANGES RECOMMENDED. THE LOOSE LIFT THICKNESS SHOULD NOT EXCEED 10 INCHES. EACH LAYER SHOULD BE PROPERLY PLACED, MIXED, SPREAD, AND COMPACTED TO BETWEEN 95 AND 100 PERCENT OF STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D 698.

- G. **PROPOSED GRADES:** THE PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATED ON THE GRADING PLAN ARE FINISHED GRADES AND CONTOURS ARE SHOWN AT ONE-FOOT INTERVALS UNLESS NOTED. SPOT ELEVATIONS SHOWN IN PAVED AREAS ARE FLOWLINE, UNLESS NOTED OTHERWISE.
- H. **MASS GRADE ELEVATIONS:** THE CONTRACTOR SHALL BE RESPONSIBLE FOR MASS GRADING OF THE SITE BASED ON THE THICKNESSES PROVIDED FOR HEAVY PAVEMENT, STANDARD PAVEMENT, SIDEWALK, LANDSCAPING, ETC.
- I. **EARTHWORK QUANTITIES:** THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALCULATING THE EARTHWORK QUANTITIES BASED ON THE EXISTING CONTOURS SHOWN ON THESE PLANS. PROPOSED SPOT AND CONTOUR ELEVATIONS SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, TOP OF BUILDING PAD, TOP OF PAVEMENT MATERIAL, TOP OF LANDSCAPING MATERIAL, ETC.). CONTRACTOR SHALL GRADE, COMPACT SUBGRADE AND DETERMINE EARTHWORK ESTIMATES BASED ON PROPOSED ELEVATIONS SHOWN MINUS FINISH MATERIAL THICKNESSES.
- J. **TRANSITION TO EXISTING:** WHERE GRADES BETWEEN NEW AND EXISTING ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH.
- K. **STORMWATER FACILITIES:** POND DESIGN PARAMETERS AND STORMWATER CONTROL MEASURES SHOWN ON THIS PLAN (TOP OF POND, BOTTOM OF POND, AREA OF POND, ETC.) TO BE STRICTLY ADHERED TO FOR CERTIFICATION PURPOSES. POST-CONSTRUCTION MAINTENANCE FOR PRIVATE STORMWATER FACILITIES WILL BE THE RESPONSIBILITY OF THE FACILITIES OWNER. PERIODIC INSPECTION AND CERTIFICATIONS OF THE FACILITIES MAY BE REQUIRED. ENGINEER RECOMMENDS THAT OWNER INSPECT SITE YEARLY AND AFTER EACH RAINFALL TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED.
- L. **AS-BUILT SURVEY:** FOR ENGINEER'S CERTIFICATION OF SUBSTANTIAL COMPLIANCE, CONTRACTOR SHALL PROVIDE AN AUTOCAD FORMAT AS-BUILT SURVEY PREPARED BY A LICENSED SURVEYOR WHICH INCLUDES:
 - AS-BUILT SPOT ELEVATIONS AT DESIGN SPOT ELEVATION SHOWN ON THE APPROVED GRADING & DRAINAGE PLAN;
 - TOP AND BOTTOM AREAS AND ELEVATIONS AS REQUIRED TO CONFIRM THE VOLUMES OF PONDS;
 - ALL CONSTRUCTION, INCLUDING PONDS SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLAN IN ORDER TO RECEIVE ENGINEER'S CERTIFICATION.
- N. **ELECTRONIC FILES:** UPON WRITTEN REQUEST COORDINATED THROUGH THE PROJECT ENGINEER, THE ELECTRONIC FILE OF THE GRADING AND DRAINAGE MAY BE PROVIDED TO THE CONTRACTOR FOR VERTICAL CONTROL.

