VILLAGE OF MCFARLAND *NOTICE OF PUBLIC MEETING*

PLAN COMMISSION

Monday, May 18, 2020 **7:00 PM** **McFarland Municipal Center**
Community Room

AGENDA

You are invited to this meeting through a Zoom webinar. The Public is strongly encouraged to watch and participate in these meetings remotely through either the webinar or telephone options listed below.

PLEASE CLICK THE LINK BELOW TO JOIN THE ZOOM WEBINAR:
https://us02web.zoom.us/j/91865017771

Or by Telephone:
+1 (301) 715-8592 or +1 (312) 626-6799 or +1 (929) 205-6099 or +1 (253) 215-8782 or +1 (346) 248-7799 or +1 (669) 900-6833

Webinar ID: 918 6501 7771

1. CALL TO ORDER
2. INTRODUCTION OF PLAN COMMISSIONERS
3. PUBLIC APPEARANCES.
4. APPROVAL OF MINUTES.
   a. Review and possible approval of the March 16, 2020 Plan Commission minutes.
   b. Review and possible approval of the April 8, 2020 Joint Community Development Authority - Plan Commission meeting.
5. PUBLIC HEARING
   a. Public hearing on a request by Robert Kay and Rachel Fisher for a Certified Survey Map (CSM) located at 5121 Glen Road, McFarland, WI in order to combine two parcels.
   b. Public hearing on a request by Utterback Ltd. Partnership for a Certified Survey Map (CSM) in order to create three parcels. Lands located west of CTH AB in the NE 1/4 of the SE 1/4 and the SE 1/4 of the SE1/4 of Section 2, Township 6 North, Range 10 East, Village of McFarland, Dane County, Wisconsin.

c. Public hearing regarding Ordinance No. 2020-16, AN ORDINANCE REZONING LANDS RECENTLY ANNEXED WEST OF CTH AB AND NORTH OF THE WISCONSIN & SOUTHERN RAILROAD IN THE VILLAGE OF MCFARLAND, FROM A-1 AGRICULTURE TRANSITION DISTRICT TO PDD-GP GENERAL PLAN AND PDD-DP DETAILED PLAN APPROVED. This zoning ordinance amendment has been requested by Veridian Homes Rosewood Fields LLC.

d. Public hearing on a request by Veridian Homes Rosewood Fields LLC regarding Preliminary Plat approval for Rosewood Fields Subdivision. Lands located west of CTH AB in the NE 1/4 of the SE 1/4 and the SE 1/4 of the SE1/4 of Section 2, Township 6 North, Range 10 East, Village of McFarland, Dane County, Wisconsin.

6. BUSINESS.

a. Discussion and action to make a recommendation to the Village Board regarding a site plan by Angelo's Restaurant, 4706 Farwell Street for expansion of the outdoor dining and consumption area.

b. Discussion and action to make a recommendation to the Village Board regarding a site plan by McFarland House Cafe, 5923 Exchange Street, for front yard outdoor dining and consumption area.

c. Discussion and action on a request by Robert Kay and Rachel Fisher for a Certified Survey Map (CSM) located at 5121 Glen Road, McFarland, WI in order to combine two parcels.

d. Discussion of a concept plan by CF Investments LLC for multi-family and townhouse units on Lots 57 & 58 of Prairie Place Subdivision.

e. Discussion of a concept plan by Northpointe Develoment for multi-family and townhouse units on Lot 56 of Prairie Place Subdivision.

f. Discussion and action to make a recommendation to the Village Board regarding temporary zoning of lands included in Ordinance 2020-15, AN ORDINANCE ANNEXING LANDS FROM THE TOWN OF DUNN TO THE VILLAGE OF MCFARLAND.

g. Discussion and action on a request by Utterback Ltd. Partnership for a Certified Survey Map (CSM) in order to create three parcels. Lands located west of CTH AB in the NE 1/4 of the SE 1/4 and the SE 1/4 of the SE1/4 of Section 2, Township 6 North, Range 10 East, Village of McFarland, Dane County, Wisconsin.

h. Discussion and action to make a recommendation to the Village Board regarding Ordinance No. 2020-16, AN ORDINANCE REZONING LANDS RECENTLY ANNEXED WEST OF CTH AB AND NORTH OF THE WISCONSIN & SOUTHERN RAILROAD IN THE VILLAGE OF MCFARLAND, FROM A-1 AGRICULTURE TRANSITION DISTRICT TO PDD-GP GENERAL PLAN AND PDD-DP DETAILED PLAN APPROVED. This zoning ordinance amendment has been requested by Veridian Homes Rosewood Fields LLC.

i. Discussion and action to make a recommendation to the Village Board on a request by Veridian Homes Rosewood Fields LLC regarding Preliminary Plat approval for Rosewood Fields Subdivision. Lands located west of CTH AB in the NE 1/4 of the SE 1/4 and the SE 1/4 of the SE1/4 of Section 2, Township 6 North, Range 10 East, Village of McFarland, Dane County, Wisconsin.

7. STAFF REPORTS
   a. Property maintenance report
   b. Directors report
8. SCHEDULE NEXT MEETING DATE.
9. ADJOURNMENT.

This meeting notice constitutes an official meeting of the above referenced group and was posted in accordance with all applicable laws related to Open Meetings Law. It is possible that members of and possibly a quorum of members of other governmental bodies of the municipality may be in attendance at the above stated meeting to gather information. No action will be taken by any governmental body at the above stated meeting other than the governmental body specifically referred to above in this notice. Upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals. For additional information or to request this service, contact the McFarland Municipal Center at (608) 838-3153 or cassandra.suettinger@mcfarland.wi.us.

Working Draft Minutes
Plan Commission
Meeting

March 16, 2020

Members Present: Dan Kolk, Brad Czebotar, Bruce Fischer, Eric Green

Members Absent: Peter Bloechl-Anderson, Tom Rogers, Scott Peters

Staff Present: Andrew Bremer

1. CALL TO ORDER
   Czebotar called the meeting to order at 7:00 p.m.

2. PUBLIC APPEARANCES

3. APPROVAL OF MINUTES
   a. Motion to approve the minutes of the February 17, 2020 Plan Commission meeting.

   Czebotar called the minutes from the February 17, 2020 meeting approved by unanimous consent.

4. BUSINESS
   With no objections, Czebotar moved to address item 4b of the agenda prior to considering item 4a

   a. Review and possible action on a site design/review application submitted by McDonalds USA, LLC for a proposed renovation of the existing McDonalds located at 4800 Larson Beach Road, McFarland, WI

   Kristi Donahue from Reprise Design joined the meeting via video. Bremer and the Commissioners reviewed the Director's staff report. Green inquired how the proposed front canopies would drain rain water. Donahue indicated that there are small holes/vents in the front of the canopies that allow the water to drip down to the surface. Green inquired whether a downspout against the building would be a better design to avoid water dripping on customers. Donahue indicated that it might be possible; however, the current design is a common approach. Green inquired whether the sidewalk under the canopies slopes away from the building so that water does not run against the foundation. Donahue indicated she is not aware of any foundational issues related to water runoff now or with the proposed design. There is also a landscape bed under the canopy, except for the area under the entry door. Bremer indicated that his only concern with the application was raising the height of the parapet wall 14" above

the height of the primary façade of the gas station portion of the building. Donahue indicated 18' is the standard height used by McDonald's and for this project they are also trying not to demo the structural component of the existing mansard roof and due to stormwater issues need to raise the parapet at least 6" above the existing roof line. The Commissioners discussed preferences regarding the proposed height of the building.

Motion by Kolk to approve the site/design application from McDonalds USA, LLC as submitted. Fisher seconded the motion. Motion carried 4-0

b. Review and possible recommendation to the Village Board regarding Seventh Amendment to Development Agreement for Juniper Ridge.

Chris Ehlers from Veridian Homes joined the meeting via video. Bremer and the Commissioners reviewed the Director's staff report. Kolk inquired where things stood with respect to finishing improvements of the stormwater facilities, Eco-Park and associated landscaping. Bremer noted that Veridian still needs to repair certain plantings, address areas that have filled in with silt, and address erosion in places. Bremer indicated that the Village Engineer and Public Works Department are coordinating the inspection of this work and that the Village has existing sureties from Veridian for these projects. Ehlers indicated that the weather last fall may have prevented completion of these activities and that he would alert his staff to finishing this spring. Kolk clarified that by approving the Seventh Amendment to the Development Agreement the Village was not agreeing that the previous eight phases of the development are completed. Bremer indicated that is correct, approving the Seventh Amendment allows the Developer to initiate the start of the final phase nine, and that existing sureties remain in place for the completion of other on-going phases of the project that are still under construction.

Motion by Czebotar to recommend to the Village Board approval of the Seventh Amendment to Development Agreement for Juniper Ridge. Kolk seconded the motion. Motion carried 4-0.

5. STAFF REPORTS

a. Property Maintenance – Kolk inquired about the status of 5915 Exchange Street and 5906 Main Street. Bremer indicated he would follow-up with Department staff regarding previous attempts to work with the owners of 5915 Exchange Street regarding tuck-pointing concerns. Bremer indicated that he is currently working with the Fire Department to obtain access from the owner of 5906 Main Street to conduct a fire inspection. Kolk noted issues with the exterior facade, including crumbling concrete stoop. Bremer indicated he would reach out to the property owner to address these issues.

b. Director Report – Bremer noted that the Department web site has been updated to include an Economic Development page as well as a new interactive GIS zoning web map.

6. SCHEDULE NEXT MEETING DATE
   a. Next meeting April 20, 2020

7. ADJOURNMENT

   Motion to adjourn by Kolk, seconded by Green. Meeting adjourned at 7:28 p.m.

Working Draft - MINUTES

Community Development Authority
Plan Commission
Joint Meting

April 8, 2020

Members Present: CDA: Ken Brost, Dan Kolk, Austen Conrad, Stephanie Brassington, Jerry Dietzel, Toni Stolarik
Plan Commission: Dan Kolk, Scott Peters, Tom Rogers, Brad Czebotar Bruce Fischer, Peter Bloechl-Anderson (@ 6:20 p.m.)

Members Absent: Sue Smith (CDA), Eric Green (Plan Commission)

Staff Present: Andrew Bremer, Matt Schuenke. Karen Knoll

1. CALL TO ORDER

Brost called the CDA meeting to order. Czebotar called the Plan Commission to order at 6:12 p.m.

2. PUBLIC APPEARANCES

None.

3. BUSINESS

a. Discussion regarding a conceptual site plan proposed by Larry Beyler, Midwest Equipment Specialists for redevelopment of 4313 Triangle Street.

Bremer reviewed the history of 4313 Triangle Street including the 2005 Terminal -Triangle District Redevelopment Plan, the 2010 Redevelopment Plan, which identified it as a blighted property, and the 2017 Comprehensive Plan. All identify this as a site for redevelopment. It is 1.6 acres in size and located in the 2004 TIF #3 district. The Village purchased in March of 2020. Mr. Byler came before the CDA in 2019 with a TIF proposal for his current site, by mutual agreement they tabled the proposal to look for a different site, which would meet his needs for a new business location.

Larry Byler of Midwest Equipment addressed CDA members and Commissioners. He reviewed his current business has been located in McFarland for approximately the past 40 years. They specialize in lift equipment for consumers, auto dealerships and heavy-duty use.

Draft

Mark Bridell of Kraus-Anderson Construction Company reviewed the conceptual site design plan for 4313 Triangle Street along with the review of the stormwater treatment and elevations. It would be just over 17,000 sq.ft. currently Mr. Byler has 12,500 sq.ft. Bremer summarized the conceptual plan and how it meets the site design standards and the Triangle guidelines along with the how, as a concept plan it does a nice job in meeting the guidelines. Bremer reviewed his staff report, which included some setback concerns and possible alternative site layout changes, which may be needed along with the former underground gasoline tank, which was formally on the site. Discussion covered the possible shifting of the proposed building to the north and east, the need for access for semis with deliveries, and the use of the lean to area for flatbed trailers.

Community Development Authority members and Plan Commissioners concurred they were please the potential proposal.

Bremer summarized the preliminary scheduled for the project based on information outlined in the packet.

4. ADJOURNMENT

Kolk moved to adjourn the CDA and Plan Commission joint meeting. That motion was seconded by Fisher, to adjourn the Plan Commission meeting, and Dietzel to adjourn the CDA meeting. Motion carried. Meeting adjourned at 6:43pm.

Draft

Please publish in the
McFarland Thistle on
April 30, 2020

VILLAGE OF MCFARLAND
NOTICE OF PUBLIC HEARING
BEFORE THE PLAN COMMISSION

NOTICE IS HEREBY GIVEN that there will be a Public Hearing before the Plan Commission on Monday, May 18, 2020 at 7:00 p.m. in the Community Room of the Municipal Center, 5915 Milwaukee St., McFarland, Wisconsin, at which time interested parties and citizens shall have an opportunity to be heard concerning the following:

> Review and possible action on a request by Robert Kay and Rachel Fisher for a Certified Survey Map (CSM) located at 5121 Glen Road, McFarland, WI in order to combine two parcels.

If you cannot attend the meeting in-person, the meeting itself can be viewed live that evening on Charter cable channel 982; TDS channel 1009 or online at mcfarlandcablechannel.com. The public may also participate in this meeting remotely by joining the following Zoom Webinar The public may also participate in this meeting remotely by joining the following Zoom Webinar https://zoom.us/j/91865017771 Or Telephone: Dial (for higher quality, dial a number based on your current location): US: +1 (929) 205-6099 or +1 (312) 626-6799 or +1 (301) 715-8592 or +1 (346) 248-7799 or +1 (669) 900-6833 or +1 (253) 215-8782 Webinar ID: 918 6501 7771.

You may submit your written or emailed comments to the Plan Commission before May 18, 2020. The mailing address is:

Village of McFarland
Community Development Department
PO Box 110
McFarland, WI 53558-0110
community.development@mcfarland.wi.us

Respectfully submitted by,
Andrew Bremer
Community and Economic Development Director

Please publish in the
McFarland Thistle on
April 30, 2020

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Respectfully submitted by,
Andrew Bremer
Community and Economic Development Director

Please publish in the
McFarland Thistle on
April 30th and May 7th, 2020

VILLAGE OF MCFARLAND
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Information regarding this request is available for review online at www.mcfarland.wi.us under Public Notices or at the Village of McFarland Municipal Center lobby, 5915 Milwaukee Street, McFarland, WI 53558 (Monday-Friday, 8:00 a.m. to 4:30 p.m.). The meeting itself can be viewed live that evening on Charter cable channel 982; TDS channel 1009 or online at mcfarlandcablechannel.com. The public may also participate in this meeting remotely by joining the following Zoom Webinar https://zoom.us/j/91865017771 Or Telephone: Dial (for higher quality, dial a number based on your current location): US: +1 (929) 205-6099 or +1 (312) 626-6799 or +1 (301) 715-8592 or +1 (346) 248-7799 or +1 (669) 900-6833 or +1 (253) 215-8782 Webinar ID: 918 6501 7771.

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Village of McFarland
Community Development Department
P.O. Box 110
McFarland, WI 53558
community.development@mcfarland.wi.us
Respectfully submitted by,
Andrew Bremer
Community and Economic Development Director

Please publish in the
McFarland Thistle
April 30, 2020

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BEFORE THE PLAN COMMISSION

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Community Development Department
P.O. Box 110
McFarland, WI 53558
community.development@mcfarland.wi.us

Respectfully submitted by,
Andrew Bremer
Community and Economic Development Director

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board regarding a site plan by Angelo's Restaurant, 4706 Farwell Street for expansion of the outdoor dining and consumption area.**

PREVIOUS ACTION:
The existing outdoor dining area was approved in 2013. A 60 square foot waiting room addition was also approved in 2014.

ISSUE SUMMARY:
Angelo's Restaurant desires to expand the existing front yard outdoor dining and consumption area at 4706 Farwell Street. This request is due in part to planned adjustments to operations to provide more spacing of tables/customers once the Covid-19 Safer at Home Order is amended or repealed to allow in-person dining. The proposed patio addition would be 504 square feet and extend along the front of the building and projecting out the same distance from the building as the current patio (refer to the street view sketch in the packet). The packet includes a representative image of the proposed four-foot high fence. The owners would also replace the existing front patio fence with the proposed design in the packet, while leaving the western side of the existing patio fence unchanged. Reducing the front fence height from 6' to 4' should aid in both maintaining visibility of the front facade, while also still meeting the minimum requirements for fence height for outdoor consumption areas. The ground within the proposed new outdoor dining area is already covered by asphalt so the only site improvement is the installation of the fence. No additional lighting other than a few more chrome tiki lights will be added to the outdoor area. Note, there is existing temporary string lighting and under mounted facade lighting already in place. The existing fence patio includes an emergency exit on the west side of the patio. The Fire Inspector and Building Inspector have recommended a second emergency exit to be located on the east end of the proposed patio.

According to the owner, the restaurant currently provides capacity for 50 indoor dining room customers and 25 bar area customers (11 bar plus 14 bar tables). Some of the bar tables essentially act as waiting spaces for the dining room. The existing patio provides seating capacity for an additional 28 customers. Therefore, total existing customer capacity is 75 indoor and 103 total. The owners are planning for an additional 8 - 4 top tables in the extended patio space bringing the total capacity to 135 (50 dining room, 25 bar, and 60 outside). Note, according to the owner, the new patio area might hold a total of 12 - 4 top tables under traditional (non-Covid) seating arrangements, bringing the non-Covid total to 151 (50 dining room, 25 bar, and 76 outside. Sec. 62-172(j) Zoning Code, requires off-site parking spaces for restaurants in the C-H District equal to 30% of the customer capacity plus 4 additional spaces per 1,000 square feet of gross leasable floor area, presumably for

employee parking. The gross floor area of the building is 2,108 square feet according to the Assessor's Property Record Card. Thus, per Code the required number of off-street parking spaces would be 54 (45 customer and 8 employee). The site currently provides 33. The packet includes a parking site plan approved in 2013 for the existing patio which described the number of parking stalls required as 30. The minutes from the July 22, 2013 Village Board meeting described the total customer capacity at that time as 77 (44 dining room, 13 bar, and 20 patio). Using the requirements of Sec. 62-172(j) would have required 31 stalls, assuming their has been no change to the parking requirements since 2013. Some points of consideration regarding the Village's parking requirements:

1. The request to expand the outdoor patio is in direct correlation to the owners anticipation of losing existing indoor and outdoor seating capacity due to what will be either recommended or required conditions under State order for the reopening of restaurants during the Covid-19 pandemic. As part of the Badger Bounce Back Plan, the WEDC and Wisconsin Department of Health Services released a Guidance on Preparing Restaurant Workplaces for COVID-19. The guidelines include, limiting dining room tables to six guests and spacing tables a minimum of six feet apart; and in bar areas leaving two bar stools empty between customers not in the same party with the same rule applied to outdoor patio areas. Adhering to these guidelines will reduce the seating capacity and thus the need for parking spaces.
2. The indoor dining area is relatively small in area. The owner has indicated that reducing the indoor capacity to meet Covid-19 seating guidelines, may not provide sufficient dining seats for the business to remain viable without additional outdoor seating expansion.
3. Even with a full or partial lifting of dine-in service, it is likely that there will be prolonged reductions in demand for dine-in service as consumer confidence is likely to be slower to rebound.
4. All customers do not necessarily travel via a vehicle to the restaurant. With additional mixed use redevelopment along Farwell Street (e.g. The Atwater) more people will be leaving within walking distance of the restaurant.
5. Use of the outdoor seating area is seasonal and weather dependent.
6. Providing adequate site parking and circulation is important for any project. However, providing an over abundance of parking is also not desirable aesthetically and sustainably (e.g. increase impervious surfaces and creating heat islands). While the existing property is built-out and can't support additional parking stalls, it is worth noting that the Village's parking regulations may be considered outdated with modern urban planning principals. Many communities are opting to revise parking standards to both lower minimum requirements and establish maximum requirements to address aesthetic and sustainable site development objectives. For example, restaurant uses in the City of Madison require a minimum parking spaces equal to 15% of capacity of persons and a maximum of 40% capacity of persons. Applying a 15% minimum requirement to the property, with the proposed patio addition, would require 31 parking stalls (23 customer + 8 employee).
7. Once/if consumer confidence does fully rebound, and all State/County guidelines or requirements are lifted, increases in customers could cause spill over of customer parking on adjacent properties during peak business hours. This could be addressed through agreements with adjacent property owners to provide shared parking or off-site parking. If the Plan Commission is concerned about long-term parking supply by a fully utilized indoor and outdoor dining areas, one option could be to approve the additional outdoor patio space for a temporary period of time (e.g. through 2020 or 12-months from

date of approval, etc.) to provide immediate assistance to the owner while also setting a reapplication date to allow time to see how things progress and any impacts to adjacent property owners. This would also provide the Village with additional time to analyze desired changes to minimum and maximum parking requirements.

Note, the Public Safety Committee met on May 13th to review the associated Outdoor Consumption Area Application and recommended approval. The Village Board will also be taking action on the Outdoor Consumption Area Application at their May 26th meeting.

FINANCIAL/BUDGET IMPACT:

None.

VILLAGE PLAN REFERENCE:

Property is identified as Mixed Use/Flex Commercial in the Village's Comprehensive Plan. One of the goals of the plan is to increase and ease opportunities for businesses to grow in McFarland and expand dining. Improving business retention and expanding commercial development are also two of the strategies identified in the Village's 2020-2030 Strategic Plan. In addition, evaluation of ways to become more business friendly and flexible for economic growth is included as in objective of the 2019-2020 Village Board Goals.

ORDINANCE REFERENCE:

Sec. 8-369, Fence Standards
Sec. 11-64(n), Outdoor Consumption
Sec. 62-71, Commercial District Permitted Use
Sec. 62-172(j), Parking Spaces Required
Sec. 62-310, Site/Design Review

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

Recommend approval of the site plan as submitted conditioned on providing an emergency exit on the east side of the proposed patio.

ATTACHMENTS:

1. 4706 Farwell St - Angelos - Proposed Patio_05.08.2020
2. 4706 Farwell St - Angelos - Existing Patio_07.22.13

Village of McFarland
Community Development Department

Plan Commission Application – 2020

~Application must be completed in full~

Applicant - Owner	Angelo's McFarland	Applicant's Agent	
	Rick Hubanks	Name	
Address	4706 Farwell St	Address	
Email	angelosmcfarland@yahoo.com	Email	
Phone #	608-577-0453	Phone #	
Fax #		Fax #	

Parcel No(s). _____ Type of Proposal – Please check boxes below that apply

Requires Public Hearing (Class One)	FEES	Requires Public Hearing (Class Two)	FEES	Public Hearing Not required	FEES
❑ Preliminary Plat	$500+AF	❑ Conditional Use	$370+F	❑ Annexation	At cost
❑ Preliminary Plat (reapplication)	$500+BF	❑ Rezoning (map)	$405+	❑ Dev. Agreement Including Addendums	$400 F
❑ Certified Survey Map	$300+FG	❑ Zoning Amendment (text)	$405 +F	❑ Final Plat	$500 +CF
❑ Condominium	$300+EF	❑ Variance-Board of Zoning Appeals	$380+F	❑ Final Plat (reapplication)	$400 +DF
❑ Comprehensive Plan Amendment	$500+F			☑ Site/Design Review	$400 + F

+ = Plus publication and notification charges

A = Plus $50.00 per lot

B = Any preliminary plat which has previously been reviewed/revised within the last 36 months

C = Plus $50.00 for each lot within the final plat

D = Any final plat which has been previously reviewed or/ revised within the last 36 months

E = Plus $40.00 for each unit shown

F = Plus actual legal, engineering and financial consulting costs incurred by the Village

G = Plus $25.00 per lot for two or more lots.

Escrow Deposits (covers costs for outside consultants; e.g., engineers, attorneys, etc.)	
❑ R-E, R-3 & PD (up to 50 acres)	$5,000
❑ R-E, R-3 & PD (greater than 50 acres)	$10,000
❑ Commercial Site/Design Review (5,000 sq. ft. or more)	$2,000
❑ All Plats including condominiums	$5,000

Nature of the development proposal: Must provide address of proposed development, legal description, current zoning and description of proposal. (Attach additional paper if needed)

Expansion of the outdoor dining and consumption area for Angelo's McFarland, 4706 Farwell st McFarland, Wi

What action is the applicant requesting of the Plan Commission?

Has this specific proposal been previously discussed or acted upon by the Plan Commission?

❑ **YES** ☑ **NO** **(If "yes" state the nature and the date(s) of the previous application.)**

PLEASE READ AND SIGN AT THE BOTTOM ON THE REVERSE SIDE

Schedule: The Village of McFarland Plan Commission conducts meetings on the third Monday of each month at 7:00 p.m. at the McFarland Municipal Center in the Community Room. To ensure adequate time for staff review, and publication of legal notices; all potential agenda item materials -are required to be submitted per the schedule listed below. **Six (6) Copies** of all materials, **one (1) copy must be 8 ½ x 11, five (5) copies to be 11 x 17 and one (1) electronic copy** (*only one copy of application, completed in full, is necessary)* shall be submitted to the Community Development Department (608-838-3154), with fees paid **by *NOON of the deadline day**, according to the following schedule:

Village of McFarland Plan Commission 2020 Schedule

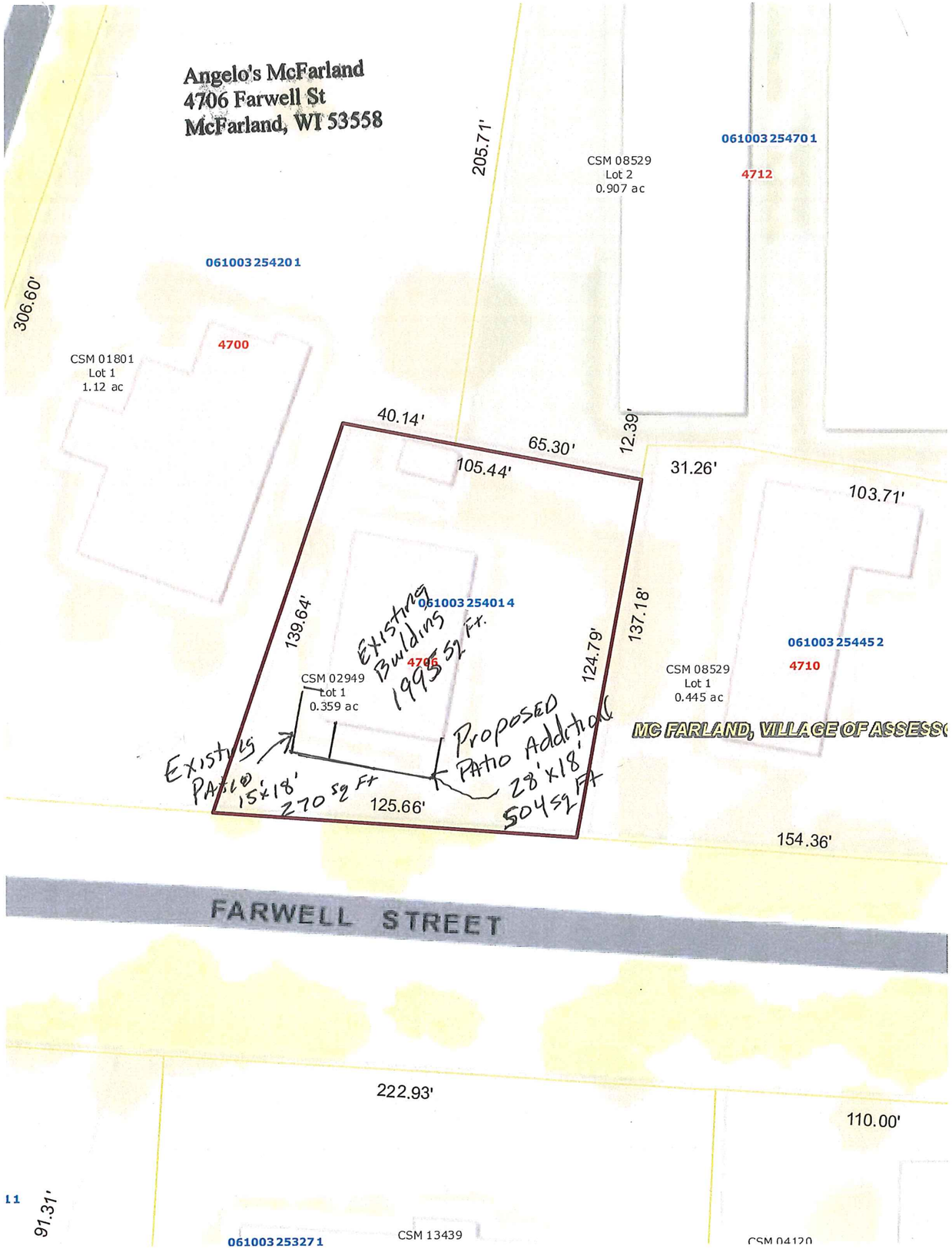
*Submittal Deadline Noon on:	For Scheduled 2020 Meeting date of:
December 12 (2019)	January Tuesday Jan. 21
January 7	February 17
February 11	March 16
March 10	April 20
April 7	May 18
May 12	June 15
June 9	July 20
July 7	August 17
August 11	September 21
September 8	October 19
October 6	November 16
November 3	December 21 (Pending)
December 8	(Pending) Tuesday, Jan. 19, 2021

*** Submittal deadline: No exceptions are given for above deadlines**

- **I understand failure to provide required materials/information/fees by the submittal deadline can result in this application being withdrawn for consideration by the Plan Commission. Materials submitted for review after the submittal deadline date, or incomplete submittals, will be held over until the next scheduled meeting.**
- **I understand any fees not paid for (i.e. legal notices, mailings, etc.) will require any permits to be withheld until all payments are made in full. In addition, all application fees are non-refundable.**

X Rick Hubanks 5/08/2020

Signature of Applicant/Agent Date


Angelo's McFarland
4706 Farwell St
McFarland, WI 53558
205.71'
CSM 08529
Lot 2
0.907 ac
061003254701
4712
061003254201
306.60'
4700
CSM 01801
Lot 1
1.12 ac
40.14'
65.30'
12.39'
105.44'
31.26'
103.71'
061003254014
139.64'
Existing Buildings 1995 sq Ft.
137.18'
124.79'
4706
CSM 02949
Lot 1
0.359 ac
061003254452
4710
CSM 08529
Lot 1
0.445 ac
MC FARLAND, VILLAGE OF ASSESS
Existing Patio 15'x18' 270 sq Ft
Proposed Patio Addition 28'x18' 504 sq Ft
125.66'
154.36'
FARWELL STREET
222.93'
110.00'
91.31'
061003253271
CSM 13439
CSM 04120

ANGELO'S MCFARLAND
4706 Farwell St

4706

4' TALL

Angelo's McFarland
4706 Farwell St
McFarland, WI 53558

Angelo's

June 17th 2013

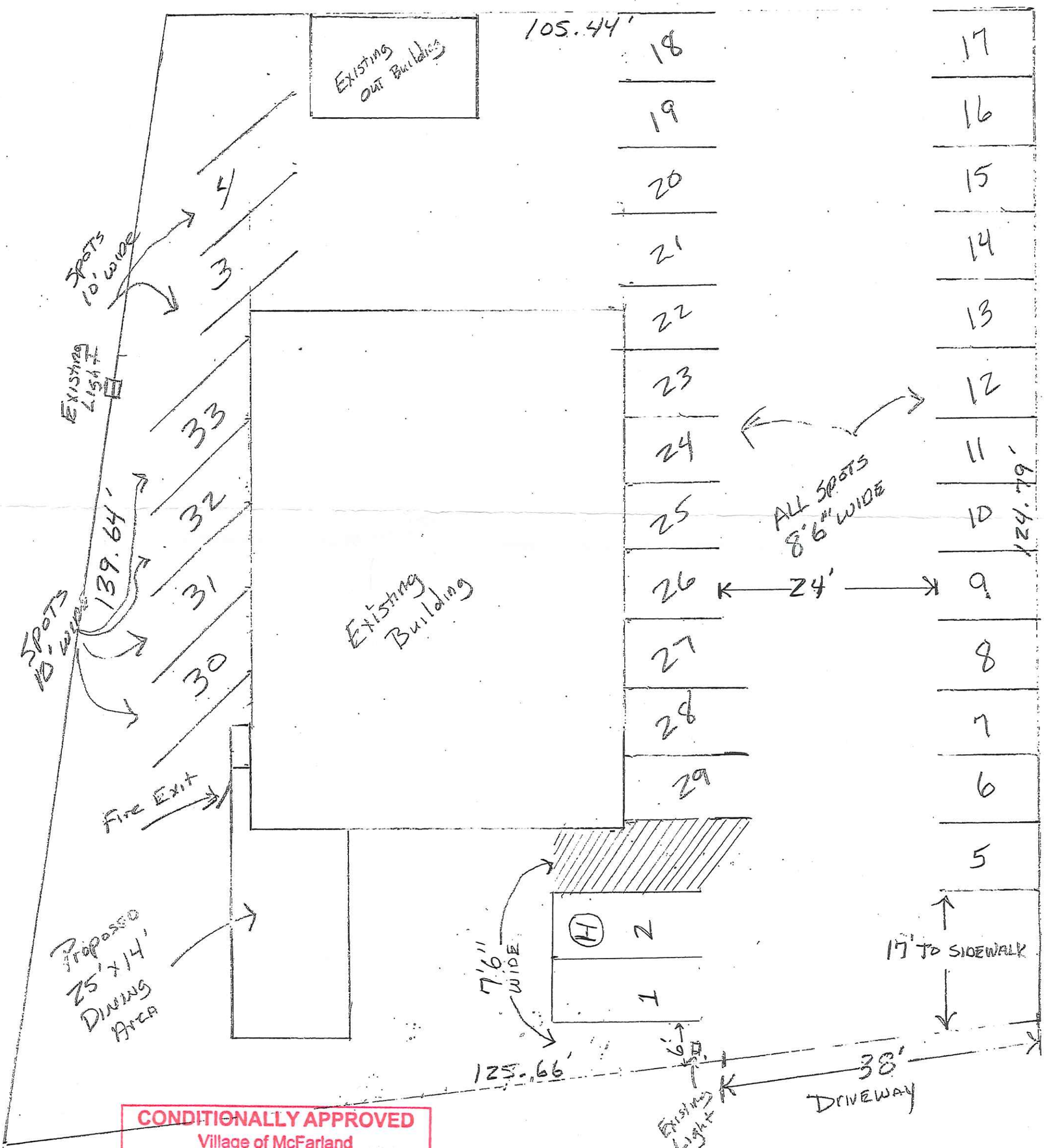
APPROVED
JUL 22 2013
Village Board

Rec. by P.C.
June 17, 2013
with conditions

Comm. Dev.

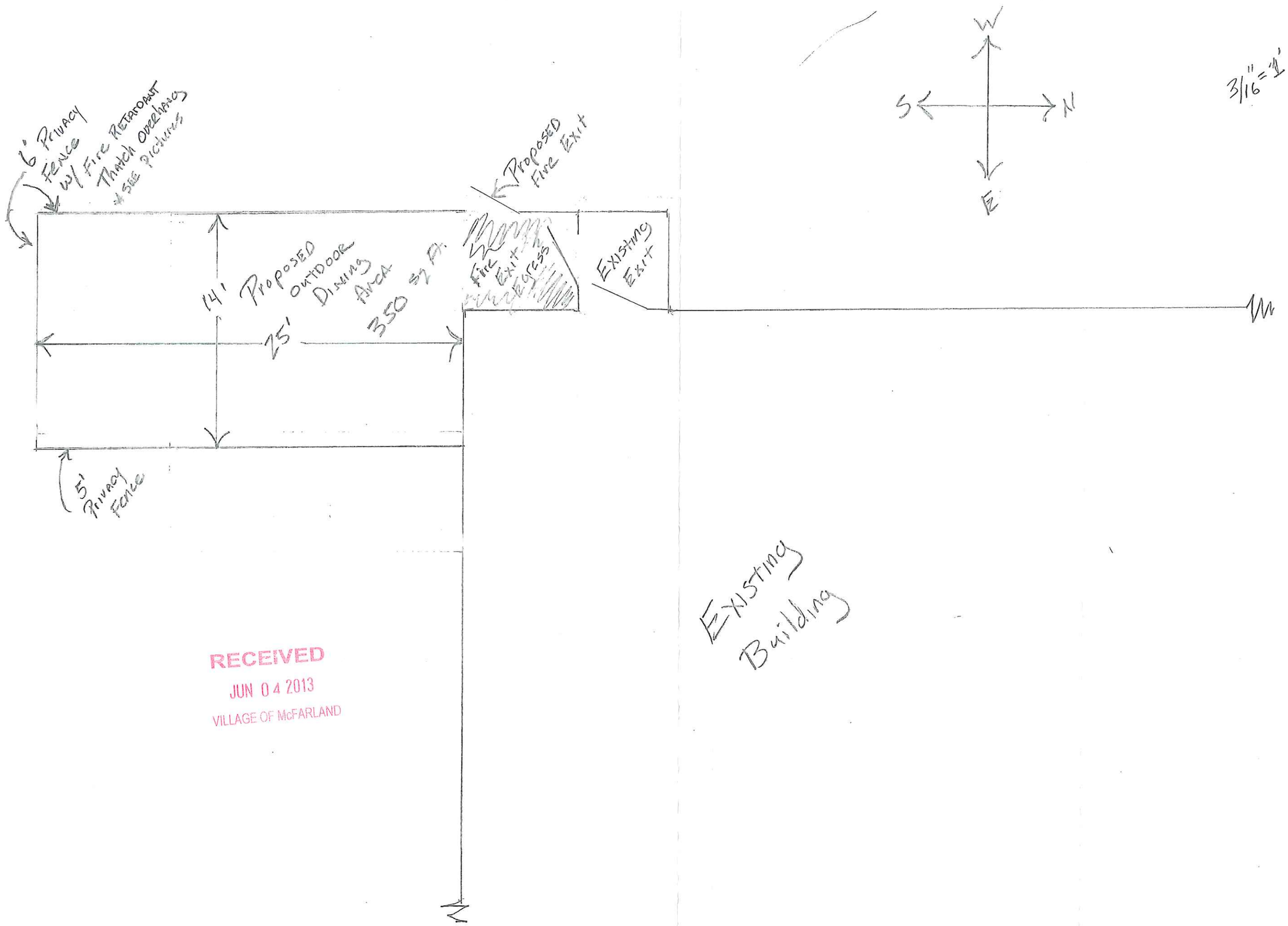
RECEIVED
JUN 17 2013
VILLAGE OF McFARLAND
Dist. At
P.C. Mtg

Current spots Required by Code – 26
Spots Required by Adding outDoor Area – 30



CONDITIONALLY APPROVED
Village of McFarland
MT Plan 7-23-13
(date)

Farwell Street



RECEIVED
JUN 04 2013
VILLAGE OF McFARLAND

ANGELO'S MCFARLAND

4706 Farwell St

RECEIVED
JUN 04 2013
VILLAGE OF McFARLAND

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board regarding a site plan by McFarland House Cafe, 5923 Exchange Street, for front yard outdoor dining and consumption area.**

PREVIOUS ACTION:
The existing two front yard gravel outdoor patio areas were approved by the Landmarks Commission on November 2, 2017. No record of approval of the site plan modification by the Plan Commission is on record. The Plan Commission did approval a site/design application on July 15, 2019 for potential improvements to outdoor dining areas in the rear yard and improvements to the accessory garden house. To date, the owner has not applied for a building permit to complete the improvements discussed in 2019. The site plan approval will expire on July 15, 2020 and the property owner has indicated he is aware he will need to resubmit an application if/when he decides to proceed with those improvements.

ISSUE SUMMARY:
McFarland Cafe desires to allow the consumption of alcoholic beverages within the two existing front yard gravel patio areas. The proposed consumption area is 651 square feet. This request is due in part to the owners anticipation of losing existing indoor seating capacity due to what will be either recommended or required conditions under State order for the reopening of restaurants during the Covid-19 pandemic. As part of the Badger Bounce Back Plan, the WEDC and Wisconsin Department of Health Services released a Guidance on Preparing Restaurant Workplaces for COVID-19. The guidelines include, limiting dining room tables to six guests and spacing tables a minimum of six feet apart; and in bar areas leaving two bar stools empty between customers not in the same party with the same rule applied to outdoor patio areas.

The property is zoned Central Commercial (C-C) and is a local and state designated historic property. Because of the unique nature of the property a number of committee's have a role in reviewing this request, including Public Safety, Landmarks Commission, Plan Commission, and the Village Board.

Section 11-64(n) of the Municipal Code requires a 4-foot high fence for outdoor consumption areas, constructed of wood, plastic, or metal. The applicant is proposing a four foot-high white, wood, picket fence. In addition, the applicant proposes the inclusion of exterior overhead string lighting. The lighting component is a non-permanent site improvement. The lighting would be connected to the existing freestanding signs which includes a photovoltaic sensor. Hours of operation will be Tuesday through Sunday up to 9 pm.

While the proposed fence will not alter the historic structure, Sec. 62-395(b)(2) provides, in part, that no person

in charge of a historic site shall reconstruct or alter any part of the exterior of such structure or construct any improvement upon such designated historic site upon such property unless a certificate of appropriateness has been granted by the Landmarks Commission. Historic site is defined in the Zoning Code to include a parcel on which is situated a historic structure. The Landmarks Commission will be meeting prior to the start of the Plan Commission meeting to consider approval of the Certificate of Appropriateness.

In staff's opinion, the proposed accessory fence and exterior lighting are compatible with the design of the existing building and unobtrusive. The proposed four foot high white, wood, picket fence is architecturally and historically compatible with the existing primary building materials. The proposed improvements would not destroy or detrimentally change the existing historic structure or fail to harmonize with the external appearance of other neighboring improvements on the site.

Two additional points of interest related to this request:

1. Parking. The parking requirements of Sec. 62-172(j) are advisory only in the C-C District. Without social distancing requirements, the owner anticipates the patio area may accommodate up to 50 people. The requirement is for parking spaces equal to 30% of the dining capacity, or 15 in this case. Staff recommends the Plan Commission waive the requirement for additional off-street parking due to the fact that the property location offers greater access to on-street parking opportunities, there is a public parking lot adjacent to the property, the request to expand the outdoor patio is in correlation with likely decreased indoor seating capacity due to COVID-19 safe distancing guidelines/requirements, use of the outdoor area is seasonal and weather dependent, and many customers travel to the restaurant by bike given the locations proximity to the Lower Yahara River Trail.
2. Limited License Agreement. The existing front yard freestanding dual post sign is within the right-of-way on Exchange Street. The proposed fence would also be within the proposed ROW. The Village Attorney has drafted a Limited License Agreement for approval by the Village Board with the Outdoor Consumption Application that permits the owner to install these features and use the ROW for outdoor dining. The Agreement protects Village interests in the event there is a need to use the ROW or temporarily remove the sign or fence for public street or utility projects.

The Public Safety Committee will met on May 20 to review the Outdoor Consumption Area application. The Village Board will met on May 26 to review the same along with the Limited License Agreement.

FINANCIAL/BUDGET IMPACT:

None.

VILLAGE PLAN REFERENCE:

Property is identified as Downtown use in the Village's Comprehensive Plan. One of the goals of the plan is to increase and ease opportunities for businesses to grow in McFarland and expand dining. Improving business retention and enhancing commercial uses in the downtown area are also two of the strategies identified in the Village's 2020-2030 Strategic Plan. In addition, evaluation of ways to become more business friendly and flexible for economic growth is included as in objective of the 2019-2020 Village Board Goals.

ORDINANCE REFERENCE:

Sec. 8-369, Fence Standards
Sec. 11-64(n), Outdoor Consumption
Sec. 62-71, Commercial District Permitted Use
Sec. 62-172(j), Parking Spaces Required
Sec. 62-310, Site/Design Review
Chapter 62, Division 6 - Historic Preservation

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

Recommend approval of the site plan as submitted conditioned on Village Board approval of the Limited License Agreement.

ATTACHMENTS:

1. 5923 Exchange Street Site Plan Application_05.08.20
2. 5923 Exchange Street McFarland House License Agreement

Village of McFarland
Community Development Department

Plan Commission Application – 2020

~Application must be completed in full~

Applicant - Owner	OHearn Ventures LLC	Applicant's Agent	Shaun O'Hearn
		Name	
Address	5923 Exchange St	Address	5205 Linden Parkway
Email	mcfarlandcafe@gmail.com	Email	mcfarlandcafe@gmail.com
Phone #	608 217 6356	Phone #	608 217 6356
Fax #		Fax #	

Parcel No(s). _____ **Type of Proposal – Please check boxes below that apply**

Requires Public Hearing (Class One)	FEES	Requires Public Hearing (Class Two)	FEES	Public Hearing Not required	FEES
☐ Preliminary Plat	$500+AF	☐ Conditional Use	$370+F	☐ Annexation	At cost
☐ Preliminary Plat (reapplication)	$500+BF	☐ Rezoning (map)	$405+	☐ Dev. Agreement Including Addendums	$400 F
☐ Certified Survey Map	$300+FG	☐ Zoning Amendment (text)	$405 +F	☐ Final Plat	$500 +CF
☐ Condominium	$300+EF	☐ Variance-Board of Zoning Appeals	$380+F	☐ Final Plat (reapplication)	$400 +DF
☐ Comprehensive Plan Amendment	$500+F			☒ Site/Design Review	$400 + F
				Escrow Deposits (covers costs for outside consultants; e.g., engineers, attorneys, etc.)	
				☐ R-E, R-3 & PD (up to 50 acres)	$5,000
				☐ R-E, R-3 & PD (greater than 50 acres)	$10,000
				☐ Commercial Site/Design Review (5,000 sq. ft. or more)	$2,000
				☐ All Plats including condominiums	$5,000

+ = Plus publication and notification charges

A = Plus $50.00 per lot

B = Any preliminary plat which has previously been reviewed/revised within the last 36 months

C = Plus $50.00 for each lot within the final plat

D = Any final plat which has been previously reviewed or/ revised within the last 36 months

E = Plus $40.00 for each unit shown

F = Plus actual legal, engineering and financial consulting costs incurred by the Village

G = Plus $25.00 per lot for two or more lots.

Nature of the development proposal: Must provide address of proposed development, legal description, current zoning and description of proposal. (Attach additional paper if needed)

5923 Exchange Street, see attached for legal description

CC Zoning

What action is the applicant requesting of the Plan Commission?

To erect a fence on the west side of the McFarland House

Has this specific proposal been previously discussed or acted upon by the Plan Commission?

☐ **YES** ☒ **NO** **(If "yes" state the nature and the date(s) of the previous application.)**

PLEASE READ AND SIGN AT THE BOTTOM ON THE REVERSE SIDE

Schedule: The Village of McFarland Plan Commission conducts meetings on the third Monday of each month at 7:00 p.m. at the McFarland Municipal Center in the Community Room. To ensure adequate time for staff review, and publication of legal notices; all potential agenda item materials -are required to be submitted per the schedule listed below. **Six (6) Copies** of all materials, **one (1) copy must be 8 ½ x 11, five (5) copies to be 11 x 17 and one (1) electronic copy** (*only one copy of application, completed in full, is necessary)* shall be submitted to the Community Development Department (608-838-3154), with fees paid **by *NOON of the deadline day**, according to the following schedule:

Village of McFarland Plan Commission 2020 Schedule

*Submittal Deadline Noon on:	For Scheduled 2020 Meeting date of:
December 12 (2019)	January Tuesday Jan. 21
January 7	February 17
February 11	March 16
March 10	April 20
April 7	May 18
May 12	June 15
June 9	July 20
July 7	August 17
August 11	September 21
September 8	October 19
October 6	November 16
November 3	December 21 (Pending)
December 8	(Pending) Tuesday, Jan. 19, 2021

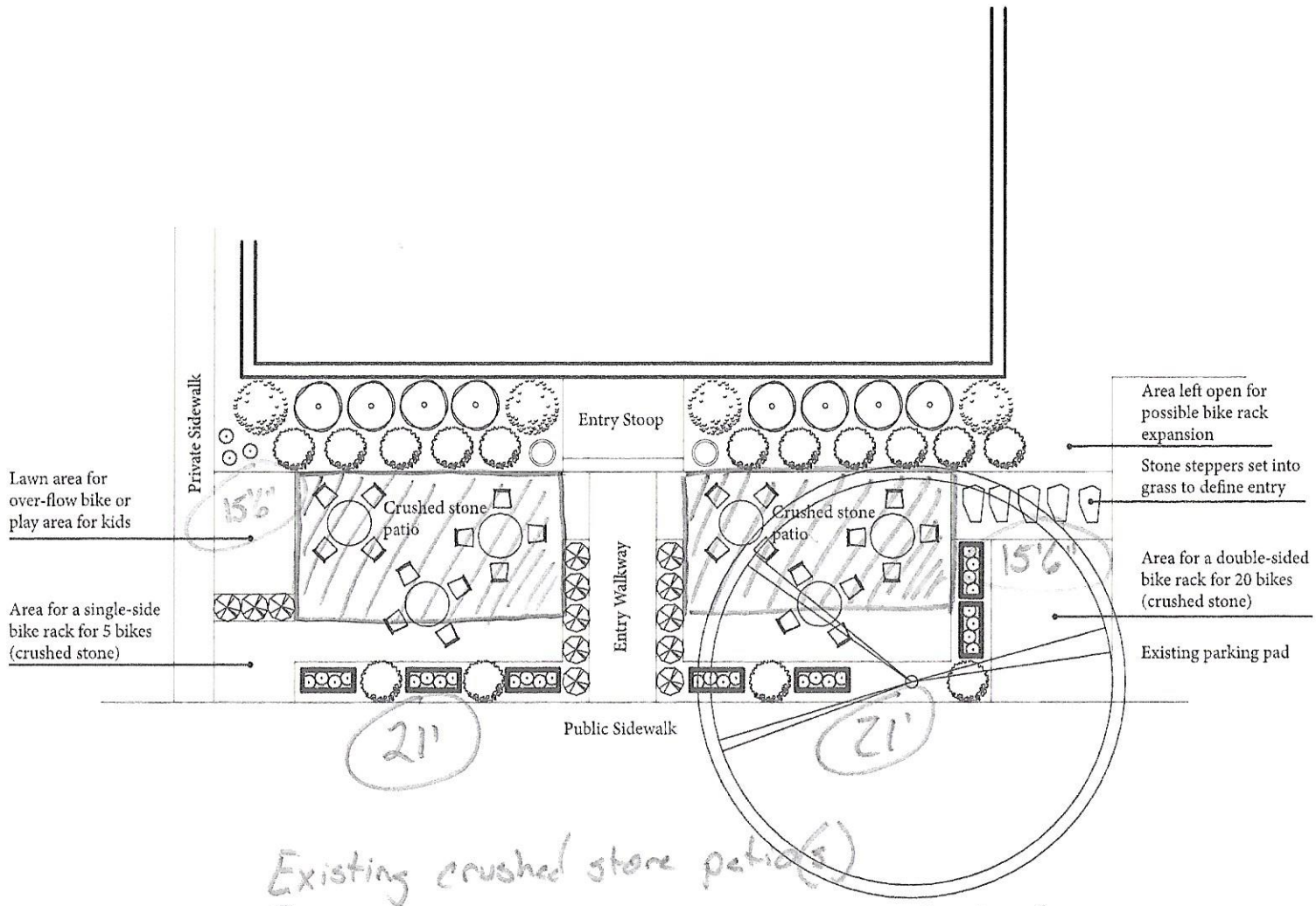
*** Submittal deadline: No exceptions are given for above deadlines**

- **I understand failure to provide required materials/information/fees by the submittal deadline can result in this application being withdrawn for consideration by the Plan Commission. Materials submitted for review after the submittal deadline date, or incomplete submittals, will be held over until the next scheduled meeting.**
- **I understand any fees not paid for (i.e. legal notices, mailings, etc.) will require any permits to be withheld until all payments are made in full. In addition, all application fees are non-refundable.**

X _____ 5/8/2020

Signature of Applicant/Agent Date

USER ACCESS & USE PLAN



Existing crushed stone patio(s)
Proposed outdoor drinking area = 651 ft²
Footprint for cafe interior = 1568 ft²
Outdoor percentage = 41.5 %

SCALE 1/8"=1'-0"

2019-007

ADVANCED LANDSCAPE

HOMESTEAD

5.9.2019

McFarland House Cafe

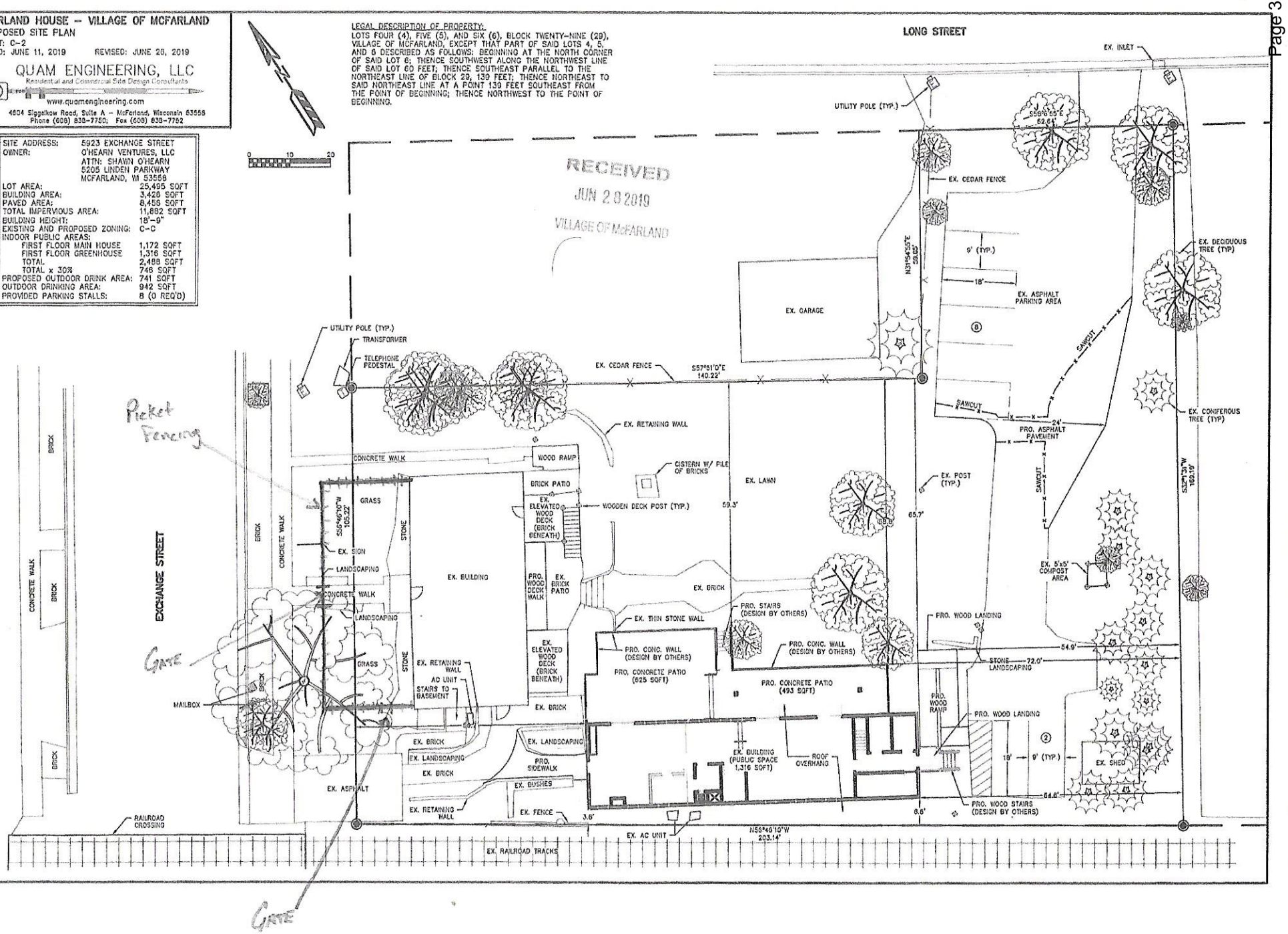
McFarland WI

MCFARLAND HOUSE – VILLAGE OF MCFARLAND
PROPOSED SITE PLAN
SHEET: C-2
DATED: JUNE 11, 2019 REVISED: JUNE 28, 2019

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838-7750; Fax (608) 838-7752

LEGAL DESCRIPTION OF PROPERTY:
LOTS FOUR (4), FIVE (5), AND SIX (6), BLOCK TWENTY-NINE (29), VILLAGE OF MCFARLAND, EXCEPT THAT PART OF SAID LOTS 4, 5, AND 6 DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTH CORNER OF SAID LOT 6; THENCE SOUTHWEST ALONG THE NORTHWEST LINE OF SAID LOT 60 FEET; THENCE SOUTHEAST PARALLEL TO THE NORTHEAST LINE OF BLOCK 29, 139 FEET; THENCE NORTHEAST TO SAID NORTHEAST LINE AT A POINT 139 FEET SOUTHEAST FROM THE POINT OF BEGINNING; THENCE NORTHWEST TO THE POINT OF BEGINNING.

SITE ADDRESS:	5923 EXCHANGE STREET
OWNER:	O'HEARN VENTURES, LLC ATTN: SHAWN O'HEARN 5205 LINDEN PARKWAY MCFARLAND, WI 53558
LOT AREA:	25,495 SQFT
BUILDING AREA:	3,426 SQFT
PAVED AREA:	8,456 SQFT
TOTAL IMPERVIOUS AREA:	11,882 SQFT
BUILDING HEIGHT:	18'-9"
EXISTING AND PROPOSED ZONING:	C-C
INDOOR PUBLIC AREAS:	
FIRST FLOOR MAIN HOUSE	1,172 SQFT
FIRST FLOOR GREENHOUSE	1,316 SQFT
TOTAL	2,488 SQFT
TOTAL x 30%	746 SQFT
PROPOSED OUTDOOR DRINK AREA:	741 SQFT
OUTDOOR DRINKING AREA:	942 SQFT
PROVIDED PARKING STALLS:	8 (0 REQ'D)



- 4' Fencing
- White
- Wood

LIMITED LICENSE AGREEMENT
Between the Village of McFarland and OHearn Ventures LLC

This Agreement is entered into effective as of the last date of signature below, by and between the Village of McFarland, Wisconsin, a municipal corporation, (hereafter referred to as "the Village") and OHEARN VENTURES LLC, a Wisconsin limited liability company (hereafter referred to as "O'Hearn").

WHEREAS, O'Hearn owns and operates a tavern/restaurant facility located at 5923 Exchange Street in the Village; and

WHEREAS, O'Hearn installed and continues to maintain a business sign in front of its property in the public right-of-way of Exchange Street; and

WHEREAS, O'Hearn has requested approval from the Village of an expansion of its outdoor seating area between its building and Exchange Street, including an area within the public right-of-way; and

WHEREAS, the Village is willing to grant O'Hearn a limited license to use a portion of the Exchange Street right-of-way for such purposes, and to allow for construction of a fence to enclose the seating area on the terms and conditions contained herein.

NOW, THEREFORE, in consideration of one dollar, the mutual promises and obligations contained herein, and other valuable consideration, the receipt and sufficiency of which are hereby mutually acknowledged, the parties agree as follows:

1. Grant of License. The Village hereby grants to O'Hearn a limited license to occupy and use that portion of the public right-of-way of Exchange Street northwest of the front of its building at 5923 Exchange Street as depicted in Exhibit A and labeled as "Licensed Area A" for the purpose of constructing, operating, maintaining, repairing, and replacing a seating and service area for customers of its business at that location, including the right to enclose Licensed Area A with a fence (hereinafter referred to as "the Improvements") as provided herein. The design, style and methods of construction of any fence shall be subject to approval by the Village. Any other fixtures or other construction within Licensed Area A must be first approved by the Village.

The Village further grants to O'Hearn a limited license to maintain an existing business sign, or any replacement thereof approved by the Village, in the portion of the public right-of-way of Exchange Street in front of said building in the area depicted in Exhibit A and labeled "Licensed Area B." Licensed Area A and Licensed Area B are referred to herein collectively as the "Licensed Areas."

2. Compliance with Laws. The use of the Licensed Areas, and the construction, installation and use of all Improvements therein, shall conform to all Village ordinances and regulations, the site plan attached hereto as Exhibit A, all conditions imposed on the approval of

said plan and all conditions imposed as conditions to any alcohol beverage license issued by the Village. O'Hearn shall assure that any contractors performing any excavation within the Leased Areas have obtained the permits required by Village Ordinances and carry worker's compensation insurance to the extent required by law.

3. Cost of Improvements. All construction or installation of any Improvements shall be at the sole expense of O'Hearn. O'Hearn shall ensure that the Licensed Areas are not impaired by any contractor's or other liens as a result of work performed on behalf of O'Hearn, and shall provide lien waivers or other documents acceptable to the Village confirming that all contractors have been fully paid.

4. Maintenance of Improvements. O'Hearn shall be solely responsible for all necessary maintenance and repair of the Improvements, and shall keep the Improvements in a neat and attractive condition at all times.

5. Indemnification. O'Hearn shall indemnify and hold the Village harmless from and against any and all liability and damages arising from O'Hearn's use of the Licensed Areas as authorized by this Agreement. The term "liability" shall include all claims, suits, actions, costs, penalties, fines, forfeitures, remedial action or abatement expenses, attorney fees, litigation expenses, damages, judgments or decrees.

6. No Vested Rights. O'Hearn acknowledges that this Agreement does not grant it any rights to, or interest in, the Licensed Areas other than a limited license to install and maintain the Improvements and use the Licensed Areas in the manner provided herein. The Village makes no warranty or representation that the Licensed Areas are suitable for the purposes authorized hereby.

7. No Village Liability. O'Hearn shall be solely responsible for the conduct of its operations and the protection of its Improvements within the Licensed Areas and the Village shall have no liability therefor. O'Hearn acknowledges and agrees that it is solely responsible for determining and maintaining the safety and suitability of the Licensed Areas for use in its operations. O'Hearn shall maintain at all times while using the Licensed Areas one or more policies of commercial general liability insurance written on an occurrence basis with limits of liability for bodily injury and property damage of not less than $1,000,000 per occurrence, naming the Village as an additional insured. Said insurance shall be primary and noncontributory and include a waiver of subrogation in favor of the Village. O'Hearn shall provide the Village with a certificate of insurance evidencing the required coverage prior to constructing any new Improvements in the Licensed Areas, and upon each renewal. The certificate shall be accompanied by a copy of the policy provisions or endorsement providing the additional insured coverage for the Village.

8. Assignment. The license granted by this Agreement is personal to O'Hearn and none of the rights granted hereby may be assigned to any other person or entity without the prior written consent of the Village.

9. Removal of Improvements. The rights granted to O'Hearn by this Agreement are subject and subordinate to the rights of the Village in the use of the public right-of-way of Exchange Street. In the event the Village undertakes any public work within such right-of-way, O'Hearn shall, on 10 days' notice from the Village, temporarily or permanently remove its Improvements to facilitate such work at its sole expense. In the event O'Hearn fails to do so within the time allowed by the Village, O'Hearn waives any and all claims it may have resulting from damage to, or destruction of, any such Improvements and agrees to reimburse the Village for any costs incurred for its removal of the Improvements or additional construction or other project costs resulting from the failure to remove them.

10. Termination. O'Hearn acknowledges and agrees that, pursuant to §66.0425, Wis. Stats., the rights granted by this Agreement may be terminated on 10 days' notice from the Village. O'Hearn further waives any and all right it may have to contest in any manner the validity of §66.0425, Wis. Stats. on any basis whatsoever.

11. Neutral Construction. The parties acknowledge that this Agreement is the product of negotiations between the parties and that, prior to the execution hereof, each party has had full and adequate opportunity to have this Agreement reviewed by, and to obtain the advice of, its own legal counsel with respect hereto. Nothing in this Agreement shall be construed more strictly for or against either party because that party's attorney drafted this Agreement or any part hereof.

IN WITNESS WHEREOF, the parties have executed this Agreement effective as of the last date of signature below.

VILLAGE OF McFARLAND

By: _____
Brad Czebotar (date)
Village President

Attest: _____
Cassandra Suettinger (date)
Village Clerk/Treasurer

OHEARN VENTURES LLC

By: _____ 5/8/2020
Shaun T. O'Hearn, Member (date)

MCFARLAND HOUSE – VILLAGE OF MCFARLAND
PROPOSED SITE PLAN
SHEET: C-2
DATED: JUNE 11, 2019 REVISED: MAY 1, 2020

QUAM ENGINEERING, LLC
Residential and Commercial Site Design Consultants
www.quamengineering.com
4604 Siggelkow Road, Suite A – McFarland, Wisconsin 53558
Phone (608) 838-7750; Fax (608) 838-7752

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PAVED AREA:	8,456 SQFT
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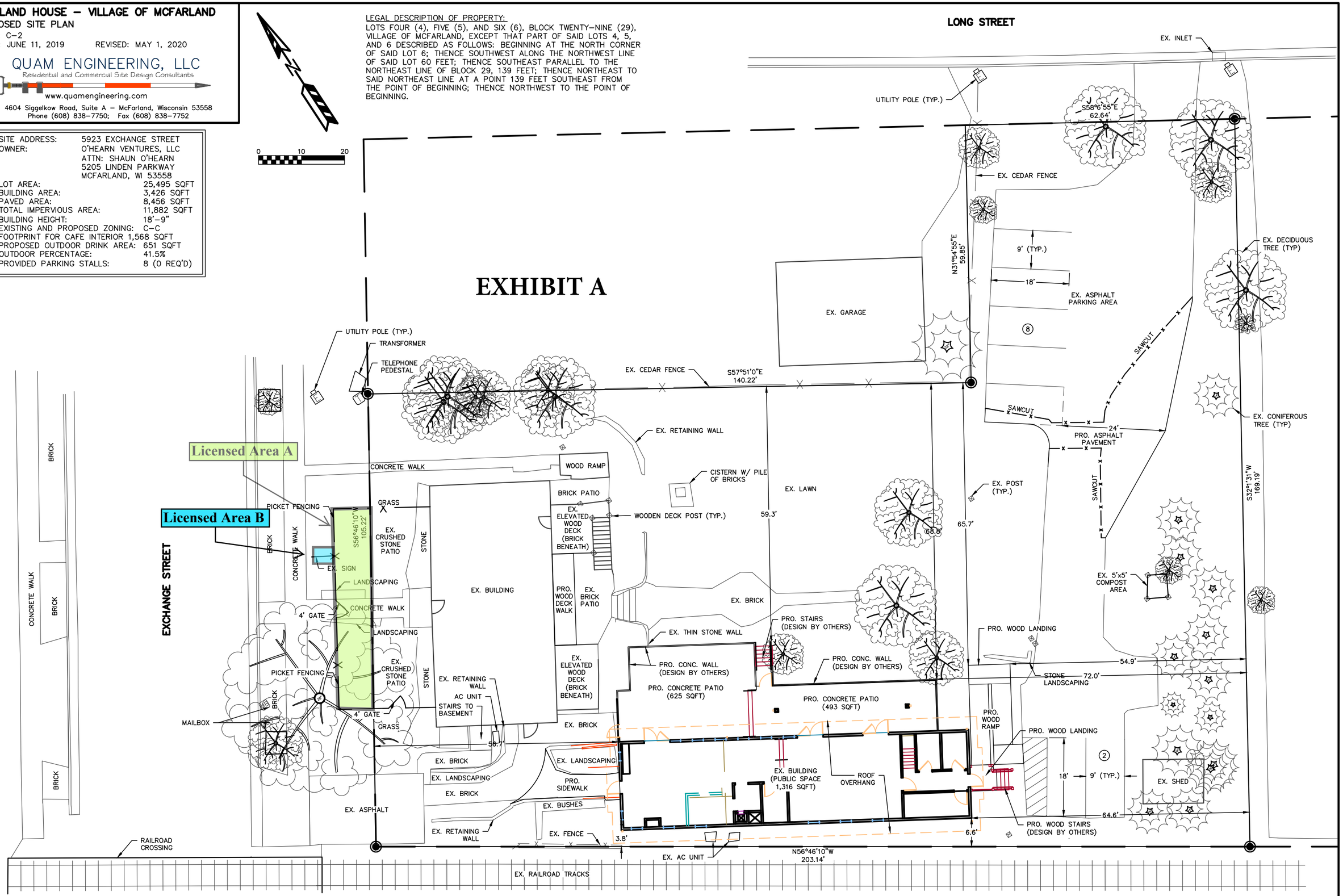
BUILDING HEIGHT:	18'-9"
EXISTING AND PROPOSED ZONING:	C-C
FOOTPRINT FOR CAFE INTERIOR	1,568 SQFT
PROPOSED OUTDOOR DRINK AREA:	651 SQFT
OUTDOOR PERCENTAGE:	41.5%
PROVIDED PARKING STALLS:	8 (0 REQ'D)

EXHIBIT A



QUAM ENGINEERING, LLC 4604 Siggelkow Road, Suite A – McFarland, WI 53558 (608) 838-7750 \SO-02-19\S002BASE.DWG

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion and action on a request by Robert Kay and Rachel Fisher for a Certified Survey Map (CSM) located at 5121 Glen Road, McFarland, WI in order to combine two parcels.**

PREVIOUS ACTION:
None

ISSUE SUMMARY:
Robert Kay and Rachel Fisher desire to combine two parcels they own that comprise 5121 Glen Road. The two parcels are Lot 74 and the north half of Lot 73, of the Idlewild plat. Both parcels are zoned R-1B Single Family Residential. Lot 74 includes the dwelling and a detached garage, while the half of Lot 73 they own includes an accessory shed and driveway. The applicants desire to combine the properties as one lot for the purpose of constructing a fence along the proposed Lot 1 perimeter. Combining the lots also benefits the owners and Village as the proposed Lot 1 would be in compliance with the minimum lot size and lot width requirements of the R-1B District, whereas each separate lot is currently nonconforming to these standards.

FINANCIAL/BUDGET IMPACT:
None

VILLAGE PLAN REFERENCE:
Properties are planned as Single Family Residential in the Village's Comprehensive Plan

ORDINANCE REFERENCE:
Sec. 56-39 Certified Survey Map Approval
Sec. 56-71 Technical requirements for Certified Survey Maps
Sec. 62-70 Bulk standard - Residential Districts

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
Recommend approval of the application and CSM as submitted.

ATTACHMENTS:
1. 5121 Glen Road - PC App 3.10.20
2. KAY CSM 5121 GLEN RD (5-11-2020)

Village of McFarland
Community Development Department

RECEIVED
MAR 10 2020
VILLAGE OF McFARLAND

Plan Commission Application – 2020

~Application must be completed in full~

Applicant - Owner	Robert Kay & Rachel Fisher	Applicant's Agent	Williamson Sureying & Assoc. LLC
		Name	Chris Adams
Address	5121 Glen Rd, McFarland	Address	104A W. Main St, Waunakee, WI 53597
Email	rekay2000@hotmail.com	Email	chris@williamsonsurveying.com
Phone #	608-239-4106 608-556-9424	Phone #	608-255-5705
Fax #		Fax #	608-849-9760

Parcel No(s). 0710-343-3854-3 / 0710-343-3845.6 **Type of Proposal – Please check boxes below that apply**

Requires Public Hearing (Class One)	FEES	Requires Public Hearing (Class Two)	FEES	Public Hearing Not required	FEES
☐ Preliminary Plat	$500+AF	☐ Conditional Use	$370+F	☐ Annexation	At cost
☐ Preliminary Plat (reapplication)	$500+BF	☐ Rezoning (map)	$405+	☐ Dev. Agreement Including Addendums	$400 F
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☐ Comprehensive Plan Amendment	$500+F			☐ Site/Design Review	$400 + F

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A = Plus $50.00 per lot

B = Any preliminary plat which has previously been reviewed/revised within the last 36 months

C = Plus $50.00 for each lot within the final plat

D = Any final plat which has been previously reviewed or/ revised within the last 36 months

E = Plus $40.00 for each unit shown

F = Plus actual legal, engineering and financial consulting costs incurred by the Village

G = Plus $25.00 per lot for two or more lots.

Escrow Deposits (covers costs for outside consultants; e.g., engineers, attorneys, etc.)	
☐ R-E, R-3 & PD (up to 50 acres)	$5,000
☐ R-E, R-3 & PD (greater than 50 acres)	$10,000
☐ Commercial Site/Design Review (5,000 sq. ft. or more)	$2,000
☐ All Plats including condominiums	$5,000

Nature of the development proposal: Must provide address of proposed development, legal description, current zoning and description of proposal. (Attach additional paper if needed)

Combine Lot 74 and 1/2 of Lot 73 (current ownership) of Idlewild into 1 CSM lot for possible new construction project at 5121 Glen Rd

What action is the applicant requesting of the Plan Commission?

Approval of a lot line adjustment Certified Survey Map

Has this specific proposal been previously discussed or acted upon by the Plan Commission?

☐ **YES** ☒ **NO** **(If "yes" state the nature and the date(s) of the previous application.)**

PLEASE READ AND SIGN AT THE BOTTOM ON THE REVERSE SIDE

Schedule: The Village of McFarland Plan Commission conducts meetings on the third Monday of each month at 7:00 p.m. at the McFarland Municipal Center in the Community Room. To ensure adequate time for staff review, and publication of legal notices; all potential agenda item materials -are required to be submitted per the schedule listed below. **Six (6) Copies** of all materials, **one (1) copy must be 8 ½ x 11, five (5) copies to be 11 x 17 and one (1) electronic copy** (*only one copy of application, completed in full, is necessary)* shall be submitted to the Community Development Department (608-838-3154), with fees paid **by *NOON of the deadline day**, according to the following schedule:

Village of McFarland Plan Commission 2020 Schedule

*Submittal Deadline Noon on:	For Scheduled 2020 Meeting date of:
December 12 (2019)	January Tuesday Jan. 21
January 7	February 17
February 11	March 16
March 10	April 20
April 7	May 18
May 12	June 15
June 9	July 20
July 7	August 17
August 11	September 21
September 8	October 19
October 6	November 16
November 3	December 21 (Pending)
December 8	(Pending) Tuesday, Jan. 19, 2021

*** Submittal deadline: No exceptions are given for above deadlines**

- **I understand failure to provide required materials/information/fees by the submittal deadline can result in this application being withdrawn for consideration by the Plan Commission. Materials submitted for review after the submittal deadline date, or incomplete submittals, will be held over until the next scheduled meeting.**
- **I understand any fees not paid for (i.e. legal notices, mailings, etc.) will require any permits to be withheld until all payments are made in full. In addition, all application fees are non-refundable.**

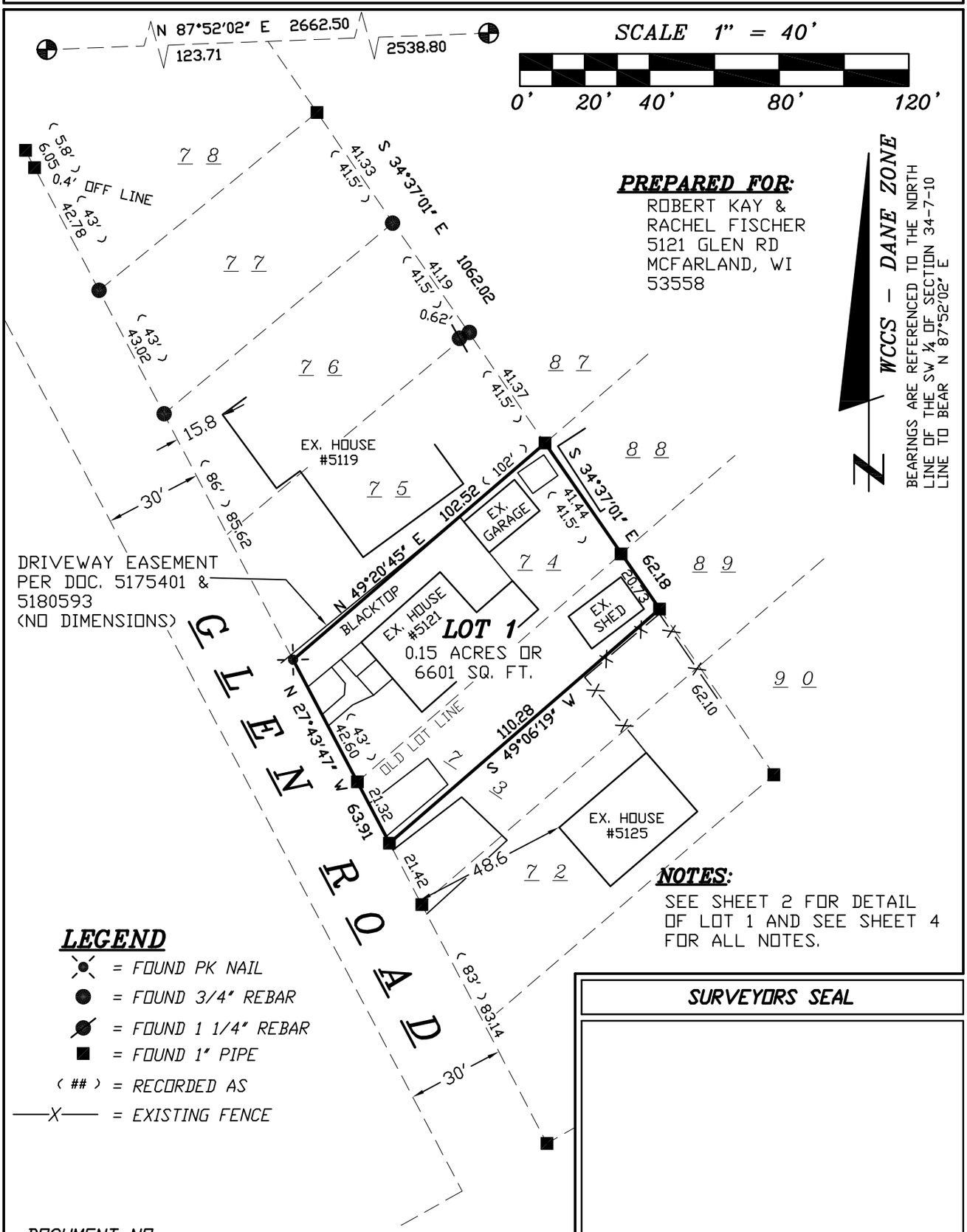
X Rachel Fisher Kay — 3-10-2020

Signature of Applicant/Agent — Date

CERTIFIED SURVEY MAP

WILLIAMSON SURVEYING AND ASSOCIATES, LLC
NOA T. PRIEVE & CHRIS W. ADAMS, PROFESSIONAL LAND SURVEYORS
104 A WEST MAIN STREET, WAUNAKEE, WISCONSIN, 53597 PHONE: 608-255-5705

Located in the NW ¼ of the SW ¼ of Section 34, T7N, R10E, Village of McFarland, Dane County, Wisconsin. Including all of Lot 74 and the North ½ of Lot 73, Idlewild.



NOTES:

SEE SHEET 2 FOR DETAIL OF LOT 1 AND SEE SHEET 4 FOR ALL NOTES.

SURVEYORS SEAL

DOCUMENT NO._____

CERTIFIED SURVEY MAP NO._____

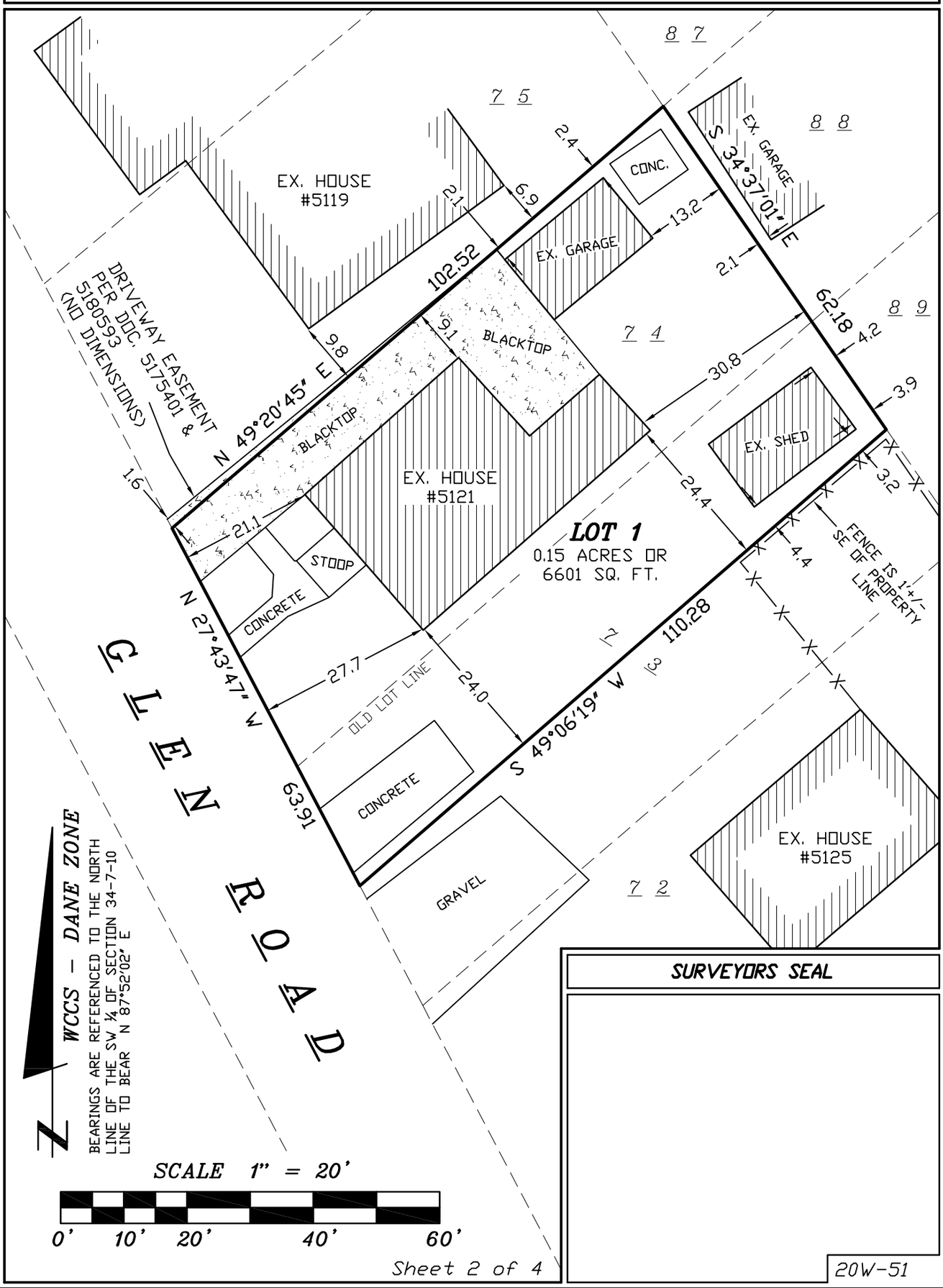
Sheet 1 of 4

20W-51

CERTIFIED SURVEY MAP

WILLIAMSON SURVEYING AND ASSOCIATES, LLC
NOA T. PRIEVE & CHRIS W. ADAMS, PROFESSIONAL LAND SURVEYORS
104 A WEST MAIN STREET, WAUNAKEE, WISCONSIN, 53597 PHONE: 608-255-5705

Located in the NW ¼ of the SW ¼ of Section 34, T7N, R10E, Village of McFarland, Dane County, Wisconsin. Including all of Lot 74 and the North ½ of Lot 73, Idlewild.



SURVEYORS SEAL

Sheet 2 of 4

20W-51

CERTIFIED SURVEY MAP

WILLIAMSON SURVEYING AND ASSOCIATES, LLC
NOA T. PRIEVE & CHRIS W. ADAMS, PROFESSIONAL LAND SURVEYORS
104 A WEST MAIN STREET, WAUNAKEE, WISCONSIN, 53597 PHONE: 608-255-5705

Located in the NW ¼ of the SW ¼ of Section 34, T7N, R10E, Village of McFarland, Dane County, Wisconsin. Including all of Lot 74 and the North ½ of Lot 73, Idlewild.

SURVEYOR'S CERTIFICATE

I, Chris W. Adams, Professional Land Surveyor hereby certify that this survey is correct to the best of the professional surveyor's knowledge and belief and is in full compliance with the provisions of Chapter A-E 7 and Chapter 236.34 Wisconsin Statutes, the subdivision regulations of the Village of McFarland, and by the direction of the owners listed below, I have surveyed, divided, and mapped a correct representation of the exterior boundaries of the land surveyed and the division of that land, being part of the NW ¼ of the SW ¼ of Section 34, T7N, R10E also being all of Lot 74 and the North ¼ of Lot 73, Idlewild, in the Village of McFarland, Dane County, Wisconsin.

Williamson Surveying and Associates, LLC
by Noa T. Prieve & Chris W. Adams

*Date*_____

_____
Chris W. Adams S-2748
Professional Land Surveyor

OWNERS' CERTIFICATE:

As owner, I hereby certify that I caused the land described on this certified survey map to be surveyed, divided and mapped as represented on the certified survey map. I also certify that this certified survey map is required to be submitted to the Vilage of McFarland for approval.

WITNESS the hand seal of said owners this _____day of_____,20___.

_____ _____
ROBERT KAY *RACHEL A. FISHER*

STATE OF WISCONSIN)
DANE COUNTY)

Personally came before me this _____ day of _____, 20___ the above named Robert Kay and Rachel A. Fisher to me known to be the person who executed the foregoing instrument and acknowledge the same.

_____*County, Wisconsin.*

My commission expires _____

_____
Notary Public

_____
Print Name

SURVEYORS SEAL

CERTIFIED SURVEY MAP

WILLIAMSON SURVEYING AND ASSOCIATES, LLC
NOA T. PRIEVE & CHRIS W. ADAMS, PROFESSIONAL LAND SURVEYORS
104 A WEST MAIN STREET, WAUNAKEE, WISCONSIN, 53597 PHONE: 608-255-5705

Located in the NW ¼ of the SW ¼ of Section 34, T7N, R10E, Village of McFarland, Dane County, Wisconsin. Including all of Lot 74 and the North ½ of Lot 73, Idlewild.

NOTES:

1.) THIS SURVEY WAS PREPARED WITHOUT BENEFIT OF A TITLE REPORT FOR THE SUBJECT TRACT OR ADJOINERS AND IS THEREFORE SUBJECT TO ANY EASEMENTS, AGREEMENTS, RESTRICTIONS AND STATEMENT OF FACTS REVEALED BY EXAMINATION OF SUCH DOCUMENTS.

2.) WETLANDS, IF PRESENT, HAVE NOT BEEN DELINEATED OR SHOWN.

