

# Hoffman Estates District

Hoffman Estates, Illinois

## South Ridge Community Park Enhancement Plan 2019

### Enhancement Plan 2019

## Project Manual

Bid Proposal and Specifications

January 23, 2020

Bids are due and will be opened and read aloud on Tuesday February 11 at 10:00 AM at the Hoffman Estates Park District's Triphahn Center which is located at the Community Center at 10:00 AM at 1685 West Higgins Road in Hoffman Estates, Illinois.



Engineering • Design • Consulting

2675 Pratum Avenue  
Hoffman Estates, IL 60192  
(224) 293-6333 Fax (224) 293-6444

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Bidder Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone #: \_\_\_\_\_

Facsimile: \_\_\_\_\_

**NAME OF PROJECT**

**South Ridge Park Renovations**

**BID DATE: 2/11/2020**

**BID TIME: 10:00AM**

PREPARED BY:

HOFFMAN ESTATES PARK DISTRICT

1685 W. Higgins Road

Hoffman Estates, IL 60169-2998

Telephone: (847) 885-7500

Facsimile: (847) 885-7523

## INVITATION TO BIDS

Sealed bids for the **South Ridge Park Renovation** will be received by the Hoffman Estates Park District at our office; 1685 West Higgins Road, Hoffman Estates, Illinois 60169 until **exactly 10:00A.M., 2/11/2020** and then publicly opened and read. Bids submitted after the closing time will be returned unopened. No oral or telephone proposals or modifications will be considered.

The Hoffman Estates Park District Board of Commissioners will make the final award.

Proposals shall be submitted on the attached Form of Proposal and returned in the envelope, if provided. No bidder may withdraw his proposal after the hour set for the opening thereof, or before award of the contract, unless said award is delayed for a period exceeding sixty (60) calendar days.

The Hoffman Estates Park District requires all bidders to comply with all provisions of the Park District Prevailing Wage Ordinance O. This ordinance specifies that no less than the general prevailing rate of wages as found by the Park District or Department of Labor or determined by a court on review shall be paid each draft type of worker or mechanic needed to execute the contract or perform the work.

The Hoffman Estates Park District may reject any or all of the bids on any basis and without disclosure of a reason. The failure to make such a disclosure shall not result in accrual of any right, claim, or cause of action by any unsuccessful Bidder against the Hoffman Estates Park District.

Bid results and the award of the bid will be published on the Hoffman Estates Park District website [www.heparks.org](http://www.heparks.org).

Sincerely,

*Dustin Hugen*

Dustin Hugen  
Director of Parks, Planning & Maintenance  
Hoffman Estates Park District  
[dhugen@heparks.org](mailto:dhugen@heparks.org)  
847-285-5465

HOFFMAN ESTATES PARK DISTRICT

INSTRUCTIONS TO BIDDERS

1. Identification of Project

The official name and location of the project shall henceforth be known as:

**South Ridge Park Renovations**

The official name and address of the project owner shall henceforth be known as:

HOFFMAN ESTATES PARK DISTRICT  
1685 West Higgins Road  
Hoffman Estates, IL 60169-2998

Bid Opening: DATES **2/11/2020**

Committee Approval: DATES **2/18/2020**

Board Approval: DATES **2/25/2020**

Contract Awarded: DATES **2/26/2020**

Commencement of Work: Commencement of paperwork shall begin immediately upon notification of award. Actual work shall commence immediately after contract is awarded (weather dependent) according to timelines set by HEPD (owner).

Construction Timeline: **March 2, 2020 – September 18, 2020**

Completion Date: **September 18, 2020**

HOFFMAN ESTATES PARK DISTRICT  
Hoffman Estates, Illinois

**FORM OF PROPOSAL**

Proposal of \_\_\_\_\_, hereinafter called the  
"BIDDER", (a) / (an) \_\_\_\_\_,  
(Corporation, Partnership,  
individual) doing business as \_\_\_\_\_, to Hoffman Estates  
Park District, hereinafter called the "OWNER."

\* \* \*

The Bidder, in response to your advertisement for bids for **South Ridge Park Renovations** and delivery, having examined the Specifications and other Documents and being familiar with all of the conditions surrounding the proposed work (purchase/sale) including availability of materials and labor, hereby proposes to furnish all labor, materials and supplies and to construct the project in accordance with the Contract Documents, within the time set forth therein and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents of which this proposal is a part.

Bidder acknowledges receipt of the following Addenda, which are a part of the Contract

Document: Numbers: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

Bidder hereby agrees to start work within ten (10) days after receipt of "Notice to Proceed" from the Owner.

Bidders agree to provide all equipment described in the Specifications for the sum of:  
\_\_\_\_\_ (in writing)  
(Dollars)

HOFFMAN ESTATES PARK DISTRICT

FIRM NAME \_\_\_\_\_

BY: \_\_\_\_\_  
(Sign and Date)

ADDRESS \_\_\_\_\_

BY: \_\_\_\_\_  
(Sign and Date)

PHONE \_\_\_\_\_

EMAIL: \_\_\_\_\_

BY: \_\_\_\_\_  
(Sign and Date)

Accompanying this is a \_\_\_\_\_  
(Bid Bond, Certified Check, Bank Draft)

In the amount of \_\_\_\_\_  
(Dollars)

(\$ \_\_\_\_\_) being five percent (5%) of the Base Contract Bid, the same being subject to forfeiture in the event of default by the undersigned.

In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids and it is agreed that this bid may not be withdrawn during the period of days in the Contract Documents.

The Bidder hereby certifies:

- A. That this bid is genuine and is not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation.
- B. That he has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid.
- C. That he has not solicited or induced any person, firm, or corporation to refrain from bidding.
- D. That he has not sought by collusion or otherwise to obtain for himself any advantage over any other bidder or over the "Owner."
- E. That he will comply with all provisions of the Prevailing Wage Ordinance #O-\_\_\_\_\_ adopted by the Hoffman Estates Park District.
- F. That he is in compliance with the Criminal Code Act of 1961, Article 33E-11, Public Contracts, and Public Act 85-1295.
- G. That all materials, methods and workmanship shall conform to the drawings, specifications, manufacturer's standards and specifications, and all applicable Codes and Standards.

**CERTIFICATION**

I, \_\_\_\_\_ (Officer), having been first duly sworn on Oath, do  
depose and state that I presently reside at \_\_\_\_\_ (Address), and  
that I am the duly authorized principal, officer or agent of \_\_\_\_\_  
(Name of Contractor) and do hereby certify to Hoffman Estates Park District, its  
Commissioners, Officers and Employees that neither I nor \_\_\_\_\_  
(Name of Contractor) are barred from bidding on the Contract for which this bid is  
submitted, and as a result of violation of either Section 33E-3 (Bid-rigging") or  
Section 33E-4 ("Bid-rotating") of Article 33E of the Criminal Code of 1961 of the  
State of Illinois approved July 28,1961, as amended.

\_\_\_\_\_  
On behalf of Contractor

Subscribed and sworn to before me  
this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
- Notary Public -

My Commission Expires:  
\_\_\_\_\_

## SUBCONTRACTORS

The following list includes all Subcontractors who will perform work representing five percent (5%) or more of the total base bid. The Bidder represents that the Subcontractors are qualified to perform the work required.

<b>Category</b>	<b>Subcontractor Name</b>	<b>Address</b>
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____
11.	_____	_____
12.	_____	_____
13.	_____	_____
14.	_____	_____
15.	_____	_____

## REFERENCES

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Hoffman Estates IL 60169

**References for:**

1. Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City-state: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Contact Person: \_\_\_\_\_

2. Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Contact Person: \_\_\_\_\_

3. Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Contact Person: \_\_\_\_\_

4. Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Contact Person: \_\_\_\_\_

## STATEMENT OF EXPERIENCE

The Bidder shall list all recent projects for which he provided services of a similar nature to the subject project.

Project/Location	Contract Amount	Reference/Phone #
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____
11.	_____	_____
12.	_____	_____
13.	_____	_____
14.	_____	_____
15.	_____	_____

HOFFMAN ESTATES PARK DISTRICT  
Hoffman Estates, Illinois

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Please list all of the equipment you will be using on this specific job.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_
- 13. \_\_\_\_\_
- 14. \_\_\_\_\_
- 15. \_\_\_\_\_

# SUSTAINABILITY STATEMENT

## Introduction

The Hoffman Estates Park District is committed to green and sustainable practices and good environmental stewardship. Consequently, we are asking bidders to provide a Statement of Sustainability to ensure our bidders are also incorporating sustainability into their firm's practices.

## Instructions

Provide a clear description of your firm's sustainable practices, policies or procedures to the below sections or attach a copy of your practice. These practices may include but are not limited to:

Waste Minimization within the office or facilities through recycling programs, double-sided copying, electronic internal communications, recycled content in materials, reusable cups, limited printing, electronic document management, green purchasing policies, green cleaning supplies or reduced packaging in materials procured or supplied. \_\_\_\_\_

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Energy Efficiency within office, facilities or firm through lighting retrofits, photo sensor switches for lighting, use of day lighting, Energy Star rated appliance or equipment, alternative fuel or efficient fleet, anti-idling policy, or indoor temperature management. \_\_\_\_\_

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Water Efficiency in office, facilities or firm through faucet or fixture retrofits, switch individual bottled water to office water coolers or drinking fountains, drought tolerant landscaping. \_\_\_\_\_

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Staff are encouraged to be sustainable and supported by your firm through public transit benefits, bicycle accommodations, telecommuting options, support to attend green seminars, US Green Building Council LEED accredited or the creation of an internal green team. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Education of your staff about green practices, your business peers of your green accomplishments, your community of your sustainability, or any environmental awards your firm has achieved. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_.

|

# Bid Instructions

The Hoffman Estates Park District will receive sealed bids for the South Ridge Park Renovations. The project includes a new parking lot, shelter structure, splash pad, new playgrounds, sand volleyball court, bike paths, concrete sidewalk, and utilities.

Bids are due and will be opened and read aloud on **Tuesday February 11 at 10:00 AM** at 1685 West Higgins Road in Hoffman Estates, Illinois.

A Certified Check, Cashier's Check or Bid Bond payable to the Streamwood Park District for not less than five (5) percent of the total bid amount will be required for each bid.

The successful bidder will be required to furnish a satisfactory Performance Bond and Labor and Material Payment Bond for the total Contract Amount. The successful bidder will also be required to execute AIA Form A101 – 2017 as the contract between the parties.

**All questions should be directed to Dustin Hugen at the Hoffman Estates Park District via email at [dhugen@heparks.org](mailto:dhugen@heparks.org).**

In all work performed under this Contract, the Contractor and all of its subcontractors shall comply with the current provisions of the Prevailing Wage Act of the Illinois Revised Statutes, Chapter 48, Sections 39s-1 *et seq.*

No bids will be withdrawn without the written consent of the Streamwood Park District. If a Bid is withdrawn, the Bidder will not be permitted to submit another Bid for the same project. Only bids in compliance with the provisions of the Bid Documents will be considered. Bids will be considered firm for a period of ninety (90) days. The Streamwood Park District reserves the right to reject any or all bids or portions of bids/portions of work and to waive any technicalities in the bidding if it should be deemed in the public interest.

Please note, the Park District has purchased (or will purchase) the playground equipment, fitness equipment, synthetic turf, rubber infill, and padding, the splash pad equipment, and the shelter structure. It will be the contractor's responsibility to install of these items.

Additionally, note, the Park District will install all permanent seeding, erosion control blanket, and trees, shrubs, and perennials. However, it will be the contractor's responsibility to bring all landscape areas to finish grade and it is the contractor's responsibility to install a minimum of 6" of topsoil.

It will be the contractor's responsibility to construct all proposed concrete and foundations associated with the new Bathroom (Toilet) Facility. It will also be the contractor's responsibility to install all proposed utilities associated with the Bathroom Facility and to stub these proposed utilities up through the slab. The owner will construct the building and features inside of the Bathroom (Toilet) Facility.

# Bid Instructions

## Preparation of Bid Proposals

The bidder shall submit his prices on the attached proposal forms. The proposal shall be executed properly and all writing shall be with blue or black ink.

The bidder shall specify in figures, in the places provided, a price for each of the separate items called for in the proposal forms.

The bidder shall return all of the project manual “specifications” with the bid, and **no sheets shall be detached from any part of the bid documents.**

## Scope of Work

The scope of work includes the removal and replacement of existing asphalt paved parking lots, new parking lots, pathways, and sidewalks, installation of new concrete pads, curbing, ramps, and sidewalks, installation of new storm sewer, sanitary sewer, and water main systems, landscape restoration and storm water pollution prevention. Other improvements include the installation and construction of playgrounds, a splash pad, a new building, underground detention / retention, a sand volleyball court, a shelter structure, and other miscellaneous improvements. **All new pathways and parking lots have been designed to meet ADA standards and are expected to be constructed to meet ADA standards. The contractor must use all measures necessary to ensure that proposed improvements have been installed to meet ADA requirements.**

## Beginning and Completion Dates

- Begin Construction: March 2, 2020
- End Construction: August 18, 2020 (Substantial Completion)
- 100 % Completion September 18, 2020

Project Contact  
Mr. Dustin Hugen  
(847) 285-5465  
[dhugen@heparks.org](mailto:dhugen@heparks.org)

**Please Submit All Technical Questions in Writing to Above Email Address**

# Special Conditions

## **Specification or Information Conflicts**

Should any Specifications, Information, Directives, Notes, Tags or Provisions contained in the Construction Documents conflict with any other Specification, Information, Directives, Notes, Tags or Provisions contained in the Construction Documents, then the more stringent Specification, Information, Directive, Note, Tags or Provision shall apply.

## **Limit of Construction**

Construction traffic and material staging shall be permitted only within the Limit of Construction area as shown on the Construction Plans. The Contractor shall repair, at no additional cost to the Owner, any areas disturbed outside of this limit. Turf repairs will be made with sod.

## **Excess Materials and Debris**

All excess materials and debris etc., generated by this work, shall be considered an incidental item to the Bid, and hauled from the site. Large amounts of debris will not be permitted to accumulate on the site and must be hauled from the site on a continuous basis.

## **Construction Access**

Construction access shall be permitted only through the access point as shown on the plan. No other access will be permitted. The Contractor shall be responsible for protection of existing curbs and pavements and for replacement of any damage, at no additional expense to the Owner.

## **Existing Utility Structures and Utility Lines**

The Contractor will be responsible for locating all existing utility structures and utility lines prior to any excavation or demolition. These include but are not limited to water, sanitary, drainage, telephone, fiber optics, cable television, natural gas, and electrical structures and lines. Contact J.U.L.I.E., the Village of Hoffman Estates prior to construction. Private site underground utility locating services shall be provided as specified on the plans.

## **Traffic Control**

The Contractor will be responsible for controlling traffic when construction vehicles are entering or exiting the site. The Contractor will be responsible for the erection and maintenance of barricades, signage and miscellaneous traffic control measures to insure that vehicular traffic flows smoothly and safely within the site and on the streets surrounding the site.

### **Dust and Noise Control**

The Contractor will be responsible for control of dust throughout the duration of the project. The Contractor will also be required to conform with any applicable Village of Hoffman Estates noise ordinances.

### **Street Cleaning**

The Contractor will be responsible for cleaning surrounding streets of any mud or debris at the end of each workday. Street sweeping equipment may be used to fulfill this requirement.

### **Hold Harmless**

The Contractor agrees to indemnify, save harmless and defend the Hoffman Estates Park District, its consultants, agents and employees, and each of them against and hold it and them harmless from any and all lawsuits, claims, demands, liabilities, losses or expenses, including court costs and attorney's fees, for or on account of any injury to any person, or any death at any time resulting from such injury, or any damage to any property, which may arise or which may be alleged to have arisen out of or in connection with the work covered by this contract. The foregoing indemnity shall apply except if such injury, death or damage is caused directly by the negligence or fault of the Hoffman Estates Park District, its consultants, agents, servants, or employees or any other person indemnified hereunder.

### **Prevailing Wage**

In all work performed under this Contract, the Contractor and all of its subcontractors shall comply with the current provisions of the Prevailing Wage Act of the Illinois Revised Statutes, Chapter 48, Sections 39s-1 *et seq.* Certified Payrolls are to be delivered to the Owner with each Application for Payment. Union labor per say is not required by the Park District, however prevailing wage is required. It is the contractor's responsibility to ensure that construction delays are avoided due to union issues.

### **Sexual Harassment**

The Contractor and all of its subcontractors shall comply with the Sexual Harassment provisions of the Illinois Human Rights Act (775 ILCS 5/1-101 *et seq.*). Certified Payrolls are to be delivered to the Owner with each Application for Payment.

### **Equal Opportunity**

In all work performed under this Contract, the Contractor and all of its subcontractors shall certify that they are an "Equal Opportunity Employer" as defined by Section 2000 (e) of Chapter 21, Title 42 of the United States Code, Annotated and Federal Executive Orders #11246 and #11375.

## **Licenses and Permits**

The Contractor will be responsible for obtaining a Contractor's License and all applicable Permits from the Village of Hoffman Estates, and any other regulatory agencies or governmental bodies, prior to beginning any work on this project. Contractor shall contact the village to determine what fees will be required for inspections and the appropriate licenses, and shall include these costs within the bid.

## **Protection of Existing Trees**

The Contractor shall be responsible for protection of all existing trees to remain on the project site. The Contractor may, at his own cost, fence any trees that may be in danger of damage or be near active construction. Any damage to an existing tree will result in a back-charge to the Contract of \$100 per caliper inch of the damaged tree. The caliper of the damaged tree will be measured 1.0' above existing grade.

## **Concrete Testing**

The Contractor will be required to provide samples of all concrete used for this project. One test cylinder will be required from each truckload of concrete delivered to the site. Each test cylinder must be clearly marked with the date of the pour, load ticket number, the name of the concrete supplier and the location where the concrete was used. The Owner, at their own cost, will test these cylinders to determine if concrete meets project specifications. The Contractor will be responsible for disposing of all untested cylinders.

## **Protection of Existing Features**

The Contractor will be responsible for protecting all existing features in the work area including walks, pavements, curbs, site furnishings, and utilities, etc. Damage to any existing features will be repaired or replaced by the Contractor at no additional expense to the Owner. Turf repairs will be made with sod.

## **Grading and Compaction**

All grading performed for this project shall conform to the specifications. Mechanical compacting devices as outlined in the specifications must be utilized to perform the compacting that is necessary for this project.

## **Employer Liability**

The Contractor (and each subcontractor and sub-subcontractor into whose subcontracts this clause shall be incorporated) agrees to assume the entire liability for all personal injury claims suffered by its own employees, including but without limitation claims under the Illinois Structural Work Act, asserted by persons allegedly injured on the Project; waives any limitation of liability defense based upon Worker's Compensation Act, court interpretation of said Act or otherwise; agrees to indemnify and defend Owner, Engineer, Construction Manager and their agents, employees and consultants (the "Indemnitees") from and against all such loss, expense, damage or injury, including reasonable attorney's

fees, that the Indemnitees may sustain as a result of such claims, except to the extent that Illinois Law prohibits indemnity for the Indemnitees' own negligence.

### **Bid Document Review**

Bidders are encouraged to review the Bid Documents immediately upon receipt. The Owner and Engineer will be available to make interpretations regarding the Bid Documents and answer any questions that may arise during the Bid process. No inquiries will be accepted by the Engineer within two (2) working days of the Bid Opening. All questions shall be submitted in writing to the following email address:

[dhugen@heparks.com](mailto:dhugen@heparks.com)

### **Pavement Quantities**

The contractor will be responsible for collecting asphalt tickets for submission to the engineer for review. The engineer will use these tickets to ensure that the proper thickness of asphalt pavement is provided. A unit weight of 112 lbs / sq. yd. / in. will be used to verify asphalt quantities.

### **Reservation of Rights**

Hoffman Estates Park District reserves the right to act in its own best interest and award the work to the Contractor, or Contractors it deems best able to complete the work in an appropriate and timely manner.

### **Construction Layout**

All construction staking will be the responsibility of the contractor.

### **Construction Fencing**

Contractor responsible for the installation of orange construction fencing to ensure public safety.

# **AIA General Conditions and AIA Contract Forms**

The General Conditions of this contract are the American Institute of Architects' Standard Document No. A-201, "General Conditions of the Contract for Construction," 2017, as modified by the Supplementary General Conditions. The document is hereby specifically made apart of the contract documents with the same force and effect as though set forth in full. The Contract for this project is the American Institute of Architects' Standard Document No. A-101, "Standard form of Agreement Between Owner and Contractor, where the basis of payment is a Stipulated Sum", 2017. The document is hereby specifically made apart of the contract documents with the same force and effect as though set forth in full.

Copies of these documents are on file at the office of the Engineer and maybe referred to at any time during normal business hours.

The Contractor is directed to the Supplementary Conditions, which modify the General Conditions.

# 2019 Hoffman Estates Park District South Ridge Community Park Enhancement Plan 2019

## CONTRACTOR'S CERTIFICATION

As required under Article 33E of The Criminal Code of  
1961 (Ill. Rev. Stat. Ch 38, Paras. 33E-1 through 33E-11)

\_\_\_\_\_ a \_\_\_\_\_  
*Name of Contractor* *Corporation, Partnership, etc.*

as part of its bid on the above sole referenced Contract, hereby certifies that the Contractor is not barred from bidding on the above referenced Contract as a result of a violation of either Section 33E-3 (Bid-Rigging) or 33E-4 (Bid-Stating) of Article 33E of the Illinois Criminal Code of 1961, as amended.

Dated: \_\_\_\_\_

**Contractor:**

By: \_\_\_\_\_

As its: \_\_\_\_\_

STATE OF ILLINOIS     )  
  ) SS.  
COUNTY OF COOK     )

I, the undersigned, a notary public in and for the State and County aforesaid, hereby certify that \_\_\_\_\_ appeared before me this day in person, and being first duly sworn an oath, acknowledged that he/she executed the foregoing certification as his/her free act and deed.

Dated: \_\_\_\_\_ Notary Public: \_\_\_\_\_

# Project References

(Failure to complete will result in disqualification of Bid.)

Please submit at least five (5) references for similar projects completed within the past two (2) years.

1. Project Name: \_\_\_\_\_

Contact Person/Title/Phone: \_\_\_\_\_

Project Cost : \_\_\_\_\_ Date of Completion: \_\_\_\_\_

2. Project Name: \_\_\_\_\_

Contact Person/Title/Phone: \_\_\_\_\_

Project Cost : \_\_\_\_\_ Date of Completion: \_\_\_\_\_

3. Project Name: \_\_\_\_\_

Contact Person/Title/Phone: \_\_\_\_\_

Project Cost : \_\_\_\_\_ Date of Completion: \_\_\_\_\_

4. Project Name: \_\_\_\_\_

Contact Person/Title/Phone: \_\_\_\_\_

Project Cost : \_\_\_\_\_ Date of Completion: \_\_\_\_\_

5. Project Name: \_\_\_\_\_

Contact Person/Title/Phone: \_\_\_\_\_

Project Cost : \_\_\_\_\_ Date of Completion: \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Bidder's Signature:** \_\_\_\_\_

*Title*

# Sub-Contractor and Supplier List

(Failure to complete will result disqualification of Bid.)

The sub-contractors and suppliers listed below will be involved in this contract work in the assignments listed. We understand that any deviation from this list must be requested in writing and approved by the Owner one (1) week prior to the start of the work that is involved.

**Sub-Contractor**  
(Including Address & Phone Number)

**Work Performed**


**Material Supplier**

**Material Supplied**


**Company Name:** \_\_\_\_\_

**Bidders Signature:** \_\_\_\_\_

*Title*

# Bid Proposal Form

South Ridge Community Park 2019 Enhancement Plan  
Hoffman Estates Park District

<b>#</b>	<b><u>Item/Description</u></b>	<b><u>Cost</u></b>
----------	--------------------------------	--------------------

<b>1.Base Bid:</b>	All work at South Ridge Community Park depicted on the construction plans dated 1-23-19 and 1-20-20 entitled South Ridge Community Park 2019 Enhancement Plan as well as all documents included within this project manual.	
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**Total Bid Cost** \$ \_\_\_\_\_

**Note: Winning Bidder will be required to furnish a Schedule of Values by Trade for the project. Winning Bidder will also be required to furnish a project construction schedule.**

**Note: please include all unit prices included within the unit price section. During construction the owner reserves the right to reduce or increase quantities of proposed improvements. These changes will be based on the unit prices that are included within the unit price section.**

# Bidder Information

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Bidder's  
Signature: \_\_\_\_\_  
*Title*

Bidder's Name:  
(Printed) \_\_\_\_\_

## SECTION 2050

### GENERAL SITE CONDITIONS

**Locating Existing Utilities:** It is the Contractor's responsibility to have all existing utilities located before construction begins. This information can be obtained by calling JULIE (Joint Utilities Locating Information for Excavators) toll free at 1-800-892-0123, the Village of Hoffman Estates Water Department for water lines and shut-off location and for street light cables, the Village's Traffic Engineer's office.

**Permits:** The Contractor shall obtain and pay for all necessary permits and shall make all necessary arrangements for carrying out the work with the utility companies and any authorities involved.

**Street Light Cables** During progress of the work, constant contact should be maintained with the Village of Hoffman Estates Engineering Department for the purpose of locating buried cables. Cables shall be maintained in service.

#### A. PLANT MATERIALS

All existing trees, shrubs, lawns and other plant material, unless otherwise specified, shall be protected from mechanical injury. There shall be full protection of all plants including all limbs, trunks and exposed roots, and relief from soil compaction.

Any trees damaged during the course of construction by either the General Contractor or a qualified nurseryman shall repair any of his subcontractors at the Contractor's expense. All repairs must be done to the satisfaction of the Superintendent.

If any tree is damaged beyond repair, it shall be removed by the Contractor and replaced with a new tree of equivalent size and species as designated by the Superintendent of Parks at the cost of the Contractor.

The Contractor shall repair all tracks and ruts in the lawn left by his vehicle or the vehicles of his subcontractors. All repairs shall be done to the satisfaction of the Superintendent.

#### B. PAVEMENTS AND WALKS

Any pavement areas damaged by the Contractor during the construction operation shall be replaced to the satisfaction of the Superintendent at Contractor's expense.

#### C. TRAFFIC SIGNS

The Contractor when authorized by the Village's Traffic Engineer may remove any traffic sign within the limits of construction, which interferes with construction operations. Any traffic sign which has been removed shall be re-erected immediately by the Contractor at the temporary location designated by the Traffic Engineer, and as soon as construction operations permit, the sign shall be set at its permanent location. The cost of all materials required and all labor necessary to comply with this provision will not be paid for separately but shall be considered as incidental to contract.

The Contractor shall replace at his own expense any traffic signs or posts, which have been damaged due to his operations.

Any traffic sign designated as critical by the traffic sign owner shall not be disturbed and no additional compensation will be allowed the Contractor for any delays, inconvenience, or damage sustained by him due to any special construction methods required in prosecuting his work due to the existence of such traffic signs.

END OF SECTION 02050

## Section 012200-Unit Prices

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Sections:
  - 1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
  - 2. Division 01 Section "Quality Requirements" for general testing and inspecting requirements.