LEGEND

- - - - - EXISTING CONTOUR
- 5233.34' EXISTING SPOT ELEVATION
- - - - - PROPOSED CONTOUR
- ◆ 30.63 PROPOSED SPOT ELEVATION
- PG= 5240.5 PAD GRADE ELEVATION
- FLOW ARROW
- STORM DRAIN
- STORM INLET
- - - - - RETAINING WALL
- — — DRIVEWAY LOCATION DESIGNATED TO AVOID CONFLICT WITH STORM INLETS

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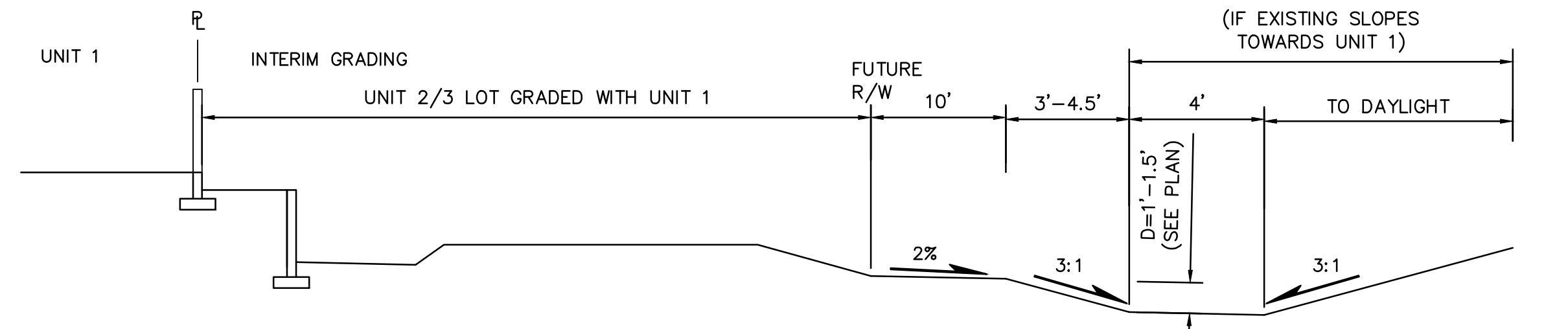
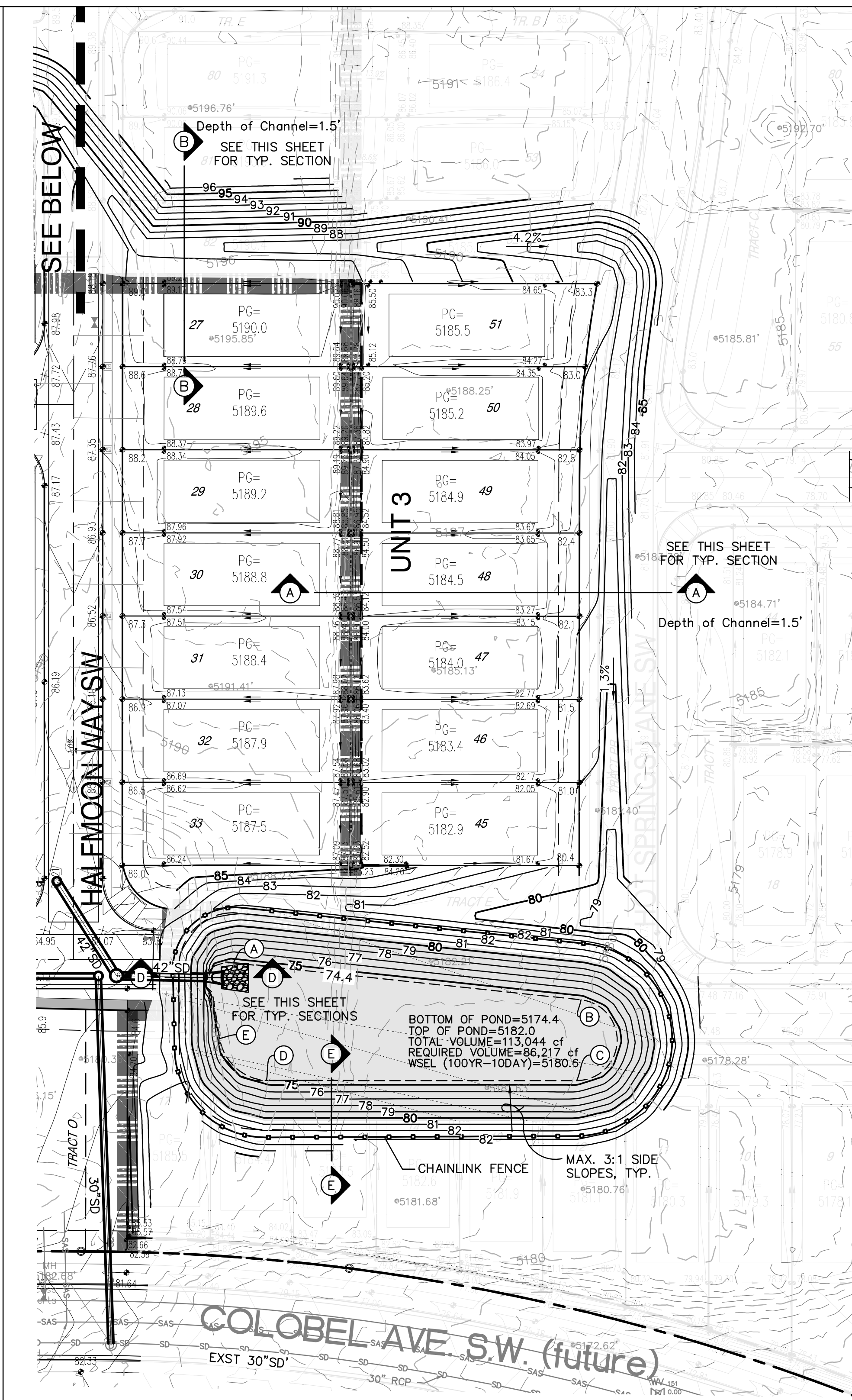
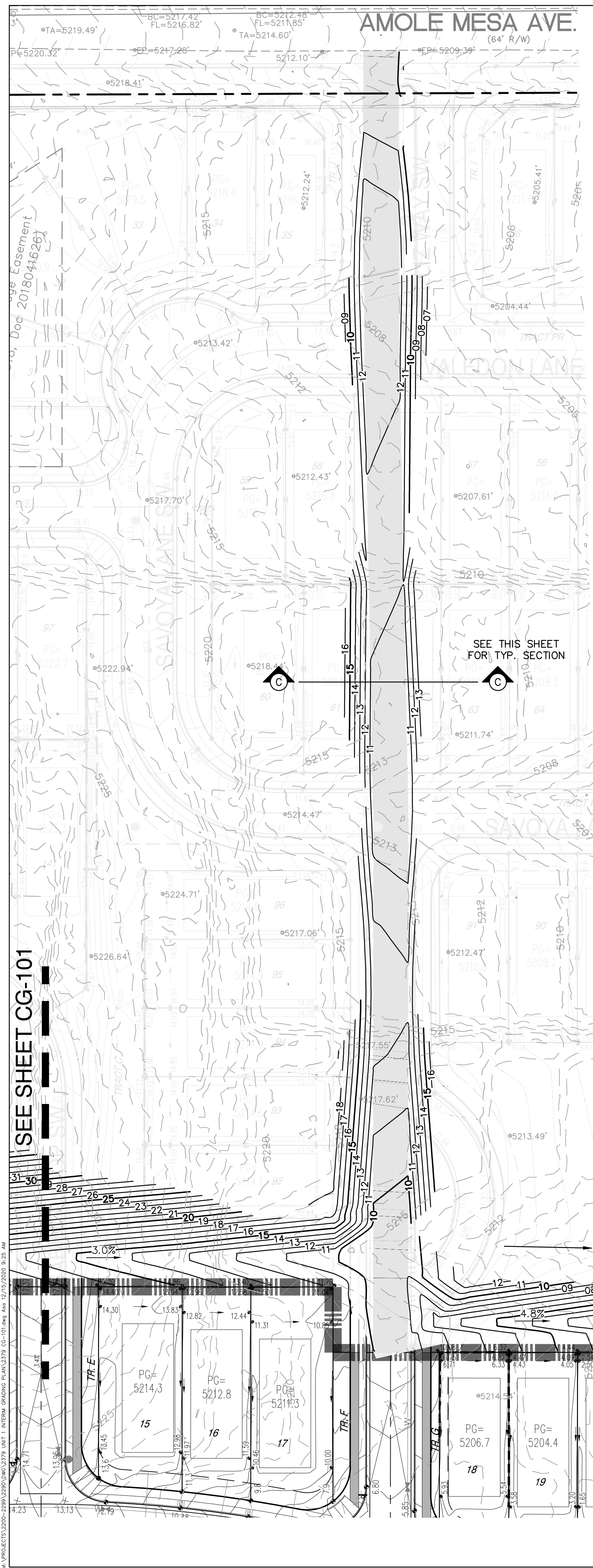
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ASPIRE SUBDIVISION
UNIT 1 INTERIM GRADING PLAN
 HERITAGE TRAILS DEVELOPMENT I, LLC

