

James McDonald, Mayor
Mary Konrad, Clerk
Stacy Michael, Treasurer



Trustees:
Allena Barbato
Jake Cramond
Karen Harms
Jeff Nielsen
Tom O'Reilly
Doug Savell

AGENDA
PLAN COMMISSION
January 19, 2023
7:00 pm

1. Call to Order and Roll Call
2. Pledge of Allegiance
3. **Status Hearing**: Status Hearing and Motion to continue consideration of approval of a Conditional Use Permit for a Planned Development and rezoning to the UR4 Zoning District relative to the properties at 406 Monaville Road and at 500 Monaville Road to 7:00 p.m. on Thursday, January 26, 2023 at Village Hall (65 Cedar Avenue, Lake Villa, IL)
4. **Public Hearing**: Consideration of approval of a Conditional Use Permit for a Senior Apartment Planned Development and rezoning to the UR4 Zoning District of the property at 0 Deep Lake Road
5. Public Comment
6. Adjournment

**Conditional Use Permit – 0 Deep Lake Road
(Cover Transmittal)**



DATE: January 13, 2023

TO: Chairman Craig Kressner and Members of the Plan Commission

FROM: Michael Strong, Village Administrator

RE: **Starling Senior Apartments at 0 Deep Lake Road (the "Subject Property")**

<u>Property Owner</u>	<u>Property Location</u>	<u>Zoning District</u>
Home State Bank N.A. 40 Grant Street Crystal Lake, IL 60014	0 Deep Lake Road – Vacant Lot south of Tower Crossing (the "Subject Property")	Suburban Business SB
Applicant and Contract Purchaser: Lincoln Avenue Capital, LLC c/o Hume An, Vice President and Regional Project Partner 3048 Mary Kay Lane Glenview, IL 60026		

Representatives: Hume An, Vice President and Regional Project Partner (Developer)

Requested Action

1. Preliminary Plat Approval for Planned Development

Procedural Summary

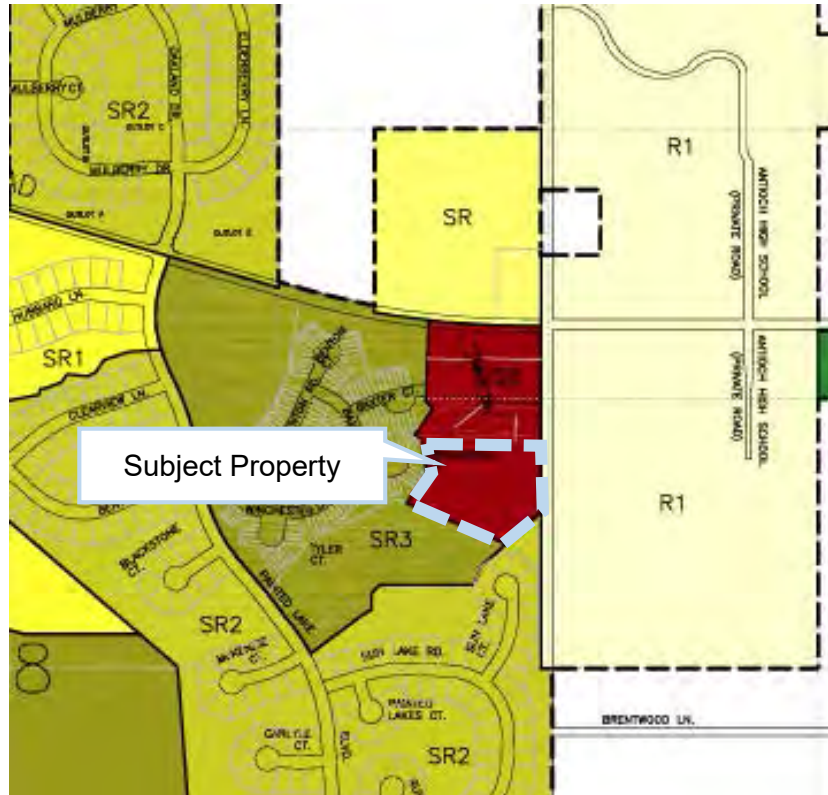
Pursuant to Section 10-9-1.7 of the Village Code, a planned development may be granted a conditional use permit in any zoning district in which it is permitted in accordance to the standards and procedures set forth in the Code. A preliminary planned development or preliminary plat must first be submitted to the Village for consideration by the Plan Commission for a required public hearing, after which the Board of Trustees will review such report or recommendation of the Plan Commission. During the Public Hearing, the Plan Commission will hear the evidence presented by Village Staff, Applicant/Developer, and any individuals in the audience wishing to speak for or against the proposed development.

At the conclusion of the public hearing, the Plan Commission shall, with the aid and advice of Village Staff, transmit its findings and recommendations as to whether the preliminary plat should be approved, approved subject to modifications, or not approved. The Plan Commission has the authority to modify the proposal and/or attach conditions to the recommendation that is sent to the Board of Trustees for final consideration.

Summary of the Request and Review of the Proposed Plan – *Please refer to the attached documents as reference*

This is a request for approval of a Conditional Use Permit for a Planned Development for Senior Apartments at the Subject Property located at 0 Deep Lake Road. The site is currently zoned Suburban Business (SB). The project is adjacent to SR-2 Single-Family Homes to the south, SR-3 Townhomes to the

west, SR zoning for an elementary school to the north, and R-1 zoning for high school athletic fields to the east.



The proposed development calls for a revision of a portion of the existing Lake Tower Crossing Phase 3 Planned Development located at the southwest corner of Grass Lake Road and Deep Lake Road. There are two existing retail buildings in the Lake Tower Crossing development, a commercial strip center and a bank. The Subject Property is also a Village water tower which is located at the Southwest corner of the intersection of Tower Road and Deep Lake Road. The project also proposes rerouting and reconfiguring a portion of Tower Drive westward where it meets Grass Lake Road.

The applicant is requesting a change of zoning for the property, from Suburban Business to Urban Residential (UR4). The proposed UR4 zoning would be consistent with the surrounding residential and suburban business uses, provides for a residential density buffer adjacent to a commercial district and is the only zoning district that allows for elderly housing uses.

Comprehensive Plan

The proposed development is consistent with the Comprehensive Plan, which was adopted on January 3, 2022 by the Village Board. The Plan shows the site as multi-family as an appropriate future land use for the site. Additionally, the future land use goals call for adding *appropriately to the housing stock and providing housing options to attract families, professionals and allow seniors to stay in the community.*

A specific objective with this goal is referenced in subsection 3.3 of the Village's future land use goals:

3.3 Plan for a range of quality housing options for seniors, from active adult to age-restricted housing so that residents can stay in the community.

Preliminary Site Plan

The preliminary site plan for the Subject Property shows a total lot area of 5.21 acres and will require both on-site and off-site improvements proposed for ingress/egress and pedestrian access. Within the Subject Property, a three story senior apartment building is proposed which would be oriented east-west toward the northern portion of the parcel, with east and west access to a parking lot south of the building adjacent to the main entryway to the building. In addition to the three story building, a walking path is proposed in the northwest section of the parcel, and a community garden and dog run are proposed east of the building. Ornamental fencing is proposed to be installed along the eastern property line (adjacent to Deep Lake Road) and retaining walls are proposed to buffer the impervious surface areas with the wetland detention which is located south of the parking lot.

Access and Internal Circulation

The proposed site plan offers two points of access for ingress and egress. These access points are proposed through a proposed easement agreement with the property owner to the north, which would allow for vehicular and pedestrian access from Tower Drive through an existing parking lot which serves the Lake Tower Crossing Planned Development directly north of the site. No access points are being proposed off Deep Lake Road. Additionally, pedestrian paths and/or sidewalks are proposed to be connected to Tower Drive and around the Village's water plant property, consistent with the existing Conditional Use Permit that was issued for the Phase 2 of the Lake Tower Crossing Planned Development. Six foot sidewalks are also proposed around the building to provide access to on-site amenities including the walking path/open space, community garden and dog run.

Landscaping and Sidewalks

A preliminary landscape plan was proposed and meets the Village's landscaping requirements. The plan shows a mix of interior landscaping for parking lots, buffer yards, and perimeter areas. The Developer is proposing to replace approximately 31 trees being removed with 45 replacement trees, which meets the Village requirements.

Consistent with the Conditional Use Permit (2020-07-07) that was previously approved for the site, sidewalks are proposed along Deep Lake Road, Tower Drive, and the eastern access lane to the site which will access the eastern frontage of the building.

Zoning and Bulk Standards

The only zoning district that allows elderly housing is UR4 with a Conditional Use. As "each planned development shall be compatible with the character and objectives of the underlying zoning district or districts within which it is located" it is recommended to change the zoning of Lot A Phase 2 to UR4 that allows "elderly housing" as a conditional use.

The Applicant is proposing front yard, side yard, and rear yard setbacks that meet and/or exceed the minimum setback requirements for the UR4 zoning district. The Applicant is not proposing any residential bulk standards that vary from the UR4 zoning district, as further outlined in the chart below.

Residential Bulk Standards

	SB	UR4	Proposed
Use		Elderly housing is a conditional use	Elderly housing
Front	20	30 feet	151 feet
Rear	30	6 (first) + 4 (second) +1 (each additional unit) = 60 feet	Approximately 60 feet.
Total Side Yard	15	15 (first) + 8 (second) +2 (each additional unit) = 123 feet	303 feet
Side Yard	50	6 (first) + 4 (second) + 1 (each additional unit) = 60 feet	76 feet
Min. Setback Abutting a Street	50	30 feet	151 feet
Min. Setback Abutting a Residential Zone	50	6 (first) + 4 (second) + 1 (each additional unit) = 60 feet	76 feet
Maximum FAR	.80	.40	.09
Maximum Height of Principal Use	40	50	40
Number of Stories	3	3	3
Site Area			227,068 sq ft

Parking

The Zoning Code requires 1.5 spaces for each one-bedroom or efficiency unit and 2 spaces for two-bedroom units. Below is a breakdown of the proposed parking for the development.

Parking	SB	Proposed
Required	85 (according to application)	See below
Standard Spaces		84
Handicap Spaces		8
Total	85	94

Standards for Conditional Uses

In reviewing requests for conditional uses, the following standards shall be reviewed and considered pursuant to the Village's Zoning Code:

1. Location: The site shall be so situated that the proposed use is compatible with the existing or planned future development of the area.

Comment/Observation: The proposed development is located along an arterial with compatible commercial development to the north and residential development to the east.

2. Zoning District Requirements: All regulations of the zone in which a conditional use is located shall apply to such uses, except where specifically amended by the conditions under which the conditional use permit is granted.

Comment/Observation: Zoning variances may be provided through the adoption of the planned development.

3. Lot Area: A conditional use shall be located on a lot or a zoning lot which conforms to the applicable zone regulations, unless the lot area requirement is specified in this section.

Comment/Observation: The proposed project is in compliance with minimum requirements of the UR4 Zoning District.

Planned Development Standards

In evaluating a Planned Development, the Planning Commission shall consider the degree to which that development varies from underlying zoning standards of the district in which it will be located, and also consider benefits of the development such as the following (summary of Lake Villa Zoning Ordinance 9-1-2):

- (1) The proposed development plan has provided a trail system for residents; or
- (2) The amount of landscaping is substantially greater than the minimum required by the Village Code; or
- (3) The proposed development has substantially greater architectural amenities; or
- (4) Other extraordinary site amenities

Comment/Observation: The proposed development exceeds the amount of landscaping that is required by providing two of the standards:

- (1) The proposed development provides a trail system in the northwest portion of the development*
- (2) The proposed development exceeds landscape requirements by providing common open space, a community garden and dog run.*

- a. The degree to which the development exhibits extra care and attention to details in excess of Village requirements which enhance the character of the development

Comment/Observation: The proposed development provides additional open space, a trail system, community garden and dog run. It also exceeds requirements for parking and accessible parking spaces.

- b. The degree to which any requested increase in density reflects an investment in better design, landscaping, or facilities

Comment/Observation: The design of the development provides moderate-density senior housing that is needed in the community, is located along an easily accessible arterial and complements the commercial development to the north and serves as a buffer to residential development to the west.

- c. The degree to which the developer has gone to better preserve critical natural environments, restore or mitigate degraded or distressed environments, alleviated off-site problems, or provided other improvements.

Comment/Observation: The proposed development provides additional open space, a trail system, community garden and dog run. The wet bottom detention basin should be designed with native wetland vegetation wherever possible to enhance the natural environment and the abutting wetland to the south.

Action Requested

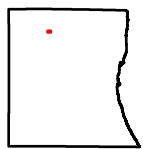
The Plan Commission is asked to consider the application and hold a public hearing relative to the proposed preliminary plat of PUD for the Starling Senior Apartment Residential Development proposed at 0 Deep Lake Road.

Village staff is seeking direction from the Plan Commission on whether findings of fact should be drafted to approve, approve with conditions, or deny the Applicant's request for preliminary approval.

Attachments

- Exhibit 1 – Aerial Photograph
- Exhibit 2 - Zoning Map with Subject Property Outlined
- Exhibit 3 – Petitioner's Application Packet and Submittals
- Exhibit 4 – Copy of Public Hearing Notice and Notification Area

0 Deep Lake Road, Lake County, Illinois



Lake County, Illinois



Map Printed on 1/12/2023

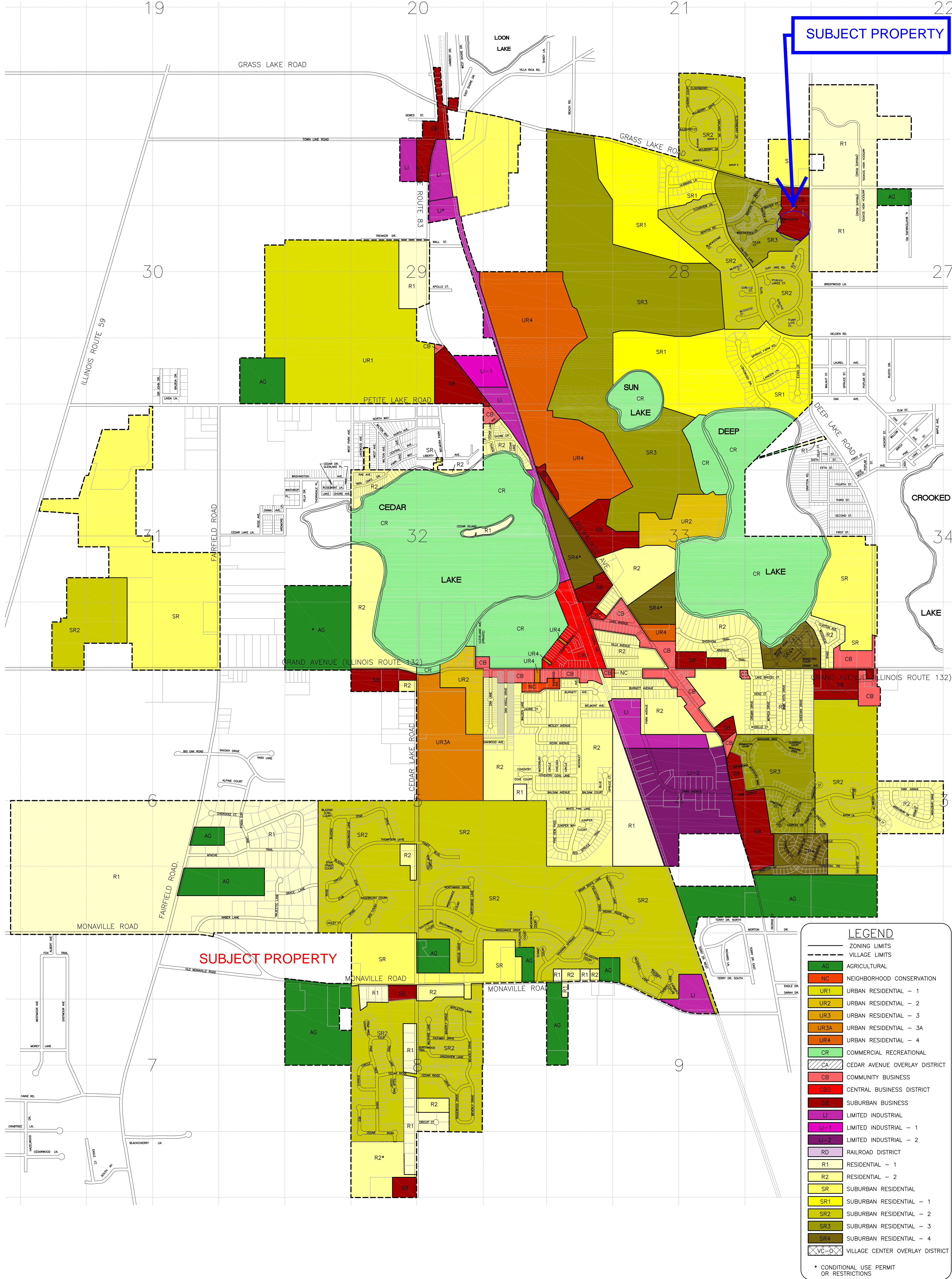


- Override 1
- Tax Parcel Lines
- Tax Parcel Information

Disclaimer:

The selected feature may not occur anywhere in the current map extent. A Registered Land Surveyor should be consulted to determine the precise location of property boundaries on the ground. This map does not constitute a regulatory determination and is not a base for engineering design. This map is intended to be viewed and printed in color.

OFFICIAL ZONING MAP



TO: VILLAGE OF LAKE VILLA
 X **ZONING BOARD OF APPEALS**
 X **PLAN COMMISSION**

APPLICATION FOR
ZONING CHANGE, CONDITIONAL USE PERMIT,
PLANNED UNIT DEVELOPMENT, AND VARIATION

Please print or type all information:

- I. _____ Zoning change
_____ Conditional Use Permit (CUP) for _____
 x Planned Unit Development (PUD)
_____ Variation from the zoning ordinance
- II. Now comes the Petitioner(s), Lincoln Avenue Capital and
represent that they are the owners) (contract purchasers) (lessees) of the following
described real estate, to wit:

(Legal description) SEE EXHIBIT A
- III. Commonly known as (street address): SEE EXHIBIT A
- IV. Physical location of the property: SEE EXHIBIT A

Located on the west side of Deep Lake Road, approximately
(direction) (street name)
170 feet south from Tower Drive
(direction) (street name)
- V. Permanent Real Estate Tax (PIN) Number: SEE EXHIBIT A

Assessed Valuation for the last three years:

20 22	\$ 71,300
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20 21 \$ 66,233

20 20 \$ 64,111

- VI. That said premises are now classified under the Lake Villa Zoning Ordinance as the Suburban Business with a zone, and are presently [improved] [unimproved] as follows:
Conditional Use Permit

vacant land.

- VII. That under said current classification, the petitioner(s) are prohibited from installing and operating therein the following uses, of which they are desirous.
(Make a brief statement as to the proposed use.)

The proposed use is a three-story senior housing development (aged 55 and older)
of up to 52 units.

- VIII. That petitioner(s) feel that their request is justified in that the existing PUD on the
the property already allows multifamily residential of up to 91 units comprised of a mix
of one-bedroom and two-bedroom units. Our proposed development of up to 52 units (a mix of one-
bedroom and two bedroom units) would be a far less dense and intense use and would have de
minimis impact on the school system as the apartment would be for seniors. Moreover, the Comprehensive Plan
(Make a statement as to why you believe the requested change is desirable.)
shows the future land use of the parcel to be Multi-Family.


WHEREFORE, your petitioner(s) pray that your Village of Lake Villa Zoning Board of Appeals and/or the Village of Lake Villa Plan Commission, pursuant to the Village's rules and regulations, will hold a public hearing as provided by ordinance and as a result of said hearing recommend to the Village Board of Lake Villa, that the Village amend, or modify the use(s) to which the above described premises may be put; that said premises be:

- A. _____ Rezoned from the present _____ zone to the _____ zone
B. _____ Issued a Conditional Use Permit.
C. x _____ Issued a Planned Unit Development
D. _____ Issued a Variation from Ordinance.
E. _____

- IX. PETITIONER'S NAME:

Hume An

[Print/Type Name]


[Signature]

3048 Mary Kay Ln.

[Address]

Glenview, IL 60026

312-286-8128

[Phone Number]

Date: December 5, 2022

- X. Some of the items required may be waived depending upon the nature and scope of this application.
1. If petitioner is a corporation, a counsel at the public hearing must represent you.
 2. Petitioner must present with this petition the following:
 - (a) Current evidence of title to property, purchase contract or lease agreement.
 - (b) Plat of Survey with square footage of property.
 - (c) Plat of Survey with all existing buildings and structures shown and specifically located.
 - (d) Photographs of the area for which the change is requested.
 - (e) Sketch drawn to scale of subject property with proposed changes, and all property and improvements within 300 feet of subject property (include North arrow).
 - (f) Legal description of the property.
 3. Indicate which portion, if any, of subject property is in flood plain.
 4. Letter of Concurrence from present property owner if different from petitioner(s). Letter from owner must show owner's name, address, and present phone number.
 5. If requested for a Conditional Use Permit, requirements of the Lake Villa Zoning Ordinance, Article Four, Section IV.

For office use only

Zoning change fee:	\$ _____
Variation fee:	\$ _____
CUP fee:	\$ _____
PUD fee:	\$ <u>750</u>
Escrow:	\$ _____
Total amount received:	\$ <u>750</u>

Date payment received: _____ Cash Check # _____

EXHIBIT A

ADDRESS(ES):

0 Deep Lake Rd., Lake Villa, IL 60046

LEGAL DESCRIPTION(S):

Lot A in Lake Tower Crossing Planned Unit Development Phase 2, being a resubdivision of Part of Section 28, Township 46 North, Range 10 East of The Third Principal Meridian, in Lake County Illinois according to the Plat thereof recorded May 1, 2008 as document number 6340408, in the Village of Lake Villa, Lake County, Illinois.

PHYSICAL LOCATION OF THE PROPERTY:

Located on the [North] [South] [East] [West] side of Deep Lake Road, at/south of the [North] [South] [East] [West] corner of Deep Lake Road and Tower Dr.;

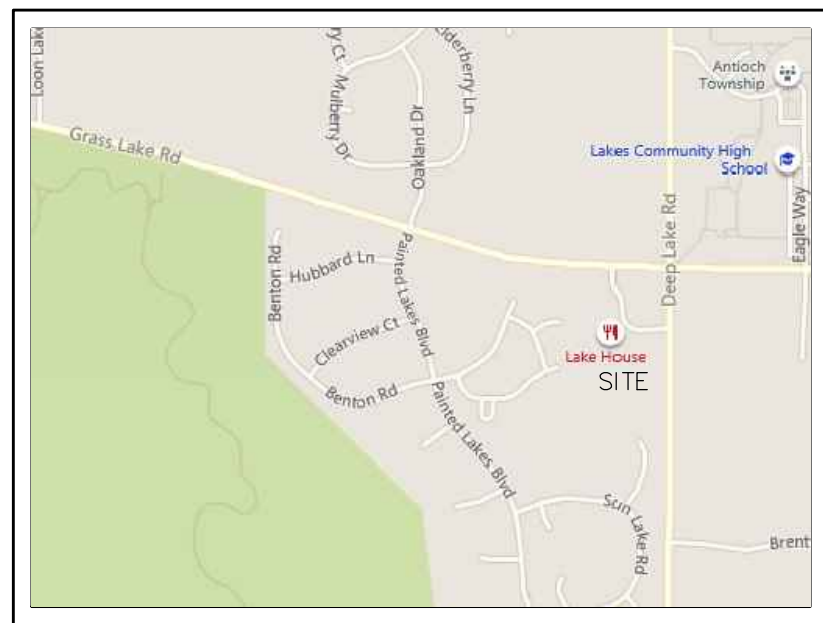
FLOOD PLAIN: The above property(ies) [is or are] [is not or are not] located in a flood plain.

EQUALIZED ASSESSED VALUATIONS:

	Permanent Index Number	Year	Equalized Assessed Valuation
(A)	P.I.N. 02-28-201-178	2021	\$66,233 (taxable EAV)
		2020	\$64,111
		2019	\$62,442
(B)	P.I.N.	2021	
		2020	
		2019	
(C)	P.I.N.	2021	
		2020	
		2019	
(D)	P.I.N.	2021	
		2020	
		2019	
(E)	P.I.N.	2021	
		2020	
		2019	

LEGAL DESCRIPTION

LOT 4 IN LAKE TOWER CROSSING PLANNED UNIT DEVELOPMENT PHASE 2, BEING A RESUBDIVISION OF PART OF SECTION 28, TOWNSHIP 46 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY ILLINOIS ACCORDING TO THE PLAT THEREOF RECORDED MAY 1, 2008 AS DOCUMENT NUMBER 6340408, IN THE VILLAGE OF LAKE VILLA, LAKE COUNTY, ILLINOIS.



