CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

June 23, 2022

Ian Anderson, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. N.E
Albuquerque, NM 87108

RE: 62nd Street Subdivision
Grading Plans & Drainage Report
Engineer's Stamp Date: 06/07/22
Hydrology File: J11D043

Dear Mr. Anderson:

Based upon the information provided in your submittal received 06/08/2022, the Grading Plans & Drainage Report are approved for Grading Permit, Work Order and for action by the DRB on Platting.

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

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 6/2018)

Project Title: 62nd Street Subdivision Building Permit #: _____ Hydrology File #: J11D043

DRB#: PR-2020-003688 EPC#: _____ Work Order#: _____

Legal Description: Lots 42-50, 53-55 Davis Perea-Courson Subdivision, Town of Atrisco Grant

City Address: 528 62nd Street NW, Albuquerque, NM 87015

Applicant: Isaacson & Arfman, Inc. Contact: Ian Anderson

Address: 128 Monroe Street NE, Albuquerque, NM 87108

Phone#: 505-268-8828 Fax#: _____ E-mail: ian@iacivil.com

Other Contact: Greater Albuquerque Habitat for Humanity Contact: Doug Champlin/Bill Reilly

Address: 4900 Menaul Blvd. NE, Albuquerque, NM 87110

Phone#: 505-265-0057 Fax#: 505-255-0937 E-mail: doug@habitatabq.org/ bill@habitatabq.org

TYPE OF DEVELOPMENT: x-10 lots PLAT (# of lots) x RESIDENCE _____ DRB SITE ___ ADMIN SITE

IS THIS A RESUBMITTAL? _____ Yes x No

DEPARTMENT _____ TRANSPORTATION x HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
____ CONCEPTUAL G & D PLAN
x GRADING PLAN
x DRAINAGE REPORT
____ DRAINAGE MASTER PLAN
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ STREET LIGHT LAYOUT
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

x 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
x GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: 06/08/22 By: Ian Anderson

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

JUNE 7, 2022

DRAINAGE REPORT

FOR

Greater Albuquerque Habitat for Humanity
62nd Street Subdivision

ALBUQUERQUE, NEW MEXICO

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 06/23/22
BY: Renée C Brissette
HydroTrans # J11D043

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.

PREPARED BY

Isaacson & Arfman, Inc.
EST 1980
Civil Engineering Consultants

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

I&A Project No. 2415

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PROJECT INFORMATION

PROPOSED LEGAL DESCRIPTION:
Lot A-I, Tract A, Lot 50-A & 51-A Davis-Perea-Courson Subdivision

EXISTING LEGAL DESCRIPTION:
Lots 42-51, Portion of Lot 52, 53, 54 & 55 Town of Atrisco Grant

ENGINEER: Isaacson & Arfman, Inc.
128 Monroe Street NE
Albuquerque, NM 87108
(505) 268-8828
Attn: Ian M. N. Anderson, PE / Fred C. Arfman, PE

OWNER: Greater Albuquerque Habitat for Humanity
4900 Menaul Blvd. NE
Albuquerque, NM 87110
(505) 265-0057
Attn: Bill Reilly / Doug Champlin

SURVEYOR: Construction Survey Technologies, Inc.
6501 Americas Parkway NE
Albuquerque, NM 87110
(505) 917-8921
Attn: John Gallegos

DISTURBED AREA: 2.13 AC.±

NUMBER OF PROPOSED DWELLING UNITS: 10

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. 35001C0329H.

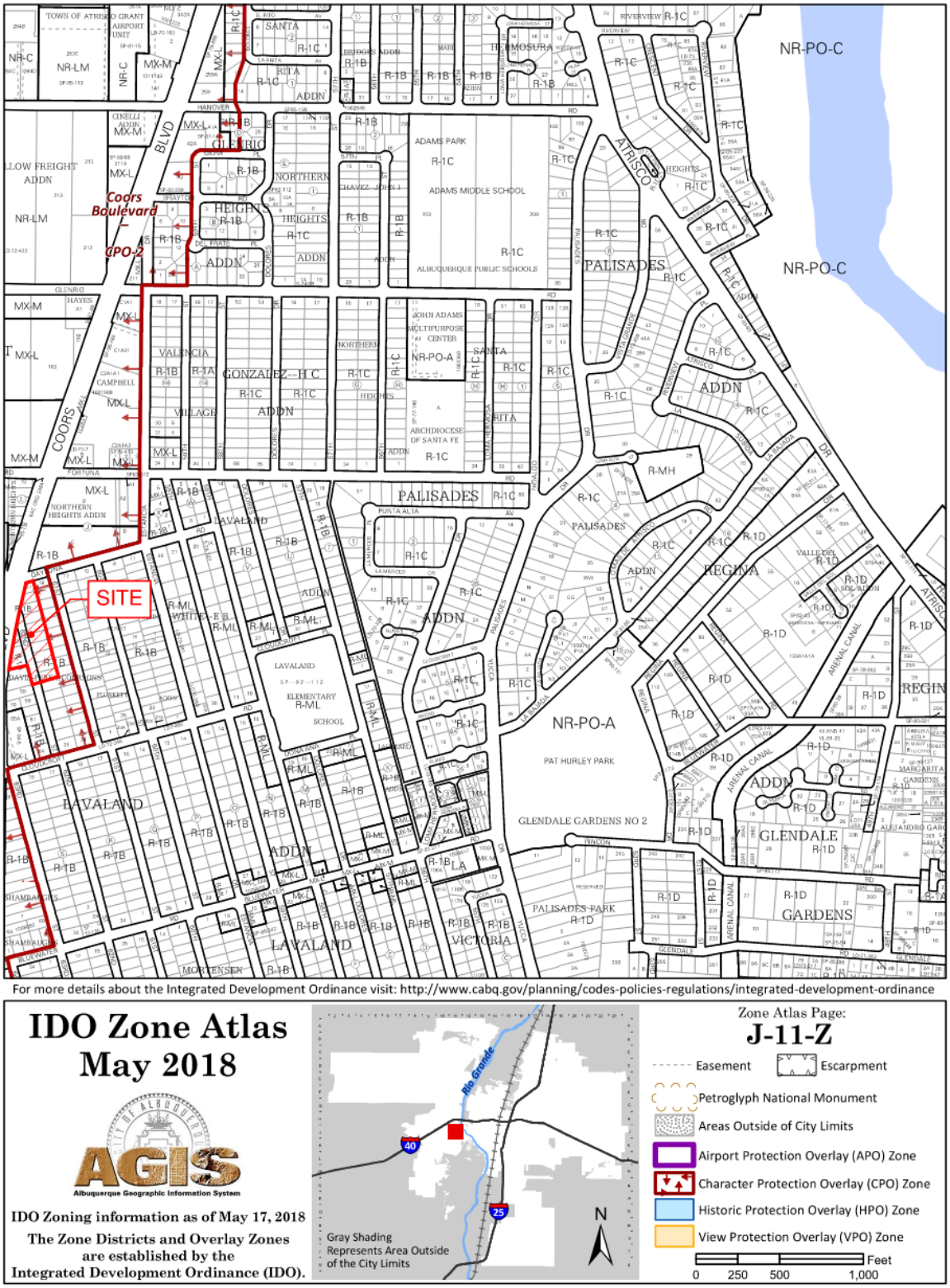

Figure 1.1 -Location / Zone Atlas Map

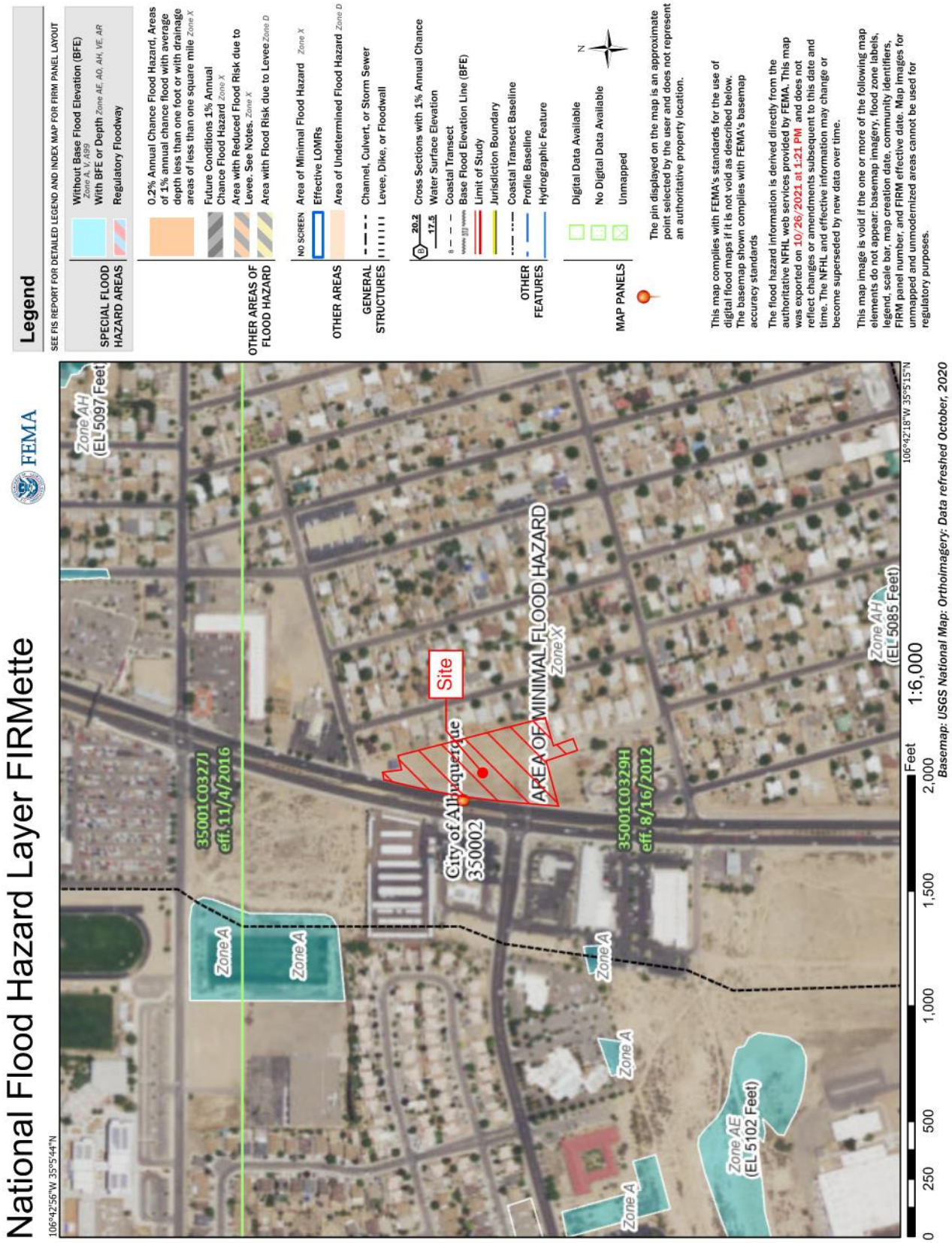

Figure 1.2 – FEMA FIRMette 35001C0329H

I. INTRODUCTION

Greater Albuquerque Habitat for Humanity (GAHH) 62nd Street Subdivision is located east of Coors Boulevard NW, south of Daytona Road NW, west of 61st Street NW, and north of Cloudcroft Road NW. There is a total of eleven (11) lots associated with this development, ten (10) of which will include single family dwelling units, a drainage pond, and the extension of the 62nd Street pavement. This report identifies the required drainage improvements needed to mitigate the increase of impervious area across the project site, and the developed runoff flow due to the impervious area increase from the current conditions.

II. EXISTING CONDITIONS

The existing site is undeveloped with low lying shrubs and grasses sparsely spread throughout the vacant lots. There is an existing dirt roadway used for access to existing Lot 50 from 62nd Street NW.

The existing drainage pattern on-site splits the site in two. The first existing drainage basin runoff drains north-westerly towards the existing curb inlet located near the south-west corner of the Coors Boulevard NW and Daytona Road NW intersection. The second, southern half of the site drains southwards to the existing paved section of 62nd Street NW. The paved section of 62nd Street is poorly graded with various low points located throughout the roadway, on both sides of the paved street. Runoff from the existing residences to the south drains out to 62nd Street NW, and ponds until the high point connection to Cloudcroft Road NW is overtopped. There are no existing public storm drainage systems within 62nd Street NW or Cloudcroft Road NW. See Appendix A for the Existing Drainage Basin Exhibit and Existing Drainage Basin summary table.

EXISTING LAND TREATMENTS & BASIN AREAS

The existing project site was divided into four (4) drainage basins (EX-1, EX-2, EX-3, & EX-4) for this hydrological analysis. Basin EX-1 covers the northern portion of the project site which drains norther-westerly to the existing curb inlet near the southwest corner (SWC) of the Coors Boulevard NW and Daytona Road NW intersection. Basin EX-2 denotes the remainder of the project site which historically drains southernly, towards the existing paved portion of 62nd Street NW. Basins EX-3 and EX-4 are off-site basins analyzed in order to quantify the total runoff entering the existing paved portion of 62nd Street NW. As previously noted, the paved portion of 62nd is poorly graded and runoff from Basins EX2, EX-3, & EX-4 ultimately ponds within 62nd

Street NW until the high point connection with Cloudcroft Road NW is surpassed. See table 2.1 for the existing basin land treatment percentages used in the existing hydrology analysis. See Appendix A for the complete existing drainage basin exhibit and the existing drainage basin summary table.

Table 2.1 - Existing Basin Land Treatment

BASIN	%A	%B	%C	%D
EX-1	90%	0%	3%	7%
EX-2	95%	0%	5%	0%
EX-3	33%	8%	8%	51%
EX-4	0%	24%	24%	52%

EXISTING HYDROLOGY

The existing drainage calculations were performed for the 100-year, 6-hour storm using AHYMO-S4, 2009 with rainfall data from the NOAA Atlas 14 and the land treatment designations above. See Table 2.1 below for the existing basin calculation summary table. See Appendix A for AHYMO summary file noting the detailed existing drainage basin hydrology calculations.

Table 2.2 - Existing Basin Calculation Summary

BASIN	AREA (SF)	AREA (AC.)	AREA (SQ.MI.)	Q_{100} (CFS)	NOTES/ COMMENTS
EX-1	26,979	0.62	0.00097	1.09	Drains to public curb inlet near Coors & Daytona Intersection
EX-2	82,364	1.89	0.00295	3.00	Project Site Drainage flowing south towards 62nd & Cloudcroft
EX-3	66,642	1.53	0.00239	4.64	Existing off-site drainage basin entering existing 62nd st (W)
EX-4	56,389	1.29	0.00202	4.39	Existing off-site drainage basin entering existing 62nd st (L)

The total existing runoff ponding within the paved portion of 62nd Street NW (Basin EX-2 + Basin EX-3 + Basin EX-4) is 12.03 cubic feet per second (cfs).

III. PROPOSED CONDITIONS

The proposed development will seek to limit the amount of standing water located within the existing paved portion of 62nd Street NW, while matching the historical drainage patterns on site. In order to limit the amount of flow entering the paved 62nd street to the south, the proposed roadway will set a new highpoint at its connection to the existing pavement and will direct runoff generated off of the new roadway pavement to a proposed drainage pond located on Tract A, via overland flow. The runoff flow will be routed into the drainage pond at the roadway low point through a proposed sidewalk culvert and pond rundown.

