Hoffman Estates District
Hoffman Estates, Illinois

Birch Park

Project Manual
Bid Proposal and Specifications

January 22, 2021

Bids are due and will be opened and read aloud on March 3, 2021 at 11:00 AM at the Hoffman Estates Park District's Triphahn Center which is located at 1685 West Higgins Road in Hoffman Estates, Illinois.

WT Group

Engineering • Design • Consulting

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

Index

Bidder Name: _____

Address: _____
_____

Telephone #: _____
Facsimile: _____

NAME OF PROJECT

Earth Work at Birch Park

BID DATE: 3/3/21 **BID TIME: 11:00 AM**

PREPARED BY:

HOFFMAN ESTATES PARK DISTRICT
1685 W. Higgins Road
Hoffman Estates, IL 60169-2998
Telephone: (847) 885-7500
Facsimile: (847) 885-7523

February 20, 2020

Dear Bidder:

Enclosed you will find the plans, specifications and bidding materials for **Earth Work at Birch Park.** All pertinent information is included in the attached package. Please submit the Proposal Forms, Certification, References, and Bid Bonds. Please copy your proposal and retain one copy for your records.

Bidders will be required to meet all State bidding requirements.

I look forward to reviewing your bid proposal and working with you on this project. If you have further questions or need to meet at the site, please contact me 847-285-5465. I can be reached Monday through Friday from 7:00 a.m. until 4:00 p.m.

Sincerely,
Dustin Hugen

Dustin Hugen

Director of Parks, Planning & Maintenance

INVITATION TO BIDS

Sealed bids for the **Earth Work at Birch Park** will be received by the Hoffman Estates Park District at our office; 1685 West Higgins Road, Hoffman Estates, Illinois 60169 until **exactly 11:00 A.M., 3/3/21** 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.

Sincerely,

Dustin Hugen

Dustin Hugen
Director of Parks, Planning & Maintenance
Hoffman Estates Park District
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:

Earth Work at Birch Park
1045 Ash Road
Hoffman Estates, IL 60169

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 **3/3/2021**

Committee Approval: DATES **3/16/2021**

Board Approval: DATES **3/23/2021**

Contract Awarded: DATES **3/30/2021**

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: **May 3, 2021 – July 1, 2021 (For Proposed Hardscape Areas)**

100 % Completion Date: **July 30, 2021**

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 **Birch Park Install** 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: _____, _____, _____, _____.

HOFFMAN ESTATES PARK DISTRICT

BY: _____
(Sign and Date)

COMPANY _____

ADDRESS _____

_____

PHONE _____

EMAIL: _____

BY: _____

FORM 1 – BID

CERTIFICATION

I, _____ (Officer), having been first duly sworn on Oath, state 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.

Category	**Subcontractor Name**	**Address**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

REFERENCES

_____

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

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. _____

_____

_____

_____

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.
_____

_____

_____

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. _____

_____

_____

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. _____

_____

_____.

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2. Contract Documents

   The Notice to Bidders, the Instructions to Bidders, the Supplementary Conditions, Drawings, and Specifications, the supplied Form of Proposal, the accepted Bid Sheet and certification comprise the Contract Documents. Copies of these documents can be obtained in person from the office of the Hoffman Estates Park District, 1685 W. Higgins Road, Hoffman Estates IL 60169-2998.

3. Explanation to Bidders

   Any explanation desired by a bidder regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc., must be requested in writing and with sufficient time allowed for a reply to reach bidders before the submission of their bids.

   Any interpretation made will be in the form of an amendment of the invitation for bids, drawings, specifications, etc., and will be furnished to all prospective bidders. Its receipt by the bidder must be acknowledged in the space provided on the Bid Form or by letter or telegram received before the time set for opening of bids. Oral explanations or instructions given before the award of the contract will not be binding.

4. Conditions Affecting the Work

Bidders should visit the site and take such other steps as may be reasonably necessary to ascertain the nature and location of the Work, the general and local conditions, which can affect the Work or the cost thereof. Failure to do so will not relieve bidders from responsibility for estimating properly the difficulty or cost of successfully performing the Work.

5. Bid Guarantee, Bonds and Required Paperwork

   A. A Bid Guarantee, five (5%) percent, is required by the invitation for bids. Failure to furnish a Bid Guarantee in the proper form and amount by the time set for opening of bids may be cause for rejection of the bid in the absolute discretion of the Owner.

   B. A Bid Guarantee shall be the form of a bid bond, postal money order, certified check, or cashier's check made payable to the Owner. Bid guarantees, other than those stated, will be returned to the bidder upon opening of bids. Such bids will not be considered for award (a) to unsuccessful bidders as soon as practical after the award of the job, and (b) to the successful bidder upon execution of such further contractual documents and bonds as may be required by the bid as accepted.

   C. The successful bidder, upon being given a "Written Notice to Proceed", will have five (5) calendar days to provide the required Labor and Material Payment Bond, Performance Bond, and Insurance Policies or certificates for same, and commence with the Work. Failure to comply with the conditions set forth in the Contract Documents shall result in the termination of the contract for default. In such event, the Contractor may be liable for any costs of performing the work which exceed the amount of his bid, and the Bid Guarantee shall be available toward offsetting such difference, if not previously returned to the Contractor.

6. <u>Preparation and Submission of Bids</u>

   Before submitting proposal, each bidder shall carefully examine all documents pertaining to the Work and visit the site to verify conditions under which Work will be performed.

   Submission of bid will be considered presumptive evidence that the Bidder has visited the site and is conversant with local facilities and difficulties, the requirements of the documents and of pertinent State or Local Codes, State of Labor and Material Markets, and has made due allowance in his bid for all contingencies. Include in bid all costs of labor, material, equipment, contractor's license, permits, guarantees, applicable taxes (sales tax does not apply), insurance and contingencies, with

overhead and profit necessary to produce a completed project, or to complete those portions of the Work necessary to produce a completed project, or to complete those portions of the Work covered by the specifications on which proposal is made, including all trades, without further cost to the Owner. The Owner shall be responsible for the building permit fee.

No compensation will be allowed by reason of any difficulties which the Bidder could have discovered reasonably, prior to bidding.

All proposals must be made upon the Proposal Form furnished by the Owner attached hereto and should give the amounts bid for work, in numbers, and must be signed and acknowledged by the contractor. The Proposal should be enclosed in the envelope marked "Bid Proposal for Hoffman Estates Park District **"Earth Work at Birch Park"** to be received until **11:00 A.M., March 3, 2021** showing the return address of the sender and addressed to: Hoffman Estates Park District, 1685 W. Higgins Road, Hoffman Estates, Illinois 60169. Bids should be sealed, marked and addressed as directed above. Failure to do so may result in a premature opening of or a failure to open such bid.

The proposal submitted must not contain erasures, inter-lineations, or other corrections unless each correction is suitably authenticated by affixing in the margin immediately opposite the correction the surname or surnames of the person or persons signing the bid.

Modifications of bids already submitted will be considered if received at the office designated in the invitation for bids by the time set for opening of bids. Telegraphic modifications will be considered, but should not reveal the amount of the original or reversed bid.

7. Prices

The prices are to include the furnishing of all materials, equipment, tools, insurance, bonds, warranties, and all other facilities, and the performance of all labor and services necessary for the proper completion of the Work except as may be otherwise expressly provided in the Contract Documents.

8. Time Schedule

The timely execution of any project is extremely important. The successful bidder shall take every means to meet the completion date stated above except for extensions granted by the Owner in writing for circumstances beyond the control of the Bidder.

9. Late Bids and Modifications or Withdrawals

Bids and modifications or withdrawals thereof received at the office designated in the invitation for bids after the exact time set for opening of bids will not be considered.

10. Withdrawal of Bids

Bids may be withdrawn by written or telegraphic request received from bidders prior to the time set for opening of bids.

11. Public Opening of Bids

Bids will be publicly opened at the time set for opening in the invitation for bids. Their content will be made public for the information of bidders and others interested, who may be present either in person or by representative.

12. Award of Contract

A. Award of Contract will be made to the lowest responsible bidder, as determined by the Board of Commissioners of the Hoffman Estates Park District, whose bid conforms to the invitation for bid.
B. The Board of Park Commissioners 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.

13. Contract and Insurance

The written contract between the accepted bidder and the Owner shall be considered finalized and entered into between the parties upon the Park District Board's approval and award of the contract to the accepted bidder and the Park District's execution of the accepted bidder's Form of Proposal, and said written contract shall be comprised by the Contract Documents. The accepted bidder shall provide the Owner with a Labor and Material Payment Bond, Performance Bond, and copies of applicable Insurance Policies and endorsements and certificates for same within five (5) calendar days of the "Written Notice to Proceed" and prior to the commencement of work.

14. Postponement of Date for Opening Proposals

The Owner reserves the right to postpone the date of presentation and opening of proposals and will give telegraphic notice of any such postponement to each interested party.

SUPPLEMENTARY CONDITIONS

SECTION I – GENERAL

1. Application

   These Supplementary Conditions shall be used in conjunction with and are a part of any and all Sections of the Specifications and all Contracts and Subcontracts that may be made for the completion of the work in all its parts as identified and described in the Contract Documents.

2. Definitions

   Owner: The Hoffman Estates Park District, Board of Commissioners, Staff and its appointed Owner's representative.
   Contractor: A firm, corporation or individual with whom the Owner makes a direct Contract for the construction of all or any portion of the work.
   Architect/Engineer: The authorized representative of the Owner.
   Subcontractor: A firm, corporation or individual other than employees of a Contractor with whom a Contractor or Subcontractor makes a contract to furnish labor, and/or materials, and/or services in connection with the project.
   Owner Representative: An employee of the Hoffman Estates Park District responsible for the coordination of the work involved on the project.

   The words "approve", "equal to", "as directed", etc., are interpreted and will be taken to mean "to the satisfaction of the Owner." Samples shall be submitted and approvals shall be requested in ample time to avoid any delays should resubmission of an item be necessary.

3. Contract Documents

   The Contract Documents shall consist of the Notice to Bidders, the Instructions to Bidders, the Supplementary Conditions, the Drawings, the Specifications, the supplied Form of Proposal, and the accepted Bid Sheet and certification.

4. Bonds

   A. With proposal, and attached hereto, each Bidder shall furnish Bid Security payable to the Owner in the amount of 5% of bid.
   B. Include allowance in Lump Sum Proposal for Performance Bond and Labor and Materials Payment Bond in the amount of 100% of Contract Price.
      1. The Contractor, before commencing the Work, shall furnish a Performance Bond and a Labor and Material Bond. The Performance Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the faithful performance of the obligation of the Contract Documents, and the Labor and Material Payment Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the payment of all persons performing labor and furnishing

materials in connection with the Contract Documents. Such bonds shall be on standard AIA Documents, issued by the American Institute of Architect/Engineers, shall be issued by a surety satisfactory to the Owner, and shall name the Owner as a primary co-obligee. The cost of the bonds is to be included in the Bid Proposal. The Performance Bond and Labor and Material Payment Bond will become a part of the Contract. Each Bidder shall list the name of the surety company that will be furnishing the Bonds on its Bid Proposal. The failure of a Bidder to list the name of its surety company on its Bid Proposal shall be a non-responsive bid. The failure of the successful Bidder to supply the required Bonds within five (5) days after the Notice of Award or within such extended period as the Owner may grant if the forms do not meet its approval shall constitute a default, and the Owner may either award the Contract to the next responsible, responsive Bidder or re-advertise for bids. A charge against the defaulting Bidder may be made for the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid guarantee.