LOCATION MAP

NOTES:

1. PERMANENT INDEX NUMBER (P.I.N. #): 02-28-201-178
2. THE LOCATION OF UNDERGROUND UTILITIES WAS DETERMINED BY FIELD OBSERVATION AND VISIBLE MARKINGS ONLY.
3. PROPERTY AREA: 227,068.13 SQUARE FEET / 5.22 ACRES
4. FIELD WORK COMPLETED ON 12/13/18.
5. SURVEY PREPARED WITHOUT THE AID OF A TITLE REPORT, REFER TO A CURRENT TITLE REPORT, DEED AND LOCAL CODES FOR ANY EASEMENT, BUILDING SETBACKS AND OTHER LOCAL RESTRICTIONS NOT SHOWN HEREON.
6. SURVEY PREPARED FOR: CHRIS KHAYAT
7. BASIS OF BEARINGS IS TRUE NORTH BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, ILLINOIS EAST 1201 ZONE.
8. ANY DISCREPANCIES FOUND WITHIN THIS DOCUMENT NEED TO BE REPORTED TO THE SURVEYOR AS SOON AS POSSIBLE.

STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

WE THE W-T GROUP DO HEREBY DECLARE THAT WE HAVE SURVEYED THE ABOVE DESCRIBED PROPERTY AND THAT THIS PLAT IS A CORRECT REPRESENTATION OF SAID SURVEY. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY AND TOPOGRAPHIC SURVEY.

GIVEN UNDER OUR HAND AND SEAL THIS 9TH DAY OF
A.D. 2019, AT HOFFMAN ESTATES, ILLINOIS.

THE W-T GROUP, LLC

FRANJO I. MATICIC - PLS #035-003556 EXPIRES
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO.

WT GROUP

WV Group
Engineering • Design • Consulting

STARLING SENIOR APARTMENTS
0 DEEP LAKE ROAD
LAKE VILLA, ILLINOIS

ISSUE

TO	DATE
CLIENT	01/09/19

CHECK:FIM

DRAWN:BMB

JOB: D18057

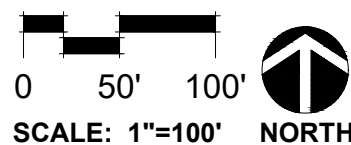
SUR-2

BOUNDARY SURVEY



LEGEND

- Study Area
- Lake County Wetland
- ADvanced IDentification Wetlands



GARY R. WEBER
ASSOCIATES, INC.

Grass Lake Rd & Deep Lake Rd
Lake Villa, IL

MA2242
Manhard Consulting, LTD.

PHOTO OF AREA OF ZONING
CHANGE REQUESTED

Provided by: Lake County Parcel Viewer

EXHIBIT C

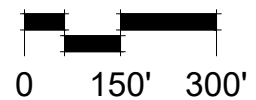
Created by: MGK Checked by:



LEGEND

Regulatory Floodway		0.2% Annual Chance Flood Hazard	
Special Floodway		Area of Undetermined Flood Hazard	
1% Annual Chance Flood Hazard		Future Conditions 1% Annual Chance Flood Hazard	
		Area with Reduced Risk Due to Levee	

Study Area



SCALE: 1"=300'



NORTH



GARY R. WEBER
ASSOCIATES, INC.

Grass Lake Rd & Deep Lake Rd
Lake Villa, IL

MA2242
Manhard Consulting, LTD.

FLOOD INSURANCE MAP

Provided by: Federal Emergency Management Agency

EXHIBIT F

Created by: MGK

Checked by:

Mr. David Kerth
Chief Credit Officer
Home State Bank N.A.
40 Grant St.
Crystal Lake, IL 60014

December 1, 2022

Dear Mr. Strong:

Lincoln Avenue Capital, LLC (LAC), as agent for the property owner listed below, has approval to submit a rezoning application to the Village of Lake Villa, Lake County, State of Illinois for the following property:

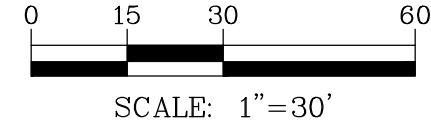
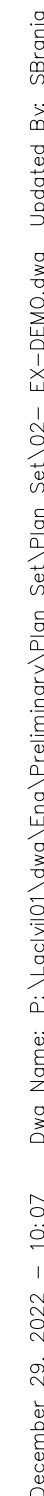
The real property with a Parcel Identification Number of 02-28-201-178, comprised of approximately 5.21 acres, and located at 0 Deep Lake Road, Lake Villa, Illinois 60046.


LAC will apply to for a new PUD to allow for a senior housing apartment building with a unit count of up 52 units.

A handwritten signature in black ink, appearing to read "David Kerth", written over a horizontal line.

Signature of Property Owner

David Kerth, Chief Credit Officer
Home State Bank N.A.
Printed Name of Property Owner

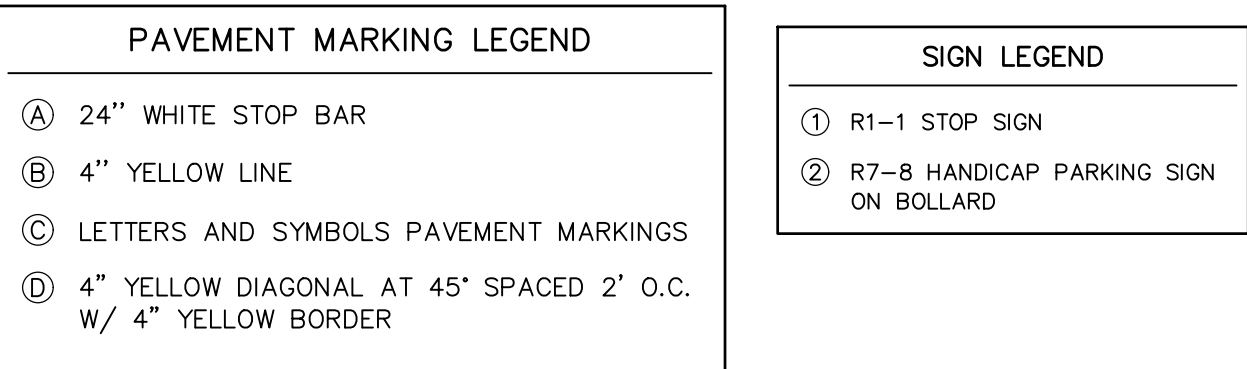


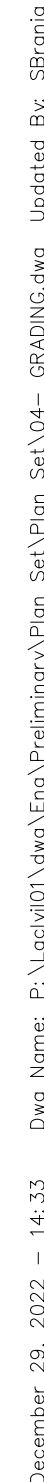
Manhard
CONSULTING

116 West Illinois, 7th Floor, Chicago, IL 60604
ph: 312.824.3801
fax: 312.824.0085
manhard.com
Civil Engineers • Surveyors • Mechanical Engineers •
Electrical Engineers • Structural Engineers •
Construction Management • Environmental Engineers •
Energy Consultants • Industrial Architects •

STARLING SENIOR APARTMENTS	LAKE VILLA, ILLINOIS	EXISTING CONDITIONS AND DEMOLITION PLAN
SHEET		
<div style="display: flex; justify-content: space-around; align-items: center;"> 2 OF 6 </div>		
LAC.LVL01		

PROJ. MGR.:	<u>MDE</u>	
PROJ. ASSOC.:	<u>MJC</u>	
DRAWN BY:	<u>SB</u>	
DATE:	<u>12-29-22</u>	
SCALE:	<u>1"=30'</u>	
<p>SHEET</p> <p style="font-size: 48px; margin: 0;">2 OF 6</p> <p style="font-size: 24px; margin: 0;">LAC.LVIL01</p>		

PROJ. MGR.:	<u>MDE</u>	
PROJ. ASSOC.:	<u>MJC</u>	
DRAWN BY:	<u>SB</u>	
DATE:	<u>12-29-22</u>	
SCALE:	<u>1"=30'</u>	
<p>SHEET</p> <p style="font-size: 48px; margin: 0;">2 OF 6</p> <p style="font-size: 24px; margin: 0;">LAC.LVL01</p>		





5. RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
6. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
7. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
8. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
9. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO GRADING OPERATIONS.
10. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
11. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR DEPTH OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS PROVIDED TO RELIEVE THE CONTRACTOR OF LIABILITY. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION OR CUTTING EXCEEDS 4 FEET IN DEPTH. THE CONTRACTOR BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
12. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
13. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION TO ALL SLOPES NOT AT OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
14. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PROVIDED BY THE CITY OF SEASIDE, 9. 2015. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IN THE EVENT OF A DISCREPANCY WITH EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR OWNERS RISK, TOPOGRAPHIC DATA TO A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
15. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

DETENTION BASIN	
HWL	798.25
NWL	790.25
DET. VOLUME PROVIDED	2.67 ACRE-FEET
100 YEAR RELEASE RATE	0.15 CFS

[illegible]

Manhard
CONSULTING

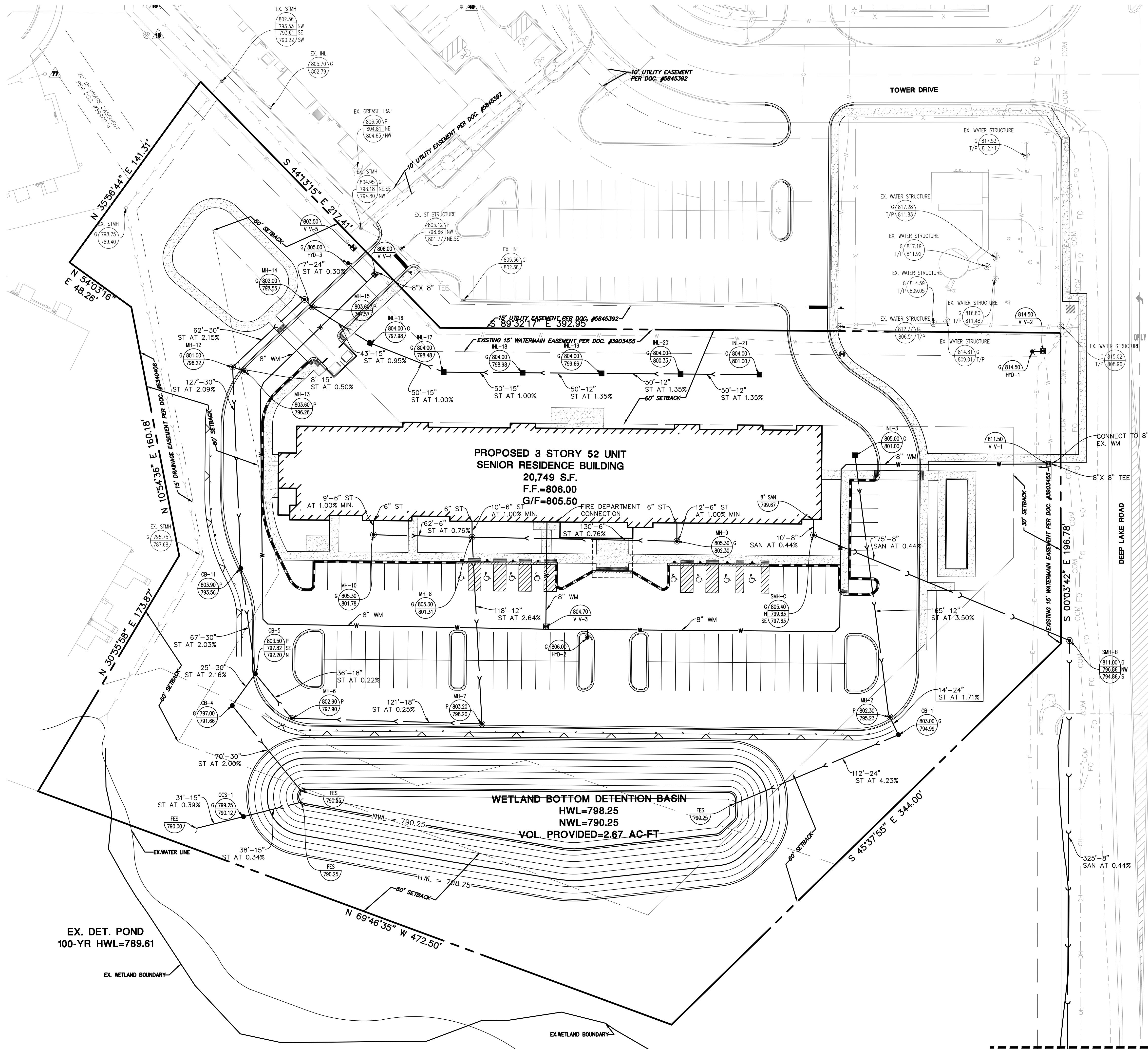
115 West Illinois, 7th Floor, Chicago, IL 60654
PH: 312.634.3901
F: 312.634.0065
manhard.com

Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

GRADING PLAN

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">PROJ. MGR.:</td> <td style="border-bottom: 1px solid black;"><u>MDE</u></td> </tr> <tr> <td>PROJ. ASSOC.:</td> <td style="border-bottom: 1px solid black;"><u>MJC</u></td> </tr> <tr> <td>DRAWN BY:</td> <td style="border-bottom: 1px solid black;"><u>SB</u></td> </tr> <tr> <td>DATE:</td> <td style="border-bottom: 1px solid black;"><u>12-29-22</u></td> </tr> <tr> <td>SCALE:</td> <td style="border-bottom: 1px solid black;"><u>1"=30'</u></td> </tr> </table>				PROJ. MGR.:	<u>MDE</u>	PROJ. ASSOC.:	<u>MJC</u>	DRAWN BY:	<u>SB</u>	DATE:	<u>12-29-22</u>	SCALE:	<u>1"=30'</u>
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<p>SHEET</p> <div style="display: flex; align-items: center; justify-content: center; gap: 20px;"> 4 OF 6 </div> <p style="font-size: 24px; font-weight: bold; margin-top: 10px;">LAC.LVL01</p>													

PRELIMINARY PLANS- NOT FOR CONSTRUCTION



UTILITY NOTES:

1. ALL UTILITY DIMENSIONS ARE TO CENTER OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. BUILDING DIMENSIONS AND ADJACENT UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT J.U.I.L.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
4. ROUTING OF GAS, ELECTRIC AND TELEPHONE SERVICES IF SHOWN ARE APPROXIMATE ONLY AND SUBJECT TO CHANGE BASED UPON FINAL REVIEW AND APPROVAL BY RESPECTIVE UTILITY COMPANIES AND OWNER. CONTRACTOR SHALL CONTACT EACH UTILITY COMPANY AND COORDINATE FINAL LOCATIONS FOR ALL UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
6. LIGHTING AND UNDERGROUND CABLE IF SHOWN ON PLANS ARE FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS AND DETAILS.
7. THE CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF ALL EXISTING STRUCTURES TO PROPOSED FINISH GRADES.
8. CONTRACTOR TO VERIFY LOCATION, SIZES, AND ELEVATION OF ALL BUILDING SERVICE LOCATIONS WITH ARCHITECTURAL PLANS.
9. AT LOCATIONS WHERE WATER MAIN CROSSES BENEATH OR LESS THAN 18" ABOVE A SEWER, PROVIDE WATER MAIN PROTECTION PER STANDARD SPECIFICATIONS FOR SEWER AND WATER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.
10. ELEVATIONS GIVEN FOR STORM SEWER STRUCTURES LOCATED IN CURB LINE ARE PAVEMENT ELEVATIONS.
11. ALL WATER MAIN SHALL BE 5'-6" BELOW FINISHED GRADE TO TOP OF MAINS UNLESS NOTED OTHERWISE.
12. ALL EXISTING UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT ELEVATION OR LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES.
13. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HERE ON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED.
14. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
15. PROVIDE CONCRETE COLLAR FOR ALL DRAINAGE STRUCTURES IN PAVEMENT, NOT ADJACENT TO CURB. SEE CONCRETE COLLAR DETAIL ON DETAIL SHEET.
16. CONTRACTOR SHALL CORE AND BOOT ALL PIPE ENTRANCES TO EXISTING SANITARY MANHOLES.
17. EXTERNAL CHIMNEY SEALS ARE REQUIRED ON PROPOSED AND ADJUSTED EXISTING SANITARY MANHOLES.
18. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
19. ALL D.I. WATERMAIN PIPE AND D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.

MATCHLINE SEE SHEET 6

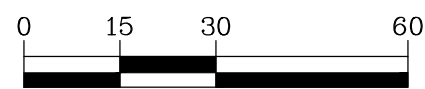
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REVISIONS	
DATE	



STARLING SENIOR APARTMENTS
LAKE VILLA, ILLINOIS
UTILITY PLAN- NORTH

PROJ. MGR:	MDE
PROJ. ASSOC:	MJC
DRAWN BY:	SB
DATE:	12-29-22
SCALE:	1"=30'
SHEET	5 OF 6
LAC.LVL01	

PRELIMINARY PLANS- NOT FOR CONSTRUCTION



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[illegible]

Manhard
CONSULTING

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ph: 312.824.3801
k: 847.634.0095
manhard.com

Civil Engineers • Surveyors • Water Resources Engineers • Water & Wastewater Engineers

STARLING SENIOR APARTMENTS

LAKE VILLA, ILLINOIS

UTILITY PLAN-SOUTH

PROJ. MGR.: MDE
PROJ. ASSOC.: MJC
DRAWN BY: SB
DATE: 12-29-22
SCALE: 1"=30'

SHEET
6 OF 6
LAC.LVIL01

PRELIMINARY PLANS- NOT FOR CONSTRUCTION



1 BUILDING FRONT VIEW
SCALE: N.T.S



2 BUILDING SW CORNER VIEW
SCALE: N.T.S



3 BUILDING SE CORNER VIEW
SCALE: N.T.S



NORTH ARROW
ARCHITECTURE
524 WEST ST. CHARLES ROAD
VILLA PARK, ILLINOIS 60181

STARLING SENIOR APARTMENTS

0 DEEP LAKE ROAD
LAKE VILLA, IL 60046

PID #12114
DATE:
11/09/2022

A4.0



1 BUILDING REAR VIEW
SCALE: N.T.S



2 BUILDING NW CORNER VIEW
SCALE: N.T.S



3 BUILDING NE CORNER VIEW
SCALE: N.T.S



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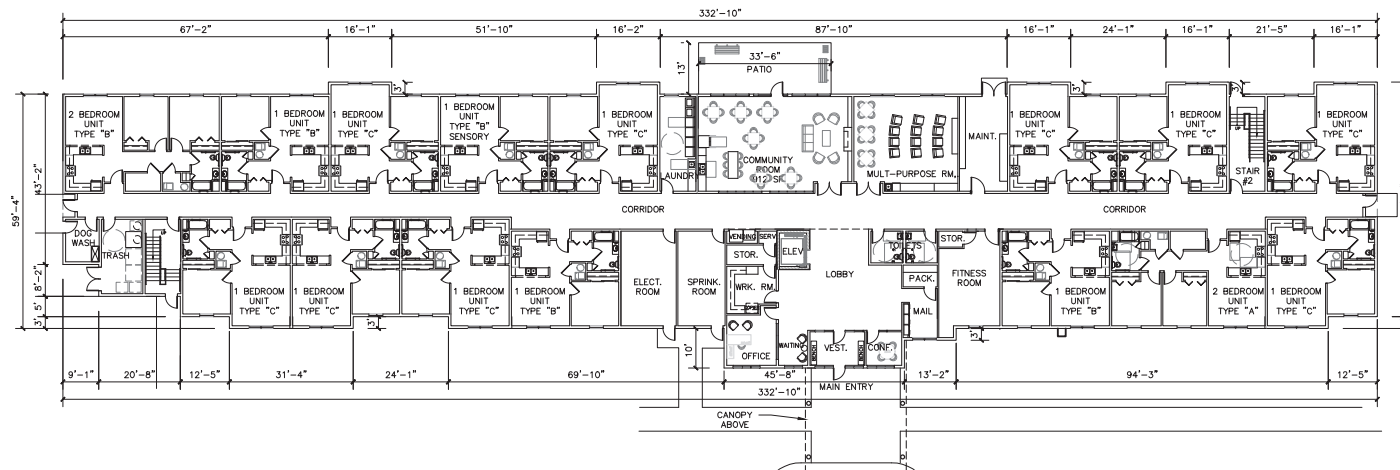
PID #12114
DATE:
11/09/2022

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<ul style="list-style-type: none"> WEATHER SHELTERED BUILDING MAIN ENTRY AREA. MIN. 32" CLEAR SECONDARY ENTRY DOORWAY. SECONDARY ENTRY AREA SHALL BE FREE OF TRAILER, STROKE AND HINGE CLEARANCES, HARDWARE AND THRESHOLDS. 42" WIDE HALLWAYS AND MANEUVERING CLEARANCES WITH 32" CLEAR DOORWAYS WITHIN COMMON AREAS AND UNITS. PEEPHOLE AT ALL UNIT ENTRY DOORS, DUAL PEEPHOLES FOR ACCESSIBLE UNITS AT REQUIRED ACCESSIBLE HEIGHT. AUDIO/ VISUAL DOORBELL AT SENSORY UNIT ONLY. ALL FLOOR FINISHES TO BE CARPET & VINYL FLOORING WITH VINYL BASE. ALL WALLS AND CEILINGS ARE TO BE PAINTED DRYWALL IN COMPLIANCE WITH GREEN SEAL STANDARDS FOR LOW VOC LIMITS. LEVER STYLE DOOR HARDWARE ON ALL INTERIOR DOORS (COMMON AREA AND WITHIN UNITS). ELECTRIC DEVICES, HVAC CONTROLS AND ALARM CONTROLS AT ACCESSIBLE HEIGHTS IN COMMON AREAS AND UNITS. ROCKER LIGHT SWITCHES / CONTROLS AT ACCESSIBLE HEIGHTS IN COMMON AREAS AND UNITS. 	<ul style="list-style-type: none"> INTERIOR APARTMENT KITCHEN INCLUDES: ENERGY STAR CERTIFIED APPLIANCES: DISHWASHER, STOVE & REFRIGERATOR (ADA COMPLIANT IN ALL UNITS & COMMON AREAS), GARBAGE DISPOSAL WITH ACCESSIBLE SWITCH, TWO BOWL KITCHEN SINK & KITCHEN EXHAUST HOODS VENTED TO THE EXTERIOR. EXHAUST HOOD/LIGHT WALL SWITCH IN ALL UNITS KITCHEN. UNDERCABINET LIGHTING UNDER ALL WALL CABINETS. ADEQUATE WORK/FLOOR SPACE IN FRONT OF ALL APPLIANCES (30"x48" MIN. PARALLEL WHERE ALLOWED BY CODE) IN ALL UNIT KITCHENS. KITCHENS TO HAVE WOOD FACED CABINETS WITH PLASTIC LAMINATE COUNTERTOP. 30" MIN. CLEAR WORK SURFACE ADJACENT TO RANGE/ OVEN AT ACCESSIBLE UNITS KITCHEN AND COMMUNITY ROOM. ACCESSIBLE HANDLES/TOUCH LATCHES FOR DOORS/DRAWERS AT COMMON AREA TOILET ROOMS & KITCHENS, UNIT KITCHENS AND BATHROOMS. SINKS IN ALL COMMON AREA TOILET ROOMS & KITCHENS, UNIT KITCHENS AND BATHROOMS WITH SINGLE-HANDLE LEVER FAUCET AND ANTI-SCALD DEVICE. 	<ul style="list-style-type: none"> IN ACCESSIBLE UNITS VERTICAL GRAB BARS IN THE BATHTUB / SHOWER, BATHTUB AND SHOWER SURROUND, BUILT-IN REINFORCEMENT & WOOD BLOCKING FOR GRAB BARS, REMOVABLE SEATS AT ACCESSIBLE UNITS. STANDARD BATHTUB OR SHOWER WITH GRAB BAR REINFORCEMENT, OFFSET CONTROLS FOR EXTERIOR USE, ANTI-SCALD DEVICES AND SINGLE-HANDLE LEVER FAUCETS. LOWER TOWEL RACKS AT ALL BATHROOMS & TOILET ROOM. WINDOW COVERINGS AT ALL UNITS. ALL WINDOWS TO HAVE 1" WIDE HORIZONTAL MINI BLINDS. ADJUSTABLE RODS AND SHELVES WITHIN CLOSETS IN COMMON AREAS AND UNITS. ALL CLOSETS HAVE MINIMUM 32" CLEAR OPENING. COMMON LAUNDRY ROOM WITH WASHER AND DRYER VENTED TO THE EXTERIOR OF THE BUILDING. ACCESSIBLE SINK WITH ADJACENT 30"x60" MIN. WORKSPACE AT COMMON LAUNDRY ROOM ON SECOND FLOOR.
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*SEE ENLARGED UNIT FLOOR PLANS.

