BILL NO. 19-46 **ORDINANCE NO. 4.496**

AN ORDINANCE AND FINAL DEVELOPMENT PLAN RELATING TO ZONING ORDINANCE REGULATIONS AND THE ESTABLISHMENT OF USE DISTRICTS WITHIN THE CITY OF GLADSTONE, MISSOURI.

WHEREAS, pursuant to applicable City Ordinances, an application has been submitted to the Gladstone City Council to rezone Parcel #13917000201300 in Gladstone, Clay County, Missouri.

WHEREAS, public hearings have been held after the publishing of the required notices.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF GLADSTONE, MISSOURI, AS FOLLOWS:

THAT, the aforesaid land be rezoned from R-1 (Residential) to CP-2 (Planned Commercial General Business District).

SECTION 1. FINAL DEVELOPMENT PLAN APPROVAL.

The Final Development Plan for the above described property is hereby approved subject to the terms and conditions set forth herein:

1. Any and all disturbed areas shall be sodded.
2. All manicured grass and landscaped areas shall be irrigated and maintained in perpetuity.
3. All mechanical equipment located on the roof and the ground shall be screened from public view similar in design to the rest of the structure. All screening will be reviewed via the building permit process.
4. A compliant monument sign shall be used to serve the development. The monument sign will need a minimum of 240 sq. ft. of area landscaping around the sign.
5. Signage compliant with the sign code shall be used. Signage shall be approved at the time of permitting.
6. All exterior lighting shall be LED.
7. The dumpster shall be enclosed with materials consistent with the primary building. Specific colors shall be submitted and approved as part of the building permit.
8. Trash service and commercial deliveries shall occur between the hours of 7:00 a.m. to 10:00 p.m.
9. Tractor trailers, storage containers, and other commercial vehicles shall not be parked or stored overnight on the premises.
10. The outdoor play area located on the north side of the building shall incorporate landscaping using a combination of eastern redbud trees, flowers and shrubs consistent in nature throughout the site.
11. Outside recreation for the animals in the "outdoor play yard" shall occur between the hours of 6:30 a.m. and 8:30 p.m. Monday – Sunday.

INTRODUCED, READ, PASSED, AND ADOPTED BY THE COUNCIL OF THE CITY OF GLADSTONE, MISSOURI THIS 28th DAY OF OCTOBER, 2019.

Mayor Carol J. Suter

ATTEST:

Ruth E. Bocchino, City Clerk

1st Reading: October 28, 2019

2nd Reading: October 28, 2019

File #2019-014

Request for Council Action

RES ☐# City Clerk Only **BILL ☒# 19-46** **ORD # 4.496**

Date: 10/21/2019 Department: Community Development

Meeting Date Requested: 10/28/2019

Public Hearing: Yes ☒ Date: 10/28/2019

Subject: Re-plat, Zoning Change, and Site Plan Revision for Woofs Play & Stay

Background:
The applicant is requesting a re-plat, zoning change and site plan revision for the purpose of constructing a brand new Woof's Play & Stay, which happens to be a doggy day care and boarding facility proposed on NW Old Pike Road.

This project will re-plat and rezone a property currently owned by Van Chevrolet Trust. The current zoning of this property is R-1 Single Family Residential and the applicant is asking to re-zone this property from residential to commercial. The Comprehensive Plan recommends a future land use of commercial at this location. The desired zoning of this proposed project is CP-2 Planned District, General Business.

The exterior will consist of a thin faux stone veneer, cement board lap siding around the entire structure, cement board siding panel, metal awning, metal roof, and an 8 foot vinyl play yard fence.

The proposed landscaping for this site will consist of perennials, Prairie Willow shrubs, Eastern Redbud trees, Blue Grama and Little Bluestem grass.

The storm water study complies with the Kansas City Metropolitan APWA Stormwater requirements and satisfies our City Engineer.

The photometric (lighting) plan complies and conforms to City Staff standards and adjacent commercial properties.

Recommended Conditions:

City Staff recommends that the following conditions be considered if the Planning Commission and City Council choose to approve this project request:

1. Any and all disturbed areas shall be sodded.
2. All manicured grass and landscaped areas shall be irrigated and maintained in perpetuity.

RCA DUE TO CITY CLERK WEDNESDAY 12:00 PM

3. All mechanical equipment located on the roof and the ground shall be screened from public view similar in design to the rest of the structure. All screening will be reviewed via the building permit process.
4. A compliant monument sign shall be used to serve the development. The monument sign will need a minimum of 240 sq. ft. of area landscaping around the sign.
5. Signage compliant with the sign code shall be used. Signage shall be approved at the time of permitting.
6. All exterior lighting shall be LED.
7. The dumpster shall be enclosed with materials consistent with the primary building. Specific colors shall be submitted and approved as part of the building permit.
8. Trash service and commercial deliveries shall occur between the hours of 7:00 a.m. to 10:00 p.m.
9. Tractor trailers, storage containers, and other commercial vehicles shall not be parked or stored overnight on the premises.
10. The outdoor play area located on the north side of the building shall incorporate landscaping using a combination of eastern redbud trees, flowers and shrubs consistent in nature throughout the site.
11. Outside recreation for the animals in the "outdoor play yard" shall occur between the hours of 6:30 a.m. and 8:30 p.m. Monday – Sunday.

Budget Discussion: Funds are budgeted in the amount of $ from the Fund. Ongoing costs are estimated to be $ annually. Previous years' funding was $

Public/Staff Input/Commission:
A gentleman and his wife who live north of the proposed development spoke at the meeting and discussed their concerns regarding lighting, noise and storm water. The majority of their concern took place with Home Depot and an apartment complex in Kansas City, Missouri. The couple does not oppose the development and city staff as well as the project team have taken measures to address storm water, lighting, and noise regarding this proposed development.

The Planning Commission voted unanimously in favor to approve the re-plat, zoning change, and site plan revision.

City Staff recommends that the request be **APPROVED** contingent upon the conditions listed above.

Provide Original Contracts, Leases, Agreements, etc. to: City Clerk and Vendor

Austin Greer, Assistant To the City Manager/Planning Administrator
PC SW
City Attorney City Manager

RCA DUE TO CITY CLERK WEDNESDAY 12:00 PM

Community Development Department
Staff Report
Date: September 10, 2019
File: #2019-014
Requested Action: Replat, Zoning Change and Site Plan Revision
Date of PC Consideration: October 7, 2019
Date of Council Consideration: October 28, 2019

Applicant: Blake Bauer, HCI Hospitality
530 McCall Road, Suite 110
Manhattan, KS 66502

Owner: V T Inc
1550 E Missouri Ave, Suite 300
Phoenix, AZ 85014

Architect/ Engineer: Ben Moore
Ben Moore Studio
513 Leavenworth, Suite A
Manhattan, KS 66502

Address of Property: Parcel #13971000201300
NW Old Pike Road

Planning Information

- Current Zoning: R-1 Single Family Dwelling District
- Planned Land Use: The Comprehensive Plan recommends future land use as commercial
- Surrounding Uses: North – Residential R-1; South- Commercial (Chevrolet Dealership); East – Commercial (Steak & Shake, Gas Station/Convenience Store and Home Depot); West – Commercial (Chevrolet Dealership)
- Applicable Regulations: Zoning and Subdivision Ordinance and Comprehensive Plan

Additional Information

- Public Utility Availability: Existing
- Ingress/Egress: Newly constructed Ingress/Egress on NW Old Pike Road directly in front of development
- Parking Required: 16 spaces
- Parking Provided: 18 spaces
- Proposed On-Site Improvements: See site plans
- Proposed Landscaping: See site plans
- Proposed Signage: - Monument Sign

Analysis

The applicant is requesting a re-plat, zoning change and site plan revision for the purpose of constructing a brand new Woof's Play & Stay, which happens to be a doggy day care and boarding facility proposed on NW Old Pike Road.

This project will re-plat and rezone a property currently owned by Van Chevrolet Trust. The current zoning of this property is R-1 Single Family Residential and the applicant is asking to re-zone this property from residential to commercial. The Comprehensive Plan recommends a future land use of commercial at this location. The desired zoning of this proposed project is CP-2 Planned District, General Business.

The exterior of the metal building will consist of a thin faux stone veneer, cement board lap siding around the entire structure, cement board siding panel, metal awning, metal roof, and an 8 foot vinyl play yard fence.

The proposed landscaping for this site will consist of perennials, Prairie Willow shrubs, Eastern Redbud trees, Blue Grama and Little Bluestem grass.

The storm water study complies with the Kansas City Metropolitan APWA Stormwater requirements and satisfies our City Engineer.

The photometric (lighting) plan complies and conforms to City Staff standards and adjacent commercial properties.

Recommended Conditions

City Staff recommends that the following conditions be considered if the Planning Commission and City Council choose to approve this project request:

1. Any and all disturbed areas shall be sodded.
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3. All mechanical equipment located on the roof and the ground shall be screened from public view similar in design to the rest of the structure. All screening will be reviewed via the building permit process.
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5. Signage compliant with the sign code shall be used. Signage shall be approved at the time of permitting.
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7. The dumpster shall be enclosed with materials consistent with the primary building. Specific colors shall be submitted and approved as part of the building permit.

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9. Tractor trailers, storage containers, and other commercial vehicles shall not be parked or stored overnight on the premises.
10. The outdoor play area located on the north side of the building shall incorporate landscaping using a combination of eastern redbud trees, flowers and shrubs consistent in nature throughout the site.
11. Outside recreation for the animals in the "outdoor play yard" shall occur between the hours of 6:30 a.m. and 8:30 p.m. Monday – Sunday.

Recommendation

City Staff recommends that the request be **APPROVED** contingent upon the conditions listed above.

TO: Owners of Property Within 185' & Other Interested Parties

FROM: Community Development Department

DATE: September 13, 2019

SUBJECT: Replat, Zoning Change and Site Plan Revision, NW Old Pike Road, Parcel #13917000201300

Public Hearing File #2019-014

Public notice is hereby given that the Gladstone Planning Commission will meet on **Monday, October 7, 2019 at 7:00 pm** for a Replat, Zoning Change, and Site Plan Revision for the property located at NW Old Pike Road, parcel #13917000201300. The property is legally described as VT TRACT LT 1 in the City of Gladstone, Clay County, Missouri.

Applicant: Blake Bauer, HCI Hospitality
Owner: V T Inc.

