

Bidder Name: _____

Address: _____

Telephone #: _____

Facsimile: _____

**Installation of Playground Equipment at Victoria, Colony and
Seascape Parks;
Concrete Work at Victoria, Colony, Seascape,
Hassell Rd Maintenance, and Evergreen;
Landscape Restoration/Work at Victoria, Colony,
Evergreen and Westbury**

BID DATE: February 22, 2017

BID TIME: 9:00 a.m.

PREPARED BY:

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

HOFFMAN ESTATES PARK DISTRICT

TABLE OF CONTENTS

- ❖ Invitation to Bidders
- ❖ Instructions to Bidders
- ❖ Supplementary Conditions
- ❖ Specifications
- ❖ Proposal
 - ◆ Bid Proposal Form
 - ◆ Bid Certification Form
 - ◆ List of Subcontractors
 - ◆ Contract Compliance Attachment
 - ◆ Reference List
 - ◆ Illinois Department of Labor Prevailing Wage Rates
 - ◆ Certifications

January 27, 2017

Dear Bidder:

Enclosed you will find the plans, specifications and bidding materials for **Installation of Playground Equipment at Victoria, Colony and Seascapes Parks; Concrete Work at Victoria, Colony, Seascapes, Hassell Rd Maintenance, and Evergreen; Landscape Restoration/Work at Victoria, Colony, Evergreen and Westbury.** 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 847-561-2172. I can be reached Monday through Friday from 8:30 a.m. until 4:30 p.m.

Sincerely,

Gary Buczkowski
Director of Planning and Development

INVITATION TO BIDS

Sealed bids for **Installation of Playground Equipment at Victoria, Colony and Seascape Parks; Concrete Work at Victoria, Colony, Seascape, Hassell Rd Maintenance, and Evergreen; Landscape Restoration/Work at Victoria, Colony, Evergreen and Westbury** will be received by the Hoffman Estates Park District at our office; 1685 West Higgins Road, Hoffman Estates, Illinois 60169 until **exactly 9:00 A.M., February 22, 2017**, 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-16-003. 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,

Gary Buczkowski
Director of Planning and Development

HOFFMAN ESTATES PARK DISTRICT

INSTRUCTIONS TO BIDDERS

1. Identification of Project

The official name and location of the project shall henceforth be known as:
**Installation of Playground Equipment at Victoria, Colony and Seascap
Parks; Concrete Work at Victoria, Colony, Seascap, Hassell Rd Maintenance, and Evergreen; Landscape Restoration/Work at Victoria, Colony, Evergreen and Westbury**

- **Victoria South Park 1100 Kingsdale**
- **Colony Park 5097 Kingston Dr**
- **Seascap Family Aquatic Center 1300 Moon Lake Blvd**
- **Maintenance Facility 2352 Hassell Rd**
- **Evergreen Park 600 Washington Blvd**
- **Westbury Park 1075 Westbury Drive**

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: February 22, 2017, 9:00 a.m.

Committee Approval: March 7, 2017

Board Approval: March 28, 2017

Contract Awarded: March 29, 2017

Commencement of Work: Commencement of paperwork shall begin immediately upon notification of award.

Substantial Completion Date: July 22, 2016

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. Preparation and Submission of Bids

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 **Installation of Playground Equipment at Victoria, Colony and Seascape Parks; Concrete Work at Victoria, Colony, Seascape, Hassell Rd Maintenance, and Evergreen; Landscape Restoration/Work at Victoria, Colony, Evergreen and Westbury** " to be received until **9:00 A.M., February 22, 2017** 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 Architect/Engineer 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, Owner's 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. Supervision

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 under ground 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 observed 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 Engineer, 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 Engineer 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 are 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 \$500,000 per occurrence and \$1,000,000 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 \$1,000,000 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 is 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. I. 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 Architect/Engineer 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 Architect/Engineer, 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 Architect/Engineer, 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 Architect/Engineer 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, Architect or Engineer 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 Engineer.

HOFFMAN ESTATES PARK DISTRICT

SPECIFICATIONS

TRADE SPECIFIC

INSTALLATION OF MANUFACTURED PLAYGROUND EQUIPMENT

Section 0608

PART 1 – GENERAL

- 1.1** All work covered under this contract shall be performed in accordance with the manufacturer's procedures, directions and or standards for assembly of the equipment being installed. Any and all deviations from procedures, directions and or standards shall be approved by the manufacturer prior in writing prior to final acceptance. All manufacturer acknowledgements shall be provided to the owner prior to final acceptance. All additional materials necessary to complete the installation shall be provided by the contractor in accordance with the manufacturer's minimum specification and or requirements.
- 1.2** All work related to the playground shall be performed in accordance with CPSC standards for playgrounds. Any deviation shall be brought to the attention of the owner in writing prior to final acceptance of the project.
- 1.3** All work shall be performed in accordance with the building codes of the Village of Hoffman Estates. The Contractor is responsible for obtaining all inspection certificates relevant to the piece of equipment being installed.
- 1.4** During the installation of the playground equipment, the contractor must have on site at all times a CPSC certified employee in charge of the project.

1.5 REFERENCES

- A. ACI 302 – Guide for Concrete Floor and Slab Construction.
- B. ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- C. ACI 305R – Hot Weather Concreting.
- D. ACI 306R – Cold Weather Concreting.
- E. ACI 308 – Standard Practice for Curing Concrete.
- F. ACI 318 – Building Code Requirements for Reinforced Concrete.
- G. ANSI/ASTM D994 – Preformed Expansion Joint Filler for Concrete (Bituminous Type).
- H. ANSI/ASTM D1190 – Concrete Joint Sealer, Hot-Poured Elastic Type.
- I. ANSI/ASTM D1751 – Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
- J. ASTM C33 – Concrete Aggregates.
- K. ASTM C94 – Ready-Mixed Concrete.
- L. ASTM C150 – Portland Cement.
- M. ASTM C260 – Air Entraining Admixtures for Concrete.
- N. ASTM C494 – Chemicals Admixtures for Concrete.

1.6 SUBMITTALS

- A. Product Data: Provide data on joint devices, sealants and admixtures.
- B. Test samples of exposed aggregate concrete

1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Acquire cement and aggregate from same source for all work.

PART 2 – PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I – Normal, gray color.
- B. Fine and Course Aggregates: ASTM C33.
- C. Water: Clean and not detrimental to concrete.

2.2 ADMIXTURES

- A. Air Entrainment: ASTM C260
- B. Chemical: ASTM C494 Type A – Water Reducing and/or Type F – Water Reducing, High Range to achieve required water/cement ratio.
- C. Shrinkage Reducing Admixture, as approved by owner.

2.3 ACCESSORIES

- A. Burlene plastic coated burlap fabric for use in curing operations.
- B. Non-Shrink Gout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents: capable of developing minimum compressive strength of 2400 psi in 48 hours and 7000 psi in 28 days.

2.4 CONCRETE MIX

- A. Mix and deliver concrete in accordance with ASTM C94, Alternative No. 1.
- B. Provide concrete to the following criteria.

Unit	Measurement
Cement Type	ASTM C 150, Type I
Compressive Strength (28 day)	4000 psi
Cement Content	650 to 700 lb/cu.yd. or better
Water/Cement Ratio (maximum)	0.44 by weight (mass) typically
Aggregate Size (maximum)	ASTM C 33-85, Size CA 7 & 16
Air Entrained	5 to 8% typically
Admixture	ASTM Type A and/or Type F as necessary
Admixture	Shrinkage Reducing as approved by Owner
Slump – Maximum	1.5 in.
- C. Use accelerating admixtures in cold weather only when approved by Owner. Use of admixtures will not relax cold weather placement requirements.
- D. Use calcium chloride only when approved by Owner.

- E. Use set retarding admixtures during hot weather only when approved by Owner.
- F. Add air entraining agent to normal weight concrete mix for work exposed to exterior.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Contractor shall verify site conditions prior to commencing work under this section.
- B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.5 CURING AND PROTECTION

- A. Per Section 1022 CONCRETE CURING MATERIALS **TYPE III** of SSRBC

3.2 FIELD QUALITY CONTROL (BY OWNER)

- A. Field testing will be performed in accordance with accepted professional practices.
- B. Provide free access to Work and cooperate with appointed firm.
- C. Submit proposed mix design to testing firm for review prior to commencement of Work.
- D. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- E. Three concrete test cylinders will be taken for every continuous concrete placement.
- F. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- G. One slump test will be taken for each set of test cylinders taken.
- H. Concrete testing will be undertaken at the direction and at the cost of the Owner.

END OF SECTION 0608

Hoffman Estates Park District

CAST-IN-PLACE CONCRETE

Section 0403

PART 1 – GENERAL

1.8 SECTION INCLUDES

- A. Cast-In-Place Concrete walls and curbs.
- B. Slabs on grade.
- C. Control, expansion and contraction joint devices associated with concrete work, including joint sealants.
- D. Exposed aggregate walk
- E. Concrete footings, foundations pads and grade beams.

1.9 RELATED SECTIONS

- A. Section Earthwork
- B. Section Drainage

1.10 REFERENCES

- A. ACI 302 – Guide for Concrete Floor and Slab Construction.
- B. ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- C. ACI 305R – Hot Weather Concreting.
- D. ACI 306R – Cold Weather Concreting.
- E. ACI 308 – Standard Practice for Curing Concrete.
- F. ACI 318 – Building Code Requirements for Reinforced Concrete.
- G. ANSI/ASTM D994 – Preformed Expansion Joint Filler for Concrete (Bituminous Type).
- H. ANSI/ASTM D1190 – Concrete Joint Sealer, Hot-Poured Elastic Type.
- I. ANSI/ASTM D1751 – Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
- J. ASTM C33 – Concrete Aggregates.
- K. ASTM C94 – Ready-Mixed Concrete.
- L. ASTM C150 – Portland Cement.
- M. ASTM C260 – Air Entraining Admixtures for Concrete.
- N. ASTM C494 – Chemicals Admixtures for Concrete.