FIRST FLOOR	= 19,987.3 S.F.
SECOND FLOOR	= 19,322.4 S.F.
THIRD FLOOR	= 19,322.4 S.F.
TOTAL BLDG. GROSS FLOOR AREA = 58,632 S.F.	



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ARCHITECTURE
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0 DEEP LAKE ROAD
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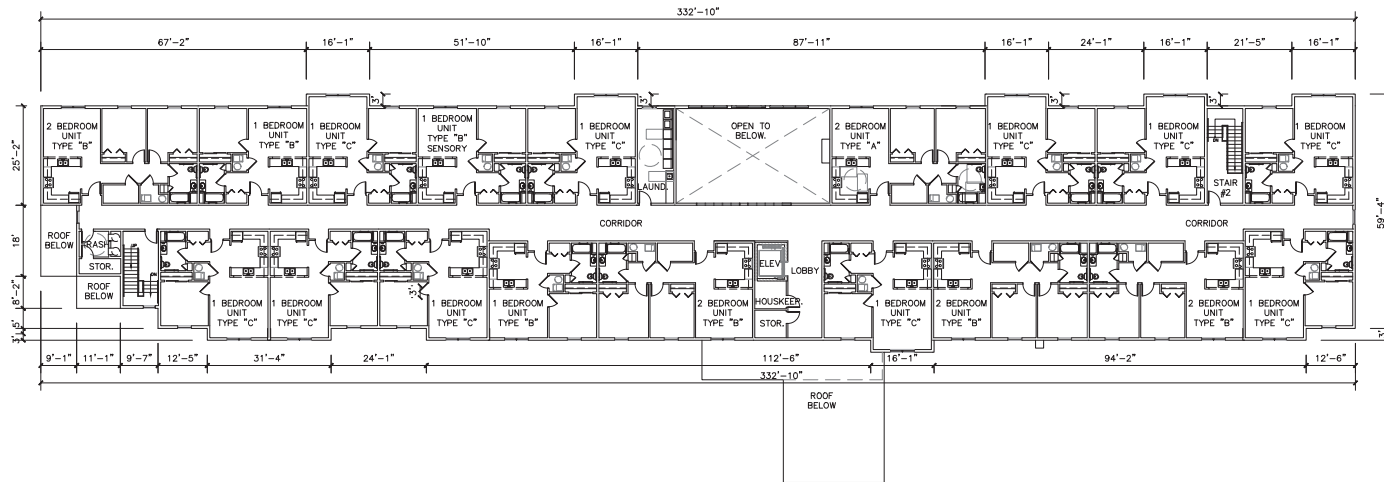
PROPOSED FINISHES:

- WEATHER SHELTERED BUILDING MAIN ENTRY AREA.
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- 30" MIN. CLEAR WORK SURFACE ADJACENT TO RANGE/ OVEN AT ACCESSIBLE UNITS KITCHEN AND COMMUNITY ROOM.
- ACCESSIBLE HANDLES/TOUCH LATCHES FOR DOORS/DRAWERS AT COMMON AREA TOILET ROOMS & KITCHENS, UNIT KITCHENS AND BATHROOMS.
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- ACCESSIBLE SINK WITH ADJACENT 30"x60" MIN. WORKSPACE AT COMMON LAUNDRY ROOM ON SECOND FLOOR.

*SEE ENLARGED UNIT FLOOR PLANS.

BUILDING GROSS FLOOR AREA

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SECOND FLOOR PLAN

SCALE: 1" = 30'-0"



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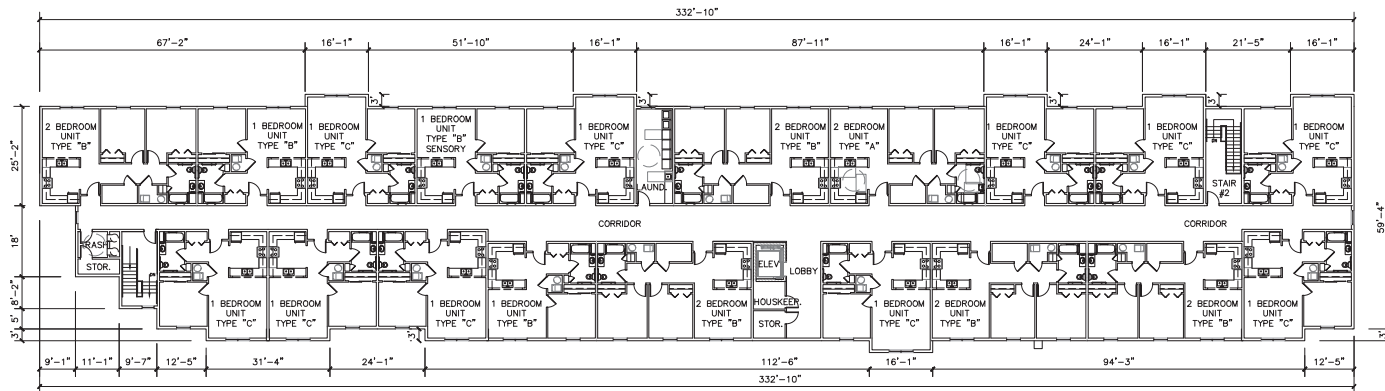
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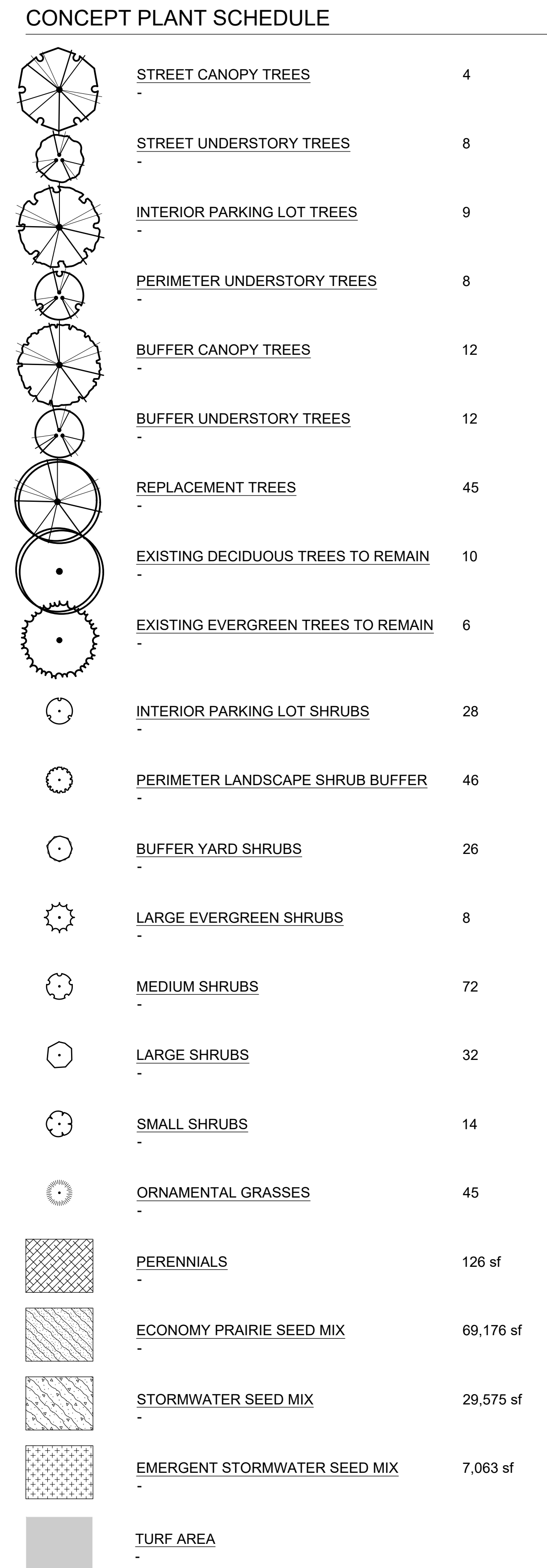
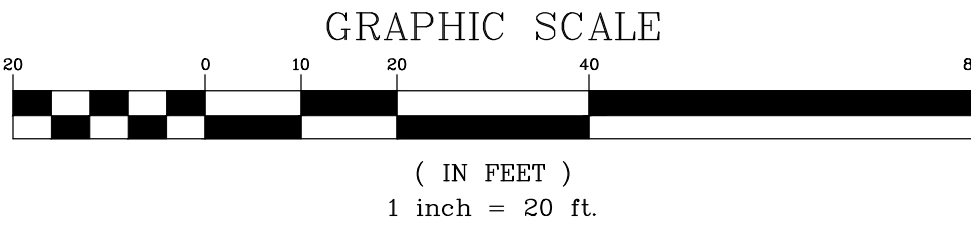
A1.2



- ROOFTOP H.P.
± 40'-0"
- T/ THIRD FLOOR
± 22'-5 1/4"
- T/ SECOND FLOOR
± 11'-2 5/8"
- FIRST FLOOR
± 0'-0"

1 FRONT ELEVATION
SCALE: N.T.S.





PART 1 - GENERAL

A. Provide trees, shrubs, perennials and groundcovers as shown and specified. This work includes:

1. Spreading of topsoil or soil preparation
2. Trees, shrubs, perennials and groundcovers
3. Planting mixes
4. Mulch and planting accessories
5. Fertilizer and herbicide
6. Maintenance
7. Warranty of plant material

B. The Contractor shall verify all existing conditions and dimensions in the field prior to bidding and report any discrepancies to the Owner or his/her representative.

- A. Comply with site work requirements
- B. Plant names indicated must comply with 'Standardized Plant Names' as adopted by the latest edition of American Joint Committee of Horticultural Nomenclature. Names of varieties which are not listed should conform with those generally accepted by the nursery trade. Stock should be legibly tagged.
- C. All plant materials shall conform to the 'American Standards for Nursery Stock' (ASNS), latest edition, published by the American Association of Nurserymen, Washington, D.C.
- D. All plant material shall be grown and supplied within a 50 mile radius of the project for a minimum of two full growing seasons.
- E. Adhere to sizing requirements as listed in the plant list and/or bid form for the project. A plant shall be measured in its natural standing position.

I. Container grown deciduous and/or evergreen shrubs will be acceptable in lieu of balled and burlapped shrubs subject to specified limitations for container grown stock. Size of container grown material must conform to size/height requirements of plant list.

- A. Fertilizer shall be delivered in original, unopened and undamaged packaging. Containers shall display weight, analysis and manufacturer's name. Store fertilizer in a manner that will prevent wetting and deterioration.
- B. Take all precautions customary concerning proper trade practice in preparing plants for transport. Plants shall be dug, packed and transported with care to ensure protection against injury. Inspection certificates required by law shall accompany each shipment invoice or order to stock and on arrival, the certificate shall be filed with the landscape architect. All plants must be protected from drying out. No plant material cannot be planted immediately upon delivery, said material should be properly protected in a manner that is acceptable to the landscape architect. Heeled-in plants must be watered daily. No plant shall be bound with rope or wire in a manner that could strip bark or break or shear branches.
- C. Plant material transported on open vehicles should be covered with a protective covering to prevent wind burn.
- D. Dry, loose topsoil shall be provided for planting bed mixes. Muddy or frozen topsoil is unacceptable as working with medium in this condition will destroy its structure, making root development more difficult.

- A. Notify landscape architect at least seven (7) working days prior to installation of plant material.
- B. It shall be the Contractor's responsibility to locate and protect all existing above and below ground utilities. Utilities can be located and marked (in Illinois) by calling J.U.I.E. at (800)892-0123.
- C. The Contractor shall provide, at his/her own expense, protection against trespassing and damage to seeded areas, planted areas, and other construction areas until the preliminary acceptance. The Contractor shall provide barricades, temporary fencing, signs, and written warning or policing as may be required to protect such areas. The Contractor shall not be responsible for any damage caused by the Owner after such warning has been issued.
- D. The Contractor shall be responsible for the protection of crowns, trunks and roots of existing trees, shrubs, lawns, paved areas and other landscaped areas that are to remain intact. Existing trees, which may be subject to construction damage, shall be boxed, fenced or otherwise protected before any work is started. The Owner desires to preserve those trees within and adjacent to the limits of construction except those specifically indicated to be removed on the Drawings. The contractor shall erect protective tree fencing and tree armor at locations indicated on the drawings and around all trees on any tree to be preserved. Protective fencing shall be erected between the limits of construction and site which tree preservation areas shown on the Drawings.
- E. A complete list of plants including a schedule of sizes, quantities and other requirements is shown on the Drawings and on the bid form. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.

A. All plantings shall be maintained by the Contractor for a period of 90 days after preliminary acceptance by the Owner or his/her representative. Maintenance shall include, but is not limited to: mowing and edging turf, pulling weeds, watering turf and plant material and annual flower maintenance.

A. All plant material (excluding annual color), shall be warranted for one (1) year after the end of the 90 day maintenance period. The end of the maintenance period is marked by the final acceptance of the Contractor's work by the Owner or his/her representative. Plant materials will be warranted against defects including death and unsatisfactory growth, except for defects resulting from abuse or damage by others, or unusual phenomena or incidents which are beyond the control of the Contractor. The warranty covers a maximum of one replacement per item.

A. Plants: Provide typical of their species or variety, with normal, densely developed branches and vigorous, fibrous root systems. Only sound, healthy, vigorous plants which are free from sunscald injuries, disfiguring knots, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation shall be provided. All plants shall have a fully developed form without voids and open patches.

1. Balled and burlapped plants shall have a firm natural ball of earth of sufficient diameter and depth to encompass a root system necessary for a full recovery of the plant. Root ball sizes shall comply with the latest edition of the "American Standards for Nursery Stock" (ANSI). Root balls that are cracked or mushroomed are unacceptable.
2. Container grown stock should be grown for an amount of time that is of sufficient length for the root system to have developed enough to hold its soil together, firm and whole. Plants will not be loose in their containers, nor shall they be pot-bound and all container grown stock will comply with the sizes stated on the plant list.
3. No evidence of wounds or pruning cuts shall be allowed unless approved by the Landscape Architect.
4. Evergreen trees shall be branched to the ground. The height of evergreen trees are determined by measuring from the ground to the first lateral branch closest to the top. Height and/or width of other trees are measured by the mass of the plant not the very tip of the branches.
5. Shrubs and small plants shall meet the requirements for spread and/or height indicated in the plant list. The height measurement shall be taken from ground level to the average height of the top of the plant, not the longest branch. Single stem or thin plants will not be accepted. Side branches shall be flushed with growth and have good form to the ground. Plants shall be in a moist, vigorous condition, free from dead wood, bruises or other root or branch injuries.

A. Topsoil:
 1. Topsoil shall be fertile, natural topsoil of a loamy character, without admixture of subsoil material. Topsoil shall be reasonably free from clay, lumps, coarse sand, stones, plants, roots, sticks and other foreign materials with a pH between 6.5 to 7.0.

B. Topsoil for seed areas shall be a minimum of 6".

C. Soil amendments shall be as follows:
 1. For trees and shrubs the plant pit will be backfilled with pulverized black dirt.
 2. For perennials and ornamental grasses the soil mixture will be as follows: CM-63 General Purpose Peat Based Mix as supplied by Midwest Trading. Top beds with 8" of CM-63 and till into existing beds to a depth of 8". Soil mixtures are available from Midwest Trading. Midwest Trading, St. Charles, IL 60174 (630) 365-1990

E. Herbicide:

1. Round-Up or approved equal

F. Mulch:

1. Bark mulch shall be finely shredded hardwood bark which has been screened and is free of any green foliage, twigs, rocks, sawdust, wood shavings, growth or germination inhibiting ingredients, or other foreign materials. Bark mulch is available from Midwest Trading.
2. Mushroom compost as available from Midwest Trading.

G. Water:

1. Water service will be available on the site, with the cost of water being paid by the Owner. Transporting of the water from the source to the work areas shall be the responsibility of the Landscape Contractor. All necessary hose, piping, tank truck, etc. shall be supplied by the Landscape Contractor.

H. Guying:

1. Stakes: 5/8" x 40" steel eye anchor with 4" helix
2. Cable:
 - a. Trees under 5": flexible 1/8" galvanized aircraft cable, 7x7 strand or approved equal
 - b. Trees 5" and over: flexible 3/16" galvanized aircraft cable, 7x7 strand or approved equal.
3. Turnbuckles: 5/16", eye and eye, with 4" takeup.
4. Hose: new two-ply reinforced rubber hose, minimum 1/2" I.D.

A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected.

- A. All nursery techniques and methods shall be consistent with the latest edition of "Horticulture Standards of Nurserymen, Inc." and as detailed on these Drawings.
- B. Planting shall be performed by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.
- C. All underground utilities must be located and marked clearly.
- D. Apply Round-Up or approved equivalent to kill any existing vegetation in all areas to be planted. Commence waiting period for chemical application and plant installation with manufacturer.
Do not begin planting operations until prescribed post-application waiting period has elapsed. Take extreme care to avoid chemical drift to adjoining properties of landscape plantings.

- E. Prior to all planting, rototill all areas to be landscaped to prepare for plant installation to a minimum depth of 12". Eliminate uneven areas and low spots. Maintain lines, levels, profiles and contour. Changes in grade are to be gradual. Blend slopes into level areas. Remove all debris, weeds and undesirable plants and their roots from areas to be planted. Remove all concrete slag larger than 2" in diameter.
- F. Topsoil shall be spread over the site at a minimum depth of 6". For those areas which are indicated as prairie or natural areas on the Drawings, a topsoil depth of 18" is recommended where possible.
- G. It shall be the responsibility of the landscape contractor to prepare all seeded areas by disking and raking prior to planting seed. Soil shall be loosened and scarified to a minimum depth of 6". Fine grading of all seeded areas is required. Maximum size of stone or topsoil lump is 1".
- H. Locate all plant material as indicated or as approved in the field by the Landscape Architect. If obstructions are encountered which are not shown on the drawings, then do not proceed with planting operations until alternate plant locations have been selected.
- I. Planting holes shall be constructed as shown on the planting details. Holes shall be hand dug or machine dug. Great care will be taken to not excavate the hole deeper than the root ball and the diameter shall be a minimum of two times the root ball width. Remove any materials encountered in excavation that may be injurious to plant growth, including stones larger than 2" in diameter or other debris. Soil to be used as backfill should be pulverized.
- J. Provide pre-mixed planting mixture for use around root systems and root balls of the plants. The mixtures are outlined in section B of part 2-02.
- K. Prior to planting, provide additional topsoil to all planting beds to bring the finish grade of the bed to 2" above lawn grade and to finish grade of adjacent hard surface grades.
- L. Add 2" thickness of mushroom compost to all annual, perennial and groundcover beds. Finish grade bed and install plants.

- A. Set plant material in the planting hole to proper grade and alignment. Set plants upright and plumb. Set plant material 2" above the adjacent finish grade. Remove burlap from top 1/3 of root ball. Remove treated burlap (green). Cut and remove or cut and fold down upper half of wire basket, dependent upon tree size. Backfill hole by firmly tamping soil to avoid any air pockets or voids.
- B. Set balled and burlapped plants in the planting hole and compact 8" of soil around the base of the ball. Backfill remaining space with planting mixture. Water plants immediately after planting to eliminate all voids and thoroughly soak the plant root ball.
- C. Space groundcover plants according to dimensions given on the plans. Adjust spacing as necessary to evenly fill planting bed with indicated number of plants. Plant to within 18" of the trunks of trees and shrubs or at the edge of the plant ball, whichever is closest. Plant to within 12" of edge of bed.
- D. Mulching:
 1. Install 4" depth of mulch around all tree and shrub beds as indicated on drawings or planting details. Mulch shrub planting areas as continuous beds. Do not place mulch directly against tree trunk; form mulch to create an inverted cone around trunk.
 2. Mulch perennial, groundcover and annual planting beds with 2" mushroom compost. Water mulched areas thoroughly after placing mulch.

- Tree wrapping is not required, unless the Contractor feels it is necessary due to characteristics of a particular species or past experience with the species. The landscape architect will be notified as to which trees are to be wrapped and shall inspect the trunk(s) before wrapping. Tree wrap will not be used to cover damage or defects. When wrapping is done, trunks will be wrapped spirally with approved tree wrapping tape that is not less than 4" wide, and securely tied with suitable cord at the top, bottom and 2" intervals along the trunk. Wrap from ground to the height of the first branch.
- F. **Staking and guying of trees is optional.** If the Contractor chooses to stake all or part of the trees, he/she shall use the method specified in the planting details. One (1) stake is to be used on trees of 1" caliper and under, or 4" height and under. Two (2) stakes are to be used on trees of 1" to 2 3/4" caliper. Guy wires of 3" caliper or larger at three (3) per tree. The root ball will not be pierced with a stake. Stakes are to be driven at least eighteen (18) inches into subsoil below the planting hole. Stakes and wire attachments shall be removed after three months for spring planted material and by the following May for fall planted stock by the Contractor. Staking and guying should be done immediately after lawn seeding or sodding operations.
- G. **Seeding of specified lawn areas on plans will be treated as follows:**
1. Topsoil shall be spread over all areas to be seeded to a minimum depth of 6" when compacted (to be performed by others).
 2. Seed mixture and application rate - use Premium seed mix as supplied by Arthur Clesen, Inc. Apply at a rate of 5 lbs./1000 s.f.
 3. Apply fertilizers and conditioners at the rate specified per soil test findings. In lieu of soil test results, apply two (2) tons of ground agricultural limestone and 1000 lbs. 10-10-10 or equivalent analysis fertilizer per acre. At least 40% of the fertilizer nitrogen shall be of an organic origin.
 4. Soil preparation areas where vehicular traffic has compacted the soil shall be loosened/scarified to a minimum depth of 6" before fertilizing and seeding. Fine grading of all seeded areas is required. Maximum size of stone or topsoil lump is 1".
 5. Watering seeded areas shall be done to ensure proper germination. Once seeds have germinated, watering may be decreased but the seedlings must never be allowed to dry out completely. Frequent watering should be continued approximately four (4) weeks after germination or until grass has become sufficiently established to warrant watering on an 'as needed' basis.
 6. Turf is being established on a variety of slope conditions. It shall be the Contractor's responsibility to determine and implement whatever procedures he/she deems necessary to establish the turf as part of his/her work. Seeded areas will be accepted when all areas show a uniform stand of the specified grass in healthy condition and at least 90 days have elapsed since the completion of this work. The Contractor shall submit with his/her bid a description of the methods and procedures he/she intends to use.

- H. Erosion Control Blanket
1. Erosion Control Blanket shall be installed per manufacturer's recommendation in all areas shown on the plan.
 2. Install S-75 Erosion Control Blanket as manufactured by North American Green or approved equal.
 3. Blanket should be premarked with staple pattern.
 4. Staples should be 8" wire staples, applied at two (2) per square yard minimum.
 5. Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and Sedimentation Control ordinances and the PLANS.
- I. Sodding of specified lawn areas on plans will be completed as follows:
1. Rake soil surface to receive sod to completely remove any soil crust no more than one day prior to laying sod.
 2. Moisten prepared surface immediately prior to laying sod. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.

3. Sod shall be laid within 24 hours from the time of stripping. Do not plant dormant sod or if the ground is frozen.
4. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Sod strips fitted into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent sod.
5. Place top elevation of sod 1/2 inch below adjoining edging or paving.
6. Water sod thoroughly with a fine spray immediately after planting.
7. After sod and soil have dried, roll seeded areas to ensure a good bond between the sod and soil and to remove minor depressions and irregularities.
8. Sodded slopes 3:1 or greater shall be staked to prevent erosion and washout.
9. Warranty sounding for a period of one (1) year from the end of the 90 day maintenance period. If sod fails or lacks vigor and full growth as determined by the Landscape Architect, the Contractor will repeat site preparation operations and re-sod affected areas at the Contractor's expense.
10. Note: Sod shall be a premium Kentucky Bluegrass blend, and is required in all areas indicated on the plans as well as areas which have been affected by construction. Sod can be placed as long as water is available and the ground surface can be properly prepared. Sod shall not be laid on frozen or snow-covered ground. Sod shall be strongly rooted, not less than two (2) years old and free of weeds and undesirable native grasses. Sod should be machine cut to pad thickness of 3/4" (plus or minus 1/4"), excluding top growth and thatch. Provide only sod capable of vigorous growth and uniformity when planted (viable, not dormant). Provide sod of uniform pad sizes with maximum 5% deviation in either length or width. Broken pads or pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on the upper 10% of pad will not be accepted.