2. The Contractor shall deliver the required bonds to the Owner not later than five (5) days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the owner that such bonds will be furnished.
3. The contractor shall require the attorney-in-fact who executed the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.
4. Whenever the Contractor shall be and is declared by Owner to be in default under the Contract, the Surety and the Contractor are each responsible to make full payment to the Owner or any and all extra Work incurred by the Landscape Architect as a result of the Contractor’s default, and to pay to Owner all attorney’s fees and court costs incurred by Owner as a result of the Contractor’s default, and in protecting Owner’s rights under the Agreement to remedy Contractor’s default.
5. The Contractor shall (i) furnish all Surety Company’s bonds through Surety Company’s local agents approved by and/or as directed by Owner; (ii) fully covered and guarantee with said bond the faithful performance and completion of the entire Contract, including without limitation, the faithful performance of prevailing wage requirements; and (iii) guarantee with said bond payment in all cases by the Contractor or by the Surety Company for all labor performed, material and supplies furnished with the entire Work in the Contract. Said Bond shall remain in full force and effect during the entire period of all general guarantees given by the Contractor with the Contract as called for in the Specifications and Contract, except in cases where other bonds are specifically called for in the specifications and Contract in connection with special guarantees.

5. Payment

The Contractor may present estimate of work for which he desires payment no later than the first Monday of each month, based on cost of labor and material incorporated into the work. Estimate shall be a Sworn Statement and shall show relative amount of each item completed. Submit Partial Waivers of Lien, including for first payout, from Contractors, Subcontractors and Material Suppliers with Sworn Statement for monthly payout. Payments will be made within approximately thirty (30) days after review by the Owner. Notwithstanding, anything to the contrary contained in the Contract Documents, payouts are to be made by checks payable to the Contractor. The Contractor will be required to submit a sworn payroll statement according to the Illinois Department of Labor documenting his compliance with the Illinois Prevailing Wage Act.

Final Payment will be made within approximately thirty (30) days of final inspection and approval and receipt of all waivers, sworn statements, guarantee statements, and other documents set forth in the Contract Documents.

6. Preparation of Bids

Before submitting proposal, each bidder shall examine carefully all documents pertaining to the work and visit the sites to verify conditions under which work will be performed. Submittal of the Bid Proposal by the Contractor is a representation by the Contractor, that the Contract Documents are full and complete, are sufficient to enable the Contractor to determine the cost of the Work and that the Contract Documents are sufficient to enable it to construct the Work outlined therein, in accordance with applicable laws and regulations, and otherwise to fulfill all its obligations hereunder, including, but not limited to, Contractor's obligations to construct the Work for an amount not in excess of the contract Sum on or before the date(s) of Completion established in the Agreement. The Contractor further acknowledges and declares that it has visited and examined the Project site, examined all physical and other conditions affecting the Work and is fully familiar with all of the conditions thereon and thereunder affecting the same. In connection therewith, Contractor specifically represents and warrants to Owner that prior to the submission of its bid it has: (a) thoroughly examined the location of the work to be performed, is familiar with local conditions, and has read and thoroughly understands the Contract Documents as they relate to the physical conditions prevalent or likely to be encountered in the performance of the work at such location; (2) examined the nature, location and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (3) examined the quality and quantity of all materials, supplies, tools, equipment, labor, and professional services necessary to complete the Work in the manner and within the cost and time frame required by the Contract Documents.

Submission of bid will be considered presumptive evidence that the Bidder has visited the site and is conversant with local facilities and difficulties, the requirements of the documents and of pertinent State, County or Local Codes, State of Labor and Material Markets, and has made due allowance in his bid for all contingencies.

Include in bid all costs of labor, material, equipment, allowance, fees, permits, guarantees, applicable taxes (**sales tax does not apply**), insurance and contingencies, with overhead and profit necessary to complete those portions of the work covered by the specifications on which proposal is made, including all trades, without further cost to the Owner. Obtain all permits and arrange for all inspections. Pay all fees, permits and costs incurred.

No compensation will be allowed by reason of any difficulties, which the Bidder could have discovered prior to bidding.

7. Fees and Inspection

The Contractor is responsible for all license fees and arrangements for all inspections required by State, County, Local and other authorities having lawful jurisdiction. The Owner is responsible for all building permit fees associate with the Work.

8. Subcontracts

Contractors operating under direct Contracts with the Owner may let Subcontracts for the performance of such portions of the work as are usually executed by special trades. All such Subcontracts shall be based on conformance with all pertinent conditions set forth in the Contract Documents, including the Supplementary Conditions as well as the detailed requirements of the portions of the drawings and specifications which depict or describe the work (labor and materials) covered by the Subcontract.

No Work may be sublet without approval of the Owner, who reserves the right to disapprove any proposed Subcontractor whose record does not establish his experience, competence, and financial ability to perform the work.

9. Materials

Materials shall conform to the drawings, specifications, manufacturer's specifications for all products incorporated into the work, and all applicable standards and guidelines.

Some specific equipment and materials have been specified for use on this project to establish minimum performance requirements or desired features. To receive consideration of alternate equipment or materials, the Bidder must submit

all appropriate product data and receive pre-bid approval from the Owner. All materials are subject to the approval by the Owner both before and after incorporation in the project.

All condemned material or work shall be removed from the premises and properly disposed of.

10. Law Compliance

All project construction work shall comply with all State and Municipal Laws and Regulation, and with all Local Ordinances and Rules pertaining to this work. Such Laws, Regulations, Ordinances and Rules shall be considered a part of these specifications.

A. The Contractor warrants that it is familiar with and shall comply with Federal, State and local laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Contract including without limitation Workers Compensation Laws, minimum salary and wage statutes and regulations, laws with respect to permits and licenses and fees in connection therewith, laws regarding maximum working hours. No plea of misunderstanding or ignorance thereof will be considered.
B. Whenever required, the Contractor or Subcontractor shall furnish the Architect/Engineer and Owner with satisfactory proof of compliance with said Federal, State and local laws, statutes, ordinances, rules, regulations, orders, and decrees.
C. Contractor shall carefully examine the Occupational Safety and health Act as issued by the Federal Register (OSHA), and the specific regulations governing procedures, techniques, safety precautions, equipment design, and the configuration of the same as required under this Act and shall comply with all terms of the Act and to perform and complete in a workmanlike manner all work required in full compliance with said Act.
D. Contractor shall comply with all terms of the Illinois Preference Act and all terms of the Equal Employment Opportunity Clause of the Illinois Fair Employment Practices Commission.
E. At all times Contractor shall remain in compliance with the Illinois Public Works Employment Discrimination Act (775 ILCS 10/1, et seq.,) and the Illinois Human Rights Act (775 ILCS 5/2-101, et seq.,), and in addition shall at all times comply with Section 2-105 of the Illinois Human Rights Act requiring a written sexual harassment policy as defined therein.
F. Contractor and all subcontractors shall be solely responsible for complying with the Substance Abuse Prevention on Public Works Projects Act, Public Act 095-06345.
G. Contractor agrees to maintain all records and documents for projects of the District in compliance with the Freedom of Information Act, 5 ILCS 140/1 et seq. In addition, Contractor shall produce records which are responsive to a

request received by the District under the Freedom of Information Act so that the District may provide records to those requesting them within the time frames required. If additional time is necessary to compile records in response to a request, then Contractor shall so notify the District and if possible, the District shall request an extension so as to comply with the Act. In the event that the District is found to have not complied with the Freedom of Information Act due to Contractor's failure to produce documents or otherwise appropriately respond to a request under the Act, then Contractor shall indemnify and hold the District harmless, and pay all amounts determined to be due including but not limited to fines, costs, attorney's fees and penalties.

H. Contractor understands, represents and warrants to the Owner that the Contractor and its Subcontractors (for which the Contractor takes responsibility to insure that they comply with the above-mentioned Acts) are in compliance with all requirements provided by the Acts set forth in Article 15 and that they will remain in compliance for the entirety of the Work. A violation of any of the Acts set forth in this Article is cause for the immediate cancellation of the Contract. However, any forbearance or delay by the Owner in canceling this Contract shall not be considered as, and does not constitute, Owners consent to such violation and a waiver of any rights the Owner may have, including without limitation, cancellation of this Contract.

I. Contractor and each of its Subcontractors shall pay prevailing wages as established by the Illinois Department of Labor for each craft or type of work needed to execute the contract in accordance with 820 ILCS 130/.01 et seq. The Contractor shall prominently post the current schedule of prevailing wages at the Contract site and shall notify immediately in writing all of its Subcontractors, of all changes in the schedule of prevailing wages. Any increases in costs to the Contractor due to changes in the prevailing rate of wage during the terms of any contract shall be at the expense of the Contractor and not at the expense of the Owner. The change order shall be computed using the prevailing wage rates applicable at the time the change order work is scheduled to be performed. The Contractor shall be solely responsible to maintain accurate records as required by the prevailing wage statute and shall be solely liable for paying the difference between prevailing wages and any wages actually received by laborers, workmen and/or mechanics engaged in the Work

11. <u>Supervision</u>

The Contractor shall maintain a highly qualified technician on the job site at all times. The Contractor shall enforce strict discipline and good order among his employees and the Subcontractors at all times work is in progress. The

Contractor shall not employ any unfit person or anyone not skilled in the work assigned to him.

12. Equipment and Tools

Furnish and maintain all equipment tools and apparatus, scaffolding, and all temporary work and materials necessary to perform the work.

13. Expediting

Place orders for materials and equipment immediately upon receipt of Contract or Notice to Proceed and follow up vigorously to insure adequate and timely supply to the work. Perform all tracings and expediting actions and arrange to get workmen in the job at the proper time to avoid delays.

14. Sanitary

The Contractor shall provide suitable, temporary toilet facilities at a specified location, for workmen on the project, complying in every respect with Local and County requirements. Unit shall be chemically treated, serviced at regular intervals, and maintained in a sanitary condition at all times.

15. Existing Utilities

The Contractor shall be responsible for locating and protecting all existing utilities, public and private, for the duration of the job. Prior to the commencement of any work, the Contractor shall notify all public and private utilities for the purpose of verifying, marking, and recording the locations of all underground or overhead utilities, temporary or permanent. Any repair/replacement costs or associated damage will be the responsibility of the Contractor.

16. Testing and Observations

The Contractor shall give the Owner, Village Inspector, and Manufacturer's Representative proper notice of readiness of Work for all required observations, tests, or reviews.

If Laws or Regulations of any public body having jurisdiction requires any Work (or part thereof) to specifically observe or tested, Contractor shall assume full responsibility therefor, pay all costs in connection therewith and furnish Engineer with the required certificates of inspection, testing, or approval. Contractor shall be responsible for and pay all costs in connection with any inspection or testing required in connection with Owner's or Manufacturer's agreed to Supplier of materials or equipment proposed to be incorporated into the Work, or of

materials or equipment submitted for approval prior to the Contractor's purchase thereof for incorporation in the Work.

The cost of all observations, tests, and approvals in addition to the above which are required by the Contract Documents shall be paid by the Owner (unless otherwise specified).

All observations, tests, or reviews other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations agreed to by Owner and Contractor (or Manufacturer if so specified).

Should testing reveal deficiencies due to Contractor error, subsequent testing costs shall be paid by Contractor.

If any work (including the work of others) that is to be observed or tested is covered without the written concurrence of the Owner, it must, if requested by the Landscape Architect, be uncovered of observation. Such uncovering shall be at the expense of the Contractor unless Contractor has given Owner or Village Inspector timely notice of Contractor's intention to cover such work and the Landscape Architect has not acted with reasonable promptness in response to such notice. Neither observations by Owner nor observations, tests, nor reviews by others shall relieve the Contractor from his obligations to perform the work in accordance with the Contract Documents.

17. Acceptance Preceding Work (if applicable)

Before starting any operation, the Contractor and Subcontractors shall examine work performed by others to which his work adjoins or is applied and report any condition that will prevent satisfactory accomplishment of his Contract. Failure to notify the Owner in writing of deficiencies or faults in preceding work will constitute acceptance thereof and waiver of any claims and its unsuitability.