3.) FLOOD PLAIN, IF PRESENT, HAS NOT BEEN LOCATED OR SHOWN.

VILLAGE OF MCFARLAND APPROVAL

Resolved that this certified survey map is hereby acknowledged and approved by the Village of McFarland on this _____day of _____, 20___.

_____
Cassandra Suettinger
Village of McFarland Clerk

REGISTER OF DEEDS:

Received for recording this ___ day of _____, 20___ at ___ o'clock ___.M. and recorded in Volume _____ of Dane County Certified Surveys on pages _____ through _____.

_____
Kristi Chlebowski
Register of Deeds

DOCUMENT NO._____

CERTIFIED SURVEY MAP NO._____

SURVEYORS SEAL

20W-51

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion of a concept plan by CF Investments LLC for multi-family and townhouse units on Lots 57 & 58 of Prairie Place Subdivision.**

PREVIOUS ACTION:
None.

ISSUE SUMMARY:
CF Investments LLC (Craig Frank) has an option to purchase Lots 57 & 58 of the Prairie Place subdivision. They are appearing at the May Plan Commission meeting for a pre-application discussion to introduce their development plans and answer initial questions or concerns.

The project site is 2.25 acres and currently zoned R-3 General Residence. The developer proposes constructing 32 market rate dwelling units consisting of 24 two-story townhouse units in four separate buildings, each with two-car garages, and one two-story multi-family building with eight units and underground parking. Total gross density of the site would be 14.2 DU/acre. The developer will be petitioning for a conditional use permit and site plan approval. The R-3 District allows up to 15 DU/ac with a conditional use permit. The developer desires to break ground this summer.

Consistency with the Village Comprehensive Plan
The Village's Future Land Use Map identifies the subject property in the "Multiple Family Residential" category. Figure 4.1 of the Comp Plan provides additional details regarding development policies for this future land use category. The general description of land uses includes a range of housing types, including multiple family residences (e.g. condominiums, apartments, multiplexes), including independent elderly housing. May also include single family residences. The Development Policies in Figure 4.1 further explain the desire to encourage design of multiple family developments to relate to public streets and integrate with the fabric of the surrounding neighborhood, rather than being designed as isolated enclaves or with large parking lot dominance. In addition the Comp Plan calls for developments to include high-quality building materials, architectural variation and interest, durable and lasting finish materials (inside and out), garage or under building parking, and responsible management. Typical implementing zoning districts include R-3, R-E, PD and PD-I.

FINANCIAL/BUDGET IMPACT:
The developer has indicated an estimated appraised value of $7.5M, which would yield approximately $50K in annual property tax payments to the Village. There are also deferred special assessments that will be due for

this property related to Holscher Road and Lift Station #5 construction under the existing Development Agreement for Prairie Place. The amount due is approximately $82K. Additional revenue from park impact fees, library impact fees, and public water impact fees would be payable to the Village.

VILLAGE PLAN REFERENCE:

One of the goals of the Village of McFarland Comprehensive Land Use Plan is to promote quality, affordable housing for families and older residents within neighborhoods and mixed use settings that are organized around safety, conservation, recreation, and connections to the broader community. A related housing objective is to expand the range of quality and affordable housing choices for empty nesters, seniors, and the McFarland workforce, while remaining a family-oriented community. A related housing policy is to promote affordable housing through allowing modest lot sizes and higher suburban densities, including appropriately planned and located multiple family housing, incentives where practical, and continued participation in County and State housing programs. The plan recommends dispersing townhouse residential uses through the Village rather than repeating blocks of this type of future land use in just a few areas. Townhouses are encouraged to relate to public streets and integrate with the fabric of the surrounding neighborhood, rather than being designed as isolated enclaves or with garage-door dominance.

ORDINANCE REFERENCE:

Sec. 62-69, Residential Permitted & Conditional Uses
Sec. 62-70, Residential Bulk Standards
Chapter 62, Article II, Division 2, Subdivision II, Conditional Uses
Sec. 62-310, Site/Design Review

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

This agenda item is for discussion only. Input provided by the Plan Commission will be considered by the development team as they prepare their PUD General Development Plan.

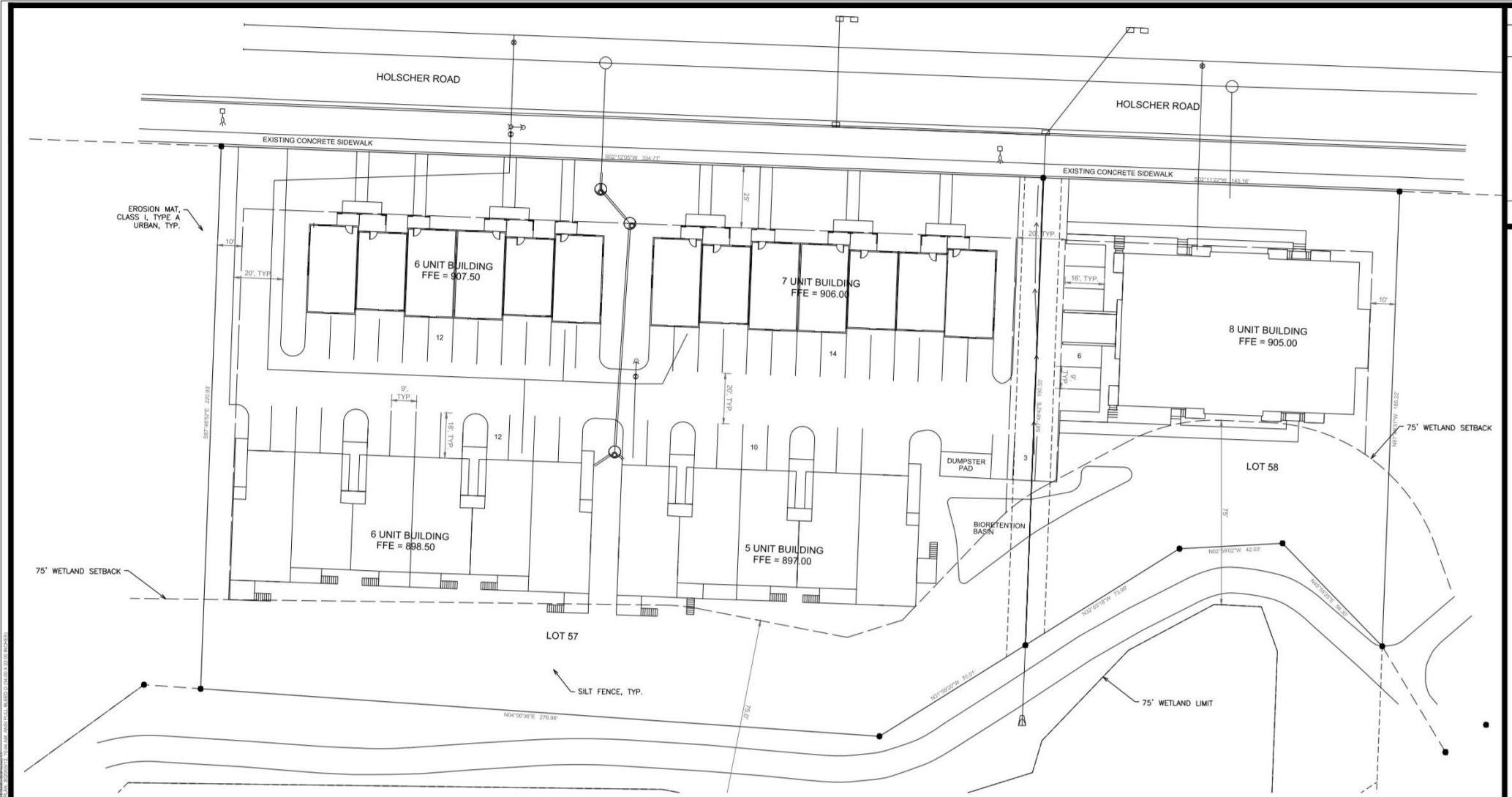
ATTACHMENTS:

1. Prairie Place Lots 57 and 58_CF Investments_05.18.20

Development Proposal Lots 57/58 Prairie Place

CF Investments LLC

REAL ESTATE



ZONING
R-3

PROPERTY DESCRIPTION
PRAIRIE PLACE - LOTS 57 & 58
2.25 ACRES

PARCEL NUMBERS
0610-021-2628-1
0610-021-2617-1-

GENERAL USE
MULTIFAMILY RESIDENTIAL

BUILDING DESCRIPTION
MULTIFAMILY
MAXIMUM BUILDING HEIGHT = 35'

PARKING STALL COUNT
LOT 57 REQUIREMENT: 5 - 2 BDRM = 10 STALLS, 19 - 3 BDRM = 48 STALLS,
LOT 57 TOTAL REQUIREMENT = 58 STALLS
LOT 57 PROVIDED: 95 STALLS

LOT 58 REQUIREMENT: 4 - 2 BDRM = 8 STALLS, 4 - 3 BDRM = 10 STALLS
LOT 58 TOTAL REQUIREMENT = 18 STALLS
LOT 58 PROVIDED: 22 STALLS

BASE SITE CALCULATIONS
LOT AREA = 98,006 SQ. FT.
PERVIOUS AREA = 44,356 SQ. FT. (45.3% LOT COVERAGE)
IMPERVIOUS AREA = 53,650 SQ. FT. (54.7% LOT COVERAGE)
BUILDING = 29,192 SQ. FT.
SIDEWALK = 3,460 SQ. FT.
PAVEMENT = 20,998 SQ. FT.

IMPERVIOUS SURFACE RATIO = 54.7%

MARK	REVISION	DATE	BY

Engineer: MLC | Checked By: CHKD | Scale: 1" = 20'
Technician: TECH | Date: 05-11-2020 | T-R-S: T7N-R8W-S5
Project No: 120.0462.30 | Sheet C 200

PRAIRIE PLACE - LOTS 57 & 58
SITE PLAN
VILLAGE OF MCFARLAND, DANE COUNTY, WI

SNYDER & ASSOCIATES, INC.
5010 VOGES ROAD
MADISON, WISCONSIN 53718
608-838-0444 | www.snyder-associates.com

SNYDER & ASSOCIATES

Project No: 120.0462.30
Sheet C 200

Activat

Overview

- 32-unit residential development consisting of 5 townhome style buildings
- Mix of 2 and 3 bedroom units with several floor plan options
- 1280-1960 sqft
- All units to have 2-car garages or underground parking
- Interior finishes include wood/laminate and tile floors, solid surface countertops, stainless steel appliances, and quality cabinetry. High efficiency mechanicals throughout.
- Total projected value: $7,500,000
- With a goal of complementing the existing neighborhood and making the Holscher Rd frontage as attractive as possible, we are proposing a private driveway within the property
- Rear facing garages and surface parking
- Parking requirements – 76 stalls
- Parking proposed – 117 stalls
- With a surplus of 41 parking stalls beyond the requirements there will be a reduced need for street parking on Holscher Rd

Project Renderings

Interior

CF Investments LLC Background

- Based out of McFarland, Craig Frank and CF Investments have been in the real estate business since 1985. With the addition of Cory Frank we are poised to continue providing communities with high quality projects for future generations.
- Our current focus is on pursuing redevelopment opportunities, residential/mixed-use projects, and land development with over 180 million dollars in projects that are completed or currently under construction.

Recent Projects

North Towne Apartments – Windsor
- Residential development consisting of a 42-unit apartment and six 3-unit townhome buildings
- Completed 2016

Cottage Grove Commons – Cottage Grove
- 105 unit mixed use building w/ 8,000 sqft commercial and four 8-unit condominiums
- Under Construction

Freedom Townhomes Condominiums – Sun Prairie (Pictured)
- Three 8-unit townhome style condominiums w/underground parking
- 2018-2019

Driscoll Townhomes – Madison (Pictured)
- Eight 4-unit townhome style buildings w/ 2-car attached garages
- 2019

Triumph Dr 12-unit Apartment – Sun Prairie
- 12-unit garden style apartment w/ underground parking and elevator
- Under Construction

Stonehaven 17-unit Apartment – Sun Prairie
- 17-unit garden style apartment w/ attached garages
- Under Construction

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion of a concept plan by Northpointe Develoment for multi-family and townhouse units on Lot 56 of Prairie Place Subdivision.**

PREVIOUS ACTION:
None.

ISSUE SUMMARY:
North Pointe Development has an option to purchase Lot 56 of the Prairie Place subdivision. They are appearing at the May Plan Commission meeting for a pre-application discussion to introduce their development plans and answer initial questions or concerns.

The project site is 3.30 acres and currently zoned R-3 General Residence. The developer proposes rezoning the property to Planned Development for the purpose of constructing 80 dwelling units consisting of 62 units in a 3-story building with underground parking and 18 units in five separate two-story townhouse buildings, each with individual two-car garages. Total gross density of the site would be 24 DU/acre. The development project (named The Waterford Apartments and Townhouses) would be built in a single phase. The multi-family building would be age restricted to 55 plus. The developer intends to apply for affordable housing tax credits with the units targeted primarily to households earning 50-80% of county median incomes. To meet tax credit program eligibility requirements, the developer will be petitioning for a rezone to the PD Planned Development District and approval of a General Development Plan. Should they receive tax credits they will then proceed to apply for approval of a Detailed Development Plan (~June 2021) with construction commencing in ~August 2021 and completed ~September 2022.

Consistency with the Village Comprehensive Plan
The Village's Future Land Use Map identifies the subject property in the "Multiple Family Residential" category. Figure 4.1 of the Comp Plan provides additional details regarding development policies for this future land use category. The general description of land uses includes a range of housing types, including multiple family residences (e.g. condominiums, apartments, multiplexes), including independent elderly housing. May also include single family residences. The Development Policies in Figure 4.1 further explain the desire to encourage design of multiple family developments to relate to public streets and integrate with the fabric of the surrounding neighborhood, rather than being designed as isolated enclaves or with large parking lot dominance. In addition the Comp Plan calls for developments to include high-quality building materials, architectural variation and interest, durable and lasting finish materials (inside and out), garage or under building parking, and responsible management. Typical implementing zoning districts include R-3, R-E, PD

and PD-I.

FINANCIAL/BUDGET IMPACT:

The developer has indicated an estimated construction budget of $14.6M. Assuming a final assessment value of ~10.2M (70% of construction costs) would yield approximately $66K in annual property tax payments to the Village. There are also deferred special assessments that will be due for this property related to Holscher Road and Lift Station #5 construction under the existing Development Agreement for Prairie Place. The amount due is approximately $124K. Additional revenue from park impact fees, library impact fees, and public water impact fees would be payable to the Village. Note, the developer has expressed interest in the potential waiving or reduction of park impact fees for the affordable housing units as is permitted at the Village's discretion under Sec. 8-464(d)(4).

VILLAGE PLAN REFERENCE:

One of the goals of the Village of McFarland Comprehensive Land Use Plan is to promote quality, affordable housing for families and older residents within neighborhoods and mixed use settings that are organized around safety, conservation, recreation, and connections to the broader community. A related housing objective is to expand the range of quality and affordable housing choices for empty nesters, seniors, and the McFarland workforce, while remaining a family-oriented community. A related housing policy is to promote affordable housing through allowing modest lot sizes and higher suburban densities, including appropriately planned and located multiple family housing, incentives where practical, and continued participation in County and State housing programs.

Developing affordable housing in the Village was also a theme that emerged from the Village's 2020-2030 Strategic Plan. In addition, actively promoting and supporting affordable housing in the Village is included in the 2019-2020 Village Board Goals.

ORDINANCE REFERENCE:

Sec. 62-67, PD Planned Development District
Sec. 62-310, Site/Design Review
Sec. 62-343, Procedure for Changes and Amendments to the Zoning Code

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

This agenda item is for discussion only. Input provided by the Plan Commission will be considered by the development team as they prepare their PUD General Development Plan.

ATTACHMENTS:

1. Praire Place Lot 56_NorthPointeDevelopment_05.08.20

NORTHPOINTE
DEVELOPMENT CORPORATION

Village of McFarland

Planning Commission Meeting

May 18, 2020

The Waterford

Conceptual renderings

3-STORY APARTMENT

2-STORY TOWNHOUSE

2-STORY TOWNHOUSE

knothe bruce
ARCHITECTS

Phone: 608.836.3690
7601 University Ave, Ste 201
Middleton, WI 53562

ISSUED
Issued for Review - April 29, 2020

PROJECT TITLE
Northpointe Development

Broadhead Street
McFarland, Wisconsin

SHEET TITLE
Site Plan

SHEET NUMBER
C-1.1

PROJECT NO. 1972

© Knothe & Bruce Architects, LLC

The Waterford Apartments and Townhomes

Lot 56 Prairie Place Subdivision: Corner of Holscher and Broadhead

- 80 senior and workforce housing units in 5 buildings
- Units targeted primarily to households earning 50-80% of county median
  - $40,050-$64,080 two-person households
  - $50,050-$80,080 four-person households
- Building 1
  - 62 units three-story apartment building
    - Age restricted 55 plus
    - 31- one bedroom / 31- two bedroom
    - 62 underground parking spaces
- Buildings 2-5
  - 18 three-bedroom townhomes
    - General occupancy
    - Two-Story
    - Two Car Garages

- Utilizing State and Federal 4% Housing Tax Credit
- State 4% program created in 2018
- Benefits to McFarland
  - 4% projects are funded by WHEDA at a significantly higher percentage than 9% projects
  - 4% projects are 100% affordable but includes households earning up to 80% of county median income vs 60%
  - Affordable but higher per unit real estate taxes then a 9% Housing Tax Credit project
- Northpointe was awarded two State 4% applications in 2020
  - The Limerick in Fitchburg is like the McFarland proposal.

The Waterford Apartments and Townhomes

Lot 56 Prairie Place Subdivision: Corner of Holscher and Broadhead

DEVELOPMENT TIMELINE

May 18, 2020	Pre-Application Meeting with Village
June- 2020	General Plan approval from Village Submission of FHLB-AHP application
November-2020	Notification of AHP Grant
December- 2020	Submit WHEDA Tax Credit Application
April- 2021	WHEDA Announcement of Housing Tax Credit Awards
June- 2021	Detailed Plan Approval from Village
August- 2021	Acquire property and commence construction
September-2022	Receive Occupancy permits- begin leasing

SOURCES AND USES OF FUNDS

First Mortgage-WHEDA	$8,989,000
Federal HTC Equity	$4,947,310
State HTC Equity	$2,291,049
AHP- FHLB	$900,000
Subordinate Mortgage- WHEDA	$1,123,625
Developer Contribution	$1,550,402
TOTAL SOURCES OF FUNDS	$19,801,386
Property Acquisition & Construction	$14,641,199
Intermediary Costs	$4,655,187
Development Reserves	$505,000
TOTAL USES OF FUNDS	$19,801,386

About Northpointe

- Northpointe Development Corporation is a real estate development company created for the purpose of bringing revitalization and development to various neighborhoods in Wisconsin.
- Northpointe envisions vibrant communities that strengthen neighborhoods, enhance livelihoods, respond to the environment, and connect people and places.
- The company's mission is to provide sustainable housing for communities in a collaborative, honest, and transparent manner.

Marion Road Oshkosh, WI

The Rivers- 60 Unit Senior Affordable
The Rivers II- 40 Unit Senior Affordable
Anthem Lofts- 80 Unit Market Rate

NORTHPOINTE
DEVELOPMENT CORPORATION

Northpointe-Principals

Callan L. Schultz

- Cal Schultz graduated from the University of Wisconsin-Oshkosh with a Bachelor of Business Administration with majors in finance and management information systems and a Masters of Business Administration.
- Cal formed Keystone Development, LLC in 1999. The company has developed over 2,000 apartment units throughout Wisconsin, Michigan, Ohio and Iowa. In 2011 he and Andy Dumke formed Northpointe Development Corporation for the purpose of developing and owning affordable housing in Wisconsin.

Andrew J. Dumke

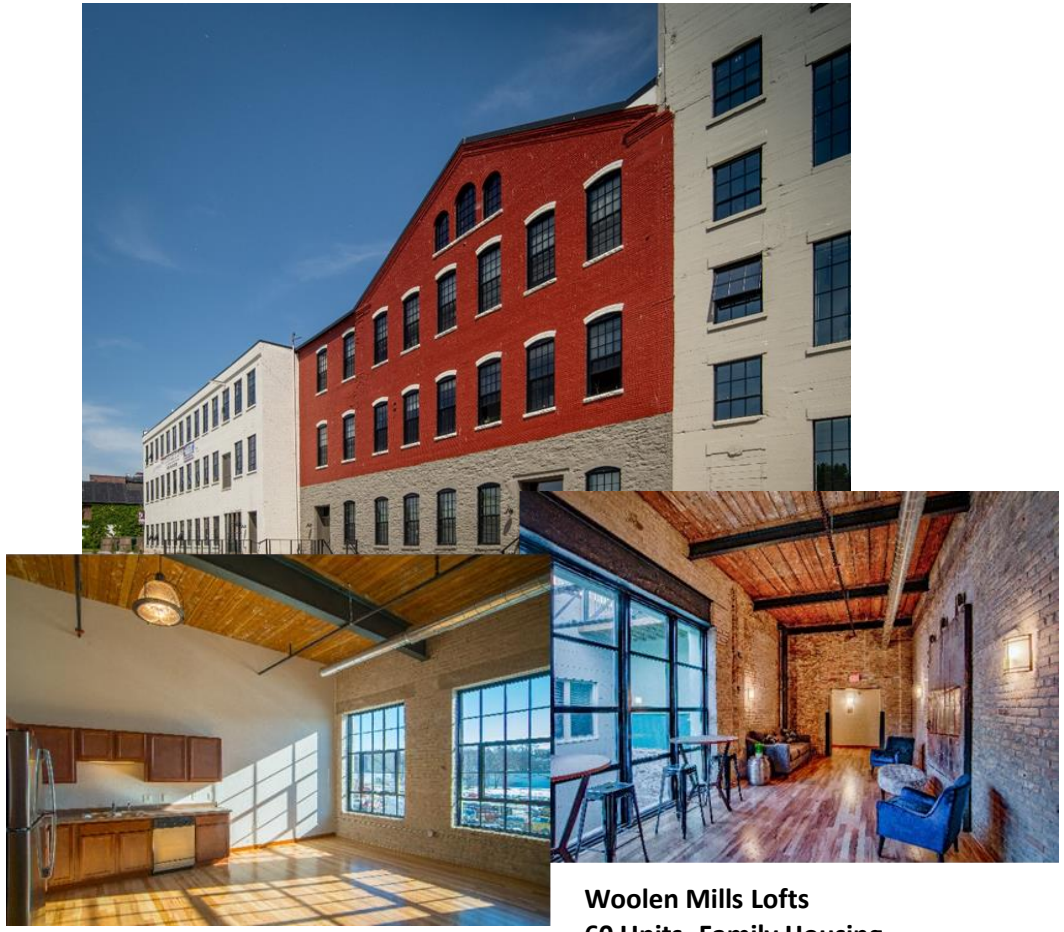
- Andrew Dumke began developing and managing real estate in 1993. He has grown his portfolio to include multi-family apartments, commercial office buildings, warehouse buildings, and retail centers.
- His company Alliance Development has developed over $200,000,000 in real estate. Samples of nationally accredited tenants he works with are Starbucks, Panera, Fed EX/Kinkos, TJ Maxx, JoAnn Fabrics, US Cellular, Verizon, Buffalo Wild Wings, Chipotle, Qdoba, Baker Tilly, Old National Bank, and Olive Garden. Andrew's current portfolio contains over 1,000,000 square feet of commercial office, warehouse, and retail space.

Sean O'Brien

- Sean O'Brien joined Northpointe Development as a Partner in 2020. Prior to joining Northpointe Development, Sean worked at the Wisconsin Housing and Economic Development Authority (WHEDA) for 14 years. The last 6 years of his tenure he was the was the Director of Commercial Lending. As Director, Sean led the development of Wisconsin's Affordable Housing Policy and allocation of the Low-Income Housing Tax Credit Program. In 2018, the Commercial Lending team implemented the State Housing Tax Credit Program which allowed WHEDA to allocate a new credit that has created or preserved approximately a thousand affordable homes annually. For three years, Sean also served on the Community Investment Advisory Council for the Federal Home Loan Bank of Chicago.

Nicolett Townhomes
60 Units- Family Housing
1380 Scheuring Road, DePere, WI

NORTHPOINTE
DEVELOPMENT CORPORATION

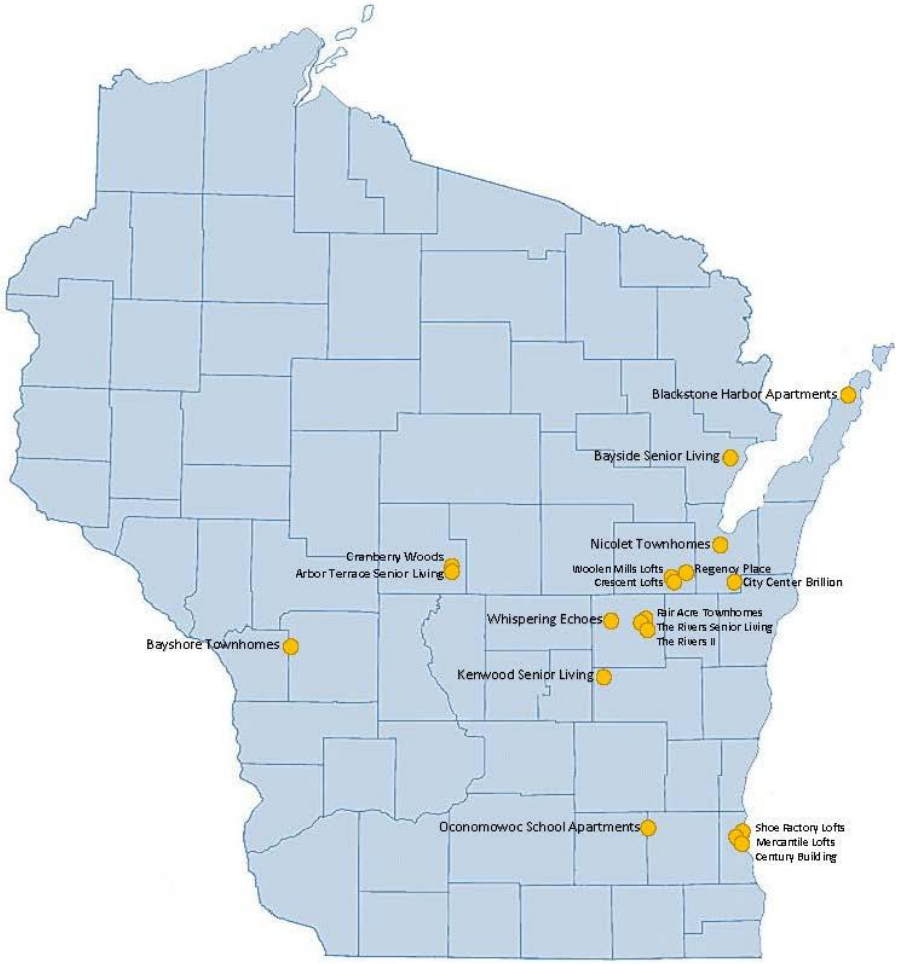


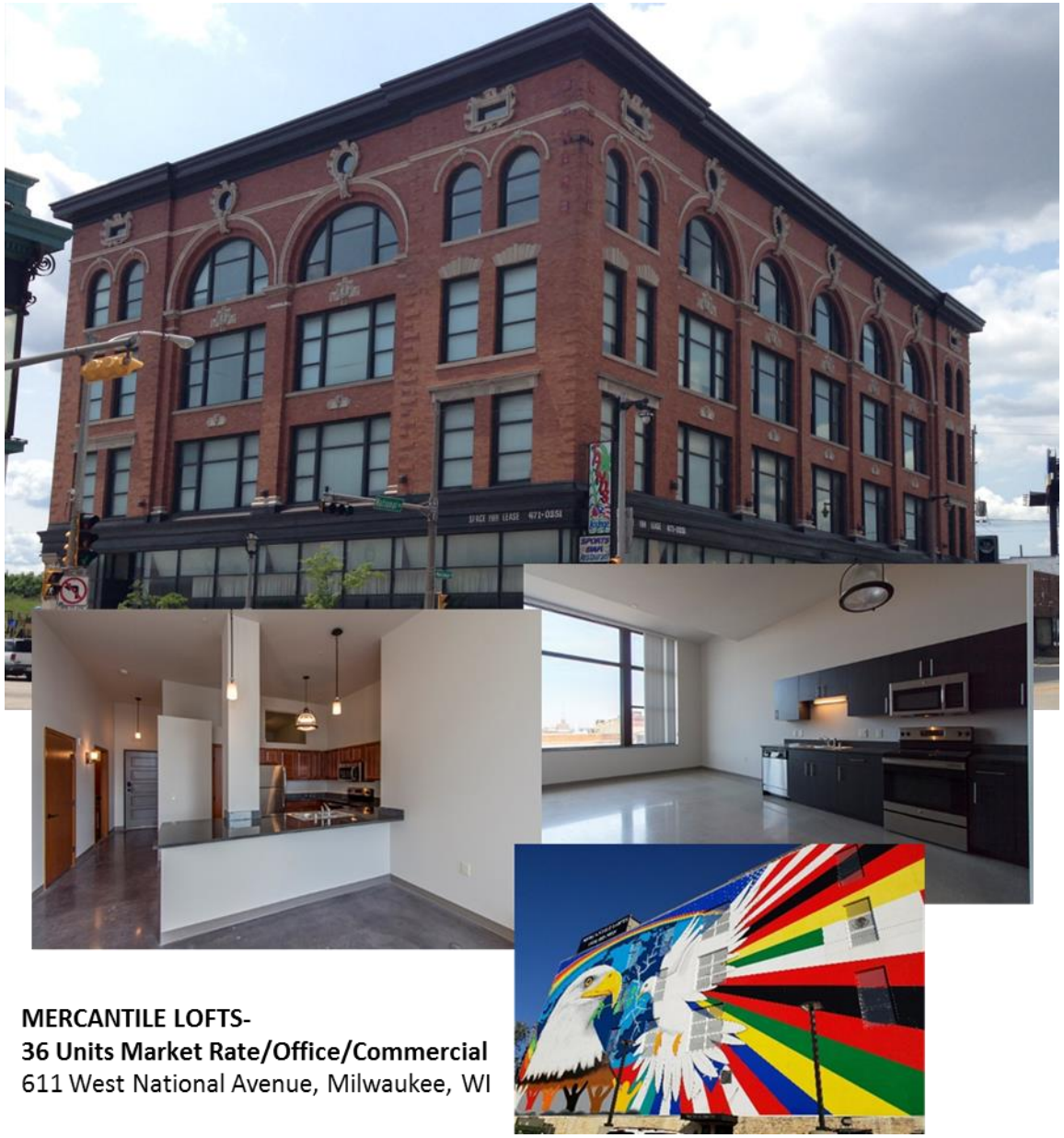
Woolen Mills Lofts
60 Units- Family Housing
218 E. South Island St., Appleton, WI

Multi Family Developments

Project Name	Location		Units	Property Type
Rivers Senior Living	Oshkosh	WI	60	New Construction
Bayshore Townhomes	Sparta	WI	32	New Construction
Fair Acre Townhomes	Oshkosh	WI	55	New Construction
Kenwood Senior Living	Ripon	WI	24	New Construction
The Fountains of West Allis	West Allis	WI	35	Acquisition/Rehab
Blackstone Harbor Apts.	Sister Bay	WI	24	New Construction
Oconomowoc School Apts	Oconomowoc	WI	55	Adaptive Reuse/Historic
Nicolet Townhomes	De Pere	WI	60	New Construction
Anthem Luxury Living	Oshkosh	WI	80	New Construction
Mercantile Lofts	Milwaukee	WI	36	Adaptive Reuse/Historic
Shoe Factory Lofts	Milwaukee	WI	55	Adaptive Reuse/Historic
The Rivers - Phase II-Senior Living	Oshkosh	WI	40	New Construction
Woolen Mills Lofts	Appleton	WI	60	Adaptive Reuse/Historic
Century Building	Milwaukee	WI	44	Adaptive Reuse/Historic
Cranberry Woods Townhomes	Wisconsin Rapids	WI	40	New Construction
Bayside Senior Apartments	Oconto	WI	42	New Construction
Whispering Echoes Townhomes	Winneconne	WI	28	New Construction
Regency Place Senior Living	Little Chute	WI	40	New Construction
Under Construction				
Arbor Terrace Senior Living	Wisconsin Rapids	WI	40	New Construction
City Center	Brillion	WI	40	New Construction
Crescent Lofts	Appleton	WI	69	Adaptive Reuse/Historic
2020 Awards				
The Limerick	Fitchburg	WI	125	
Cabrini Apartments	Oshkosh	WI	33	
Total Units			1,117	

NORTHPOINTE
DEVELOPMENT CORPORATION





MERCANTILE LOFTS-
36 Units Market Rate/Office/Commercial
611 West National Avenue, Milwaukee, WI

Questions?

Sean O'Brien
Principal
Northpointe Development Corporation
(608) 334-5665
sean@northpointedev.com

NORTHPOINTE
DEVELOPMENT CORPORATION

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board regarding temporary zoning of lands included in Ordinance 2020-15, AN ORDINANCE ANNEXING LANDS FROM THE TOWN OF DUNN TO THE VILLAGE OF MCFARLAND.**

PREVIOUS ACTION:
None.

ISSUE SUMMARY:
Utterback Limited Partnership and the WisDOT have submitted a petition (#14299) for direct annexation by unanimous approval. The request includes two parcels owned by Utterback Limited Partnership totaling 53.47 acres lying west of CTH AB on the east side of the Village in the Town of Dunn. The petition also includes lands owned by the WisDOT as part of the Wisconsin & Southern Railroad corridor from Elvehjem Road to the existing Village boundary near Tuscobia Trail. The population of the territory to be annexed is zero. The petition has been signed by Wayne Utterback, Manager of Utterback Limited Partnership and Lisa Stern Chief of Railroads and Harbors, WisDOT. The petition includes a legal description and scale map. Within the packet is a review letter provided by the Wisconsin Department of Administration in which they have provided an opinion that the proposed annexation is in the public interest.

The Utterback properties (parcel # 0610-024-8070-0 & 0610-024-9501-0) are undeveloped consisting of agricultural and open spaces areas. The existing zoning of the properties are FP-35 Farmland Preservation under the Dane County Zoning Code. Utterback desires to annex these properties into the Village, and then divide the properties for sale to three separate entities. Veridian Homes intends to purchase 36.3 acres of land lying north of the railroad, and southwest of the existing natural gas line on the property, to develop the proposed Rosewood Fields subdivision. Urso Bros intends to purchase the portion of the property south of the railroad (15.72 acres) to develop small multi-family residential housing on a portion of the property suitable for such uses adjacent to CTH AB. Nancy Utterback (3029 CTH AB) intends to purchase the remaining 1.96 acres lying on the northeast side of the existing natural gas line adjacent to her existing residence (3029 CTH AB), for the purpose of continued open space and agricultural uses. Note, Nancy has expressed interest to Village Staff in the possibility of eventually detaching her ownership interest back to the Town of Dunn to enable her to consolidate her existing and future properties (4 parcels) as one parcel. This request will be considered at a later date, after consideration of the annexation petition and land division applications, and upon receipt of a written request.

Ordinance 2020-15 recommends temporarily zoning the lands in the annexation petition to the Village's A-1 Agriculture Transition District. The purpose of the Agriculture-Transition District is to "preserve in agricultural and related open space uses those lands generally located in proximity to developed areas within the Village where urban expansion is likely and in keeping with long-term plans for development. It is intended that urban development be deferred in such areas until the appropriate authorities determine that it is economically and financially feasible to provide public services and facilities. It is also intended that the status of all areas in this district be reviewed by the appropriate authorities periodically in order to determine whether, in light of current land development trends, there should be a transfer of all or any part of those areas to some other appropriate use district. Any such review will consider local and regional land use plans. Existing homes are grandfathered as are existing house lots. No new house lots can be created without rezoning." Parcel 0610-024-9501-0 will be non-conforming in lot size to the minimum requirements of the A-1 District; however, the temporary zoning designation is consistent with the purpose of the A-1 District, the existing uses of the property, and development intentions.

FINANCIAL/BUDGET IMPACT:

The unimproved Utterback properties have an assessment value of $11,800. The portion of annual property taxes paid to the Town of Dunn total $36.10. Per state statue, the Village will provide the Town with a payment equal to 5 years of the property taxes, or $180.50. This cost will be recouped through the property taxes collected by the Village from the future development of the properties.

VILLAGE PLAN REFERENCE:

The Village's Comprehensive Plan, Future Land Use Map, designates the future land uses of these properties as future Neighborhood. The comp plan references the Village's separate East Side Neighborhood Growth Area Plan for further conceptual guidance. The Utterback property is identified for Traditional Residential with associated Parks and Open Space. According to the plan, Traditional Neighborhood Areas are predominantly owner-occupied and intended to contain a combination of single-family, two-family, and 3-4 unit structures at a minimum density of four units per acre.

The majority of the annexation area also lies within the Village and Town of Dunn Boundary Agreement from 2005. Exhibit C of the Agreement includes the Village's Proposed East Side Growth Boundary. The portion of the annexation petition that lies outside the East Side Growth Boundary includes about half of the Wisconsin & Southern Railroad ROW from CTH AB to Elvehjem Road. This ROW is adjacent to property within the Village and the WisDOT desires to include all of their ROW that is adjacent to the Village's existing boundary within this petition. Section 2 of the Agreement restricts the Town from purchasing conservation easements and opposing annexations within the Proposed East Side Growth Boundary. The Agreement does not restrict or prevent the Village from annexing territory outside of the Proposed East Side Growth Boundary except as identified in Exhibit B of the Agreement (Map of No Annexation Buffer Area), which is not applicable to this annexation.

In addition, pursuing annexation requests to diversify land uses is included as an action step as part of the 2019-2020 Village Board Goals.

ORDINANCE REFERENCE:

Sec. 62-68 A-1 Agriculture Transition Statement of Purpose.

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

Recommend Village Board approval of Ordinance 2020-15, which includes temporarily zoning the lands in the annexation petition to the A-1 Agriculture Transition District.

ATTACHMENTS:

1. 2020-15 Annexing Lands from the Town of Dunn
2. 13 - Utterback Plan Commission Application 2020.04.07
3. Utterback Revised Petition Of Annexation (Executed 5.1.2020)
4. 14299 Questionnaire - McFarland Response_04.16.20
5. 14299_WDOA Review Letter_05.04.2020

ORDINANCE NO. 2020-15
AN ORDINANCE ANNEXING LANDS FROM THE TOWN OF DUNN TO THE VILLAGE OF MCFARLAND

The Village Board of the Village of McFarland do ordain as follows:

WHEREAS, a proper petition having been presented seeking direct annexation, pursuant to Wis. Stats. §66.0217(2), of the property legally described on Exhibit "A," attached hereto, to the Village of McFarland, Wisconsin; and

WHEREAS, the signatories on the petition constitute the qualified electors, and the owners of the real property in assessed value within the territory legally described in Exhibit "A;" and

Cassandra Suettinger
Village of McFarland
P.O. Box 110
McFarland, WI 53558-0110

Tax Parcel No. 028/0610-024-8070-0
Tax Parcel No. 028/0610-024-9501-0

WHEREAS, a scale map of the land proposed for annexation is attached hereto as Exhibit "B;" and

WHEREAS, the current population of the annexed property is 0; and

WHEREAS, pursuant to Wis. Stats. §66.0217(14)(a)1. the Village shall pay to the Town of Dunn for the property legal described in Exhibit "A," annually for 5 years, an amount equal to the property taxes that the Town of Dunn would levy on the annexed territory identified in Exhibit "A" and as graphically depicted in Exhibit "B;" and

WHEREAS, the Department of Administration has reviewed the proposed annexation under Wis. Stats. §66.0217(6)(a) and has found that the annexation is in the public interest; and

WHEREAS, upon recommendation of the McFarland Plan Commission, the territory annexed to the Village of McFarland by this ordinance is temporarily zoned A-1 Agriculture-Transition District, pursuant to Wis. Stats. 66.0217(8)(a).

NOW, THEREFORE, the above-described property is hereby annexed from the Town of Dunn and is hereby located in Ward 4 of the Village of McFarland, and in the School District of McFarland, County Supervisory District 34, Assembly District 47 and Senate District 16.

This Ordinance shall take effect upon its passage.

[signature page follows]

Adopted on roll call at a regular meeting of the Village Board of the Village of McFarland held on the 26th day of May, 2020.

APPROVED:

_____

Brad Czebotar, Village President

ATTEST:

_____

Cassandra Suettinger, Clerk

ORDINANCE 2020–15	
MOTION	SECOND
ACTION	DATE
Adopted	
Referred	
Tabled	
Withdrawn	
Defeated	
Published	
INDIVIDUAL VOTING RECORD	
Brassington –	Kryzenske -
Clow -	Rupert -
Czebotar -	Utter -
Flaherty -	
VOTING RESULTS	
Motion Carried:	
Motion Defeated:	

Village of McFarland
Community Development Department

Plan Commission Application – 2020

~Application must be completed in full~

Applicant - Owner	Utterback Ltd. Partnership	Applicant's Agent	D'Onofrio Kottke and Associates, Inc.
	c/o Wayne Utterback	Name	c/o Dan Day
Address	4627 Prairie Fire Ct., DeForest, WI	Address	7530 Westward Way, Madison, WI
Email	wayneutterback@icloud.com	Email	dday@donofrio.cc
Phone #	608-999-1999	Phone #	608-833-7530
Fax #		Fax #	

Parcel No(s). 0610-024-9501-0 & 0610-024-8070-0 **Type of Proposal – Please check boxes below that apply**

Requires Public Hearing (Class One)	FEES	Requires Public Hearing (Class Two)	FEES	Public Hearing Not required	FEES
❑ Preliminary Plat	$500+AF	❑ Conditional Use	$370+F	☒ Annexation	At cost
❑ Preliminary Plat (reapplication)	$500+BF	❑ Rezoning (map)	$405+	❑ Dev. Agreement Including Addendums	$400 F
☒ Certified Survey Map	$300+FG	❑ Zoning Amendment (text)	$405 +F	❑ Final Plat	$500 +CF
❑ Condominium	$300+EF	❑ Variance-Board of Zoning Appeals	$380+F	❑ Final Plat (reapplication)	$400 +DF
❑ Comprehensive Plan Amendment	$500+F			❑ Site/Design Review	$400 + F

+ = Plus publication and notification charges Fee = $300.00 + $75.00(3) = $450.00

A = Plus $50.00 per lot

B = Any preliminary plat which has previously been reviewed/revised within the last 36 months

C = Plus $50.00 for each lot within the final plat

D = Any final plat which has been previously reviewed or/ revised within the last 36 months

E = Plus $40.00 for each unit shown

F = Plus actual legal, engineering and financial consulting costs incurred by the Village

G = Plus $25.00 per lot for two or more lots.

Escrow Deposits (covers costs for outside consultants; e.g., engineers, attorneys, etc.)	
❑ R-E, R-3 & PD (up to 50 acres)	$5,000
❑ R-E, R-3 & PD (greater than 50 acres)	$10,000
❑ Commercial Site/Design Review (5,000 sq. ft. or more)	$2,000
❑ All Plats including condominiums	$5,000

Nature of the development proposal: Must provide address of proposed development, legal description, current zoning and description of proposal. (Attach additional paper if needed)

Annexation and CSM to facilitate development of parcel

What action is the applicant requesting of the Plan Commission?

Adoption of Annexation Petition and approval of CSM

Has this specific proposal been previously discussed or acted upon by the Plan Commission?

❑ **YES** ☒ **NO** **(If "yes" state the nature and the date(s) of the previous application.)**

PLEASE READ AND SIGN AT THE BOTTOM ON THE REVERSE SIDE

Schedule: The Village of McFarland Plan Commission conducts meetings on the third Monday of each month at 7:00 p.m. at the McFarland Municipal Center in the Community Room. To ensure adequate time for staff review, and publication of legal notices; all potential agenda item materials -are required to be submitted per the schedule listed below. **Six (6) Copies** of all materials, **one (1) copy must be 8 ½ x 11, five (5) copies to be 11 x 17 and one (1) electronic copy** (*only one copy of application, completed in full, is necessary)* shall be submitted to the Community Development Department (608-838-3154), with fees paid **by *NOON of the deadline day**, according to the following schedule:

Village of McFarland Plan Commission 2020 Schedule

*Submittal Deadline Noon on:	For Scheduled 2020 Meeting date of:
December 12 (2019)	January Tuesday Jan. 21
January 7	February 17
February 11	March 16
March 10	April 20
April 7	May 18
May 12	June 15
June 9	July 20
July 7	August 17
August 11	September 21
September 8	October 19
October 6	November 16
November 3	December 21 (Pending)
December 8	(Pending) Tuesday, Jan. 19, 2021

*** Submittal deadline: No exceptions are given for above deadlines**

- **I understand failure to provide required materials/information/fees by the submittal deadline can result in this application being withdrawn for consideration by the Plan Commission. Materials submitted for review after the submittal deadline date, or incomplete submittals, will be held over until the next scheduled meeting.**
- **I understand any fees not paid for (i.e. legal notices, mailings, etc.) will require any permits to be withheld until all payments are made in full. In addition, all application fees are non-refundable.**

X _____ 4/7/20

Signature of Applicant/Agent Date

REVISED PETITION FOR DIRECT ANNEXATION
BY UNANIMOUS CONSENT
(Wis. Stats. § 66.0217(2))

TO:	Village of McFarland Attn: Village Clerk 5915 Milwaukee Street P.O. Box 110 McFarland, WI 53558-0110	Town of Dunn Attn: Town Clerk 4156 County Road B McFarland, WI 53558

The undersigned, being all of the electors residing in and owners of all of the real property in the Territory do hereby unanimously petition the Village of McFarland for the purpose of annexing the Territory from the Town of Dunn to the Village of McFarland.

The "Territory" proposed for annexation from the Town of Dunn to the Village of McFarland is more particularly described on the attached Exhibit A, and is shown on the scale map attached as Exhibit B. The Territory is located in Dane County, Wisconsin.

The undersigned do hereby request that this annexation be approved and take effect in the manner provided for by law.

There are no electors residing in the Territory. The population of the Territory is zero.

This Petition for Annexation is filed pursuant to Wis. Stats. § 66.0217(2).

[SIGNATURES ON FOLLOWING PAGES]

cc: Wisconsin Department of Administration

SIGNATURE PAGE

REVISED PETITION FOR DIRECT ANNEXATION BY UNANIMOUS CONSENT

Of

UTTERBACK LIMITED PARTNERSHIP

UTTERBACK LIMITED PARTNERSHIP

By: Utterback Farm LLC, General Partner

Wayne O. Utterback Date: 4/30/2020

Wayne O. Utterback, Manager

SIGNATURE PAGE

REVISED PETITION FOR DIRECT ANNEXATION BY UNANIMOUS CONSENT

Of

WISCONSIN DEPARTMENT OF TRANSPORTATION

WISCONSIN DEPARTMENT OF TRANSPORTATION

By: Lisa A. Stern Date: 4-29-2020

Name: LISA A. STERN

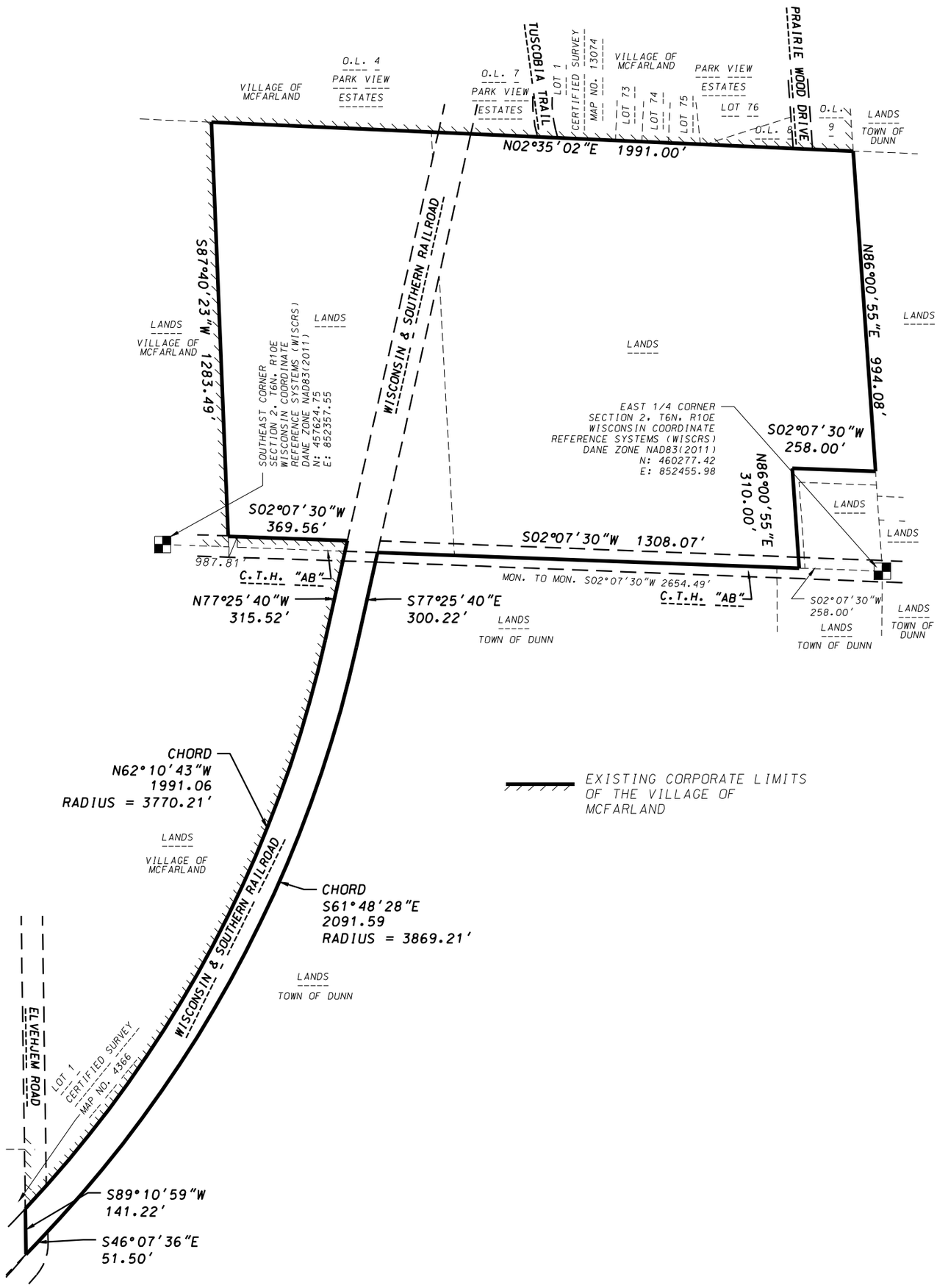
Title: CHIEF RAILROADS AND HARBORS

EXHIBIT A

ANNEXATION LEGAL DESCRIPTION

Part of the Northeast 1/4 of the Southeast 1/4 and part of the Southeast 1/4 of the Southeast 1/4 of Section 2; part of the Southwest 1/4 of the Southwest 1/4 and part of the Southeast 1/4 of the Southwest 1/4 of Section 1 and part of the Northeast 1/4 of the Northwest 1/4 of Section 12, all in Township 6 North, Range 10 East, Town of Dunn, Dane County, Wisconsin to-wit: Commencing at the East 1/4 corner of said Section 2; thence S02°07'30"W, 258.00 feet along the East line of said Southeast 1/4, to the point of beginning; thence continuing S02°07'30"W, 1308.07 feet along said East line, to a point on the Northerly right-of-way line of the Wisconsin & Southern Railroad; thence S77°25'40"E, 300.22 feet along said Northerly right-of-way line to a point of curve; thence Southeasterly along said Northerly right-of-way line on a curve to the right which has a radius of 3869.21 feet and a chord which bears S61°48'28"E, 2091.57 feet; thence S46°07'36"E, 51.50 feet along said Northerly right-of-way line; thence S89°10'59"W, 141.22 feet to a point on the South right-of-way line of Elvehjem Road and a point of curve on the Southerly right-of-way line of the Wisconsin & Southern Railroad, also being on the existing corporate boundary of the Village of McFarland; thence along said existing corporate boundary, Northwesterly along the Southerly right-of-way line of the Wisconsin & Southern Railroad on a curve to the left which has a radius of 3770.21 feet and a chord which bears N62°10'43"W, 1991.06 feet; thence N77°25'40"W, 315.52 feet along said existing corporate boundary; thence S02°07'30"W, 369.52 feet, along said corporate boundary; thence S87°40'23"W, 1283.49 feet, along said corporate boundary, to a point on the East line of Outlot 4, Park View Estates; thence N02°35'02"E, 1991.00 feet along the East lines of Outlots 4 and Outlots 7 through 9, Lots 73 through 76, Park View Estates, the East line of Lot 1, Certified Survey Map No. 13074, East right-of-way lines of Tuscobia Trail and Prairie Wood Drive, all being on said corporate boundary, to a point on the North line of said Southeast 1/4; thence N86°00'55"E, 994.08 feet along said North line; thence S02°07'30"W, 258.00 feet; thence N86°00'55"E, 310.00 feet to the point of beginning.
Containing 2,764,679 square feet or 63.468 acres.

EXHIBIT B



D'ONOFRIO KOTTKE AND ASSOCIATES, INC.

7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

0 400
Scale 1" = 400'

DATE: April 22, 2020
F.N.: 19-07-114

Annexation Review Questionnaire

Wisconsin Department of Administration

WI Dept. of Administration
Municipal Boundary Review
PO Box 1645
Madison WI 53701
608-264-6102 Fax: 608-264-6104
wimunicipalboundaryreview@wi.gov
http://doa.wi.gov/municipalboundaryreview

Petitioner: **Utterback Limited Partnership** Petition Number: **14299**

1. Territory to be annexed: From **TOWN OF DUNN** To **VILLAGE OF MCFARLAND**

2. Area (Acres): 55.03

3. Pick one: ☑ Property Tax Payments **OR** ☐ Boundary Agreement

a. Annual town property tax on territory to be annexed:

$ $36.10

b. Total that will be paid to Town

(annual tax multiplied by 5 years): $180.50

c. Paid by: ☐ Petitioner ☐ City ☑ Village

☐ Other: _____

a. Title of boundary agreement _____

b. Year adopted _____

c. Participating jurisdictions _____

d. Statutory authority (pick one)

☐ s.66.0307 ☐ s.66.0225 ☐ s.66.0301

4. Resident Population: Electors: 0 Total: 0

5. Approximate **present land use** of territory:

Residential: _____% Recreational: _____% Commercial: _____% Industrial: _____%

Undeveloped: 100 %

6. If territory is undeveloped, what is the **anticipated use**?

Residential: 60 % Recreational: 6 % Commercial: _____% Industrial: _____%

Other: 34 % Stormwater management areas & wetlands

Comments: _____

7. Has a ☑ preliminary or ☐ final plat been submitted to the Plan Commission: ☑ Yes ☐ No

Plat Name: Rosewood Fields (portion of the property north of rail road)

8. What is the **nature of land use adjacent** to this territory in the city or village?

Single family residential (Park View Estates Subdivision)

In the town?: Agricultural, open spaces and scattered single-family residential

9. What are the **basic service needs** that precipitated the request for annexation?

☑ Sanitary sewer ☑ Water supply ☑ Storm sewers

☑ Police/Fire protection ☑ EMS ☑ Zoning

Other _____

Police service in the Town is provided by Dane County and Fire/EMS is provided by the Village of McFarland. Annexation would greatly improve response times for current and future residents for police service due to closer proximity. The Village is also capable of offering full public utility to the area including water, sewer, and storm sewer. The Village also has full jurisdictional control of its zoning. The ability to provide public utilities and full jurisdictional control of zoning offers greater density and more flexibility with land uses than within the Town.

10. Is the city/village or town capable of providing needed utility services?

City/Village ☑ Yes ☐ No Town ☐ Yes ☑ No

If yes, approximate timetable for providing service:

	City/Village	Town
Sanitary Sewers immediately	☑	☐
or, write in number of years.	1-2	____
Water Supply immediately	☑	☐
or, write in number of years.	1-2	____

Will provision of sanitary sewers and/or water supply to the territory proposed for annexation require capital expenditures (i.e. treatment plant expansion, new lift stations, interceptor sewers, wells, water storage facilities)?

☑ Yes ☐ No

The Village is designing an interceptor sewer on lands through and adjacent to the petition area to serve future development in this area. The petition area would tie into the planned interceptor. Total cost of interceptor estimated at $500,000. Water main will be added along available right of way and supplied by existing municipal wells and storage tanks.

If yes, identify the nature of the anticipated improvements and their probable costs: _____

11. Planning & Zoning:

a. Do you have a comprehensive plan for the City/Village/Town? ☑ Yes ☐ No

Is this annexation consistent with your comprehensive plan? ☑ Yes ☐ No

b. How is the annexation territory now zoned? FP-35 Farmland Preservation

c. How will the land be zoned and used if annexed? Planned Unit Development, single and multi-family residential

12. Elections: ☐ New ward or ☑ Existing ward? Will the annexation create a new ward or join an existing ward? For more information, please contact the Wisconsin Election Commission at (608) 266-8005, **elections@wi.gov** or see their annexation checklist here: **http://elections.wi.gov/forms/el-100**

13. Other relevant information and comments bearing upon the public interest in the annexation:

Property is included within the Intermunicipal Cooperation Agreement between the Town of Dunn and Village of McFarland, dated February 28th, 2005. Property is within the Village's Proposed East Side Growth Boundary (Exhibit C). Per Section 4 of agreement, Town not to oppose annexation.

Prepared by: ☐ Town ☐ City ☑ Village

Name:	Andrew Bremer, AICP
Email:	andrew.bremer@mcfarland.wi.us
Phone:	608-838-3154
Date:	04.16.2020

Please **RETURN PROMPTLY** to:

wimunicipalboundaryreview@wi.gov

Municipal Boundary Review

PO Box 1645, Madison WI 53701

Fax: (608) 264-6104

(March 2018)

TONY EVERS
GOVERNOR
JOEL BRENNAN
SECRETARY
Municipal Boundary Review
PO Box 1645, Madison WI 53701
Voice (608) 264-6102 Fax (608) 264-6104
Email: **wimunicipalboundaryreview@wi.gov**
Web: **http://doa.wi.gov/municipalboundaryreview**

May 01, 2020 PETITION FILE NO. 14299

CASSANDRA SUETTINGER, CLERK
VILLAGE OF MCFARLAND
5915 MILWAUKEE ST
MC FARLAND, WI 53558-8962

CATHY HASSLINGER, CLERK
TOWN OF DUNN
4156 COUNTY RD B
MC FARLAND, WI 53558-9754

Subject: UTTERBACK LIMITED PARTNERSHIP ANNEXATION

The proposed annexation submitted to our office on April 10, 2020 and as revised on May 1, 2020, has been reviewed and found to be in the public interest. In determining whether an annexation is in the public interest, s. 66.0217 (6), Wis. Stats. requires the Department to examine "[t]he shape of the proposed annexation and the homogeneity of the territory with the annexing village or city…." so as, to ensure the resulting boundaries are rational and compact. The statute also requires the Department to consider whether the annexing city or village can provide needed municipal services to the territory. The subject petition is for territory that is reasonably shaped and contiguous to the **VILLAGE OF MCFARLAND**, which is able to provide needed municipal services.

The Department reminds clerks of annexing municipalities of the requirements of s. 66.0217 (9)(a), Wis. Stats., which states:

"The clerk of a city or village which has annexed shall file immediately with the secretary of administration a certified copy of the ordinance, certificate and plat, and shall send one copy to each company that provides any utility service in the area that is annexed. The clerk shall record the ordinance with the register of deeds and file a signed copy of the ordinance with the clerk of any affected school district..."

State and federal aids based on population and equalized value may be significantly affected through failure to file with the Department of Administration. Please file a copy of your annexing ordinance, including a statement certifying the population of the annexed territory. **Please include your MBR number 14299 with your ordinance.** Ordinance filing checklist available at http://mds.wi.gov/, click on "Help on How to Submit Municipal Records". Email scanned copy of required materials (color scan maps with color) to mds@wi.gov or mail to: Wisconsin Department of Administration, Municipal Boundary Review, PO Box 1645, Madison WI 53701-1645.

The petition file is available for viewing at: http://mds.wi.gov/View/Petition?ID=2373
Please call me at (608) 264-6102, should you have any questions concerning this annexation review.

Sincerely,

Erich Schmidtke, Municipal Boundary Review cc: petitioner

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion and action on a request by Utterback Ltd. Partnership for a Certified Survey Map (CSM) in order to create three parcels. Lands located west of CTH AB in the NE 1/4 of the SE 1/4 and the SE 1/4 of the SE1/4 of Section 2, Township 6 North, Range 10 East, Village of McFarland, Dane County, Wisconsin.**

PREVIOUS ACTION:
Consideration of Ordinance 2020-15, annexing the subject property to the Village of McFarland and temporarily zoning the properties to the A-1 Agriculture Transition District.

ISSUE SUMMARY:
Utterback Limited Partnership has submitted a Certified Survey Map for approval by the Plan Commission. The request includes two parcels owned by Utterback Limited Partnership totaling 53.47 acres lying west of CTH AB, included in the annexation petition previously addressed under Ordinance 2020-15.

The Utterback properties (parcel # 0610-024-8070-0 & 0610-024-9501-0) are undeveloped consisting of agricultural and open spaces areas. Utterback is requesting approval of a Certified Survey Map that would create three new lots to enable sale to three separate entities. Veridian Homes intends to purchase Lot 2, 36.3 acres of land lying north of the railroad, and southwest of the existing natural gas line on the property, to develop the proposed Rosewood Fields subdivision. Urso Bros intends to purchase Lot 3, the portion of the property south of the railroad (15.72 acres) to develop small multi-family residential housing on a portion of the property suitable for such uses adjacent to CTH AB. Nancy Utterback (3029 CTH AB) intends to purchase Lot 1, the remaining 1.96 acres lying on the northeast side of the existing natural gas line adjacent to her existing residence (3029 CTH AB), for the purpose of continued open space and agricultural uses.

Under Ordinance 2020-15, the properties are proposed for temporary zoning in the Village's A-1 Agriculture Transition District. The purpose of the Agriculture-Transition District is to "preserve in agricultural and related open space uses those lands generally located in proximity to developed areas within the Village where urban expansion is likely and in keeping with long-term plans for development. It is intended that urban development be deferred in such areas until the appropriate authorities determine that it is economically and financially feasible to provide public services and facilities. It is also intended that the status of all areas in this district be reviewed by the appropriate authorities periodically in order to determine whether, in light of current land development trends, there should be a transfer of all or any part of those areas to some other appropriate use district. Any such review will consider local and regional land use plans. Existing homes are grandfathered as are existing house lots. No new house lots can be created without rezoning."

The Plan Commission agenda includes a subsequent request by Veridian Homes to rezone Lot 2 to Planned Development and approval of a Preliminary Plat for Rosewood Fields. Village Staff anticipates a future request by Urso Bros to rezone Lot 3 as part of their development plans. Village Staff anticipates a future request by Nancy Utterback to detach Lot 1 to the Town of Dunn to enable her to consolidate her existing and future properties (4 parcels) as one parcel. This request will be considered at a later date, after consideration of the annexation petition and land division applications, and upon receipt of a written request. The proposed CSM would make Lot 1 non-conforming in lot size to the minimum requirements of the A-1 District; however, the temporary zoning designation is consistent with the purpose of the A-1 District and the existing uses of the property and additional residential development is precluded until the property is permanently rezoned. The proposed dimensional design of Lot 1 is also unusual in shape; however, this is due to the natural gas line that bisects the property. The unusual configuration of Lot 1 may be resolved through the future request to consolidate Nancy Utterback's properties.

Consistency with Village Subdivision Ordinances (Transportation Facilities)
Section 56-139(w) of the Village's Subdivision Ordinance requires right-of-way widths for collector streets of 70 feet. The CSM provides for a 66 foot wide ROW along CTH AB. This should be expanded to 70 feet, requiring an additional two (2) feet of ROW dedication on the west side of CTH AB; the remaining two (2) feet would be provided on the other side of CTH AB if and when those lands were subdivided.

FINANCIAL/BUDGET IMPACT:
None.

VILLAGE PLAN REFERENCE:
The Village's Comprehensive Plan, Future Land Use Map, designates the future land uses of these properties as future Neighborhood. The comp plan references the Village's separate East Side Neighborhood Growth Area Plan for further conceptual guidance. The Utterback property is identified for Traditional Residential with associated Parks and Open Space. According to the plan, Traditional Neighborhood Areas are predominantly owner-occupied and intended to contain a combination of single-family, two-family, and 3-4 unit structures at a minimum density of four units per acre.

ORDINANCE REFERENCE:
Sec. 56-39 Certified Survey Map Approval
Sec. 56-71 Technical requirements for Certified Survey Maps
Sec. 62-70 Bulk standard - Residential Districts

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
Recommend approval of the CSM with the following conditions:

1. Approval by the Village Board of Annexation Petition #14299.
2. Revising the CSM to include a minimum 35 feet of right-of-way dedication from the center line of CTH AB for Lots 1, 2, and 3.

ATTACHMENTS:

1. 13 - Utterback Plan Commission Application 2020.04.07
2. 12 - Utterback CSM 2020.04.07

Village of McFarland
Community Development Department

Plan Commission Application – 2020

~Application must be completed in full~

Applicant - Owner	Utterback Ltd. Partnership	Applicant's Agent	D'Onofrio Kottke and Associates, Inc.
	c/o Wayne Utterback	Name	c/o Dan Day
Address	4627 Prairie Fire Ct., DeForest, WI	Address	7530 Westward Way, Madison, WI
Email	wayneutterback@icloud.com	Email	dday@donofrio.cc
Phone #	608-999-1999	Phone #	608-833-7530
Fax #		Fax #	

Parcel No(s). 0610-024-9501-0 & 0610-024-8070-0 **Type of Proposal – Please check boxes below that apply**

Requires Public Hearing (Class One)	FEES	Requires Public Hearing (Class Two)	FEES	Public Hearing Not required	FEES
❑ Preliminary Plat	$500+AF	❑ Conditional Use	$370+F	☒ Annexation	At cost
❑ Preliminary Plat (reapplication)	$500+BF	❑ Rezoning (map)	$405+	❑ Dev. Agreement Including Addendums	$400 F
☒ Certified Survey Map	$300+FG	❑ Zoning Amendment (text)	$405 +F	❑ Final Plat	$500 +CF
❑ Condominium	$300+EF	❑ Variance-Board of Zoning Appeals	$380+F	❑ Final Plat (reapplication)	$400 +DF
❑ Comprehensive Plan Amendment	$500+F			❑ Site/Design Review	$400 + F

+ = Plus publication and notification charges Fee = $300.00 + $75.00(3) = $450.00

A = Plus $50.00 per lot

B = Any preliminary plat which has previously been reviewed/revised within the last 36 months

C = Plus $50.00 for each lot within the final plat

D = Any final plat which has been previously reviewed or/ revised within the last 36 months

E = Plus $40.00 for each unit shown

F = Plus actual legal, engineering and financial consulting costs incurred by the Village

G = Plus $25.00 per lot for two or more lots.

Escrow Deposits (covers costs for outside consultants; e.g., engineers, attorneys, etc.)	
❑ R-E, R-3 & PD (up to 50 acres)	$5,000
❑ R-E, R-3 & PD (greater than 50 acres)	$10,000
❑ Commercial Site/Design Review (5,000 sq. ft. or more)	$2,000
❑ All Plats including condominiums	$5,000

Nature of the development proposal: Must provide address of proposed development, legal description, current zoning and description of proposal. (Attach additional paper if needed)

Annexation and CSM to facilitate development of parcel

What action is the applicant requesting of the Plan Commission?

Adoption of Annexation Petition and approval of CSM

Has this specific proposal been previously discussed or acted upon by the Plan Commission?

❑ **YES** ☒ **NO** **(If "yes" state the nature and the date(s) of the previous application.)**

PLEASE READ AND SIGN AT THE BOTTOM ON THE REVERSE SIDE

Schedule: The Village of McFarland Plan Commission conducts meetings on the third Monday of each month at 7:00 p.m. at the McFarland Municipal Center in the Community Room. To ensure adequate time for staff review, and publication of legal notices; all potential agenda item materials -are required to be submitted per the schedule listed below. **Six (6) Copies** of all materials, **one (1) copy must be 8 ½ x 11, five (5) copies to be 11 x 17 and one (1) electronic copy** (*only one copy of application, completed in full, is necessary)* shall be submitted to the Community Development Department (608-838-3154), with fees paid **by *NOON of the deadline day**, according to the following schedule:

Village of McFarland Plan Commission 2020 Schedule

*Submittal Deadline Noon on:	For Scheduled 2020 Meeting date of:
December 12 (2019)	January Tuesday Jan. 21
January 7	February 17
February 11	March 16
March 10	April 20
April 7	May 18
May 12	June 15
June 9	July 20
July 7	August 17
August 11	September 21
September 8	October 19
October 6	November 16
November 3	December 21 (Pending)
December 8	(Pending) Tuesday, Jan. 19, 2021

*** Submittal deadline: No exceptions are given for above deadlines**

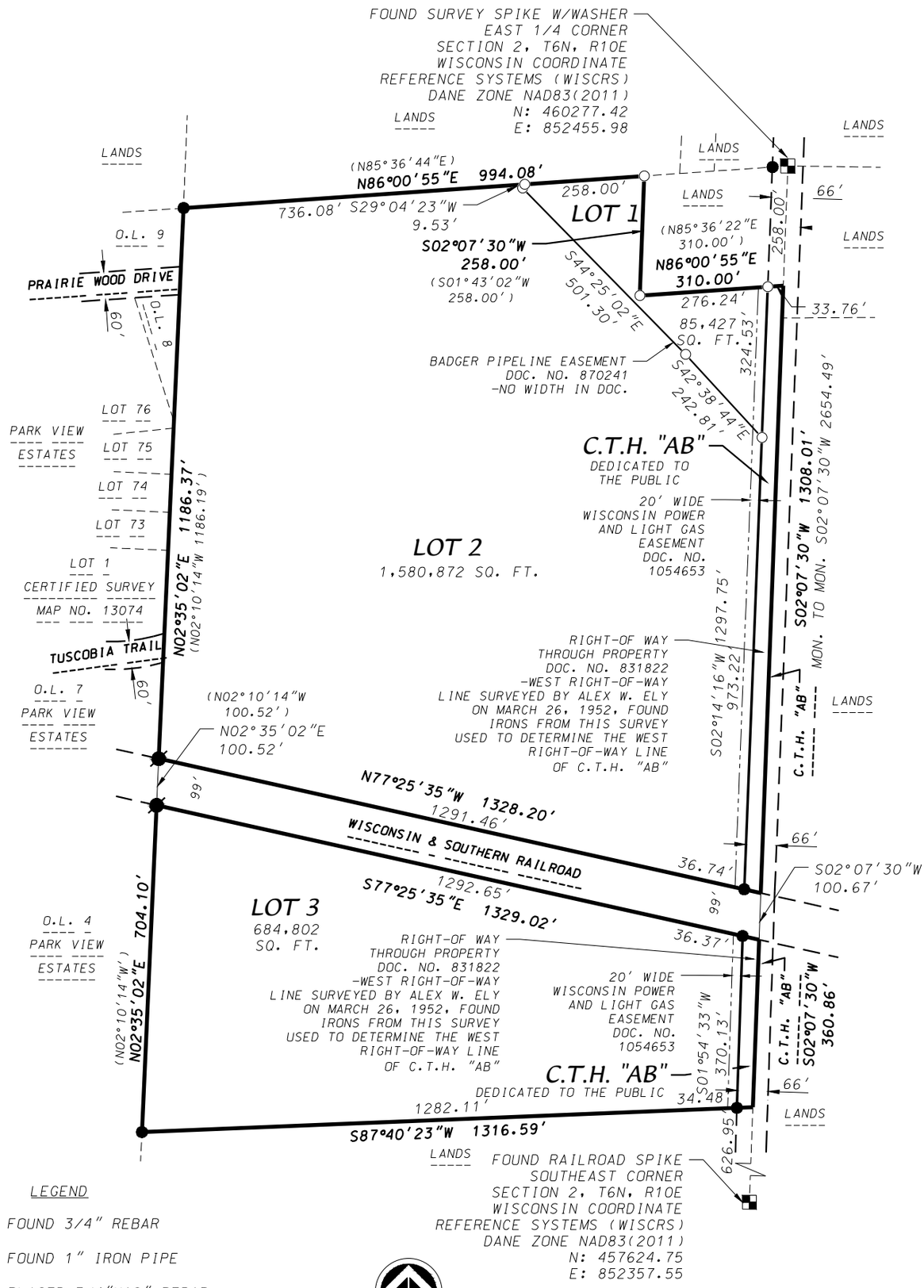
- **I understand failure to provide required materials/information/fees by the submittal deadline can result in this application being withdrawn for consideration by the Plan Commission. Materials submitted for review after the submittal deadline date, or incomplete submittals, will be held over until the next scheduled meeting.**
- **I understand any fees not paid for (i.e. legal notices, mailings, etc.) will require any permits to be withheld until all payments are made in full. In addition, all application fees are non-refundable.**

X _____ 4/7/20

Signature of Applicant/Agent Date

CERTIFIED SURVEY MAP

LOCATED IN THE NE1/4 OF THE SE1/4 AND THE SE1/4 OF THE SE1/4 SECTION 2, T6N, R10E, VILLAGE OF McFARLAND, DANE COUNTY, WISCONSIN



LEGEND

- ● FOUND 3/4" REBAR
- ✱ FOUND 1" IRON PIPE
- ○ PLACED 3/4"X18" REBAR WT=1.5LBS/FT
- ( ) RECORDED AS INFORMATION

GRID NORTH
WISCONSIN COORDINATE
REFERENCE SYSTEMS (WISCRS)
DANE ZONE NAD83(2011)
THE EAST LINE OF THE
SE1/4 OF SEC. 2, T6N, R10E
BEARS S02°07'30"W

0 300
Scale 1" = 300'

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

DATE: April 7, 2020
F.N.: 19-07-114
C.S.M. NO.
DOC. NO.
VOL. SHEET

SHEET 1 OF 3

CERTIFIED SURVEY MAP

LOCATED IN THE NE1/4 OF THE SE1/4 AND THE SE1/4 OF THE SE1/4
SECTION 2, T6N, R10E, VILLAGE OF McFARLAND, DANE COUNTY, WISCONSIN

SURVEYOR'S CERTIFICATE

I, Brett T. Stoffregan, Professional Land Surveyor, S-2742, do hereby certify that this survey is in full compliance with Chapter 236.34 of the Wisconsin Statutes and the Subdivision Regulations of the Village of McFarland, Dane County, Wisconsin and under the direction of the Owners listed below, I have surveyed, divided and mapped the land described herein and that said map is a correct representation of the exterior boundaries of the land surveyed and the division thereof. Said land is described as follows:
Lands located in NE 1/4 of the SE 1/4 and the SE 1/4 of the SE1/4 of Section 2, Township 6 North, Range 10 East, Town of Dunn, Dane County, Wisconsin to-wit:
Commencing at the East 1/4 corner of said Section 2; thence S02°07'30"W, 258.00 feet along the East line of said Southeast 1/4, to the point of beginning; thence continuing S02°07'30"W, 1308.01 feet along said East line, to a point on the Northerly line of right-of-way line of the Wisconsin & Southern Railroad; thence N77°25'35"W, 1328.20 feet along said Northerly line of right-of-way line, to the Southeast corner of Outlot 7, Park View Estates; thence S02°35'02"W, 100.52 feet to a point on the Southerly right-of-way line of the Wisconsin & Southern Railroad; thence S77°25'35"E, 1329.02 feet along said Southerly line to a point on the East line of said SE1/4; thence S02°07'30"W, 360.86 feet along said South line; thence S87°40'23"W, 1316.59 feet to a point of the East line of Outlot 4, Park View Estates; thence N02°35'02"E, 704.10 feet along the East line of said Outlot 4, to a point on Southerly right-of-way line of the Wisconsin & Southern Railroad; thence N02°35'02"E, 100.52 feet to a point on the Northerly right-of-way line of the Wisconsin & Southern Railroad, also being the Southeast corner of Outlot 7, Park View Estates; thence N02°35'02"E, 1186.37 feet along East lines of Outlot 7, Outlot 9, and Lots 73 through 76, Park View Estates, the East line of Lot 1, Certified Survey Map No. 13074, the East right-of-way lines of Tuscobia Trail and Prairie Wood Drive, to a point on the North line of said SE1/4; thence N86°00'55"E, 994.08 feet along said North line; thence S02°07'30"W, 258.00 feet; thence N86°00'55"E, 310.00 feet to the point of beginning. Containing 2,409,321 square feet (51.310 acres).

Dated this_____day of_____, 2020.

_____
Brett T. Stoffregan, Professional Land Surveyor, S-2742

NOTES

1. Surveyed for: VH Rosewood Fields, LLC
   6801 South Towne Drive
   Madison, WI 53717

2. Fieldwork was completed April 3, 2020.

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

DATE: April 7, 2020
F.N.: 19-07-114
C.S.M. NO. _____
DOC. NO. _____
VOL. _____ SHEET _____

SHEET 2 OF 3

CERTIFIED SURVEY MAP

LOCATED IN THE NE1/4 OF THE SE1/4 AND THE SE1/4 OF THE SE1/4
SECTION 2, T6N, R10E, VILLAGE OF McFARLAND, DANE COUNTY, WISCONSIN

OWNER'S CERTIFICATE

Utterback Limited Partnership, a Wisconsin limited partnership duly organized and existing under and by virtue of the laws of the State of Wisconsin, as owner, does hereby certify that said limited partnership caused the land described on this map to be surveyed, divided, mapped and dedicated as represented on this map.

IN WITNESS WHEREOF, the said Utterback Limited Partnership has caused these presents to be signed this_____day of_____, 2020.

Utterback Limited Partnership

_____
By:

STATE OF WISCONSIN)
COUNTY OF DANE)S.S.

Personally came before me this_____day of_____, 2020, the above named person(s) to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

_____
Notary Public, Dane County, Wisconsin
My commission_____

VILLAGE OF McFARLAND APPROVAL CERTIFICATE

This Certified Survey Map and the public roadway dedication shown hereon is hereby acknowledged, accepted and approved for recording by the Village of McFarland,

By:_____ Date:_____
Cassandra Suettinger, Clerk, Village of McFarland

REGISTER OF DEEDS CERTIFICATE

Received for recording this_____day of_____, 2020 at

_____.M. and recorded in Volume_____of Certified Survey

Maps on Pages_____as Document Number_____.

_____
Kristi Chlebowski, Dane County Register of Deeds

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

DATE: April 7, 2020
F.N.: 19-07-114
C.S.M. NO. _____
DOC. NO. _____
VOL._____ SHEET_____

SHEET 3 OF 3

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board regarding Ordinance No. 2020-16, AN ORDINANCE REZONING LANDS RECENTLY ANNEXED WEST OF CTH AB AND NORTH OF THE WISCONSIN & SOUTHERN RAILROAD IN THE VILLAGE OF MCFARLAND, FROM A-1 AGRICULTURE TRANSITION DISTRICT TO PDD-GP GENERAL PLAN AND PDD-DP DETAILED PLAN APPROVED. This zoning ordinance amendment has been requested by Veridian Homes Rosewood Fields LLC.**

PREVIOUS ACTION:
April 16th, 2020 Parks Committee Meeting
May 12th, 2020 Public Works/Public Utilities Meeting
May 18th, 2020 Plan Commission Meeting, Ordinance 2020-15 and CSM to create Lot 2.

ISSUE SUMMARY:
Background and Meeting Purpose
Veridian Homes (VH Rosewood Fields LLC) has petitioned the Village for approval of a rezoning of the lands identified in the preliminary plat (Rosewood Fields) to the Planned Development District. The packet includes a copy of their Planned Development General and Detailed Plan, along with Ordinance 2020-16. Concurrent with rezone petition, Veridian is also seeking approval of the preliminary plat.

Summary of Proposed Development
The proposed development consists of 117 residential lots, of which 107 will be for single family units and 10 will be for twin units (two attached dwellings separated by zero lot line). Twenty four (24) of the single family lots would have their driveways accessed by a private alley (Outlot 2) to be maintained by the Rosewood Fields Homeowners Association. The proposed development includes 138,198 square feet (3.2 acres) of land dedicated as public park space (Outlot 3). There is an additional 7.6 acres of wetland, stormwater, and passive open space in Outlots 1, 4 & 5. A proposed off-road trail would run through Outlots 1, 3, and 4, from Prairie Wood Drive to the railroad crossing at CTH AB. Future development of lands south of the railroad would provide continued off-road connections to the Lower Yahara River Trail. The proposed neighborhood park and trail will be developed as part of Phase 1 of the subdivision development. Build-out of all lots is anticipated to occur over a 5-6 year period based on market conditions.

Consistency with the Village Comprehensive Plan of 2017
The Village's Future Land Use Map identifies the subject property in the "Neighborhood" category. Figure 4.1

of the Comp Plan provides additional details regarding development policies for this future land use category. The general description of land uses includes mostly single-family residential development with components of two family and townhouse residential, multi-family and institutional, and recreational land uses. The Development Policies in Figure 4.1 further explain the desire to accommodate a mixture of housing types, costs, and densities while maintaining at least 65% single family housing (development provides 91% single family). Typical implementing zoning districts include R-1 and PD, as proposed by Veridian, but can also include R-2, R-3, and R-E. The 10 proposed twin lots are consistent with uses allowed in the R-2 District. The comp plan references the Village's separate East Side Neighborhood Growth Area Plan for further conceptual guidance.

Consistency with the East Side Neighborhood Growth Area Plan of 2008
Included in the Rosewood Fields Zoning Submittal.pdf is a copy of the Village's East Side Neighborhood Growth Area Concept Development Plan, marked Exhibit C. This plan was adopted in 2008 and incorporated into the Village's 2017 Comprehensive Plan. The area of the preliminary plat is outlined on the map. The subject property is identified for Traditional Residential development. According to the plan, Traditional Neighborhood Areas are predominantly owner-occupied and intended to contain a combination of single-family, two-family, and 3-4 unit structures at a minimum density of four units per acre. The plan stipulates that density recommendations are inclusive of land area dedicated to public rights-of-way and utilities, but not dedicated parks and open space (including stormwater management facilities). Proposed net density is 4.7 units per acre. The neighborhood plan further identified the continuation of Tuscobia Trail to CTH AB, connectivity of new local streets to connect to undeveloped adjacent lands to the north, and the provision of park and stormwater management areas along the south side of Tuscobia Trail and on the west side of the property adjacent to the existing Park View Estates subdivision.

The PDD General & Detailed Plan is generally consistent with the Village's land use plans in terms of land uses, land use locations, unit mix, and street layout. Veridian has proposed rezoning to the PD District in order to reduce certain bulk standards found either within the Village's Subdivision, existing residential zoning districts, and Dimensional Criteria for Traditional Neighborhood Land Uses identified on page 32 of the East Side Neighborhood Growth Area Plan. Specifically the following provisions:

1. District I (Carriage Lane Lots). Proposed minimum lot widths of 37 feet. Sec. 56-142(e) of the Subdivision Code requires a minimum of 40 feet, while the ESNGAP recommends 50 feet. Veridian is proposing the use of 37 feet on 11 of the 24 lots, with all but two lots less than 50 feet. Proposed minimum lot depths of 100 feet. Sec. 56-142(l) of the Subdivision Code requires a minimum of 100 feet. Proposed minimum lot size of 3,500 square feet, minimum front yard setback of 15 feet, minimum side yard setback of 5 feet, and minimum open space per dwelling unit of 500 square feet. The dimensional guidelines from the ESNGAP recommended 5,000 square feet, 20 feet, 6 feet, and 1,000 square feet respectfully. It should be noted that it is unclear if the dimensional guidelines in the ESNGAP for Traditional Neighborhoods were drafted to reflect alley development. Veridian is specifically proposing the carriage lane lots in order to increase the net density of the subdivision to meet the minimum density requirements of the ESNGAP, while also providing a diversity of housing style and purchase prices consistent with other goals and objectives of the Village and ESNGAP.
2. District II (Traditional Lots). Minimum front yard setback of 20 feet, 18 proposed. Minimum side yard

setback of 6 feet, 5 feet proposed. Minimum sum of side yards of 12 feet, 10 feet proposed. Minimum corner lot side yard setback of 12 feet, 10 proposed.

3. District III (Twin Lots). Minimum lot size of 10,000 square feet (5,000 per unit), 9,100 square feet (4,550 per unit) proposed. Minimum front yard setback of 20 feet, 15 feet proposed. Minimum side yard setback of 6 feet, 5 feet proposed. Minimum sum of side yards of 12 feet, 10 feet proposed.

Included within the packet is a review letter provided by the Village Fire and Rescue Department. To accommodate the reduced building setback, the McFarland Fire & Rescue recommends all homes have fire sprinkler systems installed according to the National Fire Protection Association (NFPA) 13D-Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.

FINANCIAL/BUDGET IMPACT:

Assuming at least an average assessment value of $325,000 for each lot would yield approximately $250K in annual property tax payments to the Village upon full build-out. Additional revenue from park impact fees, library impact fees, and public water impact fees would be payable to the Village as well. The Developer will also be responsible for paying for utility, street, trail, and park improvements within the development. Specific requirements will be addressed as part of a development agreement to be approved with the final plat.

VILLAGE PLAN REFERENCE:

One of the goals of the Village of McFarland Comprehensive Land Use Plan is to promote quality, affordable housing for families and older residents within neighborhoods and mixed use settings that are organized around safety, conservation, recreation, and connections to the broader community. A related housing objective is to expand the range of quality and affordable housing choices for empty nesters, seniors, and the McFarland workforce, while remaining a family-oriented community. A related housing policy is to promote affordable housing through allowing modest lot sizes and higher suburban densities, including appropriately planned and located multiple family housing, incentives where practical, and continued participation in County and State housing programs.

Developing affordable housing in the Village was also a theme that emerged from the Village's 2020-2030 Strategic Plan. In addition, actively promoting and supporting affordable housing in the Village is included in the 2019-2020 Village Board Goals.