The drainage pond will collect all runoff from the proposed lots and store the required storm water quality volume on site. A six (6) inch stand pipe will serve as outfall for the pond, and will be routed underground to the existing curb inlet near the southwest corner of the Coors Boulevard NW and Daytona Road NW. The pond outlet pipe will limit the released pond runoff in order to ensure that the combined runoff flow from the pond and the northern Lot 51A will not exceed the historical flow which entered the curb inlet from the project site.

The proposed conditions noted above will also remove the historical project site runoff that flows southernly towards the existing paved portion of 62nd Street NW. This will reduce the amount of runoff ponding along the poorly graded paved 62nd Street NW; thus, improving the overall drainage pattern within 62nd Street NW from its current condition.

PROPOSED LAND TREATMENTS & BASIN AREAS

The area of analysis was divided into five (5) proposed drainage basins (PR-1, PR-2, PR-3, PR-4, & PR-5). Basin PR-1 is the remaining northern portion of the project site that will continue to drain northwesterly and enters the curb inlet near the SWC of the Coors Boulevard NW and Daytona Road NW intersection. Basin PR-2 is the project site area that will drain into the proposed drainage pond on Lot TR-A. Basins PR-3, PR-4, and PR-5 are the off-site basins that contribute to the 62nd Street NW ponding runoff. Basin PR-3 is separated due to the Lots 58, 59, and 70 remaining undeveloped in the proposed condition, while PR-4 and PR-5 are fully developed residential lots.

The associated land treatment percentages for each of the basins noted above are listed in Table 3.1 Proposed Basin Land Treatments below.

Table 3.1 - Proposed Basin Land Treatment

BASIN	%A	%B	%C	%D
PR-1	78%	0%	6%	16%
PR-2	15%	18%	18%	49%
PR-3	100%	0%	0%	0%
PR-4	0%	26%	26%	49%
PR-5	0%	24%	24%	52%

PROPOSED 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 Table 2.1 below for the existing basin calculation summary table. See Appendix B for AHYMO summary and output file noting the detailed proposed hydrology calculations.

Table 3.2 - Proposed Basin Calculation Summary

BASIN	AREA (SF)	AREA (AC.)	AREA (SQ.MI.)	Q_{100} (CFS)	TOTAL OUT Q_{100} (CFS)	NOTES/ COMMENTS
PR-1	3,865	0.09	0.00014	0.19	0.19	Northern Off-site runoff entering ex inlet at SWC Coors & Daytona
PR-2	105,463	2.42	0.00378	7.68	0.80	Contributing basin to 62nd st extension runoff; enters proposed pond, outfall to ex inlet at SWC of Coors & Daytona
PR-3	22,148	0.51	0.00079	0.78	0.78	Existing off-site generated runoff, enters existing paved portion of 62nd st. (W)
PR-4	44,487	1.02	0.00160	3.41	3.41	Existing off-site generated runoff, enters existing paved portion of 62nd st. (W)
PR-5	56,396	1.29	0.00202	4.39	4.39	Existing off-site generated runoff, enters existing paved portion of 62nd st. (E)

The total proposed runoff ponding within the paved portion of 62nd Street NW is 8.58 cfs (Basin PR-3 + Basin PR-4 + Basin PR-5), a reduction of 3.45 cfs from the existing condition. See Table 3.3 – Existing vs Proposed flow to Existing Paved 62nd Street NW for the tabled summary.

Table 3.3 – Existing vs Proposed Flow to Existing Paved 62nd Street NW

Existing Basins	Existing Flow, Q_e (CFS)	Proposed Basins	Proposed Flow, Q_p (CFS)	Δ (Q_p-Q_e) (CFS)
EX-2, EX-3, EX-4	12.03	PR-3, PR-4, PR-5	8.58	-3.45

WATER QUALITY VOLUMES

The required water quality volume is calculated based on the requirements in the 2020 Development Process Manual (DPM) of 0.42 inches of the impervious area. The water quality volume calculations can be found in the Basin Area and Flow Detailed Summary Table in Appendix A. The required water quality volume in the proposed condition was calculated based only on Basins PR-1 and PR-2, as the on-site drainage basins. The off-site drainage basins were not taken into account for the required water quality volume associated with this project. The total water quality volume required to retain on site was 1,845 cubic feet (cf). The proposed pond will retain the required water quality volume on site.

DRAINAGE POND

The drainage pond was sized to store the impervious area flow increase across the site while allowing for a limited release of the runoff to the curb inlet near the SWC of Coors Boulevard NW and Daytona Road NW. In order to match the existing runoff entering the curb inlet, it was determined that the pond will be required to store 12,278 cf.

The proposed drainage pond will have a total height difference of 4.5-feet, with a bottom elevation of 5,096-feet and top elevation of 5,100.5-feet. These dimensions provide for a total storage capacity of 12,312 cf, exceeding the pond storage requirement noted above. See Table 3.4 – Proposed Pond Volume below for the detailed pond volume calculation.

Table 3.4 - Proposed Pond Volume

Basin PR-2 Pond Volume		
Contour	Area	Volume
5100.5	4799	
5100	4254	2263 CF
5099	3281	3768 CF
5098	2423	2852 CF
5097	1687	2055 CF
5096	1060	1373 CF
POND VOLUME =		**12312** CF

The pond will utilize a 6-inch standpipe as an outlet, with a rim elevation of 5099.0-feet. The AHYMO-S4 calculations for the pond and incoming drainage basin has indicated that under these

conditions the pond will have a 100-yr water surface elevation of 5,099.73-feet. The calculated water surface elevation will maintain the outlet flow from the pond at 0.80 cfs or below.

STORM DRAIN

Inlet and storm drain capacities for the proposed underground storm drain system can be found in Appendix C. The proposed 6-inch standpipe will transition to a 10-inch HDPE storm drain line to allow for a lower minimum pipe slope, due to the invert connection elevation required at the existing curb inlet. The storm drain line will have a maximum discharge of 0.80 cfs to the existing curb inlet.

Proposed basin PR-1 will also enter the existing curb inlet via overland flow. The summation of the maximum discharge flow from the pond outlet underground storm line and the overland flow from basin PR-1 is allowed to meet, without exceeding, the existing flow entering the curb inlet, previously noted as basin EX-1. The total flow in the existing condition from basin EX-1 entering the curb inlet was 1.09 cfs. The summation of the pond outlet flow and the overland flow from PR-1 is 0.99 cfs. The proposed flow entering the existing inlet is reduced by 0.10 cfs from the existing condition. See Table 3.5 – Existing vs Proposed Flow to Existing Curb Inlet below for summary table.

Table 3.5 – Existing vs Proposed Flow to Existing Curb Inlet Summary

Existing Basin	Existing Flow, Q_e (CFS)	Proposed Basins	Proposed Flow, Q_p (CFS)	Δ (Q_p-Q_e) (CFS)
EX-1	1.09	PR-1 & PR-2	0.99	-0.10

IV. SUMMARY & CONCLUSIONS

The proposed development of the ten (10) single-family houses will include the extension of the paved 62nd Street NW and a drainage pond to accommodate the runoff flow increase due to the impervious area increase across the project site. The pond is sized to store the expected runoff increase and to allow for a controlled release of runoff flow to the designated outlet to the public storm drainage system. The controlled release will not exceed the existing overland flow entering the public curb inlet. The proposed drainage pattern on site will also benefit off-site areas by eliminating the site runoff flow which enters the existing paved portion of 62nd Street NW to the south of the project site. The proposed development will improve the drainage conditions through this site and its surrounding area.

APPENDIX A

NOAA Atlas 14

Existing Drainage Basin Exhibit

Proposed Drainage Basin Exhibit

NOAA Atlas 14, Volume 1, Version 5
Location name: Albuquerque, New Mexico, USA*
Latitude: 35.0917°, Longitude: -106.7101°
Elevation: m/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	**0.165** (0.141-0.192)	**0.214** (0.183-0.249)	**0.287** (0.244-0.335)	**0.345** (0.293-0.401)	**0.424** (0.358-0.493)	**0.486** (0.409-0.565)	**0.552** (0.461-0.640)	**0.622** (0.515-0.721)	**0.716** (0.587-0.831)	**0.791** (0.644-0.918)
10-min	**0.251** (0.215-0.293)	**0.325** (0.278-0.379)	**0.437** (0.372-0.510)	**0.525** (0.446-0.611)	**0.646** (0.545-0.750)	**0.740** (0.623-0.859)	**0.840** (0.701-0.974)	**0.946** (0.784-1.10)	**1.09** (0.894-1.26)	**1.20** (0.981-1.40)
15-min	**0.311** (0.267-0.363)	**0.403** (0.344-0.470)	**0.542** (0.461-0.633)	**0.651** (0.553-0.757)	**0.800** (0.676-0.930)	**0.917** (0.772-1.07)	**1.04** (0.870-1.21)	**1.17** (0.972-1.36)	**1.35** (1.11-1.57)	**1.49** (1.22-1.73)
30-min	**0.419** (0.359-0.488)	**0.543** (0.464-0.633)	**0.730** (0.621-0.852)	**0.876** (0.745-1.02)	**1.08** (0.910-1.25)	**1.24** (1.04-1.44)	**1.40** (1.17-1.63)	**1.58** (1.31-1.83)	**1.82** (1.49-2.11)	**2.01** (1.64-2.33)
60-min	**0.518** (0.445-0.605)	**0.672** (0.574-0.783)	**0.904** (0.769-1.05)	**1.09** (0.922-1.26)	**1.33** (1.13-1.55)	**1.53** (1.29-1.78)	**1.74** (1.45-2.01)	**1.96** (1.62-2.27)	**2.25** (1.85-2.61)	**2.49** (2.03-2.89)
2-hr	**0.585** (0.501-0.693)	**0.748** (0.638-0.888)	**0.993** (0.844-1.18)	**1.19** (1.01-1.40)	**1.47** (1.23-1.72)	**1.69** (1.41-1.98)	**1.93** (1.60-2.25)	**2.18** (1.79-2.54)	**2.53** (2.05-2.95)	**2.82** (2.26-3.29)
3-hr	**0.634** (0.548-0.748)	**0.806** (0.695-0.952)	**1.06** (0.914-1.25)	**1.26** (1.08-1.48)	**1.54** (1.31-1.81)	**1.77** (1.50-2.07)	**2.01** (1.69-2.35)	**2.27** (1.89-2.65)	**2.63** (2.17-3.07)	**2.92** (2.38-3.42)
6-hr	**0.733** (0.639-0.857)	**0.926** (0.808-1.08)	**1.20** (1.04-1.40)	**1.41** (1.23-1.64)	**1.71** (1.47-1.98)	**1.93** (1.66-2.24)	**2.18** (1.86-2.52)	**2.43** (2.06-2.81)	**2.79** (2.33-3.23)	**3.08** (2.55-3.57)
12-hr	**0.820** (0.719-0.936)	**1.03** (0.909-1.18)	**1.31** (1.15-1.50)	**1.53** (1.34-1.75)	**1.83** (1.59-2.08)	**2.06** (1.78-2.34)	**2.30** (1.98-2.60)	**2.54** (2.17-2.89)	**2.88** (2.44-3.27)	**3.15** (2.65-3.59)
24-hr	**0.917** (0.811-1.04)	**1.15** (1.02-1.30)	**1.44** (1.27-1.63)	**1.67** (1.47-1.88)	**1.97** (1.74-2.23)	**2.21** (1.94-2.49)	**2.46** (2.15-2.77)	**2.71** (2.35-3.04)	**3.04** (2.63-3.42)	**3.30** (2.84-3.71)
2-day	**0.968** (0.863-1.09)	**1.21** (1.08-1.36)	**1.51** (1.35-1.69)	**1.74** (1.55-1.95)	**2.06** (1.83-2.30)	**2.30** (2.03-2.56)	**2.54** (2.24-2.84)	**2.79** (2.45-3.12)	**3.12** (2.72-3.49)	**3.37** (2.93-3.77)
3-day	**1.09** (0.981-1.20)	**1.35** (1.22-1.50)	**1.67** (1.51-1.84)	**1.92** (1.73-2.11)	**2.25** (2.02-2.48)	**2.50** (2.24-2.75)	**2.75** (2.47-3.03)	**3.01** (2.69-3.32)	**3.35** (2.97-3.69)	**3.60** (3.19-3.98)
4-day	**1.20** (1.10-1.32)	**1.49** (1.36-1.63)	**1.82** (1.67-1.99)	**2.09** (1.91-2.27)	**2.44** (2.22-2.65)	**2.70** (2.46-2.94)	**2.97** (2.69-3.23)	**3.23** (2.92-3.52)	**3.58** (3.23-3.90)	**3.84** (3.45-4.19)
7-day	**1.37** (1.26-1.49)	**1.70** (1.56-1.85)	**2.06** (1.89-2.24)	**2.34** (2.15-2.54)	**2.71** (2.48-2.93)	**2.98** (2.73-3.22)	**3.25** (2.97-3.51)	**3.50** (3.20-3.79)	**3.83** (3.50-4.15)	**4.06** (3.70-4.41)
10-day	**1.52** (1.39-1.65)	**1.88** (1.73-2.04)	**2.29** (2.11-2.48)	**2.61** (2.41-2.82)	**3.04** (2.79-3.28)	**3.35** (3.07-3.62)	**3.67** (3.36-3.96)	**3.98** (3.63-4.29)	**4.37** (3.98-4.72)	**4.66** (4.23-5.03)
20-day	**1.89** (1.73-2.05)	**2.33** (2.15-2.55)	**2.83** (2.60-3.07)	**3.20** (2.94-3.47)	**3.67** (3.37-3.98)	**4.00** (3.67-4.34)	**4.33** (3.97-4.68)	**4.63** (4.24-5.00)	**5.00** (4.57-5.41)	**5.26** (4.80-5.69)
30-day	**2.26** (2.07-2.44)	**2.80** (2.57-3.03)	**3.36** (3.09-3.63)	**3.77** (3.47-4.06)	**4.28** (3.93-4.60)	**4.64** (4.26-4.99)	**4.98** (4.57-5.35)	**5.29** (4.85-5.69)	**5.66** (5.19-6.08)	**5.92** (5.41-6.36)
45-day	**2.76** (2.54-2.98)	**3.41** (3.15-3.68)	**4.05** (3.74-4.36)	**4.50** (4.16-4.85)	**5.04** (4.67-5.43)	**5.41** (5.01-5.82)	**5.73** (5.31-6.16)	**6.01** (5.57-6.45)	**6.31** (5.86-6.76)	**6.47** (6.03-6.92)
60-day	**3.17** (2.93-3.43)	**3.92** (3.62-4.24)	**4.66** (4.31-5.03)	**5.18** (4.80-5.59)	**5.81** (5.38-6.26)	**6.23** (5.78-6.71)	**6.62** (6.14-7.13)	**6.95** (6.45-7.48)	**7.31** (6.80-7.88)	**7.53** (7.02-8.10)

[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.