The applicant is requesting a replat, a zoning change from residential to commercial, and a site plan revision of the property at NW Old Pike Road, parcel #13917000201300 to build a dog day care.

The City Council will hold public hearing on **Monday, October 28, 2019** at 7:30 pm.

This letter is being sent to you because you are within 185' of the above address. If you have any questions, please call the Community Development Department at 423-4110.

Thank you.

AFFIDAVIT OF PUBLICATION

NPG Newspapers, Inc., P.O. Box 29, St. Joseph, MO 64502

Reference: *90701* *P.O. :*
Ad ID: *6615883* *DESC. :Hearing 2019-014.Review prop NW Old Pike*

CHERYL LAMB
CITY OF GLADSTONE
7010 N. HOLMES
GLADSTONE, MO 64118

County of Clay
State of Missouri

I, SANDRA RIDINGS, being duly sworn according to law, state that I am the Legal Advertising Coordinator of THE COURIER TRIBUNE, a weekly newspaper of general circulation in the County of Clay County, State of Missouri, where located; which newspaper has been admitted to the Post Office as periodical class matter in the City of Liberty, Missouri, the city publication; which newspaper had been published regularly and consecutively for a period of four years and has a list of bona fide subscribers voluntarily engaged as such who have paid or agree to pay a state price for a subscription for a definite period of time. Affiant further declares that said newspaper is qualified under and has complied with provision of Section 493.050 to 493.090, Missouri Revised Statutes 1949, as amended. The affixed notice appeared in said newspaper on the following consecutive week(s):

(Published in the Courier-Tribune Thurs., 9/12/19)

PUBLIC HEARING #2019-014

All persons are hereby notified that the **Gladstone Planning Commission will conduct a public hearing on Monday, October 7, 2019 at 7:00 pm** in the Council Chambers of Gladstone City Hall to **review a Replat, Zoning Change and Site Plan Revision for the property at NW Old Pike Rd**, Parcel #13917000201300 legally described as V T TRACT LT 1 in the City of Gladstone, Clay County, Missouri. Applicant: Blake Bauer, HCI Hospitality. Owner: V T Inc. Subsequently, on **Monday, October 28, 2019 at 7:30 pm, the City Council will hold a public hearing on the same request.** The public is invited to attend. Please call 423-4110 if you have any questions.

Run Dates: 09/12/19 to 09/12/19
Appearances: *2*
AD SPACE: *41*

(Signed) Sandra Ridings

Subscribed and sworn before me this 12th day of September 2019

Marcie K Piper Notary Public

MARCIE K. PIPER
Notary Public - Notary Seal
Andrew County - State of Missouri
Commission Number 14397301
My Commission Expires Apr 15, 2022

My Commission Expires: April 15, 2022

DEVELOPMENT APPLICATION

CITY OF GLADSTONE
7010 N HOLMES STREET
GLADSTONE, MISSOURI 64118
PHONE: 436-4110 FAX: 436-2228

File #: _____

Date: _____

Application Type:

- ☐ Special Use Permit ($500)
- ■ Zoning Change ($500)
- ■ Site Plan Revision ($500)
- ☐ Right-of-Way Vacation ($200)
- ☐ Variance – BZA ($200)
- ■ Final Plat/Replat ($75)

Address of Action: NW Old Pike Rd

Legal Description:
Attach under separate cover if needed.
V T Tract LT 1

Proposed Change: Replat of lot number one of the V T Tract, lot split of lot number 1. Rezone of new lot from R-1 to C-2.

Applicant/Property Owner Information:

☐ Applicant(s) Blake Bauer
Company HCI Hospitality
Address 530 McCall Rd, Suite 110, Manhattan, KS 66502
Phone 785-370-0642 Fax: N/A E-Mail: blake@hcihospitality.com

☐ Property Owner (if different than applicant)
Company V T Inc
Address 1550 E Missouri Ave, Suite 300, Phoenix, AZ 85014
Phone 602-230-1051 Fax: N/A E-Mail: N/A

■ Architect/Engineer Ben Moore
Company Ben Moore Studio
Address 513 Leavenworth, Suite A, Manhattan, KS 66502
Phone 785-560-3111 Fax: N/A E-Mail: ben@benmoorestudio.com

Please indicate in one box above which person is to be the contact.

Applicant's Signature _____ Date 9-6-19

DEVELOPMENT APPLICATION

Office Use Only:

Publication Dates:
Planning Commission _____
City Council _____
BZA _____

Public Hearing Dates:
Planning Commission _____
City Council _____
BZA _____

Planning Commission **Date**
☐ Approval _____
☐ Denial _____
☐ Withdrawn _____

City Council **Date**
☐ Approval _____
☐ Denial _____
☐ Withdrawn _____

BZA **Date**
☐ Approval _____
☐ Denial _____
☐ Withdrawn _____

Deposit: $ _____

Charges:

Office Fee	$ 75.00
Certified Mail (_____@_____)	$ _____
PC Legal Notice	$ _____
CC Legal Notice	$ _____
Other	$ _____
Sub-total	$ _____
Balance	$ _____

Amount Overpaid $ _____ Check Requested _____

Amount Underpaid $ _____ Invoice Requested _____

DEVELOPMENT APPLICATION

Applicants Requiring a Public Hearing: Special Use Permit, Site Plan Revision or Zoning Change

SUBMITTAL REQUIREMENTS

Completed application
Owner's authorization signed (if applicable)
Legal description- County records
Digital copy of plans (if necessary)
(1) 11x17 paper copy (if necessary)
(1) 24x36 Mylar copy (if necessary)
(3) 24x36 paper copies folded (if necessary)

DEPOSIT FEE

The $500 fee listed on the form and paid at the time of application is a deposit toward the costs the City of Gladstone incurs during the processing of your application. This fee goes toward the following costs:

Office fee $75.00
Certified mail notices to surrounding property owners within 185'- amount varies.*
Planning Commission Legal Notice- amount varies*
City Council Legal Notice- amount varies*

** Indicates fees for items required by State Law. The fee amount for certified mail will vary depending upon the number of property owners within 185 feet of your property. The Legal Notice fee will also vary generally depending upon the length of the legal description of your property.*

After the total costs are compiled for your application, you will be billed for any costs remaining over the initial $500 application deposit fee. If the costs accrued are under $500, you will be reimbursed for the difference.

As the money deposited for your application goes toward real costs paid by the City, there is no refund if your application is denied by the City Council. If you withdraw your application before some of the costs are accrued by the City, you may be entitled to a refund.

LEGAL NOTICE SIGN POSTED

In order to provide residents of the City with information pertaining to the public hearing regarding your request; a sign is posted on the property during part of the application process. This sign states that an application for a land use change (rezoning, site plan revision, or special use permit) has been made for this property and encourages people to call or come by City Hall for more information.

Such sign is generally posted in the right-of-way in front of your property. If for some reason the sign is in an awkward location, please call City Hall and we can see about moving the sign to a better location.

DEVELOPMENT APPLICATION

Applicants Requiring a Public Hearing: Right-of-Way Vacation

SUBMITTAL REQUIREMENTS

Completed application
Owner's authorization signed (if applicable)
Legal description- County records
Digital copy of plans (if necessary)
(1) 11x17 paper copy (if necessary)
(1) 24x36 Mylar copy (if necessary)
(3) 24x36 paper copies folded (if necessary)

DEPOSIT FEE

The $200 fee listed on the form and paid at the time of application is a deposit toward the costs the City of Gladstone incurs during the processing of your application. This fee goes toward the following costs:

Office fee $75.00
Certified mail notices to surrounding property owners within 185'- amount varies.*
Planning Commission Legal Notice- amount varies*
City Council Legal Notice- amount varies*

** Indicates fees for items required by State Law. The fee amount for certified mail will vary depending upon the number of property owners within 185 feet of your property. The Legal Notice fee will also vary generally depending upon the length of the legal description of your property.*

After the total costs are compiled for your application, you will be billed for any costs remaining over the initial $200 application deposit fee. If the costs accrued are under $200, you will be reimbursed for the difference.

As the money deposited for your application goes toward real costs paid by the City, there is no refund if your application is denied by the City Council. If you withdraw your application before some of the costs are accrued by the City, you may be entitled to a refund.

LEGAL PROTEST PETITIONS

In accordance with State Law, neighboring property owners who are displeased with the application request may decide to circulate a protest petition against it. While the details and requirements for this petition are beyond the scope of this handout, it generally works as follows:

If the petition is signed by owners of 30% of the surrounding property that is within 185 feet of the parcel (minus street right-of-ways), the final City Council action has to have a minimum of four (4) positive votes for the request to be approved. The application cannot be approved if three (3) vote "yes" and two (2) "no".

For further information regarding this handout, please call or come by the Community Development Department at 7010 N. Holmes, 423-4110.

DEVELOPMENT APPLICATION

City Code Variance Request: Board of Zoning Adjustment

SUMMITTAL REQUIREMENTS

Completed application
Owner's authorization signed (if applicable)
Legal description- County records
Information on the proposed change including pictures of the property, property surveys, written comments from impacted neighbors, etc.

DEPOSIT FEE

The $200 fee listed on the form and paid at the time of application is a deposit toward the costs the City of Gladstone incurs during the processing of your application. This fee goes toward the following costs:

Office fee $75.00
Certified mail notices to surrounding property owners within 185'- amount varies.*
Planning Commission Legal Notice- amount varies*

** Indicates fees for items required by State Law. The fee amount for certified mail will vary depending upon the number of property owners within 185 feet of your property. The Legal Notice fee will also vary generally depending upon the length of the legal description of your property.*

After the total costs are compiled for your application, you will be billed for any costs remaining over the initial $200 application deposit fee. If the costs accrued are under $200, you will be reimbursed for the difference.

As the money deposited for your application goes toward real costs paid by the City, there is no refund if your application is denied by the Board of Zoning Adjustment. If you withdraw your application before some of the costs are accrued by the City, you may be entitled to a refund.

Preliminary & Final Plat/Replat Submittals

SUMMITTAL REQUIREMENTS

Completed application
Owner's authorization signed (if applicable)
Legal description- County records
Digital copy of plans (if necessary)
(1) 11x17 paper copy (if necessary)
(1) 24x36 Mylar copy (if necessary)
(3) 24x36 paper copies folded (if necessary)

FEE

The $75 fee listed on the form and paid at the time of application goes toward the costs the City of Gladstone incurs during the processing of your application. As the fee for your application goes toward real costs paid by the City, there is no refund.