18. Cutting and Patching

When necessary to cut or alter completed work to accommodate another trade, the Contractor or Subcontractor for work in places, shall do all cutting for and repair of portions of the work so disturbed. Where cutting is necessitated by fault or negligence of another Contractor, all costs of cutting and repairing shall be borne by the party at fault.

19. Damage to Current

Each Contractor shall adequately protect all preceding work from damage caused by him or his works. All breakage or damage will be repaired by trade

concerned at the cost of the party causing damage. Each Contractor, however, shall be responsible for adequate protection of his own work against normal construction risks.

20. Housekeeping

Keep site of operations free from accumulations of rubbish and waste materials at all times. See that Subcontractors remove and dispose of their rubbish. Arrangements for removal and disposition of rubbish will be made by Contractors concerned at no cost to the Owner.

Should any Contractor or Subcontractor allow rubbish or waste material to accumulate on any portion of the site or in any portion of the building to such extent that the accumulation constitutes a hazard or obstructs the prosecution of the work in any way. The Owner may, if Contractor or Subcontractor at fault fails to remove such rubbish or waste materials within three (3) days after written notice to clear up the accumulation, engage prior labor or services of another Contractor to make necessary removal and disposition and to charge cost against monies due to Contractor or Subcontractor at fault.

21. Protection

A. Property: Each Contractor and Subcontractor shall take such precaution as are necessary adequately to protect from damage or deterioration and to safeguard from theft or pilferage, all materials, tools and equipment pertaining to his work which is on the site, whether stored or incorporated in the structure.

B. Safety: Provide all barricades or other temporary protection as may be required by local authorities having lawful jurisdiction, or be considered of general safety, around all openings in floors and walls of the structure, and around all open pits or trenches in its vicinity.

C. Weather: Each Contractor and Subcontractor shall at all times provide protection against rain, snow, wind storms, frost or heat so as to maintain all work, materials, apparatus, and fixtures, free from injury or damage.

At the end of each day's work, all new work subject to damage by the elements and all points where water or frost may enter any part of the structure or work shall be covered.

D. Water: General Contractor shall at all times protect excavations, trenches, and building from damage from rain water, snow, spring water, ground water backing up of drains or sewers and all other water. He shall provide all pumps and equipment enclosures required for such protection.

He shall also construct and maintain any temporary drainage necessary to direct or lead water away from the work and shall do all pumping necessary to keep excavation and lowest floor free of water at all times.

E. Damage: All work damaged by failure to provide protection shall be removed and replaced with new work at the expense of the Contractor at fault.

22. Guarantee

The Contractor and/or manufacturer shall provide a minimum of one (1) year warranty for all materials and workmanship associated with the project or work performed under the Contract.

23. Insurance

- **Worker's Compensation**
  - State: Statutory
  - Applicable Federal (e.g., Longshoremen's): Statutory
  - Employer's Liability
    - $1,000,000.00 Per Occurrence
    - $500,000.00 Disease, Policy Limit
    - $500,000.00 Disease, Each Employee
- If written under **Commercial General Liability Policy** Form
  - $2,000,000.00 General Aggregate
  - $1,000,000.00 Products Completed Operations Aggregate
  - $1,000,000.00 Personal and Advertising Injury
  - $1,000,000.00 Each Occurrence
  - $ 50,000.00 Fire Damage (any one fire)
  - $ 50,000.00 Medical Expense (any one person)
- **Business Automobile Liability** (including owned, non-owned and hired vehicles):
  - Bodily Injury
    - $1,000,000.00 Per Person
    - $1,000,000.00 Per Accident
  - Property Damage
    - $1,000,000.00 Per Occurrence
- **Umbrella Excess Liability**
  - $2,000,000.00 over Primary Insurance
  - $2,000,000.00 Retention for Self-Insured Hazards Each Occurrence

A. General: The Contractor shall not commence work under the Contract until he has obtained all insurance required, and it has been approved by the Owner, nor shall Contractor allow any Subcontractor to commence work on any portion of the work until all insurance required of the Subcontractor and Sub-subcontractor has been similarly approved by the Owner.

All such insurance shall be purchased only from companies licensed and duly authorized by the Department of Insurance of the State of Illinois to do business in Illinois and to write the types of insurance policies as herein specified. Insurance companies must have a minimum policy holder's rating of A+ and a financial rating of AAAAA as stated in the latest edition of Best's Insurance Guide.

The insurance coverages must be maintained by the Contractor and the Subcontractor until all work is completed by the Contractor and accepted by the Owner. If the policy is written on claims made basis, then the Contractor shall purchase such additional insurance as may be necessary to provide specified coverage to the District for a period of not less than five (5) years from the completion of the work.

B. Automobile Liability: Contractor shall obtain at his expense and keep in force at all times during the performance of the work, Comprehensive Automobile Liability Insurance providing for bodily injury, personal injury and property damage, limits of an amount not less than $1,000,000 per occurrence and $2,000,000 per annual aggregate.

C. General Liability Insurance: Contractor shall obtain at his expense and keep in force at all times during the performance of the work, Comprehensive General Liability Insurance providing for bodily injury, personal injury and property damage, limits of not less than $1,000,000 per occurrence and $2,000,000 annual aggregate.

D. Worker's Compensation and Employer's Liability Insurance: Contractor shall obtain at his expense and keep in force at all times during the performance of work, worker's compensation and related insurance coverage at amounts required by statute and employer's liability with limits of not less than $1,000,000 per occurrence.

E. Certificates of Insurance: Within five (5) calendar days after receipt of the "Written Notice to Proceed", the Contractor shall file with the Owner, a Certificate of Insurance and Policy Endorsement showing complete coverage of all insurance required by this Section signed by the insurance companies or their authorized agents, certifying to the name and address of the party insured, the description of the work covered by such insurance, the insurance policy numbers, the limits of liability of the policies and the dates of their expirations, with a further certification from said insurance companies that their policies will not be modified, amended, changed, cancelled or terminated without thirty (30) business days prior written notice to the Owner. If any form of umbrella or excess coverage policy is utilized by the Contractor, the Owner reserves the right to require a copy of the entire policy.

F. All policies of insurance purchased or maintained in fulfillment of this paragraph 24 shall name the Owner and Architect/Engineer as additional insureds thereunder.

G. Failure of Owner to demand any certificate, endorsement or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance. The Contractor agrees that the obligation to provide the insurance required by these documents are solely its responsibility and that this is a requirement which cannot be waived by any conduct, action, inaction or omission by the Owner.

H. Nothing contained in the insurance requirements of the Contract Documents is to be construed as limiting the liability of the Contractor, the liability of any Subcontractor or any tier or either of their respective insurance carriers. The Owner, does not in any way, represent that the coverages or limits of insurance specified is sufficient or adequate to protect the Owner, Contractor, Architect/Engineer, or any Subcontractor's interests or liabilities but are merely at minimums. The obligation of the Contractor, the Architect/Engineer, and any Subcontractor of any tier to purchase insurance, shall not, in any way, limit their obligations to the Owner in the event the Owner should suffer an injury or loss in excess of the amount recoverable through insurance, or any loss or portion of the loss which is not covered by either the Contractors or any Subcontractor insurance.

I. On the Certificate of Insurance, delete in the cancellation provision the following words, "Endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives."

J. All the insurance required of the Contractor shall state that the coverage afforded to the additional insureds shall be primary insurance of the additional insureds with respect to claims arising out of operations performed by or on their behalf. If the additional insureds have other insurance or self-insured coverage which is applicable to the loss, it shall be on an excess or contingent basis.

K. All insurance required of the Contractor shall provide that any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Owner or Architect/Engineer or any of their officers, directors, commissioners, officials, employees, consultants, volunteers, or agents. l. All insurance required of the Contractor shall provide that the insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

L. In the event the Contractor fails to furnish and maintain the insurance required by this contract, the Owner may purchase such insurance on behalf of the Contractor, and the Contractor shall pay the cost thereof to the Owner upon demand or shall have such cost deducted from any payments due the Contractor. The Contractor agrees to furnish to the Owner the information needed to obtain such insurance.

M. In order to protect the Owner and Architect/Engineer the Contractor shall require that all its Subcontractors purchase insurance protecting the Owner and Architect/Engineer to the same extent they are protected by the insurance required herein from the Contractor.

N. Owner's Liability Insurance

1. The Contractor shall purchase and maintain insurance covering the Owner's liability for claims which may arise from operations under the Contract and that will protect the Owner and the Architect/Engineer and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (2) is cause in whole or in part by any negligent act of omission of the Contractor, and Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party to whom insurance is afforded pursuant to this paragraph. The minimum limits of liability purchased for such coverage shall be equal to the aggregate of the limits required for the Contractor's Liability Insurance under 24 above.
2. In any and all claims against the Owner or the Landscape Architect or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.
3. The insurance obligations of the Contractor under this paragraph shall not extend to the liability of the Landscape Architect, his agents or employees arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications or (2) the giving of or failure to give directions or instruction by the Landscape Architect, his agents or employees provided that such giving or failure to give is the primary cause of the injury damage.
4. The Contractor shall provide the Owner with the Original policy and shall furnish the Architect/Engineer a memorandum copy of said policy. The

named insured in the Protective Liability Policy shall be: Hoffman Estates Park District

24. Indemnification

To the fullest extent permitted by law, the Contractor shall waive any right of contribution against the Owner and shall indemnify and hold harmless the Owner and the Landscape Architect and their officers, officials, employees, volunteers and agents from and against all claims, damages losses and expenses, including, but not limited to, legal fees (attorney's and paralegal's fees, expert fees and court costs), arising out of or resulting from the performance of the Contractor's work provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of property, other than the work itself, including the loss of use resulting therefrom, or is attributable to misuse or improper use of trademark or copyright protected material or otherwise protected intellectual property, to the extent it is caused in whole or in part by any wrongful or negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which the Owner would otherwise have. The Contractor shall similarly, protect, indemnify and hold and save harmless, the Owner, its officers, officials, employee, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including, but not limited to, legal fees, incurred by reason of Contractor's breach of any of its obligations under, or Contractor's default of any provisions of the Contract. The indemnification obligations under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under Workers' Compensation or Disability Benefit Acts or Employee Benefit Acts

25. Labor Law

The Contractor and each and every Subcontractor performing work at the site of the project to which this Contract relates shall comply with applicable and provisions of all pertinent Federal, State, and Local Labor Laws.

26. Final Cleaning

Just prior to delivery of the job to the Owner, the Contractor shall perform a final cleaning of the equipment and haul away from the job site all debris created by his work on the site and surrounding area.

27. Time Schedule/Major Repairs

Work under the Contract shall commence within five (5) calendar days after given "Written Notice to Proceed" by Owners (or date specified) and shall continue with due diligence until due completion.

Each Contractor or Subcontractor shall and does hereby agree that he will start and prosecute his work so as to cause no delay to the Contractor and that he will complete all work under his Contract coincidentally with completion of Contractor's work.

The Contractor shall submit an estimated time schedule setting up order of procedure and time allowed for each branch of work. Contractor shall make every effort to adhere to these schedules, but reasonable modifications will be permitted from time to time to compensate for delays due to strikes or conditions beyond Contractor's control, exclusive of weather.

28. Avoidance of Delays (Major Repairs)

Each Contractor and Subcontractor shall be furnished a copy of the "Time Schedule" referred to above, and each shall so prosecute his work that he not only maintains his progress in accordance with the said Time Schedule but also shall cause no delays to other Contractors, either in person or through a Subcontractor, fail to maintain progress according to the approved Time Schedule or cause delay to another Contractor or Subcontractor, he shall furnish such additional labor and/or services or work such overtime as may be necessary to bring his operation up to schedule with no additional cost to Owner. Failure to maintain schedule or to the above steps to regain the agreed time schedule shall constitute default within the terms of the Contract and grounds on which the Owner may have recourse to the Contractor's Surety for remedial action.