A. All plantings shall be maintained by the Contractor for a period of 90 days after preliminary acceptance by the Owner or his/her representative. Maintenance shall include but is not limited to: mowing and edging turf, pulling weeds, watering turf areas and plant material plus annual flower maintenance. The Contractor will reset settled plants to proper grade and position. Dead material will be removed. Stakes and guy wires will be tightened and repaired as required.

A. All plant material (excluding annual color), shall be warranted for one (1) year after the end of the 90 day maintenance period. The end of the maintenance period is marked by the final acceptance of the Contractor's work by the Owner or his/her representative.

A. The Contractor shall protect the property of the Owner and the work of other contractors. The Contractor shall also be directly responsible for all damage caused by the activities and for the daily removal of all trash and debris from his/her work area to the satisfaction of the landscape architect .

[illegible]

Manhard
CONSULTING

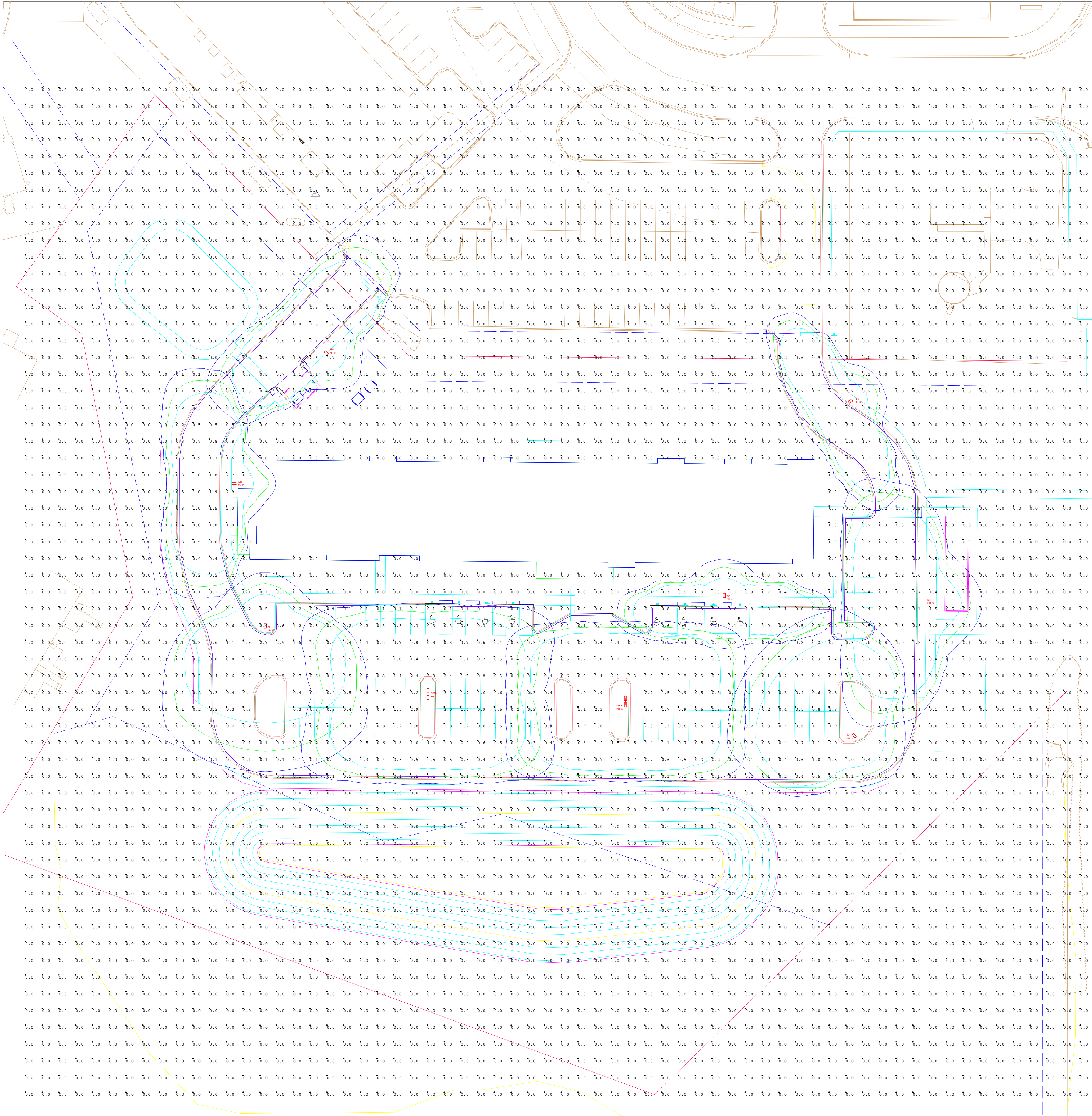
Only One World, Part 200, Jacksonville, FL 32069 904/762-4500 904/762-0005 manhard.com

Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners
Construction Managers • Environmental Scientists • Landscape Architects • Planners

STARLING SENIOR APARTMENTS
VILLAGE OF LAKE VILLA, ILLINOIS
TITLE SHEET AND LANDSCAPE SUMMARY

PROJ. MGR.: MDE
PROJ. ASSOC.: JBD
DRAWN BY: ----
DATE: 11-23-22
SCALE: 1"=XX'

SHEET
L6 OF L6
LAC.LVIL01



ONLY

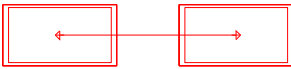






Chicago Lightworks
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Rev	Date	Comments
1		
2		
3		
4		
5		

Project Name: Starling Senior Apartments Lake Villa
NOT TO SCALE
Date: 12/29/2022

Luminaire Schedule						
Symbol	Label	Qty	Description	LLF	Lum. Watts	Lum. Lumens
	F2-B2B	2	ECF-S-32L-365-NMV-G2-3_back to back	0.850	40	5713
	F2H	2	ECF-S-32L-365-NMV-G2-2-HIS	0.850	40	4441
	F3	1	ECF-S-32L-365-NMV-G2-3	0.850	40	5713
	F3H	2	ECF-S-32L-365-NMV-G2-3-HIS	0.850	40	4518
	F4	2	ECF-S-32L-365-NMV-G2-4	0.850	40	5934

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_I	Illuminance	Fc	0.12	4.8	0.0	NA	NA
drive-parking area	Illuminance	Fc	0.66	4.8	0.1	6.60	48.00



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Rev	Date	Comments
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Project Name: Starling Senior Apartments Lake Villa	Date: 12/29/2022
NOT TO SCALE	



Project: _____

Location: _____

Cat.No: _____

Type: _____

Qty: _____

Notes: _____

The Philips Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 26,400 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings.

Ordering guide

example: ECF-S-64L-900-NW-G2-AR-5-120-HIS-MGY

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Mounting	Distribution	Voltage	Options			Finish	
							Controls	Electrical	Luminaire		
ECF-S											
ECF-S EcoForm Site and Area, Small	32L 32 LEDs (2 modules)	530 530mA	WW-G2 Warm White 3000K, 70 CRI Generation 2	AR Arm Mount (standard) ⁹ <i>The following mounting kits must be ordered separately (See accessories)</i>	Type 2 2 Type 2 2-90 Rotated left 90° 2-270 Rotated right 270° Type 3 3 Type 3 3-90 Rotated left 90° 3-270 Rotated right 270° Type 4 4 Type 4 4-90 Rotated left 90° 4-270 Rotated right 270° Type 5 5 Type 5 5W Type 5W AFR Auto Front Row AFR-90 Auto Front Row, Rotated left 90° AFR-270 Auto Front Row, Rotated right 270°	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V (50/60Hz) HVU 347-480V (50/60Hz)	DD 0-10V Dimming Driver ⁵ DCC Dual Circuit Control ⁶ Photoelectric/Receptacle systems (Twist Lock Receptacle) PCB Photocontrol Button ^{2,3} TLRD5 Twist Lock Receptacle 5 Pin TLRD7 Twist Lock Receptacle 7 Pin TLRPC Twist Lock Receptacle w/Photocell ² DynaDimmer: Automatic Profile Dimming CS50 Safety 50% Dimming, 7 hours ¹ CM50 Median 50% Dimming, 8 hours ¹ CE50 Economy 50% Dimming, 9 hours ¹ DA50 All Night 50% Dimming ¹ Infrared Motion Response Systems IMRI3 Integral with #3 lens ⁸ IMRI7 Integral with #7 lens ⁸ Pole Mounted Infrared Motion Response systems with DynaDimmer CS50-IMRO with Safety 50% Dimming ¹⁵ CM50-IMRO with Median 50% Dimming ¹⁵ CE50-IMRO with Economy 50% Dimming ¹⁵ DA50-IMRO with All Night 50% Dimming ¹⁵ Network system (SiteWise) SW Integral module ^{12,13} SW-IMRO Pole mounted motion response option Wireless system LLC2 Integral module with #2 lens ¹⁶ LLC3 Integral module with #3 lens ¹⁶ LLC4 Integral module with #4 lens ¹⁶	TB Terminal Block ⁷ Fusing F1 Single (120, 277, 347VAC) ² F2 Double (208, 240, 480VAC) ² Pole Mount Fusing FP1 Single (120, 277, 347VAC) ² FP2 Double (208, 240, 480VAC) ² FP3 Canadian Double Pull (208, 240, 480VAC) ² Surge Protection SP1 Standard 10kA SP2 Increased 20kA	RPA Round Pole Adapter (fits to 3"- 3.9" O.D. pole) ¹⁰ HIS Internal House Side Shield ⁴	Textured BK Black WH White BZ Bronze DGY Dark Gray MGY Medium Gray Customer specified RAL Specify optional color or RAL (ex: RAL7024) CC Custom color (Must supply color chip for required factory quote)	
		700 700mA									
		1A 1050mA									
		1.2A 1200mA									
		900 900mA									
		1A 1050mA									
	48L 48 LEDs (3 modules)	900 900mA	CW-G2 Cool White 5000K, 70 CRI Generation 2	SF Slip Fitter Mount ¹¹ (fits to 2 3/8" O.D. tenon)	WS Wall mount with surface conduit rear entry permitted						RAM Retrofit arm mount kit ⁹
		1A 1050mA									
		1.2A 1200mA									
		900 900mA									
		1A 1050mA									
		1.2A 1200mA									
	64L 64 LEDs (4 modules)	900 900mA	CW-G2 Cool White 5000K, 70 CRI Generation 2	SF Slip Fitter Mount ¹¹ (fits to 2 3/8" O.D. tenon)	WS Wall mount with surface conduit rear entry permitted						RAM Retrofit arm mount kit ⁹
		1A 1050mA									
		1.2A 1200mA									
		900 900mA									
		1A 1050mA									
		1.2A 1200mA									

1. Available only on 120, 208, 240, and 277 (or UNV)

2. Specify Voltage

3. Not available with 347 or 480 voltage

4. HIS not available with Type 5 or 5W optics

5. DD is required for LLCR and pole mount motion sensor.
Dimming leads are supplied through back of luminaire.
Must be ordered separately (See accessories page)

6. DCC and LLC2/3/4 not available with any other controls

7. TB not available with DCC

8. ECF-IMRI equipped with out-boarded sensor housing when
voltage is HVU (347-480V)

9. Mounts to a 4" round pole with adapter included for
square poles.

10. Not available with SF and WS. RPAs provided with black finish
standard

11. Limited to a maximum of 45 degrees aiming above horizontal

12. SW option is not available with any other control options
with the exception of IMRI3, IMRI7 and SW-IMRO motion
response options

13. Available only on 120V and 277V

ECF-S EcoForm small

Site & Area

EcoForm Accessories (ordered separately, field installed)

Controls Accessories

Pole Mount Motion Sensor

MS-A-120V¹¹ 120V Input
MS-A-277V¹¹ 277V Input

Wireless systems Remote mount module

LLCR2-(F)¹¹ #2 lens
LLCR3-(F)¹¹ #3 lens
LLCR4-(F)¹¹ #4 lens

Central Remote Motion Response (used connected to SiteWise main panel)

MS2-A-FVR-3
MS2-A-FVR-7

11. DD option required

12. Not available with Type 5 or 5W optics

Shielding Accessories¹⁰

House Side shield

Standard orientation:

HIS-32-H¹² Internal House Side Shield for 32 LEDs (2 modules)
HIS-48-H¹² Internal House Side Shield for 48 LEDs (3 modules)
HIS-64-H¹² Internal House Side Shield for 64 LEDs (4 modules)

At 90 or 270 orientation:

HIS-32-V¹² Internal House Side Shield for 32 LEDs (2 modules)
HIS-48-V¹² Internal House Side Shield for 48 LEDs (3 modules)
HIS-64-V¹² Internal House Side Shield for 64 LEDs (4 modules)

Luminaire Accessories

ECF-BD-G2 Bird deterrent

PTF2-(F) Pole top fitter fits 2 3/8-2 1/2" OD x 4" depth tenon with 1, 2, 3 or 4 luminaires at 90°

PTF3-(F) Pole top fitter fits 3-3 1/2" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°

PTF4-(F) Pole top fitter fits 3 1/2-4" OD x 6" depth tenon with 1, 2, 3 or 4 luminaires at 90°

ECF-SF-G2-(F) Slip Fitter Mount (fits to 2 3/8" O.D. tenon)

ECF-RAM-G2-(F) Retrofit Arm mount kit

ECF-WS-G2-(F) Wall mount with surface conduit rear entry permitted

(F) = Specify finish

Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L₇₀ is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L₇₀ hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L ₇₀ Hours	L ₇₀ per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1200 mA	>100,000 hours	>60,000 hours	>88%

LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp. ³	Average System Watts ¹	Type 2			Type 3			Type 4		
					Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)
ECF-S-32L-530-NW-G2-x	32	530	4000	56	6,864	B2-U0-G2	123	6,715	B1-U0-G2	121	7,025	B1-U0-G2	126
ECF-S-32L-700-NW-G2-x	32	700	4000	73	8,853	B2-U0-G2	121	8,661	B2-U0-G2	119	9,062	B1-U0-G2	124
ECF-S-32L-1A-NW-G2-x	32	1050	4000	106	12,464	B3-U0-G2	118	12,194	B2-U0-G2	115	12,757	B2-U0-G3	121
ECF-S-32L-1.2A-NW-G2-x	32	1200	4000	122	13,826	B3-U0-G3	114	13,526	B2-U0-G3	111	14,151	B2-U0-G3	116
ECF-S-48L-900-NW-G2-x	48	900	4000	135	16,409	B3-U0-G3	121	16,053	B2-U0-G3	119	16,795	B2-U0-G3	124
ECF-S-48L-1A-NW-G2-x	48	1050	4000	159	18,581	B3-U0-G3	117	18,178	B3-U0-G3	115	19,018	B2-U0-G4	120
ECF-S-48L-1.2A-NW-G2-x	48	1200	4000	183	20,627	B3-U0-G3	113	20,180	B3-U0-G4	110	21,112	B3-U0-G4	116
ECF-S-64L-900-NW-G2-x	64	900	4000	178	21,717	B3-U0-G3	122	21,246	B3-U0-G4	119	22,228	B3-U0-G4	125
ECF-S-64L-1A-NW-G2-x	64	1050	4000	206	24,467	B3-U0-G3	119	23,936	B3-U0-G4	116	25,043	B3-U0-G4	122

Ordering Code	Total LEDs	LED Current (mA)	Color Temp. ³	Average System Watts ¹	Type 5			Type 5W			Type AFR		
					Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)
ECF-S-32L-530-NW-G2-x	32	530	4000	56	7,414	B3-U0-G2	133	7,175	B3-U0-G2	129	7,111	B2-U0-G1	128
ECF-S-32L-700-NW-G2-x	32	700	4000	73	9,563	B3-U0-G2	131	9,255	B4-U0-G2	127	9,172	B2-U0-G1	126
ECF-S-32L-1A-NW-G2-x	32	1050	4000	106	13,462	B4-U0-G2	127	13,030	B4-U0-G2	123	12,912	B3-U0-G2	122
ECF-S-32L-1.2A-NW-G2-x	32	1200	4000	122	14,933	B4-U0-G2	123	14,453	B4-U0-G2	119	14,322	B3-U0-G2	118
ECF-S-48L-900-NW-G2-x	48	900	4000	135	17,723	B4-U0-G2	131	17,154	B5-U0-G3	127	16,999	B3-U0-G2	126
ECF-S-48L-1A-NW-G2-x	48	1050	4000	159	20,069	B5-U0-G3	126	19,424	B5-U0-G3	122	19,248	B3-U0-G2	121
ECF-S-48L-1.2A-NW-G2-x	48	1200	4000	183	22,279	B5-U0-G3	122	21,563	B5-U0-G3	118	21,368	B3-U0-G2	117
ECF-S-64L-900-NW-G2-x	64	900	4000	178	23,456	B5-U0-G3	132	22,702	B5-U0-G3	128	22,497	B3-U0-G2	127
ECF-S-64L-1A-NW-G2-x	64	1050	4000	206	26,427	B5-U0-G3	128	25,577	B5-U0-G4	124	25,346	B3-U0-G2	123

1. Wattage and lumen output may vary due to LED manufacturer forward volt specification and ambient temperature.
Wattage shown is average for 120V through 277V input. Measured wattage may vary due to variation in input voltage.

2. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
3. Warm white color temperature will result in decreased lumen output.
Contact outdoorlightingapplications@philips.com for details or additional information.

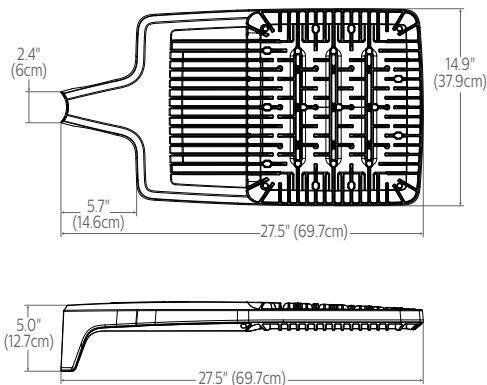
ECF-S EcoForm small

Site & Area

Dimensions

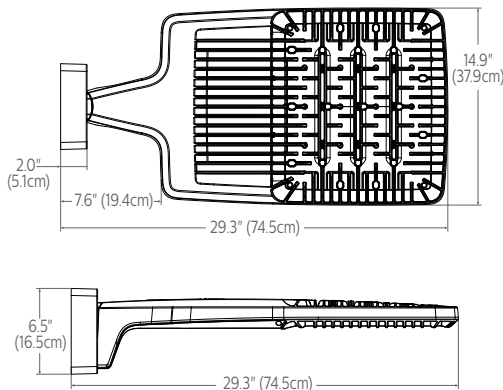
Standard Arm (AR)

Weight: 22 Lbs (9.9 Kg) EPA: 0.21ft² (.019m²)



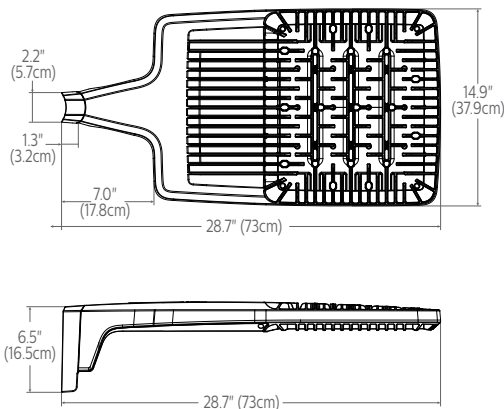
Wall (WS)

Weight: 27 Lbs (12.2 Kg) EPA: 0.27ft² (.025m²)



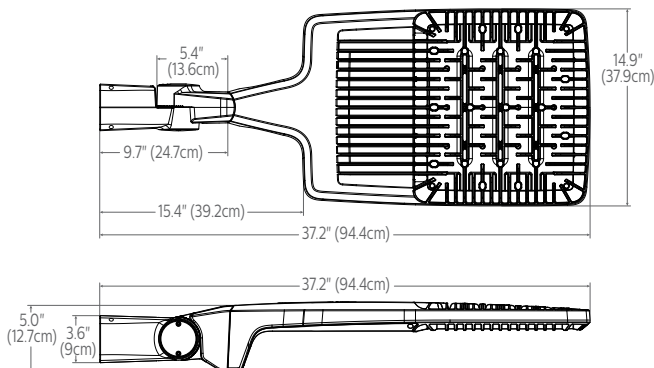
Retrofit Arm (RAM)

Weight: 24 Lbs (10.9 Kg) EPA: 0.24ft² (.022m²)

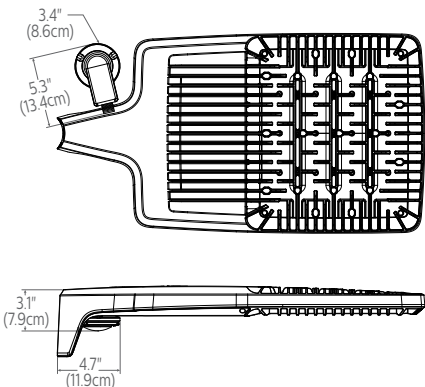


Slip fitter (SF)

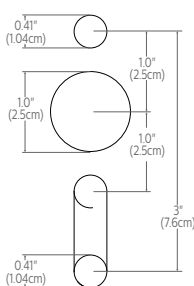
Weight: 27 Lbs (12.2 Kg) EPA: 0.33ft² (.031m²)



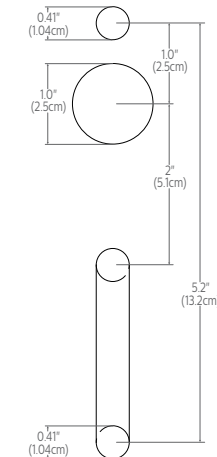
Outboard IMR-HVU sensor



Standard Arm (AR) drill pattern



Retrofit Arm (RAM) drill pattern



ECF-S EcoForm small

Site & Area

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

TLRD5: Twist Lock Receptacle with 5 pins enabling dimming, can be used with a twistlock photoelectric cell or a shorting cap. Can also be used with Philips or third party control system. Receptacle located on top of luminaire housing.

TLRD7: Twist Lock Receptacle with 7 pins enabling dimming and additional functionality (by others), can be used with twistlock photoelectric cell or a shorting cap. Can also be used with Philips or third party control system. Receptacle located on top of luminaire housing.

TLRDPC: Receptacle with twistlock photoelectric cell (must specify voltage). Receptacle located on top of luminaire housing.

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CS50/CM50/CE50) offer safety, median, or economy settings, for shorter or longer duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. 50% dimming is standard. DA50 offers 50% instantaneous dimming all night (during all dark hours). 75% and 25% dimming is also available if different light levels are required (contact Technical Support for details).

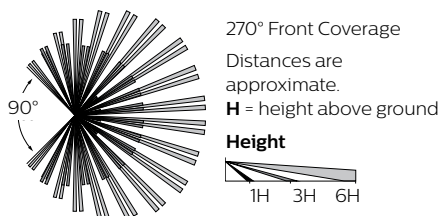
Profile	Dimming		
	Level	Duration	Example
Economy	50%	9 hours	9 PM - 6 AM
Median	50%	8 hours	10 PM - 6 AM
Safety	50%	7 hours	11 PM - 6 AM
Reactive 50	50%	dynamic	all night

IMRI3, IMRI7: Infrared Motion Response Integral. IMRI module is mounted integral on driver door and is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges (see charts for approximate detection patterns on page 7). Motion response used in combination of Dynadimmer and SiteWise are not programmable and used to override controllers schedule when motion is detected. When used not combined with any controller, IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minute default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. IMRI can also be specified with automatic profile dimming for the added benefit of a combined

dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected. Passive infrared (PIR) motion sensor.

IMRO: Infrared Motion Response Outboard pole mounted sensor, must be specified with an available automatic profile dimming option. Combines the benefits of both automatic profile dimming and motion response using the Philips Dynadimmer technology. PIR sensor features a pole mounted Wattstopper EW-200-120-W or the EW-200-277-W. One motion sensor per pole is required (order MS-A-120 or MS-A-277 separately). Available in 120 or 277V only, IMRO sensors require single voltage 120V or 277V input (see chart for approximate detection patterns). If motion is detected during the time that the luminaire is operating at profile dimming mode specified, the luminaire returns to 100% power and light output. The luminaire remains on high until no motion is detected for the duration period, after which the luminaire returns back to automatic profile dimming. Duration period is factory set at 15 minutes, and is field adjustable from 5 minutes up to 15 minutes. The area motion detector provides coverage equal to up to 6 times the sensor height above ground, 270° from the front-center of the sensor.