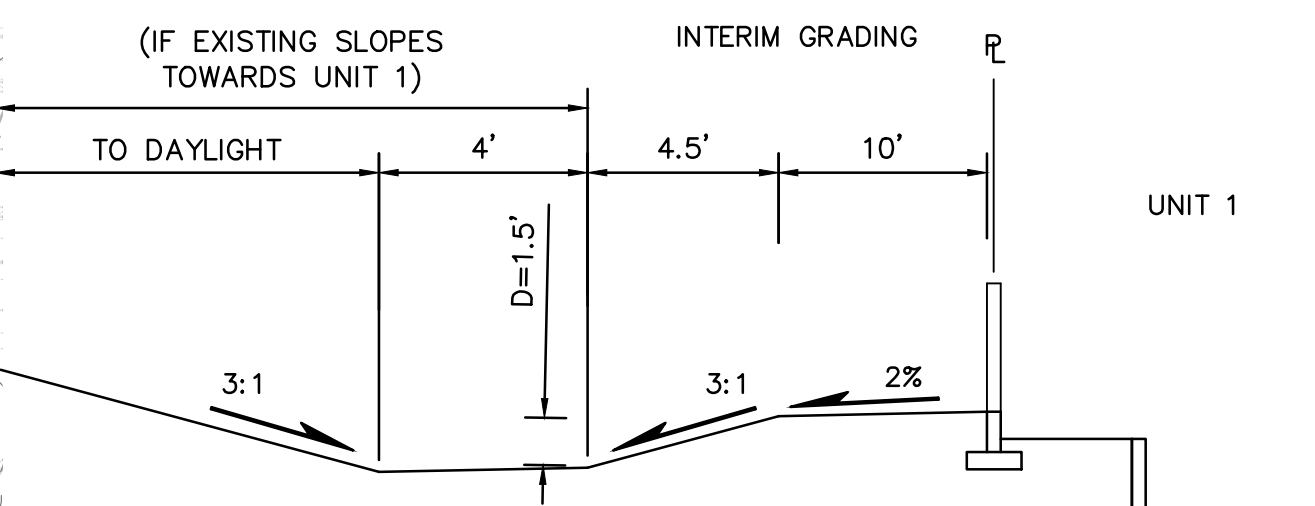
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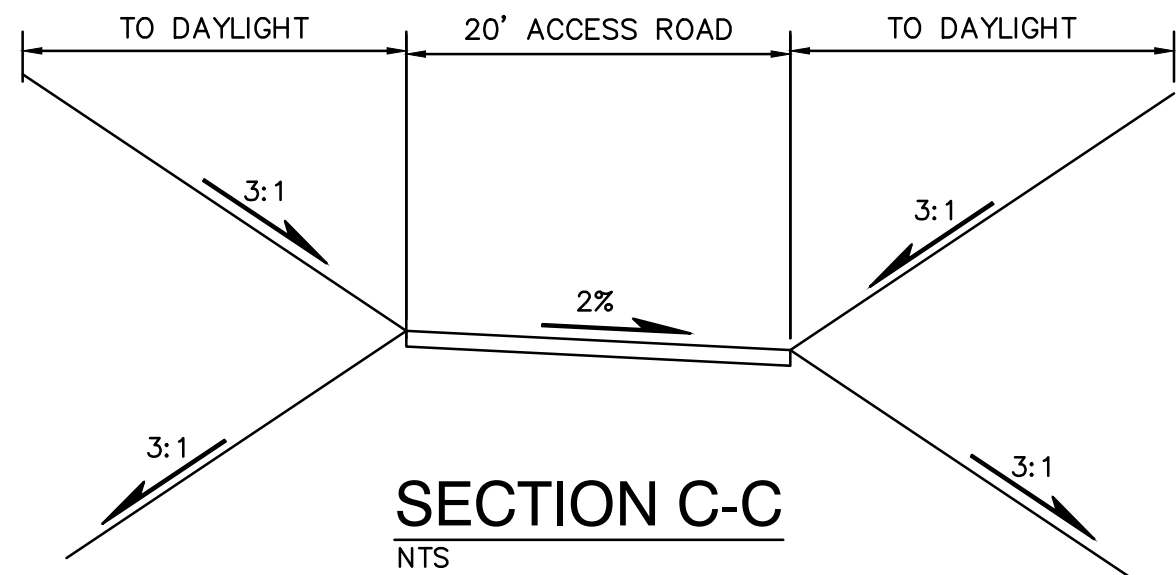