1.11 SUBMITTALS

- A. Product Data: Provide data on joint devices, sealants and admixtures.
- B. Test samples of exposed aggregate concrete

1.12 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.
- B. Acquire cement and aggregate from same source for all work.

PART 2 – PRODUCTS

2.5 CONCRETE MATERIALS

- A. Cement, Type I – Normal, gray color.
- B. Fine and Course Aggregates: ASTM C33.
- C. Water: Clean and not detrimental to concrete.

2.6 ADMIXTURES

- A. Air Entrainment: ASTM C260
- B. Chemical: ASTM C494 Type A – Water Reducing and/or Type F – Water Reducing, High Range to achieve required water/cement ratio.
- C. Shrinkage Reducing Admixture, as approved by owner.

2.7 ACCESSORIES

- A. Burlene plastic coated burlap fabric for use in curing operations.
- B. Non-Shrink Gout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents: capable of developing minimum compressive strength of 2400 psi in 48 hours and 7000 psi in 28 days.

2.8 JOINT DEVICES AND FILLER MATERIALS

- A. Joint Filler Type A; Asphalt impregnated fiberboard or felt; tongue and groove profile.
- B. Sealant: two part liquid neoprene, color to match concrete finish, in a formula compatible with joint filler.

2.9 CONCRETE MIX

- A. Mix and deliver concrete in accordance with ASTM C94, Alternative No. 1.
- B. Provide concrete to the following criteria.

Unit	Measurement
Cement Type	ASTM C 150, Type I
Compressive Strength (28 day)	4000 psi
Cement Content	650 to 700 lb/cu.yd. or better
Water/Cement Ratio (maximum)	0.44 by weight (mass) typically
Aggregate Size (maximum)	ASTM C 33-85, Size CA 7 & 16
Air Entrained	5 to 8% typically
Admixture	ASTM Type A and/or Type F as necessary
Admixture	Shrinkage Reducing as approved by Owner
Slump – Maximum	1.5 in.

- C. Use accelerating admixtures in cold weather only when approved by Owner. Use of admixtures will not relax cold weather placement requirements.
- D. Use calcium chloride only when approved by Owner.
- E. Use set retarding admixtures during hot weather only when approved by Owner.

- F Add air entraining agent to normal weight concrete mix for work exposed to exterior.

PART 3 – EXECUTION

3.3 EXAMINATION

- A Contractor shall verify site conditions prior to commencing work under this section.
- B Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.4 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.5 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304.
- B. Notify Landscape Architect minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, and formed expansion and contraction joints are not disturbed during concrete placement.
- D. Separate slabs or grade from vertical surfaces with ½" thick joint filler.
- E. Extend joint filler from bottom of slab to within ½ inch of finished slab surface. Conform to manufacturers recommendations for finish joint sealer installation.
- F. Place concrete continuously between predetermined expansion, control, and construction joints.
- G. Place slabs in saw cut pattern indicated.
- H. Soft cut saw joints at last possible hour after finishing. Use 3/16 inch thick blade, cut 5/8" deep.
- I. Seal all joints with joint sealant in accordance with manufacturer's recommendations.

3.6 CONCRETE FINISHING

- A. Provide broomed finish for slab on grade and ramp features, as selected by the Landscape Architect.
- B. Provide formed concrete surfaces to be left exposed (concrete walls and curbs) with broomed finish.

3.5 CURING AND PROTECTION

- A. Per Section 1022 CONCRETE CURING MATERIALS **TYPE III** of SSRBC

3.7 FIELD QUALITY CONTROL (BY OWNER)

- A. Field testing will be performed in accordance with accepted professional practices.
- B. Provide free access to Work and cooperate with appointed firm.
- C. Submit proposed mix design to testing firm for review prior to commencement of Work.
- D. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- E. Three concrete test cylinders will be taken for every continuous concrete placement.
- F. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- G. One slump test will be taken for each set of test cylinders taken.
- H. Concrete testing will be undertaken at the direction and at the cost of the Owner.

3.8 PATCHING

- A. Allow Landscape Architect to inspect concrete surfaces immediately upon removal of forms.
- B. Honeycomb or embedded debris in concrete is not acceptable. Notify Landscape Architect upon discovery.
- C. Patch imperfections in accordance with ACI 301.

3.9 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Landscape Architect.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Landscape Architect for each individual area.

END OF SECTION 0403

QUALITY REQUIREMENTS

Section 0140

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-control services required by Architect, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
 - 1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
 - 2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
 - 3. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect or Construction Manager.

- C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Mockups establish the standard by which the Work will be judged.
- D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.5 REGULATORY REQUIREMENTS

- A. Regulations: Contractors are encouraged to obtain copies of the following regulations and retain at Project site to be available for reference by parties who have a reasonable need:
 - 1. See front sheet of project drawings for list of applicable codes.

1.6. CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to architect for a decision before proceeding.

1.7 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.
- C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
 2. Description of test and inspection.
 3. Identification of applicable standards.
 4. Identification of test and inspection methods.
 5. Number of tests and inspections required.
 6. Time schedule or time span for tests and inspections.
 7. Entity responsible for performing tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- D. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Ambient conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- E. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect

installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

- C. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- D. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
- F. **Specialists:** Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.
- G. **Testing Agency Qualifications:** An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.
- H. **Preconstruction Testing:** Testing agency shall perform preconstruction testing for compliance with specified requirements for performance and test methods.
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens and assemblies representative of proposed materials and construction. Provide sizes and configurations of assemblies to adequately demonstrate capability of product to comply with performance requirements.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Fabricate and install test assemblies using installers who will perform the same tasks for Project.
 - d. When testing is complete, remove assemblies; do not reuse materials on Project.
 - 2. **Testing Agency Responsibilities:** Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect , through Construction Manager, with copy to Contractor. Interpret tests and inspections

and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 1. Build mockups in location and of size indicated or, if not indicated, as directed by Construction Manager.
 2. Notify Architect and Construction Manager seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's and Construction Manager's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mock-up.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed, unless otherwise indicated.

1.9 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
 2. Payment for these services will be made from the Owner directly to the testing company.
 3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Special Tests and Inspections: Owner may engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.
1. Testing agency will notify Architect and Construction Manager and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Architect, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.
 3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 5. Testing agency will retest and reinspect corrected work.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
 5. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.

3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field-curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of commencement of the construction work.
1. Distribution: Distribute schedule to Owner, Architect, Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
 2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

AGGREGATE BASE COURSE
SECTION 0402

PART 1 – GENERAL

1.0 THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, and applicable requirements of DIVISION 1 – GENERAL REQUIREMENTS are hereby made a part of this Section and must be examined by CONTRACTORS prior to signing the Contract.

1.1 SCOPE

- A. This Section covers the furnishing of all labor, materials, and equipment to provide, grade, and compact a crushed stone roadbed base course in areas indicated on the Drawings.

PART 2 – PRODUCT

2.0 CRUSHED STONE

- A. The material shall conform to the Requirements of IDOT Standard Specifications for Road and Bridge Construction. The material shall be free from vegetation or other deleterious substances.

2.1 SAMPLING AND TESTING

- A. When directed by the ENGINEER, samples of the crushed stone shall be furnished by the CONTRACTOR for testing at the expense of the OWNER.

PART 3 – EXECUTION

3.0 PREPARATION OF SUBGRADE

Prior to placing base course material on the roadbed areas designated on the Drawings, grading and compaction of the subgrade shall have been completed in accordance with the requirements of Section 02200 and other Sections of the Specifications as appropriate.

3.1 HAULING AND PLACING

Installation of aggregate base course shall be according to the IDOT Standard Specifications for Road and Bridge Construction. The base course material shall be hauled in approved vehicles and shall be placed on the parking and drive areas beginning at the end nearest the source of supply so that the hauling will aid in traffic binding of the surface. The material shall be deposited along the roadway in such a way that uniform grading and distribution can be facilitated. Sufficient material shall be placed to develop base course material into the subgrade. Holes, waves, and undulations which develop shall be corrected by the addition of material and blading until final acceptance or by removal of soft subgrade and replacement with suitable material as recommended by the Soils Engineer.

PART 4 – PAYMENT

4.0 PAYMENT

All work under this section shall be considered subsidiary to the bid items provided.

END OF SECTION 0402

DRAINAGE AND PLAYGROUND FALL SURFACE

Section 0310

Part 1 – General

1.1 Summary

- A. This section includes installation of underground drainage systems, soil barriers and placement of engineered wood fiber fall surface.
- B. Related Sections include the following:
 - "Earthwork" for subgrade preparation, grading and subbase course.

1.2 Quality Assurance

- A. Installer shall submit alternate fall surface samples to the Owner along with testing data according to ASTM Standards.
- B. All work shall conform to CPSC Standards for fall surface installation.

Part 2 – Products

2.1 Geotextile Fabric shall be TYPAR 3401 supplied by LINQ Industries or approved equal.

- A. Minimum fabric properties:

	<u>Test Method</u>	<u>Marv</u>
Grab Tensile Strength (16S)	ASTM D-4632	130
Grab Elongation (%)	ASTM D-4632	60
Trapezoidal Tear (16S)	ASTM D-4533	60
Mullen Burst (psi)	ASTM D-3786	140
Puncture (16S)	ASTM D-4833	41
Permittivity (Sec-1)	ASTM D-4491	0.7
AOS (U.S. Sieve Size)	ASTM D-4751	70
UV Stability	ASTM D-4355	70

- B. Minimum Overlap – one (1) foot on all sides.

2.2 4" Diameter Slotted Corrugated Polyethylene Drainage Tubing

Shall conform to ASTM F2736-10

Inside Diameter	Min.	3.99"
Thickness of Crown		39 Mil.
Sidewall		46 Mil.
Valley		61 Mil.