### 1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

### 1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

1. Excavate and remove to offsite location unsuitable soils and replace with CA-1 limestone compacted over Mirafi 140N geotextile fabric  
- Price per cubic yard of soil removed offsite and replaced with CA-1  
  
\$\_\_\_\_\_/C.Y.
  
2. Full Depth Asphalt Pavement as specified within the site engineering plans. IE: 1.75" of Surface Coarse, 2.25" of Binder Course, and 10" of CA-6 stone subbase.  
  
\$\_\_\_\_\_/S.Y.
  
3. New Asphalt Trail (IE 2" Surface Course Surface Course and 8" CA-6).  
  
\$\_\_\_\_\_/S.Y.
  
4. 5" thick Concrete Sidewalk / Pavement as specified within the site engineering plans. IE: 5" P.C.C., and 4" of CA-6 stone subbase.  
  
\$\_\_\_\_\_/S.F.
  
5. B6.12 Curb and Gutter (Concrete Curb and Gutter)  
  
\$\_\_\_\_\_/L.F.
  
6. New 8" Thick Reinforced Concrete Splash Pad with 6" Subbase (CA-6)  
  
\$\_\_\_\_\_/S.F.

END OF SECTION

## SECTION 033000 - CAST-IN-PLACE CONCRETE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawing and general provisions of the Contract, including General and Supplemental Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
- B. Related Sections:
  - 1. Division 31 Section "Earth Moving" for drainage fill under slabs-on-grade.
  - 2. Division 32 Section "Concrete Paving"

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement.
- D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
- E. Welding certificates.
- F. Material certificates.
- G. Material test reports.
- H. Floor surface flatness and levelness measurements.
- I. Field quality-control test and inspection reports.

## 1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301, "Specifications for Structural Concrete,"
  - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Preinstallation Conference: Conduct conference at [**Project site**].

## PART 2 - PRODUCTS

### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

### 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, **Grade 60** (Grade 420), deformed.
- B. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.

## 2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
  - 1. Portland Cement: ASTM C 150, [Type I], [gray].[ Supplement with the following:]
    - a. Fly Ash: ASTM C 618, [Class F].
    - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregates: ASTM C 33, graded.
  - 1. Maximum Coarse-Aggregate Size [1 inch (25 mm)] nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M[ and potable].

## 2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.5 FIBER REINFORCEMENT

- A. Synthetic Micro-Fiber: [Monofilament] polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, [1/2 to 1-1/2 inches (13 to 38 mm)] long.

## 2.6 VAPOR RETARDERS

- A. Sheet Vapor Retarder: ASTM E 1745, Class [A] [B] [C]. Include manufacturer's recommended adhesive or pressure-sensitive tape.

- B. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than **10 mils (0.25 mm)** thick.

## 2.7 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately **9 oz./sq. yd. (305 g/sq. m)** when dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

## 2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: [**ASTM D 1751, asphalt-saturated cellulosic fiber**].

## 2.9 CONCRETE MIXTURES

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
  - 1. Use [**water-reducing**] [**high-range water-reducing**] [**or**] [**plasticizing**] admixture in concrete, as required, for placement and workability.
  - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
- D. Proportion normal-weight concrete mixture as follows:
  - 1. Minimum Compressive Strength: [**4500 psi (31 MPa)**] at 28 days.
  - 2. Maximum Water-Cementitious Materials Ratio: [**0.44**].
  - 3. Slump Limit: [**8 inches (200 mm)**] for concrete with verified slump of **2 to 4 inches (50 to 100 mm)** before adding high-range water-reducing admixture or plasticizing admixture <Insert dimension>, plus or minus **1 inch (25 mm)**.
  - 4. Air Content: [6] percent, plus or minus 1.5 percent at point of delivery for **1-1/2-inch (38-mm)** nominal maximum aggregate size.
  - 5. Air Content: [6] <Insert number> percent, plus or minus 1.5 percent at point of delivery for [**3/4-inch (19-mm)**] nominal maximum aggregate size.

6. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.
7. Synthetic Micro-Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than [1.5 lb/cu. yd. (0.90 kg/cu. m)].

## 2.10 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.11 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M[ and ASTM C 1116/C 1116M], and furnish batch ticket information.
  1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.3 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
  1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

### 3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least **[one-fourth]** of concrete thickness as follows:
  1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of **1/8 inch (3.2 mm)**. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
  2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut **1/8-inch- (3.2-mm-)** wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
- E. Waterstops: Install in construction joints and at other joints indicated according to manufacturer's written instructions.

### 3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
- C. Cold-Weather Placement: Comply with ACI 306.1.
- D. Hot-Weather Placement: Comply with ACI 301.

### 3.7 FINISHING FORMED SURFACES

- A. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

### 3.8 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching **0.2 lb/sq. ft. x h (1 kg/sq. m x h)** before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least **12 inches (300 mm)**, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
    - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer[ **unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project**].
  - 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

### 3.9 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

3.10 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION 033000

## SECTION 311000 - SITE CLEARING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, removing site utilities abandoning site utilities in place.
7. Temporary erosion- and sedimentation-control measures.

- B. Related Sections:

1. Division 01 Section "Temporary Facilities and Controls" for temporary utility services, construction and support facilities, security and protection facilities, and temporary erosion and sedimentation-control measures.
2. Division 01 Section "Execution" for field engineering and surveying.
3. Division 01 Section "Construction Waste Management and Disposal" for additional LEED requirements.

#### 1.3 DEFINITIONS

- A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches (50 mm) in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

- D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.
- E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and indicated on Drawings.
- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

#### 1.4 MATERIAL OWNERSHIP

- A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

#### 1.5 SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
  - 1. Use sufficiently detailed photographs or videotape.
  - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

#### 1.6 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
  - 1. Do not proceed with work on adjoining property until directed by Architect.
- C. Utility Locator Service: Notify "Julie" for area where Project is located before site clearing.
- D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

- E. The following practices are prohibited within protection zones:
  - 1. Storage of construction materials, debris, or excavated material.
  - 2. Parking vehicles or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment of water.
  - 6. Excavation or other digging unless otherwise indicated.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- F. Do not direct vehicle or equipment exhaust towards protection zones.
- G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.
- H. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Division 31 Section "Earth Moving."
  - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly identify trees, shrubs, and other vegetation to remain. Flag each tree trunk at **54 inches (1372 mm)** above the ground.
- C. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

### 3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

### 3.3 TREE AND PLANT PROTECTION

- A. General: Protect trees and plants remaining on-site according to requirements in Division 01 Section "Temporary Tree and Plant Protection."
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.

### 3.4 EXISTING UTILITIES

- A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.
  - 1. Verify that utilities have been disconnected and capped before proceeding with site clearing.
- B. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
  - 1. Arrange with utility companies to shut off indicated utilities.
  - 2. Owner will arrange to shut off indicated utilities when requested by Contractor.
- C. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- D. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify Architect not less than two (2) days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Architect's written permission.
- E. Excavate for and remove underground utilities indicated to be removed.

### 3.5 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
  - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
  - 2. Grind down stumps and remove roots, obstructions, and debris to a depth of **18 inches (450 mm)** below exposed subgrade.
  - 3. Use only hand methods for grubbing within protection zones.
  - 4. Chip removed tree branches and stockpile in areas approved by Architect or dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of **8 inches (200 mm)**, and compact each layer to a density equal to adjacent original ground.

### 3.6 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than **2 inches (50 mm)** in diameter; trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.
  - 1. Limit height of topsoil stockpiles to **72 inches (1800 mm)**.
  - 2. Do not stockpile topsoil within protection zones.
  - 3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
  - 4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

### 3.7 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
  - 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.

2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

### 3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property. See plans for additional instructions.
- B. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

## SECTION 312000 - EARTH MOVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

##### A. Section Includes:

1. Preparing subgrades for slabs-on-grade walks pavements, and turf and grasses
2. Excavating and backfilling for buildings and structures.
3. Drainage course for concrete slabs-on-grade.
4. Subbase course for concrete walks pavements.
5. Subbase course and base course for asphalt paving.
6. Subsurface drainage backfill for walls and trenches.
7. Excavating and backfilling trenches for utilities and pits for buried utility structures.

##### B. Related Sections:

1. Division 01 Section "Construction Progress Documentation" for recording pre-excavation and earth moving progress.
2. Division 01 Section "Temporary Facilities and Controls" for temporary controls, utilities, and support facilities; also for temporary site fencing if not in another Section.
3. Division 03 Section "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
4. Division 31 Section "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
5. Division 31 Section "Dewatering" for lowering and disposing of ground water during construction.
6. Division 31 Section "Excavation Support and Protection" for shoring, bracing, and sheet piling of excavations.
7. Division 32 Section "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.

#### 1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices for earth moving specified in Division 01 Section "Unit Prices."

- B. Quantity allowances for earth moving are included in Division 01 Section "Allowances."

#### 1.4 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
  - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
  - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
  - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
  - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- K. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

## 1.5 SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
  - 1. Geotextiles.
  - 2. Warning tapes.
- B. Samples for Verification: For the following products, in sizes indicated below:
  - 1. Geotextile: **12 by 12 inches**.

## 1.6 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify "Julie" for area where Project is located before beginning earth moving operations.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487 Groups A-1, A-2-4, A-2-5, and A-3 according to AASHTO M 145, or a combination of these groups; free of rock or gravel larger than **3 inches** in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
  - 1. Liquid Limit: Per IDOT Specifications.
  - 2. Plasticity Index: Per IDOT Specifications.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487 Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145, or a combination of these groups.
  - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent

passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.
- H. Drainage Course: Narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.
- J. Sand: ASTM C 33; fine aggregate.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

## 2.2 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1. Survivability: Class 2; AASHTO M 288.
  - 2. Grab Tensile Strength: 157 lbf; ASTM D 4632.
  - 3. Sewn Seam Strength: 142 lbf; ASTM D 4632.
  - 4. Tear Strength: 56 lbf; ASTM D 4533.
  - 5. Puncture Strength: 56 lbf; ASTM D 4833.
  - 6. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
  - 7. Permittivity: 0.2 per second, minimum; ASTM D 4491.
  - 8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
- B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent;

complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2; AASHTO M 288.
2. Grab Tensile Strength: 247 lbf; ASTM D 4632.
3. Sewn Seam Strength: 222 lbf ; ASTM D 4632.
4. Tear Strength: 90 lbf; ASTM D 4533.
5. Puncture Strength: 90 lbf ; ASTM D 4833.
6. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
7. Permittivity: 0.02 per second, minimum; ASTM D 4491.
8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

## 2.3 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
  1. Red: Electric.
  2. Yellow: Gas, oil, steam, and dangerous materials.
  3. Orange: Telephone and other communications.
  4. Blue: Water systems.
  5. Green: Sewer systems.
  
- B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches (150 wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
  1. Red: Electric.
  2. Yellow: Gas, oil, steam, and dangerous materials.
  3. Orange: Telephone and other communications.
  4. Blue: Water systems.
  5. Green: Sewer systems.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
  
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.

- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

### 3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
  - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

### 3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

### 3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
  - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
  - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
    - a. **12 inches** outside of concrete forms at footings.

### 3.5 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

### 3.6 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
  - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to **12 inches (300 mm)** higher than top of pipe or conduit unless otherwise indicated.
  - 1. Clearance: **12 inches (300 mm)** each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
  - 1. For pipes and conduit less than **6 inches** in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  - 2. For pipes and conduit **6 inches** or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
  - 3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
  - 4. Excavate trenches **6 inches** deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Trench Bottoms: Excavate trenches **4 inches** deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.
  - 1. Excavate trenches **6 inches (150 mm)** deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- E. Trenches in Tree- and Plant-Protection Zones:
  - 1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
  - 2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
  - 3. Cut and protect roots according to requirements in Division 01 Section "Temporary Tree and Plant Protection."

### 3.7 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to **1 mph**.
  2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

### 3.8 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of **2500 psi**, may be used when approved by Architect.
1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

### 3.9 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.10 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
  2. Surveying locations of underground utilities for Record Documents.
  3. Testing and inspecting underground utilities.
  4. Removing concrete formwork.
  5. Removing trash and debris.
  6. Removing temporary shoring and bracing, and sheeting.
  7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

### 3.11 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Trenches under Footings: Backfill trenches excavated under footings and within **18 inches (450 mm)** of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Division 03 Section "Cast-in-Place Concrete Miscellaneous Cast-in-Place Concrete."
- D. Trenches under Roadways: Provide **4-inch-** thick, concrete-base slab support for piping or conduit less than **30 inches** below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of **4 inches** of concrete before backfilling or placing roadway subbase course. Concrete is specified in Division 03 Section "Cast-in-Place Concrete Miscellaneous Cast-in-Place Concrete."
- E. Backfill voids with satisfactory soil while removing shoring and bracing.
- F. Place and compact initial backfill of subbase material, free of particles larger than **1 inch** in any dimension, to a height of **12 inches** over the pipe or conduit.
  - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- G. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- H. Install warning tape directly above utilities, **12 inches** below finished grade, except **6 inches** below subgrade under pavements and slabs.

### 3.12 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
  - 1. Under grass and planted areas, use satisfactory soil material.
  - 2. Under walks and pavements, use satisfactory soil material.
  - 3. Under steps and ramps, use engineered fill.
  - 4. Under building slabs, use engineered fill.
  - 5. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

### 3.13 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
  - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
  - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

### 3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than **8 inches** in loose depth for material compacted by heavy compaction equipment, and not more than **4 inches** in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
  - 1. Under structures, building slabs, steps, and pavements, scarify and recompact top **12 inches** of existing subgrade and each layer of backfill or fill soil material at 95 percent.
  - 2. Under walkways, scarify and recompact top **6 inches** below subgrade and compact each layer of backfill or fill soil material at 92 percent.
  - 3. Under turf or unpaved areas, scarify and recompact top **6 inches** below subgrade and compact each layer of backfill or fill soil material at 85 percent.
  - 4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

### 3.15 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between adjacent existing grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  - 1. Turf or Unpaved Areas: Plus or minus **1 inch**.
  - 2. Walks: Plus or minus **1 inch**.
  - 3. Pavements: Plus or minus **1/2 inch**

- C. Grading inside Building Lines: Finish subgrade to a tolerance of **1/2 inch** when tested with a **10-foot** straightedge.

### 3.16 SUBSURFACE DRAINAGE

- A. Subdrainage Pipe: Specified in Division 33 Section "Subdrainage."
- B. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a **6-inch** course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of **12 inches** of filter material, placed in compacted layers **6 inches** thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least **6 inches**
  - 1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 698.
- C. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within **12 inches** of final subgrade, in compacted layers **6 inches** thick. Overlay drainage backfill with one layer of subsurface drainage geotextile, overlapping sides and ends at least **6 inches**
  - 1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 698.
  - 2. Place and compact impervious fill over drainage backfill in **6-inch-** thick compacted layers to final subgrade.

### 3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
  - 1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  - 2. Place base course material over subbase course under hot-mix asphalt pavement.
  - 3. Shape subbase course and base course to required crown elevations and cross-slope grades.
  - 4. Place subbase course and base course **6 inches** or less in compacted thickness in a single layer.
  - 5. Place subbase course and base course that exceeds **6 inches (150 mm)** in compacted thickness in layers of equal thickness, with no compacted layer more than **6 inches** or less than **3 inches** thick.
  - 6. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

- C. Pavement Shoulders: Place shoulders along edges of subbase course and base course to prevent lateral movement. Construct shoulders, at least **12 inches** wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

### 3.18 DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE

- A. Place drainage course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:
  - 1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  - 2. Place drainage course **6 inches** or less in compacted thickness in a single layer.
  - 3. Place drainage course that exceeds **6 inches** in compacted thickness in layers of equal thickness, with no compacted layer more than **6 inches** thick or less than **3 inches** thick.
  - 4. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

### 3.19 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

### 3.20 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

- B. Repair and reestablish grades to specify tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

### 3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

## SECTION 321313 - CONCRETE PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Driveways.
- 2. Parking lots.
- 3. Walks.

- B. Related Sections:

- 1. Division 03 Section "Cast-in-Place Concrete" for general building applications of concrete.
- 2. Division 32 Section "Concrete Paving Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

#### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

#### 1.4 QUALITY ASSURANCE

- A. Detectable Warning Installer Qualifications: An employer of workers trained and approved by manufacturer of stamped concrete paving systems.
- B. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

- C. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
  - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
- D. Concrete Testing Service: Engage a qualified testing agency to perform material evaluation tests and design concrete mixtures.

## PART 2 - PRODUCTS

### 2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
  - 1. Use flexible or uniformly curved forms for curves with a radius of **100 feet (30.5 m)** or less.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

### 2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- C. Epoxy-Coated Welded Wire Reinforcement: ASTM A 884/A 884M, Class A, plain steel.
- D. Reinforcing Bars: ASTM A 615/A 615M, **Grade 60 (Grade 420)**; deformed.
- E. Galvanized Reinforcing Bars: ASTM A 767/A 767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A 615/A 615M, **Grade 60 (Grade 420)** deformed bars.
- F. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, **Grade 60 (Grade 420)** deformed bars.
- G. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, **Grade 60 (Grade 420)**, deformed bars; assembled with clips.
- H. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
- I. Deformed-Steel Wire: ASTM A 496/A 496M.

- J. Joint Dowel Bars: ASTM A 615/A 615M, **Grade 60 (Grade 420)** plain-steel bars. Cut bars true to length with ends square and free of burrs.
- K. Epoxy-Coated, Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, **Grade 60 (Grade 420)**, plain-steel bars.
- L. Tie Bars: ASTM A 615/A 615M, **Grade 60 (Grade 420)**, deformed.
- M. Hook Bolts: **ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6)**, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- N. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
  - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
  - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
- O. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.
- P. Zinc Repair Material: ASTM A 780.

## 2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:
  - 1. Portland Cement: ASTM C 150, gray portland cement Type II
- B. Exposed Aggregate: Selected, hard, and durable; washed; free of materials with deleterious reactivity to cement or that cause staining; from a single source, with gap-graded coarse aggregate as follows:
  - 1. Aggregate Sizes: **3/4 to 1 inch (19 to 25 mm) 1/2 to 3/4 inch (13 to 19 mm) 3/8 to 5/8 inch (10 to 16 mm)** nominal.
- C. Water: Potable and complying with ASTM C 94/C 94M.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.4 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
  1. Products:
    - a. Axim Italcementi Group, Inc.; Caltexol CIMFILM.
    - b. BASF Construction Chemicals, LLC; Confilm.
    - c. ChemMasters; Spray-Film.
    - d. Conspec by Dayton Superior; Aquafilm.
    - e. Dayton Superior Corporation; Sure Film (J-74).
    - f. Edoco by Dayton Superior; BurkeFilm.
    - g. Euclid Chemical Company (The), an RPM company; Eucobar.
    - h. Kaufman Products, Inc.; VaporAid.
    - i. Lambert Corporation; LAMBCO Skin.
    - j. L&M Construction Chemicals, Inc.; E-CON.
    - k. Meadows, W. R., Inc.; EVAPRE.
    - l. Metalcrete Industries; Waterhold.
    - m. Nox-Crete Products Group; MONOFILM.
    - n. Sika Corporation, Inc.; SikaFilm.
    - o. Symons by Dayton Superior; Finishing Aid.
    - p. Vexcon Chemicals Inc.; Certi-Vex EnvioAssist.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
  1. Products:
    - a. Anti-Hydro International, Inc.; A-H Curing Compound #2 DR WB.
    - b. ChemMasters; Safe-Cure Clear.
    - c. Conspec by Dayton Superior; Resin Cure.
    - d. Dayton Superior Corporation; Day-Chem Rez Cure (J-11-W).
    - e. Edoco by Dayton Superior; Resin Emulsion Cure V.O.C. (Type II).

- f. Euclid Chemical Company (The), an RPM company; Kurez W VOX.
  - g. Kaufman Products, Inc.; Thinfilm 420.
  - h. Lambert Corporation; AQUA KURE - CLEAR.
  - i. L&M Construction Chemicals, Inc.; L&M CURE R.
  - j. Meadows, W. R., Inc.; 1100-CLEAR SERIES.
  - k. Nox-Crete Products Group; Resin Cure E.
  - l. Symons by Dayton Superior; Resi-Chem Clear.
  - m. Tamms Industries, Inc., Euclid Chemical Company (The); TAMMSCURE WB 30C.
  - n. Vexcon Chemicals Inc.; Certi-Vex Enviocure 100.
- F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dissipating.
- 1. Products:
    - a. Anti-Hydro International, Inc.; A-H Curing Compound #2 WP WB.
    - b. ChemMasters; Safe-Cure 2000.
    - c. Conspec by Dayton Superior; Resin Cure.
    - d. Dayton Superior Corporation; Day-Chem White Pigmented Cure (J-10-W).
    - e. Edoco by Dayton Superior; Resin Emulsion Cure V.O.C. (Type II).
    - f. Euclid Chemical Company (The), an RPM company; Kurez VOX White Pigmented.
    - g. Kaufman Products, Inc.; Thinfilm 450.
    - h. Lambert Corporation; AQUA KURE - WHITE.
    - i. L&M Construction Chemicals, Inc.; L&M CURE R-2.
    - j. Meadows, W. R., Inc.; 1100-WHITE SERIES.
    - k. Symons by Dayton Superior; Resi-Chem White.
    - l. Vexcon Chemicals Inc.; Certi-Vex Enviocure White 100.

## 2.5 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
  - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- D. Chemical Surface Retarder: Water-soluble, liquid, set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8 to 1/4 inch (3 to 6 mm).
  - 1. Products:

- a. ChemMasters; Exposee.
  - b. Conspec by Dayton Superior; Delay S.
  - c. Euclid Chemical Company (The), an RPM company; Surface Retarder Formula S.
  - d. Kaufman Products, Inc.; Expose.
  - e. Metalcrete Industries; Surfard.
  - f. Nox-Crete Products Group; CRETE-NOX TA.
  - g. Scofield, L. M. Company; LITHOTEX Top Surface Retarder.
  - h. Sika Corporation, Inc.; Rugasol-S.
  - i. Vexcon Chemicals Inc.; Certi-Vex Envioset.
- E. Rock Salt: Sodium chloride crystals, kiln dried, coarse gradation with 100 percent passing **3/8-inch (9.5-mm)** sieve and 85 percent retained on a **No. 8 (2.36-mm)** sieve.

## 2.6 PAVEMENT MARKINGS

- A. Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with AASHTO M 248, Type N; colors complying with FS TT-P-1952.
- 1. Color: As indicated.
- B. Glass Beads: AASHTO M 247, Type 1.

## 2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M. Furnish batch certificates for each batch discharged and used in the Work.
- 1. When air temperature is between **85 and 90 deg F** reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above **90 deg F** reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
- 1. For concrete batches of **1 cu. yd.** or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
  - 2. For concrete batches larger than **1 cu. yd.** increase mixing time by 15 seconds for each additional **1 cu. yd.**
  - 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
  - 1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to **3 mph**.
  - 2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than **15 tons**.
  - 3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of [**1/2 inch** according to requirements in Division 31 Section "Earth Moving."
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

### 3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

### 3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

- E. Zinc-Coated Reinforcement: Use galvanized-steel wire ties to fasten zinc-coated reinforcement. Repair cut and damaged zinc coatings with zinc repair material.
- F. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.
- G. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum **2-inch** overlap of adjacent mats.

### 3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
  - 1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
  - 1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
  - 2. Provide tie bars at sides of paving strips where indicated.
  - 3. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
  - 4. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least **1-1/2 inches** into concrete.
  - 5. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
  - 1. Locate expansion joints at intervals of **50 feet** unless otherwise indicated.
  - 2. Extend joint fillers full width and depth of joint.
  - 3. Terminate joint filler not less than **1/2 inch** or more than **1 inch** below finished surface if joint sealant is indicated.
  - 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
  - 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.

6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
  2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut **1/8-inch** wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
  3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a **3/8-inch** radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

### 3.6 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with **ACI 301** requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to **ACI 301** by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.
- K. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.
- L. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
1. When air temperature has fallen to or is expected to fall below **40 deg F** uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than **50 deg F** and not more than **80 deg F** at point of placement.
  2. Do not use frozen materials or materials containing ice or snow.
  3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.
- M. Hot-Weather Placement: Comply with **ACI 301** and as follows when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below **90 deg F** at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
  3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

### 3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.

- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.
  2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
  3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface **1/16 to 1/8 inch (1.6 to 3 mm)** deep with a stiff-bristled broom, perpendicular to line of traffic.

### 3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching **0.2 lb/sq. ft. x h (1 kg/sq. m x h)** before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, and curing compound or a combination of these as follows:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with **12-inch** lap over adjacent absorptive covers.
  2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least **12 inches (300 mm)** and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period using cover material and waterproof tape.
  3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have

been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

### 3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: **1/4 inch**.
2. Thickness: Plus **3/8 inch**, minus **1/4 inch**.
3. Surface: Gap below **10-foot-** long, unlevelled straightedge not to exceed **1/2 inch**.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: **1/4 inch per 12 inches** of tie bar.
5. Lateral Alignment and Spacing of Dowels: **1 inch**.
6. Vertical Alignment of Dowels: **1/4 inch**.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: **1/4 inch per 12 inches** of dowel.
8. Joint Spacing: **3 inches**
9. Contraction Joint Depth: Plus **1/4 inch** no minus.
10. Joint Width: Plus **1/8 inch**, no minus.

### 3.10 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow concrete paving to cure for a minimum of 28 days and be dry before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of **15 mils**
1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.
  2. Broadcast glass beads uniformly into wet markings at a rate of **6 lb/gal**.

### 3.11 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
    - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
  5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
  6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.
    - a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- G. Concrete paving will be considered defective if it does not pass tests and inspections.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

### 3.12 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

## SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Cold-applied joint sealants.
- 2. Hot-applied joint sealants.

- B. Related Sections:

- 1. Division 32 Section "Asphalt Paving" for constructing joints between concrete and asphalt pavement.
- 2. Division 32 Section "Concrete Paving" for constructing joints in concrete pavement.

#### 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

- B. Source Limitations: Obtain each type of joint sealant from single source from single manufacturer.

- C. Product Testing: Test joint sealants using a qualified testing agency.

- 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

#### 1.4 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:

- 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
- 2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### 2.2 COLD-APPLIED JOINT SEALANTS

- A. Single-Component, Nonsag, Silicone Joint Sealant for Concrete: ASTM D 5893, Type NS.
  1. Products:
    - a. Crafcoc Inc., an ERGON company; RoadSaver Silicone.
    - b. Dow Corning Corporation; 888.
    - c. Pecora Corporation; 301 NS.
- B. Single-Component, Self-Leveling, Silicone Joint Sealant for Concrete: ASTM D 5893, Type SL.
  1. Products:
    - a. Crafcoc Inc., an ERGON company; RoadSaver Silicone SL.
    - b. Dow Corning Corporation; 890-SL.
    - c. Pecora Corporation; 300 SL.

