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. <u>Status Hearing</u>: 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. <u>Public Hearing</u>: 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

65 Cedar Avenue P.O. BOX 519 Lake Villa, Illinois 60046 (847) 356-6100 www.lake-villa.org

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")

Property OwnerProperty LocationZoning DistrictHome State Bank N.A.0 Deep Lake Road – Vacant LotSuburban Business40 Grant Streetsouth of Tower CrossingSBCrystal Lake, IL 60014(the "Subject Property")

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

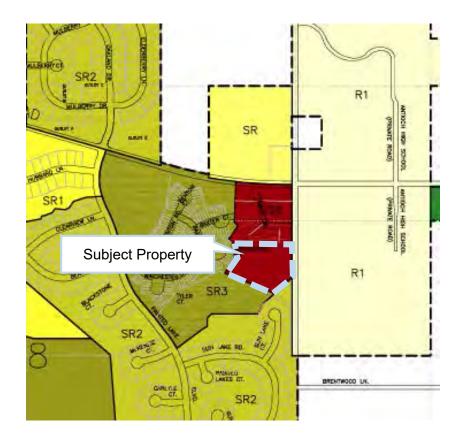
Procedural Summary

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.

<u>Summary of the Request and Review of the Proposed Plan</u> – 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 eastwest 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	Elderly housing
		conditional use	
Front	20	30 feet	151 feet
Rear	30	6 (first) + 4 (second)	Approximately 60 feet.
		+1 (each additional	
		unit) = 60 feet	
Total Side Yard	15	15 (first) + 8 (second)	303 feet
		+2 (each additional	
		unit) = 123 feet	
Side Yard	50	6 (first) + 4 (second)	76 feet
		+ 1 (each additional	
		unit) = 60 feet	
Min. Setback Abutting a	50	30 feet	151 feet
Street			
Min. Setback Abutting a	50	6 (first) + 4 (second)	76 feet
Residential Zone		+ 1 (each additional	
		unit) = 60 feet	
Maximum FAR	.80	.40	.09
Maximum Height of	40	50	40
Principal Use			
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	See below
	application)	
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. <u>Location</u>: 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.

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. <u>Lot Area</u>: 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







Map Printed on 1/12/2023



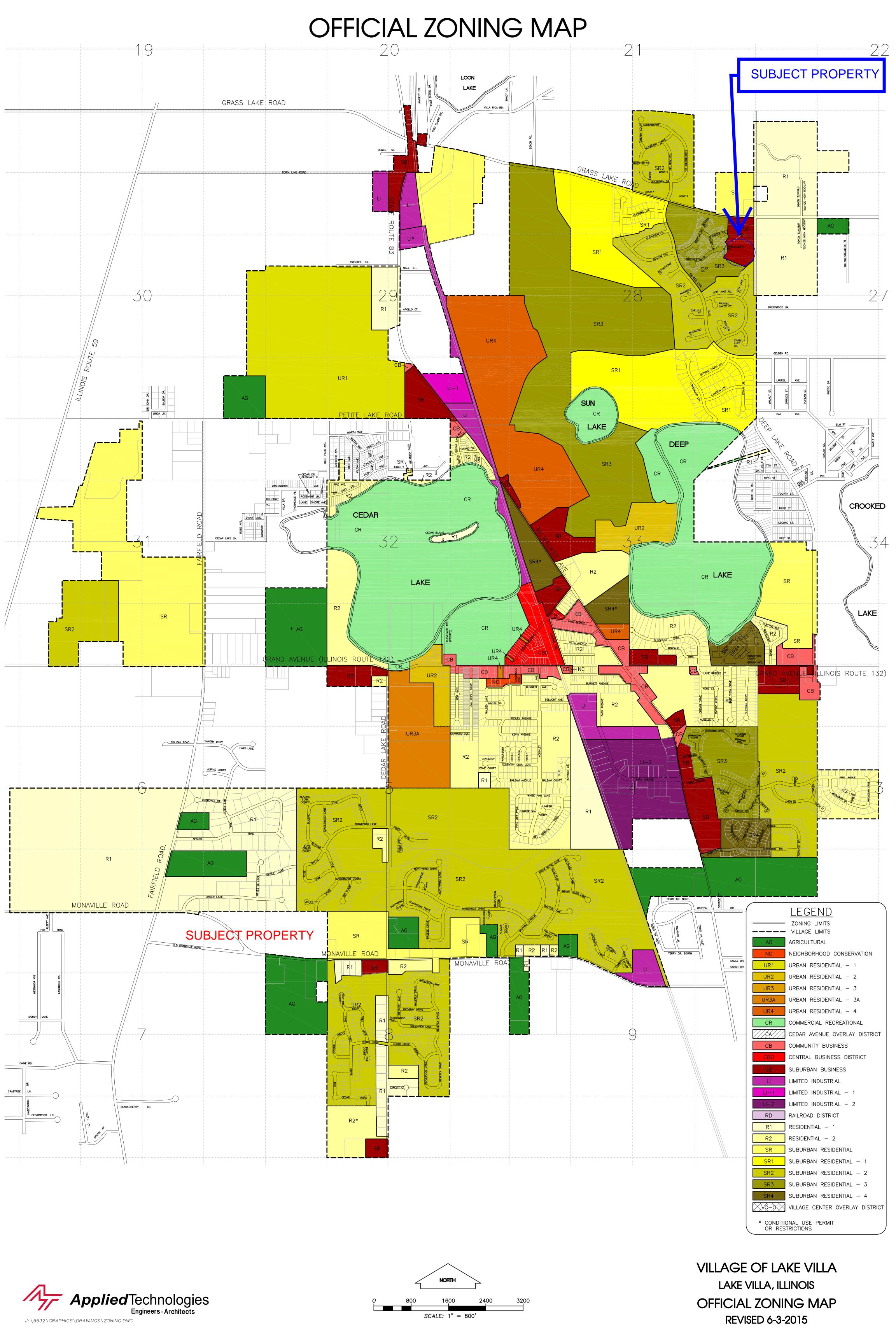
Override 1

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.



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

Plea	se 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), <u>Lincoln Avenue Capital</u> 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 street name) 170 feet south (direction) (street name) (direction) (street name)
V.	Permanent Real Estate Tax (PIN) Number: <u>SEE EXHIBIT A</u>
	Assessed Valuation for the last three years:
	20_22_ \$_71,300
	20_21
	20_20

		classified under the Lake Villary dare presently [improved] [u	<u> </u>
	vacant land.		
VII.		ing uses, of which they are de	prohibited from installing and sirous.
	The proposed use is a three of up to 52 units.	-story senior housing develops	ment (aged 55 and older)
VIII.	the property already allows mult of one-bedroom and two-bedroo bedroom and two bedroom units minimis impact on the school sy	heir request is justified in that ifamily residential of up to 91 units m units. Our proposed development would be a far less dense and intenstem as the apartment would be for sy you believe the requested character to be Multi-Family.	comprised of a mix t of up to 52 units (a mix of one- use use and would have de seniors. Moreover, the Comprehensive Plan
regula recom	als and/or the Village of Lak tions, will hold a public hea mend to the Village Board o	e Villa Plan Commission, pur ring as provided by ordinance	of Lake Villa Zoning Board of suant to the Village's rules and a and as a result of said hearing amend, or modify the use(s) to es be:
A. B. C. D. E.	Issued a Condition Issued a Planned	ne present zone to the conal Use Permit. I Unit Development on from Ordinance.	zone
IX. 1	PETITIONER'S NAME:	Hume An [Print/Type Name] [Signature] 3048 Mary Kay Ln. [Address] Glenview, IL 60026 312-286-8128 [Phone Number]\	

- 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.

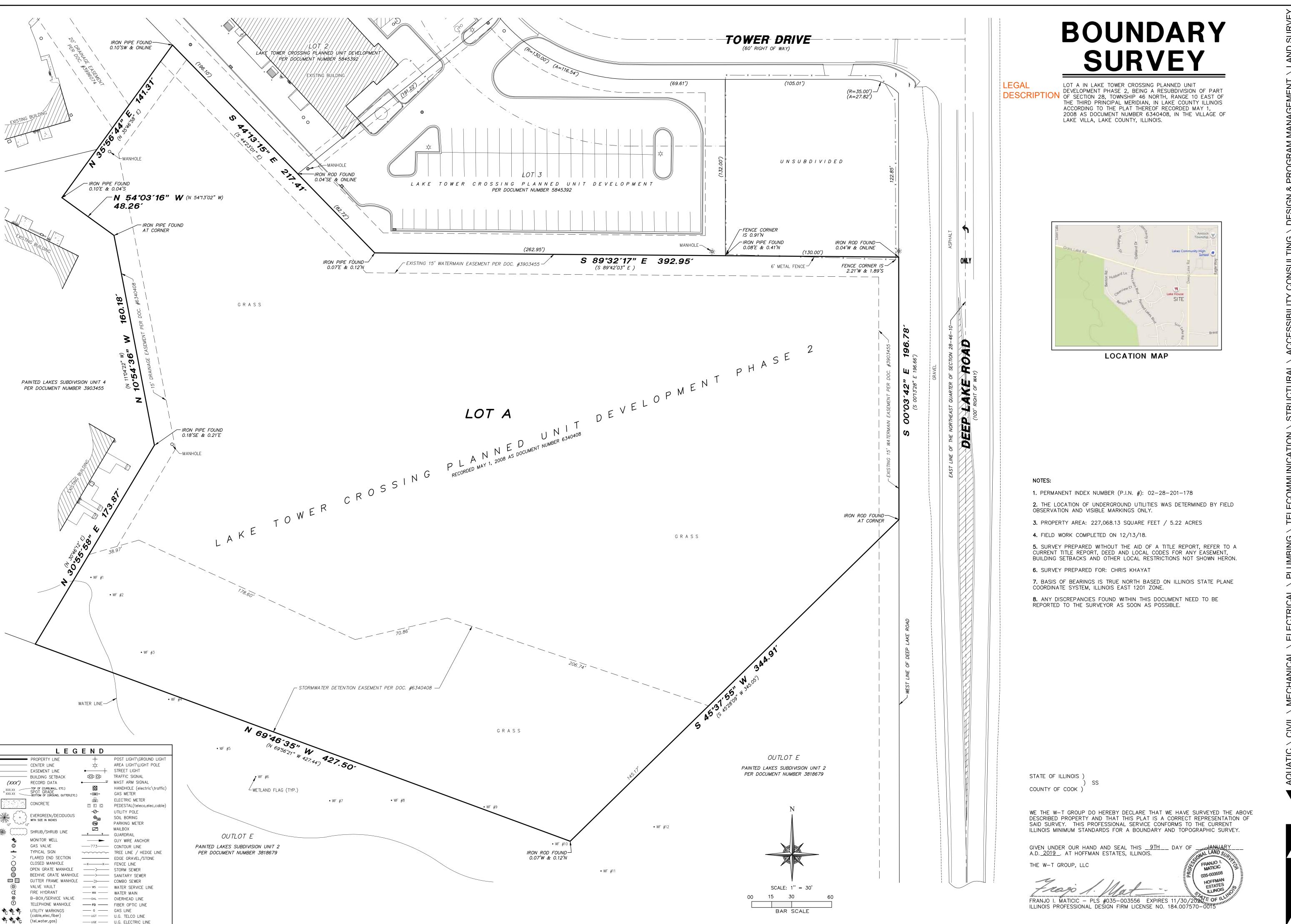
For office use only		
Zoning change fee:	\$	
Variation fee:	\$	
CUP fee:	\$	
PUD fee:	\$ 750	
Escrow:	\$	
Total amount received:	\$ 750	

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 <u>Deep Lake Road</u> and <u>Tower Dr.</u> ;
FLOOD PLAIN: The above property(ies) [is or are] [is not or are not] located in a flood plain.

EQUALIZED ASSESSED VALUATIONS:

	Permanent Index	Year	Equalized Assessed
	Number		Valuation
(A)	P.I.N.	2021	\$66,233 (taxable EAV)
	02-28-201-178	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	



STARLING

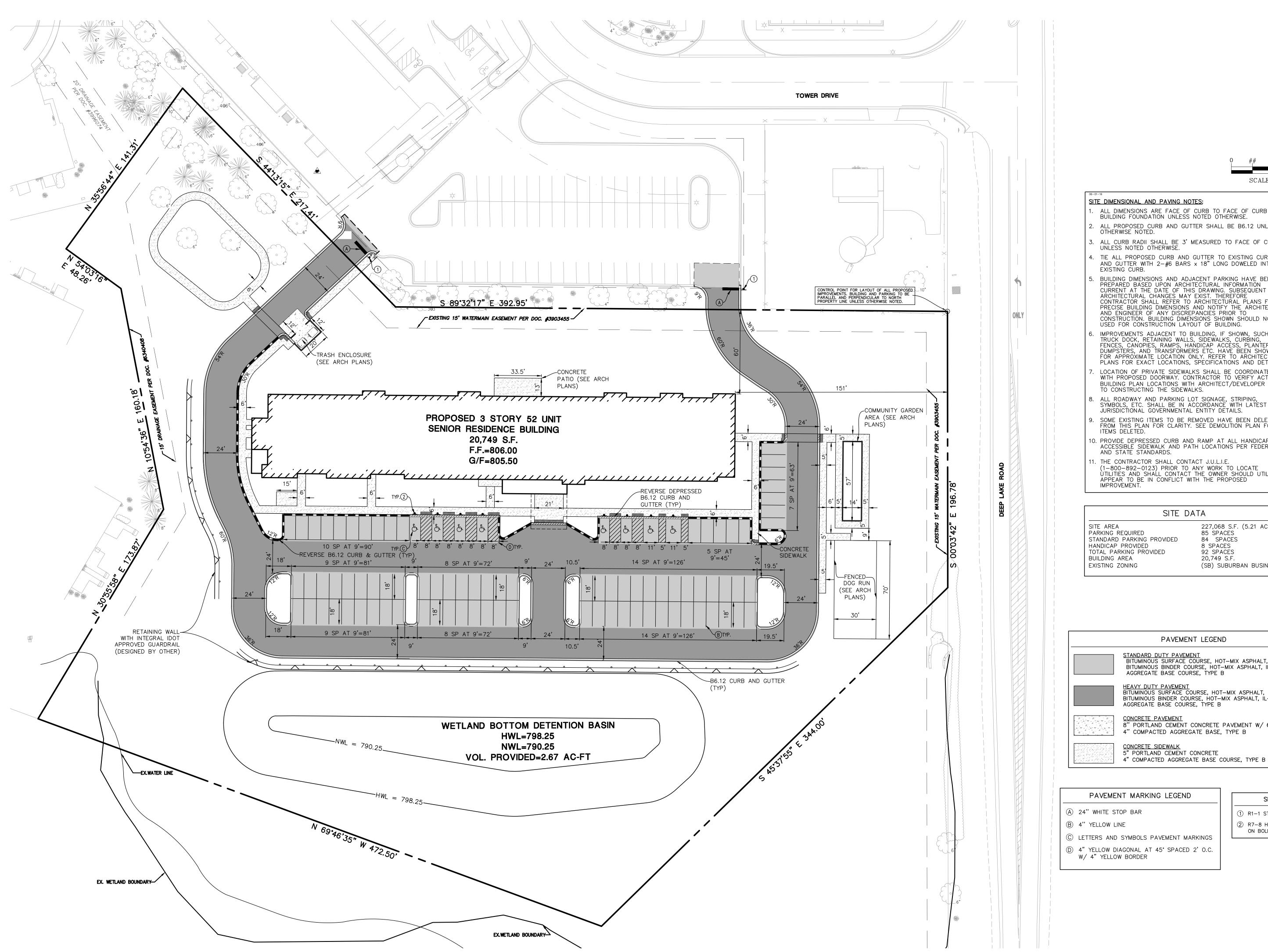
01/09/19

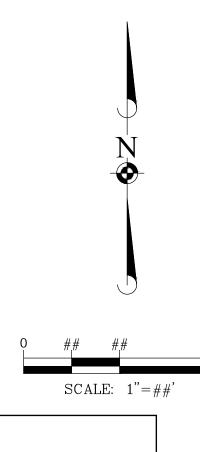
CLIENT

CHECK:FIM DRAWN:BMB

JOB: D18057

SUR-2 **BOUNDARY SURVEY**





SITE DIMENSIONAL AND PAVING NOTES:

- ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE. 2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
- 3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
- TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
- BUILDING DIMENSIONS AND ADJACENT PARKING 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 NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
- IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCÉSS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
- LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
- ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
- SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
- 10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
- 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.

SITE DATA

SITE AREA PARKING REQUIRED STANDARD PARKING PROVIDED HANDICAP PROVIDED TOTAL PARKING PROVIDED

227,068 S.F. (5.21 ACRES) 85 SPACES 84 SPACES 8 SPACES 92 SPACES

20,749 S.F.

(SB) SUBURBAN BUSINESS

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50 BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50 AGGREGATE BASE COURSE, TYPE B

HEAVY DUTY PAVEMENT
BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50 BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50 AGGREGATE BASE COURSE, TYPE B **CONCRETE PAVEMENT**

5" PORTLAND CEMENT CONCRETE

8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF 4" COMPACTED AGGREGATE BASE, TYPE B

CONCRETE SIDEWALK

PAVEMENT MARKING LEGEND

- (A) 24" WHITE STOP BAR
- B 4" YELLOW LINE
- © LETTERS AND SYMBOLS PAVEMENT MARKINGS
- (D) 4" YELLOW DIAGONAL AT 45" SPACED 2' O.C. W/ 4" YELLOW BORDER

SIGN LEGEND

(1) R1-1 STOP SIGN 2 R7-8 HANDICAP PARKING SIGN ON BOLLARD

> PROJ. MGR.: MDE 11-30-22 <u>1"=30'</u> SCALE:

APARTME

ILLINOIS

NILL

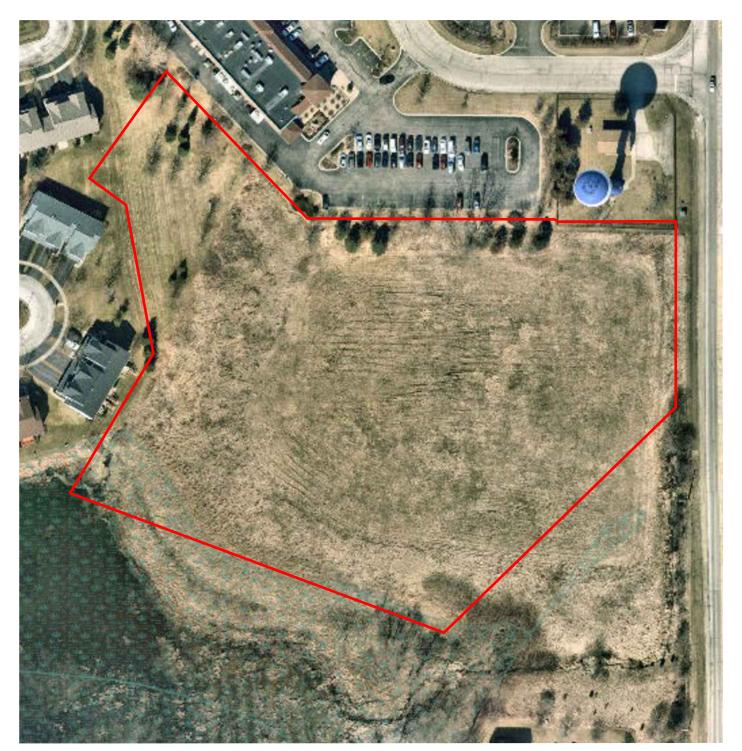
AKE

SHEET LAC.LVIL01





LAKE VILLA SENIOR LOFTS

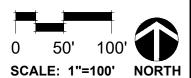


LEGEND











Grass Lake Rd & Deep Lake Rd

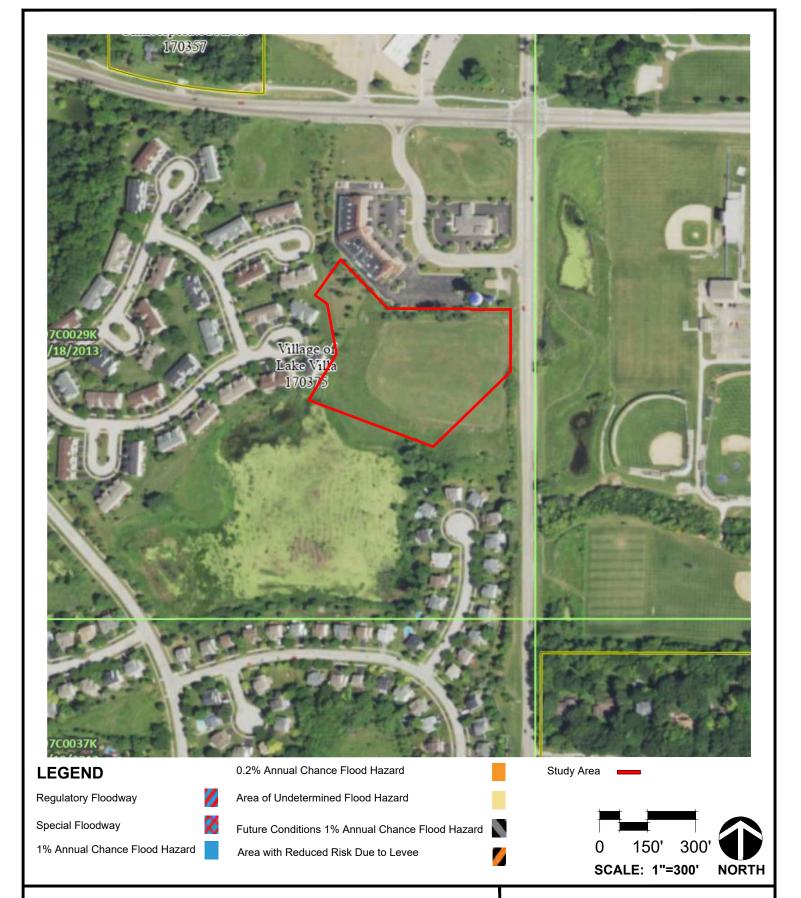
Lake Villa, IL

MA2242 Manhard Consulting, LTD. PHOTO OF AREA OF ZONING CHANGE REQUESTED

Provided by: Lake County Parcel Viewer

EXHIBIT C

Created by: MGK Checked





Grass Lake Rd & Deep Lake Rd

Lake Villa, IL

MA2242 Manhard Consulting, LTD.

FLOOD INSURANCE MAP

Provided by: Federal Emergency Management Agency

EXHIBIT F

eated by: MGK Checked

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.