Water Inlet Area	77
Perforations per foot	
Width	.09"
Length	.69"
Area	4.78
sq. in./ft	

2.3 6" Diameter Double Wall HPPE Drainage Pipe

- A. Shall conform to ASTM F2736110
- B. Manufactured by Pacific Corrugated Plastic Pipe (or Approved Equal)

2.4 6" Multi-Flow Drainage Pipe with Sock Rap

- A. Shall conform to ASTM F2736-10
- B. Physical Properties Core

<u>Property Core</u>	<u>Test Method</u>	<u>Value</u>
Thickness, inches	ASTM D-1777	1.0
Flow Rate, gpm/ft***	ASTM D-4716	30 **
Pipe Stiffness, psi	ASTM D-2412	100
Compressive Strength, psf	ASTM D-1621	6000

C. Geotextile Sock Rap

Weight (oz/sq.yd ²)	ASTM D-3776	4.0
Tensile Strength, lb.	ASTM D-4632	100
Elongation, %	ASTM D-4632	50
Puncture, lb.	ASTM D-4833	60
Mullen Burst, psi	ASTM D-3786	215
Trapezodial Tear, lb.	ASTM D-4533	42
Coefficient of Perm, cm/sec.	ASTM D-4491	0.2
Flow Rate, gpm/ft. ²	ASTM D-4491	140
Permittivity, 1/sec.	ASTM D-4491	2.0
Apparent Opening Size, Maximum us Std. Sieve Opening	ASTM D-4751	70
UV Stability, % strength Retained at 500 hours	ASTM D-4355	70
Seam Strength, lb./ft.	ASTM D-4595	150
Fungus	ASTM G-21	No Growth

- D. All connections shall be made with approved manufactured connectors.

2.5 Engineered Wood Fiber

Shall come from one of the following manufacturing sources:

1. Fiberflex
Reese Recreation, Inc.
1-800/222-2268
2. Wood Fiber Surfacing
Stillwater Enterprises, Inc.
1/217-342-3122
3. Xylem Mat
Xylem, Inc.
1/309-654-2261
4. Homer Tree Service
14000 Archer Ave
Lockport, IL
815-838-0320

NOTE: The above list of approved fiber suppliers have demonstrated that their products meet or exceed ASTM Test Standards 1296 and PS 83 and conform to the ADA requirements. Furthermore, they have demonstrated that they can supply quality product in a timely manner. This list is by no means final. Other sources will be considered as follows:

To be considered as an equal fiber supplier, the Contractor shall submit 48 hours prior to the close of bids, a sample of the material along with all test data and a list of no less than five (5) governmental agencies who purchased material in the 2000 calendar year. The Owner, upon receipt of such submittal, shall determine prior to the close of bids whether or not the alternate material meets the minimum specifications as follows:

- A. Shall be manufactured from 100% pure virgin wood fiber product consisting of oak, maple, ash, hickory, beech, birch and locust hardwoods.
- B. Fiber shall be free of bark chips, twig pieces, leaves, soil and other materials that hasten decomposition.
- C. Fiber shall be a mix-blend of wood fibers. Approximately 25% may come from kiln-dried wood. The moisture content of kiln-dried wood shall be 8-15%. Approximately 60-75% of the fibers must come from green (not dried) wood, having a moisture content of 25-40%.
- D. Fiber size shall be ten (10) times longer than the width.
- E. Fiber shall meet the accessibility minimum standard for wheelchairs, crutches and walkers as recommended by ADA and ASTM #1296, PS83.
- F. Fiber shall meet or exceed the CPSC Shock Absorbing Properties and ASTM Guidelines and shall exceed the head impact criteria at 12 foot fall height.
- G. Only approved wood fiber suppliers shall be used to determine the bid price for supply and installation of wood fiber fall surfacing.

2.6 Material Verification

The successful Contractor will be required to submit to the Owner prior to payment, a copy of all load tickets from an approved wood fiber supplier along with necessary test data and quantities supplied to that job site. Any and all materials that are not from the approved supplier will be removed and replaced at Contractor's expense.

Part 3 – Execution – ADS Installation

3.1 Trenching

- A. Make all trenches open vertical construction with sufficient width to provide free working space at both sides of the trench and around the installed item as required for caulking, joining, backfilling and compacting.
- B. Trench as required to provide the elevation shown in the Drawings. In areas where vehicular traffic is expected, provide a minimum of 12" cover over tubing if gravel bedding is used, and 24" cover if selected soil bedding material is used.
- C. Provide a continuous downhill fall of a minimum 0.2 inches per 10 feet of length along the entire length of solid drain lines without reversals in elevation.
- D. Where trench excavation is inadvertently carried below proper elevations, backfill with material approved by the Landscape Architect, and then compact to provide a firm and unyielding subgrade and/or foundation to the approval of the Landscape Architect and at no additional cost to the Owner.
- E. Properly support all trenches in strict accordance with all pertinent rules and regulations. Brace, sheet and support trench walls in such a manner that they will be safe and that the ground alongside the excavation will not slide or settle and that all existing improvements of every kind, whether on public or private property, will be fully protected from damage. In the event of damage to such improvements, immediately make all repairs and replacements necessary to the approval of the Landscape Architect, at no additional cost to the Owner.
- F. Control the stockpiling of trenched material in a manner as to prevent water running into the excavation. Do not obstruct surface drainage, but provide means whereby storm and waste waters are diverted into existing gutters, other surface drains, or temporary drains.

3.2 Foundation and Bedding for Pipes

- A. Grade the trench bottoms to provide a smooth, firm and stable foundation, free from rock points throughout the length of pipe.
- B. In areas where soft, unstable materials are encountered at the surface upon which pipe, or other drainage structures are to be placed, remove the unstable material and replace it with material approved by the

- Landscape Architect. Make sufficient depth to develop a firm foundation for the item being installed.
- C. In areas where pipe crosses under pavement or other structures, gravel bedding shall be required.
 - D. Where bedding is required, place the gravel in the trench to a depth of two inches minimum in the bottom of the trench, then place gravel simultaneously on each side of the full width of the trench, to the midpoint of the outside diameter of the pipe barrel.
 - E. Take special care to provide firm bedding support on the underside of the pipe and fittings for the full length of the pipe. Bridging of pipe will not be accepted.
 - F. Alternate bedding: Other bedding procedures and materials may be used if prior written approval has been obtained by the Landscape Architect.

3.3 Installation of Pipe and Catch Basins

- A. Install pipe and catch basins in accordance with manufacturer's recommendation.
- B. All pipe joints shall be water tight and connection by approved method.
- C. Verify the elevations of all subsurface drainage structures prior to backfilling. It is the Contractor's responsibility to contact the Landscape Architect at least 48 hours prior to placing subsurface drainage structures and to install the structures at elevations suitable to achieve the drainage indicated in the drawings. Drainage structures which have been covered without the Landscape Architect's approval shall be uncovered and backfilled again at no additional expense to the Owner.

3.4 Backfilling of Pipe

- A. After the pipe has been thoroughly bedded and covered, spread the on-site material in uniform lifts of not more than 8" in uncompacted thickness, and then compact as specified in this section. Repeat the spreading and compacting procedure until adjacent grade level is attained. On-site material will only be used in areas where no future structure, path or road will be constructed.
- B. Using imported cohesionless material: After the pipe has been thoroughly bedded and covered, fill the remaining portion of the trench with cohesionless material, and densify using water jet, or other approved method. Imported cohesionless material will be used in all structural areas, paths, roadway and other areas where settlement will not be permitted and in areas where future structures, roads, or paths will be constructed.
- C. Porous backfill and leveling bed materials shall not contain crushed fines, soil, or other material which will cause sedimentation.

3.5 Preparation

- A. Subgrade shall be compacted and free of clumps. All excavation spoils shall be removed to provide a uniform surface.
- B. Four-inch ADS Pipe shall be placed in trenches six inches deep and backfilled with pea stone. Connection to outfall structure shall be made with all associated patching required.
- C. Multi-flow pipe shall be connected to four inch ADS Pipe using approved connecting pieces.
- D. The entire fall surface area shall be covered with the Geotextile Fabric with a minimum of one-foot overlap on all sides. Fabric shall be fastened to the ground using 1" x 3" steel staples.
- E. The entire fall area shall be filled with fifteen inches of wood fiber. The final surface shall be flat.

END OF SECTION

PLAYGROUND SURFACING TILES

Section 027911

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Resilient, interlocking, playground safety surfacing tiles.

1.2 RELATED SECTIONS

- A. Section (0402) – Granular aggregate subsurface
- B. Section (0608) – Playground Equipment
- C. Section (0403) – Cast-in-Place Concrete: Concrete subsurface.

1.3 REFERENCES

- A. ASTM C 67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
- B. ASTM C 501 – Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser.
- C. ASTM D 395 – Standard Test Methods for Rubber Property – Compression Set.
- D. ASTM D 412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension
- E. ASTM D 573 – Standard Test Method for Rubber-Deterioration in an Air Oven.
- F. ASTM D 624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
- G. ASTM D 1667 – Standard Specification for Flexible Cellular Materials – Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam)
- H. ASTM D 2047 – Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
- I. ASTM D 2240 – Standard Test method for Rubber Property – Durometer Hardness

- J. ASTM D 2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.
- K. ASTM D 3676 – Standard Specification for Rubber Cellular Cushion Used for Carpet or Rug Underlay
- L. ASTM E 108 – Standard Test Methods for Fire Tests of Roof Coverings.
- M. ASTM E 303 – Standard Test method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
- N. ASTM F 1292 – Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
- O. US Consumer Product Safety Commission (CPSC) Handbook for Playground Safety.