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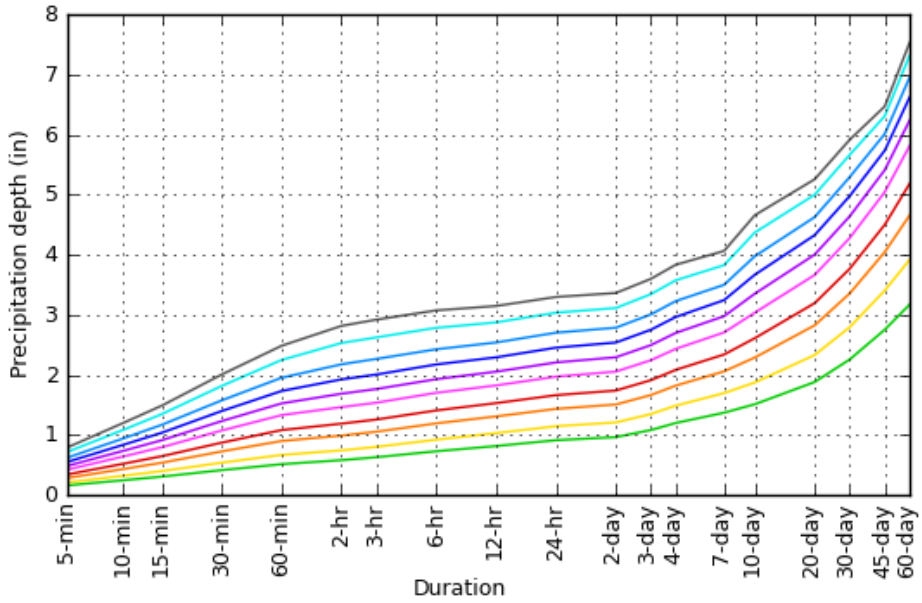
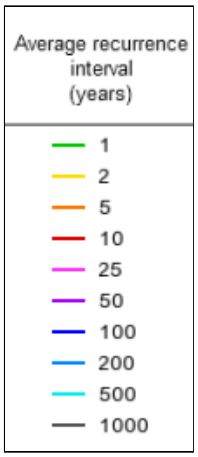
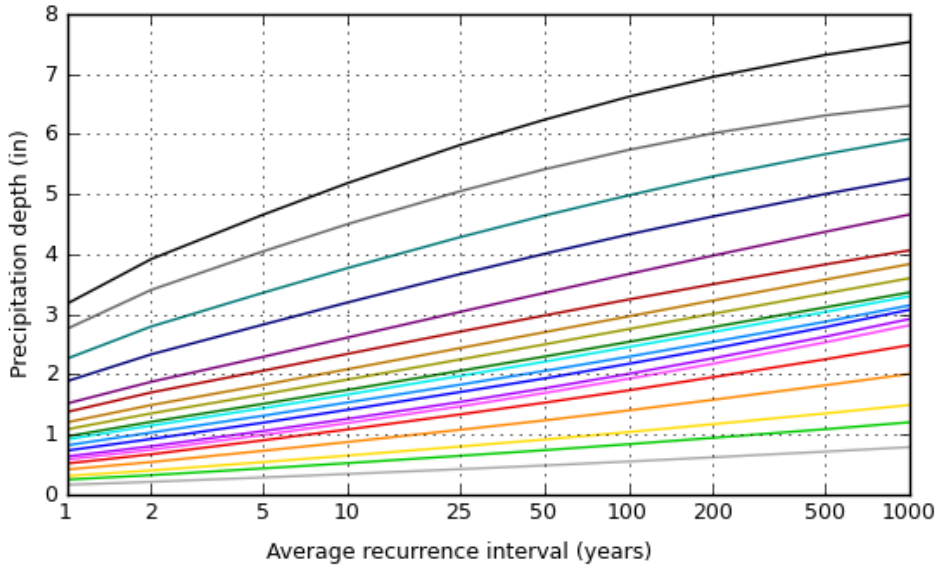
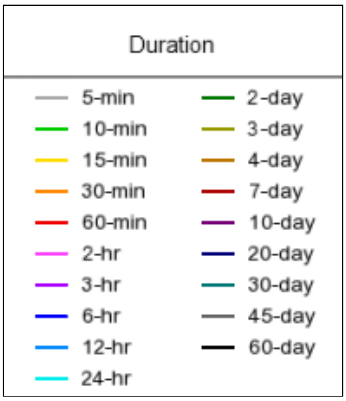
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 35.0917°, Longitude: -106.7101°









NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Tue Jun 7 19:54:13 2022

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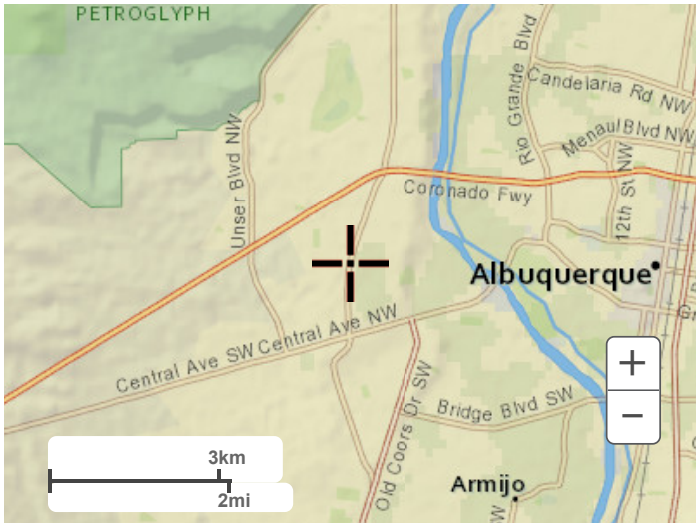
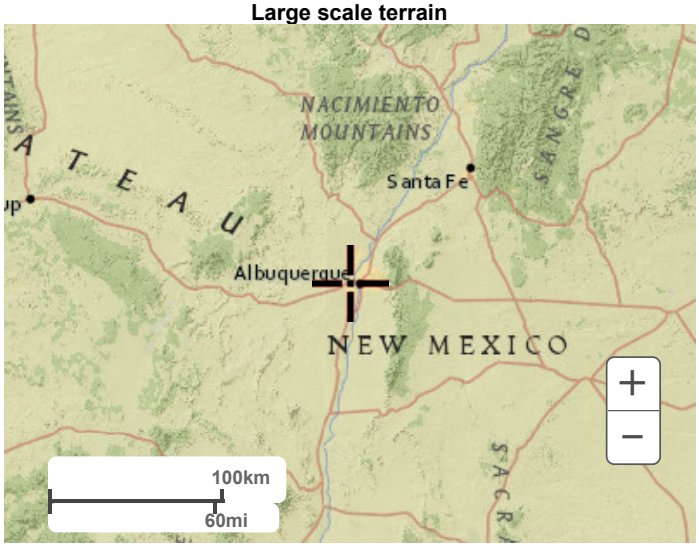
Maps & aerials

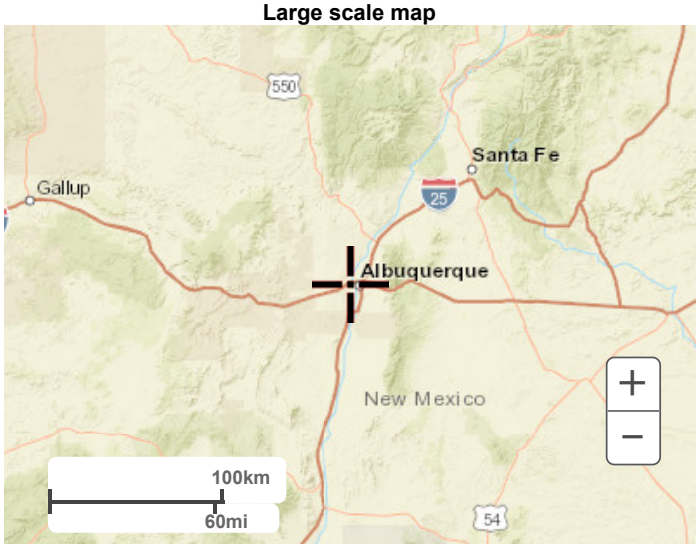
Small scale terrain



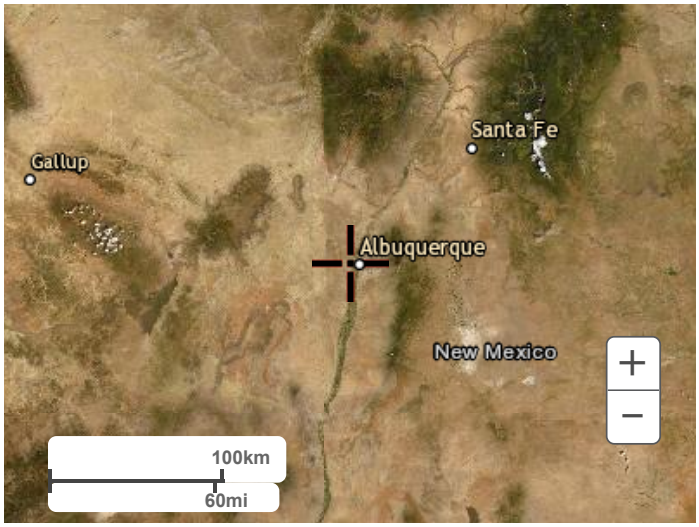
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Existing Basin Land Treatment Type Percentages				
BASIN	%A	%B	%C	%D
EX-1	90%	0%	3%	7%
EX-2	95%	0%	5%	0%
EX-3	33%	8%	8%	51%
EX-4	0%	24%	24%	52%

BASIN AREAS & FLOW SUMMARY (from AHYMO)					
BASIN	AREA (SF)	AREA (AC.)	AREA (SQ.MI.)	Q_{100} (CFS)	NOTES/ COMMENTS
EX-1	26,979	0.62	0.00097	1.09	Drains to public curb inlet near Coors & Daytona Intersection
EX-2	82,364	1.89	0.00295	3.00	Project Site Drainage flowing south towards 62nd & Clouderoft
EX-3	66,642	1.53	0.00239	4.64	Existing off-site drainage basin entering existing 62nd st (W)
EX-4	56,389	1.29	0.00202	4.39	Existing off-site drainage basin entering existing 62nd st (L)

Existing Runoff Entering Paved 62nd Street	
Existing Basin	Existing Flow, Q_e (CFS)
EX-2	3.00
EX-3	4.64
EX-4	4.39
Total	12.03

0 20 40 80 120

SCALE 1"=40'

LEGEND

6494 — EXISTING CONTOUR

EXISTING DRAIN BASIN

EXISTING FLOW ARROW

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Civil Engineering Consultants
128 Monroe Street NE
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505-268-8828 | www.iacivil.com

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NOT FOR CONSTRUCTION

IAN M. N. ANDERSON
NEW MEXICO
26441
LICENSED PROFESSIONAL ENGINEER

DATE: 6/7/22

62ND STREET SUBDIVISION

Albuquerque, New Mexico

a development of

Greater Albuquerque Habitat for Humanity

ENGINEER'S CERTIFICATION

ISSUE:

PROJECT NUMBER: IA 2415
FILE: 2415 C-EX-BASINS
DRAWN BY: IMNA
CHECKED BY: FCA
DATE: 06-07-2022

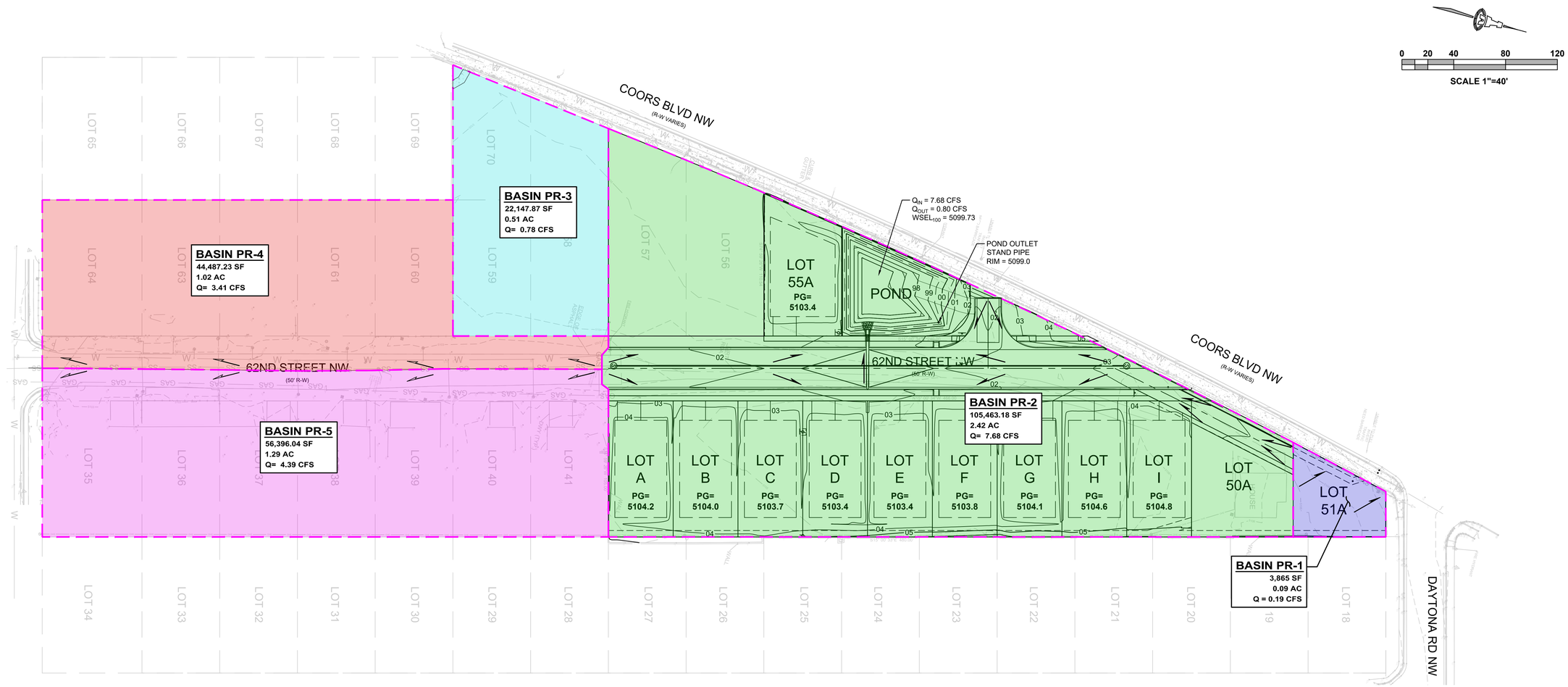
No	Date	Description

SHEET TITLE

EXHIBIT A.1 - EXISTING DRAINAGE BASINS

SHEET NUMBER

EX-A.1



Proposed Basin Land Treatment Type Percentages				
BASIN	%A	%B	%C	%D
PR-1	78%	0%	6%	16%
PR-2	15%	18%	18%	49%
PR-3	100%	0%	0%	0%
PR-4	0%	26%	26%	49%
PR-5	0%	24%	24%	52%

BASIN AREAS & FLOW SUMMARY (from AHYMO)

BASIN	AREA (SF)	AREA (AC.)	AREA (SQ.MI.)	Q_{100} (CFS)	TOTAL OUT Q_{100} (CFS)	NOTES/ COMMENTS
PR-1	3,865	0.09	0.00014	0.19	0.19	Northern Off-site runoff entering ex inlet at SWC Coors & Daytona
PR-2	105,463	2.42	0.00378	7.68	0.80	Contributing basin to 62nd st extension runoff; enters proposed pond, outfall to ex inlet at SWC of Coors & Daytona
PR-3	22,148	0.51	0.00079	0.78	0.78	Existing off-site generated runoff, enters existing paved portion of 62nd st. (W)
PR-4	44,487	1.02	0.00160	3.41	3.41	Existing off-site generated runoff, enters existing paved portion of 62nd st. (W)
PR-5	56,396	1.29	0.00202	4.39	4.39	Existing off-site generated runoff, enters existing paved portion of 62nd st. (E)

Proposed Runoff Entering Paved 62nd Street	
Proposed Basin	Proposed Flow, QP (CFS)
PR-3	0.78
PR-4	3.41
PR-5	4.39
Total	8.58

Existing vs Proposed Q to SWC Coors & Daytona Existing Curb Inlet				
Existing Basin	Existing Flow, Q_E (CFS)	Proposed Basins	Proposed Flow, Q_P (CFS)	Δ (Q_E-Q_P) (CFS)
EX-1	1.09	PR-1 & PR-2	0.99	-0.10