Pole Details: IMRO requires that the pole include an additional hand hole 15 feet above the pole base, normally oriented 180° to the standard hand hole. For Philips Gardco poles, order the pole with the Motion Sensor



Mounting (MSM) option which includes the hand hole and a special hand hole cover plate for the sensor with a 1/2" NPT receptacle centered on the hand hole cover plate into which the motion sensor mounts. Once the motion sensor is connected to the hand hole cover plate, then wiring connections are completed in the pole. The plate (complete with motion sensor attached and wired) is then mounted to the hand hole. If poles are supplied by others, the customer is responsible for providing suitable mounting accommodations for the motion sensor in the pole (see Gardco Poles specification sheets for more information).

DCC: Dual Circuit Control permits separate switching of a specific number of LED modules. Available as an option with 2 through 4 modules.

SW: SiteWise option is a fully integrated controller that connects to Philips SiteWise system in order to offer a complete area lighting management system. The communication signal is based on Philips patented central dimming technology. SiteWise delivers it deliver optimal energy savings using your site's existing cabling. No additional wiring required, installation and commissioning are simple. An intuitive, mobile app makes it easy for authorized users to set schedules to meet site specific lighting needs, local regulations, and energy codes.

Wireless systems: Controller radio/sensor module attached to luminaire arm and includes radio, photocell and motion sensor. Available with #2 lens (LLC2) for 8' to 15' mounting height" or #3 lens (LLC3) for 15-25' mounting heights or #4 lens (LLC4) for 25-40' mounting heights. Also available with remote pod accessory where pod is mounted separate from luminaire to pole or wall (see accessories and wireless system information page 5-7).

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

FP1: Fusing Pole Single (pole mounted near handhole, for 120, 277 or 347VAC)

FP2: Fusing Pole Double (pole mounted near handhole, for 208, 240 or 480VAC).

FP3: Fusing Pole Canadian Double Pull (pole mounted near handhole, for 208, 240 or 480VAC)

SP1: Surge Protection, 10kV/5kA, 120-277V or 347-480V

SP2: Surge Protection, 20kV/10kA , 120-277V or 347-480V

HIS: Internal House Side Shield. Injection molded in black finish. Ships installed with 1 per 16 LED module. Also available shipped separately as an accessory for 2-4 LED modules.

ECF-S EcoForm small

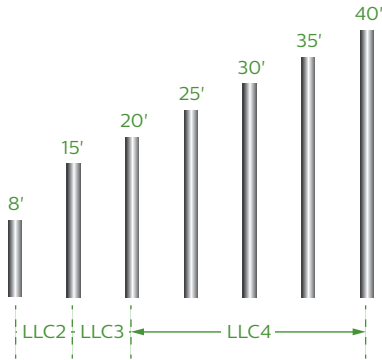
Site & Area

Wireless system – luminaire configuration information

LLC2/LLC3/LLC4 Luminaire Mounted Controller

Controller pod attached to luminaire and includes radio, photocell and motion sensor with #2, #3 or #4 lens for 8–40' mounting heights.

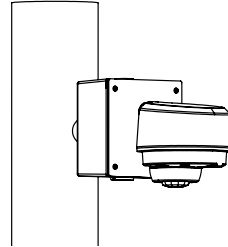
Recommended Sensor by Pole Height



LLCR2/LLCR3/LLCR4 Pole Mounted Controller

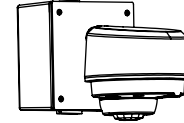
In this configuration, the wireless controller will be mounted to the pole at a fifteen foot mounting height. The number of luminaires on each pole, as well as the specific wattage chosen, will determine how many controllers will be required.

When using the wireless remote accessory option (LLCR-F) in a pole mount application, specify pole option (CL=Coupling Internal Thread, 3/4" size). Confirm required orientation of luminaire and wireless controller. Indicate height above pole base and orientation to hand hole. Recommended min pole height is 18ft, with option (CL) 15ft above pole base. Other heights are possible when choosing the appropriate sensor lens type. See pole specification sheets for more information.

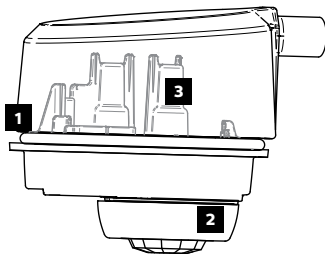


Remote Mount Wireless Controller

Used to extend the communication on site, to extend motion response and add other luminaires that are not pole mounted. Consult factory for more information.



Wireless system sensor



1. Photocell

- Ambient light photocell on every wireless radio that averages the light levels of up to 5 controllers for an accurate reading and optimal light harvesting activity.
- Reports ambient light readings to 1500 Fc.

2. Motion Response

- Detects motion through passive infrared sensing technology with three different lens configurations.
- Motion sensor coverage can be adjusted from a narrow to a wide detection range, which helps reduce false triggers to further increase energy savings.
- Sensing profiles can be updated to adapt to activity levels in the environment, such as occupancy level, wind, and mounting height.

3. Wireless Radio

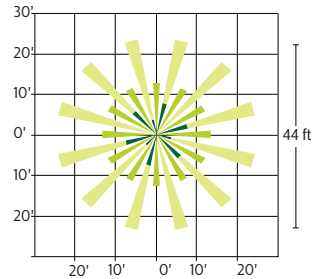
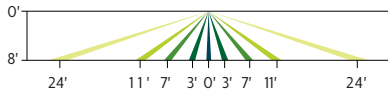
- 1.8 Watts max (no load draw)
- Operating voltage 120–277 VAC RMS
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400–2483.5Mhz
- RoHS Compliant

ECF-S EcoForm small

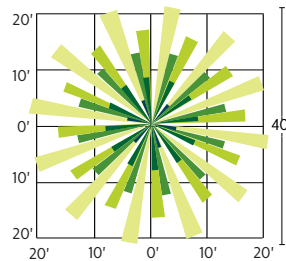
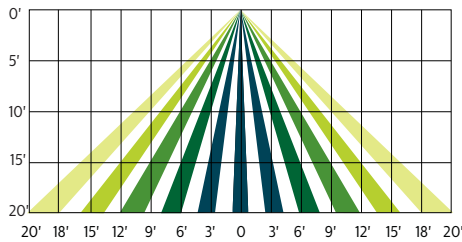
Site & Area

Infrared Motion Response – Coverage Patterns

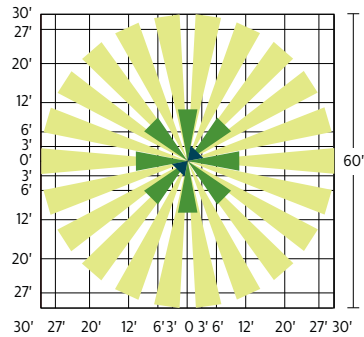
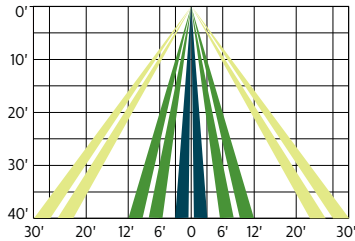
LLC2/LLCR2
Luminaire or remote mount controller
with #2 lens



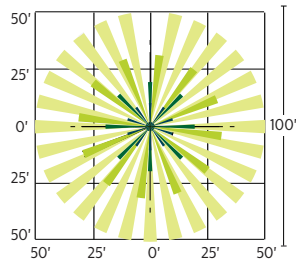
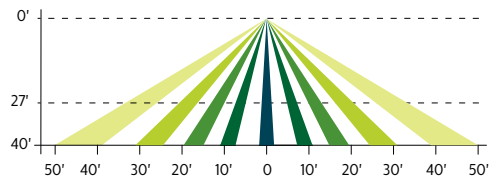
IMRI3/LLC3/LLCR3
Luminaire or Remote mount controller
with #3 lens



LLC4/LLCR4
Luminaire or Remote mount controller
with #4 lens



IMRI7
Integral motion response
with #7 lens



ECF-S EcoForm small

Site & Area

SiteWise system

SiteWise is a complete area lighting management system including a luminaire integrated controller, dimming signal transmitter cabinet, and locally accessible user interface. Installation and commissioning are simple. The cabinet communicates with the Philips luminaires using a patented central dimming technology. The control signal is embedded on the existing electrical line – no new cabling is required. An intuitive, locally accessible interface makes it easy for authorized users to set schedules in order to meet site specific lighting needs, local regulations, and energy codes.

SiteWise system diagram



SiteWise system interface



SiteWise has an intuitive user interface that makes it easy to plan, edit, and implement lighting schedules for your site. Authorized users can access the interface via a local app.

To ensure that only authorized users can access your lighting, SiteWise offers two user types, each with different permissions. An advanced user, or administrator, can set and edit schedules using the ten pre-set scenes, assign those schedules to calendar days, and check system status.

For everyday use, a basic user can manually override a schedule that is currently running but cannot create or edit schedules.

SiteWise system specifications

The SiteWise system includes both luminaires and controls. The controls used for SiteWise are circuit load dependent. Required for a complete installation are the following Philips SiteWise components: user interface, control kit, dimming signal transmitter cabinet, and dimming signal receiver located in the Philips luminaire (**SW** option). Optional luminaire-integrated or external motion sensors may also be specified as required. Within the electrical closet, the control kit and dimming signal transmitter cabinet are installed into the electrical system between the existing breaker panel and the site luminaires. New LED luminaires containing the dimming signal receiver are installed on the site. Once completed, use of the interface allows for scheduling and override capabilities. Wireless access point and tablet should be supplied by others. Complete information on the control system can be found on the SiteWise website at philips.com/sitewise

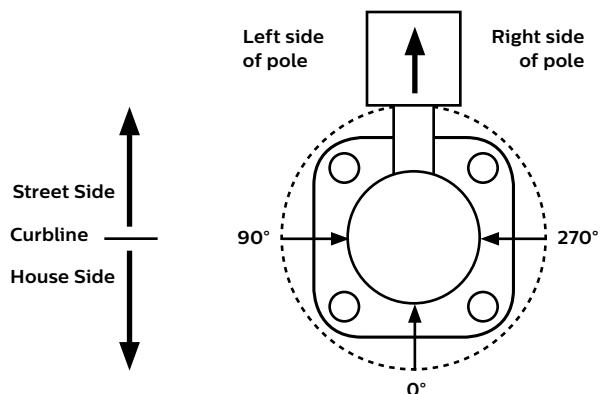
ECF-S EcoForm small

Site & Area

Optical Orientation Information

Standard Optic Position

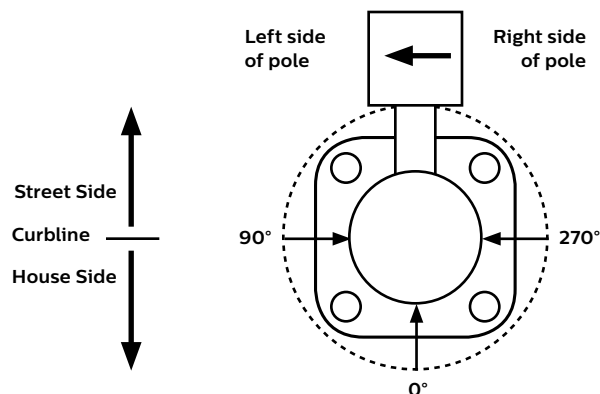
Luminaires ordered with asymmetric optical systems in the standard optic position will have the optical system oriented as shown below:



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Left (90°) Optic Position

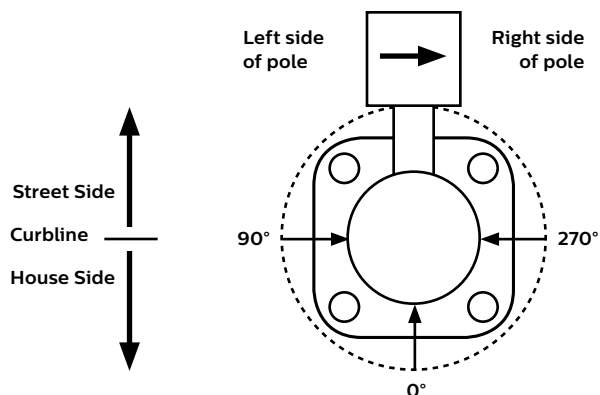
Luminaires ordered with optical systems in the Optic Rotated Left (90°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Right (270°) Optic Position

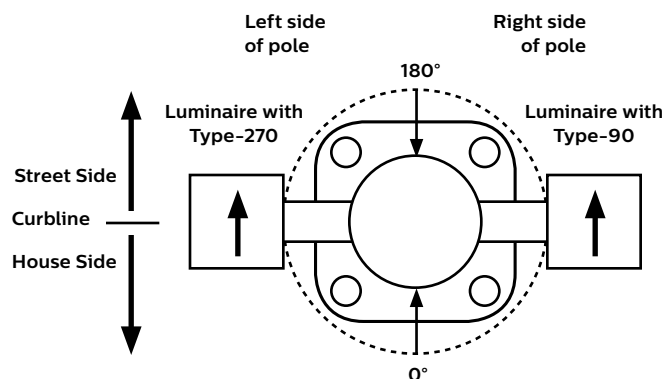
Luminaires ordered with optical systems in the Optic Rotated Right (270°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Twin Luminaire Assemblies with Type-90/Type-270 Rotated Optical Systems

Twin luminaire assemblies installed with rotated optical systems are an excellent way to direct light toward the interior of the site (Street Side) without additional equipment. It is important, however, that care be exercised to insure that luminaires are installed in the proper location.



Luminaires with Optic Rotated Right (270°) are installed on the LEFT Side of Pole

Luminaires with Optic Rotated Left (90°) are installed on the RIGHT Side of Pole

Note: The hand hole location will depend on the drilling configuration ordered for the pole.

ECF-S EcoForm small

Site & Area

Specifications

Housing

One piece die cast aluminum housing with integral arm and separate, self retained hinged, one piece die cast door frame.

IP Rating

LED light engine rated IP66. Driver compartment rated to IP65.

Vibration resistance

EcoForm with Standard Arm carries a 3G vibration rating that conforms to standards set forth by ANSI C136.31. Testing includes vibration to 3G acceleration in three axes, all performed on the same luminaire.

Electrical

Driver efficiency (>90% standard). 120–480V available (restrictions apply). Open/short circuit protection. Optional 0–10V dimming to 10% power. RoHS compliant. Surge protector standard. 10KA per ANSI/IEEE C62.41.2.

LED Board and Array

32, 48, or 64 LEDs. Color temperatures: 3000K +/- 125K, 4000K, 5000K +/- 200K. Minimum CRI of 70. Aluminum metal clad board. RoHS compliant.

LED Thermal management

The housing design allows the one piece housing to provide excellent thermal management critical to long LED system life.

Energy saving benefits

System efficacy up to 133lm/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

SiteWise network system

SiteWise system includes a controller fully integrated in the luminaire that enables the luminaires to communicate with a dimming signal transmitter cabinet located on site using Philips patented central dimming technology. A locally accessible mobile app allows users to access the system and set functionalities such as ON/OFF, dimming levels and scheduling. SiteWise is available with motion response options in order to bring the light back to 100% when motion is detected. Additional functionalities are available such as communication with indoor lighting and connection to BMS systems.

Wireless system

EcoForm luminaires are available with optional wireless controllers ready to be connected to a Limelight system (sold by other). The system allows you to wirelessly manage the entire site, independent lighting groups or individual luminaires while on-site or remotely. Based on a high density mesh network with an easy to use web-based portal, you can conveniently access, monitor and manage your lighting network remotely. Wireless controls can be combined with site and area, pedestrian, and parking garage luminaires as well, for a completely connected outdoor solution.

Optical systems

Type 2, 3, 4, 5, 5W, and AFR distributions available. Internal Shield option mounts to LED optics and is available with Type 2, 3, 4, and AFR distributions to control backlight.

Types 2, 3, 4, and AFR, when specified and used as rotated, are factory set only.

Mounting

Standard luminaire arm mounts to 4" round poles. Square pole adapter included with every luminaire. Round Pole Adapter (RPA) required for 3–3.9" poles.

Retrofit Arm Mount

EcoForm features an innovative retrofit arm kit. When specified with the retrofit arm (RAM) option, EcoForm seamlessly simplifies site conversions to LED by eliminating the need for additional pole drilling on most existing poles. RAM will be boxed separately.

Listings

UL/cUL listed to the UL 1598 standard, suitable for Wet Locations. Suitable for use in ambients from -40° to 40°C (-40° to 104°F). The quality systems of this facility have been registered by UL to the ISO 9001 series standards. Most EcoForm configurations are DesignLights Consortium® qualified. Consult DLC Qualified Products list for more details.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult factory for specs on optional or custom colors.

Warranty

EcoForm luminaires feature a 5 year limited warranty. Philips Gardco LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED Drivers also carry a 5 year limited warranty. Motion sensors are covered by warranty for 5 years by the motion sensor manufacturer.



**PROPOSED STARLING SENIOR APARTMENTS
VILLAGE OF LAKE VILLA, ILLINOIS
PRELIMINARY STORMWATER MANAGEMENT PLAN**

INTRODUCTION

The proposed Starling Senior Apartments site is +/- 5.21 acres located at the southwest corner of Grass Lake Road and Deep Lake Road in Lake Villa, Illinois. These improvements will consist of the construction of a building including car parking, grading and paving activities, installation of underground utilities, and soil erosion control measures. Stormwater Management was previously provided for the developed area north of the site (WT Group Storm Management Report). Stormwater management for the proposed improvements will be provided through additional storm sewers and an additional on-site basin, providing detention per the new Bulletin 75 rainfall data. A Bulletin 75 Nomograph was used to calculate preliminary detention requirements for the proposed improvements and modeled calculations will be performed in the final stormwater phase. This report serves as a Preliminary Stormwater Management Plan for the proposed site stormwater design.

PROJECT DESCRIPTION

The project is located near the southwest corner of Grass Lake Road and Deep Lake Road intersection in the Village of Lake Villa, Illinois. The site is in Section 28, Township 46 North, and Range 10 East. It is bordered on the west by a neighborhood, to the north by the Lake House Restaurant and Water Tower, to the east by Deep Lake Road, and to the south by an existing detention basin. This project will be served by the proposed detention basin.

EXISTING CONDITIONS

The existing conditions of the site are an undeveloped site. The existing drainage is through sheet flow to the existing detention basin or to a swale that drains to the basin. The site is free of floodplain but wetland have been identified off-site to the south.

PROPOSED CONDITIONS

The proposed conditions are design to contain the proposed site within the proposed detention basin. The onsite project area will drain via proposed storm sewer to a proposed 2.67 ac-ft detention pond with a NWL of 790.25 and HWL of 798.25. The calculations used to size the proposed detention basins using 0.15 cubic feet per second per acre. The proposed

detention was designed using Bulletin 75. The runoff volume reduction quantity was found by using the runoff depth of 0.39 inches, for the 39% impervious site, and finding it in the provided table in the LCWDO. The RVR Quantity found in the table was then multiplied by the total impervious area to find our site RVR of 2,712 cubic feet (0.07 ac-ft). This volume is provided in the bottom of the proposed detention pond.

All required detention and additional information for the project site is detailed in the stormwater calculations and exhibits provided.

ANALYSIS METHODS

The procedures and assumptions used for the storm sewer and drainage design elements are listed below.

- Onsite curve numbers were calculated using 98 for impervious and 74 for pervious areas
- The CN Exhibit and calculation attached to this report show the proposed CN to be 82.
- Required detention volume was found using a B-75 nomograph.
- RVR and water quality requirements were found using the Lake County Watershed Development Ordinance graphs and tables.

CONCLUSION

In our professional opinion the proposed development's stormwater management system as described in this report conforms to the requirements set forth by the Village of Lake Villa Municipal Code.

Sincerely,

MANHARD CONSULTING, LTD



CALCULATIONS



COMPOSITE RUNOFF CURVE NUMBER (CN)

PROJECT: Starling Senior Apartments PERMIT NUMBER: _____

LOCATION: Lake Villa, Illinois DATE: 12/29/2022

TYPE OF AREA (SELECT WITH DROP-DOWN)

☒ DETAINED AREA ☐ MAJOR STORMWATER SYSTEM
☐ UNRESTRICTED AREA ☐ OTHER: _____
☐ UPSTREAM AREA

CONDITION (SELECT WITH DROP-DOWN)

☒ PROPOSED CONDITION ☐ EXISTING CONDITION

RUNOFF CURVE NUMBER

Surface Description	Hydrologic Soil Group (HSG)	CN	Area (acres)	Product (CN)(Area)
Impervious Surface		98	1.91	187.18
Pervious Surface		74	3.30	244.20

TOTALS: 5.21 431.38

COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{431.38}{5.21} \rightarrow \text{Composite CN} = 82.80$$



COMPOSITE RUNOFF COEFFICIENT (C)

PROJECT: Starling Senior Apartments PERMIT NUMBER: _____

LOCATION: Lake Villa, Illinois DATE: 12/29/2022

TYPE OF AREA (SELECT WITH DROP-DOWN)

☒ DETAINED AREA ☐ MAJOR STORMWATER SYSTEM
☐ UNRESTRICTED AREA ☐ OTHER: _____
☐ UPSTREAM AREA

CONDITION (SELECT WITH DROP-DOWN)

☐ PROPOSED CONDITION ☒ EXISTING CONDITION

RUNOFF COEFFICIENT

Surface Description	C	Area (acres)	Product (C)(Area)
Impervious	0.90	0.00	0.00
Pervious	0.45	5.18	2.33

TOTALS: 5.18 2.33

COMPOSITE RUNOFF COEFFICIENT

$$\text{Composite C} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2.33}{5.18} \rightarrow \text{Composite C} = 0.45$$



COMPOSITE RUNOFF COEFFICIENT (C)

PROJECT: Starling Senior Apartments PERMIT NUMBER: _____

LOCATION: Lake Villa, Illinois DATE: 12/29/2022

TYPE OF AREA (SELECT WITH DROP-DOWN)

☒ DETAINED AREA ☐ MAJOR STORMWATER SYSTEM
☐ UNRESTRICTED AREA ☐ OTHER: _____
☐ UPSTREAM AREA

CONDITION (SELECT WITH DROP-DOWN)

☒ PROPOSED CONDITION ☐ EXISTING CONDITION

RUNOFF COEFFICIENT

Surface Description	C	Area (acres)	Product (C)(Area)
Impervious	0.90	1.91	1.72
Pervious	0.45	3.30	1.49

TOTALS: 5.21 3.20

COMPOSITE RUNOFF COEFFICIENT

$$\text{Composite C} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3.20}{5.21} \rightarrow \text{Composite C} = 0.61$$



NOMOGRAPH: BULLETIN 75 RAINFALL DATA

PROJECT: Starling Senior Apartments PERMIT NUMBER: _____

LOCATION: Lake Villa, Illinois DATE: 12/29/2022

DEVELOPMENT INFORMATION

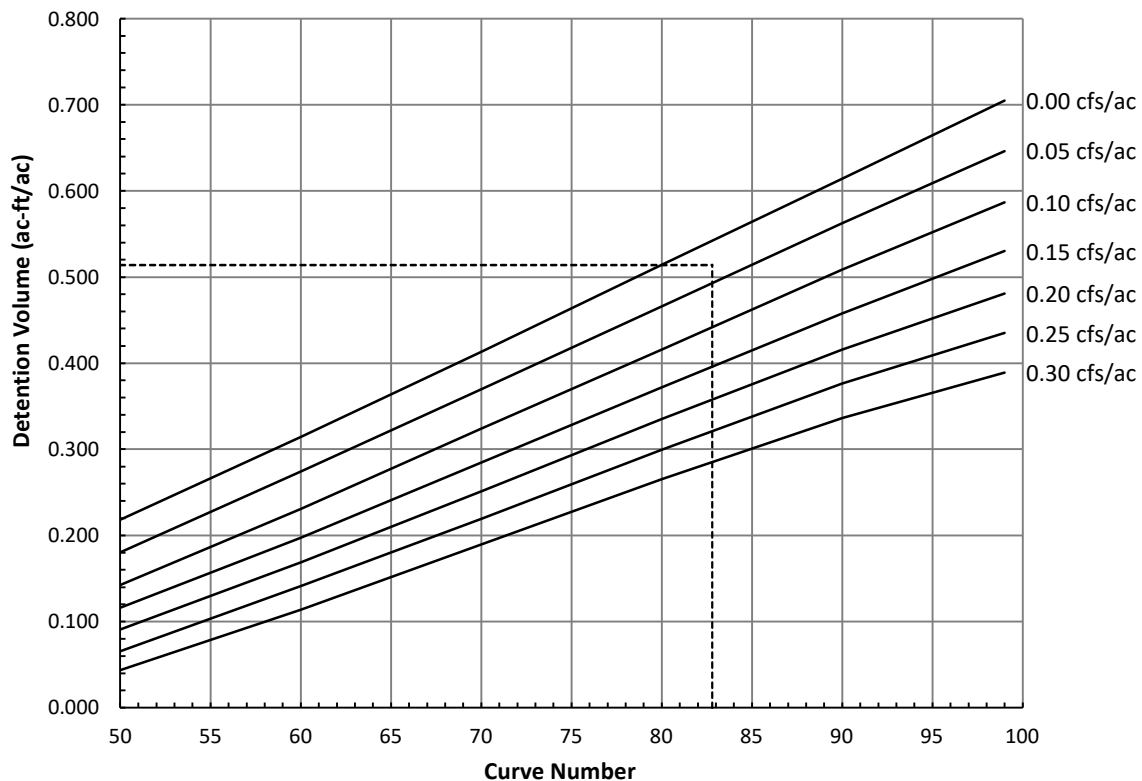
1. Detained Area	5.180	acres
2. Curve Number	82.80	
3. Actual Release Rate	0.150	cfs