DEVELOPMENT APPLICATION

OWNER'S AUTHORIZATION

I, V.T. Inc. (Owner's name), do hereby authorize Blake Bauer (Applicant's name)

to apply for the following action on my property at NW Old Pike Rd, VT Tract LT 1

_____.

a. Rezone from R-1 to C-2

b. Site Plan Revision X

c. Special Use Permit _____

d. Variance _____

e. Plat/Replat X

Date: 9/6/19 Owner's Signature: Robert T Hopcroft

NOTARIZATION

State of MISSOURI

County of Jackson

Subscribed and sworn before me this 6 day of September, 2019

Notary's Signature:

Cynthia Aitken

My Commission expires: 4-26-2023

(seal)

CYNTHIA AITKEN
Notary Public, Notary Seal
State of Missouri
Jackson County
Commission # 15178092
My Commission Expires 04-26-2023

DEVELOPMENT APPLICATION

Additional Required Documents

(check if needed)	Comments
■ Site Plan	
☐ Traffic Study	
■ Landscaping Plans	
■ Storm Water	
■ Photometric Study	
■ Sign Plan	
■ Colored Elevation / Rendering	
■ Materials Board	Will be submitted at development meeting.

Planning Commission Process

Number of Planning Commissioners: 12

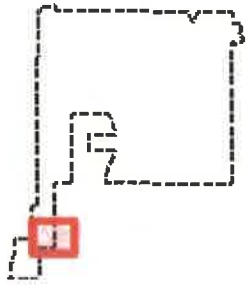
Length of time until Public Hearing: Refer to Planning Commission Calendar

City Council

Length of time until City Council Meeting*: Refer to City Council Calendar

*final decision comes from City Council

Gladstone, MO



Legend

- KCPL Lights
- Gladstone Lights
- School Point
- Bike Parking
- Bus Stop
- Point of Interest
- Church
- Apartment Point
- Street Centerline
- Edge Of Pavement
- Driveway
- City Limits
- Parcel
- House Number
- Building Footprint
- School Polygon
- City Park
- Villages
- Apartment Polygon

814.8 0 407.41 814.8 Feet

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

PC File2019-014 Woof's
Parcel# 13917000201300

1 Gladstone Site Plan
Scale: 1/32" = 1'-0"

PROGRESS PRINT NOT FOR CONSTRUCTION

Ben Moore Studio, LLC
Architecture • Planning
Council Grove, KS
7654643111

WOOFS PLAY STAY GROOMING

WOOFS- NKC
Play - Stay - Grooming
NW Old Pike Road

CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & CONDITIONS AT THE JOB SITE

DATE: 6/17/16

REVISIONS:

TITLE: SITE PLAN

SHEET: A1

PROJECT: 16-11

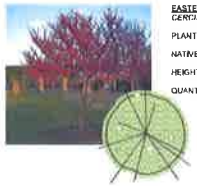
PRAIRIE WILLOW
SALIX HUMILIS

PLANT TYPE: SHRUB

NATIVE ENVIRONMENT: PRAIRIE, FULL SUN

HEIGHT: 3 FT TO 9 FT

QUANTITY: 8



EASTERN REDBUD
CERCIS CANADENSIS

PLANT TYPE: TREE

NATIVE ENVIRONMENT: PRAIRIE, FULL SUN

HEIGHT: 15 FT TO 25 FT

QUANTITY: 3

BLUE GRAMA GRASS
BOUTELOUA GRACILIS

PLANT TYPE: GRASS

NATIVE ENVIRONMENT: PRAIRIE, FULL SUN

HEIGHT: 1 FT TO 2 FT

QUANTITY: 7

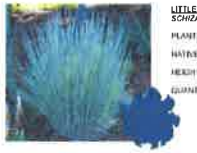
BUTTERFLY MILKWEED
ASCLEPIAS TUBEROSA

PLANT TYPE: HERBACEOUS PERENNIAL

NATIVE ENVIRONMENT: PRAIRIE, FULL SUN

HEIGHT: 1 FT TO 2 FT

QUANTITY: 11



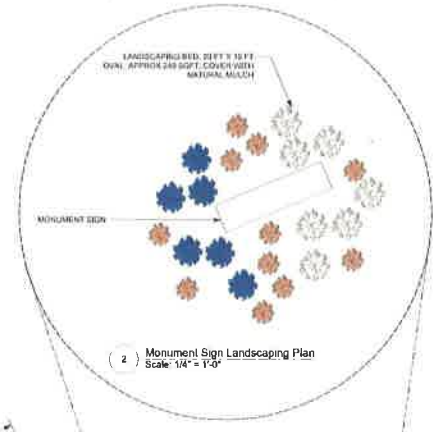
LITTLE BLUESTEM
SCHIZACHYRIUM SCOPARIUM

PLANT TYPE: GRASS

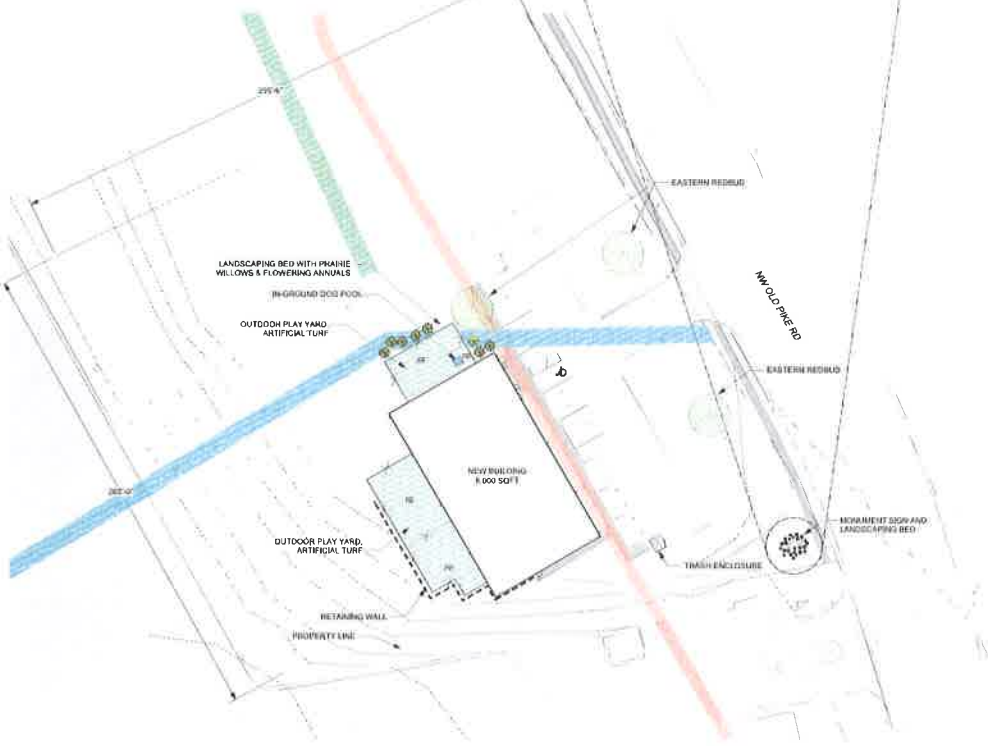
NATIVE ENVIRONMENT: PRAIRIE, FULL SUN

HEIGHT: 2 FT TO 3 FT

QUANTITY: 6



2 Monument Sign Landscaping Plan
Scale: 1/4" = 1'-0"



1 Landscaping Plan
Scale: 1/32" = 1'-0"

PROGRESS PRINT
NOT FOR CONSTRUCTION

Ben Moore Studio, LLC
Architecture • Planning
Council Grove, KS
785.560.3111
ben@benmoorestudio.com

WOOFS
PLAY STAY GROOMING

WOOFS- NKC
Play - Stay - Grooming
NW Old Pike Road

CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & CONDITIONS OF THE JOB SITE

DATE: 6/17/19

REVISIONS:

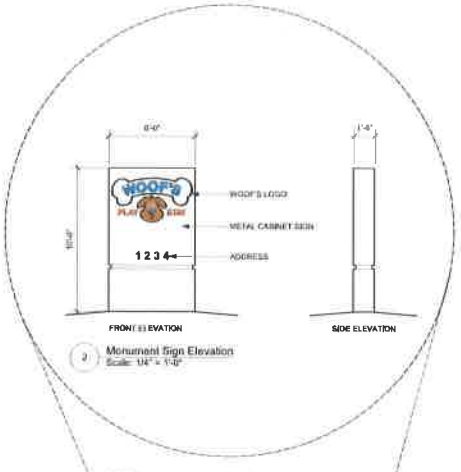
TITLE: LANDSCAPING PLAN

SHEET: A2 OF 5

PROJECT: 19-11

4 South Signage Elevation
Scale: 1/8" = 1'-0"

3 East Signage Elevation
Scale: 1/8" = 1'-0"



2 Monument Sign Elevation
Scale: 1/4" = 1'-0"

1 Key Plan
Scale: 1/32" = 1'-0"

PROGRESS PRINT
NOT FOR CONSTRUCTION

Ben Moore Studio, LLC
Architecture • Planning
Council Grove, KS
7635480311

WOOF'S PLAY STAY GROOMING

WOOFS- NKC
Play - Stay - Grooming
NW Old Pike Road

CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & CONDITIONS AT THE JOB SITE

DATE: 6/11/18

REVISIONS:

TITLE: SIGNAGE PLAN

SHEET: A3

PROJECT: 18-11

1 Floor Plan
Scale: 1/8" = 1'-0"

WOOFS- NKC

Play - Stay - Grooming

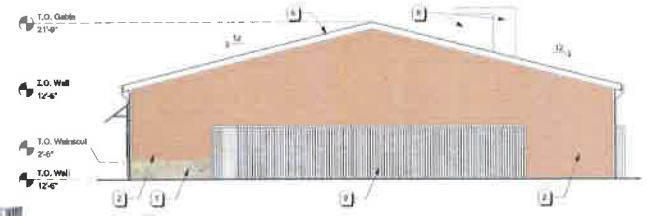
NW Old Pike Road

WOOF'S PLAY STAY GROOMING

Ben Moore Studio, LLC
Architecture • Planning
Council Grove, KS
785-640-3711
studio@benmoorearchitects.com