1.4 SUBMITTALS

- A. Comply with Section 01330 (01 33 00) – Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including installation and subsurface instructions.
- C. Samples: Submit manufacturer's sample of 1 full tile.
- D. Test Reports: Submit certified test reports from qualified independent testing agency indicating results of the following tests.
 - 1. Impact Attenuation: ASTM F 1292
 - 2. Freeze Thaw: ASTM C 67
 - 3. Rubber Deterioration/Air Oven: ASTM D 573
 - 4. Slip Resistance: ASTM D 2047 and E 303
 - 5. Compression Deflection: ASTM D 1667
 - 6. Compression Set: ASTM D 395
 - 7. Tensile Strength: ASTM D 412
 - 8. Elongation at Break: ASTM D 412
 - 9. Tear Strength: ASTM D 624
 - 10. Wear surface density (durability).
 - 11. Durometer Hardness: ASTM D 2240

- 12. Density Foam: ASTM D 3676
- 13. Taber Abrasion: ASTM C 501
- 14. Flammability: ASTM D 2859 and E 108
- E. Certificate of Compliance: Submit manufacturer's certificate of compliance indicating materials comply with specified requirements.
- F. Manufacturer's Project References:
 - 1. Submit list of 3 successfully completed projects
 - 2. Include project name and location, name of architect, and type and quantity of playground safety surfacing tiles furnished.
- G. Installer's Project References:
 - 1. Submit list of 3 successfully completed projects.
 - 2. Include project name and location, name of architect, and type and quantity of playground safety surfacing tiles installed.
 - 3. Submit copy of manufacturer issued installation certification.
- H. Maintenance Instructions: Submit manufacturer's maintenance and cleaning instructions.
- I. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer shall meet a minimum of 1 of the following 2 requirements.
 - 1. Continuously engaged in manufacturing of playground safety surfacing tiles of similar type to that specified, with a minimum of 10 years successful experience.
 - 2. Furnish a minimum of 1,000,000 sq ft of playground safety surfacing tiles of similar type to that specified.
- B. Installer's Qualifications
 - 1. Certified by manufacturer for installation of playground safety surfacing tiles.
 - 2. Approved by manufacturer.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage:
 - 1. Store materials in accordance with manufacturer's instructions.
 - 2. Playground Safety Surfacing Tiles:
 - i. Store tiles in a dry area at a minimum temperature of 50 degrees F (10 degrees C) for a minimum of 72 hours before installation.
 - ii. Protect tiles from direct sunlight before installation.
 - 3. Adhesive: Store adhesive in a dry area at a minimum temperature of 50 degrees F (10 degrees C).
- C. Handling: Protect materials during handling and installation to prevent damage.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Tile Temperature: Ensure surface temperature of playground safety surfacing tiles is a minimum of 50 degrees F (10 degrees C) at time of installation.
- B. Air Temperature: Ensure air temperature is a minimum of 40 degrees F (4 degrees C) for a minimum of 24 hours before and during installation.
- C. Tile or Air Temperatures: Consult manufacturer's installation instructions for modified installation procedure when tile or air temperatures are above 85 degrees F (29 degrees C).

1.8 WARRANTY

- A. Materials and Workmanship: Playground safety surfacing tiles shall be warranted for defects in materials and workmanship for 10 years from date of completed installation.
- B. Performance: Playground safety surfacing tiles shall be warranted to meet drop height performance requirements of ASTM F 1292 for 10 years from date of completed installation.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. SofSURFACES, Inc., 4393 Discovery Line, PO Box 239, Petrolia, Ontario, NON 1R0, Canada. Toll Free 800-263-2363. Phone 519-882-2697. Website www.sofsurfaces.com E-mail allinfo@sofsurfaces.com (or approved equal).

2.2 PLAYGROUND SURFACING TILES

- A. Tiles: "SofTILE KrosLOCK". (or approved equal).
1. Series: (Plus)(Premium)
 2. Description: Resilient, interlocking, playground safety surfacing tiles.
 3. Compliance: meet or exceed CPSC guidelines for impact attenuation.
 4. Material: Compression-molded, recycled rubber and binding agents.
 5. Tile Locking: U-shaped male and female configuration on all 4 sides to lock tiles to adjacent tiles.
 6. Top Edges: Chamfered.
 7. Tile Bottom: Hollow core stanchion pattern.
 8. Wear Layer:
 - i. Plus Series: Combination of elongated SBR rubber and granulated crumb rubber. Pigmentation used to achieve color. Minimum 0.375 inch thick.
 - ii. Premium Series: Virgin EPDM rubber granules. Minimum 0.250 inch thick.
 9. Size: 24 inches by 24 inches, plus or minus 1/8 inch.
 10. Thickness:
 - i. Critical Fall Height 4 Feet: 2.00 inches
 - ii. Critical Fall Height 5 Feet: 3.00 inches
 - iii. Critical Fall Height 6 Feet: 3.25 inches
 - iv. Critical Fall Height 7 Feet: 3.50 inches
 - v. Critical Fall Height 8 Feet: 4.00 inches

vi. Critical Fall Height 10 Feet: 4.24 inches

11. Minimum Weight Each Tile:

i. Plus Series:

1. 2.00 inch thickness: 24.00 pounds
2. 3.00 inch thickness: 25.85 pounds
3. 3.25 inch thickness: 27.15 pounds
4. 3.50 inch thickness: 28.25 pounds
5. 4.00 inch thickness: 34.50 pounds
6. 4.25 inch thickness: 33.00 pounds

ii. Premium Series:

1. 2.00 inch thickness: 25.00 pounds
2. 3.00 inch thickness: 26.85 pounds
3. 3.25 inch thickness: 28.15 pounds
4. 3.50 inch thickness: 29.25 pounds
5. 4.00 inch thickness: 35.50 pounds
6. 4.25 inch thickness: 34.00 pounds

12. Colors

i. Plus Series: Turf Green, Beige

ii. Premium Series: Green, Beige

1. Percent Color: 50% color, 50% black
2. Tile Color Ratio: 25% Green, 75% Beige

B. Test Results:

1. Impact Attenuation, ASTM F 1292:

i. G-max Score: Less than 150

ii. Head Injury Criteria (HIC Score: Less than 750

2. Freeze Thaw, ASTM C 67: No deterioration

3. Rubber Deterioration/Air Oven, ASTM D 573: No deterioration

4. Slip Resistance:
 - i. ASTM E 303:
 1. Dry: 102
 2. Wet: 62
 - ii. ASTM D 2047
 1. Dry: 0.81
 2. Wet: 0.82
5. Compression Deflection, ASTM D 1667: 29.5 psi to 25% compression
6. Compression Set, ASTM D 395: 4.37% permanent set
7. Tensile Strength, ASTM D 412:
 - i. Plus Series: 135 psi
 - ii. Premium Series: 99.8 psi
8. Elongation at break, ASTM D 412: 165%
9. Tear Strength, ASTM D 624:
 - i. Plus Series: 60 lbs/in
 - ii. Premium Series: 45 lbs/in
10. Flammability:
 - i. Burning Pill, ASTM D 2859: Pass
 - ii. Roof Covering, ASTM E 108: Class A
11. Durometer Hardness, ASTM D 2240:
 - i. Plus Series: 50 points
 - ii. Premium Series: 56 points
12. Density Foam, ASTM D 3676:
 - i. Plus Series: 51 pcf
 - ii. Premium Series: 66.5 pcf
13. Taber Abrasion, Wear index, ASTM C 501:
 - i. Plus Series: 140

ii. Premium Series: 110

2.3 ACCESSORIES

A. Corners:

1. Prefabricated outside and inside corners.
2. Material: Same as playground safety surfacing tiles.

B. Ramps

1. Prefabricated Ramps: "SofRAMP Jr."
2. Prefabricated ADA-Compliant Ramps: "SofRAMP ADA"
3. Material: Same as playground safety surfacing tiles

C. Edging

1. Prefabricated Bull Nose Curb Edging: "SofCURB:"
2. Material: Same as playground safety surfacing tiles.

D. Adhesive: Furnished by manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive playground safety surfacing tiles. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 PREPARATION

- A. Prepare subsurface in accordance with manufacturer's instructions to ensure proper support and drainage for playground safety surfacing tiles.

B. Concrete Subsurface:

1. Concrete subsurface shall be as specified in Section (0403)
2. Apply light broom finish
3. Ensure concrete is sound with no loose material or cracks over 1/8 inch wide

4. Ensure concrete is a minimum of 28 days old.
5. Test concrete for moisture in accordance with manufacturer's instructions to ensure it has sufficiently cured and is dry.
6. Power wash existing concrete in accordance with manufacturer's instructions.

C. Concrete Subsurface:

1. Concrete subsurface shall be as specified in Section (0403).
2. Apply light broom finish.
3. Ensure concrete is sound with no loose material or cracks over 1/8 inch wide.

3.3 INSTALLATION

- A. Install playground safety surfacing tiles in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Ensure prepared subsurface and tiles are dry and clean
- C. Layout tile surface in accordance with manufacturer's instructions.
- D. Install tiles in single installation session, if possible.
- E. Layout in advance tiles to be installed in single installation session.
- F. Apply adhesive in accordance with manufacturer's instructions for tile-to-tile and perimeter tile-to base installation.

3.4 FIELD QUALITY CONTROL

A. After-installation Inspection

1. Provide third-party inspection of playground safety surfacing tiles within 30 days of installation.
2. Conduct inspection by National Recreation and Parks Association/National Playground Safety Institute (NRPA/NPSI) Certified Playground Safety Inspection (CPSI).
3. Determine compliance with ASTM F 1292, unless otherwise specified in this section.

3.5 CLEANING

- A. Remove adhesive spills from playground safety surfacing tiles in accordance with manufacturer's instructions.
- B. Clean tiles in accordance with manufacturer's instructions

3.6 PROTECTION

- A. Protect playground safety surfacing tiles from foot traffic for a minimum of 12 hours after installation.
- B. Protect completed tiles from damage during construction.