REQUIRED DETENTION VOLUME

4. Required Detention Volume	2.661	ac-ft
------------------------------	-------	-------

NOMOGRAPH

NOMOGRAPH: BULLETIN 75





DETENTION VOLUME PROVIDED

PROJECT: Starling Senior Apartments PERMIT NUMBER:

LOCATION: Lake Villa, Illinois DATE: 12/29/2022

AREA UNITS (CHOOSE WITH DROP-DOWN)

Units:

POND / VAULT / SURFACE DETENTION VOLUME

Elevation (ft)	Area (ft²)	Average Area (ft²)	Increment Volume (ac-ft)	Cumulative Volume (ac-ft)
789.50	4733.00			0.00
		5906.50	0.07	
790.00	7080.00			0.07
		8263.50	0.19	
791.00	9447.00			0.26
		10680.50	0.25	
792.00	11914.00			0.50
		13198.00	0.30	
793.00	14482.00			0.81
		15816.00	0.36	
794.00	17150.00			1.17
		18534.50	0.43	
795.00	19919.00			1.59
		21354.00	0.49	
796.00	22789.00			2.08
		24274.00	0.56	
797.00	25759.00			2.64
		27294.00	0.63	
798.00	28829.00			3.27

STORM SEWER DETENTION VOLUME

Diameter (in)	Length (ft)	Volume (ac-ft)
12	0	0.00

TOTAL DETENTION VOLUME

Pond / Vault / Surface Detention Volume (ac-ft)

3.27

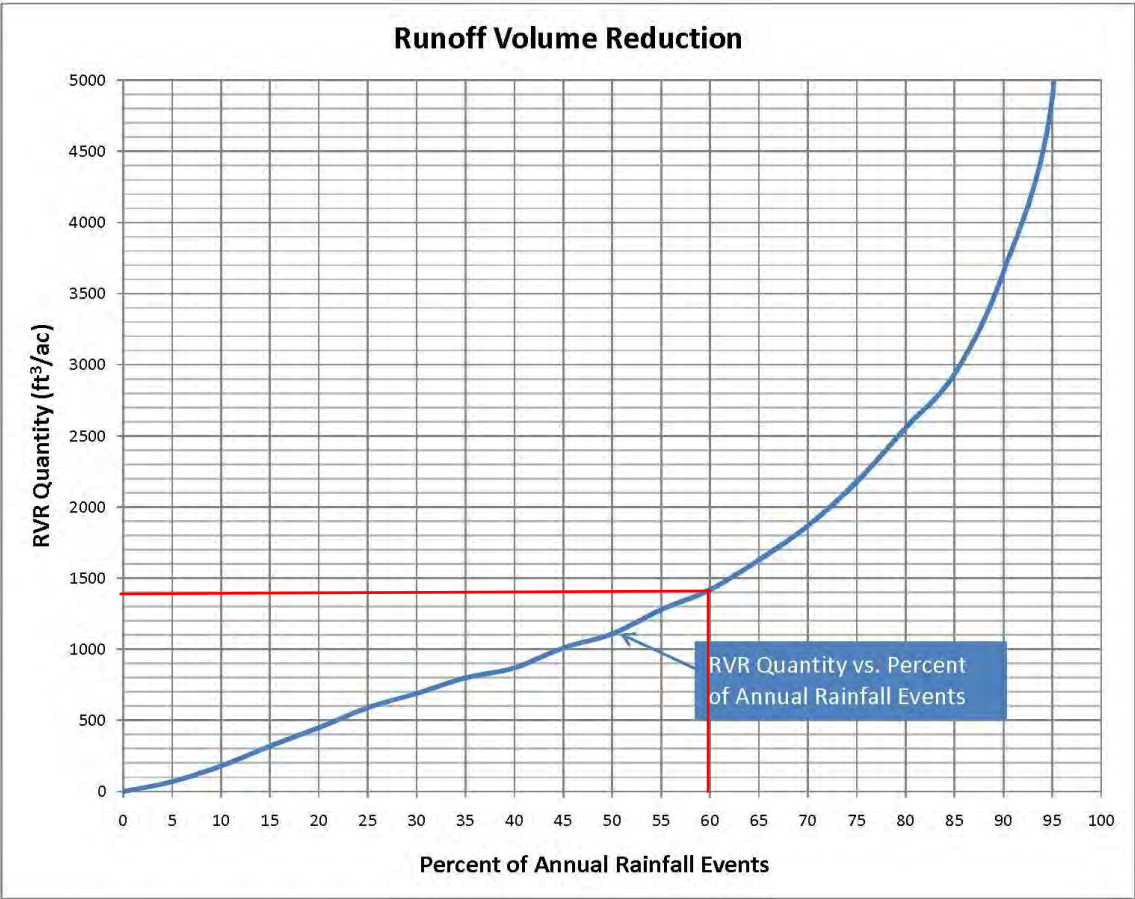
Storm Sewer Detention Volume (ac-ft)

0.00

Total Detention Volume (ac-ft)

3.27

Percent of Annual Rainfall Events	100% impervious values	
	Runoff Depth (in)	RVR Quantity ft ³ /ac new impervious
0	0	0
5	0.02	70
10	0.05	180
15	0.09	320
20	0.12	450
25	0.16	590
30	0.19	690
35	0.22	800
40	0.24	870
45	0.28	1010
50	0.30	1110
55	0.35	1280
60	0.39	1420
65	0.45	1630
70	0.51	1870
75	0.60	2180
80	0.70	2560
85	0.81	2940
90	1.01	3660
95	1.35	4900
99	2.41	8760



Runoff Depth based on Figure 3 of the Center For Watershed Protection Report.
Runoff Depth = P*R where:
P = Rainfall Depth (inches)
R=Volumetric Runoff Coefficient = 0.95 for 100% impervious cover [0.05+0.009(I), where I is 100% (impervious cover)]
RVR Quantity = Runoff Depth (in) / 12 (in/ft) * 43560 (ft²/ac)



WETLAND DELINEATION REPORT

Grass Lake Road & Deep Lake Road

Lake Villa, Lake County, IL

Manhard Consulting, LTD.

MA2242

November 22, 2022



GARY R. WEBER ASSOCIATES, INC.

LAND PLANNING ECOLOGICAL CONSULTING LANDSCAPE ARCHITECTURE

WETLAND DELINEATION REPORT

Grass Lake Road & Deep Lake Road

Pin #0228201178

Lake Villa, Lake County, IL

Prepared for:

Manhard Consulting, LTD.
116 West Illinois St, Floor 7
Chicago, IL 60654

Attn: Matt Eagle, P.E.

Prepared by:

Gary R. Weber Associates, Inc.
402 W. Liberty Drive
Wheaton, IL 60187
(630)668-7197

Project Reference Information

MA2242

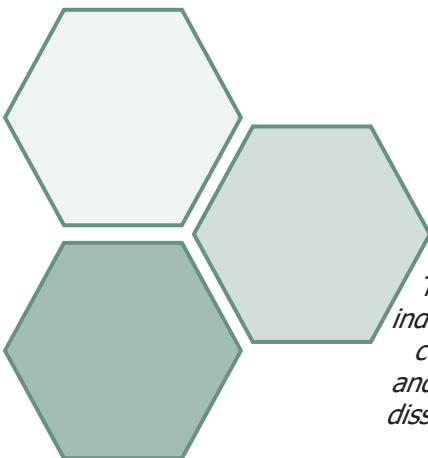
November 22, 2022

Carl M. Peterson, CPESC, LEED AP
GRWA - Managing Principal

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GRWA - Senior Ecologist

Project Staff

Lisa Pajon
GRWA - Natural Resource Consultant



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APPENDIX A – WATER RESOURCES MAPS: EXHIBIT A-G

APPENDIX B – SITE PHOTOS: EXHIBIT H

APPENDIX C – WETLAND DETERMINATION FORMS

APPENDIX D – THREATENED AND ENDANGERED SPECIES CONSULTATION

WETLAND DELINEATION REPORT

Project Name:	Grass Lake Road & Deep Lake Road MA2242	Client:	Manhard Consulting, LTD.
Location:	Lake Villa, Lake Villa Township, Lake County, IL, 60046,		
Parcel PIN #	0228201178		
PLSS	NE S28 T46N R10E		
Coordinates	Latitude: 42.439678 Longitude: -88.063754		
Field Ecologist:	Lisa Pajon		
Supervised by:	Ellen Raimondi (CWS)		
Date of site visit:	11/3/2022		

1.0 INTRODUCTION

Gary R Weber Associates performed a formal wetland delineation within the study area located on Deep Lake Road, Lake Villa, Lake County, IL (Exhibit A: Location), hereafter referred to as the study area. It is generally bounded by Deep Lake Road to the east, by commercial property to the north, and by wetland and residential properties to the west and south. The study area, as presented in this report, represents the property limits investigated by GRWA for the presence of regulated surface water resources. These limits do not necessarily reflect the boundaries of any proposed development activities. It is within the Sequoit Creek sub-watershed and the Fox River Watershed.

1.1 SITE DESCRIPTION

The study area (approximately 4.97-acres) consists of a turf field with a lightly a scrub-shrub border to the north and east (see Photo 1-2). The field is an elevated building pad that was constructed around 1999.

One (1) wetland complex totaling over 10 acres in size, with approximately 0.06-acres within the study area boundaries was identified. The wetland consists of a mix of emergent vegetation and open water with a connected drainage swale at Deep Lake Road. The wetland extends on-site in the southwest corner of the study area

Wetland acreages provided in this report are estimations; a survey of staked boundaries must be performed to obtain exact size and location information. A summary of regulations is provided in Section 1.2.

1.2 REGULATION SUMMARY

Basic information regarding wetland regulations may be found in the Regulatory Statement portion of this report. Briefly, the U.S. Army Corps of Engineers (USACE) regulates all Waters of the United States that are currently or historically navigable and all wetlands that are connected to or associated with these waterways. In Lake County, isolated wetlands are regulated through implementation of a countywide watershed development ordinance. Lake County requires a minimum buffer width of 50 feet for wetlands greater than 2.5 acres.

Wetland 1 extends to the west and enters a complex that is part of the Sequoit Creek drainage and is likely regulate by the USACE.

At the time of this wetland delineation report, current regulations state that this delineation is valid for 3 years from the date of site verification.

1.3 THREATENED AND ENDANGERED SPECIES

Based on a 11/10/2022 review of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website, sensitive (federally threatened or endangered) plant or animal species habitat are not located on or adjacent to the study area (see attached USFWS Review Summary). Further consultation with this agency may not be required for a Section 404 Permit from the USACE

According to the Illinois Department of Natural Resources (IDNR), the following protected resources may be in the vicinity of the project location: Deep Lake INAI Site, Loon Lake INAI Site, Sun Lake INAI Site, Sun, Lake Nature Preserve, Blanding's Turtle (*Emydoidea blandingii*), King Rail (*Rallus elegans*), Least Bittern (*Ixobrychus exilis*) (see INDR EcoCAT correspondence).

The IDNR has provided conservation recommendations for the above listed protected resources. See the below summary and EcoCAT consultation included in Appendix E.

- Deep Lake INAI, Loon Lake INAI, Sun Lake INAI, & Sun Lake Nature Preserve: Adverse effects are unlikely.
- Blandings Turtle: Construction should be completed in inactive season from November 1-March 1. Exclusionary fencing around the construction area and daily checks for turtles should be initiated if time frame cannot be met.
- King Rail and Least Bittern: 50 ft buffer should be maintained on all wetlands, and if possible all work near wetlands should be completed between September 30-April 1 to avoid the prime nesting and fledging season.
- Lighting recommendations have been made for all external fixtures.

2.0 PROJECT PURPOSE

The purpose of the site visit was to identify regulated surface wetland, non-wetland water resources or Waters of the United States (WOUS) on, or within 100 feet, of the study area. A floodplain determination was not included as part of our investigation.

On-site wetland areas encountered were delineated using standard methods sanctioned by the United States Army Corps of Engineers in the Corps of Engineers Wetlands Delineation Manual (1987) and 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region. Plant observations were made for calculating the Coefficient of Conservatism (Ĉ) and Floristic Quality Index (FQI) for each wetland plant community using the Wilhelm method (Swink and Wilhelm, 1994).

Observations also were made to determine if wetlands present within the study area were high-quality aquatic resources based on the Lake County Watershed Development Ordinance. Observed wildlife and evaluation of resource quality are also reported as required by the Chicago District USACE.

On-site non-wetland water resources encountered were given established Ordinary High Water Mark (OHWM) boundaries using the definitions described in Section 404 of the Clean Water Act (CWA Section 404(b).(1) Guidelines (40CFR230)

3.0 EXHIBIT REVIEW

- The **Location Map** identifies approximate location of study area and nearby major roadways (Exhibit A)
- The **National Wetlands Inventory** identifies no wetlands within the study area (Exhibit B).
- The **Lake County Wetland Inventory** identifies a **Wetland** within the southern portion of the study area. This is a designation assigned to areas with a high potential for exhibiting hydric soil, hydrophytic vegetation and required hydrologic conditions (Exhibit C).
- The **Soil Map** identifies the following soils within the study area:

530D2 Ozaukee silt loam – Non-hydric
840B Zurich and Ozaukee silt loams – Non-hydric
840C2 Zurich and Ozaukee silt loams – Non-hydric
979B Grays and Markham silt loams – Non-hydric

Field evaluations are made to determine if a hydric inclusion may be present (Exhibit D).

- The **United States Geologic Survey (USGS) Topographic Map** does not identify any surface drainage within or adjacent to the study area (Exhibit E)
- The **Flood Insurance Rate Map** identifies the study area outside the 500-year floodplain (Exhibit F).
- The **Water Resources Summary** identifies approximately locations and boundaries of water resources within the study area. Location of Wetland 1 is denoted (Exhibit G).
- The **Site Photographs** show conditions exhibited within the study area at the time of the site visit (Exhibit H)

4.0 METHODS

Prior to the site visit, a preliminary site evaluation is performed using aerial photography and natural resource mapping. Potential wetland areas and non-wetland waters units identified by these resources are evaluated in the field.

1987 USACE Wetland Delineation Manual and 2010 Regional Supplement.

Potential wetland areas were investigated to determine if they meet the requirements for a wetland based on the USACE parameters of vegetation, hydrology, and soils. In general, positive indication of each of the three parameters must be demonstrated to classify an area as wetland. Each of these parameters is discussed below.

Vegetation – Three vegetative indicators are applied to plant communities in order to determine if the hydrophytic vegetation criterion is met.

1. More than 50% of the dominant plant species across all strata must be hydrophytic (water tolerant). Wetland plants fall into three indicator classes based on differing tolerances to water level and soil saturation. These indicators are rated obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC).
2. The prevalence index is 3.0 or less. The prevalence index is a weighted-average wetland indicator status of all plant species in a sampling plot. The index is used to determine whether hydrophytic vegetation is present on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.
3. Over 50% of non-wetland plants in a sample area exhibit morphological adaptations for life in wetlands. To apply this indicator, adapted plants must occur in areas where indicators of hydric soil and wetland hydrology are present.

Hydrology – To be considered a wetland, an area must have 14 or more consecutive days of flooding or ponding, or a water table 12 inches or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10. Wetland hydrology indicators are divided into four groups as described below:

- Group A – Observation of Surface Water or Saturated Soils
- Group B – Evidence of Recent Inundation
- Group C – Evidence of Recent Soil Saturation
- Group D – Evidence from Other Site Conditions or Data

Soils - To be considered a wetland, an area must contain hydric soil. Hydric soils are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic (lacking oxygen) conditions in the upper part. Soils generally, but not always, will develop indicators that are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. The most current edition of the United States Department of Agriculture, Natural Resource Conservation Service *Field Indicators of Hydric Soils in the United States* is used for identification of hydric soils. Field indicators of hydric soils include but are not limited to the presence of any of the following: histic epipedon, sulfidic odor, at least 2 centimeters of muck, depleted matrix, and/or redoximorphic features. Field indicators are usually examined in the top 20 inches of the soil. Soil colors are determined using *Munsell Soil Color Charts*.

Areas meeting these three criteria are staked in the field for surveying purposes. Boundaries are demarcated in the field with pink flagged pin stakes labeled "WETLAND DELINEATION." Staked boundaries are mapped on an aerial photograph included in this report. Approximate off-site wetland boundaries are

identified on the aerial photograph and were determined using available aerial photographs, wetland maps, and field observation.

The Ordinary High Water Mark (OHWM)

Potential non-wetland water resources were investigated to determine if they meet requirements for a regulated WOUS or isolated waters unit based on USACE parameters.

Ordinary High Water Mark (OHWM) boundaries were established using the definition provided in 33 CFT Part 328.3 of the Clean Water Act. The OHWM is defined as the line on the shore established by the fluctuations of water. This line can be identified by physical characteristics such as a clear, natural line on the bank, changes in the character of the soil, shelving, vegetation matted down, bent, or absent, leaf litter disturbed or washed away, sediment deposition, water staining, the presence of litter and debris, destruction of terrestrial vegetation, sediment sorting, scour, multiple observed or predicted flow events, and abrupt change in plant community.

5.0 REVIEWED ON-SITE CONDITIONS

5.1 WATER RESOURCES SUMMARY

Wetland 1. This wetland (approximately over 10 acres in total size and 0.06 acres on-site) is located outside to the south within the southwestern portion of the study area.

The wetland is a complex characterized by emergent vegetation and portions of open water. A drainage route along Deep Lake Rd connects to the wetland complex and is included in the identified boundaries. A prairie buffer separates the wetland complex from the turf building pad within the study area. The wetland complex appears to provide water flow to Sequoit Creek, west of the study area. See photos 3-7 for reference.

The wetland is identified on the NWI, Lake County Wetland Inventory, and the USGS Topographic map.

Sample points were established within and adjacent to the on-site portion of Wetland 1 to characterize the vegetation, soils, and hydrology (Exhibit G: Aerial Photograph). The on-site wetland boundaries and a portion of the drainageway along Grass Lake Rd. were demarcated with 18 pink flagged pin stakes.

The on-site portion of Wetland 1 was primarily vegetated by Sandbar Willow (*Salix interior*), Narrow-leaved Cattails (*Typha angustifolia*), Awn-Fruit Sedge (*Carex stipata*) and Dark Green Bulrush (*Scirpus atrovirens*). The mapped soil series are 530D2 Ozaukee silt loam, a non-hydric soil, and 840C2 Zurich and Ozaukee silt loams, a non-hydric soil. USDA field indicators A11: Depleted Below Dark Surface, A12: Thick Dark Surface, provided evidence of hydric soil. Saturation, geomorphic position, and the FAC-neutral test provided evidence of persistent hydrology (See Wetland Determination Data Forms).

The field investigation was done outside of the growing season. Floristic dominance was assessed by observing available seed heads, general morphology, and non-dormant vegetation. Floristic quality may need to be assessed in the spring.

6.0 REGULATORY STATEMENT

6.1 Federal Regulations

The deposition of dredge or fill materials into federally jurisdictional wetlands or Waters of the United States is regulated by the USACE under Section 404 of the Clean Water Act.

The Nationwide Permit authorizes 0.1 acre or less of low quality wetlands to be filled without mitigation. If over 0.1 acre is proposed for filling or is subject to secondary impacts, in-kind mitigation may be required at a ratio of 1.5:1, or greater. The aggregate total loss of waters of the U.S. authorized by NWP cannot exceed 0.5 acre or 300 linear feet of streambed.

Under the existing regulations, secondary impacts (both on-site and off-site) from filling also must be evaluated. Mitigation may be required at a higher rate if a project will significantly alter wetland functions such as stormwater detention, water filtration, sediment trapping, and/or wildlife habitat.

Before mitigation will be approved, reasonable proof that avoidance or minimization of wetland impacts has been attempted must be provided to the Corps.

A USACE permit is not required if the wetlands are avoided and construction erosion near a wetland is controlled.

6.2 Municipal and State Regulations

Lake County Watershed Development Ordinance: The Lake County Watershed Development Ordinance regulates the development of all areas within the county. Plans for development must include provisions for stormwater conveyance, and conservation of streams and channels, lakes, ponds, or wetlands that exist on the site. A soil erosion and sediment control plan must be provided. Buffer areas are required for all areas defined as "Waters of the U.S." including isolated wetlands, lakes and ponds. Buffer areas are divided into 2 types, linear buffers and water body buffers.

Linear buffers will be designated along both sides of all channels meeting the definition of "Waters of the U.S" or "Isolated Waters of Lake County". Minimum buffer widths are as follows:

- When the linear water body has a watershed greater than 20 acres but less than 1.0 square mile, the minimum buffer width will be 50 feet on each side of the linear water body;
- When the linear water body has a watershed greater than 1.0 square mile, the minimum buffer width will be 30 feet on each side of the linear water body;
- Linear exceptional functional value wetlands and streams with an Index of Biotic Integrity greater than 40 will have a minimum buffer width of 100 feet on each side of the linear water body.

Water body buffers will encompass all non-linear bodies of water meeting the definition of "Waters of the United States" or "Isolated Waters of Lake County". Minimum buffer widths are as follows:

- For water bodies and wetlands greater than 1/3 acre but less than 1.0 acre in size, the minimum buffer width is 30 feet;
- For water bodies and wetlands greater than 1.0 acre but less than 2.5 acres in size, the minimum buffer width is 40 feet;
- For water bodies and wetlands greater than 2.5 acres in size, the minimum buffer width is 50 feet;
- Non-linear high quality aquatic resources shall have a minimum buffer width of 100 feet.

Mitigation for impacts to isolated wetlands is required within Lake County for:

- Wetland impacts greater than or equal to one-tenth (0.1) acres of Isolated Waters of Lake County that are high-quality aquatic resources (HQAR).
- Wetland impacts greater than or equal to one-quarter (0.25) acres of Isolated Waters of Lake County that are not high-quality aquatic resources.

Mitigation shall provide for the replacement of the Wetland environment lost to development at the following proportional rates (i.e. creation acreage to wetland acreage):

- For wetland impacts to areas that are not high-quality aquatic resources under Categories I, II and III, a minimum of 1.5:1 mitigation ratio for fully certified wetland mitigation bank credits;
- A minimum of 3:1 for wetland impacts that are high-quality aquatic resources
- A minimum of 6:1 for wetland impacts that are high-quality forested wetlands as defined in Appendix L.
- For wetland impacts to open waters that are not high-quality aquatic resources under Categories I, II, and III, a minimum of 1:1 mitigation ratio shall be required.

Illinois Department of Natural Resources Agency Action Plans for Interagency Wetlands Policy Act of 1989: The Illinois Interagency Wetlands Policy Act of 1989 is intended to ensure that there is no overall net loss of the State's existing wetland acres or their functional values resulting from State-supported activities. The Act charges State agencies with a further duty to "preserve, enhance and create wetlands where necessary to increase the quality and quantity of the State's wetland resource base."

The Interagency Wetlands Policy Act of 1989 states that any construction, land management or other activity performed by, or for which financial assistance is administered or provided by, a State agency that will result in an adverse impact to a wetland shall be subject to compliance. This includes, but is not limited to the following:

- The alteration, removal, excavation, or dredging of soil, sand, gravel, minerals, organic matter, vegetation, or naturally occurring minerals of any kind from a wetland;
- The discharge or deposit of fill material or dredged material in a wetland;
- The alteration of existing drainage characteristics, sedimentation patterns, or flood retention characteristics of a wetland;
- The disturbance of water level or water table of a wetland;
- The destruction or removal of plant life that would alter the character of a wetland, except for activities undertaken in accordance with the Illinois Noxious Weed Act;
- The transfer of State owned wetlands to any entity other than another state agency; and
- Other actions that cause or may cause adverse wetland impacts.

The Act is to be implemented through a State Wetland Mitigation Policy. The State Wetland Mitigation Policy requires preservation of wetlands as the primary objective. Where adverse wetland impacts are unavoidable, progressive levels of compensation based upon the level of impact to the existing wetland and the location of compensation wetlands are required.