PROGRESS PRINT
NOT FOR CONSTRUCTION

9 Exterior Perspective - Looking South
NTS



4 North Elevation
Scale: 1/8" = 1'-0"

3 South Elevation
Scale: 1/8" = 1'-0"

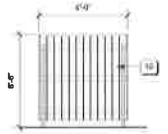
ELEVATION NOTES

1. THIN FAUX STONE VENEER
2. CEMENT BOARD LAP SIDING
3. CEMENT BOARD SIDING PANEL
4. BRAND SIGNAGE
5. METAL AWNING
6. ARCHITECTURAL ASPHALT SHINGLE
7. ROOF TOP HVAC UNIT
8. RTU SCREEN
9. VINYL PLAY YARD FENCE
10. CEDAR PICKETS, PAINT WHITE

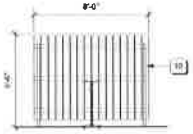
8 Exterior Perspective - Looking North
NTS

2 East Elevation
Scale: 1/8" = 1'-0"

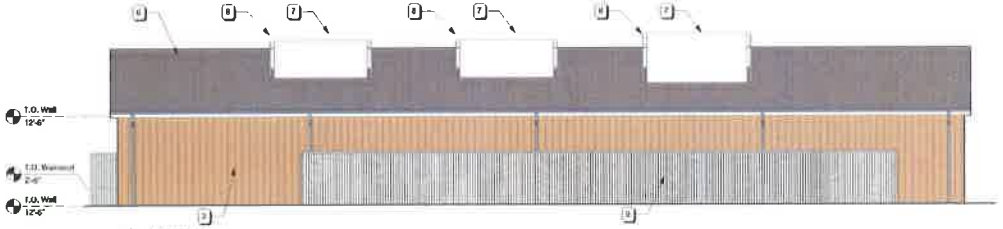
7 Exterior Perspective - Trash Enclosure
NTS



6 Fence Side Elevation
Scale: 1/4" = 1'-0"



5 Fence Elevation
Scale: 1/4" = 1'-0"



1 West Elevation
Scale: 1/8" = 1'-0"

PROGRESS PRINT NOT FOR CONSTRUCTION

Ben Moore Studio, LLC
Architecture • Planning
Council Grove, KS
785-560-3111

WOOFS- NKC
Play - Stay - Grooming
NW Old Pike Road

CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & CONDITIONS AT THE JOB SITE

DATE: 9/17/19

REVISION:

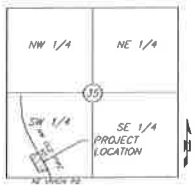
TITLE: ELEVATIONS

SHEET: A5

PROJECT: 19-11

A REPLAT OF LOT 1, VT TRACT

SW 1/4, SECTION 35, TOWNSHIP 51 NORTH, RANGE 33 WEST
GLADSTONE, CLAY COUNTY, MISSOURI



VICINITY MAP
SEC. 35-51-33
N.T.S.

SCALE
0' 30' 60'

LEGEND
- ○ = MONUMENT FOUND AS NOTED
- ★ = SET MONUMENT AS NOTED
- ○ = FOUND 1/2" IRON BAR AT CORNER UNLESS OTHERWISE NOTED
- ● = SET 1/2" IRON BAR AT CORNER W/ J & J CAP
- (P) = PLATTED DISTANCE
- (M) = MEASURED DISTANCE
- D/E = DRAINAGE EASEMENT
- S/E = SANITARY SEWER EASEMENT
- B/L = BUILDING SETBACK LINE
- U/E = UTILITY EASEMENT

DEDICATION:
The undersigned proprietors of the tract of land described herein have caused the same to be subdivided in the manner as shown on the accompanying plat, which subdivision and plat shall hereafter be known as "REPLAT OF LOT 1, VT TRACT"

ACKNOWLEDGMENTS
IN TESTIMONY WHEREOF: VT, Inc. has caused these presents to be executed this _____ day of _____, 2019.

By: _____
Robert T. Holcomb, Treasurer

STATE OF)
) SS
COUNTY OF)

BE IT REMEMBERED, that on this _____ day of _____, 20____ before me, the undersigned, a Notary Public in and for said County and State came Robert T. Holcomb, who is personally known to me to be the same person who executed the foregoing instrument of writing as his own free act and deed.

PROPERTY DESCRIPTION:

LOT 1, VT TRACT, A SUBDIVISION OF LAND IN THE CITY OF GLADSTONE, CLAY COUNTY, MISSOURI, ACCORDING TO THE RECORDED PLAT THEREOF RECORDED AS INSTRUMENT NO. 2015000700, IN BOOK H, PAGE 112, IN THE OFFICE OF THE RECORDER OF DEEDS OF CLAY COUNTY, MISSOURI

GENERAL SURVEY NOTES:

1.) The plat of VT TRACT, is recorded in Book H at Page 112 in the Recorder of Deeds Office in Clay County, Missouri

2.) Title Report # NCS-923381-KCTY, dated July 17, 2019 at 8:00 AM provided by First American Title Insurance Company was provide by client

3.) Basis of Bearing was established by the Missouri State Plane Coordinate System from GPS Observation

4.) The subject property is located in Zone X, areas determined to be outside the 0.2% annual chance floodplain, as shown on Flood Insurance Rate Map (FIRM) 29047C0212E, effective August 3, 2015

5.) Total Area 192,898 square feet or 4.43 acres more or less

CLIENT:
Buck Driggs
Driggs Design

PROPERTY LOCATION:
NW Old Pike Road
Gladstone, MO

CITY OF GLADSTONE APPROVALS:

This plat of "A REPLAT OF LOT 1, VT TRACT" has been submitted to and approved by the City Planning Commission this _____ day of _____, 2019, and by the City Council this _____ day of _____ 2019.

_____ _____
Mayor, Carol Suter City Clerk, Kris Keefover

_____
Planning Commission Chairman,
Jennifer McGee

1	Initial Submittal	8/23/19

Location: S:\19243 - Old Pike Road\DRAWINGS\WOOFS REPLAT.dwg

J & J SURVEY LLC

STATE OF MISSOURI
JOHN R. JONES
NUMBER
PROFESSIONAL LAND SURVEYOR
8-5-19
DATE

CERTIFICATION:

I hereby certify that this drawing is based on an actual field survey made by me or under my direct supervision on the 15th day of August, 2019 and that said survey meets or exceeds the current Missouri Standards for Property Boundary Surveys, as established by the Missouri Board for Architects, Professional Engineers and Land Surveyors, and the Missouri Department of Natural Resources, Division of Geology and Land Survey

SHEET 1 OF 1

WOOF'S GLADSTONE DEVELOPMENT

Stormwater Drainage Analysis

September 5, 2019

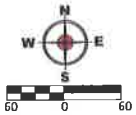
PRELIMINARY DRAFT

DRIGGS DESIGN GROUP, PA
Surveying Engineering Planning

Table of Contents

EXISTING CONDITIONS

PROPOSED CONDITIONS



EXISTING CONDITIONS				
DRAINAGE AREA	TURF	CONCRETE	ROOFTOP	TOTAL (SQ. FT.)
EA-1	94,183	0	0	94,183
			TOTAL AREA:	94,183

LEGEND

- CONCRETE
- TURF AREAS
- BUILDING

PROPOSED CONDITIONS				
DRAINAGE AREA	TURF	CONCRETE	ROOFTOP	TOTAL (SQ. FT.)
DA-1	75,200	10,983	8,000	94,183
			TOTAL AREA:	94,183

CITY OF GLADSTONE, KANSAS
GLADSTONE WOOF'S
DRAINAGE EXHIBIT A

DRIGGS DESIGN GROUP, PA
Surveying Engineering Planning
MANHATTAN HAYS EMPORIA

Project No.: N/A
Date: 9/6/2019
Sheet No.: 1 OF 1

Andrew Ortiz 9/6/2019 Gladstone_Woof's Drainage Exhibit.dwg

BACKGROUND

HCI Hospitality has contracted with the Driggs Design Group, PA to provide a drainage analysis for the proposed Woof's located at the north of NW Vivian Road along NW Old Pike Road in Gladstone, Missouri. An aerial photograph along with the project limits can be found in Exhibit A. This document shall service as the *preliminary* drainage study for the proposed development site.

This drainage study provides the hydraulic analysis for the determination of stormwater runoff for both preconstruction and post construction activities per Kansas City Metropolitan APWA Stormwater Requirements. The storm water analysis was completed for the 2-year, 10-year and 100-year storm events per the Kansas City Metropolitan APWA Stormwater requirements. As part of the hydraulic analysis, locations for stormwater detention and/or retention were identified and designed to ensure that post construction runoff for the site remained equal to or less than that of the preconstruction site.

EXISTING CONDITIONS

The proposed site consists of one existing drainage area. The existing drainage area will be referred to as EA-1. The existing drainage area of EA-1 consists of 2.16 acres in size and flows to the north west to an existing storm drain inlet. The drainage area is currently undeveloped. Exhibit A provides an overview of the existing drainage patterns for the proposed development location. The existing drainage analyzed for the hydraulic analysis has been identified as EA-1, while the proposed drainage areas have been identified as DA-1. The flow through EA-1 and DA-1 was considered to have sheet and shallow flow for calculations of time of concentration.

