LARAMIE COUNTY PLANNING & DEVELOPMENT DEPARTMENT

Planning • Building

MEMORANDUM

TO: **Laramie County Board of Commissioners**

FROM: **Cate Cundall, Associate Planner**

DATE: **April 7, 2026**

TITLE: **PUBLIC HEARING regarding the Vacation of Tract 2, Block 1, Barnes Subdivision, and approval of the Subdivision Permit and Plat for Barnes Subdivision, 2nd Filing, Laramie County, WY.**

EXECUTIVE SUMMARY

Steil Surveying Services, LLC, on behalf of Roger A. Barnes, has submitted a Small Subdivision Permit and Plat application for Barnes Subdivision, 2nd Filing, a replat of Tract 2, Block 1, Barnes Subdivision, Laramie County, WY. The subject property is located at 5404 North College Drive, Cheyenne, WY. The subdivision divides the 11.54 acre parcel into two tracts. Tract 1 will be a 5.25 acre tract that includes the existing residence. Tract 2 will be a 6.29 acre tract and will be developed into an RV Storage Facility. Future development will require a Site Plan Permit.

BACKGROUND

The subject property is currently assessed as residential land and located in the LU-Land Use zone district. The site is bordered by developed rural residential to the north, urban residential to the west, College Drive and Carla Drive to the east and south respectively. Lot sizes are consistent with the surrounding area.

Pertinent Statutes and 2025 Laramie County Land Use Regulations Include:

Wyoming Statutes § 18-5-301 thru 18-5-306 and 34-12-101 thru 34-12-15.
Section 2-4-104 governing the LU – Land Use Zone District.
Section 4-5-100(i) governing Subdivision Permit and Plat Requirements.
Section 4-5-102(c) governing Small Subdivision**.**

DISCUSSION

The existing access for the residence will be moved to align with the approach across the street. Access to the proposed RV Storage will be off Carla Drive.

The Laramie County Comprehensive Plan identifies the area as Urban Rural Interface (URI), where properties are intended to accommodate a mix of more intensive land uses than other areas. PlanCheyenne identifies this parcel as Urban Residential (UR).

Public notice was completed per section 1-2-104 and one comment was received.

RECOMMENDATION and FINDINGS
Based on evidence provided, staff finds that:

a. This applications meets the criteria for a Small Subdivision Permit and Plat pursuant to Section 4-5-102(c) of the 2025 Laramie County Land Use Regulations.

b. This application is in conformance with section 2-4-104 governing the LU – Land Use zone district.

and the Board of County Commissioners may approve the Vacation of Tract 2, Barnes Subdivision, situated in a portion of Section 22, T14N, R66W of the 6th P.M. and approve the Subdivision Permit and Plat for Barnes Subdivision, 2nd Filing, and adopt the finding of facts a and b of the staff report.

PROPOSED MOTION
I move to approve the Vacation of Tract 2, Barnes Subdivision, situated in a portion of Section 22, T14N, R66W, of the 6th P.M., Laramie County, and approve the Subdivision Permit and Plat for Barnes Subdivision, 2nd Filing, and adopt the findings of facts a and b of the staff report.

ATTACHMENTS
Attachment 1: Location Map
Attachment 2: Project Narrative
Attachment 3: Pre-Application Meeting Notes
Attachment 4: Acknowledgements and Requests
Attachment 5: Transportation Worksheet
Attachment 6: Agency Comments and Applicant Response
Attachment 7: Perimeter Fence Acknowledgement
Attachment 8: Public Comment
Attachment 9: Preliminary Drainage Report
Attachment 10: Resolution
Attachment 11: Barnes Subdivision, 2nd Filing Plat Revised 3.18.26

Barnes Subdivision, 2nd

5404 North College
Cheyenne, Wyoming

PZ-26-00012

Laramie County
Fire Authority

School District #1

AMEC Zone 2

NORTH

Laramie County, WY

Laramie County Planning and Development Office

3966 Archer Pkwy
Cheyenne, WY 82009
(307) 633-4303
www.laramiecountywy.gov
planning@laramiecounty.com

PERMIT

PA-26-00007

PRE-APPLICATION MEETINGS

SITE ADDRESS: 5404 N COLLEGE DR CHEYENNE
PRIMARY PARCEL: 14662220601300
PROJECT NAME: SMALL SUBDIVISION/ CONDITIONAL USE CLASS B/SITE PLAN

ISSUED: 01/29/2026

EXPIRES: 07/28/2026

APPLICANT: HANSEN, MICHEAL SHANE
1102 W 19TH ST
CHEYENNE, WY 82001
307-634-7273

OWNER: BARNES, ROGER A
5404 N COLLEGE DR
CHEYENNE, WY 82009

Detail Name	Detail Value
Meeting Date	01/29/2026
MEETING AM OR PM	AM
Application Types	Site Plan
Attendees	In Person (3966 Archer Pkwy)
Property Interest	Owner
Detailed Project Narrative	two tract subdivision and rv storage
Staff Attending	JA CC SP DP
Application Fees	Yes
Copy of Pre-App Notes	REQUIRED FOR APPLICATION SUBMITTAL
Project Narrative Letter	Yes
Warranty Deed and/or Lease Agreement	Yes
Development Action	Small Subdivision (2-5 lots)
Drainage Plans	No
Drainage Study	Letter of Waiver
Traffic Study	Transportation Assessment Worksheet
Public Safety Fees Acknowledgement Letter	Yes
Community Facility Fees Acknowledgement Letter	Yes
WY DEQ Chapter 23 Study/Submittal Letter	No
Development Agreement	No

3966 Archer Pkwy
Cheyenne, WY 82009
(307) 633-4303
www.laramiecountywy.gov
planning@laramiecounty.com

Roadway Maintenance Plan	No
Road/Easement Use Agreement	No
Right-of-Way Construction Permit	Upon Construction
Engineer Review - Paid by Applicant	Yes
Environmental Health Review/Approval	Yes
Environmental and Services Impact Report	No
GESC Permit	Yes, Low Impact
Floodplain Development Permit	No
Perimeter Fence Construction per W.S.S. 18-5-319	Yes
Public Notice, Paid by Applicant	Yes
Newspaper Legal Notice, Paid by Applicant	Yes
Adjacent Property Owner Letter, Paid by Applicant	Yes
Miscellaneous Notes	MPO Notes: 1. Prefer to see access to a RV Storage off Carla Dr. Must have an area to pull off the road to keep street clear.2. All inquiries for N. College Dr must go through WYDOT. If looking for access off N. College Dr, access must have an area to pull off the road to keep street clear. May require right turn deceleration lane for southbound movement and left turn lane.3. County may require traffic study.4. Must work with City Engineering on any requirements for Carla Dr along site.5. Prefer to see detached sidewalk alone N. College Dr.
Miscellaneous Notes (2)	Approach will be off Carla Drive and lot divided to keep house on 5.25 acres and remainder will be storage. No zone change is needed. No office is planned so no septic or water will be added. The existing access for the house will be realigned and moved to align with approach across street. WYDOT said that two permits - one for new approach and one for moving approach. Area is 40 mph so should be no problem if sight distance works. The approach with the storage facility will be off Carla Drive for both ingress and egress. Screening will be provided and detention pond will be onsite.

Laramie County, WY

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Miscellaneous Notes (3)

Lot split with southern portion for storage. Class B permit and engineered site plan. Hearing before PC for approval of Class B and site plan can be done concurrently. Lot split will be small (2 to 5) subdivision will be done before the other actions. Transportation worksheet will be needed. Cost is $750 Small subdivision, $500 CUP, $500 CUP. Other expenses are legal ad cost, mailing cost, signs x 2, public safety fees, community development fees already paid, engineer and environmental health review fees. Other permits include grading for site preparation. No floodplain.

CONDITIONS

* Disclaimer: These are intended as guidance only. Fee calculations are determined at the time of application, and issues that arise during review periods are not always anticipated at pre-application stage. Public Records Act: This document and any documents provided by the applicant to Planning may constitute a public record under W.S.S. 16-4-201 et seq. Applicants are advised not to divulge any information at a Pre-Application Meeting with Planning that they do not yet desire to be public information.

* A traffic study may be required for any site plan, subdivision permit, or access request for any development and shall be required for any project or development that will generate 100 or more trips during any hour or over 200 trips per day. Traffic studies shall be prepared by a qualified civil engineer licensed by the Wyoming State Board of Registration for Professional Engineers and Professional Land Surveyors to practice engineering in Wyoming. The applicant and the engineer shall meet with the County prior to preparation of the traffic study to discuss specific issues or concerns. The Director of Planning and Development may waive a traffic study based on estimated ADT, and peak hour trips, or existing road or site conditions, including adequate pedestrian access.

* Requests for waivers for drainage impact studies shall be made in writing to the Laramie County Public Works Department. The County shall review the request and approve the grant for a waiver or identify the level of study required for the proposed development action. Laramie County Public Works may waive the requirement for drainage study based on the following: a. Information is provided to substantiate there are no potential drainage problems at the site or downstream of the site (including impacts to downstream floodplains). b. The development or redevelopment will not result in an increase in the historic impervious area. c. The development or redevelopment of an area is immediately adjacent to a major drainageway that is capable of conveying the fully developed basin 100-year flood without impact to the base flood elevation. d. The development or redevelopment is unlikely to create drainage problems.

* A waiver or alternative to the required landscaping may be presented to the Planning and Development Director for review. The Director shall approve the proposed alternative landscape plan based on the following criteria: A. the proposed alternative meets or exceeds the intent of this regulation, and B. the proposed alternative is well-integrated with the surrounding landscaping and land uses, and C. the proposed alternative meets the goals of Laramie County Comprehensive Plan and; D. the purpose of the required site plan is to legalize an existing use and the impact or benefits of the landscape plan on the property would be minimal; or E. the landscaping as required would prohibit reasonable use of the property.

Steil Surveying Services,
Professional Land Surveyors

February 18, 2026

Laramie County Planning & Development Office
3966 Archer Parkway
Cheyenne, WY 82009
(307) 633-4303

InRe: Subdivision to be known as Barnes Subdivision 2nd Filing a replat of Lot 2, Barnes Subdivision, Laramie County Wyoming.

To whom it may concern:

Steil Surveying Services, agent for the owner(s), provides this letter on their behalf, confirming that the owner does not intend to pay the appropriate Community Facility Fee(s) (CFFs) as they were paid in a previous platting action. The owner intends to pay the appropriate Public Safety Fee(s) (PSFs) at the appropriate time to the proper authority, pursuant to §§1-1-106 of the Laramie County Land Use Regulations.

Sincerely,

Michael S. Hansen

Shane Hansen

Director Planning and Development
Steil Surveying Services, LLC
shansen@steilsurvey.com

Steil Surveying Services,
Professional Land Surveyors

February 18, 2026

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(307) 633-4303

InRe: Subdivision to be known as Barnes Subdivision 2nd Filing a replat of Lot 2, Barnes Subdivision, Laramie County Wyoming.

To whom it may concern:

Steil Surveying Services, agent for the owner(s), provides this letter on their behalf, confirming that the owner acknowledges that a non adverse DEQ letter is not required.

Sincerely,

Michael L. Hansen

Shane Hansen

Director Planning and Development
Steil Surveying Services, LLC
shansen@steilsurvey.com

Transportation Assessment Worksheet
The following transportation assessment worksheet shall be completed in association with 5-6-103

Project:	Barnes Sub 2nd	By:	Kelly Hafner, PE
Date:	2-17-2026	Contact:	kelly.hafner@civilworxeng.com
Owner/Developer:	Maverick Lawn & Tree	Phone:	307.514.1012
Property Address or Legal Description (lot, block, subdivision):			5404 N COLLEGE DR
Legal Description:	Tracts 1 and 2, Barnes Subdivision 2nd Filing		
Existing Zoning:	LU	Change to:	
Existing Land Use:	✔	Proposed:	Above changes if applicable.
Applicant email:	mavericktree307@yahoo.com		

All Developments
Provide the following information, to the best of your knowledge, for all projects:
1. Provide existing Land Use and Proposed Land Use for this site.
   a. Traffic counts need to be included in here… if not existing developer must provide current traffic counts on adjacent public roadways.
   b. Description of existing Land Use: (If none, use Vacant) If using Peak Hours, multiply by a Rate of 7.44

Type	ITE Code	Land Use	Unit	Time Period	Rate	Size	Trips/Day
Residential	210	SF Detache	1		9.4		9.4
						Total:	

   c. Description of proposed Land Use: (If none, use Vacant) If using Peak Hours, multiply by a Rate of 7.44

Type	ITE Code	Land Use	Unit	Time Period	Rate	Size	Trips/Day
Residential	210	F Detache	1		9.4		9.4
Commerica	151	Industrial	112		1.85		185
						Total:	

		New Land Use:	Trips/Day
1. Traffic Impact Study - Criteria I		Increase (+)/Decrease (-):	185
2. Traffic Impact Study - Criteria II			
3. Traffic Impact Study - Criteria III			
4. Traffic Impact Study - Criteria IV			
5. No Traffic Impact Study Required			

Notes: ITE does not have a rural residential location dataset

b. *Standards for TIS*

Traffic impact studies shall utilize the Institute of Transportation Engineers (ITE) trip generation rates unless better information is available and approved by the County. If there is no available current data regarding existing traffic counts on existing roadways, traffic counts will be required to be obtained when a TIS is required.