Existing vs Proposed Q to Existing Paved 62nd Street NW				
Existing Basins	Existing Flow, Q_E (CFS)	Proposed Basins	Proposed Flow, Q_P (CFS)	Δ (Q_E-Q_P) (CFS)
EX-2, EX-3, EX-4	12.03	PR-3, PR-4, PR-5	8.58	-3.45

CALCULATIONS: GAIHI 62nd St Subdivision Basins : 11/24/2021

HYDROGRAPH FOR SMALL WATERSHED
DPM SECTION 6-2(A)(7)

Base time, t_B, for a small watershed hydrograph is (Equation 6.8):
$tB = (2.107 * E * A / Q_P) - (0.25 * A_D / A)$

Where

E	=	1.48 inches
A_T	=	2.42 acres
A_D	=	1.19 acres
Q_P	=	7.6 cfs
t_B	=	0.87 hours

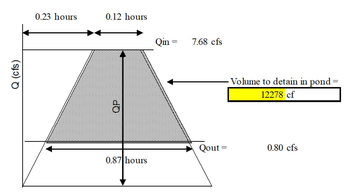
E is the excess precipitation in inches (from DPM TABLE 6.2.13), Q_P is the peak flow, A_D is the area (acres) of treatment D, and A_T is the total area in acres. Using the time of concentration, t_C (hours), the time to peak in hours is:

$t_P = (0.7 * tC) + ((1.6 - (A_D / A)) / 12)$

Where

tc	=	0.20 hours
t_P	=	0.23 hours

Continue the peak for 0.25 * A_D / A_T hours. When A_D is zero, the hydrograph will be triangular. When A_D is not zero, the hyrograph will be trapezoidal. see the graph below:



INFLOW / OUTFLOW HYDROGRAPH

Basin PR-2 Pond Volume		
Contour	Area	Volume
5100.5	4799	
5100	4254	2263 CF
5099	3281	3768 CF
5098	2423	2852 CF
5097	1687	2055 CF
5096	1060	1373 CF
POND VOLUME =		**12312** CF

LEGEND

- EXISTING CONTOUR (6494)
- EXISTING DRAIN BASIN
- EXISTING FLOW ARROW
- PROPOSED MAJOR CONTOUR (95)
- PROPOSED MINOR CONTOUR (92)
- PROPOSED FLOW ARROW

NOTES:

- REFER TO THE COMPLETE DRAINAGE REPORT FOR DETAILED DISCUSSION OF THE DRAINAGE DESIGN FOR THIS PROJECT
- POND OUTFLOW AND WATER SURFACE ELEVATION WAS CALCULATED VIA AHYMO-14, REFER TO THE DRAINAGE REPORT APPENDIX X FOR COMPLETE AHYMO BASIN AND POND INFLOW/OUTFLOW CALCULATION RESULTS

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IAN M. N. ANDERSON
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26441
LICENSED PROFESSIONAL ENGINEER

DATE: 6/7/22

62ND STREET SUBDIVISION
Albuquerque, New Mexico
a development of
Greater Albuquerque Habitat for Humanity

ENGINEER'S CERTIFICATION
ISSUE:

PROJECT NUMBER:	IA 2415
FILE:	2415 MAP-BASINS
DRAWN BY:	MMA
CHECKED BY:	FCA
DATE:	06-07-2022

No	Description	Date

SHEET TITLE

PROPOSED DRAINAGE BASINS

SHEET NUMBER

EX-A.2

APPENDIX B

AHYMO 100-Yr, 6-Hr Summary

AHYMO 100-Yr, 6-Hr Output

Hydrology & Pond Volume Calculation Tables

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4) - Ver. S4.01a, Rel: 01a RUN DATE (MON/DAY/YR) =06/07/2022
INPUT FILE = ROJECTS\2400-2499\2415\CALCS\HYDROLOGY\2022 06-07_ahymo_update\2415-R.DAT USER NO.= AHYMO_Temp_User:20122010

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
*S**********											
START										TIME=	0.00
LOCATION	ALBUQUERQUE										
RAINFALL TYPE= 2 NOAA 14										RAIN24=	2.460
*S EXISTING BASIN 1											
COMPUTE NM HYD	10.00	-	1	0.00097	1.09	0.035	0.68475	1.500	1.764	PER IMP=	7.00
*S EXISTING BASIN 2											
COMPUTE NM HYD	11.00	-	2	0.00295	3.00	0.091	0.57644	1.550	1.591	PER IMP=	0.00
*S EXISTING BASIN 3											
COMPUTE NM HYD	12.00	-	3	0.00239	4.64	0.185	1.44923	1.500	3.035	PER IMP=	51.00
*S EXISTING BASIN 4											
COMPUTE NM HYD	13.00	-	4	0.00202	4.39	0.169	1.56575	1.500	3.394	PER IMP=	52.00
*S PROPOSED BASIN 1											
COMPUTE NM HYD	101.00	-	5	0.00014	0.19	0.006	0.84455	1.500	2.163	PER IMP=	16.00
*S PROPOSED BASIN 2											
COMPUTE NM HYD	102.00	-	6	0.00378	7.68	0.298	1.47651	1.500	3.176	PER IMP=	49.00
*S PROPOSED BASIN 3											
COMPUTE NM HYD	103.00	-	7	0.00079	0.78	0.024	0.55816	1.550	1.542	PER IMP=	0.00
*S PROPOSED BASIN 4											
COMPUTE NM HYD	104.00	-	8	0.00160	3.41	0.129	1.51202	1.500	3.331	PER IMP=	48.00
*S PROPOSED BASIN 5											
COMPUTE NM HYD	105.00	-	9	0.00202	4.39	0.169	1.56575	1.500	3.394	PER IMP=	52.00
*S ~~~~~~~~~~~~~~~~~~~~ POND ~~~~~~~~~~~~~~~~~~~~~~~											
*S ROUTE BASIN 2 THROUGH POND (1 6-IN RIM @ 5099.0)											
ROUTE RESERVOIR	106.00	6	10	0.00378	0.80	0.298	1.47642	2.050	0.330	AC-FT=	0.206
FINISH											

```
    AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
         RUN DATE (MON/DAY/YR) = 06/07/2022
         START TIME (HR:MIN:SEC) = 11:10:47     USER NO.= AHYMO_Temp_User:20122010
         INPUT FILE = M:\PROJECTS\2400-2499\2415\CALCS\HYDROLOGY\2022 06-07_ahymo_update\2415-R.DAT

*S**********************************************************************
*
*     2415 - GAHH 62ND ST SD
*     JUNE 7, 2022 - IMNA
*
*     PRECIPITATION FROM NOAA
*     62ND ST SITE; ALBUQUERQUE; (LAT: 35.0916° LONG:-106.7099°)
*          P15 =       1.04"
*          P60 =       1.74"
*          P360 =      2.18"
*          P1440 =     2.46"
*
*     HYDROLOGIC MODEL FOR SITE EXISTING CONDITIONS
*     100-YEAR, 24-HOUR STORM
*
*     2415-R.DAT
*     BY ISAACSON & ARFMAN PA - IAN M N ANDERSON, PE
*
**********************************************************************
START               TIME=0.0 HR  PUNCH CODE=0
LOCATION            ALBUQUERQUE, NM
     City of Albuquerque soil infiltration values (LAND FACTORS) used for computations.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
          A             0.65                  1.67
          B             0.50                  1.25
          C             0.35                  0.83
          D             0.10                  0.04

RAINFALL            TYPE=2 RAIN QUARTER=0 RAIN ONE=1.74
                    RAIN SIX=2.18 RAIN DAY=2.46 DT=0.05HR

               24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
               DT =   0.050000 HOURS       END TIME =    24.000002 HOURS
                 0.0000  0.0029  0.0060  0.0092  0.0127  0.0163  0.0204
                 0.0262  0.0352  0.0450  0.0551  0.0662  0.0773  0.0889
                 0.1008  0.1129  0.1263  0.1404  0.1555  0.1774  0.2025
                 0.2363  0.2745  0.3216  0.3846  0.4554  0.5777  0.7678
                 1.0936  1.3226  1.5032  1.5939  1.6734  1.7306  1.7760
                 1.8157  1.8447  1.8713  1.8933  1.9101  1.9244  1.9371
                 1.9491  1.9597  1.9697  1.9794  1.9888  1.9965  2.0009
                 2.0053  2.0095  2.0135  2.0174  2.0213  2.0251  2.0288
                 2.0323  2.0358  2.0392  2.0426  2.0459  2.0491  2.0522
                 2.0553  2.0583  2.0613  2.0641  2.0670  2.0698  2.0725
                 2.0753  2.0780  2.0806  2.0832  2.0858  2.0884  2.0909
                 2.0934  2.0959  2.0983  2.1007  2.1031  2.1055  2.1078
                 2.1101  2.1124  2.1147  2.1169  2.1191  2.1213  2.1235
```

2.1256	2.1277	2.1298	2.1319	2.1340	2.1360	2.1380
2.1400	2.1420	2.1440	2.1459	2.1479	2.1498	2.1517
2.1536	2.1554	2.1573	2.1591	2.1609	2.1627	2.1645
2.1663	2.1681	2.1698	2.1715	2.1733	2.1750	2.1767
2.1783	2.1800	2.1808	2.1816	2.1823	2.1831	2.1839
2.1847	2.1854	2.1862	2.1870	2.1878	2.1886	2.1893
2.1901	2.1909	2.1917	2.1924	2.1932	2.1940	2.1948
2.1956	2.1963	2.1971	2.1979	2.1987	2.1994	2.2002
2.2010	2.2018	2.2026	2.2033	2.2041	2.2049	2.2057
2.2064	2.2072	2.2080	2.2088	2.2096	2.2103	2.2111
2.2119	2.2127	2.2134	2.2142	2.2150	2.2158	2.2166
2.2173	2.2181	2.2189	2.2197	2.2204	2.2212	2.2220
2.2228	2.2236	2.2243	2.2251	2.2259	2.2267	2.2274
2.2282	2.2290	2.2298	2.2306	2.2313	2.2321	2.2329
2.2337	2.2344	2.2352	2.2360	2.2368	2.2376	2.2383
2.2391	2.2399	2.2407	2.2414	2.2422	2.2430	2.2438
2.2446	2.2453	2.2461	2.2469	2.2477	2.2484	2.2492
2.2500	2.2508	2.2516	2.2523	2.2531	2.2539	2.2547
2.2554	2.2562	2.2570	2.2578	2.2586	2.2593	2.2601
2.2609	2.2617	2.2624	2.2632	2.2640	2.2648	2.2656
2.2663	2.2671	2.2679	2.2687	2.2694	2.2702	2.2710
2.2718	2.2726	2.2733	2.2741	2.2749	2.2757	2.2764
2.2772	2.2780	2.2788	2.2796	2.2803	2.2811	2.2819
2.2827	2.2834	2.2842	2.2850	2.2858	2.2866	2.2873
2.2881	2.2889	2.2897	2.2904	2.2912	2.2920	2.2928
2.2936	2.2943	2.2951	2.2959	2.2967	2.2974	2.2982
2.2990	2.2998	2.3006	2.3013	2.3021	2.3029	2.3037
2.3044	2.3052	2.3060	2.3068	2.3076	2.3083	2.3091
2.3099	2.3107	2.3114	2.3122	2.3130	2.3138	2.3146
2.3153	2.3161	2.3169	2.3177	2.3184	2.3192	2.3200
2.3208	2.3216	2.3223	2.3231	2.3239	2.3247	2.3254
2.3262	2.3270	2.3278	2.3286	2.3293	2.3301	2.3309
2.3317	2.3324	2.3332	2.3340	2.3348	2.3356	2.3363
2.3371	2.3379	2.3387	2.3394	2.3402	2.3410	2.3418
2.3426	2.3433	2.3441	2.3449	2.3457	2.3464	2.3472
2.3480	2.3488	2.3496	2.3503	2.3511	2.3519	2.3527
2.3534	2.3542	2.3550	2.3558	2.3566	2.3573	2.3581
2.3589	2.3597	2.3604	2.3612	2.3620	2.3628	2.3636
2.3643	2.3651	2.3659	2.3667	2.3674	2.3682	2.3690
2.3698	2.3706	2.3713	2.3721	2.3729	2.3737	2.3744
2.3752	2.3760	2.3768	2.3776	2.3783	2.3791	2.3799
2.3807	2.3814	2.3822	2.3830	2.3838	2.3846	2.3853
2.3861	2.3869	2.3877	2.3884	2.3892	2.3900	2.3908
2.3916	2.3923	2.3931	2.3939	2.3947	2.3954	2.3962
2.3970	2.3978	2.3986	2.3993	2.4001	2.4009	2.4017
2.4024	2.4032	2.4040	2.4048	2.4056	2.4063	2.4071
2.4079	2.4087	2.4094	2.4102	2.4110	2.4118	2.4126
2.4133	2.4141	2.4149	2.4157	2.4164	2.4172	2.4180
2.4188	2.4196	2.4203	2.4211	2.4219	2.4227	2.4234
2.4242	2.4250	2.4258	2.4266	2.4273	2.4281	2.4289
2.4297	2.4304	2.4312	2.4320	2.4328	2.4336	2.4343
2.4351	2.4359	2.4367	2.4374	2.4382	2.4390	2.4398

```
                2.4406  2.4413  2.4421  2.4429  2.4437  2.4444  2.4452
                2.4460  2.4468  2.4476  2.4483  2.4491  2.4499  2.4507
                2.4514  2.4522  2.4530  2.4538  2.4546  2.4553  2.4561
                2.4569  2.4577  2.4584  2.4592  2.4600

**********************************************************************
*S  EXISTING BASIN 1
COMPUTE NM HYD       ID=1 HYD NO=10 AREA= 0.00097 SQ MI
                     PER A=90 PER B=0 PER C=3 PER D=7
                     TP=-0.1333 HR   MASS RAIN=-1

     K =  0.072649HR    TP =  0.133300HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =  0.26807    CFS   UNIT VOLUME =   0.9593       B =   526.28      P60 = 1.7400
     AREA =     0.000068 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000


     K =  0.164943HR    TP =  0.133300HR    K/TP RATIO =  1.237382     SHAPE CONSTANT, N =  2.879628
     UNIT PEAK =   1.8398    CFS   UNIT VOLUME =   0.9905       B =   271.86      P60 = 1.7400
     AREA =     0.000902 SQ MI    IA =   0.64032 INCHES    INF =   1.64290 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

PRINT HYD            ID=1   CODE=5

                                    OUTFLOW HYDROGRAPH REACH    10.00

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000       0.0         1.250       0.0         2.500       0.0         3.750       0.0         5.000       0.0
     0.250       0.0         1.500       1.1         2.750       0.0         4.000       0.0         5.250       0.0
     0.500       0.0         1.750       0.4         3.000       0.0         4.250       0.0         5.500       0.0
     0.750       0.0         2.000       0.1         3.250       0.0         4.500       0.0         5.750       0.0
     1.000       0.0         2.250       0.1         3.500       0.0         4.750       0.0         6.000       0.0

    RUNOFF VOLUME =     0.68475 INCHES     =       0.0354 ACRE-FEET
    PEAK DISCHARGE RATE =       1.09 CFS  AT   1.500 HOURS   BASIN AREA =  0.0010 SQ. MI.



*S  EXISTING BASIN 2
COMPUTE NM HYD       ID=2 HYD NO=11 AREA= 0.00295 SQ MI
                     PER A=95 PER B=0 PER C=5 PER D=0
                     TP=-0.1333 HR   MASS RAIN=-1

     K =  0.163833HR    TP =  0.133300HR    K/TP RATIO =  1.229055     SHAPE CONSTANT, N =  2.897236
     UNIT PEAK =   6.0492    CFS   UNIT VOLUME =   0.9961       B =   273.34      P60 = 1.7400
     AREA =     0.002950 SQ MI    IA =   0.63500 INCHES    INF =   1.62800 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

PRINT HYD            ID=2   CODE=5

                                    OUTFLOW HYDROGRAPH REACH    11.00
```

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.000	0.0	2.000	0.3	3.000	0.0	4.000	0.0
0.250	0.0	1.250	0.0	2.250	0.2	3.250	0.0		
0.500	0.0	1.500	3.0	2.500	0.1	3.500	0.0		
0.750	0.0	1.750	1.1	2.750	0.1	3.750	0.0		

RUNOFF VOLUME = 0.57644 INCHES = 0.0907 ACRE-FEET
PEAK DISCHARGE RATE = 3.00 CFS AT 1.550 HOURS BASIN AREA = 0.0030 SQ. MI.