### 2.3 HOT-APPLIED JOINT SEALANTS

- A. Hot-Applied, Single-Component Joint Sealant for Concrete: ASTM D 3406.
  1. Products:
    - a. Crafcoc Inc., an ERGON company; Superseal 444/777.
- B. Hot-Applied, Single-Component Joint Sealant for Concrete and Asphalt: ASTM D 6690, Types I, II, and III.

1. Products:

- a. Meadows, W. R., Inc.; Sealtight Hi-Spec Sealtight 3405.
- b. Right Pointe; D-3405 Hot Applied Sealant.

2.4 JOINT-SEALANT BACKER MATERIALS

- A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.
- B. Round Backer Rods for Cold- and Hot-Applied Joint Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.
- C. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.
- D. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D 5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.5 PRIMERS

- A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or

prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install joint-sealant backings of kind indicated to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of joint-sealant backings.
  - 2. Do not stretch, twist, puncture, or tear joint-sealant backings.
  - 3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install joint sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place joint sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:
  - 1. Remove excess joint sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

### 3.4 CLEANING

- A. Clean off excess joint sealant or sealant smears adjacent to joints as the Work progresses, by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect joint sealants, during and after curing period, from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

### 3.6 PAVEMENT-JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Joints within cement concrete pavement.
  - 1. Joint Location:
    - a. Expansion and isolation joints in cast-in-place concrete pavement.
    - b. Contraction joints in cast-in-place concrete slabs.
    - c. Other joints as indicated.
  - 2. Silicone Joint Sealant for Concrete: Single component, nonsag.
  - 3. Urethane Joint Sealant for Concrete: Multicomponent, pourable, traffic-grade
  - 4. Hot-Applied Joint Sealant for Concrete: Single component.
  - 5. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- B. Joint-Sealant Application: Fuel-resistant joints within cement concrete pavement.
  - 1. Joint Location:
    - a. Expansion and isolation joints in cast-in-place concrete pavement.
    - b. Contraction joints in cast-in-place concrete slabs.
    - c. Other joints as indicated.
  - 2.
  - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- C. Joint-Sealant Application: Joints between cement concrete and asphalt pavement.
  - 1. Joint Location:
    - a. Joints between concrete and asphalt pavement.
    - b. Joints between concrete curbs and asphalt pavement.
    - c. Other joints as indicated.
  - 2. Hot-Applied Joint Sealant for Concrete and Asphalt: Single component.
  - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 321373

## SECTION 312319 - DEWATERING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes construction dewatering.
- B. Related Sections:
  - 1. Division 01 Section "Construction Progress Documentation" for recording preexisting conditions and dewatering system progress.
  - 2. Division 31 Section "Earth Moving" for excavating, backfilling, site grading, and for site utilities.
  - 3. Division 31 Section "Excavation Support and Protection" for shoring, bracing, and sheet piling of excavations.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
  - 1. Delegated Design: Design dewatering system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
  - 2. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented.
  - 3. Prevent surface water from entering excavations by grading, dikes, or other means.
  - 4. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.
  - 5. Remove dewatering system when no longer required for construction.

#### 1.4 SUBMITTALS

- A. Shop Drawings: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of risers, headers, filters, pumps, power units, and discharge lines; and means of discharge, control of sediment, and disposal of water.
  - 1. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
  - 2. Include a written plan for dewatering operations including control procedures to be adopted if dewatering problems arise.
- B. Field quality-control reports.
- C. Other Informational Submittals:
  - 1. Photographs: Show existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by dewatering operations.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer that has specialized in design of dewatering systems and dewatering work.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to dewatering including, but not limited to, the following:
    - a. Inspection and discussion of condition of site to be dewatered including coordination with temporary erosion control measures and temporary controls and protections.
    - b. Geotechnical report.
    - c. Proposed site clearing and excavations.
    - d. Existing utilities and subsurface conditions.
    - e. Coordination for interruption, shutoff, capping, and continuation of utility services.
    - f. Construction schedule. Verify availability of Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
    - g. Testing and monitoring of dewatering system.

## 1.6 PROJECT CONDITIONS

- A. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:
  - 1. Notify Architect and Owner no fewer than two days in advance of proposed interruption of utility.
  - 2. Do not proceed with interruption of utility without Architect's or Owner's written permission.
  
- B. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer. Owner will not be responsible for interpretations or conclusions drawn from this data.
  - 1. Make additional test borings and conduct other exploratory operations necessary for dewatering.
  - 2. The geotechnical report is included elsewhere in the Project Manual.
  
- C. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
  - 1. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Architect if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
  - 1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.
  - 2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

- B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- C. Provide temporary grading to facilitate dewatering and control of surface water.
- D. Monitor dewatering systems continuously.
- E. Promptly repair damages to adjacent facilities caused by dewatering.
- F. Protect and maintain temporary erosion and sedimentation controls, which are specified in Division 31 Section "Site Clearing" during dewatering operations.

### 3.2 INSTALLATION

- A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
  - 1. Space well points or wells at intervals required to provide sufficient dewatering.
  - 2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.
- B. Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.
- C. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
  - 1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
- D. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
  - 1. Maintain piezometric water level a minimum of **24 inches (1500 mm)** below surface of excavation.
- E. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others. Provide sumps,

sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

- F. Provide standby equipment on site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to Owner.
  - 1. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of **36 inches (900 mm)** below overlying construction.
- G. Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

### 3.3 FIELD QUALITY CONTROL

- A. Observation Wells: Provide, take measurements, and maintain at least the minimum number of observation wells or piezometers indicated; additional observation wells may be required by authorities having jurisdiction.
  - 1. Observe and record daily elevation of ground water and piezometric water levels in observation wells.
  - 2. Repair or replace, within 24 hours, observation wells that become inactive, damaged, or destroyed. In areas where observation wells are not functioning properly, suspend construction activities until reliable observations can be made. Add or remove water from observation-well risers to demonstrate that observation wells are functioning properly.
  - 3. Fill observation wells, remove piezometers, and fill holes when dewatering is completed.
- B. Provide continual observation to ensure that subsurface soils are not being removed by the dewatering operation.

END OF SECTION 312319

## SECTION 321824.1 - TENNIS COURT COLOR COATING

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract including general and supplementary conditions and other Division 1 Specifications Sections, apply to this section.

#### 1.2 REFERENCES

- A. ASTM D2938 - Specification for bituminous protective coating.
- B. ASTM C136- Standard testing method for Sieve Analysis of fine course aggregates.
- C. Refer to specifications on civil and structural drawings.

#### 1.3 SUMMARY

- A. Section includes:
  - 1. Concrete primer
  - 2. Asphalt/concrete binder
  - 3. Court depression
  - 4. Color System
- B. Related Sections include the following: The following sections contain requirements that relate to this Section:
  - 1. Division 03 Section – “Cast-in-Place Concrete”
  - 2. Division 03 Section - “Unbounded Post-Tensioned Concrete”
  - 3. Division 32 Section – “Asphalt Paving”
  - 4. Division 32 Section – “Tennis Court Equipment”

#### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product specifications.
- B. Certification: Submit letter from manufacturer stating applicator is a certified applicator.
- C. Samples for verification: For the following products:
  - 1. Court Color System: Submit samples of manufacturer’s full range of colors.

#### 1.5 QUALITY ASSURANCE

- A. Tests and Inspections: Owner reserves right to employ a testing laboratory to

conduct testing and inspection of materials and mixtures.

- B. Applicator: Certified Applicator of color coat manufacturer.
- C. Regulatory Requirements: Equipment specified shall conform to the latest rules and regulations of the following:

- 1. United States Tennis Association (USTA)
- 2. American Sports Builders Association (ASBA)
- 3. Illinois High School Association (IHSA)
- 4. National Federation of State High School Association (NFSH):

NFSH  
PO Box 690  
Indianapolis, IN 46206  
Telephone (317)972-6900

## 1.6 JOB CONDITIONS

- A. Environmental Requirements: Apply coating in dry weather when pavement and atmospheric temperatures are 50 deg. F or above and are anticipated to remain above 50 deg F for four (4) hours after completing application.

## 1.7 WARRANTY

- A. Prior to final payment, submit two (2) year written dual warranty signed by contractor.

## PART 2 – PRODUCTS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
  - 1. Color System:
    - a. Elite Sport Coating
    - b. Plexipave System by California Products.
    - c. Approved equal
  - 2. Asphalt/Concrete Binder:
    - a. Elite Sport Coating
    - b. Plexipave System by California Products.
    - c. Approved equal
  - 3. No other manufacturers will be accepted unless approved by Architect in writing 10 (ten) days prior to bid date.

## 2.2 MATERIALS

- A. Color System: An ultra-violet light stabilized, pure synthetic mineral oxide pigmented acrylic epoxy color coating system specifically formulated for coating of recreational surfaces and as specified in this section

- B. Aggregate for Courts:
  - 1. Washed, dry silica sand free of dust, trash, clay, organic materials or other contaminants and supplied in bags to insure correct measurements.
  - 2. Gradation: to have an American Foundry Society grain fineness number is no less than 65 and no more than 95, when tested in accordance with ASTM C 136 and with 99% passing 40.
- C. Mixing Water: Potable and free from harmful soluble salts.
- D. Equipment and Tools:
  - 1. All equipment, tools and machinery used for handling materials and executing any part of work shall be subject to approval by Architect/Engineer before work is started.
  - 2. Use equipment for applying mixture that is designed for applying tennis court color coating and capable of applying required coating weights evenly to provide a smooth, uniformly coated surface. **Do NOT use tools with sharp edges, such as razor blades, on the courts. Any cuts made in the court will be corrected by the contractor and restriped.**

## PART 3 – EXECUTION

### 3.1 INSPECTION

- A. Inspect asphalt/concrete where Color Coating is to be installed, with the Asphalt/Concrete Installer present, for conditions and defects that will adversely affect performance of tennis courts, and which cannot be put into an acceptable condition through normal preparatory work as specified below. court surface must comply with court depression tolerances as specified below.
- B. Do not begin to apply Color Coating until satisfactory conditions have been corrected.
- C. Start of Color Coating will be construed as the Applicator's acceptance of surfaces and conditions of the asphalt.

### 3.2 PREPARATION

- A. Curing:
  - 1. Asphalt shall be cured for a minimum of 14 days.
  - 2. Concrete shall be cured for a minimum of 30 days.
- C. Cleaning:
  - 1. Thoroughly clean surfaces to be coated. Remove all foreign debris (dirt, silt, gravel, leaves, etc.) using mechanically powered forced air sweepers, mechanical street sweepers, steel bristle brooms, and/or high-pressure water.

2. Thoroughly scrape mud areas and scrub wash with clean water.
  3. For Concrete pavement, remove calcium sulfate via an etching process employing muriatic acid, phosphoric acid or rotary power washing.
- C. Protection: Protect adjacent curbs, walks, fences, and other items from receiving color coat and/or resurfacer.
- D. Primer: At concrete only apply penetrating acrylic primer – Elite Court Patch Binder or approved equal.
- E. Resurfacer:
1. At asphalt apply 2 coats of acrylic resurfacer.
  2. At concrete apply 1 coat of acrylic resurfacer.
- F. Apply 2 coats of fortified tennis court color coating.

### 3.3 COURT DEPRESSIONS

- A. Court surface shall be flooded with water. Any ponding or “birdbaths” remaining after 1 (one) hour at 70 degrees F in sunlight which cover a five-cent piece (American coin) shall be patched and leveled by the asphalt installer.

### 3.4 COLOR SYSTEM

- A. The color finish shall be Elite Sport Coating System or Plexipave System by California Products. This system includes the following:
1. Resurfacer: Two (2) coats of Acrylic resurfacer shall be applied to the entire court area in order to provide a uniform and even surface.
  2. Colors: Verify colors with Owner prior to work.
    - a. Court areas, and practice board area: Custom blend of standard yellow and beige to create “Lemont Gold”
    - b. Out-of-Bounds: Blue as selected from manufacturers full color line
      - 1) Out-of-Bounds color not to extend past 1-foot of the fence line

### 3. Color Finish:

- A. Two (2) coats of sand filled acrylic color shall be applied to the entire court surface.
- B. The second coat shall be applied upon thorough drying of first coat.
- C. Color areas shall be taped where colors meet in order to assure razor sharp edges prior to painting. **Do NOT use actual razors.**

### 4. Playing Lines:

- A. Lines shall be taped in order to assure razor sharp edges prior to painting. **Do NOT use actual razors.**
- B. One (1) coat of acrylic line paint shall be applied accurately and in accordance with the Regulatory Requirements listed in this section.
- C. Playing lines shall be 2” wide and Base lines shall be between 2” and

- 4" in width.
- D. Playing lines shall be accurately located and marked in accordance with the Regulatory Requirements listed in this section. The painting shall be done by skilled mechanics in a workmanlike manner in accordance with the manufacturer's standard printed instructions, hand painted.
  - E. Lines shall be painted with a paint recommended or approved by the manufacturer of the color finish material: however, use of traffic, oil, alkyd, or solvent-vehicle type paint is prohibited

### 3.3 PROTECTION

- A. Protect adjacent curbs, walks, fences, landscaping, and other items from receiving color coat and /or resurfacer.
- B. Barricade coated areas until coating has dried sufficiently for foot traffic.

### 3.4 CLEAN UP

- A. Upon completion of the work, the Contractor shall remove all containers, surplus material and debris and have the site in a clean and orderly condition acceptable to the Owner.

END OF SECTION 321824.1

## SECTION 329200 – LAWNS AND GRASSES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Seeding.
  - 2. Sodding.
  - 3. Erosion-control material(s).

#### 1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.
- E. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- C. Product Certificates: For soil amendments and fertilizers, from manufacturer.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn establishment.
  - 1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
  - 2. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.
- B. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Preinstallation Conference: Conduct conference at Project site.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Seed: Deliver seed in original sealed, labeled, and undamaged containers.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in TPI's "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in its "Guideline Specifications to Turfgrass Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

## 1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

## 1.8 MAINTENANCE SERVICE

- A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until satisfactory lawns are established as defined in Section 3.6.
  - 1. When initial maintenance period has not elapsed before end of planting season, or if lawn is not fully established, continue maintenance during next planting season.

## PART 2 - PRODUCTS

### 2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
  - B. Grass Seed Mix: Unless otherwise noted on the plans, use IDOT Class 1 seed mix as follows:
    - 1. Mix shall be Blue Tag certified:
      - 50% Ky Bluegrass- (Choose 2 varieties below- 25% Each)
        - Rugby, Touchdown, Award, Bluestone
      - 20% Creeping Red Fescue (Choose 1 varieties below)
        - Aruba, Jasper, Dawsen, Cindy
      - 30% Perennial Ryegrass (Choose 1 varieties below)
        - Enterprise, Montgomery, Caddie Shack, Accent
- Seed at 6 lbs per 1,000 SQ. FT.

### 2.2 TOPSOIL

- A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, free of stones **1/2 inch** or larger in any dimension and other extraneous materials harmful to plant growth.
  - 1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
    - a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from bogs or marshes.

### 2.3 SOD

- A. Turfgrass Species: Sod of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
  - 1. Athletic Fields: Proportioned by weight as follows:
    - a. 60% Blue Grass- (Choose 3 Varieties below- 20% Each) - Rugby 2, Award, Perfection, Bluestone, Denim Kentucky
    - 40% Rye Grass- (Choose 2 Varieties below- 20% Each)

## 2.4 FERTILIZER

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
1. Composition: **1 lb/1000 sq. ft.** of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
  2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

## 2.5 MULCHES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic; free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

## 2.6 EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended Bio-Stakes® staples, **6 inches** long.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### PREPARATION

- C. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect adjacent and adjoining areas from hydromulching overspray.
  2. Protect grade stakes set by others until directed to remove them.
- D. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 3.2 LAWN PREPARATION

- A. Limit lawn subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of **6 inches**. Remove stones larger than **1 inch** in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  - 1. Apply fertilizer directly to subgrade before loosening.
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus **1/2 inch** of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- D. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- E. Before planting, restore areas if eroded or otherwise disturbed after finish grading.

### 3.3 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Prepare area as specified in "Lawn Preparation" Article.
- B. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.
- C. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

### 3.4 SEEDING

- A. Sow seed with seeding machine. Do not drop seed when wind velocity exceeds **5 mph**. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
  - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
- B. Sow seed at a total rate of **6 lb/1000 sq. ft.**
- C. Rake seed lightly into top **1/8 inch** of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with erosion-control blankets installed and stapled according to manufacturer's written instructions and as shown on the drawings.

### 3.5 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
  - 1. Lay sod across angle of slopes exceeding 1:3.
  - 2. Anchor sod on slopes exceeding 1:6 with wood pegs spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.

Saturate sod with fine water spray within two hours of planting. During first week, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

### 3.6 HYDROMULCH

- A. Hydromulch: Mix specified fertilizer and fiber mulch in water, using equipment specifically designed for hydromulch application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
  - 1. Mix slurry with **fiber-mulch manufacturer's recommended** tackifier.
  - 2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than **1500-lb/acre** dry weight.

### 3.7 LAWN MAINTENANCE

- A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.
  - 1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
- B. Watering: Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of **4 inches**. Water as required keeping soil moist to insure proper and even germination. Condition of soil moisture should be checked daily to insure proper germination and keep the lawn area actively growing.
  - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
  - 2. Water lawn with fine spray at a minimum rate of **1 inch** per week unless rainfall precipitation is adequate.

- C. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
  - 1. Mow grass to a height of 2 1/2 inch.
- D. Lawn Post-fertilization: Apply fertilizer after initial mowing and when grass is dry.
  - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to lawn area.

### 3.8 SATISFACTORY LAWNS

- A. Lawn installations shall meet the following criteria as determined by Architect:
  - 1. Satisfactory Seeded Lawn: Is defined when, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 sq. ft. and bare spots not exceeding 3" by 3" inches.
- B. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance of lawns until lawns are determined satisfactory as defined in Section 3.7-A.

### 3.9 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris, created by lawn work, from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after lawn is established.
- C. Remove non-degradable erosion-control measures after grass establishment period.

END OF SECTION 329200



REPORT NO. 19234

JULY 23, 2019  
(Rev. 08/08/19)

REPORT OF SOIL INVESTIGATION

PROJECT

Proposed Improvements  
South Ridge Community Park  
1350 Freeman Road  
Hoffman Estates, Illinois

CLIENT

Hoffman Estates Park District  
  
Hoffman Estates, Illinois

ILLINOIS DRILLING & TESTING CO., INC.  
1752 ARMITAGE COURT - ADDISON, ILLINOIS 60101.4207  
Phone 630.629.7645  
[www.illinoisdrilling.com](http://www.illinoisdrilling.com)



*Since 1958*

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## ILLINOIS DRILLING & TESTING CO., INC.

1752 Armitage Court  
Addison, Illinois 60101

Phone 630.629.7645  
[www.illinoisdrilling.com](http://www.illinoisdrilling.com)

July 23, 2019

Mr. Dustin Hugen  
Hoffman Estates Park District  
[dhugen@heparks.org](mailto:dhugen@heparks.org)

**RE: Report No. 19234 - Proposed Improvements**  
South Ridge Community Park  
1350 Freeman Road  
Hoffman Estates, Illinois

Dear Mr. Hugen:

Our Report of Soil Investigation No. 19234, performed at the above referenced site in Hoffman Estates, Illinois, are herewith submitted. Five (5) test borings were performed to depths of 5.0' to 15.0' below existing grades at the locations indicated on the attached plot plan. The results of these borings along with the location diagram are included with this letter report. The purpose of the subsurface investigation was to determine the physical properties of the soil at the site, analyze the results and submit preliminary recommendations regarding foundation construction of the proposed shelter, parking lot expansion and additional play areas.

### SOIL CONDITIONS - FOUNDATION RECOMMENDATIONS

Boring 1 was performed to a depth of 15.0' below existing grade within the proposed shelter area. We have included the depth and elevation to firm soil for a net allowable 3,000 PSF soil bearing capacity in the soil boring log and the summary, which can be utilized to support the loads of the foundation system. Suitable bearing soil was encountered at a depth of 6.5' below existing grade. The soil conditions encountered are described in detail on the soil boring logs. In general, surface topsoil was encountered overlying clay fill to a depth of 6.5' below existing grade. Below these materials, the soil consists of a natural, very tough/hard, brown silty clay extending through the depth of the test boring.

On the basis of the field and laboratory investigation, the proposed shelter to be constructed on this site may utilize the most economical type of foundation. All footings should extend through the surface topsoil and clay fill in order to expose the underlying, natural, brown clay. Any additional excavated soil may be replaced with either 3" rock up to the designed bottom of footing level or with additional concrete. The bottom of the footings should be located at a minimum of 42" below final exterior grade for sufficient frost protection.

**PARKING LOT EXPANSION & PLAY AREAS**

Borings 2 through 5 were performed to depths of 5.0' below existing grades in the proposed various play areas and expanded parking lot. The depth and elevation of cut are indicated on the soil boring logs and summary. The soil conditions are described in detail on the soil boring logs. In general, Borings 2 and 3 indicated a surface layer of topsoil overlying hard/very tough, brown clay fill. Boring 4 indicated original topsoil overlying hard, brown clay. Boring 5 indicated 2.0' of clay, topsoil and gravel fill overlying a natural, hard, brown clay.

In these various play and parking lot areas, it is recommended that all surface vegetation and topsoil be completely removed to expose the underlying clay fill or natural clay. A proof-roll with a heavily loaded truck of the exposed material should be performed prior to placement of any additional fill. Any loose or soft areas detected by the proof-roll should be excavated and replaced. The depth of undercut will depend on final grading plans and can be determined on-site by our soil engineer. Any additional cohesive fill utilized to achieve desired grades should be placed in 9.0" lifts of loose thickness and be compacted to 95% of the maximum dry density, as determined by the Modified Proctor density test, ASTM D1557.

Once final subgrade levels are achieved, a final proof-roll should be performed in order to detect the presence of soft or unstable soil types due to weather conditions, construction traffic, etc., prior to placement of the subbase material. Any soft or unstable areas should be removed and replaced, as indicated above. Base course materials should conform to IDOT gradation CA-6 and be compacted to 95% of the above indicated Proctor method. Bituminous materials should be compacted to between 93% and 97% of their theoretical maximum density.

**SEASONAL HIGH WATER LEVEL**

Boring 1 was performed to a depth of 15.0' below existing grade. The following table summarizes the soil conditions, estimated permeability rates, and the SHWT:

Depth		Soil Description	Permeability Rate * (in/hr)	SHWT
From	To			
0.0' EL: 849.0+/-	0.7'	Topsoil FILL - Black	0.2 - 0.6 (est.)	-
0.7'	6.5'	Silty Clay FILL - Brown	0.06 - 0.2 (est.)	-
6.5'	15.0' EL: 834.0+/-	Silty CLAY - Brown	0.06 - 0.2	-

Notes: \* - Saturated hydraulic conductivity estimate is derived from the USDA Cook County Soil Survey

*SHWT level is anticipated to be below the boring depth based on the boring data (i.e., deeper than 15.0' below existing grade)*

**COMMENTS**

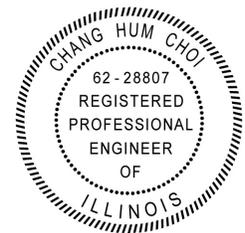
Based on the limited scope of the investigation, some variation in the soil conditions should be anticipated. The analyses and recommendations submitted in this report are based upon the data obtained from the five soil borings performed at the locations indicated on the Plot Plan. This report does not reflect any variations which may occur between these borings. The nature and extent of the variations between borings may not become evident until the course of construction is underway.

If variations then appear evident, it will be necessary that a re-evaluation of the recommendations of this report be made after performing on-site observations during the construction period and noting the characteristics of any variations. It is recommended that a representative from Illinois Drilling & Testing Co., Inc. be present during footing excavation, fill placement, proof-rolls, etc. in order to verify the soil conditions and to ensure that proper remedial measures are being implemented.

We have welcomed the opportunity to be of service to you on this project. If there are any questions regarding the information presented, please do not hesitate to contact us.