AVAILABLE TRAFFIC COUNTS (DATA SOURSE, WYOMING DEPARTMENT OF TRANSPORTATION)

AVAILABLE TRAFFIC COUNTS (DATA SOURSE MPO 2020-2023)

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

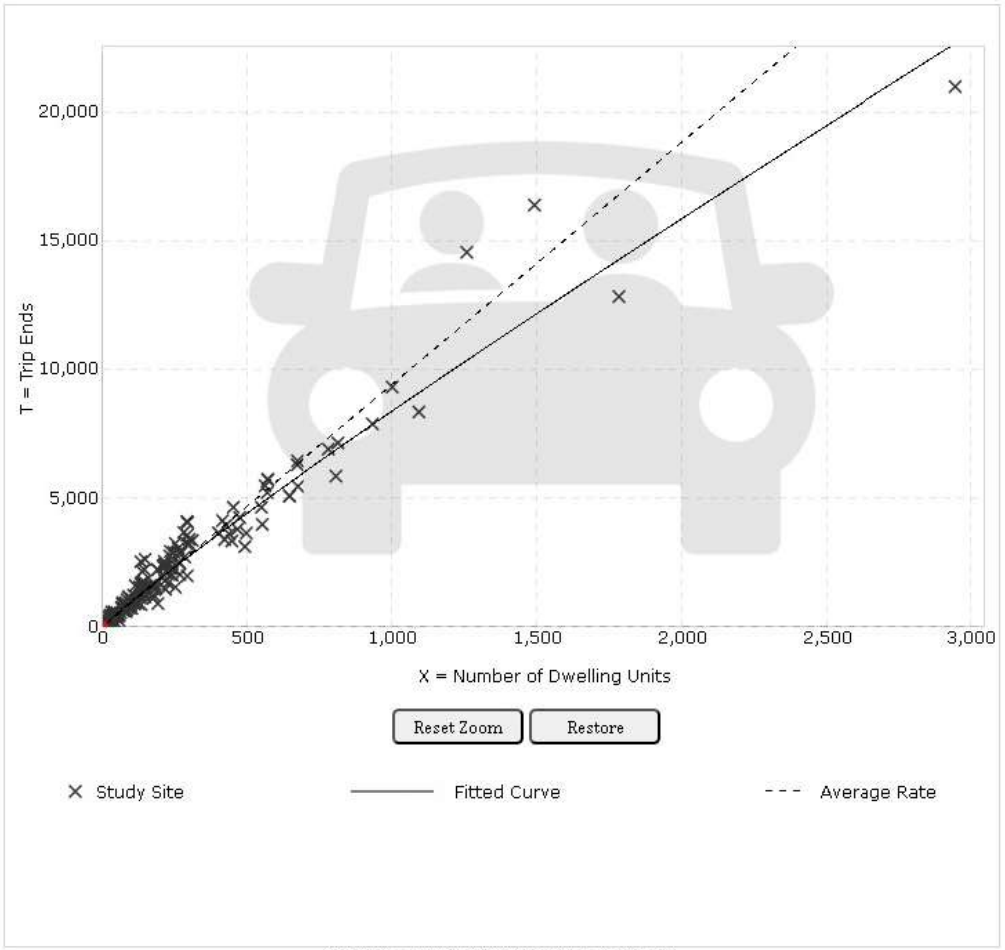
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
2 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
174

Avg. Num. of Dwelling Units:
246

Average Rate:
9.43

Range of Rates:
4.45 - 22.61

Standard Deviation:
2.13

Fitted Curve Equation:
Ln(T) = 0.92 Ln(X) + 2.68

R^2:
0.95

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 19 (Total), 9 (Entry), 10 (Exit)
Fitted Curve: 28 (Total), 14 (Entry), 14 (Exit)

Potential Use - RV Storage. Although ITE does not have trip rates for RV storage use, the trip-generating characteristics of an RV storage use closely resemble those of a self-storage (mini-warehouse) use.
Calculations for Net Rentable Area:

Tract 2 - 6.29 Acres x 0.75 for loss of area for landscaping and stormwater management, parking and drive aisles reduce net rentable area reducidec by an additional 50% for drive and parking areas verses rentable space. Computed net rentable space = 112,000 sf.

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
151

LAND USE GROUP:
(100-199) Industrial

LAND USE :
151 - Mini-Warehouse

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. Net Rentable Area

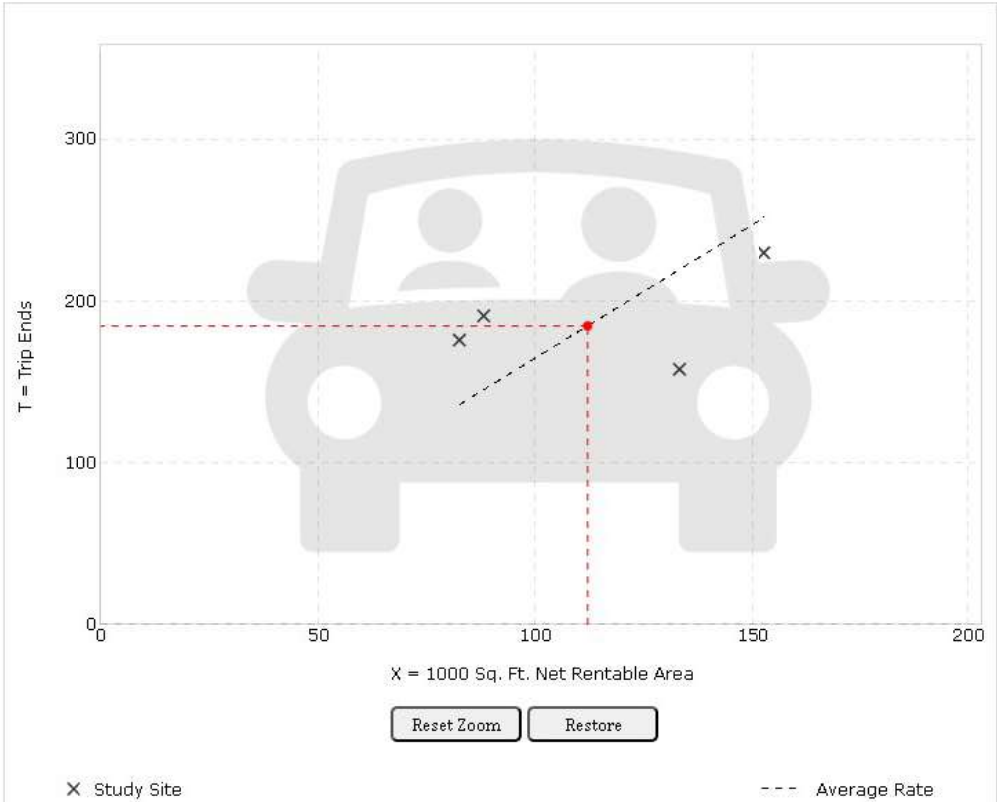
TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
112 Calculate

Data Plot and Equation

Caution – Small Sample Size



DATA STATISTICS

Land Use:
Mini-Warehouse (151) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. Net Rentable Area

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
4

Avg. 1000 Sq. Ft. Net Rentable Area:
114

Average Rate:
1.65

Range of Rates:
1.19 - 2.17

Standard Deviation:
0.47

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 185 (Total), 92 (Entry), 93 (Exit)

AGENCY REVIEW #2

Permit Notes

Permit Number: PZ-26-00012
Parcel Number: 14662220601300
Site Address: 5404 N COLLEGE DR
Cheyenne, WY 82009
Applicant: HANSEN, MICHEAL SHANE
Owner: BARNES, ROGER A
Project Description: A 2 TRACT REPLAT. TRACT 1 REMAINS AS MR. BARNES HOME, TRACT 2 WILL BECOME RV STORAGE.
Submitted: 02/18/2026
Technically Complete: 02/18/2026
Approved: 03/18/2026
Issued:

Begin Date	End Date	Permit Area	Subject	Note Type	Note Text	Created By
02/18/2026		Application	PZ-26-00012	GENERAL	BOCC public hearing will be held on 4.7.26. Letters sent 2.19.26 and legal ad published on 2.25.26.	CATHERINE.CUNDALL@LARAMIECOUNTYWY.GOV
02/20/2026		Application	PZ-26-00012	GENERAL	No comment on plat split	CHRISTOPHER.YANEY@LARAMIECOUNTYWY.GOV
02/23/2026		Application	PZ-26-00012	GENERAL	No concerns noted at this time	CONSERVATIONDISTRICT@LARAMIECOUNTYWY.GOV
02/23/2026		Application	PZ-26-00012	GENERAL	The Wyoming Game and Fish Department has no concerns with this proposal.	WYGAMEFISHDEPT@LARAMIECOUNTYWY.GOV
02/23/2026		Application	PZ-26-00012	GENERAL	No comments	MATTHEW.BUTLER@LARAMIECOUNTYWY.GOV
02/27/2026		Application	PZ-26-00012	GENERAL	LCFA has no comment on this plat split.	MANUEL.MUZQUIZ@LARAMIECOUNTYWY.GOV
02/27/2026	02/27/2026	Workflow	COUNTY REAL ESTATE OFFICE REVIEW	GENERAL	no comments	TERESA.LEMASTER@LARAMIECOUNTYWY.GOV
03/02/2026		Fees	COMMUNITY FACILITY FEE	EXEMPT FROM PAYMENT	Community Facility Fees were paid on a prior planning action so there are no fees due with this permit.	CATHERINE.CUNDALL@LARAMIECOUNTYWY.GOV

Permit Notes

03/02/2026	Workflow	ENGINEERS REVIEW	GENERAL	1st Review Engineers Comments: 1.Per 4-5-102, the plat drawings need to show existing easements adjacent to the proposed subdivision/development. There are adjacent easements along the west boundary of this subdivision, in the adjacent subdivisions, which are not shown. 2.The Transportation Assessment Worksheet and Preliminary Drainage Report are both adequate for the platting. If either Tracts are developed for anything other than residential use, a full Traffic Impact Study and a Final Drainage Report may be warranted with the site plan application, if the property remains within the County. 3.A Vacation Statement is needed on this plat. Surveyors Comments: 1.Is the 267.66' tie to the north end of the 16' CLF&P EASEMENT to the center line of said easement? 2.Is the 38.00' tie shown at the southwest corner of TRACT 2 to the center line of the 10' EASEMENT MST&T? It is a little confusing with 2 leaders going to the same line.	SCOTT.LARSON@LARAMIECOUNTYWY.GOV
03/02/2026	Workflow	WYDOT REVIEW	GENERAL	1. Developers and landowners should be aware for planning purposes that any work or presence in the WYDOT right-of-way (WY 212/College Dr. in this situation) created by development/construction for this parcel will need the appropriate permitting or licensing between the utility owner (or appropriate local agency for fence modifications) and WYDOT District 1 Maintenance (access permits are with D1 Traffic). Utility owners, including governmental entities, will be responsible for the licensing and/or permitting of all utility facilities in the WYDOT right-of-way. Other work in the ROW can be approved through a temporary use permit. Permits (except for access permits) and licenses can be acquired by contacting Michael Elliott (Michael.Elliott@wyo.gov, 307-745-2123).Also, the development must maintain historic drainage corridors so that drainage is not diverted to other entry points to the R/W. If drainage is affected in the highway right-of-way, a drainage study needs to demonstrate that post-development discharge rates are metered at or below pre-development rates for 2, 5, 10, 25, 50 and 100 year events and will need to be reviewed by WYDOT Bridge/Hydraulics Program. 2. As discussed in the pre application meeting, no access for tract 2 will be permitted to College Dr due to insufficient spacing.	TAYLOR.MCCORT@LARAMIECOUNTYWY.GOV
03/03/2026	Application	PZ-26-00012	GENERAL	1. Official City Comment Letter to County Commissioners attached (no comments warranting response). 2. Tract 2 is abutting City-jurisdiction rights-of-way along Carla and College. While not required with the platting action,	SETH.LLOYD@LARAMIECOUNTYWY.GOV