ORDINANCE REFERENCE:

Chapter 56, Subdivisions
Sec. 62-67, PD Planned Development District
Sec. 62-343, Procedure for Changes and Amendments to the Zoning Code

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:

Recommend to the Village Board approval of Ordinance 2020-16, with the following conditions:

1. Revise page 8 of the General Plan/Detailed Plan to include a third bullet under the section titled Permitted & Accessory Uses to reference the Declaration of Protective Covenants, Conditions, and Restrictions.
2. Revise pages 11, 14, and 17 to strike front porches and open porches, and insert unenclosed porches.

3. Revise page 16 to require a minimum rear yard setback for District III lots of 20 feet.
4. Village Board approval of Ordinance 2020-15.
5. Plan Commission approval of the Certified Survey Map creating Lot 2 of the Utterback Limited Partnership property.

ATTACHMENTS:

1. 2020-16 Rezoning Certain Lands Recently Annexed (Rosewood Fields)
2. 04 - RF Plan Commission Application 2020.04.07
3. 15 - Rosewood Fields Zoning Submittal (April 6. 2020) (reduced)
4. Pages from East Side Neighborhood Growth Area Plan (Adopted 3-10-08)
5. Utterback-Veridian Development Fire & Rescue Dept Postion_04.20.20

ORDINANCE 2020-16

AN ORDINANCE TO REZONE LANDS RECENTLY ANNEXED WEST OF CTH AB AND NORTH OF THE WISCONSIN & SOUTHERN RAILROAD IN THE VILLAGE OF MCFARLAND FROM A-1 AGRICULTURE TRANSITION TO PDD-GP GENERAL PLAN AND PDD-DP DETAILED PLAN APPROVED

Purpose: To rezone certain lands on recently annexed west of CTH AB and north of the Wisconsin & Southern Railroad, commonly referred to as the Rosewood Fields Subdivision.

Sponsor: Community & Economic Development Director Bremer

Recommended Referral: Plan Commission (Required)

Public Hearing: Required; Preceded by Class 2 Notice

WHEREAS, the developer of the proposed Rosewood Fields Subdivision on lands recently annexed west of CTH AB and north of the Wisconsin & Southern Railroad, in the Village of McFarland, has applied for approval of rezoning of the same property from the A-1 Agricultural Transition District to the Planned Development District; and,

WHEREAS, the developer has submitted documents fulfilling the requirements for approval of the General & Detailed Implementation Plans, dated April 6, 2020, a copy which is attached hereto as Exhibit A; and

WHEREAS, the proposed rezoning is consistent with the Village of McFarland Comprehensive Plan, which designates the subject land as Neighborhood; and

WHEREAS, the proposed rezoning is consistent with the Village of McFarland East Side Neighborhood Growth Area Plan, which designates the subject land as Traditional Neighborhood; and

WHEREAS, the Village Board is willing to grant approval of the request to rezone and the Village Board finds approval thereof is in the public interest;

NOW, THEREFORE, the Village Board of the Village of McFarland, does ordain as follows:

1. Section 62-62(a) of the McFarland Municipal Code and the Official Zoning Map are hereby amended so that the following described real estate is hereby rezoned from the A-1 Agriculture Transition District to the Planned Development District – General & Detailed Implementation Plan Approved:

A parcel of land located in the NE1/4 of the SE1/4 and the SE1/4 of the SE1/4 of Section 2, T6N, R10E, Village of McFarland, Dane County, Wisconsin to-wit:

Commencing at the East 1/4 corner of said Section 2; thence S02°07'30"W 258.00 feet along the East line of said SE1/4; thence N87°52'30"W, 34.21 feet to the point of beginning; thence S02°14'16"W, 973.22 feet; thence N77°25'35"W, 1291.46 feet; thence N02°35'02"E, 1186.37 feet; thence N86°00'55"E, 736.08 feet; thence S43°08'26"E, 746.88 feet to the point of beginning. Containing 1,582,369 square feet square feet (36.326 acres)..

2. The Zoning Administrator is hereby directed to label these changes on the Official Zoning Map, once the rezoning is effective.

3. This ordinance does not constitute approval of any earthwork or building construction within any of the property described in the ordinance. No construction of any kind, including earthwork or building construction, is permitted on the parcel described in Section 1 of this ordinance until applicable preliminary and final plats, and associated erosion control, stormwater management, engineering development plans, declarations of protective covenants, conditions and restrictions, development agreements and building permits are approved by the Village. If the property owner fails to obtain approval of a final plat for the parcel described in Section 1 by the Village within one (1) year after adoption of this ordinance, then Section 1 of this ordinance shall become null and void, and the zoning of the afore stated lands shall continue to be the existing A-1 District.

The above and foregoing Ordinance was duly adopted on roll call at a regular meeting of the Village Board of the Village of McFarland held on the 26th day of May, 2020.

[signature page follows]

APPROVED:

_____

Brad Czebotar, Village President

ATTEST:

_____

Cassandra Suettinger, Village Clerk-Treasurer

ORDINANCE 2020 – 16	
MOTION	SECOND
ACTION	DATE
Adopted	
Referred	
Tabled	
Withdrawn	
Defeated	
Published	
INDIVIDUAL VOTING RECORD	
Brassington –	Kryzenske -
Clow –	Rupert –
Czebotar –	Utter –
Flaherty –	
VOTING RESULTS	
Motion Carried	
Motion Defeated:	

Village of McFarland
Community Development Department

Plan Commission Application – 2020

~Application must be completed in full~

Applicant - Owner	VH Rosewood Fields LLC	Applicant's Agent	D'Onofrio Kottke & Assoc.	Vandewalle Associates
	c/o Chris Ehlers	Name	c/o Dan Day	c/o Brian Munson
Address	6801 South Towne Drive, Madison, WI	Address	7530 Westward Way Madison, WI	120 East Lakeside St. Madison, WI
Email	cehlers@veridianhomes.com	Email	dday@donofrio.cc	bmunson@vandewalle.com
Phone #	608-226-3100	Phone #	608-833-7530	608-255-3988
Fax #		Fax #		

Parcel No(s). 0610-024-8070-0 **Type of Proposal – Please check boxes below that apply**

Requires Public Hearing (Class One)	FEES	Requires Public Hearing (Class Two)	FEES	Public Hearing Not required	FEES
☒ Preliminary Plat	$500+AF	❑ Conditional Use	$370+F	❑ Annexation	At cost
❑ Preliminary Plat (reapplication)	$500+BF	☒ Rezoning (map)	$405+	❑ Dev. Agreement Including Addendums	$400 F
❑ Certified Survey Map	$300+FG	❑ Zoning Amendment (text)	$405 +F	❑ Final Plat	$500 +CF
❑ Condominium	$300+EF	❑ Variance-Board of Zoning Appeals	$380+F	❑ Final Plat (reapplication)	$400 +DF
❑ Comprehensive Plan Amendment	$500+F			❑ Site/Design Review	$400 + F

+ = Plus publication and notification charges

Fee: $500.00 + $50.00(122) + $405= $7,005.00

A = Plus $50.00 per lot

B = Any preliminary plat which has previously been reviewed/revised within the last 36 months

C = Plus $50.00 for each lot within the final plat

D = Any final plat which has been previously reviewed or/ revised within the last 36 months

E = Plus $40.00 for each unit shown

F = Plus actual legal, engineering and financial consulting costs incurred by the Village

G = Plus $25.00 per lot for two or more lots.

Escrow Deposits (covers costs for outside consultants; e.g., engineers, attorneys, etc.)	
☒ R-E, R-3 & PD (up to 50 acres)	$5,000
❑ R-E, R-3 & PD (greater than 50 acres)	$10,000
❑ Commercial Site/Design Review (5,000 sq. ft. or more)	$2,000
❑ All Plats including condominiums	$5,000

Nature of the development proposal: Must provide address of proposed development, legal description, current zoning and description of proposal. (Attach additional paper if needed)

Residential development of Rosewood Fields. See attached zoning document and prelininary plat.

What action is the applicant requesting of the Plan Commission?

Approval of preliminary plat and rezoning

Has this specific proposal been previously discussed or acted upon by the Plan Commission?

❑ **YES** ☒ **NO** **(If "yes" state the nature and the date(s) of the previous application.)**

PLEASE READ AND SIGN AT THE BOTTOM ON THE REVERSE SIDE

Schedule: The Village of McFarland Plan Commission conducts meetings on the third Monday of each month at 7:00 p.m. at the McFarland Municipal Center in the Community Room. To ensure adequate time for staff review, and publication of legal notices; all potential agenda item materials -are required to be submitted per the schedule listed below. **Six (6) Copies** of all materials, **one (1) copy must be 8 ½ x 11, five (5) copies to be 11 x 17 and one (1) electronic copy** (*only one copy of application, completed in full, is necessary)* shall be submitted to the Community Development Department (608-838-3154), with fees paid **by *NOON of the deadline day**, according to the following schedule:

Village of McFarland Plan Commission 2020 Schedule

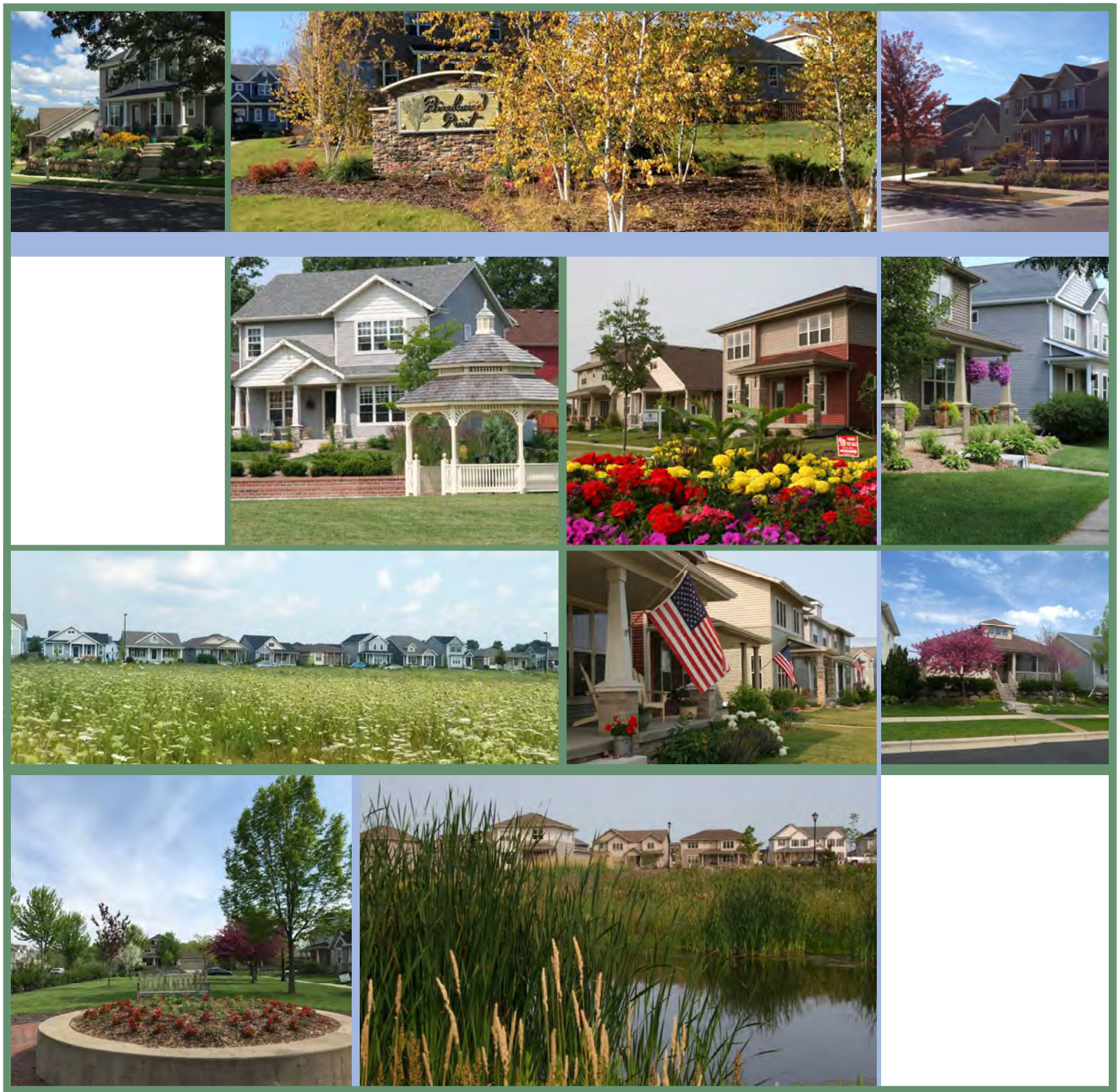
*Submittal Deadline Noon on:	For Scheduled 2020 Meeting date of:
December 12 (2019)	January Tuesday Jan. 21
January 7	February 17
February 11	March 16
March 10	April 20
April 7	May 18
May 12	June 15
June 9	July 20
July 7	August 17
August 11	September 21
September 8	October 19
October 6	November 16
November 3	December 21 (Pending)
December 8	(Pending) Tuesday, Jan. 19, 2021

*** Submittal deadline: No exceptions are given for above deadlines**

- **I understand failure to provide required materials/information/fees by the submittal deadline can result in this application being withdrawn for consideration by the Plan Commission. Materials submitted for review after the submittal deadline date, or incomplete submittals, will be held over until the next scheduled meeting.**
- **I understand any fees not paid for (i.e. legal notices, mailings, etc.) will require any permits to be withheld until all payments are made in full. In addition, all application fees are non-refundable.**

X _____ _____ 9/1/20

Signature of Applicant/Agent Date



Rosewood Fields

McFarland, Wisconsin

Planned Development:
General Plan/ Detailed Plan

Submitted: April 6th, 2020

VERIDIAN HOMES

VANDEWALLE & ASSOCIATES INC.
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D'ONOFRIO KOTTKE AND ASSOCIATES, INC.

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Intent of Document

The intent of this document is to provide the Village of McFarland with a Planned Development General Plan and Detailed Plan that summarizes the components of the proposed Rosewood Fields Neighborhood.

Project Name

Rosewood Fields

Project Owners

Wayne Utterback
4627 Prairie Fire Court
DeForest, WI 53532

Contacts

Applicant:

VH Rosewood Fields, LLC.

6801 South Town drive

Madison, WI 53713

Chris Ehlers

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Madison, Wisconsin 53715

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Fax: 608.255.0814

Brian Munson
bmunson@vandewalle.com

EXISTING CONDITIONS

Existing Zoning:

Undeveloped Land	A-1

Existing Parcels (PIN):	061002480700
	061002495010

Legal Description:	See Exhibit A: Legal Description

Adopted Plans from Village of McFarland Comprehensive Plan

Future Land Use Plan

Project Area:	Neighborhood Residential
Adjoining Parcels:	Single family residential; Neighborhood residential; DNR wetlands & potential wetland indicators over undeveloped lands; park and open space
See Exhibit B:	Future Land Use Plan

East Side Neighborhood Plan

Project Area:	Traditional Residential
See Exhibit C:	East Side Neighborhood Growth Area Plan

Lot Area: 36.3 acres

Site Information

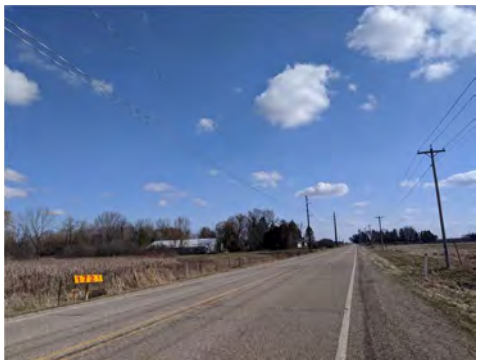
Rosewood Fields is located at the eastern gateway of the Village of McFarland along County Highway AB. The land is currently comprised of agricultural fields. The site generally slopes from a high point in the northern part of the site down toward the southern end of the site and to the western frontage along the greenway. A portion of the site is already annexed to the Village and the remainder will be annexed as part of the planning process.

Abutting Uses:

North:	Agricultural
East:	Agricultural
South:	Agricultural
	Rail Road ROW
	Wetlands/
	Environmental Corridor
West:	Residential

See Exhibit D: Location Map

See Exhibit E: Existing Conditions



ZONING REQUEST

Planned Development District

General Plan (PDD-GP)

Detailed Plan (PDD-DP)

VARIANCES FROM SUBDIVISION ORDINANCE:

Sec. 56-142. - Lot design standards.

(d) *Corner lots.* Corner lots for residential use shall have a width sufficient to provide a building setback of at least 30 feet from each street.

Request: Corner lot setbacks per proposed districts in PUD

(e) *Access to public streets.* Every lot shall front or abut for a minimum distance of at least 40 feet on a public street. Lots with an access only to private drives or streets shall be permitted only with Village Board approval.

Request: Lot width per proposed districts in PUD and as reflected in plat submittals.

(l) *Lot depth.* Depth of lots shall be a minimum of 100 feet. Excessive depth in relation to width shall be avoided and a proportion of two to one shall be considered a desirable ratio under normal conditions. Depth of lots or parcels reserved or laid out for commercial or industrial use shall be adequate to provide for off-street service and parking required by the use contemplated.

Request: Lot depth per proposed districts in PUD and as reflected in plat submittals.

ZONING REQUEST JUSTIFICATION

The Planned Development District is established to provide a voluntary regulatory framework designed to encourage greater variety and flexibility in land development while achieving substantial compliance with the Village Land Use Plan and basic intent of the zoning ordinance and land uses beneficial to the Village. Such district is also established to promote the maximum benefit from coordinated area site planning, including diversified location of structures and mixed compatible uses, and to provide for safe and efficient systems for pedestrian and vehicular traffic, attractive recreation and landscaped open spaces, and economic design and location of public and private utilities and community facilities. Within this district are allowed the diversification and variation in the bulk and relationship of uses, structures and spaces in developments planned as comprehensive and cohesive unified plans and projects.

CRITERIA FOR APPROVAL

(a) *General requirements.*

(4) *Standards.* The following standards shall apply in the review of all general or detailed plans proposed for the Planned Development District:

a. The uses proposed in the planned development shall be in general conformance with the Village Comprehensive Plan.

This project area is planned as neighborhood residential in the future land use plan, and as traditional residential in the East Side Neighborhood Growth Area plan. One of the comprehensive plan's initiatives is to encourage neighborhood development on the Village's East side, which is where this project is located. The comprehensive plan encourages a supply of vacant lots, homes for sale, and developable land for housing to maintain a vibrant housing market and enhance affordability. This policy is promoted in the diversity of housing types and price points proposed in Rosewood Fields.

b. The establishment, maintenance or operation of the uses proposed in the planned development shall not substantially impair or diminish the use, value and enjoyment of other properties within the neighborhood.

The proposed residential neighborhood will be an extension of the surrounding McFarland neighborhoods. It's street network ties into the existing grid, and the new homes will blend easily with the style and scale of the existing homes nearby, while still creating some diversity in housing and lot layout.

c. Traffic circulation into and within the development shall be designed to minimize traffic congestion and traffic hazards, provide for the accessibility of all uses and buildings and also provide for the safe and convenient movement of both vehicles and pedestrians.

Traffic circulation in the proposed Rosewood Fields neighborhood will minimize traffic congestion and create a safe and attractive pedestrian environment. The street grid from the existing western neighborhood will connect seamlessly into the Rosewood Fields neighborhood, maintaining similar street widths, terrace treatment, and walkable sideways throughout the project.

d. The planned development shall incorporate environmental design considerations, including the preservation of topography, trees and ground cover, streams and natural bodies of waters, and other significant natural features and control of erosion and runoff in accord with the Village Erosion Control and Stormwater Management Ordinances.

This proposed planned development preserves the existing wetland in the southeast area of the site and extends the regional greenway on the west side of the site. There will be two stormwater basins on-site to collect stormwater runoff.

e. The planned development shall provide for convenient and harmonious groups of buildings, structures and uses; and buildings shall be spaced and sited to ensure adequate safety, light, ventilation and privacy.

This new neighborhood will create diversity in housing within McFarland, while remaining in harmony and cohesion with the surrounding areas.

f. The following provisions shall apply:

1. In a planned development for residential use, adequate open space and recreational areas shall be provided in appropriate locations, and all public and common open spaces shall be designed and located to provide safe and convenient access to residents.

This planned development will provide a blend of park dedication and fee in lieu of dedication. A 3.2 acre public park has been designated in the

southern portion of the site for residents to enjoy. This park location will be easily accessible to all new residents and will provide active and passive recreational options for people of all ages and abilities. On the west side of the site, there is a regional greenway accessible by a trail that runs south into the southern park and then into the existing wetland to the east. This path will connect this development to the neighborhood to the west, and offer more passive recreational activities like dog walking, running or biking. It will also extend a connection to the planned path along county highway AB, creating a seamless regional trail system.

g. The planned development will not adversely affect the ability of public agencies to provide school or other municipal services.

This area was planned for residential development in the comprehensive plan and in the East side Neighborhood Growth Area plan and is reflected by public agencies providing school and other municipal services.

h. The width of street rights-of-way, width of paving, width and location of street or other paving, outdoor lighting, location of sewer and water lines, provision for stormwater drainage or other similar environmental engineering considerations shall be based on a determination of the appropriate standards necessary to implement the specific function in the specific situation; provided, however, that in no case shall standards be less than those necessary to ensure the public safety and welfare as determined by the Village.

Environmental engineering considerations have been incorporated into the design to ensure the public health, safety and welfare as determined by the Village. These plans are incorporated into the separate plat submittal documents.

i. The proponents of a Planned Development District application shall provide evidence satisfactory to the Village Board of its economic feasibility of available adequate financing and that it would not adversely affect the economic prosperity of the Village or the values of surrounding properties.

This planned development is shown as neighborhood residential in the comprehensive plan and in the East Side Neighborhood Growth Area plan. The comprehensive plan encourages the expansion of the range of quality and affordable housing choices for empty nesters, seniors, and the McFarland workforce, while remaining a family-oriented community. This development will be able to do that by providing a diverse range of price points and housing types that will be desirable to a wide range of people.

j. The proponents of a Planned Development District shall submit a reasonable schedule for the implementation of the development to the satisfaction of the Village Board, including suitable provisions for assurance that each phase could be brought to completion in a manner that would not result in an adverse effect upon the community as a result of termination at that point.

Approving this PDD will create a voluntary framework designed to encourage greater variety and flexibility in land development while complying with the Village Board's time schedule. The comprehensive plan promotes quality, affordable housing for families and older residents within neighborhoods, which is what a PDD helps make possible in Rosewood Fields.

Development Concept

Rosewood Fields site concept plan provides opportunities for quality, affordable housing for families and older residents that are organized around safety, conservation, recreation, and connections to the broader community. Rosewood Fields creates a seamless connection to the adjoining western McFarland neighborhood, while also respecting the greenway corridor on the west side of the site and extending the community character of The Village of McFarland.

Proposed Land Use Summary

See Exhibit F: Zoning Map

See Exhibit G: Master Plan

See Exhibit H: District Plan

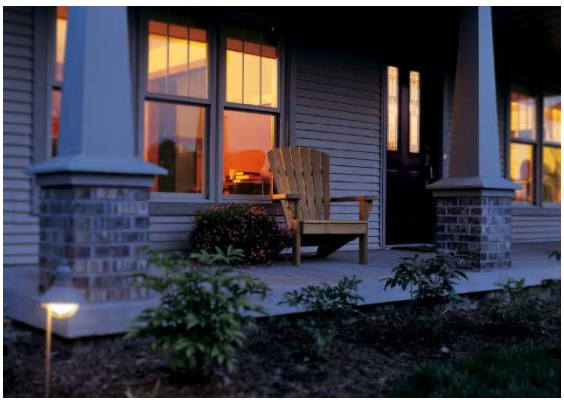
Projected Construction: 2020-2032

Proposed Use:

24	Carriage Lane Accessed Single Family Homes
83	Street Accessed Single Family Homes
10	Flat Site Twins - front
10.8	*Acres of Parks and Open Space*

Single Family Homes

Single family homes within the project will include both carriage lane accessed, and street accessed configurations that can accommodate a wide range of house types, architectural treatments, landscaping, floor plans and price points. This will create an integrated and diverse neighborhood that also blends easily into the surrounding McFarland neighborhoods. Price points within the single-family format will range from entry level/first time home buyer to move up/missing middle housing options.



Twin Homes

Twin homes within the neighborhood include a range of floor plans and configurations with street accessed garages. These homes offer additional price points and housing variety within the neighborhood.

Parks and Open Space

This project preserves and enhances the existing wetland in the southeast corner and the greenway on the west side of the site. A public park, stormwater and a trail will also be added to the overall open space offering a range of passive and active recreational activities and gathering areas to serve the neighborhood.

Definitions

Lot width: Lot width is measured at the front yard setback and may be wider or narrower at the ROW due to road curvature.

Useable Open Space: Usable open space shall be provided on each lot, devoted in whole or in part to any residential use, as set forth in each district. Such usable open space provided on the ground level shall be in a compact area and having no dimension less than ten feet and having no slope grade greater than ten percent. Required open space may be designed to be part of the individual living units in the form of balconies, porches, patios or decks. Usable open space may count area on adjoining lot if granted as part of a recorded use easement.

Permitted & Accessory Uses

Primary uses within the proposed districts will be for single family homes or two unit attached single family homes. Additional permitted and accessory uses will be allowed provided per the following:

- *District I & II*: Uses consistent with the R1-B residential district
- *District III*: Use consistent with the R-2 residential district

District Descriptions/ Zoning Text

Rosewood Fields: District I

General Plan/ Detailed Plan:

Single Family Homes

Carriage Lane Alley accessed garage

See Exhibit G: Master Plan

Description

Carriage lane homes enhance the variety of housing and neighborhood character through the use of single-family home sites served by alleys. These homes are designed with integrated architecture and reduced setbacks which create an unbroken front façade of houses without garages that emphasize a human-based scale and texture in which the pedestrian and front porches become the focus.

Proposed Dwelling Units 24 units

Character Guidelines

- Balconies, entry bays and front entry porches are recommended to enhance the human scale of the public street façade.
- Porches, stoops, and bays are allowed to encroach into the front yard setback to allow for increased porch width and to encourage the inclusion of porches or entry bays onto each house.
- Varied building setbacks are encouraged to create a more organic streetscape in which there are varied building placements along the length of the street.
- As the buildings are moved closer to the street and each other, special attention should be taken to design details, house details, and landscaping to ensure that the public street façade is of proper pedestrian scale.

District I Zoning

Minimum Lot Area	3,500 square feet
Minimum Lot Width (at front yard setback)	37 feet (42 feet corner lots)
Maximum Building Height	35 feet
Minimum Lot Depth	95 feet
Minimum Front Yard Setback	15 feet
Maximum Front Yard Setback	24 feet
Minimum Side Yard Setback	5 feet
Minimum Dwelling Unit Separation	10 feet minimum setback between buildings on adjacent lots
Sum of Side Yards	10 feet minimum
Minimum Corner Lot Side Yard Setback	10 feet from the street side right of way
Minimum Garage Rear Yard Setback	2 foot
Maximum Garage Rear Yard Setback for Exterior Lots (lots adjacent to the street)	4 feet
Minimum Paved Surface Setback	2 feet
Maximum Height of Detached Garage	20 feet
Detached Garage Side Yard Setbacks	5 feet
Required Off-street Parking and Loading	Two off-street parking stalls per lot
Usable Open Space	500 square feet

Permitted Encroachments	Front porches, balconies, stoops, open porches and covered walkways may encroach a maximum of 6' into the front yard setback. Front Yard Setbacks of 18-20' must utilize 6-8' porch encroachment Corner lot porches, and bay windows may not encroach the vision triangle. The triangle is defined by: the intersection of the curbs at the corner, and a point 30 feet back along each curb from the corner. Bay windows and fireplace chases may encroach a maximum of 2' into the side yard Garden walls or fences shall be no more than 4' in height and will require approval by the Architectural Control Committee. Walls and fences located within the vision triangle shall not exceed 30" in height.
Appropriate Architectural Styles (not limited to):	Victorian Salt Box Prairie Cottage Four Square Traditional Southern Traditional Shingle Craftsman

ROSEWOOD FIELDS: DISTRICT II

General Plan/ Detailed Plan:

Single Family Homes

Front-access garage

See Exhibit G: Master Plan

Description

This district's homes offer additional diversity and housing choices in a single-family format. Conventional single-family homes within the neighborhood will span from entry level/first time homebuyer, to market rate, and downsizer opportunities.

Proposed Dwelling Units 83 units

Character Guidelines

- Balconies, entry bays and front entry porches are recommended to enhance the human scale of the public street façade.
- Porches, stoops, and bays are allowed to encroach into the front yard setback to allow for increased porch width and to encourage the inclusion of porches or entry bays onto each house.
- Varied building setbacks are encouraged to create a more organic streetscape in which these are slight variations between buildings along the length of the street.
- As the buildings are moved closer to the street and each other, special attention should be taken to design details, house details, and landscaping to ensure that the public street façade is of proper pedestrian scale.
- The front entry of each house should be oriented towards the public street frontage.
- Garages will be set back a minimum of two feet from the front façade of the house to ensure that the garage does not dominate the façade of the house

District II Zoning

Minimum Lot Area	5,100 square feet
Minimum Lot Width (at front yard setback)	51 feet
Maximum Building Height	35 feet
Minimum Lot Depth	100 feet
Minimum Front Yard Setback	18 feet
Maximum Front Yard Setback	25 feet
Minimum Side Yard Setback	5 feet
Sum of Side Yards	10 feet minimum
Minimum Corner Lot Side Yard Setback	10 feet from the street side right of way
Minimum Rear Yard Setback	20 foot
Garage Setback	20 feet Garage must be setback a minimum of 2' from front façade of the house Side entry garages may be allowed in front of façade There shall not be more than (2) single car width and (1) double car width garage doors per street facing elevation. On street facing facades with a three stall garage, one single width door must be setback on a new façade a minimum of 2' from the double width garage door's façade.
Minimum Paved Surface Setback	2 feet
Bulk Mass	The width of the garage wing shall not exceed 50% of the total structure width
Required Off-street Parking and Loading	Three off-street parking stalls minimum per lot
Usable Open Space	1,000 square feet

Permitted Encroachments	Front porches, balconies, stoops, open porches and covered walkways may encroach a maximum of 6' into the front yard setback. Corner lot porches, and bay windows may not encroach the vision triangle. The triangle is defined by: the intersection of the curbs at the corner, and a point 30 feet back along each curb from the corner. Bay windows & fireplace chases may encroach side yard setbacks and will require approval by the Architectural Control Committee. Garden walls or fences shall be no more than 4' in height and will require approval by the Architectural Control Committee. Walls and fences located within the vision triangle shall not exceed 30" in height. Decks may encroach up to 10' into rear yard setback
Appropriate Architectural Styles (not limited to):	Victorian Salt Box Prairie Cottage Four Square Traditional Southern Traditional Shingle Craftsman

ROSEWOOD FIELDS: DISTRICT III

General Plan/ Detailed Plan:

Twin homes/zero lot line single family

Street facing garage

Flat site

See Exhibit G: Master Plan

Description

This district's homes offer additional diversity and housing choices in a twinhome format. District III twin homes offer paired attached single-family housing with street accessed garages. This district will offer more affordable housing for a range of different home buyers.

Proposed Dwelling Units 10 units

Character Guidelines

- Balconies, entry bays and front entry porches are recommended to enhance the human scale of the public street façade.
- Porches, stoops, and bays are allowed and encouraged to encroach into the front yard setback to allow for increased porch width and to encourage the inclusion of porches or entry bays onto each house.
- Varied building setbacks are encouraged to create a more organic streetscape in which these are slight variations between buildings along the length of the street.
- As the buildings are moved closer to the street and to each other, special attention should be taken to design details, house details, and landscaping to ensure that the public street façade is of proper pedestrian scale.
- The front entry of each house should be oriented towards the public street frontage.

District III Zoning Text

Minimum Lot Area	9,100 feet for combined twin home 4,550 feet for zero lot line home
Minimum Lot Width (at front yard setback)	91 feet for combined twin home building 45.5 feet for zero lot line home
Maximum Building Height	35 feet
Minimum Lot Depth	100 feet
Maximum Number of Units Per Lot	2 units if paired building 1 unit for zero lot line home
Minimum Front Yard Setback	15 feet
Minimum Side Yard Setback	5 feet (exterior building lot line) 0 feet for zero lot line home sites (party wall)
Sum of Side Yard Setback	10 feet minimum (combined building)
Minimum Corner Lot Side Yard Setback	15 feet from the street side right of way
Minimum Rear Yard Setback	2 feet
Minimum Paved Surface Setback	2 feet
Required Off-Street Parking and Loading	Two off-street parking stalls per unit minimum
Usable Open Space	1,000 square feet per unit

Permitted Encroachments	Front porches, balconies, stoops, open porches and covered walkways may encroach a maximum of 6' into the front yard setback. At grade patios may encroach up to the paved side yard setback allowance. Corner lot porches, and bay windows may not encroach the vision triangle. The triangle is defined by: the intersection of the curbs at the corner, and a point 30 feet back along each curb from the corner. Bay windows and fireplace chases may encroach a maximum of 2' into the side yard Garden walls or fences shall be no more than 4' in height and will require approval by the Architectural Control Committee. Walls and fences located within the vision triangle shall not exceed 30" in height. Additional Requirements A minimum one-hour fire rated wall assembly division, separating all areas from the lowest level flush against the underside of the roof, is required between each dwelling unit.
Appropriate Architectural Styles (not limited to):	Victorian Salt Box Prairie Cottage Four Square Traditional Southern Traditional Shingle Craftsman Mid-Century Modern

ARCHITECTURAL STANDARDS

Development of the property will require review and approval by the Architectural Review Committee for Rosewood Fields prior to submittal to the Village of McFarland.

The following additional guidelines will also apply:

Massing

- Awnings, bays, canopies, porches, stoops, towers and windows are encouraged to enhance the building scale.
- Primary façade rooflines are encouraged to be broken with bays, gables, and smaller roof forms to reduce the overall size of roof elements. Pitched or flat room forms may be allowed, as appropriate to the overall style of the building.
- Building architecture should utilize a tripartite composition with base, middle, and top elements clearly defined with material and façade design changes.
- Façade breaks and wall recessions shall be used to further break up massing of buildings.

Styles

- Each individual building shall select one style of architecture and apply appropriate details, massing, rooflines, façade breaks, colors, and materials on all of the buildings within the project site. Using a variety of architectural styles throughout the neighborhood will create more visual interest and appeal. The buildings should contain variations in materials and colors between buildings to enhance the overall character of the site.
- Appropriate styles:
  - Victorian
  - Salt Box
  - Prairie
  - Cottage
  - Four Square
  - Traditional
  - Southern Traditional
  - Shingle
  - Mid-Century Modern
  - Craftsman

Materials

- Building design shall feature high quality, durable materials in a range of types and colors.
- Appropriate materials:
  - Brick
  - Stone and cast stone
  - Cement board, composite siding, or vinyl siding
  - Wood, composite, vinyl, or cement board shingle siding/ board and batten siding
  - Metal panels
  - Synthetic trim materials

OPEN SPACE

The open space system features about 10.8 acres of park space, stormwater management and open space; roughly 30% of the project. The components of the open space include a new public park and stormwater basins, which connect to the existing wetland and greenway through connections to the planned regional trail system.

Parks	3.2 Acres
Wetlands	1.2 Acres
Stormwater	3.3 Acres
Passive Open Space	3.1 Acres
Dedicated Park	3.2 Acres

See Exhibit I: Parks and Open Space Plan

PAVED TRAILS

The trail system comprises of both sidewalks and a paved trail to accommodate bicycle and pedestrian traffic. All trails will be owned and maintained by the Village.

ENVIRONMENTAL CORRIDOR AND STORMWATER

The greenway in the western portion of the site connects to the regional environmental corridor. The wetland in the southeastern portion of the site is buffered to protect the quality and the integrity of the ecosystem. There will also be two stormwater detention basins designed to not only treat runoff but also to be a part of the open space system and viewed as an amenity with public access via the trail network. All environmental corridor and stormwater will be owned and maintained by the Village.

Streets

Rosewood Fields features a complete street network, extending west to Prairie Wood Dr and Tuscobia Trail, and east to County Highway AB. Residential collector and local street widths have been used to meet both vehicle and pedestrian needs. Street trees and grass terraces will enhance the pedestrian experience.

The Homeowners Association will be responsible for the maintenance of any planting islands within right-of-way.

See Exhibit J: Street Right-of-Way Width Map

See Exhibit K: Street Cross Sections

Mailboxes

Per United States Postal Service requirements, cluster mailboxes will be used and placed throughout the neighborhoods in private easements or private outlots. The final CBU locations will be determined on a phase by phase basis and are subject to USPS approval and may be revised as necessary.

The Home Owners Association will be responsible for the maintenance of the CBUs.

See Exhibit L: Conceptual CBU Location Map

Phasing

The neighborhood is projected to be built out in multiple phases over the span of the next 5-6 years. Final phase lines and sequencing will be determined based on market demand

See Exhibit M: Conceptual Phasing Plan

Homeowner Association

Rosewood Fields will be governed by a Homeowners Association. Maintenance responsibilities will be further detailed in the amended covenants and restrictions recorded against each property.

ARCHITECTURAL REVIEW COMMITTEE

The Architectural Review Committee and The Rosewood Fields Covenants and Restrictions Code will be set up to ensure the continued development of high-quality design, architecture and site execution is carried throughout the neighborhood.

Architectural and Landscape plans for any site within Rosewood Fields shall be submitted to the Architectural Review Committee for review and approval prior to the issuance of any Building Permit, or prior to any site improvements.

The Committee will review all submitted plans to ensure the continuation of the distinct architectural character, and landscape quality established within the development. Plans will be reviewed based on the design guidelines as established in the Covenants and Restrictions guide and standards outlined for each zoning district. The Committee will review any future remodeling plans that will change the outward appearance of any structure found within Rosewood Fields. The Committee will not review any re-landscaping plans that take place more than one year after the original landscape plan is installed.

The Committee has the right to enforce all design guidelines and standards found within the Covenants and Restrictions, Design Guidelines, or zoning text. The Committee also retains the right to grant exceptions to the design guidelines and standards based on the merit of exceptional design that may not fall within or meet the technical requirements of the guidelines and standards, but generally accomplished the basic principles and intent of the aforementioned documents. Exceptions may also be made on a case-by-case evaluation of individual site context issues that would inhibit the practical implementation of these guidelines and standards.

The Architectural Review Committee shall initially be appointed by the Developer, and references in this Zoning Text to the Architectural Review Committee shall mean the Developer for such period of time as the Developer remains the only member of the Architectural Review Committee as provided in the Association Bylaws. As long as the Developer is the only member of the Architectural Review Committee, the Developer, acting alone, may exercise all of the rights and ceases to be the sole member of the Architectural Review Committee, the Architectural Review Committee shall thereafter consist of such persons as are elected pursuant to the Bylaws.

EXHIBITS

Exhibit A: Legal Description

Exhibit B: Future Land Use Plan

Exhibit C: East Side Neighborhood Growth Area Plan

Exhibit D: Location Map

Exhibit E: Existing Conditions

Exhibit F: Zoning Map

Exhibit G: Master Plan

Exhibit H: District Plan

Exhibit I: Parks & Open Space Plan

Exhibit J: Street Right of Way Width Map

Exhibit K: Street Cross Sections

Exhibit L: Conceptual CBU Location Map

Exhibit M: Conceptual Phasing Plan

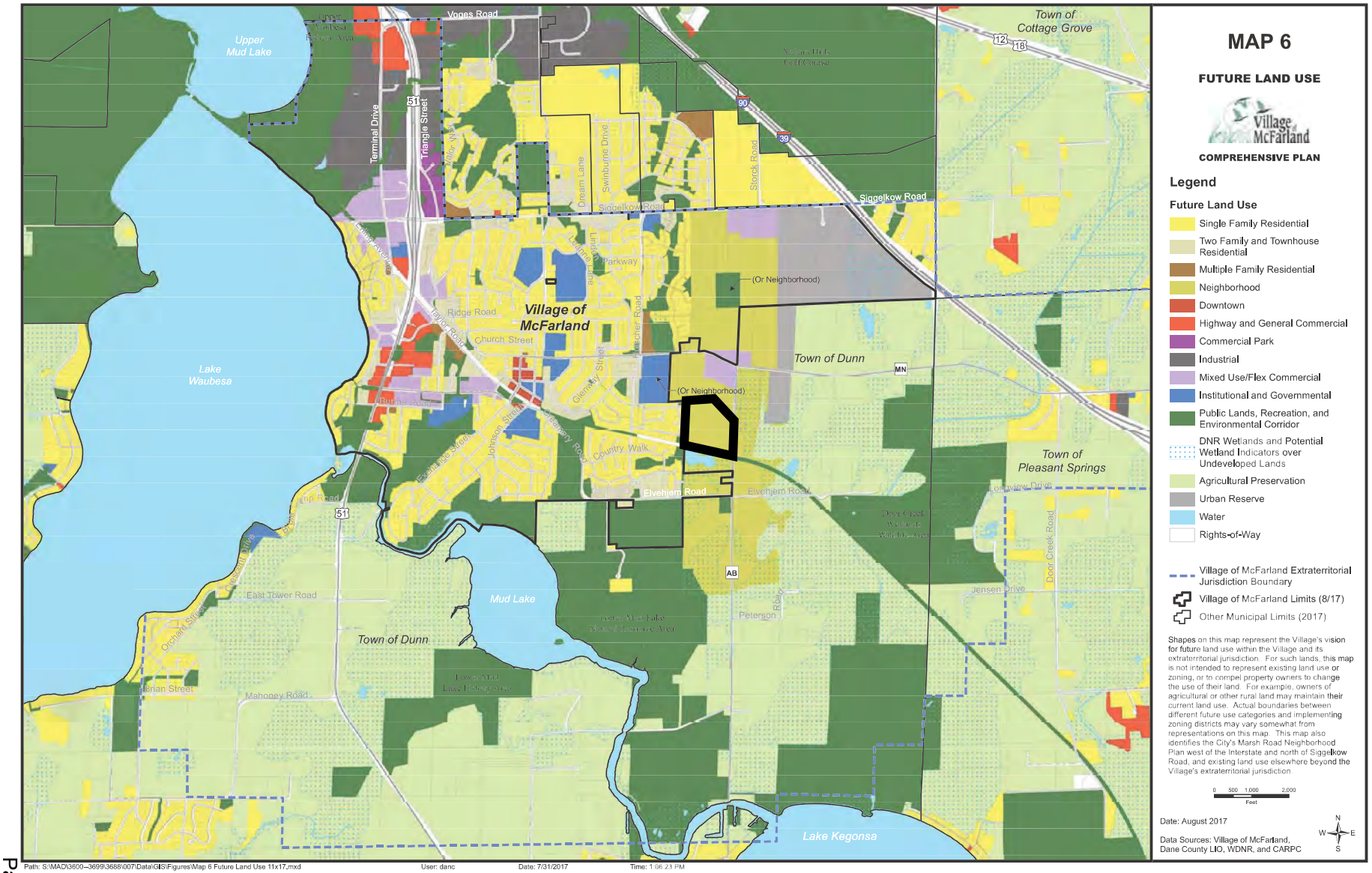
Exhibit A: Legal Description

Lot 2 Proposed CSM:

A parcel of land located in the NE1/4 of the SE1/4 and the SE1/4 of the SE1/4 of Section 2, T6N, R10E, Village of McFarland, Dane County, Wisconsin to-wit:

Commencing at the East 1/4 corner of said Section 2; thence S02°07'30"W 258.00 feet along the East line of said SE1/4; thence N87°52'30"W, 34.21 feet to the point of beginning; thence S02°14'16"W, 973.22 feet; thence N77°25'35"W, 1291.46 feet; thence N02°35'02"E, 1186.37 feet; thence N86°00'55"E, 736.08 feet; thence S43°08'26"E, 746.88 feet to the point of beginning.

Containing 1,582,369 square feet square feet (36.326 acres).



MAP 6

FUTURE LAND USE

Village of McFarland

COMPREHENSIVE PLAN

Legend

Future Land Use

- Single Family Residential
- Two Family and Townhouse Residential
- Multiple Family Residential
- Neighborhood
- Downtown
- Highway and General Commercial
- Commercial Park
- Industrial
- Mixed Use/Flex Commercial
- Institutional and Governmental
- Public Lands, Recreation, and Environmental Corridor
- DNR Wetlands and Potential Wetland Indicators over Undeveloped Lands
- Agricultural Preservation
- Urban Reserve
- Water
- Rights-of-Way

- Village of McFarland Extraterritorial Jurisdiction Boundary
- Village of McFarland Limits (8/17)
- Other Municipal Limits (2017)

Shapes on this map represent the Village's vision for future land use within the Village and its extraterritorial jurisdiction. For such lands, this map is not intended to represent existing land use or zoning, or to compel property owners to change the use of their land. For example, owners of agricultural or other rural land may maintain their current land use. Actual boundaries between different future use categories and implementing zoning districts may vary somewhat from representations on this map. This map also identifies the City's Marsh Road Neighborhood Plan west of the Interstate and north of Siggelkow Road, and existing land use elsewhere beyond the Village's extraterritorial jurisdiction.

0 500 1,000 2,000 Feet

Date: August 2017

Data Sources: Village of McFarland, Dane County LIO, WDNR, and CARPC

N W E S

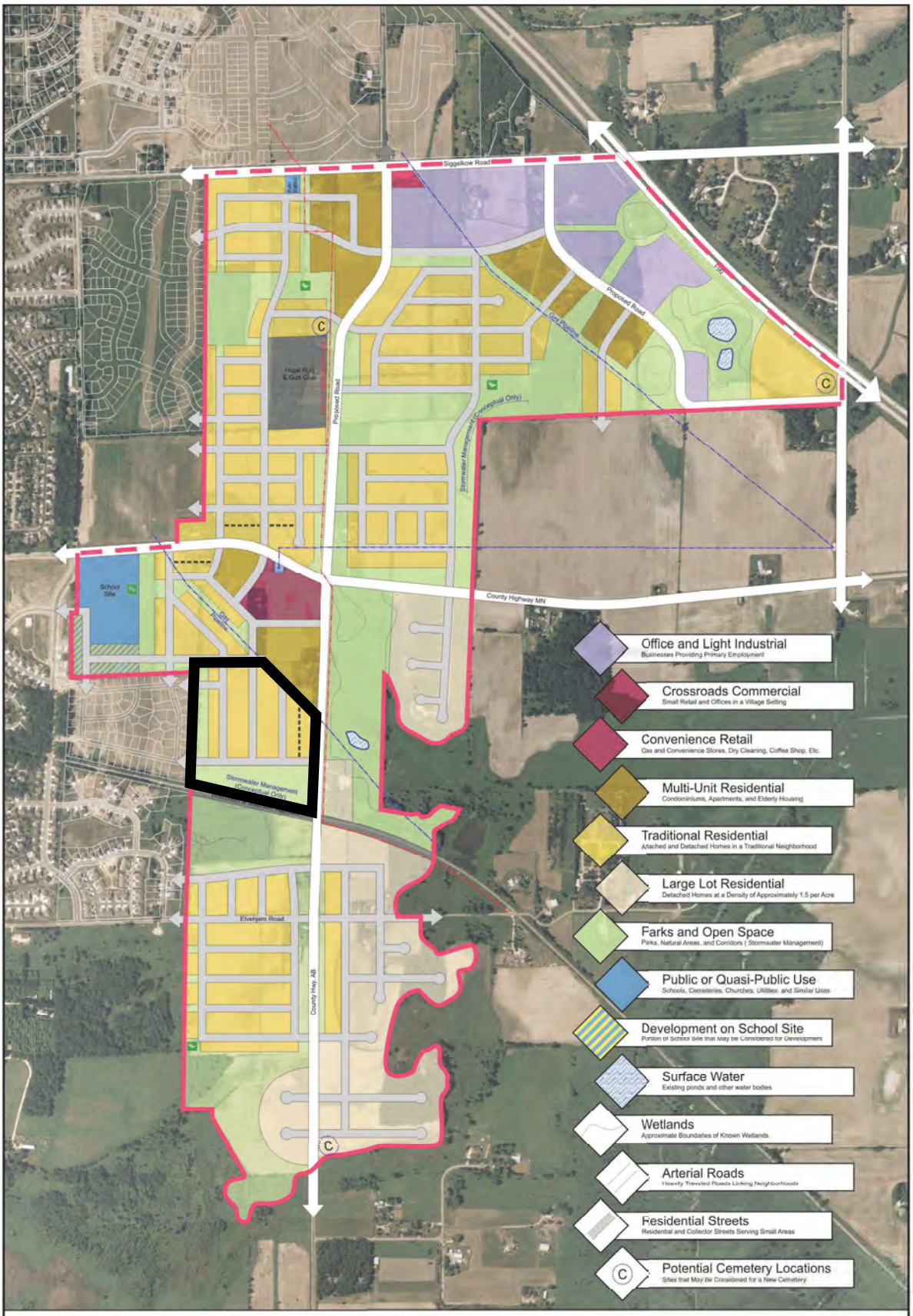
Path: S:\MAD\3600–3699\3688\007\Data\GIS\Figures\Map 6 Future Land Use 11x17.mxd User: danc Date: 7/31/2017 Time: 1:06:23 PM

VERIDIAN HOMES

ROSEWOOD FIELDS

MCFARLAND, WISCONSIN

EXHIBIT B: FUTURE LAND USE PLAN



Village of McFarland - East Side Neighborhood Growth Area - Concept Development Plan

R.A. Smith & Associates, Inc.

EXHIBIT C: EAST SIDE NEIGHBORHOOD GROWTH AREA PLAN	**ROSEWOOD FIELDS** MCFARLAND, WISCONSIN	VERIDIAN HOMES

EXHIBIT D: LOCATION MAP	**ROSEWOOD FIELDS** MCFARLAND, WISCONSIN	VERIDIAN HOMES

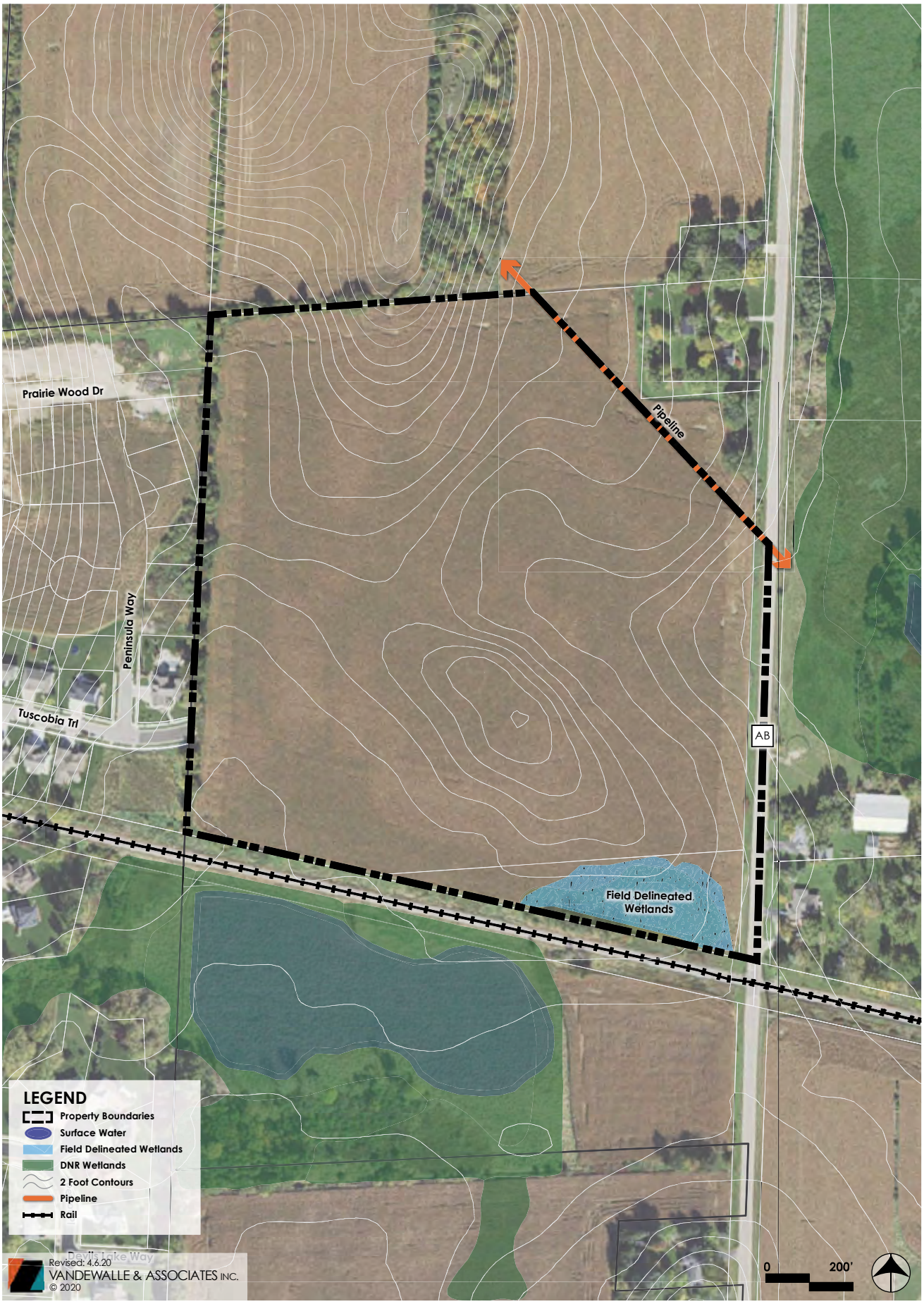
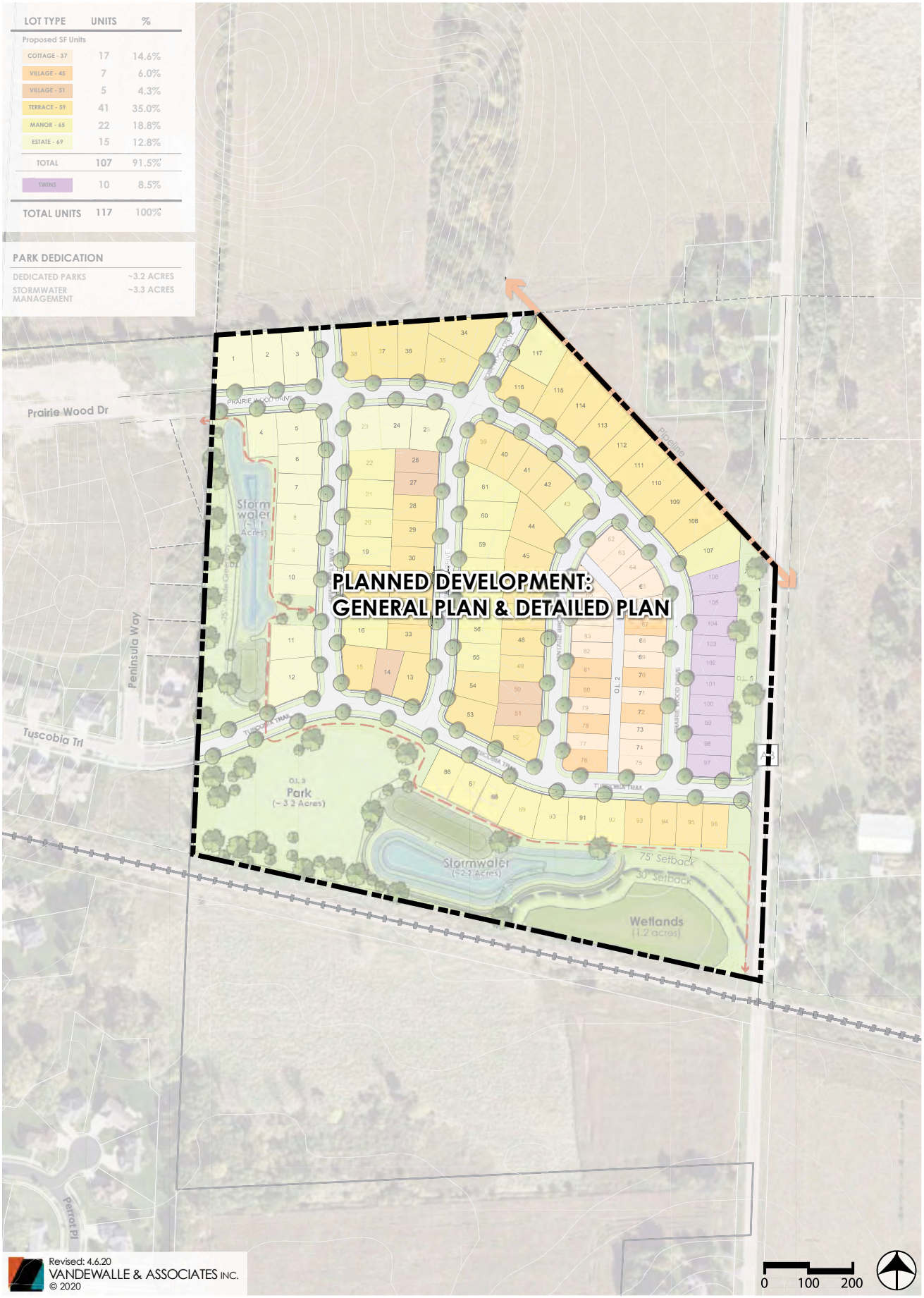


EXHIBIT E: EXISTING CONDITIONS	**ROSEWOOD FIELDS** MCFARLAND, WISCONSIN	VERIDIAN HOMES

LOT TYPE	UNITS	%
Proposed SF Units		
COTTAGE - 37	17	14.6%
VILLAGE - 45	7	6.0%
VILLAGE - 51	5	4.3%
TERRACE - 59	41	35.0%
MANOR - 65	22	18.8%
ESTATE - 69	15	12.8%
TOTAL	107	91.5%
TWINS	10	8.5%
TOTAL UNITS	117	100%

PARK DEDICATION	
DEDICATED PARKS	~3.2 ACRES
STORMWATER MANAGEMENT	~3.3 ACRES



Revised: 4.6.20
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EXHIBIT F: ZONING MAP	ROSEWOOD FIELDS MCFARLAND, WISCONSIN	VERIDIAN HOMES

LOT TYPE	UNITS	%
Proposed SF Units		
COTTAGE - 37	17	14.6%
VILLAGE - 45	7	6.0%
VILLAGE - 51	5	4.3%
TERRACE - 59	41	35.0%
MANOR - 65	22	18.8%
ESTATE - 69	15	12.8%
TOTAL	107	91.5%
TWINS	10	8.5%
TOTAL UNITS	117	100%

PARK DEDICATION	
DEDICATED PARKS	~3.2 ACRES
STORMWATER MANAGEMENT	~3.3 ACRES

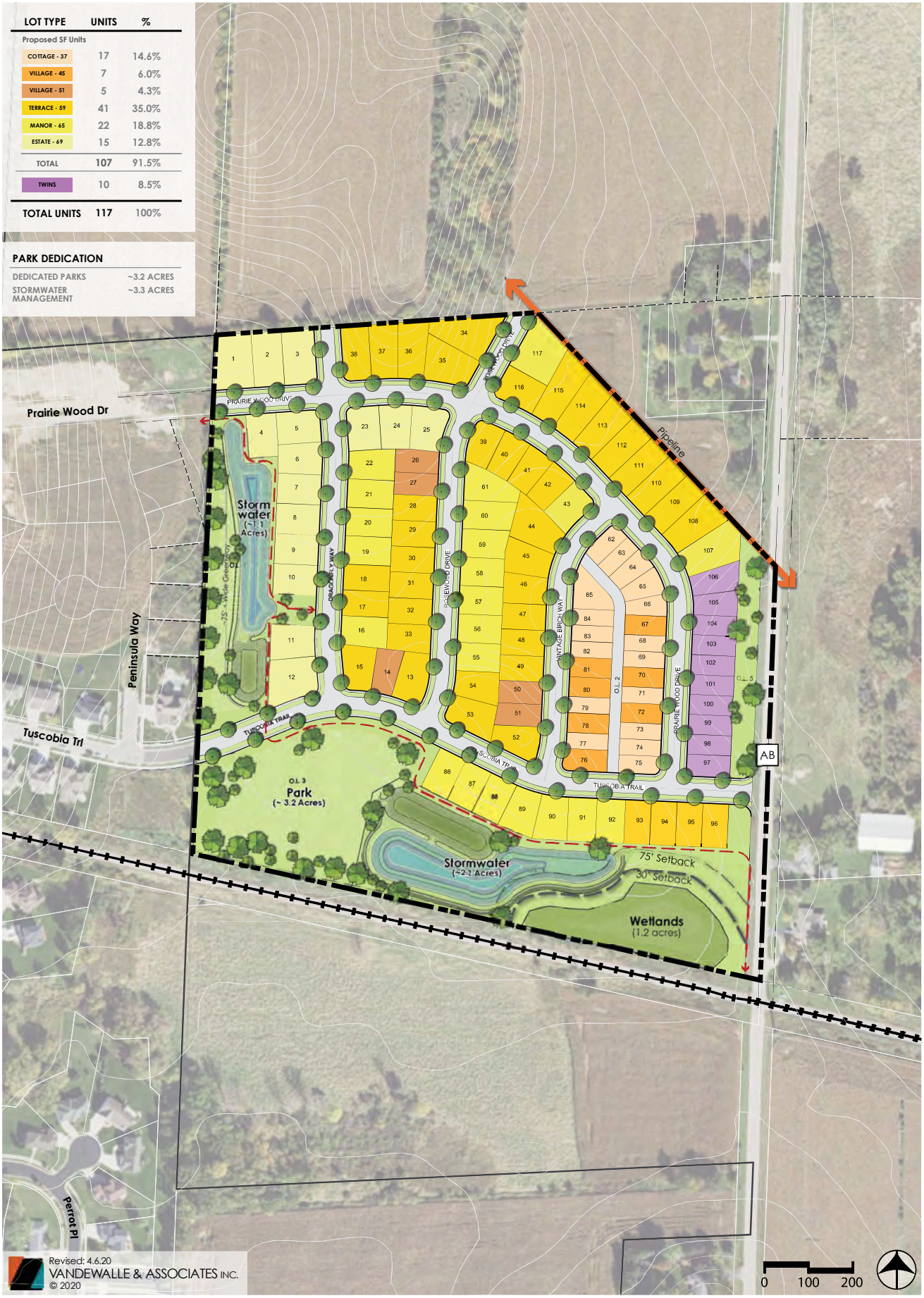


EXHIBIT G: MASTER PLAN

ROSEWOOD FIELDS

MCFARLAND, WISCONSIN

VERIDIAN HOMES

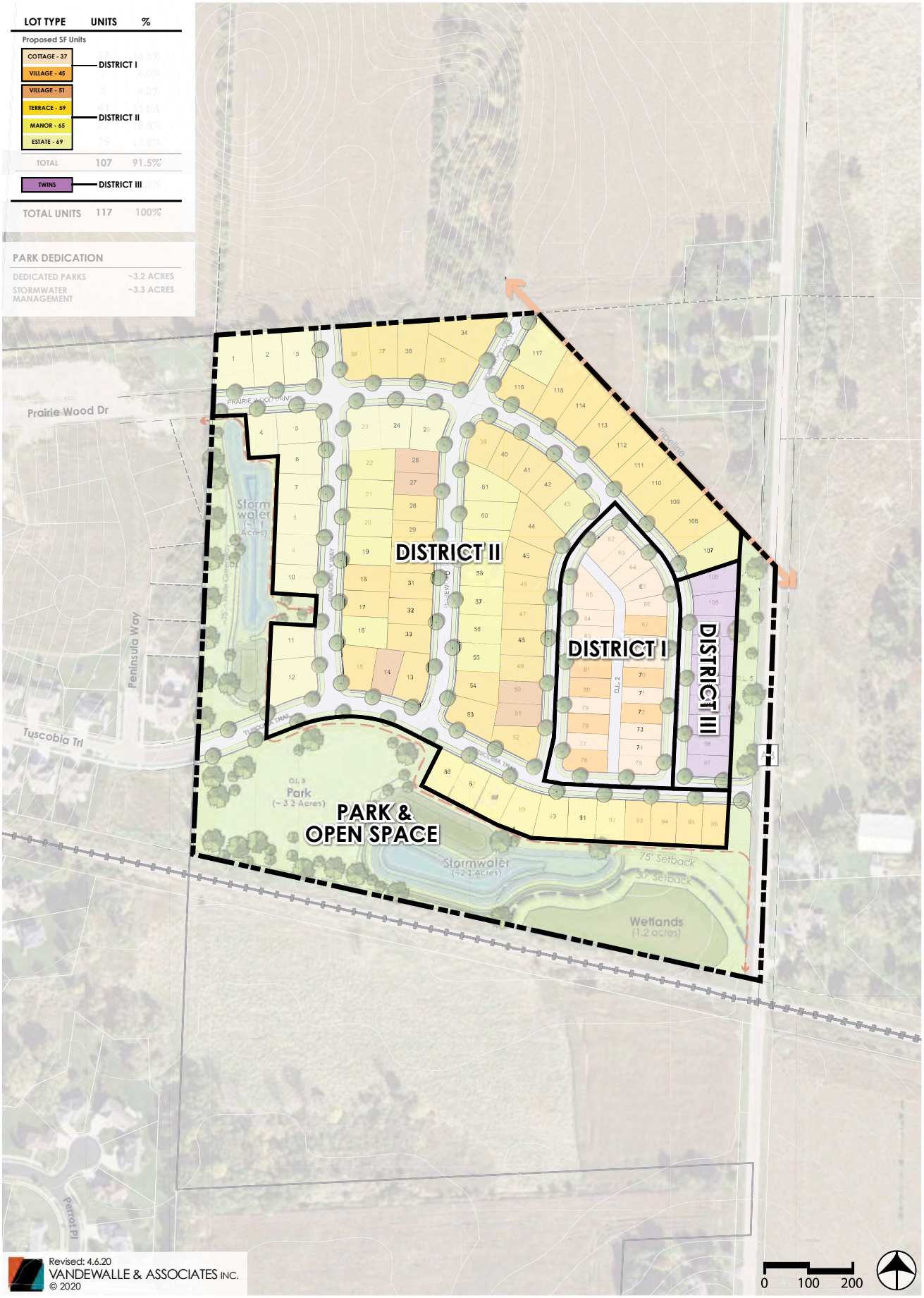
LOT TYPE	UNITS	%
Proposed SF Units		
COTTAGE - 37	37	14.6%
VILLAGE - 45	7	6.0%
VILLAGE - 51	5	4.3%
TERRACE - 59	41	35.0%
MANOR - 65	22	18.8%
ESTATE - 69	15	12.8%
TOTAL	107	91.5%
TWINS	10	8.5%
TOTAL UNITS	117	100%

DISTRICT I

DISTRICT II

DISTRICT III

PARK DEDICATION	
DEDICATED PARKS	~3.2 ACRES
STORMWATER MANAGEMENT	~3.3 ACRES



Revised: 4.6.20
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EXHIBIT H: DISTRICT PLAN	ROSEWOOD FIELDS MCFARLAND, WISCONSIN	VERIDIAN HOMES

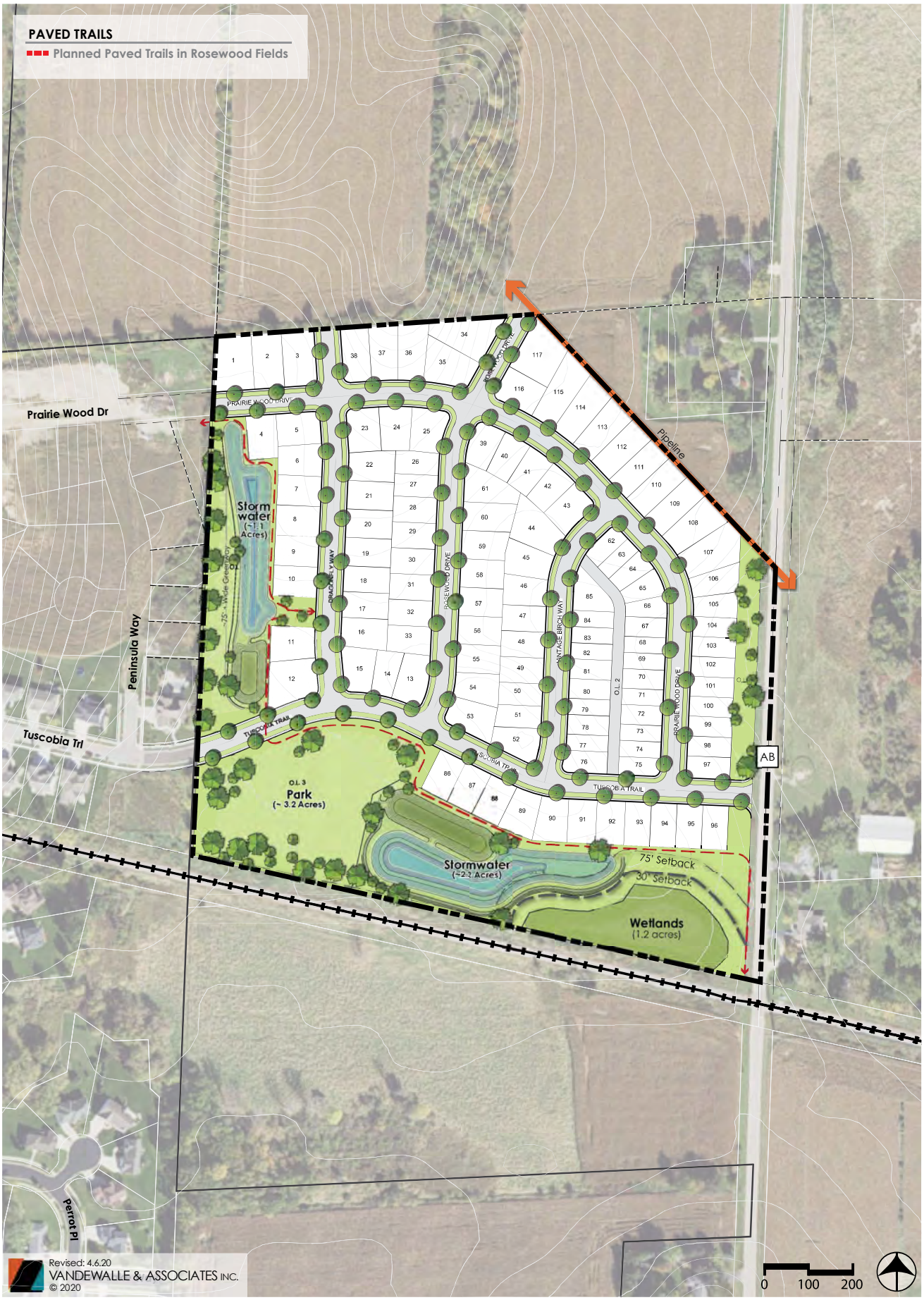


EXHIBIT I: PARKS & OPEN SPACE PLAN	**ROSEWOOD FIELDS** MCFARLAND, WISCONSIN	VERIDIAN HOMES

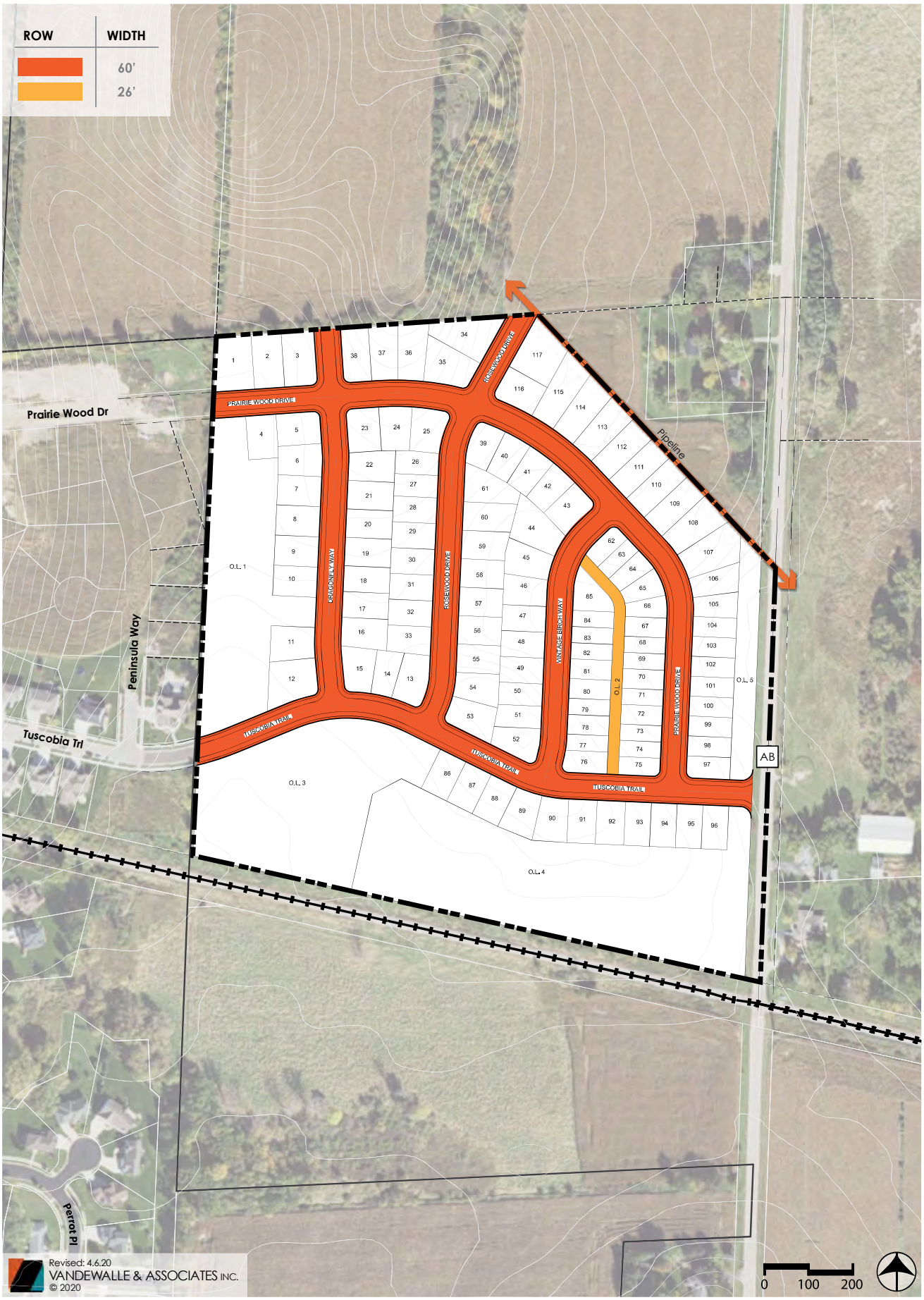
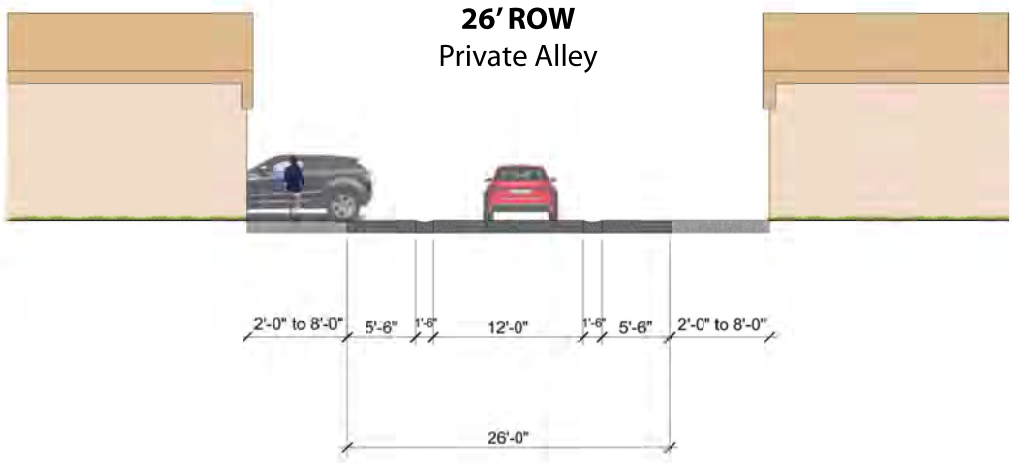
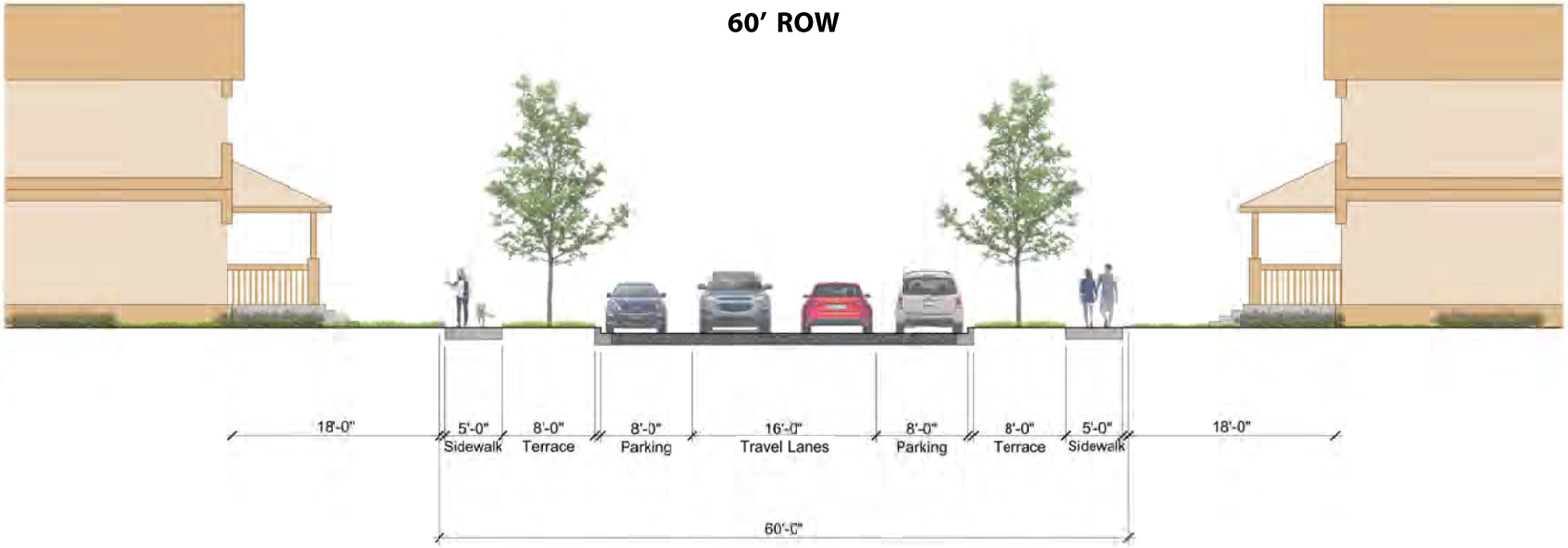


EXHIBIT J: STREET RIGHT-OF-WAY WIDTH MAP	**ROSEWOOD FIELDS** MCFARLAND, WISCONSIN	VERIDIAN HOMES

26' ROW
Private Alley



60' ROW



0 10

VERIDIAN HOMES

ROSEWOOD FIELDS
MCFARLAND, WISCONSIN

EXHIBIT K:
STREET CROSS SECTIONS

Revised: 4.6.20
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LOT TYPE	UNITS	%
Proposed SF Units		
COTTAGE - 37	17	14.6%
VILLAGE - 45	7	6.0%
VILLAGE - 51	5	4.3%
TERRACE - 59	41	35.0%
MANOR - 65	22	18.8%
ESTATE - 69	15	12.8%
TOTAL	107	91.5%
TWINS	10	8.5%
TOTAL UNITS	117	100%

PARK DEDICATION	
DEDICATED PARKS	~3.2 ACRES
STORMWATER MANAGEMENT	~3.3 ACRES

Revised: 4.6.20
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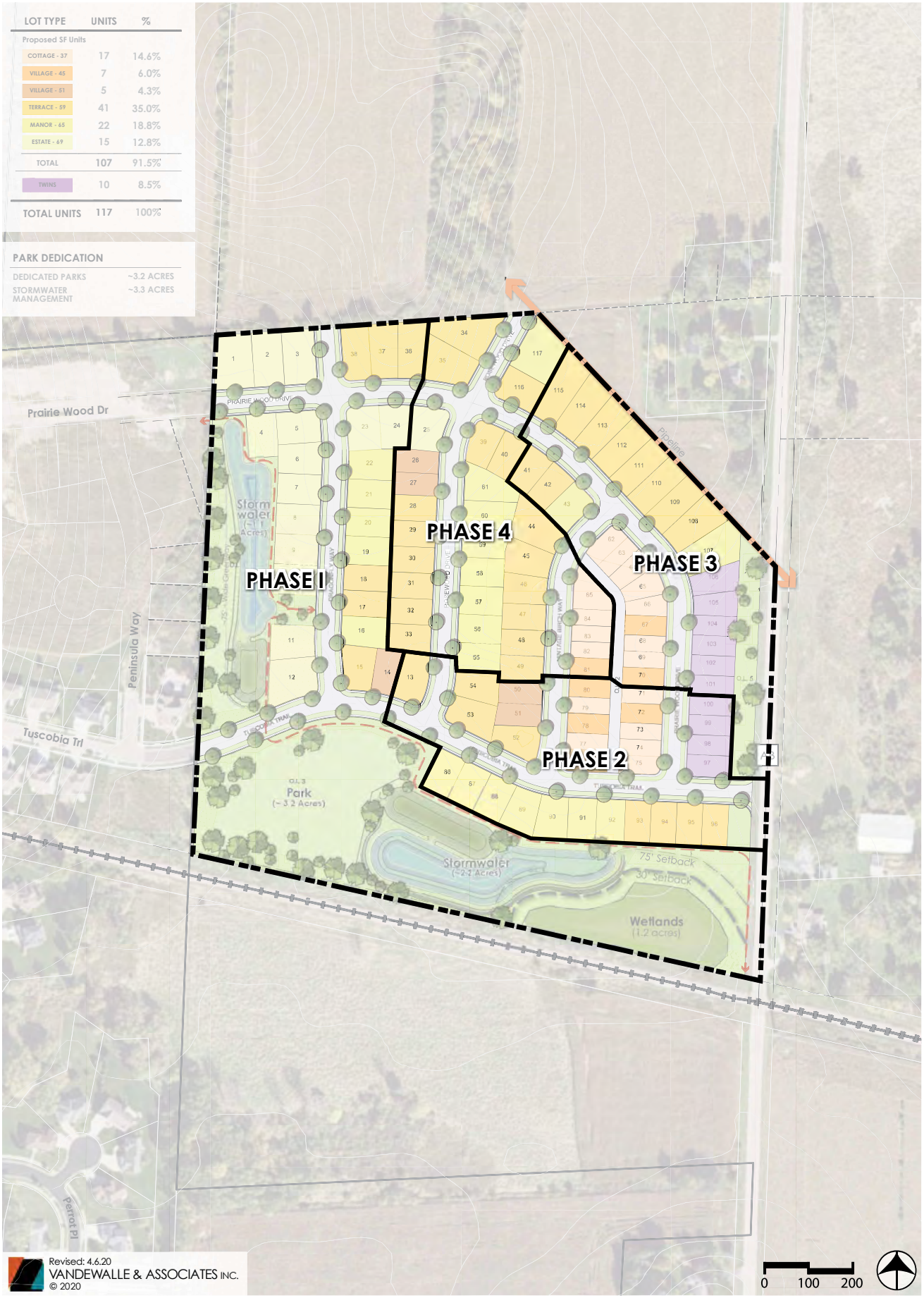
*Note: Subject to review and approval by the postal service (USPS)

0 100 200

EXHIBIT L: CONCEPTUAL CBU LOCATION MAP	ROSEWOOD FIELDS MCFARLAND, WISCONSIN	VERIDIAN HOMES

LOT TYPE	UNITS	%
Proposed SF Units		
COTTAGE - 37	17	14.6%
VILLAGE - 45	7	6.0%
VILLAGE - 51	5	4.3%
TERRACE - 59	41	35.0%
MANOR - 65	22	18.8%
ESTATE - 69	15	12.8%
TOTAL	107	91.5%
TWINS	10	8.5%
TOTAL UNITS	117	100%

PARK DEDICATION	
DEDICATED PARKS	~3.2 ACRES
STORMWATER MANAGEMENT	~3.3 ACRES



Revised: 4.6.20
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EXHIBIT M: CONCEPTUAL PHASING PLAN	**ROSEWOOD FIELDS** MCFARLAND, WISCONSIN	VERIDIAN HOMES

Native plantings may be an attractive and sustainable approach to landscaping

- Every home and business should have nearby and unobstructed access to public space. This may include public parks, natural areas, private recreational facilities (on multi-unit residential sites), plazas, or other spaces.
- Whenever possible, sites and buildings should be designed on an east-west axis to maximize solar orientation for daylighting.

Landscaping

- Landscape public spaces and non-residential properties with plant species native to the region. Residential property owners should be encouraged to use natives as well. These plants are adapted to the region, provide food and habitat for wildlife, and can help to maintain ecological connections between natural open spaces in the neighborhood.
- Use natural plantings to buffer wetlands and other significant natural features.
- Manage existing wetlands and woodlands to maintain their ecological health. This may include the removal of non-native or invasive species.

Dimensional Criteria

The following table summarizes area, setback, and similar dimensional criteria for the different land use categories in the neighborhood.

Dimensional Criteria for Neighborhood Land Uses

Criteria	Office & Lt. Industry	Commercial Crossroads	Convenience Commercial	Traditional Neighborhood	Multi-Unit Residential	Large Lot Residential	Cluster Residential
Min. lot area (SF)	10,000	none	10,000	5,000	3,000	15,000	15,000*
Min. lot width	50'	none	50'	50'	50'	80'	40'
Building height	none	35'	35'	35'	45'	35'	35'
Front yard setback (min./max.)	25' / 50'	20' / 25'	25' / 25'	20' / 25'	20' / 25'	25' / none	20' / none
Front yard Encroachment**	none	none	none	10'	10'	10'	10'
Garage setback	n/a	n/a	n/a	25'	25'	25'	25'
Side yard setback	10'	none	10'	6'	6'	10'	6'
Rear yard setback	20'	none	20'	20'	30'	30'	20'
Rear yard deck encroachment	n/a	n/a	n/a	10'	n/a	10'	10'
Commercial setback from residential	20'	none	20'	n/a	n/a	n/a	n/a
Open space per dwelling unit (SF)**	n/a	500	500	1,000	750	10,000	10,000

* Minimum lot area may be reduced to 5,000 square feet where a minimum of 10,000 square feet per lot of open space is located contiguous to the lot.