Signature of Property Owner

David Kerth, Chief Credit Officer

<u>Home State Bank N.A.</u>

Printed Name of Property Owner

Preliminary Engineering Plans for

STARLING SENIOR APARTMENTS

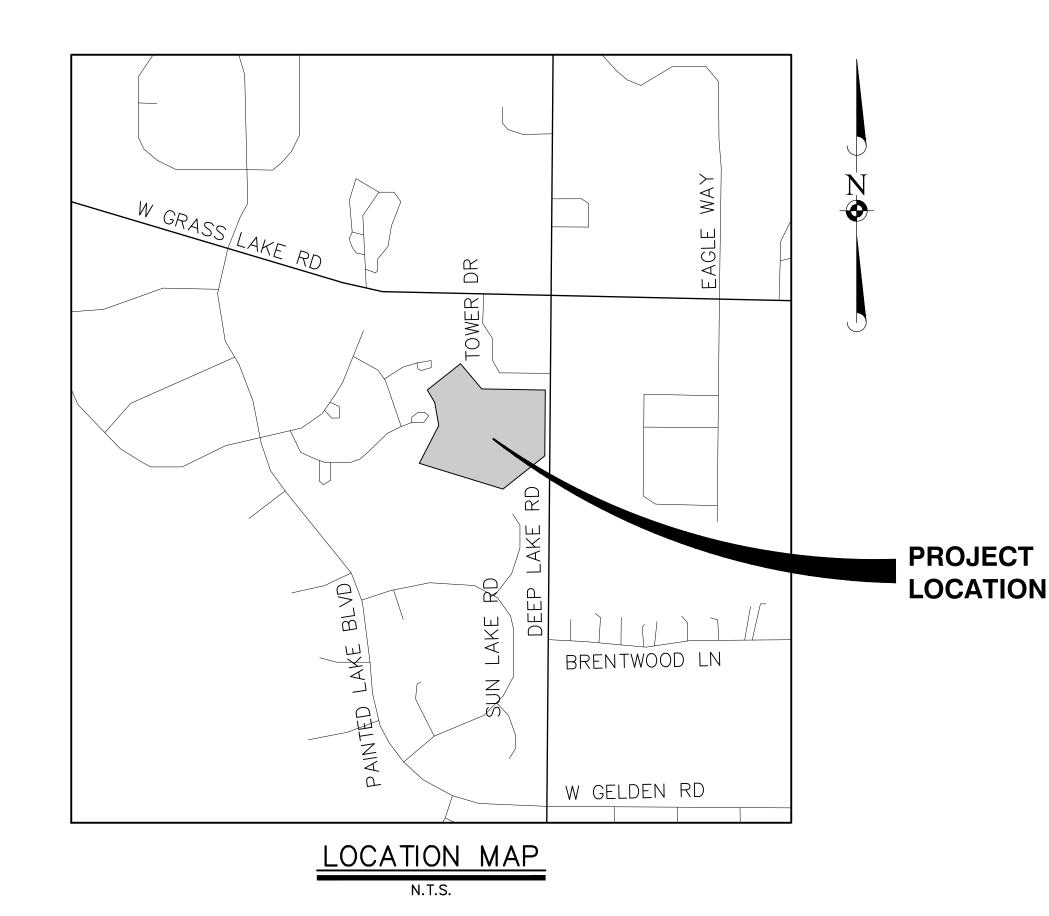
STANDARD SYMBOLS

EXISTING STORM SEWER SANITARY SEWER COMBINED SEWER FORCEMAIN DRAINTILE WATER MAIN ELECTRIC TELEPHONE OVERHEAD WIRES SANITARY MANHOLE STORM MANHOLE CATCH BASIN STORM INLET HAY BALES VALVE IN VAULT VALVE IN BOX FIRE HYDRANT BUFFALO BOX FLARED END SECTION STREET LIGHT SUMMIT / LOW POIN RIM ELEVATION INVERT ELEVATION DITCH OR SWALE DIRECTION OF FLOW OVERFLOW RELIEF SWALI 1 FOOT CONTOURS ========= CURB AND GUTTER ZZZZZZREVERSE CURB AND GUTTER SIDEWALK DETECTABLE WARNINGS EASEMENT LINE SETBACK LINE MAIL BOX TRAFFIC SIGNAL POWER POLE GUY WIRE GAS VALVE HANDHOLE ELECTRICAL EQUIPMENT © I TELEPHONE EQUIPMENT CHAIN-LINK FENCE 792.8 G SPOT ELEVATION \sim BRUSH/TREE LINE DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR) CONIFEROUS TREE WITH HEIGHT IN FEET (TBR) SILT FENCE RETAINING WALL WETLAND

<u>ABBREVIATIONS</u>

	06-01-1	6			
ADJ. ARCH B.A.M. B-B B/C B-B B-B B.E. B.O. CONT CONT DIWM DT E-EV. F.P. F.P. FES	ADJUST AGGREGATE ARCHITECT BITUMINOUS AGGREGATE MIXTURE BACK TO BACK BACK OF CURB BOTTOM OF PIPE BACK OF WALK BUFFALO BOX BITUMINOUS BENCHMARK BY OTHERS COMMERCIAL ENTRANCE CATCH BASIN CENTERLINE CORRUGATED METAL PIPE CONTROL CLEANOUT CONCRETE CUBIC YARD DITCH DIAMETER DUCTILE IRON PIPE DUCTILE IRON WATER MAIN DOWNSPOUT DRAIN TILE ELECTRIC EDGE TO EDGE ELEVATION EDGE OF PAVEMENT EXISTING FIELD ENTRANCE FACE TO FACE FINISHED FLOOR FLARED END SECTION	F/L FM G /F GW HH HWLD INP T D. MM/E MHN.NWL PCC PGL PP PT C PVC PVI P P. R	FLOW LINE FORCE MAIN GROUND GRADE AT FOUNDATION GUY WIRE HEADWALL HANDHOLE HIGH WATER LEVEL HYDRANT INLET INVERT IRON PIPE LEFT MAXIMUM MAILBOX MEET EXISTING MANHOLE MINIMUM NORMAL WATER LEVEL PRIVATE ENTRANCE POINT OF CURVATURE POINT OF COMPOUND CURVE PROFILE GRADE LINE POINT OF INTERSECTION PROPERTY LINE POWER POLE PROPOSED POINT OF VERTICAL CURVATURE POINT OF VERTICAL CURVATURE POINT OF VERTICAL INTERSECTION POINT OF VERTICAL INTERSECTION POINT OF VERTICAL INTERSECTION POINT OF VERTICAL TANGENCY PAVEMENT PUBLIC UTILITY & DRAINAGE EASEMENT RADIUS	R.O.W. RCP REM REV RR RT SAN SFLD. SIL STA. STD SW T T A T/F T/W T/WALL TEMP TRANS V.CP V.V. WM	RIGHT—OF—WAY REINFORCED CONCRETE PIPE REMOVAL REVERSE RAILROAD RIGHT SANITARY SQUARE FOOT SHOULDER STREET LIGHT SANITARY MANHOLE STORM STATION STANDARD SIDEWALK SQUARE YARDS TO BE REMOVED TELEPHONE TYPE A TOP OF CURB TOP OF FOUNDATION TOP OF PIPE TOP OF WALK TOP OF WALK TOP OF WALK TOP OF WALL TEMPORARY TRANSFORMER VALVE BOX VITRIFIED CLAY PIPE VALVE VAULT WATER MAIN

0 DEEP LAKE ROAD VILLAGE OF LAKE VILLA, ILLINOIS



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS AND DEMOLITION PLAN
3	SITE DIMENSIONAL & PAVING PLAN
4	GRADING PLAN
5	UTILITY PLAN- NORTH
6	UTILITY PLAN- SOUTH

NOTE

THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A SURVEY PREPARED BY WT GROUP, LLC DATED JANUARY 9, 2019. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY MANHARD CONSULTING AND THE CLIENT IN WRITING OF ANY DIFFERING CONDITIONS. MANHARD CONSULTING HAS NOT VERIFIED THIS SURVEY AND IS NOT RESPONSIBLE FOR THE ACCURACY OF THE SURVEY BOUNDARY AND/OR TOPOGRAPHY.

LINCOLN AVENUE CAPITAL 401 WILSHIRE BLVD SUITE 1070 SANTA MONICA, CA 90401

PH: 424-222-8253



BENCHMARKS:

SITE BENCHMARK #1 - SET CROSS ON ARROW BOLT OF HYDRANT LOCATED APPROXIMATELY 23.83' N OF GRASS LAKE ROAD AND 737.5' W OF DEEP LAKE ROAD, AS SHOWN ON SHEET SUR-1. ELEVATION=800.95' (NAVD88)

SITE BENCHMARK #2 - SET CROSS ON ARROW BOLT OF HYDRANT LOCATED APPROXIMATELY 2.3' N OF TOWER DRIVE AND 214.4' W OF DEEP LAKE ROAD, AS SHOWN ON SHEET SUR-4. ELEVATION=814.68' (NAVD88)

SITE BENCHMARK #3 - SET RAILROAD SPIKE IN UTILITY POLE LOCATED APPROXIMATELY 435.7' S OF TOWER DRIVE AND 19.9' W OF DEEP LAKE ROAD, AS SHOWN ON SHEET SUR-6. ELEVATION=809.61' (NAVD88)

SITE BENCHMARK #4 — SET CROSS ON SOUTHWEST BOLT AT TOP OF HYDRANT LOCATED APPROXIMATELY 22.9' NOF GRASS LAKE ROAD AND 137.8' WOF DEEP LAKE ROAD, AS SHOWN ON SHEET SUR—2. ELEVATION=807.34' (NAVD88)



	<u>UTILITY CONTACTS</u>		
	ELECTRIC COMED	WATER VILLAGE OF LAKE VILLA	
	(630) 576-7094	(847) 356-6100 CONTACT: GLENN MCCOLLUM	
_	GAS	TELEPHONE	
	NICOR GAS	AT&T DISTRIBUTION	
	(630) 388-2362	(800) 288-2020	
	SEWER VILLAGE OF LAKE VILLA		
	(847) 356-6100 CONTACT: GLENN MCCOLLUM		

TS

CONStruction Managers • Environmental Scientists • Landscape Au

LAKE VILL

ILLINOIS

SENIOR

ARLING

ST

PROJ. MGR.: MDE

PROJ. ASSOC.: MJC

DRAWN BY: SB

DATE: 12-29-22

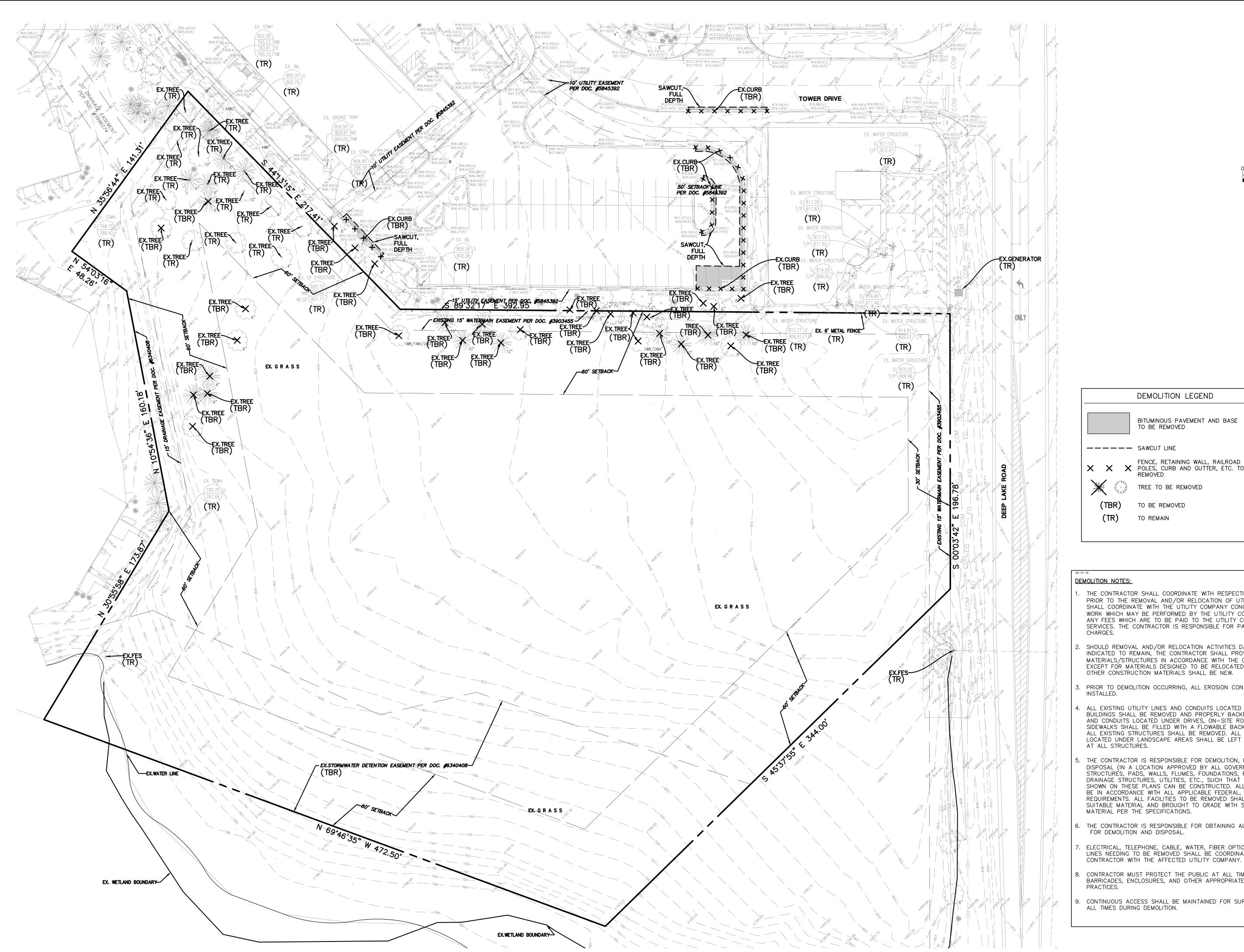
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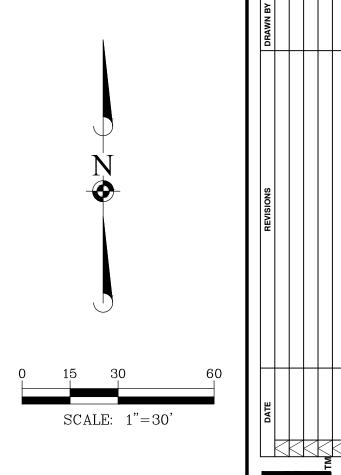
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MANHARD CONSULTING, LTD. IS NOT RESPONSIBLE FOR THE SAFETY OF ANY PARTY AT OR ON THE CONSTRUCTION SITE. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ANY OTHER PERSON OR ENTITY PERFORMING WORK OR SERVICES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR THE JOB SITE SAFETY OF PERSONS ENGAGED IN THE WORK OR THE MEANS OR METHODS OF CONSTRUCTION.





DEMOLITION LEGEND

BITUMINOUS PAVEMENT AND BASE TO BE REMOVED

FENCE, RETAINING WALL, RAILROAD TIES, POLES, CURB AND GUTTER, ETC. TO BE REMOVED TREE TO BE REMOVED

TO BE REMOVED

TO REMAIN

DEMOLITION NOTES:

- THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING FOR ALL FEES AND
- SHOULD REMOVAL AND/OR RELOCATION ACTIVITIES DAMAGE FEATURES INDICATED TO REMAIN, THE CONTRACTOR SHALL PROVIDE NEW MATERIALS/STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. EXCEPT FOR MATERIALS DESIGNED TO BE RELOCATED ON THIS PLAN, ALL OTHER CONSTRUCTION MATERIALS SHALL BE NEW.
- PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE
- ALL EXISTING UTILITY LINES AND CONDUITS LOCATED UNDER PROPOSED BUILDINGS SHALL BE REMOVED AND PROPERLY BACKFILLED. ALL UTILITY LINES AND CONDUITS LOCATED UNDER DRIVES, ON-SITE ROADS, PARKING LOTS OR SIDEWALKS SHALL BE FILLED WITH A FLOWABLE BACKFILL AND END PLUGGED. ALL EXISTING STRUCTURES SHALL BE REMOVED. ALL EXISTING UTILITY LINES LOCATED UNDER LANDSCAPE AREAS SHALL BE LEFT IN PLACE AND PLUGGED AT ALL STRUCTURES.
- THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND LAWFUL DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
- ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED SHALL BE COORDINATED BY THE
- CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, AND OTHER APPROPRIATE BEST MANAGEMENT
- CONTINUOUS ACCESS SHALL BE MAINTAINED FOR SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION.

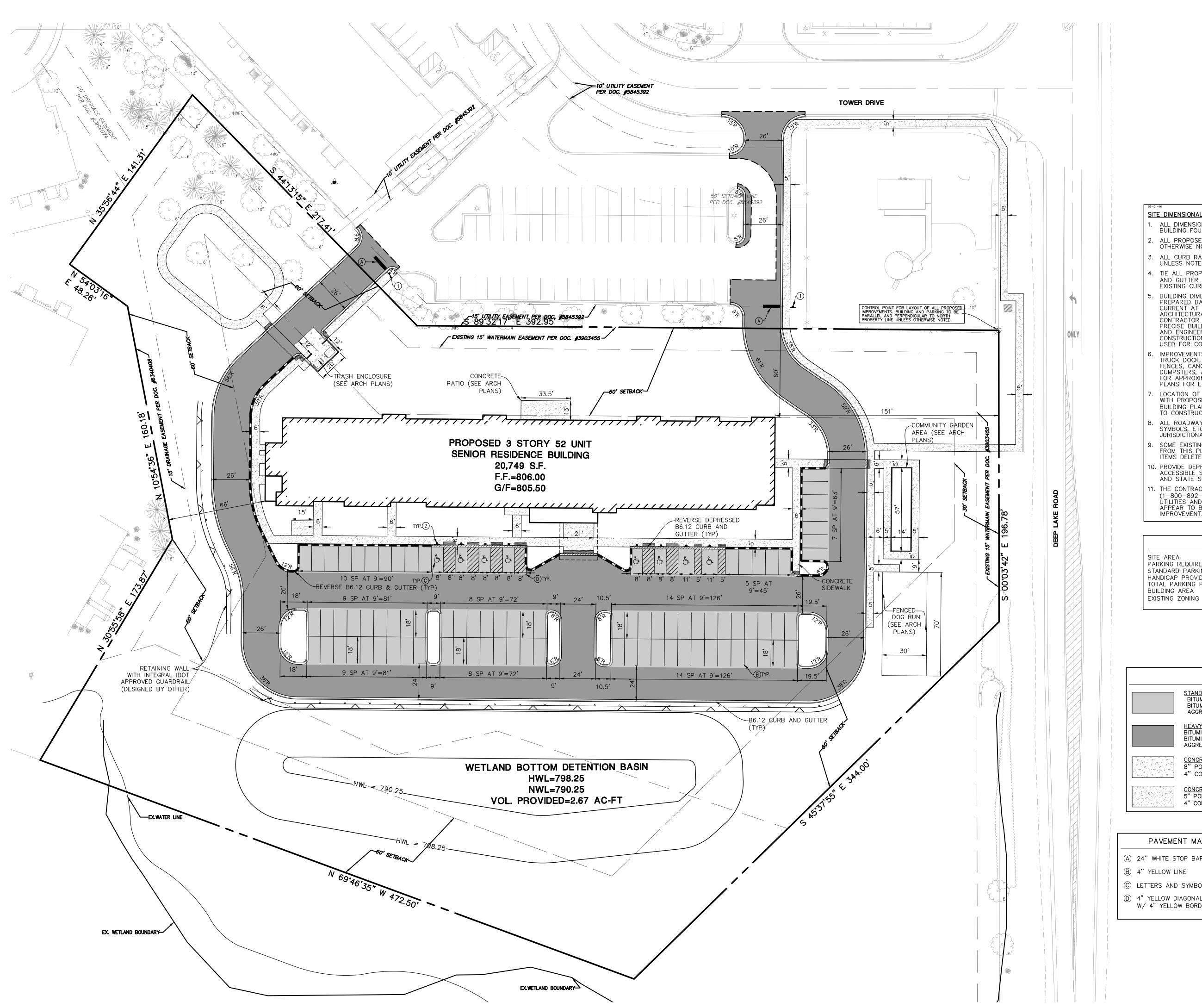
DEMOI VILLA, ILLINOIS

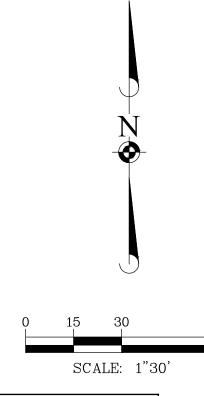
SENIOR

LAKE

PROJ. MGR.: MDE 12-29-22

<u>1"=30'</u> SCALE:





SITE DIMENSIONAL AND PAVING NOTES:

- ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE. 2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
- 3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
- TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
- BUILDING DIMENSIONS AND ADJACENT PARKING 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 NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
- IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCÉSS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
- LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
- ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
- SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
- 10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
- 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.

SITE DATA

SITE AREA PARKING REQUIRED STANDARD PARKING PROVIDED HANDICAP PROVIDED TOTAL PARKING PROVIDED

227,068 S.F. (5.21 ACRES) 85 SPACES 84 SPACES 8 SPACES 92 SPACES

20,749 S.F.

(SB) SUBURBAN BUSINESS

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50 BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50 AGGREGATE BASE COURSE, TYPE B

HEAVY DUTY PAVEMENT
BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50 BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50 AGGREGATE BASE COURSE, TYPE B

> **CONCRETE PAVEMENT** 8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF 4" COMPACTED AGGREGATE BASE, TYPE B

CONCRETE SIDEWALK 5" PORTLAND CEMENT CONCRETE 4" COMPACTED AGGREGATE BASE COURSE, TYPE B

PAVEMENT MARKING LEGEND

(A) 24" WHITE STOP BAR

B 4" YELLOW LINE

© LETTERS AND SYMBOLS PAVEMENT MARKINGS

(D) 4" YELLOW DIAGONAL AT 45" SPACED 2' O.C. W/ 4" YELLOW BORDER

SIGN LEGEND

(1) R1-1 STOP SIGN

(2) R7-8 HANDICAP PARKING SIGN ON BOLLARD

> PROJ. MGR.: MDE 12-29-22 <u>1"=30'</u> SCALE:

APARTMENT

SENIOR

STARLING

ILLINOIS

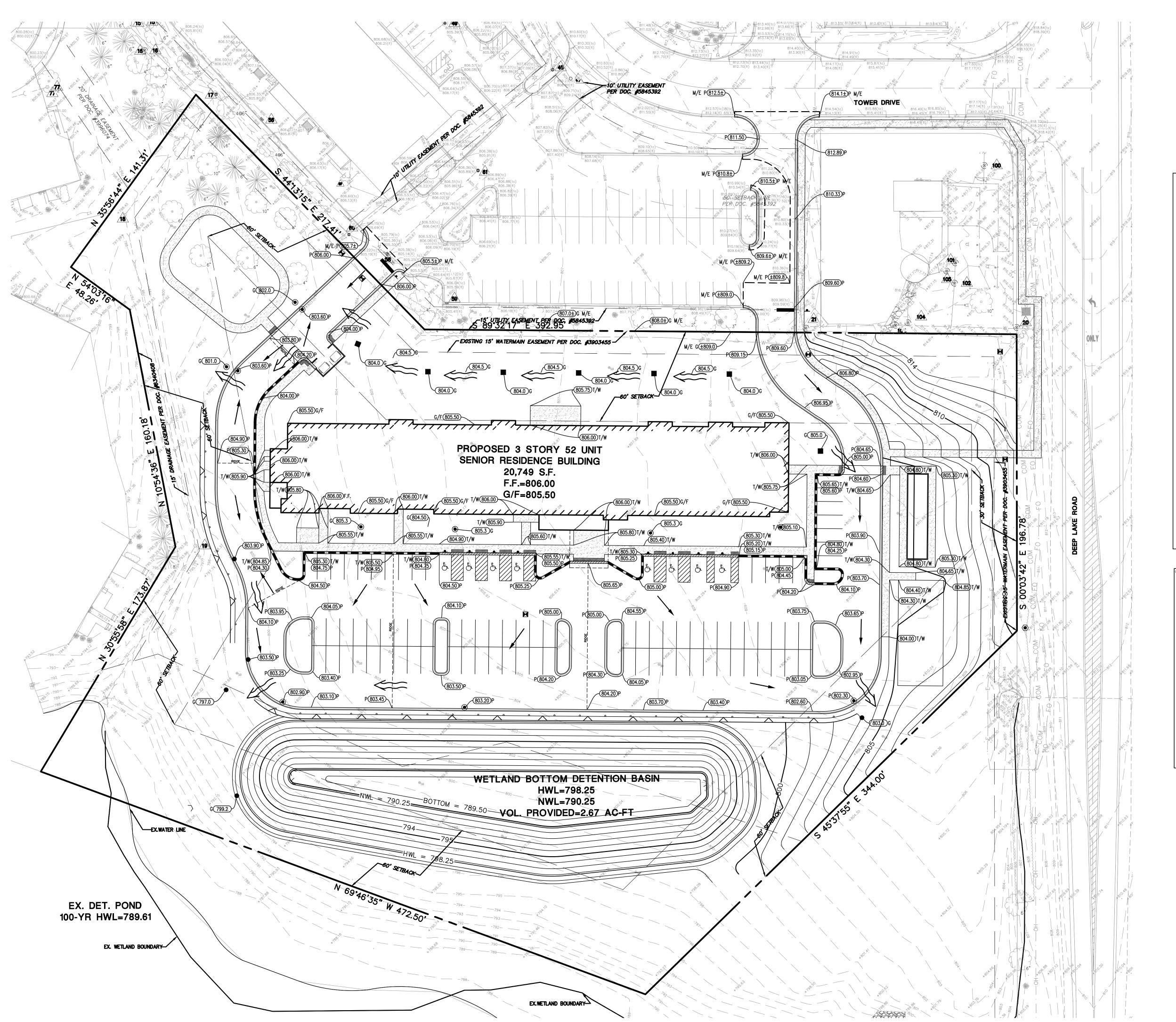
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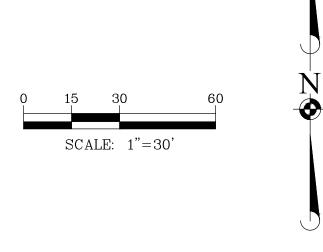
LAKE

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SITE

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GRADING NOTES:

- RETAINING WALL DESIGN TO BE PROVIDED BY OTHERS.
- . PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
- ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
- MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED
- 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 BEGINNING GRADING OPERATIONS. 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.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION 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 NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- . 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.
- 9. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
- 10. EXISTING TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS AS PREPARED BY WT GROUP, LLC ON JANUARY 9, 2019. CONTRACTOR SHALL FIELD CHECK EXISTING ELEVATIONS AND CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
- TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H: 1V UNLESS OTHERWISE NOTED.