Permit Notes

				applicant should be aware development of a site adjacent to City rights-of-way must meet City right-of-way standards or applicable relief processes. Full City standards for non-residential development would typically include: any new accesses meeting access spacing, paving of street (if not already paved), installing curb along the street (if curb does not exist or is in disrepair), installing of detached sidewalk and ADA ramps (if sidewalk/ADA ramps do not exist or are in disrepair), installing of street trees (if they do not exist or are dead), and reseeding any disturbed areas in the right-of-way. Due to the current conditions of College and Carla at this location, some of the standard requirements may be able to be deferred, cost-shared, or set up for reimbursement. This needs to be discussed with the City Engineer's office. (Notes: 2a. This has been standard with other projects, including situations where a City-annexed parcel had to meet County road requirements due to the abutting road way being outside of City jurisdiction. 2b. College is annexed, but also under WYDOT jurisdiction, WYDOT would be included as to appropriate right-of-way improvements for that section.) 3. If the existing driveway is to be continued as the access to Tract 1, please provide an access easement over Tract 2 to Tract 1 along the driveway. If WYDOT will not allow the current access point to continue, an access easement from Tract 1 to Carla through Tract 2 to Carla may be desired. Note: it appears Tract 1 could have access to Stonecliff, so no access easement may be needed.	
03/04/2026	Application	PZ-26-00012	GENERAL	1. Records indicate P17845.0P falls within the proposed subdivision. Our office requests that the subdivider provide the updated legal location description including the subdivision name and appropriate lot number for the well location, and the legal location description including subdivision name and lot numbers for where these uses occur. 2. An approved permit from the State engineer's Office is required prior to the drilling of any water well. The procurement of the necessary and appropriate State Engineer water right permit allows the applicant to attempt to develop a water supply adequate to meet their proposed needs, and is no guarantee that any water will be physically available. 3. If any new wells are proposed, they must be constructed in accordance with the State Engineer's Office Rules and Regulations, Part III, Water Well Minimum Construction Standards. 4. With few exceptions, new wells must be constructed by a Wyoming licensed water well drilling contractor, and pumps must be installed by a Wyoming licensed pump installation contractor. 5. Any well not to be used must be properly plugged and abandoned as outlined in the above referenced rules and regulations. 6. Any wells developed for uses that do NOT fall within the definition of domestic or stock use require adjudication by the Board of Control.	SUE.KINSLEY@LARAMIECOUNTYWY.GOV

Permit Notes

03/04/2026		Workflow	ENVIRONMENTAL HEALTH REVIEW	GENERAL	House has pre-existing septic system that pre-dates permits.	TIFFANY.GAERTNER@LARAMIECOUNTYWY.GOV
03/04/2026		Workflow	PUBLIC WORKS REVIEW	GENERAL	1. All comments from the review engineer and surveyor shall be addressed and resolved appropriately. 2. N College Drive is under the jurisdiction of WYDOT. Applicant shall comply with the comments, permitting and any other requirements of WYDOT for the roadway. 3. Carla Drive is under the jurisdiction of the City of Cheyenne. Applicant shall comply with the comments, permitting and any other requirements of the City of Cheyenne for the roadway. 4. The internal access easement(s) shall comply with the private road cross section within the Laramie County Land Use Regulations.	MOLLY.BENNETT@LARAMIECOUNTYWY.GOV
03/04/2026	03/04/2026	Application	PZ-26-00012	GENERAL	WAPA has no issues with this project	ROGERS@LARAMIECOUNTYWY.GOV
03/12/2026		Application	PZ-26-00012	GENERAL	Applicant shall comply with all agency review requirements of the LCLUR and outside jurisdictions.	JUSTIN.ARNOLD@LARAMIECOUNTYWY.GOV
03/13/2026		Workflow	SHERIFF'S OFFICE REVIEW	GENERAL	The LCSO has no concerns with this proposal.	MATTHEW.FUNARI@LARAMIECOUNTYWY.GOV
03/20/2026		Workflow	ENGINEERS REVIEW	GENERAL	2nd Review - Previous comments have been adequately addressed on the update/revised plat drawing. No further comments at this time.	SCOTT.LARSON@LARAMIECOUNTYWY.GOV
03/23/2026		Workflow	PUBLIC WORKS REVIEW	GENERAL	All previous comments have been acknowledged and/or addressed. No further comments.	MOLLY.BENNETT@LARAMIECOUNTYWY.GOV
03/23/2026		Workflow	WYDOT REVIEW	GENERAL	In the responses from the developer to the Seth Lloyd you say "access to Tract 1 will be moved to Tract 1 and perpendicular to the access across college as discussed and approved by WYDOT." Just for clarification if any access along College moves or is modified please submit an access application to Paul Beckett at paul.beckett@wyo.gov for each access to be modified.	TAYLOR.MCCORT@LARAMIECOUNTYWY.GOV

AGENCY REVIEW #1

APPLICANT RESPONSE

Permit Notes

Permit Number: PZ-26-00012
Parcel Number: 14662220601300
Site Address: 5404 N COLLEGE DR
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Applicant: HANSEN, MICHEAL SHANE
Owner: BARNES, ROGER A
Project Description: A 2 TRACT REPLAT. TRACT 1 REMAINS AS MR. BARNES HOME, TRACT 2 WILL BECOME RV STORAGE.
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Technically Complete: 02/18/2026
Approved: 03/18/2026
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02/23/2026		Application	PZ-26-00012	GENERAL	No comments	MATTHEW.BUTLER@LARAMIECOUNTYWY.GOV
02/27/2026		Application	PZ-26-00012	GENERAL	LCFA has no comment on this plat split.	MANUEL.MUZQUIZ@LARAMIECOUNTYWY.GOV
02/27/2026	02/27/2026	Workflow	COUNTY REAL ESTATE OFFICE REVIEW	GENERAL	no comments	TERESA.LEMASTER@LARAMIECOUNTYWY.GOV
03/02/2026		Fees	COMMUNITY FACILITY FEE	EXEMPT FROM PAYMENT	Community Facility Fees were paid on a prior planning action so there are no fees due with this permit.	CATHERINE.CUNDALL@LARAMIECOUNTYWY.GOV

Permit Notes

03/02/2026 1. added 2. ack 3. added 1. yes 2. yes	Workflow	ENGINEERS REVIEW	GENERAL	1st Review Engineers Comments: 1.Per 4-5-102, the plat drawings need to show existing easements adjacent to the proposed subdivision/development. There are adjacent easements along the west boundary of this subdivision, in the adjacent subdivisions, which are not shown. 2.The Transportation Assessment Worksheet and Preliminary Drainage Report are both adequate for the platting. If either Tracts are developed for anything other than residential use, a full Traffic Impact Study and a Final Drainage Report may be warranted with the site plan application, if the property remains within the County. 3.A Vacation Statement is needed on this plat. Surveyors Comments: 1.Is the 267.66' tie to the north end of the 16' CLF&P EASEMENT to the center line of said easement? 2.Is the 38.00' tie shown at the southwest corner of TRACT 2 to the center line of the 10' EASEMENT MST&T? It is a little confusing with 2 leaders going to the same line.	SCOTT.LARSON@LARAMIECOUNTYWY.GOV
03/02/2026 1 ack 2 ack	Workflow	WYDOT REVIEW	GENERAL	1. Developers and landowners should be aware for planning purposes that any work or presence in the WYDOT right-of-way (WY 212/College Dr. in this situation) created by development/construction for this parcel will need the appropriate permitting or licensing between the utility owner (or appropriate local agency for fence modifications) and WYDOT District 1 Maintenance (access permits are with D1 Traffic). Utility owners, including governmental entities, will be responsible for the licensing and/or permitting of all utility facilities in the WYDOT right-of-way. Other work in the ROW can be approved through a temporary use permit. Permits (except for access permits) and licenses can be acquired by contacting Michael Elliott (Michael.Elliott@wyo.gov, 307-745-2123).Also, the development must maintain historic drainage corridors so that drainage is not diverted to other entry points to the R/W. If drainage is affected in the highway right-of-way, a drainage study needs to demonstrate that post-development discharge rates are metered at or below pre-development rates for 2, 5, 10, 25, 50 and 100 year events and will need to be reviewed by WYDOT Bridge/Hydraulics Program. 2. As discussed in the pre application meeting, no access for tract 2 will be permitted to College Dr due to insufficient spacing.	TAYLOR.MCCORT@LARAMIECOUNTYWY.GOV
03/03/2026	Application	PZ-26-00012	GENERAL	1. Official City Comment Letter to County Commissioners attached (no comments warranting response). 2. Tract 2 is abutting City-jurisdiction rights-of-way along Carla and College. While not required with the platting action,	SETH.LLOYD@LARAMIECOUNTYWY.GOV

Permit Notes

				applicant should be aware development of a site adjacent to City rights-of-way must meet City right-of-way standards or applicable relief processes. Full City standards for non-residential development would typically include: any new accesses meeting access spacing, paving of street (if not already paved), installing curb along the street (if curb does not exist or is in disrepair), installing of detached sidewalk and ADA ramps (if sidewalk/ADA ramps do not exist or are in disrepair), installing of street trees (if they do not exist or are dead), and reseeding any disturbed areas in the right-of-way. Due to the current conditions of College and Carla at this location, some of the standard requirements may be able to be deferred, cost-shared, or set up for reimbursement. This needs to be discussed with the City Engineer's office. (Notes: 2a. This has been standard with other projects, including situations where a City-annexed parcel had to meet County road requirements due to the abutting road way being outside of City jurisdiction. 2b. College is annexed, but also under WYDOT jurisdiction, WYDOT would be included as to appropriate right-of-way improvements for that section.) 3. If the existing driveway is to be continued as the access to Tract 1, please provide an access easement over Tract 2 to Tract 1 along the driveway. If WYDOT will not allow the current access point to continue, an access easement from Tract 1 to Carla through Tract 2 to Carla may be desired. Note: it appears Tract 1 could have access to Stonecliff, so no access easement may be needed.	

1. ack
2. ack
3. access to Tract 1 will be moved to Tract 1 and perpendicular to the access across college as discussed and approved by WYDOT

03/04/2026	Application	PZ-26-00012	GENERAL	1. Records indicate P17845.0P falls within the proposed subdivision. Our office requests that the subdivider provide the updated legal location description including the subdivision name and appropriate lot number for the well location, and the legal location description including subdivision name and lot numbers for where these uses occur. 2. An approved permit from the State engineer's Office is required prior to the drilling of any water well. The procurement of the necessary and appropriate State Engineer water right permit allows the applicant to attempt to develop a water supply adequate to meet their proposed needs, and is no guarantee that any water will be physically available. 3. If any new wells are proposed, they must be constructed in accordance with the State Engineer's Office Rules and Regulations, Part III, Water Well Minimum Construction Standards. 4. With few exceptions, new wells must be constructed by a Wyoming licensed water well drilling contractor, and pumps must be installed by a Wyoming licensed pump installation contractor. 5. Any well not to be used must be properly plugged and abandoned as outlined in the above referenced rules and regulations. 6. Any wells developed for uses that do NOT fall within the definition of domestic or stock use require adjudication by the Board of Control.	SUE.KINSLEY@LARAMIECOUNTYWY.GOV

1. existing well and septic are on Tract 1, Barnes Subdivision 2nd Filing and remain with the existing residence.
2. No new well or septic are proposed

Permit Notes

03/04/2026		Workflow	ENVIRONMENTAL HEALTH REVIEW	GENERAL	House has pre-existing septic system that pre-dates permits.	TIFFANY.GAERTNER@LARAMIECOUNTYWY.GOV
03/04/2026		Workflow	PUBLIC WORKS REVIEW	GENERAL	1. All comments from the review engineer and surveyor shall be addressed and resolved appropriately. 2. N College Drive is under the jurisdiction of WYDOT. Applicant shall comply with the comments, permitting and any other requirements of WYDOT for the roadway. 3. Carla Drive is under the jurisdiction of the City of Cheyenne. Applicant shall comply with the comments, permitting and any other requirements of the City of Cheyenne for the roadway. 4. The internal access easement(s) shall comply with the private road cross section within the Laramie County Land Use Regulations.	MOLLY.BENNETT@LARAMIECOUNTYWY.GOV
03/04/2026	03/04/2026	Application	PZ-26-00012	GENERAL	WAPA has no issues with this project	ROGERS@LARAMIECOUNTYWY.GOV
03/12/2026		Application	PZ-26-00012	GENERAL	Applicant shall comply with all agency review requirements of the LCLUR and outside jurisdictions.	JUSTIN.ARNOLD@LARAMIECOUNTYWY.GOV
03/13/2026		Workflow	SHERIFF'S OFFICE REVIEW	GENERAL	The LCSO has no concerns with this proposal.	MATTHEW.FUNARI@LARAMIECOUNTYWY.GOV

1. ack
2. ack
3. ack
4. no internal roadways. access to Tract 1 will be moved onto tract 1 and perpendicular with access across College as discussed and approved with WYDOT

Steil Surveying Services,
Professional Land Surveyors

February 18, 2026

Laramie County Planning & Development Office
3966 Archer Parkway
Cheyenne, WY 82009
(307) 633-4303

InRe: Subdivision to be known as Barnes Subdivision 2nd Filing a replat of Lot 2, Barnes Subdivision Laramie County Wyoming.

To whom it may concern:

Steil Surveying Services, agent for the owner(s), provides this letter on their behalf, confirming that the owner acknowledges that THIS PARCEL IS ALREADY FENCED.

Sincerely,

Michael S. Hansen

Shane Hansen

Director Planning and Development
Steil Surveying Services, LLC
shansen@steilsurvey.com

Catherine Cundall

From: Rachel Smith <redrachelsmith@yahoo.com>
Sent: Monday, March 16, 2026 10:04 AM
To: Planning
Subject: Reject subdividing 5404 College Dr.