END OF SECTION 02791

PLAYGROUND POURED IN PLACE
VITRITURF PLAYGROUND SYSTEMS OR EQUIVALENT
Section 027912

PART 1 GENERAL

- 1.00 SCOPE:** This is a Manufacturer's Specification on the Playground version of the VITRITURF System or equivalent
- 1.01 DESCRIPTION:** Provide all Labor, materials and equipment necessary to install the VITRITURF System or equivalent.
- 1.02 QUALITY ASSURANCE**
- A. Qualifications
 - 1. VITRITURF or equivalent shall have marketed this system in the US for at least 5 years.
 - 2. The Applicator shall be trained and registered by VITRITURF or equivalent.
 - B. Design Detail
 - 1. General
 - A. VITRITURF Playground System or equivalent is utilized wherever an impact, absorbing cushioned surface is required. Playground areas should meet criteria set by the CPSC.
 - 2. Substrate and Substrate Systems
 - A. Check application manual for specific instructions on substrate.
 - 3. Acceptable Substrates for the VITRITURF System or equivalent include asphalt, concrete and compacted stone.
 - 4. Other substrates shall be approved by VITRITURF or equivalent prior to application.
 - 5. The Trained Applicator shall verify that the proposed Substrate is acceptable with application of the VITRITURF System or equivalent.
 - 6. Substrate Systems shall be engineered with regard to structural performance.
 - 7. Follow VITRITURF'S or equivalent's published details with specific recommendations for this project.
- 1.03 SUBMITTALS:**
- A. Trained Applicator shall submit 6" x 6" 1220 mm samples of the VITRITURF System or equivalent.
- 1.04 DELIVERY, STORAGE AND HANDLING**
- A. Deliver all materials in original unopened packages with labels intact.
 - B. Store all materials protected from weather at temperature not less than 40F (4C).
- 1.05 JOB CONDITIONS**
- A. Ambient air temperature should be 32 F at the time of installation of the VITRITURF system or equivalent. The system may be installed with temperatures below 40. The temperature only affects the

system in workability of the materials and the dry time. The lower the temperature, the thicker the viscosity of the binder and the dry time may become delayed.

- B. The VITRITURF SYSTEM or equivalent shall be protected during installation while curing and/or unattended from weather and other damage.

1.06 ALTERNATES AND ALLOWANCES

- A. Systems to be considered equal to those specified herein shall be approved by the Owner, in writing, at least 10 working days prior to the project bid date.

PART 11 PRODUCTS

2.01 GENERAL:

- A. All components of the VITRITURF SYSTEM or equivalent shall be obtained from VITRITURF or its authorized distributors or equivalent. No substitutions of, or additions of, other materials shall be submitted without prior permission from VITRITURF or equivalent.

2.02 MATERIALS:

- A. VITRITURF or equivalent Primer: A single component moisture cured polyurethane primer.
- B. VITRITURF or equivalent Binder: A proprietary, elastic Polyurethane Pre-Polymer, MDI based, extremely low odor, capable of excellent weathering and binding characteristics. Binder shall contain no TDI Monomers.
- C. VITRITURF or equivalent Black SBR: Shall be recycled SBR Rubber, shall be cryogenically processed, be chopped to 1-3 mm or 3/8" shredded granules and contain less than 4% dust and shall be packed in suitable bags to protect SBR from moisture.
- D. VITRITURF or equivalent EPDM Rubber: A man-made rubber containing minimum of 30% EPDM and having a density of 1.5 – 0.5.
 - 1. Is available in assorted colors and available in 3 sizes: 1-3 mm, 0.5-1.5 mm and 0.40-08 mm (dust).
- E. VITRITURF or equivalent Line Markers: A two component polyurethane utilized to strip lines or demarcate specific areas.
- F. The VITRITURF or equivalent Playground System shall have been tested for shock attenuation under ASTM-F-1292 and HIC. Tested for non-slip characteristics under ASTM-E303, ease of ignition under BS-5696 and ASTM-D-2859 for fire resistance under UL94.

- 2.03 MIXING AND PREPARATION:** A mixture of binder/EPDM or binder/SBR will be determined by the system which is specific.

PART III EXECUTION

3.01 INSPECTION

- A. Prior to application of VITRITURF SYSTEM or equivalent, the substrates shall be examined for compliance with the contract documents of VITRITURF or equivalent specifications. The General Contractor and Architect shall be

advised of all discrepancies. Work shall not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

VITRITURF or equivalent Playground System

A. VITRITURF or equivalent Primer:

1. Apply primer with a short nap roller at a rate of 300 sq ft per gallon.

B. VITRITURF or equivalent SBR Base Mat

1. Mix SBR to VITRITURF or equivalent Binder in a ratio of 82/18 and spread evenly at specified thickness. Compact and allow to dry for 24 hours.

C. VITRITURF or equivalent Primer:

1. Apply VITRITURF or equivalent primer at the rate of 300 sq ft per gallon.

D. VITRITURF or equivalent Wearing Course

1. Mix EPDM to VITRITURF or equivalent Binder in a ratio of 82/18

2. Apply with a steel trowel

E. For compacting

1. Lubricate trowel with diesel fuel or soapy water.

F. For finishing

1. Spray a light mist of water on surface and trowel smooth. Apply at a minimum of 3/8"

END OF SECTION 027912

Hoffman Estates Park District

EARTHWORK Section 0245

PART 1 – GENERAL

1.10 Description

- A. Work included: Earthwork for this project includes, but is not necessarily limited to:
1. Topsoil stripping, stockpiling.
 2. Excavating to attain indicated grades. Top 6" of final grade is topsoil cover.
 3. Filling and backfilling to attain indicated grades.
 4. Trenching and trench backfilling.
 5. Shoring and bracing as necessary or directed to keep excavations in a workable condition and to maintain safety on the job.
 6. Pumping and bailing to keep excavations free of water during pipe laying and jointing.
 7. Maintaining uninterrupted surface water flow during work progress.
 8. Protecting all pipes, conduits, culverts, fences, buildings and other public and private property adjacent to or in area of work.
 9. Removing all shoring and bracing not ordered left in place or not required by the project plans or specifications to remain in place.
 10. Rough grading and shaping of the site.
- B. Except as otherwise directed by the Landscape Architect, perform all rough and finish grading required to attain the elevations shown on the drawings.

1.20 Related Sections

Demolition & Removals, Tree Protection, Topsoil, Excavating, Drainage, Cast in Place Concrete.

1.30 General Requirements

- A. Dust control
1. Use all means necessary to control dust on and near the work and on and near all off-site borrow areas if such dust is caused by the Contractor's operation during performance of work or if resulting from the condition in which the Contractor leaves the site.
 2. Thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of other work on the site.

- B. Protection
 - 1. Use all means necessary to protect all materials of this Section before, during and after installation and to protect all objects designated to remain.
 - 2. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Landscape Architect at no additional cost to the Owner.

1.40 Submittals
Topsoil analysis and certification, import fill certification.

1.50 Reference Standards
Materials in this section, where applicable, shall be in conformance with "Standard Specifications for Road and Bridge Construction" (SSRBC) of the Illinois Department of Transportation, January 1, 1997 edition.

PART 2 – MATERIALS

2.10 Topsoil
Refer to Section – Topsoil

2.20 On-site fill material
All on-site fill material shall be clay or granular/clay mixture which is free from organic matter and other deleterious substances. It shall contain no rocks over six inches in greatest dimension, and not more than 15 percent of the rocks or lumps shall be larger than two and one-half (2 ½") inches in greater dimension.

2.30 Imported fill material
All imported fill material shall meet the requirements of "On-site fill material" above and, in addition, shall be predominantly granular with a maximum particle size of two inches and a plasticity index of 12 or less. Contractor shall provide certification that imported fill material contains no hazardous materials.

2.40 Fill beneath foundations
All material placed within two feet of the base of building or structure foundations, footings, or slabs shall have a plasticity index of 15 or less and compacted to 95% modified proctor.

2.50 Trench and structural backfill

- A. On-site fill material used for trench and structural backfill shall meet the requirements of "on-site fill material." For trenches in open spaces, compacted CA6 to be used under structural/paving areas.
- B. Imported cohesionless material used for trench and structural backfill shall be free from organic substances and other deleterious matter, shall be in particle size grading with the following limits:
 - Passing the number four sieve: 100%

Passing the number 200 sieve: 3% maximum

- 2.60 Aggregate Base Material
Aggregate base material shall conform to the requirements of Article 1004.01 of SSRBC, Type CA-6.
- 2.70 Pipe Bedding
Shall conform to the requirements of Article 1004.01 of SSRBC, Type CA-11.
- 2.80 Sand Backfill or Sub-base
Sand shall be torpedo sand compacted in 6" max. layers to 100% of maximum density at optimum moisture content as determined by AASHTO STD method T99 or 95% using method T180.
- 2.90 Granular Trench Stabilization
Material shall conform to the requirements of Article 1004.01 of SSRBC, Type CA-1.

PART 3 – EXECUTION

- 3.10 General Requirements
 - A. Familiarization
Prior to all work of this Section, become thoroughly familiar with the site, the site conditions, and all portions of the work following within this Section.
 - B. Existing Utilities
 - 1. Locate existing underground utilities by careful hand excavation before starting earthwork operations. If utilities are to remain in place, provide protection from damage during construction operation. J.U.L.I.E. to be contacted prior to any construction.
 - 2. Should other utilities not shown be encountered during excavation, consult the Landscape Architect immediately for direction as to procedure. Cooperate with the Owner, and public and private utility companies, in keeping services and facilities in operation to the satisfaction of the utility owner.
 - 3. Do not interrupt existing utilities serving facilities occupied by Owner or others, except when permitted in writing by the Landscape Architect, and then only after temporary utility services have been provided.
 - C. Backfilling prior to approvals
Do not allow or cause any of the work performed or installed to be covered up or enclosed by work of this section prior to all required inspections, tests and approvals. Should any of the work be so enclosed or covered up before it has been approved, uncover all such work at no additional cost to the Owner.