GRADING PLAN LEGEND		
764	PROPOSED 1 FOOT CONTOURS	
792.8 G	PROPOSED SPOT ELEVATION	
F.F.	PROPOSED FINISHED FLOOR ELEVATION	
G/F	PROPOSED GRADE AT FOUNDATION	
Р	PROPOSED PAVEMENT ELEVATION	
T/C	PROPOSED TOP OF CURB	
T/W	PROPOSED TOP OF WALK	
T/WALL	PROPOSED TOP OF WALL	
M/E	MEET EXISTING	
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL	
~~	PROPOSED DITCH OR SWALE	
	PROPOSED DIRECTION OF FLOW	
	OVERFLOW RELIEF SWALE	
RIDGE	PROPOSED RIDGE LINE	
0.5)	PROPOSED DEPTH OF PONDING	
	RETAINING WALL	
(L)	PROPOSED SWALE LOW POINT	
<u>\$</u>	PROPOSED SWALE SUMMIT	

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

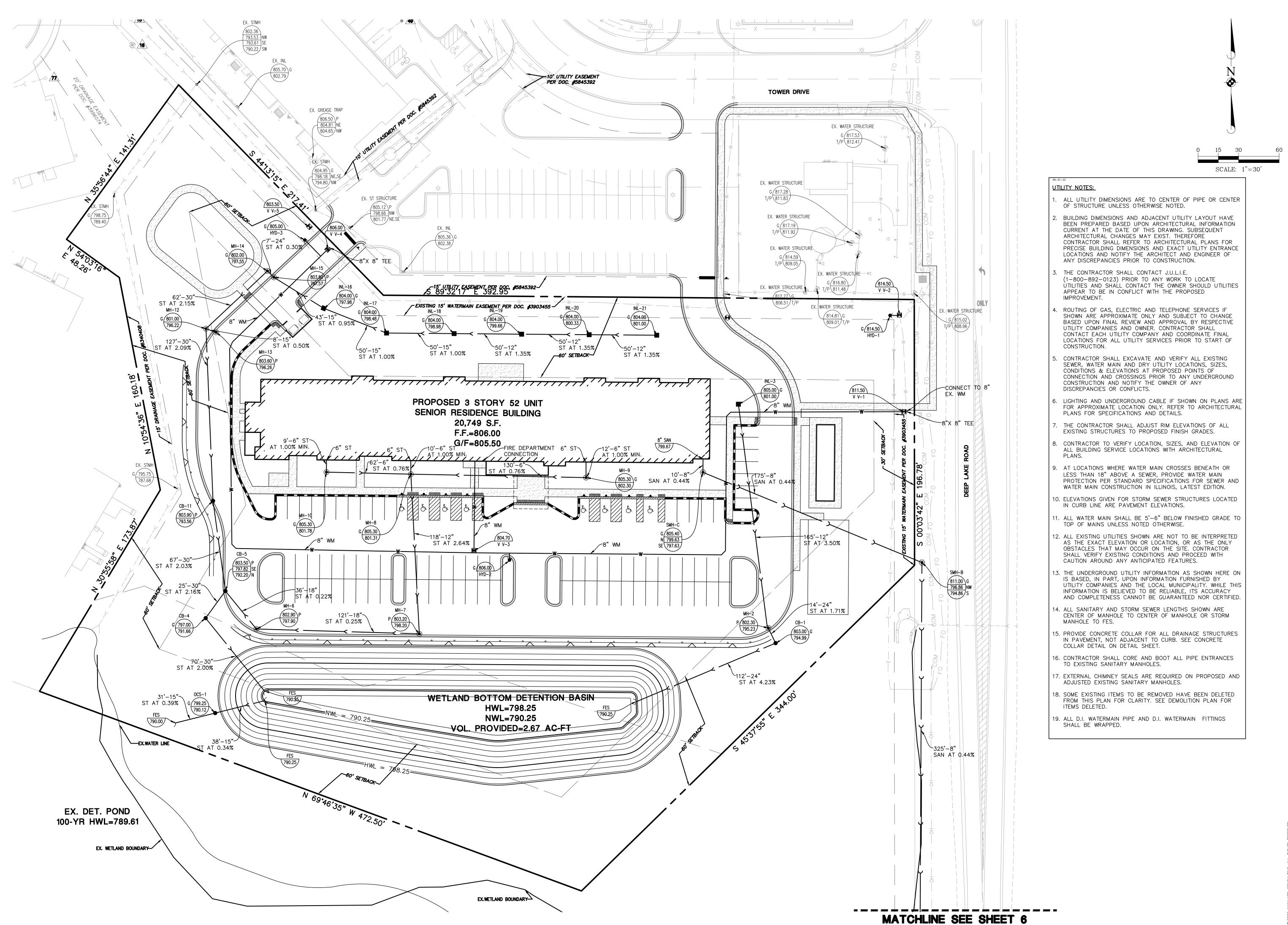
SENIOR APARTMENT

STARLING

LAKE VILLA, ILLINOIS

PROJ. MGR.: MDE 12-29-22

<u>1"=30'</u>



NORTH ILLINOIS VILLA, LAKE

APARTMEN

SENIOR

LING

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PROJ. MGR.: MDE 12-29-22

<u>1"=30'</u> SCALE:



15 30

SCALE: 1"=30'

UTILITY NOTES:

- 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.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.
- 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
- 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.

TOP OF MAINS UNLESS NOTED OTHERWISE.

- 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.

O N S U L T N C manhard.

Water Resource Engineers • Water & Wastewater Engine

116 West Illinois, 7th Floo
Civil Engineers • Su
Construction Man

VILLA, ILLINOIS

Y PLAN- SOUTH

APARTME

SENIOR

STARLING SEI
LAKE VII

PROJ. MGR.: MDE
PROJ. ASSOC.: MJC

DRAWN BY: SB

DATE: 12-29-22

SCALE: 12-29-2 1"=30'
SHEET

SHEET

OF

LAC.LVIL01









BUILDING SW CORNER VIEW

SCALE: N.T.S

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



STARLING SENIOR APARTMENTS

0 DEEP LAKE ROAD LAKE VILLA, IL 60046









BUILDING NW CORNER VIEW

SCALE: N.T.S

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



STARLING SENIOR APARTMENTS

0 DEEP LAKE ROAD LAKE VILLA, IL 60046

PID #12114	
DATE: 11/09/2022	4
	1



PROPOSED FINISHES:

- . WEATHER SHELTERED BUILDING MAIN ENTRY AREA.
- MIN. 32" CLEAR SECONDARY ENTRY DOORWAY. SECONDARY ENTRY ACCESSIBLE INTERNAL/EXTERNAL STRIKE 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.

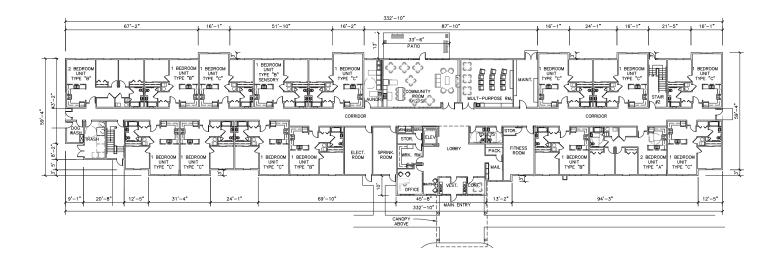
- INTERIOR APARTMENT KITCHEN INCLUDES; ENERGY STAR CERTIFED APPLIANCES; DISHWASHER, STOVE & REFRIGERATOR (ADA COMPLIANT IN ALL UNITS & COMMON AREAS), CARRAGE DISPOSAL WITH ACCESSIBLE SWITCH, TWO BOWL KITCHEN SINK & KITCHEN EXHAUST HOODS VENTED TO THE EXTERIOR. EXHAUST HOODS/LEGHT ADA UNITS KITCHEN.
- . 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.

- 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 VENTEI TO THE EXTERIOR OF THE BUILDING.
- ACCESSIBLE SINK WITH ADJACENT 30"x60" MIN. WORKSPACE AT COMMON LAUNDRY ROOM ON SECOND FLOOR.

*SEE ENLARGED UNIT FLOOR PLANS.

BUILDING GROSS FLOOR AREA

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.







STARLING SENIOR APARTMENTS

0 DEEP LAKE ROAD LAKE VILLA, IL 60046 PID #12114 DATE: 11/09/2022

A1.0

PROPOSED FINISHES:

- . WEATHER SHELTERED BUILDING MAIN ENTRY AREA.
- MIN. 32" CLEAR SECONDARY ENTRY DOORWAY. SECONDARY ENTRY ACCESSIBLE INTERNAL/EXTERNAL STRIKE 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.

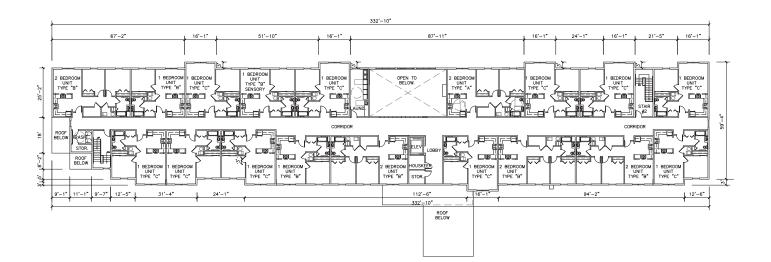
- INTERIOR APARTMENT KITCHEN INCLUDES; ENERGY STAR CERTIFED APPLIANCES; DISHWASHER, STOVE & REFRIGERATOR (ADA COMPLIANT IN ALL UNITS & COMMON AREAS), CARRAGE DISPOSAL WITH ACCESSIBLE SWITCH, TWO BOWL KITCHEN SINK & KITCHEN EXHAUST HOODS VENTED TO THE EXTERIOR. EXHAUST HOODS/LEGHT ADA UNITS KITCHEN.
- . 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.

- 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 VENTER TO THE EXTERIOR OF THE BUILDING.
- ACCESSIBLE SINK WITH ADJACENT 30"x60" MIN. WORKSPACE AT COMMON LAUNDRY ROOM ON SECOND FLOOR.

*SEE ENLARGED UNIT FLOOR PLANS.

BUILDING GROSS FLOOR AREA

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







STARLING SENIOR APARTMENTS

0 DEEP LAKE ROAD LAKE VILLA, IL 60046 PID #12114 DATE: 11/09/2022

A1.1

PROPOSED FINISHES:

- . WEATHER SHELTERED BUILDING MAIN ENTRY AREA.
- MIN. 32" CLEAR SECONDARY ENTRY DOORWAY. SECONDARY ENTRY ACCESSIBLE INTERNAL/EXTERNAL STRIKE 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.

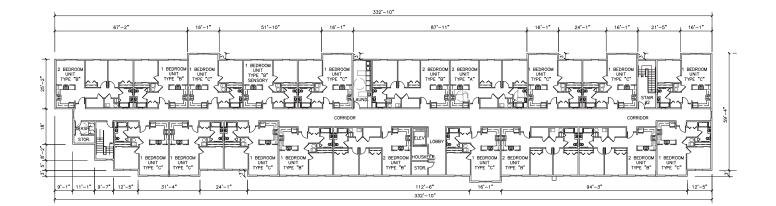
- INTERIOR APARTMENT KITCHEN INCLUDES; ENERGY STAR CERTIFED APPLIANCES; DISHWASHER, STOVE & REFRIGERATOR (ADA COMPLIANT IN ALL UNITS & COMMON AREAS), CARRAGE DISPOSAL WITH ACCESSIBLE SWITCH, TWO BOWL KITCHEN SINK & KITCHEN EXHAUST HOODS VENTED TO THE EXTERIOR. EXHAUST HOODS/LEGHT ADA UNITS KITCHEN.
- . 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.

- 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 VENTE TO THE EXTERIOR OF THE BUILDING.
- ACCESSIBLE SINK WITH ADJACENT 30"x60" MIN. WORKSPACE AT COMMON LAUNDRY ROOM ON SECOND FLOOR.

*SEE ENLARGED UNIT FLOOR PLANS.

BUILDING GROSS FLOOR AREA

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.







STARLING SENIOR APARTMENTS

0 DEEP LAKE ROAD LAKE VILLA, IL 60046 PID #12114 DATE: 11/09/2022

A1.2



1 FRONT ELEVATION SCALE: N.T.S.

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

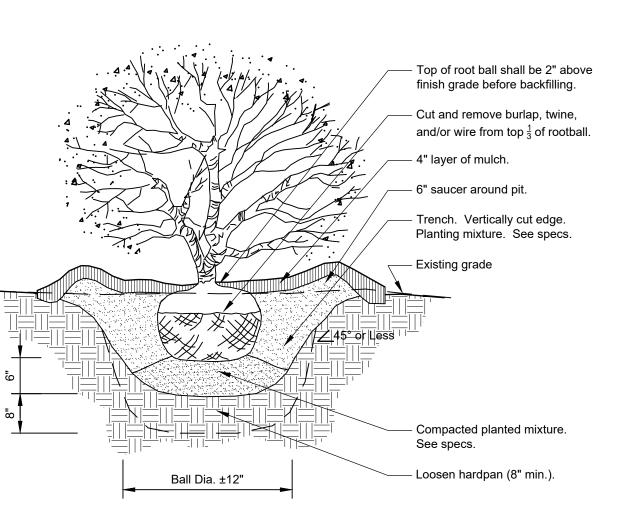
LAKE VILLA

0 DEEP LAKE ROAD LAKE VILLA, IL 60046 DATE: 12/29/2022 **A0.2**

DECIDUOUS TREE PLANTING

2 -Ply rubber hose $\frac{2}{3}$ up tree height Guying cables @ 3 guys per tree. Top of root ball shall be 3" above finish grade before backfilling. Galvanized turnbuckle. See specs. Remove burlap from top $\frac{1}{3}$ of root ball; cut and remove as much wire basket as possible from the root White guy wire flag. 4" Layer of mulch. 3' Dia. Mulch Existing grade. Steel guying stake- auger type. 18" min. set top of stake at grade. - Planting mixture. Compacted planting mixture. See specs. 2-5x Root Ball Dia Loosen hardpan (min. 24") 6' Min. Dia. Note: Remove all stakes and wires after one year of

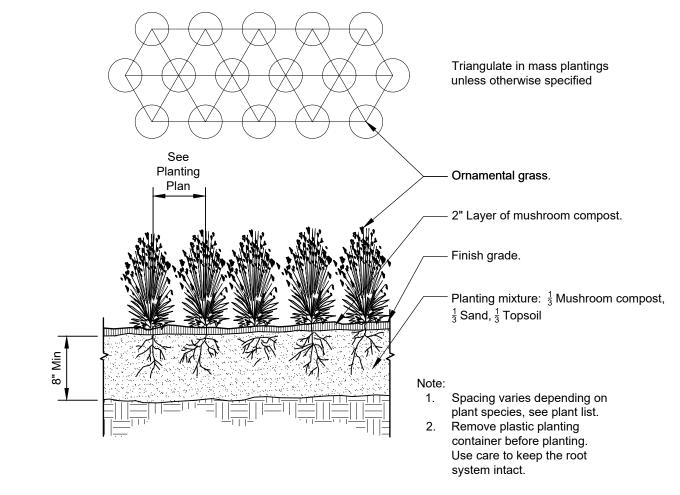
CONIFER TREE PLANTING



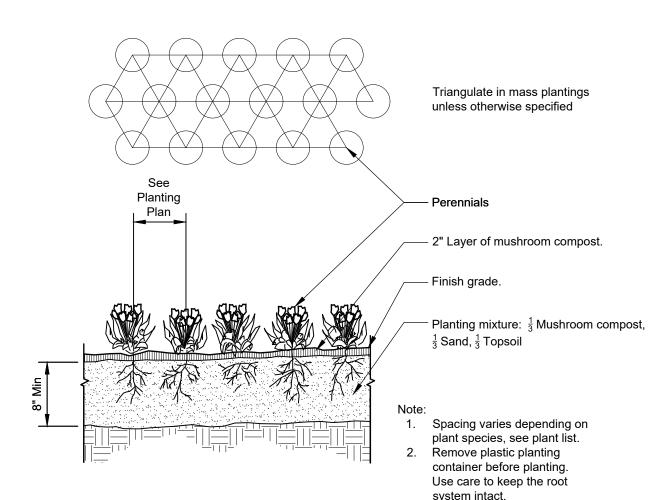
32 9343.33-20

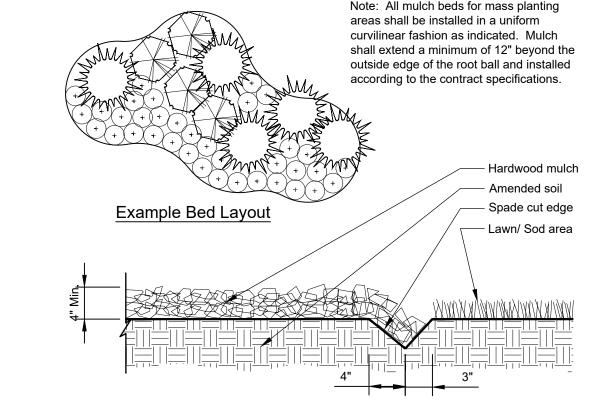
32 9313-02





ORNAMENTAL GRASS PLANTING 32 9313-01





PERENNIAL / ANNUAL PLANTING



Village of Lake Villa Required Landscaping

PLANTING AREA REQUIREMENTS

Requirement: Canopy trees must be 2.5" Cal min., Understory trees must be 1.5" Cal min. and Shrubs must be 2' Height min.

STREET TREE REQUIREMENT -Arterial Road

Requirement: 1 Canopy Tree and 2 Understory Trees per 50 linear feet located 15' from the Right-of-Way Deep Lake Road - 196.78 linear feet $196.78 / 50 = 3.93 \times 1 = 4 \text{ Canopy Trees}$ $3.93 \times 2 = 8$ Understory Trees

Required- 4 Canopy Trees and 8 Understory Trees On Plan - 4 Canopy Trees and 8 Understory Trees

INTERIOR LANDSCAPING FOR PARKING LOTS Requirement: For every 10 Parking Spaces 160 square feet of landscape area. 1 Canopy Tree and 3 shrubs per 160 square feet.

Parking Lot Spaces: 92 Spaces 92 / 10 = 9.2 x 160 = 1,472 Square Feet of Landscape Area $9.2 \times 1 = 9 \text{ Canopy Trees}$

Required- 9 Canopy Trees and 28 Shrubs, 1,472 square feet of green space

On Plan - 9 Canopy Trees and 28 Shrubs, 2,897 square feet of green space

PERIMETER LANDSCAPE FOR PARKING LOTS AND VEHICULAR USE AREAS

Requirement: 1 Canopy Tree or Understory Tree per 25 linear feet. Solid deciduous shrub screen 24" in height with a decorative fencing at least 3' in height.

Deep Lake Road - 196.78 196.78 / 25 = 8 Trees

 $9.2 \times 3 = 28 \text{ Shrubs}$

32 9343.46-01

Required- 8 Canopy or Understory Trees with solid deciduous shrub buffer and decorative fencing at least 3' in height.

On Plan - 8 Canopy or Understory Trees with solid deciduous shrub buffer and decorative fencing at

WEST BUFFER YARD - SB adjacent to SR3 Requirement: (C Buffer Required) 30 width buffer area with 1 Canopy Tree, 1 Understory

West property line - 523.62 / 100 = 5.24 $5.24 \times 1 = 5$ Canopy Trees $5.24 \times 1 = 5$ Understory Tree

 $5.24 \times 2 = 10 \text{ Shrubs}$

 $4.28 \times 2 = 9 \text{ Shrubs}$

Tree, and 2 Shrubs per 100 linear feet

Required- 5 Canopy Trees, 5 Understory Trees and 10 Shrubs

On Plan - 5 Canopy Trees, 5 Understory Trees and 10 Shrubs

SOUTH BUFFER YARD - SB adjacent to SR3 Requirement: (C Buffer Required) 30 width buffer area with 1 Canopy Tree, 1 Understory

South property line - 427.5 / 100 = 4.28 $4.28 \times 1 = 4$ Canopy Trees $4.28 \times 1 = 4$ Understory Tree

Tree, and 2 Shrubs per 100 linear feet

Required- 4 Canopy Trees, 4 Understory Trees and 9 Shrubs

On Plan - 4 Canopy Trees, 4 Understory Trees and 9

EAST BUFFER YARD - SB adjacent to SR2 Requirement: (C Buffer Required) 30 width buffer area with 1 Canopy Tree, 1 Understory Tree, and 2 Shrubs per 100 linear feet

East property line - 344.91 / 100 = 3.45 $3.45 \times 1 = 3$ Canopy Trees $3.45 \times 1 = 3$ Understory Tree $3.45 \times 2 = 7 \text{ Shrubs}$

Required- 3 Canopy Trees, 3 Understory Trees and

On Plan - 3 Canopy Trees, 3 Understory Trees and 7

NORTH BUFFER YARD - SB adjacent to SB No Buffer Yard Required

FOUNDATION LANDSCAPING

Requirement: The developer shall provide adequate foundation landscaping for all multi-family residential buildings in keeping with the overall landscape concept for the project.