Dear Laramie County Planning and Development:

I am writing this letter to ask you **not** to approve the application for the subdivision of 5404 N. College Drive.

I own an adjacent property at 3731 Edison Ct. where I enjoy the view of the country, the sunrises in the east, and peace and quiet. This is the primary reason I chose this location for building a house with views of the countryside. If development occurs on the Tract 2 portion of the subdivision, disruption to visual landscape will occur, excessive noise will interrupt daily living. There is little land left near city limits that does not already have housing development.

Developing this tract could potentially decrease current property values of adjacent properties.

In addition, there are herds of deer that migrate through that part of the land. This disturbance will interfere with the natural habitat of local deer.

I strongly encourage a different location for Barnes Subdivision.

Sincerely,

Rachel Smith

Land owner 3731 Edison Ct.
307-631-6865

CivilWorx

Preliminary Drainage Report

Prepared for:

STEIL SURVEYING SERVICES, LLC

LAND | CONSTRUCTION | ALTA | SITE PLANNING
1102 West 19th Street | Cheyenne, Wyoming 82001
Office: 307.634.7273

February 20, 2026

February 20, 2026

Mr. Justin Arnold, Director
Laramie County Planning & Development Office
3966 Archer Pkwy Cheyenne, WY 82009
Phone #: (307) 633-4303

RE: Preliminary Drainage Report
Barnes Subdivision 2nd Filing
CivilWorx Project Number: C26004

Dear Justin:

CivilWorx, LLC is pleased to submit the preliminary drainage report for the above-mentioned project. At this time the site is subdivided with no definitive development plan but is anticipated to be redeveloped in the future. The site is in the Dry Creek Basin which has downstream drainage issues which will impact future development on this site. If portions of the site are developed, it is assumed the applicable properties will be annexed to the City of Cheyenne if it requires new potable water, fire sprinkler, or sanitary sewer service. For this reason, our report assumes future development will follow city requirements in the future phase discussions.

The included hydrological assessment utilizes the recent 2024 NOAA rainfall data for the site.

We understand that review by Laramie County is to assure general compliance with standardized criteria contained within the Laramie Land Use Regulations. The intent of this report is to accompany the replat for the project.

If you should have any questions or comments as you review this report, please feel free to contact me at your convenience.
Sincerely,

Kelly W. Hafner, PE
Senior Project Manager
CivilWorx, LLC

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APPENDICES

I. General Location and Description

A. Location

A replat is proposed for Lot 2 Barnes Subdivision. It is our understanding that this site is planned for future development is planned for Tract 2. The full extent of the redevelopment is unknown so a future drainage plan will have to be developed for any development action on this property. These combined 11.54-acre parcels, (referred herein as "the site") are located NW of the intersection of Carla Drive and North College Drive.

The site is located within the east half of Section 22, Township 14 North, Range 66 West of the 6th Principal Meridian. A vicinity map is shown with Figure 1.

Figure 1. Vicinity Map

The purpose of this report is to outline a preliminary drainage assessment of the existing site.

B. Description of Property

Currently the property is a partially developed rural residential site embedded into a hillside. The site is bordered by developed rural residential to the north, urban residential to the west, College Drive and Carla Drive to the east and south respectively. The following is a summary of the existing conditions:

Figure 2. Existing Site 2025

Ground Cover - The property contains a rural residential site in the center of the site. The site is primarily natural prairie.

Grades – In general, the property drains southerly on very steep to steep grades.

Soil Type – A direct site geotechnical study was not available. The local soils area assumed sandy loam as outlined in the drainage master plans. The drainage master plan for this area utilized HSG Type B soils conditions in which include a Loam soil. Given the variability in potential runoff, infiltration characteristics of Loam soils are assumed best to correspond with surfaces soils on the site.

Groundwater – Groundwater is unknown at the time of this report.

Utilities – The site includes previous utility lines and stub-outs including water, storm sewer, natural gas, telephone, fiber, and electric, all located within the adjacent roads and/or stubbed to the property.

Storm Drainage Facilities – The site has adjoining storm sewer near the SE corner of the site.

C. Description of Overall Development

The proposed Barnes Subdivision 2nd Filing is shown with Figure 3.

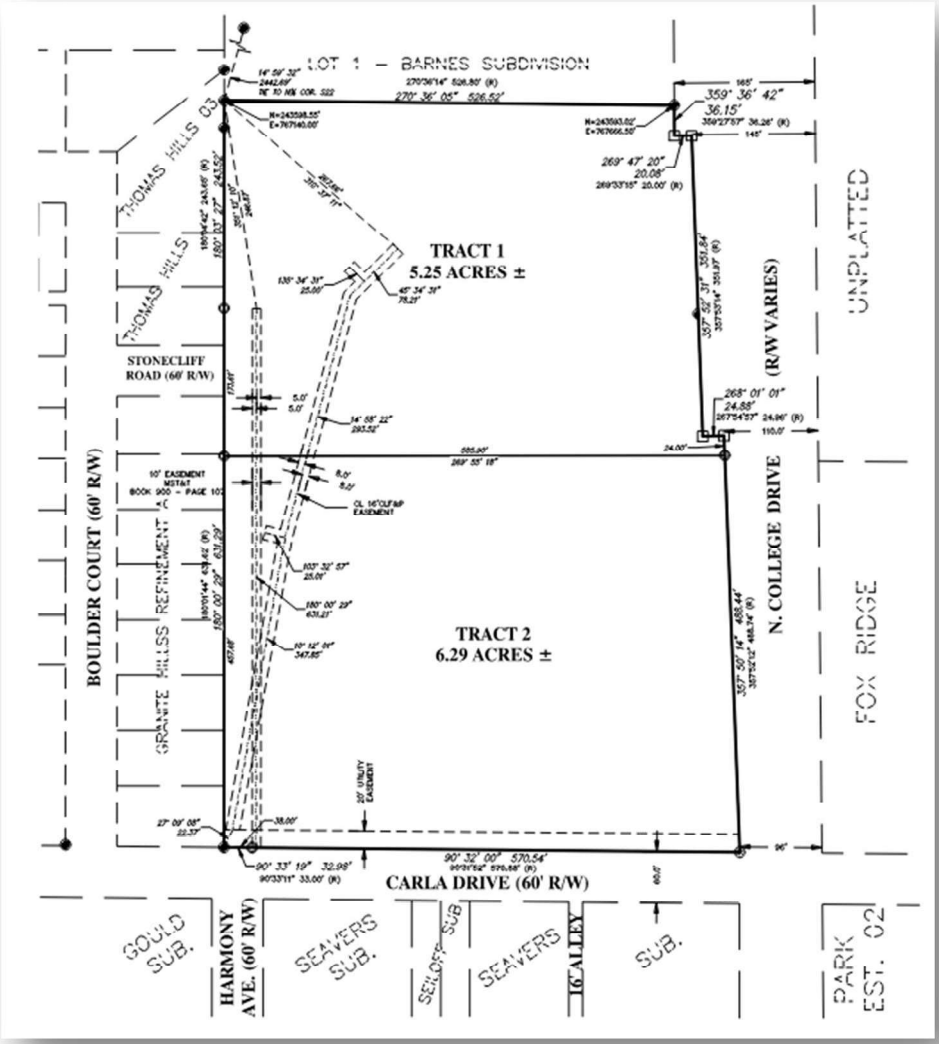


Figure 3. Site Development Plan

II. Drainage Basins and Sub-Basins

A. Major Basin Description

The site is in the Dry Creek Drainage Basin (14.9 square miles), a tributary of Crow Creek. The site is located within Sub-basin 110 of the Lower Dry Creek Basin. The Sub-basin 110 confluence with Dry Creek

and the North College drive crossing south of Dell Range. The downstream has a constrained crossing of the creek at the Union Pacific Railroad (UPRR) embankment east of Sun Valley. The UPRR crossing is referenced as DC-N in the drainage master plan. This location is a known flood hazard area produced by the depth of water impounded by the limited outflow capacity under the UPRR. This creates a large flood hazard area for many properties and residences north of the UPRR embankment. The project site is situated outside of all the current regulatory Special Flood Hazard Areas.

B. Local Drainage Description

Runoff leaving the site is conveyed from two locations. Runoff from the SE corner is conveyed towards North College Drive and collected by street conveyance and storm sewer to Dry Creek at the College drive Crossing. Runoff leaving the SW corner of the site is conveyed west along Carla Drive and collected by storm sewer. Runoff is then conveyed to Dry Creek and discharged upstream of the Ridge Road crossing.

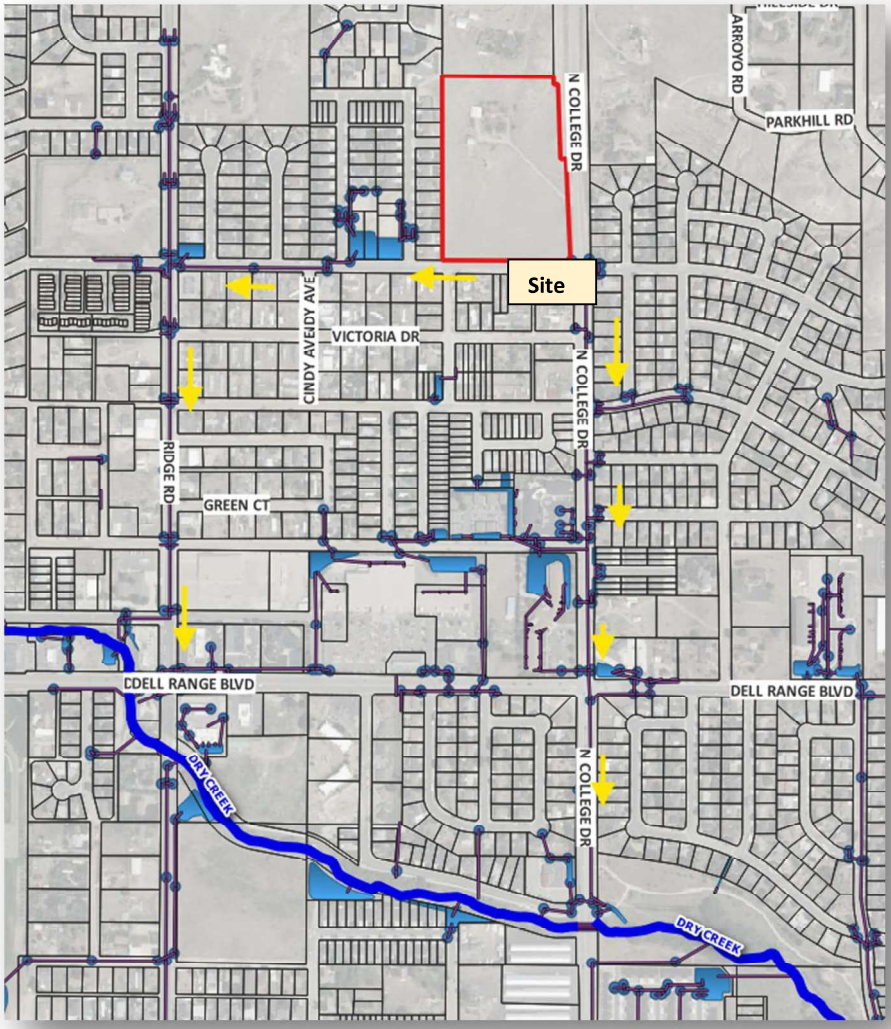


Figure 4. Downstream Drainage Path (to Dry Creek)

C. Pre-Project Drainage Patterns

The pre-project site is assessed with three catchments as shown on the drainage plan map (Appendix E). The site is influenced by an offsite area upstream of the property which will convey runoff directly into any future development area. A summary of the pre-development runoff estimates is shown with Table 1.

Table 1. Existing Conditions Runoff Summary

Catchment	Tributary Area (ac.)	Imperv Area	Q_5 cfs	Q_{10} cfs	Q_{20} cfs	Q_{50} cfs	Q_{100} cfs
Upstream Offsite							
OS-B-1	2.51	8	0.6	1.4	2.9	5.4	7.8
Site							
B-2-E	6.08	6	0.7	1.3	2.5	5.0	7.2
B-2-W	5.38	6	0.7	1.5	2.8	4.5	6.5

For this report, the peak discharge rate for this site is estimated at 0.45 cfs/acre x (5.2 cfs / 11.54 acres) based on the 20-Year criteria currently required for Dry Creek by the City Engineers Office.

III. Drainage Design Criteria

A. Regulations

It is anticipated that any future site plan will be for annexed land so the design criteria is assumed from the *City of Cheyenne Unified Development Code, Section 3.1.* If the development remains in the County, the criteria is not likely to change.