** Unenclosed porches may be allowed to encroach ten feet into the front yard setback area.

McFarland Fire & Rescue Department
5915 Milwaukee Street • PO Box 110 • McFarland, WI 53558-0110
(608) 838-3278 • Fax: (608) 838-3619
Emergency: 911

April 20, 2020

Andrew Bremer
Village of McFarland Community Development
5915 Milwaukee St.
McFarland, WI 53558

RE: Site Plan Review for proposed Utterback-Veridian development

Dear Andrew,

I have reviewed the proposed Utterback-Veridian development on the east side of the Village of McFarland. This proposal is to develop open land into residential homes. Under the proposal, the set setbacks between the buildings are to be reduced to five (5) feet from lot-line or a combination of ten (10) feet from both sides of the home. The physical separation between buildings is proposed to be no less than ten (10) feet.

Per Village Ordinance Sec. 62-70 table under the R-1A column, the minimum allowable set back between property lot-lines is to be no less than seven (7) feet or a combination of fourteen (14) feet with a building separation of fourteen (14) feet.

While reviewing proposals to reduce the minimum current standards, we utilize model codes. In this case, we utilized the 2018 International Zoning Code (IZC) and the 2018 International Residential Code (IRC). The IZC permits one and two-family dwellings the requested reduction of setbacks but does so based on using the IRC.

According to the 2018 International Residential Code (IRC):
"**R313.2 One- and two-family dwellings automatic fire sprinkler systems.**
An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings." The IRC is the model code of one and two-residential building code that many fire departments would recommend following. The recommendation is based on best practices. Wisconsin has not adopted the code for a variety of reasons and many are not supported by best practices.

We acknowledge the recommendation exceeds the current outdated Wisconsin Uniform Dwelling Code. We, however, feel that following current model codes is the best practice. Especially when the cost is often less than 2.5% of the home selling price.

To accommodate the reduced building setback, the McFarland Fire & Rescue recommends all homes have fire sprinkler systems installed according to the *National Fire Protection Association (NFPA) 13D-Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.*

If you have any questions regarding the above, please contact me via phone at 608-838-3278 or via email at mitchell.sutter@mcfarland.wi.us

Sincerely,

Mitchell Sutter

Mitchell Sutter
Fire Inspector/Public Education Specialist

Cc: Chris Dennis, Fire & EMS Chief (McFarland Fire & Rescue Department)

PLAN COMMISSION SUMMARY SHEET

MEETING DATE: **Monday, May 18, 2020**

SECTION: **Business**

DEPARTMENT: **Community Development**

CONTACT: **Andrew Bremer, Comm & Eco Dev Director**

AGENDA ITEM: **Discussion and action to make a recommendation to the Village Board on a request by Veridian Homes Rosewood Fields LLC regarding Preliminary Plat approval for Rosewood Fields Subdivision. Lands located west of CTH AB in the NE 1/4 of the SE 1/4 and the SE 1/4 of the SE1/4 of Section 2, Township 6 North, Range 10 East, Village of McFarland, Dane County, Wisconsin.**

PREVIOUS ACTION:
April 16th, 2020 Parks Committee Meeting
May 12th, 2020 Public Works/Public Utilities Meeting
May 18th, 2020 Plan Commission Meeting, Ordinance 2020-15, CSM to create Lot 2, Ordinance 2020-16 Rezoning to PDD-General & Detailed Plan.

ISSUE SUMMARY:
Background and Meeting Purpose
Veridian Homes (VH Rosewood Fields LLC) has petitioned the Village for approval of a preliminary plat (Rosewood Fields) for 36.29 acres of land along CTH AB. Veridian has an option to purchase this property from Utterback Limited Partnership. Concurrent with the preliminary plat approval, Veridian Homes is also petitioning for annexation, land division, and rezoning of the parent parcel. These requests will be reviewed by the Plan Commission and Village Board in May.

Plats are approved in a two step fashion with the preliminary plat phase allowing the applicant an opportunity to obtain design input and answer initial questions regarding general plat design, prior to having to incur additional expenses in the preparation of the final plat. The purpose of the May 18th Plan Commission meeting is to review and provide a recommendation to the Village Board. Assuming the preliminary plat is approved, the applicant will prepare the final plat for review by the Village, including the Public Works and Public Utility committees. Concurrent with the final plat approval a development agreement will be prepared by the Village Attorney specifying construction obligations, sureties, and related matters

Summary of Proposed Development
The proposed development consists of 117 residential lots, of which 107 will be for single family units and 10 will be for twin units (two attached dwellings separated by zero lot line). Twenty four (24) of the single family lots would have their driveways accessed by a private alley (Outlot 2) to be maintained by the Rosewood Fields Homeowners Association. The proposed development includes 138,198 square feet (3.2 acres) of land dedicated as public park space (Outlot 3). There is an additional 7.6 acres of wetland, stormwater, and passive

open space in Outlots 1, 4 & 5. A proposed off-road trail would run through Outlots 1, 3, and 4, from Prairie Wood Drive to the railroad crossing at CTH AB. Future development of lands south of the railroad would provide continued off-road connections to the Lower Yahara River Trail. The proposed neighborhood park and trail will be developed as part of Phase 1 of the subdivision development. Build-out of all lots is anticipated to occur over a 5-6 year period based on market conditions.

Consistency with the Village Comprehensive Plan of 2017

The Village's Future Land Use Map identifies the subject property in the "Neighborhood" category. Figure 4.1 of the Comp Plan provides additional details regarding development policies for this future land use category. The general description of land uses includes mostly single-family residential development with components of two family and townhouse residential, multi-family and institutional, and recreational land uses. The Development Policies in Figure 4.1 further explain the desire to accommodate a mixture of housing types, costs, and densities while maintaining at least 65% single family housing (development provides 91% single family). Typical implementing zoning districts include R-1 and PD, as proposed by Veridian, but can also include R-2, R-3, and R-E. The 10 proposed twin lots are consistent with uses allowed in the R-2 District. The comp plan references the Village's separate East Side Neighborhood Growth Area Plan for further conceptual guidance.

Consistency with the East Side Neighborhood Growth Area Plan of 2008

Included in the Rosewood Fields Zoning Submittal.pdf is a copy of the Village's East Side Neighborhood Growth Area Concept Development Plan, marked Exhibit C. This plan was adopted in 2008 and incorporated into the Village's 2017 Comprehensive Plan. The area of the preliminary plat is outlined on the map. The subject property is identified for Traditional Residential development. According to the plan, Traditional Neighborhood Areas are predominantly owner-occupied and intended to contain a combination of single-family, two-family, and 3-4 unit structures at a minimum density of four units per acre. The plan stipulates that density recommendations are inclusive of land area dedicated to public rights-of-way and utilities, but not dedicated parks and open space (including stormwater management facilities). Proposed net density is 4.7 units per acre. The neighborhood plan further identified the continuation of Tuscobia Trail to CTH AB, connectivity of new local streets to connect to undeveloped adjacent lands to the north, and the provision of park and stormwater management areas along the south side of Tuscobia Trail and on the west side of the property adjacent to the existing Park View Estates subdivision.

The PDD General & Detailed Plan is generally consistent with the Village's land use plans in terms of land uses, land use locations, unit mix, and street layout. Veridian has proposed rezoning to the PD District in order to reduce certain bulk standards found either within the Village's Subdivision, existing residential zoning districts, and Dimensional Criteria for Traditional Neighborhood Land Uses identified on page 32 of the East Side Neighborhood Growth Area Plan. Specifically the following provisions:

1. District I (Carriage Lane Lots). Proposed minimum lot widths of 37 feet. Sec. 56-142(e) of the Subdivision Code requires a minimum of 40 feet, while the ESNGAP recommends 50 feet. Veridian is proposing the use of 37 feet on 11 of the 24 lots, with all but two lots less than 50 feet. Proposed minimum lot depths of 100 feet. Sec. 56-142(l) of the Subdivision Code requires a minimum of 100 feet. Proposed minimum lot size of 3,500 square feet, minimum front yard setback of 15 feet, minimum

side yard setback of 5 feet, and minimum open space per dwelling unit of 500 square feet. The dimensional guidelines from the ESNGAP recommended 5,000 square feet, 20 feet, 6 feet, and 1,000 square feet respectfully. It should be noted that it is unclear if the dimensional guidelines in the ESNGAP for Traditional Neighborhoods were drafted to reflect alley development. Veridian is specifically proposing the carriage lane lots in order to increase the net density of the subdivision to meet the minimum density requirements of the ESNGAP, while also providing a diversity of housing style and purchase prices consistent with other goals and objectives of the Village and ESNGAP.

2. District II (Traditional Lots). Minimum front yard setback of 20 feet, 18 proposed. Minimum side yard setback of 6 feet, 5 feet proposed. Minimum sum of side yards of 12 feet, 10 feet proposed. Minimum corner lot side yard setback of 12 feet, 10 proposed.
3. District III (Twin Lots). Minimum lot size of 10,000 square feet (5,000 per unit), 9,100 square feet (4,550 per unit) proposed. Minimum front yard setback of 20 feet, 15 feet proposed. Minimum side yard setback of 6 feet, 5 feet proposed. Minimum sum of side yards of 12 feet, 10 feet proposed.

Included within the packet is a review letter provided by the Village Fire and Rescue Department. To accommodate the reduced building setback, the McFarland Fire & Rescue recommends all homes have fire sprinkler systems installed according to the National Fire Protection Association (NFPA) 13D-Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.

Consistency with Village Subdivision Ordinances (Parkland)

Section 56-173(a) of the Village's Subdivision Ordinance requires 2,106 square feet of parkland dedication per single family unit and 1,463 square feet of parkland dedication per duplex and multi-family unit. The dedicated parkland must be usable for playground and recreational uses. The proposed parkland area is gently sloping with 3-4 feet of elevation change from the northwest corner to the southeast corner. The proposed park site is currently used for agricultural crops, does not contain wetlands, and is not located within a designated floodplain. The majority of Outlot 3 consists of Kegonsa Silt Loam (KeB) soils which are classified as well drained.

The parkland dedication requirement translates to a required dedication of 239,972 square feet (5.51 acres), with the proposed plat providing 138,198 square feet (3.17 acres), leaving a deficit of 101,774 square feet (2.34 acres). Section 56-173(b) provides the Village the ability to accept parkland impact fees in lieu of parkland dedication, or partial parkland dedication. The current fee in lieu of parkland dedication is $3,915.46/SF unit and $2,719.90/MF unit. The estimated fee in lieu of parkland dedication is $189,216.50. These funds would be payable under the terms of a development agreement to be approved at the time of the final plat. Note, the Developer has indicated interest in directly constructing park and playground equipment as part of meeting the fee in lieu of parkland dedication. Acceptance of this request will be determined through the final plat and development agreement approval process.

In addition, to the fees in lieu of parkland dedication, Section 8-464(b) requires park improvement impact fees to be paid at the time of issuance of a building permit in the amounts specified under the Village's Fee Schedule at the time of permit issuance. The current fees are $1,099.65 per single family unit and $712.52 per multi-family unit. These fees are subject to annual changes by the Village Board and are currently planned to increase annually based on the prior recommendation of the Parks Committee and the most recent Park Impact

Fee Study. For reference purposes, if all the units in the development were built in 2020, the proposed development would pay $124,787.75 in total park improvement impact fees; however, the total fees will likely be higher as the development will be built over 5-6 years based on market demand.

On April 16th, 2020 the Parks Committee meet to review the proposed parkland dedication and unanimously recommended approval to the Village Board.

Consistency with Village Subdivision Ordinances (Transportation Facilities)
Section 56-139(w) of the Village's Subdivision Ordinance requires right-of-way widths for collector streets of 70 feet, local streets of 60 feet, and alleys of 24 feet. The preliminary plat provides for a 66 foot wide ROW along CTH AB. This should be expanded to 70 feet, requiring an additional two (2) feet of ROW dedication by Veridian; the remaining two (2) feet would be provided on the other side of CTH AB if and when those lands were subdivided. The local roads are planned with a 60-foot ROW and the alley with a 26-foot ROW, both of which meet the Village subdivision ordinance requirements. Exhibit K of the Rosewood Fields Zoning Submittal.pdf includes a cross section of the ROW designs for the proposed alley and local roadways, including the provision of 5-foot sidewalks along both sides of all local roads.

Consistency with Village Subdivision Ordinances (Utilities)

The packet includes a copy of the draft Rosewood Fields Preliminary Engineering Plan and Preliminary Stormwater Management Plan. The Village Engineer has reviewed these documents and provided a letter outlining recommend conditions of approval to address compliance with Village requirements and best management practices. Addressing these comments will be part of the scope of the developer's efforts prior to submittal of the final plat, final engineering plan, and final stormwater management plan.

On May 12th, 2020 the Public Works and Public Utilities Committee meet and unanimously recommended approval of the preliminary plat, conditioned on address the items in the Village Engineer's Staff Report dated May 7, 2020.

FINANCIAL/BUDGET IMPACT:
Assuming at least an average assessment value of $325,000 for each lot would yield approximately $250K in annual property tax payments to the Village upon full build-out. Additional revenue from park impact fees, library impact fees, and public water impact fees would be payable to the Village as well. The Developer will also be responsible for paying for utility, street, trail, and park improvements within the development. Specific requirements will be addressed as part of a development agreement to be approved with the final plat.

VILLAGE PLAN REFERENCE:
One of the goals of the Village of McFarland Comprehensive Land Use Plan is to promote quality, affordable housing for families and older residents within neighborhoods and mixed use settings that are organized around safety, conservation, recreation, and connections to the broader community. A related housing objective is to expand the range of quality and affordable housing choices for empty nesters, seniors, and the McFarland workforce, while remaining a family-oriented community. A related housing policy is to promote affordable housing through allowing modest lot sizes and higher suburban densities, including appropriately planned and

located multiple family housing, incentives where practical, and continued participation in County and State housing programs.

Developing affordable housing in the Village was also a theme that emerged from the Village's 2020-2030 Strategic Plan. In addition, actively promoting and supporting affordable housing in the Village is included in the 2019-2020 Village Board Goals.

ORDINANCE REFERENCE:
Chapter 56, Subdivisions
Sec. 62-67, PD Planned Development District

BOARD, COMMISSION OR COMMITTEE RECOMMENDATION:
Recommend approval of the proposed Rosewood Fields Preliminary Plat with the following conditions

1. Veridian Homes to address those conditions as provided in the Village Engineer's Rosewood Fields Development - Zoning Submittal Review letter dated May 7, 2020, as recommended by the Public Works and Public Utilities Committee.
2. Village Board approval of Ordinance 2020-15.
3. Plan Commission approval of the Certified Survey Map creating Lot 2 of the Utterback Limited Partnership property.
4. Village Board approval of Ordinance 2020-16.
5. Veridian Homes shall have 24 months after the date of approval of the Preliminary Plat to file the Final Plat for review and approval by the Village Board, otherwise the Preliminary Plat will be considered void unless an extension is requested in writing and granted by the Village.
6. Concurrent with the Final Plat, review and approval of a development agreement and declaration of protection covenants, conditions, and restrictions by the Village Attorney and Village Board.

ATTACHMENTS:
1. 02 - Rosewood Fields Preliminary Plat 2020.04.07
2. 07 - Rosewood Fields Preliminary Engineering 2020.04.07(reduced)
3. 08 - Rosewood Prelim SWMP 2020.04.07(reduced)
4. 03 - Rosewood Fields - CCRs (clean) 2020.04.07

SURVEYOR'S CERTIFICATE

I, Brett T. Stoffregan, Registered Land Surveyor, S-2742, hereby certify that this preliminary plat is a true and correct representation of all the adjacent existing land divisions and of the boundary of the preliminary plat and features and that I have fully complied with the Village of McFarland Subdivision Ordinance.

Dated this 7th day of April, 2020.

Brett T. Stoffregan, Professional Land Surveyor, S-2742

WISCONSIN BRETT T. STOFFREGAN S-2742 MADISON, WISCONSIN LAND SURVEYOR

LEGAL DESCRIPTION

A parcel of land located in the NE1/4 of the SE1/4 and the SE1/4 of the SE1/4 of Section 2, T6N, R10E, Village of McFarland, Dane County, Wisconsin to-wit:
Commencing at the East 1/4 corner of said Section 2; thence S02°07'30"W 586.21 feet along the East line of said SE1/4; thence N87°52'30"W, 34.21 feet to the point of beginning; thence
S02°14'16"W, 973.22 feet; thence N77°25'35"W, 1291.46 feet; thence N02°35'02"E, 1186.37 feet; thence N86°00'55"E, 736.08 feet; thence S29°04'23"W, 9.53 feet; thence S44°25'02"E, 501.30 feet; thence S42°39'44"E, 242.81 feet to the point of beginning.
Containing 1,580,872 square feet square feet (36.292acres).

to be known as

Lot 2, Certified Survey Map No. _____, recorded in Volume __ of Certified Survey Maps on pages _____ as Document Number _____, Dane County Registry, located in the Village of McFarland, Dane County, Wisconsin.

NOTES

1. Zoning: Existing - FP-35
   Proposed - Planned Development
2. All intersection radii are 15' unless noted.
3. Outlot designation
   1 - Dedicated to the public for storm water management and conveyance
   2 - Private alley to be owned and maintained by the Rosewood Fields Neighborhood Association
   3 - Dedicated to the public for park purposes
   4 - Dedicated to the public for storm water management and open space. Public sanitary sewer easement over entire outlot.
   5 - Private open space. Public storm water drainge easement over entire outlot.
4. Owner
   Utterback Limited Partnership
   C/O Wayne Utterback
   4627 Prairie Fire Ct.
   DeForest, WI 53532

   Subdivider
   VM Rosewood Fields LLC
   6801 South Towne Drive
   Madison, WI 53713

   Planner
   Vandewalle & Assoc.
   120 E Lakeside St.
   Madison, WI 53715

LEGEND

- FOUND 1" IRON PIPE
- FOUND 1-1/4" REBAR
- FOUND 3/4" REBAR
- PLACED 3/4"x18" REBAR (WT=1.5 LBS/FT)
- SS — SANITARY SEWER
- W — WATER MAIN
- G — GAS MAIN
- OHE — OVERHEAD ELECTRIC
- RAILROAD TRACKS
- MANHOLE
- POWER POLE
- RAILROAD CROSSING SIGNAL
- HYDRANT
- SOIL BORING
- 870 — EXISTING CONTOUR
- ( ) — "RECORDED AS" INFORMATION

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

PRELIMINARY PLAT

ROSEWOOD FIELDS

LOCATED IN THE NE1/4 OF THE SE1/4 AND THE SE1/4 OF THE SE1/4 OF SECTION 2, T6N, R10E, VILLAGE OF MCFARLAND, DANE COUNTY, WISCONSIN

WISCONSIN COORDINATE REFERENCE SYSTEMS (WISCRS) DANE ZONE NAD83(2011)

SCALE: 1"= 100'

0 100

DATE: 04-07-20
REVISED:

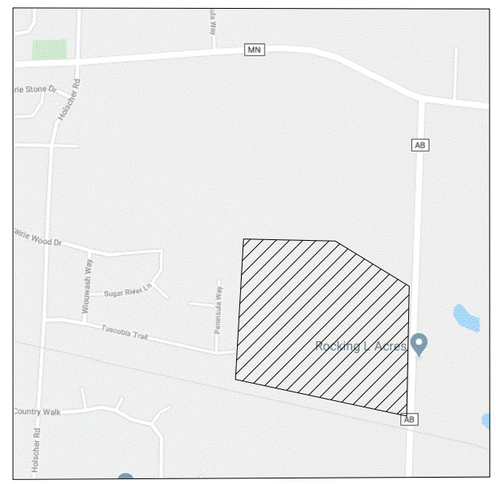
FN: 19-07-114

Sheet Number:
1 of 1

ROSEWOOD FIELDS

PRELIMINARY ENGINEERING

VILLAGE OF MCFARLAND
DANE COUNTY, WISCONSIN



PROJECT LOCATION

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.

7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

FN: 19-04-113

ISSUE DATE: 04/07/20

SHEET 1 of 18

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7530 Westward Way, Madison, WI 53717
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YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

COVER SHEET

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND

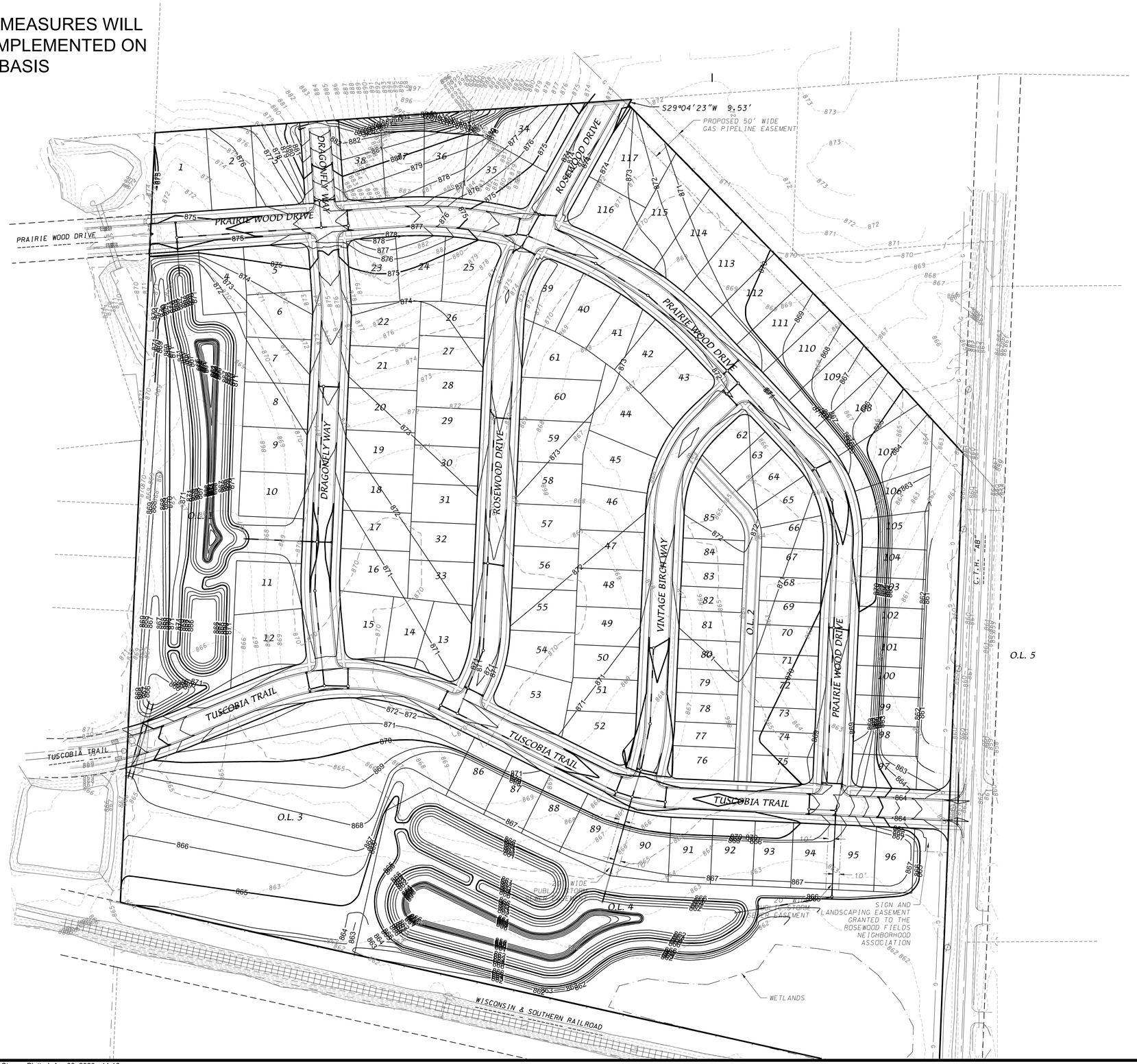
DATE: 04/07/20
REVISED:

DRAWN BY: KWB

FN: 19-04-113

Sheet Number:
1 of 18

EROSION CONTROL MEASURES WILL BE DESIGNED AND IMPLEMENTED ON A PHASE BY PHASE BASIS



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7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

OVERALL GRADING PLAN

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND

SCALE: 1"= 80'
(PAGE SIZE: 22x34)
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DATE: 04/07/20
REVISED:

DRAWN BY: KWB

FN: 19-04-113

Sheet Number:
2 of 18

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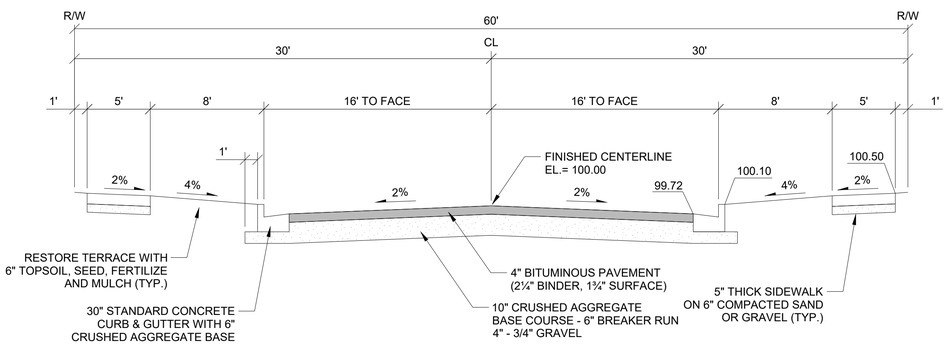

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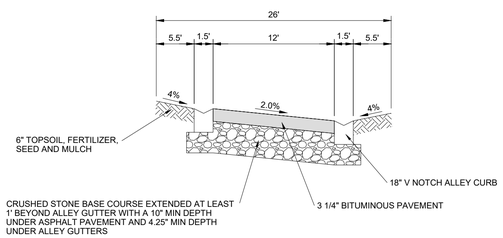

TYPICAL ALLEY SECTION

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

DETAILS - TYPICAL SECTIONS

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND

DATE: 04/07/20
REVISED:

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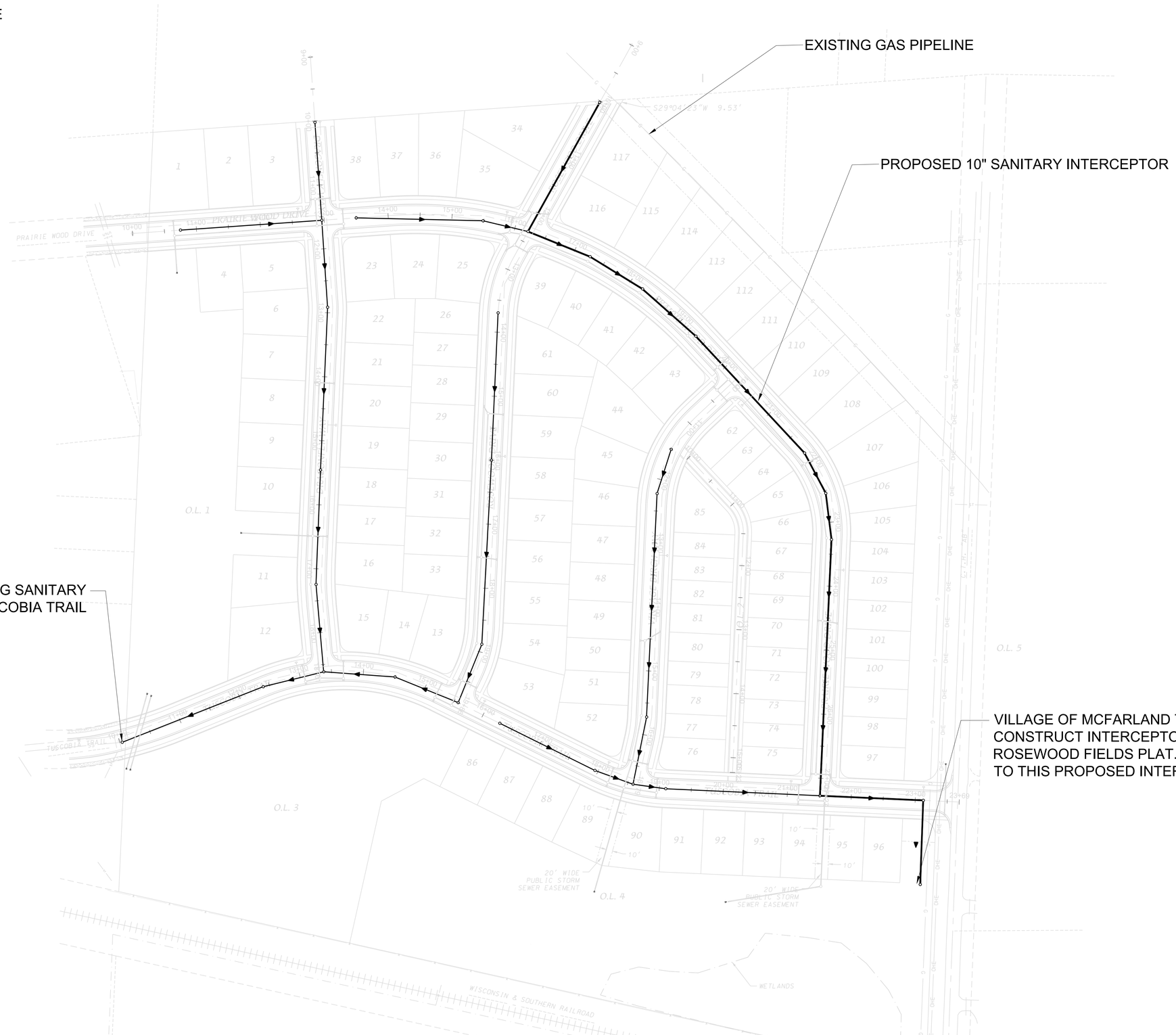
FN: 19-04-113

Sheet Number:
3 of 18

SANITARY SEWER TO BE
8" EXCEPT AS NOTED



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YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

UTILITY SCHEMATIC - SANITARY SEWER

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND

SCALE: 1" = 80'
(PAGE SIZE: 22x34)
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DATE: 04/07/20
REVISED:

DRAWN BY: KWB

FN: 19-04-113

Sheet Number:
4 of 18

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STORM SEWER SIZING TO BE DETERMINED FOR FINAL ENGINEERING DESIGN

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

UTILITY SCHEMATIC - STORM SEWER

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND

SCALE: 1"= 80'
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WATER MAIN TO BE 8"

EXISTING GAS PIPELINE

CONNECT TO EXISTING WATER MAIN IN PRAIRIE WOOD DRIVE

CONNECT TO EXISTING WATER MAIN IN TUSCOBIA TRAIL

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

UTILITY SCHEMATIC - WATER MAIN

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND

SCALE: 1"= 80'
(PAGE SIZE: 22x34)
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REVISED:

DRAWN BY: KWB

FN: 19-04-113

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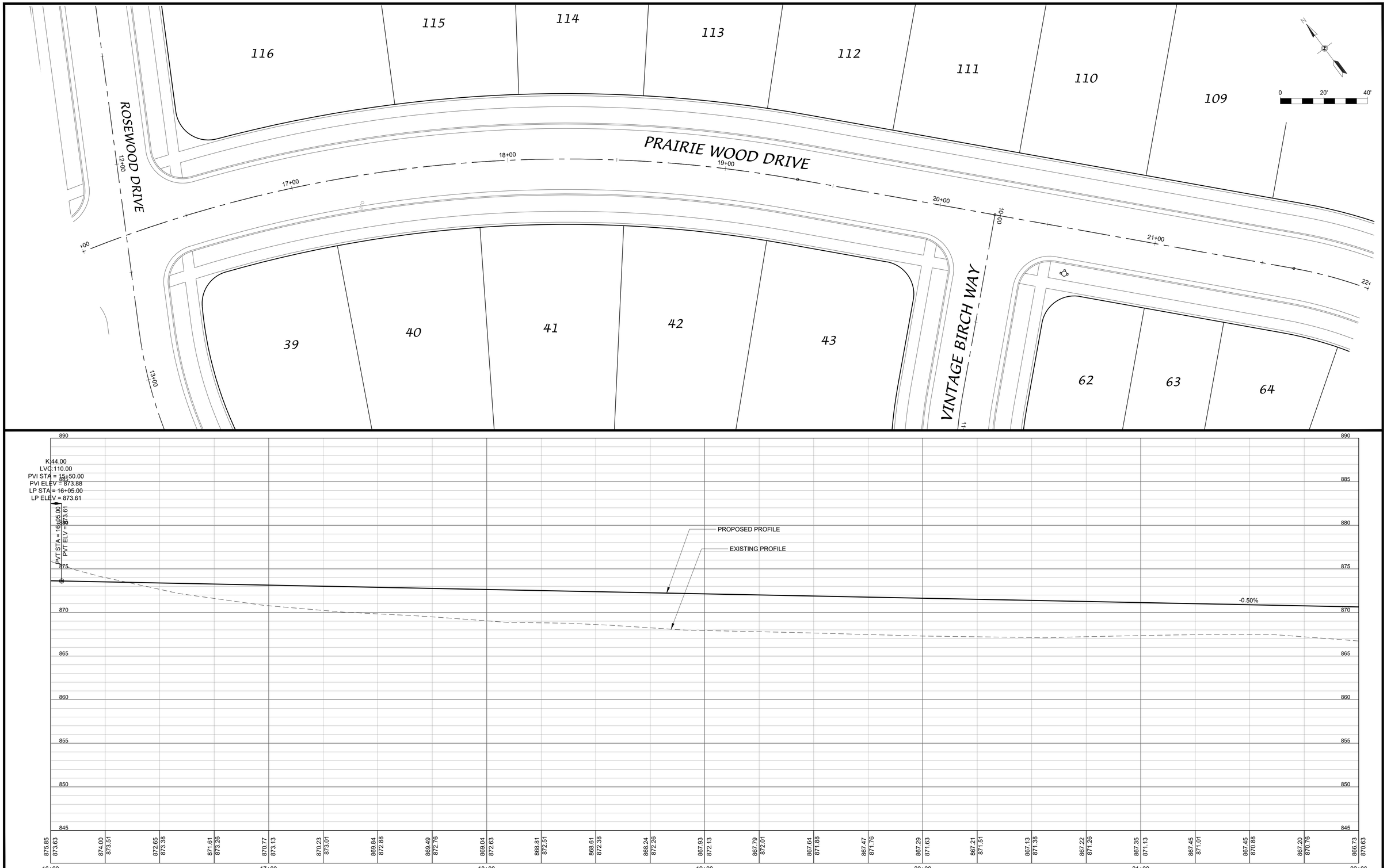
DATE: 04/07/20
REV:

ROSEWOOD FIELDS

PRAIRIE WOOD DRIVE

SHEET: 7 of 18



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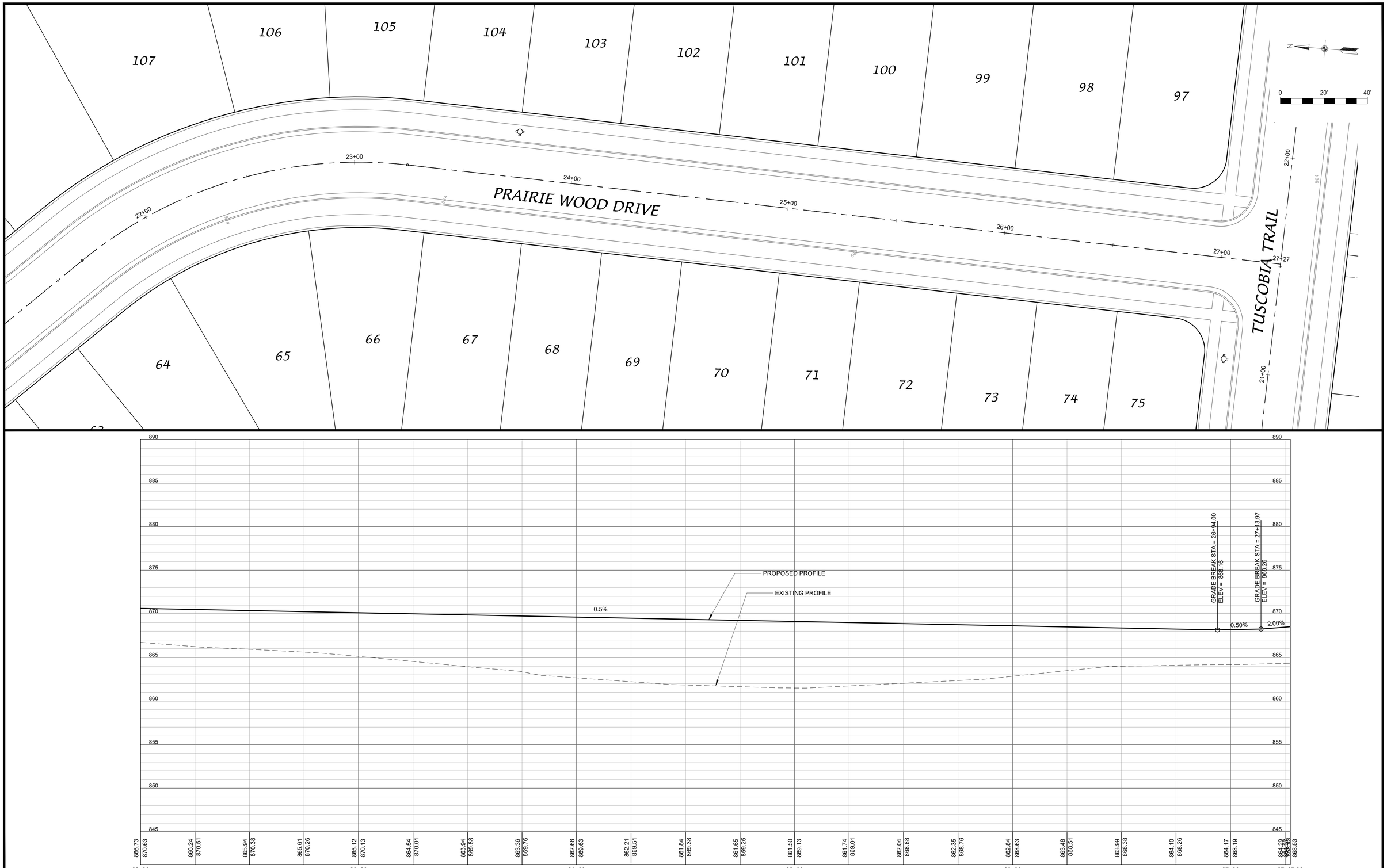
PRAIRIE WOOD DRIVE
SHEET: 8 of 18



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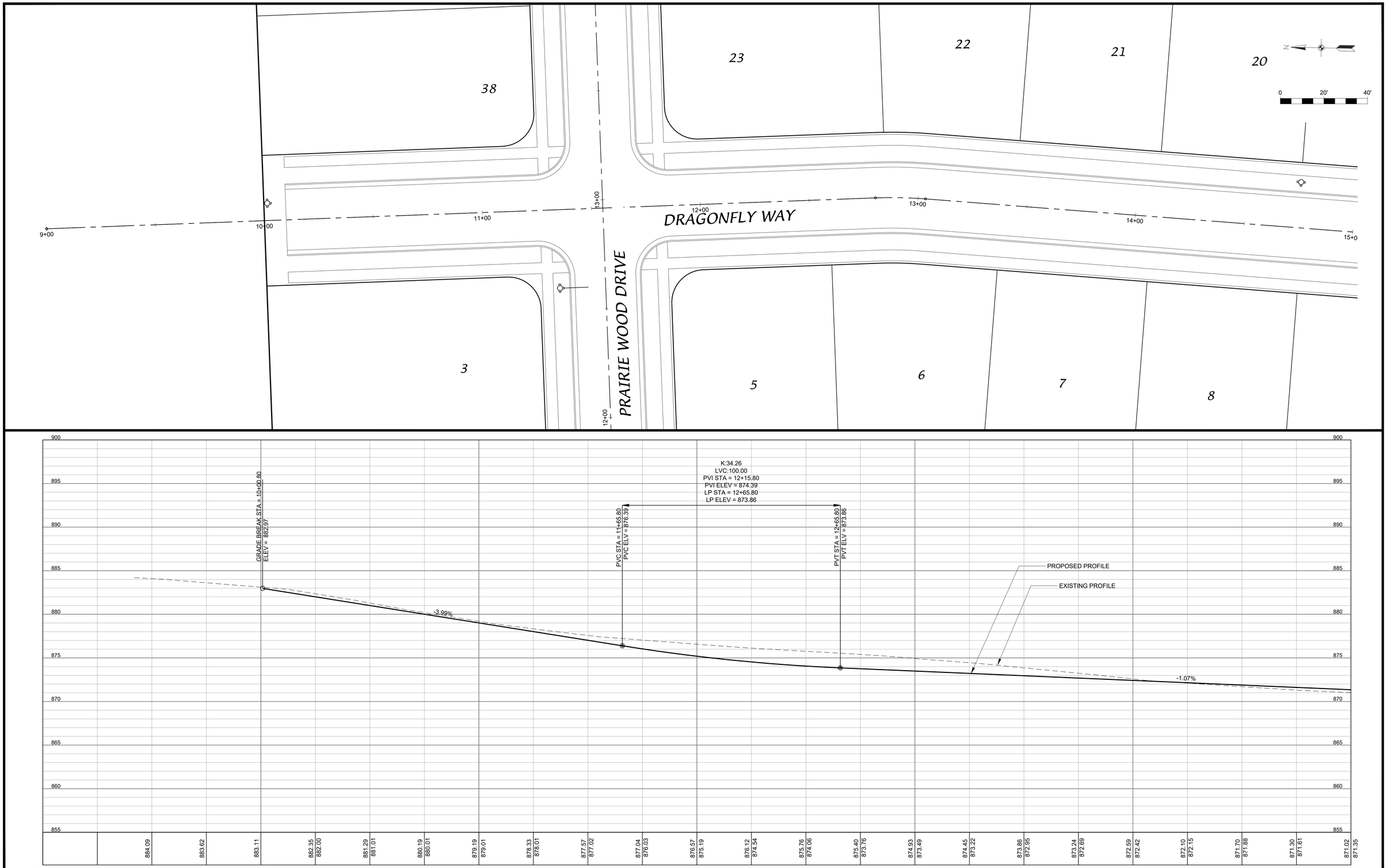
PRAIRIE WOOD DRIVE

SHEET: 9 of 18



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DRAGONFLY WAY

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DRAGONFLY WAY
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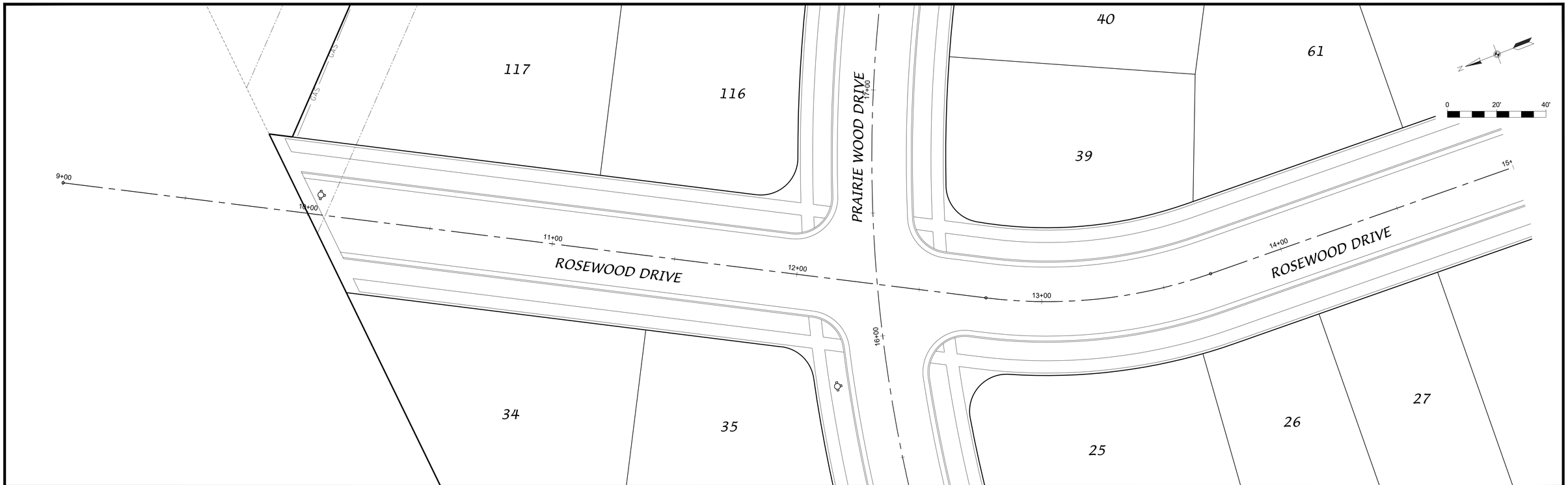

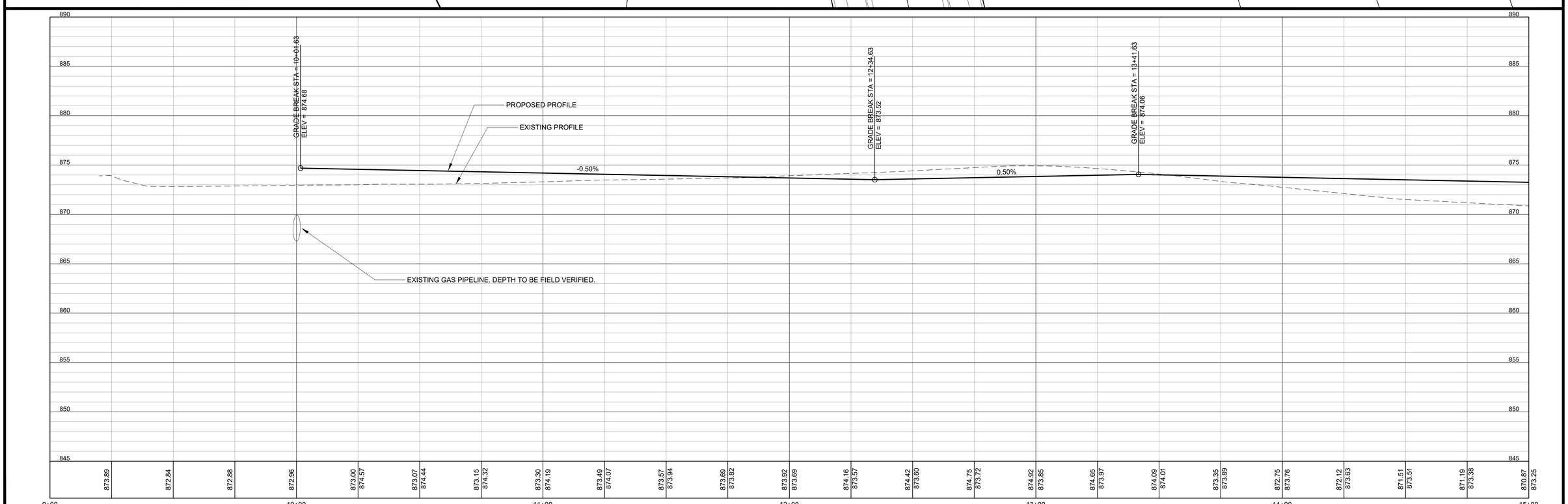

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ROSEWOOD FIELDS

ROSEWOOD DRIVE

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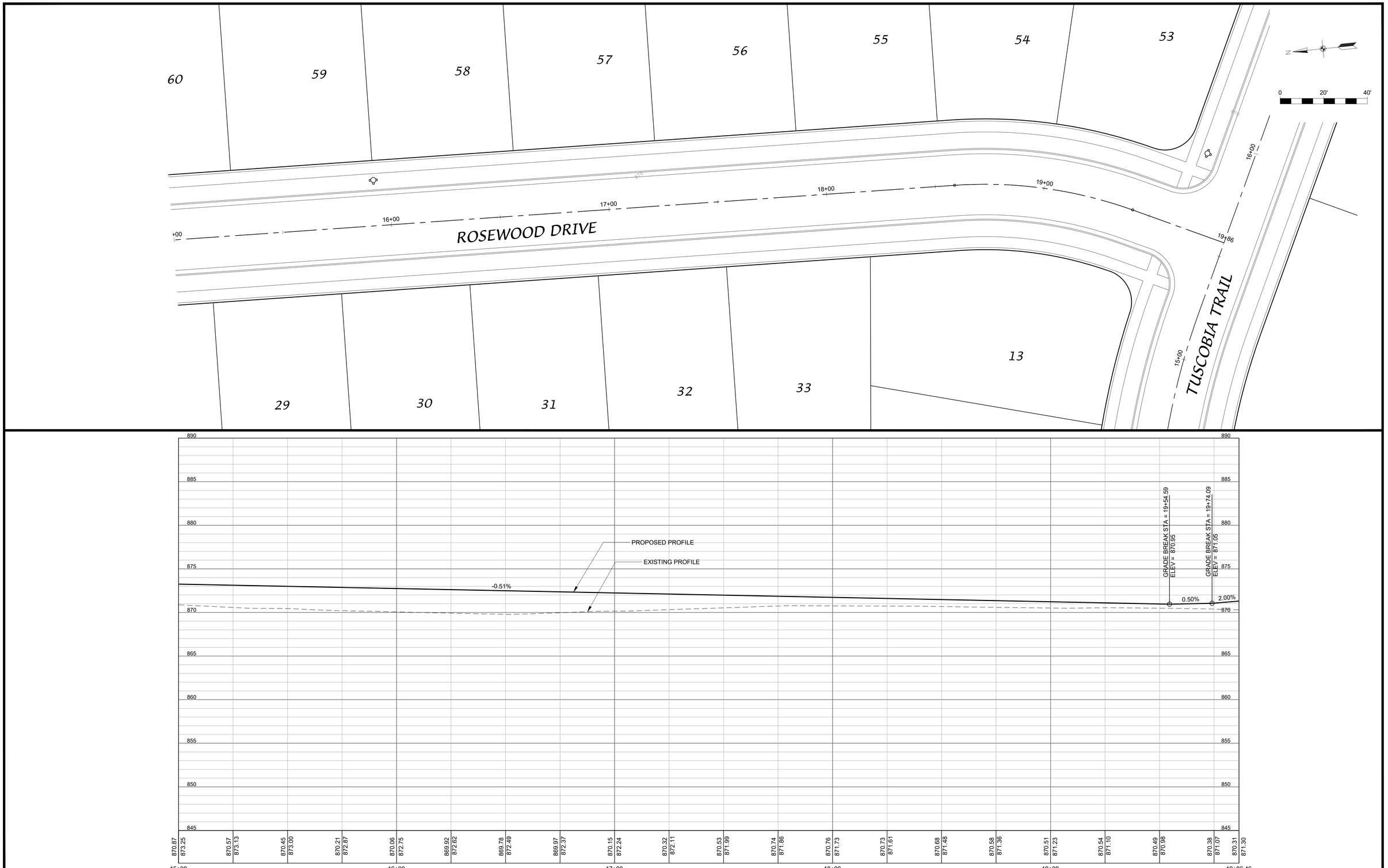

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ROSEWOOD DRIVE
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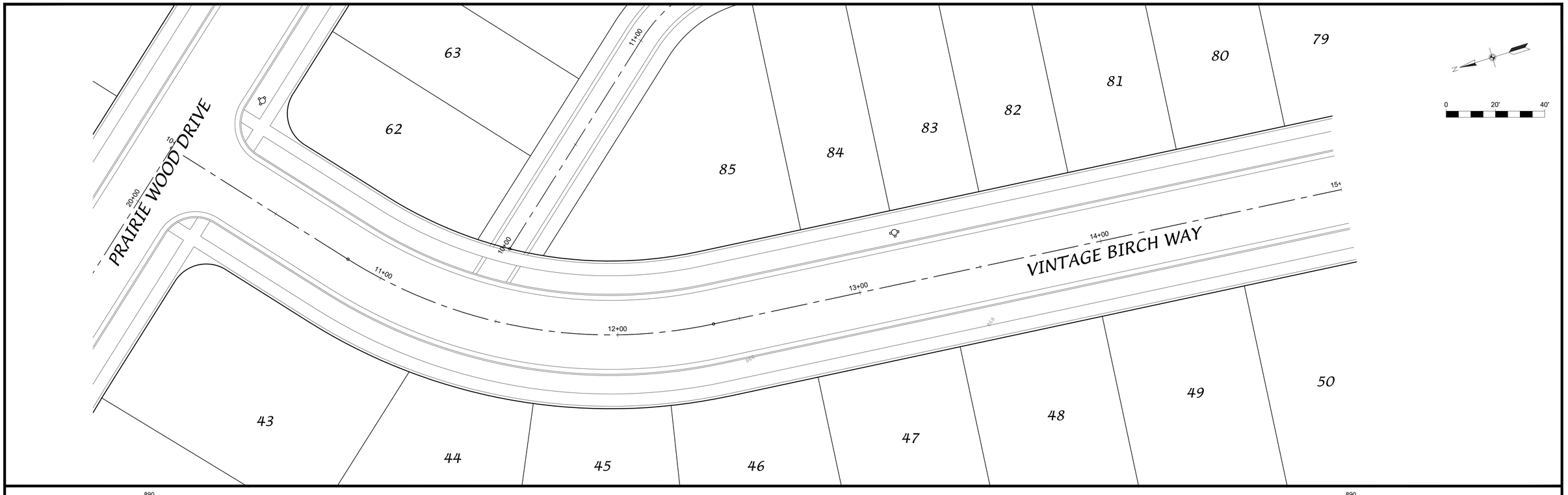

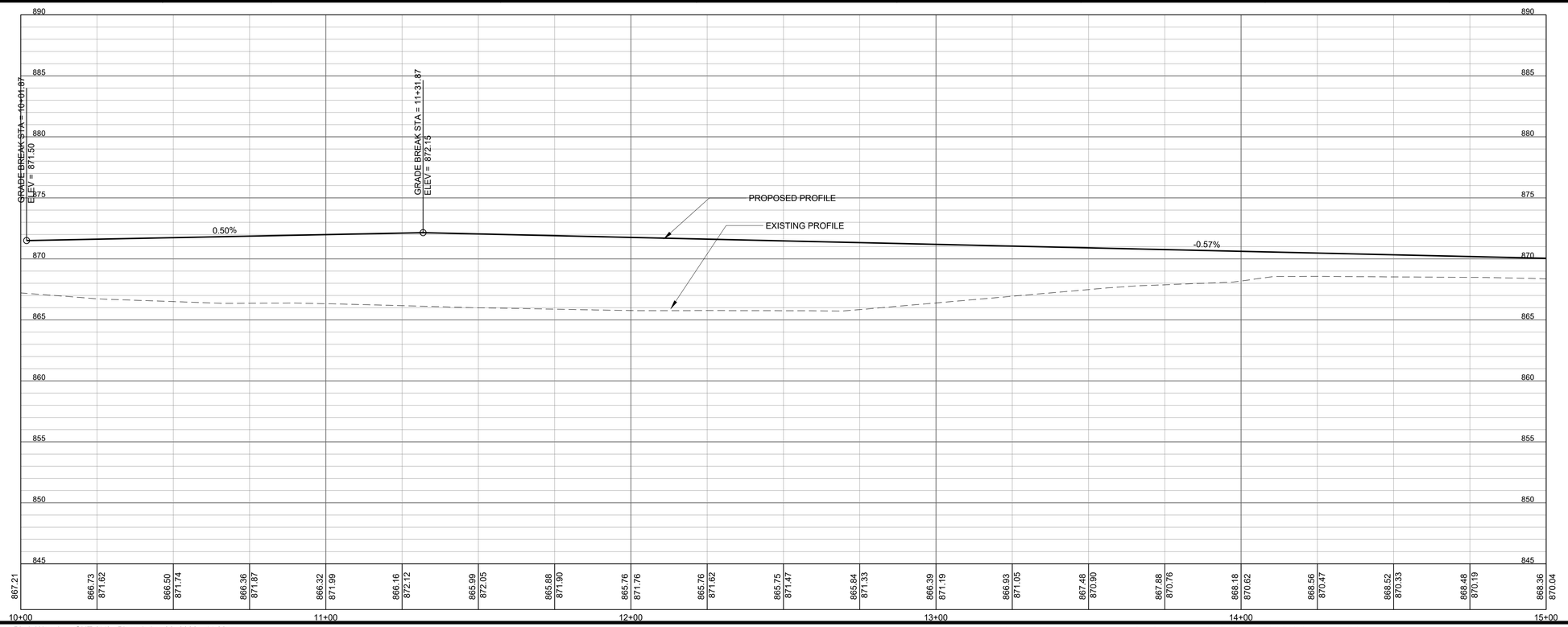

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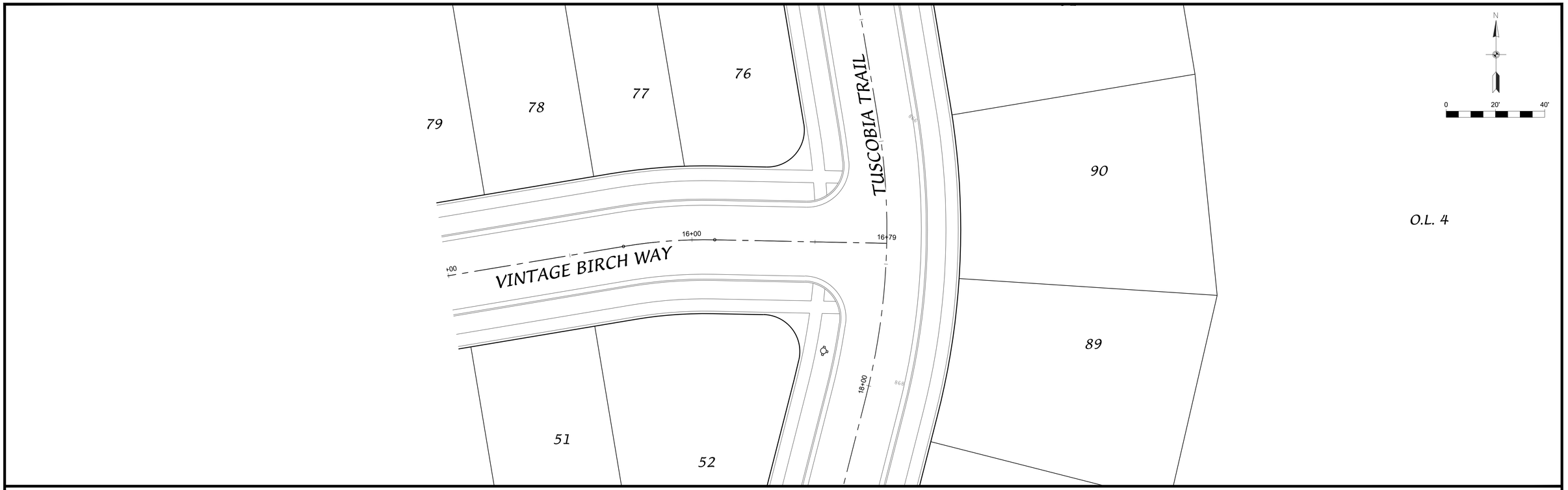
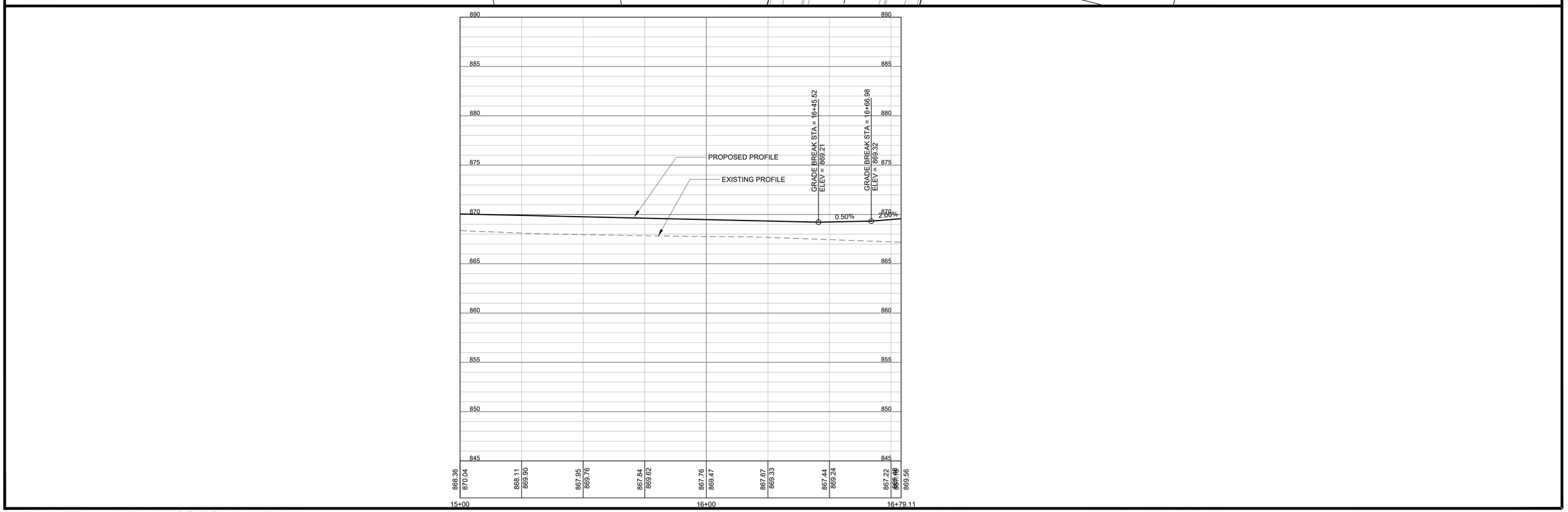
ROSEWOOD FIELDS

VINTAGE BIRCH WAY
SHEET: 14 of 18





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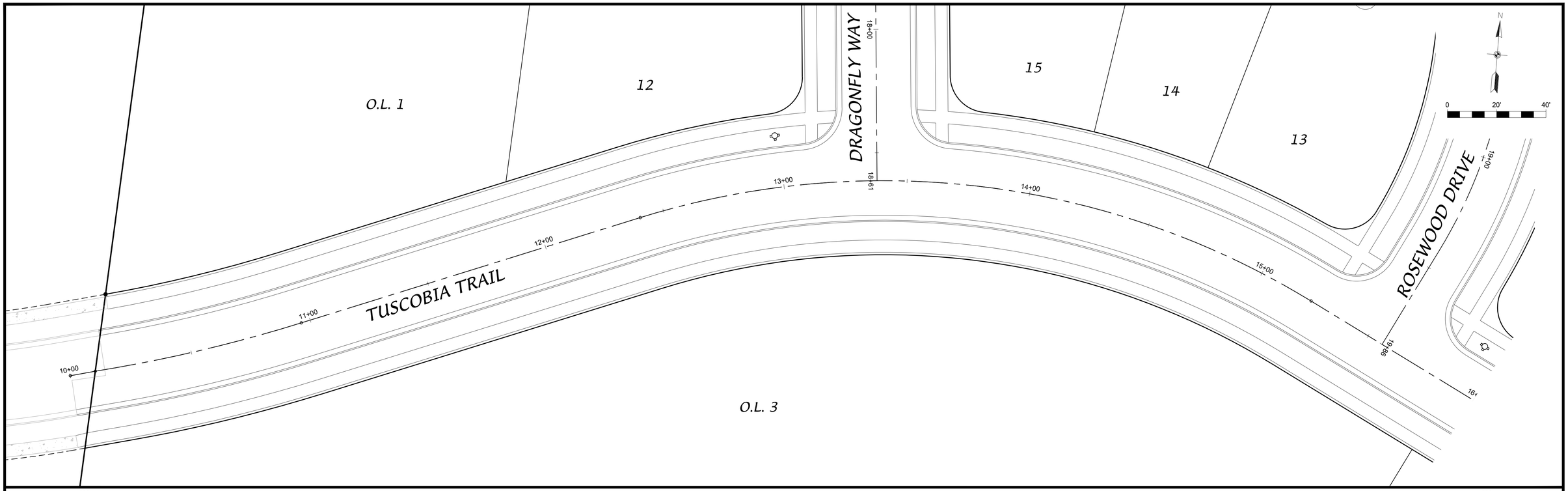
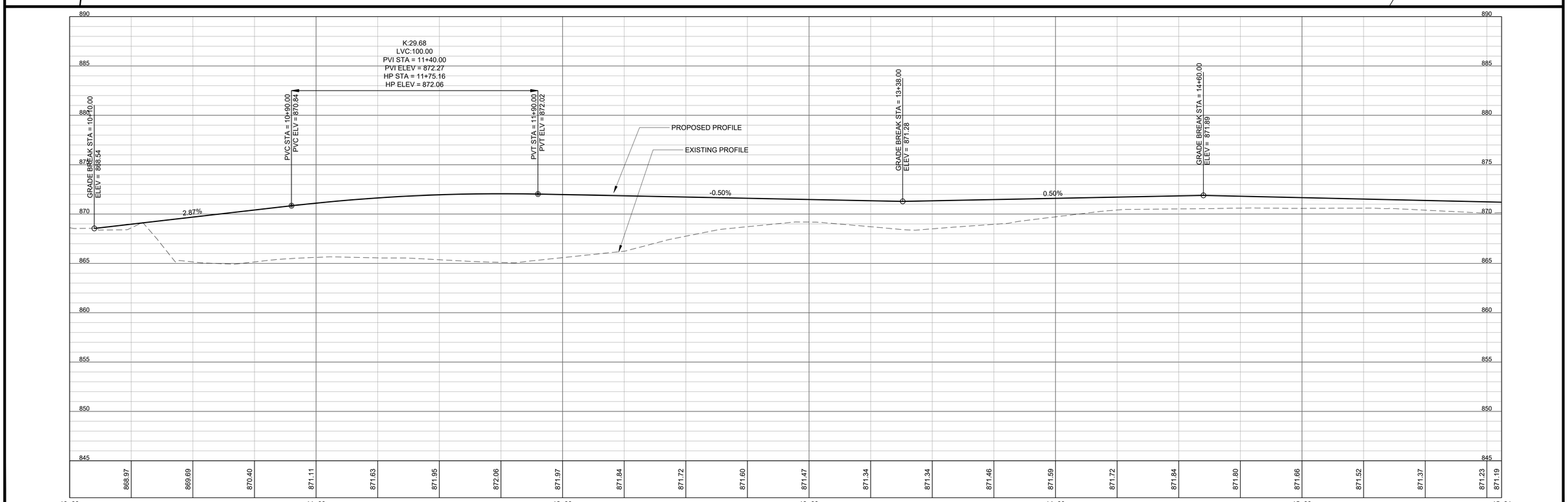
ROSEWOOD FIELDS

VINTAGE BIRCH WAY
SHEET: 15 of 18





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FN: 19-04-113

DATE: 04/07/20
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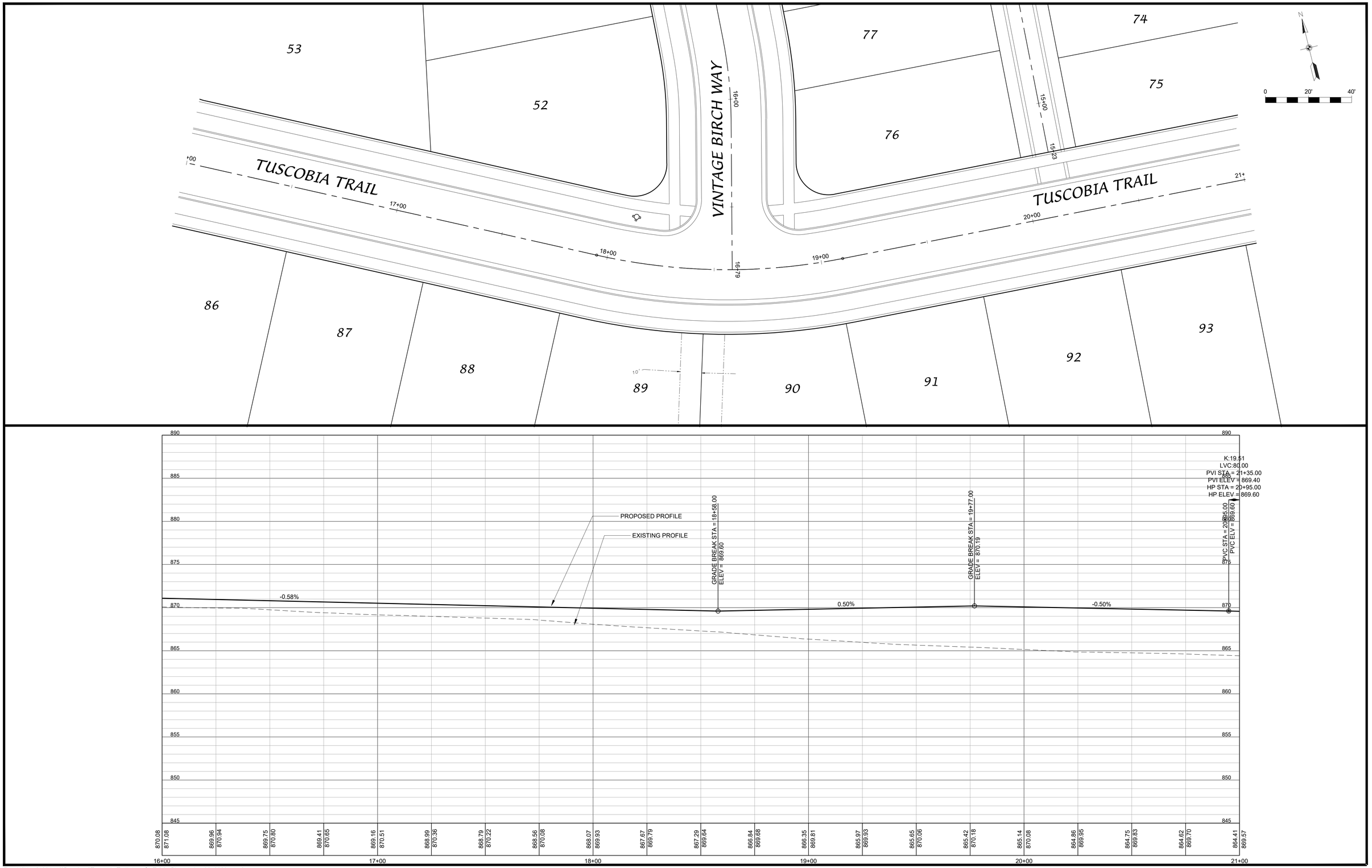
ROSEWOOD FIELDS

TUSCOBIA TRAIL
SHEET: 16 of 18



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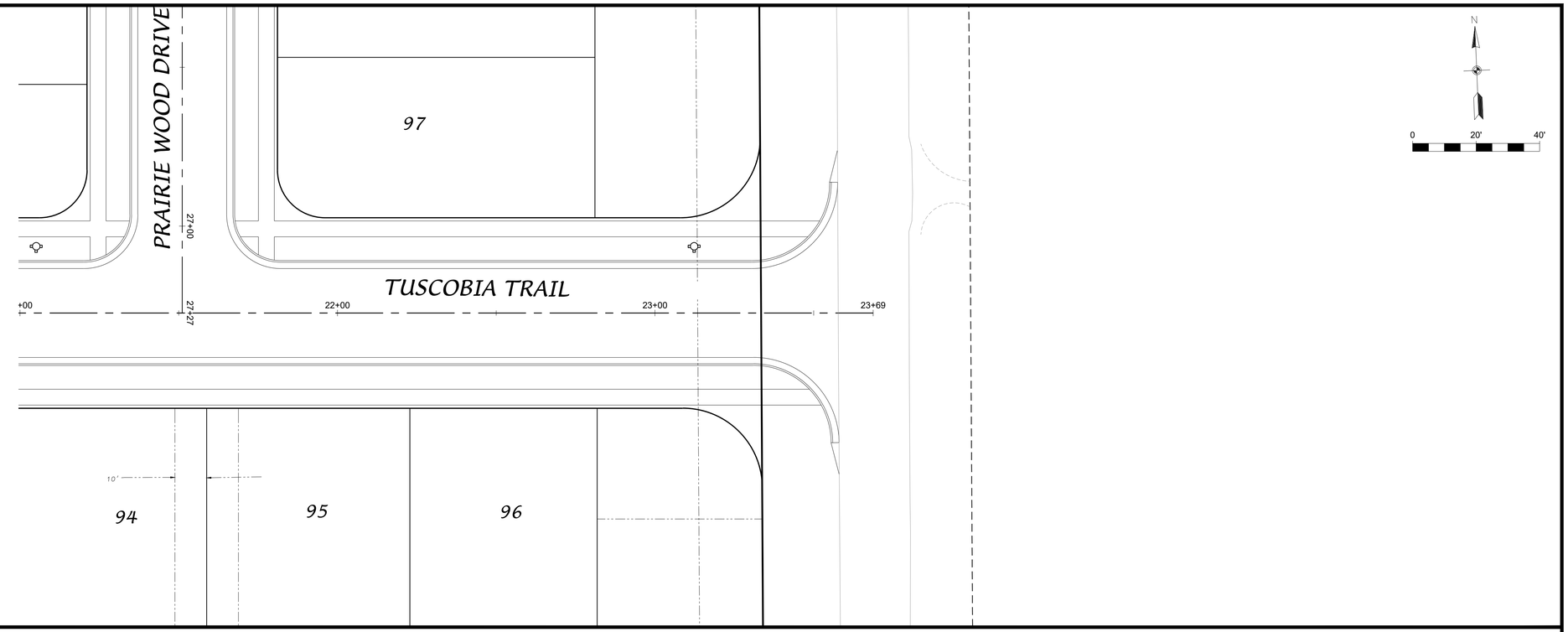
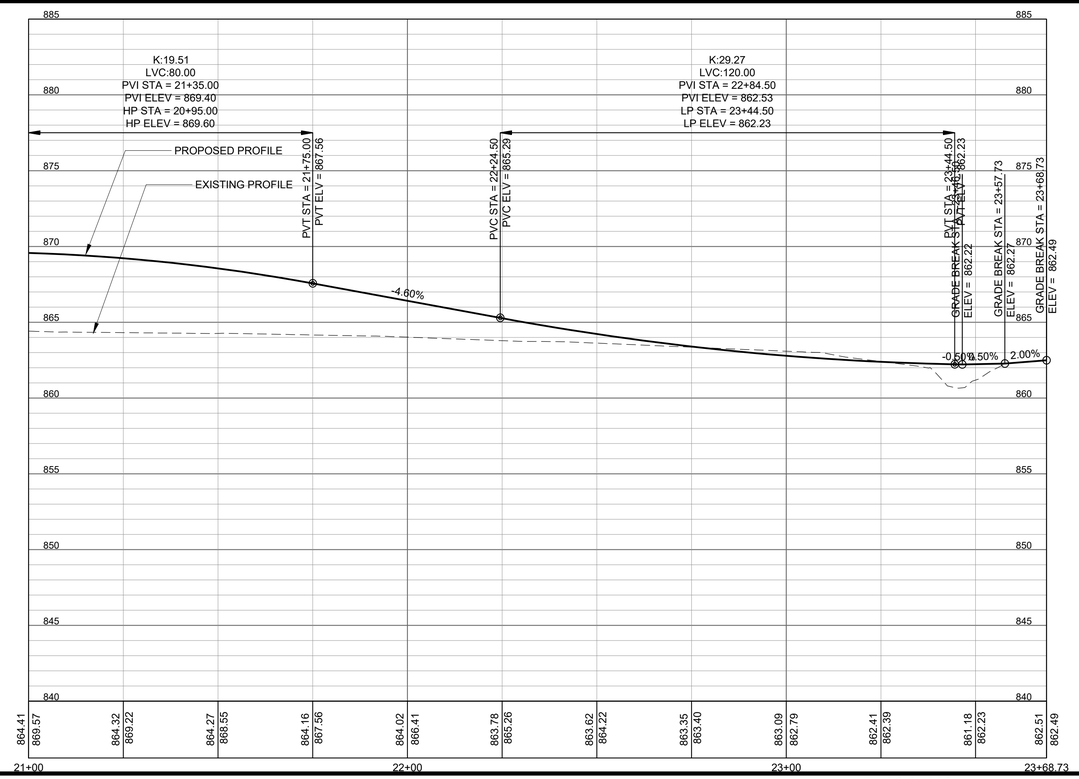
DATE: 04/07/20
REV:

ROSEWOOD FIELDS

TUSCOBIA TRAIL
SHEET: 17 of 18





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FN: 19-04-113

DATE: 04/07/20

REV:

ROSEWOOD FIELDS

TUSCOBIA TRAIL

SHEET: 18 of 18

ROSEWOOD FIELDS
VILLAGE OF MCFARLAND
COUNTY HWY AB
DANE COUNTY, WISCONSIN

PRELIMINARY STORM WATER MANAGEMENT REPORT

OWNER
VH Rosewood Fields, LLC
c/o Chris Ehlers
6801 South Towne Drive
Madison, WI 53713

April 7, 2020

PREPARED BY
D'Onofrio, Kottke & Associates, Inc.
7530 Westward Way
Madison, Wisconsin 53717
608.833.7530

FN: 19-04-113

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Introduction ..... Page 3

Standards & Results ..... Page 4

Storm Water Management Measures ..... Page 6

Peak Flow Comparison Chart ..... Page 7

Conclusions ..... Page 7

EXHIBITS

1. Site Location Map
2. Site Soils Map
3. Existing Drainage Plan
4. Proposed Drainage Plan
5. Detention/Infiltration Basin Layout
6. Aerial Photo
7. USGS Map
8. Wetland Indicator Map

APPENDICES

A. Detention Pond & Infiltration Basin Details
B. Sediment Reduction Calculations
C. Infiltration Design
D. Hydrocad Output
E. Soils Report
F. Wetland Report
G. Draft Maintenance Agreement

INTRODUCTION

The intent of this report is to provide details on how the proposed "Rosewood Fields" residential plat will be developed so that it is constructed in accordance with applicable storm water management standards.

The proposed development is approximately a 36 acre residential plat located in the Village of McFarland. The site is located to the east of the Park View Estates plat, north of the Wisconsin and Southern railroad tracks and west of County Hwy AB in the NE ¼ of the SE ¼ of Section 2 Township 06N, Range 10E. More specifically parcel number 0610-024-8070-0. A project location map can be found in Exhibit #1.

The existing layout of the site consists mostly of agricultural tilled land with surface water generally draining to the south and east sides of the site and eventually out of the plat. The drainage is split by a ridge running through the middle of the site from the north to south. In developed conditions the plat will create single family lots, 2-stormwater outlots and open space/parkland. The runoff from the plat will mostly be routed to wet detention/infiltration basin systems for stormwater treatment prior to leaving the site. The soil conditions on site consist of hydrologic soil group type B soils, with some type C soils. A site soils map can be found in Exhibit #2.

The proposed future improvements for this plat require land disturbing activity in excess of one acre and the future cumulative addition of 20,000 square feet of impervious surface area. Therefore, according to the Village of McFarland and State of Wisconsin ordinances, the site requires storm water management approvals and permits.

STANDARDS & RESULTS

The proposed development requires the following storm water management performance standards.

Sediment Control

Standard: Reduce, to the maximum extent practical, total suspended solids load leaving the site by eighty percent (80%) based on the average annual rainfall.

Design Results: Sediment from the site will be reduced by 80% by routing the site runoff through two wet detention basin/infiltration basin systems prior to leaving the site. A minimum of 60% of the sediment will be removed by the wet detention basins prior to entering the infiltration basins. WinSLAMM was used to model the sediment load reduction. The basin system was sized to compensate for any stormwater that drains directly offsite. See appendix B for sediment reduction calculations.

Temperature Control

Standard: For development of sites within thermally sensitive areas, provisions and practices to reduce the temperature of the storm water runoff shall be included.

Design Results: The proposed site does not fall within a defined thermally sensitive area.

Runoff Rate Control

Standard: For new developments, storm water management practices shall be designed and implemented to maintain post-development peak runoff discharge rates at predevelopment rates for the 1, 2, 10, 25 and 100 year-24 hour design storm events.

Design Results: The proposed detention basin system was designed to maintain the development's existing peak runoff rates for the 1, 2, 10, 25 and 100 year- 24 hour storm events. The peak flow comparison chart for the site can be found in the stormwater management measures section of this report and the HydroCAD output can be found within Appendix D. The soil curve number for the post development lawn areas has been dropped by a soil class to 71.

The existing and proposed runoff curve numbers used for this development are as follows:

Description	CN
Existing Type B Soil	58
Existing Type C Soil	71
Impervious Area	98
Proposed 60% Impervious Residential	87
Proposed 70% Impervious Residential	90
Proposed Park Area/ Assumed 10% Impervious	74
Proposed 10% Impervious Lightly Disturbed Areas	62

Along with analyzing the plat drainage information, the offsite stormwater draining through and around the site was also included in the model.

Infiltration

Standard: For new developments, design practices to infiltrate sufficient runoff volume so the post-development infiltration volume shall be at least 90% of the predevelopment infiltration volume.

Design Results: The proposed development was designed to meet the 90% stayon requirement for the plat through two infiltration basins. The infiltration basins were sized using WinSLAMM modeling software. A minimum of 60% sediment reduction will occur in the proposed wet detention basin cells prior to entering the designed infiltration basins. The basin system was sized to compensate for any stormwater that drains directly offsite. The infiltration design calculations can be found in Appendix C.

STORM WATER MANAGEMENT MEASURES

The proposed plat was modeled as five drainage areas in developed conditions and as two drainage areas in pre-developed conditions. The stormwater from the site will be treated by routing runoff to two wet detention/infiltration basin systems located at the west and southeast sides of the plat. Peak flow, sediment reduction, and stayon requirements will be met for the entire plat with this system.

HydroCAD Stormwater Modeling software has been used to analyze the stormwater runoff characteristics for the development. HydroCAD uses the TR-55 methodology for determining peak discharge rates. The model output shows the runoff leaving the site in existing and proposed conditions. The site was designed to utilize two combination wet detention basin and infiltration basin systems prior to leaving the site in proposed conditions. In these systems, the wet detention chamber in each basin will limit flow into the infiltration basin chamber for the 1yr-24hr storm event to remove sediment before entering the infiltration basin. During larger storms, the two chambers in the basin systems will act as one basin to limit peak flow from the site (see basin details in Appendix A).The detention and infiltration basins were modeled dynamically to better represent the elevations of the two chambers working together. The peak flow results from the stormwater modeling and basin design are shown in the chart on the next page. The chart shows the proposed results from each individual drainage area along with a comparison of the overall existing and proposed peak flows leaving at the edge of the site. The detention basin system will maintain the combined existing peak runoff rates leaving the plat on south, east and overall for the 1, 2, 10, 25 and 100 year- 24 hour storm events.

The offsite west, northeast and north drainage areas were also included in this model to show how the offsite water will be routed through the site. A bypass channel was sized to route this offsite water around the west side of the site, through two culverts under Tuscobia Trail and eventually to the south where it flows in existing conditions.

Infiltration modeling for the site was calculated using WinSLAMM software and meets the 90% predevelopment standard per the ordinance. The infiltration basins will be implemented when at a minimum 75% of the plat area draining to the basin is complete. WinSLAMM was also used to perform the sediment reduction calculations for the proposed basin system. Appendix B contains the calculation results. The stormwater management system will provide 80% sediment removal for the plat.

PEAK FLOW COMPARISION CHART

24-HR STORM EVENT (PEAK FLOW IN CFS)-PEAK FLOW COMPARISION					
	1YR	2YR	10YR	25YR	100YR
TOTAL EXISTING COMBINED FLOW THOUGH SITE	4.35	9.71	45.73	83.98	166.65
TOTAL PROPOSED COMBINED FLOW WITH BASIN TREATMENT	2.75	6.00	31.79	62.21	120.58
TOTAL PROPOSED COMBINED FLOW WITHOUT DETENTION	46.73	57.96	103.66	143.23	221.56
TOTAL EXISTING FLOW LEAVING SOUTH SIDE OF SITE	3.09	7.09	34.57	64.14	128.47
TOTAL PROPOSED/TREATED FLOW LEAVING SOUTH SIDE OF SITE	2.29	5.03	28.75	56.78	110.42
TOTAL EXISTING FLOW LEAVING EAST SIDE OF SITE	1.53	3.22	13.7	24.07	45.72
TOTAL PROPOSED FLOW LEAVING EAST SIDE OF SITE	1.07	2.09	7.66	12.86	23.52
OFFSITE FLOWS					
EXISTING WEST OFFSITE DRAINAGE	0.4	0.97	5.42	10.27	20.81
EXISTING NW OFFSITE DRAINAGE	1.34	3.2	16.34	30.61	61.96
EXISTING N OFFSITE DRAINAGE	0.59	1	2.96	4.7	8.21
EXISTING NE OFFSITE DRAINAGE	0.86	1.72	6.22	10.39	18.89
FLOW TO WEST BYPASS CHANNEL	1.76	4.07	20.54	38.53	78.16
PRO FLOWS DIRECTLY OFFSITE					
PRO SOUTH DIRECTLY OFFSITE	0.66	1.22	4.24	7.11	13.05
PRO EAST DIRECTLY OFFSITE	0.29	0.55	1.94	3.24	5.94
WEST WET DETENTION BASIN: OUTLET = 867.0, TOP OF BERM = 871.0					
PROPOSED FLOW INTO DETENTION	13.72	17.15	30.36	40.49	58.97
ROUTED DETENTION	0.44	0.50	4.06	11.59	22.22
ELEVATION	868.26	868.58	869.19	869.44	870.12
WEST INFILTRATION BASIN: BOTTOM = 866.0, OUTLET = 867.0, TOP OF BERM = 871.0					
ROUTED INFILTRATION OFFSITE	0.41	0.47	2.86	6.21	9.09
ELEVATION	867.27	867.30	867.88	868.77	870.10
EAST WET DETENTION BASIN: OUTLET = 862.0, TOP OF BERM = 866.0					
PROPOSED FLOW INTO DETENTION	33.13	40.59	67.99	88.35	124.79
ROUTED DETENTION	1.85	2.11	16.76	25.39	58.85
ELEVATION	863.55	863.9	864.5	864.97	865.63
EAST INFILTRATION BASIN: BOTTOM = 861.0, OUTLET = 862.0, TOP OF BERM = 866.0					
ROUTED INFILTRATION OFFSITE	1.56	1.82	8.24	10.85	19.36
ELEVATION	862.54	862.60	863.64	864.35	865.58

CONCLUSIONS

As the results indicate, the storm water management system for the proposed development meets the Village of McFarland and State of Wisconsin Ordinances. The peak flow, sediment control and infiltration requirements will be met for this site at the time of development.

EXHIBITS

PROJECT LOCATION

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.