Sincerely,

**ILLINOIS DRILLING & TESTING COMPANY, INC.**

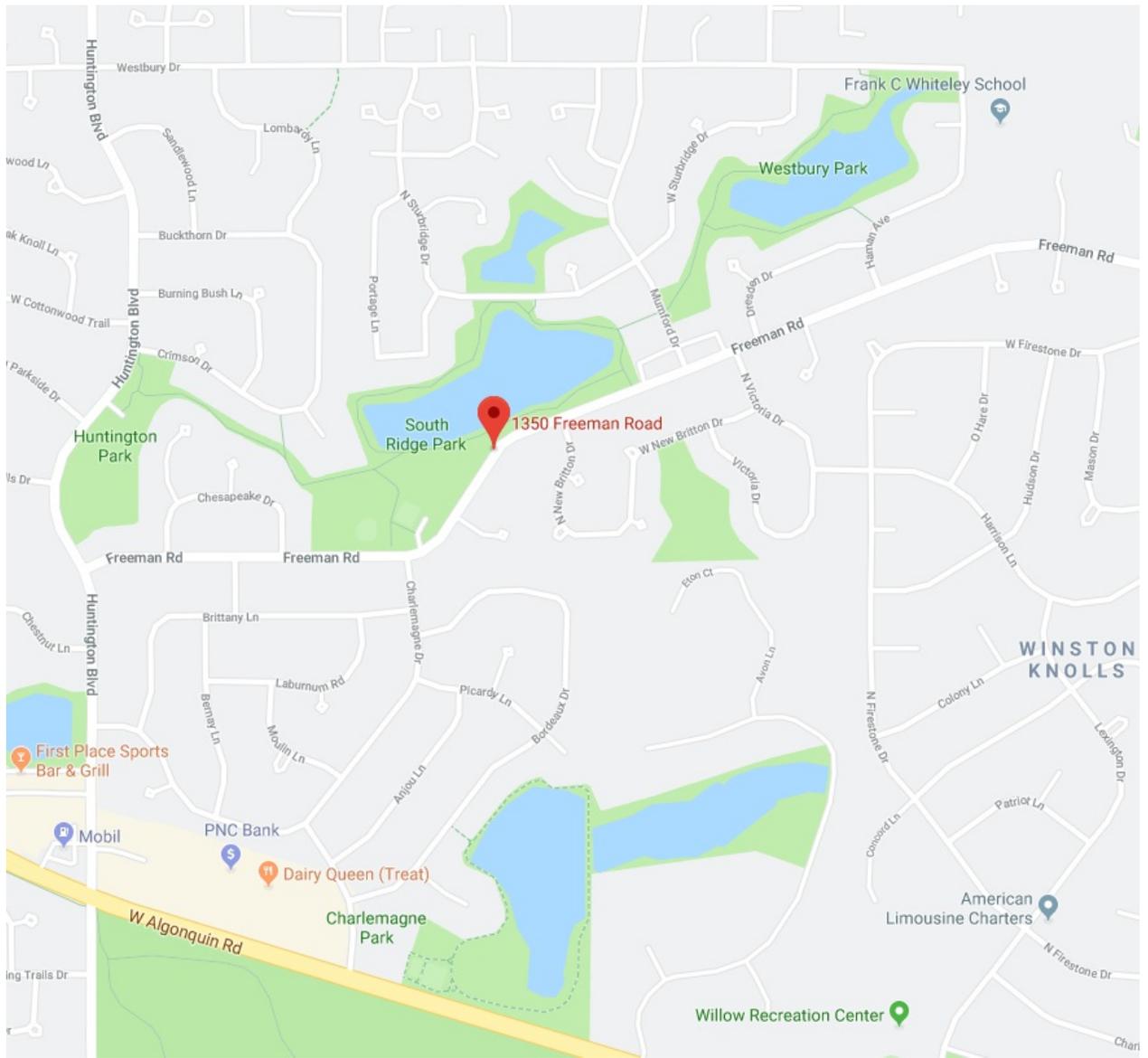


*Chang H. Choi*

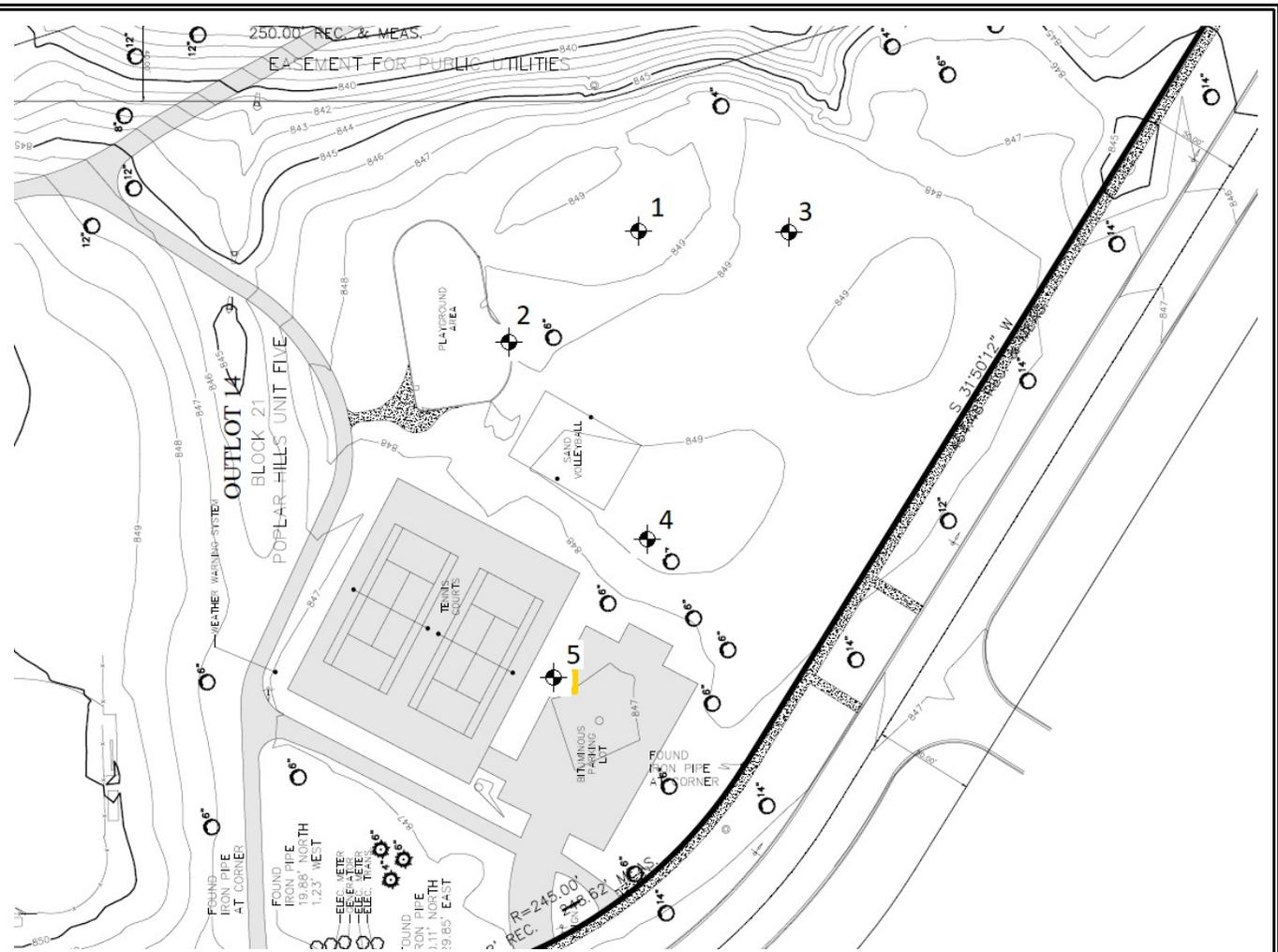
Anthony Cipriani  
Project Manager

Chang H. Choi, P.E.  
Illinois No. 62-28807

AC:CHC:rc



July 23, 2019	By: rc	SITE LOCATION		Job No. 19234	Scale: NTS
CLIENT	Hoffman Estates Park District Hoffman Estates, IL		PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL	



**SUMMARY OF THE TEST BORINGS**

Boring Number	Ground Surface Elevation	Depth to Firm Soil 3,000 PSF	Elevation to Firm Soil 3,000 PSF	Depth of Cut	Elevation of Cut	Approximate Location
1	849.0+/-	6.5'	842.5+/-	-	-	Shelter
2	849.0+/-	-	-	0.6'	848.4+/-	Spray Park
3	849.0+/-	-	-	0.5'	848.5+/-	Playground
4	849.0+/-	-	-	0.3'	848.7+/-	Parking
5	847.0+/-	-	-	0.0'	847.0+/-	Parking

July 23, 2019	By: rc	PLOT PLAN	Job No. 19234	Scale: NTS
CLIENT	Hoffman Estates Park District Hoffman Estates, IL		PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL

ILLINOIS DRILLING & TESTING COMPANY, INC.

1752 Armitage Court - Addison, IL 60101.4207

Report No.	19234	Rig	45C	Crew	AC/SC	Date of Boring	07-16-19
------------	-------	-----	-----	------	-------	----------------	----------

BORING NO.	1	WATER LEVELS:	While Sampling	6.0'	After Boring	8.0'				
Depth	Description of Material (Ground Surface)		S	T	S	Elevation	Q <sub>u</sub>	Q <sub>p</sub>	MC	N
0.0'			N	S	D	849.0+/-				
0.7'	FILL: TOPSOIL - Black					842.5+/-				
6.5'	Fill; Silty CLAY Brown - Some Gray - Very Tough		1	S				2.7	20	
			2	S				2.8	20	
			3	S				3.2	19	
15.0'	Silty CLAY Brown - Very Tough/Hard (CL)		4	S			834.0+/-		4.2	17
			5	S				4.0	18	
			END OF BORING							

NOTE: Net Allowable Soil Bearing Capacity of 3,000 PSF encountered at a depth of 6.5' below existing grade.

SOIL BORING LOG RECORD SHEET

CLIENT	Hoffman Estates Park District Hoffman Estates, IL	PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL
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ILLINOIS DRILLING & TESTING COMPANY, INC.

1752 Armitage Court - Addison, IL 60101.4207

Report No.	19234	Rig	45C	Crew	AC/SC	Date of Boring	07-16-19
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BORING NO.		2		WATER LEVELS:		While Sampling		NE		After Boring		NE	
Depth	Description of Material (Ground Surface)	S	T	S	Elevation	Q <sub>u</sub>	Q <sub>p</sub>	MC	N				
0.0'		N	S	D	849.0+/-								
0.6'	FILL: TOPSOIL - Black				848.4+/-								
	FILL: Silty CLAY Brown - Trace Gray - Hard/Very Tough	1	S				4.0	18					
5.0'		2	S		844.0+/-		2.6	20					

END OF BORING

SOIL BORING LOG RECORD SHEET

CLIENT	Hoffman Estates Park District Hoffman Estates, IL	PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL
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ILLINOIS DRILLING & TESTING COMPANY, INC.

1752 Armitage Court - Addison, IL 60101.4207

Report No.	19234	Rig	45C	Crew	AC/SC	Date of Boring	07-16-19
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BORING NO.		3		WATER LEVELS:		While Sampling		NE		After Boring		NE	
Depth	Description of Material (Ground Surface)	S	T	S	Elevation	Q <sub>u</sub>	Q <sub>p</sub>	MC	N				
0.0'		N	S	D	849.0+/-								
0.5'	FILL: TOPSOIL - Black				848.5+/-								
	FILL: Silty CLAY Brown - Trace Gray - Hard/Very Tough	1	S				4.3	17					
5.0'		2	S		844.0+/-		2.6	21					

END OF BORING

SOIL BORING LOG RECORD SHEET

CLIENT	Hoffman Estates Park District Hoffman Estates, IL	PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL
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ILLINOIS DRILLING & TESTING COMPANY, INC.

1752 Armitage Court - Addison, IL 60101.4207

Report No.	19234	Rig	45C	Crew	AC/SC	Date of Boring	07-16-19
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BORING NO.		4		WATER LEVELS:		While Sampling			NE		After Boring			NE	
Depth		Description of Material (Ground Surface)				S	T	S	Elevation	Q <sub>u</sub>	Q <sub>p</sub>	MC	N		
0.0'						N	S	D	849.0+/-						
0.3'		TOPSOIL - Black (OL)							848.7+/-						
		Silty CLAY Brown - Hard (CL)				1	S				4.5+	17			
						2	S			4.5+	17				
5.0'											844.0+/-				

END OF BORING

SOIL BORING LOG RECORD SHEET

CLIENT	Hoffman Estates Park District Hoffman Estates, IL	PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL
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ILLINOIS DRILLING & TESTING COMPANY, INC.

1752 Armitage Court - Addison, IL 60101.4207

Report No.	19234	Rig	45C	Crew	AC/SC	Date of Boring	07-16-19
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BORING NO.		5		WATER LEVELS:		While Sampling			NE		After Boring			NE	
Depth	Description of Material					S	T	S	Elevation	Q <sub>u</sub>	Q <sub>p</sub>	MC	N		
0.0'	(Ground Surface)					N	S	D	847.0+/-						
2.0'	FILL: Silty CLAY & TOPSOIL - Some Gravel Brown, Gray & Black - Hard					1	S				4.0	21			
	Silty CLAY Brown - Hard (CL)					2	S				4.5+	16			
5.0'									842.0+/-						

END OF BORING

SOIL BORING LOG RECORD SHEET

CLIENT	Hoffman Estates Park District Hoffman Estates, IL	PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL
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ILLINOIS DRILLING & TESTING COMPANY, INC.

1752 Armitage Court - Addison, IL 60101.4207

Report No.	19234	Rig	45C	Crew	AC/SC	Date of Boring	07-16-19
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NOTES

Abbreviation		Units
NE	Not Encountered	-
SN	Sample Number	-
TS	Type of Sampling	-
S	Split Spoon	-
SD	Sampling Distance	-
$Q_u$	Unconfined Compression test	Tons/ft <sup>2</sup>
$Q_p$	Calibrated Penetrometer test	Tons/ft <sup>2</sup>
MC	Moisture Content test	% Dry Weight
N	Penetration Test	Blows/Foot

SOIL BORING LOG RECORD SHEET

CLIENT	Hoffman Estates Park District Hoffman Estates, IL	PROJECT	Proposed Improvements South Ridge Community Park 1350 Freeman Road Hoffman Estates, IL
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February 06, 2019

Dear Dustin:

BCI Burke Company (99) is delighted to provide Hoffman Estates Park District with this playground equipment proposal.

This design was developed with your specific needs in mind, and we look forward to discussing this project further with you to ensure your complete satisfaction. BCI Burke Company (99) is confident that this proposal will satisfy your functional, environmental, and safety requirements -- and most importantly -- bring joy and excitement to the children and families directly benefiting from your new playground.

You have our personal commitment to support this project and your organization in every manner possible, and we look forward to continue developing a long-standing relationship with you. We appreciate your consideration and value this opportunity to earn your business.

Sincerely,

BCI Burke Company (99)  
P. O. Box 549  
Fond du Lac, WI 54936

## **Design Summary**

BCI Burke Company (99) is very pleased to present this Proposal for consideration for the FIT-2628 FITNESS COURSE 1 located in Hoffman Estates. BCI Burke Company, LLC has been providing recreational playground equipment for over 90 years and has developed the right mix of world-class capabilities to meet the initial and continuing needs. We believe our proposal will meet or exceed your project's requirements and will deliver the greatest value to you.

The following is a summary of some of the key elements of our Proposal:

- Project Name: FIT-2628 FITNESS COURSE 1
- Project Number: FIT-2628
- User Capacity: 33
- Age Groups: Ages 13+ years
- Dimensions: 47' 6" x 77' 7"
- Designer Name:

BCI Burke Company (99) has developed a custom playground configuration based on the requirements as they have been presented for the FIT-2628 FITNESS COURSE 1 playground project. Our custom design will provide a safe and affordable playground environment that is aesthetically pleasing, full of fun for all users and uniquely satisfies your specific requirements. In addition, proposal # FIT-2628 has been designed with a focus on safety, and is fully compliant with ASTM F1487 and CPSC playground safety standards.

We invite you to review this proposal for the FIT-2628 FITNESS COURSE 1 playground project and to contact us with any questions that you may have.

Thank you in advance for giving us the opportunity to make this project a success.



**INFORMATION**  
 MINIMUM FALL ZONE  
 SURFACED WITH  
 RESILIENT MATERIAL  
 AREA  
 2449 SQ. FT.  
 PERIMETER  
 375 FT.

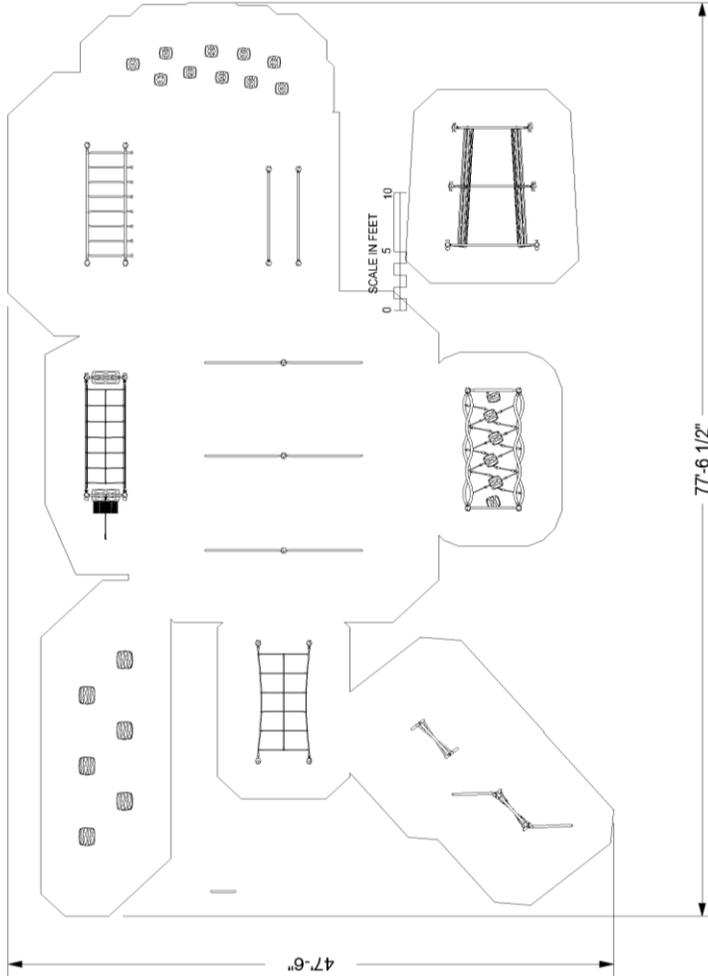
**STRUCTURE SIZE**  
 47' 6" x 77' 7"

STRUCTURE IS DESIGNED  
 FOR CHILDREN AGES:  
 6-23 MONTH OLDS  
 2-5 YEAR OLDS  
 5-12 YEAR OLDS  
 13 + YEAR OLDS

The play components identified  
 in this plan are IPEMA  
 certified and meet or exceed  
 these components conform to the  
 requirements of ASTM F1487.  
 To verify product certification,  
 visit: www.ipema.org

The space requirements shown  
 here are to ASTM standards.  
 Requirements for other standards  
 may be different.

The use and layout of play  
 components identified in this plan  
 conform to the CPSC guidelines.  
 U.S. CPSC recommends the  
 separation of age groups in  
 playground layouts.



**WARNING!**

ACCESSIBLE SAFETY SURFACING MATERIAL IS REQUIRED BENEATH  
 AND AROUND THIS EQUIPMENT.  
 FOR SLIDE FALL ZONE SURFACING AREA SEE CPSC's Handbook for  
 Public Playground Safety.  
 PLATFORM HEIGHTS ARE IN INCHES ABOVE RESILIENT MATERIAL.

**ADA ACCESSIBILITY GUIDELINE (ADAAG CONFORMANCE)**

NUMBER OF PLAY EVENTS	22	RECD: 0
NUMBER OF ELEVATED PLAY EVENTS	0	RECD: 0
NUMBER OF ELEVATED PLAY EVENTS ACCESSIBLE BY RAMP	PROVIDED: 0	RECD: 0
NUMBER OF ELEVATED PLAY EVENTS ACCESSIBLE BY TRANSFER SYSTEM	PROVIDED: 0	RECD: 0
NUMBER OF ELEVATED PLAY EVENTS ACCESSIBLE BY RAMP OR TRANSFER SYSTEM	PROVIDED: 22	RECD: 0
NUMBER OF TYPES OF GROUND LEVEL PLAY EVENTS	PROVIDED: 7	RECD: 0

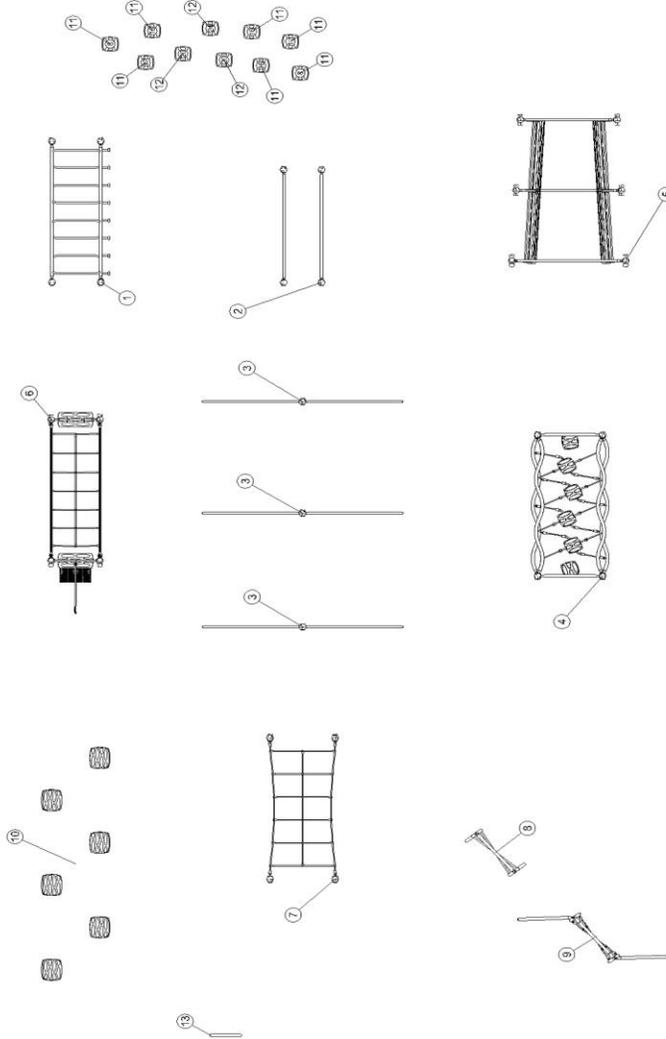
SERIES: Fitness  
 SITE PLAN  
 DRAWN BY:

FIT-2628 FITNESS COURSE 1

BCI Burke Company (99)  
 FIT-2628

February 06, 2019

ITEM	COMP	DESCRIPTION
1	370-0868	DOOR KNOB JAM
2	370-0869	JUNGLE PIPELINE
3	370-1600	OVER UNDER
4	370-1605	FROG HOP
5	370-1606	WALL CLINGER
6	370-1607	SUMMIT BRIDGE
7	370-1613	TWINKLE TOES
8	370-1614	MIGHTY MIGHT
9	370-1615	MIGHTY MAX
10	560-0591	LAVA LEAP
11	560-0595	BLOCK UP 8"-16"
12	560-0596	BLOCK UP 20"-24"
13	580-1328	FS SIGN, ELEVATE FIT-2628



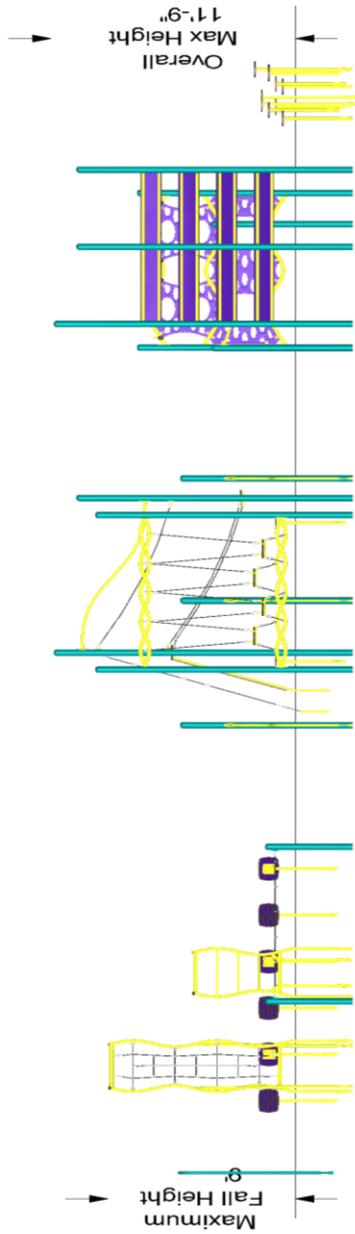
February 06, 2019

SERIES: Fitness  
 COMPONENT PLAN  
 DRAWN BY:

FIT-2628 FITNESS COURSE 1

BCI Burke Company (99)  
 FIT-2628

BCI Burke Company, LLC PO Box 549 Fond du Lac, Wisconsin 54936-0549 Telephone 920-921-9220



The protective surfacing for this design must accommodate the critical fall height.

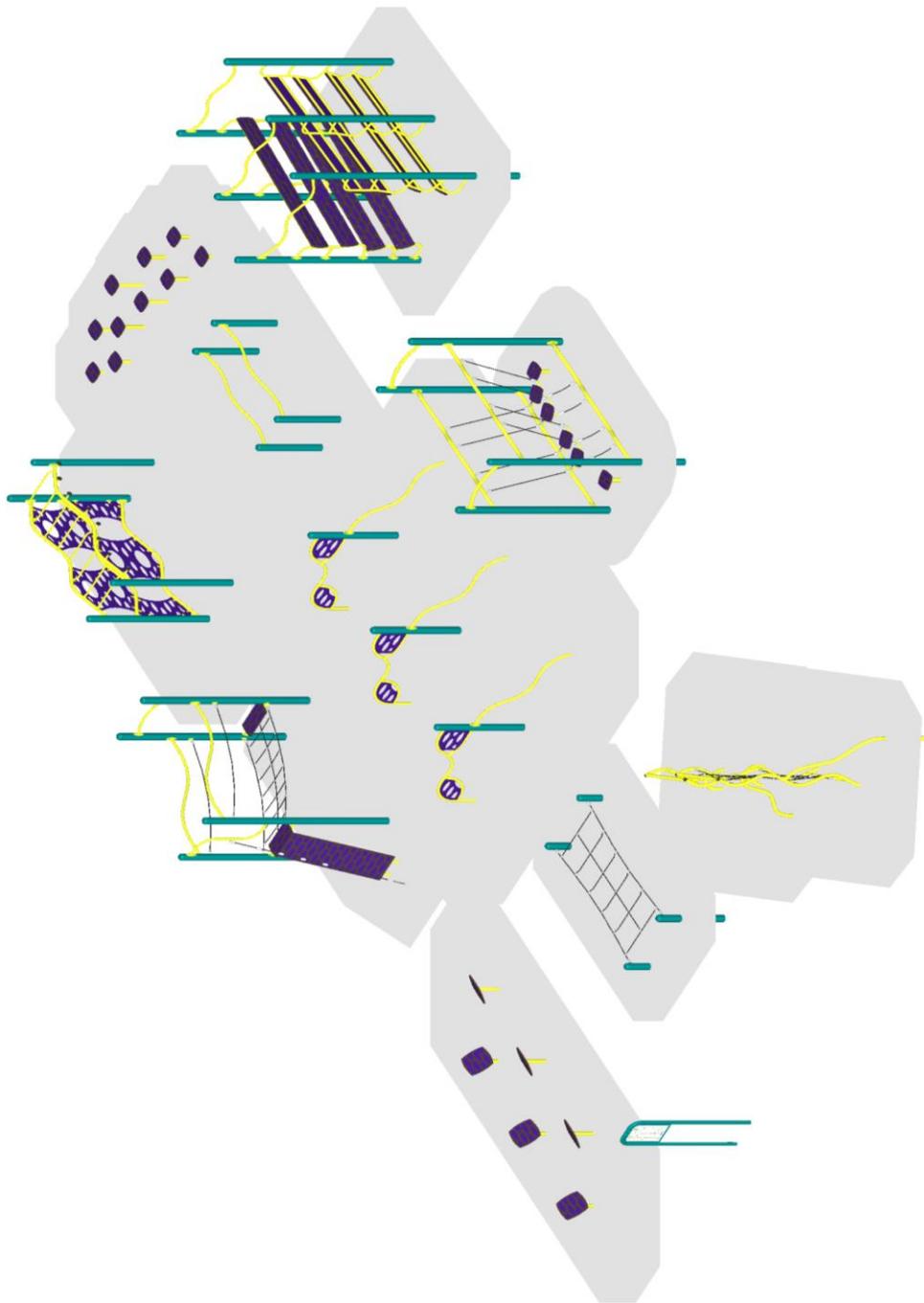
February 06, 2019

SERIES: Fitness  
 ELEVATION PLAN  
 DRAWN BY:

FIT-2628 FITNESS COURSE 1

BCI Burke Company (99)  
 FIT-2628

BCI Burke Company, LLC PO Box 549 Fond du Lac, Wisconsin 54936-0549 Telephone 920-921-9220



February 06, 2019

SERIES: Fitness  
ISOMETRIC PLAN  
DRAWN BY:

FIT-2628 FITNESS COURSE 1

BCI Burke Company (99)  
FIT-2628

BCI Burke Company, LLC PO Box 549 Fond du Lac, Wisconsin 54936-0549 Telephone 920-921-9220

**Burke**



# Proposal # FIT-2628

February 06, 2019  
2019 Pricing

**Proposal Prepared for:**

Dustin Hugen  
Hoffman Estates Park District  
1685 W Higgins Rd  
Hoffman Estates, IL 60169

**Project Location:**

FIT-2628 FITNESS COURSE 1

**Proposal Prepared by:**

BCI Burke Company (99)  
P. O. Box 549  
Fond du Lac, WI 54936

Play Illinois  
4716 Roslyn Road  
Downers Grove, IL 60515

Component No.	Description	Qty.	User Cap.	Ext. User Cap.	Weight	Ext. Weight
Fitness						
370-0858	DOOR KNOB JAM	1	3	3	325	325
370-0859	JUNGLE PIPELINE	1	1	1	37	37
370-1600	OVER UNDER	3	2	6	92	276
370-1605	FROG HOP	1	4	4	262	262
370-1606	WALL CLINGER	1	2	2	1,032	1,032
370-1607	SUMMIT BRIDGE	1	3	3	274	274
370-1613	TWINKLE TOES	1	1	1	23	23
370-1614	MIGHTY MIGHT	1	1	1	96	96
370-1615	MIGHTY MAX	1	1	1	168	168
560-0591	LAVA LEAP	1	1	1	171	171
560-0595	BLOCK UP 8"-16"	7	1	7	18	126
560-0596	BLOCK UP 20"-24"	3	1	3	21	63
580-1326	FS SIGN, ELEVATE FIT-2628	1	0	0	52	52
670-0150	POST ASSEMBLY 5" OD X 80"	4	0	0	44	176
670-0165	POST ASSEMBLY 5" OD X 123"	4	0	0	66	264
670-0167	POST ASSEMBLY 5" OD X 147"	4	0	0	78	312
670-0168	POST ASSEMBLY 5" OD X 158"	6	0	0	84	504
670-0169	POST ASSEMBLY 5" OD X 171"	4	0	0	91	364
670-0419	POST ASSEMBLY 5" OD X 49"	4	0	0	29	116
670-0420	POST ASSEMBLY 5" OD X 98"	3	0	0	55	165
Nucleus						
670-0099	INSTALLATION KIT, INTENSITY	1	0	0	2	2
670-0103	MAINTENANCE KIT, INTENSITY	1	0	0	0	0

Total User Capacity: 33  
Total Weight: 4,808 lbs.