B. Development Criteria Reference and Constraints

The criteria used as the basis to analyze and design stormwater features of this project were done according to the references noted above. UDC Section 3.2.2 Levels of Study outlines the following levels of analysis apply with the applicable section to this Site Plan highlighted in Green.

a. Less than 20,000 square feet (sf). For new, infill, or re-development with a total area of the project site less than 20,000 sf when all phases are complete the Developer shall complete the Drainage Worksheet. Drainage Impact Studies and detention and water quality requirements are waived, except as provided by Subsection e. of this Section.

b. Infill or re-development 20,001 sf to 40,000 sf. A Drainage Impact Study shall be completed and the Water Quality Capture Volume (WQCV) shall be treated in a post-construction BMP. Detention requirements to control the peak discharge are waived, except as provided by Subsection e. of this Section.

c. Infill or re-development 40,001 sf to 75,000 sf. A Drainage Impact Study shall be completed, the WQCV shall be treated in a post-construction BMP, and detention for the

10-year storm shall be provided. Detention requirements to control the 100-year peak discharge are waived, except as provided by Subsection e. of this Section.

d. Infill or re-development greater than 75,000 sf or new development greater than 20,000 sf. A Drainage Impact Study shall be completed, and all water quality and detention requirements shall be complied with to the maximum extent feasible.

Drainage design criteria is outlined in UDC 3.2.3 with the applicable criteria cited for this report is outlined in Green:

3.2.3 Drainage Design
a. General.

1. Design shall preserve existing natural features, drainage features and historical flow patterns to the extent they can be incorporated into the site development plan and fit the context and urban design principles for the general area.

2. Drainage facilities shall be designed and constructed in accordance with accepted engineering practices. Primary resources include the City Construction Specifications, the current adopted City Stormwater Management Manual and the current UDFCD Urban Storm Drainage Criteria Manual (UDFCD Manual).

3. Provisions shall be made in the planning and development of land to provide for the mitigation of surface water run-off increases due to development. Mitigation shall be provided to the extent that the peak rate of flow from the project area after development exceeds the specified peak rate of flow prior to development, in accordance with the design standards as established herein.

(a) The City Engineer is authorized to require a lower allowable discharge rate in specific basins or sub-basins if, in the exercise of professional judgment, a lower allowable discharge rate is required to prevent additional adverse impacts on downstream properties. A lower allowable discharge rate shall be documented in writing and be supported by reproducible engineering calculations, referenced to the Drainage Master Plan. <Required for the Dry Creek Basin>

(b) An individual development will not be required to provide mitigation, or may provide partial mitigation if it can be demonstrated, subject to City approval, that: (1) the increased volume and rate of runoff caused by a proposed development, when considered in combination with other existing or planned developments or land uses, will not cause the design criteria specified in this Sub-article 3.2 to be exceeded; or (2) the required mitigation is provided in an off-site facility.

C. Hydrological Criteria

Drainage design criteria for the City of Cheyenne is outlined in Article 3 of the Unified Development Code (present edition) for this project. The primary design for detention is the limitation of peak outflow from post-development to a maximum of the pre-development 20-Year peak rate. Other requirements include

criteria for Water Quality Capture Volumes (WQCV) to improve stormwater runoff quality from urban development projects. The primary criteria from the referenced UDC includes:

Development (Type)	WQCV Design	Minor Storm Design	Major Storm Design
Commercial	1-Year	10-Year	100-Year

The proposed developed drainage networks, including a stormwater detention system, designed using the US EPA Stormwater Management Model (SWMM, ver. 5.2.4) software. The performance of the proposed swale, culvert, street/gutter, and detention/retention systems are estimated within the SWMM model for the minor and major storm events. Developed runoff hydrographs are estimated using EPA SWMM sub-catchment rainfall-to-runoff algorithms. Dynamic wave routing within the SWMM model was used to address interconnections and interactions between all collection, conveyance, storage, and regulatory elements. SWMM sub-catchment width parameters are calibrated using the theory of cascading planes (see Guo reference). This method was also documented in the 2016 SWMM Hydrology Reference Manual published by the EPA. Overland flow manning's 'n' is calibrated to average overland flow transitions to shallow concentrated flow and channel flow within the sub-catchment sub-areas. Computations outlining these adjustments are included in the appendix of this report. Detention storage volumes are based on hydrograph routing and stage-area curves developed from the project grading plans, drainage reports, or anticipated detention pond storage areas.

Soils infiltration is assessed using Green-Ampt parameters based on Type 'B' hydrologic soil group conditions for the developed site. Generalized Loam soil parameters for natural prairie conditions include 3.5" of capillary suction head; 0.6 in/hr for saturated hydraulic conductivity; and 0.30 and 0.24 (undeveloped to developed respectively) for moisture deficit. Overland flow impedance parameters are based on recommendations from the USACE for kinematic overland flow.

IV. Drainage Facility Design

A. General Preliminary Drainage Plan

The anticipated development on the site is unknown. At this time, it is assumed that Tracts 1 and 2 will be redeveloped for commercial activities. The other assumptions are as follows:

- Full development is limited to 85% impervious coverage
- All developed site runoff is controlled by a single conceptual detention pond.

B. Catchment Summaries

A summary of the conceptual developed catchments runoff estimates for the 5-Year through 100-Year storm events are shown with Table 3. Based on Table 2, the peak theoretical detention pond outflow is limited to 5.2 cfs.

Table 2. Developed Catchment Runoff Summary						
Catchment	**Area (Ac.)**	**% Impervious**	**Q_5**	**Q_{10}**	**Q_{20}**	**Q_{100}**
B-2-E DEV	6.08	85%	7.6	11.3	15.8	28.2
B-2-W DEV	5.38	85%	6.8	10.2	14.3	25.4

C. Detention System Design

To control the runoff from the project, one (1) theoretical detention pond is assumed to provide a level of detention storage for planning purposes. A summary of the theoretical detention facility requirements is outlined with Table 3.

Table 3. Detention System Design Summary									
Pond (ID)	**Service Area (Ac.)**	**Peak Inflow *(cfs)***		**Design Peak Outflow *(cfs)***		**Max. Depth/Elev (ft)**		**Max. Used Storage CF**	
		Q_{10}	**Q_{100}**	**Q_{10}**	**Q_{100}**	**D_{10}**	**D_{100}**	**V_{10}**	**V_{100}**
Concept	11.5	21.5	54	1.9	5.23	TBD	TBD	39,816	76,524

The total outflow from the conceptual site is anticipated at or below the 20-Year pre-project discharge rate. Note the city also requires Water Quality Capture Volumes with detention ponds which will hold water for a long period of time in order to drop out sediment. This may impact the final detention pond sizing.

D. General Comments and Recommendations

The existing site is on a steep hillside so planning for runoff control will be necessary for any level of development. After reviewing the area, the following recommendations are listed for consideration with future development:

- It is recommended that all developed runoff is conveyed east and storm sewer in College Drive. The downstream conveyance path west on Carla Drive is constrained and discharges to problematic area of Dry Creek. The drainage pathway south of College Drive is, in our opinion, a better option and better for the community at large to receive runoff.

- The proposed over-detention requirements for Dry Creek require larger detention areas than under normal conditions. The volume of stormwater storage will be considerable so planning for detention facilities that can be cut into the grade at the base of the hill and connected to storm sewer would appear the best strategy. If there is opportunity to mid-site detention, that is recommended rather than trying to capture all runoff near the outlet of the site.

V. Conclusions

A. Compliance with Standards

Stormwater drainage calculations have followed the guidelines provided by the applicable sections of the Laramie County Land-Use Regulations and the City of Cheyenne Unified Development Code.

B. Drainage Plan

A new developed drainage plan is not proposed at this time but will be required with any level of redevelopment at this site.

VI. References

1. Urban Storm Drainage Criteria Manuals 2 and 3, Urban Drainage and Flood Control District, Denver, Colorado, November 2010 as currently (Feb 2018) amended.

2. Storm Water Management Model, Reference Manual Volume I, Hydrology, U.S. Environmental Protection Agency, January 2016.

3. Storm Water Management Model, Reference Manual Volume II, Hydraulics, U.S. Environmental Protection Agency, May 2017.

4. Conversion of Natural Watershed to Kinematic Wave Cascading Plane, Guo, J.C.Y. and Urbonas, B., Journal of Hydrologic Engineering, Vol. 14, No. 8, pp. 839-846, July/August 2009.

5. CH2M HILL 2 1988: CH2M HILL & States West Water Resources Corporation: Drainage Master Plan – Dry Creek.

VII. Certification

"I hereby attest that the Preliminary Drainage Report for the Barnes Subdivision, 2nd Filing was prepared by me, or under my direct supervision, in accordance with the provisions of the Laramie County Land Use Regulations for the responsible parties thereof and that I am a duly registered Professional Engineer under the laws of the State of Wyoming. I understand that Laramie County does not and shall not assume liability for drainage facilities designed by others."

Kelly W. Hafner
Registered Professional Engineer
State of Wyoming # 10514

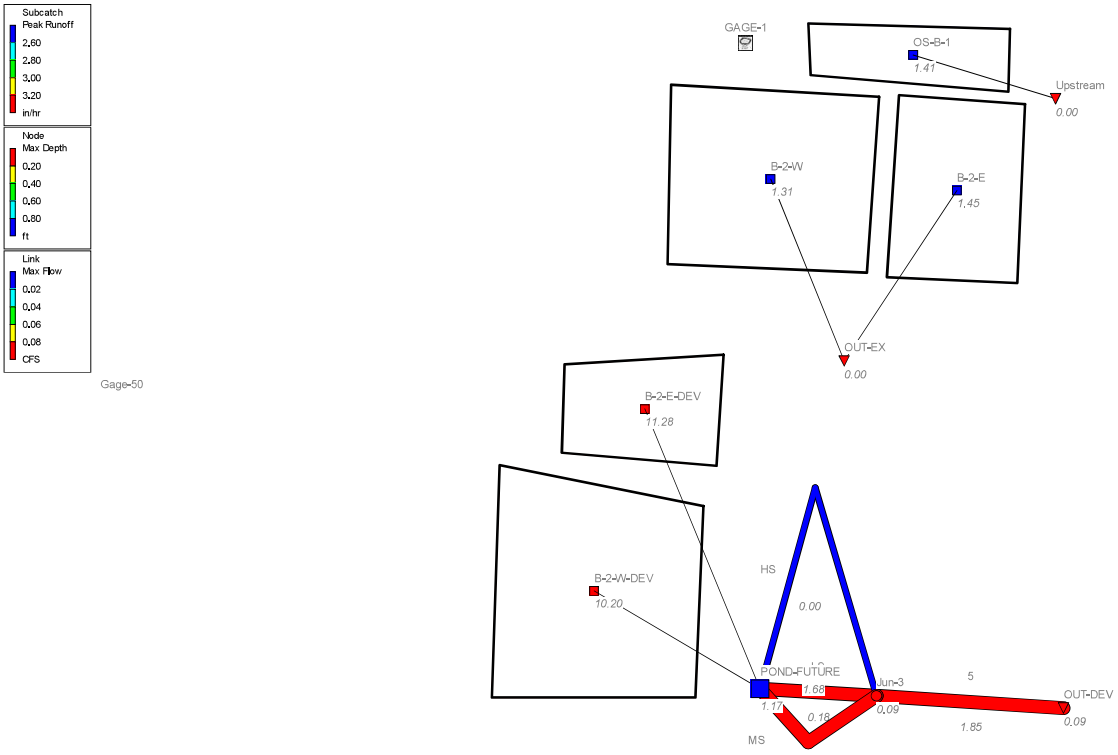
APPENDIX A

SWMM Drainage Model Input Data and Output Summaries

- SWMM Model Overview
  - Full Model
- Hydrological/Hydraulic Assumptions
- Soil Parameters and Friction Parameters
- Rainfall Data

BARNES SUB 2nd Carla and College

07/12/2006 00:01:00



Soil Parameter Estimates

Texture class	Percent by weight		Suction head		Conductivity		Initial deficit	Porosity	Field capacity	Wilting point
	Sand	Clay	in	mm	in/h	mm/h				
Sand	88	5	1.9	49.5	4.26	108.1	0.34	0.46	0.10	0.05
Loamy sand	80	5	2.4	61.3	3.81	96.7		0.46	0.12	0.05
Sandy loam	65	10	4.3	110.1	1.98	50.3	0.33	0.45	0.18	0.08
Loam	40	20	3.5	88.9	0.61	15.5	0.31	0.46	0.28	0.14
Silt loam	20	15	6.6	166.8	0.63	16.1	0.32	0.48	0.31	0.11
Silt	10	5			0.87	22		0.48	0.30	0.06
Sandy clay loam	60	25	8.6	218.5	0.44	11.3	0.26	0.43	0.27	0.17
Clay loam	30	35	8.2	208.8	0.17	4.3	0.24	0.48	0.36	0.22
Silty clay loam	10	35	10.7	273.0	0.22	5.7		0.51	0.38	0.22
Silty clay	10	45	11.5	292.2	0.15	3.7		0.52	0.41	0.27
Sandy clay	50	40	9.4	239.0	0.06	1.4		0.44	0.36	0.25
Clay	25	50	12.5	316.3	0.04	1.1	0.21	0.50	0.42	0.30