Meets Requirement

TREE REPLACEMENT TREES REQUIRED See Sheet L2 for Replacement Trees

Landscape Notes:

- 1. Seed/ Sod limit line is approximate. Seed/ Sod to limits of grading and disturbance. Contractor responsible for restoration of any unauthorized disruption outside of designated construction area.
- 2. Contractor responsible for erosion control in all seeded/ sodded areas. Tree mulch rings in turf areas are 5' diameter. Contractor shall provide a mulch ring around all existing trees within the limits of work. Remove all existing grass from area to be mulched and provide a typical spade cut edge. Landscape Fabric shall not be installed under mulch. Root flares shall be at or above grade, per specifications, and all rope/cord shall be removed from the base of tree trunks.
- Bedlines are to be spade cut to a minimum depth of 3". Curved bedlines are to be smooth and not
- 4. All planting, beds shall receive top dressing of mulch. Landscape fabric shall <u>not</u> be installed under mulch. 5. Do not locate plants within 10' of utility structures or within 5' horizontally of underground utility lines unless otherwise shown on plans. Consult with Landscape Architect if these conditions exist.
- 6. For Lump Sum Contracts, plants and other materials are quantified and summarized for the convenience of the Owner and jurisdictional agencies only. Confirm and install sufficient quantities to complete the work as drawn and specified. No additional payments will be made for materials required to complete the work as
- 7. For Unit Price Contracts, payments will be made based on actual quantities installed as measured in place by the Owner's Representative.
- 8. It is the responsibility of the contractor to locate and provide plant material as specified on this plan. The contractor may submit a request to provide substitutions for the specified plant material under the following
 - a. Any substitutions proposed shall be submitted to the project owner's representative within two weeks of the award of contract. Substitutions must meet equivalent design and functional goals of the original materials as determined by the owner's representative. Any changes must have the approval of the owner's representative,
- b. The request will be accompanied by at least three notices from plant material suppliers that the plant material specified is not available and will not be available prior to construction.
- 10. Verify site conditions and information on drawings. Promptly report any concealed conditions, mistakes, discrepancies or deviations from the information shown in the Contract Documents. The Owner is not responsible for unauthorized changes or extra work required to correct unreported discrepancies. Commencement of work shall constitute acceptance of conditions and responsibility for corrections
- 11. A minimum of two working days before performing any digging, call underground service alert for information on the location of natural gas lines, electric cables, telephone cables, etc. The contractor shall be responsible for location and protection of all utilities, and repair of any damage resulting from his work at no additional cost to the owner.
- 12. Contractor shall promptly repair all damages to existing site at no cost to owner.
- 13. Refer to landscape specifications for additional conditions, standards, and notes.

CONCEPT PLANT SCHEDULE
_

STREET CANOPY TREES STREET UNDERSTORY TREES INTERIOR PARKING LOT TREES PERIMETER UNDERSTORY TREES **BUFFER CANOPY TREES** 12 **BUFFER UNDERSTORY TREES** 12 REPLACEMENT TREES 45 EXISTING DECIDUOUS TREES TO REMAIN EXISTING EVERGREEN TREES TO REMAIN INTERIOR PARKING LOT SHRUBS PERIMETER LANDSCAPE SHRUB BUFFER **BUFFER YARD SHRUBS** LARGE EVERGREEN SHRUBS **MEDIUM SHRUBS** 32

126 sf **PERENNIALS**

ORNAMENTAL GRASSES

ECONOMY PRAIRIE SEED MIX 69,176 sf

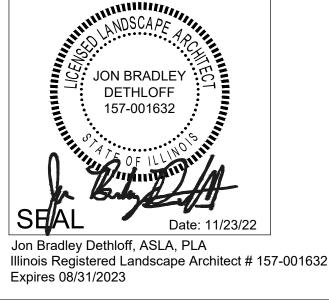
29,575 sf STORMWATER SEED MIX

TURF AREA

EMERGENT STORMWATER SEED MIX



Simply Call 811



7,063 sf

11-23-22 _1"=XX' SHEET LAC.LVIL01

PROJ. MGR.: MDE

ILLINOIS

OF

VILLAGE

APARTMENT

SENIOR

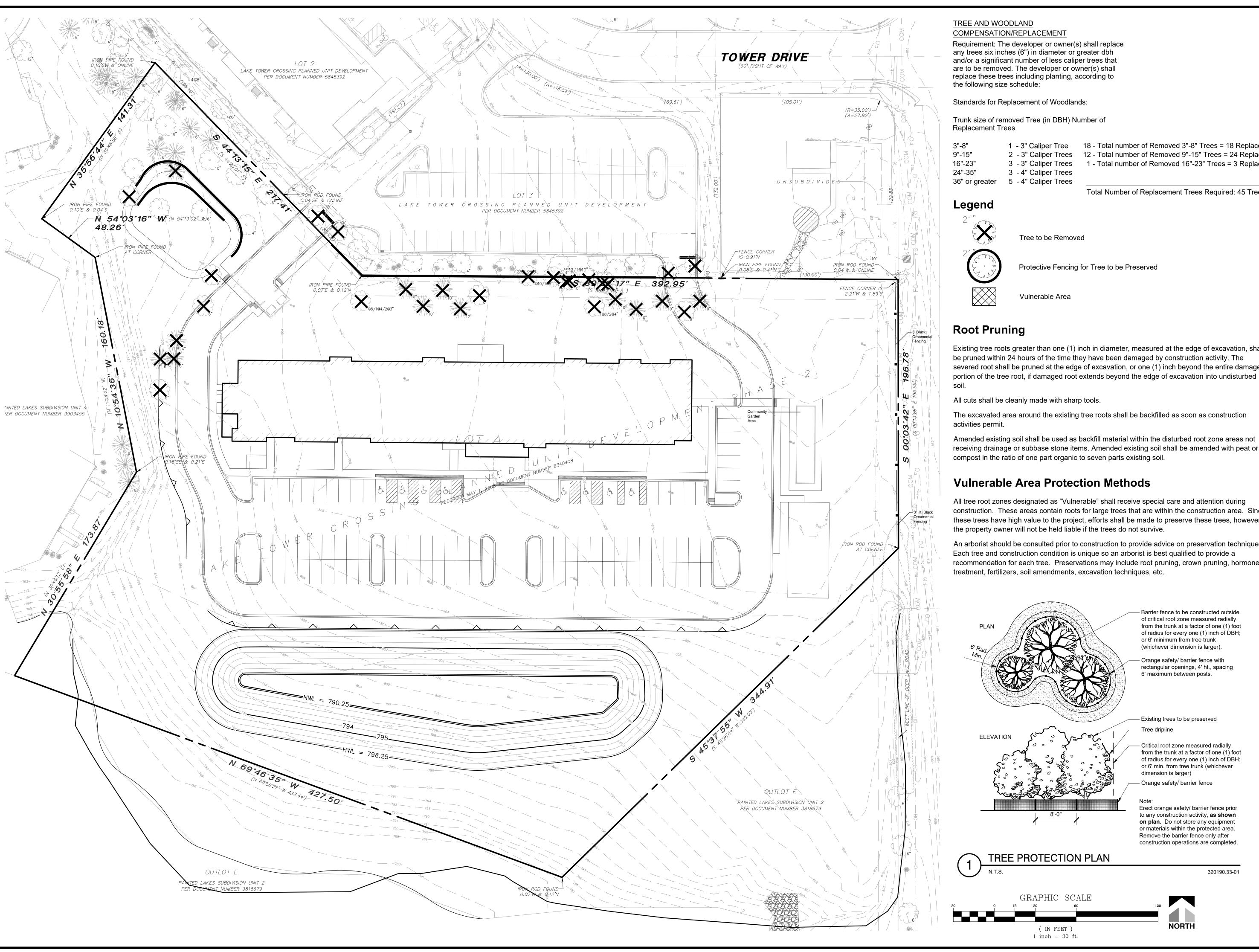
ARLING

SUMM,

LANDSCAPE

NA

SHEET



1 - 3" Caliper Tree 18 - Total number of Removed 3"-8" Trees = 18 Replacement Trees

2 - 3" Caliper Trees 12 - Total number of Removed 9"-15" Trees = 24 Replacement Trees 3 - 3" Caliper Trees 1 - Total number of Removed 16"-23" Trees = 3 Replacement Trees

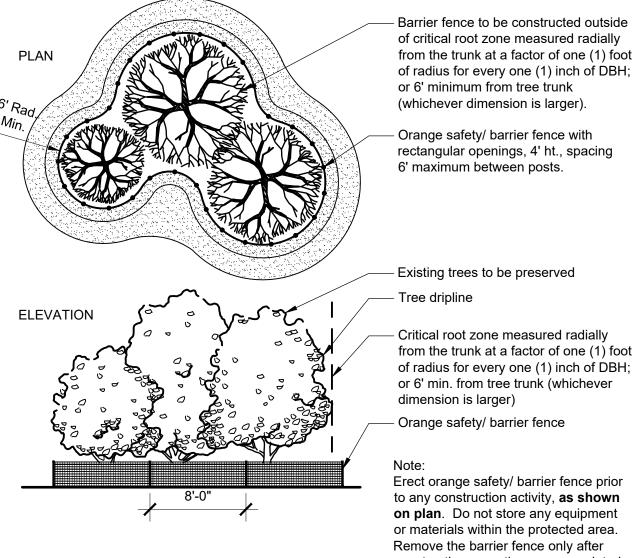
Total Number of Replacement Trees Required: 45 Trees

Existing tree roots greater than one (1) inch in diameter, measured at the edge of excavation, shall be pruned within 24 hours of the time they have been damaged by construction activity. The severed root shall be pruned at the edge of excavation, or one (1) inch beyond the entire damaged portion of the tree root, if damaged root extends beyond the edge of excavation into undisturbed

receiving drainage or subbase stone items. Amended existing soil shall be amended with peat or

All tree root zones designated as "Vulnerable" shall receive special care and attention during construction. These areas contain roots for large trees that are within the construction area. Since these trees have high value to the project, efforts shall be made to preserve these trees, however

An arborist should be consulted prior to construction to provide advice on preservation techniques. Each tree and construction condition is unique so an arborist is best qualified to provide a recommendation for each tree. Preservations may include root pruning, crown pruning, hormone



11-23-22 <u>1"=30'</u>

PROJ. MGR.: MDE

SUMMARY

AND LANDSCAPE

SHEET

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VILLA, ILLINOIS

OF

VILLAGE

APARTMENTS

STARLING SENIOR

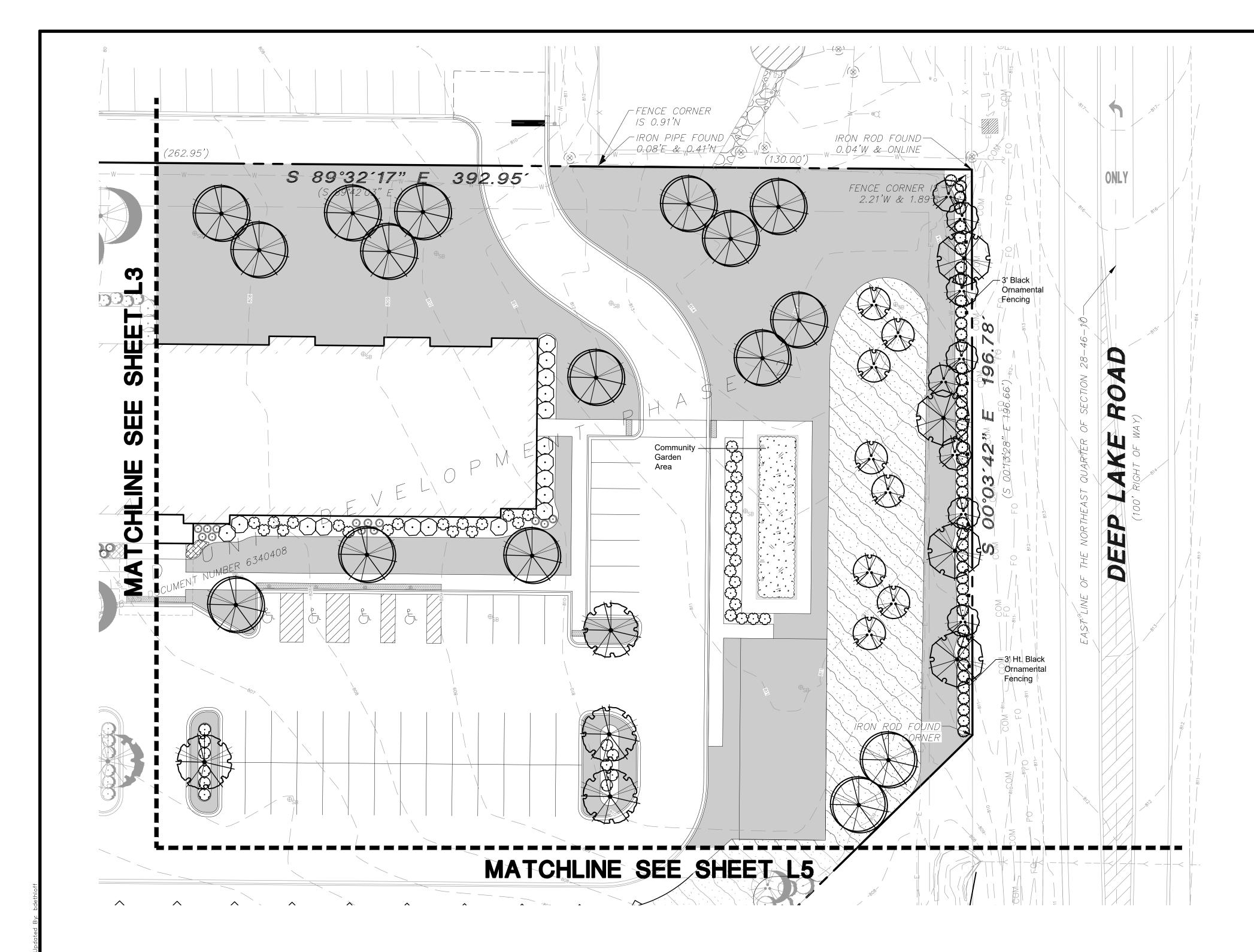


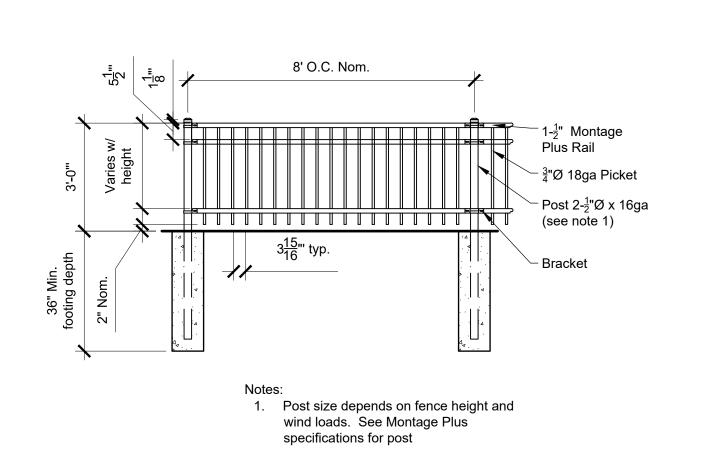
One Overlook Point, Suite 290, Lincolnshire, IL 50069 ph:847.534.5550 fx:847.534.0095 menhand.com
Civil Engineers • Surveyors • Weter Resource Engineers • Weter & Wester Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

VILLAGE OF LAKE VILLA, ILLINOIS TITLE SHEET AND LANDSCAPE SUMMARY

DJ. MGR.: MDE
DJ. ASSOC.: JBD

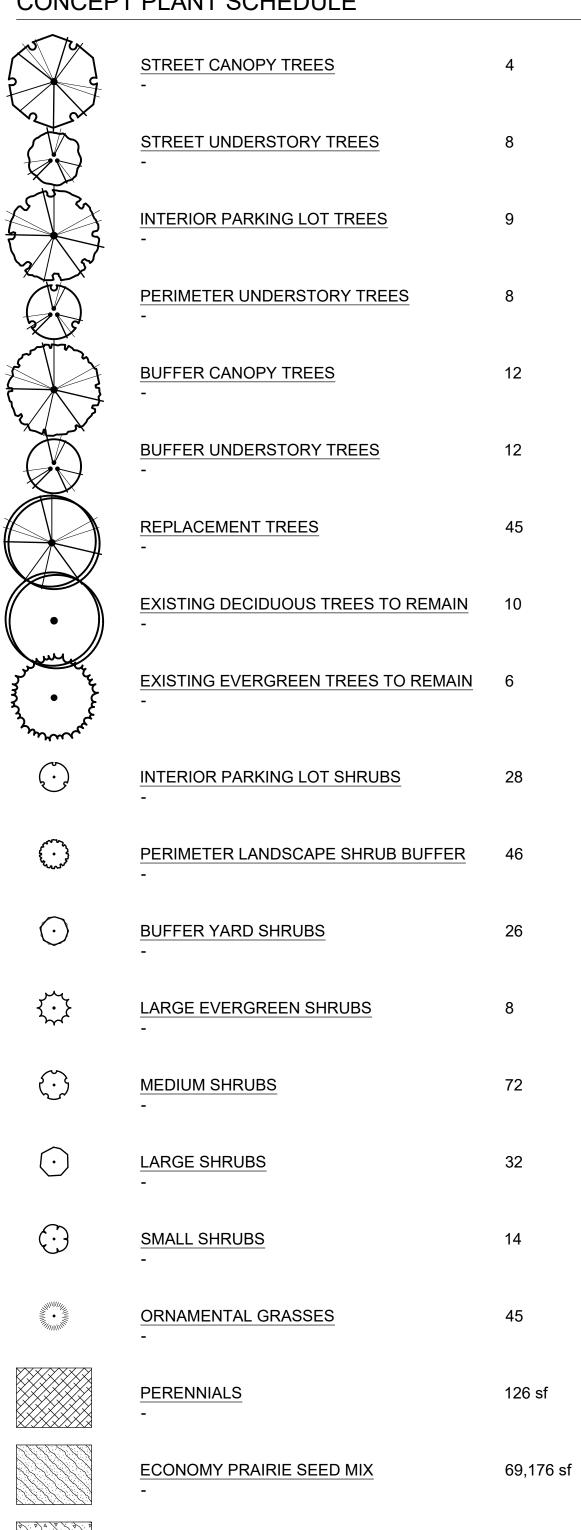
L3 of L6

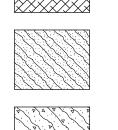


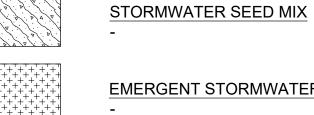


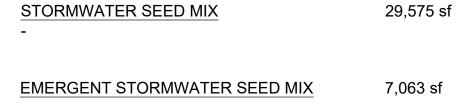
3' MONTAGE PLUS ORNAMENTAL FENCE- MAJESTIC 323119-02

CONCEPT PLANT SCHEDULE STREET CANOPY TREES



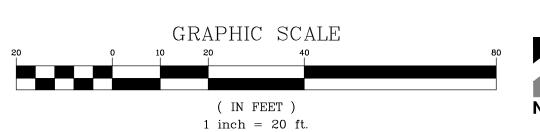














TITLE SHEET AND LANDSCAPE SUMMARY VILLAGE OF LAKE VILLA, ILLINOIS STARLING SENIOR APARTMENTS

PROJ. MGR.: MDE

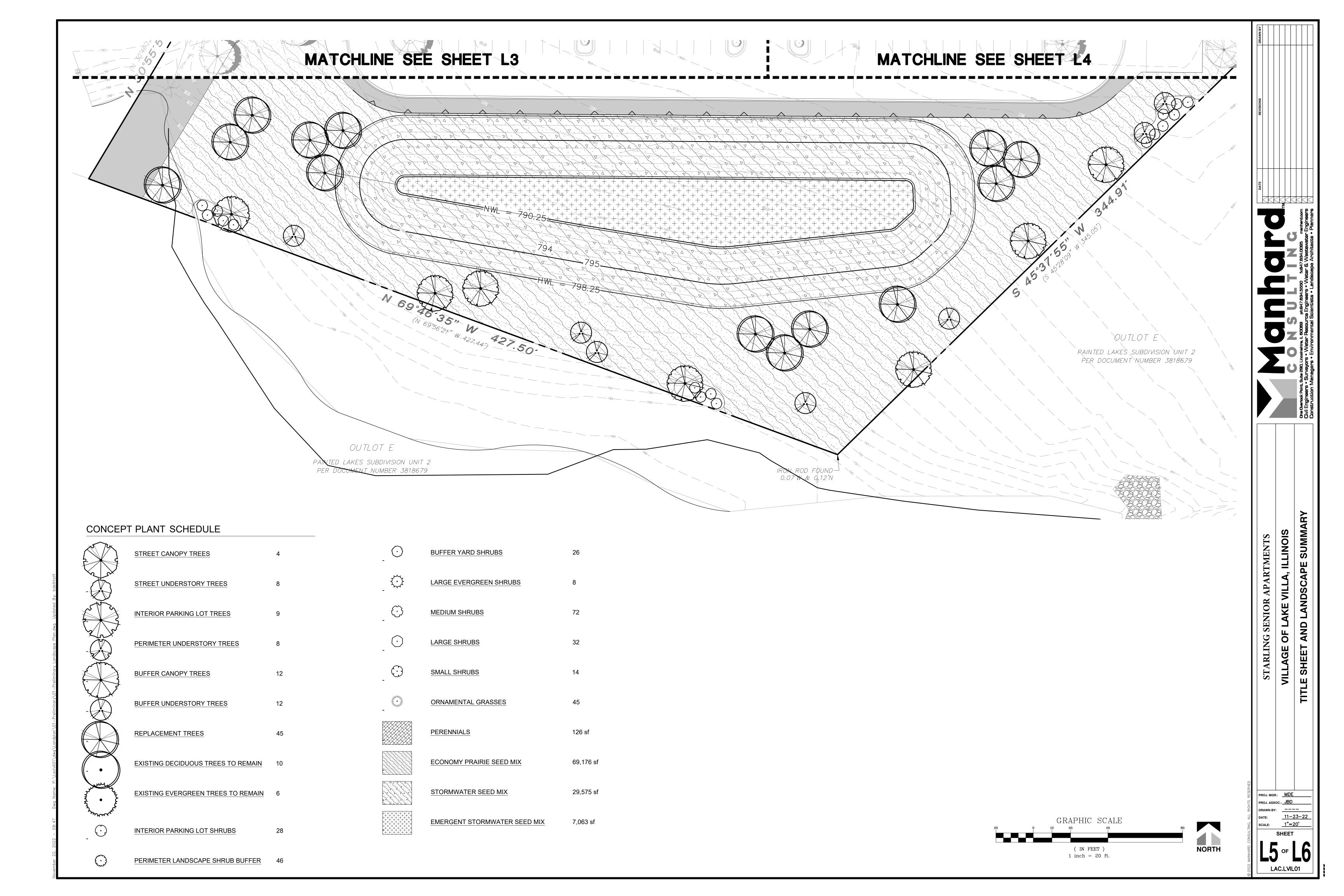
DRAWN BY: _____

DATE:

11-23-22

1"=20'

SHEET



GENERAL PLANTING SPECIFICATIONS:

PART 1 - GENERAL

1-01 DESCRIPTION:

- 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.

1-02 QUALITY ASSURANCE:

measured in its natural standing position.

A. Comply with site work requirements

- B. Plant names indicated must comply with 'Standardized Plant Names' as adopted by the latest edition of the 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
- E. Adhere to sizing requirements as listed in the plant list and/or bid form for the project. A plant shall be
- Stock that is furnished shall be at least the minimum size shown. With permission of the landscape architect, substitution from the specified plant list will be accepted only when satisfactory evidence in writing is submitted to the landscape architect, showing that the plant specified is not available. Requests for approval of substitute plant material shall include common and botanical names and size of substitute material. Only those substitutions of at least equivalent size and character to that of the specified material will be approved. Stock which is larger than that which is specified is acceptable with permission of the landscape architect, providing there is no additional cost and that the larger plant material will not be cut down in order to conform to the size indicated.
- G. All shrubs shall be dense in form. Shrub liners do not meet these specifications. Shrubs specified by height shall have a spread that is equal to the height measurement. Shrubs which are specified by spread shall exhibit the natural growth habit of the plant by having a greater spread than height.
- H. All plant materials are subject to inspection and approval. The landscape architect and Owner reserve the right to select and tag all plant material at the nursery prior to planting. The landscape architect and Owner reserve the right to inspect plant material for size and condition of root systems, the presence of insects and diseases, injuries and latent defects (due to Contractor negligence or otherwise), and to reject unacceptable plant material at any time during progress of the project.
- 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.

1-03 DELIVERY, STORAGE & HANDLING:

- 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
- 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. If 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.