**Total Price: \$85,023**  
**Shipping Cost: 1,932**  
**Total: \$86,955**

**Special Notes:**

Prices do not include unloading, material storage, site excavation/preparation, removal of existing equipment, removal of excess soil from footing holes, site security, safety surfacing, installation, or sales tax (if applicable). Prices are based on standard colors per CURRENT YEAR BCI Burke Catalog. Custom colors, where available, would be an extra charge. **Pricing is valid for 45 days from the date of this proposal.**



# Proposal # FIT-2628

February 06, 2019

2019 Pricing

## ***Selected Color List***

<b><u>Color Group</u></b>	<b><u>Color</u></b>
<i>Phase 1</i>	
Accessory	Lemon
Platform	Brown
1 Color Extruded/Flat	Purple
Post	Aqua

# BURKE GENERATIONS WARRANTY®

## The Longest and Strongest warranty in the industry

BCI Burke Company, LLC ("Burke") warrants that all standard products are warranted to be free from defects in materials and workmanship, under normal use and service, for a period of one (1) year from the date of invoice.

### We stand behind our products.

In addition, the following products are warranted, under normal use and service from the date of invoice as follows:

- One Hundred (100) Year Limited Warranty on aluminum and steel upright posts (including Intensity®, Voltage®, Nucleus®, Little Buddies® and ELEVATE®/ACTIVATE®) against structural failure due to corrosion, deterioration or workmanship.
- One Hundred (100) Year Limited Warranty on KoreConnect® clamps against structural failure due to corrosion, deterioration or workmanship.
- One Hundred (100) Year Limited Warranty on Hardware (nuts, bolts, washers)
- One Hundred (100) Year Limited Warranty on bolt-through fastening and clamp systems (Voltage®, Intensity®, Nucleus®, Little Buddies® and ELEVATE®/ACTIVATE®).
- Twenty-Five (25) Year Limited Warranty on spring assemblies and aluminum cast animals.
- Fifteen (15) Year Limited Warranty on main structure platforms and decks, metal roofs, table tops, bench tops, railings and barriers.
- Fifteen (15) Year Limited Warranty on all plastic components including StoneBorders against structural failure due to materials or workmanship.
- Ten (10) Year Limited Warranty on ShadePlay Canopies fabric, threads, and cables against degradation, cracking or material breakdown resulting from ultra-violet exposure, natural deterioration or manufacturing defects. This warranty is limited to the design loads as stated in the specifications.
- Ten (10) Year Limited Warranty on NaturePlay® Boulders and GFRC products against structural failure due to natural deterioration or workmanship. Natural wear, which may occur with any concrete product with age, is excluded from this warranty
- Ten (10) Year Limited Warranty on Full Color Custom Signage against manufacturing defects that cause delamination or degradation of the sign. Full Color Custom Signs also carry a two (2) year warranty against premature fading of the print and graphics on the signs.
- Five (5) Year Limited Warranty on Intensity® and RopeVenture® cables and LEVEL X® flex bridge against premature wear due to natural deterioration or manufacturing defects. Determination of premature wear will be at the manufacturer's discretion.
- Five (5) Year Limited Warranty on swing seats and hangers; Kid Koaster® Trolleys and other moving parts against structural failure due to materials or workmanship.
- Five (5) Year Limited Warranty on PlayEnsemble™ cables and mallets against defects in materials and workmanship.
- Three (3) Year Limited Warranty on electronic panel speakers, sound chips and circuit boards against electronic failure caused by manufacturing defects.

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# Wetland Delineation of the South Ridge Community Park

Located in

Hoffman Estates, Illinois, in Cook County



Olson Ecological  
Solutions, LLC



tallgrass  
RESTORATION, LLC

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**July 1, 2019**



## ACKNOWLEDGEMENTS

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For more information, visit the websites for OES and Tallgrass at the following links:

[www.olsonecosolutions.com](http://www.olsonecosolutions.com)

[www.tallgrassrestoration.com](http://www.tallgrassrestoration.com)

## INTRODUCTION

In June of 2019, Tallgrass Restoration represented Olson Ecological Solutions (OES) in conducting a wetland delineation for an 18.1-acre parcel planned for the South Ridge Community Park enhancements by the applicant in Section 19, Township 42 North, Range 10 East, located in Hoffman Estates, Illinois in Cook County. At the time of investigation, the land use at the site was currently a lake with a concrete trail surrounding it. Historically, the land use where the lake was created was wetland according to the 1938 aerial (ISGS, 1938).

Dustin Hugen requested wetland delineation of the site approximately bounded on the north and east side by residential properties, the south by Freeman Road and a recreational park. The location of the site was summarized in the Property Location Map (Figure 1). The purpose of the wetland delineation was to determine the location and size of wetlands associated with South Ridge Park enhancement project.

As reviewed in the section OES DELINEATED WETLANDS below, all regulatory decisions and final determinations rest with the U.S. Army Corps of Engineers (ACOE). This report summarizes the process of our investigations and submits our findings. Marking the wetland boundaries with flagging and recording GPS points allow us to communicate a complex boundary to the ACOE. Due to the variance by the GPS unit, recorded GPS data is considered secondary to the flags placed in the field, which may be revised by the ACOE.

## **METHODS**

Consultants from OES and Tallgrass conducted the wetland delineation in June 2019 using the technical guidelines as described in the Army Corps of Engineers Wetland Delineation Manual (ACOE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (ACOE, 2010). This process included off-site procedures and a field investigation.

The off-site review of the study area included an analysis of the maps and aerial photography, determination of normal precipitation, and a review of wetness signatures on recent aerial photography.

We determined if the delineation time frame was drier than normal, normal, or wetter than normal using recent precipitation recorded at the local Barrington 3SW, IL Weather Station for the months of March, April, and May compared to historic precipitation norms as determined by a W.E.T.S. Table created for years 1971 through 2000. We also considered antecedent precipitation from the Agricultural Applied Climate Information website from the Barrington 2SW Station from the week prior to the delineation date (USDA eFOTG, 2007a).

Field investigation for the data points took place during three days over a duration period of June 11 through June 13, 2019. Wetland A's boundary was marked on June 13. After confirming the project boundary, we examined the site for the presence of natural or human induced changes affecting vegetation, soils, and hydrology, and we traversed the site. We explored suspected wetland areas with mapped hydric soils, saturation or inundation visible on aerial imagery, areas indicated as wetlands by the National Wetlands Inventory, floodplains, and areas appearing as wetlands on historic imagery. We looked for drainage patterns and depressions in the landscape, and we conducted a final walk-through of the entire site.

We recorded data on a Midwest Regional Supplement Data Sheet, marked a data point with a pink "Wetland Delineation" flag, and recorded a GPS point for each data point in all suspected wetland areas. For areas with mapped hydric soils, we looked for coinciding wetland vegetation and hydrology and confirmed hydric soils. In areas found to have the hydrology indicator of saturation or inundation visible on aerial imagery or if an area was a floodplain, drainage area, or indicated as wetland on the NWI map or historic aerial, we first looked for wetland vegetation and if found, we explored for additional hydrology indicators and then hydric soils.

When wetland conditions were found, we took data at a point within the correlating upland and delineated the wetland boundary between the upland and wetland data points, dictated by site-specific wetland indicators. We labeled all data points with letters (e.g. AW and AU for wetland and upland in Wetland A) and wetland boundaries with sequentially numbered flags (e.g. 1, 2, 3), noting the numbers on GPS points.

# RESULTS

## Historical and Current Site Environmental Conditions

The subject property located at 1450 Freeman Road in Hoffman Estates was once wetlands. It is currently used as a public recreation space, with a trail surrounding the man-made South Ridge Lake which was once a wetland. We gleaned the historic conditions from 1939 aerial photography (ISGS, 2008).

The topography present at the site showed the lowest area on the property being within the lake, as it ascended towards the lake's edges (Figure 2 and Figure 3). There was a steep climb between the northern lake area and the southern park section.

National Wetlands Inventory (NWI) was used to understand what existing wetlands were present at the site. The recorded wetlands were classified as a riverine and a freshwater pond, created because Salt Creek flowed into South Ridge Lake (Figure 4). The Federal Emergency Management Agency (FEMA) supplied flood hazard maps which speculated areas prone to flooding. The area directly around the lake presented flood hazards at this site (Figure 5).

Hydric soils were observed from data provided from the Natural Resources Conservation Service's Web Soil Survey. It showed three types of soils potentially found on site with varying hydric levels present and 3 soil types with no hydric soils (Figure 6). The soil with the greatest hydric presence of 100% was Peotone silty clay loam, 0 to 2% slopes (330A), located along the north bank of the lake. The other two soil types only had 4% hydric soils and were also located along the lake. They were Elliott silt loam, 2 to 4% slopes, and Markham silt loam, 2 to 4% slopes (USDA NRCS, 2019).

Most of the data points taken from this delineation showed hydric soils present in the form of Redox Dark Surfaces (F6) while only one upland point had no hydric soils present. Sections of the site were located in mowed turf grass. Despite that, most of the grass species could be identified based on a few overgrown sections as well as the presence of lawn weeds. Water tables and saturation were found around the lake at most points.

The upland points were defined by a lack of hydrological features as well as predominantly upland plant species. One set of data points, DU and DW, had interesting hydrological issues. The point taken at DU had a deep water table and saturation present below twelve inches. At a lower elevation point, a few feet away, point DW there was no present water table or saturation. Despite this, DU did not qualify for hydrology while DW did qualify with secondary indicators.

Climate in the three-month window before the investigation was wetter than normal. According to the AgACIS found at the eFOTG website, it rained 2.3 inches over the seven days prior to the delineation. Between three delineation days, there was 0.02 inches of precipitation. It rained at the end of the last day and accumulated 0.93 inches by the end of the day, however there was no accumulating precipitation before the final data points were recorded (USDA eFOTG, 2007b).

## Wetlands

The chart below describes the wetland basins found on the site in terms of topography, drainage, and wetland indicators:

Wetland Basins		
Wetland(s)	Description	Representative Data Point(s)
A	This wetland was located surrounding South Ridge Lake. It was shown as having the lowest elevation on site and being in the 0.2% Annual Chance Flood Hazard. It contained the Freshwater Pond indicated from NWI as South Ridge Lake as well as the riverine, Salt Creek, that fed into it.	AU, AW, BU, BW, DU, DW, EU, EW, HU, HW

More detail regarding each wetland indicator is found in the following charts that describe vegetation, hydrology, and soils for each wetland basin and associated uplands.

## Vegetation

The vegetation immediately around the pond was native vegetation, and mowed lawn grasses and yard weeds extended beyond the native buffer. The lawn was predominantly upland with some wetland pockets dictated by the presence of *Eleocharis palustris* or *Agrostis stolonifera*.

For each wetland basin and associated uplands, details of the vegetation are described below:

Vegetation			
Wetland(s)	Hydrophytic Vegetation Present	Description	Representative Data Point(s)
A	<i>Acer rubrum</i> , <i>Eleocharis palustris</i> , <i>Solidago gigantea</i> , <i>Poa pratensis</i> , <i>Rorippa palustris</i> , <i>Bidens frondosa</i> , <i>Epilobium coloratum</i> , <i>Verbena hastata</i> , <i>Asclepias incarnata</i> , <i>Agrostis stolonifera</i>	The vegetation around the pond were native species. <i>Solidago gigantea</i> and <i>Eleocharis palustris</i> were good indicators of wetlands in the naturalized area. The upland species were characterized by <i>Melilotus alba</i> , <i>Ambrosia artemisiifolia</i> , <i>Schedonorus arundinaceus</i> , and <i>Monarda fistulosa</i> .	AU, AW
A	<i>Agrostis stolonifera</i> , <i>Poa pratensis</i>	A majority of this site was in mowed turf grass. The shift to upland occurred when <i>Elymus repens</i> and <i>Trifolium repens</i> became frequent.	BU, BW
A	<i>Quercus palustris</i> , <i>Taxodium distichum</i> , <i>Agrostis stolonifera</i> , <i>Poa pratensis</i> , <i>Plantago major</i>	<i>Agrostis stolonifera</i> dominated the lawn grass present in this extension of Wetland A. The boundary followed the presence of this grass, extending from the bank of the lake to across the trail.	DU, DW

Vegetation (Continue)			
Wetland(s)	Hydrophytic Vegetation Present	Description	Representative Data Point(s)
A	<i>Betula nigra</i> , <i>Eleocharis palustris</i> , <i>Rumex crispus</i> , <i>Poa pratensis</i> , <i>Plantago major</i>	This extension of Wetland A occurred in a microdepression on the northwest side of the lake. Plant cover was only at 82%, however <i>Eleocharis palustris</i> held a strong presence.	EU, EW
A	<i>Taxodium distichum</i> , <i>Solidago gigantea</i> , <i>Eleocharis palustris</i> , <i>Mentha arvensis</i> , <i>Juncus tenuis</i> , <i>Rorippa palustris</i> , <i>Poa pratensis</i> , <i>Carex stipata</i> , <i>Fraxinus pennsylvanica</i> , <i>Veronica peregrina</i> , <i>Vernonia fasciculata</i> , <i>Rumex crispus</i> , <i>Ambrosia trifida</i> , <i>Phalaris arundinacea</i> , <i>Zizia aurea</i>	This data point set was similar to AU and AW. The dominant species within the community type were <i>Solidago gigantea</i> and <i>Eleocharis palustris</i> . This community type was followed in the vegetated shoreline around the lake, except where the wetland extended into the mowed grasses.	HU, HW

## Hydrology

Overall, wetland hydrology on the site was defined by the vegetation that qualified for the FAC-Neutral test, the presence of algal crusts, and the geomorphic position. A water table and saturation were present at most data points sampled around the lake.

For each wetland basin and associated uplands, details of the hydrology are described below:

Hydrology				
Wetland(s)	Wetland Hydrology Present	Indicators	Description	Representative Data Point(s)
A	Yes	Primary: High Water Table (A2), Saturation (A3) Secondary: Geomorphic Position (D2), FAC-Neutral Test (D5)	The wetland hydrology was present in the form of saturation and a high water table that extended almost all the way to the surface. It was located at the toe slope of a hill, right next to the edge of a lake. The upland point was more elevated. A water table and saturation were present but did not qualify the hydrology as it started at 15."	AU, AW
A	Yes	Primary: High Water Table (A2), Saturation (A3) Secondary: None	A water table was present at this wetland points at 7.5" and saturation was visible to the surface. Although the upland point also had these features, it was starting at a depth of 20.5" therefore not qualifying the hydrology.	BU, BW
A	Yes	Primary: None Secondary: Geomorphic position (D2), FAC-Neutral Test (D5)	This was an interesting set of data points. The higher elevation upland point had saturation and a water table present, although it was too deep to qualify. The wetland point, taken in the toeslope of a hill, was completely dry despite being lower and on about ten feet away from the upland point. This section of Wetland A crossed the trail and extended into the turf grass.	DU, DW

## Hydrology (Continue)

Wetland(s)	Wetland Hydrology Present	Indicators	Description	Representative Data Point(s)
A	Yes	Primary: Saturation (A3), Secondary: Geomorphic position (D2), FAC-Neutral Test (D5)	Although a water table was found at the wetland point, it was at 15" which was too deep to qualify. However, saturation was found at both upland and wetland points, although it only qualified on EW at 6". The concave depression along with qualifying FAC-Neutral vegetation confirmed the presence of wetland hydrology.	EU, EW
A	Yes	Primary: Saturation (A3), Secondary: FAC-Neutral Test (D5)	Both points within this dataset found a water table and saturation. The only qualifying hydrological indicator was saturation, which began at the surface, at point HW.	HU, HW

## Soils

The site contained both hydric and non-hydric soils. The most common indicator was Redox Dark Surface (F6). Soils were not a critical indicator in delineating the wetland boundary, because every point except for one had hydric soils which indicated that wetlands were more dependent on the present hydrology and vegetation.

The site exhibited four mapped series of hydric soils and two series of non-hydric soils as summarized below per basin.

<b>Soils</b>				
<b>Wetland(s)</b>	<b>Mapped Soil Type</b>	<b>Hydric Status</b>	<b>Field Indicator</b>	<b>Representative Data Point(s)</b>
A	531C2 (Markham silt loam, 4-6% slopes, eroded)	Hydric	Redox Dark Surface (F6)	AU
A	531C2 (Markham silt loam, 4-6% slopes, eroded)	Hydric	Redox Dark Surface (F6)	AW
A	531C2 (Markham silt loam, 4-6% slopes, eroded)	Non-Hydric	N/A	BU
A	531C2 (Markham silt loam, 4-6% slopes, eroded)	Hydric	Redox Dark Surface (F6)	BW
A	531C2 (Markham silt loam, 4-6% slopes, eroded)	Hydric	Redox Dark Surface (F6)	DU
A	531C2 (Markham silt loam, 4-6% slopes, eroded)	Hydric	Redox Dark Surface (F6)	DW
A	330A (Peotone silty clay loam, 0-2% slopes)	Hydric	Redox Dark Surface (F6)	EU
A	330A (Peotone silty clay loam, 0-2% slopes)	Hydric	Redox Dark Surface (F6)	EW
A	330A (Peotone silty clay loam, 0-2% slopes)	Hydric	Redox Dark Surface (F6)	HU
A	330A (Peotone silty clay loam, 0-2% slopes)	Hydric	Redox Dark Surface (F6)	HW

## OES Delineated Wetland Boundaries and Waters of the United States

Wetlands on the subject property were indicated by vegetation, hydrology, and soils as described above. As anticipated based on the observation of the National Wetlands Inventory, the area surround South Ridge Lake was considered to be a wetland and was discovered to be an expansion of the freshwater basin listed on the inventory. The FEMA Flood Hazard map also suggested that the shoreline surrounding the lake would support wetland habitat, although the boundary observed from this delineation was more undulating than the flood zone predicted. On the southern shoreline of Wetland A, the wetland boundary crossed the trail and extended into the turf in two areas that were originally classified as non-hydric.

The indicators that were most important for delineating wetland boundaries were the presence of facultative wet or obligate vegetation. Just as important as the wetland species present, were the upland species. *Schedonorus arundinaceus* and *Trifolium repens* were often used to determine the extent of a wetland boundary. Hydrology was very important as well. Usually a water table or saturation qualified the wetland supported by geomorphic position and qualifying FAC-Neutral wetland vegetation. One wetland point did not hold water at the time of inspection but demonstrated both secondary indicators.

North Ridge Lake was connected to South Ridge Lake by a culvert that ran underneath North Sturbridge Drive. Salt Creek flowed from Westbury Lake from the northeast into South Ridge Lake. Salt Creek stretched across the Chicago region before it connected to the Des Plaines River near Brookfield, Illinois.

Stream Area		
Type	Acres	Linear Feet
Open Water	9.9	1,664.4
Dry Channel	-	-
<b>Total:</b>	<b>9.9</b>	<b>1,664.4</b>

The boundaries of the wetland basin were reflected in the Delineated Wetland Boundaries Map (Figure 7 shows the entirety of the wetland found on site, Figure 8 shows close ups of the data points). The wetland found was described as “Wetland A” and was 11.0370 acres.

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OES notes that final authority regarding regulatory jurisdiction rests with the USACOE and that the delineation is not final until so designated by the Corps. Notification of a final Jurisdictional Determination should be received from the Corps prior to any construction on the property. If any construction is planned for areas within a wetland it may require the filing of a joint permit to the USACOE and Illinois Department of Natural Resources.

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Appendix A: Data Forms for Data Points

Appendix B: Site Photos

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## GIS CITATIONS

Esri. "Roads" [basemap]. Scale Not Given. "World Street Map". December 12, 2009. Available online at <https://www.arcgis.com/home/item.html?id=3b93337983e9436f8db950e38a8629af>. Accessed [June 5, 2019]. (Geographic Coordinate System: GCS\_North\_American\_1983).

Esri. "Topographic" [basemap]. Scale Not Given. "World Topographic Map". June 13, 2013. Available online at <https://www.arcgis.com/home/item.html?id=30e5fe3149c34df1ba922e6f5bbf808f>. Accessed [June 5, 2019]. (Geographic Coordinate System: GCS\_North\_American\_1983).

Esri. "Topographic" [basemap]. Scale Not Given. "USA Topo Map". December 12, 2019. Available online at <https://www.arcgis.com/home/item.html?id=99cd5fbd98934028802b4f797c4b1732>. Accessed [June 5, 2019]. (Geographic Coordinate System: GCS\_North\_American\_1983).

Federal Emergency Management Agency (FEMA). National Flood Hazard Layer for Cook County. Washington, D.C.: FEMA-NFHL, December 17, 2010. Available online at <https://www.fema.gov/national-flood-hazard-layer-nfhl>. [Accessed June 5, 2019]. (Geographic Coordinate System: GCS\_North\_American\_1983).

Illinois State Geological Survey (ISGS). 1938 Historical Aerial Photograph. Champaign, IL: Illinois Historical Aerial Photographs 1937-1947, November 15, 1938. Available online at <https://maps.isgs.illinois.edu/ilhap>. [Accessed July 1, 2019]. (Geographic Coordinate System: None – Georeferenced to GCS\_North\_American\_1983).

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database. Available online at <https://sdmdataaccess.sc.egov.usda.gov>. Accessed June 5, 2019]. (Geographic Coordinate System: GCS\_North\_American\_1983).

U.S. Fish and Wildlife Service (USFWS). National Wetlands Inventory in Illinois. Champaign, IL: IL Natural History Survey, April 1996. Available online at <https://www.fws.gov/wetlands/data/mapper.html>. Accessed [June 5, 2019]. (Geographic Coordinate System: GCS\_North\_American\_1983).

## WORKS CITED

Google, Inc. Google Earth. Various dates 2013-2018.

U.S. Army Corps of Engineers (ACOE). *Corps of Engineers Wetland Delineation Manual*. 1987. Vicksburg, MS: U.S. Army Corps of Engineers Waterways Experiment Station, 1987. Print 100 pp. + appendices.

US Army Corps of Engineers (ACOE). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*. Vicksburg, MS: US Army Corps of Engineers, Engineer Research and Development Center, Environmental Laboratory, 2010.

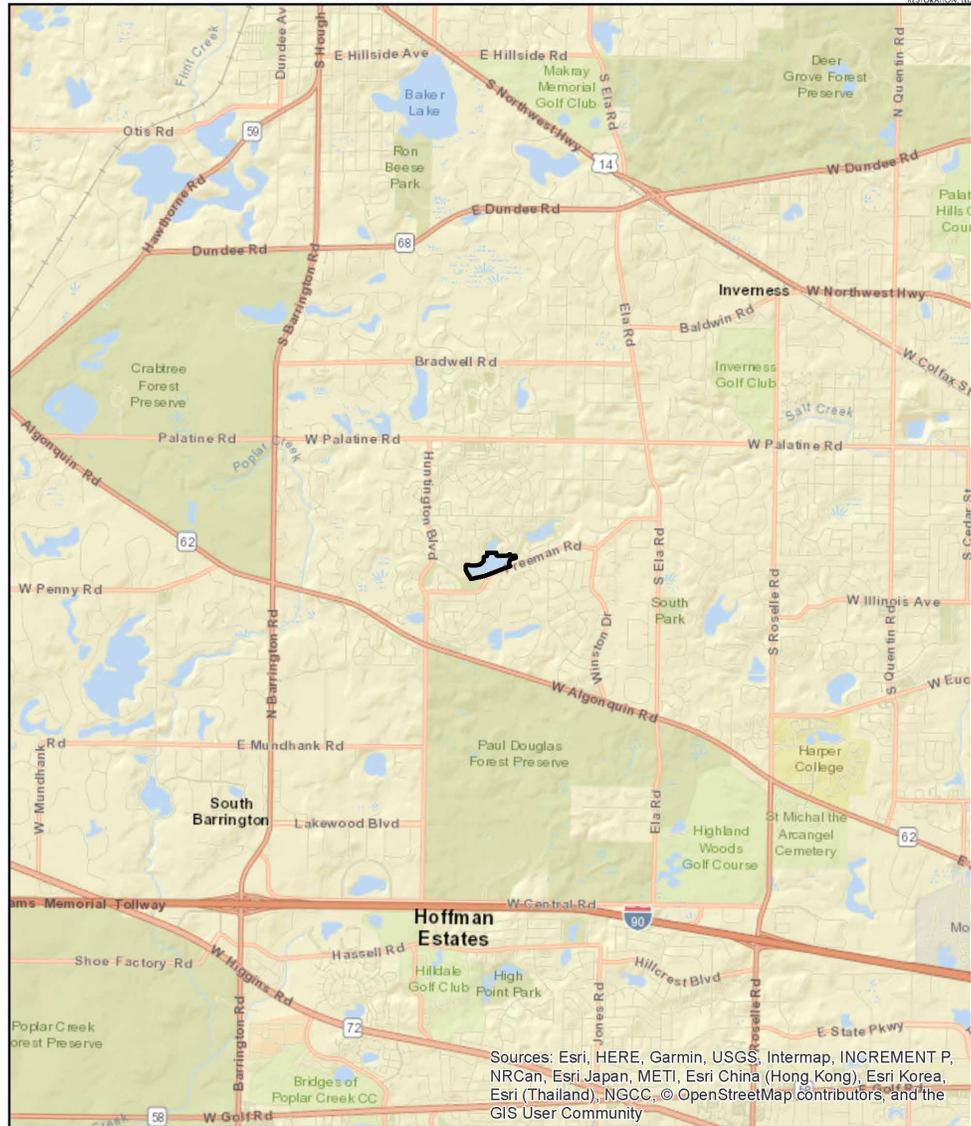
USDA eFOTG. Field Office Climate Data: Daily Summary for June 2019. *NRCS Electronic Field Office Technical Guide*. U.S. Department of Agriculture. March 29, 2007a. Available online at <https://efotg.sc.egov.usda.gov/#/details>.