- D. Finished line and grade
The Contractor will be responsible for initial, supplemental and replacement stakes, monuments, and elevation for completion of the work. Final completion of the project and verification of conformance to the plans and specifications will be the responsibility of the Contractor.
- E. Topsoil stripping and stockpiling
1. After the site has been cleared and the trees and brush have been removed, all areas to be excavated, filled or which are to receive pavement shall be stripped of all topsoil. This material shall then be stockpiled only in those areas designated for topsoil stockpiling by the Landscape Architect.
 2. For information pertaining to the redistribution of topsoil, refer to "Topsoil spreading and preparation for seeding, sodding or planting" in Section 0252 of these specifications.
- F. Shoring and Bracing
1. The Contractor shall design, furnish, install and remove all shoring, bracing, sheet piling or other required work necessary to retain banks of excavation, prevent cave-in of adjacent ground and support and prevent displacement of adjacent structures or piping.
 2. All shoring shall be maintained in good condition and removed when no longer required. The Contractor shall make good any injury or damage resulting from failure of the shoring system or the non-observance of these requirements.
 3. The Contractor shall make himself familiar with all requirements concerning shoring and bracing of the Occupational Safety and Health Act, and shall govern himself accordingly. In no way shall the Owner or Landscape Architect be responsible for the design or placement of, or maintenance of any shoring or bracing of any excavations.
- G. Dewatering
The Contractor shall at all times during construction provide and maintain ample means and devices with which to promptly remove and properly dispose of all water entering the excavation and to keep the excavation dry until the structure is completed, and all backfill has been placed.
- H. Uninterrupted Surface Water Flow
The Contractor shall provide all necessary temporary ditches or other structures to divert overland flow around the construction area so as to protect the project and adjacent property.
- I. Excess Material
All excess material resulting from earthwork operations shall be hauled off site and disposed of in an approved manner.

3.20 Excavating

A. Depressions

Where depressions result from, or have resulted from, the removal of surface or sub-surface obstructions, open the depression to equipment working width and remove all debris and soft material.

B. Other Areas

Excavate to subgrades shown on the Drawings. Where excavation grades are not shown on the drawings, excavate as required to accommodate the installation.

C. Overexcavation

Backfill and compact all overexcavated areas as specified for fill below, and at no additional cost to the Owner.

3.30 Preparation of Subgrade

A. Scarifying

After the site has been cleared, stripped, and excavated to within six inches of the specified depths for recompaction, scarify the exposed surface to a minimum depth of six inches, thoroughly moisture-condition, and compact to the requirements specified for fill below.

B. Leveling

Remove all ruts, hummocks, and other uneven surfaces by surface grading prior to placement of fill.

C. All subgrades to be excavated/filled to plus or minus 0.10' averaging 0.00.

3.40 Excess Water Control

A. Unfavorable Weather

Do not place, spread, or roll and fill material during unfavorable weather conditions, do not resume operations until moisture content and fill density are satisfactory.

B. Flooding

Provide berms or channels to prevent flooding of subgrade. Promptly remove all water collecting in the depressions.

C. Softened Subgrade

Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all damaged areas and re-compact as specified for fill and compaction below. Area to be cross-sectioned prior to and after removal.

D. Dewatering

Provide and maintain at all times during construction, ample means and devices with which to remove promptly and dispose of all water from every source entering the excavations or other parts of the Work. Dewater by means which will ensure dry excavations and the preservation of the final lines and grades of bottoms of excavations.

3.50 Fill and compaction

A. Filling

1. After subgrade compaction has been completed, spread approved fill material in layers not exceeding eight (8) inches in uncompacted thickness.
 2. Water or aerate the fill material as necessary and thoroughly mix to obtain a moisture content which will permit proper compaction.
 3. Compact each soil layer to at least 90% relative compaction, or as otherwise specified. Repeat compaction process until plan grade is attained.
- B. Underground Structural Fill
1. Densify all structural fill, including re-compacted existing fill and backfill to a minimum degree of compaction of 95 percent modified proctor.
- C. Pavement areas
1. Compact the upper six inches of fill in pavement areas to a minimum degree of compaction of 95 percent.
 2. Densify cohesionless backfill material to a minimum relative density of 70 percent as determined by ASTM D2049.
 3. Compact materials of a questionable cohesion to either a minimum degree of compaction of 90 percent or a minimum relative density of 70 percent, whichever results in the greater dry density.
- D. Compaction
1. Compaction equipment used to compact existing subgrade and fill shall be a vibratory type compactor as selected by the Contractor and approved by the Landscape Architect. In areas where the vibratory type compactor is inappropriate, the Contractor shall select an alternate method for approval by the Landscape Architect.
 2. All required subgrade and fill compaction shall be in compliance with Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction", adopted January 1, 1997.
 - a. Structural Subbase: not less than 98% modified proctor maximum density.
 - b. Backfill Material: not less than 95% modified proctor maximum density.
 - c. Sodded and Planted Areas: not less than 90% modified proctor maximum density.
 - d. Utility Trenches: not less than 95% modified proctor maximum density.
 - e. Provide equipment capable of adding measured amounts of moisture to the soil material as determined by moisture-density retention tests. The moisture content in the soil material shall be within 3% of optimum. The soil shall be moistened or dried as needed by approved methods prior to continuing compaction operations.

- E. Hand compaction
 - 1. All fill or backfill around pipe or underground structures inaccessible to compaction equipment shall be compacted by hand.
 - 2. The soil shall be deposited in lifts not to exceed six inches loose measure and thoroughly compacted over the entire lift area with impact from a pneumatic power tamping hammer. Special precautions shall be taken to secure the required compaction as specified herein, without damage to the pipe or structure. Special care shall be taken in backfilling adjacent to foundation walls to avoid damage.
 - 3. Jetting will not be permitted unless specifically authorized by the Landscape Architect for densification of cohesionless material.

3.60 Grading

- A. Except as otherwise directed by the Landscape Architect, perform all rough finish grading required to attain the elevations shown on the drawings.
- B. Grading Tolerances
 - 1. Rough grade:
 - a. Building and paved areas: Plus or minus 0.1 foot averaging 0.00
 - b. Landscaped areas: Plus or minus 0.15 foot
 - 2. Finished grade:
 - a. Paved areas: Plus or minus 0.05 foot
 - b. Landscaped areas: Plus or minus 0.1 foot.
- C. Grading, including excavated and filled sections and adjacent transition areas, shall be reasonably smooth, compacted, and free from irregular surface changes. Slope transitions shall be smooth and gradual.
- D. Redress and compact any areas that settle below required grades because of traffic, precipitation, or storage loading before excavation of other work required.
- E. Treatment After Completion of Grading
After grading is completed and the Landscape Architect has finished his review, no further excavating, filling or grading will be permitted, except with the approval of and review by the Landscape Architect. Use all means necessary to prevent erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.

3.70 Excavation for Footings

- A. Preparation
 - 1. To minimize differential settlement, it is essential that earth surfaces upon which footings will be placed be compacted in accordance with the compaction requirements established in this section of these specifications.

2. Verify that all compaction is complete and approved prior to excavating for footings.
- B. Excavating
- Excavate to the established lines and grades. Cut off bottom of trenches level, and remove all loose soil. Where soft spots are encountered, remove all defective material and replace with clean fill at no additional cost to the Owner.
- 3.80 Preparation of Aggregate Base for Pavement Areas
- Aggregate base in all areas to receive pavement (Asphaltic Concrete, Poured in Place Concrete, Precast Concrete Pavers, etc.) shall be prepared in conformance with the requirements in Section 350, Type A of SSRBC.
- 3.90 Trench Excavation and Backfilling
- A. Excavation for all trenches required for the installation of pipes shall be made in such a manner that shall provide suitable room for laying the pipe within the trenches, for bracing and supporting and for pumping and drainage facilities. The Contractor shall render the bottom of the excavations firm and dry and in all respects acceptable to the Engineer. Pavement, when encountered, shall be sawcut along straight lines before excavating.
 - B. Where pipe is to be laid in gravel bedding or encased in concrete, the trench may be excavated by machinery to or just below the designated subgrade, provided that the material remaining in the bottom of the trench is no more than slightly disturbed.
 - C. Where pipe is to be laid directly on the bottom of the trench, the lower part of the trenches shall not be excavated to grade by machinery. The last part of the material shall be excavated manually in such a manner that shall give a flat bottom true to grade so that pipe or duct can be evenly supported on undisturbed material.
 - D. The Contractor shall meet the following criteria when the installation method includes the use of a steel box:
 1. When installing rigid pipe (R.C., V.C., A.C., etc.), any portion of the box extending below mid diameter shall be raised above this point prior to moving the box ahead to install the next pipe. This is to prevent the separation of installed pipe joints due to movement of the box.
 2. When installing flexible pipe (PVC, ABS solid wall, ABS truss, DI, etc.), the bottom of the box shall not extend below mid diameter. This is to prevent loss of soil between the box and the pipe bedding which could result in excessive deflection of the installed pipe.
 - E. Backfilling over ducts shall begin not less than three days after placing concrete encasement.
 - F. Where pipe is to be installed in fill of any type, fill shall be placed and compacted to the total depth required (rough grade elevation) and then re-excavated for pipe installation.

- G. The method and degree of compacting backfill as directed by the Engineer shall be governed by the type of material and the extent to which any subsequent settlement can be permitted.

END OF SECTION

Hoffman Estates Park District

EXCAVATING & TRENCHING

Section 0255

PART 1 – GENERAL

1.10 Summary

The work includes: excavating and trenching for drainage facilities including backfilling as shown, specified or required.