7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

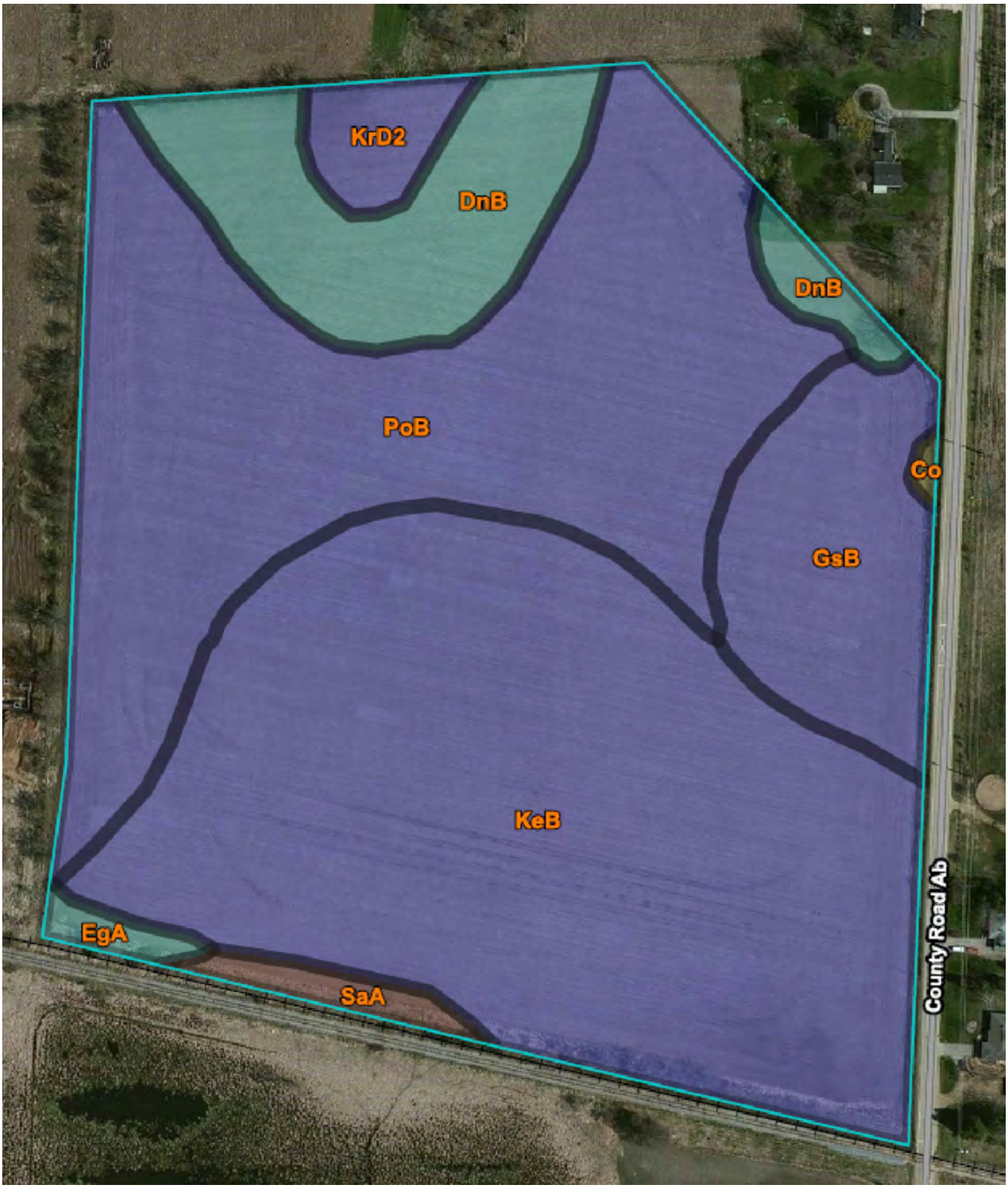
LOCATION MAP

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND, WISCONSIN

DRAWN BY: GVP *EXHIBIT 1*

U:\USER\1904113\ENGINEERING\SWMP\1904113 SWMP.DWG



D'ONOFRIO KOTTKE AND ASSOCIATES, INC.

7530 Westward Way, Madison, WI 53717
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SOILS MAP

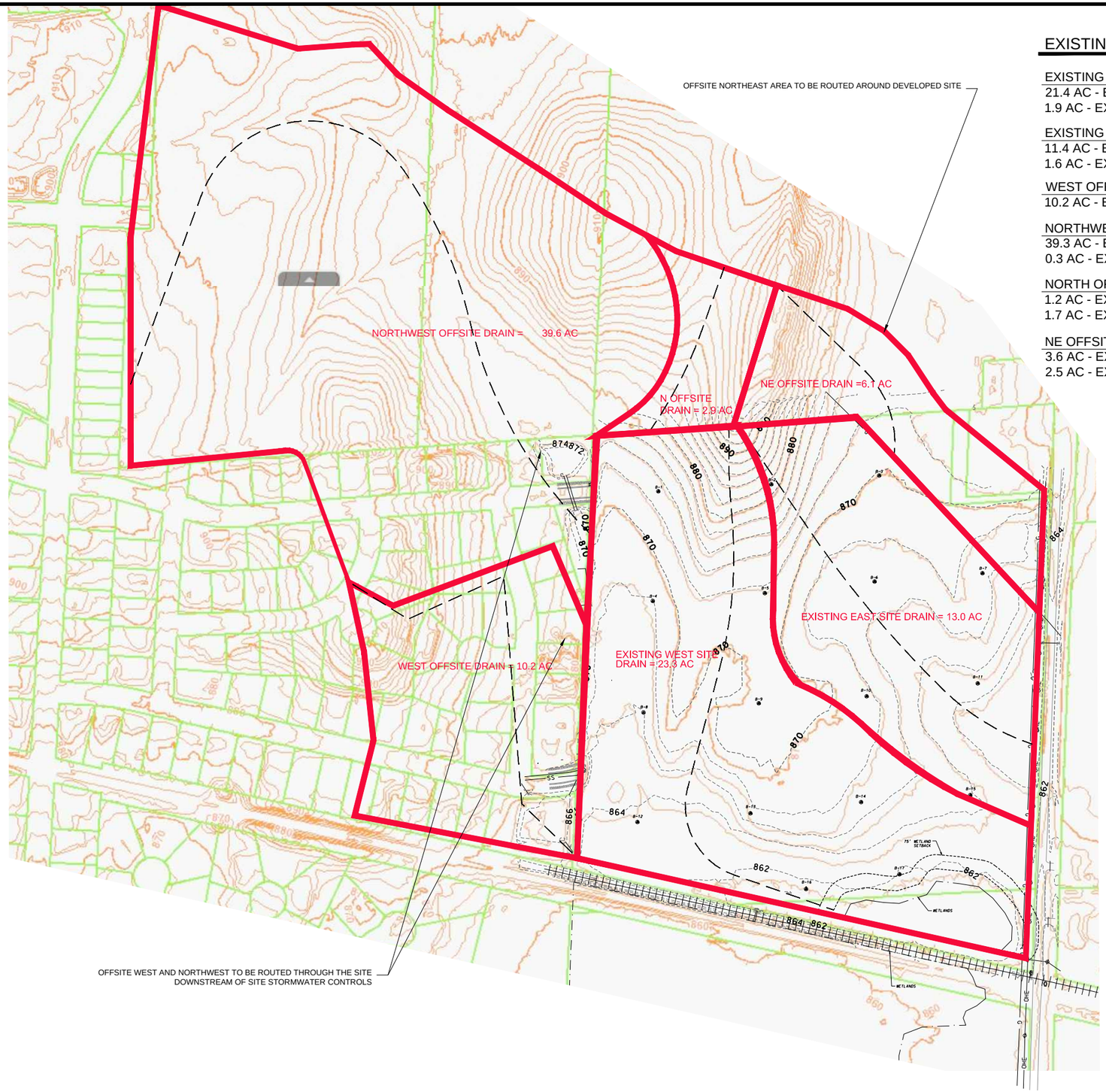
ROSEWOOD FIELDS

VILLAGE OF MCFARLAND, WISCONSIN

DRAWN BY: GVP

EXHIBIT 2

U:\USER\1904113\ENGINEERING\SWMP\1904113 SWMP.DWG



EXISTING DRAINAGE BASIN INFORMATION

EXISTING WEST SITE DRAINAGE AREA = 23.3 AC	
21.4 AC - EXISTING TYPE B=	CN 58
1.9 AC - EXISTING TYPE C=	CN 71
EXISTING EAST SITE DRAINAGE AREA = 13.0 AC	
11.4 AC - EXISTING TYPE B=	CN 58
1.6 AC - EXISTING TYPE C=	CN 71
WEST OFFSITE DRAINAGE AREA = 10.2 AC	
10.2 AC - EXISTING TYPE B=	CN 58
NORTHWEST OFFSITE DRAINAGE AREA = 39.6 AC	
39.3 AC - EXISTING TYPE B=	CN 58
0.3 AC - EXISTING TYPE C=	CN 71
NORTH OFFSITE DRAINAGE AREA = 2.9 AC	
1.2 AC - EXISTING TYPE B=	CN 58
1.7 AC - EXISTING TYPE C=	CN 71
NE OFFSITE DRAINAGE AREA = 6.1 AC	
3.6 AC - EXISTING TYPE B=	CN 58
2.5 AC - EXISTING TYPE C=	CN 71

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EXISTING REGIONAL DRAINAGE PLAN

ROSEWOOD FIELDS
COUNTY HWY AB

VILLAGE OF MCFARLAND, WISCONSIN

0 160

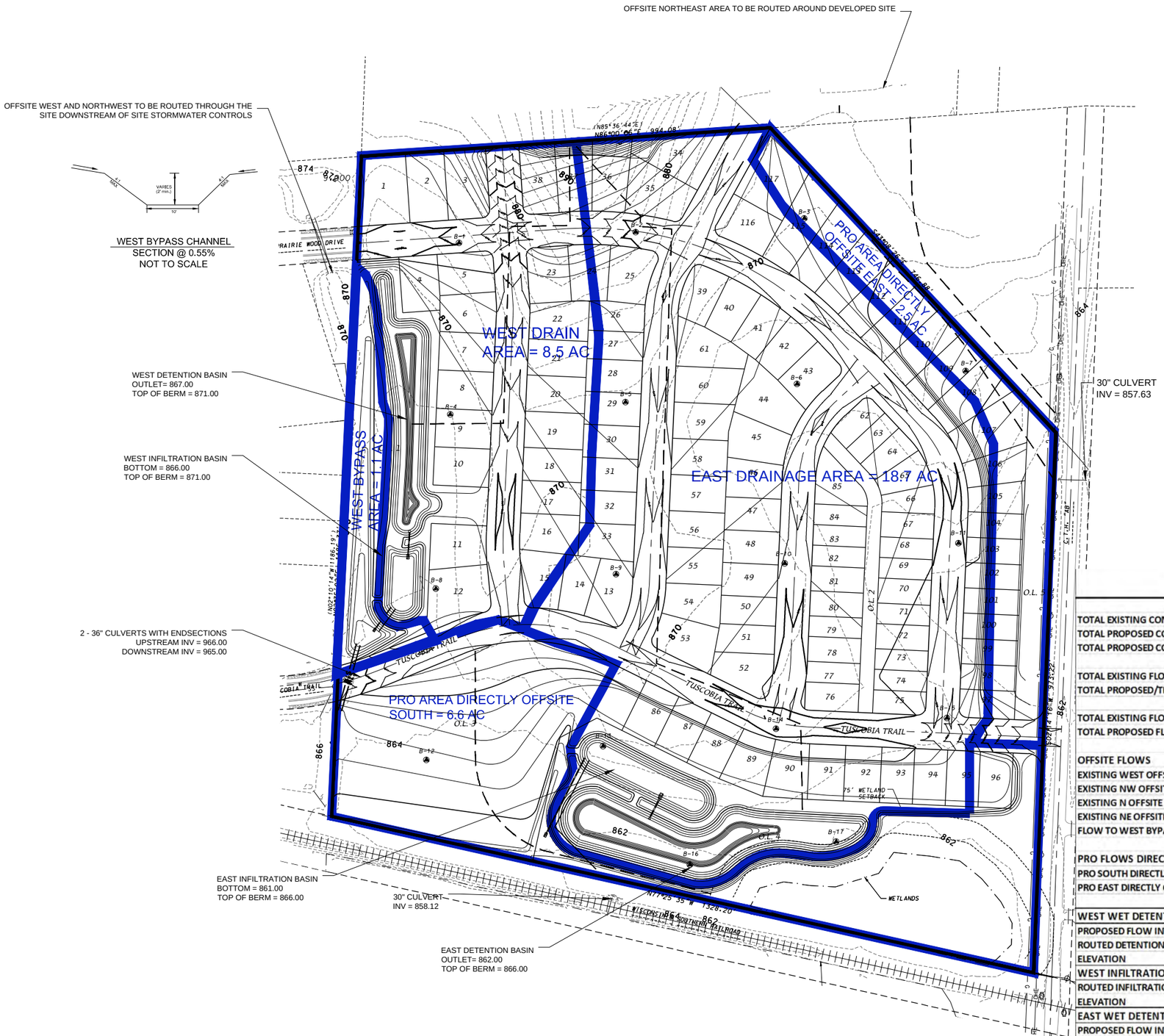
DATE: 03/11/20
REVISED:

DRAWN BY: GVP

FN: 19-04-114

Sheet Number:
Exhibit 3

File: U:\User\1904113\Engineering\SWMP\1904113 SWMP.dwg Existing Drainage Plotted: Apr 03, 2020 - 1:18pm



EXISTING SITE DRAINAGE BASIN INFORMATION

EXISTING DRAINAGE AREA = 36.3 AC

33.0 AC - EXISTING TYPE B=	CN 58
3.3 AC - EXISTING TYPE C=	CN 71

PROPOSED SITE DRAINAGE BASIN INFORMATION

PROPOSED WEST DRAINAGE AREA =7.4 AC.

6.0 AC - 60% IMPERVIOUS RESIDENTIAL =	CN 87
1.2 AC - OUTLOT AREA (10% IMP) =	CN 74
0.2 AC - WET BASIN =	CN 98

PROPOSED WEST BYPASS AREA = 1.1 AC.

1.1 AC - OUTLOT AREA (10% IMP) =	CN 74

PROPOSED EAST DRAINAGE AREA = 18.7 AC.

12.9 AC - 60% IMPERVIOUS RESIDENTIAL =	CN 87
3.6 AC - 70% IMPERVIOUS ALLEY RESIDENTIAL =	CN 90
1.5 AC - OUTLOT AREA (10% IMP) =	CN 74
0.7 AC - WEST BASIN =	CN 98

PROPOSED AREA DIRECTLY OFFSITE EAST = 2.5 AC.

2.4 AC - 10% IMP (LIGHTLY DISTURBED/DEEP TILL)=	CN 62
0.1 AC - 70% IMP ROW AREA =	CN 90

PROPOSED AREA DIRECTLY OFFSITE SOUTH = 6.6 AC.

6.2 AC - ASSUME 10% IMP (LIGHTLY DISTURBED)=	CN 62
0.2 AC - 40% IMP YARD AREA=	CN 82
0.2 AC - 70% IMP ROW AREA =	CN 90

24-HR STORM EVENT (PEAK FLOW IN CFS)-PEAK FLOW COMPARISION

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TOTAL EXISTING COMBINED FLOW THOUGH SITE	4.35	9.71	45.73	83.98	166.65
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PRO FLOWS DIRECTLY OFFSITE					
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PROPOSED FLOW INTO DETENTION	13.72	17.15	30.36	40.49	58.97
ROUTED DETENTION	0.44	0.50	4.06	11.59	22.22
ELEVATION	868.26	868.58	869.19	869.44	870.12
WEST INFILTRATION BASIN: BOTTOM = 866.0, OUTLET = 867.0, TOP OF BERM = 871.0					
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EAST INFILTRATION BASIN: BOTTOM = 861.0, OUTLET = 862.0, TOP OF BERM = 866.0					
ROUTED INFILTRATION OFFSITE	1.56	1.82	8.24	10.85	19.36
ELEVATION	862.54	862.60	863.64	864.35	865.58

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PROPOSED SITE DRAINAGE PLAN

ROSEWOOD FIELDS
COUNTY HWY AB

VILLAGE OF MCFARLAND, WISCONSIN

0 100

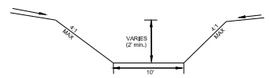
DATE: 04/06/20
REVISED:

DRAWN BY: GVP

FN: 19-04-113

Sheet Number:
Exhibit 4

OFFSITE WEST AND NORTHWEST TO BE ROUTED THROUGH THE SITE DOWNSTREAM OF SITE STORMWATER CONTROLS



WEST BYPASS CHANNEL
SECTION @ 0.55%
NOT TO SCALE

WEST BYBASS CHANNEL

PROPOSED WEST DETENTION BASIN

TOP OF POND BERM - 871.00, AREA = 32,596 SQFT
TOP OF WET POND/OUTLET - 867.00, AREA = 15,467 SQFT
BOTTOM OF WET POND - 865.00

WEST DETENTION BASIN OUTLET STRUCTURES
ROUTED TO INFILTRATION BASIN:
48" STANDPIPE
RIM = 869.00
W/4" ORIFICE @ 867.00
18" OUTLET PIPE @ 866.00

30' EQUALIZATION BERM @ 869.75

WEST INFILTRATION BASIN OUTLET STRUCTURES:
1-15" CULVERTS @ 867.00
5' OVERFLOW WEIR @ 870.00
8" CAPPED EMERGENCY DRAIN(DAYLIGHT) @ 866.00

PROPOSED WEST INFILTRATION BASIN W/ 12" DEPRESSION ZONE

3,624 SQFT @ 866.00
10,466 SQFT (TOP OF BERM) @ 871.00

2 - 36" CULVERTS WITH ENDSECTIONS
UPSTREAM INV = 966.00
DOWNSTREAM INV = 965.00

PROPOSED EAST INFILTRATION BASIN W/ 12" DEPRESSION ZONE

8,400 SQFT @ 861.00
19,855 SQFT (TOP OF BERM) @ 866.00

30" CULVERT
INV = 858.12

PROPOSED EAST DETENTION BASIN

TOP OF POND BERM - 866.00, AREA = 50,568 SQFT
TOP OF WET POND/OUTLET - 862.00, AREA = 30,928SQFT
BOTTOM OF WET POND - 856.00

INFILTRATION BASIN OUTLET STRUCTURES:
1-18" CULVERTS @ 862.00
8" CAPPED EMERGENCY DRAIN(DAYLIGHT) @ 861.00

4' OVERFLOW WEIR @ 865.00

EAST DETENTION BASIN OUTLET STRUCTURES
ROUTED TO INFILTRATION BASIN:
48" STANDPIPE
RIM = 864.00
W/8" ORIFICE @ 862.00
24" OUTLET PIPE @ 861.00

20' EQUALIZATION BERM @ 864.75

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YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

DETENTION/INFILTRATION BASIN LAYOUT

ROSEWOOD FIELDS
COUNTY HWY AB

VILLAGE OF McFARLAND, WISCONSIN

0 100

DATE: 04/07/20
REVISED:

DRAWN BY: GVP

FN: 19-04-113

Sheet Number:
Exhibit 5

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YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

AERIAL MAP

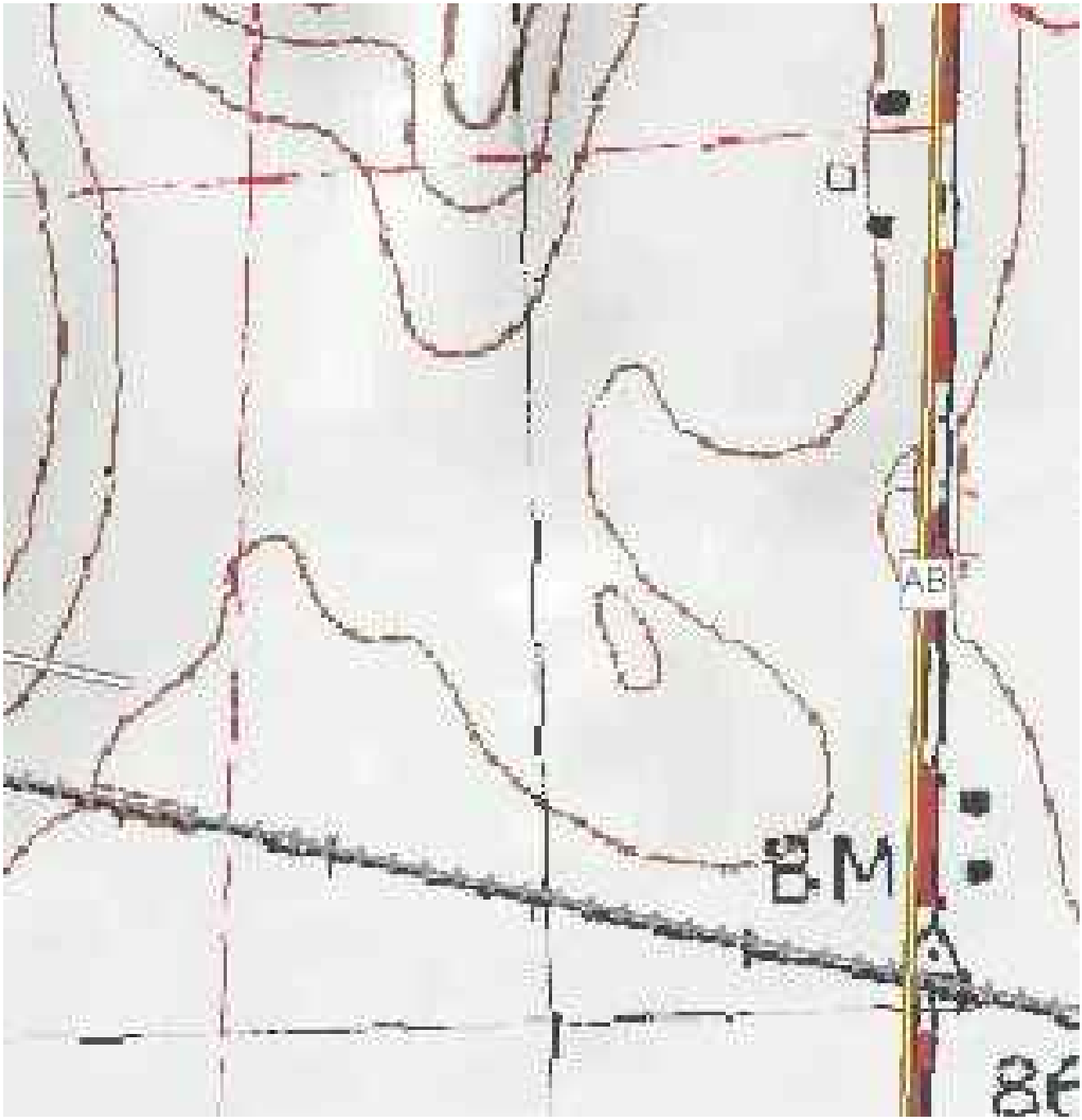
UTTERBACK PROPERTY

VILLAGE OF MCFARLAND, WISCONSIN

DRAWN BY: GVP

EXHIBIT 6

U:\USER\1904113\ENGINEERING\SWMP\1904113 SWMP.DWG



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7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

USGS MAP

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND, WISCONSIN

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EXHIBIT 7

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WETLAND INDICATOR MAP

ROSEWOOD FIELDS

VILLAGE OF MCFARLAND, WISCONSIN

DRAWN BY: GVP *EXHIBIT 8*

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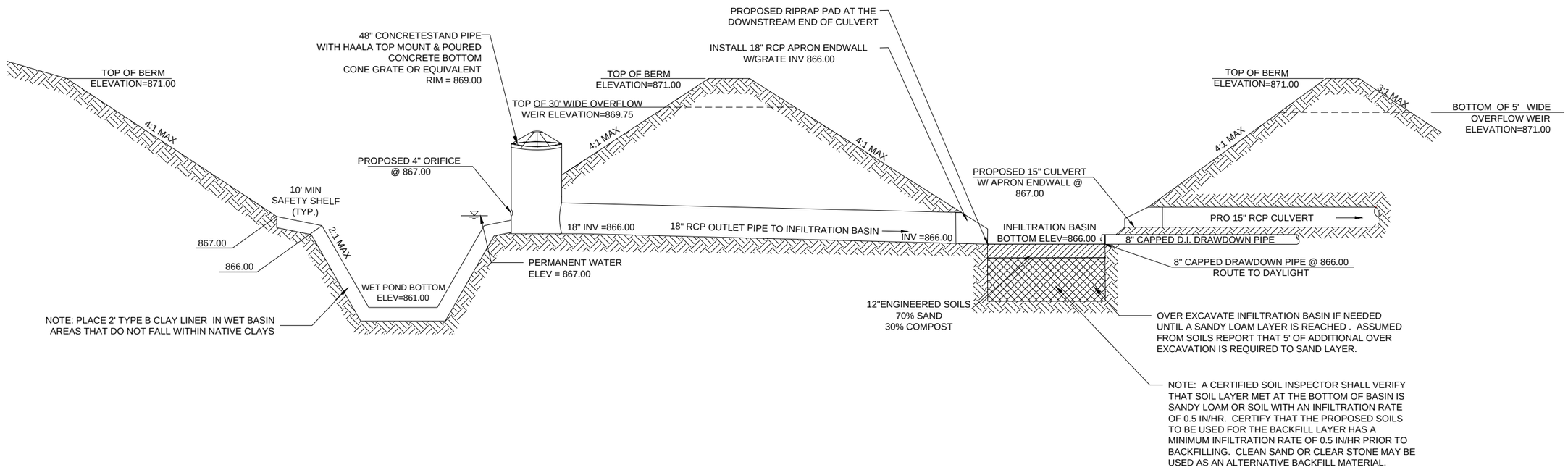
APPENDIX A

DETENTION POND & INFLITRATION BASIN DETAILS



PROFILE VIEW

PROPOSED WEST WET DETENTION BASIN & INFILTRATION BASIN

NOT TO SCALE

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7530 Westward Way, Madison, WI 53717
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YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

WEST WET DETENTION AND INFILTRATION BASIN DETAIL

ROSEWOOD FIELDS
COUNTY HWY AB

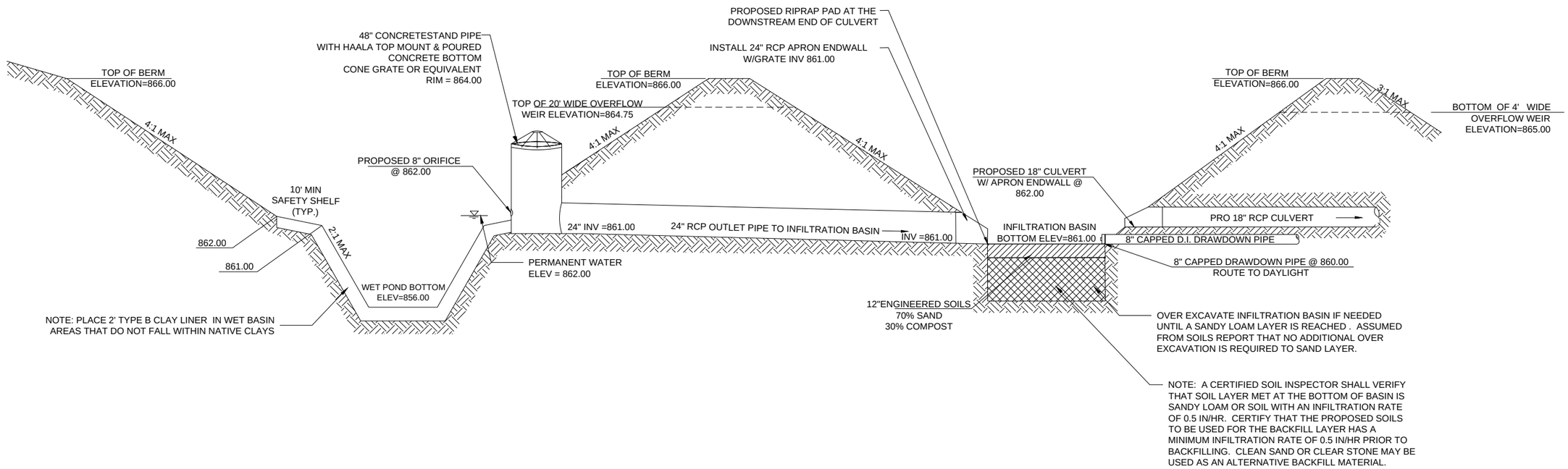
VILLAGE OF MCFARLAND, WISCONSIN

DATE: 04/03/20
REVISED:

DRAWN BY: GVP

FN: 19-04-113

Sheet Number:
APP A-1



PROFILE VIEW

PROPOSED EAST WET DETENTION BASIN & INFILTRATION BASIN

NOT TO SCALE

D'ONOFRIO KOTTKE AND ASSOCIATES, INC.
7530 Westward Way, Madison, WI 53717
Phone: 608.833.7530 • Fax: 608.833.1089
YOUR NATURAL RESOURCE FOR LAND DEVELOPMENT

EAST WET DETENTION AND INFILTRATION BASIN DETAIL

ROSEWOOD FIELDS
COUNTY HWY AB

VILLAGE OF MCFARLAND, WISCONSIN

DATE: 04/03/20
REVISED:

DRAWN BY: GVP

FN: 19-04-113

Sheet Number:
APP A-2

APPENDIX B

SEDIMENT REDUCTION CALCULATIONS

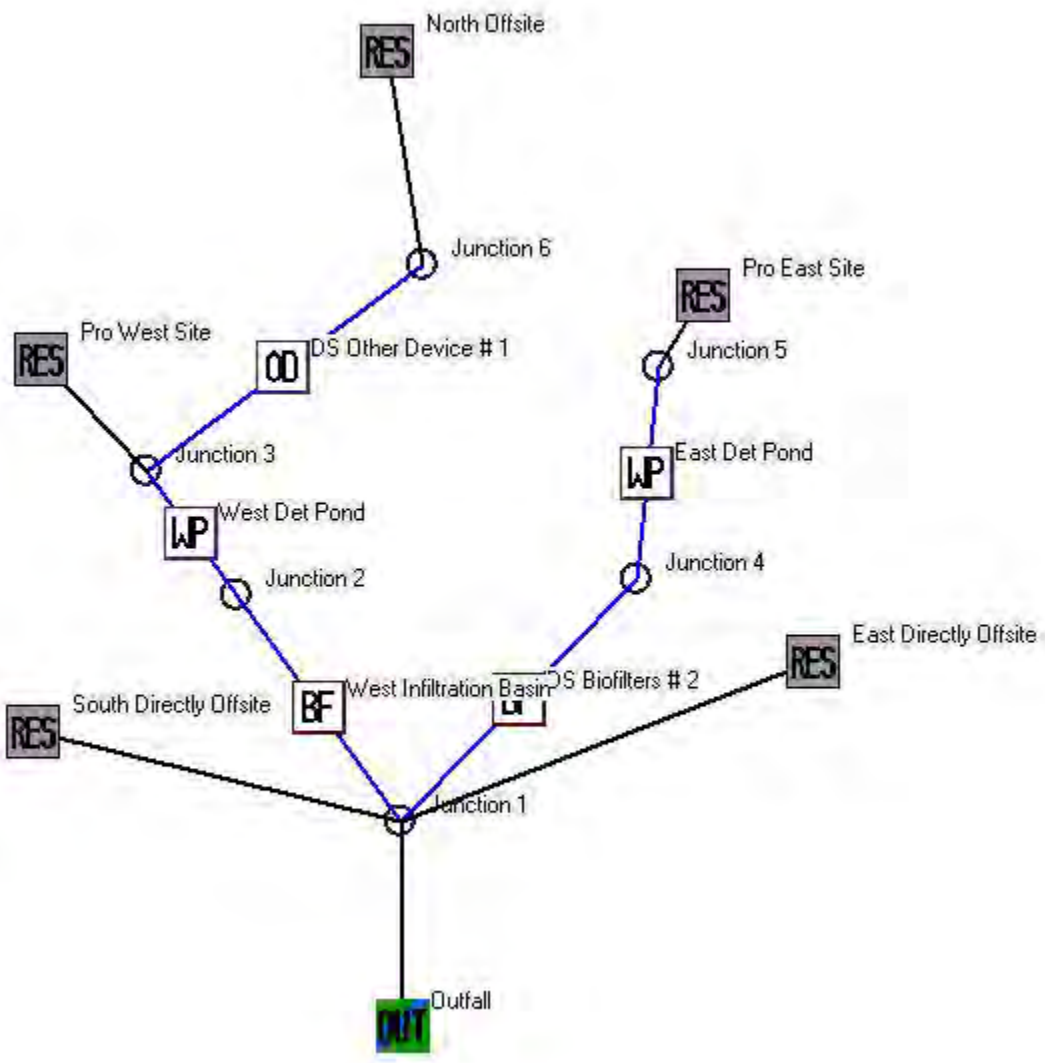
DETENTION BASIN
SEDIMENTATION REDUCTION CALCULATIONS (WINSLAMM)

WinSlamm Design

The following WinSlamm design shows that 80% of sediment is being removed from the proposed site

Total site sediment reduction in developed conditions = <u>83.56%</u>

Model Schematic:



Model Input Information:

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Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 04-02-2020 Time: 16:41:46
Site information:

LU# 1 - Residential: Pro West Site Total area (ac): 8.500
1 - Roofs 1: 1.190 ac. Pitched Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.610 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.790 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.230 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 1.010 ac. Intermediate Street Length = 0.768 curb-mi Street Width (assuming two curb-mi per street mile) = 21.69922 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 4.180 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.490 ac. Source Area PSD File:

LU# 2 - Residential: Pro East Site Total area (ac): 18.700
1 - Roofs 1: 3.390 ac. Pitched Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 1.740 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 2.260 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.150 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 2.870 ac. Intermediate Street Length = 1.713 curb-mi Street Width (assuming two curb-mi per street mile) = 27.64448 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 7.390 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.900 ac. Source Area PSD File:

LU# 3 - Residential: South Directly Offsite Total area (ac): 6.600
1 - Roofs 1: 0.050 ac. Pitched Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.030 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.620 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 0.040 ac. Intermediate Street Length = 0.044 curb-mi Street Width (assuming two curb-mi per street mile) = 15 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.860 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Residential: East Directly Offsite Total area (ac): 2.500
31 - Sidewalks 1: 0.240 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 0.070 ac. Intermediate Street Length = 0.044 curb-mi Street Width (assuming two curb-mi per street mile) = 26.25 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 2.190 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 5 - Residential: North Offsite Total area (ac): 2.900
45 - Large Landscaped Areas 1: 2.900 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - West Det Pond
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 6
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft): 6

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 30
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 7.75

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 7

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.0195	0.00	0.00
2	1.00	0.0344	0.00	0.00
3	2.00	0.0569	0.00	0.00
4	3.00	0.0894	0.00	0.00
5	4.00	0.1220	0.00	0.00
6	5.00	0.1560	0.00	0.00
7	6.00	0.3550	0.00	0.00
8	7.00	0.4490	0.00	0.00
9	8.00	0.5470	0.00	0.00
10	9.00	0.6460	0.00	0.00
11	10.00	0.7480	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - West Infiltration Basin
1. Top area (square feet) = 10466
2. Bottom aea (square feet) = 3624
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.1
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 5
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 4

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 1.25
2. Pipe invert elevation above datum (ft): 1
3. Number of surface pipe outlets: 1

Control Practice 3: Wet Detention Pond CP# 2 (DS) - East Det Pond

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 6

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.67
2. Number of orifices: 1
3. Invert elevation above datum (ft): 6

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 8.75

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.2030	0.00	0.00
2	1.00	0.2380	0.00	0.00
3	2.00	0.2750	0.00	0.00
4	3.00	0.3130	0.00	0.00
5	4.00	0.3520	0.00	0.00
6	5.00	0.3900	0.00	0.00
7	6.00	0.7100	0.00	0.00
8	7.00	0.8190	0.00	0.00
9	8.00	0.9310	0.00	0.00
10	9.00	1.0440	0.00	0.00
11	10.00	1.1610	0.00	0.00

Control Practice 4: Biofilter CP# 2 (DS) - DS Biofilters # 2

1. Top area (square feet) = 19855
2. Bottom aea (square feet) = 8400
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 1
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 4

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 1.5
2. Pipe invert elevation above datum (ft): 1
3. Number of surface pipe outlets: 1

Control Practice 5: Other Device CP# 1 (DS) - DS Other Device # 1

Fraction of drainage area served by device (ac) = 1.00

Particulate Concentration reduction fraction = 1.00

Filterable Concentration reduction fraction = 0.00

Runoff volume reduction fraction = 0

Output Sediment Reduction:

File Name:
U:\User\1904113\Engineering\SWMP\Sed Pro Utterback Slamm.mdb

Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	1.130E+06		0.25	135.9	9588	
Outfall Total with Controls	488981	56.73 %	0.11	51.62	1576	83.56 %
Current File Output: Annualized Total After Outfall Controls	490324	Years in Model Run:	1.00		1580	

Print Output Summary to .csv File
Print Output Summary to Text File
Print Output Summary to Printer

Total Area Modeled (ac): 39.200

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Outfall Flow Duration Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff
(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.25	Poor
With Controls	0.11	Good

Total site sediment reduction in developed conditions = <u>83.56%</u>

Data File: U:\User\1904113\Eng mm.mdb
Rain File: WisReg - Madison WI
Date: 04-02-20 Time: 4:43:38 PM
Site Description:

Col. #:	2	4	5	6	7	8	9
Control Practice No.	Control Practice Type	Total Inflow Volume (cf)	Total Outflow Volume (cf)	Percent Volume Reduction	Total Influent Load (lbs)	Total Effluent Load (lbs)	Percent Load Reduction
1	Wet Detention Pond	310884	311720	-0.269	2521	332.0	86.83
2	Biofilter	311720	115685	62.89	332.0	152.1	54.19
3	Wet Detention Pond	750693	752823	-0.284	5899	1091	81.51
4	Biofilter	752823	304609	59.54	1091	513.1	52.97
5	Other Device	18203	18203	0	258.0	0	100.0

The chart above shows that over 60% sediment reduction will occur prior to the infiltration basins.

APPENDIX C

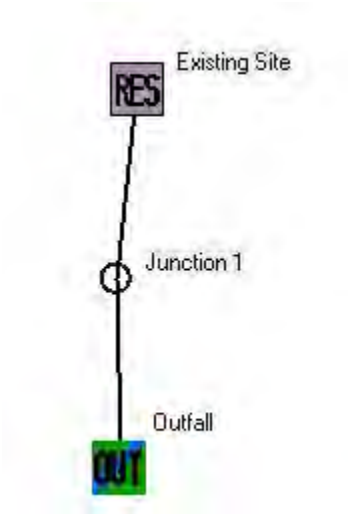
INFILTRATION DESIGN

INFILTRATION SIZING FOR THE PROPOSED PLAT

Methodology: To meet infiltration requirements, the following will show that the infiltration design will meet stayon requirements for the site. To establish the infiltration requirements, the site was modeled using WinSLAMM in existing conditions to establish an existing stayon value first. A target stayon value was established as 90% of the existing value per the ordinance. As shown in the following calculations; The site will meet the required infiltration performance standard in developed conditions

WinSLAMM Model to Establish Stayon Requirements

Model Schematic:



Model Input Information:

Data file name: U:\User\1904113\Engineering\SWMP\Ex Utterback Slamm.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 04-02-2020 Time: 16:48:49
Site information:

LU# 1 - Residential: Existing Site Total area (ac): 36.300
45 - Large Landscaped Areas 1: 36.300 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Output Existing Stayon From Plat:

Data File: U:\User\1904113\Engineering\SWMP\Ex Utterback Slamm.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 04-02-20 Time: 4:50:34 PM
Site Description:

Runoff Volume Total (cf) at the Outfall

Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)
73	08/28/81	0.04	0	0.000	0.04
74	08/31/81	0.03	0	0.000	0.03
75	08/31/81	1.52	10760	0.054	1.44
76	09/07/81	0.89	5048	0.043	0.85
77	09/11/81	0.08	0	0.000	0.08
78	09/16/81	0.03	0	0.000	0.03
79	09/21/81	0.45	1398	0.024	0.44
80	09/24/81	0.90	5117	0.043	0.86
81	09/26/81	0.12	0	0.000	0.12
82	09/28/81	0.10	0	0.000	0.10
83	09/29/81	0.16	0	0.000	0.16
84	09/30/81	0.36	825.6	0.017	0.35
85	10/01/81	0.01	0	0.000	0.01
86	10/04/81	0.15	0	0.000	0.15
87	10/05/81	0.04	0	0.000	0.04
88	10/05/81	0.02	0	0.000	0.02
89	10/09/81	0.14	0	0.000	0.14
90	10/13/81	1.20	8238	0.052	1.14
91	10/15/81	0.02	0	0.000	0.02
92	10/17/81	0.95	5464	0.044	0.91
93	10/18/81	0.06	0	0.000	0.06
94	10/21/81	0.06	0	0.000	0.06
95	10/21/81	0.01	0	0.000	0.01
96	10/24/81	0.01	0	0.000	0.01
97	10/31/81	0.01	0	0.000	0.01
98	11/05/81	0.04	0	0.000	0.04
99	11/15/81	0.07	0	0.000	0.07
100	11/18/81	0.05	0	0.000	0.05
101	11/19/81	0.26	230.8	0.007	0.26
102	11/23/81	0.18	0	0.000	0.18
103	11/25/81	0.89	5048	0.043	0.85
104	11/30/81	0.37	900.6	0.018	0.36
105	12/03/81	-	-	-	-
106	12/14/81	-	-	-	-
107	12/20/81	-	-	-	-
108	12/26/81	-	-	-	-
109	12/31/81	-	-	-	-
Minimum:		0.00	0	0.000	0.01
Maximum:		2.59	68256	0.200	2.07
Average:		0.26	2090	0.012	0.25
Total:		28.81	227858		27.09

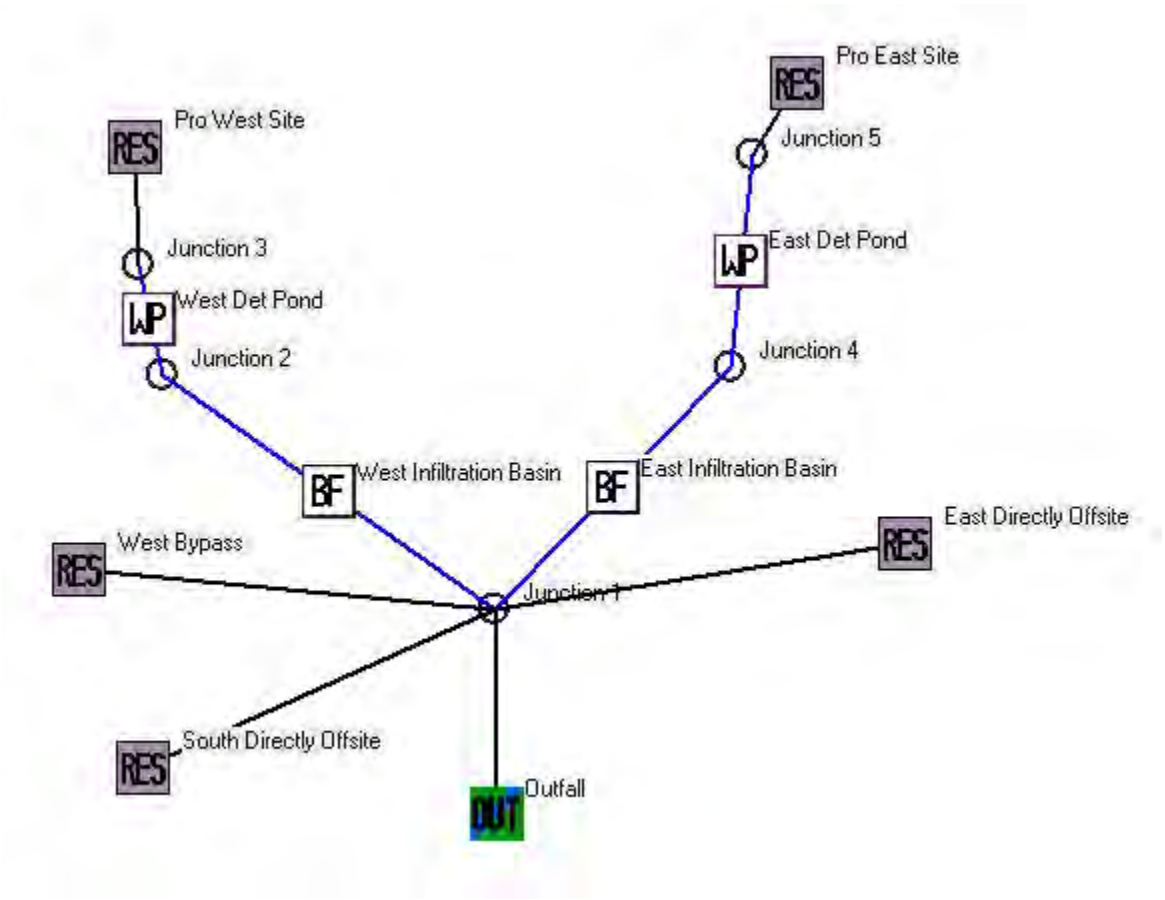
The plat has **27.09** inches of stayon in existing conditions. 90% of 27.09 inches = **24.4 inches of stayon required** to meet stayon requirements for the plat.

Proposed Infiltration Design:

Proposed Site Infiltration Design:
Stayon Required = 24.4 inches
Note: Assume 0.5 in/hr infiltration can be attained

WinSlamm Design

Model Schematic:



Model Input Information:

Data file name: U:\User\1904113\Engineering\SWMP\Pro Utterback Slamm.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:

Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 04-02-2020 Time: 16:56:40
Site information:

LU# 1 - Residential: Pro West Site Total area (ac): 7.400
1 - Roofs 1: 1.190 ac. Pitched Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.610 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.790 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.120 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 1.010 ac. Intermediate Street Length = 0.768 curb-mi Street Width (assuming two curb-mi per street mile) = 21.69922 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 3.190 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.490 ac. Source Area PSD File:

LU# 2 - Residential: Pro East Site Total area (ac): 18.700
1 - Roofs 1: 3.390 ac. Pitched Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 1.740 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 2.260 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.150 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 2.870 ac. Intermediate Street Length = 1.713 curb-mi Street Width (assuming two curb-mi per street mile) = 27.64448 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 7.390 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.900 ac. Source Area PSD File:

LU# 3 - Residential: South Directly Offsite Total area (ac): 6.600
1 - Roofs 1: 0.050 ac. Pitched Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.030 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.620 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 0.040 ac. Intermediate Street Length = 0.044 curb-mi Street Width (assuming two curb-mi per street mile) = 15 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 5.860 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Residential: East Directly Offsite Total area (ac): 2.500
31 - Sidewalks 1: 0.240 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 0.070 ac. Intermediate Street Length = 0.044 curb-mi Street Width (assuming two curb-mi per street mile) = 26.25 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 2.190 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 5 - Residential: West Bypass Total area (ac): 1.100
31 - Sidewalks 1: 0.110 ac. Disconnected Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.990 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - West Det Pond
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 6
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft): 6
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 30
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 7.75
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 7
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.0190	0.00	0.00
2	1.00	0.0340	0.00	0.00

3	2.00	0.0560	0.00	0.00
4	3.00	0.0890	0.00	0.00
5	4.00	0.1220	0.00	0.00
6	5.00	0.1560	0.00	0.00
7	6.00	0.3550	0.00	0.00
8	7.00	0.4490	0.00	0.00
9	8.00	0.5470	0.00	0.00
10	9.00	0.6460	0.00	0.00
11	10.00	0.7480	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - West Infiltration Basin
1. Top area (square feet) = 10466
2. Bottom aea (square feet) = 3624
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.1
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 5
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 4

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 1.25
2. Pipe invert elevation above datum (ft): 1
3. Number of surface pipe outlets: 1

Control Practice 3: Wet Detention Pond CP# 2 (DS) - East Det Pond

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 6

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.67
2. Number of orifices: 1
3. Invert elevation above datum (ft): 6

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 8.75

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.2030	0.00	0.00
2	1.00	0.2380	0.00	0.00
3	2.00	0.2750	0.00	0.00
4	3.00	0.3130	0.00	0.00
5	4.00	0.3520	0.00	0.00
6	5.00	0.3900	0.00	0.00
7	6.00	0.7100	0.00	0.00
8	7.00	0.8190	0.00	0.00
9	8.00	0.9310	0.00	0.00
10	9.00	1.0440	0.00	0.00
11	10.00	1.1610	0.00	0.00

Control Practice 4: Biofilter CP# 2 (DS) - East Infiltration Basin

1. **Top area (square feet) = 19855**
2. **Bottom aea (square feet) = 8400**
3. **Depth (ft): 5**
4. **Biofilter width (ft) - for Cost Purposes Only: 10**
5. **Infiltration rate (in/hr) = 0.5**
6. **Random infiltration rate generation? No**
7. **Infiltration rate fraction (side): 1**
8. **Infiltration rate fraction (bottom): 1**
9. **Depth of biofilter that is rock filled (ft) 0**
10. **Porosity of rock filled volume = 0**
11. **Engineered soil infiltration rate: 0**
12. **Engineered soil depth (ft) = 0**
13. **Engineered soil porosity = 0**
14. **Percent solids reduction due to flow through engineered soil = 0**
15. **Biofilter peak to average flow ratio = 3.8**
16. **Number of biofiltration control devices = 1**
17. **Particle size distribution file: Not needed - calculated by program**
18. **Initial water surface elevation (ft): 0**

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. **Weir crest length (ft): 10**
2. **Weir crest width (ft): 10**
3. **Height of datum to bottom of weir opening: 4**

Outlet type: Surface Discharge Pipe

1. **Surface discharge pipe outlet diameter (ft): 1.5**
2. **Pipe invert elevation above datum (ft): 1**
3. **Number of surface pipe outlets: 1**

Proposed Infiltration Design:

Data File: U:\User\1904113\Engineering\SWMP\Pro Utterback Slamm.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 04-02-20 Time: 4:59:15 PM
Site Description:

Runoff Volume Total (cf) at the Outfall

Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)
73	08/28/81	0.04	99.17	0.019	0.04
74	08/31/81	0.03	0.6224	0.000	0.03
75	08/31/81	1.52	34950	0.174	1.25
76	09/07/81	0.89	11971	0.102	0.80
77	09/11/81	0.08	21.02	0.002	0.08
78	09/16/81	0.03	0.6224	0.000	0.03
79	09/21/81	0.45	575.2	0.010	0.45
80	09/24/81	0.90	7729	0.065	0.84
81	09/26/81	0.12	40.53	0.003	0.12
82	09/28/81	0.10	30.18	0.002	0.10
83	09/29/81	0.16	55.90	0.003	0.16
84	09/30/81	0.36	370.6	0.008	0.36
85	10/01/81	0.01	0.06915	0.000	0.01
86	10/04/81	0.15	51.97	0.003	0.15
87	10/05/81	0.04	7.682	0.001	0.04
88	10/05/81	0.02	0.2766	0.000	0.02
89	10/09/81	0.14	48.10	0.003	0.14
90	10/13/81	1.20	27507	0.174	0.99
91	10/15/81	0.02	0.2766	0.000	0.02
92	10/17/81	0.95	19095	0.153	0.81
93	10/18/81	0.06	526.3	0.067	0.06
94	10/21/81	0.06	13.64	0.002	0.06
95	10/21/81	0.01	0.06915	0.000	0.01
96	10/24/81	0.01	0.06915	0.000	0.01
97	10/31/81	0.01	0.06915	0.000	0.01
98	11/05/81	0.04	7.682	0.001	0.04
99	11/15/81	0.07	17.14	0.002	0.07
100	11/18/81	0.05	10.48	0.002	0.05
101	11/19/81	0.26	161.0	0.005	0.26
102	11/23/81	0.18	63.94	0.003	0.18
103	11/25/81	0.89	7125	0.061	0.84
104	11/30/81	0.37	396.0	0.008	0.37
105	12/03/81	-	-	-	-
106	12/14/81	-	-	-	-
107	12/20/81	-	-	-	-
108	12/26/81	-	-	-	-
109	12/31/81	-	-	-	-
Minimum:		0.00	0	0.000	0.01
Maximum:		2.59	114005	0.334	1.72
Average:		0.26	4344	0.026	0.23
Total:		28.81	473485		25.23

25.2 inches of stayon attained on the site in proposed conditions. This exceeds 24.4 inches required in developed conditions

Note: DNR conservation practice standard 1003 states that ponding depth must infiltrate within the maximum allowable draw down period of 24 hours. From the DNR's technical note for sizing infiltration basins, drawdown time is calculated as a function of depression zone vs. infiltration rate.

Depth/kd = Drawdown Time

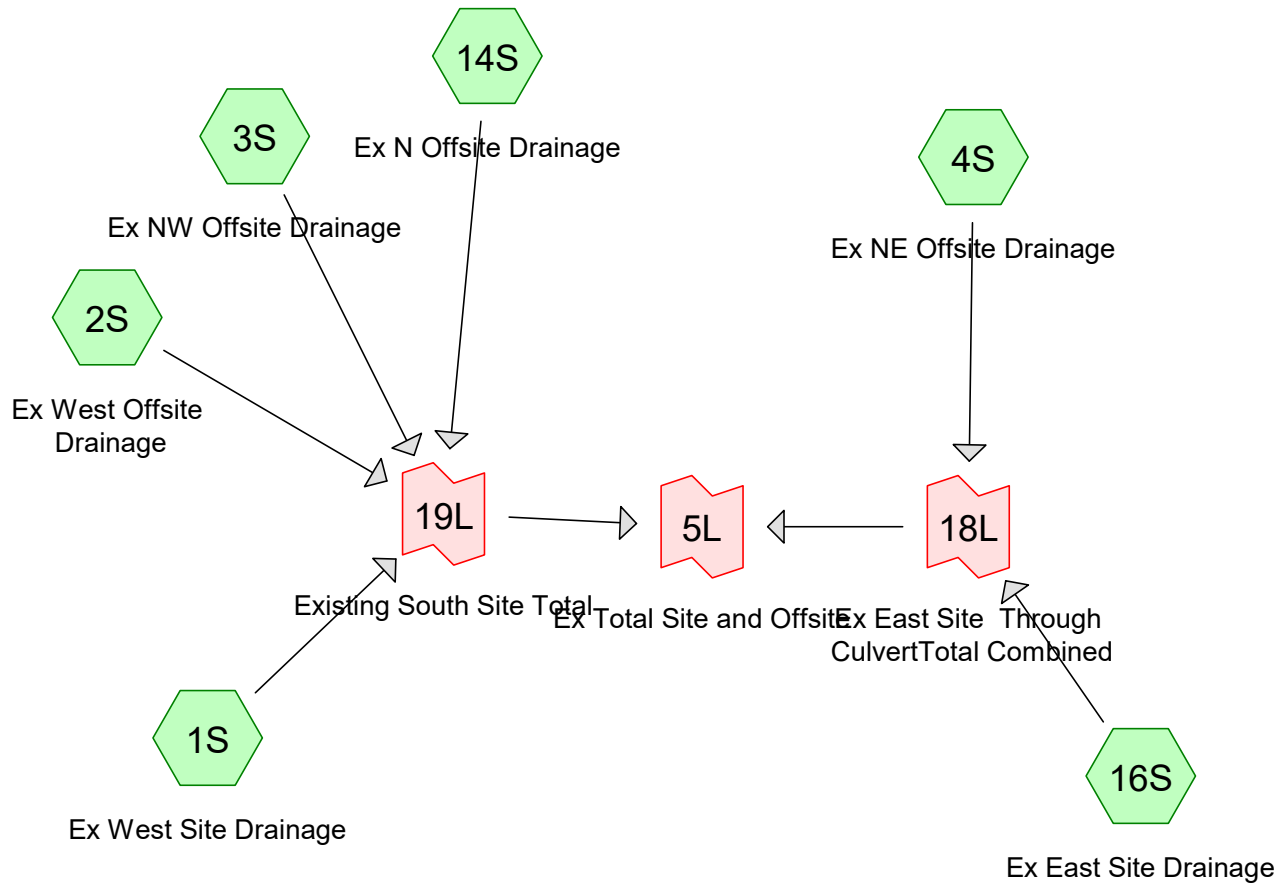
12" is maximum depression zone, and 0.5in/hr is the minimum infiltration rate within the infiltration basin.

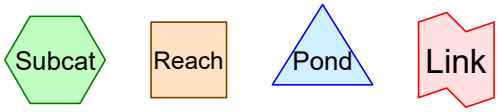
12" depression zone/0.50 in/hr = 24 hours is the maximum drawdown after rainfall event.

APPENDIX D

HYDROCAD OUTPUT

Existing Hydrocad





Routing Diagram for 1904113 prelim SWMP
Prepared by HP Inc., Printed 4/2/2020
HydroCAD® 10.00-25 s/n 02063 © 2019 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Ex West Site Drainage

Runoff = 1.12 cfs @ 12.65 hrs, Volume= 0.292 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	21.400	58	Type B Soils
*	1.900	71	Type C Soils
	23.300	59	Weighted Average
	23.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
9.4	1,000	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.1	300	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
24.9	1,600	Total			

Summary for Subcatchment 2S: Ex West Offsite Drainage

Runoff = 0.40 cfs @ 12.62 hrs, Volume= 0.111 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 3S: Ex NW Offsite Drainage

Runoff = 1.34 cfs @ 12.85 hrs, Volume= 0.432 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 4S: Ex NE Offsite Drainage

Runoff = 0.86 cfs @ 12.31 hrs, Volume= 0.122 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 14S: Ex N Offsite Drainage

Runoff = 0.59 cfs @ 12.40 hrs, Volume= 0.078 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 16S: Ex East Site Drainage

Runoff = 0.84 cfs @ 12.54 hrs, Volume= 0.185 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	11.400	58	Type B Soils
*	1.600	71	Type C Soils
	13.000	60	Weighted Average
	13.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	300	0.0733	0.38		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
6.6	700	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
0.7	200	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.6	1,200	Total			

Summary for Link 5L: Ex Total Site and Offsite

Inflow Area = 95.100 ac, 0.00% Impervious, Inflow Depth = 0.15" for 1yr 24hr event
Inflow = 4.35 cfs @ 12.63 hrs, Volume= 1.221 af
Primary = 4.35 cfs @ 12.63 hrs, Volume= 1.221 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 18L: Ex East Site Through CulvertTotal Combined

Inflow Area = 19.100 ac, 0.00% Impervious, Inflow Depth = 0.19" for 1yr 24hr event
Inflow = 1.53 cfs @ 12.45 hrs, Volume= 0.308 af
Primary = 1.53 cfs @ 12.45 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 19L: Existing South Site Total

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth = 0.14" for 1yr 24hr event
Inflow = 3.09 cfs @ 12.71 hrs, Volume= 0.914 af
Primary = 3.09 cfs @ 12.71 hrs, Volume= 0.914 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 1S: Ex West Site Drainage

Runoff = 2.56 cfs @ 12.53 hrs, Volume= 0.486 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	21.400	58	Type B Soils
*	1.900	71	Type C Soils
	23.300	59	Weighted Average
	23.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
9.4	1,000	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.1	300	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
24.9	1,600	Total			

Summary for Subcatchment 2S: Ex West Offsite Drainage

Runoff = 0.97 cfs @ 12.49 hrs, Volume= 0.191 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 3S: Ex NW Offsite Drainage

Runoff = 3.20 cfs @ 12.70 hrs, Volume= 0.740 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 4S: Ex NE Offsite Drainage

Runoff = 1.72 cfs @ 12.28 hrs, Volume= 0.187 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 14S: Ex N Offsite Drainage

Runoff = 1.00 cfs @ 12.37 hrs, Volume= 0.114 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 16S: Ex East Site Drainage

Runoff = 1.85 cfs @ 12.43 hrs, Volume= 0.301 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	11.400	58	Type B Soils
*	1.600	71	Type C Soils
	13.000	60	Weighted Average
	13.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	300	0.0733	0.38		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
6.6	700	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
0.7	200	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.6	1,200	Total			

Summary for Link 5L: Ex Total Site and Offsite

Inflow Area = 95.100 ac, 0.00% Impervious, Inflow Depth = 0.25" for 2yr 24hr event
Inflow = 9.71 cfs @ 12.54 hrs, Volume= 2.019 af
Primary = 9.71 cfs @ 12.54 hrs, Volume= 2.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 18L: Ex East Site Through CulvertTotal Combined

Inflow Area = 19.100 ac, 0.00% Impervious, Inflow Depth = 0.31" for 2yr 24hr event
Inflow = 3.22 cfs @ 12.37 hrs, Volume= 0.488 af
Primary = 3.22 cfs @ 12.37 hrs, Volume= 0.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 19L: Existing South Site Total

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth = 0.24" for 2yr 24hr event
Inflow = 7.09 cfs @ 12.60 hrs, Volume= 1.531 af
Primary = 7.09 cfs @ 12.60 hrs, Volume= 1.531 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 1S: Ex West Site Drainage

Runoff = 12.44 cfs @ 12.42 hrs, Volume= 1.467 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	21.400	58	Type B Soils
*	1.900	71	Type C Soils
	23.300	59	Weighted Average
	23.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
9.4	1,000	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.1	300	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
24.9	1,600	Total			

Summary for Subcatchment 2S: Ex West Offsite Drainage

Runoff = 5.42 cfs @ 12.36 hrs, Volume= 0.600 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 3S: Ex NW Offsite Drainage

Runoff = 16.34 cfs @ 12.56 hrs, Volume= 2.330 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 4S: Ex NE Offsite Drainage

Runoff = 6.22 cfs @ 12.24 hrs, Volume= 0.492 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 14S: Ex N Offsite Drainage

Runoff = 2.96 cfs @ 12.34 hrs, Volume= 0.276 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 16S: Ex East Site Drainage

Runoff = 8.43 cfs @ 12.35 hrs, Volume= 0.874 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	11.400	58	Type B Soils
*	1.600	71	Type C Soils
	13.000	60	Weighted Average
	13.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	300	0.0733	0.38		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
6.6	700	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
0.7	200	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.6	1,200	Total			

Summary for Link 5L: Ex Total Site and Offsite

Inflow Area = 95.100 ac, 0.00% Impervious, Inflow Depth = 0.76" for 10yr 24hr event
Inflow = 45.73 cfs @ 12.42 hrs, Volume= 6.038 af
Primary = 45.73 cfs @ 12.42 hrs, Volume= 6.038 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 18L: Ex East Site Through CulvertTotal Combined

Inflow Area = 19.100 ac, 0.00% Impervious, Inflow Depth = 0.86" for 10yr 24hr event
Inflow = 13.70 cfs @ 12.30 hrs, Volume= 1.365 af
Primary = 13.70 cfs @ 12.30 hrs, Volume= 1.365 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 19L: Existing South Site Total

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth = 0.74" for 10yr 24hr event
Inflow = 34.57 cfs @ 12.46 hrs, Volume= 4.673 af
Primary = 34.57 cfs @ 12.46 hrs, Volume= 4.673 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 1S: Ex West Site Drainage

Runoff = 22.79 cfs @ 12.40 hrs, Volume= 2.408 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	21.400	58	Type B Soils
*	1.900	71	Type C Soils
	23.300	59	Weighted Average
	23.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
9.4	1,000	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.1	300	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
24.9	1,600	Total			

Summary for Subcatchment 2S: Ex West Offsite Drainage

Runoff = 10.27 cfs @ 12.34 hrs, Volume= 0.998 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 3S: Ex NW Offsite Drainage

Runoff = 30.61 cfs @ 12.53 hrs, Volume= 3.875 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 4S: Ex NE Offsite Drainage

Runoff = 10.39 cfs @ 12.23 hrs, Volume= 0.770 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 14S: Ex N Offsite Drainage

Runoff = 4.70 cfs @ 12.33 hrs, Volume= 0.419 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 16S: Ex East Site Drainage

Runoff = 15.08 cfs @ 12.33 hrs, Volume= 1.416 af, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	11.400	58	Type B Soils
*	1.600	71	Type C Soils
	13.000	60	Weighted Average
	13.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	300	0.0733	0.38		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
6.6	700	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
0.7	200	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.6	1,200	Total			

Summary for Link 5L: Ex Total Site and Offsite

Inflow Area = 95.100 ac, 0.00% Impervious, Inflow Depth = 1.25" for 25yr 24hr event
Inflow = 83.98 cfs @ 12.40 hrs, Volume= 9.886 af
Primary = 83.98 cfs @ 12.40 hrs, Volume= 9.886 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 18L: Ex East Site Through CulvertTotal Combined

Inflow Area = 19.100 ac, 0.00% Impervious, Inflow Depth = 1.37" for 25yr 24hr event
Inflow = 24.07 cfs @ 12.29 hrs, Volume= 2.186 af
Primary = 24.07 cfs @ 12.29 hrs, Volume= 2.186 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 19L: Existing South Site Total

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth = 1.22" for 25yr 24hr event
Inflow = 64.14 cfs @ 12.43 hrs, Volume= 7.700 af
Primary = 64.14 cfs @ 12.43 hrs, Volume= 7.700 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 1S: Ex West Site Drainage

Runoff = 45.16 cfs @ 12.38 hrs, Volume= 4.413 af, Depth= 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	21.400	58	Type B Soils
*	1.900	71	Type C Soils
	23.300	59	Weighted Average
	23.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
9.4	1,000	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.1	300	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
24.9	1,600	Total			

Summary for Subcatchment 2S: Ex West Offsite Drainage

Runoff = 20.81 cfs @ 12.32 hrs, Volume= 1.854 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 3S: Ex NW Offsite Drainage

Runoff = 61.96 cfs @ 12.50 hrs, Volume= 7.198 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 4S: Ex NE Offsite Drainage

Runoff = 18.89 cfs @ 12.23 hrs, Volume= 1.347 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 14S: Ex N Offsite Drainage

Runoff = 8.21 cfs @ 12.32 hrs, Volume= 0.710 af, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 16S: Ex East Site Drainage

Runoff = 29.14 cfs @ 12.32 hrs, Volume= 2.563 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	11.400	58	Type B Soils
*	1.600	71	Type C Soils
	13.000	60	Weighted Average
	13.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	300	0.0733	0.38		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
6.6	700	0.0140	1.77		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
0.7	200	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.6	1,200	Total			

Summary for Link 5L: Ex Total Site and Offsite

Inflow Area = 95.100 ac, 0.00% Impervious, Inflow Depth = 2.28" for 100yr 24hr event
Inflow = 166.65 cfs @ 12.38 hrs, Volume= 18.085 af
Primary = 166.65 cfs @ 12.38 hrs, Volume= 18.085 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 18L: Ex East Site Through CulvertTotal Combined

Inflow Area = 19.100 ac, 0.00% Impervious, Inflow Depth = 2.46" for 100yr 24hr event
Inflow = 45.72 cfs @ 12.28 hrs, Volume= 3.910 af
Primary = 45.72 cfs @ 12.28 hrs, Volume= 3.910 af, Atten= 0%, Lag= 0.0 min

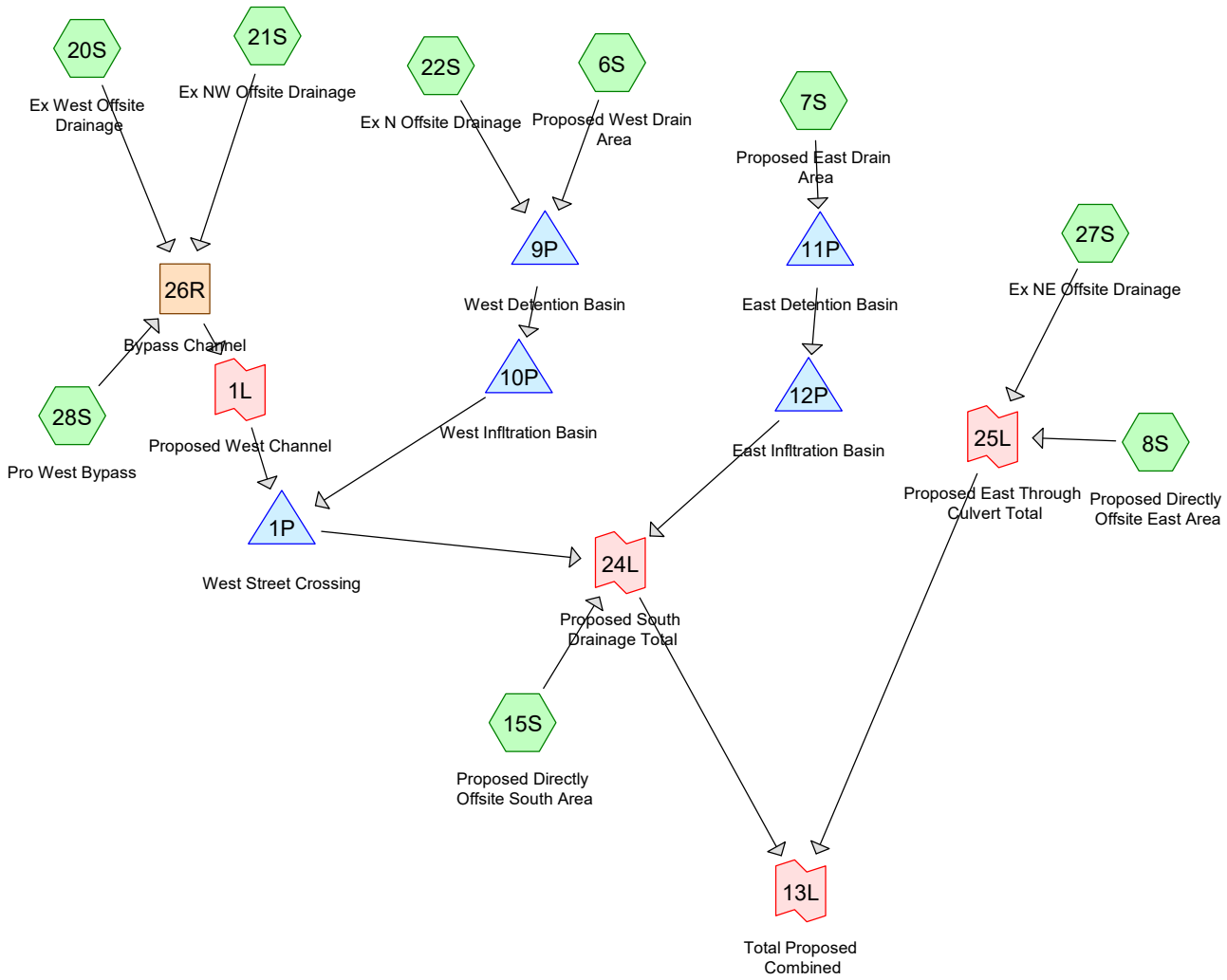
Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

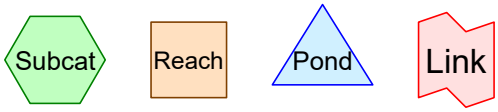
Summary for Link 19L: Existing South Site Total

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth = 2.24" for 100yr 24hr event
Inflow = 128.47 cfs @ 12.41 hrs, Volume= 14.176 af
Primary = 128.47 cfs @ 12.41 hrs, Volume= 14.176 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Proposed Hydrocad





Routing Diagram for 1904113 prelim SWMP
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Summary for Subcatchment 6S: Proposed West Drain Area

Runoff = 13.63 cfs @ 12.14 hrs, Volume= 0.722 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	6.000	87	55% Impervious Residential
*	1.200	74	10% Impervious OL Area
*	0.200	98	Wet Basin
	7.400	85	Weighted Average
	7.200		97.30% Pervious Area
	0.200		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0800	0.31		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.9	550	0.0180	9.66	30.35	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
6.5	750	Total			

Summary for Subcatchment 7S: Proposed East Drain Area

Runoff = 33.13 cfs @ 12.18 hrs, Volume= 2.030 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	12.900	87	60% Impervious Residential
*	3.600	90	70% Impervious Residential
*	1.500	74	10% Impervious OL
*	0.700	98	Wet Basin
	18.700	87	Weighted Average
	18.000		96.26% Pervious Area
	0.700		3.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	150	0.0800	0.34		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
2.3	1,200	0.0150	8.82	27.71	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
10.0	1,450	Total			

Summary for Subcatchment 8S: Proposed Directly Offsite East Area

Runoff = 0.29 cfs @ 12.49 hrs, Volume= 0.050 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	2.400	62	10% Impervious Lightly Disturbed/Restored
*	0.100	90	70% Imp ROW area
	2.500	63	Weighted Average
	2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	200	0.0100	0.16		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.3	400	0.0200	2.87		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
23.6	600	Total			

Summary for Subcatchment 15S: Proposed Directly Offsite South Area

Runoff = 0.66 cfs @ 12.64 hrs, Volume= 0.132 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	6.200	62	10% Impervious Lightly Disturbed/Restored
*	0.200	82	40% Imp yard area
*	0.200	90	70% Imp ROW area
	6.600	63	Weighted Average
	6.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	300	0.0100	0.17		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
32.8	700	Total			

Summary for Subcatchment 20S: Ex West Offsite Drainage

Runoff = 0.40 cfs @ 12.62 hrs, Volume= 0.111 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 21S: Ex NW Offsite Drainage

Runoff = 1.34 cfs @ 12.85 hrs, Volume= 0.432 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 22S: Ex N Offsite Drainage

Runoff = 0.59 cfs @ 12.40 hrs, Volume= 0.078 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 27S: Ex NE Offsite Drainage

Runoff = 0.86 cfs @ 12.31 hrs, Volume= 0.122 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 28S: Pro West Bypass

Runoff = 1.00 cfs @ 12.14 hrs, Volume= 0.055 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 1yr 24hr Rainfall=2.49"

	Area (ac)	CN	Description
*	1.100	74	OL Area 10% Imp
	1.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC**

Summary for Reach 26R: Bypass Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 0.14" for 1yr 24hr event
Inflow = 1.82 cfs @ 12.81 hrs, Volume= 0.599 af
Outflow = 1.76 cfs @ 12.98 hrs, Volume= 0.599 af, Atten= 3%, Lag= 10.1 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Max. Velocity= 0.86 fps, Min. Travel Time= 10.6 min
Avg. Velocity = 0.42 fps, Avg. Travel Time= 21.6 min

Peak Storage= 1,121 cf @ 12.98 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 2.00' Flow Area= 36.0 sf, Capacity= 121.18 cfs

10.00' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 4.0 '/' Top Width= 26.00'
Length= 550.0' Slope= 0.0055 '/'
Inlet Invert= 869.00', Outlet Invert= 866.00'

‡

Summary for Pond 1P: West Street Crossing

Inflow Area = 61.200 ac, 0.33% Impervious, Inflow Depth = 0.21" for 1yr 24hr event
Inflow = 1.76 cfs @ 12.98 hrs, Volume= 1.063 af
Outflow = 1.75 cfs @ 13.06 hrs, Volume= 1.063 af, Atten= 1%, Lag= 5.3 min
Primary = 1.75 cfs @ 13.06 hrs, Volume= 1.063 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 866.34' @ 13.06 hrs Surf.Area= 2,432 sf Storage= 663 cf

Plug-Flow detention time= 10.8 min calculated for 1.062 af (100% of inflow)
Center-of-Mass det. time= 10.3 min (1,243.0 - 1,232.6)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	22,843 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	1,479	0	0
867.00	4,287	2,883	2,883
868.00	9,984	7,136	10,019
869.00	15,664	12,824	22,843

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**36.0" Round Culvert X 2.00** L= 110.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 865.00' S= 0.0091 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=1.75 cfs @ 13.06 hrs HW=866.34' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 1.75 cfs @ 1.98 fps)

Summary for Pond 9P: West Detention Basin

Inflow Area = 10.300 ac, 1.94% Impervious, Inflow Depth = 0.93" for 1yr 24hr event
Inflow = 13.72 cfs @ 12.14 hrs, Volume= 0.800 af
Outflow = 0.44 cfs @ 15.14 hrs, Volume= 0.756 af, Atten= 97%, Lag= 180.2 min
Primary = 0.44 cfs @ 15.14 hrs, Volume= 0.756 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 868.26' @ 15.14 hrs Surf.Area= 20,686 sf Storage= 22,708 cf

Plug-Flow detention time= 669.3 min calculated for 0.756 af (94% of inflow)
Center-of-Mass det. time= 642.1 min (1,473.4 - 831.3)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	95,625 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	15,467	0	0
868.00	19,599	17,533	17,533
869.00	23,831	21,715	39,248
870.00	28,163	25,997	65,245
871.00	32,596	30,380	95,625

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**18.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 866.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	867.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	869.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	869.75'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.44 cfs @ 15.14 hrs HW=868.26' TW=866.96' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.44 cfs of 7.94 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.44 cfs @ 5.03 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 10P: West Infltration Basin

Inflow Area =	10.300 ac,	1.94% Impervious,	Inflow Depth >	0.88" for 1yr 24hr event
Inflow =	0.44 cfs @	15.14 hrs,	Volume=	0.756 af
Outflow =	0.41 cfs @	18.56 hrs,	Volume=	0.661 af, Atten= 8%, Lag= 205.4 min
Discarded =	0.07 cfs @	18.56 hrs,	Volume=	0.197 af
Primary =	0.34 cfs @	18.56 hrs,	Volume=	0.464 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 867.27' @ 18.56 hrs Surf.Area= 5,085 sf Storage= 5,517 cf

Plug-Flow detention time= 288.3 min calculated for 0.661 af (87% of inflow)
Center-of-Mass det. time= 155.9 min (1,629.3 - 1,473.4)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	34,052 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	3,624	0	0
867.00	4,745	4,185	4,185
868.00	6,000	5,373	9,557
869.00	7,386	6,693	16,250
870.00	8,876	8,131	24,381
871.00	10,466	9,671	34,052

Device	Routing	Invert	Outlet Devices
#1	Discarded	866.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 860.00'
#2	Primary	867.00'	**15.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Primary	870.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.07 cfs @ 18.56 hrs HW=867.27' (Free Discharge)
└─**1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=0.34 cfs @ 18.56 hrs HW=867.27' TW=866.23' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 0.34 cfs @ 2.59 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 11P: East Detention Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth =	1.30"	for 1yr 24hr event
Inflow =	33.13 cfs @	12.18 hrs,	Volume=	2.030 af	
Outflow =	1.85 cfs @	13.66 hrs,	Volume=	1.953 af,	Atten= 94%, Lag= 89.0 min
Primary =	1.85 cfs @	13.66 hrs,	Volume=	1.953 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 863.55' @ 13.66 hrs Surf.Area= 38,370 sf Storage= 53,718 cf

Plug-Flow detention time= 447.3 min calculated for 1.953 af (96% of inflow)
Center-of-Mass det. time= 427.0 min (1,246.9 - 819.9)

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	162,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
862.00	30,928	0	0
863.00	35,693	33,311	33,311
864.00	40,550	38,122	71,432
865.00	45,509	43,030	114,462
866.00	50,568	48,039	162,500

Device	Routing	Invert	Outlet Devices
#1	Primary	861.00'	**24.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 861.00' / 861.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	862.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	864.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4	Primary	864.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.85 cfs @ 13.66 hrs HW=863.55' TW=861.97' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.85 cfs of 13.93 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 1.85 cfs @ 5.31 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 12P: East Infltration Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth >	1.25"	for 1yr 24hr event
Inflow =	1.85 cfs @	13.66 hrs,	Volume=	1.953 af	
Outflow =	1.56 cfs @	16.50 hrs,	Volume=	1.778 af,	Atten= 16%, Lag= 170.3 min
Discarded =	0.16 cfs @	16.50 hrs,	Volume=	0.447 af	
Primary =	1.39 cfs @	16.50 hrs,	Volume=	1.331 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 862.54' @ 16.50 hrs Surf.Area= 11,691 sf Storage= 15,484 cf

Plug-Flow detention time= 254.6 min calculated for 1.777 af (91% of inflow)
Center-of-Mass det. time= 161.8 min (1,408.7 - 1,246.9)

Volume	Invert	Avail.Storage	Storage Description
#1	861.00'	69,661 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
861.00	8,400	0	0
862.00	10,501	9,451	9,451
863.00	12,689	11,595	21,046
864.00	14,977	13,833	34,879
865.00	17,366	16,172	51,050
866.00	19,855	18,611	69,661

Device	Routing	Invert	Outlet Devices
#1	Discarded	861.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 855.00'
#2	Primary	862.00'	**18.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 862.00' / 861.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Primary	865.00'	**4.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.16 cfs @ 16.50 hrs HW=862.54' (Free Discharge)
└─**1=Exfiltration** (Controls 0.16 cfs)

Primary OutFlow Max=1.39 cfs @ 16.50 hrs HW=862.54' TW=0.00' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 1.39 cfs @ 3.58 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: Proposed West Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 0.14" for 1yr 24hr event
Inflow = 1.76 cfs @ 12.98 hrs, Volume= 0.599 af
Primary = 1.76 cfs @ 12.98 hrs, Volume= 0.599 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 13L: Total Proposed Combined

Inflow Area = 95.100 ac, 0.95% Impervious, Inflow Depth > 0.34" for 1yr 24hr event
Inflow = 2.75 cfs @ 12.92 hrs, Volume= 2.699 af
Primary = 2.75 cfs @ 12.92 hrs, Volume= 2.699 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 24L: Proposed South Drainage Total

Inflow Area = 86.500 ac, 1.04% Impervious, Inflow Depth > 0.35" for 1yr 24hr event
Inflow = 2.29 cfs @ 17.08 hrs, Volume= 2.526 af
Primary = 2.29 cfs @ 17.08 hrs, Volume= 2.526 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 25L: Proposed East Through Culvert Total

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 0.24" for 1yr 24hr event
Inflow = 1.07 cfs @ 12.35 hrs, Volume= 0.173 af
Primary = 1.07 cfs @ 12.35 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 6S: Proposed West Drain Area

Runoff = 16.92 cfs @ 12.14 hrs, Volume= 0.897 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	6.000	87	55% Impervious Residential
*	1.200	74	10% Impervious OL Area
*	0.200	98	Wet Basin
	7.400	85	Weighted Average
	7.200		97.30% Pervious Area
	0.200		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0800	0.31		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.9	550	0.0180	9.66	30.35	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
6.5	750	Total			

Summary for Subcatchment 7S: Proposed East Drain Area

Runoff = 40.59 cfs @ 12.18 hrs, Volume= 2.494 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	12.900	87	60% Impervious Residential
*	3.600	90	70% Impervious Residential
*	1.500	74	10% Impervious OL
*	0.700	98	Wet Basin
	18.700	87	Weighted Average
	18.000		96.26% Pervious Area
	0.700		3.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	150	0.0800	0.34		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
2.3	1,200	0.0150	8.82	27.71	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
10.0	1,450	Total			

Summary for Subcatchment 8S: Proposed Directly Offsite East Area

Runoff = 0.55 cfs @ 12.44 hrs, Volume= 0.077 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	2.400	62	10% Impervious Lightly Disturbed/Restored
*	0.100	90	70% Imp ROW area
	2.500	63	Weighted Average
	2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	200	0.0100	0.16		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.3	400	0.0200	2.87		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
23.6	600	Total			

Summary for Subcatchment 15S: Proposed Directly Offsite South Area

Runoff = 1.22 cfs @ 12.59 hrs, Volume= 0.202 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	6.200	62	10% Impervious Lightly Disturbed/Restored
*	0.200	82	40% Imp yard area
*	0.200	90	70% Imp ROW area
	6.600	63	Weighted Average
	6.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	300	0.0100	0.17		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
32.8	700	Total			

Summary for Subcatchment 20S: Ex West Offsite Drainage

Runoff = 0.97 cfs @ 12.49 hrs, Volume= 0.191 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 21S: Ex NW Offsite Drainage

Runoff = 3.20 cfs @ 12.70 hrs, Volume= 0.740 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet**
					Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow**
					Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel**
					Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 22S: Ex N Offsite Drainage

Runoff = 1.00 cfs @ 12.37 hrs, Volume= 0.114 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet**
					Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow**
					Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 27S: Ex NE Offsite Drainage

Runoff = 1.72 cfs @ 12.28 hrs, Volume= 0.187 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 28S: Pro West Bypass

Runoff = 1.38 cfs @ 12.14 hrs, Volume= 0.074 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 2yr 24hr Rainfall=2.84"

	Area (ac)	CN	Description
*	1.100	74	OL Area 10% Imp
	1.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC**

Summary for Reach 26R: Bypass Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 0.24" for 2yr 24hr event
Inflow = 4.22 cfs @ 12.66 hrs, Volume= 1.005 af
Outflow = 4.07 cfs @ 12.76 hrs, Volume= 1.005 af, Atten= 4%, Lag= 5.7 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Max. Velocity= 1.17 fps, Min. Travel Time= 7.8 min
Avg. Velocity = 0.49 fps, Avg. Travel Time= 18.9 min

Peak Storage= 1,916 cf @ 12.76 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 2.00' Flow Area= 36.0 sf, Capacity= 121.18 cfs

10.00' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 4.0 '/' Top Width= 26.00'
Length= 550.0' Slope= 0.0055 '/'
Inlet Invert= 869.00', Outlet Invert= 866.00'

‡

Summary for Pond 1P: West Street Crossing

Inflow Area = 61.200 ac, 0.33% Impervious, Inflow Depth > 0.32" for 2yr 24hr event
Inflow = 4.07 cfs @ 12.76 hrs, Volume= 1.651 af
Outflow = 4.02 cfs @ 12.82 hrs, Volume= 1.649 af, Atten= 1%, Lag= 3.8 min
Primary = 4.02 cfs @ 12.82 hrs, Volume= 1.649 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 866.52' @ 12.82 hrs Surf.Area= 2,938 sf Storage= 1,147 cf

Plug-Flow detention time= 9.1 min calculated for 1.648 af (100% of inflow)
Center-of-Mass det. time= 7.6 min (1,224.1 - 1,216.4)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	22,843 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	1,479	0	0
867.00	4,287	2,883	2,883
868.00	9,984	7,136	10,019
869.00	15,664	12,824	22,843

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**36.0" Round Culvert X 2.00** L= 110.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 865.00' S= 0.0091 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=4.02 cfs @ 12.82 hrs HW=866.52' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 4.02 cfs @ 2.45 fps)

Summary for Pond 9P: West Detention Basin

Inflow Area = 10.300 ac, 1.94% Impervious, Inflow Depth = 1.18" for 2yr 24hr event
Inflow = 17.15 cfs @ 12.14 hrs, Volume= 1.011 af
Outflow = 0.50 cfs @ 15.21 hrs, Volume= 0.950 af, Atten= 97%, Lag= 184.5 min
Primary = 0.50 cfs @ 15.21 hrs, Volume= 0.950 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 868.58' @ 15.21 hrs Surf.Area= 22,045 sf Storage= 29,569 cf