*S EXISTING BASIN 3
COMPUTE NM HYD ID=3 HYD NO=12 AREA= 0.00239 SQ MI
PER A=33 PER B=8 PER C=8 PER D=51
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 4.8123 CFS UNIT VOLUME = 0.9971 B = 526.28 P60 = 1.7400
AREA = 0.001219 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.151248HR TP = 0.133300HR K/TP RATIO = 1.134644 SHAPE CONSTANT, N = 3.119664
UNIT PEAK = 2.5605 CFS UNIT VOLUME = 0.9942 B = 291.44 P60 = 1.7400
AREA = 0.001171 SQ MI IA = 0.57653 INCHES INF = 1.46429 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=3 CODE=5

OUTFLOW HYDROGRAPH REACH 12.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	5.000	0.0	10.000	0.0	15.000	0.0	20.000	0.0
0.250	0.0	5.250	0.0	10.250	0.0	15.250	0.0	20.250	0.0
0.500	0.0	5.500	0.0	10.500	0.0	15.500	0.0	20.500	0.0
0.750	0.0	5.750	0.0	10.750	0.0	15.750	0.0	20.750	0.0
1.000	0.2	6.000	0.0	11.000	0.0	16.000	0.0	21.000	0.0
1.250	0.7	6.250	0.0	11.250	0.0	16.250	0.0	21.250	0.0
1.500	4.6	6.500	0.0	11.500	0.0	16.500	0.0	21.500	0.0
1.750	1.7	6.750	0.0	11.750	0.0	16.750	0.0	21.750	0.0
2.000	0.6	7.000	0.0	12.000	0.0	17.000	0.0	22.000	0.0
2.250	0.3	7.250	0.0	12.250	0.0	17.250	0.0	22.250	0.0
2.500	0.1	7.500	0.0	12.500	0.0	17.500	0.0	22.500	0.0
2.750	0.1	7.750	0.0	12.750	0.0	17.750	0.0	22.750	0.0
3.000	0.0	8.000	0.0	13.000	0.0	18.000	0.0	23.000	0.0
3.250	0.0	8.250	0.0	13.250	0.0	18.250	0.0	23.250	0.0
3.500	0.0	8.500	0.0	13.500	0.0	18.500	0.0	23.500	0.0
3.750	0.0	8.750	0.0	13.750	0.0	18.750	0.0	23.750	0.0
4.000	0.0	9.000	0.0	14.000	0.0	19.000	0.0	24.000	0.0

4.250	0.0	9.250	0.0	14.250	0.0	19.250	0.0	24.250	0.0
4.500	0.0	9.500	0.0	14.500	0.0	19.500	0.0		
4.750	0.0	9.750	0.0	14.750	0.0	19.750	0.0		

RUNOFF VOLUME = 1.44923 INCHES = 0.1847 ACRE-FEET
PEAK DISCHARGE RATE = 4.64 CFS AT 1.500 HOURS BASIN AREA = 0.0024 SQ. MI.

*S EXISTING BASIN 4
COMPUTE NM HYD ID=4 HYD NO=13 AREA= 0.00202 SQ MI
PER A=0 PER B=24 PER C=24 PER D=52
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 4.1470 CFS UNIT VOLUME = 0.9966 B = 526.28 P60 = 1.7400
AREA = 0.001050 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.118840HR TP = 0.133300HR K/TP RATIO = 0.891522 SHAPE CONSTANT, N = 3.977611
UNIT PEAK = 2.5726 CFS UNIT VOLUME = 0.9961 B = 353.68 P60 = 1.7400
AREA = 0.000970 SQ MI IA = 0.42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=4 CODE=5

OUTFLOW HYDROGRAPH REACH 13.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	5.000	0.0	10.000	0.0	15.000	0.0	20.000	0.0
0.250	0.0	5.250	0.0	10.250	0.0	15.250	0.0	20.250	0.0
0.500	0.0	5.500	0.0	10.500	0.0	15.500	0.0	20.500	0.0
0.750	0.0	5.750	0.0	10.750	0.0	15.750	0.0	20.750	0.0
1.000	0.2	6.000	0.0	11.000	0.0	16.000	0.0	21.000	0.0
1.250	0.6	6.250	0.0	11.250	0.0	16.250	0.0	21.250	0.0
1.500	4.4	6.500	0.0	11.500	0.0	16.500	0.0	21.500	0.0
1.750	1.5	6.750	0.0	11.750	0.0	16.750	0.0	21.750	0.0
2.000	0.5	7.000	0.0	12.000	0.0	17.000	0.0	22.000	0.0
2.250	0.3	7.250	0.0	12.250	0.0	17.250	0.0	22.250	0.0
2.500	0.1	7.500	0.0	12.500	0.0	17.500	0.0	22.500	0.0
2.750	0.1	7.750	0.0	12.750	0.0	17.750	0.0	22.750	0.0
3.000	0.0	8.000	0.0	13.000	0.0	18.000	0.0	23.000	0.0
3.250	0.0	8.250	0.0	13.250	0.0	18.250	0.0	23.250	0.0
3.500	0.0	8.500	0.0	13.500	0.0	18.500	0.0	23.500	0.0
3.750	0.0	8.750	0.0	13.750	0.0	18.750	0.0	23.750	0.0
4.000	0.0	9.000	0.0	14.000	0.0	19.000	0.0	24.000	0.0
4.250	0.0	9.250	0.0	14.250	0.0	19.250	0.0	24.250	0.0
4.500	0.0	9.500	0.0	14.500	0.0	19.500	0.0		
4.750	0.0	9.750	0.0	14.750	0.0	19.750	0.0		

```
    RUNOFF VOLUME =     1.56575 INCHES     =       0.1687 ACRE-FEET
    PEAK DISCHARGE RATE =       4.39 CFS  AT   1.500 HOURS   BASIN AREA =  0.0020 SQ. MI.


*S  PROPOSED BASIN 1
COMPUTE NM HYD       ID=5 HYD NO=101 AREA= 0.00014 SQ MI
                     PER A=78 PER B=0 PER C=6 PER D=16
                     TP=-0.1333 HR   MASS RAIN=-1

     K =  0.072649HR    TP =  0.133300HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =  0.88436E-01CFS   UNIT VOLUME =   0.8994       B =   526.28      P60 = 1.7400
     AREA =     0.000022 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000


     K =  0.162492HR    TP =  0.133300HR    K/TP RATIO =  1.218998     SHAPE CONSTANT, N =  2.918902
     UNIT PEAK =  0.24274    CFS   UNIT VOLUME =   0.9413       B =   275.15      P60 = 1.7400
     AREA =     0.000118 SQ MI    IA =   0.62857 INCHES    INF =   1.61000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

PRINT HYD            ID=5   CODE=5

                                  PARTIAL HYDROGRAPH   101.00

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000       0.0         0.750       0.0         1.500       0.2         2.250       0.0
     0.250       0.0         1.000       0.0         1.750       0.1         2.500       0.0
     0.500       0.0         1.250       0.0         2.000       0.0

    RUNOFF VOLUME =     0.84455 INCHES     =       0.0063 ACRE-FEET
    PEAK DISCHARGE RATE =       0.19 CFS  AT   1.500 HOURS   BASIN AREA =  0.0001 SQ. MI.


*S  PROPOSED BASIN 2
COMPUTE NM HYD       ID=6 HYD NO=102 AREA= 0.00378 SQ MI
                     PER A=15 PER B=18 PER C=18 PER D=49
                     TP=-0.1333 HR   MASS RAIN=-1

     K =  0.072649HR    TP =  0.133300HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =   7.3126    CFS   UNIT VOLUME =   0.9975       B =   526.28      P60 = 1.7400
     AREA =     0.001852 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000


     K =  0.132993HR    TP =  0.133300HR    K/TP RATIO =  0.997698     SHAPE CONSTANT, N =  3.538386
     UNIT PEAK =   4.6731    CFS   UNIT VOLUME =   0.9980       B =   323.13      P60 = 1.7400
     AREA =     0.001928 SQ MI    IA =   0.49118 INCHES    INF =   1.22529 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000
```

PRINT HYD ID=6 CODE=5

PARTIAL HYDROGRAPH 102.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	5.000	0.0	10.000	0.0	15.000	0.0	20.000	0.0
0.250	0.0	5.250	0.0	10.250	0.0	15.250	0.0	20.250	0.0
0.500	0.0	5.500	0.0	10.500	0.0	15.500	0.0	20.500	0.0
0.750	0.0	5.750	0.0	10.750	0.0	15.750	0.0	20.750	0.0
1.000	0.3	6.000	0.0	11.000	0.0	16.000	0.0	21.000	0.0
1.250	1.0	6.250	0.0	11.250	0.0	16.250	0.0	21.250	0.0
1.500	7.7	6.500	0.0	11.500	0.0	16.500	0.0	21.500	0.0
1.750	2.7	6.750	0.0	11.750	0.0	16.750	0.0	21.750	0.0
2.000	1.0	7.000	0.0	12.000	0.0	17.000	0.0	22.000	0.0
2.250	0.5	7.250	0.0	12.250	0.0	17.250	0.0	22.250	0.0
2.500	0.2	7.500	0.0	12.500	0.0	17.500	0.0	22.500	0.0
2.750	0.1	7.750	0.0	12.750	0.0	17.750	0.0	22.750	0.0
3.000	0.1	8.000	0.0	13.000	0.0	18.000	0.0	23.000	0.0
3.250	0.0	8.250	0.0	13.250	0.0	18.250	0.0	23.250	0.0
3.500	0.0	8.500	0.0	13.500	0.0	18.500	0.0	23.500	0.0
3.750	0.0	8.750	0.0	13.750	0.0	18.750	0.0	23.750	0.0
4.000	0.0	9.000	0.0	14.000	0.0	19.000	0.0	24.000	0.0
4.250	0.0	9.250	0.0	14.250	0.0	19.250	0.0	24.250	0.0
4.500	0.0	9.500	0.0	14.500	0.0	19.500	0.0		
4.750	0.0	9.750	0.0	14.750	0.0	19.750	0.0		

RUNOFF VOLUME = 1.47651 INCHES = 0.2977 ACRE-FEET
PEAK DISCHARGE RATE = 7.68 CFS AT 1.500 HOURS BASIN AREA = 0.0038 SQ. MI.

*S PROPOSED BASIN 3
COMPUTE NM HYD ID=7 HYD NO=103 AREA= 0.00079 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=-0.1333 HR MASS RAIN=-1

K = 0.166961HR TP = 0.133300HR K/TP RATIO = 1.252521 SHAPE CONSTANT, N = 2.848355
UNIT PEAK = 1.5955 CFS UNIT VOLUME = 0.9892 B = 269.22 P60 = 1.7400
AREA = 0.000790 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=7 CODE=5

PARTIAL HYDROGRAPH 103.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	0.750	0.0	1.500	0.8	2.250	0.0	3.000	0.0
0.250	0.0	1.000	0.0	1.750	0.3	2.500	0.0	3.250	0.0
0.500	0.0	1.250	0.0	2.000	0.1	2.750	0.0		

RUNOFF VOLUME = 0.55816 INCHES = 0.0235 ACRE-FEET
PEAK DISCHARGE RATE = 0.78 CFS AT 1.550 HOURS BASIN AREA = 0.0008 SQ. MI.

*S PROPOSED BASIN 4
COMPUTE NM HYD ID=8 HYD NO=104 AREA= 0.00160 SQ MI
PER A=0 PER B=26 PER C=26 PER D=48
TP=-0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 3.0321 CFS UNIT VOLUME = 0.9959 B = 526.28 P60 = 1.7400
AREA = 0.000768 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.118840HR TP = 0.133300HR K/TP RATIO = 0.891522 SHAPE CONSTANT, N = 3.977611
UNIT PEAK = 2.2075 CFS UNIT VOLUME = 0.9953 B = 353.68 P60 = 1.7400
AREA = 0.000832 SQ MI IA = 0.42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=8 CODE=5

PARTIAL HYDROGRAPH 104.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	5.000	0.0	10.000	0.0	15.000	0.0	20.000	0.0
0.250	0.0	5.250	0.0	10.250	0.0	15.250	0.0	20.250	0.0
0.500	0.0	5.500	0.0	10.500	0.0	15.500	0.0	20.500	0.0
0.750	0.0	5.750	0.0	10.750	0.0	15.750	0.0	20.750	0.0
1.000	0.1	6.000	0.0	11.000	0.0	16.000	0.0	21.000	0.0
1.250	0.4	6.250	0.0	11.250	0.0	16.250	0.0	21.250	0.0
1.500	3.4	6.500	0.0	11.500	0.0	16.500	0.0	21.500	0.0
1.750	1.2	6.750	0.0	11.750	0.0	16.750	0.0	21.750	0.0
2.000	0.4	7.000	0.0	12.000	0.0	17.000	0.0	22.000	0.0
2.250	0.2	7.250	0.0	12.250	0.0	17.250	0.0	22.250	0.0
2.500	0.1	7.500	0.0	12.500	0.0	17.500	0.0	22.500	0.0
2.750	0.0	7.750	0.0	12.750	0.0	17.750	0.0	22.750	0.0
3.000	0.0	8.000	0.0	13.000	0.0	18.000	0.0	23.000	0.0
3.250	0.0	8.250	0.0	13.250	0.0	18.250	0.0	23.250	0.0
3.500	0.0	8.500	0.0	13.500	0.0	18.500	0.0	23.500	0.0
3.750	0.0	8.750	0.0	13.750	0.0	18.750	0.0	23.750	0.0
4.000	0.0	9.000	0.0	14.000	0.0	19.000	0.0	24.000	0.0
4.250	0.0	9.250	0.0	14.250	0.0	19.250	0.0	24.250	0.0
4.500	0.0	9.500	0.0	14.500	0.0	19.500	0.0		
4.750	0.0	9.750	0.0	14.750	0.0	19.750	0.0		