1.20 Related Work

Section Excavating and Grading for Site Work

PART 2 – PRODUCTS

2.10 Components For Backfilling

- A. Sand shall be clean and entirely free from wood or other organic material subject to decay, and shall be free of cinders, stone, brick and materials soluble in water. Sand shall not contain fine particles in excess of 20 percent by weight passing a #100 sieve.
- B. Grade "A" Earth fill shall consist of sand, earth and yellow clay and may be mixed. Grade "A" fill shall be material as excavated without blue clay and may be mixed with gravel or stone not exceeding 6 inches in diameter. The material shall be entirely free from slag, cinders, bottles, glass, cans, metal, combustible rubbish, rubble, asphalt or oily wastes, wood or organic materials subject to decay and shall be free of materials soluble in water. Contractor shall state the locality from which the earth fill is to be obtained.

PART 3 – EXECUTION

3.10 Workmanship

- A. Excavations shall be made to the alignment, width, and depth necessary for the proper construction of the work as shown and specified, together with sufficient working space to permit the installation and inspection of the work.
- B. Excavations carried below the depth indicated, without specific directions, shall be refilled to the proper grade with thoroughly compacted suitable fill; all additional work of this nature shall be at the Contractor's expense.
- C. Trench width may vary with and depend upon the nature of the excavation material encountered; but, in any case, shall be made ample to permit the conduit or duct to be laid and constructed properly, and the backfilling to

be placed and well compacted. The minimum width at the bottom of the trench shall be 18 inches in the clear, measured between the walls of the trench, or between the faces of the sheeting if the trench is sheeted. Where necessary for the proper installation of the fittings, or other equipment, the dimensions of the trench shall be increased, but no additional payment will be made for any such increase in the amount of excavation required.

- D. All excavation shall be made by open cut and sides of trench shall be kept as nearly vertical as possible. If material in the bottom of trench is spongy or otherwise unsuitable for supporting the conduit or duct, the trench shall be excavated to firm earth and backfilled with sand as specified.
- E. The depth of the trench shall be sufficient to permit the placing of the conduit or duct lines at the indicated grade and to allow for 6" of sand bed, unless excavated trench material is of sand. Where connections to existing lines or other conditions require a depth greater than that necessary to provide said indicated cover, the bottom of the trench shall be sloped up, as rapidly as proper conduit or duct installation will permit, from such required maximum depth to the depth necessary for the said indicated cover.
- F. Any part of the trench excavated below the required elevations, except for bell holes, shall be corrected with specified sand thoroughly compacted, and no allowance or payment will be made to the Contractor for such additional excavation and the backfilling thereof.
- G. Rubble or large stones shall be removed to provide a clearance of at least 6 inches around conduit or duct. Excavation below grade for such removal of rubble and stones, and the backfilling of such excavation, shall be included in the contract price at no additional cost.
- H. Where sand is encountered in the excavation of trenches, it may be used for the sand bed and backfill required for laying of conduit or duct. This sand may be placed in lieu of the specified sand fill to be furnished and placed by the Contractor.
- I. The use of trench digging machinery will be permitted except in such places where in the opinion of the Landscape Architect, the operation of such machinery would cause damage to existing or new underground systems; in which case, hand methods shall be employed. The requirements by the Landscape Architect of hand excavation in any part of the work shall be complied with by the Contractor, and shall not constitute a basis for any claim for extra payment in addition to the agreed contract price.
- J. Excavated materials shall be handled and placed in such a manner as not to injure surrounding areas, existing or new underground lines or structures, and so as not to obstruct roadways. Roadways shall be kept open at all times, and open trenches shall be bridged, if required, for roadway crossing.
- K. As a part of the work of excavation, the Contractor shall provide and install all necessary plywood to protect ground and sheeting and bracing to

prevent any caving of the trenches and pits which might cause injury to workmen or to adjacent structures. Such sheeting and bracing shall be maintained until the backfill has progressed to the point where sheeting and bracing is no longer required. The removal of sheeting and bracing shall be complete, and no wood shall be left in the excavation.

- L. Also, as part of the work of excavation, the Contractor shall provide temporary support and adequate protection of all existing underground and surface utility structures, and other obstructions encountered in the progress of the work. So far as known, the existing water lines, drainage lines, and other subsurface utilities within the areas covered by the work under the contract are shown on the drawings. However, the Contractor shall check these locations by surface indications.
- M. Where such existing utilities cross the line of the trench at an elevation above or below the lines to laid hereunder, or wherever such utilities encroach upon the trench at such locations and such elevations as, in the opinion of the Landscape Architect, make it possible to retain such utilities in their present location, such utilities shall be maintained by the Contractor at his own expense, and all hand work and other special provisions and precautions necessary for the maintenance of such utilities shall be performed by the Contractor, and all cost thereof shall be included in the agreed contract prices.
- N. If, in the opinion of the Landscape Architect, it is deemed impracticable to maintain the existing utilities in their present locations, the necessary changes in the location for the utilities will be made by the Park District without charge to the Contractor. However, no allowance will be made to the Contractor for delays or expense occasioned by or resulting from the maintenance, removal or relocation of any such utilities encountered.
- O. As part of the excavation work and without additional remuneration therefor; the Contractor shall maintain all trenches and excavations free from water during the installation of all work and until such time as the lines have been tested and accepted. The water shall be removed by pumping or bailing or by the use of well points or other approved means. Water discharged from the trenches shall be led to natural drainage channels, drains or sewers. Water carrying sand or other sediment shall be run first into settling basins, and the sand and sediments settled out before the water is discharged into sewers.
- P. Backfilling:
 - 1. After the underground systems have been completed and approved by the Landscape Architect, the Contractor shall backfill the trenches and other excavations promptly and as hereinafter specified.
 - 2. Only approved stone shall be used for backfill and shall be thoroughly compacted by puddling and tamping. A bed of stone shall be placed 6 inches below and around the pipe for the full width of the trench and all backfilling shall be up to subgrade elevation in all areas.

- Q. Disposal: All excess excavated and unsuitable material is to be legally disposed of off Park District property.

END OF SECTION

Hoffman Estates Park District

LANDSCAPE SPECIFICATIONS

Section 0890

PART 1 – GENERAL

1.1 CONDITIONS & REQUIREMENTS

- A. Refer to the General Conditions, Supplementary Conditions and Division General Requirements.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Earthwork sections, apply to work specified in this section.

1.3 DESCRIPTION OF WORK

- A. The extent of Landscape is shown on Drawings.
- B. Landscape work includes, but is not limited to:
 - 1. Installation of all plant materials.
 - 2. Installation of grasses and forbes.

1.4 JOB CONDITIONS

- A. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
- B. Protection of Existing Improvements: Provide protection necessary to prevent damage to existing improvements indicated to remain in place. Protect improvements on adjoining properties and on Owner's Property.

1.5 GUARANTEE

- A. General
 - 1. Warrant all plant material to be true to botanical name and specified size.
 - 2. The Contractor will not be responsible for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents beyond Landscape Installer's control which

results from natural causes such as floods, lightning, storms, freezing rain, or winds over 60 miles per hour, fires or vandalism.

B. Replacements

1. During the guarantee period, replace at no additional expense to the Owner, plant materials that are dead or that are, in the opinion of the Owner and Consultant, in an unhealthy or unsightly condition. Rejected plant materials shall be removed from the site and legally disposed of at no additional expense to the Owner.
2. Only one (1) replacement of any plant is required after provisional acceptance, except for losses or replacements due to failure to comply with specified requirements.
3. Replacement plants and planing operations shall be in accordance with the original specifications. Replacements shall be made no later than the next succeeding planting season. Fully restored areas damaged by replacement operations to their original and specified condition.

1.6 ACCEPTANCE

A. Selection

1. All plant materials shall be selected at nurseries by Contractor and approved by the Owner prior to digging.

B. Condition and Quality

1. All trees and shrubs are to be selected specifically for their native character and habitat, unless otherwise noted.
2. Plants shall be sound, healthy, vigorous and free of disease, insect pests and larvae, with well-developed root systems. Plants shall meet applicable standards set forth by the American Nurserymen's Association.
3. Plants shall not be pruned prior to delivery without the express written approval of the Owner and the Consultant.

C. Measurements

1. Caliper of trees required to be less or equal to four (4) inches shall be taken six (6) inches above ground level. Caliper of trees required to be over four (4) inches shall be measured one foot above ground level.

D. Inspections

1. All plant material shall be inspected and approved by the Consultant at the Work Site before planting.
2. Inspection and approval of plant material by the Owner at the nursery shall not waive the Owner's right to reject any plant materials after delivery to the Work Site.

- E. Digging and Handling
 1. All plants shall be balled and burlaped with firm, natural balls of earth. The balls shall be dug according to current nursery practices for sufficient depth and width to include adequate fibrous and feeding roots. Follow AAN standards ANS1260, 1-1980 American Standard for Nursery Stock.
 2. No plants dug with a ball shall be accepted if the ball is broken before or after planting operations, without express written approval by the Owner.
 3. Plants with broken major branches or badly bruised or damaged bark are not accepted and may be rejected.
 4. Contractor shall protect the roots and balls of all plants that cannot be planted immediately upon delivery to the Work Site with wet soil, wet straw, or other acceptable materials and shall water such plants as necessary. Contractor shall plant all plants at their location no later than two (2) days after delivery to the Work Site.

- F. Substitutions
 1. No substitute plant materials shall be permitted without expressed written approval of the Owner. Contractor may submit evidence, in a form acceptable to the Owner, that any plant material is unobtainable. Owner shall consider proposals for the use of the nearest equivalent or variety of plant material, and, if necessary, may consider making an equitable adjustment of the Contract price.

- G. Perennials and Groundcovers
 1. All perennial and groundcover plants shall be established and well-rooted in removable containers, integral peat pods or bare root as approved by the Owner and Consultant.