Plug-Flow detention time= 742.3 min calculated for 0.950 af (94% of inflow)
Center-of-Mass det. time= 711.9 min (1,538.3 - 826.4)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	95,625 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	15,467	0	0
868.00	19,599	17,533	17,533
869.00	23,831	21,715	39,248
870.00	28,163	25,997	65,245
871.00	32,596	30,380	95,625

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**18.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 866.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	867.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	869.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	869.75'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.50 cfs @ 15.21 hrs HW=868.58' TW=867.12' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.50 cfs of 9.48 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.50 cfs @ 5.72 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 10P: West Infltration Basin

Inflow Area =	10.300 ac,	1.94% Impervious,	Inflow Depth >	1.11" for 2yr 24hr event
Inflow =	0.50 cfs @	15.21 hrs, Volume=	0.950 af	
Outflow =	0.47 cfs @	18.20 hrs, Volume=	0.847 af, Atten= 6%, Lag= 179.1 min	
Discarded =	0.07 cfs @	18.20 hrs, Volume=	0.201 af	
Primary =	0.40 cfs @	18.20 hrs, Volume=	0.645 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 867.30' @ 18.20 hrs Surf.Area= 5,117 sf Storage= 5,645 cf

Plug-Flow detention time= 250.6 min calculated for 0.846 af (89% of inflow)
Center-of-Mass det. time= 129.0 min (1,667.3 - 1,538.3)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	34,052 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	3,624	0	0
867.00	4,745	4,185	4,185
868.00	6,000	5,373	9,557
869.00	7,386	6,693	16,250
870.00	8,876	8,131	24,381
871.00	10,466	9,671	34,052

Device	Routing	Invert	Outlet Devices
#1	Discarded	866.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 860.00'
#2	Primary	867.00'	**15.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Primary	870.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.07 cfs @ 18.20 hrs HW=867.30' (Free Discharge)
└─**1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=0.40 cfs @ 18.20 hrs HW=867.30' TW=866.27' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 0.40 cfs @ 2.71 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 11P: East Detention Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth =	1.60"	for 2yr 24hr event
Inflow =	40.59 cfs @	12.18 hrs,	Volume=	2.494 af	
Outflow =	2.11 cfs @	13.68 hrs,	Volume=	2.409 af,	Atten= 95%, Lag= 90.3 min
Primary =	2.11 cfs @	13.68 hrs,	Volume=	2.409 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 863.90' @ 13.68 hrs Surf.Area= 40,085 sf Storage= 67,574 cf

Plug-Flow detention time= 476.8 min calculated for 2.407 af (97% of inflow)
Center-of-Mass det. time= 459.0 min (1,274.0 - 815.0)

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	162,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
862.00	30,928	0	0
863.00	35,693	33,311	33,311
864.00	40,550	38,122	71,432
865.00	45,509	43,030	114,462
866.00	50,568	48,039	162,500

Device	Routing	Invert	Outlet Devices
#1	Primary	861.00'	**24.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 861.00' / 861.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	862.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	864.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4	Primary	864.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.11 cfs @ 13.68 hrs HW=863.90' TW=862.15' (Dynamic Tailwater)
- **1=Culvert** (Passes 2.11 cfs of 16.45 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 2.11 cfs @ 6.03 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 12P: East Infltration Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth >	1.55"	for 2yr 24hr event
Inflow =	2.11 cfs @	13.68 hrs,	Volume=	2.409 af	
Outflow =	1.82 cfs @	16.32 hrs,	Volume=	2.216 af,	Atten= 14%, Lag= 158.3 min
Discarded =	0.17 cfs @	16.32 hrs,	Volume=	0.458 af	
Primary =	1.65 cfs @	16.32 hrs,	Volume=	1.759 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 862.60' @ 16.32 hrs Surf.Area= 11,811 sf Storage= 16,128 cf

Plug-Flow detention time= 219.2 min calculated for 2.215 af (92% of inflow)
Center-of-Mass det. time= 135.0 min (1,409.0 - 1,274.0)

Volume	Invert	Avail.Storage	Storage Description
#1	861.00'	69,661 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
861.00	8,400	0	0
862.00	10,501	9,451	9,451
863.00	12,689	11,595	21,046
864.00	14,977	13,833	34,879
865.00	17,366	16,172	51,050
866.00	19,855	18,611	69,661

Device	Routing	Invert	Outlet Devices
#1	Discarded	861.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 855.00'
#2	Primary	862.00'	**18.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 862.00' / 861.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Primary	865.00'	**4.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.17 cfs @ 16.32 hrs HW=862.60' (Free Discharge)
└─**1=Exfiltration** (Controls 0.17 cfs)

Primary OutFlow Max=1.65 cfs @ 16.32 hrs HW=862.60' TW=0.00' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 1.65 cfs @ 3.72 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: Proposed West Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 0.24" for 2yr 24hr event
Inflow = 4.07 cfs @ 12.76 hrs, Volume= 1.005 af
Primary = 4.07 cfs @ 12.76 hrs, Volume= 1.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 13L: Total Proposed Combined

Inflow Area = 95.100 ac, 0.95% Impervious, Inflow Depth > 0.49" for 2yr 24hr event
Inflow = 6.00 cfs @ 12.73 hrs, Volume= 3.874 af
Primary = 6.00 cfs @ 12.73 hrs, Volume= 3.874 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 24L: Proposed South Drainage Total

Inflow Area = 86.500 ac, 1.04% Impervious, Inflow Depth > 0.50" for 2yr 24hr event
Inflow = 5.03 cfs @ 12.78 hrs, Volume= 3.610 af
Primary = 5.03 cfs @ 12.78 hrs, Volume= 3.610 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 25L: Proposed East Through Culvert Total

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 0.37" for 2yr 24hr event
Inflow = 2.09 cfs @ 12.30 hrs, Volume= 0.264 af
Primary = 2.09 cfs @ 12.30 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 6S: Proposed West Drain Area

Runoff = 29.12 cfs @ 12.14 hrs, Volume= 1.565 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	6.000	87	55% Impervious Residential
*	1.200	74	10% Impervious OL Area
*	0.200	98	Wet Basin
	7.400	85	Weighted Average
	7.200		97.30% Pervious Area
	0.200		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0800	0.31		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.9	550	0.0180	9.66	30.35	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
6.5	750	Total			

Summary for Subcatchment 7S: Proposed East Drain Area

Runoff = 67.99 cfs @ 12.17 hrs, Volume= 4.238 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	12.900	87	60% Impervious Residential
*	3.600	90	70% Impervious Residential
*	1.500	74	10% Impervious OL
*	0.700	98	Wet Basin
	18.700	87	Weighted Average
	18.000		96.26% Pervious Area
	0.700		3.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	150	0.0800	0.34		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
2.3	1,200	0.0150	8.82	27.71	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
10.0	1,450	Total			

Summary for Subcatchment 8S: Proposed Directly Offsite East Area

Runoff = 1.94 cfs @ 12.38 hrs, Volume= 0.201 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	2.400	62	10% Impervious Lightly Disturbed/Restored
*	0.100	90	70% Imp ROW area
	2.500	63	Weighted Average
	2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	200	0.0100	0.16		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.3	400	0.0200	2.87		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
23.6	600	Total			

Summary for Subcatchment 15S: Proposed Directly Offsite South Area

Runoff = 4.24 cfs @ 12.51 hrs, Volume= 0.532 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	6.200	62	10% Impervious Lightly Disturbed/Restored
*	0.200	82	40% Imp yard area
*	0.200	90	70% Imp ROW area
	6.600	63	Weighted Average
	6.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	300	0.0100	0.17		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
32.8	700	Total			

Summary for Subcatchment 20S: Ex West Offsite Drainage

Runoff = 5.42 cfs @ 12.36 hrs, Volume= 0.600 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 21S: Ex NW Offsite Drainage

Runoff = 16.34 cfs @ 12.56 hrs, Volume= 2.330 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 22S: Ex N Offsite Drainage

Runoff = 2.96 cfs @ 12.34 hrs, Volume= 0.276 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 27S: Ex NE Offsite Drainage

Runoff = 6.22 cfs @ 12.24 hrs, Volume= 0.492 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 28S: Pro West Bypass

Runoff = 2.94 cfs @ 12.13 hrs, Volume= 0.152 af, Depth= 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 10yr 24hr Rainfall=4.09"

	Area (ac)	CN	Description
*	1.100	74	OL Area 10% Imp
	1.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC**

Summary for Reach 26R: Bypass Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10yr 24hr event
Inflow = 20.89 cfs @ 12.52 hrs, Volume= 3.083 af
Outflow = 20.54 cfs @ 12.58 hrs, Volume= 3.083 af, Atten= 2%, Lag= 3.3 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Max. Velocity= 2.00 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 14.3 min

Peak Storage= 5,640 cf @ 12.58 hrs
Average Depth at Peak Storage= 0.78'
Bank-Full Depth= 2.00' Flow Area= 36.0 sf, Capacity= 121.18 cfs

10.00' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 4.0 '/' Top Width= 26.00'
Length= 550.0' Slope= 0.0055 '/'
Inlet Invert= 869.00', Outlet Invert= 866.00'

‡

Summary for Pond 1P: West Street Crossing

Inflow Area = 61.200 ac, 0.33% Impervious, Inflow Depth > 0.88" for 10yr 24hr event
Inflow = 20.54 cfs @ 12.58 hrs, Volume= 4.473 af
Outflow = 20.19 cfs @ 12.63 hrs, Volume= 4.469 af, Atten= 2%, Lag= 3.3 min
Primary = 20.19 cfs @ 12.63 hrs, Volume= 4.469 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 867.23' @ 12.63 hrs Surf.Area= 5,580 sf Storage= 4,002 cf

Plug-Flow detention time= 5.7 min calculated for 4.466 af (100% of inflow)
Center-of-Mass det. time= 4.3 min (1,069.0 - 1,064.7)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	22,843 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	1,479	0	0
867.00	4,287	2,883	2,883
868.00	9,984	7,136	10,019
869.00	15,664	12,824	22,843

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**36.0" Round Culvert X 2.00** L= 110.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 865.00' S= 0.0091 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=20.17 cfs @ 12.63 hrs HW=867.23' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 20.17 cfs @ 5.49 fps)

Summary for Pond 9P: West Detention Basin

Inflow Area = 10.300 ac, 1.94% Impervious, Inflow Depth = 2.14" for 10yr 24hr event
Inflow = 30.36 cfs @ 12.14 hrs, Volume= 1.841 af
Outflow = 4.06 cfs @ 12.77 hrs, Volume= 1.718 af, Atten= 87%, Lag= 37.8 min
Primary = 4.06 cfs @ 12.77 hrs, Volume= 1.718 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 869.19' @ 12.78 hrs Surf.Area= 24,665 sf Storage= 43,914 cf

Plug-Flow detention time= 616.5 min calculated for 1.718 af (93% of inflow)
Center-of-Mass det. time= 583.2 min (1,397.0 - 813.8)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	95,625 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	15,467	0	0
868.00	19,599	17,533	17,533
869.00	23,831	21,715	39,248
870.00	28,163	25,997	65,245
871.00	32,596	30,380	95,625

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**18.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 866.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	867.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	869.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	869.75'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.06 cfs @ 12.77 hrs HW=869.19' TW=867.17' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.06 cfs of 11.87 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.60 cfs @ 6.84 fps)
  - **3=Orifice/Grate** (Weir Controls 3.47 cfs @ 1.43 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 10P: West Infltration Basin

Inflow Area =	10.300 ac,	1.94% Impervious,	Inflow Depth >	2.00" for 10yr 24hr event
Inflow =	4.06 cfs @	12.77 hrs, Volume=	1.718 af	
Outflow =	2.86 cfs @	13.45 hrs, Volume=	1.604 af, Atten= 30%, Lag= 41.1 min	
Discarded =	0.08 cfs @	13.45 hrs, Volume=	0.214 af	
Primary =	2.78 cfs @	13.45 hrs, Volume=	1.390 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 867.88' @ 13.45 hrs Surf.Area= 5,851 sf Storage= 8,855 cf

Plug-Flow detention time= 159.8 min calculated for 1.603 af (93% of inflow)
Center-of-Mass det. time= 68.8 min (1,465.8 - 1,397.0)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	34,052 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	3,624	0	0
867.00	4,745	4,185	4,185
868.00	6,000	5,373	9,557
869.00	7,386	6,693	16,250
870.00	8,876	8,131	24,381
871.00	10,466	9,671	34,052

Device	Routing	Invert	Outlet Devices
#1	Discarded	866.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 860.00'
#2	Primary	867.00'	**15.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Primary	870.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.08 cfs @ 13.45 hrs HW=867.88' (Free Discharge)
└─**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=2.78 cfs @ 13.45 hrs HW=867.88' TW=866.87' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 2.78 cfs @ 4.21 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 11P: East Detention Basin

Inflow Area = 18.700 ac, 3.74% Impervious, Inflow Depth = 2.72" for 10yr 24hr event
Inflow = 67.99 cfs @ 12.17 hrs, Volume= 4.238 af
Outflow = 16.76 cfs @ 12.49 hrs, Volume= 4.142 af, Atten= 75%, Lag= 18.8 min
Primary = 16.76 cfs @ 12.49 hrs, Volume= 4.142 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 864.50' @ 12.50 hrs Surf.Area= 43,015 sf Storage= 92,201 cf

Plug-Flow detention time= 360.7 min calculated for 4.139 af (98% of inflow)
Center-of-Mass det. time= 348.4 min (1,150.9 - 802.5)

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	162,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
862.00	30,928	0	0
863.00	35,693	33,311	33,311
864.00	40,550	38,122	71,432
865.00	45,509	43,030	114,462
866.00	50,568	48,039	162,500

Device	Routing	Invert	Outlet Devices
#1	Primary	861.00'	**24.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 861.00' / 861.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	862.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	864.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4	Primary	864.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=16.75 cfs @ 12.49 hrs HW=864.50' TW=862.49' (Dynamic Tailwater)
- **1=Culvert** (Passes 16.75 cfs of 21.17 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 2.38 cfs @ 6.81 fps)
  - **3=Orifice/Grate** (Weir Controls 14.37 cfs @ 2.30 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 12P: East Infltration Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth > 2.66"	for 10yr 24hr event
Inflow =	16.76 cfs @	12.49 hrs, Volume=	4.142 af	
Outflow =	8.24 cfs @	13.21 hrs, Volume=	3.934 af,	Atten= 51%, Lag= 43.4 min
Discarded =	0.22 cfs @	13.21 hrs, Volume=	0.489 af	
Primary =	8.02 cfs @	13.21 hrs, Volume=	3.445 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 863.64' @ 13.21 hrs Surf.Area= 14,163 sf Storage= 29,692 cf

Plug-Flow detention time= 147.0 min calculated for 3.934 af (95% of inflow)
Center-of-Mass det. time= 85.2 min (1,236.1 - 1,150.9)

Volume	Invert	Avail.Storage	Storage Description
#1	861.00'	69,661 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
861.00	8,400	0	0
862.00	10,501	9,451	9,451
863.00	12,689	11,595	21,046
864.00	14,977	13,833	34,879
865.00	17,366	16,172	51,050
866.00	19,855	18,611	69,661

Device	Routing	Invert	Outlet Devices
#1	Discarded	861.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 855.00'
#2	Primary	862.00'	**18.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 862.00' / 861.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Primary	865.00'	**4.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.22 cfs @ 13.21 hrs HW=863.64' (Free Discharge)
└─**1=Exfiltration** (Controls 0.22 cfs)

Primary OutFlow Max=8.02 cfs @ 13.21 hrs HW=863.64' TW=0.00' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 8.02 cfs @ 5.16 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: Proposed West Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10yr 24hr event
Inflow = 20.54 cfs @ 12.58 hrs, Volume= 3.083 af
Primary = 20.54 cfs @ 12.58 hrs, Volume= 3.083 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 13L: Total Proposed Combined

Inflow Area = 95.100 ac, 0.95% Impervious, Inflow Depth > 1.15" for 10yr 24hr event
Inflow = 31.79 cfs @ 12.65 hrs, Volume= 9.139 af
Primary = 31.79 cfs @ 12.65 hrs, Volume= 9.139 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 24L: Proposed South Drainage Total

Inflow Area = 86.500 ac, 1.04% Impervious, Inflow Depth > 1.17" for 10yr 24hr event
Inflow = 28.75 cfs @ 12.68 hrs, Volume= 8.446 af
Primary = 28.75 cfs @ 12.68 hrs, Volume= 8.446 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 25L: Proposed East Through Culvert Total

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 0.97" for 10yr 24hr event
Inflow = 7.66 cfs @ 12.26 hrs, Volume= 0.693 af
Primary = 7.66 cfs @ 12.26 hrs, Volume= 0.693 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 6S: Proposed West Drain Area

Runoff = 38.28 cfs @ 12.13 hrs, Volume= 2.083 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	6.000	87	55% Impervious Residential
*	1.200	74	10% Impervious OL Area
*	0.200	98	Wet Basin
	7.400	85	Weighted Average
	7.200		97.30% Pervious Area
	0.200		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0800	0.31		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.9	550	0.0180	9.66	30.35	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
6.5	750	Total			

Summary for Subcatchment 7S: Proposed East Drain Area

Runoff = 88.35 cfs @ 12.17 hrs, Volume= 5.574 af, Depth= 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	12.900	87	60% Impervious Residential
*	3.600	90	70% Impervious Residential
*	1.500	74	10% Impervious OL
*	0.700	98	Wet Basin
	18.700	87	Weighted Average
	18.000		96.26% Pervious Area
	0.700		3.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	150	0.0800	0.34		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
2.3	1,200	0.0150	8.82	27.71	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
10.0	1,450	Total			

Summary for Subcatchment 8S: Proposed Directly Offsite East Area

Runoff = 3.24 cfs @ 12.37 hrs, Volume= 0.316 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	2.400	62	10% Impervious Lightly Disturbed/Restored
*	0.100	90	70% Imp ROW area
	2.500	63	Weighted Average
	2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	200	0.0100	0.16		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.3	400	0.0200	2.87		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
23.6	600	Total			

Summary for Subcatchment 15S: Proposed Directly Offsite South Area

Runoff = 7.11 cfs @ 12.50 hrs, Volume= 0.833 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	6.200	62	10% Impervious Lightly Disturbed/Restored
*	0.200	82	40% Imp yard area
*	0.200	90	70% Imp ROW area
	6.600	63	Weighted Average
	6.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	300	0.0100	0.17		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
32.8	700	Total			

Summary for Subcatchment 20S: Ex West Offsite Drainage

Runoff = 10.27 cfs @ 12.34 hrs, Volume= 0.998 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 21S: Ex NW Offsite Drainage

Runoff = 30.61 cfs @ 12.53 hrs, Volume= 3.875 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 22S: Ex N Offsite Drainage

Runoff = 4.70 cfs @ 12.33 hrs, Volume= 0.419 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 27S: Ex NE Offsite Drainage

Runoff = 10.39 cfs @ 12.23 hrs, Volume= 0.770 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 28S: Pro West Bypass

Runoff = 4.21 cfs @ 12.13 hrs, Volume= 0.217 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 25yr 24hr Rainfall=5.01"

	Area (ac)	CN	Description
*	1.100	74	OL Area 10% Imp
	1.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC**

Summary for Reach 26R: Bypass Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 1.20" for 25yr 24hr event
Inflow = 39.04 cfs @ 12.48 hrs, Volume= 5.091 af
Outflow = 38.53 cfs @ 12.53 hrs, Volume= 5.091 af, Atten= 1%, Lag= 3.3 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Max. Velocity= 2.43 fps, Min. Travel Time= 3.8 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 12.8 min

Peak Storage= 8,733 cf @ 12.53 hrs
Average Depth at Peak Storage= 1.10'
Bank-Full Depth= 2.00' Flow Area= 36.0 sf, Capacity= 121.18 cfs

10.00' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 4.0 '/' Top Width= 26.00'
Length= 550.0' Slope= 0.0055 '/'
Inlet Invert= 869.00', Outlet Invert= 866.00'

‡

Summary for Pond 1P: West Street Crossing

Inflow Area = 61.200 ac, 0.33% Impervious, Inflow Depth > 1.40" for 25yr 24hr event
Inflow = 42.31 cfs @ 12.56 hrs, Volume= 7.121 af
Outflow = 41.13 cfs @ 12.64 hrs, Volume= 7.118 af, Atten= 3%, Lag= 4.3 min
Primary = 41.13 cfs @ 12.64 hrs, Volume= 7.118 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 867.87' @ 12.64 hrs Surf.Area= 9,241 sf Storage= 8,765 cf

Plug-Flow detention time= 4.9 min calculated for 7.113 af (100% of inflow)
Center-of-Mass det. time= 3.9 min (994.4 - 990.5)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	22,843 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	1,479	0	0
867.00	4,287	2,883	2,883
868.00	9,984	7,136	10,019
869.00	15,664	12,824	22,843

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**36.0" Round Culvert X 2.00** L= 110.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 865.00' S= 0.0091 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=41.11 cfs @ 12.64 hrs HW=867.87' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 41.11 cfs @ 6.34 fps)

Summary for Pond 9P: West Detention Basin

Inflow Area = 10.300 ac, 1.94% Impervious, Inflow Depth = 2.91" for 25yr 24hr event
Inflow = 40.49 cfs @ 12.14 hrs, Volume= 2.502 af
Outflow = 11.59 cfs @ 12.38 hrs, Volume= 2.367 af, Atten= 71%, Lag= 14.5 min
Primary = 11.59 cfs @ 12.38 hrs, Volume= 2.367 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 869.44' @ 12.53 hrs Surf.Area= 25,744 sf Storage= 50,194 cf

Plug-Flow detention time= 467.6 min calculated for 2.367 af (95% of inflow)
Center-of-Mass det. time= 439.8 min (1,247.2 - 807.3)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	95,625 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	15,467	0	0
868.00	19,599	17,533	17,533
869.00	23,831	21,715	39,248
870.00	28,163	25,997	65,245
871.00	32,596	30,380	95,625

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**18.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 866.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	867.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	869.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	869.75'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=11.66 cfs @ 12.38 hrs HW=869.42' TW=867.48' (Dynamic Tailwater)
- **1=Culvert** (Passes 11.66 cfs of 11.85 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.59 cfs @ 6.71 fps)
  - **3=Orifice/Grate** (Weir Controls 11.08 cfs @ 2.11 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 10P: West Infltration Basin

Inflow Area =	10.300 ac,	1.94% Impervious,	Inflow Depth > 2.76"	for 25yr 24hr event
Inflow =	11.59 cfs @	12.38 hrs, Volume=	2.367 af	
Outflow =	6.21 cfs @	13.11 hrs, Volume=	2.252 af, Atten= 46%, Lag= 44.1 min	
Discarded =	0.11 cfs @	13.11 hrs, Volume=	0.222 af	
Primary =	6.10 cfs @	13.11 hrs, Volume=	2.030 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 868.77' @ 13.11 hrs Surf.Area= 7,071 sf Storage= 14,605 cf

Plug-Flow detention time= 122.7 min calculated for 2.252 af (95% of inflow)
Center-of-Mass det. time= 49.3 min (1,296.5 - 1,247.2)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	34,052 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	3,624	0	0
867.00	4,745	4,185	4,185
868.00	6,000	5,373	9,557
869.00	7,386	6,693	16,250
870.00	8,876	8,131	24,381
871.00	10,466	9,671	34,052

Device	Routing	Invert	Outlet Devices
#1	Discarded	866.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 860.00'
#2	Primary	867.00'	**15.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Primary	870.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.11 cfs @ 13.11 hrs HW=868.77' (Free Discharge)
└─**1=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=6.10 cfs @ 13.11 hrs HW=868.77' TW=867.38' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 6.10 cfs @ 4.97 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 11P: East Detention Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth =	3.58"	for 25yr 24hr event
Inflow =	88.35 cfs @	12.17 hrs,	Volume=	5.574 af	
Outflow =	25.39 cfs @	12.36 hrs,	Volume=	5.472 af,	Atten= 71%, Lag= 11.1 min
Primary =	25.39 cfs @	12.36 hrs,	Volume=	5.472 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 864.97' @ 12.47 hrs Surf.Area= 45,376 sf Storage= 113,247 cf

Plug-Flow detention time= 308.2 min calculated for 5.472 af (98% of inflow)
Center-of-Mass det. time= 297.5 min (1,093.5 - 796.0)

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	162,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
862.00	30,928	0	0
863.00	35,693	33,311	33,311
864.00	40,550	38,122	71,432
865.00	45,509	43,030	114,462
866.00	50,568	48,039	162,500

Device	Routing	Invert	Outlet Devices
#1	Primary	861.00'	**24.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 861.00' / 861.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	862.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	864.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4	Primary	864.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=25.38 cfs @ 12.36 hrs HW=864.93' TW=862.91' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 21.53 cfs @ 6.85 fps)
  - **2=Orifice/Grate** (Passes < 2.39 cfs potential flow)
  - **3=Orifice/Grate** (Passes < 36.93 cfs potential flow)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 3.84 cfs @ 1.06 fps)

Summary for Pond 12P: East Infltration Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth >	3.51"	for 25yr 24hr event
Inflow =	25.39 cfs @	12.36 hrs,	Volume=	5.472 af	
Outflow =	10.85 cfs @	13.10 hrs,	Volume=	5.259 af,	Atten= 57%, Lag= 44.7 min
Discarded =	0.26 cfs @	13.10 hrs,	Volume=	0.511 af	
Primary =	10.59 cfs @	13.10 hrs,	Volume=	4.748 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 864.35' @ 13.10 hrs Surf.Area= 15,806 sf Storage= 40,219 cf

Plug-Flow detention time= 122.9 min calculated for 5.255 af (96% of inflow)
Center-of-Mass det. time= 72.3 min (1,165.8 - 1,093.5)

Volume	Invert	Avail.Storage	Storage Description
#1	861.00'	69,661 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
861.00	8,400	0	0
862.00	10,501	9,451	9,451
863.00	12,689	11,595	21,046
864.00	14,977	13,833	34,879
865.00	17,366	16,172	51,050
866.00	19,855	18,611	69,661

Device	Routing	Invert	Outlet Devices
#1	Discarded	861.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 855.00'
#2	Primary	862.00'	**18.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 862.00' / 861.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Primary	865.00'	**4.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.26 cfs @ 13.10 hrs HW=864.35' (Free Discharge)
└─**1=Exfiltration** (Controls 0.26 cfs)

Primary OutFlow Max=10.59 cfs @ 13.10 hrs HW=864.35' TW=0.00' (Dynamic Tailwater)
├─**2=Culvert** (Barrel Controls 10.59 cfs @ 5.99 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link 1L: Proposed West Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 1.20" for 25yr 24hr event
Inflow = 38.53 cfs @ 12.53 hrs, Volume= 5.091 af
Primary = 38.53 cfs @ 12.53 hrs, Volume= 5.091 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 13L: Total Proposed Combined

Inflow Area = 95.100 ac, 0.95% Impervious, Inflow Depth > 1.74" for 25yr 24hr event
Inflow = 62.21 cfs @ 12.60 hrs, Volume= 13.785 af
Primary = 62.21 cfs @ 12.60 hrs, Volume= 13.785 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 24L: Proposed South Drainage Total

Inflow Area = 86.500 ac, 1.04% Impervious, Inflow Depth > 1.76" for 25yr 24hr event
Inflow = 56.78 cfs @ 12.62 hrs, Volume= 12.699 af
Primary = 56.78 cfs @ 12.62 hrs, Volume= 12.699 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 25L: Proposed East Through Culvert Total

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 1.52" for 25yr 24hr event
Inflow = 12.86 cfs @ 12.25 hrs, Volume= 1.086 af
Primary = 12.86 cfs @ 12.25 hrs, Volume= 1.086 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Subcatchment 6S: Proposed West Drain Area

Runoff = 54.75 cfs @ 12.13 hrs, Volume= 3.039 af, Depth= 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	6.000	87	55% Impervious Residential
*	1.200	74	10% Impervious OL Area
*	0.200	98	Wet Basin
	7.400	85	Weighted Average
	7.200		97.30% Pervious Area
	0.200		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0800	0.31		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
0.9	550	0.0180	9.66	30.35	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
6.5	750	Total			

Summary for Subcatchment 7S: Proposed East Drain Area

Runoff = 124.79 cfs @ 12.17 hrs, Volume= 8.027 af, Depth= 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	12.900	87	60% Impervious Residential
*	3.600	90	70% Impervious Residential
*	1.500	74	10% Impervious OL
*	0.700	98	Wet Basin
	18.700	87	Weighted Average
	18.000		96.26% Pervious Area
	0.700		3.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	150	0.0800	0.34		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
0.3	100	0.0600	4.97		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
2.3	1,200	0.0150	8.82	27.71	**Pipe Channel, Pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
10.0	1,450	Total			

Summary for Subcatchment 8S: Proposed Directly Offsite East Area

Runoff = 5.94 cfs @ 12.35 hrs, Volume= 0.552 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	2.400	62	10% Impervious Lightly Disturbed/Restored
*	0.100	90	70% Imp ROW area
	2.500	63	Weighted Average
	2.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.3	200	0.0100	0.16		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.3	400	0.0200	2.87		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
23.6	600	Total			

Summary for Subcatchment 15S: Proposed Directly Offsite South Area

Runoff = 13.05 cfs @ 12.48 hrs, Volume= 1.457 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	6.200	62	10% Impervious Lightly Disturbed/Restored
*	0.200	82	40% Imp yard area
*	0.200	90	70% Imp ROW area
	6.600	63	Weighted Average
	6.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	300	0.0100	0.17		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
3.3	400	0.0100	2.03		**Shallow Concentrated Flow, Shallow** Paved Kv= 20.3 fps
32.8	700	Total			

Summary for Subcatchment 20S: Ex West Offsite Drainage

Runoff = 20.81 cfs @ 12.32 hrs, Volume= 1.854 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	10.200	58	Type B Soils
	10.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	300	0.0600	0.35		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.4	400	0.0350	2.81		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
3.9	1,100	0.0100	4.71	94.24	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.040
20.7	1,800	Total			

Summary for Subcatchment 21S: Ex NW Offsite Drainage

Runoff = 61.96 cfs @ 12.50 hrs, Volume= 7.198 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	39.300	58	Type B Soils
*	0.300	71	Type C Soils
	39.600	58	Weighted Average
	39.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	300	0.0167	0.21		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
8.3	1,000	0.0180	2.01		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
1.0	1,100	0.0100	18.85	376.98	**Channel Flow, Channel** Area= 20.0 sf Perim= 14.0' r= 1.43' n= 0.010
33.3	2,400	Total			

Summary for Subcatchment 22S: Ex N Offsite Drainage

Runoff = 8.21 cfs @ 12.32 hrs, Volume= 0.710 af, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	1.200	58	Type B Soils
*	1.700	71	Type C Soils
	2.900	66	Weighted Average
	2.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	300	0.0267	0.25		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
1.1	200	0.0400	3.00		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
21.0	500	Total			

Summary for Subcatchment 27S: Ex NE Offsite Drainage

Runoff = 18.89 cfs @ 12.23 hrs, Volume= 1.347 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	3.600	58	Type B Soils
*	2.500	71	Type C Soils
	6.100	63	Weighted Average
	6.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	300	0.1000	0.43		**Sheet Flow, Sheet** Range n= 0.130 P2= 2.84"
2.2	200	0.0100	1.50		**Shallow Concentrated Flow, Shallow** Grassed Waterway Kv= 15.0 fps
13.9	500	Total			

Summary for Subcatchment 28S: Pro West Bypass

Runoff = 6.60 cfs @ 12.13 hrs, Volume= 0.343 af, Depth= 3.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs
MSE 24-hr 4 100yr 24hr Rainfall=6.66"

	Area (ac)	CN	Description
*	1.100	74	OL Area 10% Imp
	1.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TC**

Summary for Reach 26R: Bypass Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 2.21" for 100yr 24hr event
Inflow = 78.97 cfs @ 12.45 hrs, Volume= 9.395 af
Outflow = 78.16 cfs @ 12.49 hrs, Volume= 9.395 af, Atten= 1%, Lag= 2.4 min

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Max. Velocity= 2.98 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 11.2 min

Peak Storage= 14,431 cf @ 12.49 hrs
Average Depth at Peak Storage= 1.60'
Bank-Full Depth= 2.00' Flow Area= 36.0 sf, Capacity= 121.18 cfs

10.00' x 2.00' deep channel, n= 0.040
Side Slope Z-value= 4.0 '/' Top Width= 26.00'
Length= 550.0' Slope= 0.0055 '/'
Inlet Invert= 869.00', Outlet Invert= 866.00'

‡

Summary for Pond 1P: West Street Crossing

Inflow Area = 61.200 ac, 0.33% Impervious, Inflow Depth > 2.48" for 100yr 24hr event
Inflow = 84.32 cfs @ 12.49 hrs, Volume= 12.645 af
Outflow = 79.60 cfs @ 12.60 hrs, Volume= 12.641 af, Atten= 6%, Lag= 6.5 min
Primary = 79.60 cfs @ 12.60 hrs, Volume= 12.641 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 868.91' @ 12.60 hrs Surf.Area= 15,142 sf Storage= 21,427 cf

Plug-Flow detention time= 4.4 min calculated for 12.633 af (100% of inflow)
Center-of-Mass det. time= 3.9 min (937.4 - 933.5)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	22,843 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	1,479	0	0
867.00	4,287	2,883	2,883
868.00	9,984	7,136	10,019
869.00	15,664	12,824	22,843

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**36.0" Round Culvert X 2.00** L= 110.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 865.00' S= 0.0091 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=79.55 cfs @ 12.60 hrs HW=868.91' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 79.55 cfs @ 7.23 fps)

Summary for Pond 9P: West Detention Basin

Inflow Area = 10.300 ac, 1.94% Impervious, Inflow Depth = 4.37" for 100yr 24hr event
Inflow = 58.97 cfs @ 12.14 hrs, Volume= 3.749 af
Outflow = 22.22 cfs @ 12.31 hrs, Volume= 3.603 af, Atten= 62%, Lag= 10.5 min
Primary = 22.22 cfs @ 12.31 hrs, Volume= 3.603 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 870.12' @ 12.79 hrs Surf.Area= 28,716 sf Storage= 68,795 cf

Plug-Flow detention time= 338.2 min calculated for 3.603 af (96% of inflow)
Center-of-Mass det. time= 317.1 min (1,115.9 - 798.8)

Volume	Invert	Avail.Storage	Storage Description
#1	867.00'	95,625 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
867.00	15,467	0	0
868.00	19,599	17,533	17,533
869.00	23,831	21,715	39,248
870.00	28,163	25,997	65,245
871.00	32,596	30,380	95,625

Device	Routing	Invert	Outlet Devices
#1	Primary	866.00'	**18.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 866.00' / 866.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	867.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	869.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	869.75'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=22.22 cfs @ 12.31 hrs HW=870.05' TW=868.70' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 9.89 cfs @ 5.60 fps)
  - **2=Orifice/Grate** (Passes < 0.49 cfs potential flow)
  - **3=Orifice/Grate** (Passes < 44.09 cfs potential flow)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 12.33 cfs @ 1.38 fps)

Summary for Pond 10P: West Infltration Basin

Inflow Area =	10.300 ac,	1.94% Impervious,	Inflow Depth >	4.20" for 100yr 24hr event
Inflow =	22.22 cfs @	12.31 hrs,	Volume=	3.603 af
Outflow =	9.09 cfs @	13.33 hrs,	Volume=	3.488 af, Atten= 59%, Lag= 61.1 min
Discarded =	0.15 cfs @	12.82 hrs,	Volume=	0.238 af
Primary =	8.94 cfs @	13.33 hrs,	Volume=	3.249 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 870.10' @ 12.82 hrs Surf.Area= 9,034 sf Storage= 25,273 cf

Plug-Flow detention time= 93.5 min calculated for 3.488 af (97% of inflow)
Center-of-Mass det. time= 41.2 min (1,157.1 - 1,115.9)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	34,052 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	3,624	0	0
867.00	4,745	4,185	4,185
868.00	6,000	5,373	9,557
869.00	7,386	6,693	16,250
870.00	8,876	8,131	24,381
871.00	10,466	9,671	34,052

Device	Routing	Invert	Outlet Devices
#1	Discarded	866.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 860.00'
#2	Primary	867.00'	**15.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 867.00' / 866.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Primary	870.00'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.15 cfs @ 12.82 hrs HW=870.10' (Free Discharge)
└─**1=Exfiltration** (Controls 0.15 cfs)

Primary OutFlow Max=8.94 cfs @ 13.33 hrs HW=869.95' TW=867.66' (Dynamic Tailwater)
├─**2=Culvert** (Inlet Controls 8.94 cfs @ 7.28 fps)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 11P: East Detention Basin

Inflow Area = 18.700 ac, 3.74% Impervious, Inflow Depth = 5.15" for 100yr 24hr event
Inflow = 124.79 cfs @ 12.17 hrs, Volume= 8.027 af
Outflow = 58.85 cfs @ 12.29 hrs, Volume= 7.919 af, Atten= 53%, Lag= 7.3 min
Primary = 58.85 cfs @ 12.29 hrs, Volume= 7.919 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 865.63' @ 12.62 hrs Surf.Area= 48,684 sf Storage= 144,018 cf

Plug-Flow detention time= 253.7 min calculated for 7.919 af (99% of inflow)
Center-of-Mass det. time= 245.5 min (1,033.0 - 787.5)

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	162,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
862.00	30,928	0	0
863.00	35,693	33,311	33,311
864.00	40,550	38,122	71,432
865.00	45,509	43,030	114,462
866.00	50,568	48,039	162,500

Device	Routing	Invert	Outlet Devices
#1	Primary	861.00'	**24.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 861.00' / 861.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	862.00'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	864.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4	Primary	864.75'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=58.59 cfs @ 12.29 hrs HW=865.58' TW=864.21' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 17.69 cfs @ 5.63 fps)
  - **2=Orifice/Grate** (Passes < 1.97 cfs potential flow)
  - **3=Orifice/Grate** (Passes < 70.78 cfs potential flow)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 40.89 cfs @ 2.45 fps)

Summary for Pond 12P: East Infltration Basin

Inflow Area =	18.700 ac,	3.74% Impervious,	Inflow Depth >	5.08"	for 100yr 24hr event
Inflow =	58.85 cfs @	12.29 hrs,	Volume=	7.919 af	
Outflow =	19.36 cfs @	12.67 hrs,	Volume=	7.699 af,	Atten= 67%, Lag= 22.4 min
Discarded =	0.33 cfs @	12.67 hrs,	Volume=	0.550 af	
Primary =	19.04 cfs @	12.67 hrs,	Volume=	7.149 af	

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs / 2
Peak Elev= 865.58' @ 12.67 hrs Surf.Area= 18,806 sf Storage= 61,513 cf

Plug-Flow detention time= 101.8 min calculated for 7.699 af (97% of inflow)
Center-of-Mass det. time= 63.1 min (1,096.2 - 1,033.0)

Volume	Invert	Avail.Storage	Storage Description
#1	861.00'	69,661 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
861.00	8,400	0	0
862.00	10,501	9,451	9,451
863.00	12,689	11,595	21,046
864.00	14,977	13,833	34,879
865.00	17,366	16,172	51,050
866.00	19,855	18,611	69,661

Device	Routing	Invert	Outlet Devices
#1	Discarded	861.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 855.00'
#2	Primary	862.00'	**18.0" Round Culvert** L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 862.00' / 861.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Primary	865.00'	**4.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.33 cfs @ 12.67 hrs HW=865.58' (Free Discharge)
└─**1=Exfiltration** (Controls 0.33 cfs)

Primary OutFlow Max=19.03 cfs @ 12.67 hrs HW=865.58' TW=0.00' (Dynamic Tailwater)
├─**2=Culvert** (Inlet Controls 14.31 cfs @ 8.10 fps)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 4.72 cfs @ 2.04 fps)

Summary for Link 1L: Proposed West Channel

Inflow Area = 50.900 ac, 0.00% Impervious, Inflow Depth = 2.21" for 100yr 24hr event
Inflow = 78.16 cfs @ 12.49 hrs, Volume= 9.395 af
Primary = 78.16 cfs @ 12.49 hrs, Volume= 9.395 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 13L: Total Proposed Combined

Inflow Area = 95.100 ac, 0.95% Impervious, Inflow Depth > 2.92" for 100yr 24hr event
Inflow = 120.58 cfs @ 12.55 hrs, Volume= 23.145 af
Primary = 120.58 cfs @ 12.55 hrs, Volume= 23.145 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 24L: Proposed South Drainage Total

Inflow Area = 86.500 ac, 1.04% Impervious, Inflow Depth > 2.95" for 100yr 24hr event
Inflow = 110.42 cfs @ 12.59 hrs, Volume= 21.247 af
Primary = 110.42 cfs @ 12.59 hrs, Volume= 21.247 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

Summary for Link 25L: Proposed East Through Culvert Total

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 2.65" for 100yr 24hr event
Inflow = 23.52 cfs @ 12.24 hrs, Volume= 1.899 af
Primary = 23.52 cfs @ 12.24 hrs, Volume= 1.899 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-48.01 hrs, dt= 0.03 hrs

APPENDIX E

SOILS REPORT

CGC, Inc.
Construction • Geotechnical
Consulting Engineering/Testing

January 6, 2020
C19482

Mr. Chris Ehlers
VH Acquisitions, LLC
6801 South Towne Drive
Madison, WI 53713

Re: Geotechnical Exploration Report
Proposed Residential Development
Utterback Property – CTH AB
Town of Dunn, Dane County, Wisconsin

Dear Mr. Ehlers:

Construction • Geotechnical Consultants, Inc. (CGC) has completed the subsurface exploration program for the above-referenced project. The purpose of this exploration program was to evaluate the subsurface conditions within proposed roadways and stormwater management areas and to provide geotechnical recommendations regarding site preparation, utility and pavement design/construction. Preliminary stormwater and residential foundation design recommendations are also included. We are sending you an electronic copy of this report, and we can mail a paper copy upon request. An electronic copy is also being sent to Mr. Dan Day at D'Onofrio Kottke and Associates.

PROJECT AND SITE DESCRIPTIONS

We understand a residential development is proposed for an approximately 54-acre site on the west side of CTH AB, about 1,500 ft south of the intersection with CTH MN, in the Town of Dunn, Dane County, Wisconsin. The project area, which is currently farmland, is to be annexed into the Village of McFarland. Based on publicly-available topographic data (DCiMap, 1-ft contour lines), existing site grades generally slope from north-central parts of the site down towards the southeast, with current ground surface elevations ranging from about EL 896 to 862 ft. The site is bounded by railroad tracks to the south, and a lowland area is present to the south of the tracks, with lowest ground surface elevations in that area near EL 859 to 860 ft, based on DCiMap 1-ft contour lines.

Although in the early planning stages, we understand the project will include the construction of roads, utilities, stormwater management areas and, ultimately, single family homes. Proposed site grading information was not available at the time of this evaluation.

2921 Perry Street, Madison WI 53713
Telephone: 608/288-4100
FAX: 608/288-7887

SUBSURFACE CONDITIONS

Subsurface conditions for this study were explored by drilling 17 Standard Penetration Test (SPT) soil borings to planned depths between 15 and 20 ft below current site grades at locations selected and field-staked by D'Onofrio Kottke personnel, who also surveyed the ground surface elevations at the boring locations. The borings were conducted on December 11 and 12, 2019 by GeoServe (under subcontract to CGC), using a track-mounted (ATV) Geoprobe 7822DT rotary drill rig equipped with hollow stem augers and an automatic SPT hammer. Note that auger and split-spoon refusal occurred in Boring 15 at about 12.5 ft below the ground surface on apparent bedrock. The specific procedures used for drilling and sampling are described in Appendix A, and the boring locations are shown in plan on the Soil Boring Location Exhibit presented in Appendix B.

The subsurface profiles at the boring locations varied to some degree across the site, but the following strata were generally encountered (in descending order):

- About 12 to 36 in. of ***topsoil***; followed by
- About 2 to 5.5 ft of generally stiff to very stiff ***lean clay*** and ***sandy lean clay***, typically softening somewhat with depth or grading to loose to medium dense ***clayey sand***; over
- Very loose to very dense ***sand and gravel*** strata, containing variable amounts of fines and scattered cobbles/boulders, to the maximum depths explored in the majority of the borings; except where
- Loose to medium dense ***silt*** and ***silty to clayey sand*** or medium stiff to very stiff ***lean to silty clay*** layers were present towards the bottom of Borings 5, 15, 16 and 17; underlain by
- Very dense, ***probable highly weathered to weathered sandy dolomite bedrock*** to the level of auger/split-spoon refusal in Boring 15.

Natural moisture contents in representative samples from the shallow lean clay layers ranged from 22.9% to 29.8%, while sandier lean clay specimens were determined to have natural moisture contents of 12.0% to 18.2%. A sample obtained from the deeper cohesive/fine-grained soils encountered in Boring 15 was tested for its liquid and plastic (Atterberg) limits to aid in its classification, with a liquid limit of 17% and a plasticity index of 1 corresponding to USCS classification of low-plasticity silt (ML). Based on natural moisture contents, pocket penetrometer readings (q_p; an estimate of the unconfined compressive strength of cohesive soils) and SPT blow counts (N-values), the on-site cohesive and fine-grained soils should generally be considered slightly to moderately compressible.

In addition, particle size distribution (gradation) was determined on a sand sample from Boring 13. With a P200 ('fines') content of 3.5%, the sample classifies as poorly-graded sand (SP) and fine sand (FS) per the USCS and USDA classification systems, respectively.

Note that occasional organic seams were found to be interbedded with the sand soils in Borings 15 and 17.

As mentioned above, probable highly weathered to weathered sandy dolomite bedrock was encountered below a depth of about 10.5 ft in Boring 15 (corresponding to approximately EL 853.6 ft), extending to the level of auger and split-spoon refusal on probable harder/more competent bedrock at about 12.5 ft below the ground surface (corresponding to approximately EL 851.6 ft). In addition, the clay soils encountered in Boring 5 below a depth of about 19 ft and the clayey/silty sand below about 13 ft in Boring 17 were classified as possible highly weathered/decomposed bedrock. It must be noted that the sampling procedure can disturb/degrade weathered bedrock, making it difficult to determine the depth to bedrock in some areas.

Groundwater was encountered in the majority of the borings during and upon the completion of drilling at depths between about 4 and 13 ft, corresponding to approximately EL 855 to 863 ft, with the average groundwater level at about EL 859 ft. Groundwater levels were also measured in Borings 13, 16 and 17 about one day after the completion of drilling, at which point the water was observed about 2.0 to 6.0 ft below current site grades, corresponding to approximately EL 859.2 to 861.3 ft. Note that the average groundwater level observed during drilling and the longer-term groundwater readings in Borings 13, 16 and 17 correspond fairly well with ground surface elevations in the lowland area south of the railroad tracks. Water levels can be expected to fluctuate based on seasonal variations in precipitation, infiltration, evapotranspiration, the levels in nearby waterbodies, as well as other factors. A more detailed description of the site soil and groundwater conditions is presented on the boring logs attached in Appendix B, which also contain the laboratory test results (including Particle Size Distribution Test Report), and on the WDSPS Soil and Site Evaluation – Storm form contained in Appendix F.

According to the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) *Web Soil Survey*, eight soil series are identified within the development area. Two major soil series, which constitute about three-quarters of the site, are Kegonsa silt loam (KeB; approximately 42% of area) and Plano silt loam (PoB; approximately 33% of area). Minor soils include Dodge silt loam (DnB) in the north and northeast, Grays silt loam (GsB) in the east, Kidder soils (KrD2) in the north-central portions (near the high point), Sable silty clay loam (SaA) and Elburn silty loam (EgA) in the south to southwest as well as Colwood silt loam (Co) in an isolated area at the eastern perimeter of the development area.

The vast majority of the site's soils (Kegonsa, Plano, Dodge and Kidder) are described as well-drained soils that formed from loess over loamy and/or gravelly/sandy outwash on outwash plains, or from glacial till or loess over loamy till on drumlins and moraines. A typical profile involves finer-grained soils, such as clay loam, silty clay loam, sandy clay loam, silt loam and loam, followed by coarser-grained soils like sandy loam, gravelly sandy loam, stratified gravelly sand and gravelly coarse sand. As an exception, the soil series Grays silt loam, formed from silty alluvium over stratified silt and fine sand lacustrine deposits on lake plains, typically involves silt loam and silty

clay loam over very fine sandy loam to silt loam. In areas mapped as Kegonsa silt loam, Plano silt loam, Dodge silt loam, Grays silt loam and Kidder soils, the seasonally high groundwater table is expected to remain more than 80 in. below the ground surface.

In contrast to the soils described in the previous paragraph, the soil series Sable silty clay loam, Elburn silt loam and Colwood silt loam, mapped in small southern to southwestern and eastern sections of the site, are described as somewhat poorly-drained to poorly-drained soils that formed from loess on swales, loess over sandy and gravelly outwash on till plains, and from loamy glaciolacustrine deposits over stratified silt and fine sand glaciolacustrine deposits on lakebeds. Fairly deep finer-grained deposits (silty clay loam and silt loam) are common in areas mapped as Sable silty clay loam, with silty clay loam, sandy clay loam and silt loam over stratified very fine sand to silt, sandy loam and very gravelly coarse sand typically encountered in areas mapped as Elburn silt loam and Colwood silt loam. Where Sable silty clay loam, Elburn silt loam and Colwood silt loam are present, the seasonally high groundwater table should generally be expected within 0 to 12 in. of the ground surface, and frequent ponding may occur in areas mapped as Sable silty clay loam and Colwood silt loam.

The Soil Map for this site, which was generated by the USDA-NRCS *Web Soil Survey*, is attached in Appendix B. The soil profiles in the borings were in general agreement with the profiles from the soil mapping.

DISCUSSION AND RECOMMENDATIONS

Subject to the limitations discussed below and based on the subsurface exploration program, it is our opinion that this site is generally suitable for construction. However, some excavation below subgrade (EBS or undercutting/replacement) will likely be required during site grading and roadway construction, based on the presence of near-surface clay soils. In addition, some undercutting/replacement of marginal clay and/or clayey sand may be required below residential floor slabs and foundations, as well as utility inverts/structures in some portions of the site depending on structure and utility grades. Furthermore, bedrock excavation could potentially also be required during utility construction and building excavations in isolated portions of the site depending on utility and structure grades. Additionally, shallow groundwater and/or perched zones may impact utility and basement excavations in portions of the site, and groundwater levels should be considered when establishing basement grades.

Our recommendations for site preparation, roadway and utility design/construction are presented in the following subsections, along with preliminary stormwater infiltration and residential building design and construction considerations. Additional information regarding the conclusions and recommendations presented in this report is discussed in Appendix C.

1. Site Preparation

We recommend that topsoil and vegetation be stripped at least 10 ft beyond the construction limits in areas to receive fill and where building and roadway construction is planned. The topsoil can be stockpiled on-site and later re-used as fill in landscape areas. Topsoil thicknesses typically ranged between 12 and 36 in. in the borings, but variable topsoil thicknesses should be expected between and beyond boring locations due to past agricultural activities. Trees and root zones should be removed in conjunction with topsoil stripping.

After topsoil removal, the exposed soils are generally expected to consist of stiff to very stiff clay. Granular soils exposed in areas at-grade or requiring fill (if any) should be recompacted with a vibratory smooth-drum roller, and cohesive/fine-grained subgrade soils should be statically compacted (without vibration) and then proof-rolled with a piece of heavy rubber-tire construction equipment, such as a loaded scraper or tri-axle dump truck, to check for soft/yielding areas. If soft/unstable clay soils are encountered, an attempt could be made to dry/recompact the cohesive soils to develop a stable subgrade, which will likely be the most economical alternative to improve marginal subgrade soils, but this approach will likely require more time than other alternatives and is also highly weather dependent. Several cycles of discing, drying and recompaction may be required during extended periods of favorable weather (i.e., dry, warm and windy conditions) before a firm subgrade is developed. If drying/recompaction is not effective or the construction schedule or weather does not allow for drying/recompaction, the unsuitable soils can be undercut and replaced with suitable backfill compacted to at least 95% compaction based on modified Proctor methods (ASTM D1557). As an alternative, soft subgrade soils could be stabilized using coarse aggregate (e.g., 3-in. dense graded base, select crushed material, etc.) that is compacted into the subgrade until deflection ceases. Similarly, loose sands that do not improve with compaction should be undercut and replaced with suitable granular backfill. Note that some of the shallow clay soils encountered in the borings exhibited fairly high natural moisture contents, and zones of lower- to moderate strength clay and clayey sand were also encountered, so we anticipate that some undercutting/stabilization or discing/recompacting will be required, which could be fairly widespread depending on the time of the year when grading occurs. *We therefore recommend that the project budget include a generous contingency for undercutting/stabilization or discing/recompacting during site preparation (or roadway subgrade preparation if not addressed earlier in the project).*

After a stable subgrade has been developed, fill placement to establish site grades may then proceed. To the extent practical, we recommend using granular soils (i.e., sand and/or gravel, including on-site materials if selectively excavated and stockpiled) as fill in building areas, as well as within the upper several feet of roadways as these soils are generally easier to place and compact compared to cohesive/fine-grained soils, particularly in adverse weather conditions. It is our opinion that clay and silt soils excavated on-site are best used in landscaping, or potentially in lower portions of roadway embankments assuming that moisture conditioning will be completed to facilitate proper compaction. Moisture conditioning (drying) may require several cycles of discing and recompaction in order to develop adequate compaction, which could delay construction progress. Fill/backfill

should be placed in accordance with the Recommended Compacted Fill Specifications presented in Appendix D. *Where placement of several feet of fill will be required to establish site grades (i.e., more than about 5 ft above existing), a time delay between fill placement and beginning roadway and/or residential construction should be considered to allow the slightly to moderately compressible cohesive and fine-grained soils generally encountered on this site to consolidate and settle under the weight of the new fill, with a delay time of about one to three months typically being adequate.* We can provide additional details once the grading plan is developed, if needed.

As discussed above, possible/probable bedrock was encountered in isolated borings, and the depth and consistency of bedrock should be expected to vary across the site. As a general "rule of thumb", it has been our experience that excavation to the level of auger refusal in soil borings can typically be accomplished using conventional earthwork equipment and techniques, including a narrow bucket and ripping tooth. Excavations that extend below the level of auger refusal typically require special bedrock removal techniques, such as chiseling with an excavator-mounted rock chipper, blasting, etc. Rock excavation considerations are contained in Appendix E. *We recommend that a unit rate for rock excavation be established in the bidding documents. Note that rock excavation should be clearly defined in the project specifications.* It should also be noted that mass excavation with scrapers may not be able to extend into weathered bedrock to the same extent as using a large excavator (with appropriate bucket) and haul trucks. *Supplemental test pits are recommended to further explore the depth and consistency of the bedrock where deeper cuts are anticipated and the soil borings indicate the presence of bedrock.*

2. Roadway Pavement Design

The shallow cohesive soils encountered across the site are expected to control the pavement design, as we anticipate that the pavement subgrades (near existing site grades) will generally consist of stiff to very stiff clay soils, which could potentially also be used to raised site grades in some areas. Standard earthwork-related techniques that should be used during roadway construction after topsoil stripping include proof-rolling, undercutting/stabilization (excavation below subgrade – EBS) and compaction control of fill/backfill, as discussed in the Site Preparation section of this report.

Based on the borings, the shallow soil conditions in the borings generally appear suitable for pavement support. *However, because of the potential for shallow marginal clays (to clayey sands) at or below existing site grades/pavement subgrade levels, especially in southern, lower portions of the site, we recommend including a generous contingency for undercutting and stabilization with 3-in. dense graded base (or other coarse aggregate) in the project budget.* If long, continuous sections of soft/unstable soils are encountered, biaxial geogrid (e.g., Tensar Type 1 (BX 1100) or equivalent) or woven geotextile fabric (e.g., Mirafi 600X or equivalent) can be used to reduce the undercut depth and provide additional stabilization. It has been our experience that clay or silt soils with pocket penetrometer readings of less than about 1.5 tsf will likely require undercutting after proof-rolling, as described above. If roadway grades will be raised above existing grade, and well-compacted fill is

placed above a firm subgrade during general site grading, the need for undercutting/stabilization will likely be reduced.

Based on the soil conditions encountered in the borings and assuming that on-site clays may be used to raise grade in some roadway areas, the pavement design will be controlled by the cohesive soils, and the following parameters should be used to develop the design pavement sections, which are based on a firm or adequately stabilized subgrade being developed:

USCS Soil Classification	CL
AASTHO Classification	A-6
Frost Group Index	F-3
Design Group Index	12
Soil Support Value	4.2
Subgrade Modulus, k (pci)	150

These design parameters are based on the following assumptions:

1. The subgrade has been closely monitored.
2. The subgrade has been thoroughly and adequately compacted.
3. Wet zones have been dried, drained or removed.
4. Pockets of dissimilar material have been removed, replaced or mixed to achieve a homogeneous subgrade.
5. Adequate subgrade drainage has been achieved.

(Reference: WisDOT *Geotechnical Manual)*

Assuming traffic volumes of up to 100 cars and less than 5 trucks per day per design lane (i.e., Traffic Class II according to Wisconsin Asphalt Pavement Association (WAPA) recommendations for low-volume roadways and subdivision streets), a typical pavement section per WDOT Standard Specifications and following WAPA recommendations is 3.5 to 4.0 in. of asphalt pavement over 8 to 12 in. of compacted aggregate base course. Alternative pavement designs for different traffic count data (e.g., if high truck traffic loads are expected) are also acceptable provided they are based on the given design parameters. *Note that if the upper (surface) asphalt layer will not be installed immediately after the lower (binder) asphalt layer and construction traffic will travel on only the lower layer, consideration should be given to increasing the lower asphalt layer thickness to improve the durability of the lower layer.*

3. Utility Construction

Based on the available soil and groundwater information, it appears that utility construction can proceed using traditional open-cut methods. Dewatering may be required in some portions of the site, especially where shallow groundwater was encountered in the borings (predominantly southern, lower parts of the site) and the soil mapping indicates that the seasonal high water table may be

within 1 ft of the ground surface during wet periods (southern/southwestern and eastern areas). Rock excavation may potentially also be required in some areas, depending on utility locations and depths. It is expected that excavation sidewalls will be sloped back for relatively shallow installations (i.e., less than 4 ft in depth) and that a trench shield and/or internal bracing will be used for deeper excavations. The following are our recommendations regarding trench excavation, dewatering, and backfilling:

- Excavation: Open cuts should be sloped and/or braced in accordance with OSHA guidelines. The softer clays, sand and gravel with low "fines" content (denoted as SP/SP-SM and GP/GP-GM on the boring logs), as well as loose sands with higher silt content (SM and SC) are generally classified as OSHA "Type C" soils, and slopes of 1.5H:1V or flatter are expected to be at least temporarily stable. At least medium stiff clays and denser silty to clayey sand soils above the water table are generally classified as OSHA "Type B" soils where slopes of 1H:1V are expected to be temporarily stable. Note that flatter side slopes may also be required where perched water is present that destabilizes the side slopes. *The appropriate utility trench excavation side slopes should be determined by a competent person completing the earthwork in accordance with OSHA slope guidelines.* Due to the presence of weak and marginal clays, clayey to silty sand and sand strata in some of the borings, a stone stabilization layer consisting of 6 to 12 in. of compacted crushed stone may be required below the bedding layer in some areas to adequately support utility piping, depending on utility grades.

- Dewatering: Groundwater was encountered at depths between about 2 and 13 ft below existing site grades. In addition, the soil mapping indicates that seasonally elevated groundwater may be within 1 ft of the ground surface in some portions of the site. Therefore, depending on the location and depth of the utility, as well as the time of year construction occurs, some dewatering may be required. In general, groundwater drawdowns of less than about 1 to 2 ft can typically be achieved using submersible pumps operating from filtered sump pits, which can also be used to remove seepage or precipitation. If groundwater drawdowns exceed about 2 ft, dewatering with vacuum well points or deep wells may be required. Dewatering means and methods are the responsibility of the utility contractor.

- Rock Removal: Possible/probable bedrock was encountered in isolated borings, as previously discussed. The depth to bedrock should be expected to vary across the site. Although rock excavation considerations were included in the Site Preparation section of this report, bedrock removal in narrow utility trenches will likely be more difficult than in mass cut areas, as it may be more difficult to locate and exploit fractures and weak zones in the bedrock. Rock excavation considerations are contained in Appendix E, and we recommend that a unit rate for rock excavation be established in the bidding documents for utility excavations. Supplemental test pits

are recommended to further explore the depth and consistency of the bedrock along proposed utility alignments where possible/probable bedrock was encountered in the soil borings.

- Backfilling: Excavation backfilling may proceed using the following guidelines:

  - Although clayey and silty excavation spoils may be used to backfill the utility trenches above the pipe and associated granular bedding material, to the extent possible, we recommend that granular soils be used as backfill below paved areas because sand/gravel soils are relatively easy to place and compact in most weather conditions compared to cohesive soils. Silt and clay soils will likely require moisture conditioning prior to placement and compaction, which could delay construction progress. Granular soils containing cobbles and boulders should not be used in direct contact with utility lines.

  - Backfill material should be placed in accordance with Appendix D guidelines or applicable municipal requirements.

  - Compaction recommendations:

    - Within 10 ft of buildings: 95% modified Proctor (ASTM D1557);
    - Depths greater than 3 ft below grade in pavement areas: 90% modified Proctor;
    - Final 3 ft in pavement areas: 95% modified Proctor; and
    - Landscape areas: 85% modified Proctor.

4. Preliminary Stormwater Infiltration Potential

We understand that stormwater management areas are currently being considered in southern portions of the site near Borings 13, 16 and 17.

The subsurface conditions encountered in the southernmost Borings B-16 and B-17 were fairly consistent and included about 12 in. of topsoil, followed by lower-permeability clay loam and sandy clay loam strata, which were underlain, below a depth of about 6.5 ft, by more permeable fine sand and sand layers. However, groundwater was encountered during drilling at the bottom of the lower-permeability soils, and the shallow clay soils generally exhibited redoximorphic features (redox or mottling) and low-chroma/high-value (gray) dominant color, indicating the level of past saturation from perched water, periodically infiltrating surface water or seasonally elevated groundwater. About one day after the completion of Borings B-16 and B-17, the groundwater had stabilized at about 2.0 to 2.5 ft below current site grades in these boreholes. Therefore, it is our opinion that the area near Borings B-16 and B-17 is not suitable for infiltrating significant quantities of stormwater.

In Boring B-13, performed slightly further north and at a higher elevation, the shallow topsoil was underlain by lower-permeability sandy clay loam to a depth of about 3 ft, followed by more permeable granular strata to the maximum depth explored. Groundwater in this boring was encountered at a depth of about 8 ft during drilling and about 6 ft below the ground surface upon the completion of drilling. Provided the bottom of the infiltration system near B-13 extends through the lower-permeability soils (or lower-permeability soils are undercut below the bottom of the infiltration system and replaced with appropriate sandier soils) and adequate separation from groundwater can be achieved, it is our opinion that some stormwater infiltration in this area may potentially be feasible.

A gradation performed on a representative sand sample obtained above the apparent groundwater table in Boring B-13 showed a P200 content of 3.5%, and the particle size distribution test report is included in Appendix B. Per NR151, it may be necessary to include at least a 3-ft soil layer with a minimum of 20% fines or a 5-ft thick layer with a minimum of 10% fines below the bottom of the infiltration system to act as a filtering layer before the infiltrating stormwater reaches the groundwater table. *The inclusion of a filtering layer with higher fines content may control the infiltration rate of the infiltration system.*

As the soil conditions vary across the site, the Boring Logs and WDSPS Soil and Site Evaluation – Storm form attached in Appendices B and F, respectively, should be consulted for a description of the soil conditions at each boring location. Variability in the soil conditions should be expected across the site and within stormwater basins that could result in a wide range of undercut depths to reach soil suitable for the design infiltration rate.

Infiltration Potential: The following is a *preliminary* summary of the estimated infiltration rates for the soils encountered in Borings B-13, B-16 and B-17, per Table 2 of the WDNR Conservation Practice Standard 1002, *Site Evaluation for Storm Water Infiltration*. The estimated infiltration rates are as follows:

- Clay loam (CL) 0.03 in./hr
- Silty clay loam (SiCL) 0.04 in./hr
- Sandy clay loam (SCL) 0.11 in./hr
- Silt loam (SiL) 0.13 in./hr
- Fine sandy loam (FSL) 0.50 in./hr
- Gravelly sandy loam (GRSL) 0.50 in./hr
- Fine sand (FS) 0.50 in./hr
- Sand (S) 3.60 in./hr
- Extremely gravelly sand (XGRS) 3.60 in./hr

Note that the infiltration rates should be considered very approximate since they are merely based on soil texture and do not account for in-place soil density and other factors, which will affect the infiltration rate. We recommend that the soils at and

several feet below the bottom of stormwater management systems be checked by a geotechnical engineer or certified soil tester *in conjunction with the basin designer* to document that the soils are appropriate for the design infiltration rate or recommend remedial measures, if necessary. The Wisconsin Department of Safety and Professional Services Soil and Site Evaluation – Storm form for Borings B-13, B-16 and B-17 is contained in Appendix F.

It must be cautioned that the results of the soil borings have limitations with regard to the evaluation of the on-site stormwater infiltration potential as actual soil horizon transitions may vary from those shown on the boring logs and infiltration form. The reviewing agency may require test pits be excavated at a later date prior to finalizing the stormwater design. *The results of the test pits may require revisions to the stormwater management design if the design has been based solely on the soil borings.*

Groundwater: Groundwater was encountered in the southernmost Stormwater Borings B-16 and B-17, about one day after the completion of drilling, at about 2.0 to 2.5 ft. In addition, the soil mapping indicates that the seasonally high groundwater table may be within 1 ft of the ground surface in southern to southwestern (and isolated eastern) portions of the site. Furthermore, redoximorphic features and low-chroma/high-value dominant color, which are indicative of the level of previous saturation from perched water, periodically infiltrating surface water or seasonally elevated groundwater, were generally noted in the cohesive soils. Slightly deeper groundwater levels were observed in Boring B-13, performed further north and at a higher ground surface elevation compared to B-16 and B-17. At the completion of B-13, the groundwater level was observed at about 6 ft below the ground surface.

Bedrock: Apparent bedrock was not encountered in the Stormwater Borings B-13 and B-16, but the soils below a depth of about 13 ft in B-17 were classified as possible highly weathered bedrock, and possible/probable bedrock was also encountered in isolated other borings performed on this site. The depth of bedrock should therefore be expected to vary across the site.

During construction, appropriate erosion control should be provided to prevent eroded soil from contaminating the stormwater management areas. Where appropriate, the stormwater system design should include pretreatment to remove fine-grained soils (silt/clay) and clogging materials (oils/greases) from stormwater prior to entering the infiltration areas. Additionally, a regular maintenance plan should be developed to remove silt/clay soils and clogging materials that may accumulate in the bottom of the stormwater management area over time. Failure to adequately control fine-grained soils and clogging materials from entering the infiltration area or failure to regularly remove fine-grained soils and clogging materials that accumulate at the base of the stormwater infiltration system will likely cause the stormwater management system to fail.

Additionally, it is important that the soils in the bottom of the infiltration systems do not become compacted during construction or measures are taken to mitigate soils that are compacted during construction. Refer to WDNR Conservation Practice Standards 1002, 1003 and 1004, as well as NR151 for additional information.

5. Preliminary Foundation Design

Depending on building elevations, a combination of cohesive, fine-grained and granular soils could be encountered at foundation grades. If site grades are raised, footings may also bear on compacted granular fill, in which case it is important that the existing soils be carefully checked (including shallow test pits) to document the existing soils are suitable for building support prior to new fill placement. Bedrock excavation may potentially also be required for footing and basement excavations in isolated locations, depending on building grades.

It is our opinion that residential structures can generally be supported on conventional spread footing foundations bearing on suitable natural soils and engineered fill. Based on the range of soil conditions encountered, a bearing pressure in the range of 1,000 psf to 3,000 psf appears to be applicable over most of the site. However, depending on building locations and grades, some undercutting below footings (and floor slabs) due to lower-strength and marginal soils should generally be expected. The soil conditions in southern portions of the site generally appear to be the weakest and most compressible, which may potentially be problematic for building support, but fairly shallow undercutting will likely also be required in other portions of the site to develop suitable foundation and floor slab subgrades. There were also areas where denser sand/silt and harder clay were encountered, and higher bearing pressures could potentially be used.

Since residential structure loads are generally light, for preliminary design purposes, we recommend assuming an allowable bearing pressure of 1,500 psf, with the understanding that undercutting below footings could be required in various locations, depending on building and foundation grades. *Note that dewatering may potentially be required during basement, undercutting and backfilling operations, depending on building location and elevations, as well as the time of year construction occurs. We recommend that careful consideration be given to establishing basement grades where groundwater was encountered. Longer-term water level readings in monitoring wells may prove helpful in this determination. To the extent possible, we recommend establishing basement grade several feet above the seasonal high groundwater level to reduce the potential for dewatering being required below basements.*

The following parameters should be used for *preliminary* foundation design:

- Maximum net allowable bearing pressure: 1,500 psf
- Minimum foundation widths:
  - Continuous wall footings: 18 in.

- Column pad footings: 30 in.

- Minimum footing depths:
  - Exterior/perimeter footings: 4 ft
  - Interior footings: no minimum requirement

Undercutting below footing grade will be required where loose or disturbed sand/silt soils or clay with q_P-readings of less than 0.75 tsf are encountered at or slightly below footing grade. As discussed above, some undercutting below footing grade should be expected, and an allowance for this operation should be included in the project budget. *Where medium stiff clays (i.e., pocket penetrometer readings of less than 1 tsf) are encountered that are especially susceptible to disturbance from construction traffic or weather, we recommend placing a 6-in. layer of clear stone below the footings immediately after excavation to act as a working platform.* Where undercutting is required, the base of the undercut excavation should be widened beyond the footing edges at least 0.5 ft in each direction for each foot of undercut depth for stress distribution purposes. Foundation grades above the water table can be restored with granular backfill compacted to at least 95% compaction (modified Proctor – ASTM D1557) or 3-in. dense graded base that is placed in maximum loose lifts of 12 in. and thoroughly compacted with a large vibratory compactor until deflection ceases. Below the water table, undercut excavations should be backfilled with crushed clear stone that is placed in loose lifts of 12 in. or less, which are subsequently compacted with a large vibratory plate compactor or excavator-mounted hoe-pack until deflection ceases. Where the total clear stone layer thickness exceeds 12 in., the clear stone should be wrapped in non-woven geotextile fabric (e.g. Mirafi 160N or equivalent) to prevent migration of fines into the void spaces of the clear stone.

Since the subsurface conditions vary across the site, CGC should be present during footing excavations to check whether subgrades are satisfactory for the design bearing pressure and to advise on corrective measures, where necessary. We recommend using a smooth-edged backhoe bucket for footing and undercut excavations in soil. A bucket with teeth is acceptable where excavation occurs in weathered bedrock, provided loosened rock is removed from the bottom of the excavation. Additionally, granular soils exposed at footing grade that are above the water table and not susceptible to disturbance from vibrations should be recompacted with a large vibratory plate compactor or an excavator-mounted hoe-pack prior to formwork/concrete placement to densify soils loosened during the excavation process. Soils potentially susceptible to disturbance from compaction (e.g., silty or clayey soils or granular soils close to or below the water table) should be hand trimmed and/or stabilized with clear stone, as appropriate. Provided the foundation design/construction recommendations discussed above are followed, we estimate that total and differential settlements should be on the order of 1.0 and 0.5 in., respectively.

Based on groundwater observations in the soil borings and indications in the soil mapping that shallow groundwater may be encountered in some portions of the site, a sub-floor dewatering system with sump pump may potentially be required for some residential structures to prevent groundwater

from entering the lower level depending on the location and elevation. Depending on basement grades, seasonal dewatering could be fairly significant, and we recommend that careful consideration be given to establishing basement grades where groundwater was encountered. To the extent possible, we recommend establishing basement grade several feet above the seasonal high groundwater level to reduce the potential for dewatering being required below basements. Longer-term water level readings in monitoring wells may prove helpful in determining seasonally high groundwater levels, and we can provide additional information and recommendations if needed.

CONSTRUCTION CONSIDERATIONS

Due to variations in weather, construction methods and other factors, specific construction problems are difficult to predict. Soil related difficulties that could be encountered on the site are discussed below:

- Earthwork construction during the late fall through early spring could be complicated as a result of wet weather and freezing temperatures. During cold weather, exposed subgrades should be protected from freezing before and after footing construction. Fill should never be placed while frozen or on frozen ground.

- If the construction schedule requires that construction proceed during adverse weather, typically encountered during fall through spring, the contingency for undercutting disturbed soils should be increased.

- To the extent practical, traffic should be avoided on prepared subgrades to minimize further disturbance.

- Excavations extending greater than 4 ft in depth below the existing ground surface should be sloped or braced in accordance with current OSHA standards.

- Based on the soil mapping and water observations in the soil borings, groundwater infiltration into some utility, basement and footing excavations may occur, especially during wet seasons. Dewatering using submersible pumps operating from filtered sump pits, vacuum well points or deep wells may be required for groundwater control, as previously discussed, which should be evaluated by the contractor.

- The depth to bedrock is expected to vary across the site. In addition to potential bedrock removal during building excavations, some bedrock excavation may be required during utility construction. Supplemental test pits can be excavated to better determine if bedrock excavation may be required. See the Site Preparation and Utility Construction sections of the report, as well as Appendix E for additional information regarding rock excavation.

RECOMMENDED CONSTRUCTION MONITORING

The quality of the residential building pads and pavement subgrades will largely be determined by the level of care exercised during site development. To check that earthwork and foundation construction proceeds in accordance with our recommendations, the following operations should be monitored by CGC:

- Topsoil stripping/removal and subgrade proof-rolling;
- Fill/backfill placement and compaction;
- Foundation excavation and subgrade preparation; and
- Concrete placement.

FOLLOW-UP EXPLORATION PROGRAMS

The exploration program described in this report is preliminary in nature and is not intended to provide sufficient detail on subsurface conditions for each individual lot or stormwater management area. Due to the variability in soil and bedrock conditions, especially the potential for undercutting of soft/loose soils below footing grade of some residential structures, shallow groundwater as well as possible bedrock excavation during utility and residential building construction, follow-up exploration by test pits or borings is recommended to provide lot-specific geotechnical recommendations. *Note that stormwater infiltration potential estimations based on soil borings are considered preliminary, and test pits will likely need to be performed in proposed stormwater management areas to develop final design infiltration rates. If the stormwater design is based on the soil borings performed during the subsurface exploration program summarized in this report, revisions to the design may be required depending on the findings in the test pits.* We can provide specific recommendations and a proposal for the additional geotechnical work at the appropriate time.

* * * * *

It has been a pleasure to serve you on this project. If you have any questions or need additional consultation, please contact us.

Sincerely,

CGC, Inc.

Tim F. Gassenheimer, EIT, CST
Staff Engineer

Ryan J. Portman, PE, CST
Consulting Professional

Encl: Appendix A - Field Exploration
Appendix B - Soil Boring Location Exhibit
Logs of Test Borings (17)
Particle Size Distribution Test Report (1)
Log of Test Boring-General Notes
Unified Soil Classification System
Web Soil Survey Map and Legend (3 Pages)
Appendix C - Document Qualifications
Appendix D - Recommended Compacted Fill Specifications
Appendix E - Rock Excavation Considerations
Appendix F - WDSPS Soil and Site Evaluation – Storm Forms (3 Borings)

Cc: Mr. Dan Day, D'Onofrio Kottke and Associates

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Subsurface conditions for this study were explored by drilling 17 Standard Penetration Test (SPT) soil borings to planned depths between 15 and 20 ft below current site grades at locations selected and field-staked by D'Onofrio Kottke personnel, who also surveyed the ground surface elevations at the boring locations. The borings were conducted on December 11 and 12, 2019 by GeoServe (under subcontract to CGC), using a track-mounted (ATV) Geoprobe 7822DT rotary drill rig equipped with hollow stem augers and an automatic SPT hammer. Note that auger and split-spoon refusal occurred in Boring 15 at about 12.5 ft below the ground surface on apparent bedrock.

Soil samples were generally obtained at 2.5-foot intervals to a depth of 10 ft and at 5-ft intervals thereafter. As an exception, the borings located in or near proposed stormwater management areas were sampled at 2.5-foot intervals to the final depth. The soil samples were obtained in general accordance with specifications for standard penetration testing, ASTM D 1586. The specific procedures used for drilling and sampling are described below.

1. Boring Procedures between Samples

   The boring is extended downward, between samples, by a hollow stem auger.

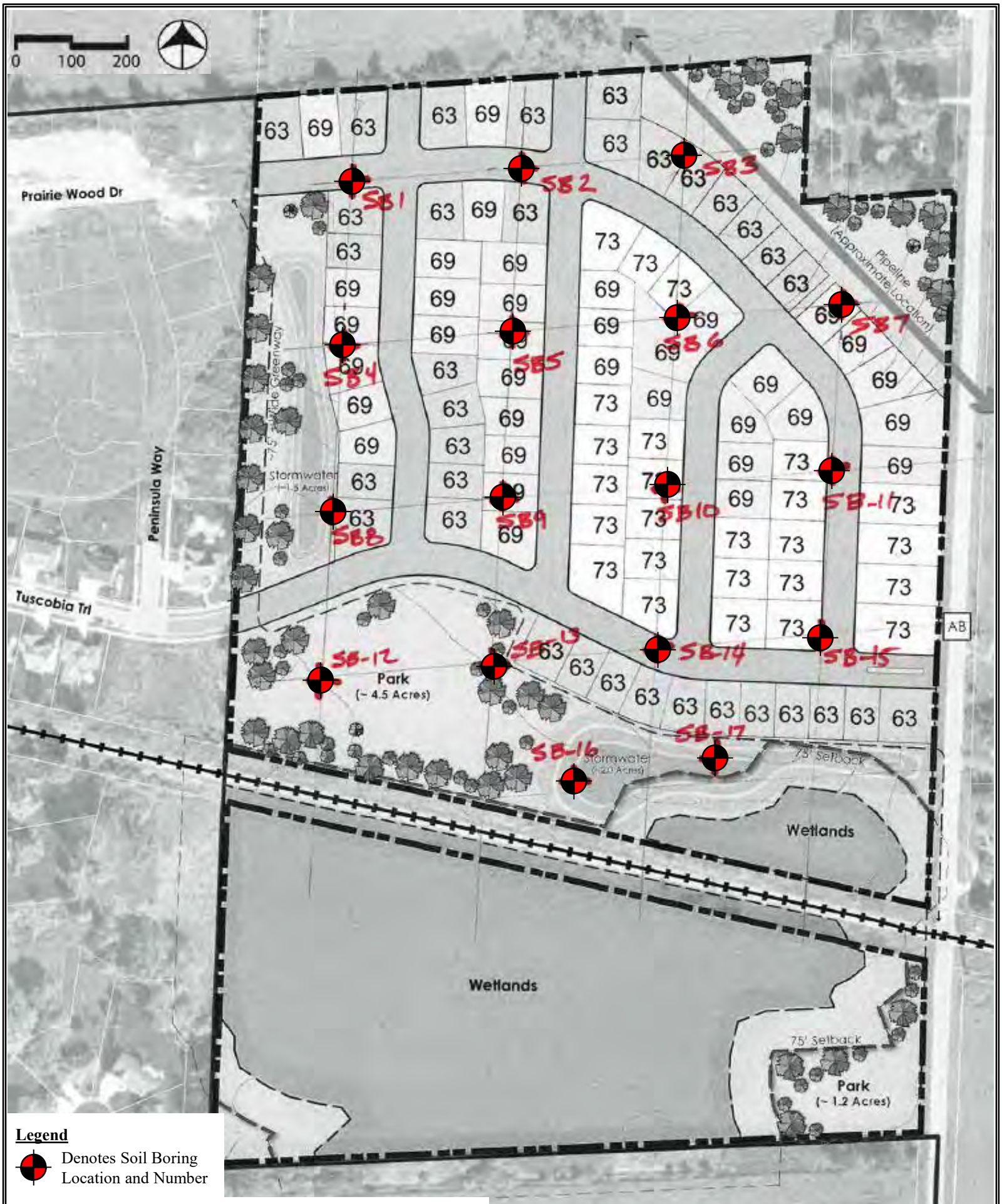
2. Standard Penetration Test and Split-Barrel Sampling of Soils
   (ASTM Designation: D 1586)

   This method consists of driving a 2-inch outside diameter split-barrel sampler using a 140-pound weight falling freely through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the log of borings and is known as the Standard Penetration Resistance. Recovered samples are first classified as to texture by the driller.

During the field exploration, the driller visually classified the soil and prepared a field log. *Field screening of the soil samples for possible environmental contaminants was not conducted by the driller, as environmental site assessment activities is beyond CGC's work scope*. Water level observations were made in each boring during and after drilling and are shown at the bottom of each boring log. Upon completion of drilling, the boreholes were backfilled in accordance with WDNR regulations, and the soil samples were delivered to our laboratory for visual classification and laboratory testing. The soils were visually classified by a geotechnical engineer using the Unified Soil Classification System. The final logs prepared by the engineer, including the laboratory test results, along with a Soil Boring Location Exhibit and a description of the Unified Soil Classification System are presented in Appendix B.

APPENDIX B

SOIL BORING LOCATION EXHIBIT
LOGS OF TEST BORINGS (17)
PARTICLE SIZE DISTRIBUTION TEST REPORT (1)
LOG OF TEST BORING-GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM
WEB SOIL SURVEY MAP AND LEGEND (3 PAGES)



Legend

Denotes Soil Boring Location and Number

Notes

1. Borings were drilled by GeoServe on December 11 and 12, 2019.
2. Boring locations are approximate.
3. Base map was prepared by D'Onofrio Kottke and Associates.

Job No.: C19482	CGC, Inc.	SOIL BORING LOCATION EXHIBIT Proposed Residential Development Utterback Property – CTH AB Town of Dunn, Dane County, Wisconsin
Date: 12/2019		

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **1**
Surface Elevation (ft) **872.72**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		18	M	7		Very Stiff, Brown/Gray (Lightly Mottled) Lean CLAY, Trace Sand (CL)	(2.5-3.25)	24.3			
						Stiff, Brown Lean CLAY, Trace Sand (CL)					
2		18	M	4	5		(1.0-1.75)	29.8			
						Medium Dense to Very Dense, Tan Fine to Coarse SAND and GRAVEL, Trace to Little Silt, Scattered Cobbles/Boulders (SP/SP-SM/GP/GP-GM)					
3		18	M	29							
4		18	M	60	10	Possible Cobble/Boulder near 9 ft					
						Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
5		8	W	16	15						
						End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **13.0'** Upon Completion of Drilling _____
Time After Drilling _____ _____ _____ **10 mins.**
Depth to Water _____ _____ _____ **NW** ▼
Depth to Cave in _____ _____ _____ **11.0'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/12/19** End **12/12/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **2**
Surface Elevation (ft) **881.14**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		18	M	8		Very Stiff, Brown/Gray (Lightly Mottled) Lean CLAY, Trace Sand (CL)	(2.5-4.0)	25.8			
						Very Stiff, Brown Lean CLAY, Trace Sand (CL)					
2		4	M	10			(2.5)				
					5	Medium Dense, Tan Fine to Coarse SAND and GRAVEL, Trace to Little Silt, Scattered Cobbles/Boulders (SP/SP-SM/GP/GP-GM)					
3		18	M	12		Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
4		4	M	24	10						
						Medium Dense to Very Dense, Tan Fine to Medium SAND, Little to Some Gravel, Little Silt, Scattered Cobbles/Boulders (SP-SM)					
5		18	M	27	15						
6		12	M	102	20						
						End of Boring at 20 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling ▽ **NW** Upon Completion of Drilling _____
Time After Drilling _____ _____ _____ **10 mins.**
Depth to Water _____ _____ _____ **NW** ▼
Depth to Cave in _____ _____ _____ **17.0'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/12/19** End **12/12/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **3**
Surface Elevation (ft) **869.74**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		18	M	10		Very Stiff, Brown/Gray (Lightly Mottled) Lean CLAY, Trace Sand (CL)	(3.0-3.25)	25.7			
2		18	M	6	5	Medium Stiff, Brown Sandy Lean CLAY, Trace Gravel (CL)	(0.75-1.0)	18.2			
3		12	M/W	7		Loose to Medium Dense, Tan Fine to Coarse SAND and GRAVEL, Trace to Little Silt, Scattered Cobbles/Boulders (SP/SP-SM/GP/GP-GM)					
4		16	W	28	10						
5		10	W	13	15						
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling ▽ **6.5'** Upon Completion of Drilling _____
Time After Drilling _____ _____ _____ **10 mins.**
Depth to Water _____ _____ _____ **8.0'** ▼
Depth to Cave in _____ _____ _____ **9.0'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/12/19** End **12/12/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: Proposed Residential Development
Utterback Property - CTH AB
Location: Town of Dunn, Dane County, Wisconsin

Boring No. 4
Surface Elevation (ft) 867.88
Job No. C19482
Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		16	M	6		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.5-2.75)	24.4			
2		18	M	20	5	Medium Dense, Tan Fine to Coarse SAND and GRAVEL, Trace to Little Silt, Scattered Cobbles/Boulders (SP/SP-SM/GP/GP-GM)					
3		18	W	22		Medium Dense, Tan Fine to Coarse SAND, Little Gravel, Trace Silt (SP)					
4		12	W	18	10	Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
5		16	W	16	15	Medium Dense, Tan/Reddish Brown (Laminated) Silty Fine SAND to Sandy SILT (SM/ML)					
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling	6.5'	Upon Completion of Drilling		
Time After Drilling				10 mins.
Depth to Water				8.0'
Depth to Cave in				8.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 12/12/19 End 12/12/19
Driller GeoServe Chief Eddie Rig Geoprobe
Logger Matt Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

LOG OF TEST BORING

CGC Inc.