RUNOFF VOLUME = 1.51202 INCHES = 0.1290 ACRE-FEET
PEAK DISCHARGE RATE = 3.41 CFS AT 1.500 HOURS BASIN AREA = 0.0016 SQ. MI.

```
*S  PROPOSED BASIN 5
COMPUTE NM HYD       ID=9 HYD NO=105 AREA= 0.00202 SQ MI
                     PER A=0 PER B=24 PER C=24 PER D=52
                     TP=-0.1333 HR   MASS RAIN=-1

     K =  0.072649HR    TP =  0.133300HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =   4.1470    CFS   UNIT VOLUME =   0.9966       B =   526.28      P60 = 1.7400
     AREA =     0.001050 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000


     K =  0.118840HR    TP =  0.133300HR    K/TP RATIO =  0.891522     SHAPE CONSTANT, N =  3.977611
     UNIT PEAK =   2.5726    CFS   UNIT VOLUME =   0.9961       B =   353.68      P60 = 1.7400
     AREA =     0.000970 SQ MI    IA =   0.42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.050000

PRINT HYD            ID=9   CODE=5

                                PARTIAL HYDROGRAPH   105.00

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     0.000       0.0         5.000       0.0        10.000       0.0        15.000       0.0        20.000       0.0
     0.250       0.0         5.250       0.0        10.250       0.0        15.250       0.0        20.250       0.0
     0.500       0.0         5.500       0.0        10.500       0.0        15.500       0.0        20.500       0.0
     0.750       0.0         5.750       0.0        10.750       0.0        15.750       0.0        20.750       0.0
     1.000       0.2         6.000       0.0        11.000       0.0        16.000       0.0        21.000       0.0
     1.250       0.6         6.250       0.0        11.250       0.0        16.250       0.0        21.250       0.0
     1.500       4.4         6.500       0.0        11.500       0.0        16.500       0.0        21.500       0.0
     1.750       1.5         6.750       0.0        11.750       0.0        16.750       0.0        21.750       0.0
     2.000       0.5         7.000       0.0        12.000       0.0        17.000       0.0        22.000       0.0
     2.250       0.3         7.250       0.0        12.250       0.0        17.250       0.0        22.250       0.0
     2.500       0.1         7.500       0.0        12.500       0.0        17.500       0.0        22.500       0.0
     2.750       0.1         7.750       0.0        12.750       0.0        17.750       0.0        22.750       0.0
     3.000       0.0         8.000       0.0        13.000       0.0        18.000       0.0        23.000       0.0
     3.250       0.0         8.250       0.0        13.250       0.0        18.250       0.0        23.250       0.0
     3.500       0.0         8.500       0.0        13.500       0.0        18.500       0.0        23.500       0.0
     3.750       0.0         8.750       0.0        13.750       0.0        18.750       0.0        23.750       0.0
     4.000       0.0         9.000       0.0        14.000       0.0        19.000       0.0        24.000       0.0
     4.250       0.0         9.250       0.0        14.250       0.0        19.250       0.0        24.250       0.0
     4.500       0.0         9.500       0.0        14.500       0.0        19.500       0.0
     4.750       0.0         9.750       0.0        14.750       0.0        19.750       0.0

    RUNOFF VOLUME =     1.56575 INCHES     =       0.1687 ACRE-FEET
    PEAK DISCHARGE RATE =       4.39 CFS  AT   1.500 HOURS   BASIN AREA =  0.0020 SQ. MI.


*S  ~~~~~~~~~~~~~~~~~~~~ POND ~~~~~~~~~~~~~~~~~~~~~~
*S      ROUTE BASIN 2 THROUGH POND (1 6-IN RIM @ 5099.0)
ROUTE RESERVOIR     ID=10 HYD NO=106  INFLOW ID=6 CODE=4
```

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEVATION(FT)
0.0	0.000	96.0
0.67	0.18455	99.5
0.95	0.23146	100.0
1.34	0.34060	101.0

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	96.00	0.000	0.00
0.20	0.00	96.00	0.000	0.00
0.40	0.00	96.00	0.000	0.00
0.60	0.00	96.00	0.000	0.00
0.80	0.07	96.00	0.000	0.00
1.00	0.31	96.06	0.003	0.01
1.20	0.79	96.22	0.012	0.04
1.40	3.98	96.74	0.039	0.14
1.60	6.09	98.71	0.143	0.52
1.80	2.10	99.61	0.194	0.73
2.00	0.98	99.72	0.206	0.80
2.20	0.52	99.71	0.204	0.79
2.40	0.32	99.65	0.198	0.75
2.60	0.15	99.56	0.190	0.70
2.80	0.09	99.43	0.181	0.66
3.00	0.06	99.25	0.171	0.62
3.20	0.04	99.08	0.162	0.59
3.40	0.03	98.91	0.153	0.56
3.60	0.03	98.75	0.145	0.53
3.80	0.03	98.60	0.137	0.50
4.00	0.03	98.45	0.129	0.47
4.20	0.03	98.32	0.122	0.44
4.40	0.03	98.19	0.116	0.42
4.60	0.03	98.07	0.109	0.40
4.80	0.03	97.96	0.103	0.38
5.00	0.03	97.85	0.098	0.36
5.20	0.03	97.76	0.093	0.34
5.40	0.03	97.66	0.088	0.32
5.60	0.04	97.58	0.083	0.30
5.80	0.04	97.50	0.079	0.29
6.00	0.04	97.42	0.075	0.27
6.20	0.02	97.35	0.071	0.26
6.40	0.02	97.28	0.067	0.24
6.60	0.02	97.21	0.064	0.23
6.80	0.02	97.14	0.060	0.22
7.00	0.02	97.08	0.057	0.21
7.20	0.02	97.03	0.054	0.20
7.40	0.02	96.97	0.051	0.19
7.60	0.02	96.92	0.049	0.18
7.80	0.02	96.87	0.046	0.17
8.00	0.02	96.83	0.044	0.16

8.20	0.02	96.78	0.041	0.15
8.40	0.02	96.74	0.039	0.14
8.60	0.02	96.71	0.037	0.14
8.80	0.02	96.67	0.035	0.13
9.00	0.02	96.64	0.034	0.12
9.20	0.02	96.61	0.032	0.12
9.40	0.02	96.58	0.030	0.11
9.60	0.02	96.55	0.029	0.11
9.80	0.02	96.52	0.028	0.10
10.00	0.02	96.50	0.026	0.10
10.20	0.02	96.47	0.025	0.09
10.40	0.02	96.45	0.024	0.09
10.60	0.02	96.43	0.023	0.08
10.80	0.02	96.41	0.022	0.08
11.00	0.02	96.39	0.021	0.08

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
11.20	0.02	96.38	0.020	0.07
11.40	0.02	96.36	0.019	0.07
11.60	0.02	96.34	0.018	0.07
11.80	0.02	96.33	0.017	0.06
12.00	0.02	96.32	0.017	0.06
12.20	0.02	96.30	0.016	0.06
12.40	0.02	96.29	0.015	0.06
12.60	0.02	96.28	0.015	0.05
12.80	0.02	96.27	0.014	0.05
13.00	0.02	96.26	0.014	0.05
13.20	0.02	96.25	0.013	0.05
13.40	0.02	96.24	0.013	0.05
13.60	0.02	96.23	0.012	0.04
13.80	0.02	96.23	0.012	0.04
14.00	0.02	96.22	0.011	0.04
14.20	0.02	96.21	0.011	0.04
14.40	0.02	96.20	0.011	0.04
14.60	0.02	96.20	0.010	0.04
14.80	0.02	96.19	0.010	0.04
15.00	0.02	96.19	0.010	0.04
15.20	0.02	96.18	0.010	0.03
15.40	0.02	96.18	0.009	0.03
15.60	0.02	96.17	0.009	0.03
15.80	0.02	96.17	0.009	0.03
16.00	0.02	96.16	0.009	0.03
16.20	0.02	96.16	0.008	0.03
16.40	0.02	96.16	0.008	0.03
16.60	0.02	96.15	0.008	0.03
16.80	0.02	96.15	0.008	0.03
17.00	0.02	96.15	0.008	0.03
17.20	0.02	96.14	0.008	0.03
17.40	0.02	96.14	0.007	0.03
17.60	0.02	96.14	0.007	0.03

17.80	0.02	96.14	0.007	0.03
18.00	0.02	96.13	0.007	0.03
18.20	0.02	96.13	0.007	0.03
18.40	0.02	96.13	0.007	0.02
18.60	0.02	96.13	0.007	0.02
18.80	0.02	96.13	0.007	0.02
19.00	0.02	96.12	0.007	0.02
19.20	0.02	96.12	0.006	0.02
19.40	0.02	96.12	0.006	0.02
19.60	0.02	96.12	0.006	0.02
19.80	0.02	96.12	0.006	0.02
20.00	0.02	96.12	0.006	0.02
20.20	0.02	96.12	0.006	0.02
20.40	0.02	96.11	0.006	0.02
20.60	0.02	96.11	0.006	0.02
20.80	0.02	96.11	0.006	0.02
21.00	0.02	96.11	0.006	0.02
21.20	0.02	96.11	0.006	0.02
21.40	0.02	96.11	0.006	0.02
21.60	0.02	96.11	0.006	0.02
21.80	0.02	96.11	0.006	0.02
22.00	0.02	96.11	0.006	0.02
22.20	0.02	96.11	0.006	0.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
22.40	0.02	96.11	0.006	0.02
22.60	0.02	96.11	0.006	0.02
22.80	0.02	96.11	0.006	0.02
23.00	0.02	96.11	0.006	0.02
23.20	0.02	96.10	0.006	0.02
23.40	0.02	96.10	0.005	0.02
23.60	0.02	96.10	0.005	0.02
23.80	0.02	96.10	0.005	0.02
24.00	0.02	96.10	0.005	0.02
24.20	0.00	96.10	0.005	0.02
24.40	0.00	96.10	0.005	0.02
24.60	0.00	96.09	0.005	0.02
24.80	0.00	96.09	0.004	0.02
25.00	0.00	96.08	0.004	0.02
25.20	0.00	96.08	0.004	0.01
25.40	0.00	96.07	0.004	0.01
25.60	0.00	96.07	0.004	0.01
25.80	0.00	96.06	0.003	0.01
26.00	0.00	96.06	0.003	0.01
26.20	0.00	96.06	0.003	0.01
26.40	0.00	96.05	0.003	0.01
26.60	0.00	96.05	0.003	0.01
26.80	0.00	96.05	0.002	0.01
27.00	0.00	96.04	0.002	0.01
27.20	0.00	96.04	0.002	0.01

```
    27.40       0.00     96.04      0.002      0.01
    27.60       0.00     96.04      0.002      0.01
    27.80       0.00     96.03      0.002      0.01
    28.00       0.00     96.03      0.002      0.01
    28.20       0.00     96.03      0.002      0.01
    28.40       0.00     96.03      0.002      0.01
    28.60       0.00     96.03      0.001      0.01
    28.80       0.00     96.03      0.001      0.00
 PEAK DISCHARGE =        0.798 CFS - PEAK OCCURS AT HOUR    2.05
 MAXIMUM WATER SURFACE ELEVATION =       99.728
 MAXIMUM STORAGE =        0.2060 AC-FT      INCREMENTAL TIME=    0.050000HRS

PRINT HYD           ID=10 CODE=1

                                  PARTIAL HYDROGRAPH   106.00


    RUNOFF VOLUME =     1.47642 INCHES     =       0.2976 ACRE-FEET
    PEAK DISCHARGE RATE =       0.80 CFS  AT   2.050 HOURS   BASIN AREA =  0.0038 SQ. MI.



FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 11:10:47
```

Existing Hydrology Calculation Tables

Existing Basin Land Treatment Type Percentages				
BASIN	**%A**	**%B**	**%C**	**%D**
EX-1	90%	0%	3%	7%
EX-2	95%	0%	5%	0%
EX-3	33%	8%	8%	51%
EX-4	0%	24%	24%	52%

BASIN AREAS & FLOW SUMMARY (from AHYMO)					
BASIN	**AREA (SF)**	**AREA (AC.)**	**AREA (SQ.MI.)**	**Q_{100} (CFS)**	**NOTES/ COMMENTS**
EX-1	26,979	0.62	0.00097	1.09	Drains to public curb inlet near Coors & Daytona Intersection
EX-2	82,364	1.89	0.00295	3.00	Project Site Drainage flowing south towards 62nd & Cloudcroft
EX-3	66,642	1.53	0.00239	4.64	Existing off-site drainage basin entering existing 62nd st (W)
EX-4	56,389	1.29	0.00202	4.39	Existing off-site drainage basin entering existing 62nd st (L)

Existing Runoff Entering Paved 62nd Street	
Existing Basin	**Existing Flow, Q_e (CFS)**
EX-2	3.00
EX-3	4.64
EX-4	4.39
Total	12.03

Proposed Hydrology & Pond Volume Calculation Tables

Proposed Basin Land Treatment Type Percentages				
BASIN	**%A**	**%B**	**%C**	**%D**
PR-1	78%	0%	6%	16%
PR-2	15%	18%	18%	49%
PR-3	100%	0%	0%	0%
PR-4	0%	26%	26%	49%
PR-5	0%	24%	24%	52%

BASIN AREAS & FLOW SUMMARY (from AHYMO)						
BASIN	**AREA (SF)**	**AREA (AC.)**	**AREA (SQ.MI.)**	**Q_{100} (CFS)**	**TOTAL OUT Q_{100} (CFS)**	**NOTES/ COMMENTS**
PR-1	3,865	0.09	0.00014	0.19	0.19	Northern Off-site runoff entering ex inlet at SWC Coors & Daytona
PR-2	105,463	2.42	0.00378	7.68	0.80	Contributing basin to 62nd st extension runoff; enters proposed pond, outfall to ex inlet at SWC of Coors & Daytona
PR-3	22,148	0.51	0.00079	0.78	0.78	Existing off-site generated runoff, enters existing paved portion of 62nd st. (W)
PR-4	44,487	1.02	0.00160	3.41	3.41	Existing off-site generated runoff, enters existing paved portion of 62nd st. (W)
PR-5	56,396	1.29	0.00202	4.39	4.39	Existing off-site generated runoff, enters existing paved portion of 62nd st. (E)

Proposed Runoff Entering Paved 62nd Street	
Proposed Basin	**Proposed Flow, QP (CFS)**
PR-3	0.78
PR-4	3.41
PR-5	4.39
Total	8.58

Existing vs Proposed Q to SWC Coors & Daytona Existing Curb Inlet				
Existing Basin	**Existing Flow, Q_e (CFS)**	**Proposed Basins**	**Proposed Flow, Q_p (CFS)**	**Δ (Q_p-Q_e) (CFS)**
EX-1	1.09	PR-1 & PR-2	0.99	-0.10

Existing vs Proposed Q to Existing Paved 62nd Street NW				
Existing Basins	**Existing Flow, Q_e (CFS)**	**Proposed Basins**	**Proposed Flow, Q_p (CFS)**	**Δ (Q_p-Q_e) (CFS)**
EX-2, EX-3, EX-4	12.03	PR-3, PR-4, PR-5	8.58	-3.45

Basin PR-2 Pond Volume		
Contour	Area	Volume
5100.5	4799	
5100	4254	2263 CF
5099	3281	3768 CF
5098	2423	2852 CF
5097	1687	2055 CF
5096	1060	1373 CF
POND VOLUME =		**12312** CF

CALCULATIONS: GAHH 62nd St Subdivision Basins : 11/24/2021

HYDROGRAPH FOR SMALL WATERSHED

DPM SECTION 6-2(A)(7)

Base time, t_B, for a small watershed hydrograph is (Equation 6.8):