HYDRAULIC ANALYSIS

The Driggs Design Group, PA completed the requested hydraulic analysis utilizing the TR-55 Urban Hydrology for Small Watersheds method developed by the United States Department of Agriculture an approved method of the Kansas City Metropolitan APWA Stormwater requirements. This method of

calculating storm water runoff is an industry standard and generally accepted by most communities for determinations made regarding stormwater runoff in small urban watersheds. Additional information pertaining to the hydraulic analysis is provided below:

Runoff Determination

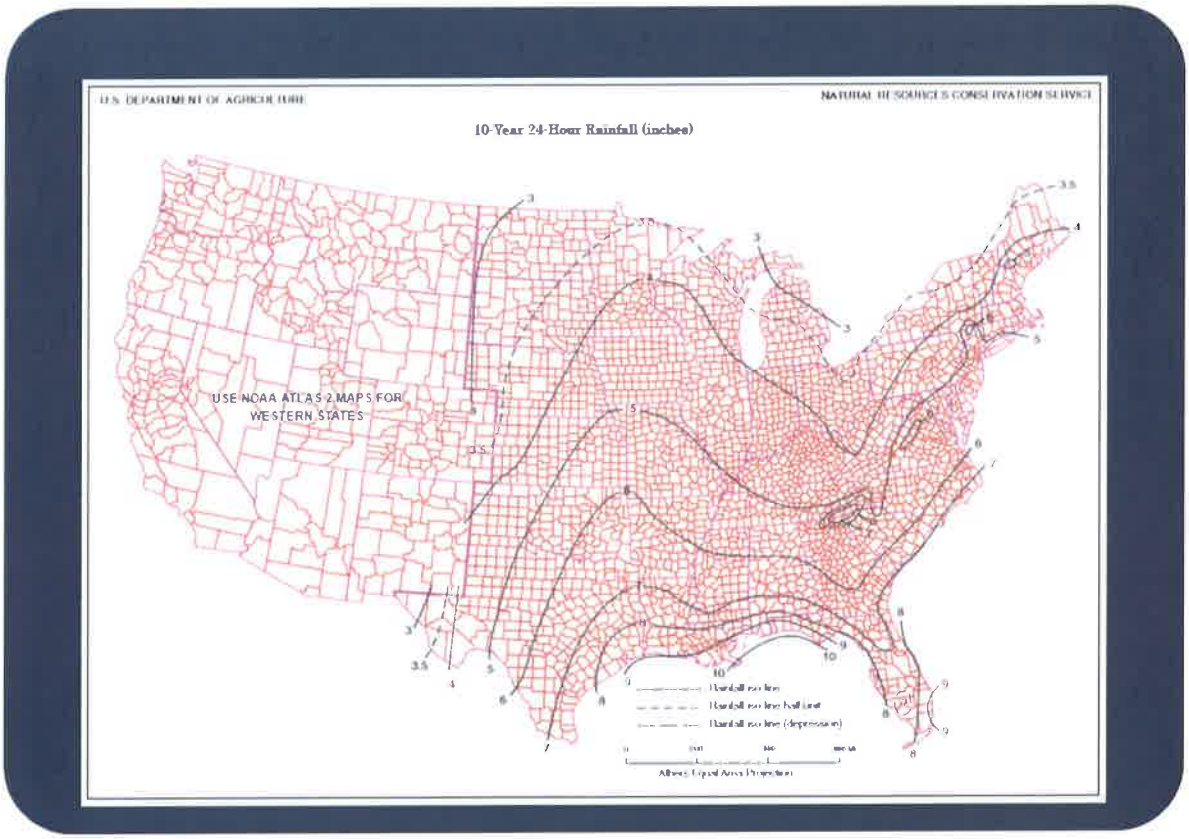
For this hydraulic analysis, the Driggs Design Group, PA identified one existing basin within the proposed project area being studied. This existing drainage area is identified in Exhibit B as EA-1. The proposed drainage area is identified in Exhibit B as DA-1. As part of the analysis, the basin was further broken down based on the appropriate surface area type as listed below. The breakdown of each drainage sub basin and its surface type is provided in Figure 1.

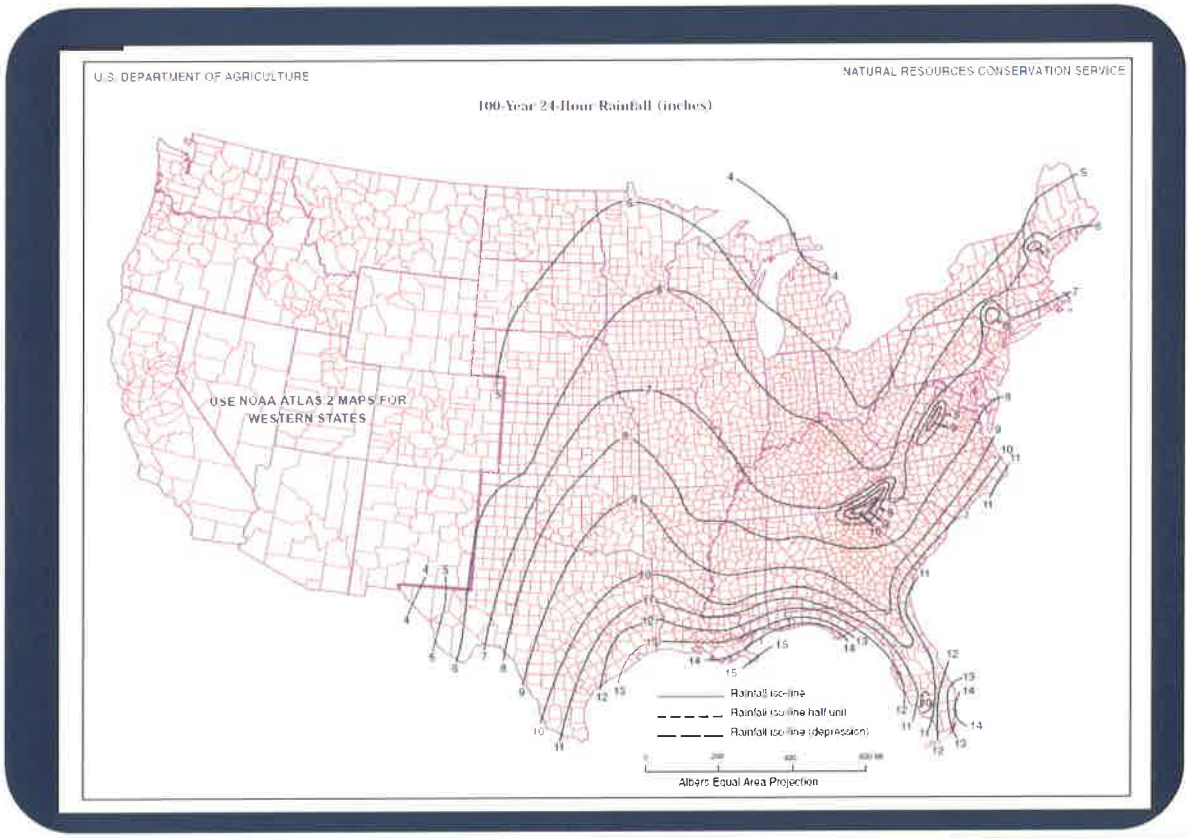
Sub Basin Drainage Area Information							
Drainage Area ID	Turf	Concrete	Roof Top	Gravel	Total (sf)	Total (sq mi)	Total (Ac)
EA-1	94,183 100%	0%	0%	0%	94,183	0.003378	2.16
DA-1	75,200 80%	10,983 12%	8,000 8%	0%	94,183	0.003378	2.16

Figure 1 Sub Basin Drainage Information

The information developed within Figure 1 along with the soils information within the project limits was utilized to determine the runoff curve number for each sub basin. The soil type identified in the project area was obtained from United States Department of Agriculture (USDA) Soil Surveys. From these soil surveys, it was determined that the drainage area consists of primarily Know Silt Loam which is classified as a Type C Soil and Snead-Rock Outcrop complex which is classified as Type D Soil. The weighted runoff curve number for EA-1 was calculated as 75. The Kansas City Metropolitan APWA requires the CN number of 74 be utilized for Hydrologic Group C Soils. The proposed soil information was calculated using a CN of 98 for impervious cover types. Since 75.6% of the remaining area is Hydrologic Group Type C soils a CN number of 74 was used to calculate the turf areas for the proposed drainage area. For additional information, pertaining to the calculations of the Runoff Curve Numbers, see Attachment A1-A2 in Appendix A.

To determine the appropriate runoff for the drainage areas, the 2, 10 and 100-year 24-hour storm rainfall distribution maps utilized by the National Resources Conservation Services (SCS) Rainfall Distribution Charts for the development of this drainage study is provided in Figure 2.


U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
10-Year 24-Hour Rainfall (inches)
USE NOAA ATLAS 2 MAPS FOR WESTERN STATES
Albers Equal Area Projection


U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
100-Year 24-Hour Rainfall (inches)
USE NOAA ATLAS 2 MAPS FOR WESTERN STATES
Rainfall isoline
Rainfall isoline half unit
Rainfall isoline (depression)
Albers Equal Area Projection

The above information was used to determine the peak runoff rate for each drainage basin. The runoff for the existing basin is provided in Attachments A1-A5 in Appendix A.

Time of Concentration Calculations

From the information developed in Attachments A1-A2, the time of concentrations and travel times were calculated for the drainage basin. The time of concentrations were developed based on the type of flow that was utilized through each sub basin. Based on a review of the drainage area, EA-1 and DA-1 consisted of sheet and shallow flow. Calculations for the time of concentration for the basins can be found in Attachments B1-B2 in Appendix B. The Kansas City Metropolitan APWA requires a minimum of five minutes. The time of concentration for both the existing and proposed drainage areas were less than five minutes, therefore five minutes was used all peak flow calculations.

Peak Discharges

The Tabular Hydrograph Method for calculating peak discharge for each individual sub basin was used to determine the peak discharge for the entire drainage area. The worksheets utilized for the peak discharge calculations are provided in Attachments C1-C4 in Appendix C. Based on this analysis, it was determined that the peak flow for the drainage areas in their predeveloped condition for the 10-year storm event for EA-1 is 9.18 cubic feet per second. The total discharge of the proposed development for DA-1 is 10.41 cubic feet per second.

Peak Discharge Information

DRAINAGE AREA	RAINFALL P (in)	TIME OF CONCENTRATION	INITIAL ABSTRATION Ia (in)	Ia/P	RUNOFF Q (in)	DRAINAGE AREA Am (sq mi)	PEAK DISCHARGE Qp (cfs)
EA-1 (2 Yr.)	3.5	0.083	0.667	0.191	1.32	0.003	4.34
EA-1 (10 Yr.)	5.3	0.083	0.667	0.126	2.72	0.003	9.19
EA-1 (100 Yr.)	7.5	0.083	0.667	0.089	4.63	0.003	15.78
DA-1 (2 Yr.)	3.5	0.083	0.532	0.152	1.56	0.003	5.22
DA-1 (10 Yr.)	5.3	0.083	0.532	0.100	3.05	0.003	10.41
DA-1(100 Yr.)`	7.5	0.083	0.532	0.071	5.03	0.003	17.16

STORMWATER DETENTION

Based on the stormwater requirements of the Kansas City Metropolitan APWA Stormwater requirements post development peak discharge rates shall not exceed those indicated below:

- 50% storm peak rate less than or equal to 0.5 cubic feet per second per site acre
- 10% storm peak rate less than or equal to 2.0 cubic feet per second per site acre
- 2% storm peak rate less than or equal to 3.0 cubic feet per second per site acre

From the information above, the total storm water discharge for the drainage area EA-1 for the 10-year storm and 100-year storm event prior to construction is 9.19 and 15.78 cubic feet per second respectively. For DA-1 approximately 17.16 cubic feet per second must be captured for the 100-year storm. Utilizing worksheet 6a in Appendix D of this report, the required storm water detention required for the proposed improvements of DA-1 is 7,106 cubic feet for the 100-year storm.