Project: Proposed Residential Development
Utterback Property - CTH AB
Location: Town of Dunn, Dane County, Wisconsin

Boring No. 5
Surface Elevation (ft) 871.59
Job No. C19482
Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		18	M	7		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.5-2.75)	23.3			
2		18	M	6		Stiff, Brown Sandy Lean CLAY, Little Gravel (CL)	(1.0-2.0)				
					5	Loose, Brown Fine to Medium SAND, Little to Some Silt, Trace Gravel (SP-SM/SM)					
3		12	M	24		Medium Dense, Tan Fine to Coarse SAND and GRAVEL, Trace to Little Silt, Scattered Cobbles/Boulders (SP/SP-SM/GP/GP-GM)					
4		12	W	7		Loose to Very Dense, Brown Fine to Medium SAND, Some Silt, Little to Some Gravel, Scattered Cobbles/Boulders (SM)					
					10						
5		16	W	81		Probable Cobble/Boulder near 14 ft					
					15						
						Medium Dense to Very Dense, Tan Fine SAND, Trace to Little Silt (SP/SP-SM)					
6		18	W	95		Very Stiff, Reddish Brown Lean to Silty CLAY, Trace Gravel (CL/CL-ML - Possible Highly Weathered/Decomposed Bedrock)	(2.75-3.5)				
					20	End of Boring at 20 ft					
						Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling	8.5'	Upon Completion of Drilling		
Time After Drilling				10 mins.
Depth to Water				11.0'
Depth to Cave in				14.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 12/12/19 End 12/12/19
Driller GeoServe Chief Eddie Rig Geoprobe
Logger Matt Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

LOG OF TEST BORING

CGC Inc.

Project: Proposed Residential Development
Utterback Property - CTH AB
Location: Town of Dunn, Dane County, Wisconsin

Boring No. 6
Surface Elevation (ft) 866.29
Job No. C19482
Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		12	M	6		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.0-2.5)	23.0			
2		16	M/W	3	5	Very Loose, Brown Fine to Medium SAND, Some Silt, Trace Gravel (SM)					
3		18	W	12		Medium Dense, Tan Fine to Coarse SAND, Little Gravel, Trace Silt (SP)					
4		18	W	6	10	Loose, Brown Fine to Medium SAND, Trace Silt and Gravel (SP)					
5		18	W	12	15	Medium Dense, Grayish Brown Fine to Coarse SAND, Little Gravel, Trace Silt (SP)					
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling	6.5'	Upon Completion of Drilling		
Time After Drilling				10 mins.
Depth to Water				6.0'
Depth to Cave in				7.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 12/12/19 End 12/12/19
Driller GeoServe Chief Eddie Rig Geoprobe
Logger Matt Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

LOG OF TEST BORING

CGC Inc.

Project: Proposed Residential Development
Utterback Property - CTH AB
Location: Town of Dunn, Dane County, Wisconsin

Boring No. 7
Surface Elevation (ft) 866.34
Job No. C19482
Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		16	M	6		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.25-2.5)	24.0			
2		10	M/W	4	5	Soft, Brown Sandy Lean CLAY, Trace Gravel (CL)	(0.25-0.5)	17.5			
3		12	W	3		Very Loose, Brown Fine to Medium SAND, Little Silt, Trace Gravel (SP-SM)					
4		12	W	5	10	Loose, Tan Fine SAND, Little to Some Silt (SP-SM/SM)					
5		12	W	24	15	Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling ▽ 6.5' Upon Completion of Drilling _____
Time After Drilling _____ _____ _____ 10 mins.
Depth to Water _____ _____ _____ 6.0' ▼
Depth to Cave in _____ _____ _____ 7.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 12/11/19 End 12/11/19
Driller GeoServe Chief Eddie Rig Geoprobe
Logger Matt Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **8**
Surface Elevation (ft) **865.92**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		12	M	4		Stiff to Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.0)	25.9			
2		16	M	5	5	Stiff to Very Stiff, Gray/Brown (Mottled) Lean CLAY, Trace Sand (CL)	(1.75-3.0)	26.7			
3		12	W	20		Medium Dense, Tan Gravelly Fine to Coarse SAND, Trace Silt, Scattered Cobbles/Boulders (SP)					
4		12	W	15	10	Medium Dense, Tan Fine to Medium SAND, Some Gravel, Trace to Little Silt (SP/SP-SM)					
5		16	W	12	15	Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling	6.5'	Upon Completion of Drilling		
Time After Drilling				10 mins.
Depth to Water				6.0'
Depth to Cave in				7.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/12/19** End **12/12/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **9**
Surface Elevation (ft) **870.51**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		16	M	7		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(3.25-3.5)	23.4			
2		18	M	18	5	Medium Dense, Tan Fine to Coarse SAND, Some Gravel, Trace Silt, Scattered Cobbles/Boulders (SP)					
3		18	M	90		Dense to Very Dense, Tan Fine to Coarse SAND and GRAVEL, Trace to Little Silt, Scattered to Numerous Cobbles/Boulders (SP/SP-SM/GP/GP-GM) Probable Cobble/Boulder near 6.5 ft					
4		0	M	34	10	No Recovery from 8.5 to 10 ft (Sample 4) - Sample Collected from Drill Cuttings					
5		12	W	10	15	Medium Dense to Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
6		18	W	45	20	Possible Cobble/Boulder near 19 ft					
						End of Boring at 20 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling	▽ 13.0'	Upon Completion of Drilling		
Time After Drilling				10 mins.
Depth to Water				11.0' ▼
Depth to Cave in				11.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/12/19** End **12/12/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **10**
Surface Elevation (ft) **868.32**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		18	M	8		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.75-3.0)	23.7			
2		18	M	9		Loose, Tan Fine to Coarse SAND, Some Gravel, Trace Silt, Scattered Cobbles/Boulders (SP)					
					5						
3		18	M	40		Medium Dense to Dense, Tan Fine to Coarse SAND and GRAVEL, Trace to Little Silt, Scattered Cobbles/Boulders (SP/SP-SM/GP/GP-GM) Possible Cobble/Boulder near 6.5 ft					
4		18	W	18							
					10						
						Loose to Medium Dense, Tan Fine to Coarse SAND, Trace Silt and Gravel (SP)					
5		12	W	10							
					15	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **8.0'** Upon Completion of Drilling _____

Time After Drilling				**10 mins.**
Depth to Water				**8.0'** ▼
Depth to Cave in				**8.0'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/12/19** End **12/12/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: Proposed Residential Development
Utterback Property - CTH AB
Location: Town of Dunn, Dane County, Wisconsin

Boring No. 11
Surface Elevation (ft) 862.88
Job No. C19482
Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		6	M	6		Stiff, Brown/Gray (Lightly Mottled) Sandy Lean CLAY (CL)	(1.75-2.0)	12.0			
						Loose to Medium Dense, Brown Clayey Fine to Medium SAND (SC)					
2		12	M/W	18		Medium Dense, Tan Fine to Coarse SAND, Little Gravel, Trace Silt (SP)					
					5						
3		16	W	17		Medium Dense, Grayish Brown Gravelly Fine to Coarse SAND, Trace to Little Silt, Scattered Cobbles/Boulders (SP/SP-SM)					
						Loose, Gray to Brown Fine to Coarse SAND, Little Gravel, Trace Silt (SP)					
4		10	W	10							
					10						
5		18	W	9							
					15	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					
					20						

WATER LEVEL OBSERVATIONS

While Drilling	▽ 6.0'	Upon Completion of Drilling		
Time After Drilling				10 mins.
Depth to Water				6.0' ▼
Depth to Cave in				6.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 12/11/19 End 12/11/19
Driller GeoServe Chief Eddie Rig Geoprobe
Logger Matt Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **12**
Surface Elevation (ft) **863.41**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						18± in. TOPSOIL (OL)					
1		18	M	5		Stiff, Gray/Brown (Lightly Mottled) Lean CLAY, Trace to Little Sand (CL)	(1.0-1.25)	28.2			
2		18	M	7	▼	Stiff, Light Gray/Brown (Mottled) Lean CLAY, Little Sand (CL)	(1.25-1.75)				
					5						
3		18	W	4	▽	Loose, Brown Fine to Medium SAND, Trace Silt and Gravel (SP)					
4		18	W	36		Dense, Grayish Brown Gravelly Fine to Coarse SAND, Little Silt, Scattered Cobbles/Boulders (SP-SM)					
					10						
5		12	W	19		Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
					15	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ **6.5'**	Upon Completion of Drilling			
Time After Drilling				**10 mins.**
Depth to Water				**4.0'** ▼
Depth to Cave in				**8.0'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/11/19** End **12/11/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **13**
Surface Elevation (ft) **867.25**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		12	M	5		Stiff/Loose, Brown to Yellowish Brown Sandy Lean CLAY to Clayey Fine SAND, Trace Gravel (CL/SC) *USDA: 10YR 5/3, 5/4 Sandy Clay Loam*	(1.0-1.5)	14.7			
2		16	M	12	5	Medium Dense, Very Pale Brown Fine to Medium SAND, Trace Silt and Gravel (SP) *USDA: 10YR 7/3 Fine Sand* P200 (Sample 2 - 3.5 to 5 ft): 3.5%		4.5			
3		18	M/W	19		Medium Dense, Pale Brown Sandy Fine to Coarse GRAVEL, Trace Silt, Scattered Cobbles/Boulders (GP) *USDA: 10YR 6/3 Extremely Gravelly Sand*					
4		16	W	4	10	Very Loose to Loose, Pale Brown Fine to Medium SAND, Little Gravel, Trace Silt (SP) *USDA: 10YR 6/3 Sand*					
5		18	W	11		Medium Dense, Pale Brown Silty Fine SAND, Trace Gravel (SM) *USDA: 10YR 6/3 Fine Sandy Loam*					
6		18	W	15	15	Medium Dense, Pale Brown Fine Sand, Trace Silt and Gravel, Scattered Silt Seams (SP) *USDA: 10YR 6/3 Fine Sand, Silt Loam Seams*					
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling	▽ **8.0'**	Upon Completion of Drilling		
Time After Drilling			**1 Day**	**10 mins.**
Depth to Water			**NW**	**6.0'** ▼
Depth to Cave in			**6.0'**	**6.0'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/11/19** End **12/11/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: Proposed Residential Development
Utterback Property - CTH AB
Location: Town of Dunn, Dane County, Wisconsin

Boring No. 14
Surface Elevation (ft) 866.81
Job No. C19482
Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		14	M	7		Very Stiff, Brown Lean CLAY, Trace Sand (CL)	(2.75-3.0)	24.0			
2		18	M/W	3							
					5	Very Loose, Brown Fine to Medium SAND, Little to Some Silt, Trace Gravel (SP-SM/SM)					
3		12	W	5		Loose, Grayish Brown Gravelly Fine to Coarse SAND, Little Silt, Scattered Cobbles/Boulders (SP-SM)					
4		12	W	3		Very Loose, Brown Fine to Medium SAND, Trace Silt and Gravel (SP)					
					10						
						Loose to Medium Dense, Tan Silty Fine SAND, Scattered Lean Clay Seams (SM)					
5		18	W	10							
					15	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					
					20						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 7.0' Upon Completion of Drilling

Time After Drilling	10 mins.
Depth to Water	6.0' ▼
Depth to Cave in	6.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 12/11/19 End 12/11/19
Driller GeoServe Chief Eddie Rig Geoprobe
Logger Matt Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **15**
Surface Elevation (ft) **864.13**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		18	M	6		Stiff, Brown Lean CLAY, Trace Sand (CL)	(1.75-2.0)	25.6			
2		12	M	4	5	Soft, Gray/Brown (Mottled) Lean CLAY to Sandy Lean CLAY, Trace Gravel (CL)	(0.25-0.5)	22.9			
3		18	M/W	23		Medium Dense, Tan Fine to Medium SAND, Little Gravel, Trace Silt, Scattered Organic Seams (SP)					
4		18	W	5	10	Loose, Brown SILT to Clayey SILT, Trace to Little Sand (ML)	(0.5-1.5)	21.3	17	16	
5		4	W	99/4"		Very Dense, Brown to Gray Clayey to Silty Fine to Coarse SAND, Some Gravel (SC/SM - Probable Highly Weathered to Weathered Sandy Dolomite Bedrock)					
6		0	-	99/0"							
					15	End of Boring/Auger and Split-Spoon Refusal on Apparent Sandy Dolomite Bedrock at 12.5 ft Borehole Backfilled with Bentonite Chips					
					20						

WATER LEVEL OBSERVATIONS

While Drilling	7.0'	Upon Completion of Drilling		
Time After Drilling				10 mins.
Depth to Water				6.0'
Depth to Cave in				6.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/11/19** End **12/11/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

LOG OF TEST BORING

CGC Inc.

Project: Proposed Residential Development
Utterback Property - CTH AB
Location: Town of Dunn, Dane County, Wisconsin

Boring No. 16
Surface Elevation (ft) 861.45
Job No. C19482
Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		12	M/W	3		Medium Stiff to Stiff, Black to Very Dark Grayish Brown Organic to Silty CLAY, Little to Some Sand (OL/CL-ML - Probable Lower Horizon Topsoil in Upper Part of Layer) *USDA: 10YR 2/1 to 3/2 Clay Loam*	(0.75-1.25)				
2		18	M	6	5	Stiff, Gray/Light Olive Brown (Mottled) Sandy Lean CLAY, Trace Gravel (CL) *USDA: 2.5Y 5/1 (Redox: c2d 2.5Y 5/3) Sandy Clay Loam*	(1.5-1.75)				
3		18	W	12		Medium Dense, Pale Brown Fine to Medium SAND, Little Gravel, Trace Silt (SP) *USDA: 10YR 6/3 Sand*					
4		18	W	18	10	Medium Dense, Pale Brown Fine Sand, Trace Silt and Gravel (SP) *USDA: 10YR 6/3 Fine Sand*					
5		18	W	11		Medium Dense, Fine Layers of Light Yellowish Brown Silty Fine SAND, Light Brown SILT and Brown Lean CLAY (SM/ML/CL) *USDA: Stratified 10YR 6/4 Fine Sandy Loam, 7.5YR 6/3 Silt Loam and 7.5YR 5/4 Silty Clay Loam*					
6		18	W	11	15	Medium Stiff to Very Stiff, Light Brown Lean to Silty CLAY, Trace Sand (CL/CL-ML) *USDA: 7.5YR 6/3 Silty Clay Loam*	(0.75-2.5)				
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling ▽ 6.5' Upon Completion of Drilling

Time After Drilling			1 Day	10 mins.
Depth to Water			2.0'	6.0' ▼
Depth to Cave in			4.0'	6.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 12/11/19 End 12/11/19
Driller GeoServe Chief Eddie Rig Geoprobe
Logger Matt Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

LOG OF TEST BORING

CGC Inc.

Project: **Proposed Residential Development**
Utterback Property - CTH AB
Location: **Town of Dunn, Dane County, Wisconsin**

Boring No. **17**
Surface Elevation (ft) **861.70**
Job No. **C19482**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE No.	TYPE	Rec (in.)	Moist	N	Depth (ft)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	LI
						12± in. TOPSOIL (OL)					
1		18	M	5		Stiff, Gray/Brown (Lightly Mottled) Sandy Lean CLAY, Trace Gravel (CL) *USDA: 10YR 5/1 (Redox: c1f 10YR 5/3) Sandy Clay Loam*	(1.25-1.5)				
2		18	M	4	5	Medium Stiff to Stiff, Gray/Yellowish Brown (Mottled) Lean CLAY, Trace to Little Sand (CL) *USDA: 5Y 6/1 (Redox: c2d 10YR 5/4) Clay Loam*	(0.75-1.5)				
3		18	W	11		Medium Dense, Pale Brown Fine Sand, Trace Silt and Gravel, Scattered Silt and Organic to Silty Clay Seams (SP) *USDA: 10YR 6/3 Fine Sand, Silt Loam and Silty Clay Loam Seams*					
4		18	W	17	10						
5		18	W	5		Stiff to Very Stiff, Light Brown/Brown (Laminated) Lean to Silty CLAY, Trace Sand (CL/CL-ML) *USDA: 7.5YR 6/3, 5/4 Silty Clay Loam*	(1.25-2.5)				
6		8	W	50/2"	15	Very Dense, Gray Clayey to Silty Fine to Coarse SAND, Some Gravel, Scattered Cobbles/Boulders (SC/SM - Possible Highly Weathered Bedrock) *USDA: 7.5YR 6/1 Gravelly Sandy Loam* Probable Cobble/Boulder near 14 ft					
					20	End of Boring at 15 ft Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling ▽ **6.5'** Upon Completion of Drilling _____

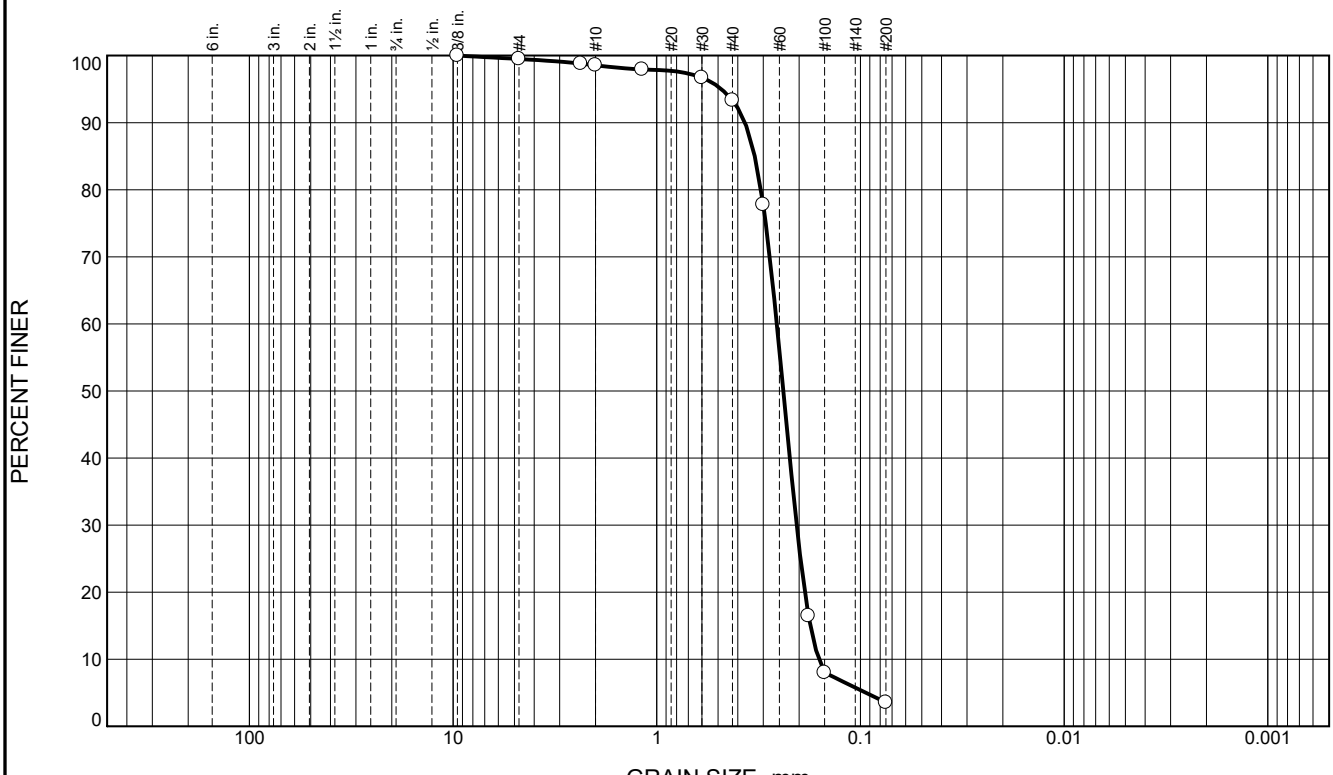
Time After Drilling			1 Day	10 mins.
Depth to Water			2.5'	6.0' ▼
Depth to Cave in			5.0'	7.0'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start **12/11/19** End **12/11/19**
Driller **GeoServe** Chief **Eddie** Rig **Geoprobe**
Logger **Matt** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.5	0.9	5.3	89.8	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	99.5		
#8	98.8		
#10	98.6		
#16	97.9		
#30	96.7		
#40	93.3		
#50	77.8		
#80	16.4		
#100	8.0		
#200	3.5		

* (no specification provided)

Material Description

Brown Fine to Medium Sand, Trace Silt and Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3687 D_{85}= 0.3303 D_{60}= 0.2573
D_{50}= 0.2391 D_{30}= 0.2057 D_{15}= 0.1764
D_{10}= 0.1599 C_u= 1.61 C_c= 1.03

Classification

USCS= SP AASHTO=

Remarks

USDA: Fine Sand

Sample Number: Boring 13 **Depth:** 3.5 to 5 ft

Date: 12/27/19

CGC,Inc.

Client: VH Acquisitions, LLC
Project: Utterback Property Residential Devlopment
Project No: C19482 **Figure**

Tested By: DRW **Checked By:** TFG

CGC, Inc.

LOG OF TEST BORING

General Notes

DESCRIPTIVE SOIL CLASSIFICATION

Grain Size Terminology

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

General Terminology

Physical Characteristics
Color, moisture, grain shape, fineness, etc.
Major Constituents
Clay, silt, sand, gravel
Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin
Glacial, alluvial, eolian, residual, etc.

Relative Density

Term	"N" Value
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

Relative Proportions Of Cohesionless Soils

Proportional Term	Defining Range by Percentage of Weight
Trace	0% - 5%
Little	5% - 12%
Some	12% - 35%
And	35% - 50%

Consistency

Term	q_u-tons/sq. ft
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

Organic Content by Combustion Method

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4 – 12%
Sedimentary Peat	12% - 50%
Fibrous and Woody Peat	More than 50%

Plasticity

Term	Plastic Index
None to Slight	0 - 4
Slight	5 - 7
Medium	8 - 22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

Drilling and Sampling

CS – Continuous Sampling
RC – Rock Coring: Size AW, BW, NW, 2"W
RQD – Rock Quality Designation
RB – Rock Bit/Roller Bit
FT – Fish Tail
DC – Drove Casing
C – Casing: Size 2 ½", NW, 4", HW
CW – Clear Water
DM – Drilling Mud
HSA – Hollow Stem Auger
FA – Flight Auger
HA – Hand Auger
COA – Clean-Out Auger
SS - 2" Dia. Split-Barrel Sample
2ST – 2" Dia. Thin-Walled Tube Sample
3ST – 3" Dia. Thin-Walled Tube Sample
PT – 3" Dia. Piston Tube Sample
AS – Auger Sample
WS – Wash Sample
PTS – Peat Sample
PS – Pitcher Sample
NR – No Recovery
S – Sounding
PMT – Borehole Pressuremeter Test
VS – Vane Shear Test
WPT – Water Pressure Test

Laboratory Tests

q_a – Penetrometer Reading, tons/sq ft
q_a – Unconfined Strength, tons/sq ft
W – Moisture Content, %
LL – Liquid Limit, %
PL – Plastic Limit, %
SL – Shrinkage Limit, %
LI – Loss on Ignition
D – Dry Unit Weight, lbs/cu ft
pH – Measure of Soil Alkalinity or Acidity
FS – Free Swell, %

Water Level Measurement

▽ - Water Level at Time Shown
NW – No Water Encountered
WD – While Drilling
BCR – Before Casing Removal
ACR – After Casing Removal
CW – Cave and Wet
CM – Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

CGC, Inc.

Madison - Milwaukee

Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

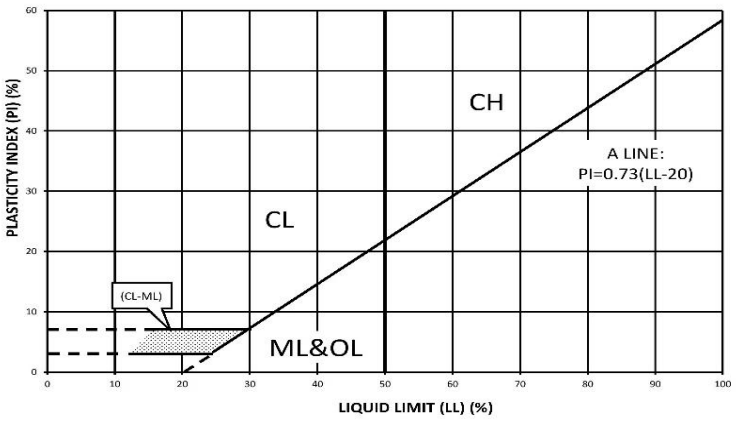
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limts below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limts above "A" line or P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent …….. GW, GP, SW, SP
More than 12 percent …….…… GM, GC, SM, SC
5 to 12 percent …….…... Borderline cases requiring dual symbols

PLASTICITY CHART



Soil Map—Dane County, Wisconsin
(Utterback Property)

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dane County, Wisconsin
Survey Area Data: Version 18, Sep 10, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Co	Colwood silt loam, 0 to 2 percent slopes	0.1	0.2%
DnB	Dodge silt loam, 2 to 6 percent slopes	4.4	11.3%
EgA	Elburn silt loam, gravelly substratum, 0 to 3 percent slopes	0.3	0.9%
GsB	Grays silt loam, 2 to 6 percent slopes	3.4	8.7%
KeB	Kegonsa silt loam, 2 to 6 percent slopes	16.7	42.3%
KrD2	Kidder soils, 10 to 20 percent slopes, eroded	0.8	2.0%
PoB	Plano silt loam, gravelly substratum, 2 to 6 percent slopes	13.0	33.1%
SaA	Sable silty clay loam, 0 to 2 percent slopes	0.6	1.6%
Totals for Area of Interest		**39.4**	**100.0%**

APPENDIX C

DOCUMENT QUALIFICATIONS

APPENDIX C
DOCUMENT QUALIFICATIONS

I. GENERAL RECOMMENDATIONS/LIMITATIONS

CGC, Inc. should be provided the opportunity for a general review of the final design and specifications to confirm that earthwork and foundation requirements have been properly interpreted in the design and specifications. CGC should be retained to provide soil engineering services during excavation and subgrade preparation. This will allow us to observe that construction proceeds in compliance with the design concepts, specifications and recommendations, and also will allow design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction. CGC does not assume responsibility for compliance with the recommendations in this report unless we are retained to provide construction testing and observation services.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and no other warranties are expressed or implied. The opinions and recommendations submitted in this report are based on interpretation of the subsurface information revealed by the test borings indicated on the location plan. The report does not reflect potential variations in subsurface conditions between or beyond these borings. Therefore, variations in soil conditions can be expected between the boring locations and fluctuations of groundwater levels may occur with time. The nature and extent of the variations may not become evident until construction.

II. IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the report for any purpose or project except the one originally contemplated.

READ THE FULL REPORT

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report* that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *CGC cannot accept responsibility or liability for problems that occur because our reports do not consider developments of which we were not informed.*

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINION

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most

effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the confirmation-dependent recommendations included in your report. *Those confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *CGC cannot assume responsibility or liability for the report's confirmation-dependent recommendations if we do not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical engineering report. Confront that risk by having CGC participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

GIVE CONSTRUCTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and constructors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

ENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

OBTAIN PROFESSIONAL ASSISTANCE TO DEAL WITH MOLD

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Membership in the Geotechnical Business Council (GBC) of Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with CGC, a member of GBC, for more information.

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Geotechnical Business Council
of the Geoprofessional Business Association
8811 Colesville Road, Suite G 106
Silver Spring, MD 20910

APPENDIX D

RECOMMENDED COMPACTED FILL SPECIFICATIONS

APPENDIX D

CGC, INC.

RECOMMENDED COMPACTED FILL SPECIFICATIONS

General Fill Materials

Proposed fill shall contain no vegetation, roots, topsoil, peat, ash, wood or any other non-soil material which by decomposition might cause settlement. Also, fill shall never be placed while frozen or on frozen surfaces. Rock, stone or broken concrete greater than 6 in. in the largest dimension shall not be placed within 10 ft of the building area. Fill used greater than 10 ft beyond the building limits shall not contain rock, boulders or concrete pieces greater than a 2 sq ft area and shall not be placed within the final 2 ft of finish subgrade or in designated utility construction areas. Fill containing rock, boulders or concrete pieces should include sufficient finer material to fill voids among the larger fragments.

Special Fill Materials

In certain cases, special fill materials may be required for specific purposes, such as stabilizing subgrades, backfilling undercut excavations or filling behind retaining walls. For reference, WisDOT gradation specifications for various types of granular fill are attached in Table 1.

Placement Method

The approved fill shall be placed, spread and leveled in layers generally not exceeding 10 in. in thickness before compaction. The fill shall be placed at moisture content capable of achieving the desired compaction level. For clay soils or granular soils containing an appreciable amount of cohesive fines, moisture conditioning will likely be required.

It is the Contractor's responsibility to provide all necessary compaction equipment and other grading equipment that may be required to attain the specified compaction. Hand-guided vibratory or tamping compactors will be required whenever fill is placed adjacent to walls, footings, columns or in confined areas.

Compaction Specifications

Maximum dry density and optimum moisture content of the fill soil shall be determined in accordance with modified Proctor methods (ASTM D1557). The recommended field compaction as a percentage of the maximum dry density is shown in Table 2. Note that these compaction guidelines would generally not apply to coarse gravel/stone fill. Instead, a method specification would apply (e.g., compact in thin lifts with a vibratory compactor until no further consolidation is evident).

Testing Procedures

Representative samples of proposed fill shall be submitted to CGC, Inc. for optimum moisture-maximum density determination (ASTM D1557) prior to the start of fill placement. The sample size should be approximately 50 lb.

CGC, Inc. shall be retained to perform field density tests to determine the level of compaction being achieved in the fill. The tests shall generally be conducted on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

Table 1
Gradation of Special Fill Materials

Material	WisDOT Section 311	WisDOT Section 312	WisDOT Section 305			WisDOT Section 209		WisDOT Section 210
	Breaker Run	Select Crushed Material	3-in. Dense Graded Base	1 1/4-in. Dense Graded Base	3/4-in. Dense Graded Base	Grade 1 Granular Backfill	Grade 2 Granular Backfill	Structure Backfill
Sieve Size	Percent Passing by Weight							
6 in.	100							
5 in.		90-100						
3 in.			90-100					100
1 1/2 in.		20-50	60-85					
1 1/4 in.				95-100				
1 in.					100			
3/4 in.			40-65	70-93	95-100			
3/8 in.				42-80	50-90			
No. 4			15-40	25-63	35-70	100 (2)	100 (2)	25-100
No. 10		0-10	10-30	16-48	15-55			
No. 40			5-20	8-28	10-35	75 (2)		
No. 100						15 (2)	30 (2)	
No. 200			2-12	2-12	5-15	8 (2)	15 (2)	15 (2)

Notes:

1. Reference: Wisconsin Department of Transportation *Standard Specifications for Highway and Structure Construction.*
2. Percentage applies to the material passing the No. 4 sieve, not the entire sample.
3. Per WisDOT specifications, both breaker run and select crushed material can include concrete that is 'substantially free of steel, building materials and other deleterious material'.

Table 2
Compaction Guidelines

Area	Percent Compaction (1)	
	Clay/Silt	Sand/Gravel
Within 10 ft of building lines		
Footing bearing soils	93 - 95	95
Under floors, steps and walks		
- Lightly loaded floor slab	90	90
- Heavily loaded floor slab and thicker fill zones	92	95
Beyond 10 ft of building lines		
Under walks and pavements		
- Less than 2 ft below subgrade	92	95
- Greater than 2 ft below subgrade	90	90
Landscaping	85	90

Notes:

1. Based on Modified Proctor Dry Density (ASTM D 1557)

APPENDIX E

ROCK EXCAVATION CONSIDERATIONS

APPENDIX E

ROCK EXCAVATION CONSIDERATIONS

In order to minimize probable "rock" excavation expenses during construction, we suggest that project specifications incorporate the following:

A. It is assumed that all excavations to levels and dimensions required by the Contract Documents are earth excavation. Earth excavation includes removal and disposal of all materials encountered except rock/sound bedrock which is defined as natural materials which:

   1. Cannot be excavated with a minimum 3/4 cubic yard capacity backhoe without drilling and blasting;

   2. Cannot be economically removed with a one-tooth ripper on a D8 cat (or equivalent);

   3. Requires the use of special equipment such as a pneumatic hammer;

   4. Requires the use of explosives (after obtaining written permission of the owner).

B. Examples of material classified as rock are boulders 1/2 cubic yard or more in volume, bedrock, rock in ledges, and rock-hard cementitious aggregate deposits.

C. Do not proceed with rock excavation work until architect, engineer and/or testing firm (i.e., CGC) has taken the necessary measures to determine quantity of rock excavation required to complete the work. Measurements will be taken after properly stripped of earth by the contractor. Contractor will be paid the difference between the cost of rock and earth excavation based on an agreed upon unit price established prior to starting rock excavation.

A statement should also be included in the specifications to the effect that: "Stated models of earth excavation equipment are merely for purposes of defining the various excavation categories and are not intended to indicate the brand or type of equipment that is to be used."

APPENDIX F

WISCONSIN DEPARTMENT OF SAFETY & PROFESSIONAL SERVICES
SOIL AND SITE EVALUATION – STORM FORM (3 BORINGS)

Division of Industry Services
P.O. Box 2658
Madison, Wisconsin 53701
Scott Walker, Governor
Laura Gutierrez, Secretary

Attachment 2:

SOIL AND SITE EVALUATION - STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent of slope, scale or dimensions, north arrow, and BM referenced to nearest road	County: Dane
	Parcel I.D.: 028/0610-024-8070-0
Please print all information	Reviewed by:
Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]	Date:

Property Owner: Utterback LTD Partnership c/o Wayne Utterback		Property Location: Govt. Lot NE ¼ SE ¼ S 02 T N 06 R 10 E	
Property Owner's Mail Address: 4627 Prairie Fire Ct.		Lot #	Block# / Subd. Name or CSM #
City: DeForest / State: WI / Zip Code: 53532 / Phone Number		[ ] City [ ] Village [X] Town: Dunn	Nearest Road: CTH AB
Drainage area _____ [ ] sq ft [ ] acres	Hydraulic Application Test Method	Soil Moisture: Date of soil borings: _____	
Test site suitable for (check all that apply): [ ] Site not suitable;	[X] Morphological Evaluation	USDA-NRCS WETS Value: [ ] Dry = 1;	
[ ] Bioretention; [ ] Subsurface Disperal System;	[ ] Double Ring Infiltrometer	[ ] Normal = 2;	
[ ] Reuse; [ ] Irrigation; [ ] Other _____	[ ] Other: (specify) _____	[ ] Wet = 3.	

B-13 #OBS. [ ] Pit [X] Boring Ground surface elevation 867.3 ft. Elevation of limiting factor 861.3 ft. (Groundwater)

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	Topsoil (not sampled)								
2	12-36	10YR 5/3, 5/4	none	SCL	2mabk	mfi		<5		0.11
3	36-66	10YR 7/3	none	FS	0sg	ml		1	4	0.50
4	66-96	10YR 6/3	none	XGRS	0sg	ml		65-75		3.60
5	96-126	10YR 6/3	none	S	0sg	ml		<10		3.60
6	126-156	10YR 6/3	none	FSL	2msbk	mfr		<5		0.50
7	156-180	10YR 6/3	none	FS, SiL	0sg	ml		<5		0.13-0.50

Comments: Groundwater was encountered at about 8 ft during drilling and at about 6 ft shortly after the completion of drilling. About one day after the completion of drilling, the borehole had caved-in at about 6 ft, with no groundwater present above this depth.
Infiltration potential appears limited based on fairly shallow groundwater.

B-16 #OBS. [ ] Pit [X] Boring Ground surface elevation 861.5 ft. Elevation of limiting factor 859.5 ft. (Groundwater)

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	Topsoil (not sampled)								
2	12-36	10YR 2/1 to 3/2	none	CL	0m	mfi		<5		0.03
3	36-78	2.5Y 5/1	c2d 2.5Y 5/3	SCL	0m	mfi		<5		0.11
4	78-102	10YR 6/3	none	S	0sg	ml		<10		3.60
5	102-126	10YR 6/3	none	FS	0sg	ml		<5		0.50
6	126-156	10YR 6/4, 7.5YR 6/3, 7.5YR 5/4	none	Strat. FSL, SiL, SiCL	variable			<5		0.04
7	156-180	7.5YR 6/3	none	SiCL	0m	mvfi		<5		0.04

Comments: Groundwater was encountered at about 6.5 ft during drilling and at about 6 ft shortly after the completion of drilling. About one day after the completion of drilling, the borehole had caved-in at about 4 ft, with groundwater observed at about 2 ft.
Infiltration potential appears very limited based on shallow groundwater.

Name (Please Print): Tim F. Gassenheimer	Signature		Credential Number: SP-011900004
Address: 129 Milky Way, Madison, WI 53718		Date Evaluation Conducted: December 11, 2019	Telephone Number: (608) 288-4100

B-17 #OBS. [ ] Pit [X] Boring Ground surface elevation 861.7 ft. Elevation of limiting factor 860.7 ft. (Redox)
859.2 ft. (Groundwater)

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	Topsoil (not sampled)								
2	12-36	10YR 5/1	c1f 10YR 5/3	SCL	0m	mfi		<5		0.11
3	36-78	5Y 6/1	c2d 10YR 5/4	CL	0m	mfi		<5		0.03
4	78-126	10YR 6/3	none	FS, SiL/SiCL	0sg	ml		<5		0.04-0.50
5	126-156	7.5YR 6/3, 5/4	none	SiCL	0m	mvfi		<5		0.04
6	156-180	7.5YR 6/1	none	GRSL [1]	1cabk	mfr		20-30		0.50

Comments: Groundwater was encountered at about 6.5 ft during drilling and at about 6 ft shortly after the completion of drilling. About one day after the completion of drilling, the borehole had caved-in at about 5 ft, with groundwater observed at about 2.5 ft.
Infiltration potential appears very limited based on shallow low-chroma/high-value dominant color and redox, as well as groundwater.
[1] Horizon 6 was classified as possible bedrock.

Overall Site Comments: See Comments above and Stormwater Infiltration Potential section in Geotechnical Exploration Report.

APPENDIX F

WETLAND REPORT

Assured Wetland Delineation Report

Utterback Property North

Town of Dunn, Dane County, Wisconsin

December 20, 2019

Project Number: 20190239

506 Springdale Street | Mount Horeb, WI 53572 | www.heartlandecological.com

Utterback Property North

Town of Bucky, Dane County, Wisconsin

December 20, 2019

Prepared for:

Mr. Chris Ehlers

VH Acquisitions LLC

6801 South Towne Drive

Madison, WI 53713

Prepared by:

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Scott Fuchs, Environmental Technician

Jeff Kraemer, Principal

Solutions for people, projects, and ecological resources.

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1.0 Introduction

Heartland Ecological Group, Inc. ("Heartland") completed an assured wetland determination and delineation on the Utterback Property North site on September 16, 2019 at the request of VH Acquisitions LLC. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program (Appendix E, Qualifications). The 39.80-acre site (the "Study Area") is east of the ends of Tuscobia Trail and Prairie Wood Drive, and west of County Highway AB, in the southeast ¼ of Section 2, T6N, R10E, Town of Dunn, Dane County, WI (Figure 1, Appendix A). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area.

One (1) wetland area totaling approximately 1.20 acres was delineated and mapped within the Study Area (Figure 6, Appendix A). Wetlands discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and local zoning authorities. Heartland recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence.

2.0 Methods

2.1 Wetlands

Wetlands were determined and delineated using the criteria and methods described in the USACE Wetlands Delineation Manual, T.R. Y-87-1 ("1987 Corps Manual") and the applicable *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*. In addition, the *Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR* (WDNR, 2015) was followed in completing the wetland delineation and report.

Determinations and delineations utilized available resources including the U.S. Geological Survey's (USGS) *WI 7.5 Minute Series (Topographic) Map* (Figure 2, Appendix A), the Natural Resource Conservation Service's (NRCS) Soil Survey Geographic Database (SSURGO), U.S. Department of Agriculture's (USDA) *Web Soil Survey* (Figure 3, Appendix A), the Wisconsin Department of Natural Resources' *Surface Water Data Viewer's* wetland indicator data layer (Figure 4, Appendix A), the WDNR's *Wisconsin Wetland Inventory* data layer (Figure 5, Appendix A), and aerial imagery available through the USDA Farm Service Agency's (FSA) National Agriculture Imagery Program (NAIP), Google Earth™, and Dane County's interactive mapping. The USGS *National Hydrography Dataset* is included on Figures 2 and 5, Appendix A.

Wetland determinations were completed on-site at sample points, often along transects, using the three (3) criteria (vegetation, soil, and hydrology) approach per the 1987 Corps Manual and the Regional Supplement. Procedures in these sources were followed to demonstrate that, under normal circumstances, wetlands were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

Atypical conditions were encountered within the Study Area due to the presence of agricultural fields including row-cropping and hay fields. Therefore, procedures for managed plant communities in the *Problematic hydrophytic vegetation* section described in Chapter 5 (Difficult Wetland Situations) of the Regional Supplement were used. NAIP imagery were reviewed for evidence of crop stress, saturation, or inundation signatures. Sample point placements for the wetland delineation were partially determined based on such signatures.

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators. An assessment of recent precipitation patterns helps to determine if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of the antecedent precipitation in the three (3) months leading up to the field investigation was completed. Using a WETS analysis developed by the NRCS, the amounts of precipitation in these three (3) months were compared to averages and standard deviation thresholds over the past 30 years to generally represent if conditions encountered during the investigation were normal, wet, or dry. Recent precipitation events in the week prior to the investigation were considered while interpreting wetland hydrology indicators. In some cases, the Palmer Drought Index was checked for long-term drought or moist conditions (NOAA, 2018).

The uppermost wetland boundary and sample points were identified and marked with wetland flagging and located with a Global Positioning System (GPS) capable of sub-meter accuracy. In some cases, wetland flagging was not utilized to mark the boundary and the location was only recorded with a GPS unit, particularly in active agricultural areas. The GPS data was then used to map the wetlands using ESRI ArcMap™ 10.6 software.

3.0 Results and Discussion

3.1 Desktop Review

Climatic Conditions

According to the WETS analysis using the previous three (3) months of precipitation data, conditions encountered at the time of the fieldwork were expected to be normal for the time of year (Appendix B). The Palmer Drought Index was checked on line and the long-term conditions at the time of the fieldwork were in the extremely moist range. Fieldwork was completed at the end of the dry-season based on long-term regional hydrology data utilized in the WebWIMP Climatic Water Balance web site.

General Topography and Land Use

The topography within the Study Area was rolling, with various hills, depressions, and slopes, but generally was sloping towards the railway which makes up the southern boundary of the site. A topographic high of approximately 895 feet above mean sea level

(msl) is present along the northern boundary of the site, and a topographic low of approximately 865 feet above msl is present within the depression in the southeast corner of the site (Figures 2 and 6, Appendix A). Land use within the Study Area consists of agricultural row cropping. Surrounding areas are primarily agricultural row cropping and residential homes. General drainage is to the south and east.

Soil Mapping

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1. Wetlands identified during the field investigation are located primarily within areas mapped as hydric or partially hydric soils including wetland indicator soils (Figures 3 and 4, Appendix A).

Table 1. Summary of NRCS Mapped Soils within the Study Area

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
Co: Colwood silt loam, 0 to 2 percent slopes	Colwood	80-90	Lakebeds (relict)	Yes
	Pella	5-10	Drainageways	Yes
	Palms	5-10	Depressions	Yes
DnB: Dodge silt loam, 2 to 6 percent slopes	Dodge	80-95	Drumlins	No
	St. Charles	3-10	Drumlins	No
	Mayville	2-7	Drumlins	No
	Lamartine	0-3	Drumlins	No
EgA: Elburn silt loam, gravelly substratum, 0 to 3 percent slopes	Elburn-Gravelly substratum	85-95	Till plains	No
	Sable	2-5	Drainageways	Yes
	Drummer	2-5	Drainageways	Yes
	Mahalasville	2-5	Drainageways	Yes
GsB: Grays silt loam, 2 to 6 percent slopes	Grays	100	Lake plains	No
KeB: Kegonsa silt loam, 2 to 6 percent slopes	Kegonsa	100	Outwash plains	No
KrD2: Kidder soils, 10 to 20 percent slopes, eroded	Kidder-Loam	60	Recessionial moraines, terminal moraines, drumlins	No

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
	Kidder-Sandy loam	30	Recessionial moraines, terminal moraines, drumlins	No
PoB: Plano silt loam, gravelly substratum, 2 to 6 percent slopes	Plano-Gravelly substratum	80-90	Outwash plains	No
	Warsaw	5-10	Outwash plains	No
	Plano-Moderately wet gravelly substratum	5-10	Outwash plains	No
SaA: Sable silty clay loam, 0 to 2 percent slopes	Sable	85-100	Swales	Yes
	Muscatune	0-6	Ground moraines	No
	Ipava	0-7	Ground moraines	No
	Buckhart	0-4	Knolls	No
	Elburn	0-3	Outwash plains	No

Wetland Mapping

The Wisconsin Wetlands Inventory (WWI) mapping (Figure 5, Appendix A) does not depict any wetlands within the Study Area.

Aerial Photography

A formal off-site analysis was not completed due to a lack of mapped hydric soils within the Study Area, however available NAIP imagery from 2004 through 2018 (Appendix F) were reviewed to assist in understanding the recent history of the Study Area and to evaluate for general wetland signatures. This imagery showed a consistent use of agricultural row cropping within the Study Area. A depression in the southeast corner of the Study Area featured consistent wetland signatures in the reviewed imagery.

3.2 Field Review

One (1) wetland was identified and delineated within the Study Area based on both the desktop review, including a review of aerial imagery, and a field reconnaissance. Wetland determination data sheets (Appendix C) were completed at two (2) sample points that were

representative of the wetland and upland conditions near the boundary and where potential wetlands may be present based on the desktop review and field reconnaissance. Appendix D provides photographs, typically at the sample point locations of the wetlands and adjacent uplands. The wetland boundary and sample point locations are shown on Figure 6 (Appendix A) and the wetlands are summarized in Table 2 and detailed in the following sections.

Table 2. Summary of Wetlands Identified within the Study Area

Wetland ID	Wetland Description	*Surface Water Connections	*NR151 Protective Area	Acreage (on-site)
W-1	Farmed Wet Meadow	Potentially Isolated	Less susceptible, 10-30 feet	1.20
*Classification based on Heartland's professional opinion. Jurisdictional authority of wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities may have additional restrictions. USACE has authority for determining federal jurisdiction of wetlands and waterways.				**1.20**

Wetland 1 (W-1)

Wetland 1 (W-1) is a 1.20-acre wet meadow with a history of being farmed and is located within a depression in the southeastern corner of the Study Area.

Dominant vegetation observed in W-1 included fall panic grass (*Panicum dichotomiflorum,* FACW) and reed canary grass (*Phalaris arundinacea,* FACW).

The Depleted Matrix (F3) hydric soil indicator was observed within W-1, which is inconsistent with the NRCS-mapped Kegonsa silt loam soil type.

The primary wetland hydrology indicators of Surface Water (A1) and High Water Table (A2) were observed within W-1, while secondary indicators included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5).

Wetland W-1 appears to be an isolated depression and its boundaries follow a moderately-defined topographic break. The boundaries were partially determined by the wetland signatures observed during the review of NAIP aerial imagery and located in the field.

3.3 Other Considerations

This report is limited to the identification and delineation of wetlands within the Study Area. Other regulated environmental resources that result in land use restrictions may be present within the Study Area that were not evaluated by Heartland (e.g. navigable waterways, floodplains, cultural resources, and threatened or endangered species).

Wisconsin Act 183 provides exemptions to permitting requirements for certain nonfederal wetlands. Nonfederal wetlands are wetlands that are not subject to federal jurisdiction. Exemptions apply to projects in urban areas with wetland impacts up to 1-acre per parcel. An urban area is defined as an incorporated area; an area within ½ mile of an incorporated area; or an area served by a sewerage system. Exemptions for nonfederal wetlands also apply to projects in rural areas with wetland impacts up to three (3) acres per parcel. Exemptions in rural areas only apply to structures with an agricultural purpose such as buildings, roads, and driveways. The determination of federal and nonfederal wetlands MUST be made by the USACE through an Approved Jurisdictional Determination (AJD). This report may be submitted to the USACE to assist with their determination.

Wis. Adm. Code NR 151 ("NR 151") requires that a "protective area" (buffer) be determined from the Ordinary High-Water Mark (OHWM) of lakes, streams and rivers, or at the delineated boundary of wetlands. Per NR 151.12, the protective area width for "less susceptible" wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. "Moderately susceptible" wetlands, lakes, and perennial and intermittent streams identified on recent mapping require a protective area width of 50 feet; while "highly susceptible wetlands" are associated with outstanding or exceptional resource waters in areas of special natural resource interest and require protective area width of 75 feet. Table 2 above lists the potential wetland buffers per NR 151 for each wetland identified based on Heartland's professional opinion. Please note that jurisdictional authority on wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities and regional planning organizations may have additional land use restrictions within or adjacent to wetlands.

4.0 Conclusion

Heartland completed an assured wetland determination and delineation within the Utterback Property North site on September 16, 2019 at the request of VH Acquisitions LLC. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the WDNR Wetland Delineation Assurance Program. The Study Area lies in Section 2, T6N, R10E, Town of Dunn, Dane County, WI.

One (1) wetland area was delineated and mapped within the 39.80-acre Study Area. The wetland, which may be classified as a farmed wet meadow, totals approximately 1.20 acres within the Study Area.

Wetlands and waterways discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and the local zoning authority. Heartland recommends this report be submitted to the USACE for final jurisdictional review and concurrence. Review by local authorities may be necessary for determination of any applicable zoning and setback restrictions.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area or within or adjacent to wetlands or waterways. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland delineation.

Experienced and qualified professionals completed the wetland determination and delineation using standard practices and professional judgment. Wetland boundaries may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands and their boundaries are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination and boundary reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland delineation was completed and the time of the review. Factors that may influence the findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.

5.0 References

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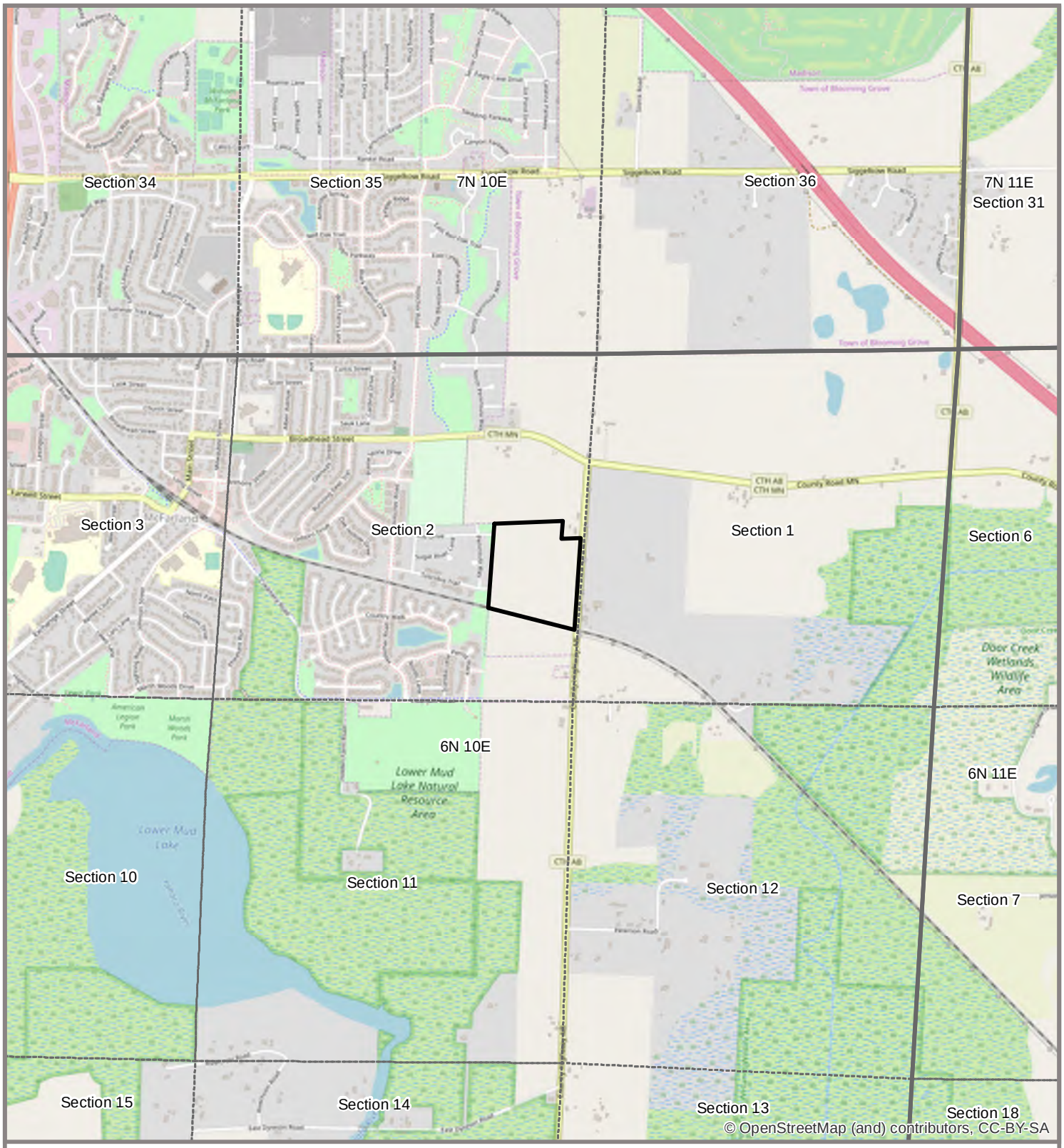
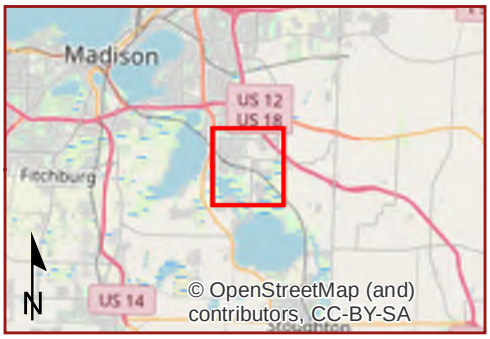
Appendix A | Figures





Study Area (39.80 ac)

Township

Section

0 1,000 2,000 Ft

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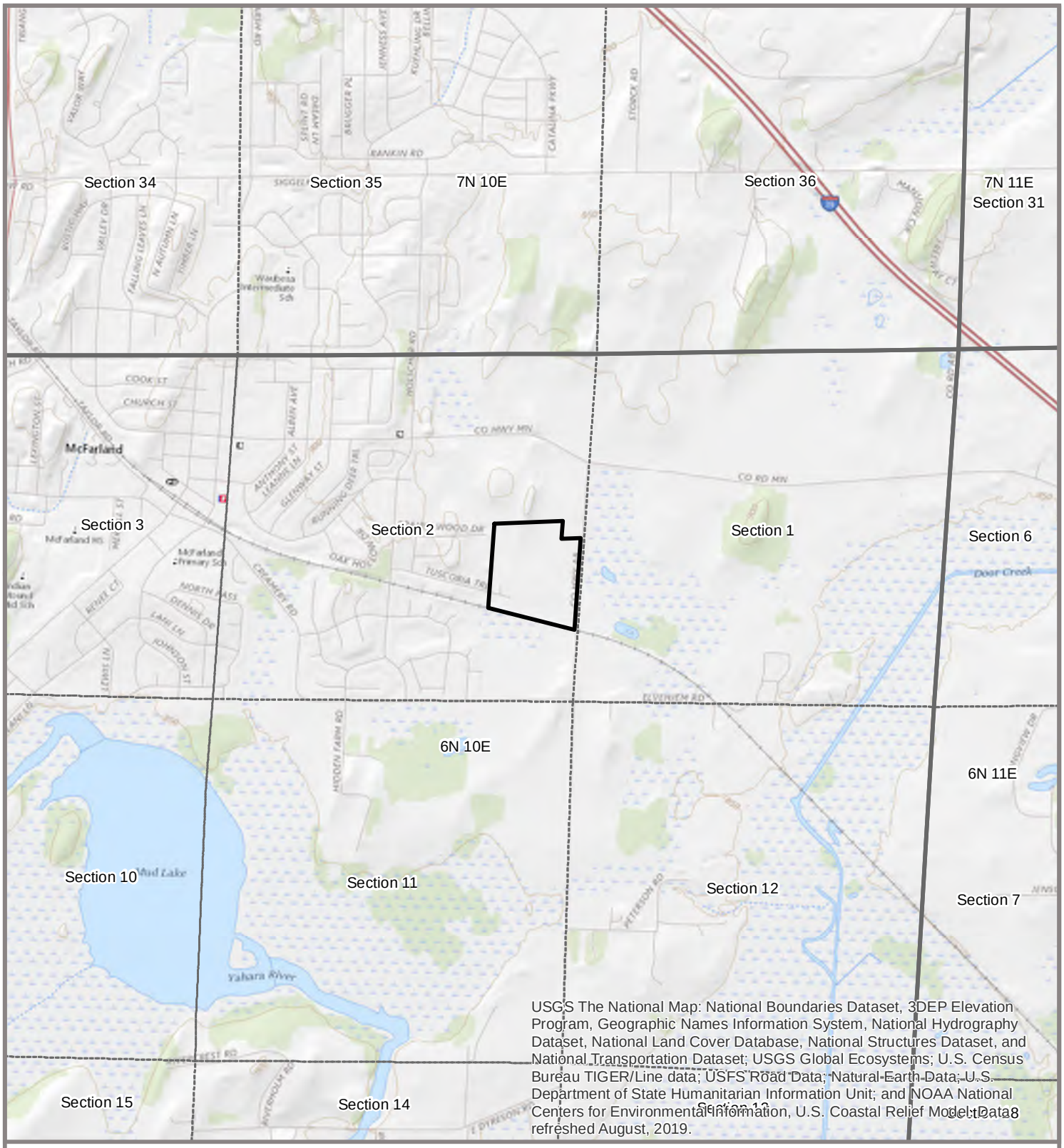
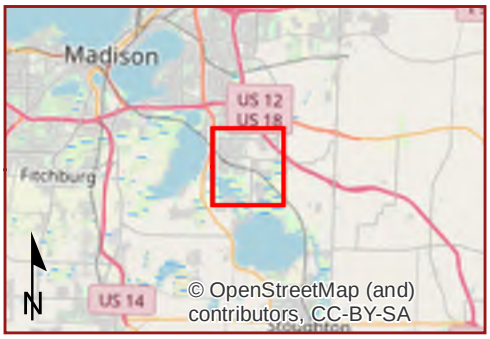
Figure 1. Project Location

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

OpenStreetMap
Data: ESRI *12/17/2019*





Study Area (39.80 ac)

Township

Section

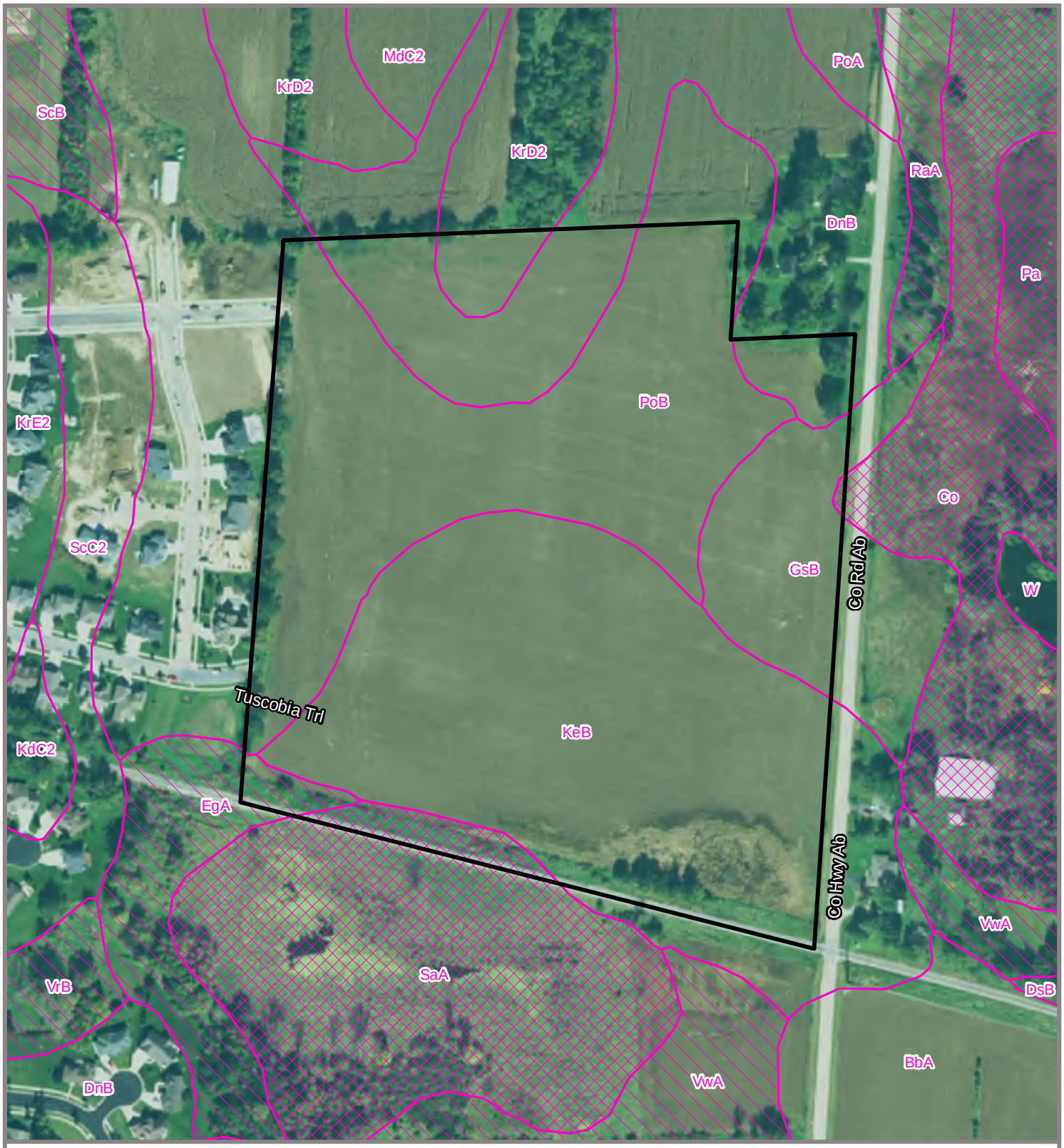
0 1,000 2,000 Ft

Heartland ECOLOGICAL GROUP INC

Figure 2. USGS Topography

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

USGS Topo
Data: USGS *12/17/2019*



Study Area (39.80 ac)

0 150 300 Ft

NRCS Soil Survey Data

Predominantly Hydric (85-100%)

Partially Hydric (15-84%)

Predominantly Non-Hydric (1-14%)

Non-Hydric (0%)

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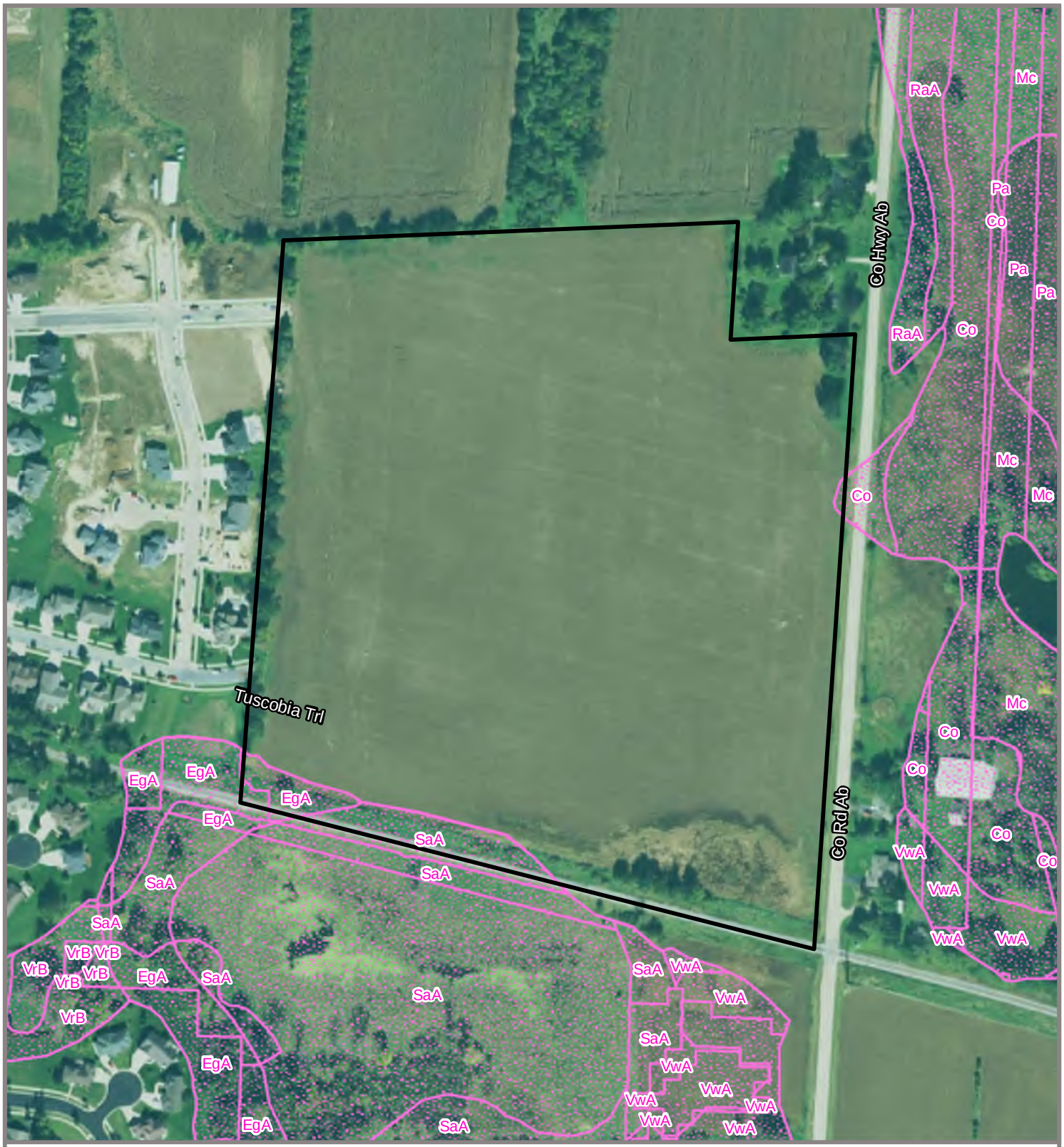
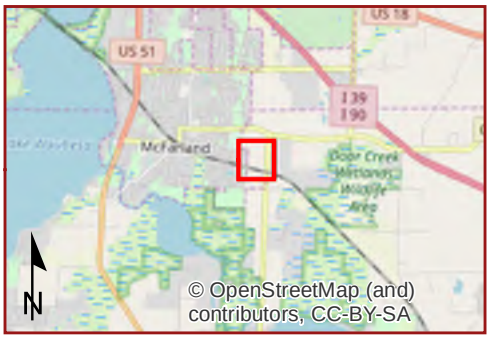
Figure 3. NRCS Hydric Soils

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2018 NAIP
Data: NRCS *12/17/2019*





Study Area (39.80 ac)

Maximum Extent Wetland Indicators

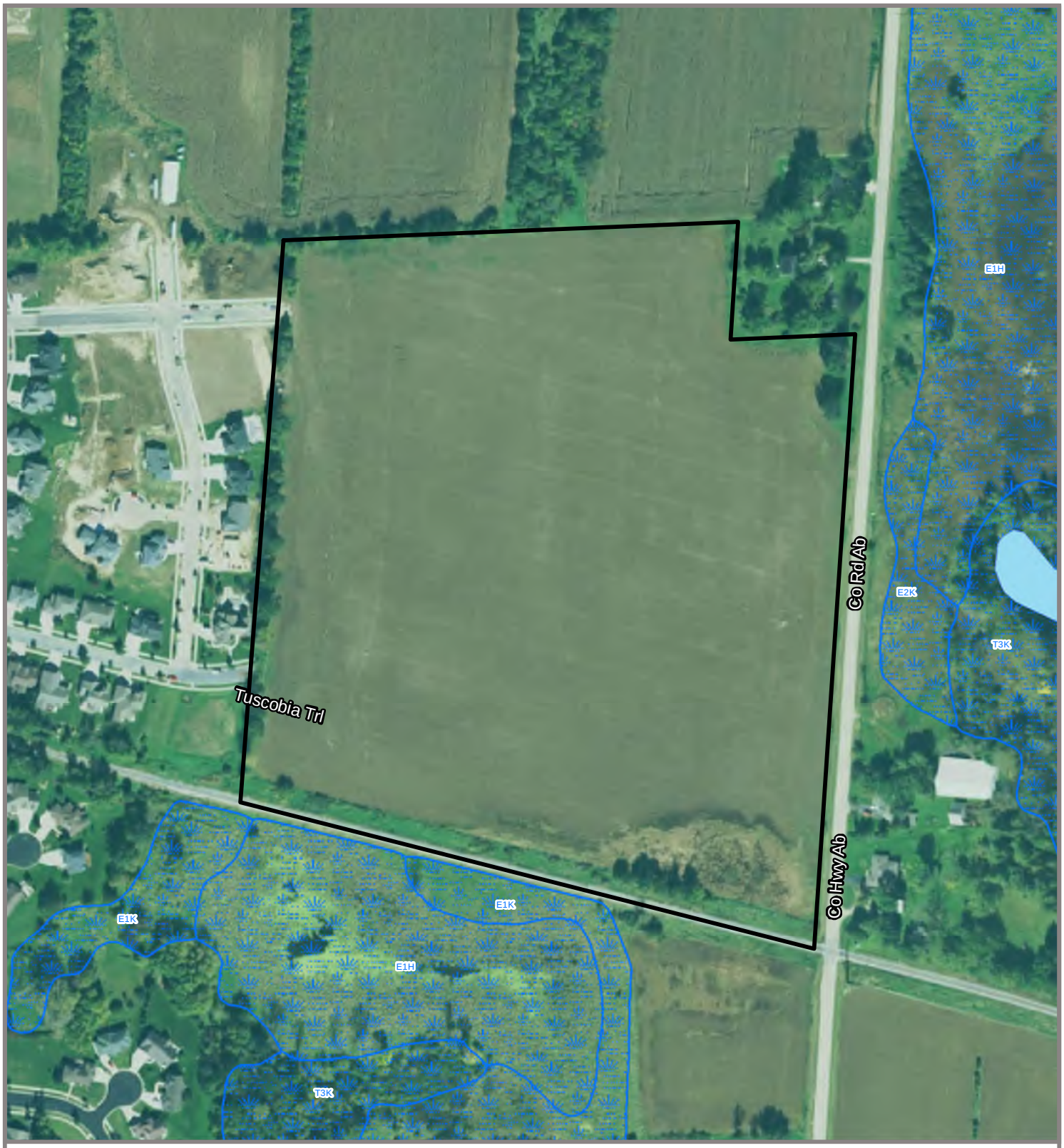
0 150 300 Ft

Heartland
ECOLOGICAL GROUP INC

Figure 4. SWDV Wetland Indicators

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2018 NAIP
Data: WDNR *12/17/2019*



Study Area (39.80 ac)

WWI Wetlands

NHD Waterway

NHD Waterbody

0 150 300 Ft

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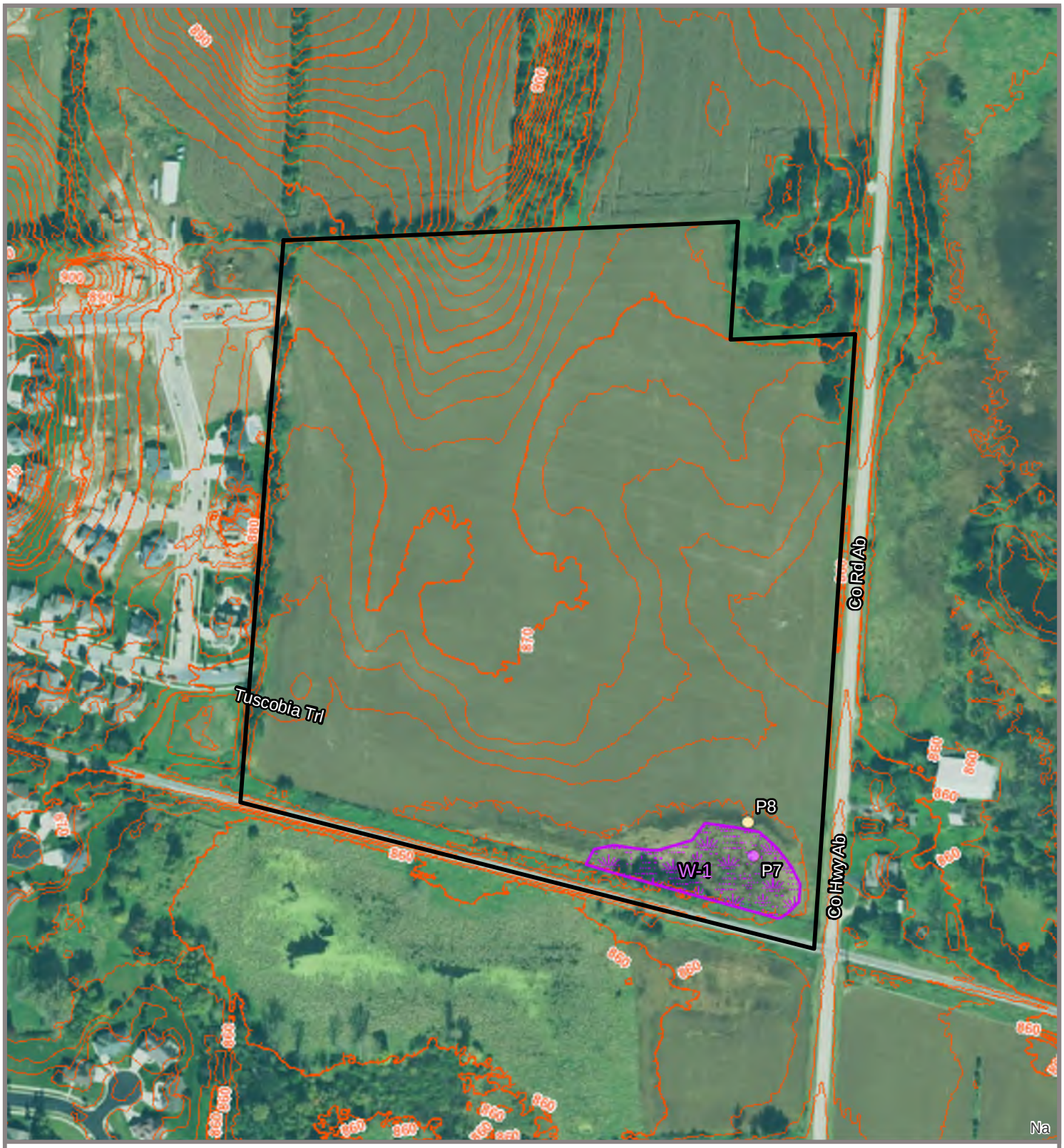
Figure 5. Wisconsin Wetland Inventory

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2018 NAIP
Data: USGS, WDNR *12/17/2019*



Study Area (39.80 ac)

Field Delineated Wetlands (1.20 ac)

0 150 300 Ft

Sample Points

- Upland
- Wetland

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Figure 6. Field Delineated Wetlands

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2018 NAIP
Data: Dane Co *12/17/2019*

Appendix B | WETS Analysis

WETS Analysis Worksheet

Project Name: Utterback Parcel
Project Number: 20190239
Period of interest: June - August 2019
Station: Dane County Regional Airport
County: Dane County

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	August	2.61	4.27	5.17
2nd month prior:	July	3.20	4.34	5.10
3rd month prior:	June	3.21	5.27	6.38
		Sum =	**13.88**	

Site determination

	Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
	2.85	Normal	2	3	6
	5.77	Wet	3	2	6
	5.16	Normal	2	1	2
Sum =	**13.78**			Sum*** =	**14**

*Normal precipitation with 30% to 70% probability of occurrence

Determination:

	Wet
	Dry
X	Normal

**Condition value:

Dry =	1
Normal =	2
Wet =	3

***If sum is:

6 to 9	then period has been drier than normal
10 to 14	then period has been normal
15 to 18	then period has been wetter than normal

Precipitation data source: Midwest Regional Climate Center, cli-MATE: MRCC Application Tools Environment

Reference: Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination* , Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Appendix C | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Utterback Property City/County: T Dunn/Dane Co Sampling Date: 9/16/2019

Applicant/Owner: VH Acquisitions LLC State: WI Sampling Point: P7

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T6N, R10E, S02

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 1 - 3

Subregion (LRR or MLRA): LRR K Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: Kegonsa silt loam (KeB) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)
A WETS analysis was conducted and indicates that climate conditions were normal at the time of the field investigation. Sample point recorded within a farmed wetland depression north of the railway that traverses the Study Area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Depression is mostly inundated with 1-6 inches of water throughout.

VEGETATION – Use scientific names of plants. Sampling Point: P7

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Panicum dichotomiflorum*	65	Yes	FACW
2. *Phalaris arundinacea*	25	Yes	FACW
3. *Zea mays*	5	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	95 (A)		205 (B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
No crops present / crops not planted this year. The depression appears to not have been farmed for a few years and reed canary grass has become established.

SOIL

Sampling Point P7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 4/1	90	10YR 5/6	10	C	M	Loamy/Clayey	SiCL
10 - 18	10YR 5/1	85	10YR 5/8	15	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Utterback Property City/County: T Dunn/Dane Co Sampling Date: 9/16/2019

Applicant/Owner: VH Acquisitions LLC State: WI Sampling Point: P8

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T6N, R10E, S02

Landform (hillside, terrace, etc.): Sideslope Local relief (concave, convex, none): None Slope %: 1 - 3

Subregion (LRR or MLRA): LRR K Lat: ____ Long: ____ Datum: ____

Soil Map Unit Name: Kegonsa silt loam (KeB) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No X	

Remarks: (Explain alternative procedures here or in a separate report.)
A WETS analysis was conducted and indicates that climate conditions were normal at the time of the field investigation. Sample point recorded within an upland agricultural field planted to corn - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology indicators observed.

VEGETATION – Use scientific names of plants. Sampling Point: P8

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Panicum dichotomiflorum*	3	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	3	=Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	3 (A)		6 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
The agricultural field is planted with corn, no apparent stress, 85% cover. Few to no agricultural weeds present.

SOIL

Sampling Point P8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 3/3	100					Loamy/Clayey	SiL
12 - 20	10YR 5/3	99	10YR 4/6	1	C	M	Loamy/Clayey	SiCL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

Appendix D | Site Photographs

Photo #1 Sample Point P7

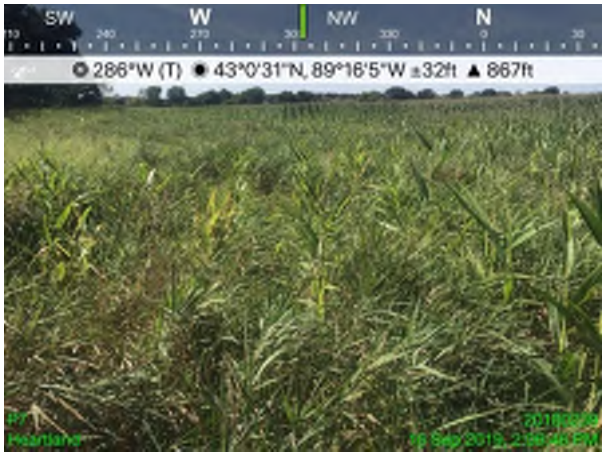


Photo #2 Sample Point P7

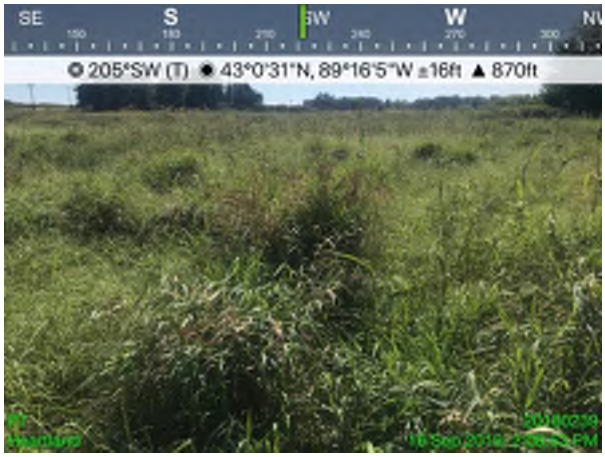


Photo #3 Sample Point P7

Photo #4 Sample Point P7

Photo #5 Sample Point P8

Photo #6 Sample Point P8

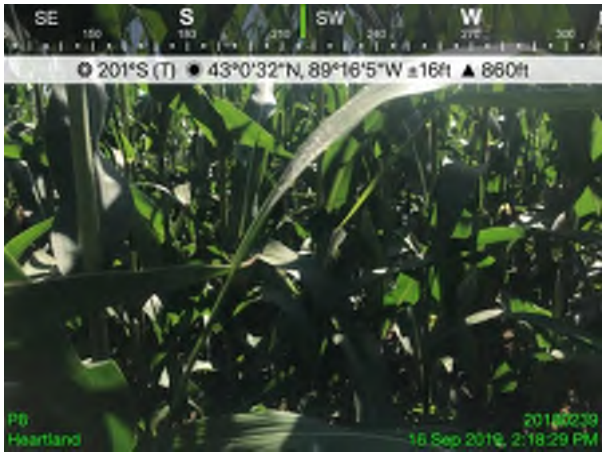


Photo #7 Sample Point P8

Appendix E | Delineator Qualifications

Jeff Kraemer

Principal Scientist
506 Springdale Street
Mount Horeb, WI 53572
jeff@heartlandecological.com
(608) 490-2450

Jeff is the founder of Heartland Ecological Group, Inc. With over 16 years of experience as an environmental consultant, ecological and regulatory policy practitioner, and managing business leader, Jeff provides proven value to clients with his vast experience guiding often complex projects through environmental regulatory and technical challenges applied throughout a diversity of industry sectors. Jeff is recognized by the Wisconsin Department of Natural Resources Wetland Delineation Assurance Program and is the longest standing assured wetland delineator in the state of Wisconsin.

Jeff is a recognized expert in the field of wetland ecology and delineation; wetland restoration and mitigation banking; and regulatory policy and permitting associated with wetlands and waterways. His experience includes: Wetland Determination, Delineation & Functional Assessment; Wetland Restoration, Mitigation, Banking & Monitoring; Botanical / Biological Surveys & Natural Resource Inventories; Rare Species Surveys, Conservation Plans & Monitoring; Habitat Restoration, Wildlife Surveys, SCAT surveys, Environmental Assessments; Local, state, federal permit applications; Expert Witness testimony; and Regulatory permit compliance.

Education

MS, Biological Sciences (Emphasis in Wetland Ecology), University of Wisconsin – Milwaukee, WI, 2003

BS, Biological Sciences (Emphasis in Aquatic Biology) University of Wisconsin – La Crosse, WI, 1999

Regional Supplement Field Practicum
Wetland Training Institute (WTI)
Portage, WI, 2017

Basic and Advanced Wetland Delineation Training, Continuing Education and Extension, UW-La Crosse, WI, 2001

Identification of Sedges Workshop, UW-Milwaukee, Saukville, WI, 2001

Vegetation of Wisconsin Workshop, UW-Milwaukee, Saukville, WI 2000

Environmental Corridor Delineation Workshop, Southeastern Wisconsin Regional Planning Commission (SEWRPC), 2004

Wetland Soils and Hydrology Workshop, Wetland Training Institute, Toledo, OH, 2003

Critical Methods in Wetland Delineation
University of Wisconsin - La Crosse Continuing Education and Extension
Madison, WI, 2006 - 2018

Federal Wetland Regulatory Policy Course
Wetlands Training Institute (WTI)
Cottage Grove, WI, 2010

Registrations

Professionally Assured Wetland Delineator, Wisconsin Department of Natural Resources (2005-Present)

Wetland Professional in Training (WPIT), Society of Wetland Scientists Certification Programs

Project Experience

Energy

Ameren Corporation Transmission Line Projects: LaSalle-Ottawa, LaSalle Co., IL; Wood River Refinery, Madison Co., IL; Rockwood-Big River, Jefferson Co., MO; Saddle Creek 73, Franklin Co., MO.; Havana Rebuild, Mason Co., IL*
Managed support for environmental and GIS services to gain regulatory approvals for various new transmission lines. Provided project support for: transmission line siting; critical issues analysis; route matrices; GIS data acquisition and mapping services, coordination of regulatory agency meetings, completion of field wetland delineations; threatened and endangered species; biological assessment and Section 404 permitting, CPCN approvals; community advisory and public workshop support, and expert witness testimony.

Alliant Energy, Nelson Dewey Power Generation Facility Expansion Project, Cassville, WI
Completed field evaluations and delineations of wetlands in preparation of the National Environmental Policy Act (NEPA) documentation for a proposed expansion of the facility.

Enbridge, Inc., Southern Access Expansion Project, Crude Petroleum Pipeline Project, WI
Completed wetland delineations and habitat assessments along a 343-mile proposed crude petroleum pipeline corridor through Wisconsin as part of Enbridge Energy's Southern Access Expansion Program.

American Transmission Company, Arrowhead to Weston, WI, 345 kV Transmission Line Project
Completed wetland delineations, threatened and endangered plant surveys, and habitat assessments along a 208-mile proposed new electric transmission line.

Midwest Generation, Waukegan Power Generation Facility Expansion Project, Lake County, IL
Completed field evaluations of wetlands and threatened and endangered species in coordination with Section 404 permitting requirements for expansion of the power generation facility.

Commonwealth Edison Co. (ComEd), Prairie Program, Greater Chicago Area, IL
Managed ComEd's Prairie Program for over 10 years that involved nearly 200 acres of prairie restoration and management within their transmission line rights-of-way throughout the greater Chicago area.

Alliant Energy, Hydroelectric Dam, Prairie Du Sac, WI
Conducted purple loosestrife surveys on Lake Wisconsin shorelines and wetlands to develop a purple loosestrife management plan in support of the hydroelectric facility FERC licensing.

Alliant Energy, Edgewater Generation Facility, Sheboygan, WI
Managed and coordinated environmental regulatory process for expansion of existing fly ash disposal facility which required approvals from the USACE and WDNR for wetland impacts associated with the project.

Guardian, Pipeline Wetland Mitigation, Winnebago County, WI
Managed and lead the site selection, design, construction oversight, and long-term monitoring and management of a 30-acre wetland mitigation project consisting of prairie, wetland, and forested wetland restoration. The mitigation successfully compensated for wetland impacts associated with the Guardian gas pipeline construction.