USDA eFOTG. Field Office Climate Data: WETS Tables. *NRCS Electronic Field Office Technical Guide*. U.S. Department of Agriculture. March 29, 2007b. Available online at <https://efotg.sc.egov.usda.gov/#/details>.

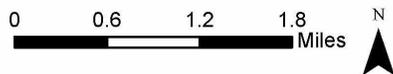
USDA Natural Resource Conservation Service (NRCS). "Custom Soil Resource Report for Cook County, Illinois" *Web Soil Survey*. U.S. Department of Agriculture. June 5, 2019. [Websoilsurvey.nrcs.usda.gov/app/homepage.htm](http://websoilsurvey.nrcs.usda.gov/app/homepage.htm)

Figure 1: Location Map

# Hoffman Estates Park District South Ridge Park Location



Delineation Boundary



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

Map created by Kristin Adams with Tallgrass Restoration, LLC  
Data Sources: ESRI  
Edited July 29, 2019

Figure 2: Topography Map

# Hoffman Estates Park District South Ridge Park Topography



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

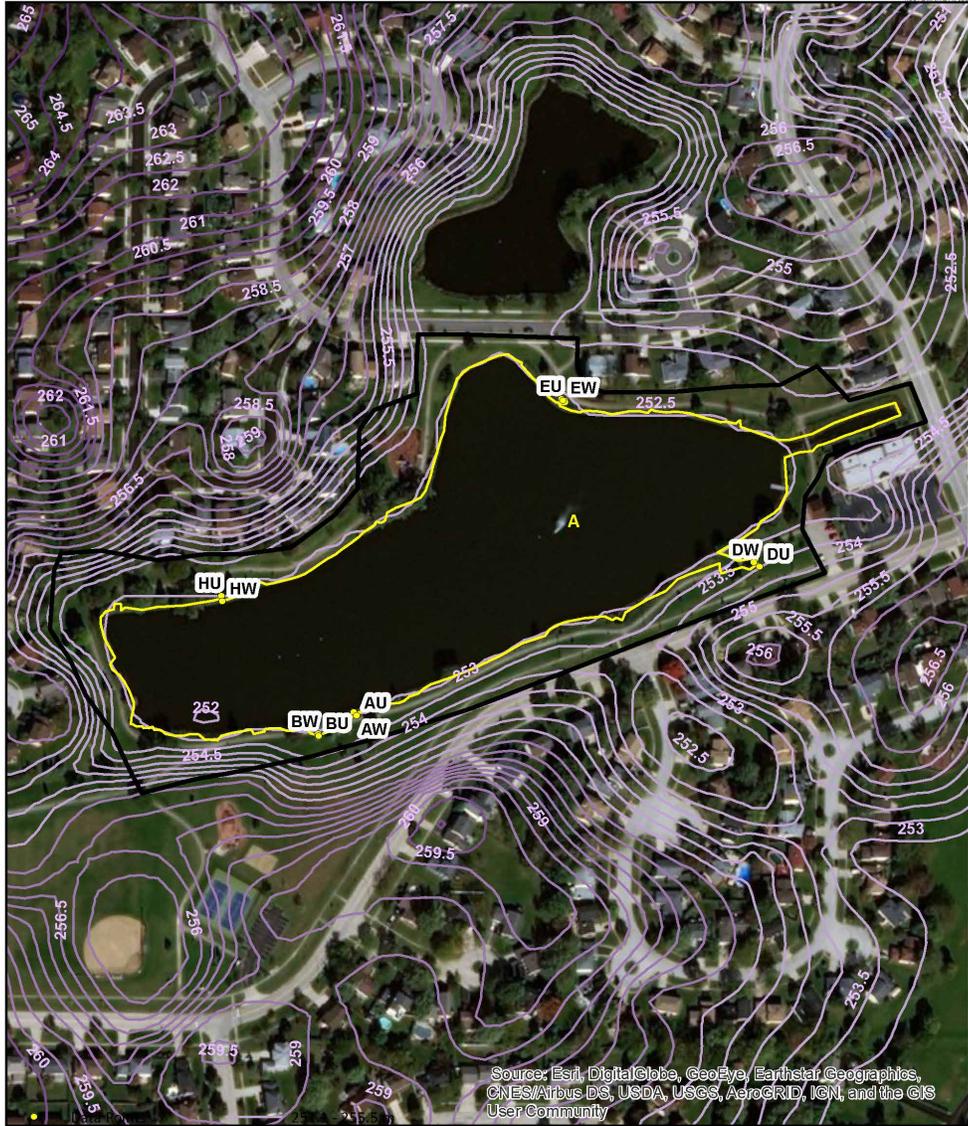
- Data Points
- Delineation Boundary
- Wetland Boundary



Map created by Kristin Adams with Tallgrass Restoration, LLC  
Data Sources: ESRI  
Edited July 29, 2019

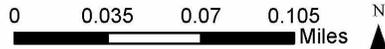
Figure 3: 1-Meter Elevation Map

# Hoffman Estates Park District South Ridge Park Elevation



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

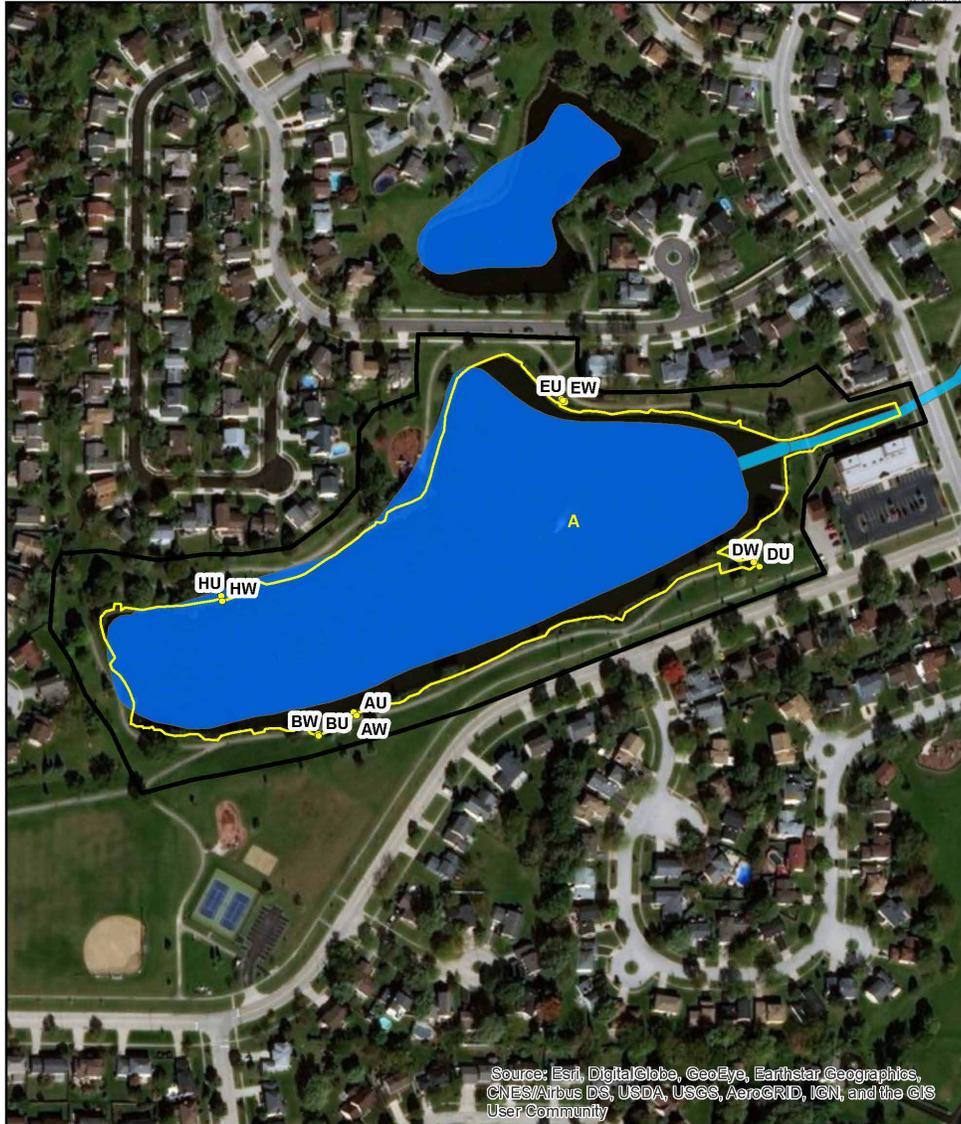
- Delineation Boundary
- Wetland Boundary
- 246.5 - 251 m
- 255.6 - 259.5 m
- 259.6 - 263.5 m
- 263.6 - 269 m



Map created by Kristin Adams with Tallgrass Restoration, LLC  
Data Sources: ESRI, USGS  
Edited July 29, 2019

Figure 4: National Wetlands Inventory Map

Hoffman Estates Park District  
 South Ridge Park  
 National Wetlands Inventory



- Data Points
- Delineation Boundary
- Wetland Boundary
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

0 0.035 0.07 0.105 Miles

Map created by Kristin Adams with Tallgrass Restoration, LLC  
 Data Sources: ESRI, USGS  
 Edited July 29, 2019

Figure 5: FEMA Flood Hazard Map

Hoffman Estates Park District  
 South Ridge Park  
 FEMA Flood Hazard



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Data Points
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Delineation Boundary
- Wetland Boundary
- Minimal Flood Hazard



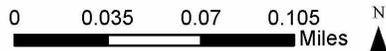
Map created by Kristin Adams with Tallgrass Restoration, LLC  
 Data Sources: ESRI, FEMA  
 Edited July 29, 2019

Figure 6: Hydric Soils Map

Hoffman Estates Park District  
 South Ridge Park  
 Hydric Soils



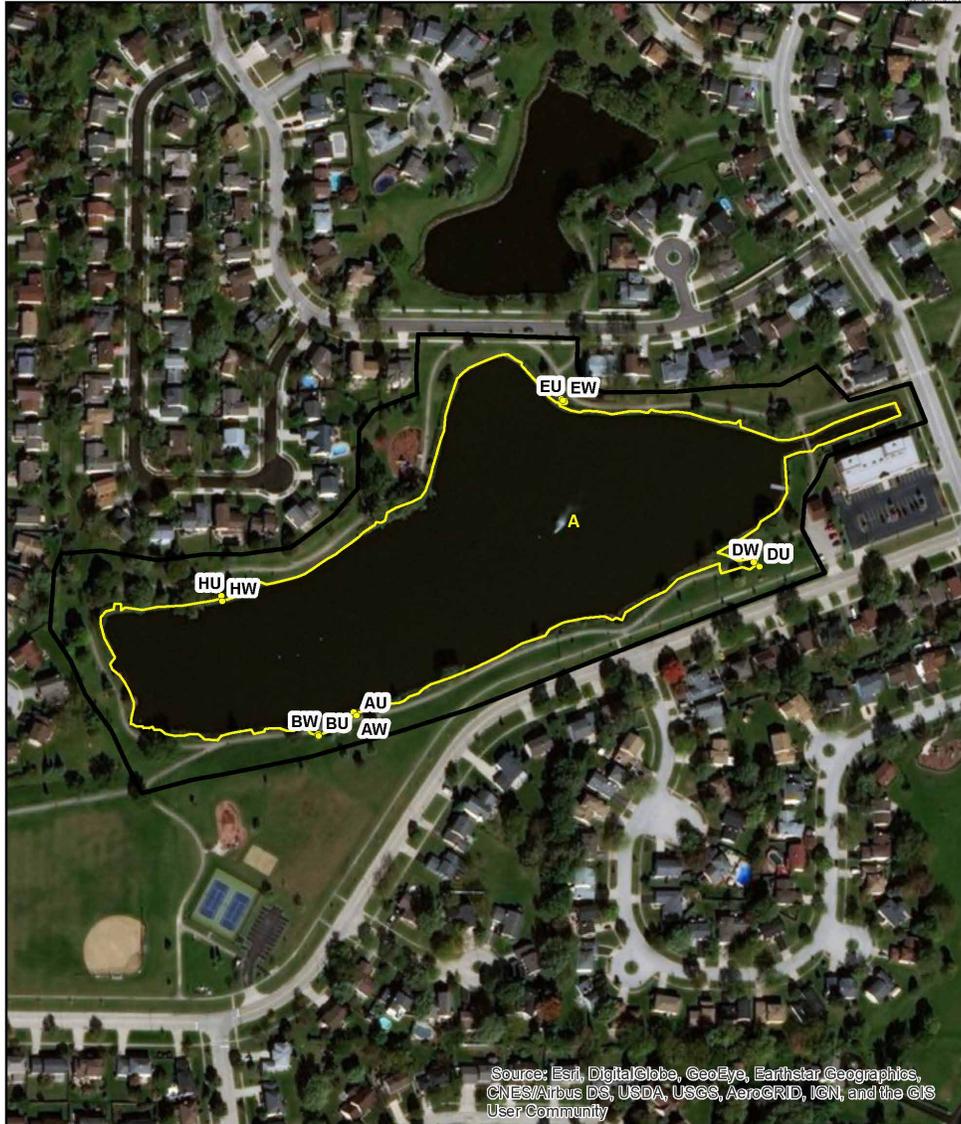
- Data Points
- ▭ Delineation Boundary
- ▭ Wetland Boundary
- ▭ Hydric (100%)
- ▭ Hydric (66 to 99%)
- ▭ Hydric (33 to 65%)
- ▭ Hydric (1 to 32%)
- ▭ Not Hydric (0%)
- ▭ Not rated or not available



Map created by Kristin Adams with Tallgrass Restoration, LLC  
 Data Sources: ESRI, USGS  
 Edited July 29, 2019

Figure 7: OES Delineated Wetland Boundaries Map

Hoffman Estates Park District  
 South Ridge Park  
 Delineated Wetland Boundaries



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

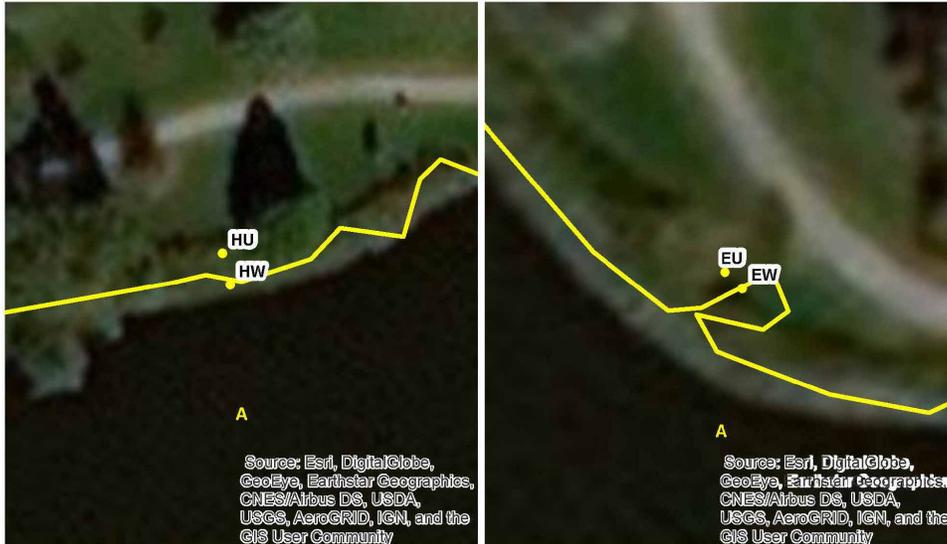
- Delineation Boundary
- Data Points
- Wetland Boundary



Map created by Kristin Adams with Tallgrass Restoration, LLC  
 Data Sources: ESRI  
 Edited July 29, 2019

Figure 8: Wetland A Data Points Detail Map

Hoffman Estates Park District  
 South Ridge Park  
 Wetland A - Data Points Detail



- Data Points
- Wetland Boundaries
- Delineation Boundary



Map created by Kristin Adams with Tallgrass Restoration, LLC  
 Data Sources: ESRI  
 Edited July 1, 2019

Figure 9: 2012 Aerial Photography



Figure 10: 2015 Aerial Photography



Figure 11: 2016 Aerial Photography



Figure 12: 2017 Aerial Photography

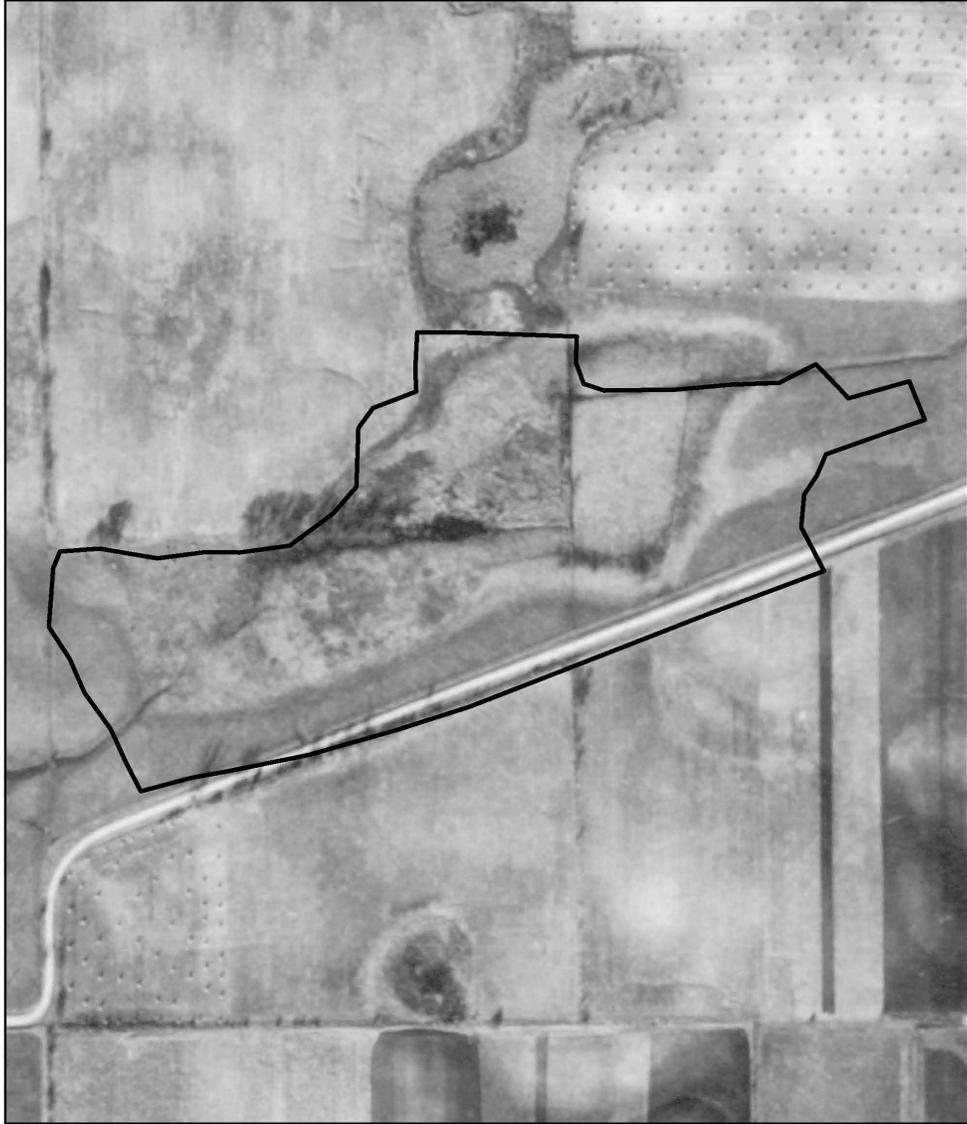


Figure 13: 2018 Aerial Photography



Figure 14: 1938 Historical Aerial Photography

Hoffman Estates Park District  
South Ridge Park  
1938 Historic Aerial



 Delineation Boundary

0 0.035 0.07 0.105 Miles



Map created by Kristin Adams with Tallgrass Restoration, LLC  
Data Sources: ILHAP  
Edited July 29, 2019

Figure 15: Rainfall Determination for Field Observation Dates

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination NRCS Engineering Field Handbook Chapter 19			
Date	6/5/2019	Landowner/Project	Hoffman Estates PD - South Park
Weather Station	Barrington 3SW	State	IL
County	Cook	Growing Season	Yes
Photo/obs Date	6/10-13/2019	Soil Name	Various, see Soils map

shaded cells are locked or calculated	Long-term rainfall statistics (from WETS table or State Climatology Office)				Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
	Month	30% chance <	30% chance >	Precip				
1st Prior Month*	May	2.34	4.82	7.53	W	3	3	9
2nd Prior Month*	April	2.36	4.25	4.79	W	3	2	6
3rd Prior Month*	March	1.43	2.85	2.24	N	2	1	2
*compared to photo/observation date							Sum	17

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

**Conclusions:** prior period has been wetter than normal

## **APPENDIX A**

### **DATA FORMS FOR DATA POINTS**

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/10/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: AU  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave  
 Slope (%): 40% Lat: -88.11453 Long: 42.097887 Datum: N American 1983  
 Soil Map Unit Name: 531C2 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Wetter season than normal according to Rainfall Determination Worksheet.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
<u>2%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>2</u></td> <td>x 1 = <u>2</u></td> </tr> <tr> <td>FACW species <u>17</u></td> <td>x 2 = <u>34</u></td> </tr> <tr> <td>FAC species <u>9</u></td> <td>x 3 = <u>27</u></td> </tr> <tr> <td>FACU species <u>52</u></td> <td>x 4 = <u>208</u></td> </tr> <tr> <td>UPL species <u>57</u></td> <td>x 5 = <u>285</u></td> </tr> <tr> <td>Column Totals: <u>137</u> (A)</td> <td><u>556</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.06</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	x 1 = <u>2</u>	FACW species <u>17</u>	x 2 = <u>34</u>	FAC species <u>9</u>	x 3 = <u>27</u>	FACU species <u>52</u>	x 4 = <u>208</u>	UPL species <u>57</u>	x 5 = <u>285</u>	Column Totals: <u>137</u> (A)	<u>556</u> (B)	Prevalence Index = B/A = <u>4.06</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>2</u>	x 1 = <u>2</u>																			
FACW species <u>17</u>	x 2 = <u>34</u>																			
FAC species <u>9</u>	x 3 = <u>27</u>																			
FACU species <u>52</u>	x 4 = <u>208</u>																			
UPL species <u>57</u>	x 5 = <u>285</u>																			
Column Totals: <u>137</u> (A)	<u>556</u> (B)																			
Prevalence Index = B/A = <u>4.06</u>																				
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )</b>																				
1. <u>None</u>	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
<b>Herb Stratum (Plot size: <u>5 ft</u> )</b>																				
1. <u>Melilotus alba</u>	<u>40%</u>	<u>Y</u>	<u>UPL</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Schedonorus arundinaceus</u>	<u>15%</u>	<u>Y</u>	<u>FACU</u>																	
3. <u>Ambrosia artemisiifolia</u>	<u>15%</u>	<u>Y</u>	<u>FACU</u>																	
4. <u>Daucus carota</u>	<u>10%</u>	<u>N</u>	<u>UPL</u>																	
5. <u>Solidago gigantea</u>	<u>10%</u>	<u>N</u>	<u>FACW</u>																	
6. <u>Mondarda fistulosa</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>																	
7. <u>Solidago canadensis</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>																	
8. <u>Verbena hastata</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>																	
9. <u>Poa pratensis</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>																	
10. <u>Cirsium arvense</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>																	
<u>137%</u> = Total Cover																				
<b>Woody Vine Stratum (Plot size: <u>15 ft</u> )</b>																				
1. <u>None</u>	_____	_____	_____																	
2. _____	_____	_____	_____																	
_____ = Total Cover																				
Remarks: (Include photo numbers here or on a separate sheet.) Con't Herb Stratum (None Dom): Echinacea purpurea 5% UPL, Leucanthemum vulgare 2% UPL, Erigeron annuus 2% FACU, Juncus tenuis 2% FAC, Vernonia fasciculata 2% FACW, Rorippa palustris 2% OBL																				



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/10/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: AW  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave  
 Slope (%): 10% Lat: -88.114552 Long: 42.097907 Datum: N American 1983  
 Soil Map Unit Name: 531C2 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: Wetter season than normal according to Rainfall Determination Worksheet.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>2%</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Eleocharis palustris</u>	<u>45%</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Solidago gigantea</u>	<u>20%</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Poa pratensis</u>	<u>15%</u>	<u>Y</u>	<u>FAC</u>	
4. <u>Rorippa palustris</u>	<u>15%</u>	<u>Y</u>	<u>OBL</u>	
5. <u>Bidens frondosa</u>	<u>15%</u>	<u>Y</u>	<u>FACW</u>	
6. <u>Epilobium coloratum</u>	<u>10%</u>	<u>N</u>	<u>OBL</u>	
7. <u>Schedonorus arundinacea</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	
8. <u>Ambrosia artemisiifolia</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	
9. <u>Agrostis stolonifera</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>	
10. <u>Verbena hastata</u>	<u>2%</u>	<u>N</u>	<u>FACW</u>	
<u>154%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>15 ft</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Can't Herb Stratum (None Dom): <u>Ratibida pinnata 1% UPL, Asclepias incarnata 1% OBL</u>				

**SOIL**

Sampling Point: AW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4"	5Y 3/2	98%	2.5Y 5/3	2%	C	M	S	Very mucky, roots
4-15"	5Y 2.5/1	93%	7.5YR 6/1	1%	C	M	SC	
			2.5Y 6/3	5%	C	M	SC	
			2.5YR 5/6	1%	C	M	SC	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (Inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: Pit dug to 18"								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b>			
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Water Table Present? Yes <input checked="" type="checkbox"/> No _____	Depth (inches): 0.5"		
Saturation Present? Yes <input checked="" type="checkbox"/> No _____	Depth (inches): 0"		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: By the end of the day the water table was super high in this pit. FAC Neutral PASS 0:4 Dominants			