1-04 PROJECT CONDITIONS:

- 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.L.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, plus 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 site which are to be preserved. Protective fencing shall be erected between the limits of construction and any 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.

1-05 PRELIMINARY ACCEPTANCE:

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.

1-06 WARRANTY:

A. All plant material (excluding annual color), shall be warranteed 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 warranteed 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.

PART 2 - PRODUCTS

2-01 PLANT MATERIALS:

- 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' (ASNS). 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 togehter, 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.

2-02 ACCESSORIES:

- 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

- 1. For trees and shrubs use: 14-4-6 briquettes 17 g or equivalent available from Arthur Clesen, Inc. Follow manufacturer's recommendation for application. Arthur Clesen, Inc. 543 Diens Drive, Wheeling, IL 60090 (847)537-2177
- 2. For turf areas use 6-24-16 Clesen Fairway with micronutrients with minor elements 3.0 % S, .02% B. .05% Cu, 1.0% Fe, .0006% Mo, .10% Mn available from Arthur Clesen or approved equal.
- E. Herbicide: 1. Round-Up or approved equal

- 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.

- 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: Stakes: 5/8" x 40" steel eye anchor with 4" helix

 - 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.
- I. Tree wrap: Burlap tree wrap 4" wide.
- J. Twine: Soft nursery jute.

PART 3 - INSTALLATION OF PLANT MATERIAL

3-01 FIELD VERIFICATION:

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

3-02 PREPARATION:

- A. All planting 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. Confirm length of waiting period between 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
- 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.
- 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.

3-03 PLANTING PROCEDURES:

- 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.
- - 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.
- E. 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.
- 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 trees 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 <u>Premium</u> 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
- 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
 - 2. Install S-75 Erosion Control Blanket as manufactured by North American Green or approved
 - 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.
- 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
- 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
- 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. Work sifted soil 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 sodding 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 development 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.
- J. Timing of plant material and seeding operations:
 - 1. Seeding of specified areas shall occur when the soil temperature is above 55° F. No seed shall be sown during periods of high winds, or when the ground is not in proper condition for seeding (see section 3-02 (G)). Seeding operations for the specified mixes shall occur in the spring time frame of April 15 through June 30 and in the summer time frame of August 15 through December 1. The mixes containing bluegrass and fescue seed must have six weeks to harden off for winter
 - 2. Sod shall be installed when the ground is not frozen or snow covered and temperatures are less than 80° F. It shall not be placed during a period of extended drought.
 - 3. Herbaceous ornamental plants shall be planted between May 1 and June 15 or between August 15 and December 1
 - 4. Spring planting of woody ornamental plants shall be performed from the time the soil can be easily worked until June 1, except that evergreen planting shall end on May 15. Oak, hawthorn and red maple species will only be planted during this spring planting period. Fall planting will begin August 15 and will continue until the ground cannot be worked satisfactorily, except that evergreen planting shall be performed between August 15 and December 1.

3-04 MAINTENANCE:

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.

3-04 ACCEPTANCE:

A. All plant material (excluding annual color), shall be warranteed 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.

3-06 SITE CLEAN-UP:

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 .

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

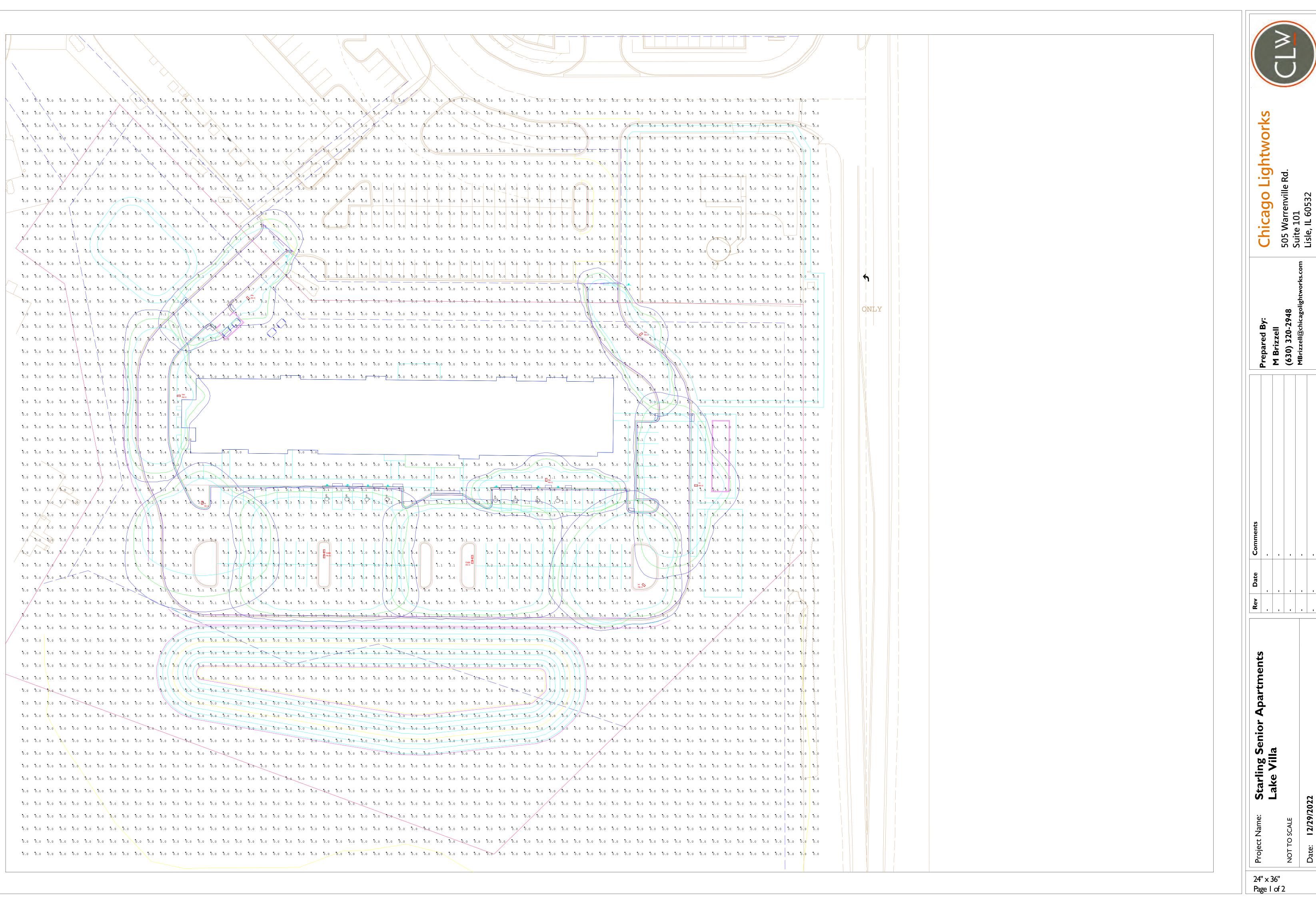
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PROJ. MGR.: MDE PROJ. ASSOC.: JBD DRAWN BY: _____

DATE:

11-23-22

<u>1"=XX'</u>





Starling Lake Vill

 $24" \times 36"$ Page I of 2

Luminaire Sc	Luminaire Schedule										
Symbol	Label	Qty	Description	Щ	Lum. Watts	Lum. Lumens					
—	F2-B2B	2	ECF-S-32L-365-NW-G2-3_back to back	0.850	40	5713					
→	F2H	2	ECF-S-32L-365-NW-G2-2-HIS	0.850	40	4441					
→	F3	I	ECF-S-32L-365-NW-G2-3	0.850	40	5713					
→	F3H	2	ECF-S-32L-365-NW-G2-3-HIS	0.850	40	4518					
→	F4	2	ECF-S-32L-365-NW-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	



Chicago Lightworks
505 Warrenville Rd.
Suite 101
Lisle, IL 60532

Prepared By:

M Brizzell
(630) 320-2948

MBrizzell@chicagolightworks.con

 Rev
 Date
 Comments

Starling Senior Apartment Lake Villa

Project Name:

24" x 36" Page 2 of 2







Project:	
Location:	
Cat.No:	
Туре:	
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

	Number	Drive	LED Color -				Options			
Prefix ECF-S	of LEDs	Current	Generation	Mounting	Distribution	Voltage	Controls	Electrical Luminaire		Finish
ECF-S ECF-S ECOFORM Site and Area, Small	32L 32 LEDs (2 modules) 48L 48 LEDs (3 modules) 64L 64 LEDs (4 modules)	1050 mA 1.2A 1200 mA 900 900 mA	WW-G2 Warm White 3000K, 70 CRI Generation 2 NW-G2 Neutral White 4000K, 70 CRI Generation 2 CW-G2 Cool White 5000K, 70 CRI Generation 2	AR Arm Mount (standard) ⁹ The following mounting kits must be ordered separately (See accessories) SF Silp Fitter Mount ¹¹ (fits to 2 ³ /s" O.D. tenon) WS Wall mount with surface conduit rear entry permitted RAM Retrofit arm mount kit ⁹	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 5 Type 5	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 7 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 CM50 Median 50% Dimming, 9 hours ¹ DA50 All Night 50% Dimming ¹ Infrared Motion Response Systems IMR13 Integral with #7 lens ⁸ IMR17 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 Median 50% Dimming ¹⁵ CE50-IMRO with Economy 50% Dimming ¹⁵ CE50-IMRO with Economy 50% Dimming ¹⁵ DA50-IMRO with All Night 50% Dimming ¹⁵	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 Gra Customer specific RAL Specify optional color or RAI (ex: RAL702 CC Custom colo (Must suppl color chip for required factory quote)
					AFR Auto Front Row AFR-90 Auto Front Row, Rotated left 90° AFR-270 Auto Front Row, Rotated right 270°		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			

- Available only on 120, 208, 240, and 277 (or UNV)
- Specify Voltage
- Not available with 347 or 480 voltage
 HIS not available with Type 5 or 5W optics
 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)
- DCC and LLC2/3/4 not available with any other controls TB not available with DCC
- **ECF-IMRI** equipped with out-boarded sensor housing when voltage is **HVU** (347-480V)
- Mounts to a 4" round pole with adapter included for
- 10. Not available with **SF** and **WS**. **RPA**s provided with black finish
- 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

Site & Area

EcoForm Accessories (ordered separately, field installed)

Pole Mount Motion Sensor

MS-A-120V 1 120V Input

MS-A-277V 1 277V Input

Wireless systems Remote mount module

Controls Accessories

LLCR2-(F) #2 lens LLCR3-(F) #3 lens LLCR4-(F) #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 Accessories 10

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:

 $\begin{array}{ll} \textbf{HIS-32-V}^{\,12} & \text{Internal House Side Shield for 32 LEDs (2 modules)} \\ \textbf{HIS-48-V}^{\,12} & \text{Internal House Side Shield for 48 LEDs (3 modules)} \\ \textbf{HIS-64-V}^{\,12} & \text{Internal House Side Shield for 64 LEDs (4 modules)} \end{array}$

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. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} 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

		LED		Average		Type 2			Type 3			Type 4	
Ordering Code	Total LEDs	Current (mA)	Color Temp. ³	System Watts ¹	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

		LED		Average		Type 5			Type 5W			Type AFR	
Ordering Code	Total LEDs	Current (mA)	Color Temp. ³	System Watts ¹	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

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.

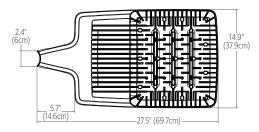
- $2. \quad Lumen\ values\ based\ on\ photometric\ tests\ performed\ in\ compliance\ with\ IESNA\ LM-79.$
- 3. Warm white color temperature will result in decreased lumen output. Contact outdoorlighting applications@philips.com for details or additional information.

Site & Area

Dimensions

Standard Arm (AR)

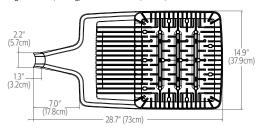
Weight: 22 Lbs (9.9 Kg) EPA: 0.21ft² (.019m²)





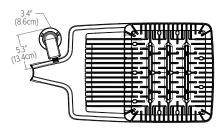
Retrofit Arm (RAM)

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





Outboard **IMR-HVU** sensor

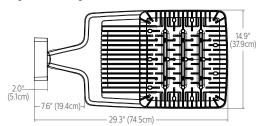




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Wall (WS)

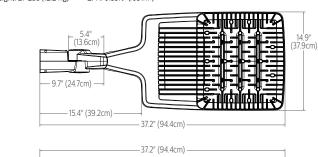
Weight: 27 Lbs. (12. 2Kg) EPA: 0.27ft² (.025m²)





Slip fitter (**SF**)

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

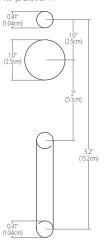




Standard Arm (**AR**) drill pattern

0.41° (1.04cm) (2.5cm) (2.5cm) (2.5cm) (2.5cm) (7.6cm) (1.04cm)

Retrofit Arm (**RAM**) drill pattern



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).

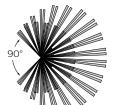
		Dimming						
Profile	Level	Duration	Example					
Economy	50%	9 hours	9 PM - 6 AM					
Median	50%	8 hours	10 PM - 6 AM					
Safety	50%	7 hours	11 PM - 6 AM					
Reactive 50	50%	dynamic	all night					

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



270° Front Coverage
Distances are
approximate.
H = height above ground
Height

1H 3H 6H

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.

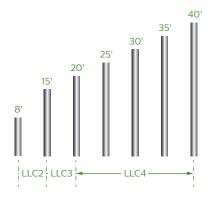
Site & Area

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.

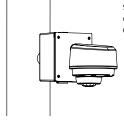
Recommended Sensor by Pole Height



LLCR2/LLCR3/LLCR4 Pole Mounted Controller

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

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.

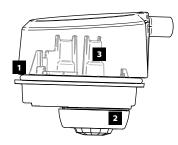


Remote Mount Wireless Controller

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

for more information.

- 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.

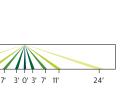
3. Wireless Radio

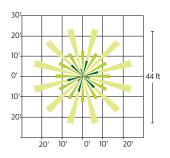
- 1.8 Watts max (no load draw)
- Operating voltage 120-277 VAC RMS
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400-2483.5Mhz
- RoHS Compliant

Site & Area

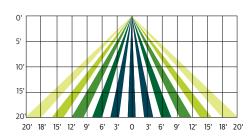
Infrared Motion Response – Coverage Patterns

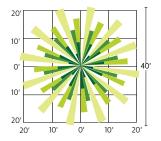
LLC2/LLCR2 Luminaire or remote mount controller with #2 lens



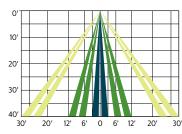


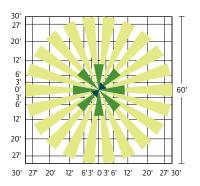
IMRI3/LLC3/LLCR3 Luminaire or Remote mount controller with #3 lens



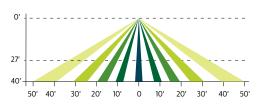


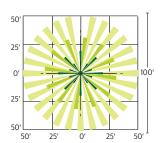
LLC4/LLCR4 Luminaire or Remote mount controller with #4 lens





IMRI7 Integral motion response with #7 lens



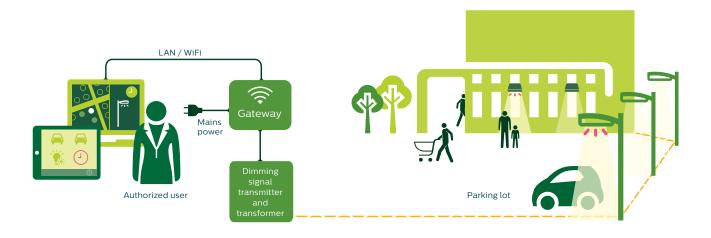


Site & Area

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**

Site & Area

Optical Orientation Information

Standard Optic Position

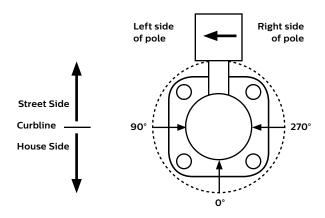
Luminaires ordered with asymmetric optical systems in the standard optic position will have the optical system oriented as shown below:

Street Side Curbline House Side

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

Optic Rotated Left (90°) Optic Position

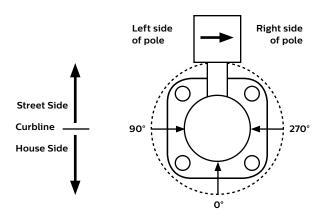
Luminaires ordered with optical systems in the Optic Rotated Left (90°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



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

Optic Rotated Right (270°) Optic Position

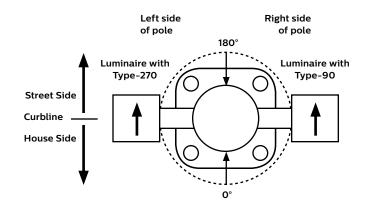
Luminaires ordered with optical systems in the Optic Rotated Right (270°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



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.

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 133 lms/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.

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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 DECSCRIPTION

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

Most Eager



CALCULATIONS



COMPOSITE RUNOFF CURVE NUMBER (CN)

PROJECT:	Starling Senior Apart	ments	PI	PERMIT NUMBER:				
LOCATION:	Lake Villa, Illinois			DATE:	12/29/2022			
TYPE OF AR	EA (SELECT WITH DRO	P-DOWN)						
	TAINED AREA		MAJOR S	STORMWATER SYS	STEM			
UN	RESTRICTED AREA		OTHER:					
UP:	STREAM AREA							
CONDITION	(SELECT WITH DROP-	DOWN)						
X PRO	OPOSED CONDITION		EXISTING	CONDITION				
RUNOFF CU	RVE NUMBER							
Su	rface Description	Hydrologic Soil Group (HSG)	CN	Area (acres)	Product (CN)(Area)			
Impervi	ious Surface		98	1.91	187.18			
Perviou	s Surface		74	3.30	244.20			
			TOTALS:	5.21	431.38			
COMPOSITE	RUNOFF CURVE NUM	ИBER						
Comp	oosite CN = ———	Product = 431.38 11 Area = 5.21	→ Cc	omposite CN =	82.80			



COMPOSITE RUNOFF COEFFICIENT (C)

PROJECT:	Starling Sei	nior Apartments		P	PERMIT NUMBER:						
LOCATION:	Lake Villa, I	llinois			DATE:	12/29/2022					
TYPE OF ARI	EA (SELECT V	WITH DROP-DOWN	1)								
_ X _DET	TAINED AREA	Ą		MAJOR S	STORMWATER SYS	TEM					
UNI	RESTRICTED	AREA		OTHER:	OTHER:						
UPS	STREAM ARE	A									
CONDITION	(SELECT WI	TH DROP-DOWN)									
PRC	OPOSED CON	NDITION		X EXISTING	G CONDITION						
RUNOFF CO	EFFICIENT										
	S	urface Description		С	Area (acres)	Product (C)(Area)					
Impervi	ous			0.90	0.00	0.00					
Perviou	S			0.45	5.18	2.33					
				TOTALS:	5.18	2.33					
COMPOSITE	RUNOFF CO	DEFFICIENT									
Comp	oosite C =	Total Product Total Area	- = 2.33		omposite C =	0.45					



COMPOSITE RUNOFF COEFFICIENT (C)

PROJECT:	Starling Ser	nior Apartments		PE	PERMIT NUMBER:					
LOCATION:	Lake Villa, I	llinois			DATE:	12/29/2022				
TYPE OF ARI	EA (SELECT \	WITH DROP-DOWN)							
_ X _DET	TAINED AREA	Ą		MAJOR S	TORMWATER SYS	TEM				
UNI	RESTRICTED	AREA		OTHER:						
UPS	STREAM ARE	·A								
CONDITION	(SELECT WI	TH DROP-DOWN)								
X PRO	OPOSED CON	IDITION		EXISTING	CONDITION					
RUNOFF CO	EFFICIENT									
	Si	urface Description		С	Area (acres)	Product (C)(Area)				
Impervi	ous			0.90	1.91	1.72				
Perviou	s			0.45	3.30	1.49				
				TOTALS:	5.21	3.20				
COMPOSITE	RUNOFF CO	DEFFICIENT			,					
Comp	oosite C =	Total Product Total Area	= 3.20 5.21	→ Cc	omposite C =	0.61				

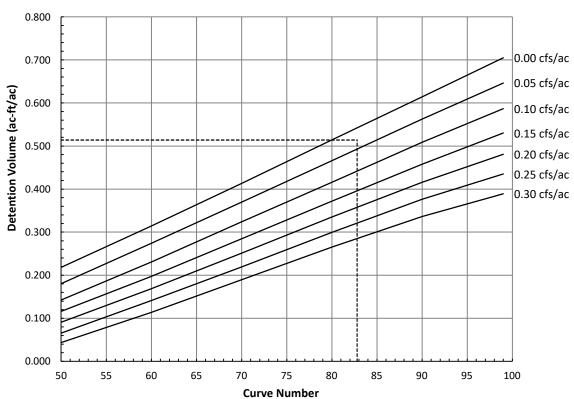


NOMOGRAPH: BULLETIN 75 RAINFALL DATA

PROJECT: **Starling Senior Apartments** PERMIT NUMBER: LOCATION: Lake Villa, Illinois 12/29/2022 DATE: **DEVELOPMENT INFORMATION** 1. Detained Area 5.180 acres **Curve Number** 82.80 3. Actual Release Rate 0.150 cfs **REQUIRED DETENTION VOLUME** 4. Required Detention Volume 2.661 ac-ft

NOMOGRAPH

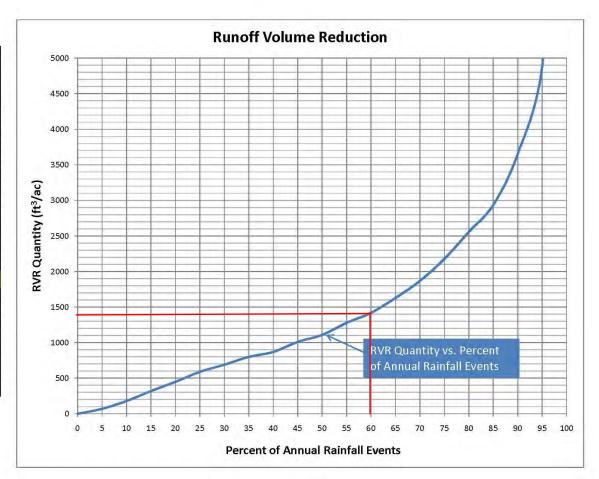
NOMOGRAPH: BULLETIN 75





DRC	DJECT: Starling	Senior Apartments	TION VOLUME	PERMIT NUMI	RER.
	CATION: Lake Vil				ATE: 12/29/2022
ARE	A UNITS (CHOOS	SE WITH DROP-DOWN)		
	Units:	ft²]		
POI	ND / VAULT / SUF	RFACE DETENTION VO	LUME		
	Elevation	Area	Average Area	Increment Volume	Cumulative Volume
	(ft)	(ft²)	(ft²)	(ac-ft)	(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	10000 50	0.25	0.26
	702.00	11914.00	10680.50	0.25	0.50
	792.00	11914.00	13198.00	0.30	0.50
	793.00	14482.00	13198.00	0.30	0.81
	755.00	14402.00	15816.00	0.36	0.01
	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
STO	RM SEWER DETE	ENTION VOLUME			
			Diameter	Length	Volume
			(in)	(ft)	(ac-ft)
			12	0	0.00
тот	TAL DETENTION V	/OLUME			
		ntion Volume (ac-ft)	3.27		
		ntion Volume (ac-ft)	0.00		
			Total Dete	ntion Volume (ac-ft)	3.27

	100% impervious values	
Percent of Annual Rainfall Events	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+.009(I), where I is 100% (impervious cover)] RVR Quantity = Runoff Depth (in) / 12 (in/ft) * 43560 (ft²/ac)



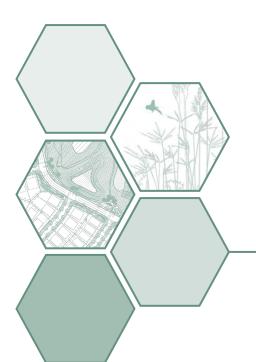
WETLAND DELINEATION REPORT

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

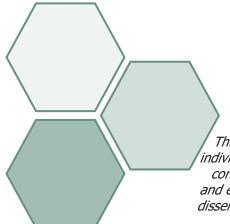
Project Reference Information

MA2242

November 22, 2022

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

Ellen L. Raimondi, CWS, DECI 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 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 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 <u>Corps of Engineers Wetlands Delineation Manual</u> (1987) and 2010 <u>Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region</u>. 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.