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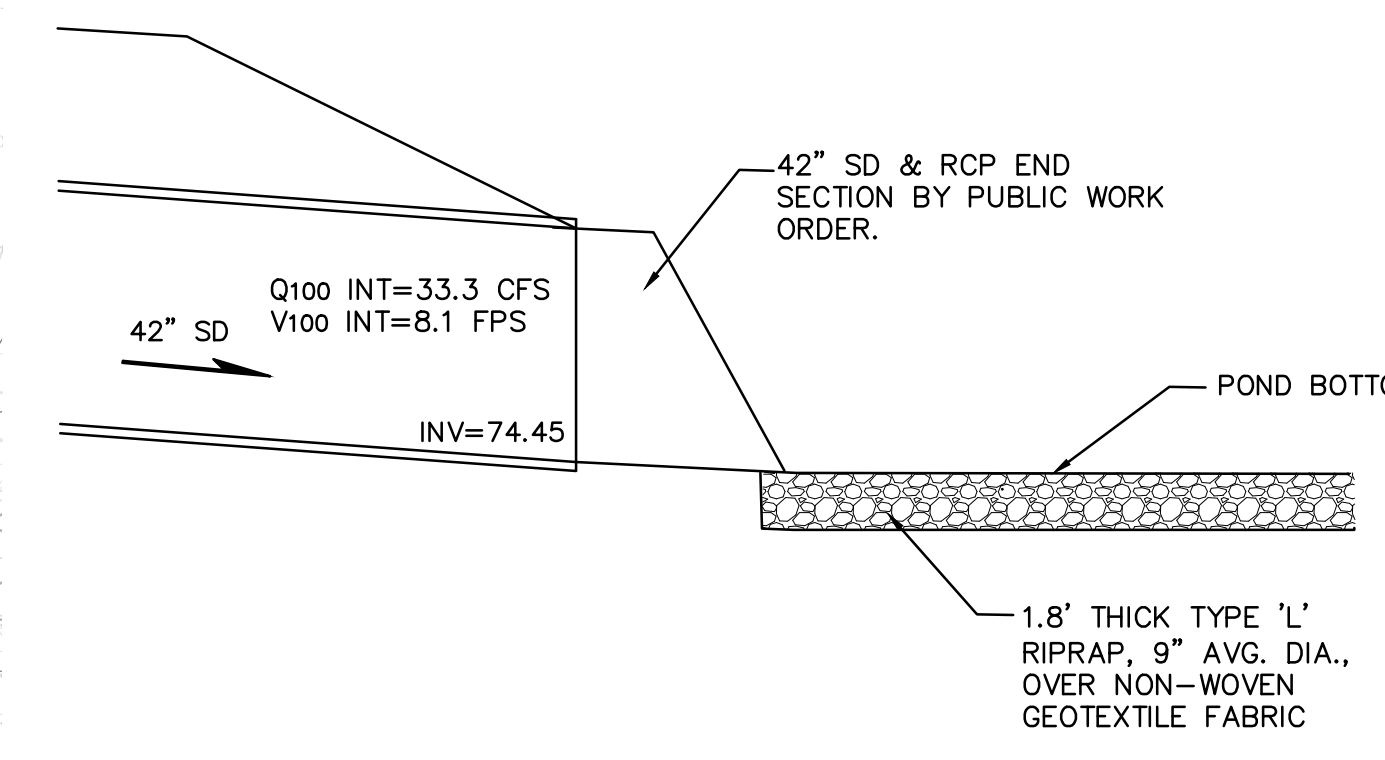
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