29. Unit Prices and Measurement (if applicable)

Upon completion of the work, a final measurement will be conducted by the Contractor and Owner. Unit prices included in the bid proposal will be applied to the units measured to determine the final/total price of the work.

30. Assignment

The Contractor or any Subcontractor shall not assign the Contract nor any monies due to become due to him hereunder, to any Person, Firm, or Corporation without previous written consent of the Owner.

31. Extras

No extra work shall be allowed or paid for unless a Change Order is made and accepted by the Owner in writing.

32. Examination of Site

Before submitting proposal, contractors shall examine site. Such an examination will be presumed and no allowance will be made for extra labor or materials due to Contractor's failure to do so. Any information furnished by the Owner shall not constitute a representation concerning site conditions and the Contractor shall bear, solely and exclusively, all costs due to concealed, unknown, unusual or otherwise unforeseen conditions at the site. Contractor is aware that all such risk concerning site conditions is borne by it, has considered such in making its bid, and therefore freely waives all of its rights under the Illinois Public Construction Contract Act of 1999 .

33. Safety

The Contractor is responsible for the safe passage of pedestrian traffic for the duration of the job. Any precautionary measures, necessary warning signs, barricades, etc., required to inform the general public of potential hazards or dangers and as necessary to assist the Contractor in the performance of the work, shall be at his expense and provided for in his quoted price. **Public safety is a foremost concern of the Owner, therefore failure by the Contractor to take a pro-active approach to safety is unacceptable**. **If necessary, the Owner will take whatever steps deemed appropriate, at the cost of the Contractor, to ensure the safety of the general public and our employees**.

34. Personnel

If any person employed on the work site be, in the opinion of the Owner, intemperate, disorderly, incompetent, willfully negligent or dishonest in the performance of his duties, he shall be directed to cease work and vacate the job site immediately.

35. Liens

No payment shall become due until the Contractor, if required, shall deliver to Owner a complete release of all liens arising out of this Contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information, the releases and receipts include all the labor and material for which a lien could be filed. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

36. Default

In case of default by the Contractor, the Owner may procure the articles or services from other sources and hold the Contractor responsible for any excess cost occasioned thereby.

37. Cancellation of Contract

If the Contractor or any of his Sub-contractors shall, in the judgment of the Hoffman Estates Park District, be unable to carry on the work satisfactorily, or if the Contractor or any of his Sub-contractors shall violate any of the provisions of this contract, or in case of bankruptcy of the Contractor, or failure of the Contractor to pay for supplies or workmen, or a work-stoppage, or a failure by the Contractor to provide sufficient workmen or sufficient material for the job, the Owner may serve written notice upon the Contractor and his Surety of his intention to terminate the Contract, and, if within seven (7) days after the service of such notice, the Contractor or the Sub-contractor or the Surety have not proceeded to carry on the work in accordance with this Contract and to the satisfaction of the Owner, this Contract shall cease and terminate and the Owner shall have the right to take over the work and prosecute the same to completion by Contract for the account and at the expense of the Contractor and the Surety; and the Contractor and Surety shall be liable to the Owner for any excess costs occasioned by the Owner thereby, and in such event the Owner may take possession of and utilize in completing the work such materials, appliances, and plants as may be on the site of the work and necessary therefore; provided, however, that in the event the Owner determines that the failure of the Contractor, Sub-contractor or Surety to carry on the work in accordance with this Contract has resulted in an emergency which will require that the Owner take over the work immediately, to avoid loss or waste of a substantial part of the work already performed, the Owner may immediately take over the work and prosecute the same at the expense of the Contractor and Surety to the extent necessary to avoid damage, and may prosecute the same at the expense of the Contractor and Surety to the extent necessary to avoid damage, and may prosecute the same to completion at the expense of the Contractor and the Surety unless within seven (7) days after the services of the above described notice, the Contractor, Sub-contractor or Surety has proceeded to carry on the work in accordance with this Contract and to the satisfaction of the Hoffman Estates Park District.

38. Lien Waivers (if applicable)

Neither by partial nor final payment will the Owner be deemed to have waived any remedy for defective work or negligence on the part of the Contractor or any other portion of the Contract which, by its nature, survives after time of payment.

Supporting partial Waivers of Lien for each Subcontractor, supplier and prime contractor must accompany each request for progress payment.

Waivers must spell out exact description of work performed for which Waiver is issued and state whether dollar amount is full amount received or amount of work less retainage, held by prime contractor.

For final payment it is necessary to submit final waivers in the full amount of the Contracts for all Subcontractors, suppliers and prime contractors.

Waivers must be accompanied by a sworn statement listing Subcontractors and suppliers, the amount of their Contracts and the amount requested.

39. Line and Grade Stakes (if applicable)

Stakes for lines and grades shall be provided once by the Owner. Costs for replacement of damaged stakes shall be paid by the Contractor. Prior to commencing work and before pouring or finally adjusting any structure or closing any excavation, the Contractor shall verify the correctness of any grades so as to conform to the Contract Documents.

40. Construction Observation

A Consultant may be called upon to observe the work on behalf of the Owner and will provide general assistance during construction insofar as proper interpretation of the Contract Documents is affected. The consultant shall not be responsible for the acts or omissions of the Contractor's superintendent or other employees.

All materials used and all completed work by the Contractor shall be subject to the observation of the Owner/Owner's representative. The Contractor shall furnish such samples of materials for examination and tests as may be requested by the Owner and shall furnish any information required concerning the nature or source of any materials or equipment, which he proposes to use. Any material, equipment, or work which does not satisfactorily meet the Contract Documents may be rejected by the Owner by giving written notice to the Contractor. All rejected materials, equipment, or work shall be promptly removed and replaced at the Contractor's expense.

41. Field Representatives

Field representatives may be appointed by the Owner, Landscape Architect to see that the work is performed in accordance with the Contract Documents. Field representatives shall have the authority to condemn and/or reject defective work materials. Only the Owner shall have authority to suspend work. Field representatives shall have no authority to permit deviation from the Contract

Documents and Owner; the Contractor shall be liable for any deviations made without a written order from the Landscape Architect

Bid Instructions Earthwork

Bids are due and will be opened and read aloud on **March 3, 2021 at 11:00 AM** at 1685 West Higgins Road in Hoffman Estates, Illinois.

A Certified Check, Cashier's Check or Bid Bond payable to the Hoffman Estates 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.

The earthwork contractor will be responsible for all site demolition shown on the Site Demolition Plans however will not be responsible for the butt joint (this will be included by the asphalt contractor), the removal of the concrete sidewalk within the middle of the playground (this will be removed by the Park District), or a portion of the existing path. See the Site Demolition Plans for additional details.

This bid includes all earthwork necessary for the installation of all proposed improvements. The earthwork contractor shall prepare the site subgrade for the installation of all of the proposed subbase material. The subgrade shall be proof rolled following completion of the earthwork operations. All stone subbase (CA-6, CA-7, etc.) will be installed by the concrete, asphalt, and utility contractor. The earthwork contractor shall coordinate the installation of the proposed utilities within the infiltration basin / detention pond with the site utility contractor.

It will be the earthwork contractor's responsibility to haul all excess material (soil and debris created by earthwork operations) from the site and to dispose of it legally. The earthwork contractor will be responsible for environmental testing necessary to dispose of the excess material.

The earthwork contractor shall also include all erosion control and storm water pollution prevention measures included within the construction plans and the storm water pollution prevention plan included within this project manual.

The earthwork contractor will be responsible for providing a minimum of 6" of topsoil in all landscape areas. Final landscape installation/restoration and the installation of seeding and blanketing will be installed by the owner. However, the earthwork contractor will be responsible for the installation of temporary erosion control measures as outlined within the construction plans and the storm water pollution prevention plan.

Note: The Hoffman Estates Park District will be construction managing the overall project.

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 demolition and earthwork as described within this project manual and the proposed construction plans.

Beginning and Completion Dates

Begin Construction:	May 3, 2021
End Construction:	July 1, 2021 (For Hardscape Areas)
100 % Completion:	July 30, 2021

Project Contact
Mr. Dustin Hugen
(847) 285-5465
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 Esates 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

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.

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.

2021 Hoffman Estates Park District
Birch Park

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

Birch Park
Hoffman Estates Park District

#	Item/Description	Cost
1.Base Bid:	All earthwork and demolition at Birch Park depicted on the construction plans dated 1-22-21 entitled Birch Park 1045 Ash Road, Hoffman Estates, IL 60619 as well as all documents included within this project manual.	

Total Bid Cost $_____

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 Contractors 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 2100 - SITE PREPARATION

1.0 GENERAL

1.1 Description

This work shall consists of the complete removal of all items called for in the plans and specifications or as otherwise implied in a safe and orderly manner creating as little disturbance as possible.

All areas indicated for construction of any kind shall be cleared of any debris, undergrowth, weeds, stumps, roots, and marked trees which might interfere with the progress of that work. Unmarked trees or any plant material indicated to be saved by the Owner or owner's representative shall be given special protection as specified.

2.0 PRODUCTS (not applicable)

3.0 EXECUTION

3.1 Safety of Operations

During removal operations, proper signs and security fence shall be installed by the Contractor prior to commencing work. Barricades shall be used to warn and protect the public against hazards. If a street must be temporarily closed to traffic, it shall be the Contractor's obligation to make arrangements for permission from the Village Traffic Engineer. After such approval is obtained, the Contractor shall notify both the Village Police and Fire Departments of actual times and dates of closure.

3.2 Protection of Items to Remain

Extreme care shall be utilized when removing any item adjacent to structures, utilities, paving, vegetation or any item not indicated for removal or relocation. These items shall be properly protected as required to keep them from damage or other disturbance of any kind during the course of work. Existing utilities to remain shall be protected and maintained to prevent leakage, settlement or other damage. Damage to any of the above shall be repaired or replaced to former condition as required by the utility company or Owner at the Contractor's expense. Repair of damaged utility shall be completed within 48 hours of damage occurring.

During the excavation for any new walks, pavements and the play area, it can be assumed that some root structure from the nearby existing trees will be encountered. Before cutting major roots exceeding 3 inches in diameter, notify the Owner's representative for approval. Care must be exercised during the excavation to minimize damage to existing trees.

The contractor shall protect all existing trees to remain by clearly identifying each tree. No traffic, excavation or filling shall take place within the drip line of each tree unless indicated on plan.

3.3 Plant Damage Compensation

The contractor will be penalized $100 per diameter inch for any tree damaged during construction. Diameter shall be measured twelve inches (12") above grade.

3.4 Removal Responsibility

All debris, trees, stumps, sod or soil to be cleared and removed from the project area shall be legally disposed of off site at the arrangement and expense of the Contractor. No materials will be stockpiled on site for future disposal; materials used for fill or topsoil may be stored on site. No excavation areas will be left in unsafe or unsightly conditions at days end.

The Contractor will be responsible for all transportation and disposal fees associated with this work. Burning of any materials on site is prohibited.

As a result of Public Act 90-761, which amends the Environmental Protection Act concerning general construction or demolition debris, new restrictions have been placed on material that is removed within the limits of a construction contract.

The revisions to the Act place specific requirements on construction or demolition debris, clean or general, or uncontaminated soil generated during construction, remodeling, repair, and demolition of utilities, structures and roads that is not commingled with any waste. When this material is removed from a job site and disposed of, certain criteria must be met as follows:

1. Either the Local Agency or the Contractor must ensure that load tickets and manifests that document the transfer, disposal, or other disposition of all debris leaving the construction site are completed.