RECOMMENDATIONS

Based on the review of the proposed site plan, it is the recommendation of the Driggs Design Group, PA that the stormwater detention areas for DA-1 be constructed along the north side of the proposed lot. The required outlet for the post-development peak discharge for a 10% storm is less than or equal to 2.0 cubic feet per second per site acre. The area of DA-1 is 2.16 acres, therefore the maximum discharge from the detention facility shall be 4.32 cubic feet per second.

The outlet pipes for each of this detention cells shall be as follows:

Discharge Pipe Size	Discharge (cfs)	Discharge Pipe Slope
10" PVC	*4.16*	*0.9%*

APPENDIX A

Run Off Curve Numbers & Runoff

Attachment A1

Woof's - Gladstone

Gladstone, Missouri

Description:
EA-1

Worksheet 2: Runof curve number and runoff

Project	Woof's - Gladstone	**By** Buck Driggs, PE	**Date** 9/10/2019
Location	Gladstone, Missouri	**Checked** Christina Cook, PE	**Date** 9/10/2019
Check one	■ Present ☐ Developed		

1. Runoff Curve Number

Soil Name and Hydrologic Group (Appendix A)	Cover Description (cover type, treatment, and hydrlogic condition; percent impervious; unconnected/connected impervious area ratio	CN1 Table 2-2	CN1 Figure 2-3	CN1 Figure 2-4	Area Percent of Area	Product of CNxArea
Type D	Open Space (Grass Cover) Good Cond.	80			24%	18.80
Type C	Open Space(Grass Cover) Good Cond.	74			77%	56.61
				Totals	100%	75.41

$$CN(\text{Weighted}) = \frac{\text{Total Product}}{\text{Total Area}} = \frac{75.41}{100\%} = 75.41$$

US CN = 75

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency	yr	2	10	100
Rainfall, P (24-hours)	in	3.5	5.3	7.5
Runoff, (Q)	in	1.3	2.7	4.63

Existing Conditions

Attachment A3

Woof's - Gladstone

Gladstone, Missouri

Description:

DA-1 - North Drainage Area, Open Space (Good Condition)

Worksheet 2: Runof curve number and runoff

Project	Woof's - Gladstone	**By** Buck Driggs, PE	**Date** 9/10/2019
Location	Gladstone, Missouri	**Checked** Christina Cook, PE	**Date** 9/10/2019
Check one	☐ Present ■ Developed		

1. Runoff Curve Number

Soil Name and Hydrologic Group (Appendix A)	Cover Description (cover type, treatment, and hydrlogic condition; percent impervious; unconnected/connected impervious area ratio	CN1 Table 2-2	CN1 Figure 2-3	CN1 Figure 2-4	Area Percent of Area	Product of CNxArea
Type C	Impervious Asphalt, Concrete, Rooftop	98			20%	19.75
Type C	turfed, Good Condition	74			80%	59.08
						-
						-
				Totals	100%	79

$$\text{CN(Weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{78.84}{100\%} = 78.84$$

US CN = 79

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency	yr	2	10	100
Rainfall, P (24-hours)	in	3.5	5.3	7.5
Runoff, (Q)	in	1.6	3.1	5.0

Proposed Conditions

APPENDIX B

Time of Concentration or Travel Time

Woof's - Gladstone

Gladstone, Missouri

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)

Project	#REF!	**By**	Buck Driggs, PE	**Date**	9/10/2019
Location	Edgerton, Kansas	**Checked**	Christina Cook, PE	**Date**	9/10/2019

Check one ☒ Present ☐ Developed

Check One: ☒ Tc ☐ Tt through subarea

Description : EA-1

Sheet Flow (Applicable to Tc only)

			Segment ID	
1	Surface Description (table 3-1)		Existing Surface (EA-1)	
2	Manning's Roughnes Coeff, n (table 3-1)		Grass	
3	Flow length, L	ft	0.150	
4	2-year 24-hour rainfall, P	in	60	
5	Land Slope, s	ft/ft	3.5	
6	$T_t = \frac{.007\,(nL)^{.8}}{P_2^{.5} s^{.4}}$ Compute Tt =	hr	0.367	
			0.032	

Shallow Concentration Flow

			Segment ID	
7	Surface Description (table 3-1)		Existing Surface (EA-1)	
8	Flow Length, L		Grass Good Condition	
9	Watercourse Slope, S		330	
10	Average Velocity, V (Figure 3-1)		0.03	
11	$T_t = \frac{L}{3600V}$ Compute Tt =	hr	2.8	
			0.033	

Channel Flow

			Segment ID	
12	Cross Sectional Flow Area, a	ft2		
13	Weted Perimeter, PW			
14	Hydrauilic Radius	ft		
15	Channel Slope, s	ft/ft		
16	Manning Roughnes Coefficient, n	ft/ft		
17	$V = \frac{1.49 r^{2/3} s^{1/2}}{n}$ ..... Compute V	ft/s		
18	Flow Length, L	ft		
19	$T_t = \frac{L}{3600V}$ Compute Tt =	hr		

20 Watershed of Subarea Tc — Hrs 0.065

Woof's - Gladstone

Gladstone, Missouri

Worksheet 3: Time of Concentration (Tc) or Travel Time (Tt)

Project	Woof's - Gladstone	**By**	Buck Driggs, PE	**Date**	9/10/2019
Location	Edgerton, Kansas	**Checked**	Christina Cook, PE	**Date**	9/10/2019

Check one: ☐ Present ■ Developed

Check One: ■ Tc ☐ Tt through subarea

Description : DA-1 - North Drainage Area, Open Space (Good Condition)

Sheet Flow (Applicable to Tc only)

			Segment ID	Proposed Surface (DA-1)	
1	Surface Description (table 3-1)			Grass	
2	Manning's Roughnes Coeff, n (table 3-1)			0.150	
3	Flow length, L	ft		60	
4	2-year 24-hour rainfall, P	in		3.5	
5	Land Slope, s	ft/ft		0.367	
6	$T_t = \frac{.007\,(nL)^{.8}}{P_2^{.5}\,s^{.4}}$ Compute Tt =	hr		0.032	

Shallow Concentration Flow

			Segment ID	Proposed Surface (DA-1)	
7	Surface Description (table 3-1)			Grass	
8	Flow Length, L			330	
9	Watercourse Slope, S			0.02	
10	Average Velocity, V (Figure 3-1)			2.3	
11	$T_t = \frac{L}{3600V}$ Compute Tt =	hr		0.040	

Channel Flow

			Segment ID	Concrete Pipe Flow	
12	Cross Sectional Flow Area, a	ft2			
13	Weted Perimeter, PW				
14	Hydrauilic Radius	ft		#DIV/0!	
15	Channel Slope, s	ft/ft			
16	Manning Roughnes Coefficient, n	ft/ft			
17	$V = \frac{1.49 r^{2/3} s^{1/2}}{n}$ Compute V	ft/s		#DIV/0!	
18	Flow Length, L	ft			
19	$T_t = \frac{L}{3600V}$ Compute Tt =	hr		#DIV/0!	

20 Watershed of Subarea Tc — Hrs 0.072

APPENDIX C

Tabular Peak Discharge

Attachement C1

Woof's - Gladstone

Gladstone, Missouri

Worksheet 5a Basic Watershed Data

Project:				**Location**				**By**			**Date**
Woof's - Gladstone				*Gladstone, Missouri*				Buck Driggs, PE			9/10/2019
Check One: ☒ Present ☐ Developed				**Frequency *** 2-Year, 10-Year & 100- Year Storm Event (Existing)				**Checked** Christina Cook, PE			**Date** 9/10/2019
Sub-Area Name	Drainage Area A_m (mi^2)	Time of Concentration T_c (hr)	Travel Time Through Sub-Area T_t (hr)	Downstream Sub-Area Names	Travel Tme Summation to Outlet T_t (hr)	24-hour Rainfall P (in)	Runof Curve Number CN	Runoff Q (in)	A_mQ (mi2-in)	Initial Absraction I_a (in)	I_a/P
EA-1(2-yr)	0.003	0.083				3.5	75	1.32	0.0044	0.667	0.191
EA-1(10-yr)	0.003	0.083				5.3	75	2.72	0.0092	0.667	0.126
EA-1(100-yr)	0.003	0.083				7.5	75	4.63	0.0156	0.667	0.089

Existing Conditions

*Minimum of 5 minutes was used for Time of Concentration

Attachment C2

Woof's - Gladstone

Gladstone, Missouri

Worksheet 5b Basic Watershed Data

Project: *Woof's - Gladstone*	**Location** *Gladstone, Missouri*	**By** Buck Driggs, PE	**Date** 9/10/2019
Check One: ■ Present ☐ Developed	**Frequency (yr)** 2-Year, 10-Year & 100- Year Storm Event (Existing)	**Checked** Christina Cook, PE	**Date** 9/10/2019

Sub-Area Name	Basic Watershed Data used				Select and Enter Hydrograph Times in Hours							
	Sub-Area Tc (hr)	Tt	Ia/P	AmQ (mi2-in)	**11.6**	**11.9**	**12**	**12.1**	**12.2**	**12.3**	**12.4**	**12.5**
EA-1(2-yr)	0.083		0.191	0.0044	29	252	611	976	578	217	158	135
					0.13	1.12	2.72	4.34	2.57	0.97	0.70	0.60
EA-1(10-yr)	0.083		0.126	0.0092	46	311	637	1000	610	217	150	126
					0.42	2.85	5.85	9.19	5.60	1.99	1.38	1.16
EA-1(100-yr)	0.083		0.089	0.0156	53	334	647	1010	623	217	147	123
					0.83	5.22	10.11	15.78	9.74	3.39	2.30	1.92
					11.6	**11.9**	**12**	**12.1**	**12.2**	**12.3**	**12.4**	**12.5**