Archaeological Survey Requirements: An archaeological survey may be required before a Section 404 permit will be issued for wetland impacts. The U.S. Army Corps of Engineers will make this determination as part of the permit application review. The archaeological survey must cover all areas of the study area, not wetlands only. If you already have a letter from the Illinois Historic Preservation Agency (IHPA) stating an archaeological survey is required, you should act on it because the USACE will support this notification.

7.0 RECOMMENDATIONS

One (1) wetland complex was identified within the study area. The overall wetland is over 10 acres in size, with approximately 0.006 acres located within the study area boundaries. In Lake County, wetlands over 2.5 acres require a minimum buffer width of 75 feet.

Based on connection with regulated waterways off-site, the Wetland 1 complex may be under USACE jurisdiction.

The U.S. Army Corps of Engineers has the final authority in determining the jurisdictional status of the wetlands identified on site. GRWA recommends that a request for jurisdictional determination be sent to the U.S. Army Corps of Engineers as soon as possible.

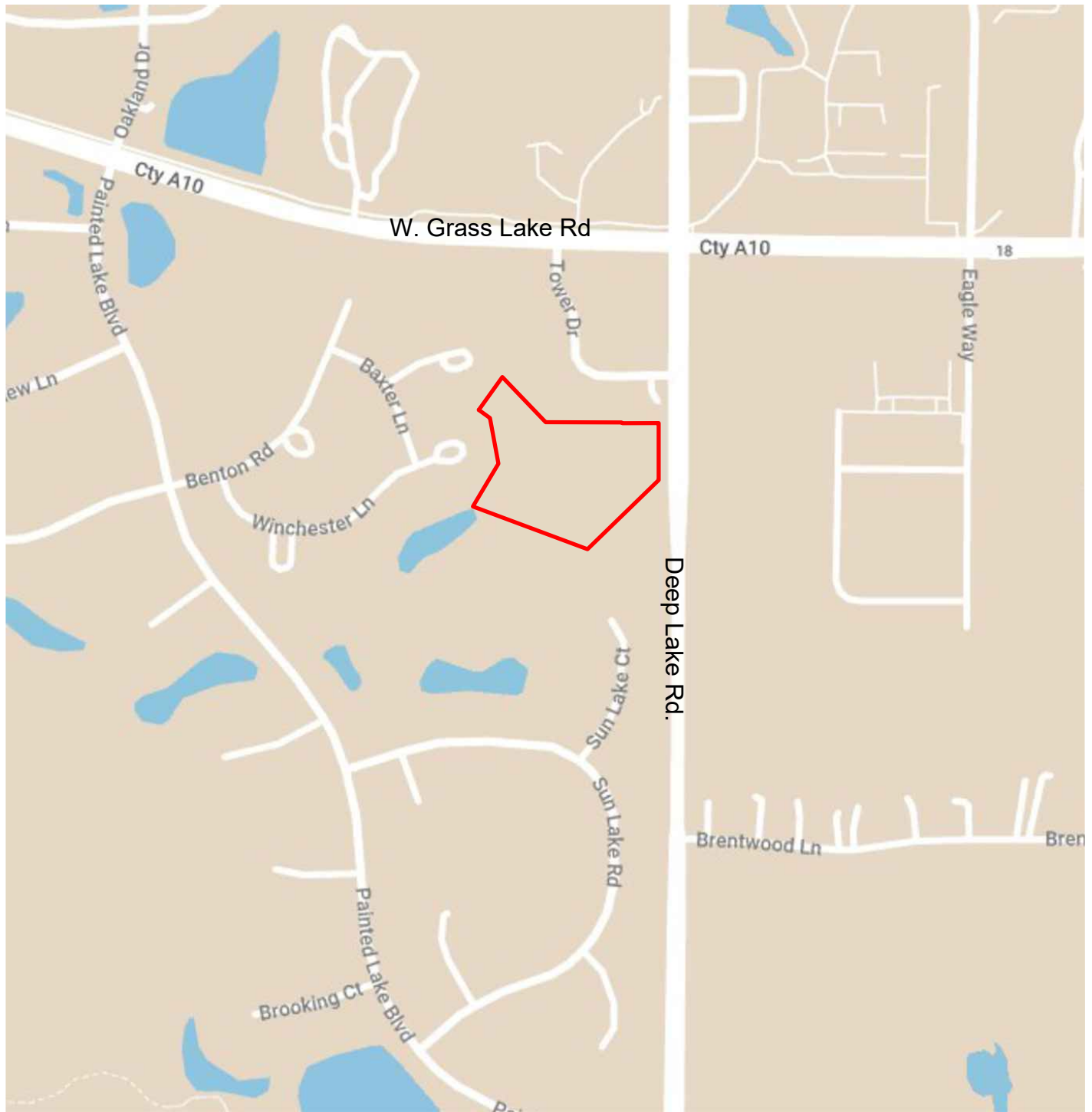
Any impacts to jurisdictional wetland, Waters of the U.S., or associated buffers will require U.S. Army Corps of Engineers and Lake County notification. GRWA can assist you with the request for jurisdictional determination, permit applications, agency negotiations, wetland design plans, and mitigation plans which may be applicable to your project. The wetland consultant should be involved during the planning and design stages of the project to avoid complications with the agencies after the plan has been drafted. Proper planning regarding wetlands can reduce delays caused by the permitting process and costly changes in site plans.

The Corps of Engineers will not perform wetland boundary verifications during the winter season. If an application for a wetland permit will be submitted to the Corps of Engineers during the winter months, we recommend that a request for concurrence of jurisdictional boundaries be sent to the Corps during the growing season. This will prevent a delay in the permitting process. GRWA is available to assist you with obtaining Corps concurrence.

8.0 REFERENCES

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- Wilhelm, G. and L. Masters. Floristic Quality Assessment Computer Program, Version 1.0. Conservation Research Institute. Elmhurst, Illinois. October 2000.

Appendix A: Water Resource Maps (Exhibits A-G)



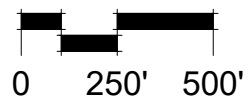
LEGEND

PLSS: NE S28 T46N R10E

Latitude: 42.439678

Longitude: -88.063754

Study Area



SCALE: 1"=500'



NORTH

Coordinates provided by Earth Point for Google Earth



GARY R. WEBER
ASSOCIATES, INC.

Grass Lake Rd & Deep Lake Rd
Lake Villa, IL

MA2242
Manhard Consulting, LTD.

LOCATION MAP

Provided by: Google Maps

EXHIBIT A

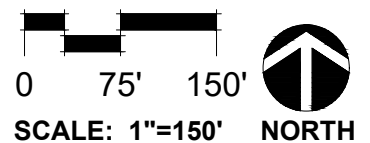
Created by: MGK

Checked by:



LEGEND

 Estuarine and Marine Deepwater	 Freshwater Pond	 Study Area
 Estuarine and Marine Wetland	 Lake	
 Freshwater Emergent Wetland	 Other	
 Freshwater Forested/Shrub Wetland	 Riverine	



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NATIONAL WETLANDS
INVENTORY MAP

Provided by: U.S. Fish and Wildlife Service

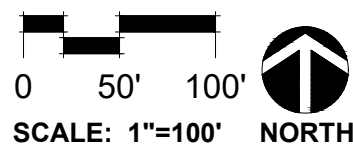
EXHIBIT B

Created by: MGK Checked by:



LEGEND

- Study Area
- Lake County Wetland
- ADvanced IDentification Wetlands



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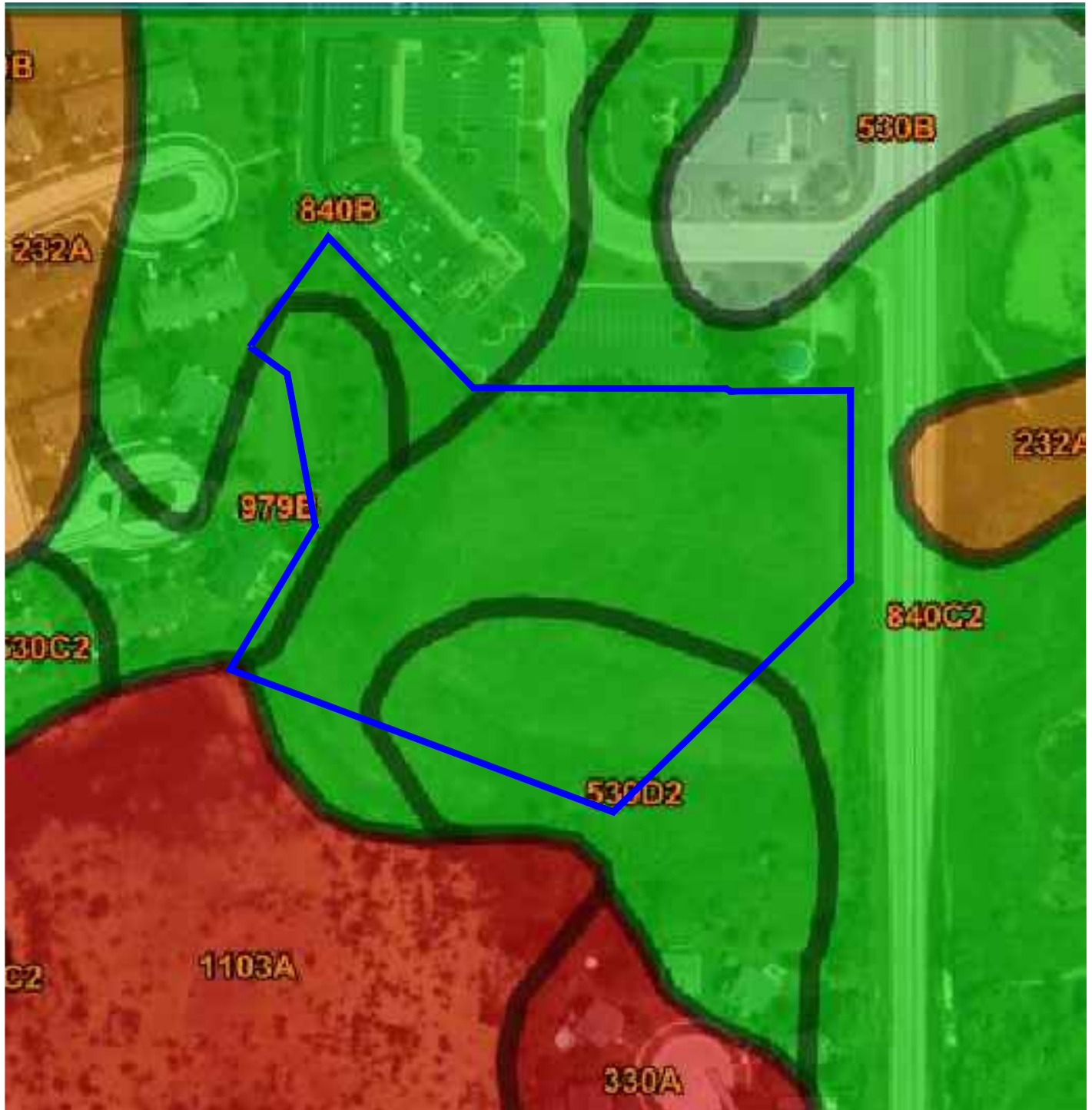
MA2242
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LAKE CO. WETLAND
INVENTORY MAP

Provided by: Lake County Parcel Viewer

EXHIBIT C

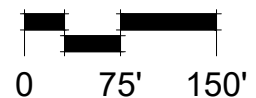
Created by: MGK Checked by:



LEGEND

- Hydric Soil (100%)
- Predominantly Hydric (66-99%)
- Partially Hydric (33-65%)
- Predominantly Non-hydric (1-32%)
- Non-hydric (0%)

Study Area



SCALE: 1"=150'



NORTH



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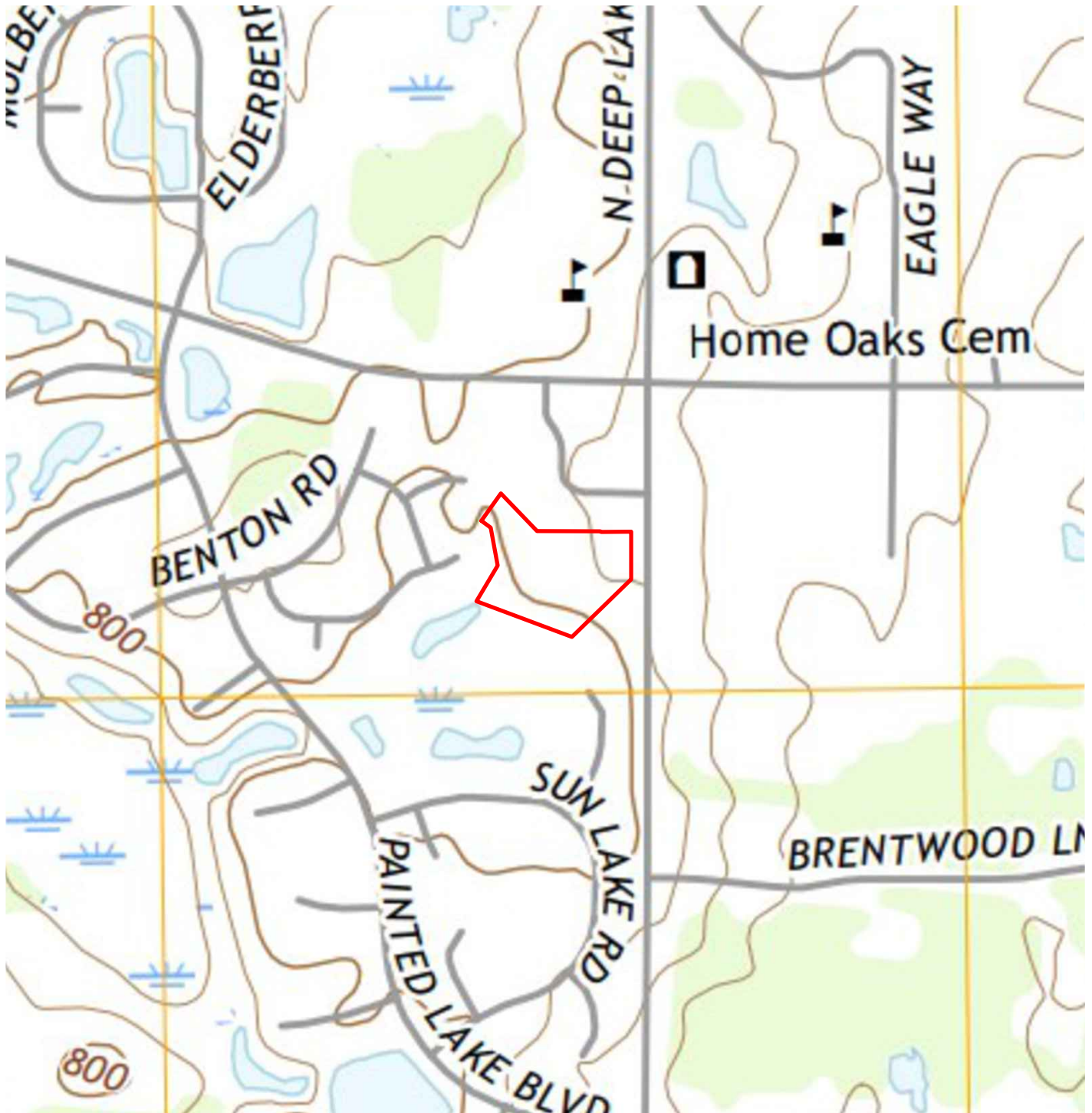
SOIL SURVEY MAP

Web Soil Survey 3.0 (Lake County)
USDA Natural Resources Conservation Service

EXHIBIT D

Created by: MGK

Checked by:

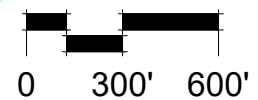


LEGEND

Perennial Stream	
Perennial River	
Intermittent Stream	
Intermittent River	

Marsh or swamp	
Submerged marsh	
Wooded marsh or swamp	
Submerged wooded marsh or swamp	

Perennial Lake/Pond	
Intermittent Lake/Pond	
Study Area	



SCALE: 1"=600'



NORTH



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USGS TOPOGRAPHIC MAP

Provided by: USGS Topographic (Antioch)

EXHIBIT E

Created by: MGK

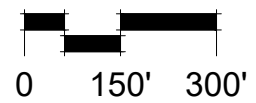
Checked by:



LEGEND

Regulatory Floodway		0.2% Annual Chance Flood Hazard	
Special Floodway		Area of Undetermined Flood Hazard	
1% Annual Chance Flood Hazard		Future Conditions 1% Annual Chance Flood Hazard	
		Area with Reduced Risk Due to Levee	

Study Area



SCALE: 1"=300'



NORTH



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FLOOD INSURANCE MAP

Provided by: Federal Emergency Management Agency

EXHIBIT F

Created by: MGK

Checked by:



LEGEND

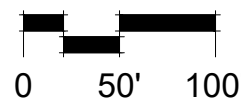
Study Area - 4.97 Acres

Flagged Wetland Boundaries

Off-site Wetland Boundaries (not flagged)



Sample Points A-F



SCALE: 1"=100'



NORTH

Provided by: Google Earth - Image date 4/6/2017



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WATER RESOURCES SUMMARY

DATE OF SITE VISIT: 11/3/2022

EXHIBIT G

Created by: MGK

Checked by:

Appendix B: Site Photographs (Exhibit H)



Photo 1: View of turf field that encompasses the majority of the site (facing south).



Photo 2: View of the southern edge of the turf field and the start of the wetland off-site to the south (facing southwest).



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SITE PHOTOGRAPHS

11/3/2022

EXHIBIT H



Photo 3: View of the on-site portion of Wetland 1 and the west stormwater culvert that feeds into it (facing west).



Photo 4: Base of prairie slope and edge of wetland (facing north).



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SITE PHOTOGRAPHS

11/3/2022

EXHIBIT H



Photo 5: Overview of open water and emergent north edge of wetland. Adjacent to prairie slope (facing west).



Photo 6: Stormwater culvert under Deep Lake Rd. Flagged as part of WL1 (facing north).



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SITE PHOTOGRAPHS

11/3/2022

EXHIBIT H



Photo 7: View of the drainage swale extending from the Deep Lake Rd culvert. Flagged as part of WL1 (facing south).



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SITE PHOTOGRAPHS

11/3/2022

EXHIBIT H

Appendix C: Wetland Determination Data Forms

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	---

Project/Site: <u>MA2242 / Grass Lake Rd & Deep Lake Rd</u>	City/County: <u>Lake Villa / Lake County</u>	Sampling Date: <u>11/3/2022</u>
Applicant/Owner: <u>Manhard Consulting, LTD.</u>	State: <u>IL</u>	Sampling Point: <u>A</u>
Investigator(s): <u>Lisa Pajon</u>	Section, Township, Range: <u>NE S28 T46N R10E</u>	
Landform (hillside, terrace, etc.): _____	Local relief (concave, convex, none): _____	
Slope (%): _____	Lat: <u>42.439678</u>	Long: <u>-88.063754</u>
	Datum: _____	
Soil Map Unit Name: <u>840C2 Zurich and Ozaukee silt loams</u>	NWI classification: _____	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No _____ (If no, explain in Remarks.)		
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: In ditch near road	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
=Total Cover				Prevalence Index worksheet: <table><tr><td colspan="2">Total % Cover of:</td><td colspan="2">Multiply by:</td></tr><tr><td>OBL species</td><td><u>20</u></td><td>x 1 =</td><td><u>20</u></td></tr><tr><td>FACW species</td><td><u>70</u></td><td>x 2 =</td><td><u>140</u></td></tr><tr><td>FAC species</td><td><u>10</u></td><td>x 3 =</td><td><u>30</u></td></tr><tr><td>FACU species</td><td><u>10</u></td><td>x 4 =</td><td><u>40</u></td></tr><tr><td>UPL species</td><td><u>0</u></td><td>x 5 =</td><td><u>0</u></td></tr><tr><td>Column Totals:</td><td><u>110</u> (A)</td><td></td><td><u>230</u> (B)</td></tr><tr><td colspan="2">Prevalence Index = B/A =</td><td colspan="2"><u>2.09</u></td></tr></table>	Total % Cover of:		Multiply by:		OBL species	<u>20</u>	x 1 =	<u>20</u>	FACW species	<u>70</u>	x 2 =	<u>140</u>	FAC species	<u>10</u>	x 3 =	<u>30</u>	FACU species	<u>10</u>	x 4 =	<u>40</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>110</u> (A)		<u>230</u> (B)	Prevalence Index = B/A =		<u>2.09</u>	
Total % Cover of:		Multiply by:																																		
OBL species	<u>20</u>	x 1 =	<u>20</u>																																	
FACW species	<u>70</u>	x 2 =	<u>140</u>																																	
FAC species	<u>10</u>	x 3 =	<u>30</u>																																	
FACU species	<u>10</u>	x 4 =	<u>40</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>110</u> (A)		<u>230</u> (B)																																	
Prevalence Index = B/A =		<u>2.09</u>																																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																																				
1. <u>Cornus racemosa</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
=Total Cover																																				
Herb Stratum (Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 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.																																
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>																																	
2. <u>Typha angustifolia</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																																	
3. <u>Symphyotrichum novae-angliae</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																																	
4. <u>Solidago altissima</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
=Total Cover																																				
Woody Vine Stratum (Plot size: <u>30</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
=Total Cover																																				
Remarks: (Include photo numbers here or on a separate sheet.)																																				

SOIL

Sampling Point: A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 2/1	100					Loamy/Clayey	Small Gravel, Wet, Silty
14-20	10YR 4/2	70	10YR 2/1	20		M	Loamy/Clayey	
			10YR 5/4	10	C	M		Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):		Hydric Soil Present?	
Type: _____		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Depth (inches): _____			

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations:				Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____		
Saturation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>3</u>		
(includes capillary fringe)					

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	---

Project/Site: <u>MA2242 / Grass Lake Rd & Deep Lake Rd</u>	City/County: <u>Lake Villa / Lake County</u>	Sampling Date: <u>11/3/2022</u>
Applicant/Owner: <u>Manhard Consulting, LTD.</u>	State: <u>IL</u>	Sampling Point: <u>B</u>
Investigator(s): <u>Lisa Pajon</u>	Section, Township, Range: <u>NE S28 T46N R10E</u>	
Landform (hillside, terrace, etc.): _____	Local relief (concave, convex, none): _____	
Slope (%): _____	Lat: <u>42.439678</u>	Long: <u>-88.063754</u> Datum: _____
Soil Map Unit Name: <u>840C2 Zurich and Ozaukee silt loams</u>	NWI classification: _____	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No _____ (If no, explain in Remarks.)		
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: Turf upland point	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>360</u> (B) Prevalence Index = B/A = <u>3.27</u>
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
=Total Cover				Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 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.
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Poa pratensis</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Dactylis glomerata</u>	<u>20</u>	<u>No</u>	<u>FACU</u>	
3. <u>Taraxacum officinale</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
4. <u>Plantago major</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
=Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (Plot size: <u>30</u>)				
1. _____				
2. _____				
=Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 2/1	100					Loamy/Clayey	Silty
6-10	2.5Y 4/4	80	10YR 2/1	20			Loamy/Clayey	Gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

³Indicators 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 <u>X</u>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No Hydro

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>MA2242 / Grass Lake Rd & Deep Lake Rd</u>	City/County: <u>Lake Villa / Lake County</u>	Sampling Date: <u>11/3/2022</u>
Applicant/Owner: <u>Manhard Consulting, LTD.</u>	State: <u>IL</u>	Sampling Point: <u>C</u>
Investigator(s): <u>Lisa Pajon</u>	Section, Township, Range: <u>NE S28 T46N R10E</u>	
Landform (hillside, terrace, etc.): _____	Local relief (concave, convex, none): _____	
Slope (%): _____	Lat: <u>42.439678</u>	Long: <u>-88.063754</u>
Datum: _____		
Soil Map Unit Name: <u>530D2 Ozaukee silt loam</u>	NW1 classification: _____	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No _____ (If no, explain in Remarks.)		
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: In wetland	

VEGETATION – Use scientific names of plants.