2. The load ticket and manifest shall:

a. Identify the hauler, generator, and place of generation of the debris or soil.

b. Identify the weight or volume of the debris or soil.

c. Identify the location, owner, and operator of the facility where the debris or soil was transferred, disposed, recycled, or treated.

3. The generator, transporter or recycler must maintain this documentation for 3 years.

A sample form has been attached that may be used to monitor all construction and demolition debris leaving the job site.

In accordance with Section 107.01 of the “Standard Specifications for Road and Bridge Construction”, a Contractor is required to observe and comply with all Federal and State laws, local laws, ordinances, and regulations when performing contract construction.

If a local agency desires to assign the documentation responsibility to the Contractor, the attached Special Provision should be inserted into the contract plans.

END OF SECTION 02100

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.

END OF SECTION

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 312213 - ROUGH GRADING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division I Specifications Sections apply to this entire section.

B. The work of this section shall consist of layout, excavation, backfilling, disposal of excess materials, compaction and grading.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 321216.16 – Athletic Asphalt Paving

1.3 QUALITY ASSURANCE

A. Installers' Qualifications: Firm with at least 3 years of successful installation experience on projects with work similar to that required for this project.

B. Submittals

1. Record Drawings: At project close-out, submit record drawings of installed work. Especially note located utilities, areas of over-excavation, removal of unsuitable soils, and backfill.

1.4 PROJECT CONDITIONS

A. Verify all existing utility locations prior to beginning earthwork operations.

B. Protect existing features designated to remain as part of the final landscape work.

C. Promptly repair damage to adjacent facilities caused by earthwork operations. Cost of repairs at Contractor's expense.

D. Promptly notify Architect and Construction Manager of unexpected sub-surface conditions.

1.5 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork and site grading in compliance with applicable requirements of governing authorities having jurisdiction.

1.6 PROTECTION

A. Protect trees, shrubs, lawns, and other features remaining.

B. Protect bench marks and existing structures.

C. Protect above or below grade utilities which are to remain.

D. Protect existing pavement and curbs

E. Repair damage.

1.7 TESTS

A. The Owner will employ a qualified testing laboratory to furnish all of the soil engineering and testing services.

1.8 REFERENCES

A. ANSI/ASTM D1557 - Moisture-Density Relations of Soils and Soil-Aggregate Mixture.

PART 2 - PRODUCTS

2.1 FILL MATERIALS

A. Engineered fill shall consist of a granular material meeting IDOT specifications.

B. When necessary, compact subsoil surfaces to density requirements for backfill material.

C. Moisten fill material to optimum moisture content prior to compaction.

D. Do not place backfill of fill material on surfaces that are muddy or frozen.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine the areas and conditions under which earthwork for site is to be performed and notify the Architect and Construction Manager in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 PREPARATION

A. Identify required lines, levels, contours, and datum. Employ registered Professional Surveyor for layout. Review layout in field with Construction Manager.

B. Identify known below grade utilities. Stake and flag locations. Notify “Julie” for area where Project is located before beginning earth moving operations.

C. Identify and flag above grade utilities.

D. Maintain and protect existing utilities which pass through work area.

E. Upon discovery of unknown utility or concealed conditions, discontinue affected work; notify Construction Manager.

F. When necessary, compact subsoil surfaces to density requirements for backfill material.

3.3 SUBGRAGE PREPARATION

A. After stripping the existing unsuitable material and prior to placing specified fill, materials, the exposed subgrade soils should be thoroughly compacted to 95% modified proctor density ASTM D1557. The subgrade shall then be proof-rolled using a fully loaded dump truck or other suitable piece of pneumatic-tired construction equipment. The purpose of the proof roll is to locate areas of unsuitably loose or soft subgrade and to uniformly compact the surface. Areas of unsuitable subgrade revealed during proof rolling should be mechanically stabilized (compacted) in place. If it is not possible to compact the unsuitable soil, it may be necessary to remove the unsuitable soil and replace with engineered fill.

3.4 ROUGH GRADE ELEVATION

A. Finish grades are shown on plans by solid contour lines and/or spot elevations. The rough grade shall be held down to allow for the finish as indicated on the plans.

3.5 EXCAVATION

A. General: Excavation consists of removal and disposal of materials encountered when establishing required grade elevations.

B. Unauthorized excavation consists of removal of material beyond indicated elevations or side dimensions without the specific direction of Construction Manager. Replace unauthorized excavation by backfilling and compacting as specified for authorized excavations of same classification, unless otherwise directed by Construction Manager. Cost of unauthorized excavation and remedial back-fill shall be borne by Contractor.

C. Additional Excavation: When excavation has reached required subgrade elevations, notify Construction Manager to allow for inspection of conditions.

1. If unsuitable materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Soils Engineer and Construction Manager.

2. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.

D. Dewatering: Prevent surface water and subsurface or ground water from flowing into excavations, and flooding project site and surrounding areas.

1. Do not allow water to accumulate in excavation. Remove water from excavations to prevent softening and soil changes detrimental to subgrades. Provide and maintain pumps, well points, sumps, suction and discharge lines and other de-watering system components necessary to convey water away from site.

2. Establish and maintain temporary drainage ditches or diversions to convey water removed from excavations and rainwater to collecting or run-off areas. Do not use excavations for permanent piping as temporary drainage ditches.

3. Provide, inspect periodically and maintain proper erosion and silt control procedures.

3.6 BACKFILLING

A. Backfill areas to contour and elevations. Use unfrozen materials.

B. Fill lowest elevation first and the fill shall be spread in approximately horizontal layers.

C. Backfill systematically, as early as possible, to allow maximum time for any natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces. Remove unsuitable materials before backfilling.

D. Place and compact fill material in continuous layers not exceeding 8 inches loose depth.

E. Employ a placement method so not to disturb or damage drainage utilities in trenches.

F. The surface of the fill shall be finished to such contour that it will not impound water. If at the end of the day's work it appears that there may be rain prior to the next working day, the surface shall be finished smooth.

G. Maintain optimum moisture content of backfill materials to achieve 95% modified proctor density ASTM D1557.

H. Dispose of excess material off-site.

3.7 TOLERANCES

A. Top Surface of Subgrade: Plus or minus 0.05 foot.

END OF SECTION 312213

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 315000 - EXCAVATION SUPPORT AND PROTECTION

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 temporary excavation support and protection systems.

B. Related Sections:

1. Division 01 Section "Construction Progress Documentation" for recording preexisting conditions and excavation support and protection system progress.
2. Division 01 Section "Temporary Facilities and Controls" for temporary utilities and support facilities.
3. Division 31 Section "Dewatering" for dewatering system for excavations.

1.3 PERFORMANCE REQUIREMENTS

A. Furnish, install, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.

1. Prevent surface water from entering excavations by grading, dikes, or other means.
2. Install excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to excavation.
3. Monitor vibrations, settlements, and movements.

1.4 SUBMITTALS

A. Shop Drawings: For excavation support and protection system.

B. Delegated-Design Submittal: For excavation support and protection system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Coordinate first paragraph below with qualification requirements in Division 01 Section "Quality Requirements."Qualification Data: For qualified and professional engineer.

D. Other Informational Submittals:

1. Photographs or Videotape: Show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by the absence of, the installation of, or the performance of excavation support and protection systems. Submit before Work begins.
2. Record Drawings: Identifying and locating capped utilities and other subsurface structural, electrical, or mechanical conditions.

    a. Note locations and capping depth of wells and well points.

1.5 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to excavation support and protection system including, but not limited to, the following:

    a. Geotechnical report.
    b. Existing utilities and subsurface conditions.
    c. Proposed excavations.
    d. Proposed equipment.
    e. Monitoring of excavation support and protection system.
    f. Working area location and stability.
    g. Coordination with waterproofing.
    h. Abandonment or removal of excavation support and protection system.

1.6 PROJECT CONDITION

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 the data.

1. Make additional test borings and conduct other exploratory operations necessary for excavation support and protection.
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; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

1. During installation of excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Architect if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide materials that are either new or in serviceable condition.

B. Structural Steel: ASTM A 36/A 36M, ASTM A 690/A 690M, or ASTM A 992/A 992M.

C. Steel Sheet Piling: ASTM A 328/A 328M, ASTM A 572/A 572M, or ASTM A 690/A 690M; with continuous interlocks.

1. Corners: Roll-formed corner shape with continuous interlock.

D. Wood Lagging: Lumber, mixed hardwood, nominal rough thickness of size and strength required for application.

E. Cast-in-Place Concrete: ACI 301, of compressive strength required for application.

F. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

G. Tiebacks: Steel bars, ASTM A 722/A 722M.

H. Tiebacks: Steel strand, ASTM A 416/A 416M.

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 that could develop during excavation support and protection system operations.

1. Shore, support, and protect utilities encountered.

B. Install excavation support and protection systems 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. Locate excavation support and protection systems clear of permanent construction so that forming and finishing of concrete surfaces are not impeded.

D. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.

E. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.

3.2 SOLDIER PILES AND LAGGING

A. Install steel soldier piles before starting excavation. Extend soldier piles below excavation grade level to depths adequate to prevent lateral movement. Space soldier piles at regular intervals not to exceed allowable flexural strength of wood lagging. Accurately align exposed faces of flanges to vary not more than 2 inches (50 mm) from a horizontal line and not more than 1:120 out of vertical alignment.

B. Install wood lagging within flanges of soldier piles as excavation proceeds. Trim excavation as required to install lagging. Fill voids behind lagging with soil, and compact.

C. Install walls horizontally at locations indicated on Drawings and secure to soldier piles.

3.3 SHEET PILING

A. Before starting excavation, install one-piece sheet piling lengths and tightly interlock to form a continuous barrier. Accurately place the piling, using templates and guide frames unless otherwise recommended in writing by the sheet piling manufacturer. Limit vertical offset of adjacent sheet piling to 60 inches. Accurately align exposed faces of sheet piling to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment. Cut tops of sheet piling to uniform elevation at top of excavation.

3.4 TIEBACKS

A. Tiebacks: Drill, install, grout, and tension tiebacks. Test load-carrying capacity of each tieback and replace and retest deficient tiebacks.

1. Test loading shall be observed by a qualified professional engineer responsible for design of excavation support and protection system.

2. Maintain tiebacks in place until permanent construction is able to withstand lateral soil and hydrostatic pressures.

3.5 BRACING

A. Bracing: Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.

1. Do not place bracing where it will be cast into or included in permanent concrete work unless otherwise approved by Architect.
2. Install internal bracing, if required, to prevent spreading or distortion of braced frames.
3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

3.6 REMOVAL AND REPAIRS

A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.

1. Remove excavation support and protection systems to a minimum depth of 48 inches below overlaying construction and abandon remainder.
2. Fill voids immediately with approved backfill compacted to density specified in Division 31 Section "Earth Moving."
3. Repair or replace, as approved by Architect, adjacent work damaged or displaced by removing excavation support and protection systems.

B. Leave excavation support and protection systems permanently in place.

END OF SECTION 315000

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

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November 16, 2002
File No. 25515

Mr. Todd Abrams
WT Group
2675 Pratum Avenue
Hoffman Estate, IL 60192

Re: Geotechnical Investigation
Birch Park Improvements
Hoffman Estates, Illinois

Dear Mr. Abrams:

The following is our report of findings for the geotechnical investigation completed at Birch Park in the Village of Hoffman Estates, Illinois.

The investigation was requested to determine current subsurface soil and water conditions at select boring locations. The findings of the field investigation and the results of laboratory testing are intended to assist in the planning, design and construction of proposed site improvements.

PROPOSED IMPROVEMENTS

We understand it is proposed to construct a picnic shelter supported on shallow depth foundations. Additional improvements are expected to include a detention basin, parking lot, basketball court, and walking path.