Existing Conditions

*Minimum of 5 minutes was used for Time of Concentration

Attachment C4

Woof's - Gladstone

Gladstone, Missouri

Worksheet 5a Basic Watershed Data

Project:				Location				By			Date
Woof's - Gladstone				*Gladstone, Missouri*				Buck Driggs, PE			9/10/2019
Check One: ☐ Present ■ Developed				**Frequency ®** 2-Year, 10-Year & 100-Year Storm Events(Proposed)				**Checked** Christina Cook, PE			**Date** 9/10/2019
Sub-Area Name	Drainage Area	Time of Concentration	Travel Time Through Sub-Area	Downstream Sub-Area Names	Travel Tme Summation to Outlet	24-hour Rainfall	Runof Curve Number	Runoff		Initial Absraction	
	A_m	T_c	T_t		T_t	P	CN	Q	A_mQ	I_a	I_a/P
	(mi^2)	(hr)	(hr)		(hr)	(in)		(in)	(mi2-in)	(in)	
DA-1 (2-yr)	0.003	0.083				3.5	79	1.558	0.0053	0.532	0.152
DA-1 (10-yr)	0.003	0.083				5.3	79	3.051	0.0103	0.532	0.100
DA-1 (100-yr)	0.003	0.083				7.5	79	5.030	0.0170	0.532	0.071

Proposed Conditions

*Minimum of 5 minutes was used for Time of Concentration

Attachment C6

Woof's - Gladstone

Gladstone, Missouri

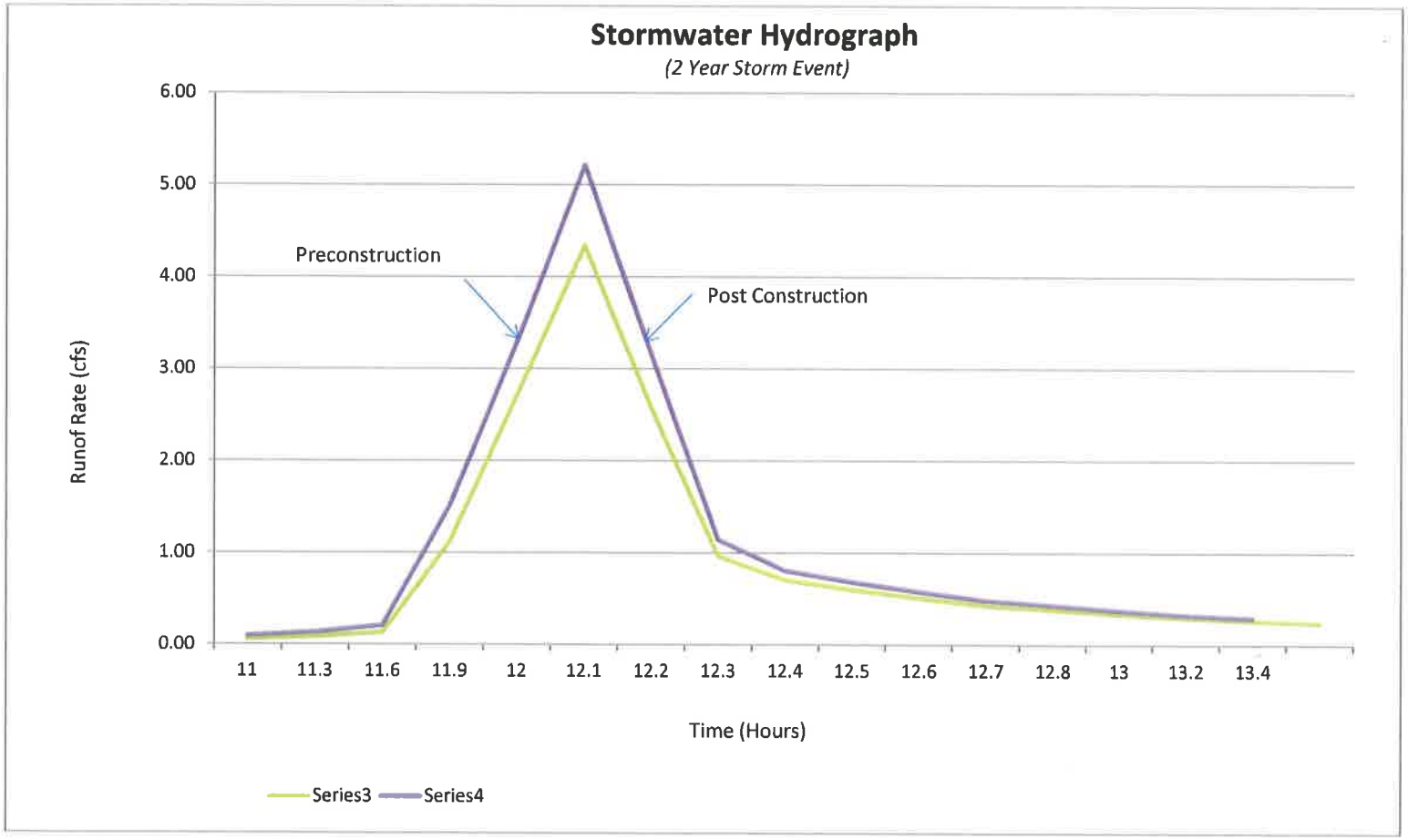
Worksheet 5b Basic Watershed Data

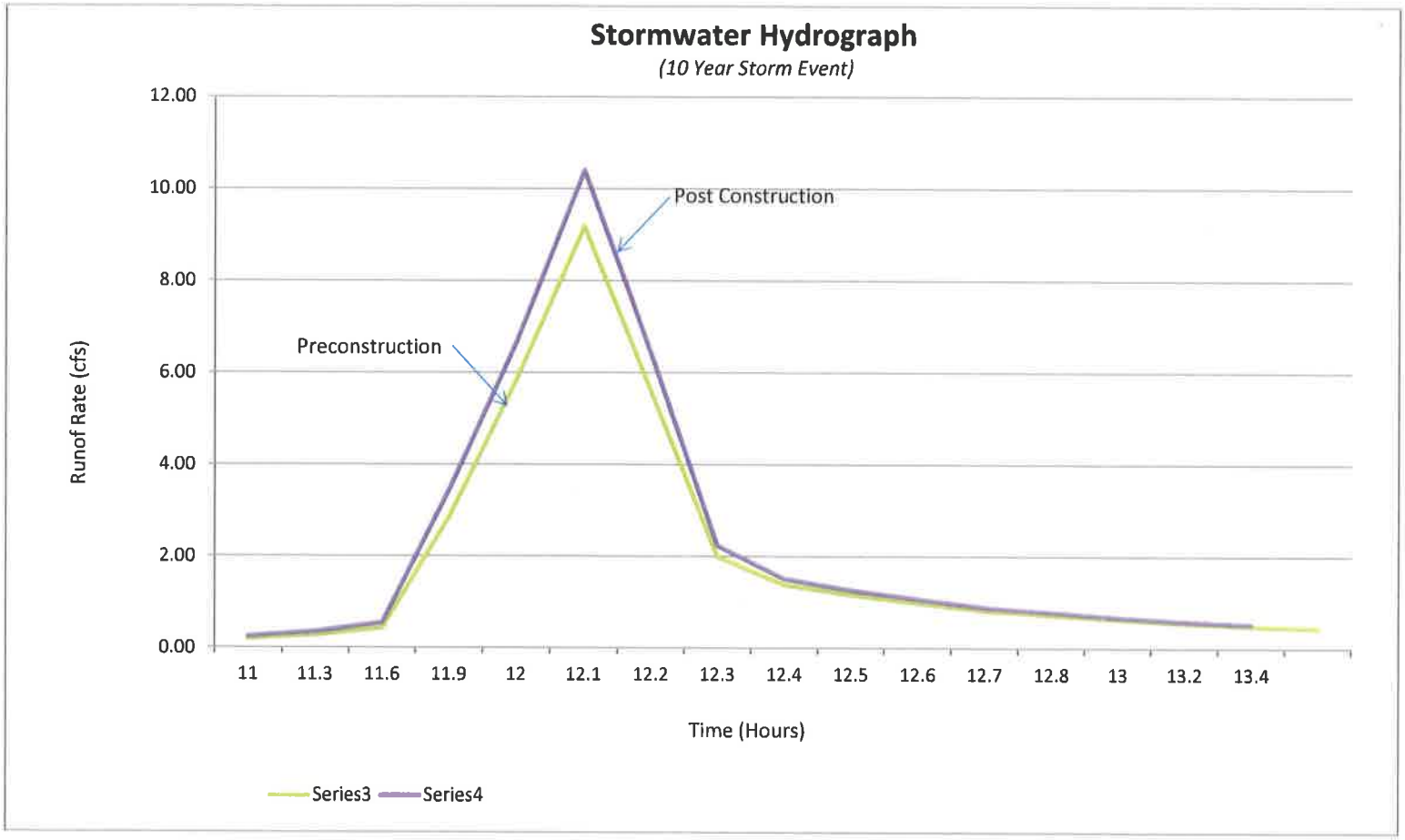
Project:	Location	By	Date
Woof's - Gladstone	*Gladstone, Missouri*	Buck Driggs, PE	9/10/2019
Check One: ☐ Present ■ Developed	**Frequency (yr)** 2-Year, 10-Year & 100-Year Storm Events (Proposed)	**Checked** Christina Cook, PE	**Date** 9/10/2019