$tB = (2.107 * E * A / Q_P) - (0.25 * A_D / A)$

Where

E	=	1.48 inches
A_T	=	2.42 acres
A_D	=	1.19 acres
Q_P	=	7.6 cfs

t_B	=	0.87 hours

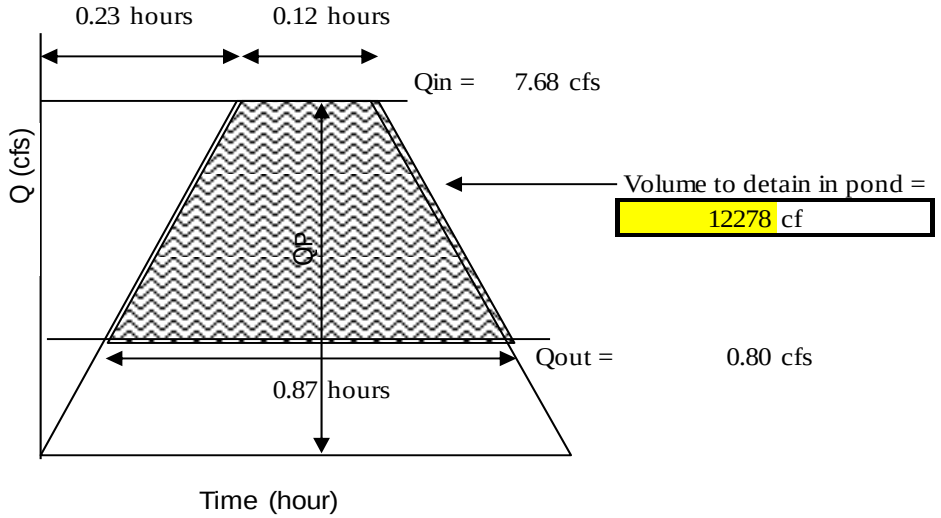
E is the excess precipitation in inches (from DPM TABLE 6.2.13), Q_P is the peak flow, A_D is the area (acres) of treatment D, and A_T is the total area in acres. Using the time of concentration, t_C (hours), the time to peak in hours is:

$t_P = (0.7 * tC) + ((1.6 - (A_D / A)) / 12)$

Where t_C = 0.20 hours

t_P = 0.23 hours

Continue the peak for 0.25 * A_D / A_T hours. When A_D is zero, the hydrograph will be triangular. When A_D is not zero, the hyrograph will be trapezoidal. see the graph below:



INFLOW / OUTFLOW HYDROGRAPH

APPENDIX C

Proposed Storm Drain Hydraulic Calculations

Proposed Storm Drain Profile

Energy Grade Line Calculations

Project Name: 62nd St SD SWS Analysis

10-26-2021

Stormwater Studio 2021 v 3.0.0.27

Line No	Line Size	Q	Downstream							Length	Upstream							Pipe		Junction		
			Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev		Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev	n Value	Enrgy Loss	HGLa Elev	EGLa Elev	Enrgy Loss
	(in)	(cfs)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
1	10	0.80	5097.85	0.83	0.55	5098.68	1.46	0.03	5098.72	2.36	5097.86	0.83	0.54	5098.69	1.46	0.03	5098.72	0.012	0.002	5098.69	5098.72	0.00
2	10	0.80	5097.86	0.83	0.54	5098.69	1.46	0.03	5098.72	20.35	5097.91	0.80	0.54	5098.71	1.48	0.03	5098.74	0.012	0.021	5098.71	5098.75	0.00
3	10	0.80	5097.91	0.80	0.54	5098.71	1.48	0.03	5098.75	159.86	5098.31	0.58	0.41	5098.89	1.95	0.06	5098.95	0.012	0.208	5098.90	5098.96	0.01
4	10	0.80	5098.31	0.59	0.41	5098.90	1.93	0.06	5098.96	181.80	5098.77	0.49	0.33	5099.26	2.41	0.09	5099.35	0.012	0.388	5099.29	5099.38	0.03

Notes: Return Period = 100-yrs.

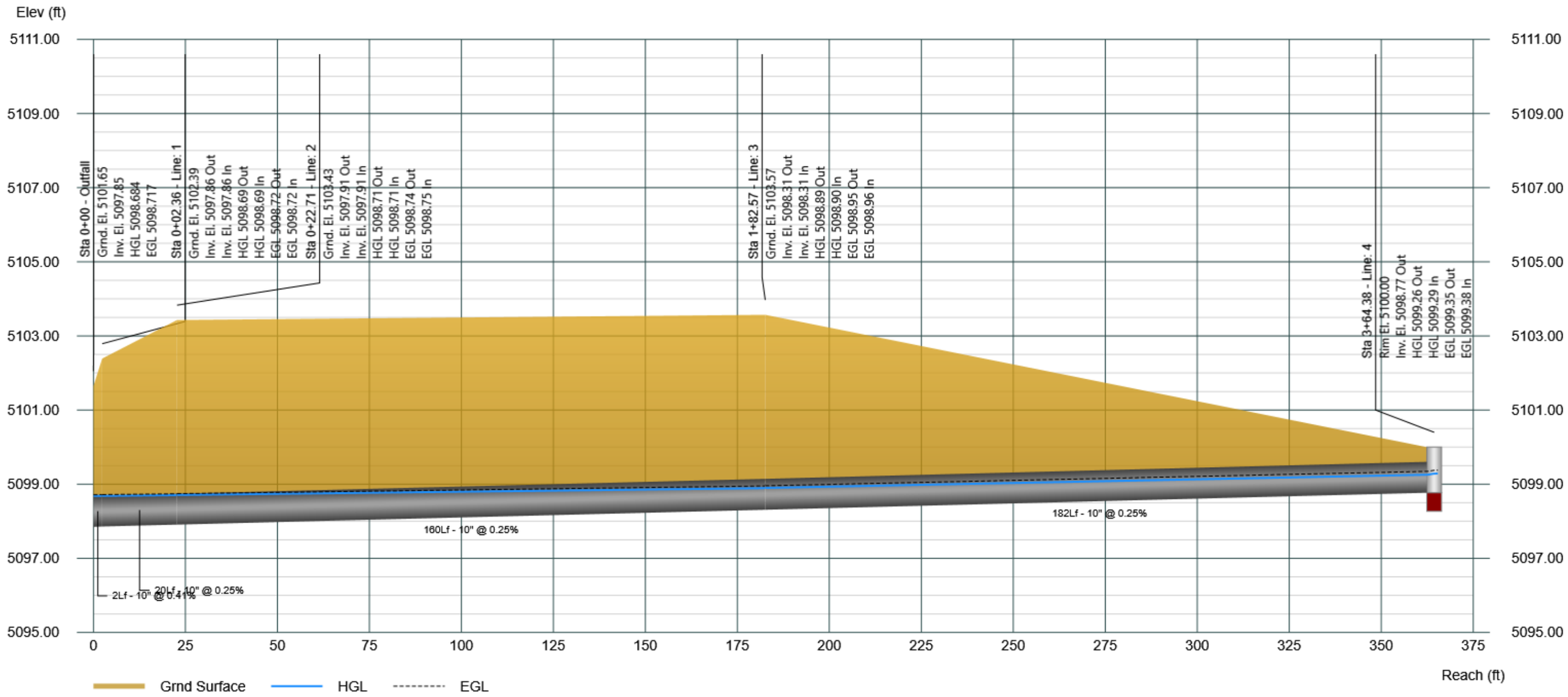
Project File: 2021 10-26gahh_62ndst_sd_sws_analysis.sws

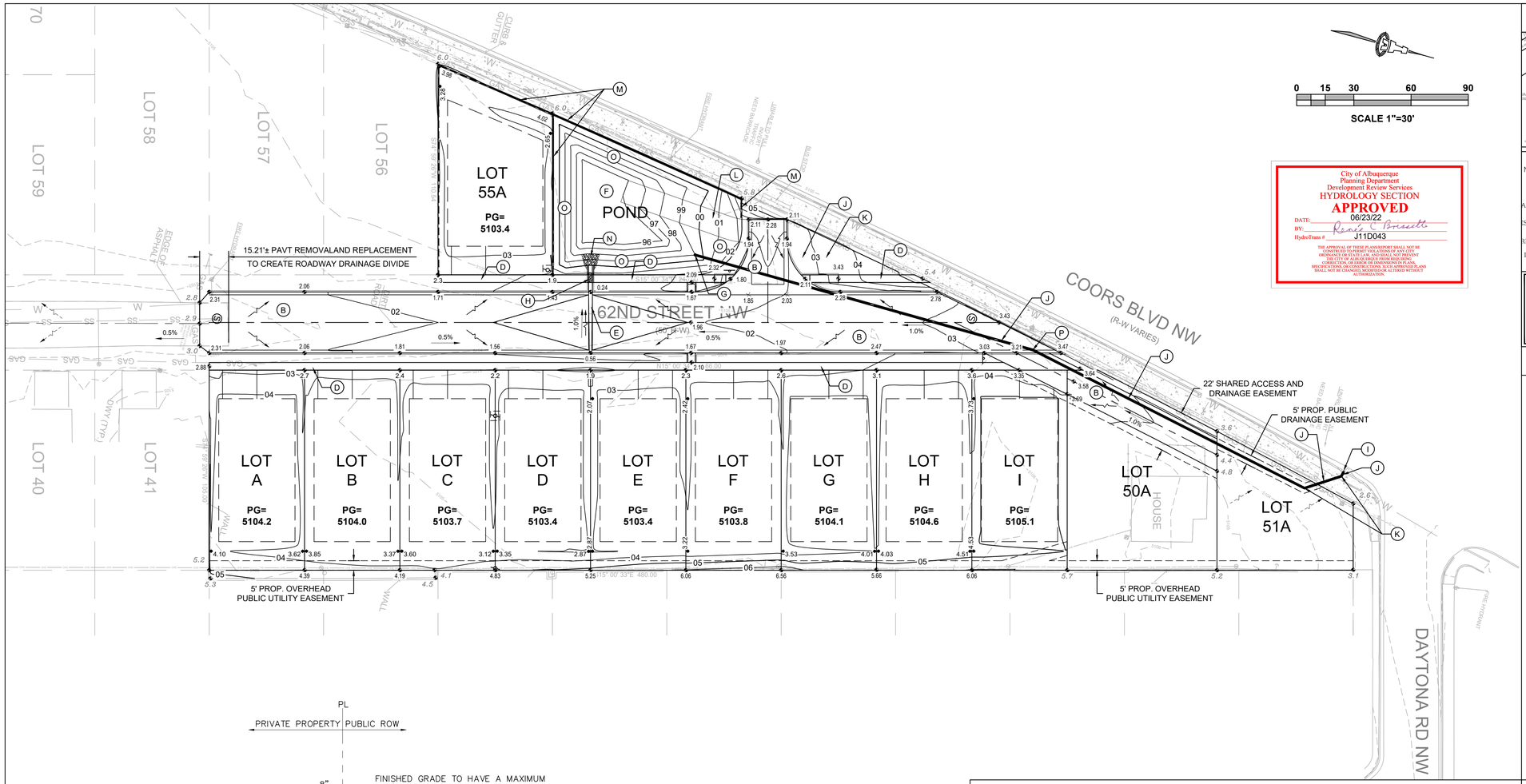
Profile View

Stormwater Studio 2021 v 3.0.0.27

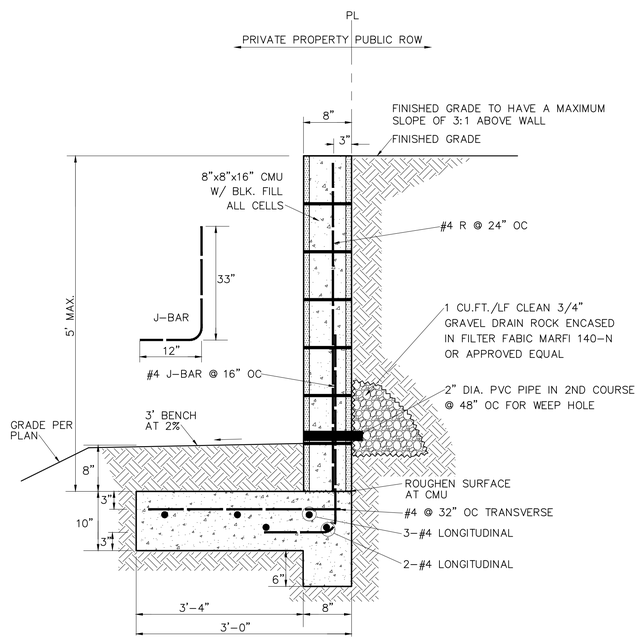
Project Name: 62nd St SD SWS Analysis

10-26-2021





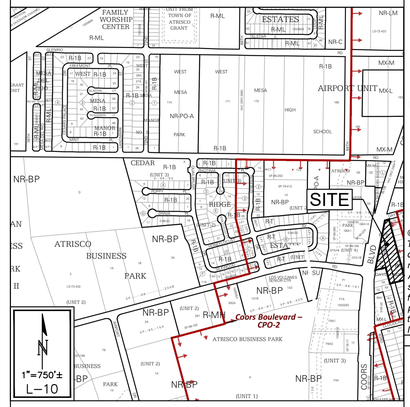
City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED
DATE: 06/23/22
BY: Renée Brissette
HydroTrans # J11D043
THE APPROVAL OF THESE PLANS/REPORT SHALL NOT BE CONSTRUED TO PERMIT VIOLATION OF ANY CITY ORDINANCE OR STATE LAW AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTION, OR ERROR OR OMISSION IN PLANS. SPECIFICATIONS OR CONSTRUCTION. THESE PLANS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.



NOTE: FINAL WALL DESIGN TO BE PROVIDED BY OTHERS

RETAINING WALL – ADJACENT TO COORS BLVD.

VICINITY MAP



KEYED NOTES

THE OVERALL GRADING & DRAINAGE PLAN IS PROVIDED FOR INFORMATION ONLY. SEE CG-101, CG-102 AND CG-103 FOR DETAILED GRADING AND NOTES.

A. ALL WORK WITHIN NMDOT ROW SHALL MEET NMDOT STANDARD SPECIFICATIONS, CURRENT EDITION. THE CONTRACTOR SHALL RE-SEED ALL AREAS OF DISTURBANCE WITHIN NMDOT ROW PER NMDOT SPECIFICATION 632.3.6, 2019 EDITION.

B. NEW PAVING. SEE PAVING PLAN FOR MATERIAL, EXTENTS, JOINTS AND PAVING SECTIONS. PUBLIC RESIDENTIAL ROADWAY SECTION TO FOLLOW COA STANDARD DETAIL 2405A.

C. SEE PUBLIC WORK ORDER PLANS (PWO) FOR CONSTRUCTION WITHIN ALL R/W'S INCLUDING ACCESS DRIVES, CURB AND GUTTER, ADA COMPLIANT RAMPS, PUBLIC SIDEWALKS, CONNECTION TO PUBLIC STORM DRAIN, COVERED SIDEWALK CULVERTS, ETC. NO WORK SHALL BE PERFORMED IN THE PUBLIC ROW WITHOUT AN APPROVED WORK ORDER OR EXCAVATION PERMIT.

D. 4-FT WIDE PUBLIC SIDEWALK, SLOPE WITHIN ADA COMPLIANT SIDEWALK AREAS TO MAINTAIN A MAXIMUM RUNNING SLOPE OF 5% AND A MAXIMUM CROSS SLOPE OF 2%. SEE ADA COMPLIANCE NOTE THIS SHEET.

E. 2-FT WIDE CONCRETE ALLEY GUTTER.

F. STORMWATER DETENTION POND.

G. STORMWATER DETENTION POND 6-INCH STANDPIPE, RIM ELEV = 5099.0

H. 2-FT WIDE SIDEWALK CULVERT, PER COA STANDARD DETAIL 2236.

I. EXISTING CURB INLET, INVERT TO BE CONFIRMED BY CONTRACTOR

J. PROPOSED 10-INCH HDPE STORM DRAIN.

K. PROPOSED 10-INCH HDPE STORM DRAIN 45° BEND.

L. PROPOSED 12-FT WIDE POND ACCESS DRIVE, MAXIMUM 10% SLOPE.

M. SITE RETAINING WALL(S) TO ACHIEVE REQUIRED GRADE DIFFERENCE. STRUCTURAL DESIGNS BY WALL CONTRACTOR (FOOTINGS, GUARDRAILS, REINFORCING, WATERPROOFING, WEEPHOLES, ETC.).