SCOPE OF THE INVESTIGATION

The field investigation included obtaining 6 borings at the locations requested and as indicated on the enclosed location sketch. The boring locations were established using field taping methods and accuracy. Surface elevations were estimated to the nearest 0.5 feet using data from the provided topographic survey.

We auger drilled the 6 borings to depths of 5.0 feet to 15.0 feet below existing surface elevations. Soil samples were obtained using a split barrel sampler advanced utilizing an automatic SPT hammer. Soil profiles were determined in the field and soil samples returned to our laboratory for additional testing including determination of moisture content. Cohesive soils obtained by split barrel sampling were tested further to determine dry unit weight and unconfined compressive strength.

The results of all field determinations and laboratory testing are included in summary with this report.

RESULTS OF THE INVESTIGATION

Enclosed are boring logs indicating the soil conditions encountered at each location. Site surface conditions include vegetation, topsoil and fill soil conditions. The topsoil is classified as dark brown to black silt/clay mixtures with traces of roots usually present.

Fill soil conditions were encountered at each boring except for boring B-4. Composition of the fill includes the presence of topsoil along with moderately to well-compacted sand/gravel/silt/clay, clay/silt, sand/grave and sand mixtures extending to depths of 1.0 feet to 5.0+ feet at these boring locations. The limits of fill placement were not determined within the scope of this investigation. Larger debris may also be present within the fill but was not encountered during the investigation. The fill soil conditions are found to overlie the apparent natural topsoil at boring B-5 extending to a depth of 4.0 feet.

Underlying natural soil conditions include the presence of cohesive soils. These are classified as very though to hard clay/silt mixtures with lesser portions of sand and gravel.

Non-cohesive soils were also encountered as indicated at borings B-1 and B-3. These include very loose to loose sand and sand/gravel mixtures. The non-cohesive granular soils are often in a very damp to saturated condition. Cobbles and boulders may be present within the site soils at any elevation, although none were encountered while drilling.

The following table summarizes depth ranges below existing grade, the magnitude of soil strength within these ranges and other information:

Boring	Surface Elevation (feet)	Depth Range Below Existing Surface (feet)	Soil Strength (lbs./sq.ft.)	Recorded Water Levels, W.D./A.D. (feet)
Picnic Shelter				
1	755.5	1.5 to 5.0	*1,000	9.0/8.0
		5.0 to 10.5	2,000	
		10.5 to 12.0	8,000	

* Not recommended for support of foundations.

It is expected that foundations can be supported on undisturbed natural soils located at any elevation within the depth ranges indicated in the above table, except as noted. Above the noted depth ranges the soils are not considered able to support foundations, even at reduced design bearing values, due to long-term settlement considerations.

SUBSURFACE WATER

The boring logs and the above table indicate the depth at which subsurface water was encountered in the bore holes at the time of the drilling operations and during the period of these readings. It is expected that fluctuations from the water levels recorded will occur over a

period of time due to variations in rainfall, temperature, subsurface soil conditions, soil permeability and other factors not evident at the time of the water level measurements.

The levels recorded at boring B-1 indicate a perched water condition. Perched water is primarily surface precipitation falling on this site or adjacent properties and which becomes trapped in pervious soil that is underlaid by relatively impervious soil. This water often flows laterally along a path of least resistance such as non-cohesive soil strata or other permeable medium. This water will also drain from the embankments of open excavations.

The detention pond is planned in the area of boring B-2. We would estimate the seasonal high groundwater at this location to be at EL. 741.5 feet where the gray clay was encountered.

FOUNDATIONS

Based on the results of this investigation it is our opinion that continuous and/or isolated footing foundations may be considered for support of the picnic shelter. These foundations can be supported on undisturbed natural soils located below all topsoil, debris, unsuitable fill soils, low strength soils and other unsuitable conditions which may be encountered. Soil strength values and the depths at which they are expected to be encountered at these boring locations are indicated in the above table. A net allowable bearing value of 2,000 lbs./sq.ft. is available for design. This value can be used to size foundations for support of structure dead and live loads.

Foundations for unprotected improvements should extend at least 48.0 inches below exposed surface elevations. We recommend providing adequate reinforcing steel in foundation walls and piers to minimize the effects of long-term differential settlement.

Weak soil conditions are expected to be discovered locally at design foundation elevations and may require extending the foundation to a deeper elevation. Alternately, removal of the weak soil followed by replacement with properly compacted coarse crushed granular fill (CA01) may be feasible. When removal is approved by the Soil Engineer, the removal of the weak soil should also extend beyond the face of footings and/or piers to a distance at least equal to the depth of fill that will be present beneath the footings and/or piers. A capping layer of finer crushed granular fill (CA06) can be utilized to establish a working surface.

DEWATERING

Excavations may require dewatering due to subsurface water seepage and/or surface precipitation. This water can likely be removed to depths of several feet by standard sump and pump operations. Soils exposed at foundation, slab or undercut elevations should not be permitted to become saturated. Loss of bearing strength and stability may occur, requiring additional soil excavation.

Filled soils, organic soils, non-cohesive soils and others can be unstable when saturated. These soils tend to cave or run when submerged or disturbed. The stability of exposed embankments is minimal to non-existent as confining soil pressures are removed. Proper drainage within excavations is necessary at all times, particularly when excavations extend below anticipated water levels and below saturated soils.

The contractor should be made responsible for designing and constructing stable temporary excavations. Also, the contractor should shore, slope, bench or restrain the sides of the excavations as required to maintain stability of both the excavation sides and bottom. In no case, should the slope, slope heights, or excavation depth exceed those in the local, state, and federal safety regulations.

SUBGRADE SOIL PREPARATION

Subgrade soil preparation should be accomplished where needed within the picnic shelter area prior to excavation for foundations. The procedure in all areas of subgrade supported improvements should include the removal of unsuitable surface conditions including vegetation, topsoil, unsuitable fill soils, significant debris, weak or unstable soils, and other deleterious conditions which may be encountered. Above grade areas should be cut to design subgrade elevations. Exposed subgrade soils should be leveled, compacted and proof-rolled in the presence of the Soil Engineer.

Proof-rolling may reveal areas of unstable soil conditions. Aeration of high moisture content soils can be effective to depths of up to 1.0 foot, depending upon the equipment utilized. Removal of unstable soils may be necessary if high moisture content conditions extend to depths greater than the effective depth of aeration. If the depth of undercut appears to be significant, it may be economical to limit the depth of undercut to that needed to establish adequate support of slabs and remediate weak soil conditions at foundation elevations at the time of foundation construction.

Soft or unstable soil conditions in pavement areas can often be bridged by use of an effective depth of crushed granular material. The placement of the crushed granular bridging material, possibly in conjunction with the use of an appropriate geotextile fabric, should only proceed after review of the proof-roll conditions by the Soil Engineer. Long-term settlement of pavement surfaces may occur locally as the bridged soils desiccate.

Structural fill can be placed on soils prepared to the satisfaction of the Soil Engineer. The fill should be placed in lifts not to exceed 8.0 inches when uncompacted. Each lift should exceed minimum compaction requirements prior to placement of the next lift. We recommend a minimum of 95% compaction based on the modified Proctor test, ASTM D-1557, be achieved within building areas. A minimum of 90% compaction should be achieved beneath exterior improvements such as pavements and sidewalks. Compaction requirements also apply to backfill placement around foundations and within trench excavations located below subgrade supported improvements.

FILL SOURCES

The onsite non-organic soils are generally suitable for reuse as fill. Offsite sources may also be used provided they are approved in advance by the Soil Engineer. Aeration may be necessary to reduce soil moisture content prior to compaction. Soil borrowed from near the surface where seasonal fluctuations in soil moisture content occur may require particular attention. The moisture content of fill soils should be within approximately 3.0% of optimum moisture content

as determined by the modified Proctor test for the soils to meet or exceed minimum compaction requirements.

SOIL INFILTRATION RATES

Grain-size analysis testing was performed on a selected soil sample near the proposed bottom of the detention basin at boring B-2 to determine a USDA soil classification and estimated infiltration rate. The grain size analysis determinations and estimated infiltration rate is shown in the below table:

Boring	Depth	USDA Soil Classification	Estimated Infiltration Rate
B-2	3.5' to 5.0'	Clay	0.07 inches per hour

Estimated design infiltration rates were taken from
Table 3-1 of City of Chicago Stormwater Ordinance Manual.

CONCLUSION

The information within this report is intended to provide initial information concerning subsurface soil and water conditions on the site. Variations in subsurface conditions are expected to be present between boring locations due to naturally changing and filled soil conditions.

Our understanding of the proposed improvements is based on limited information available to us at the writing of this report. The findings of the investigation and the recommendations presented are not considered applicable to significant changes in the scope of the improvements or applicable to alternate site uses. We recommend that proposed foundation, pavement and grading plans be reviewed by our office to determine if additional considerations are necessary to address anticipated subsurface conditions. Soil conditions encountered at foundation elevations are recommended to be tested to verify the presence of design soil strength prior to concrete placement.

If you have any questions concerning the findings or recommendations presented in this report, please let me know.

Very truly yours,

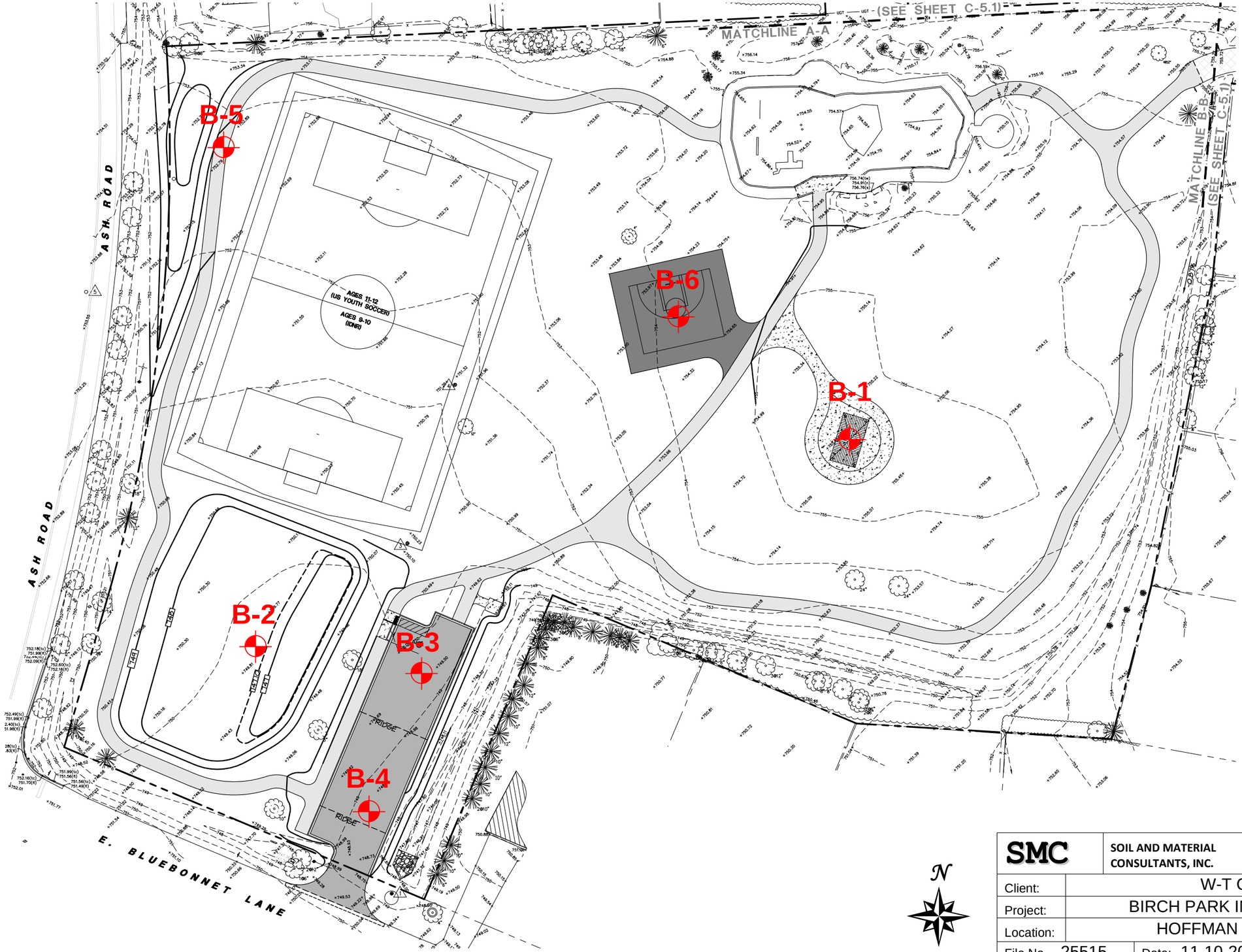
SOIL AND MATERIAL CONSULTANTS, INC.