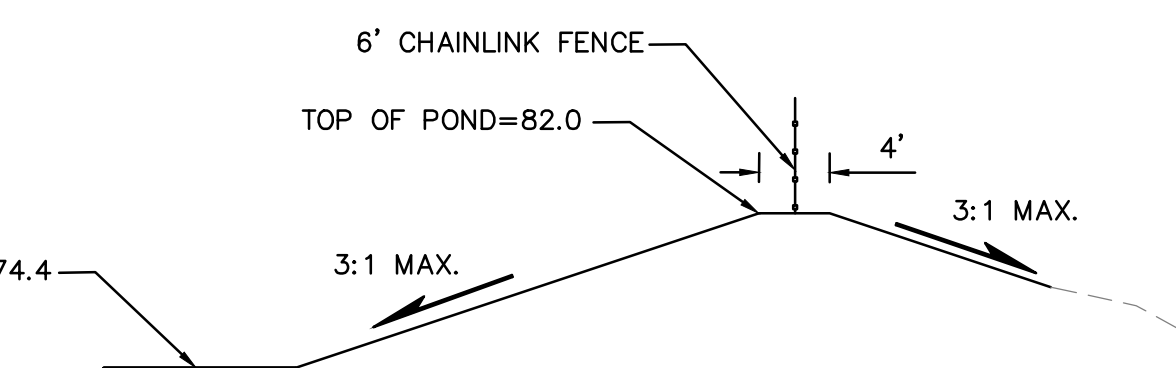
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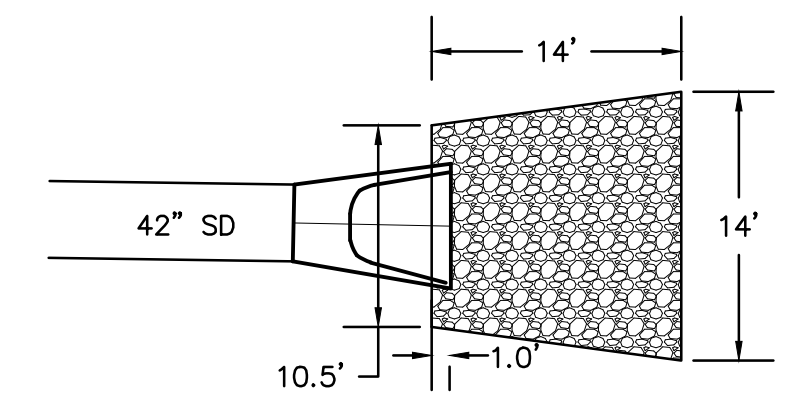
SECTION C-C
NTS