N. ANGULAR ROCK EROSION PROTECTION.

O. POND SIDE SLOPES NEED TO BE STABILIZED WITH NAVTIVE GRASS SEED WITH AGGREGATE MULCH OR EQUAL (MUST SATISFY THE "FINAL STABILIZATION CRITERIA" CGP 2.2.14.B

P. PROPOSED 10-INCH HDPE STORM DRAIN 11.25° BEND.

PROJECT INFORMATION

PROPERTY: THE PROJECT SITE CONSISTS OF TWELVE (12) UNDEVELOPED LOTS LOCATED OFF OF THE EXISTING UNPAVED ROAD SECTION OF 62ND STREET. THE PROPERTIES ARE LOCATED WITHIN C.O.A. VICINITY MAP L-10. THE SITE IS BOUNDED BY COORS BLVD TO THE NORTHWEST, DAYTONA ROAD TO THE NORTH, AND BY THE EXISTING RESIDENTIAL HOMES OFF OF THE PAVED PORTION OF 62ND STREET TO THE SOUTH.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS ON SITE WILL BE A NEW SUBDIVISION INCLUDING TEN (10) RESIDENTIAL LOTS AND ONE DRAINAGE POND. THE SUBDIVISION WILL ALSO PROVIDE AN EXTENSION OF THE PAVED 62ND STREET TO PROVIDE ACCESS TO THE PROPOSED HOUSING WITHIN THE NEW SUBDIVISION..

LEGAL: LOTS 42-50, 53-55 DAVIS PEREA-COURSON SUBDIVISION, TOWN OF ATRISCO GRANT, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

AREA: 2.05 AC (89,087 SF; INCLUDES 62ND STREET EXTENSION)

ADDRESS: 528 62ND STREET NW, ALBUQUERQUE, NM 87015

BENCHMARK: CONTROL POINT #100 (N: 1489377.92, E: 1503355.37, Z: 5105.98); CONTROL POINT #101 (N: 1488754.82, E: 1503573.10, Z: 5102.44)

OFF-SITE: OFF-SITE DRAINAGE FROM LOT 50A, 56, & 57 WILL AFFECT THIS PROPERTY. THE DRAINAGE POND CALCULATIONS HAS ACCOUNTED FOR THE EXPECTED OFF-SITE DRAINAGE FROM THE NEIGHBORING LOTS (DRAINAGE BASIN PR-2 INCLUDES THE OFF-SITE LOTS, AND IS THE SOLE CONTRIBUTING DRAINAGE BASIN TO THE DRAINAGE POND).

FLOOD HAZARD: PER FEMA FLOOD HAZARD MAP 35001C0114H, EFFECTIVE DATE 8/16/2012, THE SITE IS LOCATED WITHIN FLOODZONE 'X' DESIGNATED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.

DRAINAGE PLAN CONCEPT:
FOR NEW DEVELOPMENT SITES, THE CABQ STORMWATER QUALITY VOLUME (SWQV) IS BASED ON THE 90TH PERCENTILE STORM EVENT OR 0.42".

THE EXISTING UNDEVELOPED LOTS AND UNPAVED PORTION OF 62ND STREET DRAINS SOUTHWARDS TOWARD CLOUDCROFT ROAD. ONLY THE NORTHERN MOST PORTION OF THE UNDEVELOPED LOTS DRAIN NORTHWARD TO THE PUBLIC RIGHT-OF-WAY OF COORS BOULEVARD, ENTERING THE EXISTING CURB INLET NEAR THE SOUTHEAST CORNER OF THE COORS BOULEVARD AND DAYTONA ROAD INTERSECTION.

THE PAVED ROADWAY OF 62ND STREET IS POORLY GRADED WITH VARIOUS LOW POINTS AND PONDING PRESENT FOLLOWING STORM EVENTS. THERE ARE NO PUBLIC DRAINAGE FACILITIES PRESENT WITHIN THE PAVED PORTION OF 62ND STREET OR SOUTHWARD WITHIN CLOUDCROFT ROAD.

EXISTING SITE RUNOFF AND RUNOFF FROM THE OFF-SITE RESIDENTIAL HOUSES DRAIN SOUTHWARD TO THE PAVED PORTION OF 62ND STREET, AND PONDS UNTIL THE HIGH POINT CONNECTION TO CLOUDCROFT IS OVERTOPPED.

THE PROPOSED DRAINAGE CONCEPT WILL ESTABLISH A NEW DETENTION POND TO COLLECT THE EXISTING SITE RUNOFF AND PROPOSED INCREASE GENERATED ON SITE. THE POND WILL PROVIDE SOME RELIEF TO THE SOUTHERN PAVED PORTION OF 62ND STREET BY DECREASING THE AMOUNT OF RUNOFF ENTERING THE SOUTHERN DRAINAGE BASINS, WHERE PONDING IS PRESENT.

THE DETENTION POND WILL PROVIDE A SIX (6) INCH STAND PIPE AND A SIX (6) INCH HDPE STORM DRAIN LINE AS AN OUTLET. THE STORM DRAIN OUTLET SYSTEM WILL CONVEY DRAINAGE WITHIN THE POND TO THE EXISTING CURB INLET WHICH COLLECTS THE SITE'S GENERATED RUNOFF FLOWING NORTHWARD.

THE OUTLET DRAIN SYSTEM WILL CONTROL THE FLOW THROUGH THE PIPE IN ORDER TO MATCH, WITHOUT EXCEEDING, THE HISTORICAL RUNOFF FLOW ENTERING THE CURB INLET. THE DRAIN SYSTEM DECREASES THE OVERLAND RUNOFF ENTERING THE CURB INLET, REDUCING THE AMOUNT OF SOIL AND SEDIMENT WHICH ENTERS THE PUBLIC STORM DRAIN SYSTEM CURRENTLY. REFER TO THE SUPPLEMENTAL DRAINAGE REPORT FOR ADDITIONAL DISCUSSION REGARDING THE SITE'S DRAINAGE IN THE PROPOSED CONDITION.

LEGEND

88	PROPOSED CONTOUR
88	EXISTING CONTOUR
1.91	PROPOSED SPOT ELEVATION
3.5	EXISTING SPOT ELEVATION
	PROPOSED SURFACE FLOW DIRECTION
	EXISTING SURFACE FLOW DIRECTION
PG = 4992.50	BUILDING PAD ELEVATION
	PROPOSED STORM DRAIN
	PROPOSED EROSION PROTECTION
	PROPOSED WALL
	PROPOSED DRAINAGE BASINS

ADA COMPLIANCE

SIDEWALK(S) AND RAMP(S): TARGET CROSS SLOPE = 1% TO 1.5%. CROSS SLOPE SHALL NOT EXCEED 2%
ACCESSIBLE RAMP(S): TARGET LONGITUDINAL SLOPE = 7% LONGITUDINAL SLOPE SHALL NOT EXCEED 12:1 (8.3%).
ACCESSIBLE PARKING: TARGET SLOPE = 1% TO 1.5%. SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION

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IAN M. ANDERSON
NEW MEXICO
26441
LICENSED PROFESSIONAL ENGINEER
06/08/22

DATE: 6/8/22

62ND STREET SUBDIVISION
Albuquerque, New Mexico
a development of
Greater Albuquerque Habitat for Humanity

ENGINEER'S CERTIFICATION
ISSUE:

PROJECT NUMBER:	IA 2415
FILE:	2415 CG-101
DRAWN BY:	IMNA
CHECKED BY:	FCA
DATE:	06-08-2022

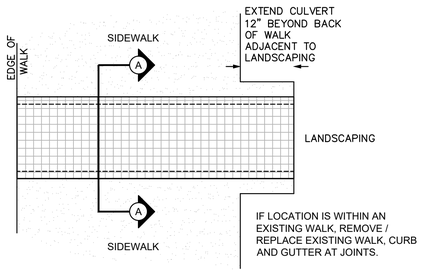
No	Date	Description

SHEET TITLE

OVERALL GRADING & DRAINAGE PLAN

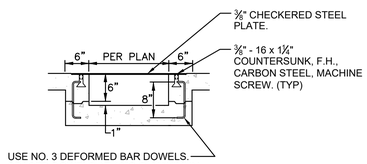
SHEET NUMBER

CG-100



WELD ⅛" THICK, ⅝" MIN. DIAMETER OVER ALL SCREWS. COMPLETELY COVER SCREW HEADS. GRIND EDGES SMOOTH.

FOR SECURING PLATE USE 1"X5" S.S. ROD ANCHOR, "RED HEAD MULTI-SET II SRM-38 ANCHOR" OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS AT MAX. 24" O.C., A MINIMUM OF 2 PER SIDE AND ONE WITHIN 6" OF EACH END.

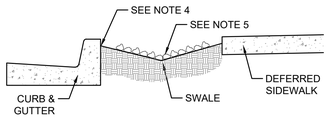


SECTION A–A

COVERED SIDEWALK CULVERT

CONSTRUCT PER COA STD. DWG 2236 WITH MODIFICATIONS PER THIS DETAIL

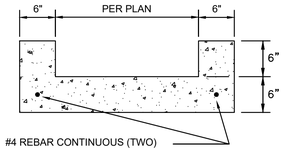
SCALE: N.T.S.



1. SWALE SHALL HAVE SIDE SLOPES OF 5:1 (H:V).
2. FOR WIDE LANDSCAPE BUFFER, GREATER THAN 10 FEET, THE MAXIMUM DEPTH IS 10 INCHES.
3. LANDSCAPE BUFFERS 2 FEET AND LESS ARE EXCLUDED.
4. FINAL GRADE OF DIRT TO BE 1" TO 2" BELOW TOP OF CURB AND TOP OF SIDEWALK GRADE.
5. SURFACE BETWEEN BACK OF CURB AND SIDEWALK TO BE COVERED WITH GRAVEL MULCH (MINIMUM ¾"), COBBLES OR RIP-RAP. DO NOT FILL ENTIRE SWALE.
6. A CHECK DAM WILL BE REQUIRED FOR SWALES ON STEEPER LONGITUDINAL SLOPES AND LONGER SECTIONS. THE ENGINEER WILL DETERMINE LOCATION.
7. LANDSCAPE FABRIC IS RECOMMENDED, BUT NOT REQUIRED, BETWEEN THE DIRT AND THE STONE. IF LANDSCAPE FABRIC IS TO BE USED, IT IS TO BE PERMEABLE.
8. IN THE CASE WHERE SIDEWALK IS EXISTING AND THE LANDSCAPE BUFFER IS IMPROVED WITH LANDSCAPING AND/OR SOME FORM OF EROSION PROTECTION, THIS REQUIREMENT DOES NOT APPLY.
9. ALL SIDEWALKS FRONTING LOTS ARE DEFERRED. SWALE @ DEFERRED SIDEWALKS SHALL BE CONSTRUCTED BY HOME BUILDER--NOT PART OF CERTIFICATION FOR PWO.

LANDSCAPE BUFFER SWALE DETAIL

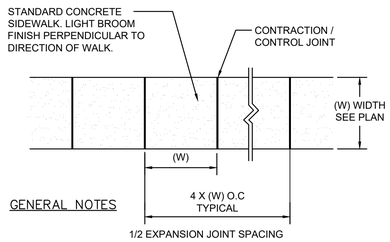
REVISION TO CITY STANDARD DRAWINGS 2405A & 2405B



1. EDGES SHALL BE SHAPED WITH A 3/8" EDGING TOOL.
2. SILICON SEALED CONSTRUCTION CONTROL JOINTS AT 6' O.C.
3. 1/2" SILICON SEALED EXPANSION JOINTS 24' O.C. AND AT CURB RETURNS.

'U' SHAPED CONC. CHANNEL

SCALE: N.T.S.

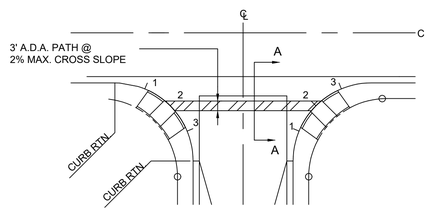


GENERAL NOTES

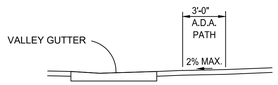
1. 4000 PSI COMPRESSIVE STRENGTH CONCRETE
2. SEE CONCRETE JOINTS DETAIL
3. FINISHED EDGE OF ASPHALT PAVING TO BE 1/2" ABOVE EDGE OF CONCRETE (TYP).
4. 3/8" RADII AT ALL EXPOSED EDGES.

CONCRETE WALK

SCALE: N.T.S.



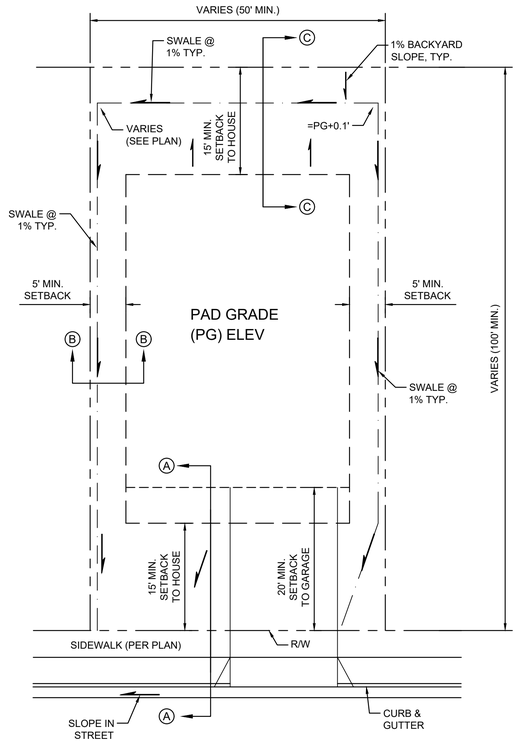
NOTE:
QUARTER POINT GRADES ARE REFERENCED AS 1, 2 & 3 ALONG THE FACE OF CURB IN A CLOCKWISE DIRECTION.



SECTION A-A

QUARTER POINT DETAIL

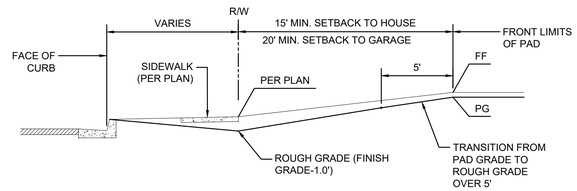
SCALE: N.T.S.



NOTE: 10' SIDEYARD SETBACK ADJACENT TO STREETS.

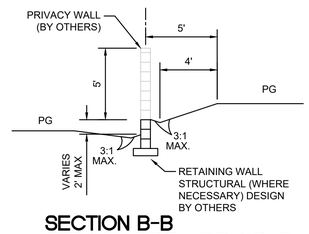
TYPICAL LOT GRADING DETAIL

SCALE: NTS



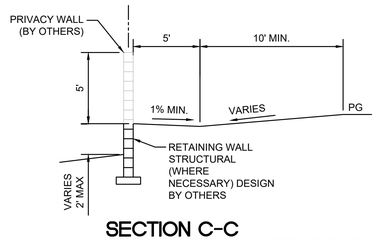
SECTION A-A FRONT YARD GRADING

SCALE: 1"=5'



SECTION B-B TYPICAL SIDEYARD GRADING

SCALE: 1"=5'



SECTION C-C TYPICAL BACKYARD GRADING

SCALE: 1"=5'

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SHEET TITLE

GRADING & DRAINAGE DETAILS

SHEET NUMBER

CG-101