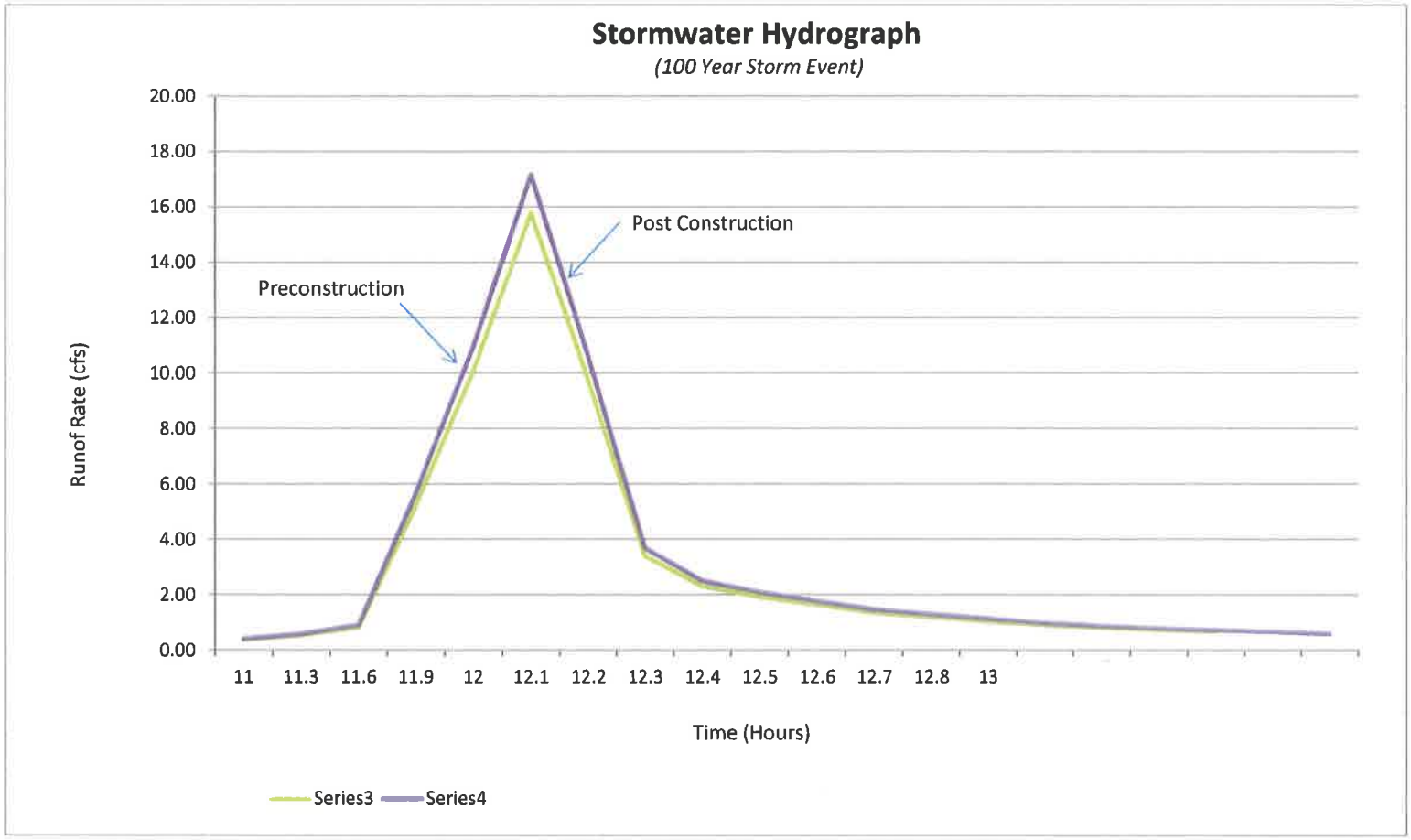
Sub-Area Name	Basic Watershed Data used				Select and Enter Hydrograph Times in Hours							
	Sub-Area Tc (hr)	Tt	Ia/P	AmQ (mi2-in)	**11.6**	**11.9**	**12**	**12.1**	**12.2**	**12.3**	**12.4**	**12.5**
DA-1 (2-yr)	0.083		0.152	0.0053	39	287	626	991	597	217	154	130
					0.21	1.51	3.30	5.22	3.14	1.14	0.81	0.68
DA-1 (10-yr)	0.083		0.100	0.0103	53	334	647	1010	623	217	147	123
					0.55	3.44	6.67	10.41	6.42	2.24	1.51	1.27
DA-1 (100-yr)	0.083		0.071	0.0170	53	334	647	1010	623	217	147	123
					0.90	5.68	10.99	17.16	10.59	3.69	2.50	2.09
					11.6	**11.9**	**12**	**12.1**	**12.2**	**12.3**	**12.4**	**12.5**

Proposed Conditions

*Minimum of 5 minutes was used for Time of Concentration


Stormwater Hydrograph
(2 Year Storm Event)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Runof Rate (cfs)
Preconstruction
Post Construction
11
11.3
11.6
11.9
12
12.1
12.2
12.3
12.4
12.5
12.6
12.7
12.8
13
13.2
13.4
Time (Hours)
Series3
Series4


Stormwater Hydrograph
(10 Year Storm Event)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Runof Rate (cfs)
Post Construction
Preconstruction
11
11.3
11.6
11.9
12
12.1
12.2
12.3
12.4
12.5
12.6
12.7
12.8
13
13.2
13.4
Time (Hours)
Series3
Series4


Stormwater Hydrograph
(100 Year Storm Event)
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Runof Rate (cfs)
Post Construction
Preconstruction
11
11.3
11.6
11.9
12
12.1
12.2
12.3
12.4
12.5
12.6
12.7
12.8
13
Time (Hours)
Series3
Series4

APPENDIX D

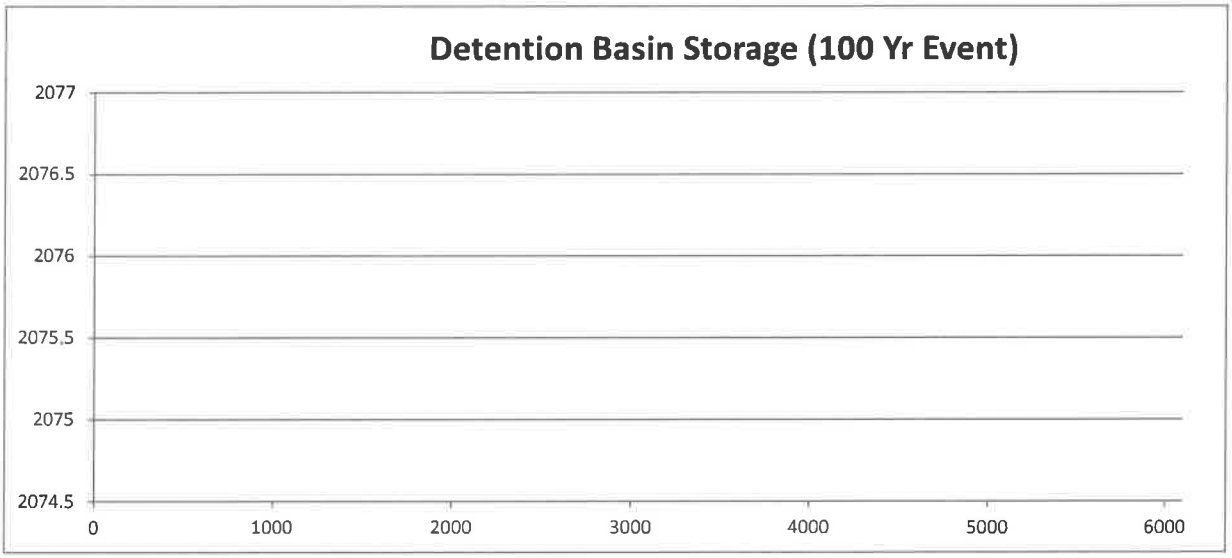
Storm Water Retention Calculations

Woof's - Gladstone

Gladstone, Missouri

Worksheet 6a: Detention Basin Storage, Peak Outflow Discharge (qo) Known

Project	By	Date
Woof's - Gladstone	Buck Driggs, PE	9/10/2019
Location	**Checked**	**Date**
Gladstone, Missouri	Christina Cook, PE	9/10/2019



Detention Basin Storage (DA-1) - West Drainage Area

1. Data

Drainage Area.....Am = 0.0034 mi2

Rainfall Distribution Type = II

	1st Stage	2nd Stage
2. Frequency.....yr	10	100
3. Peak inflow Discharge (qi).....cfs	10.41	17.16
4. Peak Outflow Discharge, qu.....cfs =	9.19	15.78
5. Compute qu/qi..... =	0.88	0.92

6. Vs/Vr	=	0.18	0.18
7. Runoff, Q	in	3.1	5.0
8. Runoff Volume Vr ac-ft	=	0.5496	0.9063
9. Storage Volume Vs (Ac-Ft)	=	0.099	0.163
(Cubic Ft)	=	4309	7106
10. Maximum Storage Emax			

Proposed Conditions

APPENDIX E

Pipe Calculations

ATTACHMENT E1

Drainage Structure Analysis

Structure ID	Structure Description	Location
P1	10" PVC	Cell #1 Outlet Pipe

Maximum Flow Capacity Analysis

Manning's Equation: Open channel flow and flow in conduits shall be analyzed using

$$Q = (1.486/n)*A*R^{(2/3)}*S^{(1/2)}$$

Q = discharge in cfs
A = cross section of flow in square feet
n = roughness coefficient see table following
R = hydraulic radius in feet
S = slope in feet per foot of drainage structure

$A = \pi r^2$	=	0.545	Cross Section of Flow in Square Feet
n	=	0.01	Per Table (X)
$R = \frac{A}{Wp}$	=	0.40	Hydraulic Radius in feet
S	=	0.90%	Logitudinal Slope of Pipe
Q	=	4.16	cfs
Pre Developed Discharge	=	4.32	cfs

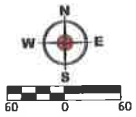
Remarks
Comprehensive Control
50 % storm peak rate less than or equal to 0.5 cfs per site per acre
10% storm peak rate less thanor equla to 2.0 cfs per site per acre
1% storm peak rate less thanor equla to 3.0 cfs per site per acre

EXHIBIT A

DRAINAGE MAP

EXISTING CONDITIONS

PROPOSED CONDITIONS



LEGEND

- CONCRETE
- TURF AREAS
- BUILDING

EXISTING CONDITIONS				
DRAINAGE AREA	TURF	CONCRETE	ROOFTOP	TOTAL (SQ. FT.)
EA-1	94,183	0	0	94,183
			TOTAL AREA:	94,183

PROPOSED CONDITIONS				
DRAINAGE AREA	TURF	CONCRETE	ROOFTOP	TOTAL (SQ. FT.)
DA-1	75,200	10,983	8,000	94,183
			TOTAL AREA:	94,183

CITY OF GLADSTONE, KANSAS
GLADSTONE WOOF'S
DRAINAGE EXHIBIT

DRIGGS DESIGN GROUP, PA
Surveying Engineering Planning
MANHATTAN HAYS EMPORIA

Project No: N/A
Date: 9/3/2019
Sheet No.: ? OF ?

Andrew Ortiz 9/3/2019 Gladstone_Woof's Drainage Exhibit.dwg