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/10/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: BU  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): Convex  
 Slope (%): 30% Lat: -88.114807 Long: 42.097774 Datum: N American 1983  
 Soil Map Unit Name: 531C2 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Wetter season than normal according to Rainfall Determination Worksheet. Mowed lawn grass.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Liriodendron tulipifera</u>	<u>60%</u>	<u>Y</u>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)														
2. <u>Acer saccharinum</u>	<u>15%</u>	<u>N</u>	<u>FACW</u>															
3. <u>Acer rubrum</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>															
4. _____																		
5. _____																		
<u>77%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>72</u></td> <td>x 3 = <u>216</u></td> </tr> <tr> <td>FACU species <u>115</u></td> <td>x 4 = <u>460</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>202</u> (A)</td> <td><u>706</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.4</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>72</u>	x 3 = <u>216</u>	FACU species <u>115</u>	x 4 = <u>460</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>202</u> (A)	<u>706</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>15</u>	x 2 = <u>30</u>																	
FAC species <u>72</u>	x 3 = <u>216</u>																	
FACU species <u>115</u>	x 4 = <u>460</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>202</u> (A)	<u>706</u> (B)																	
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )</b>																		
1. <u>None</u>																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft</u> )</b>																		
1. <u>Poa pratensis</u>	<u>70%</u>	<u>Y</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Elymus repens</u>	<u>25%</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Erigeron annuus</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>															
4. <u>Trifolium repens</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>															
5. <u>Cerastrium fontanum</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>															
6. <u>Glechoma hederacea</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>															
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>125%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>15 ft</u> )</b>																		
1. <u>None</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														
2. _____																		
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/10/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: BW  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): Concave  
 Slope (%): 30% Lat: -88.114811 Long: 42.097786 Datum: N American 1983  
 Soil Map Unit Name: 531C2 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Wetter season than normal according to Rainfall Determination Worksheet. Mowed lawn grass.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Liriodendron tulipifera</u>	<u>55%</u>	<u>Y</u>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.6%</u> (A/B)	
2. <u>Acer saccharinum</u>	<u>15%</u>	<u>N</u>	<u>FACW</u>		
3. <u>Acer rubrum</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>		
4. _____					
5. _____					
<u>72%</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>None</u>					<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. _____					
3. _____					
4. _____					
5. _____					
<u>140%</u> = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: <u>5 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Agrostis stolonifera</u>	<u>100%</u>	<u>Y</u>	<u>FACW</u>		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
2. <u>Poa pratensis</u>	<u>35%</u>	<u>Y</u>	<u>FAC</u>		
3. <u>Glechoma hederacea</u>	<u>3%</u>	<u>N</u>	<u>FACU</u>		
4. <u>Elymus repens</u>	<u>2%</u>	<u>N</u>	<u>FACU</u>		
5. _____					
<u>140%</u> = Total Cover					
Woody Vine Stratum (Plot size: <u>15 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>None</u>					
2. _____					
<u>_____</u> = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)					

**SOIL**

Sampling Point: BW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2"	10YR 2/2	100%					SCL	Roots
2-15+"	10YR 2/1	79%	7.5YR 5/8	20%	C	M	SCL	
			Gley2 5/5BG	1%	D	M	SCL	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Dark Surface (S7)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Iron-Manganese Masses (F12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 2 cm Muck (A10)			<input type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)						<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (Inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: Pit dug to 18"								

**HYDROLOGY**

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
<b>Field Observations:</b>		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>7.5"</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0"</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: FAC Neutral FAIL 2:3 Non-dominants		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/11/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: DU  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear  
 Slope (%): 30% Lat: -88.1116 Long: 42.098727 Datum: N American 1983  
 Soil Map Unit Name: 531C2 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Wetter season than normal according to Rainfall Determination Worksheet. Mowed lawn grass.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus palustris</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)																
2. <u>Taxodium distichum</u>	<u>5%</u>	<u>N</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
<u>30%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>27</u></td> <td>x 2 = <u>54</u></td> </tr> <tr> <td>FAC species <u>42</u></td> <td>x 3 = <u>126</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>129</u> (A)</td> <td><u>405</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.14</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>27</u>	x 2 = <u>54</u>	FAC species <u>42</u>	x 3 = <u>126</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>129</u> (A)	<u>405</u> (B)	Prevalence Index = B/A = <u>3.14</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>27</u>	x 2 = <u>54</u>																			
FAC species <u>42</u>	x 3 = <u>126</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>129</u> (A)	<u>405</u> (B)																			
Prevalence Index = B/A = <u>3.14</u>																				
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)</b>																				
1. <u>None</u>	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover																				
<b>Herb Stratum (Plot size: <u>5 ft</u>)</b>																				
1. <u>Poa pratensis</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
2. <u>Schedonorus arundinaceus</u>	<u>35%</u>	<u>Y</u>	<u>FACU</u>																	
3. <u>Trifolium repens</u>	<u>20%</u>	<u>Y</u>	<u>FACU</u>																	
4. <u>Plantago major</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>																	
5. <u>Veronica peregrina</u>	<u>2%</u>	<u>N</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
<u>99%</u> = Total Cover																				
<b>Woody Vine Stratum (Plot size: <u>15 ft</u>)</b>																				
1. <u>None</u>	_____	_____	_____																	
2. _____	_____	_____	_____																	
_____ = Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL**

Sampling Point: DU

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4"	10YR 3/4	20%	10YR 2/1	5%	C	M	SCL	
	10YR 3/2	60%	10YR 5/6	1%	C	M	SCL	
4-20"	10YR 2/1	55%	Gley1 5/10Y	20%	D	M	C	
			7.5YR 4/6	15%	C	M	C	
			5YR 5/8	10%	C	M	C	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						<sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (Inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: Pit dug to 20"								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 18"	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 14.5"	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: FAC Neutral FAIL 1:2 Dominants			

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/11/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: DW  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave  
 Slope (%): 10% Lat: -88.111645 Long: 42.098752 Datum: N American 1983  
 Soil Map Unit Name: 531C2 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Wetter season than normal according to Rainfall Determination Worksheet. Mowed lawn grass.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Quercus palustris</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. <u>Taxodium distichum</u>	<u>5%</u>	<u>N</u>	<u>OBL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30%</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)</b>				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5 ft</u>)</b>				
1. <u>Agrostis stolonifera</u>	<u>65%</u>	<u>Y</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <u>Poa pratensis</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Schedonorus arundinaceus</u>	<u>20%</u>	<u>N</u>	<u>FACU</u>	
4. <u>Trifolium repens</u>	<u>2%</u>	<u>N</u>	<u>FACU</u>	
5. <u>Plantago major</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>125%</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>15 ft</u>)</b>				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/11/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: EU  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 10% Lat: -88.113065 Long: 42.099627 Datum: N American 1983  
 Soil Map Unit Name: 330A NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Wetter season than normal according to Rainfall Determination Worksheet. Mowed lawn grass.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Betula nigra</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>10%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>104</u></td> <td>x 4 = <u>416</u></td> </tr> <tr> <td>UPL species <u>2</u></td> <td>x 5 = <u>10</u></td> </tr> <tr> <td>Column Totals: <u>131</u> (A)</td> <td><u>491</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.75</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>104</u>	x 4 = <u>416</u>	UPL species <u>2</u>	x 5 = <u>10</u>	Column Totals: <u>131</u> (A)	<u>491</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>104</u>	x 4 = <u>416</u>																	
UPL species <u>2</u>	x 5 = <u>10</u>																	
Column Totals: <u>131</u> (A)	<u>491</u> (B)																	
_____ = Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )</b>																		
1. <u>None</u>	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft</u> )</b>																		
1. <u>Schedonorus arundinaceus</u>	<u>80%</u>	<u>Y</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Trifolium repens</u>	<u>15%</u>	<u>N</u>	<u>FACU</u>															
3. <u>Poa pratensis</u>	<u>10%</u>	<u>N</u>	<u>FAC</u>															
4. <u>Solidago canadensis</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>															
5. <u>Ambrosia trifida</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>															
6. <u>Cerastium fontanum</u>	<u>2%</u>	<u>N</u>	<u>FACU</u>															
7. <u>Daucus carota</u>	<u>2%</u>	<u>N</u>	<u>UPL</u>															
8. <u>Ambrosia artemisiifolia</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
<u>121%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>15 ft</u> )</b>																		
1. <u>None</u>	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

**SOIL**

Sampling Point: EU

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2"	5YR 2.5/1	100%					SCL	Roots
2-20"	5YR 2.5/1	80%	10YR 4/4	10%	C	M	SCL	
	10YR 2/1	4%	10YR 5/8	5%	C	M	SCL	
			5YR 5/8	1%	C	M	SCL	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (Inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: Pit dug to 20"								

**HYDROLOGY**

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>19"</u>	
<b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: FAC Neutral PASS 1:5 Non-dominants.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/11/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: EW  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): Concave  
 Slope (%): 0-2% Lat: -88.113053 Long: 42.099619 Datum: N American 1983  
 Soil Map Unit Name: 330A NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: Wetter season than normal according to Rainfall Determination Worksheet. Mowed lawn grass.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Betula nigra</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>10%</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )</b>				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5 ft</u> )</b>				
1. <u>Eleocharis palustris</u>	<u>60%</u>	<u>Y</u>	<u>OBL</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Poa pratensis</u>	<u>10%</u>	<u>N</u>	<u>FAC</u>	
3. <u>Schedonorus arundinaceus</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	
4. <u>Plantago major</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>	
5. <u>Rumex crispus</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>82%</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>15 ft</u> )</b>				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: EW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-15"	10YR 2/1	78%	7.5YR 5/8	15%	C	M	SCL	
			10YR 5/8	5%	C	M	SCL	
			2.5YR 3/6	2%	C	M	SCL	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						<sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (Inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: Pit dug to 20"								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b>			
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Water Table Present?	Yes <input checked="" type="checkbox"/> No _____	Depth (inches): 15"	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No _____	Depth (inches): 6"	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: FAC Neutral PASS 2:0 Dominants.			

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/12/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: HU  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear  
 Slope (%): 10% Lat: -88.115532 Long: 42.09853 Datum: N American 1983  
 Soil Map Unit Name: 330A NWI classification: PUBHx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Wetter season than normal according to Rainfall Determination Worksheet.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Taxodium distichum</u>	<u>5%</u>	<u>Y</u>	<u>OBL</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>5%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>107</u></td> <td>x 4 = <u>428</u></td> </tr> <tr> <td>UPL species <u>4</u></td> <td>x 5 = <u>20</u></td> </tr> <tr> <td>Column Totals: <u>146</u> (A)</td> <td><u>523</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.67</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>107</u>	x 4 = <u>428</u>	UPL species <u>4</u>	x 5 = <u>20</u>	Column Totals: <u>146</u> (A)	<u>523</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species <u>107</u>	x 4 = <u>428</u>																	
UPL species <u>4</u>	x 5 = <u>20</u>																	
Column Totals: <u>146</u> (A)	<u>523</u> (B)																	
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )</b>																		
1. <u>None</u>	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft</u> )</b>																		
1. <u>Solidago canadensis</u>	<u>80%</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Mondarda fistulosa</u>	<u>20%</u>	<u>N</u>	<u>FACU</u>															
3. <u>Vernonia fasciculata</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
4. <u>Phalaris arundinaceae</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
5. <u>Zizia aurea</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>															
6. <u>Rudbeckia subtomentosa</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>															
7. <u>Eleocharis palustris</u>	<u>5%</u>	<u>N</u>	<u>OBL</u>															
8. <u>Solidago gigantea</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
9. <u>Ratibida pinnata</u>	<u>2%</u>	<u>N</u>	<u>UPL</u>															
10. <u>Daucus carota</u>	<u>2%</u>	<u>N</u>	<u>UPL</u>															
<u>141%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>15 ft</u> )</b>																		
1. <u>None</u>	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																		
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																		
Remarks: (Include photo numbers here or on a separate sheet.) Herb Stratum Con't: <u>Ambrosia artemisiifolia 2% N FACU</u>																		

**SOIL**

Sampling Point: HU

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2"	10YR 2/1	100%					SCL	Roots
2-15"	10YR 2/1	75%	10YR 6/1	10%	C	M	SCL	
			7.5YR 5/8	10%	C	M	SCL	
			5YR 5/6	5%	C	M	SCL	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (Inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: Pit dug to 25.5"								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b>			
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 21"		
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 13.5"		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: FAC Neutral FAIL 5:5 Non-dominants.			

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: South Ridge Park City/County: Hoffman Estates, Cook Co Sampling Date: 6/12/2019  
 Applicant/Owner: Dustin Hugen, Hoffman Estates Park District State: IL Sampling Point: HW  
 Investigator(s): Kristin Adams Section, Township, Range: S19 T42N R10E  
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): Concave  
 Slope (%): 5% Lat: -88.115523 Long: 42.098502 Datum: N American 1983  
 Soil Map Unit Name: 330A NWI classification: PUBHx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: Wetter season than normal according to Rainfall Determination Worksheet.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Taxodium distichum</u>	<u>5%</u>	<u>Y</u>	<u>OBL</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>5%</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )</b>				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5 ft</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Eleocharis palustris</u>	<u>45%</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Solidago gigantea</u>	<u>30%</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Rorippa palustris</u>	<u>10%</u>	<u>N</u>	<u>OBL</u>	
4. <u>Schedonorus arundinaceus</u>	<u>8%</u>	<u>N</u>	<u>FACU</u>	
5. <u>Veronica peregrina</u>	<u>8%</u>	<u>N</u>	<u>FACW</u>	
6. <u>Solidago canadensis</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	
7. <u>Carex stipata</u>	<u>5%</u>	<u>N</u>	<u>OBL</u>	
8. <u>Poa pratensis</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>	
9. <u>Rudbeckia subtomentosa</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	
10. <u>Juncus tenuis</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>	
<u>139%</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<b>Woody Vine Stratum (Plot size: <u>15 ft</u> )</b>				
1. <u>None</u>	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Herb Stratum Con't (No dominant species): <u>Mentha arvensis 5% FACW, Fraxinus pennsylvanica 2% FACW, Vernonia fasciculata 2% FACW, Rumex crispus 2% FACW, Ambrosia trifida 2% FAC</u>				

**SOIL**

Sampling Point: HW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2"	10YR 2/1	100%					SCL	Roots
2-15"	10YR 2/1	84%	2.5YR 4/6	15%	C	M	SCL	
			2.5Y 4/3	1%	C	M	SCL	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (Inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: Pit dug to 24"								

**HYDROLOGY**

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required: check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b>			
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Water Table Present? Yes <input checked="" type="checkbox"/> No _____	Depth (inches): 17"		
Saturation Present? Yes <input checked="" type="checkbox"/> No _____	Depth (inches): 0" (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: FAC Neutral PASS 3:0 Dominants.			

**APPENDIX B**

**SITE PHOTOS**

Wetland A, Data Point AU



Wetland A, Data Point AW



Wetland A, Data Point BW



Wetland A, Data Point BU



Wetland A, Data Point DW



Wetland A, Data Point DU



Wetland A, Data Point EW



Wetland A, Data Point EU



Wetland A, Data Point HW



**Wetland A, Data Point HU**



## Wetland A



**APPENDIX C**

**2017 USACE CHICAGO REGION**

**FLORISTIC QUALITY ASSESSMENT**

**FOR ALL WETLANDS**

Wetland A

6/13/2019

South Ridge Park  
Hoffman Estates  
Cook  
IL

United States

FQA DB Region: Chicago Region USACE

FQA DB Publication Year: 2017

FQA DB Description: <https://www.lrc.usace.army.mil/Missions/Regulatory/FQA.aspx>

Practitioner: Kristin Adams

Latitude:

Longitude:

Weather Notes:

Duration Notes:

Community Type Notes: Community was mostly lake shoreline, extended into grass at some points.

Other Notes:

Private/Public: Private

Conservatism-Based Metrics:

Total Mean C:	2.2
Native Mean C:	3.4
Total FQI:	17.6
Native FQI:	21.8
Adjusted FQI:	27.2
% C value 0:	48.4
% C value 1-3:	18.8
% C value 4-6:	23.4
% C value 7-10:	9.4
Native Tree Mean C:	4
Native Shrub Mean C:	n/a
Native Herbaceous Mean C:	3.4

Species Richness:

Total Species:	64	
Native Species:	41	64.10%
Non-native Species:	23	35.90%

Species Wetness:

Mean Wetness:	0
Native Mean Wetness:	-0.4

Physiognomy Metrics:

Tree:	2	3.10%
Shrub:	1	1.60%
Vine:	0	0%
Forb:	44	68.80%
Grass:	10	15.60%
Sedge:	6	9.40%
Rush:	0	0%
Fern:	1	1.60%
Bryophyte:	0	0%

Duration Metrics:

Annual:	6	9.40%
Perennial:	55	85.90%
Biennial:	3	4.70%
Native Annual:	5	7.80%
Native Perennial:	35	54.70%
Native Biennial:	1	1.60%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Achillea millefolium	Asteraceae	ACHMIL	non-native	0	1	forb	perennial	common yarrow
Agrostis stolonifera	Poaceae	AGRALBP	native	2	-1	grass	perennial	spreading bent
Ambrosia artemisiifolia	Asteraceae	AMBART	native	0	1	forb	annual	annual ragweed
Ambrosia trifida	Asteraceae	AMBTRI	native	0	0	forb	annual	great ragweed

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
<i>Asclepias incarnata</i>	Asclepiadaceae	ASCINC	native	3	-2	forb	perennial	swamp milkweed
<i>Bidens frondosa</i>	Asteraceae	BIDFRO	native	1	-1	forb	annual	devils-pitchfork
<i>Bromus arvensis</i>	Poaceae	BROARV	non-native	0	1	grass	annual	field brome
<i>Carex molesta</i>	Cyperaceae	CXMOLE	native	2	0	sedge	perennial	troublesome sedge
<i>Carex stipata</i>	Cyperaceae	CXSTIP	native	4	-2	sedge	perennial	stalk-grain sedge
<i>Carex vulpinoidea</i>	Cyperaceae	CXVULP	native	2	-1	sedge	perennial	common fox sedge
<i>Cerastium fontanum</i>	Caryophyllaceae	CERFON	non-native	0	1	forb	perennial	common mouse-ear chickweed
<i>Convolvulus arvensis</i>	Convolvulaceae	CONARV	non-native	0	2	forb	perennial	field bindweed
<i>Dactylis glomerata</i>	Poaceae	DACGLO	non-native	0	1	grass	perennial	orchard grass
<i>Daucus carota</i>	Apiaceae	DAUCAR	non-native	0	2	forb	biennial	queen annes lace
<i>Echinacea purpurea</i>	Asteraceae	ECHPUR	native	10	2	forb	perennial	purple coneflower
<i>Echinochloa crus-galli</i>	Poaceae	EHCGRU	native	0	-1	grass	annual	large barnyard grass
<i>Eleocharis palustris</i>	Cyperaceae	ELEERY	native	1	-2	sedge	perennial	common spike-rush
<i>Elymus repens</i>	Poaceae	AGRREP	non-native	0	1	grass	perennial	creeping wild rye
<i>Epilobium coloratum</i>	Onagraceae	EPICOL	native	3	-2	forb	perennial	purple-leaf willowherb
<i>Equisetum arvense</i>	Equisetaceae	EQUARV	native	0	0	fern	perennial	field horsetail
<i>Erigeron annuus</i>	Asteraceae	ERIANN	native	0	1	forb	biennial	eastern daisy fleabane
<i>Eutrochium purpureum</i>	Asteraceae	EUPPUR	native	6	0	forb	perennial	sweet-scented joe-pye-weed
<i>Fraxinus pennsylvanica</i>	Oleaceae	FRAPEN	native	4	-1	tree	perennial	green ash
<i>Glechoma hederacea</i>	Lamiaceae	GLEHED	non-native	0	1	forb	perennial	groundivy
<i>Helianthus grosseserratus</i>	Asteraceae	HELGRO	native	4	-1	forb	perennial	saw-tooth sunflower
<i>Heliopsis helianthoides</i>	Asteraceae	HELHEL	native	7	1	forb	perennial	smooth oxeye
<i>Hordeum jubatum</i>	Poaceae	HORJUB	native	0	0	grass	perennial	fox-tail barley
<i>Juncus nodosus</i>	Juncaceae	JUNNOO	native	8	-2	forb	perennial	knotted rush
<i>Juncus tenuis</i>	Juncaceae	JUNTEN	native	0	0	forb	perennial	lesser poverty rush
<i>Leucanthemum vulgare</i>	Asteraceae	CHRLEU	non-native	0	2	forb	perennial	ox-eye daisy
<i>Lotus corniculatus</i>	Fabaceae	LOTCOR	non-native	0	1	forb	perennial	garden birds-foot-trefoil
<i>Lycopus americanus</i>	Lamiaceae	LYCAME	native	4	-2	forb	perennial	cut-leaf water-horehound
<i>Melilotus albus</i>	Fabaceae	MELALB	non-native	0	2	forb	biennial	white sweet-clover
<i>Mentha arvensis</i>	Lamiaceae	MENARV	native	5	-1	forb	perennial	american wild mint
<i>Monarda fistulosa</i>	Lamiaceae	MONFIS	native	4	1	forb	perennial	oswego-tea
<i>Parthenium integrifolium</i>	Asteraceae	PARINT	native	8	2	forb	perennial	wild quinine
<i>Phalaris arundinacea</i>	Poaceae	PHAARU	non-native	0	-1	grass	perennial	reed canary grass
<i>Phragmites australis</i> ssp. <i>australis</i>	Poaceae	PHRAUSU	non-native	0	-1	grass	perennial	common reed
<i>Plantago major</i>	Plantaginaceae	PLAMAJ	non-native	0	0	forb	perennial	great plantain
<i>Poa pratensis</i>	Poaceae	POAPRA	non-native	0	0	grass	perennial	kentucky blue grass
<i>Ratibida pinnata</i>	Asteraceae	RATPIN	native	4	2	forb	perennial	yellow coneflower
<i>Rorippa palustris</i>	Brassicaceae	RORPAL	native	4	-2	forb	perennial	bog yellowcress
<i>Rudbeckia subtomentosa</i>	Asteraceae	RUSSUB	native	8	1	forb	perennial	sweet coneflower
<i>Rumex crispus</i>	Polygonaceae	RUMCRI	non-native	0	0	forb	perennial	curly dock
<i>Schedonorus arundinaceus</i>	Poaceae	SCHARU	non-native	0	1	grass	perennial	tall false rye grass
<i>Schoenoplectus fluviatilis</i>	Cyperaceae	SCHFLU	native	4	-2	sedge	perennial	river club-rush
<i>Scirpus pendulus</i>	Cyperaceae	SCIPEN	native	2	-2	sedge	perennial	rufous bulrush
<i>Securigera varia</i>	Fabaceae	CORVAR	non-native	0	2	forb	perennial	crown vetch
<i>Silphium laciniatum</i>	Asteraceae	SILLAC	native	5	2	forb	perennial	compass-plant
<i>Silphium perfoliatum</i>	Asteraceae	SILPER	native	5	-1	forb	perennial	cup-plant
<i>Solidago canadensis</i>	Asteraceae	SOLCAN	native	1	1	forb	perennial	canadian goldenrod
<i>Solidago gigantea</i>	Asteraceae	SOLGIG	native	4	-1	forb	perennial	late goldenrod
<i>Symphotrichum novae-angliae</i>	Asteraceae	ASTNOV	native	3	-1	forb	perennial	new england american-aster
<i>Syringa vulgaris</i>	Oleaceae	SYRVUL	non-native	0	2	shrub	perennial	common lilac
<i>Taxodium distichum</i>	Taxodiaceae	TAXDIS	non-native	0	-2	tree	perennial	southern bald-cypress
<i>Trifolium pratense</i>	Fabaceae	TRIPRA	non-native	0	1	forb	perennial	red clover
<i>Trifolium repens</i>	Fabaceae	TRIREP	non-native	0	1	forb	perennial	white clover
<i>Typha angustifolia</i>	Typhaceae	TYPANG	non-native	0	-2	forb	perennial	narrow-leaf cat-tail
<i>Verbena hastata</i>	Verbenaceae	VERHAS	native	4	-1	forb	perennial	simplers-joy
<i>Verbena urticifolia</i>	Verbenaceae	VERURT	native	2	0	forb	perennial	white vervain
<i>Vernonia fasciculata</i>	Asteraceae	VERFAS	native	8	-1	forb	perennial	prairie ironweed
<i>Veronica peregrina</i>	Scrophulariaceae	VERPEE	native	0	-1	forb	annual	neckweed
<i>Viola sororia</i>	Violaceae	VIOSOR	native	3	0	forb	perennial	hooded blue violet
<i>Zizia aurea</i>	Apiaceae	ZIZAUR	native	5	0	forb	perennial	golden alexanders

**Stormwater Pollution Prevention Plan (SWPPP)**

**For Construction Activities At:**

South Ridge Community Park  
1450 Freeman Road  
Hoffman Estates, IL 60169  
WT Project #1911354C

**SWPPP Prepared For:**

Hoffman Estates Park District  
1685 W. Higgins Road  
Hoffman Estates, IL 60169  
ph. 847-885-7500

**SWPPP Prepared By:**

The W-T Group, LLC  
2675 Pratum Ave.  
Hoffman Estates, IL 60192  
ph. 224-293-6333  
fax 224-293-6444

**SWPPP Preparation Date:**

**January 6, 2020**

**Estimated Project Dates:**

**Project Start Date: 03/01/2020**  
**Project Completion Date: 12/30/2020**

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**SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES**

**1.1 Contractor(s) / Subcontractor(s)**

**Contractor(s):**

Company Name:  
Contact:  
Address:  
City, State, Zip Code:  
Telephone:  
Fax / Email:  
Area of Control:

Company Name:  
Contact:  
Address:  
City, State, Zip Code:  
Telephone:  
Fax / Email:  
Area of Control:

**Subcontractor(s): (See Appendix G for Subcontractor Agreements)**

Company Name:  
Contact:  
Address:  
City, State, Zip Code:  
Telephone:  
Fax / Email:  
Area of Control:

Company Name:  
Contact:  
Address:  
City, State, Zip Code:  
Telephone:  
Fax / Email:

Company Name:  
Contact:  
Address:  
City, State, Zip Code:  
Telephone:  
Fax / Email:

Company Name:  
Contact:  
Address:  
City, State, Zip Code:  
Telephone:  
Fax / Email:  
Area of Control:

**1.2 Stormwater Team (Each team member must have access to the 2012 CGP and the SWPPP)**

Role or Responsibility : Owner  
Position : Director of Parks, Planning and Maintenance  
Name : Dustin Hugen- Hoffman Estates Park District  
Telephone Number: 847-285-5465  
Email: dhugen@heparks.org

Role or Responsibility : Civil Engineer / SWPPP Designer  
Position : President  
Name : Todd Abrams, P.E., CFM – The W-T Group, LLC, Civil Engineering Division  
Telephone Number : 224-293-6333  
Email : todd.abrams@wtengineering.com

Role or Responsibility :  
Position :  
Name :  
Telephone Number :  
Email :

## SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

### 2.1 Project/Site Information

#### Project Name and Address

Project/Site Name: South Ridge Community Park- Enhancement Plan 2019  
Project Street/Location: 1450 Freeman Road  
City: Hoffman Estates  
State: Illinois  
ZIP Code: 60169  
County or Similar Subdivision: Cook County

#### Project Latitude/Longitude

(Use **one** of three possible formats, and specify method)

Latitude: 42 ° 5' 50" N

Longitude: -88 ° 6' 55" W

1. 42 ° 5' 50" N (degrees, minutes, seconds)

1. -88 ° 6' 55" W (degrees, minutes, seconds)

2. \_\_ ° \_\_ . \_\_ ' N (degrees, minutes, decimal)

2. \_\_ ° \_\_ . \_\_ ' W (degrees, minutes, decimal)

3. \_\_ . \_\_ \_\_ ° N (decimal)

3. \_\_ . \_\_ \_\_ ° W (decimal)

Method for determining latitude/longitude:

USGS topographic map (specify scale: )

EPA Web site

GPS

Other (please specify): www.geocommunicator.gov

Horizontal Reference Datum:

NAD 27

NAD 83 or WGS 84

Unknown

If you used a U.S.G.S topographic map, what was the scale? \_\_\_\_\_

#### Additional Project Information

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe?  Yes  No

If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property:

If you are conducting earth-disturbing activities in response to a public emergency, document the cause of the public emergency (e.g., *natural disaster, extreme flooding conditions*), information substantiating its occurrence (e.g., *state disaster declaration*), and a description of the construction necessary to reestablish effective public services:

Are you applying for permit coverage as a "federal operator" as defined in Appendix A of the 2012 CGP?  Yes  No

**2.2 Discharge Information**

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?  Yes  No

Are there any surface waters that are located within 50 feet of your construction disturbances?  Yes  No

**Table 1 – Names of Receiving Waters**

Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)
<b>1. Salt Creek</b>

**Table 2 – Impaired Waters / TMDLs** (Answer the following for each surface water listed in Table 1 above)

	Is this surface water listed as "impaired"?	If you answered yes, then answer the following:			
		What pollutant(s) are causing the impairment?	Has a TMDL been completed?	Title of the TMDL document	Pollutant(s) for which there is a TMDL
1.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<b>Dissolved Oxygen, Iron, Nitrogen, Oil and Grease, Phosphorus, PCBs</b>	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

**Table 3 – Tier 2, 2.5, or 3 Waters** (Answer the following for each surface water listed in Table 1 above)

	Is this surface water designated as a Tier 2, Tier 2.5, or Tier 3 water? (see Appendix F)	If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as?
1.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

### **2.3 Nature of the Construction Activity**

#### **General Description of Project**

Provide a general description of the construction project:

The Hoffman Estates Park District is proposing a new spray pad, a 25 +/- parking lot addition, removal and reconstruction of the existing on-site bike path, a new open air shelter, a new playground, two (2) fitness challenge courses, new sand volleyball court, new filter/bathroom building and natural planting areas to the existing South Ridge Park located at 1450 Freeman Road in Hoffman Estates. Total land disturbance will be approximately 4.4 acres.