Justin Seligson

Justin Seligson, E.I.T.
Project Engineer

Thomas P. Johnson, P.E.
President

JMS:TPJ
Enc.



SMC	SOIL AND MATERIAL CONSULTANTS, INC.	LOCATION SKETCH
Client:	W-T GROUP	
Project:	BIRCH PARK IMPROVEMENTS	
Location:	HOFFMAN ESTATES, IL	
File No. 25515	Date: 11-10-20	Scale: 1” ≈ 60’

SOIL AND MATERIAL CONSULTANTS, INC.

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SOIL BORING LOG 1

Logged By: CS **Page:** 1 of 1

Client: WT Group

File No. 25515 **Date Drilled:** 11/10/20

Reference: Birch Park Improvements
Hoffman Estates, IL

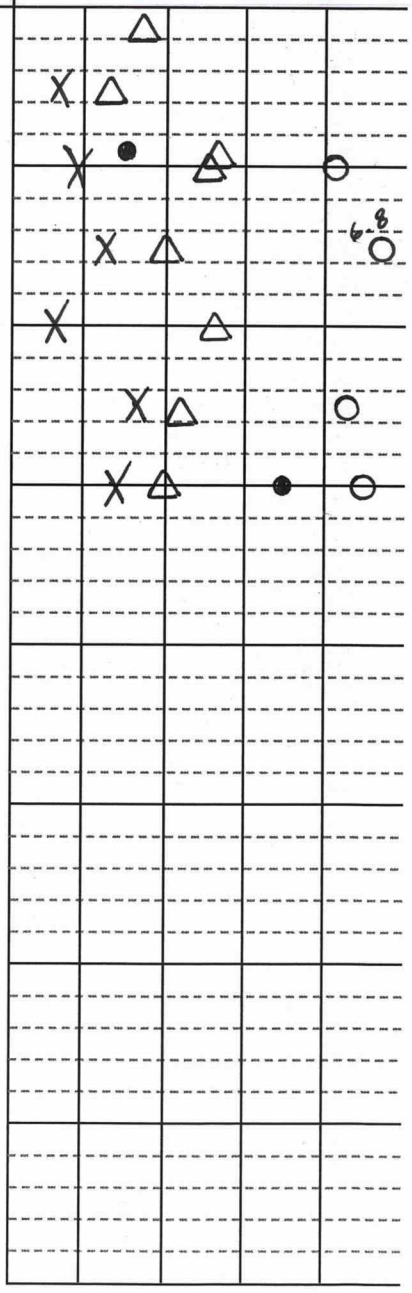
Comments:

Equipment: ☒CME 45B ☐CME 55 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation 755.5' Existing Surface	standard penetration ×	moisture content Δ	dry unit weight lbs./cu.ft. ɣ	unconfined compressive strengh ○
	(a) see below		18.4		
	Brown sand & gravel,some silt & clay, damp,loose - Fill	7	12.8		
	(b) see below		26.0		
5	Brown to brown-gray clay,some silt, trace sand & gravel,damp,hard	9	25.7	100.3	4.1
		13	19.7	108.8	6.8
10	(c) see below	6	25.6		
	Brown-gray to gray clay,some silt, trace sand & gravel,damp,hard	16	20.9	113.6	4.2
15		14	19.9	115.0	4.3
	End of Boring				
20	(a) Black silt,some clay,trace sand, gravel & roots,damp (topsoil) - Fill (b) Brown-gray-black clay & silt,trace sand & gravel,damp-very damp,tough Fill				
25	(c) Brown-gray fine sand,saturated, loose				
30					
35					
40					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
Δ moisture content, %
10 20 30 40



Water encountered at 9.0 feet during drilling operations (W.D.)
Water recorded at 8.0 feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

SOIL AND MATERIAL CONSULTANTS, INC.

8 W. COLLEGE DR. • SUITE C • ARLINGTON HEIGHTS, IL 60004

SOIL BORING LOG 2

Logged By: CS **Page:** 1 of 1

Client: WT Group

File No. 25515 **Date Drilled:** 11/10/20

Reference: Birch Park Improvements
Hoffman Estates, IL

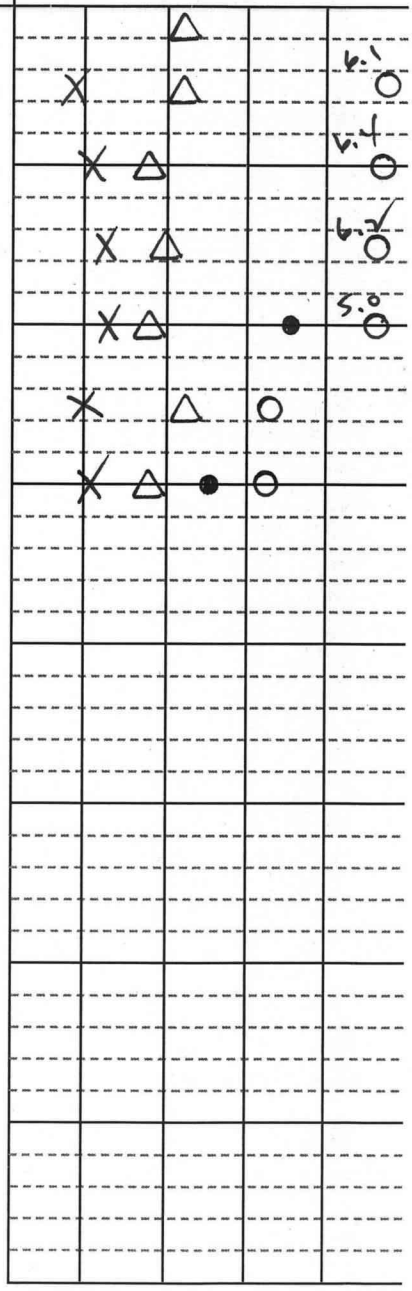
Comments:

Equipment: ☒CME 45B ☐CME 55 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation 750.0' Existing Surface	standard penetration ×	moisture content Δ	dry unit weight lbs./cu.ft. ϑ	unconfined compressive strengh ○
	(a) see below		21.4		
	Brown-gray to brown clay, some silt, trace sand & gravel, damp, hard	9	20.7	105.8	6.1
5		11	19.4	110.7	6.4
		13	19.5	110.5	6.2
10	Gray clay, some silt, trace sand & gravel, damp, hard	13	18.9	112.3	5.0
	Gray clay, some silt, trace sand & gravel, damp, very tough	10	22.3	104.7	3.3
15		11	19.1	110.5	3.2
	End of Boring				
	(a) Dark brown-black silt, some clay, trace sand, roots & gravel, damp, (topsoil) - Fill				
20					
25					
30					
35					
40					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
Δ moisture content, %
10 20 30 40



Water encountered at dry feet during drilling operations (W.D.)
Water recorded at dry feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

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SOIL BORING LOG 3

Logged By: CS **Page:** 1 of 1

Client: WT Group

File No. 25515 **Date Drilled:** 11/10/20

Reference: Birch Park Improvements
Hoffman Estates, IL

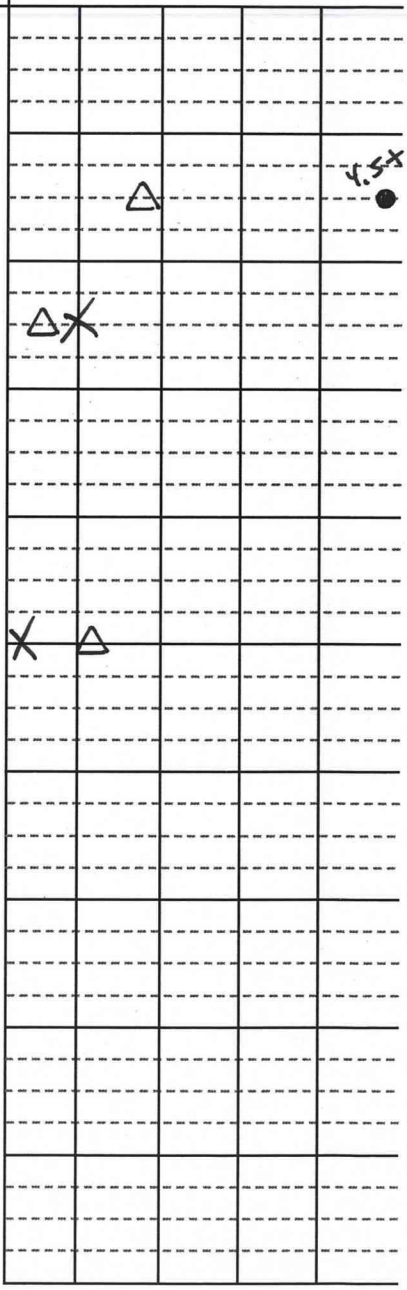
Comments:

Equipment: ☒CME 45B ☐CME 55 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation 749.5' Existing Surface	standard penetration ×	moisture content Δ	dry unit weight lbs./cu.ft. ɣ	unconfined compressive strength ○
	Topsoil- 2.0"				
1	Brown clay,some silt,trace sand & gravel damp,hard - Fill		19.2		
2	Brown fine-medium sand,some coarse sand & gravel,damp-saturated,medium dense - Fill	10	5.4		
3					
4	Brown fine-medium sand,some coarse sand & gravel,damp-saturated,very loose				
5		2	11.9		
	End of Boring				
6					
7					
8					
9					
10					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
Δ moisture content, %
10 20 30 40



Water encountered at dry feet during drilling operations (W.D.)
Water recorded at dry feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

SOIL AND MATERIAL CONSULTANTS, INC.