SECTION D-D
NTS



SECTION E-E
NTS



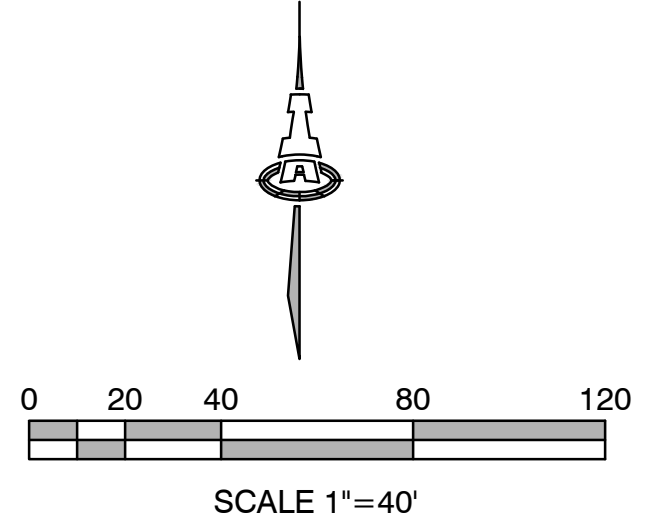
EROSION PROTECTION LIMITS
NTS



GRADING NOTES

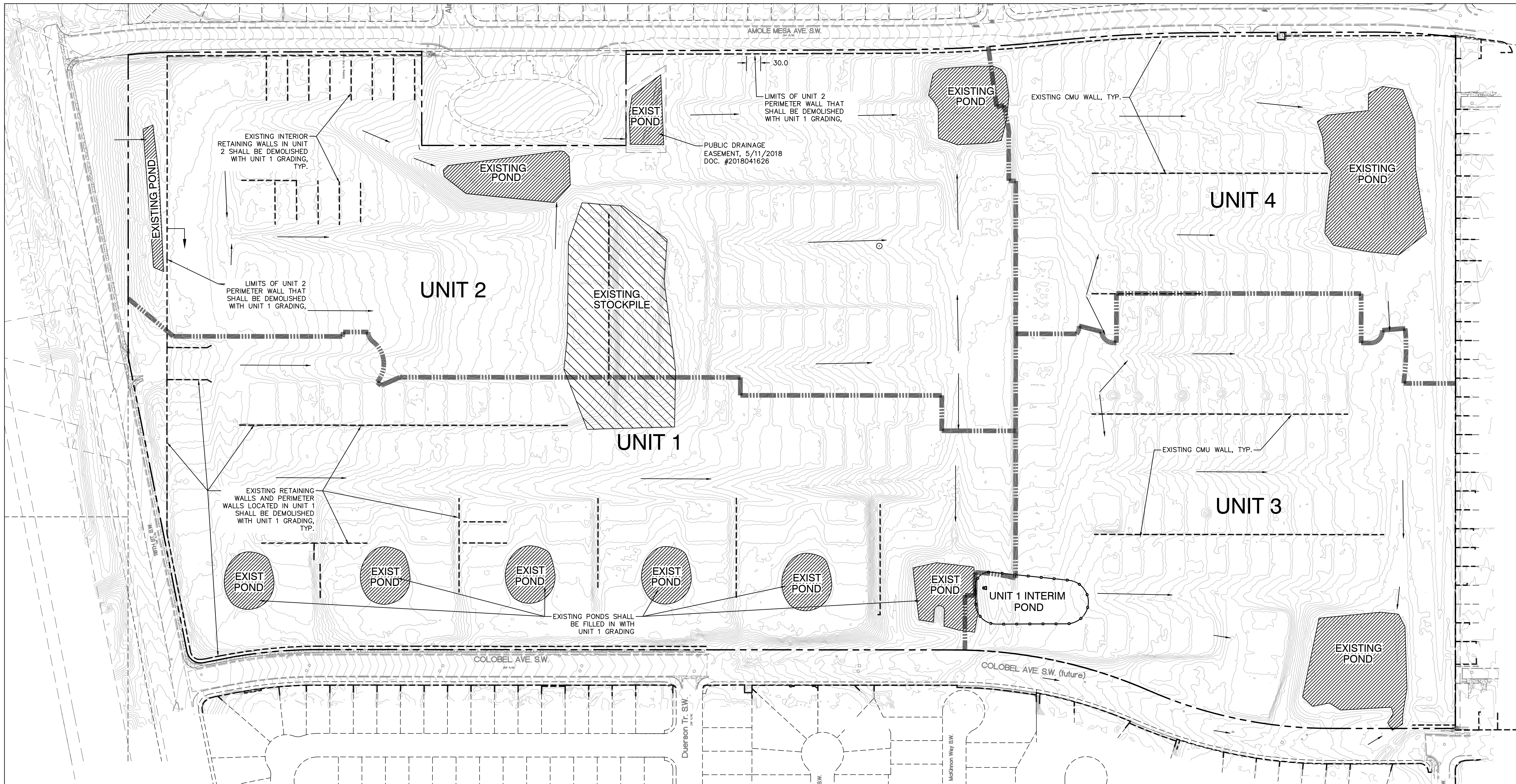
- A. GRADE POND AND CHANNEL SIDE SLOPES AT 3:1 MAX AND COMPACT TO 90%.
- B. DO NOT COMPACT POND BOTTOM.