#### **Size of Construction Project**

What is the size of the property (in acres), the total area expected to be disturbed by the construction activities (in acres), and the maximum area expected to be disturbed at any one time?

Size of Property : 24.9 Acres

Total Area of Construction Disturbance : 4.4 Acres

### **2.4 Sequence and Estimated Dates of Construction Activities**

1. Installation of the inlet protection devices – prior to any earth moving operations. The temporary perimeter controls and inlet protection devices will not be removed until all construction activities at the site are complete and soils have been permanently stabilized.
2. Water pumped or otherwise discharged from the site during construction dewatering shall be filtered.
3. Removal of the existing pavement and all other items to be removed as shown in the construction plans.
4. Stripping and stockpiling of topsoil and rough grading. Temporary stabilization shall be applied immediately once grading operations have temporarily or permanently stopped.
5. Installation of detention system, storm sewers, and outlet control structure.
6. Rough grading.
7. Installation of proposed underground utilities. Install new inlet protection devices on new storm inlets. Areas around rims should be excavated to raise rim above ground surface.
8. Construction of site improvements. Inlet protection devices must be removed before installation of the proposed tiles.
9. Remove soil stockpile and dispose excess soil off-site. Rough grade and construct parking lot as shown on the construction plans.
10. Final grading and landscaping installation.
11. Permanent landscape installation or temporary stabilization shall be provided immediately following final grading.
12. Install volume control facilities.
13. Remove sediment from detention basins.
14. Permanent landscape installation.
15. Permanent landscape installation or temporary stabilization shall be provided immediately following final grading.
16. Erosion and sedimentation control measures shall be the responsibility of the general contractor, and shall be continually maintained as follows:
17. The entrance shall be maintained in a condition, which will prevent tracking or flowing of sediment onto public Rights-of-Way. This may require repair and/or cleanout of any measures used to trap

sediment. All sediment spilled, dropped, washed or tracked onto public Rights-of-Way shall be cleaned immediately.

18. Temporary cover shall be continuously maintained until permanent cover is established. (Landscaping/grass seed is considered temporary until it is capable of surviving severe weather conditions.)

19. Inlets and drainage ways shall be inspected and cleaned periodically and before maintenance responsibility expires.

12.5 Allowable Non-Stormwater Discharges

**List of Allowable Non-Stormwater Discharges Present at the Site**

Type of Allowable Non-Stormwater Discharge	Likely to be Present at Your Site?
Discharges from emergency fire-fighting activities	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Fire hydrant flushings	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Landscape irrigation	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Waters used to wash vehicles and equipment	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Water used to control dust	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Potable water including uncontaminated water line flushings	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Routine external building wash down	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Pavement wash waters	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Uncontaminated air conditioning or compressor condensate	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Uncontaminated, non-turbid discharges of ground water or spring water	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Foundation or footing drains	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Construction dewatering water	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

Except for flows from fire fighting activities, sources of non-storm water that is combined with storm water discharges associated with the industrial activity addressed in this plan are described below. Appropriate pollution prevention measures, as described below, will be implemented for the non-storm water component(s) of the discharge.

Landscape Watering – Water used for new seed and landscape installation will be applied at a rate that will be absorbed into the soil, and not create surface runoff. If runoff occurs, the silt fences and inlet protection fabric will remove sedimentation.

Dust Control Watering - Water used for the purpose of controlling airborne dust as necessary shall be pumped and filtered before it is allowed to leave the site.

Vehicle and Equipment Cleaning - Use off-site commercial washing businesses as much as possible. If washing of vehicles and equipment must occur onsite, use designated bermed wash areas to prevent wash water contact with receiving waters, with the area to be clearly marked as “Concrete wash out area”. The wash area can be sloped for wash water collection and subsequent infiltration into the ground. The contractor shall use phosphate-free biodegradable soaps. The contractor shall educate employees and subcontractors on pollution prevention measures. Steam cleaning will not be permitted onsite. Use siphon system to pump out water.

**2.6 Site Maps- Site Engineering Plans contain all required site maps.**

### SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

#### 3.1 Endangered Species Protection

##### Eligibility Criterion

Under which criterion listed in Appendix D are you eligible for coverage under this permit?

A      B      C      D      E

For reference purposes, the eligibility criteria listed in Appendix D are as follows:

- Criterion A.** No federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of this permit.
- Criterion B.** The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.
- Criterion C.** Federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.
- Criterion D.** Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- Criterion E.** Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

- i. a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or
- ii. written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally-designated habitat.

You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

**Criterion F.** Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally-designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

### Supporting Documentation

Provide documentation for the applicable eligibility criterion you select in Appendix D, as follows:

**For criterion A,** indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the permit). Check the applicable source of information you relied upon:

- Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service.
- Publicly available species list. US Fish and Wildlife Species List
- Other source: Illinois ECOCAT

**For criterion B,** provide the Tracking Number from the other operator's notification of permit authorization:

Provide a brief summary of the basis used by the other operator for selecting criterion A, B, C, D, E, or F:

**For criterion C,** provide the following information:

Also, provide a brief summary of the basis used for determining that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat:

**For criterion D, E, or F,** attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation or coordination activities.

## 3.2 Historic Preservation

### Appendix E, Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that

apply below, and proceed to Appendix E, Step 2.

- Dike
- Berm
- Catch Basin
- Pond
- Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- Culvert
- Other type of ground-disturbing stormwater control:

### Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties?  YES  NO

- If yes, no further documentation is required for Section 3.2 of the Template.
- If no, proceed to Appendix E, Step 3.

### Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties?  YES  NO

If yes, provide documentation of the basis for your determination.

If no, proceed to Appendix E, Step 4.

### Appendix E, Step 4

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other tribal representative (whichever applies) respond to you within 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties?  YES  NO

If no, no further documentation is required for Section 3.2 of the Template.

If yes, describe the nature of their response:

- Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions.
- No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls.
- Other: A letter from the IHPA has been received stating that no historic properties area affected.

**3.3 Safe Drinking Water Act Underground Injection Control Requirements**

Do you plan to install any of the following controls? Check all that apply below.

- Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)
- Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow
- Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

## SECTION 4: EROSION AND SEDIMENT CONTROLS

### 4.1 Natural Buffers or Equivalent Sediment Controls

#### Buffer Compliance Alternatives

Are there any surface waters within 50 feet of your project's earth disturbances?  YES  NO

Check the compliance alternative that you have chosen:

- I will provide and maintain a 50-foot undisturbed natural buffer.
- I will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.
- It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore I will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.
- I qualify for one of the exceptions in Part 2.1.2.1.e. (If you have checked this box, provide information on the applicable buffer exception that applies, below.)

#### Buffer Exceptions

Which of the following exceptions to the buffer requirements applies to your site?

- There is no discharge of stormwater to the surface water that is located 50 feet from my construction disturbances.
- No natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for this project.
- For a "linear project" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible for me to meet any of the CGP Part 2.1.2.1.a compliance alternatives.
- The project qualifies as "small residential lot" construction (defined in Part 2.1.2.1.e.iv and in Appendix A).
  - For Alternative 1 (see Appendix G, Part G.2.3.2.a):
  - For Alternative 2 (see Appendix G, Part G.2.3.2.b):
- Buffer disturbances are authorized under a CWA Section 404 permit.
- Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

## 4.2 Perimeter Controls

### General

- Silt filter fencing will be installed downstream of all proposed earth moving activities prior to construction. Installation may be subject to Section 404 of the Clean Water Act.

### Specific Perimeter Controls

#### Perimeter Control # 1

##### Perimeter Control Description

- Silt filter fencing will be installed downstream of all proposed earth moving activities prior to construction.
- Details are included within the plan set.

##### Installation

- Prior to commencement of land disturbing activities.

##### Maintenance Requirements

- Removal of sediment before it has accumulated to one-half of the above ground height of the fence. Inspect fencing at least once every 7 days and within 24 hours of each rainfall event of 0.5 inches or greater.

## 4.3 Sediment Track-Out

### General

- All construction traffic entering and exiting the site will be limited to the use of the stabilized construction entrance.

### Specific Track-Out Controls

#### Track-Out Control # 1

##### Track-Out Control Description

- A 70' x 14' stabilized construction entrance will be constructed of 2 inch or larger rock, and access to the site from the public right of way, street, alley sidewalk, parking area will be limited to this entrance. A stabilized Construction Entrance is intended to reduce off-site sedimentation and improve public safety by eliminating the tracking or other movement of sediment onto public rights-of-way.
- See the plan set for details.

##### Installation

- Prior to the commencement of earth disturbing activities

##### Maintenance Requirements

- Where sediment has been tracked-out from your site onto the surface of off-site streets, other paved areas, and sidewalks, you must remove the deposited sediment by the end of the same work day in which the track-out occurs or by the end of the next work day if track-out occurs on a non-work day. You must remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface

water.

#### **4.4 Stockpiled Sediment or Soil**

##### **General**

- Silt filter fencing will be used surrounding the proposed soil stockpile area along with temporary stabilization seeding.

##### **Specific Stockpile Controls**

###### Stockpile Control # 1

###### Stockpiled Sediment/Soil Control Description

- Stockpiling is the salvaging, storing, protecting, and use of topsoil to enhance final site stabilization and support selected vegetation. The stabilized stockpile shall be located such that it will not erode, block drainage, or interfere with work on the site. Topsoil stockpiles should be located on flat ground if possible, and protected by a silt fence or other sediment barrier on the down gradient sides. Topsoil that will not be used for more than 3 days should be seeded as noted in section 4.15 below.
- See the plan set for details and specifications.

###### Installation

- As necessary during earth moving activities.

###### Maintenance Requirements

Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.)

#### **4.5 Minimize Dust**

##### **General**

- Provide dust control watering as necessary.

##### **Specific Dust Controls**

###### Dust Control # 1

###### Dust Control Description

- Provide dust control watering according the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction. Water used for the purpose of controlling airborne dust as necessary shall be pumped and filtered before it is allowed to leave the site.

###### Installation

- As required during construction.

#### **4.6 Minimize the Disturbance of Steep Slopes**

##### **General**

- Follow the grading plan, which has been designed to minimize disturbance and creation of steep slopes. The steep slopes that will be created shall be restored as shown on the plans, immediately following the completion of grading operations.

## Specific Steep Slope Controls

### Steep Slope Control # 1

#### Steep Slope Control Description

- Minimize disturbance of steep slopes by following the Grading Plan, which has been designed to minimize the disturbance to and creation of steep slopes. Stabilize all disturbed green spaces as shown in the construction plans.

## 4.7 Topsoil

### General

- Existing topsoil will be stripped and stockpiled to south of parking lot to be demolished. This soil will be re-spread on the site following the completion of rough grading operations.

## 4.8 Soil Compaction

### General

- 6" of topsoil will be spread in all green spaces following construction. Surface preparation will follow IDOT Standard Specifications.

## Specific Soil Compaction Controls

### Soil Compaction Control # 1

#### Soil Compaction Control Description

- 6" of topsoil will be spread in all green spaces following construction. Surface preparation will follow IDOT Standard Specifications. Clean up and grade the work area to eliminate the concentration of runoff.

## 4.9 Storm Drain Inlets

### General

- Catch-All inlet Devices, and silt fence inlet protection will be installed on all new and existing storm inlet structures.

## Specific Storm Drain Inlet Controls

### Storm Drain Inlet Control # 1

#### Storm Drain Inlet Control Description

- Catch-All inlet protection devices or silt fence inlet protection will be installed on all new and existing storm inlet structures.
- See the plan set for details.

#### Installation

- Inlet protection devices shall be installed on all existing inlet structures prior to the start of construction, and on all new structures once they are installed.

#### Maintenance Requirements

- Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if

removal by the same work day is not feasible.

#### 4.13 Dewatering Practices

##### General

- All dewatering discharge shall be pumped through a sediment filter bag prior to discharging from the site.

##### Specific Dewatering Practices

###### Dewatering Practice # 1

###### Dewatering Practice Description

- Dewatering discharge shall be pumped through an appropriate filter bag.
- Follow the manufacturer's specifications.

###### Installation

- As necessary.

###### Maintenance Requirements

- With backwash water, either haul it away for disposal or return it to the beginning of the treatment process; and replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

#### 4.14 Other Stormwater Controls

##### General

- Soil Erosion

##### Specific Stormwater Control Practices

###### Stormwater Control Practice # 1

###### Description

- Temporary Erosion Control Blanket - Erosion control blankets will be utilized to protect sloped areas of exposed soil from erosion until permanent ground cover has been established.
- See manufacturer's specifications for installation requirements.

###### Installation

- Following final grading and seeding installation.

###### Maintenance Requirements

- Per manufacturers recommendations.

#### 4.15 Site Stabilization

**Site Stabilization Practice** (only use this if you are not located in an arid, semi-arid, or drought-stricken area)

Vegetative   Non-Vegetative  
Temporary   Permanent

###### Description of Practice

- Temporary Seeding

- General grass seed will be applied to all disturbed areas immediately once work has temporarily stopped in the area.
- Install per IDOT Standard Specifications article 280.04

Installation

- Install as necessary during construction.

Maintenance Requirements

- Provide additional seeding as necessary to promote vegetated growth.

Description of Practice

- Permanent Seeding - Permanent landscape seeding will be installed in all green spaces per the Landscape Plan. Temporary erosion control blanket will also be installed once the seeding has been placed.
- Install per Landscape plan specifications.

Installation

- Following final grading and topsoil installation.

Maintenance Requirements

- Provide additional seeding as necessary to promote vegetated growth.

#### **4.16 General Maintenance**

##### **During Construction the contractor shall**

- Cover the open ends of pipes in trenches at the close of each working day

##### **Prior to final landscaping and restoration work the contractor shall**

- Remove and dispose of silt retained by the temporary ditch checks and silt fencing
- Reinstall temporary ditch checks after cleaning, remove and replace plugged filter fence storm drain protection devices.
- All maintenance of erosion control systems will be the responsibility of the contractor.

##### **Following construction, the owner shall**

- Clean sedimentation out of the storm sewer system as necessary
- Remove trash from the detention facility and mow the grass as necessary



## **5.2 Spill Prevention and Response**

Storage of Hazardous or Toxic Materials - Toxic or hazardous materials must be stored in a controlled area using best management practices to minimize potential for soil or storm water contamination. All materials shall be stored in an area that is not accessible to the public such as locked boxes, locked vehicles, inside buildings under construction or in fenced area. No toxic or hazardous materials shall be stored up gradient of any storm drainage structure unless spill containment controls such as sandbags are in place. The contractor shall report any spillage or leak to appropriate agencies and site remediation shall be performed to remove all contamination from the site.

## **5.3 Fueling and Maintenance of Equipment or Vehicles**

Vehicle maintenance and Storage - If maintenance must occur onsite, the contractor will use designated areas located away from drainage courses to prevent the run on of storm water and the runoff of spills. The contractor shall use secondary containment, such as drip pans or drop cloths to catch spills or leaks. Onsite vehicles and equipment will be inspected regularly and repaired immediately.

Vehicle and Equipment Fueling - Use off-site fuelling station as much as possible. If fueling of vehicles and equipment must occur onsite, use designated areas, located away from drainage course, to prevent the run-on of storm water and the runoff of spills. "Topping off" fuel tanks will be discouraged. The contractor shall use secondary containment. (Double lined tanks are considered secondary containment.)

Subcontractor Equipment - All subcontractors shall be notified regarding the SWPPP and shall be advised as to how it pertains to their activities on the site. Specifically, all vehicles shall be required to utilize the stabilized site entrance and parking and to use the controlled wash down area. All supplies that pose a threat to storm water quality shall be kept in vehicles or inside structures under construction. All waste material is to be disposed of property.

### **General**

## **5.4 Washing of Equipment and Vehicles**

### **General**

Vehicle and Equipment Cleaning - Use off-site commercial washing businesses as much as possible. If washing of vehicles and equipment must occur onsite, use designated bermed wash areas to prevent wash water contact with receiving waters. Area to be clearly marked as "Concrete wash out area". The wash area can be sloped for wash water collection and subsequent infiltration into the ground. The contractor shall use phosphate-free biodegradable soaps. The contractor shall educate employees and subcontractors on pollution prevention measures. Steam cleaning will not be permitted onsite. Use siphon system to pump out water.

## **5.5 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes**

### **5.5.1 Building Products**

No Solid materials, including building materials, shall be discharged into waters of the state, except as authorized by a Section 404 permit. Dispose of all building materials according to all local, state and federal regulations.

### **5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials**

#### **General**

- All pesticides, herbicides, insecticides, and landscape materials shall be stored in water tight containers away from all open sewers to prevent discharge to downstream waters. Fertilizers shall not be stored on the site beyond the day they will be used, and shall be kept in water tight containers when they are not actively being applied.

### **5.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals**

#### **General**

- Use off-site fueling station as much as possible. If fueling of vehicles and equipment must occur onsite, use designated areas, located away from drainage course, to prevent the run-on of storm water and the runoff of spills. "Topping off" fuel tanks will be discouraged. The contractor shall use secondary containment. (Double lined tanks are considered secondary containment.)
- If maintenance must occur onsite, the contractor will use designated areas located away from drainage courses to prevent the run on of storm water and the runoff of spills. The contractor shall use secondary containment, such as drip pans or drop cloths to catch spills or leaks. Onsite vehicles and equipment will be inspected regularly and repaired immediately.
- Any spills or leaks shall be cleaned up immediately upon being discovered.

### **5.5.4 Hazardous or Toxic Waste**

#### **General**

- Toxic or hazardous materials must be stored in a controlled area using best management practices to minimize potential for soil or storm water contamination. All materials shall be stored in an area that is not accessible to the public such as locked boxes, locked vehicles, inside buildings under construction or in fenced area. No toxic or hazardous materials shall be stored up gradient of any storm drainage structure unless spill containment controls such as sandbags are in place. The contractor shall report any spillage or leak to appropriate agencies and site remediation shall be performed to remove all contamination from the site.

### **5.5.5 Construction and Domestic Waste**

#### **General**

- All construction and domestic waste, including packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete, and other trash or building materials shall be disposed of in a proper receptacle (Dumpster, Trash Can, Etc.) and legally dumped or recycled off site.

### **5.5.6 Sanitary Waste**

#### **General**

- The contractor shall provide and maintain temporary bathroom facilities (Portable Toilets) during construction to accommodate all workers. These facilities shall be self-contained with no discharge. Waste removed from these facilities shall be disposed of properly offsite.

### **Specific Pollution Prevention Practices**

Installation

- Install Portable Toilets on the first day of construction.

#### Maintenance Requirements

- Maintain according to OSHA standards and manufacturer's recommendations.

### **5.6 Washing of Applicators and Containers used for Paint, Concrete or Other Materials**

#### **General**

- All concrete, paint and other material washout shall be limited to designated bermed wash areas to prevent wash water contact with receiving waters. Area to be clearly marked as "wash out area". The contractor shall use phosphate-free biodegradable soaps. The contractor shall educate employees and subcontractors on pollution prevention measures. Steam cleaning will not be permitted onsite. Use siphon system to pump out water.

#### **Specific Pollution Prevention Practices**

##### Installation

- As Necessary

##### Maintenance Requirements

- Clean out or remove and replace washout areas when they are 50% full.

### **5.7 Fertilizers**

#### **General**

- [Fertilizer shall not be stored onsite before the day it will be used. Store in water tight containers to prevent discharge to the downstream waters. Refer to section 5.5.2 for additional requirements.](#)

### **5.8 Other Pollution Prevention Practices**

#### Approved State or local Plans

- (i) The management practices, controls and other provisions contained in the storm water pollution prevention plan must be at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual, latest edition. Facilities which discharge storm water associated with construction site activities must include in the storm water pollution prevention plan procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials. Requirements specified in sediment and erosion site plans or site permits or storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI to be authorized to discharge under this permit, incorporated by reference and are enforceable under this permit. The plans shall include all requirements of this permit and include more stringent standards required by any local approval. This provision does not apply to provisions of master plans, comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit that is issued to the construction site.
- (ii) Dischargers seeking alternative permit requirements are not authorized by this permit and shall submit an individual permit application in accordance with 40 CFR 122.26 at the

address below, along with a description of why requirements in approved local plans of permits should not be applicable as a condition of an NPDES permit.

Illinois Environmental Protection Agency  
Division of Water Pollution Control, Mail Code #15  
Attention: Permit Section  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

## **SECTION 6: INSPECTION AND CORRECTIVE ACTION**

### **6.1 Inspection Personnel and Procedures**

#### **Personnel Responsible for Inspections**

Qualified personnel (provided by the contractor) shall inspect disturbed areas of the construction site that have not been finally stabilized, structural control measures, and location where vehicles enter or exit the site. Qualified personnel means a person knowledgeable in the principles and practices of erosion and sediment control measures, such as a licensed Professional Engineer (P.E.) and a Certified Professional in Erosion and Sediment Control (CPESC), a Certified Erosion Sediment and Storm Water Inspector (CESSWI) or other knowledgeable person who possesses the skills to assess conditions at the construction site that should impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activities.

#### **Inspection Schedule**

Specific Inspection Frequency

Every seven (7) calendar days, or within 24 hours of the end of any storm of 0.25 inches or equivalent snowfall.

Rain Gauge Location (if applicable)

Rain gauge shall be installed in an area of the site that is exposed to the sky away from all overhangs and trees.

#### **Inspection Report Forms**

See Appendix D for a sample Inspection Report Form

### **6.2 Corrective Action**

#### **Personnel Responsible for Corrective Actions**

General Contractor is responsible for all Corrective Measures

#### **Corrective Action Forms**

Contractor to Provide

### **6.3 Delegation of Authority**

#### **Duly Authorized Representative(s) or Position(s):**

Company or Organization Name:

Name:

Position:

Address:

City, State, Zip Code:

Telephone Number:

Fax/Email:



**SECTION 8: CERTIFICATION AND NOTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

[Repeat as needed for multiple construction operators at the site.]

## **SWPPP APPENDICES**

Attach the following documentation to the SWPPP:

***Appendix A – Site Maps***

***Appendix B – Copy of 2012 CGP***

***Appendix C – NOI and EPA Authorization Email***

***Appendix D – Inspection Form***

(Note: EPA is in the process of developing a sample inspection form for use by CGP permittees. The form will be made available at <http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>.)

***Appendix E – Corrective Action Form***

(Note: EPA is in the process of developing a sample corrective action form for use by CGP permittees. The form will be made available at <http://cfpub.epa.gov/npdes/stormwater/cgp.cfm>.)

***Appendix F – SWPPP Amendment Log***

***Appendix G – Subcontractor Certifications/Agreements***

***Appendix H – Grading and Stabilization Activities Log***

***Appendix I – Training Log***

***Appendix J – Delegation of Authority***

***Appendix K – Endangered Species Documentation***

***Appendix L – Historic Preservation Documentation***

**Appendix A – Site Maps - See Plan Set for Site Maps**

**Appendix B – Copy of 2012 CGP - Available online at  
<http://www.epa.gov/npdes/stormwater/cgp>.**

**Appendix C – Copy of NOI and EPA Authorization email**

**Appendix D – Copy of Inspection Form**

**Appendix E –Copy of Corrective Action Form**

**Appendix F - SWPPP Amendment Log**

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

**Appendix G – Subcontractor Certifications/Agreements**

SUBCONTRACTOR CERTIFICATION  
STORMWATER POLLUTION PREVENTION PLAN

Project Number: \_\_\_\_\_

Project Title: South Ridge Community Park- Enhancement Plan 2019

Operator(s): \_\_\_\_\_

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

**I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.**

This certification is hereby signed in reference to the above named project:

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Type of construction service to be provided: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Appendix H – Grading and Stabilization Activities Log**

<b>Date Grading Activity Initiated</b>	<b>Description of Grading Activity</b>	<b>Description of Stabilization Measure and Location</b>	<b>Date Grading Activity Ceased</b> (Indicate Temporary or Permanent)	<b>Date When Stabilization Measures Initiated</b>

**Appendix I – SWPPP Training Log**

**Stormwater Pollution Prevention Training Log**

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: \_\_\_\_\_ Date: \_\_\_\_\_

Course Length (hours): \_\_\_\_\_

Stormwater Training Topic: *(check as appropriate)*

- Sediment and Erosion Controls**
- Emergency Procedures**
- Stabilization Controls**
- Inspections/Corrective Actions**
- Pollution Prevention Measures**

Specific Training Objective: \_\_\_\_\_

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

**Appendix J – Delegation of Authority Form**

Delegation of Authority

I, \_\_\_\_\_ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the \_\_\_\_\_ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

\_\_\_\_\_ (name of person or position)  
\_\_\_\_\_ (company)  
\_\_\_\_\_ (address)  
\_\_\_\_\_ (city, state, zip)  
\_\_\_\_\_ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Name:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Appendix K – Endangered Species Documentation**

**Appendix L – Historic Properties Documentation**