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SOIL BORING LOG 4

Logged By: CS **Page:** 1 of 1

Client: WT Group **File No.** 25515 **Date Drilled:** 11/10/20

Reference: Birch Park Improvements
Hoffman Estates, IL

Comments:

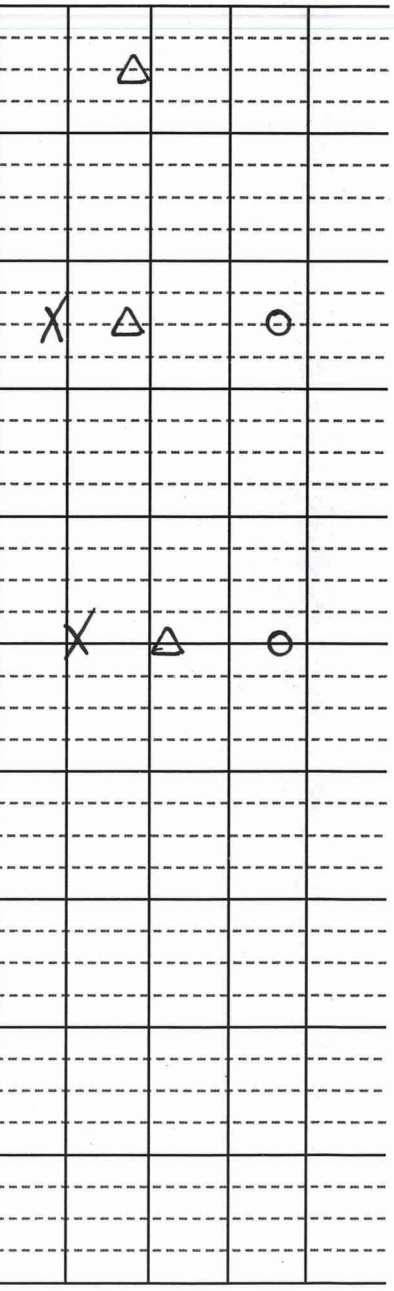
Equipment: ☒CME 45B ☐CME 55 ☐Hand Auger ☐Other

Elevation 749.0' **Existing Surface**

depth, ft.	CLASSIFICATION	standard penetration ×	moisture content △	dry unit weight lbs./cu.ft. ɣ	unconfined compressive strengh ○
	Black silt,some clay,trace sand & roots damp (topsoil)		18.6		
1	Brown clay,some silt,trace sand & gravel,damp,very tough				
2		8	19.1	110.0	3.7
3					
4					
5		11	21.9	106.1	3.7
	End of Boring				
6					
7					
8					
9					
10					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
△ moisture content, %
10 20 30 40



Water encountered at dry feet during drilling operations (W.D.)
Water recorded at dry feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

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SOIL BORING LOG 5

Logged By: CS **Page:** 1 of 1

Client: WT Group **File No.** 25515 **Date Drilled:** 11/10/20

Reference: Birch Park Improvements
Hoffman Estates, IL

Comments:

Equipment: ☒CME 45B ☐CME 55 ☐Hand Auger ☐Other

Elevation 753.0' **Existing Surface**

depth, ft.	CLASSIFICATION	standard penetration ×	moisture content Δ	dry unit weight lbs./cu.ft. ϑ	unconfined compressive strengh ○
0	Brown fine sand,some silt,damp - Fill		13.9		
1	Brown-dark brown-black clay,some silt, trace sand & gravel,damp,hard - Fill				
2		8	18.6	110.2	5.1
3	Black silt,some clay,trace sand & roots damp,loose (topsoil)				
4	Dark brown-dark gray clay,some silt, trace sand & gravel,damp,very tough		26.9		
5	End of Boring	9	27.3	94.3	2.4
6					
7					
8					
9					
10					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
Δ moisture content, %
10 20 30 40

Water encountered at dry feet during drilling operations (W.D.)
Water recorded at dry feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

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SOIL BORING LOG 6

Logged By: CS **Page:** 1 of 1

Client: WT Group **File No.** 25515 **Date Drilled:** 11/10/20

Reference: Birch Park Improvements
Hoffman Estates, IL

Comments:

Equipment: ☒CME 45B ☐CME 55 ☐Hand Auger ☐Other

depth, ft.	CLASSIFICATION Elevation 754.0' Existing Surface	standard penetration ×	moisture content △	dry unit weight lbs./cu.ft. ɣ	unconfined compressive strength ○
	Black silt,some clay,trace sand,roots & gravel,damp (topsoil) - Fill		26.3		
1	Brown-dark brown clay,some silt,trace sand & gravel,damp,hard - Fill				
2		7	21.4	104.2	4.0
3					
4	Brown-dark brown clay,some silt,trace sand & gravel,damp,very tough - Fill				
5		8	23.7	101.7	2.2
	End of Boring				
6					
7					
8					
9					
10					

○ unconfined compressive strength, tons/sq. ft.
● penetrometer reading, tons/sq. ft.
1.0 2.0 3.0 4.0

× standard penetration "N", blows/ft.
△ moisture content, %
10 20 30 40

Water encountered at dry feet during drilling operations (W.D.)
Water recorded at dry feet on completion of drilling operations (A.D.)
Water recorded at feet hours after completion of drilling operations (A.D.)

SOIL AND MATERIAL CONSULTANTS, INC.
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GENERAL NOTES

SAMPLE CLASSIFICATION

Soil sample classification is based on the Unified Soil Classification System, the Standard Practice for Description and Identification Soils (Visual-Manual Procedure), ASTM D-2488, the Standard Test Method for Classification of Soils for Engineering Purposes, ASTM D-2487 (when applicable), and the modifiers noted below.

CONSISTENCY OF COHESIVE SOILS

Term	Qu-tons.sq.ft.	N (unreliable)
Very soft	0.00 – 0.25	0 – 2
Soft	0.26 – 0.49	3 – 4
Stiff	0.50 – 0.99	5 – 8
Tough	1.00 – 1.99	9 –15
Very Tough	2.00 – 3.99	16 – 30
Hard	4.00 – 7.99	30 +
Very Hard	8.00 +	

RELATIVE DENSITY OF GRANULAR SOILS

Term	N – blows/foot
Very Loose	0 – 4
Loose	5 – 9
Medium Dense	10 – 29
Dense	30 – 49
Very Dense	50 +

IDENTIFICATION AND TERMINOLOGY

Term	Size Range
Boulder	over 8 in.
Cobble	3 in. to 8 in.
Gravel - coarse	1 in. to 3 in.
- medium	3/8 in. to 1 in.
- fine	#4 sieve to 3/8 in.
Sand - coarse	#10 sieve to #4 sieve
- medium	#40 sieve to #10 sieve
- fine	#200 sieve to #40 sieve
Silt	0.002 mm to #200 sieve
Clay	smaller than 0.002mm

Modifying Term	Percent by Weight
Trace	1 – 10
Little	11 – 20
Some	21 – 35
And	36 – 50

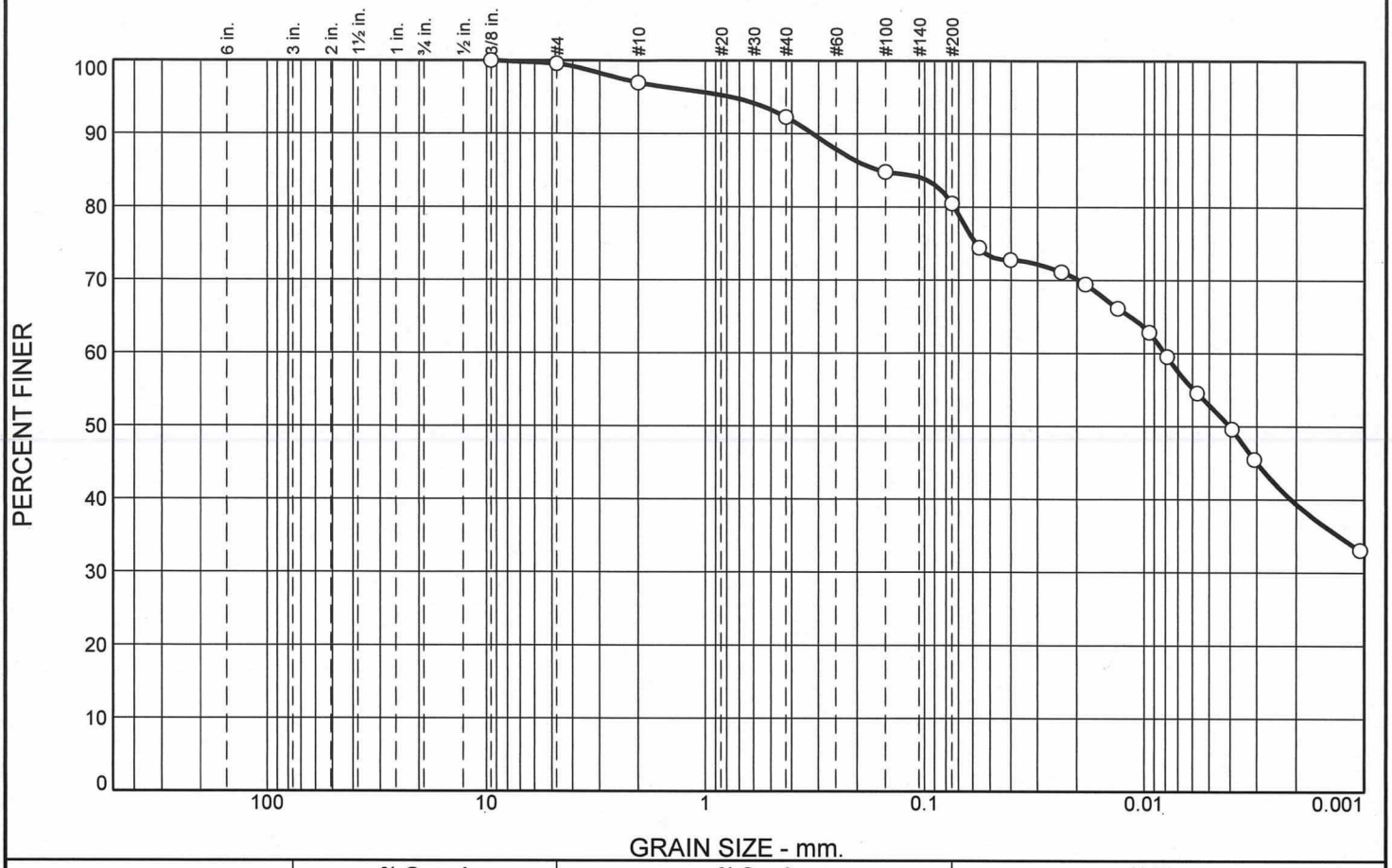
Moisture Content

Dry
Damp
Very Damp
Saturated

DRILLING, SAMPLING & SOIL PROPERY SYMBOLS

- CF - Continuous Flight Auger
- HS - Hollow Stem Auger
- HA - Hand Auger
- RD - Rotary Drilling
- AX - Rock Core, 1-3/16 in. diameter
- BX - Rock Core, 1-5/8 in. diameter
- NX - Rock Core, 2-1/8 in. diameter
- S - Sample Number
- T - Type of Sample
- J - Jar
- AS - Auger Sample
- SS - Split Spoon (2 in. O.D. with 1-3/8 in. I.D.)
- ST - Shelby Tube (2 in. O.D. w/ith1-7/8 in. I. D.)
- R - Recovery Length, in.
- B - Blows/6 in. interval, Standard Penetration Test (SPT)
- N - Blows/foot to drive 2 in. O.D. split-spoon sampler with 140 lb. hammer falling 30 in., (STP)
- Pen. - Pocket Penetrometer readings, tons/sq.ft.
- W - Water Content, % dry weight
- Uw - Dry Unit Weight of soil, lbs./cu.ft.
- Qu - Unconfined Compressive Strength, tons/sq.ft.
- Str - % Strain at Qu.
- WL - Water Level
- WD - While Drilling
- AD - After Drilling
- DCI - Dry Cave-in.
- WCI - Wet Cave-in.
- LL - Liquid Limit, %
- PL - Plastic Limit, %
- PI - Plasticity Index (LL-PL)
- LI - Liquidity Index [(W-PL)/PI]

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	2.6	4.7	11.8	41.1	39.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	99.6		
#10	97.0		
#40	92.3		
#100	84.8		
#200	80.5		

* (no specification provided)

Material Description

Clay

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3183 D_{85}= 0.1595 D_{60}= 0.0081
D_{50}= 0.0040 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Location: Boring 2
Sample Number: 3 **Depth:** 3.5' - 5.0' **Date:**

SOIL AND MATERIAL CONSULTANTS, INC.

Client: WT GROUP
Project: Birch Park Improvements
Hoffman Estates, IL
Project No: 25515 **Figure**