Table 1
Effective Resistance Parameters for Overland Flow

Surface	N value	Source
Asphalt/Concrete*	0.05 - 0.15	a
Bare Packed Soil Free of Stone	0.10	c
Fallow – No Residue	0.008 - 0.012	b
Convential Tillage – No Residue	0.06 - 0.12	b
Convential Tillage – With Residue	0.16 - 0.22	b
Chisel Plow – No Residue	0.06 - 0.12	b
Chisel Plow – With Residue	0.10 - 0.16	b
Fall Disking – With Residue	0.30 - 0.50	b
No Till – No Residue	0.04 - 0.10	b
No Till (20-40 percent residue cover)	0.07 - 0.17	b
No Till (60-100 percent residue cover)	0.17 - 0.47	b
Sparse Rangeland with Debris:		
0 Percent Cover	0.09 - 0.34	b
20 Percent Cover	0.05 - 0.25	b
Sparse Vegetation	0.053 - 0.13	f
Short Grass Prarie	0.10 - 0.20	f
Poor Grass Cover on Moderately Rough	0.30	c
Bare Surface		
Light Turf	0.20	a
Average Grass Cover	0.4	c
Dense Turf	0.17 - 0.80	a,c,e,f
Dense Grass	0.17 - 0.30	d
Bermuda Grass	0.30 - 0.48	d
Dense Shrubbery and Forest Litter	0.4	a

Legend: a) Harley (1975), b) Engman (1986), c) Hathaway (1945), d) Palmer (1946), e) Ragan and Duru (1972), f) Woolhiser (1975). [Hjemfelt, 1986]

From USACE, TD-14 Introductions and Application of Kinematic Wave Routing Techniques Using HEC-1

PROJECT: CHEYENNE NOAA 2024
LOCATION: CHEYENNE WY

CivilWorx

SWMM DESIGN RAINFALL EVENTS FOR BASINS LESS THAN 10 SQ. MI. (SE WY AND NE CO)
FROM NOAA ATLAS VOLUME 14 VERSION 2

DESIGN 2 -HOUR STORM EVENTS (INCREMENTAL INCHES)

Duration (Minutes)	(2 Year)	(5 Year)	(10 Year)	(25 Year)	(50 Year)	(100 Year)	(500-Year)
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	0.006	0.009	0.012	0.015	0.018	0.019	0.025
10	0.012	0.018	0.023	0.030	0.035	0.038	0.050
15	0.012	0.018	0.023	0.030	0.035	0.038	0.050
20	0.014	0.020	0.025	0.031	0.037	0.043	0.055
25	0.014	0.019	0.023	0.030	0.034	0.040	0.053
30	0.028	0.038	0.046	0.060	0.068	0.080	0.106
35	0.151	0.209	0.259	0.331	0.380	0.440	0.580
40	0.390	0.541	0.669	0.849	0.990	1.130	1.480
45	0.087	0.121	0.152	0.190	0.230	0.260	0.330
50	0.069	0.095	0.115	0.150	0.170	0.200	0.265
55	0.028	0.038	0.046	0.060	0.068	0.080	0.106
60	0.029	0.040	0.050	0.062	0.074	0.086	0.110
65	0.029	0.040	0.050	0.062	0.074	0.086	0.110
70	0.029	0.040	0.050	0.062	0.074	0.086	0.110
75	0.029	0.040	0.050	0.062	0.074	0.086	0.110
80	0.014	0.020	0.025	0.031	0.037	0.043	0.055
85	0.012	0.018	0.023	0.030	0.035	0.038	0.050
90	0.012	0.018	0.023	0.030	0.035	0.038	0.050
95	0.012	0.018	0.023	0.030	0.035	0.038	0.050
100	0.012	0.018	0.023	0.030	0.035	0.038	0.050
105	0.012	0.018	0.023	0.030	0.035	0.038	0.050
110	0.012	0.018	0.023	0.030	0.035	0.038	0.050
115	0.012	0.018	0.023	0.030	0.035	0.038	0.050
120	0.006	0.009	0.012	0.015	0.018	0.019	0.025
SUM	1.030	1.440	1.790	2.280	2.660	3.040	3.970
TARGET	1.030	1.440	1.790	2.280	2.660	3.040	3.970
DIFFER	0.0000	0.000	0.000	0.000	0.000	0.000	0.000

(2 Year)	(5 Year)	(10 Year)	(25 Year)	(50 Year)	(100 Year)	(500-Year)	
0.390	0.541	0.669	0.849	0.990	1.130	1.480	5(min)
0.541	0.750	0.928	1.180	1.370	1.570	2.060	10(min)
0.628	0.871	1.080	1.370	1.600	1.830	2.390	15(min)
0.766	1.060	1.310	1.670	1.940	2.230	2.920	30(min)
0.910	1.260	1.560	1.980	2.310	2.660	3.470	60(min)
1.030	1.440	1.790	2.280	2.660	3.040	3.970	120(min)

NOAA ATLAS 14 DATA (2024 VOL 12)	
20-Year Estimate - (Logrithimic)	
0	0.000
5	0.014
10	0.028
15	0.028
20	0.030
25	0.028
30	0.057
35	0.313
40	0.805
45	0.181
50	0.141
55	0.057
60	0.059
65	0.059
70	0.059
75	0.059
80	0.030
85	0.028
90	0.028
95	0.028
100	0.028
105	0.028
110	0.028
115	0.028
120	0.014
Total	2.161

6.712	
9.662	
5.198	

1-Year	WQCV
0	0.000
5	0.018
10	0.035
15	0.036
20	0.067
25	0.300
30	0.115
35	0.035
40	0.019
45	0.019
50	0.019
55	0.018
60	0.018
Total	0.699

20-Year DURATION	INTENSITY
5	9.662
10	6.712
15	5.198
30	3.113
60	1.848
120	1.080

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	0.300 (0.257-0.347)	0.390 (0.336-0.455)	0.541 (0.461-0.640)	0.669 (0.561-0.799)	0.849 (0.689-1.03)	0.990 (0.779-1.23)	1.13 (0.859-1.44)	1.28 (0.930-1.70)	1.48 (1.01-2.09)	1.64 (1.06-2.42)
10-min	0.415 (0.356-0.482)	0.541 (0.466-0.631)	0.750 (0.639-0.887)	0.928 (0.778-1.11)	1.18 (0.955-1.43)	1.37 (1.08-1.70)	1.57 (1.19-2.00)	1.78 (1.29-2.36)	2.06 (1.40-2.90)	2.28 (1.48-3.36)
15-min	0.483 (0.414-0.560)	0.628 (0.542-0.733)	0.871 (0.743-1.03)	1.08 (0.904-1.29)	1.37 (1.11-1.66)	1.60 (1.26-1.98)	1.83 (1.38-2.33)	2.07 (1.50-2.74)	2.39 (1.63-3.37)	2.64 (1.71-3.90)
30-min	0.588 (0.504-0.682)	0.766 (0.660-0.893)	1.06 (0.905-1.26)	1.31 (1.10-1.57)	1.67 (1.35-2.03)	1.94 (1.53-2.41)	2.23 (1.69-2.84)	2.52 (1.83-3.34)	2.92 (1.99-4.11)	3.22 (2.09-4.76)
60-min	0.699 (0.599-0.811)	0.910 (0.785-1.06)	1.26 (1.08-1.49)	1.56 (1.31-1.87)	1.98 (1.61-2.41)	2.31 (1.82-2.86)	2.65 (2.01-3.37)	3.00 (2.17-3.97)	3.47 (2.36-4.88)	3.83 (2.48-5.66)
2-hr	0.787 (0.681-0.911)	1.03 (0.898-1.20)	1.44 (1.24-1.71)	1.79 (1.50-2.15)	2.28 (1.84-2.78)	2.66 (2.08-3.29)	3.04 (2.28-3.87)	3.43 (2.45-4.54)	3.97 (2.65-5.56)	4.38 (2.78-6.41)
3-hr	0.836 (0.729-0.965)	1.10 (0.963-1.28)	1.55 (1.33-1.83)	1.92 (1.61-2.30)	2.44 (1.98-2.98)	2.85 (2.22-3.53)	3.26 (2.43-4.14)	3.68 (2.60-4.84)	4.24 (2.80-5.91)	4.67 (2.94-6.81)
6-hr	0.952 (0.835-1.08)	1.25 (1.10-1.43)	1.73 (1.50-2.02)	2.14 (1.82-2.53)	2.71 (2.23-3.25)	3.15 (2.50-3.83)	3.60 (2.73-4.46)	4.05 (2.92-5.21)	4.67 (3.12-6.34)	5.14 (3.28-7.29)
12-hr	1.15 (1.04-1.27)	1.45 (1.31-1.62)	1.94 (1.74-2.19)	2.36 (2.08-2.68)	2.94 (2.53-3.39)	3.41 (2.86-3.96)	3.87 (3.15-4.60)	4.36 (3.42-5.36)	5.02 (3.72-6.52)	5.52 (3.93-7.52)

APPENDIX B

Geotechnical/Soils Data

- <reserved>

APPENDIX C

Storm Sewer and Culvert Hydraulic Design

- SWMM Status Report
  - 100-Year
  - 10-Year

BARNES SUB 2nd Carla and College

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

BARNES SUB 2nd Carla and College
Last Updated Feb 2026

****
Element Count
****
Number of rain gages 2
Number of subcatchments ... 5
Number of nodes 5
Number of links 4
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
GAGE-1	100-YR-2024	VOLUME	5 min.
Gage-50	50-YR-2024	VOLUME	5 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
B-2-W	5.38	275.00	6.00	8.2000	GAGE-1	OUT-EX

B-2-W-DEV	5.38	275.00	85.00	8.2000	GAGE-1	POND-FUTURE
B-2-E	6.08	290.00	6.00	8.9000	GAGE-1	OUT-EX
OS-B-1	2.51	350.00	8.00	10.0000	GAGE-1	Upstream
B-2-E-DEV	6.08	290.00	85.00	8.9000	GAGE-1	POND-FUTURE

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
Jun-3	JUNCTION	6010.49	8.00	0.0	
OUT-DEV	OUTFALL	6010.00	0.83	0.0	
OUT-EX	OUTFALL	0.00	0.00	0.0	
Upstream	OUTFALL	0.00	0.00	0.0	
POND-FUTURE	STORAGE	6010.50	8.00	0.0	

****
Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
5	Jun-3	OUT-DEV	CONDUIT	50.0	0.9900	0.0130
LS	POND-FUTURE	Jun-3	ORIFICE			
HS	POND-FUTURE	Jun-3	ORIFICE			
MS	POND-FUTURE	Jun-3	ORIFICE			

****
Cross Section Summary
****

	Full	Full	Hyd.	Max.	No. of	Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
5	CIRCULAR	0.83	0.55	0.21	0.83	1	2.18

****
Transect Summary
****

Transect 60-ROW-40-RD
Area:

0.0003	0.0013	0.0039	0.0084	0.0147
0.0228	0.0327	0.0443	0.0568	0.0708
0.0865	0.1038	0.1217	0.1399	0.1584
0.1772	0.1964	0.2158	0.2356	0.2556
0.2760	0.2966	0.3176	0.3389	0.3605
0.3824	0.4046	0.4271	0.4499	0.4730
0.4965	0.5202	0.5443	0.5686	0.5933
0.6182	0.6435	0.6691	0.6950	0.7212
0.7477	0.7745	0.8016	0.8290	0.8567
0.8848	0.9131	0.9418	0.9707	1.0000

Hrad:

0.0113	0.0173	0.0255	0.0359	0.0469
0.0581	0.0693	0.0845	0.1026	0.1175
0.1322	0.1495	0.1725	0.1959	0.2195
0.2432	0.2669	0.2905	0.3140	0.3374
0.3608	0.3840	0.4071	0.4302	0.4531
0.4759	0.4986	0.5212	0.5437	0.5662
0.5885	0.6108	0.6329	0.6550	0.6771
0.6990	0.7209	0.7427	0.7645	0.7862
0.8078	0.8293	0.8509	0.8723	0.8937
0.9151	0.9364	0.9576	0.9788	1.0000

Width:

0.0203	0.0587	0.1205	0.1824	0.2443

0.3061 0.3680 0.4096 0.4480 0.5050
0.5620 0.6035 0.6139 0.6243 0.6348
0.6452 0.6557 0.6661 0.6765 0.6870
0.6974 0.7078 0.7183 0.7287 0.7391
0.7496 0.7600 0.7704 0.7809 0.7913
0.8017 0.8122 0.8226 0.8330 0.8435
0.8539 0.8643 0.8748 0.8852 0.8957
0.9061 0.9165 0.9270 0.9374 0.9478
0.9583 0.9687 0.9791 0.9896 1.0000

Transect 1/2_Gutter
Area:
0.0006 0.0028 0.0069 0.0130 0.0209
0.0308 0.0426 0.0556 0.0691 0.0845
0.1019 0.1212 0.1410 0.1610 0.1812
0.2015 0.2221 0.2428 0.2637 0.2848
0.3060 0.3275 0.3491 0.3709 0.3928
0.4150 0.4373 0.4598 0.4825 0.5053
0.5284 0.5516 0.5750 0.5986 0.6223
0.6462 0.6704 0.6946 0.7191 0.7437
0.7686 0.7936 0.8187 0.8441 0.8696
0.8954 0.9213 0.9473 0.9736 1.0000
Hrad:
0.0149 0.0288 0.0445 0.0606 0.0768
0.0930 0.1093 0.1383 0.1687 0.1940
0.2152 0.2341 0.2548 0.2765 0.2988
0.3212 0.3438 0.3664 0.3889 0.4113
0.4335 0.4556 0.4775 0.4992 0.5208
0.5421 0.5633 0.5843 0.6050 0.6256
0.6460 0.6662 0.6862 0.7060 0.7256
0.7450 0.7643 0.7834 0.8023 0.8211
0.8397 0.8581 0.8764 0.8945 0.9125
0.9303 0.9479 0.9654 0.9828 1.0000
Width:

0.0480	0.1200	0.1919	0.2639	0.3359
0.4078	0.4798	0.4935	0.5437	0.6181
0.6925	0.7443	0.7510	0.7577	0.7645
0.7712	0.7779	0.7847	0.7914	0.7981
0.8048	0.8116	0.8183	0.8250	0.8318
0.8385	0.8452	0.8520	0.8587	0.8654
0.8721	0.8789	0.8856	0.8923	0.8991
0.9058	0.9125	0.9192	0.9260	0.9327
0.9394	0.9462	0.9529	0.9596	0.9664
0.9731	0.9798	0.9865	0.9933	1.0000

****
Analysis Options
****
Flow Units ..... CFS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... GREEN_AMPT
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 07/12/2006 00:00:00
Ending Date 07/13/2006 23:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:05:00
Routing Time Step ..... 2.00 sec

Variable Time Step ..... YES
Maximum Trials 20
Number of Threads 1
Head Tolerance ..... 0.004000 ft

****
Control Actions Taken
****

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	6.442	3.040
Evaporation Loss	0.000	0.000
Infiltration Loss	3.230	1.524
Surface Runoff	3.127	1.475
Final Storage	0.089	0.042
Continuity Error (%)	-0.053	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	3.127	1.019
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	2.765	0.901
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.362	0.118

Initial Stored Volume 0.000 0.000
Final Stored Volume 0.000 0.000
Continuity Error (%) 0.003

****
Time-Step Critical Elements
****
None

****
Highest Flow Instability Indexes
****
All links are stable.

****
Most Frequent Nonconverging Nodes
****
Convergence obtained at all time steps.

****
Routing Time Step Summary
****
Minimum Time Step : 1.50 sec
Average Time Step : 2.00 sec
Maximum Time Step : 2.00 sec
% of Time in Steady State : 0.00
Average Iterations per Step : 2.00
% of Steps Not Converging : 0.00
Time Step Frequencies :
2.000 - 1.516 sec : 100.00 %

1.516 - 1.149 sec	:	0.00 %
1.149 - 0.871 sec	:	0.00 %
0.871 - 0.660 sec	:	0.00 %
0.660 - 0.500 sec	:	0.00 %

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10^6 gal	Peak Runoff CFS	Runoff Coeff
B-2-W	3.04	0.00	0.00	2.37	0.18	0.62	0.66	0.10	6.48	0.219
B-2-W-DEV	3.04	0.00	0.00	0.55	2.50	1.78	2.41	0.35	25.43	0.792
B-2-E	3.04	0.00	0.00	2.38	0.18	0.61	0.66	0.11	7.16	0.216
OS-B-1	3.04	0.00	0.00	2.09	0.24	0.88	0.94	0.06	7.78	0.310
B-2-E-DEV	3.04	0.00	0.00	0.55	2.50	1.78	2.40	0.40	28.16	0.791

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
Jun-3	JUNCTION	0.35	4.61	6015.11	0 01:54	4.61
OUT-DEV	OUTFALL	0.21	0.83	6010.83	0 01:00	0.83
OUT-EX	OUTFALL	0.00	0.00	0.00	0 00:00	0.00

Upstream	OUTFALL	0.00	0.00	0.00	0	00:00	0.00
POND-FUTURE	STORAGE	2.16	7.29	6017.79	0	01:54	7.29

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
Jun-3	JUNCTION	0.00	5.23	0	01:54	0	0.631	0.004
OUT-DEV	OUTFALL	0.00	5.23	0	01:54	0	0.631	0.000
OUT-EX	OUTFALL	13.63	13.63	0	00:45	0.206	0.206	0.000
Upstream	OUTFALL	7.78	7.78	0	00:45	0.0642	0.0642	0.000
POND-FUTURE	STORAGE	53.59	53.59	0	00:48	0.749	0.749	0.000

****
Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft³	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft³	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
POND-FUTURE	16.374	18.3	0.0	15.8	76.524	85.7	0 01:54	5.43

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
OUT-DEV	97.67	0.51	5.23	0.631
OUT-EX	5.46	2.97	13.63	0.206
Upstream	4.22	1.20	7.78	0.064
System	35.78	4.69	21.50	0.901

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days	hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
5	CONDUIT	5.23	0	01:54	9.59	2.40	1.00
LS	ORIFICE	0.20	0	01:19			1.00
HS	ORIFICE	2.80	0	01:54			
MS	ORIFICE	2.70	0	01:26			1.00

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Up Dry	Down Dry	Sub Dry	Sup Crit	Up Crit	Down Crit	Norm Crit	Inlet Ctrl
5	1.00	0.01	0.00	0.00	0.16	0.83	0.00	0.00	0.01	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Upstream	Dnstream	Hours Above Full Normal Flow	Capacity Limited
5	4.20	4.71	4.20	4.12	4.20

BARNES SUB 2nd Carla and College

Analysis begun on: Fri Feb 20 20:16:56 2026
Analysis ended on: Fri Feb 20 20:16:57 2026
Total elapsed time: 00:00:01

BARNES SUB 2nd Carla and College

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)
------------------------------------------------------------

BARNES SUB 2nd Carla and College
Last Updated Feb 2026

*************
Element Count
*************
Number of rain gages ...... 2
Number of subcatchments ... 5
Number of nodes ........... 5
Number of links ........... 4
Number of pollutants ...... 0
Number of land uses ....... 0


****************
Raingage Summary
****************
                                                 Data       Recording
Name                 Data Source                 Type       Interval
----------------------------------------------------------------------
GAGE-1               10-YEAR-2024                VOLUME       5 min.
Gage-50              50-YR-2024                  VOLUME       5 min.


********************
Subcatchment Summary
********************
Name                         Area     Width    %Imperv    %Slope Rain Gage            Outlet
-----------------------------------------------------------------------------------------------
B-2-W                        5.38    275.00       6.00    8.2000 GAGE-1               OUT-EX
B-2-W-DEV                    5.38    275.00      85.00    8.2000 GAGE-1               POND-FUTURE
B-2-E                        6.08    290.00       6.00    8.9000 GAGE-1               OUT-EX
OS-B-1                       2.51    350.00       8.00   10.0000 GAGE-1               Upstream
B-2-E-DEV                    6.08    290.00      85.00    8.9000 GAGE-1               POND-FUTURE


************
Node Summary
```

****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
Jun-3	JUNCTION	6010.49	8.00	0.0	
OUT-DEV	OUTFALL	6010.00	0.83	0.0	
OUT-EX	OUTFALL	0.00	0.00	0.0	
Upstream	OUTFALL	0.00	0.00	0.0	
POND-FUTURE	STORAGE	6010.50	8.00	0.0	

****
Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
5	Jun-3	OUT-DEV	CONDUIT	50.0	0.9900	0.0130
LS	POND-FUTURE	Jun-3	ORIFICE			
HS	POND-FUTURE	Jun-3	ORIFICE			
MS	POND-FUTURE	Jun-3	ORIFICE			

****
Cross Section Summary
****

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
5	CIRCULAR	0.83	0.55	0.21	0.83	1	2.18

****
Transect Summary
****

Transect 60-ROW-40-RD
Area:

0.0003	0.0013	0.0039	0.0084	0.0147
0.0228	0.0327	0.0443	0.0568	0.0708
0.0865	0.1038	0.1217	0.1399	0.1584
0.1772	0.1964	0.2158	0.2356	0.2556
0.2760	0.2966	0.3176	0.3389	0.3605

```
            0.3824     0.4046     0.4271     0.4499     0.4730
            0.4965     0.5202     0.5443     0.5686     0.5933
            0.6182     0.6435     0.6691     0.6950     0.7212
            0.7477     0.7745     0.8016     0.8290     0.8567
            0.8848     0.9131     0.9418     0.9707     1.0000
Hrad:
            0.0113     0.0173     0.0255     0.0359     0.0469
            0.0581     0.0693     0.0845     0.1026     0.1175
            0.1322     0.1495     0.1725     0.1959     0.2195
            0.2432     0.2669     0.2905     0.3140     0.3374
            0.3608     0.3840     0.4071     0.4302     0.4531
            0.4759     0.4986     0.5212     0.5437     0.5662
            0.5885     0.6108     0.6329     0.6550     0.6771
            0.6990     0.7209     0.7427     0.7645     0.7862
            0.8078     0.8293     0.8509     0.8723     0.8937
            0.9151     0.9364     0.9576     0.9788     1.0000
Width:
            0.0203     0.0587     0.1205     0.1824     0.2443
            0.3061     0.3680     0.4096     0.4480     0.5050
            0.5620     0.6035     0.6139     0.6243     0.6348
            0.6452     0.6557     0.6661     0.6765     0.6870
            0.6974     0.7078     0.7183     0.7287     0.7391
            0.7496     0.7600     0.7704     0.7809     0.7913
            0.8017     0.8122     0.8226     0.8330     0.8435
            0.8539     0.8643     0.8748     0.8852     0.8957
            0.9061     0.9165     0.9270     0.9374     0.9478
            0.9583     0.9687     0.9791     0.9896     1.0000

Transect 1/2_Gutter
Area:
            0.0006     0.0028     0.0069     0.0130     0.0209
            0.0308     0.0426     0.0556     0.0691     0.0845
            0.1019     0.1212     0.1410     0.1610     0.1812
            0.2015     0.2221     0.2428     0.2637     0.2848
            0.3060     0.3275     0.3491     0.3709     0.3928
            0.4150     0.4373     0.4598     0.4825     0.5053
            0.5284     0.5516     0.5750     0.5986     0.6223
            0.6462     0.6704     0.6946     0.7191     0.7437
            0.7686     0.7936     0.8187     0.8441     0.8696
            0.8954     0.9213     0.9473     0.9736     1.0000
Hrad:
            0.0149     0.0288     0.0445     0.0606     0.0768
```

```
            0.0930     0.1093     0.1383     0.1687     0.1940
            0.2152     0.2341     0.2548     0.2765     0.2988
            0.3212     0.3438     0.3664     0.3889     0.4113
            0.4335     0.4556     0.4775     0.4992     0.5208
            0.5421     0.5633     0.5843     0.6050     0.6256
            0.6460     0.6662     0.6862     0.7060     0.7256
            0.7450     0.7643     0.7834     0.8023     0.8211
            0.8397     0.8581     0.8764     0.8945     0.9125
            0.9303     0.9479     0.9654     0.9828     1.0000
Width:
            0.0480     0.1200     0.1919     0.2639     0.3359
            0.4078     0.4798     0.4935     0.5437     0.6181
            0.6925     0.7443     0.7510     0.7577     0.7645
            0.7712     0.7779     0.7847     0.7914     0.7981
            0.8048     0.8116     0.8183     0.8250     0.8318
            0.8385     0.8452     0.8520     0.8587     0.8654
            0.8721     0.8789     0.8856     0.8923     0.8991
            0.9058     0.9125     0.9192     0.9260     0.9327
            0.9394     0.9462     0.9529     0.9596     0.9664
            0.9731     0.9798     0.9865     0.9933     1.0000


****************
Analysis Options
****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... GREEN_AMPT
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 07/12/2006 00:00:00
Ending Date .............. 07/13/2006 23:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
```

```
Dry Time Step ..... 00:05:00
Routing Time Step ........ 2.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 20
Number of Threads ........ 1
Head Tolerance ........... 0.004000 ft


*********************
Control Actions Taken
*********************
```

Runoff Quantity Continuity	Volume acre-feet	Depth inches
Total Precipitation	3.795	1.791
Evaporation Loss	0.000	0.000
Infiltration Loss	2.484	1.172
Surface Runoff	1.223	0.577
Final Storage	0.089	0.042
Continuity Error (%)	-0.038	

Flow Routing Continuity	Volume acre-feet	Volume 10^6 gal
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	1.223	0.399
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.918	0.299
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.305	0.100
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

```
**************************
```

```
Time-Step Critical Elements
***************************
None


*******************************
Highest Flow Instability Indexes
*******************************
All links are stable.


*******************************
Most Frequent Nonconverging Nodes
*******************************
Convergence obtained at all time steps.