- 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

<u>Wetland 1.</u> 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*), Awl-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

<u>Lake County Watershed Development Ordinance:</u> 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 aguatic 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.

<u>Archaeological Survey Requirements:</u> 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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WETLAND DELINEATION REPORT Grass Lake Rd & Deep Lake Rd – MA2242

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



PLSS: NE S28 T46N R10E

Latitude: 42.439678 Longitude: -88.063754 Study Area



0 250' 500' **SCALE**: 1"=500'



Coordinates provided by Earth Point for Google Earth



Grass Lake Rd & Deep Lake Rd

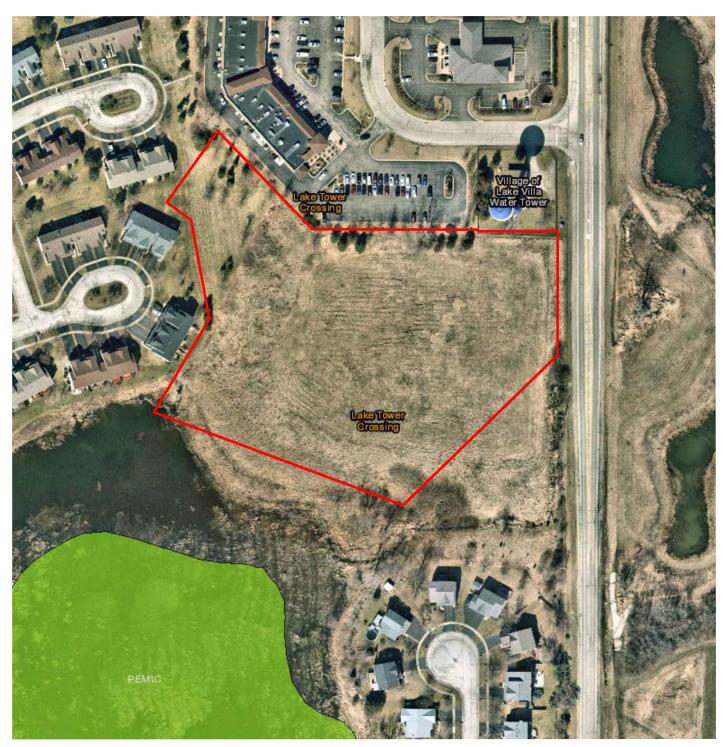
Lake Villa, IL

MA2242 Manhard Consulting, LTD. **LOCATION MAP**

Provided by: Google Maps

EXHIBIT A

Created by: MGK Checked





Estuarine and Marine Deepwater Estuarine and Marine Wetland

Freshwater Emergent Wetland

Lake

Freshwater Pond

Study Area

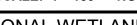
75' 150'



Freshwater Forested/Shrub Wetland

Other Riverine

SCALE: 1"=150'



NATIONAL WETLANDS **INVENTORY MAP**

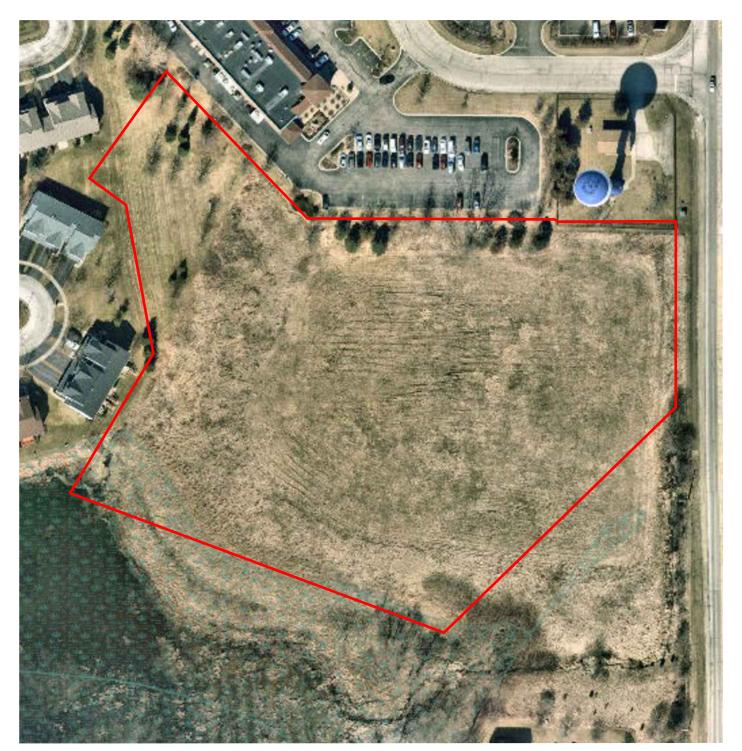
Provided by: U.S. Fish and Wildlife Service

EXHIBIT B

Created by: MGK

Grass Lake Rd & Deep Lake Rd Lake Villa, IL

> MA2242 Manhard Consulting, LTD.

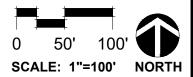


LEGEND











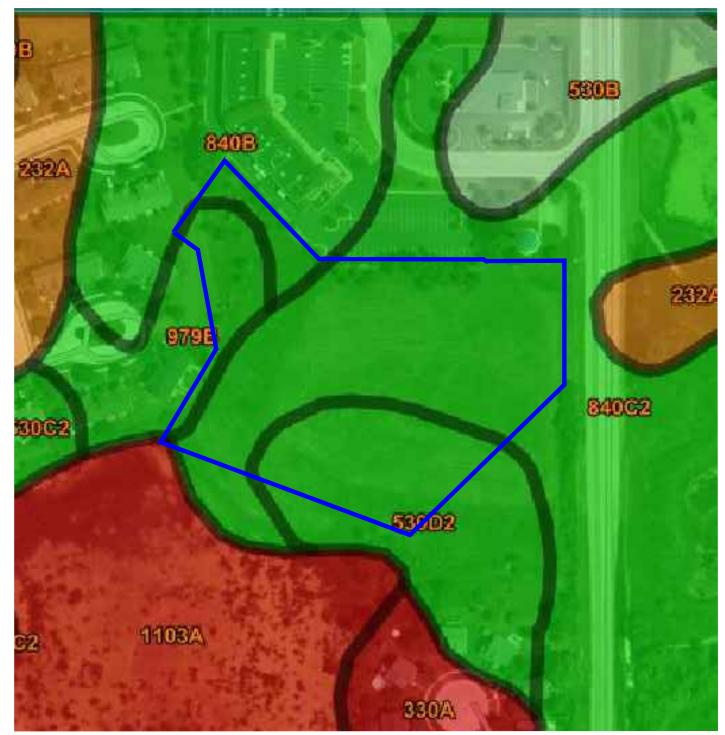
Grass Lake Rd & Deep Lake Rd Lake Villa, IL

MA2242 Manhard Consulting, LTD. LAKE CO. WETLAND INVENTORY MAP

Provided by: Lake County Parcel Viewer

EXHIBIT C

Created by: MGK Checked



LEGEND

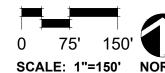
Hydric Soil (100%)

Study Area

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

GARY R. WEBER

ASSOCIATES, INC.



SOIL SURVEY MAP

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

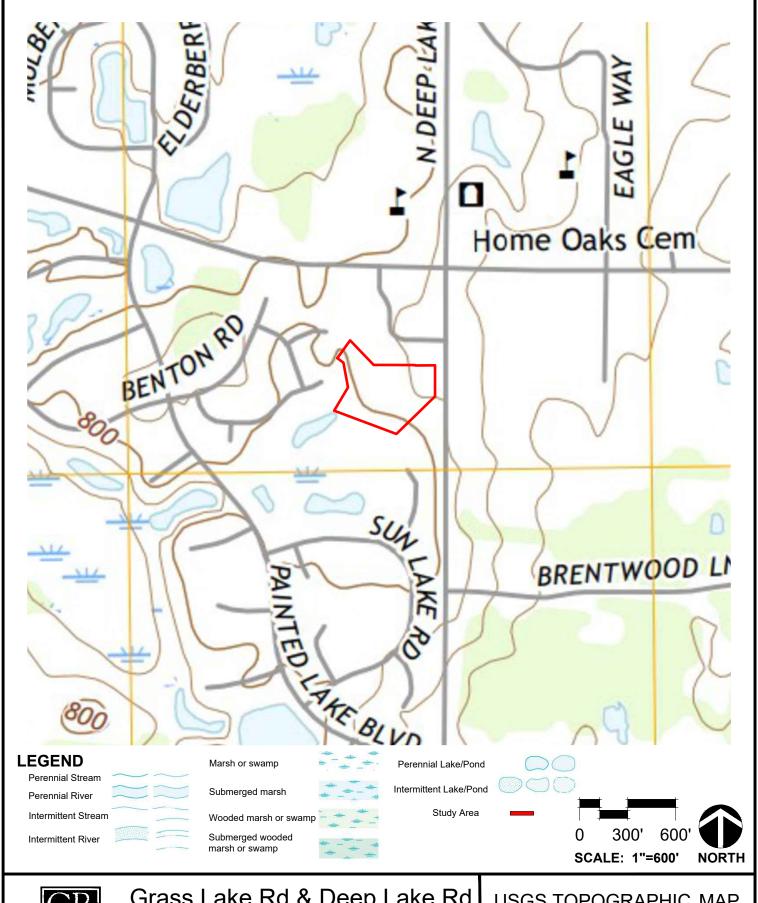
EXHIBIT D

Grass Lake Rd & Deep Lake Rd

Lake Villa, IL

MA2242 Manhard Consulting, LTD.

Created by: MGK





Grass Lake Rd & Deep Lake Rd

Lake Villa, IL

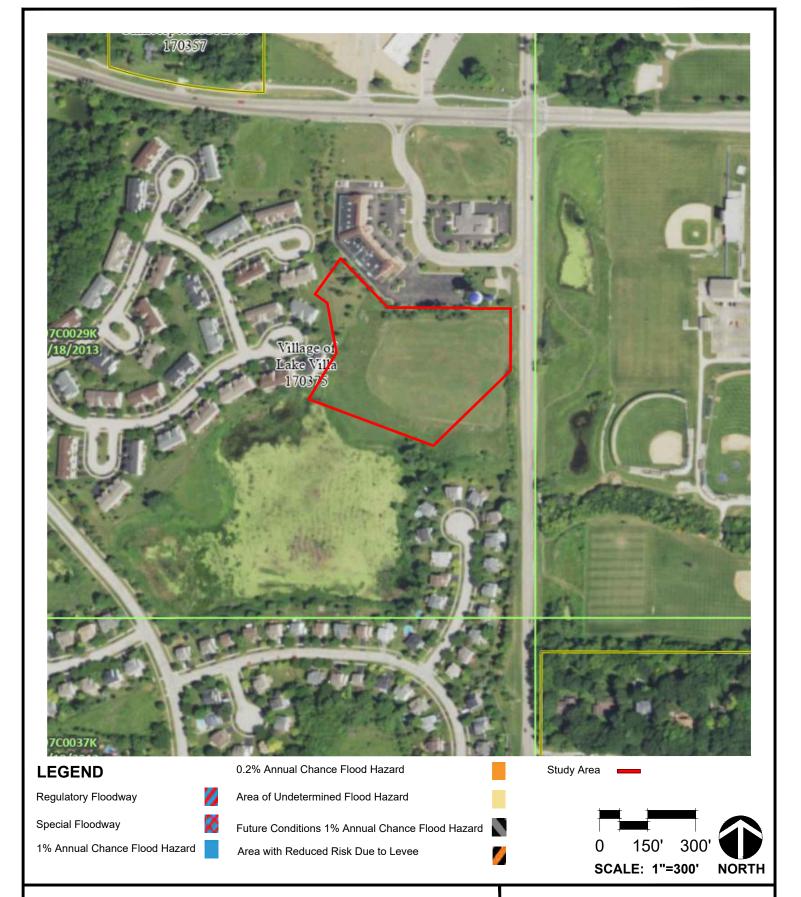
MA2242 Manhard Consulting, LTD.

USGS TOPOGRAPHIC MAP

Provided by: USGS Topographic (Antioch)

EXHIBIT E

Created by: MGK





Grass Lake Rd & Deep Lake Rd

Lake Villa, IL

MA2242 Manhard Consulting, LTD.

FLOOD INSURANCE MAP

Provided by: Federal Emergency Management Agency

EXHIBIT F

ated by: MGK Checked



LEGEND

Study Area - 4.97 Acres

Flagged Wetland Boundaries

Sample Points A-F

Off-site Wetland Boundaries (not flagged)

50' 100' SCALE: 1"=100'

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



Grass Lake Rd & Deep Lake Rd

Lake Villa, IL

MA2242 Manhard Consulting, LTD. WATER RESOURCES **SUMMARY**

DATE OF SITE VISIT: 11/3/2022

EXHIBIT G

Created by: MGK

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).



Grass Lake Rd & Deep Lake Rd Lake Villa, IL, 60046

MA2242 Manhard Consulting, LTD. 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).



Grass Lake Rd & Deep Lake Rd Lake Villa, IL, 60046

MA2242 Manhard Consulting, LTD. 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).



Grass Lake Rd & Deep Lake Rd

Lake Villa, IL, 60046

MA2242 Manhard Consulting, LTD. 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).

SITE PHOTOGRAPHS 11/3/2022

WETLAND DELINEATION REPORT Grass Lake Rd & Deep Lake Rd – MA2242

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: MA224	2 / Grass Lake	Rd & Deep	J Lake Rd		City/Cour	inty: Lake Vil	lla / Lake (County		Sampling D	ate: 11/3	3/2022
Applicant/Owner:	Manhard Con	າsulting, LT[<u>D.</u>				Stat	te: I	IL S	Sampling P	oint:	Α
Investigator(s): Lisa	Pajon				Section, T	Γownship, Ra	inge: NE	S28 T4	6N R10E			
Landform (hillside, te	errace, etc.): _					Local relief (c	concave, c	onvex, r	none):			
Slope (%):	Lat: 42.4396	678			Long:	-88.063754			Da	ıtum:		
Soil Map Unit Name	: 840C2 Zurich	ı and Ozauk	cee silt loa	ıms				NWI	classifica	ition:		
Are climatic / hydrolo	ogic conditions	on the site	typical for	this time o	f year?	Yes X	No	ı fl)	no, explai	n in Remar	ks.)	
Are Vegetation	, Soil,	or Hydrolog	յy <u>s</u> i	gnificantly	disturbed? /	Are "Normal C	Circumstan	ices" pre	esent?	Yes X	No	_
Are Vegetation	, Soil,	or Hydrolog	រូy nរ	aturally pro	blematic? (If needed, ex	κplain any a	answers	in Rema	rks.)		
SUMMARY OF	FINDINGS -	– Attach	site ma	p showii	ng samplir	ng point lo	cations	, trans	sects, iı	mportan	t feature	s, etc.
Hydrophytic Vegeta	ation Present?	Yes X	No		Is the	Sampled Ar	rea					
Hydric Soil Present	?	Yes X	No		withir	n a Wetland?	?	Yes	X	No	_	
Wetland Hydrology	Present?	Yes X	No									
Remarks:												
In ditch near road												
· COSTATION			£1	•								
VEGETATION -	- Use scient	ific name	s of plar		Deminent	Indicator	T					
Tree Stratum	(Plot size:	30)	Absolute % Cover	Dominant Species?	Indicator Status	Domina	ance Te	st worksl	heet:		
1.			-′ ·				Number	of Dom	ոinant Spe	ecies That		
2.									V, or FAC		4	(A)
3.										nt Species		_
4.							Across	All Strat	a:		4	_(B)
5			 .		Tatal Cover				•	ecies That	400.00/	/ ^ /D\
Sapling/Shrub Stra	tum (Plo	ot size:	15)		=Total Cover		Are Obi	_, FAUv	V, or FAC	C.	100.0%	_ (A/b)
Cornus racemo		/t 3120.	<u>10</u> ,	10	Yes	FAC	Prevale	nce Ind	dex works	sheet:		
2.	<u> </u>							tal % Co			ultiply by:	
3.							OBL spe		20	x 1 =	20	_
4							FACW	species	70	x 2 =	140	_
5.			<u> </u>				FAC spe	-	10	x 3 =		_
				10	=Total Cover		FACU s	•	10	x 4 =		_
Herb Stratum	(Plot size:	5	_)			=	UPL spe	-	0	x 5 =		- (5)
1. Phalaris arundir			 .	50	Yes	FACW	Column	-		(A)	230	(B)
2. Typha angustifo				20	Yes Yes	OBL FACW	Preva	alence I	ndex = B	/A =	2.09	_
 Symphyotrichur Solidago altissii 		16	 -	10	No	FACU	Hydron	hytic V	egetation	Indicator	<u></u>	
5.	<u>na</u>		·		110	1 400				/drophytic \		
6.								•	nce Test i		rogotation	
7.									nce Index			
8.							4 - !	Morphol	logical Ad	aptations ¹	(Provide su	pporting
9.							d	lata in R	Remarks o	or on a sep	arate sheet))
10.							Pro	blemation	c Hydroph	nytic Veget	ation ¹ (Expl	ain)
				100	=Total Cover						d hydrology	must
Woody Vine Stratu			30)				be prese	ent, unle	ess disturb	bed or prob	olematic.	
1.							Hydrop	-				
2					=Total Cover		Vegetat Present		Yes X	< No		
Remarks: (Include	nhoto number	rs here or or	n a senara	te sheet)			<u> </u>					
rtomante. (moiade	prioto ridiribori	0 11010 01 01	ra copara	to onoot.)								

SOIL Sampling Point: A

Depth	Matrix		Redo	x Featur				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
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	С	М		Distinct redox concentrations
Type: C=Co	oncentration, D=Depl	etion. RM	=Reduced Matrix. N	/S=Masl	ed San	d Grains.	² Locatio	n: PL=Pore Lining, M=Matrix.
lydric Soil								ors for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Gle	yed Mat	rix (S4)		Coa	st Prairie Redox (A16)
Histic Ep	pipedon (A2)		Sandy Red	dox (S5)			Iron	-Manganese Masses (F12)
Black His	stic (A3)		Stripped M	/latrix (Se	3)		Rec	Parent Material (F21)
Hydroge	n Sulfide (A4)		Dark Surfa	ace (S7)			Ver	y Shallow Dark Surface (F22)
Stratified	l Layers (A5)		Loamy Mu	icky Mine	eral (F1)		Oth	er (Explain in Remarks)
2 cm Mu	ck (A10)		Loamy Gle	eyed Mat	rix (F2)			
Depleted	Below Dark Surface	(A11)	Depleted N	√atrix (F	3)			
X Thick Da	ark Surface (A12)		Redox Dai	rk Surfac	e (F6)		³ Indicate	ors of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Depleted [Oark Surf	face (F7)	wet	and hydrology must be present,
5 cm Mu	cky Peat or Peat (S3)	Redox De	pression	s (F8)		unle	ess disturbed or problematic.
Restrictive I	Layer (if observed):							
	, ,							
Type:			<u></u>					
Depth (ir							Hydric Soil Preser	nt? Yes <u>X</u> No
Depth (ir	nches):						Hydric Soil Preser	nt? Yes <u>X</u> No
Depth (ir	nches):						Hydric Soil Preser	nt? Yes <u>X</u> No
Depth (ir Remarks: IYDROLO Wetland Hyd	oGY drology Indicators:		iradi abagi all that					
Depth (in Primary Indicators) Depth (in Primary Indicators)	nches): OGY drology Indicators: cators (minimum of o	ne is requi			was (BQ)		<u>Second</u>	ary Indicators (minimum of two requ
Depth (ir Remarks: IYDROLO Wetland Hyd Primary India Surface	orches): OGY drology Indicators: cators (minimum of o	ne is requi	Water-Sta	ined Lea)	Seconda Sur	ary Indicators (minimum of two requ face Soil Cracks (B6)
Depth (ir Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa	orches): OGY drology Indicators: cators (minimum of o Water (A1) tter Table (A2)	ne is requi	Water-Sta Aquatic Fa	ined Lea auna (B1	3))	SuriDra	ary Indicators (minimum of two requ face Soil Cracks (B6) nage Patterns (B10)
Depth (ir Remarks: IYDROLO Wetland Hyv Primary Indic Surface High Wa X Saturatio	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3)	ne is requi	Water-Sta Aquatic Fa True Aqua	iined Lea auna (B1 atic Plant	3) s (B14)		Seconda Suri Dra Dry.	ary Indicators (minimum of two requ face Soil Cracks (B6) inage Patterns (B10) Season Water Table (C2)
Depth (ir Remarks: IYDROLO Wetland Hye Primary Indic Surface High Wa X Saturatic Water M	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1)	ne is requi	Water-Sta Aquatic Fa True Aqua Hydrogen	ined Lea auna (B1 atic Plant Sulfide (3) s (B14) Odor (C1)	Second: Suri Dra Dry. Cra	ary Indicators (minimum of two requ ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8)
Depth (ir Remarks: IYDROLO Wetland Hyd Primary India Surface High Wa X Saturatio Water M Sedimen	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3)	ne is requi	Water-Sta Aquatic Fa True Aqua	iined Lea auna (B1 atic Plant Sulfide (Rhizosph	3) s (B14) Odor (C1 eres on) Living Ro	Seconda	ary Indicators (minimum of two requ face Soil Cracks (B6) inage Patterns (B10) Season Water Table (C2)
Depth (ir Remarks: IYDROLO Wetland Hyd Primary India Surface High Wa X Saturatio Water M Sedimen Drift Dep	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)	ne is requi	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	ined Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc	3) s (B14) Odor (C1 eres on ced Iron) Living Ro (C4)	Seconda Suri Dra Dry Cra Sots (C3) Sats Sturi	ary Indicators (minimum of two requ face Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (C
Depth (ir Remarks: IYDROLO Wetland Hyde Surface High Wa X Saturatic Water M Sedimen Drift Dep Algal Ma	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3)	ne is requi	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	ined Lea auna (B1 atic Plant: Sulfide (Rhizospho of Reduc	3) s (B14) Odor (C1 eres on ced Iron tion in T) Living Ro (C4)	Seconda Suri Dra Dry Cra Sati Sturi S (C6) X Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (Canted or Stressed Plants (D1)
Depth (ir Remarks: IYDROLO Wetland Hyde Primary India Surface High Wa X Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep	drology Indicators: cators (minimum of o Water (A1) tter Table (A2) on (A3) arks (B1) ott Deposits (B2) oosits (B3) ott or Crust (B4)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	ined Lea auna (B1 atic Plant: Sulfide C Rhizospho of Reduc on Reduc s Surface	3) s (B14) Odor (C1 eres on ced Iron tion in T) Living Ro (C4)	Seconda Suri Dra Dry Cra Sati Sturi S (C6) X Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) Inage Patterns (B10) Season Water Table (C2) Institution Visible on Aerial Imagery (Canted or Stressed Plants (D1) Indicators (D2)
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Depth (ir Remarks: IYDROLO Wetland Hyd Primary India Surface High Wa X Saturatia Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatia Sparsely Field Observi	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial In v Vegetated Concave vations:	nagery (B Surface (Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or 1 B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc on Reduc s Surface Well Dat blain in R	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9) emarks)) Living Ro (C4) illed Soils	Seconda Suri Dra Dry Cra Sati Sturi S (C6) X Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) Inage Patterns (B10) Season Water Table (C2) Institution Visible on Aerial Imagery (Canted or Stressed Plants (D1) Indicators (D2)
Depth (ir Remarks: IYDROLO Wetland Hyde Primary India Surface High Wa X Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatia Sparsely Field Obsert Surface Water Table	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial In vegetated Concave vations: er Present? Ye Present?	nagery (B Surface (s s	Water-Sta	ined Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc on Reduc s Surface Well Dat blain in R Depth (ii	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9) demarks) nches):) Living Ro (C4) illed Soil	Secondar	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (Canted or Stressed Plants (D1) umorphic Position (D2) C-Neutral Test (D5)
Depth (ir Remarks: HYDROLO Wetland Hyde Surface High Wa X Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Field Obser Surface Water Table Saturation P	drology Indicators: cators (minimum of o Water (A1) tter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave vations: er Present? Present? Ye resent? Ye	nagery (B Surface (Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or 1 B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc on Reduc s Surface Well Dat blain in R	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9) demarks) nches):) Living Ro (C4) illed Soil	Seconda Suri Dra Dry Cra Sati Sturi S (C6) X Geo	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (Cated or Stressed Plants (D1) pmorphic Position (D2) C-Neutral Test (D5)
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Depth (ir Remarks: IYDROLO Wetland Hyde Surface High Wa X Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Field Obsert Surface Water Table Saturation Pr (includes car	drology Indicators: cators (minimum of o Water (A1) tter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave vations: er Present? Present? Ye resent? Ye	magery (B Surface (s s s	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizospho of Reduc on Reduc Surface Well Data blain in R Depth (ii Depth (ii	3) s (B14) Dodor (C1 eres on ted Iron tion in T (C7) a (D9) temarks) nches): nches):) Living Ro (C4) illed Soils	Seconda Sur Dra Dry Cra Soots (C3) Satu Stur Stur S (C6) X Gec X FAC	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (Cated or Stressed Plants (D1) pmorphic Position (D2) C-Neutral Test (D5)
Depth (ir Remarks: IYDROLO Wetland Hyde Surface High Wa X Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Field Obsert Surface Water Table Saturation Pr (includes car	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial In vegetated Concave vations: er Present? Present? Ye resent? Ye polillary fringe)	magery (B Surface (s s s	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizospho of Reduc on Reduc Surface Well Data blain in R Depth (ii Depth (ii	3) s (B14) Dodor (C1 eres on ted Iron tion in T (C7) a (D9) temarks) nches): nches):) Living Ro (C4) illed Soils	Seconda Sur Dra Dry Cra Soots (C3) Satu Stur Stur S (C6) X Gec X FAC	ary Indicators (minimum of two requirace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (Canted or Stressed Plants (D1) umorphic Position (D2) C-Neutral Test (D5)