<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Tree Stratum</th> <th style="text-align: left;">(Plot size: <u>30</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Salix nigra</u></td><td></td><td style="text-align: center;">40</td><td style="text-align: center;">Yes</td><td style="text-align: center;">OBL</td></tr> <tr><td>2. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">40</td> <td colspan="2" style="text-align: center;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Sapling/Shrub Stratum</th> <th style="text-align: left;">(Plot size: <u>15</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Salix interior</u></td><td></td><td style="text-align: center;">30</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">30</td> <td colspan="2" style="text-align: center;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Herb Stratum</th> <th style="text-align: left;">(Plot size: <u>5</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. <u>Carex stipata</u></td><td></td><td style="text-align: center;">90</td><td style="text-align: center;">Yes</td><td style="text-align: center;">OBL</td></tr> <tr><td>2. <u>Phalaris arundinacea</u></td><td></td><td style="text-align: center;">10</td><td style="text-align: center;">No</td><td style="text-align: center;">FACW</td></tr> <tr><td>3. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>8. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>9. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>10. _____</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td style="text-align: center;">100</td> <td colspan="2" style="text-align: center;">=Total Cover</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Woody Vine Stratum</th> <th style="text-align: left;">(Plot size: <u>30</u>)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> <tr><td>1. _____</td><td></td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td><td></td></tr> <tr> <td colspan="2"></td> <td></td> <td colspan="2" style="text-align: center;">=Total Cover</td> </tr> </table>	Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	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Indicator Status	1. _____					2. _____								=Total Cover		<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Dominance Test worksheet:</td> </tr> <tr> <td>Number of Dominant Species That Are OBL, FACW, or FAC:</td> <td style="text-align: right;"><u>3</u> (A)</td> </tr> <tr> <td>Total Number of Dominant Species Across All Strata:</td> <td style="text-align: right;"><u>3</u> (B)</td> </tr> <tr> <td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td> <td style="text-align: right;"><u>100.0%</u> (A/B)</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Prevalence Index worksheet:</td> </tr> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>130</u></td> <td style="text-align: right;">x 1 = <u>130</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td style="text-align: right;">x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td style="text-align: right;">x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td style="text-align: right;">x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td style="text-align: right;">x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>170</u> (A)</td> <td style="text-align: right;"><u>210</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: right;">Prevalence Index = B/A = <u>1.24</u></td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Hydrophytic Vegetation Indicators:</td> </tr> <tr> <td colspan="2"><u> </u> 1 - Rapid Test for Hydrophytic Vegetation</td> </tr> <tr> <td colspan="2"><u>X</u> 2 - Dominance Test is >50%</td> </tr> <tr> <td colspan="2"><u>X</u> 3 - Prevalence Index is ≤3.0¹</td> </tr> <tr> <td colspan="2"><u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</td> </tr> <tr> <td colspan="2"><u> </u> Problematic Hydrophytic Vegetation¹ (Explain)</td> </tr> <tr> <td colspan="2">¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <td>Hydrophytic Vegetation Present?</td> <td style="text-align: center;">Yes <u>X</u> No _____</td> </tr> </table>	Dominance Test worksheet:		Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)	Total Number of Dominant Species Across All Strata:	<u>3</u> (B)	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.0%</u> (A/B)	Prevalence Index worksheet:		Total % Cover of:	Multiply by:	OBL species <u>130</u>	x 1 = <u>130</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>170</u> (A)	<u>210</u> (B)	Prevalence Index = B/A = <u>1.24</u>		Hydrophytic Vegetation Indicators:		<u> </u> 1 - Rapid Test for Hydrophytic Vegetation		<u>X</u> 2 - Dominance Test is >50%		<u>X</u> 3 - Prevalence Index is ≤3.0 ¹		<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		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SOIL

Sampling Point: C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 2/1	100					Loamy/Clayey	Small Gravel, Wet, Silty
14-20	10YR 4/2	70	10YR 2/1	20			Loamy/Clayey	
			10YR 5/4	10	C	M		Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):		Hydric Soil Present?	
Type: _____		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Depth (inches): _____			

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
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Field Observations:				Wetland Hydrology Present?	
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____		
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____		
(includes capillary fringe)					

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: MA2242 / Grass Lake Rd & Deep Lake Rd City/County: Lake Villa / Lake County Sampling Date: 11/3/2022
Applicant/Owner: Manhard Consulting, LTD. State: IL Sampling Point: D
Investigator(s): Lisa Pajon Section, Township, Range: NE S28 T46N R10E
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: 42.439678 Long: -88.063754 Datum: _____
Soil Map Unit Name: 840C2 Zurich and Ozaukee silt loams NWI classification: _____
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 _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: Center of slope	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
Sapling/Shrub Stratum (Plot size: <u>15</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>100</u> (A) <u>410</u> (B) Prevalence Index = B/A = <u>4.10</u>
Herb Stratum (Plot size: <u>5</u>) 1. <u>Sorghastrum nutans</u> 45 Yes FACU 2. <u>Solidago altissima</u> 30 Yes FACU 3. <u>Baptisia alba</u> 15 No FACU 4. <u>Solidago ptarmicoides</u> 5 No UPL 5. <u>Silphium laciniatum</u> 5 No UPL 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 100 =Total Cover	Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 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.
Woody Vine Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 2/1	100					Loamy/Clayey	Small gravel, silty
14-20	10YR 4/2	70	10YR 2/1	20		M	Loamy/Clayey	
			10YR 5/4	10	C	M		Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:
Same hydric soil but very dry in top 10"

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No hydro

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: MA2242 / Grass Lake Rd & Deep Lake Rd City/County: Lake Villa / Lake County Sampling Date: 11/3/2022
Applicant/Owner: Manhard Consulting, LTD. State: IL Sampling Point: E
Investigator(s): Lisa Pajon Section, Township, Range: NE S28 T46N R10E
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: 42.439678 Long: -88.063754 Datum: _____
Soil Map Unit Name: 840C2 Zurich and Ozaukee silt loams NWI classification: _____
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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: In wetland at edge of cattails	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
Sapling/Shrub Stratum (Plot size: <u>15</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: <table><tr><td>Total % Cover of:</td><td>Multiply by:</td></tr><tr><td>OBL species <u>100</u></td><td>x 1 = <u>100</u></td></tr><tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr><tr><td>FAC species <u>0</u></td><td>x 3 = <u>0</u></td></tr><tr><td>FACU species <u>0</u></td><td>x 4 = <u>0</u></td></tr><tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr><tr><td>Column Totals: <u>100</u> (A)</td><td><u>100</u> (B)</td></tr><tr><td colspan="2">Prevalence Index = B/A = <u>1.00</u></td></tr></table>	Total % Cover of:	Multiply by:	OBL species <u>100</u>	x 1 = <u>100</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>100</u> (B)	Prevalence Index = B/A = <u>1.00</u>	
Total % Cover of:	Multiply by:																
OBL species <u>100</u>	x 1 = <u>100</u>																
FACW species <u>0</u>	x 2 = <u>0</u>																
FAC species <u>0</u>	x 3 = <u>0</u>																
FACU species <u>0</u>	x 4 = <u>0</u>																
UPL species <u>0</u>	x 5 = <u>0</u>																
Column Totals: <u>100</u> (A)	<u>100</u> (B)																
Prevalence Index = B/A = <u>1.00</u>																	
Herb Stratum (Plot size: <u>5</u>) 1. <u>Typha angustifolia</u> <u>40</u> Yes OBL 2. <u>Scirpus atrovirens</u> <u>30</u> Yes OBL 3. <u>Carex stipata</u> <u>30</u> Yes OBL 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 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.																
Woody Vine Stratum (Plot size: <u>30</u>) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
Remarks: (Include photo numbers here or on a separate sheet.)																	

SOIL

Sampling Point: E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	98	10YR 4/6	2	C	M	Loamy/Clayey	Gravel and Debris in Top 8"
8-20	10YR 4/2	70	10YR 2/1	20	D	M	Loamy/Clayey	
			10YR 5/4	10	C	M		Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: <u>MA2242 / Grass Lake Rd & Deep Lake Rd</u>	City/County: <u>Lake Villa / Lake County</u>	Sampling Date: <u>11/3/2022</u>
Applicant/Owner: <u>Manhard Consulting, LTD.</u>	State: <u>IL</u>	Sampling Point: <u>F</u>
Investigator(s): <u>Lisa Pajon</u>	Section, Township, Range: <u>NE S28 T46N R10E</u>	
Landform (hillside, terrace, etc.): _____		Local relief (concave, convex, none): _____
Slope (%): _____	Lat: <u>42.439678</u>	Long: <u>-88.063754</u> Datum: _____
Soil Map Unit Name: <u>530D2 Ozaukee silt loam</u>		NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No _____ (If no, explain in Remarks.)		
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes <u>X</u> 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 _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: On slope north of C	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
1. _____																					
2. _____																					
3. _____																					
4. _____																					
5. _____																					
=Total Cover																					
Sapling/Shrub Stratum	(Plot size: <u>15</u>)				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>370</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.08</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>120</u> (A)	<u>370</u> (B)	Prevalence Index = B/A = <u>3.08</u>	
Total % Cover of:	Multiply by:																				
OBL species <u>0</u>	x 1 = <u>0</u>																				
FACW species <u>60</u>	x 2 = <u>120</u>																				
FAC species <u>10</u>	x 3 = <u>30</u>																				
FACU species <u>30</u>	x 4 = <u>120</u>																				
UPL species <u>20</u>	x 5 = <u>100</u>																				
Column Totals: <u>120</u> (A)	<u>370</u> (B)																				
Prevalence Index = B/A = <u>3.08</u>																					
1. <u>Salix interior</u>		<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Pyrus calleryana</u>		<u>10</u>	<u>Yes</u>	<u>UPL</u>																	
3. _____																					
4. _____																					
5. _____																					
=Total Cover																					
Herb Stratum	(Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Equisetum hyemale</u>		<u>50</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Solidago altissima</u>		<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Sorghastrum nutans</u>		<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Ratibida pinnata</u>		<u>10</u>	<u>No</u>	<u>UPL</u>																	
5. <u>Panicum virgatum</u>		<u>10</u>	<u>No</u>	<u>FAC</u>																	
6. _____																					
7. _____																					
8. _____																					
9. _____																					
10. _____																					
=Total Cover																					
Woody Vine Stratum	(Plot size: <u>30</u>)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>																
1. _____																					
2. _____																					
=Total Cover																					
Remarks: (Include photo numbers here or on a separate sheet.)																					

SOIL

Sampling Point: F

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
(includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			
No hydro			

Appendix D: Threatened and Endangered Species Consultation



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

JB Pritzker, Governor
Colleen Callahan, Director

November 14, 2022

Lisa Pajon
Natural Resources Consultant
402 W. Liberty Drive
Wheaton, IL 60187

**RE: Grass Lake Rd & Deep Lake Rd ment
Consultation Program
EcoCAT Review #2306326
Lake County**

Dear Mrs. Pajon:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The proposed action consists of the construction of a development with associated stormwater and utilities (42.440°, -88.069°).

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Illinois Natural Areas Inventory (INAI) Sites

**Deep Lake
Loon Lake
Sun Lake**

Illinois Nature Preserves Commission Lands
Sun Lake Nature Preserve

State Threatened or Endangered Species

**Blanding's Turtle (*Emydoidea blandingii*)
King Rail (*Rallus elegans*)
Least Bittern (*Ixobrychus exilis*)**

Due to the project scope and proximity to protected resources the Department recommends the following actions be taken to avoid adversely impacting listed species in the vicinity of the project:

Deep Lake INAI, Loon Lake INAI, Sun Lake INAI, & Sun Lake Nature Preserve

The Department has determined adverse impacts to these protected natural areas are unlikely.

Blanding's Turtle

To avoid adverse impacts to Blanding's Turtles, the Department recommends the following:

- All on-site personnel should be educated about this species and be instructed to stop work immediately and contact the Department (Brad Semel, Natural Heritage Division, 815-675-2386 ext. 216) if they are encountered in the project area. Fliers with photos of adult and juvenile Blanding's turtles, and life-history information, should be distributed to personnel.
- Exclusionary fencing should be installed around the work area, or at a minimum, to partition off any wetland areas before the active season (March 1st - November 1st). Exclusionary fencing should be trenched into the ground (a minimum of 4 inches) and inspected daily for Blanding's turtles. Fencing should be installed with turn-arounds at open ends and at any access openings needed in the fencing, in order to redirect animals away from openings.
- Excavations should be inspected daily for trapped wildlife and safely covered overnight. Soil or other potential turtle nesting medium stockpiles should also have exclusionary fencing installed around the perimeter to discourage turtle nesting and potential harm.
- A permanent exclusionary barrier between any wetlands and the project site should be incorporated into project plans to prevent turtles from entering areas where they may be adversely impacted by daily activity. The barrier should include turn-arounds where needed and be trenched into the soil a minimum of 4 inches.
- If erosion control blanket is to be used, the Department also recommends that wildlife-friendly plastic-free blanket be used around wetlands and adjacent to natural areas, if not feasible to implement project wide, to prevent the entanglement of native wildlife.

King Rail & Least Bittern

To avoid adverse impacts to King Rail and Least Bittern, the Department recommends the following:

- A 50-foot buffer should be maintained on all wetlands.
- When feasible, work near wetlands should be avoided between April 1st and September 30th to avoid the prime nesting and fledging season for these protected bird species.
- Any required night lighting should follow International Dark-Sky Association (IDA) guidance to minimize the effect of light pollution on wildlife; including shielding fixtures so no light travels upward, using "warm-white" or filtered LEDs (CCT < 3,000 K) to minimize blue emission, and avoiding over-lighting.

Given the above recommendations are adopted the Department has determined that impacts to these protected resources are unlikely. The Department has determined impacts to other protected resources in the vicinity of the project location are also unlikely.

In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.

Consultation on the part of the Department is closed unless the applicant desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed

action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal and should not be regarded as a final statement on the project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

This letter does not serve as permission to take any listed or endangered species. As a reminder, no take of an endangered species is permitted without an Incidental Take Authorization or the required permits. Anyone who takes a listed or endangered species without an Incidental Take Authorization or required permit may be subject to criminal and/or civil penalties pursuant to the *Illinois Endangered Species Act*, the *Fish and Aquatic Life Act*, the *Wildlife Code* and other applicable authority.

The Department also offers the following conservation measures be considered to help protect native wildlife and enhance natural areas in the project area:

- Good housekeeping practices should be implemented and maintained during and after construction to prevent trash and other debris from inadvertently blowing or washing into nearby natural areas.
- Post construction invasive species control should be considered, especially near any natural areas.

Please contact me with any questions about this review.

Sincerely,



Bradley Hayes
Manager, Impact Assessment Section
Division of Real Estate Services and Consultation
Office of Realty & Capital Planning
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
Bradley.Hayes@Illinois.gov
Phone: (217) 782-0031

Applicant: Gary R. Weber Associates, Inc.
Contact: Lisa Pajon
Address: 402 W. Liberty Drive
Wheaton, IL 60187

IDNR Project Number: 2306326
Date: 11/10/2022

Project: Grass Lake Rd & Deep Lake Rd
Address: Deep Lake Road, Lake Villa

Description: Proposed above ground development with associated stormwater and utilities

Natural Resource Review Results

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Deep Lake INAI Site
Loon Lake INAI Site
Sun Lake INAI Site
Sun Lake Nature Preserve
Blanding's Turtle (*Emydoidea blandingii*)
King Rail (*Rallus elegans*)
Least Bittern (*Ixobrychus exilis*)

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Lake

Township, Range, Section:
46N, 10E, 28



**IL Department of Natural Resources
Contact**
Bradley Hayes
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
U.S. Army Corps of Engineers

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

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By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

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November 21, 2022

Matt Eagle
Manhard Consulting, Ltd.
116 W. Illinois Street.
Chicago, IL 60604

RE: USFWS Threatened and Endangered Species IPaC Review Summary
Grass Lake Rd & Deep Lake Rd, Lake Cook County, Illinois

Dear Mr. Eagle,

Gary R. Weber Associates Inc. reviewed the U.S. Fish and Wildlife Information for Planning and Consultation (IPaC) website on November 10, 2022 for federally listed threatened and endangered species. The IPaC program utilizes known or expected range of species, as well as additional areas outside of the range in which activities may indirectly affect a species. This review represents an informal consultation and further coordination with USFWS may be required for a formal consultation.

According to the IPaC consultation, seven (7) species are thought to be present in this location of Lake County (see below). Based on the 11/3/2022 site review, potential habitat for these species is not present within the project area and therefore would not negatively affect threatened or endangered species.

Site Summary:

The study area (approximately 4.97-acres) consists of a turf field with a lightly a scrub-shrub border to the north and east. The field is an elevated building pad that was constructed around 1999.

The vegetated areas are entirely maintained, with mowed turf throughout the main area, and a narrow scrub-shrub community at the north boundary. The scrub-shrub consists of a few large trees and dense dogwood around the basin.

Habitat and Requirements:

Threatened – Northern long-eared bat (*Myotis septentrionalis*): No Affect

According to the USFWS guidance, conditions suitable for the Northern long-eared bat (NLEB) includes wooded areas characterized by the presence of roosting trees and an herbaceous understory community. The bats will spend the summer foraging and roosting before overwintering in caves and mines from late October to April. Summer roosting trees required by the bats are characterized by mature trees containing potential roosting features (PRF) such as peeling and crevice forming bark, cavities, and dead snags. Foraging can occur in a variety of habitats including upland forests, edge habitats, wetlands, riparian buffers, and floodplain forests. An open, herbaceous understory is beneficial to supporting insect abundance for the bats to feed on.

The current site conditions contain few large trees that contain PRF, however no canopy is present and adjacent areas are either paved or maintained turf. These conditions are not suitable as habitat for the NLEB.

Endangered – Piping Plover (*Charadrius melodus*): No Affect

According to USFWS guidance, the piping plover is a summer resident that inhabits shoreline and coastal areas of the Great Lakes during the summer breeding season. The plover is a shorebird that prefers breeding habitat consisting of open, sparsely vegetated areas with alkali or unconsolidated substrates. Foraging habitat consist of mud flats or ephemeral pools with abundant vertebrate populations. Critical habitat has been designated for this species along the Great Lakes shoreline.

Current site conditions are not suitable for the Piping Plover.

Threatened – Red Knot (*Calidris canutus rufa*): No Affect

According to USFWS guidance, the red knot is primarily occurs in Illinois during migration in the spring and fall. Spring migrants arrive in May and fall migrants arrive in July. The red knot is a shorebird that typically uses sandy, open shoreline along Lake Michigan for foraging, but has also been observed at water reservoirs.

Current site conditions are not suitable for the Red Knot.

Endangered – Karner Blue Butterfly (*Lycaeides melissa samuelis*): No Affect

According to USFWS guidance, the karner blue butterfly require environments characterized by dry, sandy areas with open woodlands capable of supporting Wild Blue Lupine populations. The lupine is the only food source for larval butterflies as well as required for adult oviposition. Foraging adults require diverse blooming nectar resources.

Current site conditions are not suitable for the Karner Blue Butterfly due to lack of lupine presence.

Endangered – Monarch Butterfly (*Danaus plexippus*): No Affect

According to USFWS Species Status Assessment Report, Monarch Butterflies require environments containing both diverse blooming nectar resources for foraging during breeding and migration, and sufficient milkweed (*Asclepias spp.*) populations for oviposition and larval feeding.

Due to mowing activity and lack of wildflower presence, current site conditions are not suitable for the Monarch Butterfly.

Threatened – Eastern Prairie Fringed Orchid (*Platanthera leucophaea*): No Affect

According to USFWS guidance, the eastern prairie fringed orchid (EPFO) occurs in a wide variety of habitats. It requires full sun for optimum growth and can occur in tall grass silt-loam or sand prairies, sedge meadows, and fens. It is adaptive to natural patch disturbance and other dynamic disturbance regimes. It is occasionally found in successional environments.

Current site conditions are not suitable for the EPFO as there are no fens, sedge meadows, or sand prairies.

Endangered – Pitcher's Thistle (*Cirsium pitcher*): No Affect

According to USFWS guidance, the Pitcher's Thistle occurs in open sand dunes and beach ridges along Lake Michigan. This species was once extirpated in Illinois but has been reintroduced in Lake County.

Current site conditions are not suitable for the Pitcher's thistle.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chicago Ecological Service Field Office
U.S. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 485-9337



In Reply Refer To:

November 10, 2022

Project Code: 2023-0014834

Project Name: Grass Lake Rd & Deep Lake Rd

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing

determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to be addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and

recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chicago Ecological Service Field Office

U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
(312) 485-9337

Project Summary

Project Code: 2023-0014834

Project Name: Grass Lake Rd & Deep Lake Rd

Project Type: New Constr - Above Ground

Project Description: Proposed above ground development with associated stormwater and utilities.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.439811750000004,-88.06377054473049,14z>



Counties: Lake County, Illinois

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.) There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Endangered
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Insects

NAME	STATUS
Karner Blue Butterfly <i>Lycaeides melissa samuelis</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Pitcher's Thistle <i>Cirsium pitcheri</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8153	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Gary R Weber Associates
Name: Michael Kellenberger
Address: 402 W. Liberty Drive
City: Wheaton
State: IL
Zip: 60187
Email: mkellenberger@grwainc.com
Phone: 6306687179

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LAND PLANNING ECOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE

402 W. LIBERTY DRIVE WHEATON, ILLINOIS 60187
TELEPHONE: 630-668-7197 FACSIMILE: 630-668-9693

NOTICE OF PUBLIC HEARING BEFORE THE PLAN COMMISSION
OF THE VILLAGE OF LAKE VILLA

NOTICE IS HEREBY GIVEN of a public hearing to be held by the Plan Commission of the Village of Lake Villa on January 19, 2023, at 7:00 p.m., or as soon thereafter as the Plan Commission's agenda permits, at the Village of Lake Villa Lehmann Mansion, 485 N. Milwaukee Ave., Lake Villa, Illinois, 60046.

NATURE OF REQUEST(S): The Petitioner requests consideration of a Petition for an amendment to the Conditional Use Permit previously approved for the Lake Tower Crossing Phase 3 Planned Development pursuant to Village of Lake Villa Ordinance No. 2020-07-07 and for an additional use for a Conditional Use Permit for the construction of Elderly Housing for the Property described below. The Property is presently zoned and classified as part of the Village's SB (Suburban Business) Zoning District, subject to the Lake Tower Crossing Phase 3 Planned Development. The Petitioner is also requesting rezoning to the UR-4 Zoning District to permit the construction, operation and maintenance of one three (3) story building consisting of up to fifty-two (52) senior housing apartment dwelling units having a mix of one- or two-bedroom apartments (intended for persons 55 years of age and older) and other related improvements, including parking, lighting, landscaping, and storm water management facilities which would be in lieu of the 91 apartments previously authorized by the aforesaid Ordinance No. 2020-07-07. The subject senior housing proposal may also require a modification of the phasing requirements set forth in Section 4(P) of Ordinance No. 2020-07-07. The Petitioner may also request certain other variations or exceptions from the Lake Villa Zoning Regulations or other provisions of the Lake Villa Village Code as may be identified in the zoning review and/or in the public hearing process before the Lake Villa Plan Commission, which would be granted by the requested CUP amendment.

OWNERS OF RECORD AND PETITIONERS: The Petitioner is Lincoln Avenue Capital, LLC, and the owner of record is Home State Bank, N.A.

ADDRESS AND LOCATION OF PROPERTY: The Property consists of approximately 5.208 acres, more or less, is located within the corporate limits of the Village of Lake Villa, is commonly known as 0 Deep Lake Road, Lake Villa, IL (Permanent Index Number 02-28-201-178) and is generally located on the west side of Deep Lake Road and south of both Grass Lake Road and Tower Drive in the Village of Lake Villa and is legally described as follows:

LEGAL DESCRIPTION OF PROPERTY ("the Property"):

LOT A IN LAKE TOWER CROSSING PLANNED UNIT DEVELOPMENT PHASE 2, BEING A RESUBDIVISION OF PART OF SECTION 28, TOWNSHIP 46 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS ACCORDING TO THE PLAT THEREOF RECORDED MAY 1, 2008 AS DOCUMENT NUMBER 6340408, IN THE VILLAGE OF LAKE VILLA, LAKE COUNTY, ILLINOIS.

Copies of the Petition and related plans are on file and available for inspection and/or copying at the office of the Village Clerk, 65 Cedar Avenue, Lake Villa, IL 60046 during the Village Clerk's normal business hours.

The Village of Lake Villa is subject to the requirements of the Americans with Disabilities Act of 1990. Individuals with disabilities who plan to attend this meeting and who require certain accommodations in order to allow them to observe and/or participate in this meeting, or who have questions regarding the accessibility of the meeting or the Village's facilities, are requested to contact the Village's ADA Coordinator at (847) 356-6100 promptly to allow the Village to make reasonable accommodations for those persons.

ALL INTERESTED PERSONS ARE INVITED TO ATTEND THESE PUBLIC HEARINGS AND WILL BE GIVEN AN OPPORTUNITY TO BE HEARD, AND SUCH PERSONS, IF THEY SO REQUEST, WILL BE GIVEN THE OPPORTUNITY TO INQUIRE OF AND CROSS-EXAMINE WITNESSES FOR THE PETITIONERS.

/s/ Michael Strong
Village Administrator, Village of Lake Villa

0 Deep Lake Road – Starling Senior Apartment Development Public Hearing Notification Area