************************
Routing Time Step Summary
************************
Minimum Time Step           :     1.50 sec
Average Time Step           :     2.00 sec
Maximum Time Step           :     2.00 sec
% of Time in Steady State   :     0.00
Average Iterations per Step :     2.00
% of Steps Not Converging   :     0.00
Time Step Frequencies       :
    2.000 -  1.516 sec      :   100.00 %
    1.516 -  1.149 sec      :     0.00 %
    1.149 -  0.871 sec      :     0.00 %
    0.871 -  0.660 sec      :     0.00 %
    0.660 -  0.500 sec      :     0.00 %


***************************
Subcatchment Runoff Summary
***************************

-----------------------------------------------------------------------------------------------------------------------
                         Total      Total      Total      Total     Imperv       Perv      Total       Total      Peak  Runo
                        Precip      Runon       Evap      Infil     Runoff     Runoff     Runoff      Runoff    Runoff   Coe
Subcatchment                in         in         in         in         in         in         in    10^6 gal       CFS
```

B-2-W	1.79	0.00	0.00	1.72	0.10	0.04	0.06	0.01	1.31	0.0
B-2-W-DEV	1.79	0.00	0.00	0.52	1.44	0.83	1.19	0.17	10.20	0.6
B-2-E	1.79	0.00	0.00	1.72	0.10	0.04	0.06	0.01	1.45	0.0
OS-B-1	1.79	0.00	0.00	1.65	0.14	0.10	0.13	0.01	1.41	0.0
B-2-E-DEV	1.79	0.00	0.00	0.52	1.44	0.83	1.19	0.20	11.28	0.6

****
Node Depth Summary
****

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Time of Max Occurrence days hr:min	Reported Max Depth Feet
Jun-3	JUNCTION	0.15	0.73	6011.22	0 02:09	0.73
OUT-DEV	OUTFALL	0.14	0.59	6010.59	0 02:09	0.59
OUT-EX	OUTFALL	0.00	0.00	0.00	0 00:00	0.00
Upstream	OUTFALL	0.00	0.00	0.00	0 00:00	0.00
POND-FUTURE	STORAGE	1.62	4.77	6015.27	0 02:09	4.77

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal	Flow Balance Error Percent
Jun-3	JUNCTION	0.00	1.85	0 02:09	0	0.271	-0.000
OUT-DEV	OUTFALL	0.00	1.85	0 02:09	0	0.271	0.000
OUT-EX	OUTFALL	2.76	2.76	0 00:45	0.0196	0.0196	0.000
Upstream	OUTFALL	1.41	1.41	0 00:45	0.00886	0.00886	0.000
POND-FUTURE	STORAGE	21.48	21.48	0 00:52	0.37	0.37	-0.000

****

Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 ft³	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 ft³	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
POND-FUTURE	10.962	12.3	0.0	26.9	39.816	44.6	0 02:09	2.00

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CFS	Max Flow CFS	Total Volume 10^6 gal
OUT-DEV	90.18	0.24	1.85	0.271
OUT-EX	5.08	0.31	2.76	0.020
Upstream	3.86	0.18	1.41	0.009
System	33.04	0.72	4.21	0.299

****

Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days	hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
5	CONDUIT	1.85	0	02:09	4.02	0.85	0.79
LS	ORIFICE	0.18	0	02:09			1.00
HS	ORIFICE	0.00	0	00:00			
MS	ORIFICE	1.68	0	02:09			1.00

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
5	1.00	0.01	0.00	0.00	0.14	0.84	0.00	0.00	0.08	0.00

****
Conduit Surcharge Summary
****

No conduits were surcharged.

Analysis begun on: Fri Feb 20 20:08:18 2026
Analysis ended on: Fri Feb 20 20:08:19 2026
Total elapsed time: 00:00:01

APPENDIX D

Miscellaneous References, Computations and Summaries

- <Reserved>

APPENDIX E

Maps

- Drainage Plan Map

LEGEND

- X / XXXX — CATCHMENT I.D. / CATCHMENT AREA
- DP-A — DRAINAGE FEATURE/DESIGN POINT
- DRAINAGE BOUNDARIES
- GENERAL DEVELOPED DRAINAGE DIRECTION

NOTES

1. DATUM: STATE PLANE NAD 83; NAVD 88
2. AERIAL IMAGE 2024 BING MAPS

- EXISTING STORM SEWER
- PROPOSED STORM SEWER

0 50' 100' 200'

SCALE: 1" = 100'

CivilWorx
1807 Capitol Avenue
Suite 108
Cheyenne, WY 82001
(307) 514-1012
CivilWorxeng.com

BARNES SUBDIVISION, 2ND FILING

DRAINAGE PLAN MAP

CARLA DRIVE - N COLLEGE DRIVE

2/20/2026

RESOLUTION # _____

A RESOLUTION TO APPROVE THE VACATION OF TRACT 2, BARNES SUBDIVISION, LOCATED IN A PORTION OF SECTION 22, T14N, R66W, OF THE 6TH P.M., LARAMIE COUNTY, WY, AND APPROVE THE SUBDIVISION PERMIT AND PLAT FOR BARNES SUBDIVISION, 2ND FILING, LARAMIE COUNTY, WY.

WHEREAS, Wyoming State Statutes §18-5-301 to 18-5-306; §18-5-301 to 18-5-315 authorize Laramie County, in promoting the public health, safety, morals and general welfare of the county, to regulate the use of land through zoning in unincorporated Laramie County; and

WHEREAS, the Laramie County Board of Commissioners adopted the 2025 Laramie County Land Use Regulations; and

WHEREAS, the proposed subdivision and plat is in accordance with section 4-5-100 of the Laramie County Land Use Regulations; and

WHEREAS, the application is in conformance with the LU – Land Use zone district; and

WHEREAS, this resolution is the subdivision permit for Barnes Subdivision, 2ND Filing.

NOW THEREFORE BE IT RESOLVED BY THE GOVERNING BODY OF LARAMIE COUNTY, WYOMING, as follows:

The Laramie County Board of Commissioners finds that:

a. This application is in conformance with section 4-5-100 of the Laramie County Land Use Regulations.
b. This application is in conformance with section 2-4-104 governing the LU – Land Use zone district.

And the Board approves the Vacation of Tract 2, Barnes Subdivision, located in a portion of Section 22, T14N, R66W, of the 6th P.M., Laramie County, and approve the Subdivision Permit and Plat for Barnes Subdivision, 2nd Filing, Laramie County, WY.

PRESENTED, READ, AND ADOPTED this _____ day of _____, 2026.

LARAMIE COUNTY BOARD OF COMMISSIONERS

_____
Gunnar Malm, Chairman

ATTEST:

_____
Debra K. Lee, Laramie County Clerk

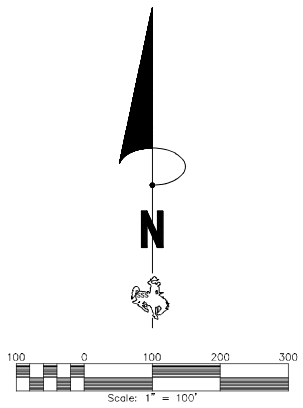
Reviewed and approved as to form:

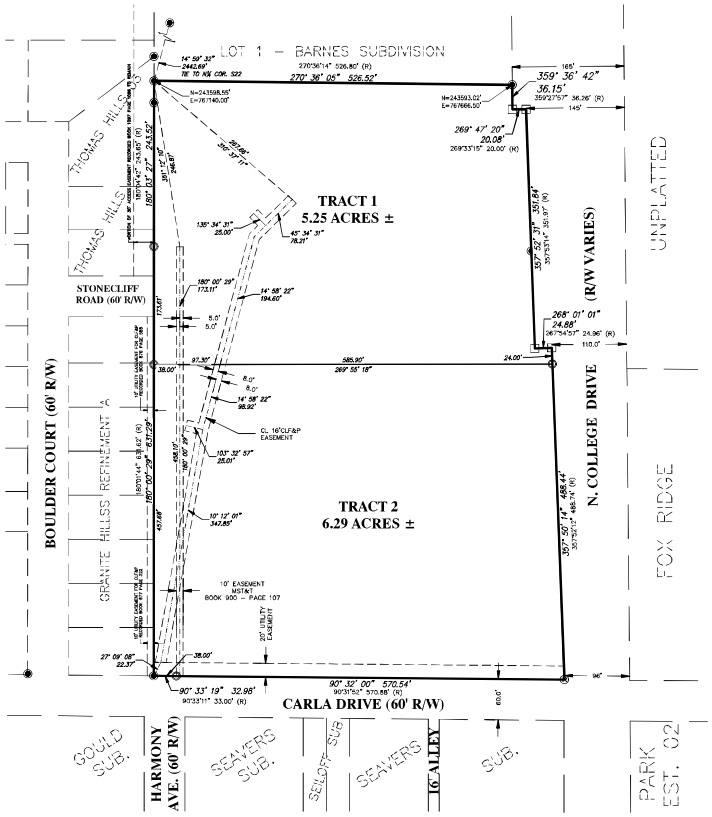
_____
Laramie County Attorney's Office

▫ NO PROPOSED CENTRAL WATER SUPPLY SYSTEM ▫ NO PROPOSED CENTRALIZED SEWAGE SYSTEM ▫ FIRE PROTECTION TO BE PROVIDED BY LCFA ▫
▫ THE SURFACE ESTATE OF THE LAND TO BE SUBDIVIDED IS SUBJECT TO FULL AND EFFECTIVE DEVELOPMENT OF THE MINERAL ESTATE ▫

LEGEND

- SET ⅝" X 24" LONG REBAR WITH 1½" ALUMINUM CAP STAMPED "SSS P.L.S. 5910"
- FOUND ALUMINUM CAP
- FOUND ⅝" REBAR
- FOUND W.D.O.T. R/W MONUMENT
- (R) DENOTES RECORD DATA
- BOUNDARY LINE
- LOT LINE
- PROPERTY LINE
- EXISTING EASEMENT





DEDICATION

KNOW ALL PERSONS BY THESE PRESENTS THAT: Roger A. Barnes, owner in fee simple of Lot 2, Barnes Subdivision, situate in a portion of Section 22, Township 14 North, Range 66 West of the 6th P.M., Laramie County, Wyoming.

Has caused the same to be vacated, replatted and known as: BARNES SUBDIVISION 2ND FILING, and does hereby declare the subdivision of said land as it appears on this plat, to be their free act and deed and in accordance with their desires..

Roger A. Barnes

OWNER ACKNOWLEDGEMENT

STATE OF WYOMING)
) SS
COUNTY OF LARAMIE)

The foregoing instrument was acknowledged before me this _____ day of _____, 2026, by Roger A. Barnes.

_____
Notary Public, Laramie County, Wyoming

My Commission Expires: _____

APPROVALS

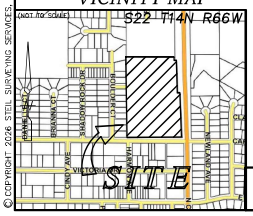
Approved by the Board of Laramie County Commissioners of Laramie County, Wyoming, this _____ day of _____, 2026.

_____ _____ ATTEST: _____
Chairman County Clerk

CERTIFICATE OF SURVEYOR

I, Jeffrey B. Jones, A Professional Land Surveyor in the State of Wyoming, for and on behalf of Steil Surveying Services, LLC, hereby state, to the best of my knowledge, information and belief, that this map was prepared from field notes taken during an actual survey made by me or under my direct supervision; and that this map correctly shows the results of said survey and that the monuments found or set are as shown.

VICINITY MAP



NOTES

1. BASIS OF BEARINGS: WYOMING STATE PLANE COORDINATES, EAST ZONE, NAD83–2011, US SURVEY FEET. GRID DISTANCES. COMBINATION FACTOR 0.999663057δ.
2. ALL UNMONUMENTED TRACT CORNERS, ANGLE POINTS AND CURVE POINTS TO BE MONUMENTED WITH A 1½" ALUMINUM CAP STAMPED "SSS PLS 5910" SET ⅝" x 24" REBAR.
3. NO PORTION OF THIS PLAT FALLS WITHIN A FEMA 100-YEAR SFHA PER F.I.R.M PANEL #56021C1092F REV 04-14-2011.
4. CWPP – SUBJECT PARCEL DOES NOT FALL WITHIN THE CWPP.
5. NO PUBLIC MAINTENANCE OF INTERNAL ROADWAYS/ACCESS EASEMENTS.

FILING RECORD

VACATION STATEMENT

IT IS THE INTENT OF THIS REPLAT TO VACATE LOT 2, BARNES ADDITION, SITUATE IN A PORTION OF SECTION 22, TOWNSHIP 14 NORTH, RANGE 66 WEST OF THE 6TH P.M., LARAMIE COUNTY, WYOMING.
EXISTING EASEMENTS TO REMAIN AS SHOWN.

REVISED: 3/18/2026
26107 FP.DWG

BARNES SUBDIVISION 2ND FILING

A SMALL REPLAT OF
LOT 2, BARNES SUBDIVISION,
SITUATE IN A PORTION OF SECTION 22,
T14N, R66W OF THE 6TH P.M.,
LARAMIE COUNTY, WYOMING

PREPARED FEBRUARY 2026

STEIL SURVEYING SERVICES, LLC
PROFESSIONAL LAND SURVEYORS
PLANNING & DEVELOPMENT SPECIALISTS
1108 WEST 10th ST. CHEYENNE, WY. 82001 ▫ (307) 634-7273
756 GILCHRIST ST. WERATLAND, WY. 82601 ▫ (307) 333-9789
www.SteilSurvey.com ▫ Info@SteilSurvey.com