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: MA224	2 / Grass Lake	Rd & Deep	Lake Rd		City/Cou	ınty: <u>Lake Vi</u>	lla / Lake C	County	s	ampling D	ate: 11/3	/2022
Applicant/Owner:	Manhard Cor	nsulting, LTD	<u>. </u>				Stat	te: I	IL S	ampling Po	oint:	В
Investigator(s): Lisa	Pajon				Section,	Township, Ra	inge: NE	S28 T4	6N R10E			
Landform (hillside, te	errace, etc.): _					Local relief (d	concave, c	onvex, r	none):			
Slope (%):	Lat: 42.439	678			Long:	-88.063754			Dat	um:		
Soil Map Unit Name:	: 840C2 Zurich	n and Ozauke	e silt loar	ms				NWI	classificat	ion:		
Are climatic / hydrolo	ogic conditions	on the site t	ypical for	this time c	f year?	Yes X	No	(If :	no, explair	in Remar	ks.)	
Are Vegetation	, Soil ,	or Hydrology	y siç	gnificantly	disturbed? /	Are "Normal (ces" pr	esent?	Yes X	No	
Are Vegetation												_
SUMMARY OF											t feature:	s, etc.
Hydrophytic Vegeta	ation Present?	Yes X	No		Is the	e Sampled Aı	rea					
Hydric Soil Present	?	Yes	No	Χ	withi	n a Wetland?	?	Yes		No X	-	
Wetland Hydrology	Present?	Yes		Χ				-				
Remarks:												
Turf upland point												
VEGETATION -	- Use scient	tific names	•									
Tree Stratum	(Plot size:	30		Absolute % Cover	Dominant Species?	Indicator Status	Domina	ince Te	st worksh	eet:		
1.	(1 10.0		-′ –	70 001.1	органи	<u> </u>			ninant Spe			
2.									W, or FAC:		1	(A)
3.							Total Nu	umber o	of Dominan	t Species		_
4.			<u> </u>				Across A			•	1	_(B)
5									ninant Spe			
			_		=Total Cover		Are OBI	_, FACV	W, or FAC:		100.0%	_ (A/B)
Sapling/Shrub Strat			15)				<u> </u>					
1.									dex works		IC L. L.	
2. 3.							OBL spe	tal % Co	over of: 0	MI x 1 =	ultiply by: 0	_
							FACW s			_ x1=		_
5.							FAC spe	•	80	_ x3=		_
<u> </u>					=Total Cover		FACU s		30	x 4 =		_
Herb Stratum	(Plot size:	5)				UPL spe	•	0	x 5 =		_
1. Poa pratensis	_			70	Yes	FAC	Column	Totals:	110	(A)	360	(B)
2. Dactylis glomer	ata			20	No	FACU	Preva	alence I	Index = B/	A =	3.27	_
3. Taraxacum offic	cinale			10	No	FACU						
4. Plantago major				10	No	FAC		-	•	Indicators		
5									•	drophytic V	/egetation	
6.									nce Test is			
7									nce Index		/D	
8. 9.											(Provide su arate sheet)	
10.										•	ation¹ (Expl	,
10				110	=Total Cover					, ,	` .	,
Woody Vine Stratu	m (Plo	ot size: 3	30)		10101 00101			-	•	nd welland ed or prob	d hydrology blematic.	musi
1.		-						•				
2.							Hydrop Vegetat	-				
					=Total Cover		Present		Yes X	No		
Remarks: (Include	photo number	rs here or on	a separat	e sheet.)								

SOIL Sampling Point: B

Profile Des	cription: (Describe t	the depth	needed to docu	ument th	e indicat	or or c	onfirm the absence of	f indicators.)
Depth	Matrix		Redo	x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 2/1	100					Loamy/Clayey	Silty
6-10	2.5Y 4/4	80	10YR 2/1	20			Loamy/Clayey	Gravel
					·			
				· —				
		— –		. ——				
,,	oncentration, D=Deple	tion, RM=R	teduced Matrix, N	иS=Mask	ed Sand	Grains		PL=Pore Lining, M=Matrix.
Hydric Soil								s for Problematic Hydric Soils ³ :
Histosol	• •		Sandy Gle	•	ix (S4)			t Prairie Redox (A16)
	pipedon (A2)		Sandy Red					Manganese Masses (F12)
	stic (A3)		Stripped N	`	;)			Parent Material (F21)
	n Sulfide (A4)		Dark Surfa					Shallow Dark Surface (F22)
	d Layers (A5)		Loamy Mu	•	, ,		Other	(Explain in Remarks)
	ick (A10)	(4.4.4)	Loamy Gle	•	• •			
	d Below Dark Surface	(A11)	Depleted N	`	,		31 11 1	
	ark Surface (A12)		Redox Da		` '			s of hydrophytic vegetation and
	fucky Mineral (S1)		Depleted [nd hydrology must be present,
_	icky Peat or Peat (S3)		Redox De	pressions	3 (F8)	1	unies	s disturbed or problematic.
	Layer (if observed):							
Type:			_					
Depth (i	nches):						Hydric Soil Present	? Yes No X
Remarks:								
HYDROLO)CV							
_	drology Indicators:							
	cators (minimum of or	e is require			(D0)			y Indicators (minimum of two required)
	Water (A1)		Water-Sta		` '			ce Soil Cracks (B6)
	ater Table (A2)		Aquatic Fa	`	,			age Patterns (B10)
Saturation Water M			True Aqua Hydrogen					Season Water Table (C2) ish Burrows (C8)
	larks (B1) nt Deposits (B2)		Oxidized F		, ,			ation Visible on Aerial Imagery (C9)
	posits (B3)		Presence			-	· · · —	ed or Stressed Plants (D1)
	at or Crust (B4)		Recent Iro		,	,		norphic Position (D2)
	oosits (B5)		Thin Muck			10u 00	· · ·	Neutral Test (D5)
· — ·	on Visible on Aerial In	nagery (B7)			` '			Neutral 1931 (30)
	Vegetated Concave				. ,			
Field Obser		,	<u>, </u>	-	,			
Surface Wat		<u>.</u>	No X	Depth (in	nches).			
Water Table			No X	Depth (ir	_			
Saturation P			No X	Depth (in	· -		Wetland Hydrolog	y Present? Yes No X
	pillary fringe)	·		,				
,	corded Data (stream	auge, mon	itoring well, aeria	l photos,	previous	inspec	tions), if available:	
	,	,- J ,	5 ,		r	•	,,	
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)

Project/Site: MA224	2 / Grass Lake	∍ Rd & Deep I	∟ake Rd		City/Cour	nty: <u>Lake Vi</u>	lla / Lake	County		Samp	ling Da	ite: 11/3/	/2022
Applicant/Owner:	Manhard Cor	nsulting, LTD.					Sta	ate:	IL	Sampl	ling Poi	int:	С
Investigator(s): Lisa	Pajon				Section, T	Гownship, Ra	ınge: NE	S28 T4	16N R10E	Ξ			
Landform (hillside, te	errace, etc.):					Local relief (d	concave,	convex,	none):				
Slope (%):	Lat: 42.439	678			Long: -	-88.063754			D	atum:			
Soil Map Unit Name	: 530D2 Ozaul	kee silt loam						NWI	l classific	ation:			
Are climatic / hydrolo	ogic conditions	on the site ty	pical for	this time o	f year?	Yes X	No	(If	no, expla	ain in R	- temark	s.)	
Are Vegetation	, Soil,	, or Hydrology	si	gnificantly o	disturbed? F	Are "Normal (Circumsta	nces" pr	esent?	Yes	X	No	_
Are Vegetation	_, Soil,	, or Hydrology	na	aturally prol	blematic? (If needed, ex	κplain any	answer	s in Rem	arks.)	_		_
SUMMARY OF	FINDINGS	– Attach s	ite ma	p showir	ng samplir	ng point lo	ocations	s, tran	sects,	impo	rtant	features	s, etc.
Hydrophytic Vegeta	ation Present?	Yes X	No		Is the	Sampled A	rea						
Hydric Soil Present	t?	Yes X	No		withir	n a Wetland?	?	Yes	X	No			
Wetland Hydrology	Present?	Yes X	No										
Remarks:													
In wetland													
\ COETATION			· f salas										
VEGETATION -	- Use scient	afic names	or plan	Absolute	Dominant	Indicator	T						
Tree Stratum	(Plot size:	30)	% Cover	Species?	Status	Domin	ance Te	est works	sheet:			
1. Salix nigra			·	40	Yes	OBL	Numbe	er of Don	minant Sp	pecies	That		
2.									W, or FA		_	3	(A)
3.			<u> </u>						of Domina	ant Spe	ecies	_	
4			 -					All Stra			_	3	_(B)
5			 -	40	=Total Cover				ninant Sp W, or FA		That	100.0%	(A/R)
Sapling/Shrub Stra	tum (Plc	ot size: 1	- 15)	40	- Total Gover		AIC OL)L, I AC	/V, Ui i / \	C.	-	100.070	_(^,'')
Salix interior	<u> </u>		<u> </u>	30	Yes	FACW	Preval	ence In	dex worl	ksheet			
2.							To	otal % C	over of:		Mul	Itiply by:	
3.							OBL sp	pecies	130		x 1 = _	130	_
4.								species			x 2 = _	80	_
5			<u> </u>				FAC sp		0		x 3 = _	0	_
Llank Ctratum	/Dist size:	<u></u>		30	=Total Cover			species			x 4 = _ x 5 =	0	_
Herb Stratum 1. Carex stipata	(Plot size:	5	.)	90	Yes	OBL	UPL sp	oecies n Totals:	170		_	210	(B)
Carex stipata Phalaris arundii	nacea		 -	10	No	FACW			Index =		_	1.24	- ^(D)
3.	lacca		 -	10	110	TACT	110,	/aiciioc	Писл	_		1.27	_
4.							Hydro	phytic V	/egetatio	n Indi	cators:	<u> </u>	
5.									•			egetation	
6.									ance Test			Ü	
7.							X 3-	Prevale	ence Inde	ex is ≤3	3.0 ¹		
8.									-	-		Provide sup	
9											-	rate sheet)	
10			·				Pre	oblemati	ic Hydrop	ohytic \	/egetat	tion ¹ (Expla	ain)
Woody Vine Stratu	m (Plo	ot size: 3	30)	100	=Total Cover				ydric soil less distu			hydrology ematic.	must
1.							Hydro	nhytic					
2.							Vegeta						
_					=Total Cover		Preser		Yes_	Χ	No		
Remarks: (Include	photo number	rs here or on a	a separa	te sheet.)									
1													

SOIL Sampling Point: C

Depth	Matrix		Redo	x Featur				
inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-14	10YR 2/1	100					Loamy/Clayey	Small Gravel, Wet, Silty
14-20	10YR 4/2	70	10YR 2/1	20			Loamy/Clayey	
		· <u></u> -	10YR 5/4	10	С	М		Distinct redox concentration
								_
Type: C=Co	oncentration, D=Dep	etion. RM	=Reduced Matrix. N	/S=Masl	ed San	d Grains.	2Locati	on: PL=Pore Lining, M=Matrix.
	Indicators:							ors for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Gle	yed Mat	rix (S4)		Co	ast Prairie Redox (A16)
Histic Ep	pipedon (A2)		Sandy Red	dox (S5)			Iro	n-Manganese Masses (F12)
Black His	stic (A3)		Stripped M	/latrix (Se	3)		Re	d Parent Material (F21)
Hydroge	n Sulfide (A4)		Dark Surfa	ace (S7)			Ve	ry Shallow Dark Surface (F22)
Stratified	l Layers (A5)		Loamy Mu	icky Mine	eral (F1)		Ot.	her (Explain in Remarks)
2 cm Mu	ck (A10)		Loamy Gle	eyed Mat	rix (F2)			
Depleted	Below Dark Surface	(A11)	Depleted N	Matrix (F	3)			
X Thick Da	ark Surface (A12)		Redox Dai	rk Surfac	e (F6)		³ Indica	tors of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Depleted [Dark Sur	face (F7)	we	tland hydrology must be present,
5 cm Mu	cky Peat or Peat (S3	.)	Redox De	pressions	s (F8)		un	less disturbed or problematic.
Restrictive I	Layer (if observed):							
	, (
Type:								
Type: Depth (ir							Hydric Soil Prese	ent? Yes <u>X</u> No
Type: _ Depth (ir Remarks:	nches):		_				Hydric Soil Prese	ent? Yes <u>X</u> No
Type: _ Depth (ir Remarks:	nches):						Hydric Soil Prese	ent? Yes <u>X</u> No
Type:	oGY drology Indicators:							
Type:	nches): OGY drology Indicators: cators (minimum of o				viae (PO)		<u>Second</u>	dary Indicators (minimum of two requ
Type:	orches): OGY drology Indicators: cators (minimum of o		Water-Sta	ined Lea)	<u>Second</u> Su	dary Indicators (minimum of two requ rface Soil Cracks (B6)
Type:	orches): OGY drology Indicators: cators (minimum of orwater (A1) tter Table (A2)		Water-Sta Aquatic Fa	ined Lea auna (B1	3))	<u>Second</u> Su Dr:	dary Indicators (minimum of two requiface Soil Cracks (B6) ainage Patterns (B10)
Type:	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3)		Water-Sta Aquatic Fa True Aqua	iined Lea auna (B1 atic Plant	3) s (B14)		Second Su Dr: Dr:	dary Indicators (minimum of two requ rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2)
Type: Depth (in Remarks: PTDROLO Vetland Hydrimary India Surface High Wa Saturatic Water M	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1)		Water-Sta Aquatic Fa True Aqua Hydrogen	ined Lea auna (B1 atic Plant Sulfide (3) s (B14) Odor (C1)	Second Su Dra Dra Cra	dary Indicators (minimum of two requ rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8)
Type: Depth (in Permarks: Primary India Surface Saturatic Water M Sedimen	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F	iined Lea auna (B1 atic Plant Sulfide (Rhizosph	3) s (B14) Odor (C1 eres on) Living Ro	SecondSuDriDriCri poots (C3)Sa	dary Indicators (minimum of two requ rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (C
Type: Depth (in Permarks: Primary India Surface High Water M Sedimen Drift Dep	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1)		Water-Sta Aquatic Fa True Aqua Hydrogen	ined Lea auna (B1 atic Plants Sulfide (Rhizosph of Reduc	3) s (B14) Odor (C1 eres on ced Iron) Living Ro (C4)	SecondSuDrCrCrSaStSt.	dary Indicators (minimum of two requirect Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1)
Type:	drology Indicators: eators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3)		Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence	ined Lea auna (B1 atic Plant: Sulfide (Rhizospho of Reduc	3) s (B14) Odor (C1 eres on ced Iron tion in T) Living Ro (C4)	Second Su Dr.	dary Indicators (minimum of two requ rface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (C
Type:	drology Indicators: cators (minimum of o Water (A1) tter Table (A2) on (A3) arks (B1) ott Deposits (B2) oosits (B3) at or Crust (B4)	ne is requi	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck	ined Lea auna (B1 atic Plant: Sulfide C Rhizospho of Reduc on Reduc s Surface	3) s (B14) Odor (C1 eres on ced Iron tion in T) Living Ro (C4)	Second Su Dr.	dary Indicators (minimum of two requirface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2)
Type:	drology Indicators: cators (minimum of o Water (A1) tter Table (A2) on (A3) arks (B1) at Deposits (B2) posits (B3) at or Crust (B4) osits (B5)	ne is requi	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V	ined Lea auna (B1 Sulfide C Rhizospho of Reduc on Reduc c Surface Well Dat	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9)) Living Ro (C4) illed Soil:	Second Su Dr.	dary Indicators (minimum of two requirface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2)
Type: Depth (ir Permarks: PPROLO Primary Indicators of the permark of the p	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial II v Vegetated Concave	ne is requi	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V	ined Lea auna (B1 Sulfide C Rhizospho of Reduct on Reduct Surface Well Dat	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9)) Living Ro (C4) illed Soil:	Second Su Dr.	dary Indicators (minimum of two requirface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2)
Type: Depth (in Primary Indic High Wa Saturatic Water M Sedimen Drift Dep Algal Ma	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial II v Vegetated Concave vations:	ne is requi magery (B Surface (Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V	ined Lea auna (B1 Sulfide C Rhizospho of Reduct on Reduct Surface Well Dat	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9)) Living Ro (C4) illed Soil:	Second Su Dr.	dary Indicators (minimum of two requirface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2)
Type: Depth (in Person	drology Indicators: cators (minimum of or Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial II ovegetated Concave vations: er Present? Ye Present?	magery (B Surface (Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc on Reduc s Surface Well Dat blain in R Depth (ii	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9) demarks) nches):) Living Ro (C4) illed Soil	Second Su Dr.	dary Indicators (minimum of two requirface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2)
Type: Depth (in Permarks: Permarks: Permarks	drology Indicators: cators (minimum of of other (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial In vegetated Concave vations: er Present? Yee	magery (B Surface (Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or 1 B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc on Reduc s Surface Well Dat blain in R	3) s (B14) Odor (C1 eres on ced Iron tion in T (C7) a (D9) demarks) nches):) Living Ro (C4) illed Soil	Second Su Dr.	dary Indicators (minimum of two requirface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
Type: Depth (ir Permarks: Permarks: Permary Indication	drology Indicators: cators (minimum of	magery (B Surface (s s	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizospho of Reduc on Reduc Surface Well Data blain in R Depth (ii Depth (ii	3) s (B14) Dodor (C1 eres on ted Iron tion in T (C7) a (D9) temarks) nches): nches):) Living Ro (C4) illed Soil:	Second	dary Indicators (minimum of two requiface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
Type: Depth (ir Permarks:	drology Indicators: cators (minimum of of of water (A1) ter Table (A2) on (A3) arks (B1) arks (B1) on to Deposits (B2) osits (B3) at or Crust (B4) osits (B5) on Visible on Aerial In vegetated Concave vations: er Present? Present? Ye resent? Ye	magery (B Surface (s s	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizospho of Reduc on Reduc Surface Well Data blain in R Depth (ii Depth (ii	3) s (B14) Dodor (C1 eres on ted Iron tion in T (C7) a (D9) temarks) nches): nches):) Living Ro (C4) illed Soil:	Second	dary Indicators (minimum of two requiface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)
Type: Depth (ir Permarks: Permarks: Permary Indication	drology Indicators: cators (minimum of	magery (B Surface (s s	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck 7) Gauge or V B8) Other (Exp	ined Lea auna (B1 atic Plants Sulfide C Rhizospho of Reduc on Reduc Surface Well Data blain in R Depth (ii Depth (ii	3) s (B14) Dodor (C1 eres on ted Iron tion in T (C7) a (D9) temarks) nches): nches):) Living Ro (C4) illed Soil:	Second	dary Indicators (minimum of two requiface Soil Cracks (B6) ainage Patterns (B10) y-Season Water Table (C2) ayfish Burrows (C8) turation Visible on Aerial Imagery (Cunted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)

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: MA2242 / Grass Lake Rd & Deep Lake Rd		City/Cour	nty: Lake Vi	illa / Lake County	Sampling Date:	11/3/2022
Applicant/Owner: Manhard Consulting, LTD.				State: IL	Sampling Point:	D
Investigator(s): Lisa Pajon		Section, T	ownship, Ra	ange: NE S28 T46N R10	0E	
Landform (hillside, terrace, etc.):		l	Local relief (concave, convex, none):		
Slope (%): Lat: 42.439678		Long: -{	88.063754		Datum:	
Soil Map Unit Name: 840C2 Zurich and Ozaukee silt loa	ms			NWI classif		
Are climatic / hydrologic conditions on the site typical for	this time o	f year?	Yes X	No (If no, exp	olain in Remarks.)	
Are Vegetation, Soil, or Hydrologysi		•				No
Are Vegetation, Soil, or Hydrologyna				xplain any answers in Rer	' <u></u>	
SUMMARY OF FINDINGS – Attach site ma				•	,	atures, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes X No	Х		Sampled A		No X	
	X		a moduli.		<u> </u>	
Remarks:						
Center of slope						
VEGETATION – Use scientific names of plar	nts.				,	<u>, </u>
Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wor	·kehoot·	
1. (Plot size:)	% Cover	Species:	Slatus	Number of Dominant 9		
2.				Are OBL, FACW, or F.	•	0 (A)
3.				Total Number of Domi	inant Species	
4.				Across All Strata:	· <u>—</u>	2 (B)
5				Percent of Dominant S	•	(A/D)
Sapling/Shrub Stratum (Plot size: 15)		=Total Cover		Are OBL, FACW, or F.	AC:	0.0% (A/B)
1				Prevalence Index wo	 orksheet:	
2.				Total % Cover of		ly by:
3.				OBL species 0		0
4.				FACW species 0) x 2 =	0
5.				FAC species 0) x 3 =	0
		=Total Cover		FACU species 90	0 x 4 =	360
Herb Stratum (Plot size: 5				UPL species 10		50
Sorghastrum nutans	45	Yes	FACU	Column Totals: 10	``	410 (B)
2. Solidago altissima	30	Yes	FACU	Prevalence Index :	= B/A =4.1	0
3. Baptisia alba	15	No	FACU			
Solidago ptarmicoides	5	No	UPL	Hydrophytic Vegetat		
5. Silphium laciniatum	5	No	UPL	I —	Hydrophytic Vege	tation
6.				2 - Dominance Te		
7				3 - Prevalence Inc		
8					Adaptations ¹ (Pro	
9					-	*
10	100	=Total Cover			ophytic Vegetation	` ' '
Woody Vine Stratum (Plot size: 30)	100	=Total Cover		¹ Indicators of hydric so be present, unless dis		
1				Hydrophytic		
2				Vegetation		
		=Total Cover		Present? Yes	No_X	
Remarks: (Include photo numbers here or on a separa	te sheet.)					