PART 2 - OTHER MATERIALS

2.1 TOPSOIL

- A. Topsoil shall be in place. Any additional topsoil needed shall be screened and pulverized, and shall be furnished from a certified supplier.

- B. Tree and Shrub Planting Soil
 - Planting soil for trees (including evergreens) and shrubs shall:
 1. Be rich in humus, fertile, friable, non-acidic, sandy loam. Be free of sub-soil admixture, noxious weeds, large clods, stones, sticks, roots or other extraneous materials.
 2. Not be transported or used for planting operations while in a frozen or muddy condition.

- C. Groundcover and Perennial Planting Soil

1. Groundcover and perennials shall be planted in a rototilled soil mixture to be a minimum depth of six (6) inches, comprised of one (1) inch sand, two (2) inches of compost, and four (4) inches topsoil.
- D. Fertilizer
Fertilizer for trees (including evergreens) shrubs, perennials, and ground cover shall be:
1. "Map-Amp" (7-40-6), or an equal, complete, slow release granular type fertilizer approved in writing by the Consultant, or substitute approved by the Consultant.
- E. Trunk Wrap
Trunks of all trees (except evergreens) shall be wrapped with standard waterproofed tree wrapping paper, 2½ inches wide, made of two (2) layers of crepe kraft paper weighing not less than 30 pounds per ream.
- F. Plant Pits
1. Before plant pits are dug, all weeds shall be removed from the planting areas and the area shall be raked level. Contractor shall adjust grades as necessary to achieve the final grades shown in Contract Drawings.
 2. Pits shall be circular in outline with vertical sides. The pits shall be dug exactly to the depth of the ball with no over dig.
 3. Shrub pits shall be at least one (1) foot larger than the diameter of the root ball. Tree pits shall be at least to (2) feet wider than the root ball.
 4. If any pit is dug too deep the backfill shall be very well completed to avoid settling after the plant material has been planted.
- G. Pruning
1. All pruning must be completed before planting.
 2. Each plant must be pruned in accordance with horticultural practice to preserve the natural character of the plant material. All dead, broken or badly bruised branches shall be removed.
 3. No paint or wound dressing will be applied to wounds or pruned limbs.
- H. Planting Trees (including evergreens) and Shrubs
1. All standing water in planting pits must be removed before setting the plant into the pit. Contractor shall report all standing water to the Consultant immediately in order to determine if drain tile or other corrective action is necessary.
 2. Set plants in the center of the pits, plumb and straight, or slightly tipped to duplicate normal growth.

3. Set plants at the same depth at which they grew in the nursery, or slightly higher in non-porous subsoils.
 4. The approved fertilizer shall be thoroughly incorporated with the planting soil before backfilling.
 5. Compact prepared planting soil around the ball in concentric layers.
 6. After filling with soil, a four (4) inch deep by eight (8) inch wide rim shall be formed of compacted soil to create a watering basin only above the root ball.
 7. Each plant shall be watered by filling the basin with water twice at each watering, or through the use of root feeders.
 8. All planting pits shall be finished within a period of three (3) days following installation. Finishing shall include reconstruction of basins and weed removal.
 9. All trees and large shrubs are to be kept at least ten feet away from fire hydrants.
- I. Mulching
1. Furnish and install shredded wood mulch to a depth of two (2) inches in all tree (including evergreen) and shrub planting beds following the application of a pre-emergence herbicide to aid in weed control. "Ron-Star" herbicide to be applied according to manufacturer's recommendations.
 2. Mulch should not be installed in groundcover or perennial beds.
- J. Trunk Wrapping
1. Contractor shall wrap overlap and entirely cover the trunk from ground to the second branch and shall be neat and snug.
- K. Guying
1. Contractor shall guy all evergreen trees (over six (6) feet in height) using a minimum of three cables.
 2. Guys shall be 3/16 inch woven wire cable, and trunks shall be protected with sections of rubber house.
 3. Each cable shall be anchored to the ground with a screw anchor or approved hardwood stake.

2.2 TURF AREAS

Turf Work shall include site preparation, fine grading and seeding and sodding as indicated on the Plans and Specifications.

- A. Quality Assurance
1. The work of this section shall be performed by a per-qualified Contractor specializing in seeding procedures for native grassland species.

- B. Submittals
 - 1. Certificates of Conformance or Compliance
 - a. Seed.
 - 2. Schedules
 - a. At least two (2) weeks prior to start of work, submit seeding schedules.
 - 3. Maintenance
 - a. Submit schedule and description of work items for meadow seeding maintenance.

- C. Final Acceptance
 - 1. The Contractor shall be responsible for the satisfactory growth of grass, forbes, and Carex species on all areas seeded and/or planted under the Contract until final acceptance of the work.

- D. Seed
 - 1. Seed shall be fresh, clean, dry new-crop seed composed of varieties, mixed in proportions by weight, and tested for minimum percentages of purity and germination.
 - 2. Within two (2) weeks of notification to proceed, submit for approval a written description of the mixes showing the percentage by number of PLS of each species.

- E. Seed Mix (rates per acre)
 - 25% Bluechip / Nublu Kentucky Bluegrass
 - 25% Kelly Kentucky Bluegrass
 - 25% APM Perennial Ryegrass
 - 25% Accent Perennial Ryegrass

- F. Seeding
 - 1. Sow seed by means of mechanical distributors. Cross seed from three different directions at a rate of 200 pounds per acre. Do not sow seed when wind is strong enough to separate light and heavy seed when it is being sown, or when ground is set or otherwise nontillable. After seeding, lightly rake or cover seed by other approved means by stirring ground not deeper than one-quarter inch (1/4"). Use care in seeding and taking procedure so no change in grade is made and seed is not raked from one spot to another, causing uneven growth. Follow seeding with roller weighing not more than 100 pounds per linear foot and not less than 25 pounds per linear foot. Finished seeded grades shall be within one inch (1") of correct, established elevations. After seeding is completed, water seeded areas with fine spray to penetrate soil three inches (3"), but do not flood.

G. Seeding Seasons

1. Disc. harrow and sow seed between April 1 and June 20, as weather permits, unless otherwise approved by the Owner and Consultant. This window is applicable to both Fescue and the Prairie Grasses. Do not sow seed when weather conditions are unfavorable, such as during drought or high winds.

H. Equipment

1. All equipment shall be inspected and approved by the Owner's Representative.
2. Prior to start of work, calibrate all equipment to the satisfaction of the Owner's Representative. Recalibration during seeding may be requested by the Owner's Representative.
3. Rangeland Grass Drill or No-till Plant which is designed specifically for the seeding of the native grasses and forbes are approved equipment types.
4. Blue Grass or Fescue seed to be incorporated into finely graded seed bed with Brillion Seeder at rates specified.

I. Mulching

1. An agricultural straw atrix stitch bonded with degradable thread blanket shall be placed on all seeded areas. A stake made of biodegradable corn-based polymer shall be inserted to bind the blanket to the topsoil surface. Stakes shall be placed no further apart than four feet (4 ft.) lengthwise and no further than three feet (3 ft.) width-wise.

J. Sodding

1. In area to be sodded, remove stones, roots or other undesirable foreign material from surface, scarify surface to a depth of two inches (2") for bonding of topsoil with the sod cover, and apply fertilizer at a rate of 450 pounds per acre. Use wood rake to rake fertilizer in until surface is smooth and friable. Moisten earth bed, upon which sod is to be placed, to loosened depth, if not naturally sufficiently moist. Place sod that has been grown on topsoil, not peat, in bed within 24 hours after sod has been cut. Lay sod on slopes in horizontal strips beginning at bottom and working upward. Lay sod so joints caused by abutting ends of sod strips are not continuous, and so each sod strip will abut snugly against strip previously laid. As sod is being laid it shall be rolled or firmly but lightly tamped with suitable wood or metal tampers to "set" or press sod into underlying soil. Where water will flow over the sod, the upper edges of the sod shall be turned into the soil below the adjacent area and a layer of topsoil thoroughly compacted over the juncture to conduct water over the upper edge of the sod.

PART 3 - EXECUTION

3.1 MAINTENANCE

- A. Contractor shall, at its sole cost and expense, be responsible for all Work incidental to maintaining plants in a vigorous and healthy condition from time of nursery pick-up through planting and until acceptance of each phase.
- B. Such maintenance shall include, but shall not be limited to, the following:
 - 1. Contractor shall water plants, when necessary, by gently flooding the basin to keep them in a healthy condition; periodically check plants for signs of excessive water in soil before watering.
 - 2. Contractor shall periodically observe the plants for signs of disease and insect infestation.
 - 3. Contractor shall prune broken and dying branches, remove all suckers, pull all weeds, and remove all vegetable debris.
 - 4. Contractor shall repair or replace deteriorated tree wrappings.
 - 5. Contractor shall dig and straighten all trees that lean as a result of faulty planning.

3.2 CLEAN-UP AND PROTECTION

- A. Clean-up
 - 1. Excess and waste material shall be removed daily.
 - 2. When planting in an area has been completed, the area shall be cleared of all debris, soil piles and containers.
- B. Repairs
 - 1. Any damage to existing landscape, paving or other such features as a result of work related to this Contract shall be repaired by the responsible Contractor to its original condition.

END OF SECTION

Mulch dump locations

- Birch park 1500 Essex Drive
- Cannon Crossings Park 1675 Nicholson drive
- High Point Park 1704 Glen Lake Road
- Olmstead Park 4500 Olmstead Drive
- South Ridge Park 1450 Freeman Road
- Vogelei Park 650 W. Higgins Road
- Victoria Park 1100 Kingsdale Drive
- Triphahn Center 1685 w. Higgins Road
- Sheffield Townhomes 1000 walnut Drive (Schaumburg)
- Alanis Landscape Golf Road (Elgin)