	POND BOTTOM COORDINATES		
A	X = 1491193.02	Y = 1468019.29	Z = 5174.4
B	X = 1491360.48	Y = 1468001.53	Z = 5174.4
C	X = 1491358.43	Y = 1467982.64	Z = 5174.4
D	X = 1491210.26	Y = 1467982.70	Z = 5174.4
E	X = 1491186.57	Y = 1467982.90	Z = 5174.4



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ASPIRE SUBDIVISION UNIT 1 INTERIM GRADING PLAN HERITAGE TRAILS DEVELOPMENT I, LLC			
EAST EDGE & DETAILS			
Date:	No. Revision:	Date:	Job No.
12/2020			2379
Drawn By:			CG-102
thor			
Ckd By:			SH OF
ANW			

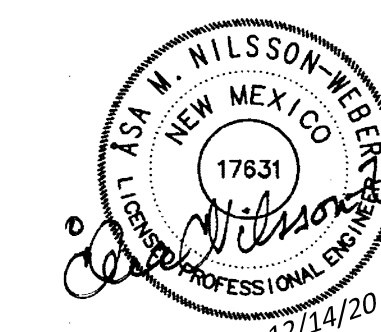
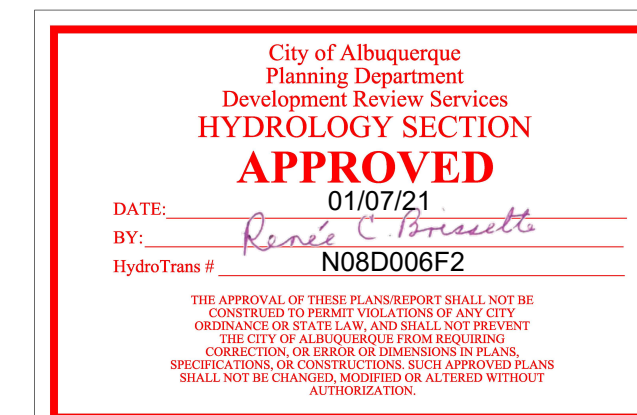


WALL DEMOLITION NOTES

1. ALL WALLS SHALL TO BE DEMOLISHED WITH UNIT 1 ARE NOTED ON PLAN. REMAINING WALLS SHALL REMAIN IN PLACE.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS WITHIN THE CONTRACT LIMITS AND NOTIFY THE ENGINEER IN WRITING OF ANY DEVIATION FROM CONTRACT DOCUMENTS NECESSITATED BY FIELD CONDITIONS OR ITEMS NOT COVERED.
3. ALL DEMOLITION SHALL BE PERFORMED IN A SAFE AND ACCEPTABLE MANNER TO ALL AUTHORITIES HAVING JURISDICTION AND THE OWNER.
4. THOROUGHLY CLEAN ADJACENT AREAS OF DEBRIS CAUSED BY DEMOLITION WORK.
5. PRIOR TO ANY DEMOLITION, THE CONTRACTOR SHALL COORDINATE BRACING AND MAINTAIN THE STRUCTURAL INTEGRITY OF THE WALLS TO REMAIN.
6. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING, SHORING, SCAFFOLDING, ETC., WHICH ARE NECESSARY TO PREVENT COLLAPSE, SUBSIDENCE, DEFLECTION OR ANY OTHER TYPE OF DAMAGE.
7. CONTRACTOR SHALL REVIEW ALL WALLS TO BE DEMOLISHED WITH OWNER TO IDENTIFY ANY ITEMS TO BE SALVAGED AND DETERMINE SALVAGE LOCATION. UNSALVAGEABLE WALL BLOCKS AND FOOTINGS SHALL BE REMOVED FROM SITE AND LEGALLY DISPOSED.

POND NOTES

1. ALL PONDS TO BE FILLED IN WITH UNIT 1 ARE NOTED ON PLAN. REMAINING PONDS SHALL REMAIN IN PLACE AND NOT BE DISTURBED.



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**ASPIRE SUBDIVISION
UNIT 1 INTERIM GRADING PLAN
HERITAGE TRAILS DEVELOPMENT I, LLC**

EXISTING POND AND WALL PLAN

Date:	No. Revision:	Date:	Job No.
12/2020			2379
Drawn By:			CG-103
thor			
Ckd By:			SH OF
ANW			

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