SOIL Sampling Point: D

	cription: (Describe	to the depth				tor or c	onfirm the absence	e of indicators.)
Depth	Matrix			x Featur		. 2		
(inches)	Color (moist)	<u> </u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
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	М		Distinct redox concentrations
1Type: C=C	oncentration, D=Dep	otion DM=	Poducod Matrix N	49-Mac	rod Sono		² l ocat	ion: PL=Pore Lining, M=Matrix.
Hydric Soil		elion, rivi-r	reduced Matrix, I	/IO-IVIASI	keu Sanc	Giailis		tors for Problematic Hydric Soils ³ :
Histosol			Sandy Gle	ved Mat	rix (S4)			past Prairie Redox (A16)
	pipedon (A2)		Sandy Re	-	(0 .)			on-Manganese Masses (F12)
Black His	. , ,		Stripped N		3)			ed Parent Material (F21)
	n Sulfide (A4)		Dark Surfa		,			ery Shallow Dark Surface (F22)
	Layers (A5)		Loamy Mu	icky Mine	eral (F1)		O	ther (Explain in Remarks)
2 cm Mu	ck (A10)		Loamy Gle	eyed Mat	trix (F2)			
Depleted	l Below Dark Surface	(A11)	Depleted I	Matrix (F	3)			
X Thick Da	rk Surface (A12)		Redox Da	rk Surfac	e (F6)		³ Indica	tors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted I		` '			etland hydrology must be present,
5 cm Mu	cky Peat or Peat (S3	5)	Redox De	pression	s (F8)		ur	lless disturbed or problematic.
Restrictive I	Layer (if observed):							
Type:								
Depth (ir	nches):		_				Hydric Soil Pres	ent? Yes <u>X</u> No
HYDROLO	GY							
r	drology Indicators:							
_	cators (minimum of o	ne is require	ed: check all that a	(vlgge			Secon	dary Indicators (minimum of two required)
	Water (A1)		Water-Sta		ves (B9)			urface Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic Fa	auna (B1	3)		 Dr	rainage Patterns (B10)
Saturation	on (A3)		True Aqua	itic Plant	s (B14)		Dr	y-Season Water Table (C2)
	arks (B1)		Hydrogen	Sulfide (Odor (C1))		ayfish Burrows (C8)
' '	t Deposits (B2)		Oxidized F			-		aturation Visible on Aerial Imagery (C9)
	oosits (B3)		Presence			. ,		unted or Stressed Plants (D1)
	t or Crust (B4)		Recent Iro			lled Soil	` ′ —	eomorphic Position (D2)
	osits (B5)	(D7)	Thin Muck		` '		F	AC-Neutral Test (D5)
	on Visible on Aerial II Vegetated Concave				, ,			
Field Observ		Odriace (Di	Other (EX	Jani III I	cinarks)		T	
Surface Water		c	No X	Denth (i	nches):			
Water Table			No X		nches):			
Saturation P			No X		nches):		Wetland Hydro	logy Present? Yes No X
(includes cap					′ -		, , ,	<u> </u>
<u> </u>	corded Data (stream	gauge, mor	nitoring well, aeria	I photos,	previous	inspec	tions), 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)

Project/Site: MA224	2 / Grass Lake	Rd & Deep	Lake Rd		City/Cou	ınty: <u>Lake Vi</u>	illa / Lake C	County	s	ampling D	ate: 11/3	/2022
Applicant/Owner:	Manhard Con	nsulting, LTD)_				Stat	te: I	IL S	ampling Po	oint:	E
Investigator(s): Lisa	Pajon				Section,	Township, Ra	inge: NE	S28 T46	6N R10E			
Landform (hillside, te	errace, etc.): _					Local relief (concave, c	onvex, r	none):			
Slope (%):	Lat: 42.4396	678			Long:	-88.063754			Dat	um:		
Soil Map Unit Name:	: 840C2 Zurich	ı and Ozauk	ee silt loar	ms				NWI	classificat	ion:		
Are climatic / hydrolo	ogic conditions	on the site t	ypical for	this time o	f year?	Yes X	No	(If r	no, explain	ı in Remar	ks.)	
Are Vegetation	, Soil,	or Hydrology	ysiç	gnificantly	disturbed?	Are "Normal (Circumstan	ces" pre	esent? `	Yes X	No	_
Are Vegetation	, Soil,	or Hydrology	yna	aturally pro	blematic?	(If needed, ex	xplain any a	answers	in Remar	ks.)		
SUMMARY OF											t feature	s, etc.
Hydrophytic Vegeta	ation Present?	Yes X	No		Is the	e Sampled A	rea					
Hydric Soil Present	?	Yes X	No		withi	n a Wetland	?	Yes	X	No	_	
Wetland Hydrology	Present?	Yes X	No_									
Remarks:												
In wetland at edge	of cattails											
· COSTATION			سمات ک									
VEGETATION -	· Use scient	ific names	•		Daminant	la dinotor	T					
Tree Stratum	(Plot size:	30		Absolute % Cover	Dominant Species?	Indicator Status	Domina	nce Te	st worksh	eet:		
1			- ·				Number	of Dom	ninant Spe	cies That		
2.									V, or FAC:		3	(A)
3.									f Dominan	t Species	_	
4.							Across A	All Strat	a:		3	_(B)
5					-Tatal Cover				ninant Spec		400.00/	/ ^ /D\
Sapling/Shrub Strat	tum (Plo	ot size:	_ 15)		=Total Cover		Are Obl	_, FACv	V, or FAC:		100.0%	_(A/B)
1.							Prevale	nce Ind	lex works	heet:		
2.								tal % Co			ultiply by:	
							OBL spe		100	x 1 =	100	_
4							FACW s	-	0	x 2 =	0	_
5.							FAC spe	ecies	0	x 3 =	0	_
			_		=Total Cover		FACU s		0	_ x 4 =		_
Herb Stratum	(Plot size:	5	_)	40		0.51	UPL spe	-	0	_ x 5 =		- (5)
1. Typha angustifo				40	Yes	OBL	Column			(A)	100	_(B)
Scirpus atrovire Carex stipata	ns			30	Yes Yes	OBL OBL	Preva	alence II	ndex = B/	A =	1.00	_
4.					162	OBL	Hydron	hytic V	egetation	Indicators		
5.								•	est for Hyd			
6.									nce Test is		ogotatio	
7.									nce Index			
8.							4 - 1	Morphol	logical Ada	aptations¹ ((Provide su	pporting
9.							d	ata in R	≀emarks or	on a sepa	arate sheet))
10							Pro	blemation	c Hydrophy	ytic Vegeta	ation¹ (Expla	ain)
	(5)		\ -	100	=Total Cover			-			d hydrology	must
Woody Vine Stratu			30)				be prese	ent, unle	ess disturb	ed or prob	lematic.	
1							Hydrop	-				
Z					=Total Cover		Vegetat Present		Yes X	No		
Remarks: (Include	shoto number	n hare or on	o cenara	-				·				
itemarks. (include	prioto number	S Here or on	a separat	.e sileet.)								

SOIL Sampling Point: E

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 5/4 10 C M Distinct redox concentration Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Red Parent Material (F21) Hydrogen Sulfide (A4) Dark Surface (S7) Very Shallow Dark Surface (F22) Stratified Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Depleted Matrix (F2) X Depleted Below Dark Surface (A11) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes X No	Depth	Matrix		Redo	x Feature				
Beautiful Common	(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced (F2) Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Type Sand Reduced F2) Type: D=Depth (Inches): A	0-8	10YR 2/1	98	10YR 4/6	2	С	M	Loamy/Clayey	Gravel and Debris in Top 8
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. **Juncation: PL=Pore Lining, M=Matrix, Mydric Soil Indicators: Histosol (A1) Histosol (A2) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Itron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S8) Red Parent Matria (F21) Hydrogen Sulfide (A4) Dark Surface (S7) 2 orm Muck (A10) Loamy Mucky Mineral (F1) Zomy Gleyed Matrix (F2) Zomy Muck (A10) Depleted Matrix (F3) Thick Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Dark Surface (F2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetal and thydrology must be present, unless disturbed or problematic. Redox Depressions (F8) **Proper Midicators (minimum of one is required; check all that apply) Set Surface (A12) Set Matrix (A11) High Water Table (A2) Aquatic Fauna (B13) Proper Modicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Drainage Patterns (B10) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation (A3) True Aquatic Plants (B14) Pry-Season Water Table (C2) Saturation (A3) True Aquatic Plants (B14) Algal Mat or Crust (B4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Sparmarky (B2) Drainage Patterns (B10) Dry-Season Water Table (C2) X FAC-Neutral Test (D5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Wetland Hydrology Present? Yes No X Depth (Inches): Deptor (Inches): Wetland Hydrology Present? Yes No X Depth (Inches): Deptor (Inches): Wetland Hydrology Present? Yes No Depth (Inches): Deptor (Inches): Deptor (Inches): Wetland Hydrology Present? Yes No Depto (Inches): Deptor (Inches): Deptor (Inches): PLANT OF	8-20	10YR 4/2	70	10YR 2/1	20	D	М	Loamy/Clayey	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. **Juncation: PL=Pore Lining, M=Matrix, Mydric Soil Indicators: Histosol (A1) Histosol (A2) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Itron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S8) Red Parent Matria (F21) Hydrogen Sulfide (A4) Dark Surface (S7) 2 orm Muck (A10) Loamy Mucky Mineral (F1) Zomy Gleyed Matrix (F2) Zomy Muck (A10) Depleted Matrix (F3) Thick Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Dark Surface (F2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetal and thydrology must be present, unless disturbed or problematic. Redox Depressions (F8) **Proper Midicators (minimum of one is required; check all that apply) Set Surface (A12) Set Matrix (A11) High Water Table (A2) Aquatic Fauna (B13) Proper Modicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Drainage Patterns (B10) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation (A3) True Aquatic Plants (B14) Pry-Season Water Table (C2) Saturation (A3) True Aquatic Plants (B14) Algal Mat or Crust (B4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Sparmarky (B2) Drainage Patterns (B10) Dry-Season Water Table (C2) X FAC-Neutral Test (D5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Wetland Hydrology Present? Yes No X Depth (Inches): Deptor (Inches): Wetland Hydrology Present? Yes No X Depth (Inches): Deptor (Inches): Wetland Hydrology Present? Yes No Depth (Inches): Deptor (Inches): Deptor (Inches): Wetland Hydrology Present? Yes No Depto (Inches): Deptor (Inches): Deptor (Inches): PLANT OF				10YR 5/4	10	С	M		Distinct redox concentration
Histosol (A1)								-	
Histosol (A1)									
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histo Epipedon (A2) Sandy Redox (S5) Iron-Managanese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Red Parent Material (F21) Hydrogen Sulfide (A4) Dark Surface (S7) Very Shallow Dark Surface (F22) Stratified Layers (A6) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (F22) Thick Dark Surface (A11) Depleted Matrix (F2) Thick Dark Surface (A12) Redox Dark Surface (F6) Thick Dark Surface (A12) Redox Dark Surface (F6) Thick Dark Surface (A12) Redox Dark Surface (F7) Sandy Mucky Mineral (S11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S11) Depleted Dark Surface (F7) Setrictive Layer (if observed): Type: Depth (inches): Presenrise: Pyprace Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) True Aquatic Plants (B14) Drainage Patterns (B10) Dray-Season Water Table (C2) Crayfish Burrows (C8) Saturation (N3) True Aquatic Plants (B14) Drainage Patterns (B10) Dray-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Drift Deposits (B3) Presence of Reduced fron (C4) Situnted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C8) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Find Observations: Vater Table Present? Yes No X Depth (inches):									
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Redox (S5) Iron-Managanese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Red Parent Material (F21) Hydrogen Sulfide (A4) Dark Surface (S7) Very Shallow Dark Surface (F21) Stratified Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Depleted Matrix (F2) 3 Depleted Bloow Dark Surface (A11) Depleted Matrix (F2) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S11) Redox Depressions (F8) unless disturbed or problematic. **Restrictive Layer (if observed): Type: Depth (inches): **Primary Indicators (minimum of one is required: check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) High Water Table (A2) Dirit Deposits (B3) Presence of Reduced fron (C4) Sediment Deposits (B3) Presence of Reduced fron (C4) Surface Water Marks (B1) Recent from Reduction in Tilled Soils (C6) Dirit Deposits (B3) Presence of Reduced fron (C4) Algal Mat or Crust (B4) Recent from Reduction in Tilled Soils (C6) Iron Deposits (B3) Thin Muck Surface (F7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Water Table Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Solucides capillary fringe) Wetland Hydrology Present? Yes No X Depth (inches): Waterlable Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		-			· ——				
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histo Epipedon (A2) Sandy Redox (S5) Iron-Managanese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Red Parent Material (F21) Hydrogen Sulfide (A4) Dark Surface (S7) Very Shallow Dark Surface (F22) Stratified Layers (A5) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (F22) Thick Dark Surface (A11) Depleted Matrix (F2) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S11) Depleted Dark Surface (F7) Sandy Mucky Mineral (S11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Restrictive Layer (if observed): Type: Depth (inches): Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Faura (B13) Saturation (A3) True Aquatic Plants (B14) High Water Table (A2) Sadiment Deposits (B3) Presence of Reduced fron (C4) Dirt Deposits (B3) Presence of Reduced fron (C4) Algal Mat or Crust (B4) Recent from Reduction in Titled Soils (C6) Inton Deposits (B3) Presence of Reduced fron (C4) Sparse Vater (A17) Recent from Reduction in Titled Soils (C6) Inton Deposits (B3) Thin Muck Surface (F7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Water Table Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Solection Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							. —	2	
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histos Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histis (A3) Stripped Matrix (S6) Red Parent Material (F21) Hydrogen Sulfide (A4) Dark Surface (S7) Very Shallow Dark Surface (F22) Stratified Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks) Z om Muck (A10) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Thick Dark Surface (A12) Redox Dark Surface (F6) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) som Mucky Peat or Peat (S3) Redox Depressions (F8) Wetland Hydrology indicators: Popth (inches): Hydric Soil Present? Yes X No. Remarks: WYDROLOGY Wetland Hydrology indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Drainage Patterns (B10) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C Drift Deposits (B3) Presence of Reduced Iron (C4) Stunder or Stunder or Stunder (C4) Iron Deposits (B3) Presence of Reduced Iron (C4) Stunder or Stunder or Stunder (D5) Iron Deposits (B3) Presence of Reduced Iron (C4) Stunder or Stunder or Stunder (D5) Iron Deposits (B3) Tin Muck Surface (C7) Iron Deposits (B3) Presence of Reduced Iron (C4) Stunder or Stressed Plants (D1) Iron Deposits (B3) Tin Muck Surface (C7) Sparsey Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X Depth (inches): Includes capillary fringe) Wetland Hydrology Present? Yes No X Depth (inches): Includes capillary fringe)			etion, RM	=Reduced Matrix, N	/IS=Mask	ked Sand	d Grains.		_
Histic Epipedon (A2) Black Histic (A3) Stripped Matrix (S6) Red Parent Material (F21) Hydrogen Sulfide (A4) Dark Surface (S7) Very Shallow Dark Surface (F22) Stratified Layers (A5) Loamy Mucky Mineral (F1) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Set of mucky Peat or Peat (S3) Red Ox Derpressions (F8) Redox D	•			Sandy Cla	wad Mat	riv (C1)			•
Black Histic (A3) Stripped Matrix (S6) Red Parent Material (F21) Hydrogen Sulfide (A4) Dark Surface (S7) Very Shallow Dark Surface (F22) Stratified Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Loamy Gleyed Matrix (F2) X Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redxo Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No. Remarks: YPROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface (F6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Adjal Mat or Crust (E4) Recent Iron Reduction in Tilled Soils (C6) Sparsely Vegetated Concave Surface (B8) Circh Other (Explain in Remarks) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Presence Reduced Iron (Rhoches): Surface Water Present? Yes No X Depth (inches): Surface Roll Observations: Surface Water Present? Yes No X Depth (inches): Surface Roll Observations: Surface Water Present? Yes No X Depth (inches): Surface Roll Observations: Surface Water Present? Yes No X Depth (inches): Surface Roll Observations: Surface Water Present? Yes No X Depth (inches): Surface Water Present? Yes No X Depth (inch		• ,			•	IIX (34)			, ,
Hydrogen Sulfide (A4) Stratified Layers (A5) Loamy Mucky Mineral (F1) Zorm Muck (A10) Depleted Below Dark Surface (F22) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F5) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F5) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sorm Mucky Peat or Peat (S3) Redox Depressions (F8) Phydric Soil Present? Yes No X Depth (inches): No X Depth (inches): Redox Depressions of hydrophytic vegetation and wettanh hydrology Present? Yes X No No No X Depth (inches): Redox Depressions (Redox Depressions of hydrophytic vegetation and wettanh hydrology Present? Yes X No No No No Depth (inches): Redox Depressions (Redox Depression		. ,			. ,	3)			• , ,
Stratified Layers (A5)		` ,			`	,			` '
2 cm Muck (A10)					` '	eral (F1)			
Depleted Below Dark Surface (A11)		• • •		 ·	•	` '			or (Explain in Romano)
Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Redox Dark Surface (F7) unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Dry-Season Water Table (C2) Surface Water (A1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) Surface Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C Dirift Deposits (B3) Presence of Reduced Iron (C4) Sturted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) X Geomorphic Position (D2) Innon Deposits (B5) Other (Explain in Remarks) Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches):		,	(A11)						
Sandy Mucky Mineral (S1)			(,,,,		`	,		³ Indicate	ors of hydrophytic vegetation and
Restrictive Layer (if observed): Type: Depth (inches): Depth (,				` ')		
Type:		• , ,	<i>i</i>)			`	,		, ,,
Type:	Restrictive I	_aver (if observed):		<u> </u>					
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Water Marks (B1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Algal Mat or Crust (B4) Algal Mat or Crust (B5) Thin Muck Surface (C7) Algal Mat or Crust (B4) Algal Mat or Crust (B5) Thin Muck Surface (C7) Algal Mat or Crust (B5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Ves No X Depth (inches): Water Table Present? Ves No X Depth (inches): Wetland Hydrology Present? Ves No Surface Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
WDROLOGY Netland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) Water Marks (B1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C4) Algal Mat or Crust (B4) Algal Mat or Crust (B4) Algal Mat or Crust (B4) In Muck Surface (C7) In Deposits (B5) Thin Muck Surface (C7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No X Depth (inches): Water Table Present? Yes No X Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ιyρ c .								
Value Variable V	-	nches):		_				Hydric Soil Presei	nt? Yes <u>X</u> No
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Water Marks (B1)	Depth (ir Remarks: IYDROLO Wetland Hyde Primary Indice Surface V	drology Indicators: cators (minimum of o	ne is requi	Water-Sta	ined Lea			Seconda Sur	ary Indicators (minimum of two requ face Soil Cracks (B6)
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Drift Deposits (B3)	Depth (ir Remarks: YDROLO Wetland Hyd Primary India Surface High Wa Saturatio	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3)	ne is requi	Water-Sta Aquatic Fa True Aqua	iined Lea auna (B1: atic Plants	3) s (B14)		Second: Sur Dra Dry	ary Indicators (minimum of two requ face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2)
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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: MA224	2 / Grass Lake	Rd & Deep I	∟ake Rd		City/Cou	ınty: <u>Lake Vil</u>	lla / Lake	County	Sa	ampling D	ate: <u>11/3</u>	3/2022
Applicant/Owner:	Manhard Con	sulting, LTD.					Sta	ite:	IL Sa	ampling Po	oint:	F
Investigator(s): Lisa I	Pajon				Section, 7	Township, Rar	nge: NE	S28 T4	6N R10E			
Landform (hillside, te	errace, etc.):					Local relief (c	concave, c	convex,	none):			
Slope (%):	Lat: 42.4396	678			Long: -	-88.063754			Datı	um:		
Soil Map Unit Name:								NWI	classificati			
Are climatic / hydrolo			voical for	this time c	f vear?	Yes X	No	(If	no, explain	in Remar	ks)	
Are Vegetation	•	•			•							
												_
Are Vegetation		•										
SUMMARY OF	FINDINGS -	- Attach s	ite maj	o snowir	ng samplir	ng point io	cations	s, trans	sects, im	iportani	t feature:	s, etc.
Hydrophytic Vegeta	ition Present?	Yes	No	Х	Is the	Sampled Ar	rea					
Hydric Soil Present	?	Yes X	No		withir	n a Wetland?	?	Yes		No X	-	
Wetland Hydrology	Present?	Yes	No	X								
Remarks:												
On slope north of C												
VEGETATION –	Use scient	ific names	of plan				•					
Tree Stratum	(Plot size:	30)	Absolute % Cover	Dominant Species?	Indicator Status	Domin:	ance Te	st workshe	eet:		
1.	(1 101 01.25.		.′ -	70 0010.	ороског.				ninant Spec			
2.									กเกลกเ Spec N, or FAC:	les mai	2	(A)
3.									of Dominant	t Snecies		- ` ′
4.								All Strat		. Ороо	4	(B)
5.							Percen	t of Dom	ninant Spec	ies That		_
					=Total Cover				W, or FAC:		50.0%	(A/B)
Sapling/Shrub Strat	<u>:um</u> (Plo	ot size: 1	5)									
1. Salix interior				10	Yes	FACW			dex worksh			
2. Pyrus calleryana				10	Yes	UPL		otal % Co			ultiply by:	_
3.			 -				OBL sp		0	_ x1=	0	_
			— -					species		_ x2=	120	_
5				20	=Total Cover		FAC sp FACU s		10 30	_ x 3 = x 4 =	30 120	_
Herb Stratum	(Plot size:	5	٠ -		= I Ulai Guvei		UPL sp	-	20	_ x4= x5=	100	_
1. Equisetum hyen	` —		, ,	50	Yes	FACW		r Totals:		(A)	370	(B)
Solidago altissir			— -	20	Yes	FACU			Index = B/A	``	3.08	_(''
Sorghastrum nu				10	No	FACU				`	•	_
4. Ratibida pinnata				10	No	UPL	Hydrop	hytic V	egetation I	ndicators	s:	
5. Panicum virgatu				10	No	FAC		•	est for Hyd			
6.									ince Test is		-	
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Appendix D: Threatened and Endangered Species Consultation

JB Pritzker, Governor

Colleen Callahan, Director

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

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,

Exalley Sayar 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





11/10/2022

IDNR Project Number: 2306326

Date:

Applicant: Gary R. Weber Associates, Inc.

Contact: Lisa Pajon

Address: 402 W. Liberty Drive

Wheaton, IL 60187

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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- 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.
- 2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.
- 3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

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EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

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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 I PaC 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 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

11/10/2022

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.

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 Myotis septentrionalis

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045

Threatened

Birds

NAME STATUS

Piping Plover Charadrius melodus

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

Red Knot Calidris canutus rufa

There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864

Threatened

Endangered

Insects

NAME STATUS

Karner Blue Butterfly Lycaeides melissa samuelis

There is $\boldsymbol{proposed}$ critical habitat for this species.

Species profile: https://ecos.fws.gov/ecp/species/6656

Monarch Butterfly Danaus plexippus

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743

Candidate

Endangered

Flowering Plants

NAME STATUS

Eastern Prairie Fringed Orchid Platanthera leucophaea

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

 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

Pitcher's Thistle Cirsium pitcheri

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8153

Threatened

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