Transportation

Canadian National Railroad, Stanberry Subdivision, Douglas County, WI
Supported CN with gaining approval to construct an approximate 2.5-mile new railroad siding track in Douglas County, WI. Completed wetland delineations and threatened and endangered resources assessments. Completed permit applications and gained approval for approximately 2-acres of wetland impacts and construction of bridges over navigable waterways.

Canadian National Railroad, Hawthorne Hill Phase 2, Douglas County, WI
Supported CN with gaining approval to construct new railroad siding track in Douglas County, WI. Completed assured wetland delineations along six miles of existing track. Completed permit applications for wetland impacts.

Canadian National Railroad, Stone Lake to Big Foot, Washburn County, WI
Completed assured wetland delineations along three miles of existing track and associate wetland delineation reports.

Canadian National Railroad, Nestle to Burlington, Racine County, WI
Completed assured wetland delineations along three miles of existing track and associate wetland delineation reports.

Wisconsin Department of Transportation (WisDOT), Neptune Wetland Mitigation Monitoring, Richland County WI
Completed annual comprehensive vegetation surveys, mapping, performance evaluations, and reporting of a 50-acre wetland mitigation site.

WisDOT, Threatened Plant Species Consultation, Port Wing, WI
Completed comprehensive study of a threatened plant species population in support of STH 13 Reconstruction project including preparation of relocation and monitoring plan, physical relocation of plants, and follow-up annual monitoring.

WisDOT, Wildcat Mountain Wetland Mitigation Monitoring, Vernon County, WI
Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 38-acre wetland mitigation site.

WisDOT, World Dairy Center Wetland Mitigation Bank, Madison, WI
Led the baseline studies, design and approval of an approximate 200-acre compensatory wetland mitigation bank on behalf of the WisDOT. The project involved lengthy stakeholder coordination, detailed hydrology evaluations and assessments, complex wetland determinations. The mitigation plan consisted of restoration of farmed and drained organic soils utilizing drain tile valves to wet meadow, sedge meadow, shallow marsh and mesic prairie.

City of Stoughton, Academy Street Reconstruction, Stoughton, WI
Completed wetland assessments and delineations within the study area of the Academy Street reconstruction project.

City of Tomah, Gopher Avenue Reconstruction, Tomah, WI
Completed wetland assessments and delineations within the project area of the Gopher Avenue reconstruction project.

Residential & Commercial Development

Veridian Homes, Smiths Crossing, Sun Prairie, WI
Completed wetland delineations on the approximate 50-acre portion of the proposed residential development project. Completed wetland permit applications and gained approval for impacts to jurisdictional wetlands. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Hovde Properties, Sprecher Road Property, Madison, WI
Completed wetland delineations on the approximate 100-acre property proposed for residential and commercial development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Ruedebusch Development and Construction, Packers Avenue Parcel, Madison, WI
Completed wetland delineations on the approximate 30-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Newport Development Corp., Briarwoods Condominiums, Caledonia, WI
Completed wetland delineations on the approximate 10-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

William Ryan Homes, West Prairie Village, Sun Prairie, WI
Completed wetland delineations throughout the approximate 80-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183 and NR103.06.

Bielinski Homes, Chapman Property, Mukwonago, WI
Completed wetland delineations throughout the approximate 65-acre property proposed for residential development.

Logistics Property Company, Nelson-Heckel Properties, Kenosha County, WI
Completed wetland delineations throughout the approximate 105-acre property proposed for commericial development.

Country View Estates Development Project, DeForest, WI
Completed wetland delineation/evaluation, wetland permitting, and mitigation planning in support of a 400-acre mixed residential/commercial/recreational development project.

Industrial, Manufacturing & Institutional Facilities

Berlon Industries Expansion Project, Hustisford, WI
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the expansion of the industrial facility.

Ashley Furniture Industries Expansion Project, Arcadia, WI
Developed and gained WDNR/USACE approval for 35-acre wetland mitigation plan in support of wetland impact application for expansion of the manufacturing facility; Managed the construction of the wetland bank and completed over 10 years of monitoring and management through project close-out.

AllEnergy Proposed Sand Mine, Trempealeau County, WI
Completed wetland delineations, wetland permitting support, and wetland mitigation support for a proposed sand mine in Trempealeau County. The project consisted of over 500 acres of wetland delineation and wetland and waterway permitting associated with a rail spur expansion. Supported community engagement through presentations at various town hall meetings.

Conway Central Express Expansion Wetland Permitting, Franklin, WI
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation design for expansion of the trucking facility.

Morrison Creek Cranberry Company, Wetland Mitigation Bank Monitoring and Remediation, Oakdale, WI
Completed annual mitigation site monitoring, vegetation surveys, and performance evaluations of 60-

acre mitigation bank site. Completed mitigation remediation management plan for compliance with USACE performance standards.

Northwestern Mutual Campus Facility, Native Landscape Management, Franklin, WI
Managed and coordinated the development of a native landscape plan for the 50 acres of open space surrounding Northwestern Mutual's campus facility. The plan consisted of wetland, woodland, and prairie restoration. Managed and coordinate the implementation of the native landscape installation and long-term management.

Daybreak Foods, Proposed Facility Expansion, Lake Mills, WI
Completed wetland assessment and delineations on over 175 acres of various properties of DayBreak Foods. Provided wetland regulatory guidance to support the expansion of the egg production and processing facilities.

Sinsinawa Dominican Sisters, Grant County, WI
Completed wetland delineations on the 57-acre Sinsinawa Dominican Sisters property in support of a land use planning study.

Government & Non-Government Organizations

City of Fitchburg, Fitchburg Northeast Neighborhood Plan, Fitchburg, WI
Completed wetland mapping and assessment and developed wetland protection standards for the City of Fitchburg's NE Neighborhood Plan.

Lake Koshkonong Wetlands Association, Lake Koshkonong Water Level and Wetland Studies, Lake Koshkonong, WI
Developed and conducted various scientific wetland studies for development of a water level management plan: E. prairie fringed orchid hydrology study; Floodplain forest/hydrology study; Floristic quality assessment/vegetation mapping within 4000 acres of wetlands on behalf of the Lake Koshkonong Wetlands Association.

Richland Center Utilities, New Force Main Project, Richland Center, WI
Supported the planning and approval of a new force main utility corridor on behalf of Richland Center Utilities. Completed wetland delineations and threatened and endangered species assessments along the approximate 3.5-mile project corridor. Completed and wetland and waterway permit applications, wetland restoration plans, and completed annual monitoring of restored wetland areas.

Portage Parks Department, Samuelson Fen Restoration, Portage, IN
Developed a restoration plan to restore a degraded 30-acre fen, conducted vegetation surveys, floristic quality assessments and hydrology monitoring.

Badger Prairie Health Care Center Expansion, Verona, WI
Completed wetland delineation/evaluations and wetland permitting in support of the expansion of the healthcare facility.

City of Fitchburg, Native Restoration Support, Fitchburg, WI
Assisted the City of Fitchburg with restoration activities on multiple projects involving incorporating native restoration within various regional stormwater and outlot facilities.

City of Tomah, Proposed Bike Trail Project, Tomah, WI
Completed wetland delineations along an approximate 1-mile proposed bike trail path on behalf of the City of Tomah.

City of Sun Prairie, Sheehan Park, Sun Prairie, WI
Completed wetland delineations throughout the 50-acre Sheehan Park on behalf of the City of Sun Prairie.

City of Madison, Various Projects, Madison, WI
Completed numerous wetland delineations on behalf the City of Madison in support of stormwater improvement and other facility improvement projects.

Private Landowners & Recreational Properties

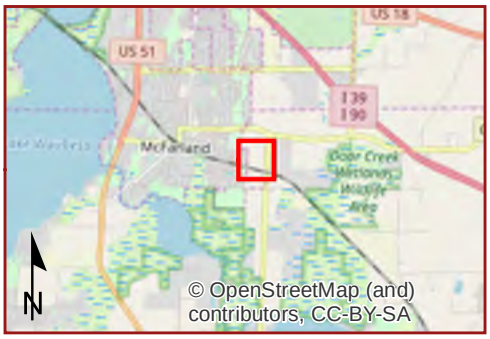
Erin Hills Golf Course, Washington County, WI
Completed wetland delineations throughout the approximate 200-acre golf course property. Provided wetland regulatory guidance in support of the renovation of Erin Hills in preparation for hosting the 2017 U.S. Open championships.

La Belle Golf Course, The Prestwick Group, Inc., Lac La Belle, WI
Completed wetland delineations throughout the approximate 250-acre golf course property. Provided wetland regulatory guidance in support of the renovation of the La Belle Golf Course.

Big Hollow Wetland Mitigation Bank, Spring Green, WI
Completed wetland delineations on the approximate 200-acre property and evaluated the potential for developing a private wetland mitigation bank. Coordinated detailed hydrology monitoring and modeling to address potential off-site water impacts and support the development of the hydrology restoration plan. Completed the prospectus documents and submittals to the Interagency Review Team. Organized and led public informational meetings, and various stakeholder meetings to address local concerns.

The Farm Golf Course, Cottage Grove, WI
Completed wetland delineations throughout the approximate 100-acre golf course property. Provided wetland regulatory guidance in support of residential development adjacent to the golf course.

Appendix F | NAIP Aerial Imagery



Study Area (39.80 ac)

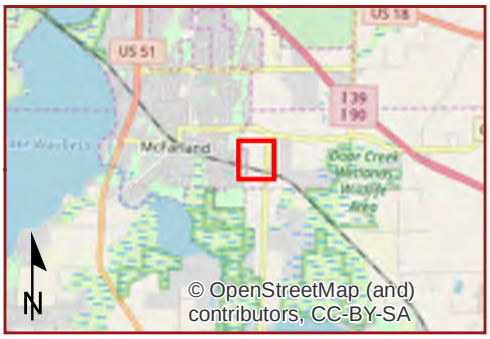
0 150 300
Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2004-06-22
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2004 NAIP
Data: USDA *12/17/2019*



Study Area (39.80 ac)

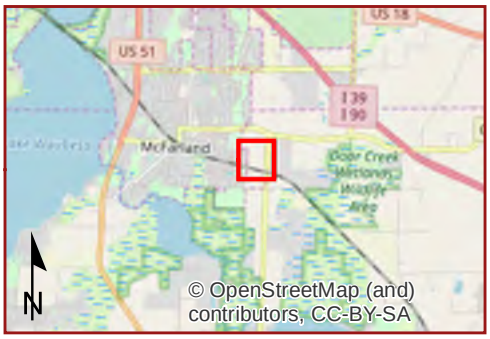
0 150 300 Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2005-06-20
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2005 NAIP
Data: USDA *12/17/2019*



Study Area (39.80 ac)

0 150 300 Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2006-07-31
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2006 NAIP
Data: USDA *12/17/2019*

Study Area (39.80 ac)

0 150 300
Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2008-08-10
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2008 NAIP
Data: USDA *12/17/2019*

Study Area (39.80 ac)

0 150 300
Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2010-07-02
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2010 NAIP
Data: USDA *12/17/2019*

Study Area (39.80 ac)

0 150 300
Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2013-06-19
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2013 NAIP
Data: USDA *12/17/2019*

Study Area (39.80 ac)

0 150 300
Ft

Heartland
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Appendix: 2015-10-11
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2015 NAIP
Data: USDA *12/17/2019*

Study Area (39.80 ac)

0 150 300 Ft

Heartland ECOLOGICAL GROUP INC

Appendix: 2017-09-03 NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2017 NAIP
Data: USDA *12/17/2019*

Study Area (39.80 ac)

0 150 300
Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2018-10-04
NAIP Aerial Imagery

Utterback Property North
Project #20190239
T6N, R10E, S02
T Dunn, Dane Co, WI

2018 NAIP
Data: USDA *12/17/2019*

APPENDIX G

DRAFT MAINTENANCE AGREEMENT

Maintenance provisions:

Detention Basin

Visual inspection of the detention basin and outlet structure shall be performed, at a minimum annually. The inspections shall include checking for potential problems such as: subsidence, erosion, tree growth in and around the embankment and outfall structure, sediment accumulation, clogging of outfall structure, and damage to the emergency spillway. Problems identified by the inspections shall be repaired as soon as practicable.

Sediment accumulations shall be removed by dredging when two (2) foot of siltation has occurred or as directed by the Village of Waunakee. The dredged material shall be removed and disposed of in accordance with NR 347.

The detention basin shall be mowed a minimum of twice per year. Mowing shall maintain a minimum grass height of 6 to 8 inches. Areas of sparse vegetation shall be reseeded. Additional fertilizer shall be applied as needed, per the results of a soil test.

Separate and distinct records shall be maintained by the owner to record the specific activities and costs thereof for the maintenance plan implementation. The records shall include the dates of maintenance visits and the specific work performed. Records shall be kept as required by local, state or federal law.

Infiltration Basin

Visual Inspection of the Infiltration Basin shall be performed, at a minimum, annually.

Maintenance shall be required when system shows standing water beyond 24 hours of rain event. Cleaning shall consist of removal of sediment, two (2) foot undercut, undercut replacement with material consisting of 15-30% compost and 70-85% sand and restoration in-kind.

Restoration of plant material shall be with native plugs or seed mixture tolerant of fluctuating water conditions. If a seed mixture is used steps shall be taken to assure vegetation establishes

Document No.

ROSEWOOD FIELDS
DECLARATION OF PROTECTIVE COVENANTS, CONDITIONS AND RESTRICTIONS

VILLAGE OF MCFARLAND, DANE COUNTY, WI.

Drafted by and return to:
Angie Christensen
Veridian Homes
6801 South Towne Drive
Madison, WI 53713

See Exhibit "B"
(Parcel Identification Numbers)

PREAMBLE

This Declaration of Protective Covenants, Conditions and Restrictions (the "**Declaration**") made this _____ day of _____, 20__, by VH Rosewood Fields LLC, a Wisconsin Limited Liability Company (collectively, hereinafter referred to as the **"Declarant"**) and/or its successors and assigns.

WHEREAS, Declarant is the owner of real property legally described as the plat of Rosewood Fields (the **"Plat"**) located in the Village of McFarland, Dane County, Wisconsin, more particularly described and depicted in Exhibit "A" attached hereto and incorporated herein by reference, and desires to build thereon a planned development with housing units (the "**Development**"); and

WHEREAS, Declarant desires to provide for the maintenance and enhancement of property values and amenities in said Development, and for the preservation of the properties and improvements thereon, as well as, for the preservation of said Development's distinctive style, and to prevent the erection, or maintenance of poorly designed or constructed improvements; and

WHEREAS, to the above end, Declarant desires to subject said real property, to the covenants, restrictions, easements, charges and liens hereinafter set forth, each and all of which is and are for the benefit of said property and each owner thereof; and

WHEREAS, Declarant has thought it desirable for the efficient maintenance and preservation of the values of said Development to create an Association to which should be delegated and assigned the powers of

owning, maintaining and administering the Common Property and facilities, as set forth below, and administering and enforcing the covenants and restrictions, and collecting and disbursing the Assessments and charges as hereinafter or in the future created or established, and promoting the health, welfare and recreation of the Development's residents. Declarant will incorporate the Rosewood Fields Homeowners Association, Inc. a non-profit, non-stock corporation, under the laws of the State of Wisconsin (the **"Association")** for such purposes;

NOW, THEREFORE, the Declarant declares that the following real property legally described and depicted in Exhibit "A", attached hereto and incorporated herein by reference, will and shall be sold, transferred and conveyed subject to the easements, covenants, restrictions, assessments, charges and liens hereinafter set forth.

PART A
ASSOCIATION MATTERS

A-1) Definitions.

A) "Association" shall mean and refer to as Rosewood Fields Homeowners Association, Inc., and its successors and assigns.

B) "Common Property" shall mean those areas located in the Development which are not contained within a Lot and which the Declarant or the Association, as the case may be, shall be required to maintain in accordance with agreements between Declarant and the Village of McFarland, or pursuant to applicable Village of McFarland rules, regulations and ordinances, until such time as maintenance of such areas is turned over to the Village of McFarland and the Village of McFarland accepts such maintenance. Areas within the Development which will initially constitute Common Property include, but are not limited to, storm water management and park areas.

C) "Declarant" shall mean and refer to VH Rosewood Fields LLC; a Wisconsin Limited Liability Company and/or their successors and assigns.

D) "Lot" shall mean and refer to the lands described as Rosewood Fields as described and depicted in Exhibit "A", now owned by Declarant, but which Declarant in the future intends to convey to purchasers who shall thereupon become members of the Association. The term "Property" or "Properties" shall be synonymous with the term Lot.

E) "Owner" shall mean and refer to the record owner, whether one or more persons or entities, of the fee simple title to any of the Properties described in Exhibit "A". A purchaser of any of said Properties by land contract shall be referred to as "Owner" instead of the land contract vendor.

F) "Occupant" shall mean and refer to the occupant of any of the Properties who shall either be an Owner or a lessee who holds a written lease having an initial term of twelve months or more.

G) "Subdivision" shall refer to the lands described in Exhibit "A". The term "Subdivision" is synonymous with the term "Development".

A-2) Membership and Voting Rights.

A) Members. Declarant will incorporate the Association. Each Owner of a Lot shall automatically become a member of the Association. By acceptance of the Deed or other instrument of

conveyance, the Owner(s) of each Lot consent to such Owner's membership in the Association whether or not specified on the deed to the Owner. Membership in the Association is appurtenant to each Lot. Each Owner of a Lot shall automatically be entitled to the benefits and subject to the burdens relating to such membership in the Association. The Association shall have authority to manage the Common Property. Persons or entities, including a land contract vendor, who hold an interest merely as security for the performance of an obligation, shall not be members of the Association. Tenants of Properties who are not Owners shall not be members of the Association. To the extent that Declarant owns any Lot, Declarant shall be a member of the Association until such ownership terminates.

B) Voting Rights.

1) Each member shall be entitled to one vote for each Lot owned except as set forth in A-2(B) (2) below.

2) When there is more than one Owner of a Lot, said Owners shall only be entitled to one collective vote for each Lot. There shall be no fractional votes or voting. When there is more than one Owner of any Lot, the vote attributable to such ownership must be cast unanimously by all the Owners of that Lot, or it shall not be considered for any purpose.

C) Proxies. Any Member may vote by proxy. All proxies shall be in writing and signed by the Owner or in cases where there is more than one Owner, by all Owners of the Lot.

D) Articles of Incorporation and By-Laws. The purposes and powers of the Association and the rights and obligations with respect to the members thereof, shall be governed by the Articles of Incorporation and By-Laws of the Association; provided, however, that such Articles of Incorporation and By-Laws shall be subject to, and shall not contravene, the terms, conditions, benefits and burdens set forth in this Declaration.

E) First Year's Operating Expenses. Commencing on the date established for the payment of assessments under Section A-4(B)(1), Declarant shall pay to the Association an amount equal to the estimated operating expenses of the Association for a period of one (1) year, less assessments on Lots owned by Declarant actually paid to the Association for the one (1) year period of time. Said payment may be made in a lump sum or in twelve (12) monthly installments, at Declarant's option. Prior to said date, Declarant shall be solely responsible for payment of all maintenance expenses.

A-3) Description.

A) Responsibility for Assessments. Declarant shall turn over to the Association, at the time control is turned over to the Members, any surplus received by the Association of income over expenses. Assessments shall be based on the number of assessment units (an "A**ssessment Unit"**), which are assigned to Lots in the Development based upon their intended use at the present time. The number of Assessment Units for a particular Lot will be divided by the total number of Assessment Units in the Development to arrive at a particular Lot's percentage share (**"Percentage Interest"**) of assessments for common area maintenance and other expenses, which the Association is permitted to assess to members under the Declaration. The Declarant shall be responsible for payment of assessments on Lots owned by Declarant, only at such time as a Declarant owned Lot has been improved with street, utilities and such other improvements as are necessary to permit commencement of construction on such Lot. For the purposes of the following table, a single family residence shall be deemed a Dwelling Unit.

	Use	Number of Assessment Units
1)	Single Family:	One (1) per Dwelling Unit.
2)	Twins (2 unit residential)	One (1) per Dwelling Unit (each side defined as a dwelling unit)

B) **Association Management.** The Association is required to retain a professional property management company with the experience necessary to perform the duties of the Association (the **"Management Company"**). The Association shall enter into a management contract (the **"Management Contract"**) with the Management Company on such terms and conditions as the Association and the Management Company shall agree. The initial Management Company is DSI Real Estate Group, Inc., a Wisconsin Corporation, which is affiliated with the Declarant by reason of common ownership. The Management Contract between DSI Real Estate Group, Inc. and the Association has not been negotiated on an arm's length basis.

C) **General Fund.** As used herein, the term **"Surplus"** shall mean the amount by which assessments collected by the Management Company on behalf of the Association to pay for common expenses relating to the Property exceed the common expenses for the fiscal year in question. The Management Company shall deposit and hold any Surplus in the Association's operating account maintained by the Management Company. The Surplus, in the discretion of the Association working in conjunction with the Management Company, may be applied to future Association expenses as they become due, but there shall be no obligation on either the Association's or the Management Company's part to return the Surplus to lot owners.

D) **Percentage Interest for Condemnation or Insurance Proceeds.** For the purposes of establishing an Owner's percentage of insurance proceeds or condemnation awards in the event any portion of the Common Property is completely destroyed or taken by eminent domain and is not reconstructed, each Owner shall have a percentage interest in the insurance or condemnation proceeds equal to the Percentage Interest of such Owner in the Common Property.

E) **Conveyance, Lease or Encumbrance of Percentage Interest.** Any deed, mortgage, lease or other instrument purporting to convey, encumber or lease for a period of time in excess of one (1) year (a **"Lease"**) any Lot shall be deemed to include the Owner's Percentage Interest in the Common Property and in the insurance proceeds or condemnation awards even though such interest is not expressly described or referred to therein. The conveyance, encumbrance or Lease of an Owner's Percentage Interest in the Common Property independent of the appurtenant Lot and the conveyance, encumbrance or Lease of an appurtenant Lot independent of the Owner's Percentage Interest in the Common Property shall be prohibited.

F) **Ownership.** The Common Property is dedicated to the Village of McFarland for the purposes described in the Plat

G) **Damage or Destruction of Common Property by Owner.** In the event any Common Property is damaged or destroyed by an Owner or any of his guests, lessees, tenants, licensees, agents or member(s) of his family, including pets, said Owner does hereby irrevocably authorize the Association to repair said damage. The Association shall repair and restore any damaged area to its former condition. The amount necessary for said repair shall become a special assessment upon the Property of said Owner.

A-4) **Maintenance of Common Property**

A) <u>Maintenance Requirements.</u>

1) Responsible Party. The Declarant or the Association shall provide for the care, operation, management, maintenance and repair of the Common Property, until maintenance obligations are assumed by the Village of McFarland. The Common Property shall be maintained in good and safe condition, in accordance with the agreements between Declarant and the Village, as well as applicable Village ordinances, rules and regulations.

2) General Responsibilities. Maintenance shall include, but not be limited to, responsibility for landscaping and lawn care, trash, snow removal including shoveling with particular attention being paid to cross walk ramps and islands, improvements to common areas, upkeep of storm water management facilities which may include detention basins and drainage swales, common property lighting and/or other common property utility charges and any special street design features or traffic calming features.

3) Specific Responsibilities. Certain streets within the Property may include special traffic islands and traffic calming measures within the public right-of-way. The Association shall be responsible, at the Association's sole cost and expense, for the maintenance and upkeep of such physical traffic measures. Such maintenance and upkeep shall be performed at the discretion of the Association except to the extent required by the Village of McFarland, and shall include landscaping, snow and ice removal. If the special street design features or landscaping are not maintained, the Village of McFarland will give notice to the Association that it is not being maintained. If the Association does not respond to the notice within sixty (60) days, the Village may modify the physical traffic measures to minimize maintenance needs; including replacing landscaped surfaces with asphalt. The Association and persons involved with the maintenance and upkeep of the special traffic measures shall indemnify and hold harmless the Village of McFarland and its boards and commissions, and their officers, agents and employees from and against all claims, demands, loss or liability of any kind, type or description, related to the maintenance and upkeep of the special traffic measures.

4) In order to carry out its maintenance obligations, the Association may enter into a contract with a reputable property management company (**"Management Company"),** pursuant to which contract the Management Company shall assume the maintenance obligations of the Association as provided herein.

5) Any and all expenses incurred by the Management Company, on behalf of and pursuant to its contract with the Association, in connection with the management and maintenance of the Common Property and administration of the Association shall be deemed to be common expenses (**"Common Expenses"),** including, without limitation, expenses incurred for: landscaping and lawn care; snow shoveling and plowing; improvements to the Common Property; common grounds security lighting; municipal utility services for Common Property enforcement of this Declaration (including attorneys' fees); and maintenance and management salaries and wages.

B) <u>Assessments</u>.

1) The Association, or the Management Company, on its behalf, shall levy annual general assessments (**"General Assessments"**) against each Lot beginning January 1, 2016 or the purpose of maintaining a fund from which Common Expenses may be paid. The General Assessments against each Lot shall be assessed according to their Percentage Interests in the Common Property. General Assessments shall be due in advance on the first day of each year, or in such other manner as the Association may set forth in the Bylaws. Any General Assessment not paid when due shall bear annual interest at a rate of ten percent (10%) until paid and, together with interest, collection costs, and reasonable attorneys' fees, shall constitute a lien on the Lot on which it is assessed.

2) The Association, or the Management Company, on behalf of and pursuant to its contract with the Association, may, whenever necessary or appropriate, levy special assessments (**"Special Assessments"**) against the Lots for deficiencies in the case of destruction or condemnation, for defraying the cost of improvements to the Common Property or for any other purpose for which the Association and/or the Management Company may determine a Special Assessment is necessary or appropriate for the improvement or benefit of the Subdivision. Special Assessments shall be paid at such time and in such manner as the Association or the Management Company may determine. Any Special Assessment or installment not paid when due shall bear annual interest at a rate of ten percent (10%) until paid and, together with the interest, collection costs and reasonable attorneys' fees, shall constitute a lien on the Lot on which it is assessed.

3) The Association, or the Management Company, on behalf of and pursuant to its contract with the Association, shall have the right to collect all General and Special Assessments and such sums shall constitute a lien on such Lot. The Owner of a Lot, or any portion thereof, shall be personally obligated to pay such charges which were assessed or accrued upon the land owned during the period of Ownership. The Association or the Management Company, on behalf of and pursuant to its contract with the Association, may commence an action against any Owner personally obligated to pay the charges or to foreclose the lien for such charge against any Lots. Any such foreclosure action may be brought at the Association election, either in the same manner as an action to foreclose a real estate mortgage, or as a proceeding to enforce a statutory maintenance lien as provided in Section 779.70, Wis. Stats., to the extent said Section is applicable. Any lien in favor of the Association/Management Company securing unpaid charges arising by virtue of this Declaration shall be subject and subordinate to the lien of any mortgage whether the mortgage is executed or recorded prior to or after the creation of such lien.

C) <u>Subordination of the Lien to Mortgages</u>. The lien of the assessments provided for herein shall be subordinate to the lien of any first mortgage. Sale or transfer of any Property shall not release the assessment lien. However, the sale or transfer of any Property pursuant to mortgage foreclosure or any proceeding in lieu thereof shall extinguish the lien of such assessment(s) as to payments which become due prior to such sale or transfer. No sale or transfer pursuant to foreclosure or proceedings in lieu thereof shall relieve such Property from liability from any assessments thereafter becoming due or from the lien thereof.

D) <u>Joint and Several Liabilities of Grantor and Grantee</u>. Upon a voluntary conveyance, the grantee of a Property shall be jointly and severally liable with the grantor for all unpaid assessments against the grantor as provided in this Declaration up to the time of conveyance, without prejudice to the grantee's right to recover from the grantor the amount paid by the grantee therefore. However, any such grantee shall be entitled to a statement from the Association setting forth the amount of such unpaid assessment and any such grantee shall not be liable for, nor shall the Property conveyed be subject to a lien for, any unpaid assessments against the grantor pursuant to this Declaration in excess of the amount therein set forth.

PART B
CONDITIONS, COVENANTS AND RESTRICTIONS

B-1) **Applicability.** The following provisions in this Part B shall apply to all Lots and Outlots, as described in Exhibit "A" and such other Lots or Outlots as may, in the future, be subjected to this Declaration, as the same may be amended from time to time, by Declarant in the sole exercise of Declarant's discretion.

B-2) **Land Use And Building Type.** Only the following designated uses for all private Lots and Outlot 3 shall be permitted. The remaining Outlots are dedicated to the Village and uses are noted for informational purposes only.

A) Lots 1-96 and 107-117 shall be used for single family residential purposes. No building shall be erected, altered, placed or permitted to remain on any Lot other than one detached single family dwelling unit not to exceed two and one-half stories in height. Each dwelling unit shall have an attached or detached garage of a size to be approved by the Committee, as that term is defined below. The size of a dwelling unit to be constructed on specific Lots shall not be less than the minimum size to be established hereinafter.

B) Lots 97-106 shall be used for twin single family homes.

C) Outlots 1 and 4 are dedicated to the public for stormwater management.

D) Outlot 2 shall be for private alley purposes and shall be maintained by the Association.

E) Outlot 3 is dedicated to the public for park purposes.

F) Outlot 5 is dedicated for private open space and shall be maintained by the Association.

G) **Lease Requirements.**

1) *Lease Requirements.* The following provisions are not applicable to Lots 16 and 17 of the Subdivision. An Owner may rent its dwelling by written Lease (a "Lease"), provided that

a) The term of any such Lease shall not be less than six (6) months;

b) The Owner has obtained the prior written approval of the Association to the proposed tenant and the terms of the proposed Lease, and the written approval for any proposed extension of the Lease; and

c) The Lease contains a statement obligating all tenants to abide by this Declaration, the Articles, the Bylaws, and the Rules and Regulations, providing that the Lease is subject and subordinate to those instruments; and

d) The Lease provides that any default arising out of the tenant's failure to abide by the Declaration, the Articles, the Bylaws, and the Rules and Regulations shall be enforceable by the Association as a third-party

beneficiary to the Lease and that the Association shall have, in addition to all rights and remedies provided under the Declaration, the Articles, the Bylaws and the Rules and Regulations, the right to evict the tenant and/or terminate the Lease should any such violation continue for a period of ten (10) days following delivery of written notice to the Owner and the tenant specifying the violation.

2) *Standard for Approval of Lease and Tenant*. The Association may withhold approval on any reasonable basis, including, but not limited to: the failure of the Lease terms to comply with all provisions of this Declaration, the Articles, the Bylaws, and the Rules and Regulations; the past failure of the Owner, the tenant or tenant's guests to abide by all provisions of this Declaration, the Articles, the Bylaws, and the Rules and Regulations; and the past use by Owner, the tenant or its invitees or guests of any part of the Lot in a manner offensive or objectionable to the Association or other occupants of the Property by reason of noise, odors, vibrations, or nuisance.

3) *Violations / Remedies*.

a) During the term of any Lease of all or any part of a Lot, each Owner of such Lot shall remain liable for the compliance of the Lot, such Owner and all tenants of the Lot with all provisions of this Declaration, the Bylaws, and the Rules and Regulations of the Association, and shall be responsible for securing such compliance from the tenants of the Lot. The Association may require that a copy of each Lease of all or any part of a Lot be filed with the Association.

b) In the event that an Owner leases out its dwelling or any portion of its Lot in violation of this provision, the Association may impose a daily fine up to the greater of (i) an amount equal to the daily rental amount being charged by Owner to its tenant and (ii) $100 (this daily fine shall be adjusted up every five years by 5%).

In addition to any fines imposed under this Section, the Owner shall reimburse the Association for all costs incurred by the Association, including attorneys' fees, incurred to enforce this Section, any action the Association takes under this Section B-2)E) against Owner or Owner's tenant, and to collect any outstanding amounts owed by Owner to the Association."

Uses, other than the uses set forth in this section B-2, shall not be permitted on the Lots or Outlots, as applicable, without the prior written approval of the Declarant and Committee (defined in Section B-3 below), as appropriate. After Declarant control of the Association has terminated, approval from the Association and the Committee shall be required.

Except as otherwise provided herein, no buildings, signs or other structures incidental to the use of any Outlot, which have been approved in advance by the Committee, may be constructed on any Outlot.

All rights-of-way noted on the Plat shall be dedicated as permanent public streets and rights-of-way and shall be improved in accordance with agreements entered into between the Declarant and the municipality in which the Development is located.

B-3) **<u>Architectural Control</u>.** No building shall be erected, placed or altered on any Lot until the construction plans and specifications and a plan showing the location of the structure have been approved by a majority of the Architectural Control Committee (the **"Committee"**) as to quality of workmanship and materials, harmony of external design with existing structures, and as to location with respect to

topography and finish grade elevation. There shall be a variation in building elevations on adjacent Lots. Approval shall be as provided below.

B-4) <u>Dwellings and Landscaping</u>. The landscaping to be installed on all Lots must meet or exceed the minimum number of points for foundation planting and cumulative total landscaping points, including foundation planting points as set forth hereafter as described in Exhibit "C", attached hereto and incorporated herein by reference and further described in the Design Guidelines. The number of points attributable to various elements of the landscaping to be installed shall be determined by reference to Exhibit "D", attached hereto and incorporated herein by reference and further referenced in the Design Guidelines. The structure and the minimum landscaping requirements shall be completed within nine (9) months after issuance of a building permit. Landscape installed by the Declarant may or may not meet the minimum number of required points. All driveways shall be of concrete and shall be installed within nine (9) months after substantial completion of the structure. No outbuilding or accessory building of any nature shall be erected on any Lot with the exception of detached garages approved by the Committee in advance of construction. No above-ground swimming pools shall be permitted. All Lot areas not used as a building site, or under cultivation as a family garden, shall be planted with grass seed or shall be sodded, and shall be maintained on a regular seasonal basis, including mowing of a frequency of not less than once every fourteen (14) days during the lawn growing season. Maintenance of all improvements on a Lot shall be performed by the Owner. Maintenance shall include, but not be limited to, watering, pruning and routine fertilizing and mulching of all plantings and plant beds, replacement of dead, dying and/or diseased trees and shrubs, prompt removal of weeds, trash and debris from plant beds and areas adjacent to shrubs and trees so as to keep said landscaping in a healthy, attractive and neat condition.

If the Owner of any Lot, after reasonable notice, fails or refuses to install landscaping as described herein, or maintain it as required above, the Committee, through its duly authorized agents or employees, shall have the right to enter upon said Lot at reasonable hours to perform said landscaping and/or maintenance. The costs of the materials and labor to perform such landscaping and/or maintenance shall be assessed against said Lot in accordance with the terms of Section A-4 (B)(2) above, which assessment may be foreclosed or collected in accordance with the terms hereof or collected as provided herein.

B-5) <u>Vehicle and/or Equipment Storage</u>. No inoperable, dilapidated or junk vehicles of any nature may be kept upon any Lot except in a fully enclosed garage. The exterior storage of boats, trailers, travel trailers, campers, motorcycles, recreational vehicles, automobiles or trucks, portable moving and storage containers, mini storage or on-site storage containers (collectively, without limitation by reason of enumeration **"Equipment"**), of any nature is prohibited whether or not screened from public view. No Equipment shall be parked or stored on lawns. The temporary storage of vehicles in a drive area for the purpose of loading or unloading for a period not to exceed twelve (12) hours is permitted. No commercial vehicles, including trucks, semi-trailers, trailers, may be stored or parked overnight on or in front of said Lots except in an enclosed garage

B-6) <u>Construction On Adjoining Lots</u>. Nothing contained herein shall be construed to prohibit the construction of a residential dwelling or private garage partially on one Lot and partially on an adjoining Lot without regard to side yards between adjoining Lots, provided that all such Lots are owned by the same person or persons.

B-7) <u>Easements</u>.

A) No structure, planting, or other materials shall be placed or permitted to remain within any easement of record (an **"Easement"**) if any, which may damage or interfere with the installation and maintenance of utilities, or which may change, obstruct or retard the flow of water or the

direction of such flow through the Easement or through such other drainage channels or swales that may have been created by the Plat or otherwise. The Easements located on each Lot and all improvements therein shall be maintained continuously by the owner of the Lot, except for those improvements for which a public authority or utility company is responsible.

B) The Intra-block drainage Easement shall be graded with the construction of each principal structure in accordance with the approved Stormwater Drainage Plan on file with the Village Engineer and the Zoning Administration, as amended in accordance with the Village Ordinances.

C) Public utility easements six feet (6') wide (unless otherwise noted on the Plat). Utility easements as herein set forth on the Plat are for the use of public and private utilities having the right-of-way to serve the area.

D) All lots within this plat are subject to a non-exclusive easement for drainage purposes which shall be a minimum of six feet (6') in width measured from the property line to the interior of each lot except that the easement shall be twelve feet (12') in width on the perimeter of the Plat. Easements shall not be required on the property lines shared with greenways or public streets.

E) There will be a public storm water drainage easement on Outlot 5.

F) **Temporary Construction Easement.** Each Lot which has been made subject to this Declaration (for the purposes of this paragraph each Lot described herein shall be referred to as the **"Primary Lot"**) is hereby made subject to a temporary, non-exclusive easement over, under, upon, across and through so much of the side yards of the Primary Lot as may be necessary for the safe and code compliant construction of a basement, including but not limited to footings, foundation and basement walls, on the adjoining Lot (the **"Adjoining Lot"**). The purpose of this Temporary Construction Easement is to permit Declarant to adequately slope and provide lateral support to the walls of the basement excavation in question so as to protect against cave-ins and loss of lateral support, and it shall be broadly construed to effectuate such purpose. This Temporary Construction Easement shall remain in effect for so long as it is needed to permit construction of the basement on the Adjoining Lot in a safe and code compliant manner. After completion, Declarant shall backfill the excavated area, compact such backfill in accordance with good construction practices, and restore the area affected by this easement to the condition existing immediately preceding the excavation, including replacement of sod, trees, shrubs and other landscaping, at no expense to the Owner of the Adjoining Lot (collectively **"Restoration"**). This Temporary Construction Easement shall, without further notice, terminate upon completion of said Restoration.

G) Lots 97-106 shall be subject to a Declaration of Party Wall Agreement. The Lots described are proposed twin homes which are two homes that share a party wall and roof with each other.

H) Certain Lots will feature groped mailboxes (CBU – cluster box units) on each Lot and will have a recorded Multi-User Mailbox Easement for these Lots. The selected Lots for the CBU's will be determined by each constructed phase and will be noted in the Neighborhood Disclosure Addendum A for Buyer's notification at the time the Sales Contract is signed.

I) Outlot 4 will be subject to a Sign and Landscaping Easement and will be maintained by the Association.

J) Lots 94-95 and 89-90 will be subject to a 20 foot (20') wide (10' on each Lot) public storm sewer easement.

K) Lots 107-115 and 117 will be subject to a 25 foot (25') wide gas pipeline easement.

B-8) <u>Slope and Swale Areas</u>.

A) The graded slopes and swales as established by Declarant shall remain as permanent. Within these slopes and swales, no structure, planting or other material shall be placed or permitted to remain, or other activities undertaken which may damage or interfere with established slope and swale ratios, create erosion or sliding problems or which may change the direction of flow of drainage channels or obstruct or retard the flow of water through drainage channels. The slopes and swales of each Lot and all improvements in them shall be maintained continuously by the Owner of a Lot, at the Owner's sole expense, except for those improvements for which a public authority or utility company is responsible.

B) In order to control run off, all down spouts and down spout extenders are to drain into a permeable area such as grass or a planting bed.

C) Declarant and the Village of McFarland have agreed to a certain Storm Water Management Plan. In the event of conflict between any plans and such Storm Water Management Plan, the Storm Water Management Plan shall control. Declarant and the Association shall each have the right to enter upon any Lot at any time for the purpose of inspection, maintenance or correction of any drainage condition and the Lot Owner shall be responsible for the cost thereof.

D) Any disputes relating to drainage swales, drainage or other surface water issues, shall be resolved by the Board of Directors of the Association, which may seek the advice of the Village Engineer of the Village of McFarland. The Association shall establish procedures by which such decisions can be heard by the Board of Directors and decided by said Board.

B-9) <u>Nuisances</u>. No noxious or offensive activity shall be carried on upon any Lot, nor shall anything be done thereon which may be or may become an annoyance or nuisance to the neighborhood or which may have a detrimental effect on the value of other Lots and/or improvements.

B-10) <u>Temporary Structures</u>. No structure of a temporary character, trailer, basement, tent, shack, garage, barn or other outbuilding shall be used on any Lot at any time as a residence, either temporarily or permanently.

B-11) <u>Signs</u>. No sign of any kind shall be displayed to the public view on any Lot except, one professional sign of not more than one square foot, one sign of not more than six square feet advertising the property for sale or rent or signs without regard to size used by the Declarant, a builder or licensed real estate broker to advertise the property during the construction and sales period or to identify the subdivision and/or its Declarant.

B-12) <u>Entrance Sign.</u> It is contemplated there will be an entrance monument sign and associated easement in Outlot 4 of the Plat. The sign and easement associated with the sign will be owned by the Association. The Association will be responsible for the maintenance of said sign to include watering, mowing and basic landscape requirements. The Association is responsible for determining whether said signs shall remain in place and assess all owners in the neighborhood of any future replacement cost after Declarant turns over control of the Association to the Owners

B-13) <u>Animals</u>. No animals, livestock or poultry of any kind shall be raised, bred or kept on any Lot, except that dogs, cats or other household pets may be kept, provided that they are not kept, bred or maintained for any commercial purpose. No animal enclosure, house, pen or fences or similar device shall be placed on any Lot without the prior written approval of the Committee which may require special landscaping and screening.

B-14) <u>Garbage and Refuse Disposal</u>. No Lot shall be used or maintained as a dumping ground for rubbish. Trash, garbage or other waste shall not be kept except in sanitary containers. No incinerators shall be permitted. Other equipment for the storage or disposal of such material shall be kept in a clean and sanitary condition. No trash, building materials, debris, leaves, lawn clippings, rocks or earth shall be placed in any Outlot.

B-15) <u>Sight Distance at Intersections</u>. No fence, wall, hedge or shrub planting which obstructs sight lines at elevations between 30" and 72" above the roadways shall be placed or permitted to remain on any corner Lot within the triangular area formed by the street property lines and a line connecting them at points twenty five (25) feet from the intersection of the street lines, or in the case of a rounded property corner, from the intersection of the street property lines extended. The same sight-line limitations shall apply on any Lot within ten (10) feet from the intersection of a street property line with the edge of a driveway. No tree shall be permitted to remain within such distances of such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines.

B-16) <u>Mailboxes and posts</u>. Based on new, recently adopted requirements of the United States Postal Service, the Rosewood Fields platted lots will receive mail by using CBU's (cluster box units) instead of curb side mailboxes on newly constructed homesites. These new requirements will phase out curb side mailboxes nationwide solely at the Postal Service's discretion.

B-17) <u>Notices to Owners</u>. The following information is being put of record in order to give record notice to all Owners, mortgagees and other persons and entities having an interest in the Property:

A) Private: Private Alleys (collectively, "Alleys") are shown on the Plat as Outlots. Said Alley will be dedicated to the Association. The cost of the maintenance of the Alleys shall be the responsibility of the Association. Certain Lots in the Development border Alleys, which are intended to serve as the access to such Lots. Restrictions on the Alleys are summarized as follows:

1) There will be no public trash, leaf or recycled material pick-up service in said Alleys, but instead, there will be one or more trash pick-up collection points designated by the Declarant to be used by Owners of a Lot bordering the Alleys in question. Trash pick-up may initially be provided by the Association and charged as an expense of the Association, but such arrangement may be changed to provide for public or some other method of trash pick-up at a future time as determined by the Declarant or the Association. All trash receptacles to include recycling receptacles must be removed from the Alleys within 24 hours after trash or recycled material pick-up.

2) Mailboxes for homes located on the Alleys may be clustered at one end of the Alleys in question or clustered at various locations along the public street. Location and placement of the mailboxes is the sole discretion of the United States Postal Service.

3) Snow removal, repair and replacement of Alleys will be the responsibility of the Association.

4) Homes with garage access to a private alley are required to have two (2) "coach" lights on each side of the garage door, which will be wired to a photo electric eye for automatic use from dusk to dawn. The lights have been pre-selected by Declarant. There are four (4) selections available. It is the Buyer's responsibility to maintain the lights so that they are always operational.

B) Plantings, flower beds, and entry signs (including utility installations connected therewith) constructed and installed by Declarant, if any, shall be deemed a part of the Common Property. The Association is obligated to maintain any entry feature; maintenance shall include electrical charges (if any), sign repair and maintenance of the landscaping including mowing of all lawns and grass areas. The cost of maintenance of said Common Property shall be an assessment against all of the Property in the subdivision in accordance with the Declaration, for so long as such maintenance is necessary or required adversely affects the natural flow of surface or underground waters with in the area permitted.

C) Notice is hereby given that as of the date hereof there is an active railroad on certain lands in close proximity to the subdivision, and that the foregoing railroad operation may have an effect on the use, enjoyment and market value of Lots in the subdivision, and in particular, those Lots located in close proximity to the railroad. Each buyer should familiarize themselves with the location of their Lot and its proximity to the railroad operation.

B-18) Improvements Within Easements. Any improvements (for example, fences, landscaping) located within any part of a Lot which is subject to a utility easement is subject to removal at the Owner's expense for utility maintenance and other reasons as determined by the party benefitted by the easement. Reinstallation of any improvement would be at the Owner's cost and would also be subject to the discretion of the party benefitted by the easement and is subject to terms and conditions as set forth on the final plat.

PART C
ARCHITECTURAL CONTROL COMMITTEE

C-1) Membership. Declarant shall establish an Architectural Control Committee (the **"Committee"**) consisting of three (3) members. So long as Declarant has title to any Lot subject to this Declaration, the Committee shall be appointed by Declarant. After Declarant no longer has title to any Lot within the Development or at such earlier time as determined by the Declarant, the initial members of the Committee shall resign and the Association shall elect three (3) Owners to serve on the Committee. At any time, Declarant may elect to surrender the selection of the members of the Committee to the Association.

A majority of the Committee may designate a representative to act for it. In the event of the death or resignation of any member of the Committee, the remaining members shall have full authority to designate a successor.

The Committee appointed hereunder shall serve for the time period specified in paragraph C-10, below. Any Committee member may resign prior to said date. Such resignation shall be effective upon receipt. If a resignation shall occur, prior to turning over control of the Committee, then the remaining members of the Committee may appoint a replacement.

C-2) Architectural Control. No structure, whether residence, accessory building, tennis or sport court, swimming pool, decks, patios, antenna (whether located on a structure or on a Lot), flag pole, wall, fence, landscaping, recreational equipment or other improvements, including exterior colors and

materials to be applied to said improvements, shall be constructed, maintained or performed upon any Lot and no alteration or repainting of the exterior of a structure shall be made unless complete Architectural Review Application (**"Application"**) Plans, specification and plot plans therefore shall have been submitted to and approved in writing by a majority of the Committee. Approval shall also be required for location of improvements with respect to topography and finish grade elevation. Said Application, plans, specifications and plot plans shall show the exterior design, height, building materials and color scheme thereof, the location of the structure plotted horizontally and vertically, the location and size of driveways, the plans for required landscaping, and the grading plan. A copy of such Application, plan specifications and plot plans as finally approved shall be deposited with the Committee. The Application can be found on the Veridian Homes website www.veridianhomes.com. Select Homeowner Resources (located on the top toolbar), select Architectural Control Committee and select the appropriate application for your request.

C-3) Plan Review. The Committee shall review said Application, plans and specifications as to quality of workmanship and materials, harmony of external design with existing or proposed structures and as to location with respect to topography and finish grade elevation. The Committee shall use the guidelines set forth in this Declaration as an aid in exercising its architectural control responsibilities hereunder, but nothing contained herein or therein shall limit the Committee's discretion to grant variances from or make changes to, the guidelines, as they shall determine in the sole exercise of their discretion.

C-4) <u>Procedure</u>.

A) Neither the members of the Committee nor its designated representative shall be entitled to any compensation for services performed pursuant to this covenant for the initial approval of a residential structure. Thereafter, said Committee may charge a "request for action" or "approval" fee not to exceed Fifty and no/100 Dollars ($50.00) for each such request or approval. The Committee's approval or disapproval, as required in these Covenants, shall be in writing. In the event the Committee fails to provide, in writing, approval or disapproval within thirty (30) days after application, plans and specifications or any other matters requiring approval have been submitted to it, the request shall be deemed denied.

B) A submission will not be complete, and the thirty (30)-day approval time, as applicable, set forth above shall not commence until all documents required herein have been submitted. All such submissions shall be made to the Committee at the address set forth in this Declaration or to such other address that the Committee may designate.

C) The Committee shall have the sole right to reject any Application and plans which, in the judgment and sole opinion of a majority of its members are not in conformity with this Declaration; or are not desirable for aesthetic reasons; or are not in harmony with buildings located on the surrounding Lots; or are not in conformity with the general purposes of this Declaration.

D) The Committee shall exercise its sole approval authority and discretion in good faith and each Owner, by acceptance of a deed to, or any other interest in, a Lot, agrees to hold the Committee harmless from any perceived discrepancies in the Committee's good-faith performance of its duties. Refusal of approval of plans by the Committee may be based on any grounds, including purely aesthetic grounds, which in the sole discretion of the Committee shall be deemed sufficient.

E) The Committee may set its own operating procedures consistent with this Declaration and any limitations hereafter imposed by the Association. The costs of operating the Committee shall be assessed by the Association as Common Property expenses, except as permitted below. The Committee may engage consultants (e.g., architects, engineers or attorneys) either on a general or on a case-by-case basis, and the costs thereof may be charged to an applicant. The members of the Committee shall not draw any compensation for serving thereon but may be reimbursed for expenses incurred in performing their duties. All funds relating to the Committee shall be handled by the Association.

C-5) <u>Separate Village Approval</u>. Matters which require approval of the Committee may also require approval of the Village of McFarland. Obtaining approval from the Committee and the Village of McFarland is solely the responsibility of the Owner desiring approval. Approval of Plans by the Committee shall not be deemed approval by the Village of McFarland and approval by the Village of McFarland shall not be deemed approval by the Committee.

C-6) <u>Records</u>. Until such time as a replacement Committee is designated, all plans, applications and requests shall be submitted to said Committee at the following address:

Rosewood Fields Homeowners Association, Inc.
Architectural Control Committee
6801 South Towne Drive
Madison, Wisconsin 53713

C-7) Committee Liability. Neither the Committee nor any member thereof shall be liable for damages to any person submitting request for approval or to any Owner of any Lot by reason of any action, failure to act, approval, disapproval or failure to approve or disapprove with regard to such requests. The Committee is not responsible for ensuring that the application and plans submitted by an Owner are in compliance with applicable laws, rules, regulations, ordinances or customary and typical building practices. The Committee does not review plans for structural design.

C-8) Indemnification. Each member or former member of the Committee, together with the personal representatives and heirs of each such person, shall be indemnified by the Association against all loss, costs, damages and expenses, including reasonable attorney's fees, asserted against, incurred by or imposed in connection with or resulting from any claim, action, suit or proceeding, including criminal proceedings, to which such person is made or threatened to be made a party by reason of service as a member thereof, except as to matters resulting in a final determination of gross negligence or willful misconduct on the part of such member. In the event of settlement of such proceeding, indemnification shall be provided only in connection with such matters covered by the settlement as to which the Association is advised by counsel that the person to be indemnified has not been guilty of gross negligence or willful misconduct in the performance of such person as a member in the matter involved. This right of indemnification shall be in addition to all other rights and defenses. All liabilities, losses, damages, costs and expenses incurred or suffered by the Association in connection with this indemnification shall be a Common Property expense. Nothing in this Section C-8 shall be deemed an indemnification of such person with respect to such person's status as an Owner, occupant or otherwise.

C-9) Variance. The Committee shall have the power and absolute discretion to authorize a variance from any of the requirements of this Declaration if it finds that the strict application thereof would, in its sole discretion and opinion, result in difficulties or undue hardship to the Lot owner or in the event the architecture of the proposed Lot improvement is such as to present, in its opinion, a particularly pleasing appearance compatible with other houses in the development.

C-10) Successor to Committee. Declarant may turn over control of the Committee to the Members of the Association at any time, and shall turn over control when Declarant no longer has any ownership interest in the Property. At such time as Declarant turns over Committee control, the Association's Board of Directors shall designate not less than three (3) or more than five (5) Members of the Association to serve and act as the Committee for all purposes hereunder.

PART D
DESIGN GUIDELINES

D-1) Single Family Dwelling Units.

A) Architectural Character. Architecture within the Development will be developed with a variety of American vernacular architectural styles in mind. These architectural styles, while not a comprehensive list, will offer a unique mixture of styles for the development, and will be applied with proportions and character in mind. The overall character of the development will be created so that the architectural styles are compatible and the overall cohesion of styles will help foster a unique setting without stifling the architectural creativity on the individual building level, creating a varied but integrated community. Identical floor plans with the same elevation style shall not be located within 7 sites to assure this variety. The following are examples of styles permitted:

Cottage	Craftsman	Four Square	Farmhouse	Salt Box

Prairie Shingle Traditional Victorian Southern Traditional

The requirements as itemized in the following section will be used as applicable to the context of the specific architectural style. Declarant reserves the right to grant variances in its sole discretion. Where Village zoning is more restrictive, such requirements will govern.

B) **Front Porch.** Usable front porches are encouraged as both visual and functional design elements.

1) A usable open front porch is defined as having a minimum depth of 6'-0", and a minimum width of 8'-0".

2) Porch post style should be consistent with the overall architectural style of the home. Minimum standard porch design details include the following; porch posts or alternate per plan, porch balustrades, when provided, of nominal 2" x 2" square wood at a maximum of six inches (6") on center; and newel posts that are compatible with the design of the column posts. Porch columns and railings shall be painted to match the trim color of the house.

C) **Garage**.

1) There shall be a minimum of a two (2) car, 20' x 20' garage per dwelling unit.

2) The maximum garage width exposed on the front elevation shall be no greater than fifty percent (50%) of the overall building width.

3) On homes with a front-entry garage face must be set back a minimum of 2'-0" from the front elevation unless applicable zoning ordinances require a greater setback.

4) Tandem, split or side entry garages are encouraged for three (3) or four (4) car garages. For three (3) car front entry garages, the third stall must have a minimum setback of the greater of 2' from the two-car garage line or as required by compatible roof design. Garage width must comply with zoning and the design guideline standards of 50% of overall building width.

5) The garage door shall be a raised panel design painted to match the siding on the home. The use of windows in the door, appropriate to the architectural style, is encouraged. The maximum single garage door size is 8' x 18".

D) **Ornamental Design Elements**.

1) Ornamental design elements, such as dormers, shutters, window wrap window grids, gable vents, pilasters, pediments, etc., shall be used in a manner consistent with the overall architectural style of the home and with emphasis on elevations exposed to public space.

2) Window wrap or shutters and window grids are required on front and other primary elevations facing a public space. Gable vents, 5" horizontal vinyl trim, and/or eyebrow roofs are required on front elevation gables greater than 10'-0" in width and are encouraged on other gables as deemed appropriate by the Architectural Control Committee.

3) The shutters shall be wood or polystyrene with colors as approved by the Architectural Control Committee or of other material or color as deemed acceptable by

the Architectural Control Committee. Panel or louver design shutters shall be used as appropriate to home materials & style.

4) The window wrap and corner trim shall be a minimum 3½" vinyl or composite material as approved by the Architectural Control Committee and used with box outs or when part of the standard plan.

5) Gable vents shall be the NuWood triangle or peaked series or equivalent for the front elevation, and side elevations facing a public street, or other design approval by the Architectural Control Committee. Other gable ornamentation as appropriate to architectural style may be allowed or required by the Architectural Control Committee.

E) **<u>Roof/Facias/Soffits/Eaves.</u>**

1) Roof Standards:

a) Roof design must be consistent with the overall architectural style of the home. Roof forms and pitches as established on individual styles may not be altered without approval by the Architectural Control Committee.

b) Roof material shall be Owens Corning Oakridge 30 architectural shingle or equal and in colors as approved by the Architectural Control Committee.

c) Use of an eyebrow roof or projecting gable is required at brick walls not extending into a gable and are encouraged, as appropriate, at double gable returns and porch column caps.

d) Hip roof design, porches or other elements deemed appropriate by the Architectural Control Committee may be used in lieu of specific gable requirements.

2) Fascia, Soffit and Eave Standards:

a) Facia shall be 6" minimum aluminum with colors as approved by the Architectural Control Committee, wood or composite material may be used when appropriate to the architectural style.

b) Aluminum soffit and eave color shall match facia.

c) A minimum 12" overhang is required at typical eaves and gable ends. However, 6" is allowable with projections less then 6'-0" in width, such as the fireplace chase and a small bay window, and beyond structure line at open porches. Larger overhangs may be required as appropriate to the architectural style.

F) Exterior Wall Surfaces.

1) Siding material shall be premium vinyl or composite material as approved by the Architectural Control Committee. Shingle or vertical board and batten siding is encouraged for accent areas appropriate to the style of the home. Colors shall be approved by the Architectural Control Committee.

2) Windows may be vinyl; vinyl clad, aluminum clad or wood with colors as approved by the Architectural Control Committee.

3) Variation of wall planes on primary elevations is encouraged as appropriate to overall building style and massing.

4) Any elevations facing public streets or spaces shall have a minimum of three (3) windows with wrap trim or shutters and window grills as appropriate and one (1) gable vent at all gable ends.

5) The use of brick or stone is encouraged as appropriate to architectural style. When brick is used, it shall be on full wall surfaces from foundation to eaves or on a two-story elevation at least to the second floor windowsill line. When brick is used, a soldier course window heads and rowlock sills are required. Additional details (i.e. projecting belt course and projecting corner accents) are encouraged as appropriate. Stone may be used as full wall surfaces or as a base course to first floor sill line. Brick or stone facing must return a minimum of 2'-4" when terminated at an outside corner.

6) Brick or stone material and color selections shall be as approved by the Committee and harmonious with overall neighborhood palette, as well as with the specific home design.

D-2) Other Improvements.

A) Fences All fencing must receive prior written approval of the Committee and shall comply with any requirements set out below. The Committee may also require the installation and maintenance of landscape materials for screening and aesthetic purposes. All fence material shall be constructed of vinyl. Zoning approval and/or building permit from the Village of McFarland may be required to construct fencing. Committee approval does not supercede the need for any municipal approvals or permits.

1) Fencing may consist of vinyl. The fence style permitted is the PlyGem Stratford Vinyl, depicted in Exhibit "E".

a) All fencing shall be erected finish side out (i.e. pickets on the outside of the rail facing the street or neighboring lot).

b) Posts shall be spaced a minimum of 72" and a maximum of 96" on center. Rails shall be discontinuous and abut into the posts.

c) Gates are permitted and shall be consistent with the fencing style. All gates shall open into the lot. Gates may be required for access to utility easements and access easements that are dedicated on the plat.

d) Fencing color by PlyGem Fence/Railing of Almond is the only color allowed for vinyl material.

2) Appropriate uses of fencing:

a) Fencing shall be limited to rear and side yards only.

b) Fencing shall meet up with the corners of the home or garage and may not project past the front face of home or garage.

c) Only one fence is permitted along adjoining properties. Corners of adjoining properties fencing shall intersect at common corners.

d) Fencing at side yards of corner lots shall be placed a minimum of 6 inches from the property line (approximately 1 foot from sidewalk) for all zoning classifications.

3) Inappropriate use of fencing:

a) Fencing in front yards shall not be permitted.

b) Fencing shall not occur in freestanding segments or be placed arbitrarily.

c) Fencing shall not meet porch or deck corners.

d) Fencing shall not interfere with utility equipment. Your utility companies shall be consulted for current requirements and the most restrictive shall apply.

B) **Decks.** All decks must receive prior written approval of the Committee and shall comply with any requirements set out below. The Committee may also require the installation and maintenance of landscape materials for screening and aesthetic purposes. A zoning approval or building permit from the Village of McFarland may be required to construct a deck. Committee approval does not supercede the need for any municipal approvals or permits.

1) Appropriate deck design shall incorporate the following criteria:

a) Deck(s) shall be proportionate in size to the footprint of the dwelling

b) Deck(s) shall be proportionate in length and width

c) Deck(s) shall not project past the rear or side yard setbacks

d) Deck(s) at side yards of corner lots may not project past the corner of the home or garage for that side facing the street.

e) Deck(s) must be stained or painted

2) Inappropriate deck design:

a) Deck(s) in front yards shall not be permitted.

b) Deck(s) shall not occur in freestanding segments or be placed arbitrarily on the lot.

c) Deck(s) shall not interfere with utility equipment. Your utility companies shall be consulted for current requirements and the most restrictive shall apply.

C) **Outbuildings.** No outbuilding, shed or accessory building of any nature shall be erected on any Lot, with the exception of a detached garage that is the only garage on the lot and is approved by the Committee prior to construction. Secondary units (granny flats) above detached garages may be allowed with prior written approval from the ACC.

D) **Antennae/Wind Powered Electric Generators.** No wind powered electric generators, exterior television, radio receiving or transmission antennae, satellite signal receiving station or dish shall be placed or maintained upon any portion of a Lot without prior written approval of the Committee.

1) Appropriate antennae or satellite dish placement:

a) Only one antennae or satellite dish shall be allowed per lot.

b) The location of the satellite dish can be any of the following and shall not be visible from the curb directly in front of the home:

i. On a pole in the backyard and located close to the home.

ii. Attached to the deck.

iii. On the rear roof line of the home.

1. A satellite dish shall not project past the uppermost roof ridgeline. This method is not recommended by the Committee as you may have water infiltration issues if the dish is not property installed and roof repairs may not be covered under the applicable roof warranty.

2) Inappropriate antennae or satellite dish placement:

a) Antennae or satellite dish in front or side yards shall not be permitted.

b) Antennae or satellite dish shall not interfere with utility equipment.

E) **Firewood Storage.** No firewood or woodpile shall be kept on any lot unless it is neatly stacked, placed in the rear yard and screened from street view by plantings or a fence first approved in writing by the Committee.

F) **Solar Collectors.** No active solar collector or apparatus may be installed on any Lot unless such installation is first approved in writing by the Committee, which shall consider the aesthetic and sun reflection effects on neighboring structures. Solar collectors or apparatus installed flat against or parallel to the plane of the roof shall be preferred.

G) Lighting. Exterior lighting installed on any Lot shall either by indirect or of such controlled focus and intensity that such lighting will not disturb the residents of adjacent Lots.

H) Landscaping Requirements. Pursuant to Section B-4 of the Declaration of Conditions, Covenants and Restrictions, Developer hereby imposes upon all Lots described in Exhibit "A", attached hereto and incorporated herein by reference, the requirement that the Owners thereof install landscaping on such Lots which meets or exceeds the minimum number of points for landscaping set forth in Exhibit "C". The number of points attributable to various elements of the landscaping to be installed shall be determined by reference to Exhibit "D", attached hereto and incorporated herein by reference. All terms, covenants and conditions of Section B-4 of the Declaration of Conditions, Covenants and Restrictions, as amended herein, shall be applicable to the landscaping to be installed pursuant to the terms of this paragraph. Landscape installed by the Declarant may or may not meet the minimum number required.

PART E
GENERAL PROVISIONS

E-1) Term. This Declaration shall run with the Property and Common Property, and shall be binding on Declarant and all Members and their successors and assigns, and all persons claiming under them for a period of twenty-five (25) years from the date recorded, after which time said Declaration shall be extended automatically for successive periods of five (5) years each unless an instrument signed by a majority of the Members agreeing to change said Covenants in whole or in part or to terminate the same.

E-2) Enforcement. The Declarant (or either one of them if more than one), Architectural Control Committee or any Owner shall have the right to enforce by any proceedings at law or in equity all restrictions, conditions and covenants created or imposed herein, against any person or persons violating or attempting to violate any covenant, by any action to either restrain violation or to recover damages, or both including reasonable attorney fees. Failure to enforce any covenant, condition or restriction herein shall in no event be deemed a waiver of the right to do so thereafter. In the event of a violation of this Declaration the Committee shall have the right to assess and collect from the violating party a fine for such violation equal to the greater of (i) the actual damages suffered on account of the violation, or (ii) the sum of $100.00 per day for each day the violation remains outstanding plus (iii) all costs of collection and enforcement, including actual attorney fees.

E-3) Severability. Invalidation of any one of these covenants by judgment or court order shall in no way affect any of the other provisions which shall remain in full force and effect.

E-4) Model Homes. So long as Declarant shall own any Lot in the Development, Declarant shall be permitted to maintain model homes in the Development, including therein a sales office for the purpose of sales and marketing of its homes.

E-5) Parade of Homes. So long as Developer shall own any Lots in the Development, or condominium units in any condominium located within the Development (collectively a "Lot/Unit"). Developer reserves the right to submit some or all of said Lots/Units as a site for the Parade of Home and/or the Parade of Condominiums of the Madison Area Builders Association (the "Parade"). In the event that some or all of said Lots/Units are selected as a site for a Parade, this Declaration of Protective Covenants, Conditions and Restrictions shall, as to the Lots/Units enrolled in the Parade, for a limited period of time ending 48 hours after the conclusion of the Parade, be deemed temporarily altered and modified, to the extent necessary, to permit the Madison Area Builders Association to hold its Parade in this Development pursuant to the then current Parade Rules and Checklist of the Madison Area Builders

Association. All purchasers of Lots/Units, and/or their successors and assigns, shall take title subject to this specific reservation by the Developer and shall waive all rights to object to violations of this Declaration of Protective Covenants, Conditions and Restrictions by the Developer, the Madison Area Builders Association, or any of the builders or participants in the Parade for the period of the Parade as set forth above, including the closing of any public or private streets in the Parade area. All Lot/Unit owners appoint the Developer their attorney-in-fact to execute all necessary petitions; applications and consents to facilitate said street closings for the Parade.

E-6) Governing Law. This Declaration shall be construed and enforced in accordance with the terms of the laws of the State of Wisconsin. The terms of this Declaration are not intended to replace or affect any applicable laws, ordinances, rules or regulations of the Village of McFarland.

E-7) Wet Basins. Wet Basins within the dedicated storm water management facilities may not permanently contain water due to weather conditions and will not be filled by the Village.

E-8) Notices.

A) Notices to Declarant shall be given to Declarant at the following address: 6801 South Towne Drive, Madison, WI 53713.

B) Notices to an Owner of any Lot within the Development shall be given in care of the street address of the Lot.

C) Any party may change its address by written notice given to the other parties. Party, its successors and/or assigns, may change said addresses by notice properly given hereunder.

E-9) Amendment and Release. At any time until Declarant conveys all of the Lots which comprise the entire Property, or turns control of the Association over to its Members, whichever occurs first, Declarant may modify, amend, alter and grant variances to this Declaration without the consent of any Member, Owner or Occupant, their Mortgagees or any other party, including the Association and its Board of Directors. These restrictions or any part thereof may be cancelled, released or amended in writing as to the entire Plat or any part thereof by the Declarant at any time until Declarant conveys all of the Lots or until the Declarant turns over control to the Committee, whichever comes first. After the Declarant has sold all of the Lots or otherwise released or assigned his right to enforce the Declaration, then this Declaration or any part thereof may be released, cancelled, amended or waived hereof. Notwithstanding the foregoing or anything else set forth herein, amendments to the following sections of this Declaration shall also require the approval of the Village of McFarland as restrictions for public benefit pursuant to §236.293 Wis. Stats., in order to be effective: Sections B-7, B-8, B-14, B-17, C-5, E-1 and this Section E-9.

E-10) No Waiver. Whenever a waiver, consent or approval is required or permitted herein, it must be express and in writing; no waiver, consent or approval shall be implied. Failure to enforce any provision of this Declaration shall not operate as a waiver of any such provision or any other provision of this Declaration.

E-11) Number and Gender. Whenever used herein, unless the context shall otherwise provide, the singular shall include the plural, the plural shall include the singular, and the use of any gender shall include all genders.

E-12) **Including**. Whenever used herein, the term "including" preceding a list of one or more items shall indicate that the list contains examples of a general principle and is not intended as an exhaustive listing.

E-13) **Captions.** The captions and article and section headings in this Declaration are intended for convenience and reference only and in no way define or limit the scope or intent of the various provisions hereof.

E-14) **Remedies.** All remedies herein are cumulative.

[Signature Page Follows]

IN WITNESS WHEREOF, the said VH Rosewood Fields LLC Wisconsin Limited Liability Companies has caused these presents to be signed and sealed this ____ day of _____, 20__.

VH Rosewood Fields LLC
By: VH Holdings, LLC, Its Sole Member

By: _____
Chris Ehlers, Authorized Signatory

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss
COUNTY OF DANE)

Personally came before me this _____ day of _____, 20__, Chris Ehlers the Authorized Signatory of VH Rosewood Fields LLC a Wisconsin Limited Liability Company, to me know to be such persons and officers who executed the foregoing instrument and acknowledged that they executed the same as such officers, by its authority for the purposes therein contained.

_____
Notary Public
Dane County, Wisconsin
My Commission Expires: _____, 20__

CONSENT TO DECLARATION OF
COVENANTS AND RESTRICTIONS

The undersigned, _____ Bank, hereby consents to the forgoing Declaration of Conditions, Covenants and Restrictions for the plat Rosewood Fields. This consent does not limit, restrict or affect in any way Mortgagee's rights, interest and remedies regarding Mortgagee's interest in the Property.

Dated at Madison, Wisconsin this _____ day of _____, 20__.

By: _____

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
COUNTY OF DANE)

Personally came before me this _____ day of _____, 20__, the above named _____ _____, to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

_____
Notary Public
County of Dane, State of Wisconsin
My Commission Expires: _____

Exhibit "A"

Description of Rosewood Fields Lots

Lots 1-117, Outlots 1-5, Rosewood Fields, Village of McFarland, Dane County, Wisconsin

Exhibit “B”

PINs:

EXHIBIT "C"

Total Minimum Points for Landscaping

Lot(s)	Minimum Points for Foundation Plantings	Total Minimum Points for Landscaping
	350	500

EXHIBIT "D"

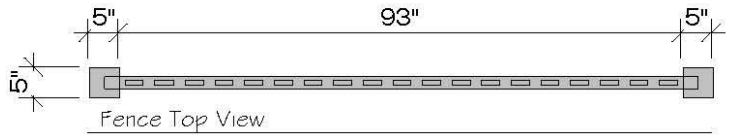
Landscaping Elements

Elements	Point Schedule
A) Small Shade Trees (balled and burlaped) (1.5"-2" caliper at 6" from the roots)	*50*
B) Medium Shade Trees (balled and burlaped) (2"-3" caliper at 6" from the roots)	*100*
C) Large Shade Trees (balled and burlaped) (3"-4" caliper at 6" from the roots)	*150*
D) Extra-Large Shade Trees (balled and burlaped) (4" + caliper at 6" from the roots)	*200*
E) Ornamental Trees (balled and burlaped) (1.5"-2" caliper at 6" from the roots)	*50*
F) Small Evergreen Trees (3' to 4.5' when planted)	*25*
G) Medium Evergree Trees (5' to 6.5' when planted)	*50*
H) Large Evergreen Trees (7' + when planted)	*100*
I) Evergreen Shrubs (18" minimum diameter)	*20*
J) Small Deciduous Shrubs (18" to 35" in diameter)	*10*
K) Medium Deciduous Shrubs (35" to 60" in diameter)	*15*
L) Large Deciduous Shrubs (balled and burlaped) (60" or greater in diameter)	*25*
M) Decorative Retaining Walls (Points are per face foot. Boulders, timbers, and stones only – no concrete walls included.)	*10*
N) Paver Stone Walks, Paths or Patios (Points per square foot – no driveways included.)	*1*
O) Planting Beds (Points per square foot – must be decorative stone or mulch.)	*1*

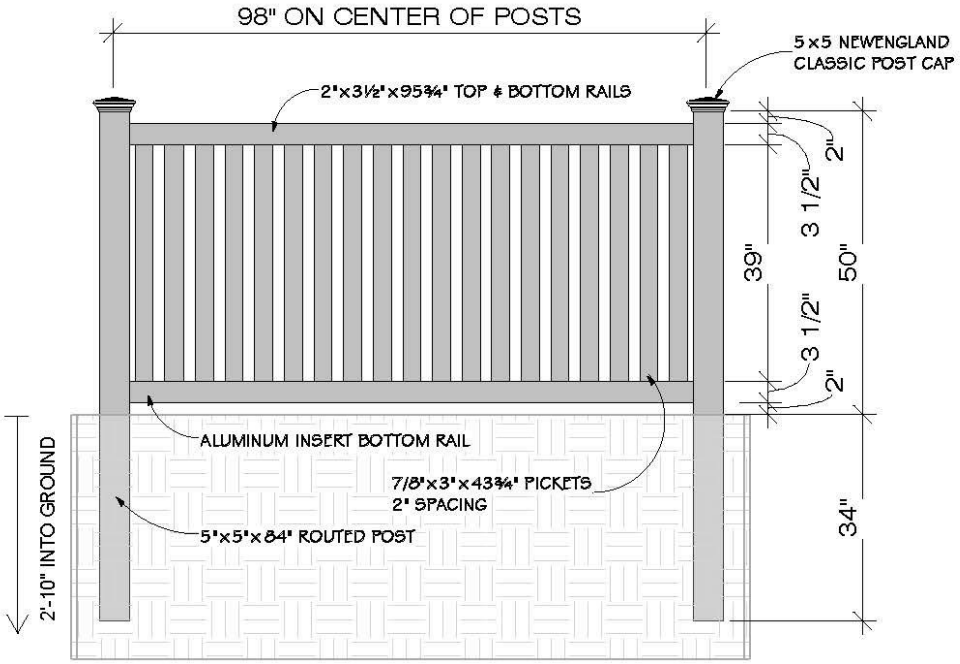
The final point totals must consist of a balanced variety of the listed elements acceptable to the Architectural Control Committee. Existing vegetation, trees and shrubs may be included in the point totals if they are properly protected and maintained during the construction process and located as such on the landscape plans submitted to the Architectural Control Committee for approval.

EXHIBIT "E"

STRATFORD



Fence Top View



Fence Elevation

NOTE:

MANDATORY REQUIREMENTS (NO VARIANCE WILL BE ALLOWED)

- FENCE MUST BE VINYL
- VINYL COLOR: ALMOND (PREVIOUSLY SANDSTONE)
- FENCE STYLE IS A PLYGEM PRODUCT (STRATFORD)

- CUSTOM BUILT ON THE JOBSITE
- INSTALLED WITH METAL BRACKETS THAT ATTACH TO POST AND SCREW INTO STRINGERS

VERIDIAN HOMES

6801 South Towne Drive
Madison, WI 53713
Phone 608.226.3100
Fax 608.226.0600

VILLAGE OF McFarland
Community Development

Memorandum

TO: Plan Commission Members

FROM: John Griffith, Code Enforcement Officer

DATE: May 11, 2020

RE: April Property Maintenance Report

ADDRESS-OWNER OR TENANT OCCUPIED (MARCH AND PRIOR LETTERS/CONTACT)	VIOLATION & DATE LETTER DELIVERED/SENT:	STATUS /DATE	DATE RESOLVED OR NEXT STEP
5911 Spartan Drive – (rental) NAK Development LLC	Furniture in yard of property - 3.16.20 – letter sent	5.7.20 – couch by dumpster - letter sent	6.9.20 – follow up
5708/10 Main street – Allen/Zellner	Accumulated debris and rubbish in front yard – 3/16/20	5.7.20 – debris & trash removed	n/a
5905 Smith Ridge Road (Hemp) rental	Junk/brush/trailer on lawn (9/9/19)	Second notice to correct sent 10/13/19	Not corrected 11/1/19, 2/6/2020 – ticket issued – Court date 2/25/2020 – changed to 5-12-20
5905 Smith Ridge Road (Hemp)- rental	Expired plates on vehicles stored on site (9/30/19)	Second letter to owner sent 10/30/19	Not corrected 11/1/19, 2/6/2020 – ticket issued. Court date 2/25/2020 – fine of $187.00 – 60 days to pay or appear at 5-12-20 hearing.
5603 Wimbledon Ct. (Dimeo)	Inoperable/ unlicensed vehicles, trash/debris on site 1.9.2020	Letter sent 1-9-2020	Checking weekly, owner working on 5.7.20 – still has auto with expired

			plates
5300 Marshwoods Road (Krenz)	Improper firewood storage	Owner given additional 60 days to move. Court fine $89.80 – pretrial stipulation. Ticket paid 3.5.20	5.11.20 – no firewood in driveway
5915 Exchange St. (Byrne)	Tuck pointing	Letter sent to owner- 10-22-18 No response from owner	No further action has been taken
5506 Valley Drive (Owner – Vogel)	Excessive # vehicles, vehicles on lawn, non-running/licensed vehicles 1.15.2020	Letter sent 1-16-2020	Citations issued 2/24/2020 Court date 3.24.20 – postponed to 5-12-20
5012 Ridge Road – Glassmaker 3.20.20	Excessive number of vehicles outside on a property	Staff monitoring	
5906 Main Street - Schneider	Request for Fire Inspection Letter Sent - 3.19.20	Owner nonresponsive, forwarded to Village Attorney to draft inspection warrant.	
5802 Main St/ 5307 Hough Street -POC LLC	Accumulated debris and rubbish stored by dumpsters 4/19/20	5.7.20 – pallets and paint cans removed	n/a
6119 Johnson St (Deyoe)	Min. maintenance accumulated debris on property, non-running vehicles, vehicles being used as storage	Letter sent 1.23.2020	Citations issued 2.27.2020 Court date 3.24.2020 – postponed to 5.12.20
5910 Juniper Ridge – Tambling	Accumulated debris and furniture on front lawn 3.9.20	5.7.20- area cleaned up	n/a
6018/6020 Johnson Street -Elmer -(rental)	Accumulated brush, debris stored in front yard 3.2.20	5.7.20 – all debris removed	n/a
5404 Falling Leaves Lane (Peterson)	Vending machine stored outside on property 3.16.20	5.7.20- moved to inside of garage	n/a
5323 Autumn Lane Hansen (rental)	Trailer parked on lawn, accumulated debris, rubbish and bagged items stored on lawn 3.16.20	5.7.20- items removed	n/a

5408 Anthony Street (parking lot)	Unlicensed inoperable vehicle on property – spoke with property owner, notice left for vehicle owner	5.7.20 – auto removed	n/a
5903 Spartan Drive – Apartment –Spartan Drive LLC	Accumulated debris by dumpster and in concrete slew 3.16.20	5.7.20 - gone	n/a

LETTERS /CONTACT IN APRIL: **ADDRESS/ OWNER/RENTAL**	**VIOLATION AND DATE OF CONTACT/POSTING/ LETTER SENT:**
5911 Spartan Drive – (rental) NAK Development LLC	Furniture stored by dumpster on property – letter sent 5-7-20
Chicken permit renewal letters mailed out	No violation, reminder of permit applications due by May 31, 2020
5506-08 Creamery Ct – Reilly (rental)	Non-running vehicles, unlicensed vehicles, vehicles parked on lawn; debris on site – letter sent 5-5-20
5836 Osborne Drive – Aubey Jr.	Construction work without a permit – letter sent 4-15-20
5705 Black Walnut Drive - White	Waste and debris in yard – minimum maintenance – letter sent 5-5-20
5306 Paulson Road	Debris on site, noise, smell, running business out of a residential property – watch list
5105 Summer Trail - Schaller	Burning mid-week without permit & during burning ban – Forward to Fire Department 4-23-20
5102 Paulson Road - Foskett	Construction work without permit – letter sent 4-29-20
5911 Leanne Lane - Ruggles	Debris/garbage/furniture stored outside on property – letter sent 5-4-20

VILLAGE OF McFarland
Community & Economic Development
www.mcfarland.wi.us/communityandeconomicdevelopment | 5915 Milwaukee St, McFarland, WI 53558 | 608.838.3154

Memorandum

To: Plan Commission

From: Andrew Bremer, AICP
Community & Economic Development Director

Date: May 8, 2020

Re: April Community & Economic Development Department Highlights

YTD New Construction Building Permits

	2019	5-Year	4-Year	3-Year	2020	2019	2018	2017
Building Permits (new construction)	**Actual**	**Average**	**Average**	**Average**	**Actual YTD**	**Actual YTD**	**Actual YTD**	**Actual YTD**
SF	67	52	60	66	19	20	27	15
MF	8	3	4	4	1	7	3	6
Com	1	3	3	3	1	0	0	3
Total	**76**	**58**	**67**	**74**	**21**	**27**	**30**	**24**

41 total building permits issued in April; however, none for new construction. For comparison, there were six new SF permits issued in the month of April in 2019, nine in 2018, and five in 2017. The stronger start to the 2020 new home construction season has offset the impacts of COVID-19 for the month of April; however, new permit construction is likely to lag in May as COVID-10 slows consumer spending on new home construction. The Village is currently on pace for 57 new SF home permits for 2020. The year started with 61 vacant SF lots in the active east-side subdivisions.

YTD Department Revenues

		2019	5-Year	4-Year	3-Year	2020	2020	YTD % of	2019
Account		**Actual**	**Average**	**Average**	**Average**	**Budget**	**Actual YTD**	**Budget**	**Actual YTD**
44300-101	Building Permit	$ 107,314	$ 82,718	$ 94,578	$ 108,402	$ 100,000	$ 35,277	35%	$ 28,589
44300-102	HVAC Permit	$ 31,034	$ 31,097	$ 36,095	$ 40,128	$ 45,000	$ 12,871	29%	$ 10,480
44300-103	Plumbing Permit	$ 37,370	$ 33,420	$ 38,326	$ 42,774	$ 45,000	$ 11,718	26%	$ 11,756
44300-104	Electrical Permit	$ 47,101	$ 41,239	$ 47,273	$ 52,637	$ 50,000	$ 17,144	34%	$ 14,486
44300-105	Sprinkler Fee	$ 2,722	$ 2,594	$ 3,223	$ 4,297	$ 4,000	$ 1,775	44%	$ 50
44300-106	Fire Alarm Inspection Fee	$ 4,515	$ 2,489	$ 3,111	$ 4,148	$ 2,000	$ 55	3%	$ 2,245
44300-108	CD Occupancy Inspection Fee	$ 8,450	$ 7,870	$ 9,250	$ 9,483	$ 10,000	$ 3,965	40%	$ 2,835
44900-000	Misc. CD Permit Fees	$ 109,484	$ 123,997	$ 143,617	$ 165,481	$ 100,000	$ 51,540	52%	$ 32,396
46800-000	Community Development Fees	$ 9,777	$ 9,753	$ 9,840	$ 9,188	$ 10,000	$ 9,566	96%	$ 2,035
47210-000	City - Building Inspection	$ -	$ 22,435	$ 19,456	$ 13,546	$ -	$ -	0%	$ -
	Total Revenue	**$ 357,767**	**$ 357,613**	**$ 357,574**	**$ 450,085**	**$ 366,000**	**$ 143,911**	**39.3%**	**$ 104,872**
	Percent Change	**-30.3%**	**x**	**x**	**x**				

* As of 04/30, 33% through calendar year

Total C&ED deposits for the month of April were $301,660.39. This was a larger than usual collection due to payment ($285,360) by Lakestone Properties for their mixed-use project on Farwell Street. Prior year April totals were $111,552 in 2019, $75,437 in 2018, and $69,665 in 2017. Through the first quarter of 2020, total C&ED revenues are 6% higher than the YTD percent of budget; however, YTD revenues are likely to return or dip below the YTD % of budget pace if COVID-19 has a lasting impact on consumer spending on new home construction and new commercial development.

Summary of Department Activities:

- Village Board action on April Plan Commission & CDA recommendations:
    - No agenda items; however, the VB did adopt Ordinance 2020-14 to improve property maintenance and weed abatement procedures related to repeat violators.

- Status update of larger development projects previously approved:
    - 4703 Terminal Drive (Ezra Properties 27-unit MF). Construction nearly complete with planned occupancy date of June 1. CDA and VB currently reviewing request to amend development agreement related to removal of outdoor vehicle storage.
    - 4719 Farwell Street (The Atwater, mixed use). Building permits approved, construction on-going.
    - 4900 Larson Beach Road (MSP, 51-unit MF). MSP was awarded WHEDA affordable housing tax credits for their proposed development. Next step is to submit for Federal and County financial aid.

- Meetings & Conferences:
    - April 8th, Joint CDA and PC meeting
    - April 13th, VB meeting
    - April 14th, Webinar: The Economics of Development 202
    - April 16th, Parks Committee
    - April 21st, Chamber Board meeting
    - April 24th, Webinar: Dane County Climate Action Plan
    - April 27th, Zoom meeting with Veridian and two property owners regarding Rosewood Fields
    - April 28th, Webinar: WHEDA Tax Credit Awards
    - April 28th, Webinar: Life After Carbon

- Other Department Projects/Initiatives/Activities:
    - 5906 Main Street (TID #4). Issued letter regarding request for fire inspection of vacant building with April 22nd deadline to contact the Fire Department. No response from property owner to date. Referred to Village Attorney.
    - 5407 Bashford Street (TID #4). Received counteroffer to Village's offer to purchase. Currently under review by CDA and VB.
    - Submitted Urban Service Area Amendment Application for planned east-side growth area to CARPC. CARPC public hearing planned for June 11, with approval consideration on July 9.
    - Continued work on an updated Village Sign Code.
    - 2020 Census. McFarland response rate through April 78%, compared to WI 64%, and Nation 56%.
    - Continued coordination with Chamber on COVID-19 resources for businesses.
    - Coordination with representatives of Alliant and ATC regarding future development on east side.
    - Coordination with MMSD on sewer connection fees due from past construction projects.
    - Updated C&ED website to include a new section titled Active Development Projects to provide links to development applications on pending Plan Commission agendas.

Look ahead to potential June CDA Agenda Items:

- 5923 Exchange Street. Potential request for TIF incentives for sprinkler system/building improvements.

- 4900 Larson Beach Road. Potential request for TIF incentive for 51-unit affordable housing project.
- 5513 Bremer Road. Potential request for TIF incentive for proposed memory care facility.

Look ahead to potential June PC Agenda Items:

- Public hearing and recommendation on a Zoning Code text amendment to add "pet training and grooming services and related accessory retail sales" as a conditional use in the C-P Commercial Park District.
- 4706 Farwell Street, Public hearing and recommendation on a rezone petition for Angelo's Restaurant from C-H to C-G.
- Pre-application meeting for Elvehjem Acres 32 (64-unit) duplex development for 55 and older residents
- Lot 57 & 58 Prairie Place, conditional use permit and site plan permit for 31-unit town house development
- Lot 56 Prairie Place, rezone and PUD General Plan approval for 80 senior and workforce housing units in 5 buildings.
- Review of draft sign code.